Actuate One™

One Design
One Server
One User Experience

Using BIRT iServer Integration Technology

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Document No. 111021-2-430301 July 28, 2011

Contents

About Using BIRT iServer Integration Technology xix

Part 1
Introduction to the Actuate Information Delivery API

Chapter 1
Understanding the Information Delivery API and schema 3
About the Actuate Information Delivery API 4
About web services and WSDL 5
Understanding the elements of iServer's WSDL schema 5
About the definitions element 6
About data type definitions 7
About message definitions 9
About the portType definition 9
About the binding definition 9
About the service definition 10
Accessing the Actuate schema using a web browser 11

Chapter 2
Constructing a SOAP message 13
About SOAP messaging 14
Calling an Actuate web service 14
About SOAP message elements 15
Understanding the HTTP header 16
Understanding the SOAP envelope 17
About XML namespace declarations 18
Understanding the SOAP header 19
Understanding the SOAP message body 21
About SOAP Fault messages 22

Chapter 3
Understanding Actuate Information Delivery API operations 25
About Actuate Information Delivery API operations 26
Working with BIRT iServer 26
Working with channels 29
Working with Encyclopedia volumes 29

Working with files and folders 31
Working with groups 34
Working with information objects and databases 35
Working with jobs and reports 35
Working with searches 41
Working with users, roles, and security 42

Chapter 4
Running, printing, and viewing a document 45
Generating or printing a document 46
Running a synchronous report 47
Generating a cube from a cube design profile 48
Setting a time frame for an ExecuteReport response 49
Waiting for report generation 50
Running a synchronous report that uses parameters 51
Retrieving report parameter values 53
Creating a report object value (.rov) file 54
Running or printing a job 55
Understanding SubmitJob 56
Specifying parameters for a job 56
Using a parameter values file as input to a job 57
About hidden, required parameters 57
Scheduling report generation or printing 57
Working with a job notification 59
About e-mail attachments 59
About notifying a channel 60
Sending an e-mail notification using SubmitJob 60
Sending an e-mail notification using UpdateJobSchedule 61
Notifying a channel using SubmitJob 62
Notifying a channel using UpdateJobSchedule 63
Customizing an e-mail notification 63
Using the e-mail template for multiple locales 64
Retrieving job properties using GetJobDetails 64
Retrieving job properties using GetNoticeJobDetails 65
Canceling a job 67
Working with a resource group 67
Creating an asynchronous resource group 68
Creating a synchronous resource group 70
Updating a resource group's properties 70
Getting a list of resource groups 71
Retrieving the properties of a specific resource group 72
Retrieving properties for all resource groups on a BIRT iServer 73
Setting properties for the resource groups on a BIRT iServer 74

Deleting a resource group . . . 76
Assigning a report to a resource group . . . 76
Assigning a job to a resource group . . . 77
Retrieving the resource group to which a job is assigned . . . 78
Working with a query . . . 79
About information object file types . . . 81
About query programming tasks . . . 81
Generating a data object instance file . . . 81
Filtering data in a query . . . 84
Scheduling a query . . . 86
Creating a data object value file . . . 88
Viewing the details of a query . . . 90
Viewing the details of a scheduled query . . . 92
Modifying the details of a scheduled query . . . 93
Viewing the details of a query notification . . . 96
Working with multidimensional data . . . 98
Retrieving and viewing data . . . 99
Requesting a page or range of pages using SelectPage . . . 100
Retrieving the attachment to a SelectPage response . . . 101
Using SelectPage to print . . . 101
Retrieving report content . . . 102
Retrieving embedded data and style sheets . . . 105
Searching within a document . . . 105
Searching for a range of pages using SearchReport . . . 107
Getting a table of contents . . . 108
Requesting a page count . . . 110
Retrieving display formats . . . 110
Retrieving a custom format . . . 111
Managing a large list . . . 112
Working with a large message . . . 113
Delivering a multilingual document . . . 115

Chapter 5
Administering an Encyclopedia volume . . . 117
About the Encyclopedia service . . . 118
Defining the data on which an operation acts . . . 118
Defining data using Id or IdList . . . 118
Defining data using Name or NameList . . . 119
Defining data using Search . . . 119
Administering security and authentication operations . . . 120
Logging in as a report user . . . 121
Logging in with SystemLogin . . . 123
Getting an access control list . . . 123

Requesting a file or folder's ACL . . . 123
Retrieving the ACL for a channel . . . 124
Getting a user's ACL template . . . 125
Setting an additional condition on an ACL request . . . 126
About Encyclopedia-level management operations . . . 127
Uploading a file . . . 127
Uploading an Actuate report . . . 128
Uploading a third-party report . . . 129
Copying file properties when uploading a file . . . 129
Attaching or embedding a file in a request . . . 130
Uploading a file as an attachment . . . 131
About the HTTP header . . . 131
Writing the UploadFile request . . . 132
Downloading a file . . . 133
Downloading a file as an attachment . . . 134
Updating a file or folder . . . 134
Updating a file's parameters . . . 135
Updating the privilege settings of a file or folder . . . 136
Selecting properties of a file or folder in an Encyclopedia volume . . . 139
Requesting a list of files or folders in a working directory using SelectFiles . . . 139
About the Search element in SelectFiles . . . 141
Using a privilege filter with SelectFiles . . . 142
Retrieving a property list for an item in a folder . . . 142
Retrieving properties of an item in a folder . . . 143
Setting a condition using GetFolderItems . . . 144
Using GetFileDetails . . . 145
Getting the details of an Actuate report . . . 145
Getting the details of a cube design profile . . . 146
Managing Encyclopedia volume items . . . 147
Ignoring error conditions in an Administrate operation . . . 148
Creating an item in an Encyclopedia volume . . . 148
Creating a user . . . 148
Creating a folder . . . 149
Creating a security role . . . 150
Deleting an item . . . 150
Deleting a file or folder . . . 151
Deleting a user . . . 151
Updating an item . . . 152
Updating a job schedule . . . 152
Updating a channel . . . 153
Moving a file or folder . . . 154
Copying a file or folder . . . 155
About composite operations and transactions . . . 156

About sequences in composite Administrate operations . . . 157
Working with a transaction . . . 157
About TransactionOperation and AdminOperation . . . 159
Searching within an Encyclopedia volume . . . 160
Selecting an item in an Encyclopedia volume . . . 160
Selecting a job or job list . . . 161
Getting Encyclopedia volume, printer, and file type information . . . 162
Getting Encyclopedia volume properties . . . 163
Getting BIRT iServer System printer information . . . 165
Retrieving a user's printer settings . . . 167
Retrieving parameter definitions for a file type . . . 167
Extracting parameter definitions . . . 168
Exporting file parameters . . . 169
Executing a predefined Encyclopedia volume command . . . 170
Diagnosing reporting environment problems . . . 171
About Ping request options . . . 172
Sending a Ping request in Concise mode . . . 174
Sending a Ping request in Normal mode . . . 174
Sending a Ping request in Trace mode . . . 175
Monitoring BIRT iServer information . . . 176
Getting information about BIRT iServer . . . 176
Getting information about a running or pending job . . . 177
Getting information about Factory service processes . . . 180
Monitoring or canceling a request for a synchronous report . . . 181
Monitoring a request for a synchronous report . . . 181
Canceling a request for a synchronous report . . . 182

Part 2
Developing Actuate Information Delivery API applications

Chapter 6
Developing Actuate Information Delivery API applications using Java 187
About the Apache Axis 1.4 client . . . 188
Generating the com.actuate.schemas library . . . 188
About third-party code libraries . . . 189
About the Actuate Information Delivery API framework . . . 190
Using a data type from a WSDL document to generate a JavaBean . . . 191
Using metadata to map XML to a Java type . . . 192
Mapping the portType to a Service Definition Interface . . . 193
Using a WSDL binding to generate a Java stub . . . 194
Implementing the Actuate API service . . . 195

Developing Actuate Information Delivery API applications 196
Writing a program that logs in to an Encyclopedia volume 197
About the auxiliary classes provided by the sample application 199
Logging in to the Encyclopedia volume 202
Capturing SOAP messages using Axis TCPMonitor 203
Writing a simple administration application 204
Creating a user 205
About ActuateControl.createUser( ) 206
About ActuateControl.runAdminOperation( ) 207
Performing a search operation 208
Using com.actuate.schemas.SelectFiles 208
Using ResultDef 211
Writing a batch or transaction application 213
About batch and transaction operations 213
Implementing a transaction-based application 214
Uploading a file 216
About ways of uploading a file 216
Using com.actuate.schemas.UploadFile 217
How to build an application that uploads a file 217
Downloading a file 220
Using com.actuate.schemas.DownloadFile 221
How to build an application that downloads a file 221
Executing a report 224
Understanding the structure of an ExecuteReport application 225
Using the SelectPage class 226
Using SelectJavaReportPage 229
Scheduling a custom event 234
Implementing a custom event service 237
Building a custom event service 238
About the custom event web service sample 239
SOAP-based event web service operations and data types 240
ArrayOfEvent 240
ArrayOfEventStatus 241
Event 241
EventStatus 242
GetEventStatus 242

Chapter 7
Developing Actuate Information Delivery API applications using Microsoft .NET 243
About the Microsoft .NET client 244
About the Actuate Information Delivery API framework 247
Using a data type from a WSDL document to generate a C# class 247

Mapping the portType to a web service interface 249
Developing Actuate Information Delivery API applications 250
Writing a program that logs in to an Encyclopedia volume 250
Writing a simple administration application 254
Performing a search operation 255
Writing a batch or transaction application 259
About batch and transaction operations 259
Implementing a transaction-based application 259
Uploading a file 261
About ways of uploading a file 261
Using UploadFile 262
How to build an application that uploads a file 262
Downloading a file 263
Using DownloadFile 264
How to build an application that downloads a file 264

Chapter 8
Actuate Information Delivery API operations 267
About the SOAP header 268
Administrate 269
AdminOperation 269
CallOpenSecurityLibrary 272
CancelJob 273
CancelReport 273
CloseInfoObject 274
CopyFile 275
CreateChannel 276
CreateDatabaseConnection 277
CreateFileType 277
CreateFolder 278
CreateGroup 279
CreateParameterValuesFile 280
CreateQuery 281
CreateResourceGroup 282
CreateRole 282
CreateUser 283
CubeExtraction 283
DataExtraction 285
DeleteChannel 286
DeleteDatabaseConnection 287
DeleteFile 287
DeleteFileType 289
DeleteGroup 289

DeleteJob 290
DeleteJobNotices 291
DeleteJobSchedule 291
DeleteResourceGroup 292
DeleteRole 293
DeleteUser 293
DownloadFile 294
DownloadTransientFile 296
ExecuteQuery 297
ExecuteReport 299
ExecuteVolumeCommand 302
ExtractParameterDefinitionsFromFile 303
ExportParameterDefinitionsToFile 303
FetchInfoObjectData 304
GetChannelACL 305
GetConnectionPropertyAssignees 307
GetContent 307
GetCubeMetaData 309
GetCustomFormat 310
GetDatabaseConnectionDefinition 311
GetDatabaseConnectionParameters 312
GetDatabaseConnectionTypes 312
GetDataExtractionFormats 313
GetDocumentConversionOptions 314
GetDynamicData 314
GetEmbeddedComponent 316
GetFactoryServiceInfo 318
GetFactoryServiceJobs 320
GetFileACL 322
GetFileCreationACL 324
GetFileDetails 326
GetFileTypeParameterDefinitions 327
GetFolderItems 328
GetFormats 329
GetInfoObject 330
GetJavaReportEmbeddedComponent 331
GetJavaReportTOC 332
GetJobDetails 333
GetMetaData 336
GetNoticeJobDetails 336
GetPageCount 339
GetPageNumber 340
GetParameterPickList 341

GetQuery . . . 342
GetReportParameters . . . 344
GetResourceGroupInfo . . . 345
GetResourceGroupList . . . 346
GetSavedSearch . . . 347
GetServerResourceGroupConfiguration . . . 347
GetStaticData . . . 348
GetStyleSheet . . . 349
GetSyncJobInfo . . . 350
GetSystemMDSInfo . . . 351
GetSystemPrinters . . . 352
GetSystemServerList . . . 352
GetSystemVolumeNames . . . 353
GetTOC . . . 354
GetUserLicenseOptions . . . 355
GetUserPrinterOptions . . . 356
GetVolumeProperties . . . 357
Login . . . 359
MoveFile . . . 361
ODBOTunnel . . . 363
OpenInfoObject . . . 363
Ping . . . 365
PrintReport . . . 369
SaveSearch . . . 372
SaveTransientReport . . . 373
SearchReport . . . 373
SelectChannels . . . 375
SelectFiles . . . 377
SelectFileTypes . . . 379
SelectGroups . . . 380
SelectJavaReportPage . . . 381
SelectJobs . . . 383
SelectJobNotices . . . 384
SelectJobSchedules . . . 385
SelectPage . . . 386
SelectRoles . . . 388
SelectUsers . . . 390
SetConnectionProperties . . . 392
SetServerResourceGroupConfiguration . . . 393
SubmitJob . . . 393
SystemLogin . . . 401
Transaction . . . 401
TransactionOperation . . . 402

UndeleteUser 405
UpdateChannel 406
UpdateChannelOperation 407
UpdateChannelOperationGroup 408
UpdateDatabaseConnection 409
UpdateFile 409
UpdateFileOperation 411
UpdateFileOperationGroup 414
UpdateFileType 414
UpdateFileTypeOperation 415
UpdateFileTypeOperationGroup 416
UpdateGroup 416
UpdateGroupOperation 417
UpdateGroupOperationGroup 418
UpdateJobSchedule 419
UpdateJobScheduleOperation 420
UpdateJobScheduleOperationGroup 423
UpdateOpenSecurityCache 424
UpdateResourceGroup 424
UpdateRole 425
UpdateRoleOperation 426
UpdateRoleOperationGroup 429
UpdateUser 429
UpdateUserOperation 430
UpdateUserOperationGroup 434
UpdateVolumeProperties 434
UpdateVolumePropertiesOperation 434
UpdateVolumePropertiesOperationGroup 436
UploadFile 436
WaitForExecuteReport 437

Chapter 9
Actuate Information Delivery API data types 439
AbsoluteDate 440
acDouble 440
acNull 440
Aggregation 441
ArchiveRule 441
Argument 442
Arrays of data types 443
Attachment 444
Boolean 445
CancelJobStatus 445

Channel . . . 446
ChannelCondition . . . 447
ChannelField . . . 447
ChannelSearch . . . 448
ColumnDefinition . . . 449
ColumnDetail . . . 452
ColumnSchema . . . 452
ComponentIdentifier . . . 453
ComponentType . . . 454
ConversionOptions . . . 454
CustomEvent . . . 455
Daily . . . 455
DatabaseConnectionDefinition . . . 456
DataCell . . . 457
DataExtractionFormat . . . 458
DataFilterCondition . . . 458
DataRow . . . 459
DataSchema . . . 459
DataSortColumn . . . 459
DataSourceType . . . 460
DataType . . . 460
DocumentConversionOptions . . . 461
Event . . . 462
EventOptions . . . 463
EventType . . . 464
ExecuteReportStatus . . . 464
ExternalTranslatedRoleNames . . . 465
FieldDefinition . . . 465
FieldValue . . . 467
File . . . 467
FileAccess . . . 469
FileCondition . . . 469
FileContent . . . 470
FileEvent . . . 470
FileField . . . 470
FileSearch . . . 471
FileType . . . 473
FilterCriteria . . . 475
FormatType . . . 476
Group . . . 476
GroupCondition . . . 477
GroupField . . . 477
Grouping . . . 478

GroupSearch 478
Header 480
Integer 481
InfoObjectData 481
InfoObjectDataFormat 481
JobCondition 482
JobEvent 482
JobField 483
JobInputDetail 484
JobNotice 489
JobNoticeCondition 491
JobNoticeField 492
JobNoticeSearch 492
JobPrinterOptions 493
JobProperties 495
JobSchedule 499
JobScheduleCondition 499
JobScheduleDetail 500
JobScheduleField 501
JobScheduleSearch 502
JobSearch 503
LicenseOption 505
MDSInfo 506
Monthly 506
NameValuePair 508
NewFile 508
ObjectIdentifier 510
OpenServerOptions 510
PageIdentifier 511
ParameterDefinition 511
ParameterValue 515
PendingSyncJob 517
Permission 518
Printer 519
PrinterOptions 522
PrivilegeFilter 524
PropertyValue 524
Query 525
Range 528
Repeat 528
Record 529
ReportParameterType 529
ResourceGroup 530

ResourceGroupSettings 531
ResultSetSchema 532
RetryOptions 533
RetryOptionType 533
Role 534
RoleCondition 534
RoleField 535
RoleSearch 535
RunningJob 536
ScalarDataType 539
SearchReportByIdList 540
SearchReportByIdNameList 540
SearchReportByNameList 541
SearchResultProperty 541
ServerInformation 541
ServerResourceGroupSetting 543
ServerState 544
ServerStatusInformation 545
ServerVersionInformation 546
Service 546
SortColumn 547
Stream 547
SupportedQueryFeatures 548
SystemType 548
TypeName 548
User 549
UserCondition 551
UserField 552
UserSearch 552
VersioningOption 554
ViewParameter 554
Volume 557
Weekly 560

Part 3
Working with BIRT iServer integration APIs

Chapter 10
Using Java Report Server Security Extension 563
About the Java Report Server Security Extension 564
Implementing the Java RSSE interface 564

About installing a Java RSSE application 565
Installing a Java RSSE application 566
Configuring and deploying an LDAP configuration file 567
Installing the page-level security application 575
Migrating a Java RSSE application to a new Actuate release 575
Using page-level security 575
Creating an access control list (ACL) 577
Deploying a report to an Encyclopedia volume 577
About the design 581
SOAP-based Report Server Security Extension (RSSE) operations 584
Authenticate 584
DoesGroupExist 585
DoesRoleExist 585
DoesUserExist 586
GetConnectionProperties 586
GetTranslatedRoleNames 587
GetUserACL 587
GetUserProperties 588
GetUsersToNotify 589
PassThrough 589
SelectGroups 590
SelectRoles 590
SelectUsers 591
Start 592
Stop 595
SOAP-based Report Server Security Extension (RSSE) data types 595
Arrays of data types 595
Permission 596
PropertyValue 597
TranslatedRoleNames 597
User 597

Chapter 11
Using Actuate logging and monitoring APIs 601
About Usage Logging and Error Logging extensions 602
Installing and using Usage Logging and Error Logging extensions 602
Customizing the Usage Logging extension 605
Customizing the Error Logging extension 606
About the usage log 606
About types of recorded events 607
Understanding a usage log entry 607
About the error log 610
Understanding an error log entry 611

About BIRT iServer error messages . . . 612
About BIRT iServer usage and error log consolidator . . . 613
About the usage and error logging report examples . . . 629
About Actuate Performance Monitoring Extension . . . 632
Installing and using Actuate Performance Monitoring Extension . . . 632
Customizing Actuate Performance Monitoring Extension . . . 636
About counters . . . 637
About SOAP endpoint counters . . . 638
About report engine counters . . . 638
About Encyclopedia volume counters . . . 639
About view counters . . . 639
About cluster framework counters . . . 640
About Encyclopedia database counters . . . 640
About lock contention counters . . . 641
About memory usage counters . . . 642
About synchronous reporting manager cache counters . . . 643
About database buffer pool cache counters . . . 643

Chapter 12
Actuate logging and monitoring functions . . . 645
About Usage Logging Extension functions . . . 646
AcIsThreadSafe . . . 646
AcLogUsage . . . 646
AcStartUsageLog . . . 646
AcStopUsageLog . . . 647
About Error Logging Extension functions . . . 647
AcIsThreadSafe . . . 647
AcLogError . . . 647
AcStartErrorLog . . . 647
AcStopErrorLog . . . 648
About the Performance Monitoring API . . . 648
ArrayOfCounterInfo . . . 648
CounterInfo . . . 648
GetAllCounterValues . . . 649
GetCounterValues . . . 649
ResetCounters . . . 650

Chapter 13
Aging and archiving Encyclopedia volume items . . . 651
Automating report archival and removal . . . 652
About Actuate Online Archive Driver . . . 652
Configuring the Online Archive Driver . . . 653
Understanding aging and archiving rules for items in an Encyclopedia volume . . . 657

Understanding precedence in archiving 658
Aging and archiving an item using the Actuate Information Delivery API 658
Setting and updating autoarchive rules using IDAPI 659
Setting default autoarchive rules when creating a folder 660
Setting autoarchive rules when creating a job schedule 661
Updating autoarchive rules for a file or folder 661
Updating autoarchive rules for a job output file 662
Updating the autoarchive rules for a file type in a folder or volume 663
Setting an autoarchive schedule when updating an Encyclopedia volume 663
Starting an archive process for an Encyclopedia volume 664
Retrieving autoarchive rules for a file or folder 665
Setting job notice expiration for all users 666
Setting job notice expiration for a user 666

Chapter 14
Archiving APIs 669
SOAP-based archiving API operations 670
DeleteExpiredFiles 670
EndArchive 670
GetNextExpiredFiles 671
StartArchive 672
SOAP-based archiving data types 673
ArrayOfFileInfo 673
ArrayOfPermission 673
FileAccess 673
FileInfo 674
Permission 675

Chapter 15
Customizing installation on Windows systems 677
Modifying the installed files and registry entries 678
Localizing the installation 679
Creating a silent installation 683
Specifying version information 686
Specifying license information 686
Customizing installation dialog boxes 686
Specifying dialog box information 687
Encrypting dialog box information 687
Using acencrypt 688
Performing a silent installation 689
Performing a silent installation removal 691
Performing a silent removal of Actuate Localization and Online Documentation 692

Chapter 16
Customizing installation on UNIX and Linux systems 693
About customizing the installation 694
Creating a silent installation 694
Modifying the parameter template file 695
About isinstall.cfg 695
Modifying isinstall.cfg 695
Performing a silent installation 696
Performing a silent installation removal 697

Appendix A
Text string limits in Actuate operations 699

Index 703

About *Using BIRT iServer Integration Technology*

Using BIRT iServer Integration Technology provides information about server-side programming using the XML-based Actuate Information Delivery API. This guide includes an introduction to the concepts required to work with the API, covers Actuate's logging, auto archiving, and open server capabilities, and provides information about using the Java Report Server Security Extension (RSSE).

Using BIRT iServer Integration Technology includes the following chapters:

- *About Using BIRT iServer Integration Technology.* This chapter provides an overview of this guide.
- *Part 1. Introduction to the Actuate Information Delivery API.* This part describes how to work with Actuate Information Delivery API.
- *Chapter 1. Understanding the Information Delivery API and schema.* This chapter introduces the features of the API and describes the Actuate Web Services Description Language (WSDL) schema.
- *Chapter 2. Constructing a SOAP message.* This chapter discusses the elements of Actuate SOAP (simple object access protocol) messages.
- *Chapter 3. Understanding Actuate Information Delivery API operations.* This chapter summarizes the web services available through the API.
- *Chapter 4. Running, printing, and viewing a document.* This chapter discusses running a design, scheduling design generation, sending job notifications, selecting items for viewing, and other tasks the Factory and Viewing services support. This chapter also discusses working with resource groups, multidimensional data, Actuate Query, Actuate Analytics Option, managing large lists of search results, working with attachments, and multilingual reporting.

- *Chapter 5. Administering an Encyclopedia volume.* This chapter discusses the functionality of the Encyclopedia service, including security and authentication, Encyclopedia- and volume-level administrative tasks, and searching within a volume.
- *Part 2. Developing Actuate Information Delivery API applications.* This part provides grouped lists of Actuate Information Delivery API operations that are frequently used together and complete descriptions of the Actuate Information Delivery API data types and operations.
- *Chapter 6. Developing Actuate Information Delivery API applications using Java.* This chapter describes how to use the Actuate Information Delivery API framework to create client applications that request Actuate iServer to perform administration, search, batch, and transaction operations, upload or download files, and schedule a custom event, using the Apache Axis development environment.
- *Chapter 7. Developing Actuate Information Delivery API applications using Microsoft .NET.* This chapter describes how to use the Actuate Information Delivery API framework to create client applications that request Actuate iServer to perform administration, search, batch, and transaction operations, and upload or download files, using the Microsoft .NET development environment.
- *Chapter 8. Actuate Information Delivery API operations.* This chapter provides an alphabetical listing of the Information Delivery API operations, including a general description, schema, and a description of each element.
- *Chapter 9. Actuate Information Delivery API data types.* This chapter contains an alphabetical listing of the Actuate Information Delivery API data types, including a general description of each data type, its schema, and a description of each element.
- *Part 3. Working with BIRT iServer integration APIs.* This part describes various integration technologies, such as error, usage, and performance logging, archiving Encyclopedia volume items, Actuate open server technology, and how to implement external security. This part also provides descriptions of the Actuate logging APIs, archiving functions and operations, and Java Report Server Security Extension (RSSE) functions and operations.
- *Chapter 10. Using Java Report Server Security Extension.* This chapter describes how to create and install an Actuate iServer Java Report Server Security Extension (RSSE) application as a web service. Using the Java RSSE framework, a developer can create an application that provides external authentication, external registration, and page-level security.
- *Chapter 11. Using Actuate logging and monitoring APIs.* This chapter discusses how to use the Actuate Error Logging, Usage Logging, and Performance Monitoring APIs.

- *Chapter 12. Actuate logging and monitoring functions.* This chapter provides an alphabetical listing of the functions and operations of the Error Logging, Usage Logging, and Performance Monitoring APIs, including a general description, syntax or schema, and a description of each parameter or element.
- *Chapter 13. Aging and archiving Encyclopedia volume items.* This chapter discusses aging rules and explains how to automate archiving and removal using the Actuate Information Delivery API.
- *Chapter 14. Archiving APIs.* This chapter provides an alphabetical listing of the SOAP-based archiving API operations, including a general description, syntax or schema, and a description of each parameter or element.
- *Chapter 15. Customizing installation on Windows systems.* This chapter discusses customizing Actuate product installations in a Windows environment and performing a silent installation.
- *Chapter 16. Customizing installation on UNIX and Linux systems.* This chapter describes customizing Actuate product installations in a UNIX and Linux environment and performing a silent installation.
- *Appendix A. Text string limits in Actuate operations.* This appendix lists the maximum field lengths for text elements in iServer Information and Management Consoles for elements the Actuate Information Delivery API creates.

Part One

Introduction to the Actuate Information Delivery API

Chapter

1

Understanding the Information Delivery API and schema

This chapter contains the following topics:

- About the Actuate Information Delivery API
- About web services and WSDL
- Understanding the elements of iServer's WSDL schema
- Accessing the Actuate schema using a web browser

About the Actuate Information Delivery API

The Actuate Information Delivery application programming interface (API) supports integrating and administering BIRT iServer using extensible markup language (XML) and the simple object access protocol (SOAP). Using the Information Delivery API, developers create applications that perform such tasks as uploading and downloading files, generating a document and scheduling document generation, sending an e-mail notification when a job completes, managing the users and security roles in an Encyclopedia volume, and working with external libraries.

SOAP is the underlying layer that provides a messaging framework for web services. A web service supplies functionality and capability over the Internet which assist in the creation of applications. Web services support integration of loosely coupled applications that are language-neutral and platform-independent, with application deployment using a standard transport protocol such as HTTP. Users, developers, and administrators can discover, describe, and invoke these applications in a distributed environment.

The Actuate Information Delivery API has the following features:

- Platform- and language-independent access to Actuate web services

  Using SOAP messaging, Actuate's web services integrate into applications developed in Java, Visual Basic, C++, C#, and other programming languages. The SOAP framework translates XML messages to the language of the calling application.

  Deployment of these applications can be across multiple platforms, including UNIX, Windows, or Linux, and integrate with web technologies such as J2EE and Microsoft Visual Studio .NET.

- Comprehensive Encyclopedia volume administration

  The Encyclopedia volume is the central repository for the design files, folders, and other items that BIRT iServer stores and manages. The Actuate Information Delivery API, can manage the items in an Encyclopedia volume from a single machine, and can send success or failure notices for immediate and scheduled jobs using simple mail transfer protocol (SMTP), Microsoft Exchange MAPI, or UNIX sendmail. The notifications can include an attachments or embedded files.

- Open infrastructure

  The Actuate Information Delivery API supports BIRT iServer's open server infrastructure. This infrastructure generates, distributes, and manages Actuate and third-party designs and integrates the designs into an Encyclopedia volume. The API also automates extracting parameters from a third-party executable file when integrating the file into an Encyclopedia volume.

- Localization support

  By setting the Locale parameter in the header of a SOAP request, localization generates data in a language other than the BIRT iServer default language. The data display uses the currency format, date format, and other conventions for specific locales.

About web services and WSDL

Actuate's web services support interactions with BIRT iServer, from running and viewing designs to managing Encyclopedia volume items. Actuate describes its services using Web Services Description Language (WSDL), an XML schema that provides the structure for requests to and responses from BIRT iServer.

A WSDL schema provides an abstract definition of the operations that a web service supports. The schema describes web services by providing such information as the name of the service, its transport protocol, data types, messages and operations, and input and output parameters. The schema binds these definitions to a concrete network protocol and message format. This schema resides on BIRT iServer.

iServer's WSDL schema serves as an interface to applications that integrate with BIRT iServer. The schema encompasses all web services accessible using the Actuate Information Delivery API. A developer can use the schema to generate a code library that contains the classes, including proxies, that the developer uses to write an application that communicates with a web service.

A developer can use an integrated development environment (IDE) to develop an application that uses the Information Delivery API schema. Actuate supplies WSDL files for the Apache Axis and Microsoft .NET development environments.

The elements of iServer's schema are case-sensitive. Capitalization must occur as the schema indicates. For example, to use the AuthId element of the complex data type Header, write AuthId instead of AuthID or authid.

Understanding the elements of iServer's WSDL schema

A WSDL file defines every element used in a SOAP message. Figure 1-1 shows the basic structure of a WSDL file. Additional details about how the Actuate Information Delivery API defines each element in the following sections.

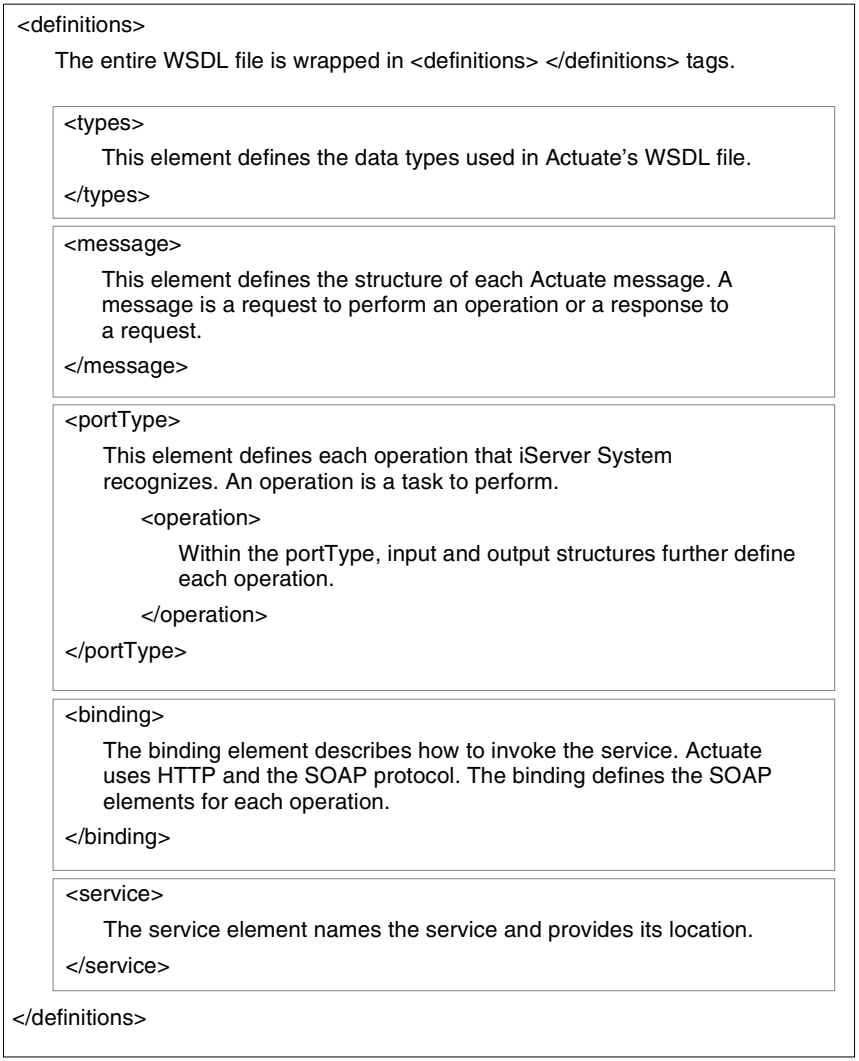

Figure 1-1 The basic structure of a WSDL file

About the definitions element

Because it is a definitions document, the WSDL schema begins with a definitions element. The opening tag defines the following Actuate namespace and attribute declarations:

```
<definitions
name="ActuateAPI"
xmlns="http://schemas.xmlsoap.org/wsdl/"
```

```
xmlns:xsd="http://www.w3.org/2001/XMLSchema"
xmlns:soap="http://schemas.xmlsoap.org/wsdl/soap/"
xmlns:typens="http://schemas.actuate.com/actuate11"
xmlns:wsdlns="http://schemas.actuate.com/actuate11/wsdl"
targetNamespace="http://schemas.actuate.com/actuate11/wsdl">
```

Table 1-1 describes each declaration. These declarations are subject to change over time.

Table 1-1 Namespace and attribute declarations for the definitions element

Declaration	Description
name="ActuateAPI"	Names the Actuate service.
xmlns="http://schemas.xmlsoap.org/wsdl/"	Defines a namespace for the WSDL specification to which Actuate adheres.
xmlns:xsd="http://www.w3.org/2001 /XMLSchema"	Defines a namespace prefix, xsd, for the XML schema standard.
xmlns:soap="http://schemas.xmlsoap.org/wsdl /soap/"	Defines a namespace prefix, soap, for the SOAP specification to which Actuate messages adhere.
xmlns:typens="http://schemas.actuate.com /actuate11"	Defines a namespace prefix, typens, for the Actuate 11 XML schema.
xmlns:wsdlns="http://schemas.actuate.com /actuate11/wsdl"	Defines a namespace prefix, wsdlns, for Actuate 11 web services.
targetNamespace="http://schemas.actuate.com /actuate11/wsdl"	Scopes messages to the Actuate WSDL file for Actuate 11.

About data type definitions

The types element of a schema describes every complex data type that Actuate web services recognize. The types element begins with the following declarations:

```
<types>
   <xsd:schema
      xmlns="http://www.w3.org/2001/XMLSchema"
      xmlns:enc="http://schemas.xmlsoap.org/soap/encoding/"
      xmlns:wsdl="http://schemas.xmlsoap.org/wsdl/"
      targetNamespace="http://schemas.actuate.com/actuate11"
      elementFormDefault="qualified">
```

Two of these declarations are unique to the types element:

- xmlns:enc="http://schemas.xmlsoap.org/soap/encoding/" specifies the encoding scheme for serializing and deserializing SOAP messages.
- elementFormDefault indicates whether the target namespace must qualify all locally declared elements in the instance document. A value of qualified

requires checking the target namespace to see that the instance document conforms to the target namespace element declarations and type definitions. A value of unqualified does not require checking.

The types element gives a data type a name and defines the structure. The types element describes whether there is a required sequence for the elements that define the structure. The following example shows the complete description of the complex data type for the Login request:

```
<xsd:complexType name="Login">
   <xsd:sequence>
      <xsd:element name="User" type="xsd:string"/>
      <xsd:element name="Password" type="xsd:string"
         minOccurs="0"/>
      <xsd:element name="EncryptedPwd" type="xsd:string"
         minOccurs="0"/>
      <xsd:element name="Credentials" type="xsd:base64Binary"
         minOccurs="0"/>
      <xsd:element name="Domain" type="xsd:string"
         minOccurs="0"/>
      <xsd:element name="UserSetting" type="xsd:boolean"
         minOccurs="0"/>
      <xsd:element name="ValidateRoles"
         type="typens:ArrayOfString"minOccurs="0"/>
   </xsd:sequence>
</xsd:complexType>
<xsd:element name="Login" type="typens:Login"/>
```

In the preceding example:

- The xsd: namespace prefix refers to the version of the XML schema that Actuate uses. Actuate reserves the xsd: namespace prefix to refer to the 2001 version of the standard XML schema.

  ```
  xmlns:xsd="http://www.w3.org/2001/XMLSchema"
  ```

  The xsd: prefix appears in every tag in the schema.

- The complex data type is Login.

  Child elements define this data type. Each child element has attributes such as the data type, the name, and the minimum or maximum number of occurrences. If the child element defines a data value that the data type requires, there is no minOccurs attribute. In this example, User is the only required element.

- Because <sequence> </sequence> tags enclose this element list, you must use these elements in the sequence shown. If <all> </all> tags enclose the elements, they can appear in any order. If <choice> </choice> tags enclose the elements, you can choose one element.

About message definitions

The message element describes the parts of each request and response message in the Actuate Information Delivery API.

Actuate provides versions of its schema for the Microsoft .NET and Apache Axis environments. These environments require slightly different syntax for WSDL definitions. For example, a message definition contains a header element in the .NET version but not in the Apache Axis version. The code examples in this chapter use the Apache Axis version.

The following example shows the Apache Axis message description for a request to search for jobs:

```
<message name="SelectJobs">
   <part name="Request" element="typens:SelectJobs" />
</message>
```

Like most requests, this one has a corresponding response.

```
<message name="SelectJobsResponse">
   <part name="Response" element="typens:SelectJobsResponse" />
</message>
```

Operations that do not require a response do not have a corresponding response.

About the portType definition

The portType element defines a structure for each operation in the Actuate schema. A unique name identifies the portType:

```
<portType name="ActuateSoapPort">
```

For most operations, portType defines an input message, the request, and an output message, the response.

The following example shows the portType definition for ActuateSoapPort:

```
<operation name="GetFileACL">
   <input message="wsdlns:GetFileACL"/>
   <output message="wsdlns:GetFileACLResponse"/>
</operation>
```

If an operation does not require a response, portType defines only an input message. In the Microsoft .NET version of the schema, the operations also include a header element.

About the binding definition

The binding element defines how the operations and messages in the schema communicate. Actuate defines its binding using the following attributes:

- name="ActuateSoapBinding"

- type="wsdlns:ActuateSoapPort"
- style="document"
- transport="http://schemas.xmlsoap.org/soap/http"

The following example shows the binding definition for ActuateSoapBinding:

```
<binding name="ActuateSoapBinding" type="wsdlns:ActuateSoapPort">
<soap:binding style="document"
   transport="http://schemas.xmlsoap.org/soap/http"/>
```

Within the <binding> </binding> tags, input and output child elements define the bindings for each operation that the portType section describes. Each input message consists of a SOAP header with attributes and a SOAP body with attributes. Each output message consists of a SOAP body with attributes.

The following example shows the input and output child elements for the Login operation:

```
<operation name="Login">
   <soap:operation soapAction="" />
      <input>
         <soap:body use="literal" parts="Request"/>
      </input>
      <output>
         <soap:body use="literal"/>
      </output>
</operation>
```

These elements specify that Actuate does not use soapAction, a required element for SOAP messages. They further show that Actuate operations are literal messages that do not use separate wrappers for each element.

About the service definition

The WSDL schema presents its various operations as a single web service. The service element defines that service, ActuateAPI. The service definition includes:

- The name of the requested service.

  ```
  service name="ActuateAPI"
  ```

- The name of the port through which the client accesses iServer's web services.

  ```
  port name="ActuateSoapPort"
  ```

- The binding definition expressed as a namespace.

  ```
  binding="wsdlns:ActuateSoapBinding"
  ```

- The location of the port, defined as host_name:port_number, expressed as a valid URL.

  ```
  soap:address location="http://localhost:8000"
  ```

The following example shows the service definition for ActuateAPI:

```
<service name="ActuateAPI">
   <port name="ActuateSoapPort"
      binding="wsdlns:ActuateSoapBinding">
      <soap:address location="http://localhost:8000"/>
   </port>
</service>
```

Accessing the Actuate schema using a web browser

To access the Actuate 11 WSDL file using a web browser, use the following URL:

`http://localhost:8000/wsdl/v11/axis/all`

where

- localhost is the local BIRT iServer.
- 8000 is the port to which the SOAP endpoint binds.
  Use port 8000 if you use only the current Actuate release of BIRT iServer. Use port 9000 if you use multiple Actuate versions.

The preceeding URL displays the WSDL document, as shown in Figure 1-2.

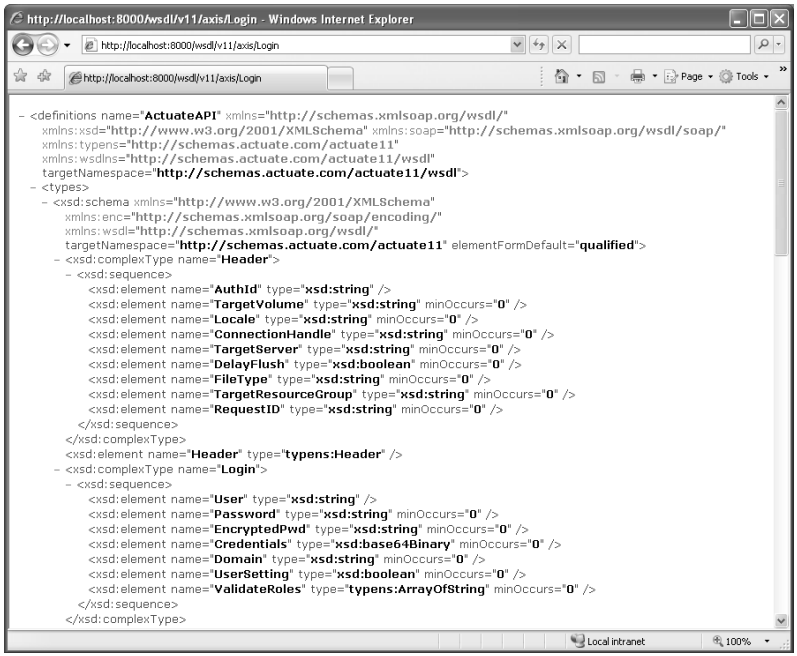

Figure 1-2 Login operation schema

Chapter

2

Constructing a SOAP message

This chapter consists of the following topics:

- About SOAP messaging
- Calling an Actuate web service
- About SOAP message elements
- About SOAP Fault messages

About SOAP messaging

This chapter describes the elements of Actuate simple object access protocol (SOAP) messages. The Actuate Information Delivery API uses SOAP messaging in the request and response pattern for communications between the client and BIRT iServer. SOAP messages are written in XML to ensure standard message formatting and standard data representation.

The principal advantage of SOAP is that it supports communications among applications written in different programming languages and running on different platforms. SOAP supports Java, Visual Basic, C++, C#, and other programming languages. It operates on Windows, UNIX, Linux, Mac, and other operating systems.

Certain messages in the Actuate Information Delivery API can be composite messages, supporting multiple operations in a single message.

The Actuate Information Delivery API packages an XML request into a SOAP envelope and sends it to the BIRT iServer using a hypertext transfer protocol (HTTP) connection. Although a SOAP message can use other transport mechanisms, Actuate supports HTTP because this protocol is ubiquitous and because it simplifies external firewall management.

The client application sends the request and reads the response in the client's native language. The system's SOAP endpoints, ports that accept SOAP messages, listen for requests and direct them to the appropriate BIRT iServer node.

As with any other XML document, a SOAP message must be well-formed and valid. A well-formed message has a single root, is correctly nested, and displays tags in starting and ending pairs. Valid XML is well-formed and adheres to a schema. XML instruction is outside the scope of this book.

Calling an Actuate web service

When accessing Actuate's web services, you create a library of proxy objects for the client application. In Java, a proxy object is a class implementation in a JAR file. In C#, a proxy is a CS file.

Use a proxy object directly. Actuate does not support subclassing an Actuate Information Delivery API class generated from an Actuate WSDL document.

Access proxy objects using a request and response pattern. As Figure 2-1 shows, the client uses a proxy object to send a SOAP request to BIRT iServer and receives a response in the client's native language.

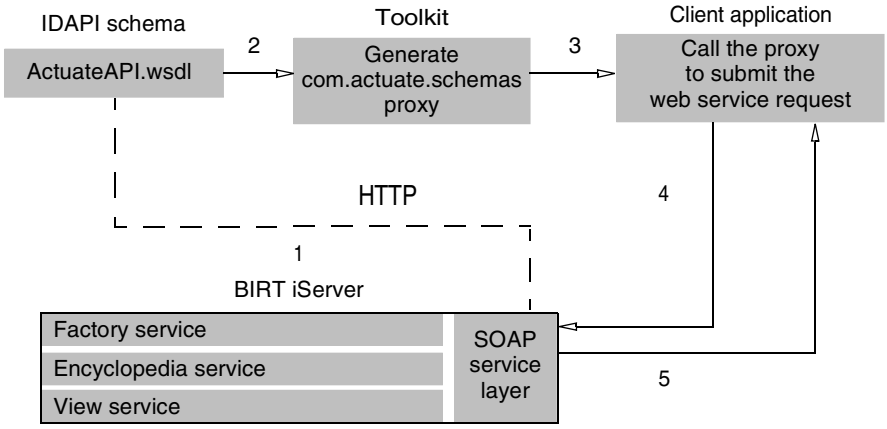

Figure 2-1 Calling an Actuate web service

In the sequence shown in Figure 2-1:

1 BIRT iServer sends the Information Delivery API schema over the web in response to a client query.

2 The client generates a proxy object that corresponds to a service or an operation in Actuate's schema.

At this point, you build or modify a client application.

3 The deployed client application calls a proxy object.

4 Using the proxy, the client generates a SOAP request, adds an HTTP header, and sends this serialized XML package to BIRT iServer over the web.

5 BIRT iServer processes the SOAP message header, deserializes the SOAP envelope, and invokes the appropriate service. In the preceding diagram, the Factory service processes the request.

6 The service serializes the result, creates the response XML, places the encoded result into a SOAP response, and returns the package to the client application. The application then extracts and decodes the result.

About SOAP message elements

The Actuate Information Delivery API uses the standard SOAP message structure. A message consists of an HTTP header followed by a SOAP envelope, header, and body. The SOAP envelope wraps the header and body elements. The HTTP header encloses the entire message, which goes over the web to a server that can accept SOAP messages.

The following sections provide details about each element of a SOAP message.

Understanding the HTTP header

This header is a mandatory element that specifies items such as the HTTP version, the host machine and port, the content type, and character set. The elements of an HTTP header can vary from message to message. The following example shows a typical HTTP header:

```
POST / HTTP/1.0
Content-Type: text/xml; charset=utf-8
Accept: application/soap+xml, application/dime, multipart/related,
   text/*
User-Agent: Axis/1.4
Host: localhost:8080
Cache-Control: no-cache
Pragma: no-cache
SOAPAction: ""
Content-Length: 1387
```

In the preceding example:

- POST routes the message to a servlet running on a web server, using HTTP version 1.0 or 1.1.

  The message determines which HTTP version to use. Version 1.0 treats an attachment as a single block of data. Version 1.1 supports sending chunked attachments.
- Content-Type specifies the message's media type. Set Content-Type to text/xml when calling an Actuate service.
- The default character set is UTF-8. To use the UTF-8 character set, it is not necessary to include this element in the HTTP header.
- Accept indicates the acceptable types of media in the response:
  - The application/soap+xml media type describes a SOAP message serialized as XML.
  - The application/dime media type supports processing a message either using MIME or by reference to a Uniform Resource Identifier (URI) that accesses a plug-in. A URI is a unique string that can be a Uniform Resource Locator (URL), a Uniform Resource Name (URN), or both. Using a URI ensures uniqueness.
  - The multipart/related media type indicates a compound object containing several inter-related parts in the body of a message.
  - The asterisk in text/* indicates the response can contain any type of text.
- User-Agent is the client that initiates the request.
- Host is the name of the host machine where the target BIRT iServer resides and, optionally, the port number.

- Cache-Control is a directive to any caching mechanism operating along the request-response transport layer. A no-cache directive keeps a cache from using the response to satisfy a subsequent request. This directive prevents the cache from returning a stale response to a client.
- Pragma is a directive to all recipients along the request-response transport layer. This no-cache directive requires the system to forward the original request to the target BIRT iServer even when a cached copy exists. Forwarding the original request prevents the transmission of a stale copy of a request.
- SOAPAction, a required element, tells the BIRT iServer that the message is a SOAP message. For an Actuate message, use a set of empty quotation marks for the SOAPAction value. The Encyclopedia volume determines the action based on the message body. The SOAPAction attribute requires empty quotes because it has no default value.
- Content-Length is the number of characters in the message.

Understanding the SOAP envelope

The SOAP envelope is a required element of each message. It defines an overall framework for the message and contains other elements of the message. The envelope contains namespace declarations that apply to the specific message that contains them and to any child elements of that message.

An XML namespace is a unique identifier for the elements and attributes of an XML document. When declaring an XML namespace in a SOAP envelope, define the rules by which the system interprets the content and structure of the message.

To ensure that a namespace is globally unique, the namespace must be a URI. A namespace does not have to point to a web site or online document.

In the following example, the namespace declarations indicate that the message adheres to specific XML and SOAP standards and identifies the version of the Actuate XML schema:

```
<?xml version="1.0" encoding="UTF-8"?>
   <soapenv:Envelope
      xmlns:soapenv="http://schemas.xmlsoap.org/soap/envelope/"
      xmlns:xsd="http://www.w3.org/2001/XMLSchema"
      xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance">
      <soapenv:Header> … </soapenv:Header>
      <soapenv:Body>
         <GetVolumeProperties xmlns="http://schemas.actuate.com/
            actuate11">
            …
         </GetVolumeProperties>
      </soapenv:Body>
   </soapenv:Envelope>
```

In the preceding example:

- <soapenv:Envelope xmlns:soapenv="http://schemas.xmlsoap.org/soap /envelope/" refers to the SOAP standard that the message elements follow. A SOAP envelope must have an element that references this namespace or a SOAP VersionMismatch error occurs.
- xmlns:xsd="http://www.w3.org/2001/XMLSchema" defines the scope of the XML namespace. In this case, the namespace indicates that the message is based on the World Wide Web Consortium XML schema initially published in 2001. This namespace is declared in every SOAP message.
- xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance" refers to the specific instance of the XML schema. In order to use namespace attribute types in an XML document, first define the xsi namespace.
- xmlns="http://schemas.actuate.com/actuate11" in <soapenv:Body> refers to the Actuate XML schema version to use.

About XML namespace declarations

XML provides support for combining data from multiple sources. In the process, however, it is possible to create confusion to tag disparate message elements with the same name.

For example, if you use the <Target> tag for data about quarterly sales goals in a Sales and Marketing application, and you use the <Target> tag to denote fiscal year revenue targets in a Finance application, errors can occur. Combining data from these two sources into one XML document, can cause naming collisions, or duplications, which may result in error messages or erroneous data. To avoid these collisions, use XML namespace declarations.

When constructing a request to BIRT iServer, use the namespaces the Actuate XML schema specifies. To use a namespace, first declare it in a header and then refer to it using the appropriate tag in the message. The following example shows how to declare two new namespaces by placing them in the SOAP envelope header:

```
<?xml version="1.0" encoding="UTF-8"?>
   <soapenv:Envelope
      xmlns:soapenv="http://schemas.xmlsoap.org/soap/envelope/"
      xmlns:xsd="http://www.w3.org/2001/XMLSchema"
      xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance">
      xmlns:fin="http://www.actuate.com/soap/Finance"
      xmlns:sales="http://www.actuate.com/soap/Sales and
      Marketing">
```

These new namespaces define prefixes, fin and sales in the example above, as shorthand for data sources. Add the prefix to the appropriate tag name to indicate which data source to use. Use a simple prefix, separated from the tag name by a colon, as shown in the following example:

```
<fin:Target> </fin:Target>
```

Understanding the SOAP header

The SOAP header contains authentication data, locale information, and other required or optional data. The SOAP header element is mandatory for calls to the BIRT iServer. Using the SOAP header, parser tools can locate key information without having to parse the entire message.

The following example shows a typical SOAP header with authentication and locale information:

```
<soapenv:Header>
   <AuthId>
      soapenv:actor="http://schemas.xmlsoap.org/soap/actor/next"
      soapenv:mustUnderstand="0">
      u4yxAKHFJg9FY0JssYijJI5XvnpqDOPBOoWPbgRak20wIZIFDX6NY1o
      NsYg7RKzFt7GgtrOKqaas5HwLSkwhYEHEBl9PuZim4kDS5g==
   </AuthId>
   <Locale
      soapenv:actor="http://schemas.xmlsoap.org/soap/actor/next"
      soapenv:mustUnderstand="0">en_US
   </Locale>
   <TargetVolume
      soapenv:actor="http://schemas.xmlsoap.org/soap/actor/next"
      soapenv:mustUnderstand="0">
   </TargetVolume>
   <ConnectionHandle
      soapenv:actor="http://schemas.xmlsoap.org/soap/actor/next"
      soapenv:mustUnderstand="0">
   </ConnectionHandle>
   <DelayFlush
      soapenv:actor="http://schemas.xmlsoap.org/soap/actor/next"
      soapenv:mustUnderstand="0">true
   </DelayFlush>
</soapenv:Header>
```

The Actuate Information Delivery API extends the standard SOAP header to use the following elements.

AuthId

When the client logs in using the Actuate Information Delivery API, the system returns a system-generated, encrypted AuthId string in the login response. All requests except login requests must have a valid AuthId in the SOAP header. The header passes this ID to BIRT iServer for validation.

The example shows a typical AuthId. In subsequent requests in the same session, the AuthId identifier appears in the SOAP header. AuthId expires after a configurable period of time.

In the example, AuthId contains two attributes:

- soapenv:actor
  The value for actor, "http://schemas.xmlsoap.org/soap/actor/next", is a URI indicating that this message is for the first SOAP application capable of processing it.
- soapenv:mustUnderstand
  Indicates that the actor must understand and process the message and, if it can not, the actor must return a SOAP fault containing the value specified by the attribute. The mustUnderstand attribute can have a value of 0 or False, or 1 or True.

ConnectionHandle

An optional element that supports keeping a connection open to view a persistent document. ConnectionHandle is a session ID of the object.

ConnectionHandle supports phased downloading and viewing of a persistent report in the Encyclopedia volume to improve performance. When ConnectionHandle is present in the header, iServer System ignores the value for TargetVolume.

ConnectionHandle returns in two ways:

- As an element of a document generation response when the document is transient and progressive viewing is enabled. BIRT iServer System routes subsequent viewing requests to the BIRT iServer that generated the transient document.
- As a response to a viewing request, to ensure that subsequent requests by the same user go to the same View service until the report data changes. If the report name changes but the data remains the same, the View service displays the same report. If ConnectionHandle is present in the SOAP header, the system routes subsequent viewing requests to the same View service that returned the ConnectionHandle.

DelayFlush

A Boolean element that tells BIRT iServer to write updates to the disk when the value is False.

FileType

An optional element that supports specifying the file type to run, such as an Actuate Basic source (.bas) file, HTML, or Actuate report object executable (.rox) file. The default setting is for BIRT iServer System to look for any available iServer to manage a request, whether or not that iServer can run the requested file type. When the SOAP header specifies the file type, BIRT iServer System looks for a machine that can execute that file type.

Locale

BIRT iServer uses this element to format data using the language, date and time conventions, currency and other locale-specific conventions before returning the data to the client. If the client does not specify another locale, BIRT iServer System uses the client's default locale.

TargetResourceGroup

An optional element that supports assigning a synchronous report generation request to a specific resource group at run time.

TargetServer

An optional element that refers to the BIRT iServer within a cluster to which to direct the request. Use TargetServer for requests pertaining to system administration, such as GetFactoryServiceJobs and GetFactoryServiceInfo.

TargetVolume

Refers to the Encyclopedia volume to which to direct the request. Use this element of the SOAP header to route a request to an Encyclopedia volume . In Release 10, TargetVolume is an optional element. In Release 11, the Login message must specify the Encyclopedia volume name using TargetVolume in the SOAP header and Domain in the SOAP message body.

RequestID

An optional element that represents a unique value identifying the SOAP request.

Understanding the SOAP message body

The body of the message contains either the request for a specific operation, the response to a request, or an error message. The following example requests detailed data about users on the Encyclopedia volume:

```
<SOAP-ENV:Body>
   <SOAP-ACTU:SelectUsers
      xmlns:SOAP-ACTU="http://schemas.actuate.com/actuate11">
      <ResultDef SOAP-ENC:arrayType="xsd:String[5]">
         <String>Id</String>
         <String>Name</String>
         <String>EmailAddress</String>
         <String>Homefolder</String>
         <String>Description</String>
      </ResultDef>
      <Search>
         <CountLimit>201</CountLimit>
         <FetchSize>100</FetchSize>
         <FetchDirection>true</FetchDirection>
```

```
      </Search>
   </SOAP-ACTU:SelectUsers>
</SOAP-ENV:Body>
```

The response includes details for each attribute in the request, including the attribute name and data type, when the attribute takes effect, and whether it is required.

```
<SOAP-ENV:Body>
   <ACTU:SelectUsersResponse
      xmlns:ACTU="http://schemas.actuate.com/actuate11"
      xmlns="http://schemas.actuate.com/actuate11">
      <Users>
      <User>
         <Name>Administrator</Name>
         <Id>1</Id>
         <EmailAddress></EmailAddress>
         <HomeFolder></HomeFolder>
         <Description></Description>
      </User>
      <User>
         <Name>User0</Name>
         <Id>2</Id>
         <EmailAddress>User0@localhost</EmailAddress>
         <HomeFolder>/home/User0</HomeFolder>
         <Description></Description>
      </User>
      …
      </Users>
      <TotalCount>15</TotalCount>
   </ACTU:SelectUsersResponse>
</SOAP-ENV:Body>
```

About SOAP Fault messages

A SOAP Fault occurs when a request cannot be completed. Fault contains information identifying the source of the error or the component returning the error, the request, an error code, and a text description of the error.

In the following example, a request to download a file results in a SOAP Fault. The Description element contains a text error message and a reference to the requested file.

```
<SOAP-ENV:Body>
   <SOAP-ENV:Body>
      <SOAP-ENV:Fault
         xmlns:SOAP-ENV="http://schemas.xmlsoap.org/soap/
         envelope/"
         xmlns="http://schemas.xmlsoap.org/soap/envelope/">
```

```
      <faultcode>Server</faultcode>
      <faultstring>Soap Server error.</faultstring>
      <detail>
         <RequestName>DownloadFile</RequestName>
         <ErrorCode>3072</ErrorCode>
         <Description>
            <Message>Cannot find the specified file or folder,
               or you do not have permission to access it.
            </Message>
         <Parameter1>/report/SampleReports.rox</Parameter1>
         </Description>
      </detail>
   </SOAP-ENV:Fault>
</SOAP-ENV:Body>
```

Chapter

3

Understanding Actuate Information Delivery API operations

This chapter contains the topic About Actuate Information Delivery API operations.

About Actuate Information Delivery API operations

The Actuate Information Delivery API defines a syntax, in the form of an XML schema, for communicating with BIRT iServer using HTTP. The operations accessible using this API fall within the following functional areas:

- BIRT iServer
- Channels
- Encyclopedia volumes
- Files or folders
- Groups
- Information Objects
- Jobs
- Searches
- Users, roles, and security

The following sections describe how to work with the Actuate Information Delivery API within these areas.

Working with BIRT iServer

BIRT iServer stores report documents in an Encyclopedia volume, manages user information, handles report requests, and delivers report documents. BIRT iServer supports Actuate Basic, BIRT, cube, and spreadsheet reports.

Table 3-1 lists the operations that work with BIRT iServer.

Table 3-1 Operations for working with BIRT iServer

Operation	Description
CreateResourceGroup	Creates a resource group and sets its properties. A resource group specifies a set of Factory processes reserved to run only those jobs assigned to the group. Contains a required ResourceGroupSettings element to define properties of the resource group.
DeleteResourceGroup	Deletes a resource group other than the default resource groups. If a deleted group has a scheduled job assigned to it, the job remains in a pending state. If a job is running on an BIRT iServer assigned to a deleted resource group, the job completes.

Table 3-1 Operations for working with BIRT iServer (continued)

Operation	Description
GetAllCounterValues	Retrieves the values of all counters.
GetCounterValues	Retrieves information about specific counters.
GetFactoryServiceInfo	Retrieves general information about the Factory service, such as the name of the BIRT iServer on which it is running, the number of synchronous jobs currently queued on BIRT iServer, and the maximum number of synchronous jobs that can be in the queue.
GetFactoryServiceJobs	For synchronous jobs, returns a list of either the pending jobs or the jobs running on the Encyclopedia volume specified in TargetVolume in the SOAP header.
GetFormats	Retrieves a list of locales or a list of formats that BIRT iServer supports, such as PDF, DHTML, and XML.
GetResourceGroupInfo	Retrieves the resource group's settings. Returns an error if there is no matching resource group.
GetResourceGroupList	Returns two lists, one for synchronous resource groups, the other for asynchronous resource groups.
GetServerResourceGroup Configuration	Returns a list of resource groups on BIRT iServer and property settings for each group.
GetSystemMDSInfo	Retrieves the names and properties of a Message Distribution service (MDS) in a cluster or stand-alone BIRT iServer without authenticating the client. In a cluster, supports routing requests to an alternate MDS if the one to which the client connects fails. The request can indicate whether to retrieve MDS information only from BIRT iServers that are currently online or from BIRT iServers that are offline as well.
GetSystemPrinters	Retrieves a list of printers and printer details to which BIRT iServer connects.
GetSystemServerList	Retrieves a list of stand-alone and cluster BIRT iServers, including the server name, state, and an error code and error description if the state is Failed.

(continues)

Table 3-1 Operations for working with BIRT iServer (continued)

Operation	Description
GetSystemVolumeNames	Retrieves the names of volumes in a stand-alone BIRT iServer or cluster system without authentication. Supports placing volume names on a Login page. The request can indicate whether to retrieve only the names of volumes currently online or all volumes in the cluster.
ODBOTunnel	Opens a connection to an OLAP server for ODBO API function.
Ping	A ping request tests whether a specific component of BIRT iServer is operational and retrieves other diagnostic information about the component. The request must specify one of the following destinations to contact: ■ The Message Distribution Service (MDS) ■ An BIRT iServer node running the Encyclopedia service (EE) ■ An BIRT iServer node running the Factory service (FS) ■ An BIRT iServer node running the View service (VS) ■ An Actuate open server driver (OSD) ■ A data source connection The request also can specify an action to perform on the destination, such as echoing payload data, reading a file, writing a temporary file, or connecting to a database. Not all actions are available for all destinations. Ping is available to an Encyclopedia volume administrator or a user in the Operator role.
ResetCounters	Resets the values of specific counters.
SetServerResourceGroup Configuration	Configures all the resource groups on an BIRT iServer.
UpdateResourceGroup	Updates resource group properties. Resource group name, type, or the name of the BIRT iServer on which the resource group runs are not updatable.

Working with channels

Channels receive electronic notifications and can display messages. Table 3-2 lists the operations that work with channels.

Table 3-2 Operations for working with channels

Operation	Description
CreateChannel	Creates a channel in an Encyclopedia volume. CreateChannel is accessed through the Administrate operation.
DeleteChannel	Deletes channels from the Encyclopedia volume. The request must specify whether to delete a single channel, a list of channels, or channels that match specific conditions. DeleteChannel is accessed through the Administrate operation.
SelectChannels	Retrieves a list of channels, channels that match specific conditions, or a single channel. The response returns channels to which the user making the request has read or write privileges.
UpdateChannel, UpdateChannelOperation, UpdateChannelOperation Group	Updates channel properties in the Encyclopedia volume. The request must specify the update activity to apply, such as updating general properties, and adding a user to one or more channels. The request must also specify whether the activity applies to a single channel, a channel list, or channels that match specific conditions. The response returns channels to which the user has read or write privileges. UpdateChannel is accessed through the Administrate operation.

Working with Encyclopedia volumes

The Encyclopedia volume is the main repository for applications and data. Operations exist to control data on the volume as well as the volume itself.

Encyclopedia volume administrators use Administrate to create, delete, update, copy, and move items within an Encyclopedia volume. An administrator manages the following items:

- Channels
- Files

- File types
- Folders
- Jobs, job notices, and job schedules
- Notification groups
- Security roles
- Users
- Volumes

The Administrate operation supports the ability to create composite operations that combine several transactions into one SOAP message. Grouping transactions reduces network traffic by streamlining the request and response process. This technique results in lower bandwidth use and increased throughput.

Update Administrate operations are also capable of acting as a composite. This feature supports the ability to implement multiple updates of Encyclopedia content in one SOAP message. A single SOAP message can contain multiple update operations, with each update operation having multiple updates within it. The following Administrate operations support multiple operations:

- UpdateChannel
- UpdateFile
- UpdateFileType
- UpdateGroup
- UpdateJobSchedule
- UpdateRole
- UpdateUser
- UpdateVolumeProperties

Typically, only an Encyclopedia volume administrator or a user in the Administrator role uses Administrate operations. The exception is that all users can change some of their own properties and all users can modify items they create.

Table 3-3 lists the operations that work with Encyclopedia volumes.

Table 3-3 Operations for working with Encyclopedia volumes

Operation	Description
Administrate	Packages operations that create, delete, copy, update, and move Encyclopedia volume items. Typically, only the Encyclopedia volume administrator or a user in the Administrator role uses Administrate operations.
ExecuteVolumeCommand	For a specified volume, begins a predefined command. The available commands are: ■ StartPartitionPhaseOut ■ StartArchive ■ SwitchToOnlineBackupMode ■ SwitchToNormalModes
GetVolumeProperties	Retrieves the properties of an Encyclopedia volume. GetVolumeProperties can also return the online backup schedule, printer options, autoarchive settings, archive library, and other properties.
Transaction	A packaging mechanism for Administrate operations. If a failure occurs anywhere in a transaction, all operations in the transaction fail.
UpdateVolumeProperties, UpdateVolumeProperties Operation, UpdateVolumeProperties OperationGroup	Updates the properties of a specific Encyclopedia volume. The request must specify the update activity to apply, such as updating general properties or printer settings. UpdateVolumeProperties is accessed through the Administrate operation.

Working with files and folders

Operations for files and folders include the uploading and downloading, copying and moving of files to and from the Encyclopedia volume. Support also exists for the retrieval of file or folder properties, including identifying information, dependencies and autoarchive polices. Table 3-4 lists the operations that work with files and folders.

Table 3-4 Operations for working with files and folders

Operation	Description
CopyFile	Copies a file or folder in the working directory to a specified target directory. The request must specify whether to copy a single file or folder, a file or folder list, or all files or folders that match specific conditions. CopyFile is accessed through the Administrate operation.
CreateFileType	Creates a new file type in BIRT iServer. CreateFileType is accessed through the Administrate operation.
CreateFolder	Creates a folder in an Encyclopedia volume. CreateFolder is accessed through the Administrate operation.
DeleteFile	Deletes files or folders from the Encyclopedia volume. The request must specify whether to delete a single file or folder, a list of files or folders, or files or folders that match specific conditions. DeleteFile is accessed through the Administrate operation.
DeleteFileType	Deletes file types. The request must specify whether to delete a single file type, a list of file types, or file types that match specific conditions. DeleteFileType is accessed through the Administrate operation.
DownloadFile	Downloads a persistent file. File content streams to the client as a MIME attachment or is embedded in the response.
DownloadTransientFile	Downloads a transient file. The request requires a FileId and can also indicate whether to decompose a compound document. File content can be attached or embedded in the response.
GetDataExtraction Formats	Retrieves a list of DataExtractionFormat objects for a specific file type.
GetFileDetails	Retrieves the properties of a file or folder, including the FileId, the file's ACL, and its autoarchive rules.

Table 3-4 Operations for working with files and folders (continued)

Operation	Description
GetFileTypeParameter Definitions	Retrieves the definitions of parameters for a specific file type on the target Encyclopedia volume.
GetFolderItems	Retrieves a list of files or folders in an Encyclopedia volume folder.
MoveFile	Moves a file or folder from the working directory to a specified target directory in the Encyclopedia volume. The request must specify whether to move a single file or folder, a file or folder list, or all files or folders that match specific conditions. MoveFile is accessed through the Administrate operation.
SaveTransientReport	Saves a transient report to a specified file.
UpdateFile, UpdateFileOperation, UpdateFileOperation Group	Updates file or folder properties in the Encyclopedia volume. The request must specify the update task to apply, such as updating general properties, adding or removing dependencies, or changing parameters. UpdateFile must also specify whether the task applies to a single file or folder, a file or folder list, or files or folders that match specific conditions. Write privilege is required on a file or folder to update its properties. Grant privilege is required to update privileges on a file or folder. UpdateFile is accessed through the Administrate operation.
UpdateFileType, UpdateFileTypeOperation, UpdateFileTypeOperation Group	Updates file type properties in the Encyclopedia volume. The request must specify the update task to apply, such as updating general properties, and adding file type parameters. UpdateFileType must also specify whether the task applies to a single file type, a list of file types, or file types that match specific conditions. UpdateFileType is accessed through the Administrate operation.

(continues)

Table 3-4 Operations for working with files and folders (continued)

Operation	Description
UploadFile	Uploads a file to an Encyclopedia volume. The client can specify a version name and can indicate whether to create a new version of the file. Content can upload to BIRT iServer as a MIME attachment or an object embedded in the request.

Working with groups

Groups, or notification groups, consist of sets of users. Notifications go to these users when a job completes, depending on settable conditions. Notification groups also indicate the success or failure of completed jobs. Table 3-5 lists the operations that work with groups.

Table 3-5 Operations for working with groups

Operation	Description
CreateGroup	Creates a notification group in an Encyclopedia volume. CreateGroup is accessed through the Administrate operation.
DeleteGroup	Deletes one or more notification groups. The request must specify whether to delete a single group, a list of groups, or groups that match specific conditions. DeleteGroup is accessed through the Administrate operation.
SelectGroups	Retrieves a list of groups that match specific conditions or a single group.
UpdateGroup, UpdateGroupOperation, UpdateGroupOperation Group	Updates notification group properties in the Encyclopedia volume. The request must specify the update task to apply, such as updating general properties, and adding a user to one or more groups. It also must specify whether the task applies to a single group, a group list, or groups that match specific conditions. UpdateGroup is accessed through the Administrate operation.

Working with information objects and databases

An information object is a file that contains a SQL query. iServer can cache information objects. Table 3-6 lists the operations that work with information objects and databases.

Table 3-6 Operations for working with information objects and databases

Operation	Description
CloseInfoObject	Closes the data source connection for an information object.
CreateDatabaseConnection	Creates a connection to an Actuate Caching service (ACS) database.
DataExtraction	Extracts data from a specified object.
DeleteDatabaseConnection	Deletes an ACS database connection objects.
GetInfoObject	Retrieves a description of an information object.
ExecuteQuery	Reads an information object and generates a data object value (.dov) file, optionally saving the resulting output file in the Encyclopedia volume.
FetchInfoObjectData	Retrieves the data source for an information object, using the connection that OpenInfoObject establishes.
GetDatabaseConnection Definition	Retrieves information about an ACS database connection object.
GetDatabaseConnection Parameters	Retrieves the connection parameter definitions that the database requires.
GetDatabaseConnection Types	Retrieves the list of available DBMS platforms.
GetMetaData	Retrieves the metadata describing a result set schema.
OpenInfoObject	Establishes a connection to an information object. The request specifies whether to embed the information object in the response or return it in blocks.
UpdateDatabase Connection	Updates an ACS database connection.

Working with jobs and reports

The Information Delivery API includes operations associated with running, printing, and scheduling a report. The API also supports open server processes that generate or print open server reports.

Specifically, the API supports:

- Generating a report immediately, with or without enabling transient report and progressive viewing features
- Submitting a report generation or print job to BIRT iServer on a specified schedule
- Submitting a request to generate or print the output of a query
- Canceling a report generation or printing job
- Retrieving details of a job, such as input and output parameters, report parameters, schedules, and printer settings
- Printing a document using printers that connect to BIRT iServer
- Creating a parameter values file
- Retrieving parameters associated with an executable file
- Notifying users and notification groups when a job completes
- Getting detailed information about a job notification

Table 3-7 lists the operations that work with jobs and reports.

Table 3-7 Operations for working with jobs and reports

Operation	Description
CancelJob	Stops generation of a scheduled or immediate job. Returns either the status of the cancellation or an error message. For synchronous reports, returns one of three states: ■ Failed, meaning the cancellation did not succeed. ■ Succeeded, meaning the cancellation succeeded. ■ InActive, meaning the job completed before BIRT iServer received the cancellation request.
CancelReport	Cancel synchronous report execution. CancelReport returns either the status of the cancellation or an error message.
CreateParameterValuesFile	Creates a report parameter values (.rov) file in an Encyclopedia volume. CreateParameterValuesFile contains a required ParameterValueList element.

Table 3-7 Operations for working with jobs and reports (continued)

Operation	Description
CreateQuery	Generates a data object value (.dov) file. CreateQuery contains a required Query element, which provides details about the available columns, parameter definitions, sorting and filtering criteria, and other properties of the query.
DeleteJob	Deletes one or more jobs. The request must specify whether to delete a single job, a list of jobs, or jobs that match specific conditions. DeleteJob is accessed through the Administrate operation.
DeleteJobNotices	Deletes one or more job notices. The request must specify whether to delete a single job notice, a list of job notices, or job notices that match specific conditions. DeleteJobNotices is accessed through the Administrate operation.
ExecuteReport	Runs a synchronous report. The WaitTime element supports specifying the minimum time for BIRT iServer to wait before returning a response. For transient reports, the request can include an Attachment element to indicate that the executable file to use is attached to the request. ExecuteReportStatus returns the status of the request.
ExportParameter DefinitionsToFile	Converts parameter definitions to an attached file that the client application can use as a report's parameter values file. The definitions can return as an attachment or an embedded object.
ExtractParameter DefinitionsFromFile	Extracts parameter definitions from a parameter values file.
GetContent	Retrieves the contents of a report for a specific component ID or component name and value. If the component ID is 0, returns the entire report.

(continues)

Table 3-7 Operations for working with jobs and reports (continued)

Operation	Description
GetCustomFormat	Extracts the results of calling the AcReport::GetCustomFormat method. For example, if the method creates an Excel file, GetCustomFormat retrieves the Excel file from an BIRT iServer node.
GetDocumentConversion Options	Retrieves a list of DocumentConversionOptions.
GetDynamicData	Retrieves a report's dynamic data.
GetEmbeddedComponent	When BIRT iServer returns an embedded URL in the report page, the browser requests the component the URL identifies. The component can be static data, dynamic data, or a style sheet.
GetJavaReportEmbedded Component	Retrieves an embedded component such as an image or a graph in a Java report document.
GetJavaReportTOC	Retrieves the table of contents of a Java report document.
GetJobDetails	Retrieves properties of a job, such as job name and ID, schedule, printer settings, resource groups to which the job is assigned, and notification list. The GroupingEnabled element indicates whether an end user can group data in a report or information object. GetJobDetails retrieves report parameters from the parameter values file for the job. If a scheduled job's RunLatestVersion element isTrue, GetJobDetails returns the combined parameters from the parameter values file and the latest report executable file. If a user requests details about a job the user did not submit, BIRT iServer returns a security error.

Table 3-7 Operations for working with jobs and reports (continued)

Operation	Description
GetNoticeJobDetails	Retrieves details about a job notification. The response always includes a JobAttributes element, which lists general job properties such as the job name, ID, state, owner, job type, duration, and resource groups to which the job is assigned. The response also can include details about the input and output files, notification information, and schedules. GetNoticeJobDetails includes the GroupingEnabled element to indicate whether the end user can group data in a report or information object.
GetPageCount	Retrieves the number of pages in a report.
GetPageNumber	Retrieves the page number of a bookmark in a report.
GetParameterPickList	Retrieves the parameters names from a pick list in a report
GetQuery	Reads and returns a data object executable (.dox) or data object value (.dov) file.
GetReportParameters	Retrieves the parameter values file of a designated report. The designated report can be an Actuate or third-party file. The client can request parameter values using a JobId, a file ID, or file name.
GetStaticData	Retrieve the report's static data
GetStyleSheet	Retrieve the report's style sheet
GetSyncJobInfo	Retrieves information about a specific synchronous job, including the status of the report, an error description if the status is Failed, and details about pending or running jobs.
GetTOC	Retrieves the table of contents for a report. Returns the table of contents in XMLDisplay format.
GetUserPrinterOptions	Retrieves the user's printer settings on BIRT iServer.

(continues)

Table 3-7 Operations for working with jobs and reports (continued)

Operation	Description
PrintReport	Prints a generated report. PrintReport can specify users, channels, or notification groups to notify at completion of printing.
SelectJavaReportPage	Returns a report page formatted in the specified display format indicated by the Page or Component element.
SelectJobNotices	Retrieves a single job notice or a list of job notices.
SelectJobs	Retrieves a list of jobs, jobs that match specific conditions, or a single job.
SelectJobSchedules	Selects all scheduled jobs matching the specified criteria.
SelectPage	Retrieves a page or range of pages to view. Pages are identified by number, page range, component ID, or other criteria.
SubmitJob	Submits a job request to run a report or run and print it in one operation. Jobs run synchronously or asynchronously. Printing occurs in asynchronous mode only. The job submitter can specify users, channels, or notification groups to notify at completion of the job. SubmitJob supports e-mail notification of success and failure, attaching the output report to the e-mail message, and choosing the format for the attachment. The job submitter also can override user preferences for the attachment format. If the request generates an information object, SubmitJob reads the executable file, generates a temporary query, and executes the request using the temporary file. SubmitJob supports choosing a resource group to process the job.

Table 3-7 Operations for working with jobs and reports (continued)

Operation	Description
UpdateJobSchedule, UpdateJobSchedule Operation, UpdateJobSchedule OperationGroup	Updates scheduled jobs in an Encyclopedia volume. The request must specify the update activity to apply, such as changing printer settings, adding or removing schedules to a job, and changing notifications. It must also specify whether the activity applies to a single scheduled job, a list of scheduled jobs, or scheduled jobs that match specific conditions. UpdateJobSchedule supports e-mail notification of success and failure, attaching the output report to the e-mail, and choosing a format for the report attachment. Viewer preferences for the attachment format are overridable. If the scheduled job is a data object value (.dov) file, UpdateJobSchedule updates the DOV file using the latest query. Using UpdateJobSchedule, an Encyclopedia volume administrator or a user in the Administrator role can add the job to a resource group or change the resource group to which the job is assigned. UpdateJobSchedule is accessed through the Administrate operation.
WaitForExecuteReport	WaitForExecuteReport overrides the WaitTime setting of an ExecuteReport operation. For example, when an ExecuteReport request has a WaitTime of 2 seconds and the response indicates that the status is Pending, the client can send WaitForExecuteReport to keep waiting for report generation beyond 2 seconds.

Working with searches

The Information Delivery API supports searching for users, notification groups, security roles, channels, files, folders, resource groups, parameters, jobs, and other items. The API can retrieve information about all volumes in an BIRT iServer and all printers to which that BIRT iServer connects.

To search for user information in an external security system, such as a Lightweight Directory Access Protocol (LDAP) server or Microsoft Active Directory, call Java Report Server Security Extension (RSSE) API functions.

The Information Delivery API does not support constructing composite search messages. For example, it is not possible to use one message to search for a user, a notification group, and a security role

Table 3-8 lists the operations that work with searches.

Table 3-8 Operations for working with searches

Operation	Description
GetSavedSearch	Retrieves a saved search.
SaveSearch	Saves the results of a search.
SearchReport	Searches a report for specific criteria.
SelectFiles	Searches for a file or folder in an Encyclopedia volume. Returns the file or folder as an embedded object or an attachment.
SelectFileTypes	Retrieves a list of file types, file types that match specific conditions, or a single file type.

Working with users, roles, and security

User, role, and security functions support the ability to create, delete, or query user and role capabilities. Security and authentication operations manage user access to files, folders, channels, licenses, and other items in an Encyclopedia volume. These operations also authenticate and log in the user or Encyclopedia volume administrator.

Table 3-9 lists the operations that work with users, roles, and security.

Table 3-9 Operations for working with users, roles, and security

Operation	Description
CallOpenSecurityLibrary	Calls the Report Server Security Extension (RSSE) API AcRSSEPassThrough function or PassThrough message, which calls the RSSE for general purposes.
CreateRole	Creates a security role in the Encyclopedia volume. CreateRole is accessed through the Administrate operation.

Table 3-9 Operations for working with users, roles, and security (continued)

Operation	Description
CreateUser	Creates a user in the Encyclopedia volume. CreateUser is accessed through the Administrate operation.
DeleteRole	Deletes one or more security roles. The request must specify whether to delete a single security role, a list of security roles, or security roles that match specific conditions. DeleteRole is accessed through the Administrate operation.
DeleteUser	Deletes one or more users. The request must specify whether to delete a single user, a user list, or users that match specific conditions. DeleteUser is accessed through the Administrate operation.
GetChannelACL	Retrieves the access control list (ACL) for a specified channel. Use either a name or ID to identify channels. FetchHandle supports retrieving a large list in the response
GetConnectionProperty Assignees	Retrieves the users and roles for a file.
GetFileACL	Retrieves the ACL for a file or folder identified by either name or ID. FetchHandle supports retrieving a large list in the response.
GetFileCreationACL	Retrieves the user's ACL templates, which are the privileges applied when the user creates a file or folder in an Encyclopedia volume. The client can specify the user either by name or ID.
GetUserLicenseOptions	Retrieves the license options for a specific user.
Login	Authenticates a user to BIRT iServer. Requires a user name. Can also accept a password or other credentials. Always returns an AuthId for use in subsequent requests in the same session. Always returns a list of the Actuate features the user can access. Can also return the user's viewing preferences, valid security roles, and other user information. If the user is an Encyclopedia volume administrator, returns a list of the user's administrative privileges.

(continues)

Table 3-9 Operations for working with users, roles, and security (continued)

Operation	Description
SelectRoles	Retrieves a list of roles, roles that match specific conditions, or a single role.
SelectUsers	Retrieves a list of users, users that match specific conditions, or a single user.
SetConnectionProperties	Sets the connection properties for a file based on user or role.
SystemLogin	Authenticates the system administrator in BIRT iServer. Requires a system password. Returns an AuthId for use in subsequent requests in the same session.
UpdateOpenSecurityCache	Flushes the Encyclopedia volume's open security data and retrieves new data from an external security source. Use UpdateOpenSecurityCache to retrieve new data before the existing data expires. UpdateOpenSecurityCache is accessed through the Administrate operation.
UpdateRole, UpdateRoleOperation, UpdateRoleOperation Group	Updates security role properties in the Encyclopedia volume. The request must specify the update activity to apply, such as updating general properties, and adding a user to one or more roles. It must also specify whether the activity applies to a single security role, a role list, or roles that match specific conditions. UpdateRole is accessed through the Administrate operation.
UpdateUser, UpdateUserOperation, UpdateUserOperation Group	Updates user properties in the Encyclopedia volume. The request must specify the update task to perform, such as updating general properties, and adding the user to a notification group. It must also specify whether the task applies to a single user, a user list, or users that match specific conditions. UpdateUser is accessed through the Administrate operation.

Chapter

4

Running, printing, and viewing a document

This chapter contains the following topics:

- Generating or printing a document
- Running a synchronous report
- Running or printing a job
- Working with a resource group
- Working with a query
- Working with multidimensional data
- Retrieving and viewing data
- Managing a large list
- Working with a large message
- Delivering a multilingual document

Generating or printing a document

The Factory service manages document generation and printing operations. Use these operations to run and print a document, schedule or cancel a job, and work with a parameter value file. Specifically, the Factory service supports:

- Running a report or information object
- Scheduling a report or information object as a job
- Canceling report or job generation
- Creating a parameter values file
- Extracting parameter definitions from or exporting parameter definitions to a file
- Getting information about parameters, jobs, and job notices
- Creating, updating, and deleting a resource group

Actuate's open server functionality extends the Factory service to generate a third-party report executable file.

Figure 4-1 shows the role of the Factory service in the process of building a report.

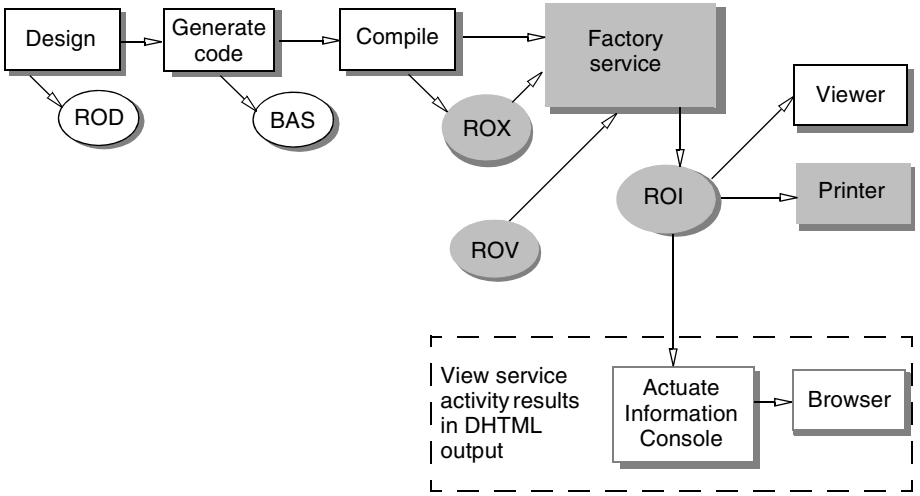

Figure 4-1 Building a report and the role of the Factory service

The ROI consists of persistent objects. The Factory service deletes all transient objects, such as data sources, data filters, and data rows, when it no longer needs them.

To focus attention on the relevant portions of operations, most of the examples in this chapter show only the SOAP body of a message.

Running a synchronous report

Use ExecuteReport to run a synchronous report. Using InputFileName or InputFileId, you can specify an Actuate report or an external executable file to run. To save the output, set SaveOutputFile to True. Then, use RequestedOutputFile to indicate the output file's name, destination, or autoarchive rules. If the report uses parameters, use ParameterValues to set name-value pairs for each parameter.

The following ExecuteReport request generates a persistent report with progressive viewing enabled. The output file is not shared. It uses the default autoarchive rules of its file type.

```
<SOAP-ENV:Body>
   <ExecuteReport>
      <JobName>Sampling_Data</JobName>
      <InputFileId>170</InputFileId>
      <SaveOutputFile>true</SaveOutputFile>
      <RequestedOutputFile>
         <Name>/SamplingDataReport.roi</Name>
         <AccessType>Private</AccessType>
         <ArchiveRule>
            <FileType>roi</FileType>
         </ArchiveRule>
      </RequestedOutputFile>
      <ParameterValues>
         <ParameterValue>
            <Name>Currency</Name>
            <Value>2008</Value>
         </ParameterValue>
         <ParameterValue>
            <Name>Date</Name>
            <Value>8/4/2008</Value>
         </ParameterValue>
      …
      </ParameterValues>
      <ProgressiveViewing>true</ProgressiveViewing>
   </ExecuteReport>
</SOAP-ENV:Body>
```

In this request:

- InputFileId identifies the file to run. The input file resides on BIRT iServer and generates the output file.
- SaveOutputFile indicates whether the report is persistent or temporary. If you save the output file, the report is persistent.

- RequestedOutputFile indicates a path to the output file because this is a persistent report.
- AccessType indicates whether the file is private or shared.
- ParameterValues lists the name and value of any parameters the input file uses.
- ProgressiveViewing enables or disables progressive viewing. Using progressive viewing, the first page of the output appears as soon as it generates. Without progressive viewing, the first page appears when the entire report completes.

An ExecuteReport request returns the status of the report, an ObjectId that BIRT iServer generates, and the output file type. For a persistent report, ObjectId is valid until the user deletes the report. For a transient report, ObjectId is a temporary identifier that lasts for a configurable period of time.

An ExecuteReport response also returns a ConnectionHandle for a persistent report. The ConnectionHandle remains valid throughout the session.

```
<SOAP-ENV:Body>
   <ExecuteReportResponse>
      <Status>FirstPage</Status>
      <OutputFileType>ROI</OutputFileType>
      <ObjectId>9015</ObjectId>
      <ConnectionHandle>g7whmBpUho+tg5MUYUgZxqVGrbtKH
      </ConnectionHandle>
   </ExecuteReportResponse>
</SOAP-ENV:Body>
```

Generating a cube from a cube design profile

Using ExecuteReport, you can generate a data cube (.cb4) file from a cube design profile (.dp4) file. Specify the profile to run using an input file name or ID. Use RequestedOutputFile to set the properties of the cube, just as you do with any other ExecuteReport request. You also can set a WaitTime to indicate the time to elapse between sending the request and receiving a status message.

The following request saves up to eight versions of a cube, OrdersProfile.cb4, in the Queries folder in the working directory. The request sets an access type, archive rules, and privileges to the cube.

```
<SOAP-ENV:Body>
   <ExecuteReport>
      <JobName>ORDERS</JobName>
      <InputFileId>8</InputFileId>
      <SaveOutputFile>true</SaveOutputFile>
      <RequestedOutputFile>
         <Name>/Queries/OrdersProfile.cb4</Name>
```

```
        <ReplaceExisting>false</ReplaceExisting>
        <MaxVersions>8</MaxVersions>
        <AccessType>Shared</AccessType>
        <ArchiveRule>
           <FileType>cb4</FileType>
           <ArchiveOnExpiration>true</ArchiveOnExpiration>
           <ExpirationAge>43200</ExpirationAge>
        </ArchiveRule>
        <ACL>
           <Permission>
              <RoleName>All</RoleName>
              <AccessRight>VSREWDG</AccessRight>
           </Permission>
        </ACL>
     </RequestedOutputFile>
     <ProgressiveViewing>true</ProgressiveViewing>
     <WaitTime>20</WaitTime>
   </ExecuteReport>
</SOAP-ENV:Body>
```

The response specifies properties of the cube.

```
<SOAP-ENV:Body>
   <ExecuteReportResponse>
      <Status>Done</Status>
      <OutputFileType>CB4</OutputFileType>
      <ObjectId>17</ObjectId>
      <ConnectionHandle>g7whmBpUho+tg5MUYUgZxqV6qxppw=
      </ConnectionHandle>
   </ExecuteReportResponse>
</SOAP-ENV:Body>
```

Setting a time frame for an ExecuteReport response

Use ExecuteReport with WaitTime to set a time frame for a response to a report generation request. WaitTime requests a response from BIRT iServer within a specific period of time, even if report generation has not started or is incomplete. WaitTime specifies the minimum time BIRT iServer waits before it returns a response.

To avoid performance issues associated with frequent server time-outs, make WaitTime long enough for a typical report to generate. The ExecuteReport response is Pending if WaitTime is less than the time required to generate the first page of a progressive report or the time required to complete a non-progressive report.

The following example sets the wait time to 1 second and ProgressiveViewing to False. Using these settings, BIRT iServer returns a status message to the client if the entire report does not generate in 1 second.

```
<SOAP-ENV:Body>
   <ExecuteReport>
      <JobName>Detailed_Data</JobName>
      <InputFileName>/detail.rox</InputFileName>
      <SaveOutputFile>true</SaveOutputFile>
      <RequestedOutputFile>
         <Name>detail.roi</Name>
         <AccessType>Shared</AccessType>
      </RequestedOutputFile>
      <IsBundled>false</IsBundled>
      <ProgressiveViewing>false</ProgressiveViewing>
      <WaitTime>1</WaitTime>
   </ExecuteReport>
</SOAP-ENV:Body>
```

The response includes the status of the report generation request, the ObjectId, and the output file type.

```
<SOAP-ENV:Body>
   <ExecuteReportResponse>
      <Status>Pending</Status>
      <OutputFileType>ROI</OutputFileType>
      <ObjectId>435</ObjectId>
   </ExecuteReportResponse>
</SOAP-ENV:Body>
```

An ExecuteReport request with WaitTime set returns one of the following report request status messages:

- Done means that report generation succeeded.
- Pending means that the report is either in the queue or in the process of generating.
- Failed means that the request to cancel did not succeed because of authorization errors or another reason.
- FirstPage means the first page of a progressive report is complete and the report is continuing to generate.

Waiting for report generation

Use WaitForExecuteReport to continue waiting for the report to generate after sending an ExecuteReport request and receiving a Pending status. For example, when an ExecuteReport request has a WaitTime of 2 seconds and the response indicates that the report status is Pending, a client can send WaitForExecuteReport to keep waiting for report generation beyond the specified wait time of 2 seconds.

WaitForExecuteReport waits until either the first page generates or the report is complete, depending on whether the user enables progressive viewing. If the report uses progressive viewing, the user can cancel after the first page generates. Otherwise, the user cannot cancel until the entire report completes. To avoid performance issues, the Factory service deletes the report from the queue if it takes too long to generate.

The WaitForExecuteReport request uses the ConnectionHandle and ObjectId from the ExecuteReport response.

```
<SOAP-ENV:Header>
   <AuthId>9FY0JssYijJI5XvkJqDOPBOoWPbgRak20wIZIFDUa</AuthId>
   <Locale>en_us</Locale>
   <ConnectionHandle>RYEMWxKREsxq0mQCiXCZHB8NiLDFwq1Q=
   </ConnectionHandle>
</SOAP-ENV:Header>
<SOAP-ENV:Body>
   <WaitForExecuteReport>
      <ObjectId>435</ObjectId>
   </WaitForExecuteReport>
</SOAP-ENV:Body>
```

The WaitForExecuteReport response returns the ObjectId of the requested report, the status of the request, and the output file type.

```
<SOAP-ENV:Header>
   <ConnectionHandle>RYEMWxKREsxq0mQCiXCZHB8NiLDFwq1Q=
   </ConnectionHandle>
</SOAP-ENV:Header>
<SOAP-ENV:Body>
   <WaitForExecuteReportResponse>
      <Status>Done</Status>
      <OutputFileType>ROI</OutputFileType>
      <ObjectId>435</ObjectId>
   </WaitForExecuteReportResponse>
</SOAP-ENV:Body>
```

If progressive viewing is enabled, the response returns a status of FirstPage and the wait period ends.

Running a synchronous report that uses parameters

To run a report that uses parameters, use ExecuteReport and set the following properties of ParameterValues:

- Group is the group section in the report.
- Name is the parameter name.
- Value is the value to search for.

The following example shows the ExecuteReport request for a report that uses two parameters, customers_creditrank and offices_city. It asks for customers with a credit rank of C whose offices are in New York City.

```
<SOAP-ENV:Body>
   <ExecuteReport>
      <JobName>CREDIT_JOB</JobName>
      <InputFileId>369</InputFileId>
      <SaveOutputFile>true</SaveOutputFile>
      <RequestedOutputFile>
         <Name>/detail.roi</Name>
         <ArchiveRule>
            <FileType>roi</FileType>
         </ArchiveRule>
      </RequestedOutputFile>
      <ParameterValues>
         <ParameterValue>
            <Group>Customer Parameters</Group>
            <Name>DataSource::customers_creditrank</Name>
            <Value>C</Value>
         </ParameterValue>
         <ParameterValue>
            <Group>Office Parameters</Group>
            <Name>DataSource::offices_city</Name>
            <Value>NYC</Value>
         </ParameterValue>
      </ParameterValues>
      <ProgressiveViewing>true</ProgressiveViewing>
      <WaitTime>20</WaitTime>
   </ExecuteReport>
</SOAP-ENV:Body>
```

The response contains the same elements as a report that does not use parameters:

```
<SOAP-ENV:Body>
   <ExecuteReportResponse>
      <Status>FirstPage</Status>
      <OutputFileType>ROI</OutputFileType>
      <ObjectId>5172</ObjectId>
      <ConnectionHandle>g7whmBpUho+tgppw=</ConnectionHandle>
   </ExecuteReportResponse>
</SOAP-ENV:Body>
```

Retrieving report parameter values

Use GetReportParameters to retrieve the parameter values of a specific report object value (.rov) file. Use one of the following identifiers to specify which ROV to use:

- JobId. BIRT iServer finds the associated ROV and reads the parameters from that file.
- The name or identifier of the file for which you want to retrieve parameter values. This file can be an Actuate or external report executable file, a parameter values file, or a third-party compound storage file.

For a date parameter, BIRT iServer returns parameter values in the General Date format, regardless of the DateTime settings in localemap.xml. For example, the General Date format is mm/dd/yyyy hh:mm:ss for the US English locale.

The following example requests parameters for a job:

```
<SOAP-ENV:Body>
   <GetReportParameters>
      <JobId>16</JobId>
   </GetReportParameters>
</SOAP-ENV:Body>
```

The response includes all parameters stored in the ROV:

```
<SOAP-ENV:Body>
   <GetReportParametersResponse>
      <ParameterList>
         <ParameterDefinition>
            <Group>Customer Parameters</Group>
            <Name>customers_creditrank</Name>
            <DefaultValue></DefaultValue>
            <IsRequired>false</IsRequired>
            <IsPassword>false</IsPassword>
            <IsHidden>false</IsHidden>
            <DisplayName>Credit Rank</DisplayName>
            <IsAdHoc>false</IsAdHoc>
         </ParameterDefinition>
         <ParameterDefinition>
            <Group>Customer Parameters</Group>
            <Name>customers_customName</Name>
            <DataType>String</DataType>
            <DefaultValue></DefaultValue>
            <IsRequired>false</IsRequired>
            <IsPassword>false</IsPassword>
            <IsHidden>false</IsHidden>
            <DisplayName>Customer Name</DisplayName>
```

```
            <IsAdHoc>true</IsAdHoc>
            <ColumnName>Name</ColumnName>
            <ColumnType>String</ColumnType>
         </ParameterDefinition>
         …
      </ParameterList>
   </GetReportParametersResponse>
</SOAP-ENV:Body>
```

If IsAdHoc is True for any parameter, the response returns ColumnName and ColumnType in the ParameterDefinition element of that parameter.

Creating a report object value (.rov) file

Use CreateParameterValuesFile to create a report object value (.rov) file. An ROV describes the parameters that apply to a specific report. You can create an ROV for any version of any executable file that uses parameters, including a report object executable (.rox) file, a cube design profile (.dp4) file, or a third-party executable file.

The following example creates an ROV for version 1 of SeedFunding.rox:

```
<SOAP-ENV:Body>
   <CreateParameterValuesFile>
      <BasedOnFileName>SeedFunding.rox;1</BasedOnFileName>
         <ParameterFile>
            <Name>SeedFunding.rov</Name>
         </ParameterFile>
      <ParameterValueList>
         <ParameterValueList>
            <Group>Customers</Group>
            <Name>customers_customName</Name>
            <Value>John</Value>
         </ParameterValueList>
      </ParameterValueList>
   </CreateParameterValuesFile>
</SOAP-ENV:Body>
```

In the preceding example:

- BasedOnFileName is the executable file name and version number of the executable file from which to create the ROV.
- ParameterFile is the name of the ROV.
- ParameterValueList is a required element that lists the parameters to include in the ROV.

The preceding request returns the ID, name, and other properties of the ROV:

```
<SOAP-ENV:Body>
   <CreateParameterValuesFileResponse>
      <ParameterValuesFile>
         <Id>1888</Id>
         <Name>SeedFunding.rov</Name>
         <FileType>ROV</FileType>
         <Version>13</Version>
      </ParameterValuesFile>
   </CreateParameterValuesFileResponse>
</SOAP-ENV:Body>
```

Running or printing a job

A job is a document generation or print operation that runs asynchronously. A job can run at a scheduled time or you can send a job to the queue immediately. Two operations support working with jobs and job schedules:

- Use SubmitJob to:
  - Create and schedule a job.
  - Set the job priority.
  - Specify the requested output file type.
  - Set the users, groups, or channels to notify.
  - Determine the parameters to use when running the job.
  - Provide printer options.
  - Determine whether to retry a failed job.
- Use UpdateJobSchedule to:
  - Modify a schedule.
  - Change the type of operation and other job attributes.
  - Modify input and output parameters.
  - Add or delete notification recipients.
  - Change the number of versions to retain in BIRT iServer.
  - Modify search conditions.

Understanding SubmitJob

UseSubmitJob to specify a file to run or print. The input file can be an Actuate report executable (.rox) file, a cube design profile (.dp4) file, an external executable file, a report document such as a report object instance (.roi) file, or a report object value (.rov) file. If the input file is dependent on an executable file, BIRT iServer uses the executable file as the input.

The following example schedules a job, Sample Report, to run a report, SampleReport.rox, and output a file, SampleReport.roi:

```
<SOAP-ENV:Body>
   <SubmitJob>
      <JobName>SampleReport</JobName>
      <Priority>1000</Priority>
      <InputFileName>/report/SampleReport.rox;1</InputFileName>
      <RunLatestVersion>false</RunLatestVersion>
      <RequestedOutputFile>
         <Name>/report/SampleReport.roi</Name>
      </RequestedOutputFile>
      <Operation>RunReport</Operation>
      <ParameterValues
         …
      </ParameterValues>
      …
   </SubmitJob>
</SOAP-ENV:Body>
```

Specifying parameters for a job

To specify a version of a document to run or print, use SubmitJob and identify the version number, separating it from the file name with a semicolon (;). Use the version number, not the optional version name:

```
<InputFileName>Forecast.rox;12</InputFileName>
```

Because SubmitJob supports only persistent reports, you must specify the output file name in the request, including the file type:

```
<RequestedOutputFile>
   <Name>Forecast.roi</Name>
</RequestedOutputFile>
```

To indicate whether to run a report or run and print the report, set the Operation element to either RunReport or RunAndPrintReport:

```
<Operation>RunReport</Operation>
```

To run the job using the most recent version of a report, set RunLatestVersion to True and identify the input file using InputFileName. BIRT iServer ignores RunLatestVersion if you use InputFileId.

For a print job, you can specify settings for the printer using PrinterOptions. These printer settings include such details as the printer name, page size and orientation, scaling, number of copies to print, and pages to print.

Using a parameter values file as input to a job

If the input to SubmitJob is a report object value (.rov) file, BIRT iServer uses the associated executable file as the input and the ROV as the parameter values file. If the ROV is not dependent on an executable file, BIRT iServer returns an error message. If the input to SubmitJob is an ROV, you cannot specify another parameter values file in ParameterFileName or ParameterFileId. In such a case, use ParameterValues to specify parameters for the run. When the input is an ROV and you set ParameterValues, the parameters merge. The Factory service uses parameters from the ROV first, then runs the parameters specified in ParameterValues.

About hidden, required parameters

When you run a report that uses a hidden, required parameter, BIRT iServer returns an error message if you do not provide the hidden parameter. The error message does not identify the hidden parameter. To determine whether a report uses hidden parameters, run GetReportParameters before submitting the job.

Scheduling report generation or printing

Use SubmitJob to run or print a job on a schedule. You can schedule any executable file to run or print immediately, daily, weekly, monthly, or on specific dates.

When a scheduled job cannot run because BIRT iServer is down, the job runs when BIRT iServer restarts. If a job has multiple pending occurrences when BIRT iServer restarts, only one instance runs.

The following example schedules a job to run once a week, using the highest priority, starting at midnight Pacific time every Monday from December 1, 2008, to December 1, 2009:

```
<SOAP-ENV:Body>
   <SubmitJob>
      <JobName>ForecastSchedule</JobName>
      <Headline>Quarterly forecast updates</Headline>
      <Priority>1000</Priority>
      <InputFileName>Forecast.rox</InputFileName>
      <RunLatestVersion>true</RunLatestVersion>
      <RequestedOutputFile>
         <Name>Forecast.roi</Name>
         <AccessType>Private</AccessType>
```

```
      </RequestedOutputFile>
      <Operation>RunReport</Operation>
      <Schedules>
         <TimeZoneName>PST</TimeZoneName>
         <ScheduleDetails>
            <JobScheduleDetail>
               <ScheduleType>Weekly</ScheduleType>
               <ScheduleStartDate>2008-12-1</ScheduleStartDate>
               <ScheduleEndDate>2009-12-1</ScheduleEndDate>
                  <Weekly>
                  <FrequencyInWeeks>1</FrequencyInWeeks>
                  <RunOn>Mon</RunOn>
                  <OnceADay>14:00:00</OnceADay>
               </Weekly>
            </JobScheduleDetail>
         </ScheduleDetails>
      </Schedules>
      <NotifyGroupsByName>
         <String>Sales Managers</String>
      </NotifyGroupsByName>
   </SubmitJob>
</SOAP-ENV:Body>
```

In this example:

- JobName is a title for the schedule.
- Headline is a title that a channel subscriber sees.
- Priority sets a priority for the job ranging from 0 to 1000, where 1000 is the highest priority.
- InputFileName identifies the executable file to use as input.
- RequestedOutputFile provides a file name and extension for the output. It also identifies the access type of the file, either Private or Shared.
- Operation identifies the task to schedule, either RunReport or RunAndPrintReport.
- NotifyGroupsByName sets the notification groups to notify of job success or failure. RunLatestVersion specifies whether to run or print the most recent version of the report executable file. RunLatestVersion ignores any version numbers in InputFileName.
- The JobScheduleDetail element of ScheduleDetails specifies the frequency of the run, the start and end dates for the schedule, the day and time of the run, and other details.

When the job succeeds, the SubmitJob request returns the JobId:

```
<SOAP-ENV:Body>
   <SubmitJobResponse>
      <JobId>145</JobId>
   </SubmitJobResponse>
</SOAP-ENV:Body>
```

For a successful job, users in the specified group receive a notification unless they choose not to do so. A report user can indicate whether BIRT iServer notifies him only of successful jobs, only of failed jobs, or of both successful and failed jobs.

When a job fails, BIRT iServer returns an error message and notifies those users who choose to receive a notification of job failure.

Working with a job notification

When an asynchronous job completes, BIRT iServer can notify a user, notification group, personal channel, and subscribed channel.

Notification tasks are suboperations of the SubmitJob and UpdateJobSchedule operations. To set a notification for a job, use SubmitJob and indicate the user, notification group, or channel to notify. To modify an existing notification, use UpdateJobSchedule.

Administrators and others who submit or update a job can indicate whether the job sends a notification. A report user can indicate whether BIRT iServer notifies him only of successful jobs, only of failed jobs, or of both successful and failed jobs.

The job submitter also can choose a list of possible formats for the job output if the report executable file is a native Actuate file type. This preference is not available for third-party reports.

About e-mail attachments

A user or notification group receives an e-mail notification when a job succeeds or fails. When the job completes successfully, the user or notification group can receive the output as an e-mail attachment or can link to the output. The person submitting the job can override user preferences for the output format. All users in a notification group receive the same output format.

To create an attachment, the Factory service runs an executable file to generate a report document. Then, the View service renders the document into the specified attachment format. You can attach a document generated from any report executable file, including a third-party file type.

If you send a document as an attachment and the output document requires secure read privileges, BIRT iServer provides a link to the file instead of the attachment. A user who chooses the link must have secure read privileges to view

the output. If the user does not have read privileges to the report, only the location of the document appears in the e-mail.

If a report user requests an e-mail attachment, he or she can choose either standard e-mail format or HTML format.

About notifying a channel

A channel receives an electronic notification and displays a message. If the channel is a personal channel, the message is visible only to the owner of the channel. If the channel is available to multiple subscribers, only those subscribers see the message. In either case, choosing a link in the message displays the output of a successful job.

Sending an e-mail notification using SubmitJob

To specify a user or notification group to receive a job notification, you can set one or more of the following elements of SubmitJob:

- NotifyUsersByName
- NotifyUsersById
- NotifyGroupsByName
- NotifyGroupsById

When you list the users or groups to notify, BIRT iServer determines their e-mail addresses based on the user names or IDs.

The following example represents portions of a SubmitJob operation using the NotifyUsersByName element:

```
<SOAP-ENV:Body>
   <SubmitJob>
      <JobName>forecast</JobName>
      …
      <Schedules>
         <TimeZoneName>PST</TimeZoneName>
         <ScheduleDetails>
            <JobScheduleDetail>
            …
            </JobScheduleDetail>
         </ScheduleDetails>
      </Schedules>
      <NotifyUsersByName>
         <String>Craig Osborne</String>
         <String>Ying Chen</String>
      </NotifyUsersByName>
```

```
      …
   </SubmitJob>
</SOAP-ENV:Body>
```

Sending an e-mail notification using UpdateJobSchedule

To modify a job's notification settings, set one or more of the following elements of UpdateJobSchedule:

- SetUserNotificationByName
- SetUserNotificationById
- SetGroupNotificationByName
- SetGroupNotificationById

The following UpdateJobSchedule operation uses SetUserNotificationByName and SetGroupNotificationByName to add three users and a group to the notification list. This operation is a transaction, which means that all updates must succeed for the operation to succeed.

```
<SOAP-ENV:Body>
   <Administrate>
      <Transaction>
         <TransactionOperation>
            <UpdateJobSchedule>
               <UpdateJobScheduleOperationGroup>
                  <UpdateJobScheduleOperation>
                     <SetAttributes>
                        <RunLatestVersion>false</RunLatestVersion>
                        <InputFileName>
                           /Regional Forecasts 2008/forecast.rox
                        </InputFileName>
                     </SetAttributes>
                     <SetParameters>
                        <OverrideRecipientPref>true
                        </OverrideRecipientPref>
                        <AttachReportInEmail>true
                        </AttachReportInEmail>
                        <SendEmailForSuccess>true
                        </SendEmailForSuccess>
                        <SendEmailForFailure>true
                        </SendEmailForFailure>
                        <EmailFormat>PDF</EmailFormat>
                        <SendSuccessNotice>true
                        </SendSuccessNotice>
                        <SendFailureNotice>true
```

```
                    </SendFailureNotice>
                 </SetParameters>
                 <SetUserNotificationByName>
                    <String>Claude Lacroix</String>
                    <String>Heinrich Richter</String>
                    <String>Ying Leung</String>
                 </SetUserNotificationByName>
                 <SetGroupNotificationByName>
                    <String>Sales Managers</String>
                 </SetGroupNotificationByName>
              </UpdateJobScheduleOperation>
           </UpdateJobScheduleOperationGroup>
           <Id>1</Id>
        </UpdateJobSchedule>
     </TransactionOperation>
  </Transaction>
</Administrate>
</SOAP-ENV:Body>
```

In this example:

- SendFailureNotice and SendSuccessNotice are True, so BIRT iServer sends e-mail for success and for failure.
- OverrideRecipientPref is True, so BIRT iServer overrides recipient preferences about whether to receive the attachment.
- EmailFormat requests the output in PDF format. You can request output in report object instance (.roi), PDF, ExcelDisplay, or ExcelData format.

As with many administration operations, this request returns an empty response.

Notifying a channel using SubmitJob

To notify a channel using SubmitJob, set one of the following elements:

- NotifyChannelsByName
- NotifyChannelsById

For example, to notify the Sales Updates channel by name, include the following code in the request:

```
<SOAP-ENV:Body>
   <SubmitJob>
   …
      <NotifyChannelsByName>
         <String>Sales Updates</String>
      </NotifyChannelsByName>
   …
</SOAP-ENV:Body>
```

Notifying a channel using UpdateJobSchedule

To notify a channel using UpdateJobSchedule, set one of the following elements:

- SetChannelNotificationByName
- SetChannelNotificationById

The following operation uses SetChannelNotificationByName to specify two channels to notify, Accounts and Daily messages:

```
<SOAP-ENV:Body>
   <Administrate>
      <UpdateJobSchedule>
         <UpdateJobScheduleOperationGroup>
            <UpdateJobScheduleOperation>
               <SetAttributes>
                  <RunLatestVersion>false</RunLatestVersion>
                  <InputFileName>/office-info.rox;
                  </InputFileName>
               </SetAttributes>
               <SetParameters>
               <RetryOption>VolumeDefault</RetryOption>
               </SetParameters>
               <SetChannelNotificationByName>
                  <String>Accounts</String>
                  <String>Daily messages</String>
               </SetChannelNotificationByName>
            </UpdateJobScheduleOperation>
         </UpdateJobScheduleOperationGroup>
         <Id>8</Id>
      </UpdateJobSchedule>
   </Administrate>
</SOAP-ENV:Body>
```

As with many administrative operations, this request returns an empty response.

Customizing an e-mail notification

Actuate provides a customizable e-mail notification template, acnotification.xml, which installs in the \iServer\etc directory. This file includes templates for success and failure messages. The template for success notifications includes a standard subject line for the e-mail, a simple message that forms the body of the e-mail, and a completion time stamp. It also provides a link to the output. The template for a failure message includes a variable to explain the reason for failure. You can customize the template by modifying the content portions of acnotification.xml.

Using the e-mail template for multiple locales

In an e-mail notification, the attachment returns in the language and with the locale conventions used to submit the request.

Because the default e-mail notification template uses UTF-8 encoding, you can also send the content of the subject line and the content of the body in multiple languages and locale conventions. Due to a limitation of Messaging Application Programming Interface (MAPI), however, the rules for encoding the e-mail subject line and the body of the message vary according to the platform. On a UNIX platform, the subject line uses UTF-8 encoding. On a Windows platform, the subject line converts to the code page encoding of the requesting operating system.

If you do not set the content type, the body of the message is plain text. On a Windows platform, the body is inline rich text format (.rtf) text. On a UNIX platform, the body is UTF-8 encoded plain text.

If you specify the content type as plain text, the e-mail message body is plain text. On Windows platforms, characters outside the code page that BIRT iServer uses might not be visible.

Retrieving job properties using GetJobDetails

Use GetJobDetails to retrieve the properties of a job stored in an Encyclopedia volume. An Encyclopedia volume administrator uses GetJobDetails to retrieve the properties of any job in the Encyclopedia volume. A nonadministrative user can use GetJobDetails for a job he submits. If a nonadministrative user sends GetJobDetails for a job he did not submit, BIRT iServer returns a security error.

GetJobDetails retrieves job properties using the elements you specify in the request. The following list describes the available elements:

- JobAttributes returns general job attributes, including JobId, JobName, Priority, Owner, JobType, and InputFileName or ID. JobAttributes always returns in the response to GetJobDetails.
- InputDetail returns details about input parameters.
- Schedules returns schedule information.
- PrinterOptions returns the printer settings, if available.
- NotifyUsers returns the users to notify, if any.
- NotifyGroups returns the groups to notify, if any.
- NotifyChannels returns the channels to notify, if any.
- DefaultOutputFileACL returns the output file ACL templates.
- Status returns the job status.

- Query returns definitions of columns available to this report. It also returns filtering criteria and other information.
- ReportParameters returns the report parameter values. BIRT iServer reads the report parameters from the report object value (.rov) file associated with the job.

The following example shows a response to a GetJobDetails request that includes JobAttributes:

```
<SOAP-ENV:Body>
   <GetJobDetailsResponse>
      <JobAttributes>
         <JobId>58</JobId>
         <JobName>Latest Results</JobName>
         <Priority>1000</Priority>
         <Owner>Administrator</Owner>
         <JobType>RunReport</JobType>
         <State>Succeeded</State>
         <InputFileId>973</InputFileId>
         <InputFileName>/ltor.rox;1</InputFileName>
         <ParameterFileId>1045</ParameterFileId>
         <ParameterFileName>
            /$$$TempROVs/_441c_f0b808e4.ROV;1
         </ParameterFileName>
         <ActualOutputFileId>1046</ActualOutputFileId>
         <ActualOutputFileName>/ltor.roi;26
         </ActualOutputFileName>
         <RequestedOutputFileName>ltor.roi
         </RequestedOutputFileName>
         <SubmissionTime>2008-09-20T21:59:16</SubmissionTime>
         <CompletionTime>2008-09-20T21:59:17</CompletionTime>
         <PageCount>5</PageCount>
         <OutputFileSize>26640</OutputFileSize>
         <RoutedToNode>pinetree</RoutedToNode>
         <DurationSeconds>1</DurationSeconds>
         <StartTime>2008-09-20T21:59:16</StartTime>
         <NotifyCount>1</NotifyCount>
         <RunLatestVersion>false</RunLatestVersion>
      </JobAttributes>
   </GetJobDetailsResponse>
</SOAP-ENV:Body>
```

Retrieving job properties using GetNoticeJobDetails

When a nonadministrative user receives a notification about a job he did not submit, he can use GetNoticeJobDetails to retrieve job details. In addition to the parameters GetJobDetails uses, a GetNoticeJobDetails operation can include the following elements:

- NotifiedChannelId restricts the search to jobs that notify the specified channel ID.
- NotifiedChannelName restricts the search to jobs that notify the specified channel name.

The following GetNoticeJobDetails request uses ResultDef to specify the properties to retrieve and restricts the search to jobs that notify the Managers channel:

```
<SOAP-ENV:Body>
   <GetNoticeJobDetails>
      <JobId>30</JobId>
      <ResultDef>
         <String>InputDetail</String>
         <String>Schedules</String>
         <String>Status</String>
         <String>ReportParameters</String>
      </ResultDef>
      <NotifiedChannelName>Managers</NotifiedChannelName>
   </GetNoticeJobDetails>
</SOAP-ENV:Body>
```

A GetNoticeJobDetails request always returns JobAttributes. The preceding request returns the requested parameters and JobAttributes for jobs that notify the Managers channel.

```
<SOAP-ENV:Body>
   <GetNoticeJobDetailsResponse>
      <JobAttributes>
         <JobId>30</JobId>
         <JobName>Portfolio</JobName>
         <Priority>500</Priority>
         <Owner>Administrator</Owner>
         <JobType>RunReport</JobType>
         …
      </JobAttributes>
      <InputDetail>
         <OutputMaxVersion>0</OutputMaxVersion>
         <RetryOption>VolumeDefault</RetryOption>
         <MaxRetryCount>10</MaxRetryCount>
         <RetryInterval>6</RetryInterval>
         <MaxVersions>3</MaxVersions>
         <ArchiveOnExpire>false</ArchiveOnExpire>
         …
      </InputDetail>
      <Schedules>
         …
      </Schedules>
```

```
      <Status>Starting…</Status>
      <ReportParameters>
         <ParameterValue>
            <Name>RunDate</Name>
            <Value>2008-09-30T00:00:00</Value>
         </ParameterValue>
         …
      </ReportParameters>
   </GetNoticeJobDetailsResponse>
</SOAP-ENV:Body>
```

Canceling a job

Use CancelJob to stop a print or run request. You can cancel both scheduled and immediate job requests while they are in the Running or Pending state.

Because you identify the job to cancel by its JobId, you must run GetJobDetails if you do not know the JobId.

The following example is a CancelJob request:

```
<SOAP-ENV:Body>
   <CancelJob>
      <JobId>55</JobId>
   </CancelJob>
</SOAP-ENV:Body>
```

CancelJob returns one of the following status messages:

- Succeeded, if the cancellation succeeds
- Failed, if the report completes before or during the cancellation attempt
- InActive, if the job is not in the Running or Pending state

The following example shows a success status message:

```
<SOAP-ENV:Body>
   <CancelJobResponse>
      <Status>Succeeded</Status>
   </CancelJobResponse>
</SOAP-ENV:Body>
```

Working with a resource group

A resource group controls the Factory processes an BIRT iServer uses to run a synchronous or asynchronous job. A resource group specifies a set of Factory processes that execute only jobs assigned to the resource group.

Using the Actuate Information Delivery API, you can perform the following tasks related to resource groups:

- Create, update, and delete a resource group.
- Retrieve a list of resource groups for an BIRT iServer.
- Retrieve details about a specific resource group or all resource groups on an BIRT iServer.
- Reserve a resource group to run specific jobs.
- Enable and disable a resource group.
- Activate a resource group on an BIRT iServer.

The default resource groups are:

- Default Sync runs synchronous jobs.
- Default Async runs asynchronous jobs.

You can create additional resource groups to control processing of specific jobs. When you create a resource group, you define the following properties for it:

- The types of executable files the resource group can run.
- The type of job the resource group can run, either synchronous or asynchronous.
- Whether the resource group is reserved. A reserved resource group runs only the jobs you assign to it using the TargetResourceGroup element in the SOAP header of an ExecuteReport request. You can reserve only a synchronous resource group.
- The priority range of jobs the resource group can run. You can set a priority range only for an asynchronous resource group.
- Whether the resource group is enabled.
- The number of Factory processes assigned to the resource group.
- The BIRT iServer nodes that are members of the resource group.
- The Encyclopedia volumes that can use the resource group's Factory processes. You can assign a resource group to a single Encyclopedia volume in a cluster or to all volumes in the cluster. The Encyclopedia volume to which you assign a resource group does not have to be online, although the resource group will not process jobs until the volume is online.

Creating an asynchronous resource group

To create an asynchronous resource group, you must set the Type element to Async. Use Disabled to enable or disable the resource group.

Use Volume to indicate whether the resource group is assigned to a specific Encyclopedia volume. Valid settings for Volume are an Encyclopedia volume name or an empty string. If you set an Encyclopedia volume name and a request to generate a job comes from a different volume, BIRT iServer rejects the job. If you set an empty string, you assign the resource group to all Encyclopedia volumes on BIRT iServer.

Set a priority range using MinPriority and MaxPriority. The resource group runs only jobs that have priority settings within this range.

If you set a value in Reserved for an asynchronous resource group, BIRT iServer ignores the value. You can reserve only a synchronous resource group.

In ResourceGroupSettings, indicate the name of the BIRT iServer on which the resource group runs. Set Activate to True or False to indicate whether the BIRT iServer is a member of the resource group. Indicate the maximum number of Factory processes to assign to the resource group. List the executable file types the resource group can run.

The following example creates a resource group to run asynchronous jobs from the Corinth Encyclopedia volume, using any one of eight executable file types:

```
<SOAP-ENV:Body>
   <CreateResourceGroup>
      <ResourceGroup>
         <Name>End-of-Quarter Sales</Name>
         <Disabled>false</Disabled>
         <Type>async</Type>
         <Volume>Corinth</Volume>
         <MinPriority>500</MinPriority>
         <MaxPriority>1000</MaxPriority>
         <Reserved>false</Reserved>
      </ResourceGroup>
      <ResourceGroupSettingsList>
         <ResourceGroupSettings>
            <ServerName>Orinda</ServerName>
            <Activate>true</Activate>
            <MaxFactory>2</MaxFactory>
            <FileTypes>
               <String>ROX</String>
               <String>VTF</String>
               <String>VTX</String>
               <String>ROI</String>
               <String>DOX</String>
               <String>DOI</String>
               <String>DP4</String>
            </FileTypes>
         </ResourceGroupSettings>
```

```
      </ResourceGroupSettingsList>
   </CreateResourceGroup>
</SOAP-ENV:Body>
The response to CreateResourceGroup is an empty operation if the
   job succeeds.
<SOAP-ENV:Body>
   <CreateResourceGroupResponse>
   </CreateResourceGroupResponse>
</SOAP-ENV:Body>
```

If the job fails, an error message appears.

Creating a synchronous resource group

When you create a synchronous resource group, set Type to Sync. If you set priority settings for a synchronous resource group, the Factory ignores them.

Using the Reserved element, you can reserve a synchronous resource group to run only those files assigned to the group in the TargetResourceGroup element of the SOAP header of an ExecuteReport request.

```
<SOAP-ENV:Body>
   <CreateResourceGroup>
      <ResourceGroup>
         <Name>Sales Forecasts</Name>
         <Disabled>false</Disabled>
         <Type>sync</Type>
         <Volume>Fairfield</Volume>
         <Reserved>false</Reserved>
      </ResourceGroup>
   </CreateResourceGroup>
</SOAP-ENV:Body>
```

The response to CreateResourceGroup is an empty operation if the request succeeds. If the request fails, an error message appears.

Updating a resource group's properties

Use UpdateResourceGroup to modify the properties of a single resource group. You can update some, but not all, properties of a resource group using UpdateResourceGroup. For example, you can:

- Enable or disable a resource group.
- Add or modify a description.
- Change the Encyclopedia volume.
- Change the priority range of an asynchronous resource group.
- Change whether the resource group is reserved.

- Update the file types assigned to the resource group.
- Change the setting that indicates whether the BIRT iServer is a member of the resource group.
- Change the maximum number of Factory processes reserved for the resource group.

You cannot update the resource group name or type, or the name of the BIRT iServer on which the resource group runs.

The following example updates a resource group by changing the file types it can run and the maximum number of Factory processes assigned to the resource group:

```
<SOAP-ENV:Body>
   <UpdateResourceGroup>
      <ResourceGroup>
         <Name>End-of-Quarter Sales</Name>
         <Disabled>false</Disabled>
         <Type>async</Type>
         <Volume>Corinth</Volume>
         <MinPriority>500</MinPriority>
         <MaxPriority>1000</MaxPriority>
         <Reserved>false</Reserved>
      </ResourceGroup>
      <ResourceGroupSettingsList>
         <ResourceGroupSettings>
            <ServerName>Orinda</ServerName>
            <Activate>true</Activate>
            <MaxFactory>4</MaxFactory>
            <FileTypes>
               <String>DP4</String>
            </FileTypes>
         </ResourceGroupSettings>
      </ResourceGroupSettingsList>
   </UpdateResourceGroup>
</SOAP-ENV:Body>
```

The response to UpdateResourceGroup is an empty operation if the request succeeds. If the request fails, an error message appears.

Getting a list of resource groups

To retrieve a list of resource groups available to BIRT iServer, use GetResourceGroupList, as shown in the following example:

```
<SOAP-ENV:Body>
   <GetResourceGroupList/>
</SOAP-ENV:Body>
```

The preceding request returns two lists, one for asynchronous resource groups and one for synchronous resource groups. Each list contains properties of each resource group, including the name, type, description, whether the resource group is enabled, and whether it is assigned to an Encyclopedia volume.

```
<SOAP-ENV:Body>
   <GetResourceGroupListResponse>
      <AsyncResourceGroupList>
         <ResourceGroup>
            <Name>Default Async</Name>
            <Disabled>false</Disabled>
            <Description>
               Default resource group for asynchronous jobs
            </Description>
            <Type>Async</Type>
            <MinPriority>0</MinPriority>
            <MaxPriority>1000</MaxPriority>
         </ResourceGroup>
      </AsyncResourceGroupList>
      <SyncResourceGroupList>
         <ResourceGroup>
            <Name>Default Sync</Name>
            <Description>Default resource group for synchronous
               jobs</Description>
            <Type>Sync</Type>
            <Reserved>false</Reserved>
         </ResourceGroup>
      </SyncResourceGroupList>
   </GetResourceGroupListResponse>
</SOAP-ENV:Body>
```

Retrieving the properties of a specific resource group

Use GetResourceGroupInfo to retrieve a list of properties for a specific resource group, as shown in the following example:

```
<SOAP-ENV:Body>
   <GetResourceGroupInfo>
      <Name>End-of-Quarter Sales</Name>
   </GetResourceGroupInfo>
</SOAP-ENV:Body>
```

The preceding request returns the properties of the resource group:

```
<SOAP-ENV:Body>
   <GetResourceGroupInfoResponse>
      <ResourceGroup>
         <Name>End-of-Quarter Sales</Name>
         <Disabled>false</Disabled>
```

```
      <Type>async</Type>
      <Volume>end00166</Volume>
      <MinPriority>500</MinPriority>
      <MaxPriority>1000</MaxPriority>
   </ResourceGroup>
   <ResourceGroupSettingsList>
      <ResourceGroupSettings>
         <ServerName>end00166</ServerName>
         <Activate>true</Activate>
         <MaxFactory>0</MaxFactory>
         <FileTypes>
            <String>ROX</String>
            <String>RPX</String>
            …
         </FileTypes>
      </ResourceGroupSettings>
   </ResourceGroupSettingsList>
</GetResourceGroupInfoResponse>
</SOAP-ENV:Body>
```

Retrieving properties for all resource groups on a BIRT iServer

Use GetServerResourceGroupConfiguration to retrieve a list of properties for each resource group on a specific BIRT iServer. The request returns such information as the type of job and the file types each resource group runs, and the maximum Factory processes for each resource group. The Activate element indicates whether BIRT iServer is available to run jobs assigned to the resource group.

```
<SOAP-ENV:Body>
   <GetServerResourceGroupConfiguration>
      <ServerName>end00166</ServerName>
   </GetServerResourceGroupConfiguration>
</SOAP-ENV:Body>
```

The following response shows the settings for the default resource groups:

```
<SOAP-ENV:Body>
   <GetServerResourceGroupConfigurationResponse>
      <ServerResourceGroupSettingList>
         <ServerResourceGroupSetting>
            <ResourceGroupName>Default Async</ResourceGroupName>
            <Type>Async</Type>
            <Activate>true</Activate>
            <MaxFactory>2</MaxFactory>
```

```
            <FileTypes>
               <String>ROX</String>
               <String>RPX</String>
               <String>VTF</String>
               <String>VTX</String>
               <String>SQT</String>
               <String>SQF</String>
               <String>ROI</String>
               <String>DOX</String>
               <String>DOI</String>
               <String>DP4</String>
            </FileTypes>
         </ServerResourceGroupSetting>
         <ServerResourceGroupSetting>
            <ResourceGroupName>Default Sync</ResourceGroupName>
            <Type>Sync</Type>
            <Activate>true</Activate>
            <MaxFactory>2</MaxFactory>
            <FileTypes>
               <String>ROX</String>
               <String>RPX</String>
               <String>VTF</String>
               <String>VTX</String>
               <String>SQT</String>
               <String>SQF</String>
               <String>ROI</String>
               <String>DOX</String>
               <String>DP4</String>
            </FileTypes>
         </ServerResourceGroupSetting>
      </ServerResourceGroupSettingList>
   </GetServerResourceGroupConfigurationResponse>
</SOAP-ENV:Body>
```


Setting properties for the resource groups on a BIRT iServer

SetServerResourceGroupConfiguration supports configuring all the resource groups on an BIRT iServer. Use this operation to:

- Change the setting that indicates whether the iServer is a member of the resource group.
- Set or change the maximum number of Factory processes available to the resource group.
- Set or change the file types the resource group can run.

SetServerResourceGroupConfiguration is available only to an Encyclopedia volume administrator or a user in the Administrator role.

```
<SOAP-ENV:Body>
   <SetServerResourceGroupConfiguration>
      <ServerName>end00166</ServerName>
      <ServerResourceGroupSettingList>
         <ServerResourceGroupSetting>
            <ResourceGroupName>Default Sync</ResourceGroupName>
            <Activate>true</Activate>
            <Type>sync</Type>
            <MaxFactory>2</MaxFactory>
            <FileTypes>
               <String>RPX</String>
               …
            </FileTypes>
         </ServerResourceGroupSetting>
         <ServerResourceGroupSetting>
            <ResourceGroupName>Default Async</ResourceGroupName>
            <Activate>true</Activate>
            <Type>async</Type>
            <MaxFactory>2</MaxFactory>
            <FileTypes>
               <String>ROX</String>
               <String>RPX</String>
               <String>DP4</String>
            </FileTypes>
         </ServerResourceGroupSetting>
         <ServerResourceGroupSetting>
            <ResourceGroupName>Quarterly Sales
            </ResourceGroupName>
            <Activate>true</Activate>
            <Type>sync</Type>
            <MaxFactory>2</MaxFactory>
            <FileTypes>
               <String>DOX</String>
            </FileTypes>
         </ServerResourceGroupSetting>
         <ServerResourceGroupSetting>
            <ResourceGroupName>Regional Forecasts
            </ResourceGroupName>
            <Activate>true</Activate>
            <Type>sync</Type>
            <MaxFactory>2</MaxFactory>
            <FileTypes>
               <String>ROX</String>
```

```
            <String>ROI</String>
            <String>DOX</String>
            <String>DOI</String>
            <String>DP4</String>
         </FileTypes>
      </ServerResourceGroupSetting>
   </ServerResourceGroupSettingList>
</SetServerResourceGroupConfiguration>
</SOAP-ENV:Body>
```

The response to SetServerResourceGroupConfiguration is an empty operation if the request succeeds. If the request fails, an error message appears.

Deleting a resource group

To delete a resource group, use DeleteResourceGroup and identify the group to delete, as shown in the following example:

```
<SOAP-ENV:Body>
   <DeleteResourceGroup>
      <Name>End-of-Quarter Sales</Name>
   </DeleteResourceGroup>
</SOAP-ENV:Body>
```

The response to a successful DeleteResourceGroup request is an empty operation if the request succeeds. If the request fails, an error message appears.

Assigning a report to a resource group

You can assign a report to a resource group when you run the report. You must use ExecuteReport and specify the resource group in the optional TargetResourceGroup element of the SOAP header. You can use TargetResourceGroup only to generate a synchronous report.

```
<SOAP-ENV:Header>
   <TargetVolume>end00166</TargetVolume>
   <AuthId>+4yxAKHFJg9FY0JssYijJI5XvkJqDOeA8=</AuthId>
   <TargetResourceGroup>Priority Sync</TargetResourceGroup>
   <Locale>en_US</Locale>
</SOAP-ENV:Header>
<SOAP-ENV:Body>
   <ExecuteReport>
      <JobName>TRANSIENT_JOB</JobName>
      <InputFileId>90</InputFileId>
      <SaveOutputFile>true</SaveOutputFile>
      <RequestedOutputFile>
         <Name>/mltd.roi</Name>
```

```
        <ArchiveRule>
           <FileType>roi</FileType>
        </ArchiveRule>
     </RequestedOutputFile>
     <ProgressiveViewing>true</ProgressiveViewing>
     <WaitTime>20</WaitTime>
   </ExecuteReport>
</SOAP-ENV:Body>
```

The preceding request returns a ConnectionHandle, the status of the report generation, an object ID, and the output file type.

```
<SOAP-ENV:Header>
   <ConnectionHandle>g7whmBpcJkcHwxpUC6qxppw=
   </ConnectionHandle>
</SOAP-ENV:Header>
<SOAP-ENV:Body>
   <ExecuteReportResponse>
      <Status>FirstPage</Status>
      <OutputFileType>ROI</OutputFileType>
      <ObjectId>93</ObjectId>
      <ConnectionHandle>g7whmBpcJcJkcHwxpUC6qxppw=
      </ConnectionHandle>
   </ExecuteReportResponse>
</SOAP-ENV:Body>
```

Assigning a job to a resource group

You can assign a job to a resource group when you submit the job or update a job schedule. Use SubmitJob or UpdateJobSchedule to set properties as you would for any other job. Use the ResourceGroup element to assign the job to a resource group. The following example shows how to set the resource group using SubmitJob:

```
<SOAP-ENV:Body>
   <SubmitJob>
      <JobName>OrderUpdates</JobName>
      <Priority>500</Priority>
      <ResourceGroup>Priority Async</ResourceGroup>
      <InputFileId>90</InputFileId>
      <RunLatestVersion>true</RunLatestVersion>
      <RequestedOutputFile>
         <Name>/OrderUpdates.roi</Name>
      </RequestedOutputFile>
      <Operation>RunReport</Operation>
```

```
      <ParameterValues>
         <ParameterValue>
            <Name>NewReportApp::OrderInput::orders_orderID</Name>
            <Value>1645</Value>
         </ParameterValue>
      </ParameterValues>
      <Schedules>
         <TimeZoneName>Pacific Standard Time</TimeZoneName>
         <ScheduleDetails>
            <JobScheduleDetail>
            …
            </JobScheduleDetail>
         </ScheduleDetails>
      </Schedules>
      <NotifyUsersByName>
         <String>Carl Jacobs</String>
      </NotifyUsersByName>
   </SubmitJob>
</SOAP-ENV:Body>
```

The response to SubmitJob is the JobId.

```
<SOAP-ENV:Body>
   <SubmitJobResponse>
      <JobId>46</JobId>
   </SubmitJobResponse>
</SOAP-ENV:Body>
```

Retrieving the resource group to which a job is assigned

If a user assigns a job to a resource group when submitting the job or updating the schedule, you can determine the resource group using GetJobDetails. Request the resource group in ResultDef, as shown in the following example:

```
<SOAP-ENV:Body>
   <GetJobDetails>
      <JobId>42</JobId>
      <ResultDef>
         <String>Schedules</String>
         <String>ResourceGroup</String>
         <String>InputDetail</String>
      </ResultDef>
   </GetJobDetails>
</SOAP-ENV:Body>
```

If the job is assigned to a resource group, the resource group name appears in JobAttributes in the response.

```
<SOAP-ENV:Body>
   <GetJobDetailsResponse>
      <Schedules>
      …
      </Schedules>
      <InputDetail>
      …
      </InputDetail>
      <JobAttributes>
         <JobId>42</JobId>
         <JobName>mltd</JobName>
         <Priority>500</Priority>
         <Owner>Administrator</Owner>
         <JobType>RunReport</JobType>
         <State>Scheduled</State>
         …
         <ResourceGroup>Default Async</ResourceGroup>
      </JobAttributes>
   </GetJobDetailsResponse>
</SOAP-ENV:Body>
```

Working with a query

Actuate Query is an Actuate licensing option that supports using a data object executable (.dox) file to generate a customizable query. You can view and use the data in several display formats.

You can use a DOX to generate a data object instance (.doi) file or a data object value (.dov) file, depending on the request you send:

- CreateQuery generates a DOV.
- ExecuteQuery generates a DOI.

A DOI is a listing report that can display grouped, sorted, filtered, and aggregate data. A DOI can be a temporary file or you can save it in the Encyclopedia volume. A DOV contains parameters, sort order, filtering information and other information about the object. You can use a DOV to run or schedule a query and to view query properties.

You can view the output of a query in Excel, PDF, DHTML, or e.Analysis format. e.Analysis is available only if your Actuate license includes the Actuate e.Analysis Option. When you download the output, you can save it in Excel Data, Excel Display, RTF, or Fully Editable RTF format.

The Actuate Information Delivery API supports changing the data rows and the grouping, sorting, and filtering of data when the user runs the query. It also supports showing the row count in subtotaled data.

Figure 4-2 shows an example of query output. This example groups data according to customer name, and provides data about the order ID, order total, customer's city, and sales representative's last name. The file displays a subtotal for each customer. When you display a subtotal, BIRT iServer calculates a grand total at the end of the document.

Customer Orders

Customer:	Computer MicroSystems		
City	Order ID	Order Total	Representative
New Bedford	1125	$227,024.00	Firrelli
New Bedford	1125	$202,754.00	Firrelli
White Plains	1145	$130,753.00	Thompson
New Bedford	1720	$202,754.00	Firrelli
New Bedford	1720	$227,024.00	Firrelli
Customer:	Computer MicroSystems		
	Sum:	$990,309.00	

Customer:	Computer Systems Corp.		
City	Order ID	Order Total	Representative
Newark	1085	$299,917.00	Hernandez
Customer:	Computer Systems Corp.		
	Sum:	$299,917.00	

Customer:	Design Boards		
City	Order ID	Order Total	Representative
Scranton	1630	$737,059.00	Howard
Trenton	1750	$160,945.00	Jennings
Customer:	Design Boards		
	Sum:	$898,004.00	

Customer:	Design Boards Co.		
City	Order ID	Order Total	Representative
New Rochelle	1435	$195,505.00	Barajas
Customer:	Design Boards Co.		
	Sum:	$195,505.00	

Figure 4-2 A query output example

Using the Actuate Information Delivery API, you can work with the output in the following ways:

- Add or remove data columns.
- Group and sort data.
- Filter data, using standard or custom filters.
- Create totals, subtotals, averages, and minimum and maximum counts.
- Choose a display format for the output.
- Save the display format, parameters, filters, sort order, and other query information in a DOV.
- Indicate whether the client application prompts the query user to change the columns, grouping, sorting, filtering, and aggregation properties when running the query.

About information object file types

Table 4-1 describes the file types related to information objects.

Table 4-1 Information object file types

File type	Description
DOX	Data object executable file. An executable file that contains a data source connection and a customizable query. The DOX serves as the input to a request to create or execute a query. You also can use the DOX to retrieve details about a query. A DOX can depend on a data object value (.dov) file.
DOI	Data object instance file. The output of a request to execute or schedule a query.
DOV	Data object value file. The input to a request to run or schedule a query. You also can use a DOV to retrieve details about a query.

About query programming tasks

Table 4-2 describes the Actuate Information Delivery API operations that support working with a query.

Table 4-2 Query operations

Operation	Programming task
CreateQuery	Creating a data object value (.dov) file from a data object executable (.dox) file.
ExecuteQuery	Generating a synchronous data object instance (.doi) file from a DOX.
GetJobDetails	Viewing the details of a scheduled query.
GetNoticeJobDetails	Viewing the details of a notification for a scheduled query.
GetQuery	Getting query details, such as column names and parameter values, from a DOX or a DOV.
SubmitJob	Submitting a scheduled query.
UpdateJobSchedule	Modifying the schedule or other details of a scheduled query.

Generating a data object instance file

Use ExecuteQuery to generate a data object instance (.doi) file from a data object executable (.dox) or a data object value (.dov) file. You must provide the name of the file to use as input. You can specify the data columns to include in the output and indicate how to group the data. You also can aggregate Integer data to create totals, subtotals, averages, and minimum or maximum counts, as shown in the following example:

```
<SOAP-ENV:Body>
   <ExecuteQuery>
      <JobName>/CustomerOrders.dox</JobName>
      <InputFileName>/CustomerOrders.dox</InputFileName>
      <SaveOutputFile>true</SaveOutputFile>
      <Query>
         <AvailableColumnList>
            <ColumnDefinition>
               <Name>customers_city</Name>
               <DisplayName>customers.city</DisplayName>
               <DataType>String</DataType>
               <EnableFilter>true</EnableFilter>
            </ColumnDefinition>
            <ColumnDefinition>
               <Name>customers_customName</Name>
               <DisplayName>customers.customName</DisplayName>
               <DataType>String</DataType>
               <EnableFilter>true</EnableFilter>
            </ColumnDefinition>
            …
         </AvailableColumnList>
         <SelectColumnList>
            <String>customers_customName</String>
            <String>customers_city</String>
            <String>OrderTotals_OrderTotal</String>
         </SelectColumnList>
         <PromptSelectColumnList>true</PromptSelectColumnList>
         <GroupingList>
            <Grouping>
               <GroupKey>customers_customName</GroupKey>
               <GroupSortOrder>ASC</GroupSortOrder>
            </Grouping>
         </GroupingList>
         <PromptGroupingList>true</PromptGroupingList>
         <AggregationList>
            <Aggregation>
               <ColumnName>OrderTotals_OrderTotal</ColumnName>
               <AggregationFunctions>
                  <String>Sum</String>
               </AggregationFunctions>
            </Aggregation>
         </AggregationList>
         <PromptAggregationList>true</PromptAggregationList>
         <GroupingEnabled>true</GroupingEnabled>
         <ShowRowCount>true</ShowRowCount>
```

```
            <SortColumnList>
               <SortColumn>
                  <Name>OrderTotals_OrderTotal</Name>
                  <SortOrder>ASC</SortOrder>
               </SortColumn>
            </SortColumnList>
            <PromptSortColumnList>true</PromptSortColumnList>
            <OutputFormat>DHTML</OutputFormat>
            <PromptOutputFormat>true</PromptOutputFormat>
            <PageHeader>Customer Orders by City</PageHeader>
         </Query>
         <ProgressiveViewing>true</ProgressiveViewing>
         <RunLatestVersion>true</RunLatestVersion>
         <WaitTime>20</WaitTime>
      </ExecuteQuery>
   </SOAP-ENV:Body>
```

The Query element determines the content and format of the output file. In the preceding example, Query contains the elements shown in Table 4-3.

Table 4-3 Example query elements

Element	Description
AvailableColumnList	Defines the database columns available for the query. Each available column has a name, an optional display name, and a data type. EnableFilter indicates whether the file user can change filtering options for the column when running the query in the client application
SelectColumnList	Indicates which of the available columns to include in the output file.
PromptSelectColumnList	Indicates whether the client application prompts the user to select the columns to include in the query.
GroupingList	Indicates the group keys and group sort order for the output file.
PromptGroupingList	Indicates whether the client application prompts the user to group query data.
AggregationList	Shows the aggregation functions to perform, such as getting totals, subtotals, averages, and minimum and maximum counts. Each aggregation function must correspond to a data column.
PromptAggregationList	Indicates whether the client application prompts the user to create totals, subtotals, averages, and minimum or maximum counts for Integer data in the query.

(continues)

Table 4-3 Example query elements (continued)

Element	Description
GroupingEnabled	Supports backward compatibility. If the DOX was created using Actuate 7 Service Pack 2 or a later release, set GroupingEnabled to True. BIRT iServer Information and Management Consoles enable the grouping and aggregation pages. If the DOX was created using an earlier version of an Actuate product, set GroupingEnabled to False.
ShowRowCount	Indicates whether to include a count of the data rows. A row count can only appear with subtotal information.
SortColumnList	The list of columns on which to sort. SortOrderList shows the sort order for the output file columns.
PromptSortColumnList	Indicates whether the client application prompts the user to sort query data.
OutputFormat	Indicates the display format for the output file.
PromptOutputFormat	Indicates whether the client application prompts the file user to choose a different format from the one set in OutputFormat.
PageHeader	Supports creating a title that appears at the top of each page in the output file.

ExecuteQuery returns the query status, the ObjectId of the output file, the output file type, and a ConnectionHandle:

```
<SOAP-ENV:Body>
   <ExecuteQueryResponse>
      <Status>FirstPage</Status>
      <ObjectId>1442</ObjectId>
      <OutputFileType>DOI</OutputFileType>
      <ConnectionHandle>g7whmBpUho+tg5MUYUgKHLkAq7
         RmnEm0pEgUAaXCZHB8MaV=</ConnectionHandle>
   </ExecuteQueryResponse>
</SOAP-ENV:Body>
```

Filtering data in a query

When you create or execute a query, you can filter the data it contains. For each filtering option you set, you also can determine whether a user can change the filtering criteria in the client application when running the report.

To enable filtering for a column in a query, set EnableFilter to True in the ColumnDefinition element:

```
<ColumnDefinition>
   <Name>customers_city</Name>
   <DisplayName>City</DisplayName>
```

```
   <DataType>String</DataType>
   <EnableFilter>true</EnableFilter>
</ColumnDefinition>
```

The FilterCriteria element of a request to create or execute a query lists the column to use as a filter, the operand value with which to filter, the operator to use, and whether to support changes to these filtering criteria by a user.

```
<FilterCriteria>
   <Name>customers_city</Name>
   <Value>Boston</Value>
   <Operation>=</Operation>
   <PromptFilterCriteria>true</PromptFilterCriteria>
</FilterCriteria>
```

The Value element of FilterCriteria sets the operand to use. Operation sets the operator to use. The operators you can use vary according to the data type of the column. Table 4-4 describes the available operators and the data types to which each operator applies.

Table 4-4 Operators and their data types

Operator	Data types
=	String, Integer, Double, Currency, DateTime, Boolean
<	String, Integer, Double, Currency, DateTime, Boolean
<=	String, Integer, Double, Currency, DateTime, Boolean
>	String, Integer, Double, Currency, DateTime, Boolean
>=	String, Integer, Double, Currency, DateTime, Boolean
<>	String, Integer, Double, Currency, DateTime
LIKE	String
NOT LIKE	String
IN	String, Integer, Double, Currency, DateTime, Boolean
IS NULL	String, Integer, Double, Currency, DateTime, Boolean
IS NOT NULL	String, Integer, Double, Currency, DateTime, Boolean

The following example shows a CreateQuery request that sets filtering criteria:

```
<SOAP-ENV:Body>
   <CreateQuery>
      <BasedOnFileName>/OrderStatus.dox</BasedOnFileName>
      <QueryFile>
         <Name>/OrderStatus_Q3.dov</Name>
```

```
      <ReplaceExisting>true</ReplaceExisting>
    </QueryFile>
    <Query>
      <AvailableColumnList>
        <ColumnDefinition>
          <Name>customers_city</Name>
          <DisplayName>City</DisplayName>
          <DataType>String</DataType>
          <EnableFilter>true</EnableFilter>
        </ColumnDefinition>
        …
      </AvailableColumnList>
      <SelectColumnList> … </SelectColumnList>
      <PromptSelectColumnList>false</PromptSelectColumnList>
      <GroupingList> … </GroupingList>
      <PromptGroupingList>false</PromptGroupingList>
      <AggregationList> … </AggregationList>
      <PromptAggregationList>false</PromptAggregationList>
      <FilterList>
        <FilterCriteria>
          <Name>customers_city</Name>
          <Value>Boston</Value>
          <Operation>=</Operation>
          <PromptFilterCriteria>true</PromptFilterCriteria>
        </FilterCriteria>
        <FilterCriteria>
          <Name>orders_status</Name>
          <Operation>IS NOT NULL</Operation>
          <PromptFilterCriteria>true</PromptFilterCriteria>
        </FilterCriteria>
      </FilterList>
      <SortColumnList>
        <SortColumn>
          <Name>customers_city</Name>
          <SortOrder>ASC</SortOrder>
        </SortColumn>
      </SortColumnList>
       …
    </Query>
  </CreateQuery>
</SOAP-ENV:Body>
```

Scheduling a query

SubmitJob creates a data object instance (.doi) file on a scheduled basis using a data object value (.dov) file as input. When you submit a query to run on a

schedule, use the Query element to define the columns to appear in the output file, the data grouping, the sort order, and other properties of the query.

As with other jobs, you can indicate whether to send an e-mail notice of success or failure, and you can choose the format of the notice.

Using the Schedules element, you can schedule a query to run immediately, once at a specific time, or on a recurring basis. In the following example, the query runs daily between November 5, 2008 and November 26, 2008 at 12:43 P.M:

```
<SOAP-ENV:Body>
   <SubmitJob>
      <JobName>CustomerOrders</JobName>
      <Priority>500</Priority>
      <InputFileName>/CustomerOrders.dov</InputFileName>
      <RunLatestVersion>true</RunLatestVersion>
      <RequestedOutputFile>
         <Name>/CustomerOrders.doi</Name>
         <ReplaceExisting>true</ReplaceExisting>
      </RequestedOutputFile>
      <Operation>RunReport</Operation>
      <Query>
         …
      </Query>
      <Schedules>
         <TimeZoneName>Pacific Standard Time</TimeZoneName>
         <ScheduleDetails>
            <JobScheduleDetail>
               <ScheduleType>Daily</ScheduleType>
               <ScheduleStartDate>2008-11-05</ScheduleStartDate>
               <ScheduleEndDate>2008-11-26</ScheduleEndDate>
               <Daily>
                  <FrequencyInDays>1</FrequencyInDays>
                  <OnceADay>12:43:00</OnceADay>
               </Daily>
            </JobScheduleDetail>
         </ScheduleDetails>
      </Schedules>
      <SendEmailForSuccess>true</SendEmailForSuccess>
      <SendEmailForFailure>true</SendEmailForFailure>
      <AttachReportInEmail>true</AttachReportInEmail>
      <OverrideRecipientPref>true</OverrideRecipientPref>
      <EmailFormat>RTFTextBox</EmailFormat>
   </SubmitJob>
</SOAP-ENV:Body>
```

A SubmitJob request returns a JobId for the query:

```
<SOAP-ENV:Body>
   <SubmitJobResponse>
      <JobId>52</JobId>
   </SubmitJobResponse>
</SOAP-ENV:Body>
```

Creating a data object value file

Use CreateQuery to create a data object value (.dov) file, which a user can run to submit a query as a job. Provide a path to the data object executable (.dox) file on which to base the query. To create a DOV, you must know the parameters of the executable file, if there are any. CreateQuery contains a required Query element, which defines the columns available to the report, the sorting and filtering settings, a parameter definition list if the DOX uses parameters, and other information.

The following example is a request to create a DOV:

```
<SOAP-ENV:Body>
   <CreateQuery>
      <BasedOnFileName>/TopCustomers.dox</BasedOnFileName>
      <QueryFile>
         <Name>/TopCustomers.dov</Name>
         <ReplaceExisting>true</ReplaceExisting>
      </QueryFile>
      <Query>
         <AvailableColumnList>
            <ColumnDefinition>
               <Name>customers_city</Name>
               <DisplayName>customers.city</DisplayName>
               <DataType>String</DataType>
               <EnableFilter>false</EnableFilter>
            </ColumnDefinition>
            …
         </AvailableColumnList>
         <SelectColumnList>
            <String>customers_customName</String>
            <String>salesreps_last</String>
            <String>customers_city</String>
            <String>customers_state</String>
         </SelectColumnList>
         <PromptSelectColumnList>false</PromptSelectColumnList>
         <GroupingList>
            <Grouping>
               <GroupKey>customers_customName</GroupKey>
               <GroupSortOrder>ASC</GroupSortOrder>
            </Grouping>
```

```
            …
         </GroupingList>
         <PromptGroupingList>false</PromptGroupingList>
         <PromptAggregationList>false</PromptAggregationList>
         <GroupingEnabled>true</GroupingEnabled>
         <ShowRowCount>true</ShowRowCount>
         <SortColumnList>
            <SortColumn>
               <Name>customers_city</Name>
               <SortOrder>ASC</SortOrder>
            </SortColumn>
         </SortColumnList>
         <PromptSortColumnList>false</PromptSortColumnList>
         <OutputFormat>DHTML</OutputFormat>
         <PromptOutputFormat>true</PromptOutputFormat>
      </Query>
   </CreateQuery>
</SOAP-ENV:Body>
```

Table 4-5 describes the key elements of this request.

Table 4-5 Example key elements

Element	Description
BasedOnFileName	Defines the executable file to use to create the query. You also can use BasedOnFileId.
QueryFile	Defines properties of the output file, including the file name, a description if there is one, and whether to replace an existing version of the same query.
Query	Defines the properties of the query. In this example: ■ EnableFilter is False for each of the columns shown, meaning that a user cannot filter data from those columns. ■ PromptSelectColumnList is False, meaning that the client application does not prompt a user to choose the columns to include when the query runs. ■ PromptGroupingList is False, meaning that the client application does not prompt a user to change the data groups. ■ GroupingEnabled is True, meaning that the DOX was created using Actuate 7 Service Pack 2 or higher.

(continues)

Table 4-5 Example key elements (continued)

Element	Description
Query *(continued)*	■ OutputFormat is DHTML. Unless the user chooses a different format when the document runs, the document returns in DHTML format. ■ PromptOutputFormat is True, meaning that the client application prompts a user to choose a different output format from the one specified in OutputFormat.

The preceding request returns the file identifier, file name and location, and other identifying information about the output file:

```
<SOAP-ENV:Body>
   <CreateQueryResponse>
      <QueryFile>
         <Id>104</Id>
         <Name>/TopCustomers.dov</Name>
         <FileType>DOV</FileType>
         <Version>1</Version>
      </QueryFile>
   </CreateQueryResponse>
</SOAP-ENV:Body>
```

Viewing the details of a query

Use GetQuery to view the parameters and other properties of a query. You can use the parameters to create a data object value (.dov) file.

In GetQuery, provide the file ID or file name for the data object executable (.dox) file, as shown in the following example:

```
<SOAP-ENV:Body>
   <GetQuery>
      <QueryFileId>19</QueryFileId>
   </GetQuery>
</SOAP-ENV:Body>
```

In the response to this request, the AvailableColumnList element lists details about the database columns available to the query. SelectColumnList indicates which columns the output file uses. The following response indicates that the query requests data from four of the available columns.

```
<SOAP-ENV:Body>
   <GetQueryResponse>
      <Query>
         <AvailableColumnList>
            <ColumnDefinition>
               <Name>customers_customName</Name>
               <DisplayName>customers.customName</DisplayName>
               <DataType>String</DataType>
               <EnableFilter>true</EnableFilter>
            </ColumnDefinition>
            <ColumnDefinition>
               <Name>offices_city</Name>
               <DisplayName>offices.city</DisplayName>
               <DataType>String</DataType>
               <EnableFilter>true</EnableFilter>
            </ColumnDefinition>
            <ColumnDefinition>
               <Name>offices_postalcode</Name>
               <DisplayName>offices.postalcode</DisplayName>
               <DataType>String</DataType>
               <EnableFilter>true</EnableFilter>
            </ColumnDefinition>
            …
         </AvailableColumnList>
         <SelectColumnList>
            <String>customers_customName</String>
            <String>offices_city</String>
            <String>salesreps_last</String>
         </SelectColumnList>
         <PromptSelectColumnList>false</PromptSelectColumnList>
         <SortColumnList>
            <SortColumn>
               <Name>customers_customName</Name>
               <SortOrder>ASC</SortOrder>
            </SortColumn>
            …
         </SortColumnList>
         <PromptSortColumnList>false</PromptSortColumnList>
         <OutputFormat>DHTML</OutputFormat>
         <PromptOutputFormat>true</PromptOutputFormat>
         <PageHeader>Customers and Sales Reps</PageHeader>
         <GroupingEnabled>true</GroupingEnabled>
         <ShowRowCount>false</ShowRowCount>
      </Query>
   </GetQueryResponse>
</SOAP-ENV:Body>
```

Viewing the details of a scheduled query

GetJobDetails retrieves the properties of a scheduled query. In the request, identify the job and use ResultDef to define the properties to retrieve. In the following example, Status is the status of the query. InputDetail returns details about input parameters. ResourceGroup returns the resource group to which the query is assigned.

```
<SOAP-ENV:Body>
   <GetJobDetails>
      <JobId>66</JobId>
      <ResultDef>
         <String>Status</String>
         <String>InputDetail</String>
         <String>ResourceGroup</String>
      </ResultDef>
   </GetJobDetails>
</SOAP-ENV:Body>
```

In the response to the preceding request, Status is empty because the job is not running or pending. GetJobDetails always returns JobAttributes, which displays general job properties, including JobId, JobName, Priority, Owner, JobType, and InputFileName or ID.

```
<SOAP-ENV:Body>
   <GetJobDetailsResponse>
      <Status></Status>
      <InputDetail>
         <OutputMaxVersion>0</OutputMaxVersion>
         <ValueFileType>Temporary</ValueFileType>
         <RetryOption>VolumeDefault</RetryOption>
         <MaxRetryCount>0</MaxRetryCount>
         <RetryInterval>0</RetryInterval>
         <MaxVersions>0</MaxVersions>
         <ArchiveOnExpire>false</ArchiveOnExpire>
         <KeepWorkspace>false</KeepWorkspace>
         <DriverTimeout>-1</DriverTimeout>
         <PollingInterval>10</PollingInterval>
         <SendSuccessNotice>true</SendSuccessNotice>
         <SendFailureNotice>true</SendFailureNotice>
         <RecordSuccessStatus>true</RecordSuccessStatus>
         <RecordFailureStatus>true</RecordFailureStatus>
         <ReplaceLatestVersion>true</ReplaceLatestVersion>
         <NeverExpire>false</NeverExpire>
         <ArchiveRuleInherited>true</ArchiveRuleInherited>
         <IsBundled>false</IsBundled>
         <OverrideRecipientPref>true</OverrideRecipientPref>
         <AttachReportInEmail>false</AttachReportInEmail>
```

```
        <SendEmailForSuccess>false</SendEmailForSuccess>
        <SendEmailForFailure>false</SendEmailForFailure>
      </InputDetail>
      <JobAttributes>
        <JobId>66</JobId>
        <JobName>CustomerOrders</JobName>
        <Priority>500</Priority>
        <Owner>Administrator</Owner>
        <JobType>RunReport</JobType>
        <State>Scheduled</State>
        <InputFileId>146</InputFileId>
        <InputFileName>/CustomerOrders.dox;1</InputFileName>
        <ParameterFileId>153</ParameterFileId>
        <ParameterFileName>/$$$TempROVs/c1792a1f_408.DOV;1
        </ParameterFileName>
        <ActualOutputFileName>/CustomerOrders.doi;0
        </ActualOutputFileName>
        <RequestedOutputFileName>/CustomerOrders.doi
        </RequestedOutputFileName>
        <SubmissionTime>2008-11-11T00:28:20</SubmissionTime>
        <CompletionTime>2008-11-11T00:30:17</CompletionTime>
        <PageCount>200</PageCount>
        <OutputFileSize>36760</OutputFileSize>
        <RoutedToNode>end00166</RoutedToNode>
        <StartTime>2008-11-11T00:30:01</StartTime>
        <NextStartTime>2008-11-12T00:30:00</NextStartTime>
        <ResourceGroup>Default Async</ResourceGroup>
      </JobAttributes>
    </GetJobDetailsResponse>
</SOAP-ENV:Body>
```

Modifying the details of a scheduled query

Use UpdateJobSchedule to modify the schedule on which a query runs. Using the SetQuery element, you can also modify the grouping, sorting, filtering, and aggregation functionality. UpdateJobSchedule is available to an Encyclopedia volume administrator or a user in the Administrator role.

```
<SOAP-ENV:Body>
   <Administrate>
      <AdminOperation>
         <UpdateJobSchedule>
            <UpdateJobScheduleOperationGroup>
               <UpdateJobScheduleOperation>
                  <SetAttributes>
                     <JobName>CustomerOrders-Southwest</JobName>
```

```
      <Priority>1000</Priority>
      <InputFileName>/CustomerOrders.dox
      </InputFileName>
      <RequestedOutputFileName>/SW
         CustomerOrders.doi
      </RequestedOutputFileName>
   </SetAttributes>
</UpdateJobScheduleOperation>
<UpdateJobScheduleOperation>
   <SetQuery>
      <AvailableColumnList>
         <ColumnDefinition>
            <Name>customers_city</Name>
            <DisplayName>City</DisplayName>
            <DataType>String</DataType>
            <EnableFilter>false</EnableFilter>
         </ColumnDefinition>
         <ColumnDefinition>
            …
         </ColumnDefinition>
      </AvailableColumnList>
      <SelectColumnList>
         <String>customers_customName</String>
         <String>customers_city</String>
         <String>OrderTotals_OrderTotal</String>
      </SelectColumnList>
      <PromptSelectColumnList>false
      </PromptSelectColumnList>
      <GroupingList>
         <Grouping>
            <GroupKey>customers_customName
            </GroupKey>
            <GroupSortOrder>ASC</GroupSortOrder>
         </Grouping>
      </GroupingList>
      <PromptGroupingList>false
      </PromptGroupingList>
      <AggregationList>
         <Aggregation>
            <ColumnName>OrderTotals_OrderTotal
            </ColumnName>
            <AggregationFunctions>
               <String>Sum</String>
            </AggregationFunctions>
         </Aggregation>
      </AggregationList>
```

```
                <PromptAggregationList>false
                </PromptAggregationList>
                <GroupingEnabled>true</GroupingEnabled>
                <ShowRowCount>false</ShowRowCount>
                <SortColumnList>
                   <SortColumn>
                      <Name>customers_city</Name>
                      <SortOrder>ASC</SortOrder>
                   </SortColumn>
                </SortColumnList>
                <PromptSortColumnList>false
                </PromptSortColumnList>
                <OutputFormat>DHTML</OutputFormat>
                <PromptOutputFormat>false
                </PromptOutputFormat>
                <PageHeader>Customer Orders</PageHeader>
             </SetQuery>
          </UpdateJobScheduleOperation>
       <UpdateJobScheduleOperation>
       <SetParameters>
          <ReplaceLatestVersion>true</ReplaceLatestVersion>
       </SetParameters>
       </UpdateJobScheduleOperation>
          <UpdateJobScheduleOperation>
             <SetSchedules>
                <TimeZoneName>Pacific Standard Time
                </TimeZoneName>
                <ScheduleDetails>
                   <JobScheduleDetail>
                      <ScheduleType>Daily</ScheduleType>
                      <ScheduleStartDate>2008-11-11
                      </ScheduleStartDate>
                      <Daily>
                         <FrequencyInDays>1</FrequencyInDays>
                         <OnceADay>09:00:00</OnceADay>
                      </Daily>
                   </JobScheduleDetail>
                </ScheduleDetails>
             </SetSchedules>
          </UpdateJobScheduleOperation>
       </UpdateJobScheduleOperationGroup>
       <Id>66</Id>
    </UpdateJobSchedule>
 </AdminOperation>
</Administrate>
</SOAP-ENV:Body>
```

Viewing the details of a query notification

Use GetNoticeJobDetails to retrieve information about a query notification. In ResultDef, you can request details about the query as well. The following operation requests the schedule and query definitions for a specific job:

```
<SOAP-ENV:Body>
   <GetNoticeJobDetails>
      <JobId>10</JobId>
      <ResultDef>
         <String>Schedules</String>
         <String>Query</String>
      </ResultDef>
   </GetNoticeJobDetails>
</SOAP-ENV:Body>
```

The preceding request returns job attributes, schedule details, and query details:

```
<SOAP-ENV:Body>
   <GetNoticeJobDetailsResponse>
      <JobAttributes>
         <JobId>10</JobId>
         <JobName>items</JobName>
         <Priority>500</Priority>
         <Owner>Administrator</Owner>
         <JobType>RunReport</JobType>
         <State>Scheduled</State>
         <InputFileId>14</InputFileId>
         <InputFileName>/items.dox;1</InputFileName>
         <ParameterFileId>24</ParameterFileId>
         …
      </JobAttributes>
      <Schedules>
         <TimeZoneName>Pacific Standard Time</TimeZoneName>
         <ScheduleDetails>
            <JobScheduleDetail>
               <ScheduleType>AbsoluteDate</ScheduleType>
               <ScheduleStartDate>2008-08-09</ScheduleStartDate>
               <ScheduleEndDate>2008-08-09</ScheduleEndDate>
               <AbsoluteDate>
                  <RunOn>2008-08-09</RunOn>
                  <OnceADay>16:44:00</OnceADay>
               </AbsoluteDate>
            </JobScheduleDetail>
         </ScheduleDetails>
      </Schedules>
```

```
      <Query>
         <AvailableColumnList>
            <ColumnDefinition>
               <Name>items_category</Name>
               <DisplayName>items.category</DisplayName>
               <DataType>String</DataType>
               <EnableFilter>true</EnableFilter>
            </ColumnDefinition>
            <ColumnDefinition>
               <Name>items_ID</Name>
               <DisplayName>items.ID</DisplayName>
               <DataType>Integer</DataType>
               <EnableFilter>true</EnableFilter>
            </ColumnDefinition>
               …
         </AvailableColumnList>
         <SelectColumnList>
            <String>items_category</String>
            <String>items_description</String>
            <String>items_extprice</String>
            <String>items_ID</String>
            <String>items_itemcode</String>
            <String>items_orderID</String>
            <String>items_pricequote</String>
            <String>items_quantity</String>
         </SelectColumnList>
         <PromptSelectColumnList>false</PromptSelectColumnList>
         <FilterList>
            <FilterCriteria>
               <Name>items_ID</Name>
               <Value>1</Value>
               <Operation>=</Operation>
               <PromptFilterCriteria>true</PromptFilterCriteria>
            </FilterCriteria>
         </FilterList>
         <PromptSortColumnList>false</PromptSortColumnList>
         <OutputFormat>DHTML</OutputFormat>
         <PromptOutputFormat>true</PromptOutputFormat>
      </Query>
   </GetNoticeJobDetailsResponse>
</SOAP-ENV:Body>
```

Working with multidimensional data

Actuate Analytics Cube Designer supports building a cube profile, which is a design file that contains the specifications for building and running a cube. A cube profile specifies the data to analyze, the structure of the cube, the source data for the cube, and general cube properties.

This section discusses the Information Delivery API operations that support working with multidimensional data. Using the Information Delivery API, you can work with an Actuate cube design profile, cube, cube view, and cube parameter values file in much the same way as you work with other file types. For example, you can upload a file to an Encyclopedia volume, generate a cube from a cube design profile, and search for a cube in the Encyclopedia volume. The multidimensional data file can be an Actuate file type or an external file type. You can work with multidimensional data only if you have an BIRT iServer license that includes Actuate Analytics Option.

Actuate Information Delivery API supports the following programming tasks in Table 4-6 for multidimensional data.

Table 4-6 Multidimensional data operations

Operation	Programming task
CopyFile	Copying a cube design profile, cube, cube view, or cube parameter values file of a specific access type
CreateParameterValues File	Creating a parameter values (.rov) file for a native cube design profile
DeleteFile	Deleting a cube design profile, cube, cube view, or cube parameter values file of a specific access type
DownloadFile	Downloading a cube design profile, cube, cube view, or cube parameter values file
ExecuteReport	Generating a cube from a cube design profile
ExportParametersToFile	Exporting the parameters of a cube design profile
GetFileDetails	Viewing properties of a profile, cube, cube view, or cube parameter values file
GetFolderItems	Retrieving a cube design profile, cube, cube view, or cube parameter values file of a specific access type in a folder
GetJobDetails	Viewing properties of a scheduled cube
ImportParameters FromFile	Importing parameters to a cube design profile
MoveFile	Moving a cube or related file of a specific access type

Table 4-6 Multidimensional data operations

Operation	Programming task
SelectFiles	Searching for a cube of a specific access type
SubmitJob	Scheduling cube generation
UpdateFile	Updating the properties of a profile, cube, cube view, or parameter values file
UpdateJobSchedule	Updating the access type, schedule, and other properties of a scheduled cube
UploadFile	Uploading a cube design profile, cube, cube view, or cube parameter values file

Retrieving and viewing data

The View service supports viewing a document, paging through a document using a web browser, retrieving an entire document or individual components of a document, and viewing the data in a variety of display formats.

The Actuate Information Delivery API supports the View service tasks described in Table 4-7.

Table 4-7 Operations for retrieving and viewing data

Operation	Programming task
GetContent	Retrieving the contents of a report using a component identifier or component name and value. Use the component identifier of 0 to view the entire report.
GetCustomFormat	Retrieving a report in a custom format.
GetEmbeddedComponent	Retrieving an embedded component. The component can be static data, dynamic data, or a style sheet, depending on the suboperation you use.
GetFormats	Retrieving a list of locales or a list of formats that BIRT iServer supports.
GetPageCount	Requesting the number of pages in the report.
GetStyleSheet	Retrieving the style sheet for a report.
GetTOC	Retrieving the table of contents for a report.
SearchReport	Searching a report for specific criteria.
SelectPage	Retrieving a page or range of pages to view.

Typically, a user views a document using Actuate Information Console JavaServer Pages (JSP). Developers can also create custom report viewing pages to integrate with their applications.

Requesting a page or range of pages using SelectPage

Use SelectPage to view a page or range of pages. You must specify an object, a view format, and a page number or page range. Use PageNum to specify a single page or a range of pages. The response returns the requested page or pages as a binary attachment.

The following example shows how to request pages 1 through 6 and page 8. In this request, ViewParameter sets the following conditions:

- The requested display format is DHTML.
- UserAgent is a tool to increase user accessibility to the data.
- AcceptEncoding restricts the content encoding of the response.
- ScalingFactor is set to 100 percent.

```
<SOAP-ENV:Body>
   <SelectPage>
      <Object>
         <Id>1071</Id>
      </Object>
      <ViewParameter>
         <Format>DHTML</Format>
         <UserAgent>Mozilla/4.0 (compatible; MSIE 6.0; Windows
            NT 5.0)
         </UserAgent>
         <AcceptEncoding>gzip, deflate</AcceptEncoding>
         <ScalingFactor>100</ScalingFactor>
      </ViewParameter>
      <Page>
         <PageNum>1-6, 8</PageNum>
      </Page>
   </SelectPage>
</SOAP-ENV:Body>
```

To view the first or the last page of the report, use ViewMode as an element of Page, instead of PageNum. Set ViewMode to 0 to view the first page or 1 to view the last page.

```
<Page>
   <ViewMode>0</ViewMode>
</Page>
```

Retrieving the attachment to a SelectPage response

The response to a SelectPage request includes the SelectPageResponse element, a ConnectionHandle to keep the connection open, a MIME boundary and header, followed by the binary attachment.

In SelectPageResponse, PageRef specifies the following properties of the response:

- ContentId specifies that the pages return as an attachment.
- ContentType is text/html when the requested format is DHTML.
- ContentEncoding is binary, meaning that the pages return as binary data.
- Locale indicates the locale in which the user can view the selected pages.

```
<SOAP-ENV:Envelope>
   <SOAP-ENV:Body>
      <SelectPageResponse>
         <PageRef>
            <ContentId>Attachment</ContentId>
            <ContentType>text/html</ContentType>
            <ContentEncoding>binary</ContentEncoding>
            <Locale>en_US</Locale>
         </PageRef>
         <ConnectionHandle>u7whmBpUho+tg5MUY=</ConnectionHandle>
      </SelectPageResponse>
   </SOAP-ENV:Body>
</SOAP-ENV:Envelope>
67

--MIME_boundary
Content-Type: text/html
Content-Transfer-Encoding:binary
Content-ID:Attachment
806

<HEAD>
   <META NAME="generator" CONTENT="Actuate">
   <META HTTP-EQUIV="Content-Type" CONTENT="text/html;
      charset=UTF-8">
   <LINK REL=STYLESHEET TYPE="text/css"
   …

--MIME_boundary--
0
```

Using SelectPage to print

SelectPage supports printing one or more pages of a report document. In the following example, the ViewOperation element of ViewParameter specifies

printing. SplitOversizePages indicates whether to split a report page across multiple PDF pages. If you set SplitOversizePages to False, each report page prints as a single page. PageWidth and PageHeight indicate the size of the paper.

```
<SOAP-ENV:Body>
   <SelectPage>
      <Object>
         <Id>89</Id>
      </Object>
      <ViewParameter>
         <Format>PDF</Format>
         <UserAgent>
            Mozilla/4.0 (compatible; MSIE 6.0; Windows NT 5.0)
         </UserAgent>
         <AcceptEncoding>gzip, deflate</AcceptEncoding>
         <ViewOperation>print</ViewOperation>
         <SplitOversizePages>true</SplitOversizePages>
         <PageWidth>6</PageWidth>
         <PageHeight>6</PageHeight>
         <EmbeddedObjPath>ViewEmbeddedObject?
            serverURL=http%3a%2f%2flocalhost%3a4000&amp;
            volume=end00166&amp;
            connectionHandle=g5WwgEamp;operation=</EmbeddedObjPath>
         <RedirectPath>../servlet/GenericRedirector</RedirectPath>
      </ViewParameter>
      <Page>
         <Range>1-5</Range>
      </Page>
   </SelectPage>
</SOAP-ENV:Body>
```

Retrieving report content

Use GetContent to retrieve the contents of a report or query. You can also retrieve the contents of a component within the report or query. Using this operation, you specify the report, the format in which to display it, and the component to retrieve from the report. Identify the component by component ID or component name. If you specify a component ID of zero, the response returns the entire report.

You can choose from the following display formats:

- CSS
- DHTML
- DHTMLLong
- DHTMLRaw

- ExcelData
- ExcelDisplay
- ImageMapURL
- PDF
- PPT
- PPTFullyEditable
- Reportlet
- RTF
- RTFFullyEditable
- XMLCompressedDisplay
- XMLCompressedExcel
- XMLCompressedPDF
- XMLCompressedPPT
- XMLCompressedReportlet
- XMLCompressedRTF
- XMLData
- XMLDisplay
- XMLReportlet
- XMLStyle

The PDF format works only for page-based information. A user cannot retrieve component-based data in PDF format.

The Reportlet format works only if the report designer enables ShowInReportlet during report design. If you choose Reportlet, the default value for the maximum height is zero, which means there is no limit to the height of the Reportlet. If you do not specify another value, BIRT iServer converts the whole component into a Reportlet.

The following example requests an entire report in XMLDisplay format. Note that the request includes a MIME boundary.

```
…
--MIME_boundary
Content-Type: text/xml;charset=utf-8
Content-Transfer-Encoding:8bit
Content-ID:<response.xml>
```

```
…
<SOAP-ENV:Body>
   <GetContent>
      <Object>
         <Name>/Temp/forecast.roi</Name>
      </Object>
      <ViewParameter>
         <Format>XMLDisplay</Format>
      </ViewParameter>
      <Component>0</Component>
   </GetContent>
</SOAP-ENV:Body>
```

The preceding request returns the SOAP response and an attachment containing the data. Because the component ID is 0, the attachment contains the entire document.

```
--MIME_boundary
Content-Type: text/xml;charset=utf-8
Content-Transfer-Encoding:8bit
Content-ID:<response.xml>
…
<SOAP-ENV:Body>
   <GetContentResponse>
      <ContentRef>
         <ContentId>Attachment</ContentId>
         <ContentType>text/xml</ContentType>
      </ContentRef>
      <ComponentId>0</ComponentId>
   </GetContentResponse>
</SOAP-ENV:Body>
…
--MIME_boundary
Content-Type: text/xml
Content-Transfer-Encoding:binary
Content-ID:Attachment
800
…

--MIME_boundary
0
```

If the requested display format is Excel, ContentType looks like the following example:

```
<GetContentResponse>
   <ContentRef>
      …
      <ContentType>application/vnd.ms-excel</ContentType>
```

```
      …
   </ContentRef>
   …
</GetContentResponse>
```

Retrieving embedded data and style sheets

Use GetEmbeddedComponent to retrieve:

- Static data, such as an image in a document.
- Dynamic data, such as an embedded URL.
- A style sheet, the template from which Actuate software builds a report. A style sheet returns in cascading style sheets (CSS) format.

Use the Operation element to specify what to retrieve, as shown in the following example:

```
<SOAP-ENV:Body>
   <GetEmbeddedComponent>
      <ObjectId>39</ObjectId>
      <Operation>GetDynamicData</Operation>
      <ComponentId>520</ComponentId>
      <ScalingFactor>57</ScalingFactor>
   </GetEmbeddedComponent>
</SOAP-ENV:Body>
```

This request returns the component as an attachment, along with an EmbeddedRef element showing the type of component. The image follows the response as an attachment.

```
<SOAP-ENV:Body>
   <GetEmbeddedComponentResponse>
      <EmbeddedRef>
         <ContentId>Attachment</ContentId>
         <ContentType>image/jpeg</ContentType>
      </EmbeddedRef>
   </GetEmbeddedComponentResponse>
</SOAP-ENV:Body>
```

Searching within a document

Use SearchReport to request specific criteria within a report or a data object instance (.doi) file. To search a document for a specific component or lists of components, you must specify:

- A target Encyclopedia volume in the SOAP envelope header.
- The name of the document to search.

- The component for which to search. You can search for any report component, including frames, controls, and page lists. Using SearchReportByIdNameList, you can list components by name or ID.
- The value for which to search in each component.
- A view format. Search results return as an attachment. The display format for search results can be in XMLDisplay, e.Analysis, tab-separated values, or comma-separated values format. e.Analysis is available only with Actuate e.Analysis Option.

The following SearchReport request includes all of the required parameters and uses additional parameters in OutputProperties to indicate whether to include column headings in the search result display and whether to enclose each data item in quotation marks:

```
<SOAP-ENV:Body>
   <SearchReport>
      <Object>
         <Name>detail.roi</Name>
      </Object>
      <ViewParameter>
         <Format>XMLDisplay</Format>
         <UserAgent>
            Mozilla/4.0 (compatible; MSIE 5.01; Windows NT)
         </UserAgent>
      </ViewParameter>
      <SearchReportByIdNameList>
         <SearchList>
            <Component>
               <Name>ItemFrame::ItemCategory</Name>
               <Value>Dynamic*</Value>
            </Component>
            <Component>
               <Id>7620</Id>
            <Value>Router</Value>
            <Component>
               <Name>ItemFrame::ItemDescription</Name>
               <Value>16M x 8 Dynamic Ram</Value>
            </Component>
         </SearchList>
         <SelectList>
            <ComponentIdentifier>ItemFrame::ItemCategory
            </ComponentIdentifier>
            <ComponentIdentifier>7620</ComponentIdentifier>
            <ComponentIdentifier>ItemFrame::ItemDescription
            </ComponentIdentifier>
         </SelectList>
```

```
      </SearchReportByIdNameList>
      <OutputProperty>
         <EnableColumnHeaders>true</EnableColumnHeaders>
         <UseQuoteDelimiter>false</UseQuoteDelimiter>
      </OutputProperty>
   </SearchReport>
</SOAP-ENV:Body>
```

The preceding request returns the report or component as an attachment in XMLDisplay. You can also choose Analysis, tab-separated value (TSV), or comma-separated value (CSV) formats.

Searching for a range of pages using SearchReport

The following example uses the Range parameter to indicate a range of search result pages for the response to include. This request searches a range of pages in version 1 of a report object instance (.roi) file.

```
<SOAP-ENV:Header>
   <TargetVolume>shropshire</TargetVolume>
   <AuthId>G4RhQBq0jidFqdi+o+KJrrSd76mhTYGwG77HJWCj</AuthId>
   <Locale>en_US</Locale>
</SOAP-ENV:Header>
<SOAP-ENV:Body>
   <SearchReport>
      <Object>
         <Name>/forecast.roi</Name>
         <Version>1</Version>
         <Type>roi</Type>
      </Object>
      <ViewParameter>
         <Format>XMLDisplay</Format>
      </ViewParameter>
      <SelectByIdList>
         <String>674</String>
         <String>660</String>
      </SelectByIdList>
      <SearchByIdList>
         <Component>
            <Id>674</Id>
            <Value>Forecasts</Value>
         </Component>
         <Component>
            <Id>660</Id>
            <Value>Plans</Value>
         </Component>
```

```
      </SearchByIdList>
      <Range>
         <Start>0</Start>
         <End>19</End>
      </Range>
   </SearchReport>
   /SOAP-ENV:Body>
```

In the preceding example:

- TargetVolume is shropshire.
- SearchReport indicates the report to search is version 1 of forecast.roi.
- ViewParameter sets the view format to XMLDisplay.
- Range indicates the range of report pages to search.
- SelectByIDList indicates the component IDs for which to search.
- SearchByIDList defines the values for which to search in each component.

This request returns the component as an attachment, with identifying information about the component:

```
<SOAP-ENV:Header>
   <ConnectionHandle>u5WwgENkpocEYxDO</ConnectionHandle>
</SOAP-ENV:Header>
   <SOAP-ENV:Body>
      <SearchReportResponse>
         <SearchRef>
            <ContentId>Attachment</ContentId>
            <ContentType>text/xml</ContentType>
         </SearchRef>
      </SearchReportResponse>
   </SOAP-ENV:Body>
</SOAP-ENV:Header>
```

ConnectionHandle keeps the connection open until the entire response returns.

Getting a table of contents

Use GetTOC to get the table of contents for a report. You must indicate the level from which you want to start viewing and the depth to which you want to view. In Figure 4-3, TocNodeId for Eastern Region Sales Forecast is 0, the top level of the table of contents. Depth indicates how many additional levels you want to retrieve. As shown in Figure 4-3, if you set a depth of 2, the response contains the top level, the first level, showing the offices in the eastern region, and the second level, showing data about sales representatives in each office.

To see the sales representatives' accounts, request a depth of 3.

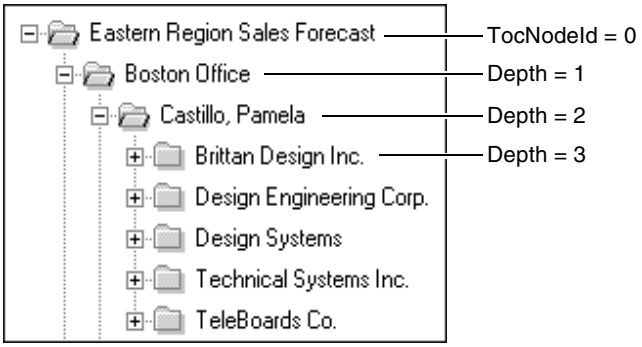

Figure 4-3 Getting a table of contents

The following example requests the table of contents for Forecast.roi:

```
<SOAP-ENV:Body>
   <GetTOC>
      <Object>
         <Name>/Temp/Forecast.roi</Name>
      </Object>
      <ViewParameter>
         <Format>XMLDisplay</Format>
      </ViewParameter>
      <TocNodeId>0</TocNodeId>
      <Depth>2</Depth>
   </GetTOC>
</SOAP-ENV:Body>
```

In this example:

- Object identifies the path to the report.
- ViewParameter indicates the display format, such as XMLDisplay.
- TocNodeId indicates the level from which you want to start viewing.
- Depth indicates the number of levels to retrieve.

This request returns the table of contents as an attachment:

```
<SOAP-ENV:Body>
   <GetTOCResponse>
      <TocRef>
         <ContentId>Attachment</ContentId>
         <ContentType>text/xml</ContentType>
         <ContentEncoding>binary</ContentEncoding>
         <Locale>default</Locale>
      </TocRef>
   </GetTOCResponse>
</SOAP-ENV:Body>
```

Requesting a page count

Use GetPageCount to request a page count for a report. In the request, provide the path to the report object instance (.roi) file for which you want the count.

```
<SOAP-ENV:Body>
   <GetPageCount>
      <Object>
         <Name>/Temp/Inventory.roi</Name>
      </Object>
   </GetPageCount>
</SOAP-ENV:Body>
```

This request returns the page count, an indicator of whether the report is complete, and a ConnectionHandle in the SOAP header that BIRT iServer uses for subsequent requests for the same report.

```
<SOAP-ENV:Header>
   <AuthId>G4RhQBq0jidFqdi+o+K</AuthId>
   <ConnectionHandle>u7wBuIMEv18lQxjMqWBDBI6/B
   </ConnectionHandle>
</SOAP-ENV:Header>
<SOAP-ENV:Body>
   <GetPageCountResponse>
      <PageCount>6</PageCount>
      <IsReportCompleted>true</IsReportCompleted>
   </GetPageCountResponse>
</SOAP-ENV:Body>
```

Retrieving display formats

Use GetFormats to retrieve display formats that the View service supports for a report. If you do not specify a format type, GetFormats returns all supported format types for the report. To use GetFormats, specify a path to a report object instance (.roi) file. You can include other identifying information about the report, such as a version number. The following example shows how to request all formats for a report titled Forecast.roi:

```
<SOAP-ENV:Body>
   <GetFormats>
      <Object>
         <Name>/Temp/Forecast.roi</Name>
         <Version>1</Version>
      </Object>
   </GetFormats>
</SOAP-ENV:Body>
```

The preceding request returns all the formats in which you can view this report, including XMLDisplay, DHTML, Reportlet, cascading style sheets (CSS), ExcelData, and PDF:

```
<SOAP-ENV:Body>
   <GetFormatsResponse>
      <FormatList>
         <Format>XMLDisplay</Format>
         <Format>XMLCompressedDisplay</Format>
         <Format>XMLStyle</Format>
         <Format>XMLData</Format>
         <Format>DHTML</Format>
         <Format>DHTMLLong</Format>
         <Format>DHTMLRaw</Format>
         <Format>Reportlet</Format>
         <Format>CSS</Format>
         <Format>ExcelDisplay</Format>
         <Format>ExcelData</Format>
         <Format>PDF</Format>
      </FormatList>
   </GetFormatsResponse>
</SOAP-ENV:Body>
```

Retrieving a custom format

Use GetCustomFormat to retrieve a report in a custom format from the View service. GetCustomFormat requests that the View service invoke AcReport::GetCustomFormat and then returns the output file as an attachment. The following example uses the ViewParameter element to define the display format:

```
<SOAP-ENV:Body>
   <GetCustomFormat>
      <Object>
         <Name>/CallingBasic.roi</Name>
      </Object>
      <ViewParameter>
         <Format>Excel</Format>
         <UserAgent>
            Mozilla/4.0 (compatible; MSIE 5.01; Windows NT)
         </UserAgent>
         <Locale>default</Locale>
      </ViewParameter>
      <ArgumentList>
         <Argument>
            <Name>case</Name>
```

```
            <Value>Succeeded</Value>
          </Argument>
        </ArgumentList>
    </GetCustomFormat>
</SOAP-ENV:Body>
```

The preceding request returns the document as an attachment in the specified custom format.

Managing a large list

The Actuate Information Delivery API provides the ability to retrieve a large number of objects from a data source. To manage a large list efficiently, the API provides five parameters that provide state information, configure the number of objects to return at one time, and manage the search result in other ways:

- FetchSize indicates the number of records to retrieve and return in the result set at one time. If you do not specify a FetchSize, BIRT iServer uses the default value of 500. If you set FetchSize to 0 or less, no records return.
- FetchHandle returns in a search response when the result set exceeds the FetchSize. FetchHandle returns in the response to a Select or Get request, such as SelectFiles or GetFolderItems. Use FetchHandle to retrieve more results in the set. In the second and subsequent calls for data, you must specify the same search criteria that you used in the original call. All Get and Select requests support FetchHandle except SelectFileType.
- FetchDirection supports navigating through a result set when the results exceed the FetchLimit. FetchDirection supports getting the next or previous set of results in a response when the result set exceeds the FetchSize. To page forward through the result list, set FetchDirection to True. To page in reverse order, set FetchDirection to False. The default setting is True. You can set FetchDirection in all Get and Select requests except SelectFileType.
- In Get and Select requests, CountLimit indicates how many objects to count. For example, if the total possible count is 1,000 records, you can limit the count result to the first 100 records. A CountLimit of -1 counts everything in the result set. The default CountLimit is equal to the FetchSize. The count is independent of how many items a response returns.

  TotalCount is the response to a CountLimit. In Get and Select responses, TotalCount indicates the size of the counted result set. TotalCount does not return for NameList or IdList requests.

Table 4-8 lists the settings for CountLimit and TotalCount.

Table 4-8 CountLimit and TotalCount settings

Setting	Result
CountLimit = 0	Does not count. Returns a TotalCount of zero.
CountLimit = -1	Counts all objects.
CountLimit > 0	Counts up to the specified limit. In this case, TotalCount returns as the lesser of the CountLimit or the total result set.

The following example shows how these mechanisms appear in the search request. In this example, the result counts up to 600 items, retrieving 100 at a time:

```
<Search>
   <FetchSize>100</FetchSize>
   <FetchDirection>true</FetchDirection>
   <CountLimit>600</CountLimit>
</Search>
```

Working with a large message

The Information Delivery API supports two ways to send and receive a message such as a report response:

- Embed the data in the SOAP body.
- Attach the data to a SOAP request or response.

If you use HTTP 1.0, you typically choose to embed the data in the SOAP message as a single block and send the block in an uninterrupted data stream. If you use HTTP 1.1, you can send the data as an attachment to improve performance on BIRT iServer and the network.

To download or upload a file, you indicate whether to embed the data in the response or send the data as an attachment by setting the DownloadEmbedded option to True or False. The following example shows a SOAP request to download a file with the content embedded in the body of the response:

```
<SOAP-ENV:Body>
   <DownloadFile xmlns="http://schemas.actuate.com/actuate11">
      <FileName>/report/SampleReport.rox</FileName>
      <DecomposeCompoundDocument>
         false
      </DecomposeCompoundDocument>
```

```
      <DownloadEmbedded>true</DownloadEmbedded>
   </DownloadFile>
</SOAP-ENV:Body>
```

The following example shows the SOAP response with the content of the file embedded in the message:

```
<SOAP-ENV:Body
   <ACTU:DownloadFileResponse
      …
      <File>
         <Id>8</Id>
         <Name>/report/SampleReport.rox</Name>
         <FileType>ROX</FileType>
         <Version>1</Version>
         <TimeStamp>2008-04-11T19:02:43</TimeStamp>
         <Owner>Administrator</Owner>
         <UserPermissions>VSRWEDG</UserPermissions>
         <PageCount>0</PageCount>
         <Size>47104</Size>
      </File>
         <Content>
            <ContentId>SampleReport.rox</ContentId>
            <ContentType>Application/Octet-Stream</ContentType>
            <ContentData>
               0M8R4KGxGuEAAAAAAAAAAAAAAAAAAAAAPg
               …
            </ContentData>
         </Content>
   </ACTU:DownloadFileResponse>
</SOAP-ENV:Body>
```

The following example shows a SOAP request to download a file with the file sent as an attachment:

```
<SOAP-ENV:Body>
   <DownloadFile xmlns="http://schemas.actuate.com/actuate11">
      <FileName>/report/SampleReport.rox</FileName>
      <DecomposeCompoundDocument>
         false
      </DecomposeCompoundDocument>
      <DownloadEmbedded>false</DownloadEmbedded>
   </DownloadFile>
</SOAP-ENV:Body>
```

The following example shows a multi-part response with the MIME boundary and content type defined in the HTTP header and the file placed outside the SOAP envelope as an attachment:

```
HTTP/1.0 200 OK
   Content-Type:
   Multipart/Related;boundary=Mime_boundary;
   type="text/xml";
   start="<response.xml>"HOST:ENL2509Connection:
   closeSOAPAction:
   ""--Mime_boundaryContent-Type: text/xml;
   charset=utf-8Content-Transfer-Encoding:8bitContent-ID:
   <response.xml>
   <?xml version='1.0' ?>
   <SOAP-ENV:Envelope xmlns:SOAP-ENV=
   "http://schemas.xmlsoap.org/soap/envelope/">
   <SOAP-ENV:Header
      …
   </SOAP-ENV:Header>
   <SOAP-ENV:Body>
      <ACTU:DownloadFileResponse>
         <File>
            <Id>8</Id>
            <Name>/report/SampleReport.rox</Name>
            <FileType>ROX</FileType>
            <Version>1</Version>
            <TimeStamp>2008-04-11T19:02:43</TimeStamp>
            <Owner>Administrator</Owner>
            <UserPermissions>VSRWEDG</UserPermissions>
            <PageCount>0</PageCount>
            <Size>47104</Size>
         </File>
            <Content>
               <ContentId>SampleReport.rox</ContentId>
               <ContentType>
                  Application/Octet-Stream
               </ContentType>
            </Content>
      </ACTU:DownloadFileResponse>
   </SOAP-ENV:Body>
</SOAP-ENV:Envelope>
   --Mime_boundaryContent-Type:
   Application/Octet-StreamContent-Transfer-Encoding:
   binaryContent-ID:SampleReport.rox
   …
```

Delivering a multilingual document

Actuate software uses the Unicode character set standard to provide multilingual, cross-platform, language-independent reporting. Unicode organizes languages according to locales. A locale is a location plus the language, date and time formats, currency representation, sort order, and other conventions of that

location. A locale is not necessarily a country. Using Unicode, Actuate software supports:

- Diacritics such as the tilde (~)
- Composite characters such as ≅
- External font libraries
- Multiple currencies in a single document

Actuate software does not support encoding logos or graphics, font variants, line breaks, or orientation of on-screen characters.

To prompt BIRT iServer to generate a response in the language of that locale, set the Locale parameter in the header of a SOAP envelope. When you do so, the response also uses the date and time formats, currency, and other conventions for that locale. Parameters return in the specified locale. If you specify an invalid locale, the response returns in the default locale, US English. If you do not choose a locale, the response returns in the default locale of the document user's BIRT iServer.

The following SOAP header requests output formatted for the Greek language and locale:

```
<SOAP-ENV:Header>
   <TargetVolume>Grandee</TargetVolume>
   <Locale>el_GR</Locale>
</SOAP-ENV:Header>
```

The response returns document content and parameters formatted for the specified locale, as shown in Figure 4-4.

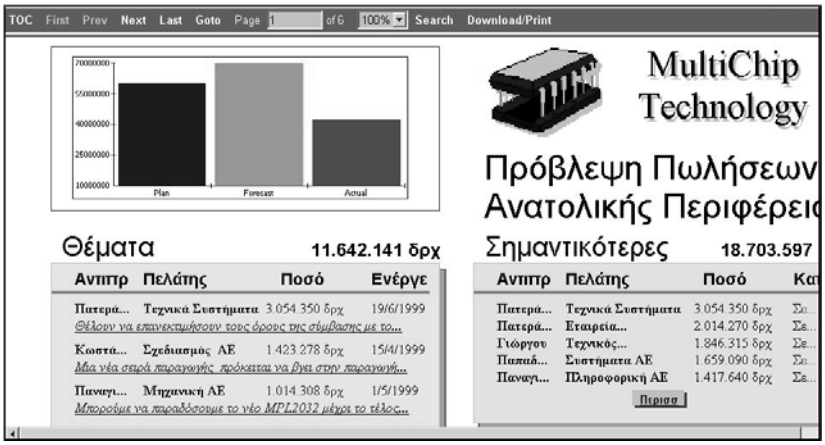

Figure 4-4 Output formatted for the Greek language and locale

Chapter

5

Administering an Encyclopedia volume

This chapter contains the following topics:

- About the Encyclopedia service
- Defining the data on which an operation acts
- Administering security and authentication operations
- About Encyclopedia-level management operations
- Managing Encyclopedia volume items
- About composite operations and transactions
- Searching within an Encyclopedia volume
- Monitoring BIRT iServer information
- Monitoring or canceling a request for a synchronous report

About the Encyclopedia service

The Encyclopedia service provides the following functional groups of operations:

- Security and authentication operations that manage logging in to a BIRT iServer and authenticating users
- Encyclopedia-level operations such as uploading or downloading files and folders and searching for content across Encyclopedia volumes
- Volume-level operations that manage the items in a particular Encyclopedia volume
- Search operations that retrieve information about items in an Encyclopedia volume

Defining the data on which an operation acts

The Information Delivery API provides three sets of parameters that define the data on which an operation acts. These parameters are:

- Id or IdList
- Name or NameList
- Search

To use Id, IdList, Name, or NameList, define an operation, such as UpdateUser or DeleteGroup, then list each item the operation affects. Identify items by name or BIRT iServer-generated ID number.

Search supports acting on data that meets a specific condition. Typically, these parameters apply to operations that select, update, move, copy, or delete items. The following sections provide examples of using each set of parameters.

Defining data using Id or IdList

To use Id or IdList in an operation, identify the operation. Then, use Id or IdList as a parameter and identify the item on which the operation acts. For example, the following request deletes IdList 4.

IdList 4 is a BIRT iServer-generated identifier for this list.

```
<SOAP-ENV:Body>
   <Administrate>
      <AdminOperation>
         <DeleteFile>
            <IdList>
               <String>49</String>
```

```
            <String>168</String>
            <String>173</String>
            <String>208</String>
            <String>1067</String>
         </IdList>
      </DeleteFile>
   </AdminOperation>
</Administrate>
</SOAP-ENV:Body>
```

Defining data using Name or NameList

The following code example shows how to define by name the users an UpdateUser operation affects:

```
<SOAP-ENV:Body>
   <Administrate>
      <AdminOperation>
         <UpdateUser>
            <Name>
               <String>Sam Stein</String>
               <String>Ying Chen</String>
               <String>Helmut Gunther</String>
               <String>Francoise DuBois</String>
            </Name>
         …
         </UpdateUser>
      </AdminOperation>
   </Administrate>
</SOAP-ENV:Body>
```

Defining data using Search

To limit the scope of an operation to specific data, use the Search element to indicate which data the operation affects. The following request deletes all notification groups to which Carl Benning belongs:

```
<SOAP-ENV:Body>
   <Administrate>
      <AdminOperation>
         <DeleteGroup>
            <Search>
               <WithUserName>Carl Benning</WithUserName>
            </Search>
         </DeleteGroup>
      </AdminOperation>
   </Administrate>
</SOAP-ENV:Body>
```

You cannot delete all items that match a condition by using the wildcard asterisk (*). For example, the following element results in an error message:

```
<WithUserName>*</WithUserName>
```

To delete all items that match a condition, you must list them all.

You can use Search to streamline update and delete requests. For example, to assign UserB the same roles as UserA, use a single UpdateRole operation. First, update the security role by adding UserB, then run a search for UserA in the same request.

```
<SOAP-ENV:Body>
   <Administrate>
      <AdminOperation>
         <UpdateRole>
            <UpdateRoleOperationGroup>
               <UpdateRoleOperation>
                  <AssignedToUsersByName>
                     <String>UserB</String>
                  </AssignedToUsersByName>
               </UpdateRoleOperation>
               <Search>
                  <UserName>UserA</UserName>
               </Search>
            </UpdateRoleOperationGroup>
         </UpdateRole>
      </AdminOperation>
   </Administrate>
</SOAP-ENV:Body>
```

Administering security and authentication operations

Security and authentication operations govern login and authentication requests. These operations also retrieve access control list (ACL) information for specified files, folders, and channels.

The Actuate Information Delivery API provides two login mechanisms, one for BIRT iServer administrators and one for other users, including volume administrators. The iServer administrator manages iServer and Encyclopedia volumes, performing such tasks as taking an iServer offline and bringing it back online, adding an iServer to a cluster, setting iServer and Encyclopedia volume properties, managing resource groups, and adding printer connections to an iServer.

The Encyclopedia volume administrator controls access to an Encyclopedia volume by creating users and assigning passwords and other credentials. The Encyclopedia volume administrator also uploads and downloads files to and

from the volume and creates, updates, and deletes the items in the Encyclopedia volume.

Other users work with Encyclopedia volume items to the extent that their access privileges permit.

Logging in as a report user

The Login request authenticates a user to BIRT iServer. A request to log in must include the user's login name. It also can include:

- A password or other credentials.
- A domain, the Encyclopedia volume that the user wants to access.
- An indicator of whether to return the user's setting information. The user's settings include such details as the user's name or ID number on BIRT iServer System, default printer, e-mail address, home folder, and viewing preferences. The user's viewing preference can be either DHTML, LRX, or the default setting for the Encyclopedia volume to which the user logs in.
- A list of security roles to validate for the user. You can validate any standard or custom security role by listing the role as a string in ValidateRoles.

The Login response always returns the following elements:

- A required AuthId to authenticate the user to BIRT iServer System. All subsequent requests in the current session must include the AuthId in the SOAP header.
- A list of BIRT iServer options available for the Encyclopedia volume to which the user is logging in. The available features are ReportGeneration, SpreadsheetGeneration, PageSecureViewing, e.Analysis, ActuateQuery, and ActuateAnalytics.

The Login response also can return:

- The Encyclopedia volume to which the user is logging in. Specify the Encyclopedia volume in the Domain element.
- A list of administrative privileges, if the user is an Encyclopedia volume administrator.
- Details about the user's settings, if you set the optional UserSetting request element to True.
- The user's valid security roles from the list provided in Validate Roles request parameter.

The following example shows a request to log in to the Fairfield Encyclopedia volume using a password. The request asks for user settings and provides a list of security roles to verify.

```
<SOAP-ENV:Body>
   <Login>
      <User>Kevin Belden</User>
      <EncryptedPwd>5hvmuDgEw3E=</EncryptedPwd>
      <Domain>Fairfield</Domain>
      <UserSetting>true</UserSetting>
      <ValidateRoles>
         <String>all</String>
         <String>Active Portal Intermediate</String>
         <String>Regional Managers</String>
      </ValidateRoles>
   </Login>
</SOAP-ENV:Body>
```

The preceding request returns the AuthId, the user's privileges, details about the user, and the BIRT iServer Options available. It also returns the security roles that are valid for this user from the list provided in ValidateRoles.

```
<SOAP-ENV:Body>
   <LoginResponse>
      <AuthId>m4yxAKHFdgedY0AlOQBTDAZc==</AuthId>
      <User>
         <Name>Kevin Belden</Name>
         <Id>3022</Id>
         <Description>Southwest Regional Manager</Description>
         <IsLoginDisabled>false</IsLoginDisabled>
         <EmailAddress>kbelden@corpus.com</EmailAddress>
         <HomeFolder>/Belden</HomeFolder>
         <ViewPreference>DHTML</ViewPreference>
         <MaxJobPriority>500</MaxJobPriority>
         <SuccessNoticeExpiration>14400</SuccessNoticeExpiration>
         <FailureNoticeExpiration>14400</FailureNoticeExpiration>
         <SendEmailForSuccess>true</SendEmailForSuccess>
         <AttachReportInEmail>true</AttachReportInEmail>
         <SendNoticeForSuccess>true</SendNoticeForSuccess>
         <SendEmailForFailure>true</SendEmailForFailure>
         <SendNoticeForFailure>true</SendNoticeForFailure>
         <DefaultPrinterName>Sandoval</DefaultPrinterName>
      </User>
      <FeatureOptions>
         <String>ReportGeneration</String>
         <String>SpreadsheetGeneration</String>
         <String>PageSecureViewing</String>
         <String>e.Analysis</String>
         <String>ActuateQuery</String>
         <String>ActuateAnalytics</String>
      </FeatureOptions>
```

```
      <ValidRoles>
         <String>all</String>
         <String>Regional Managers</String>
      </ValidRoles>
   </LoginResponse>
</SOAP-ENV:Body>
```

Logging in with SystemLogin

SystemLogin authenticates the user as a BIRT iServer system administrator. This login provides access to BIRT iServer system administration functionality, such as managing the properties of a BIRT iServer. To use SystemLogin, you must provide a system password, not your user password.

In Release 10, TargetVolume is an optional element. In Release 11, the Login message must specify the Encyclopedia volume name using TargetVolume in the SOAP header and Domain in the SOAP message body.

```
<SOAP-ENV:Header>
   <TargetVolume>end00166</TargetVolume>
   <Locale>en_US</Locale>
</SOAP-ENV:Header>
<SOAP-ENV:Body>
   <SystemLogin>
      <SystemPassword>CKJyy769</SystemPassword>
      <SystemPasswordEncryptLevel>1</SystemPasswordEncryptLevel>
   </SystemLogin>
</SOAP-ENV:Body>
```

The response to SystemLogin is an AuthId that remains valid in subsequent requests during the current session.

```
<SOAP-ENV:Body>
   <SystemLoginResponse>
      <AuthId>+zxJgKuMBr4lC1psWCGajW8GXIp7PSC==</AuthId>
   </SystemLoginResponse>
</SOAP-ENV:Body>
```

Getting an access control list

Using the Actuate Information Delivery API, you can retrieve the access control list (ACL) for a file, folder, or channel. You also can retrieve the ACL template that applies to all new files a user creates in an Encyclopedia volume.

Requesting a file or folder's ACL

To retrieve the access rights that apply to a given file or folder, use GetFileACL. Specify the item using its full path.

For a file, you can include a version number, using the format shown in the following example:

```
<SOAP-ENV:Body>
   <GetFileACL>
      <FileName>/Grants and Deeds/Brisbane County Deeds.rox;3</
   FileName>
   </GetFileACL>
</SOAP-ENV:Body>
```

The response returns the privileges for each security role or user that can access the file. The response also includes a TotalCount of users and security roles that can access the file. By default, TotalCount returns 500 records at a time. This limit is configurable. If the list is longer than the limit, the response also includes a FetchHandle mechanism to retrieve the balance of the list.

```
<SOAP-ENV:Body>
   <GetFileACLResponse>
      <ACL>
         <Permission>
            <RoleName>Administrator</RoleName>
            <RoleId>141</RoleId>
            <AccessRight>VSRWEDG</AccessRight>
         </Permission>
         <Permission>
            <RoleName>Visitor</RoleName>
            <RoleId>90</RoleId>
            <AccessRight>V</AccessRight>
         </Permission>
      </ACL>
      <TotalCount>2</TotalCount>
   </GetFileACLResponse>
</SOAP-ENV:Body>
```

Retrieving the ACL for a channel

To retrieve the ACL for a channel, use GetChannelACL. The request must specify the ChannelName or ChannelId, as shown in the following example:

```
<SOAP-ENV:Body>
   <GetChannelACL>
      <ChannelName>BargainBooks</ChannelName>
   </GetChannelACL>
</SOAP-ENV:Body>
```

The preceding request returns the permissions for each security role or user that can access the channel and a TotalCount of the security roles or users that can access it. If the list exceeds the allowable maximum number of items to fetch, the response includes a FetchHandle to support retrieving the remaining items.

```
<SOAP-ENV:Body>
   <GetChannelACLResponse>
      <ACL>
         <Permission>
            <RoleName>Support</RoleName>
            <RoleId>306</RoleId>
            <AccessRight>RW</AccessRight>
         </Permission>
         <Permission>
            <UserName>Raphael Grigory</UserName>
            <UserId>554</UserId>
            <AccessRight>RW</AccessRight>
         </Permission>
      </ACL>
      <TotalCount>2</TotalCount>
   </GetChannelACLResponse>
</SOAP-ENV:Body>
```

Getting a user's ACL template

GetFileCreationACL retrieves a user's ACL template. The ACL template is the access rights that apply to a file the user creates in an Encyclopedia volume. You can specify the user by either ID or name.

```
<SOAP-ENV:Body>
   <GetFileCreationACL>
      <CreatedByUserName>Wenfeng Chan</CreatedByUserName>
   </GetFileCreationACL>
</SOAP-ENV:Body>
```

The response returns the privileges that apply to the user's new files. In the following example, the privileges include visible, read, write, execute, and delete. If the list exceeds the allowable maximum number of items to fetch, the response includes a FetchHandle to support retrieving the remaining items.

```
<SOAP-ENV:Body>
   <GetFileCreationACLResponse>
      <ACL>
         <Permission>
            <AccessRight>VRWED</AccessRight>
         </Permission>
      </ACL>
      <TotalCount>1</TotalCount>
   </GetFileCreationACLResponse>
</SOAP-ENV:Body>
```

Setting an additional condition on an ACL request

Typically, a request for an ACL returns all the permissions that apply to an item. The request returns the permissions for every user and every security role with access to the item. You can, however, restrict a result to the permissions that apply to a specific user or security role.

Using GetFileCreationACL, you can request privileges granted to a user or a security role for files a specific user creates. For example, you can extend the request to ask for the rights granted to the Engineering security role for a file that Wenfeng Chan created. Specify the security role and user by name or ID.

```
<SOAP-ENV:Body>
   <GetFileCreationACL>
      <CreatedByUserName>Wenfeng Chan</CreatedByUserName>
      <GrantedRoleName>Engineering</GrantedRoleName>
   </GetFileCreationACL>
</SOAP-ENV:Body>
```

The preceding request returns the rights granted to Engineering for files Wenfeng Chan creates. In this example, the rights are Visible and Secure Read:

```
<SOAP-ENV:Body>
   <GetFileCreationACLResponse>
      <ACL>
         <Permission>
            <GrantedRoleName>Engineering</GrantedRoleName>
            <AccessRight>VSR</AccessRight>
         </Permission>
      </ACL>
      <TotalCount>1</TotalCount>
   </GetFileCreationACLResponse>
</SOAP-ENV:Body>
```

Using GetChannelACL, you can determine what permissions a user or security role has to a channel by specifying GrantedUserName, GrantedUserId, GrantedRoleName, or GrantedRoleId:

```
<SOAP-ENV:Body>
   <GetChannelACL>
      <ChannelName>BargainBooks</ChannelName>
      <GrantedUserName>Colin Drey</GrantedUserName>
   </GetChannelACL>
</SOAP-ENV:Body>
```

The preceding request returns the privileges for the user or security role and a TotalCount:

```
<SOAP-ENV:Body>
   <GetChannelACLResponse>
      <ACL>
         <Permission>
            <GrantedUserName>Colin Drey</GrantedUserName>
            <AccessRight>RW</AccessRight>
         </Permission>
      </ACL>
      <TotalCount>1</TotalCount>
   </GetChannelACLResponse>
</SOAP-ENV:Body>
```

About Encyclopedia-level management operations

Encyclopedia-level management operations support uploading and downloading a file, retrieving a file or folder from an Encyclopedia volume, retrieving an item from a folder, and getting details about a file or folder.

Uploading a file

To upload a file to an Encyclopedia volume, use UploadFile. You must identify the Encyclopedia volume in the SOAP header using TargetVolume. Then, specify the file to upload. You also can set certain properties of the file. For example, you can use the AccessType element to indicate whether the file is private or shared and you can use MaxVersions to set the maximum number of versions of the file to retain in the Encyclopedia volume.

You can upload an Actuate native file type or an external file type. To work with an external file you upload, BIRT iServer must recognize the file type.

Table 5-1 lists the principal elements of an UploadFile request.

Table 5-1 UploadFile request elements

Element	Description
NewFile	Identifies the file to upload. Specify an optional version number by adding it to the file name using a semicolon. In addition to the file name and version, NewFile can contain the following information: ■ AccessType indicates whether the file is shared or private in the Encyclopedia volume. ■ ReplaceExisting indicates whether to replace an existing file that has the same name. If the file you replace has dependencies, BIRT iServer creates a new version and does not overwrite the existing version.

(continues)

Table 5-1 UploadFile request elements (continued)

Element	Description
NewFile *(continued)*	■ MaxVersions indicates the maximum number of versions of the file to retain in the Encyclopedia volume.
CopyFromLatestVersion	When the Encyclopedia volume contains older versions of the file you are uploading, you can indicate whether to copy certain properties from the latest version of the older file to the newer version. The properties you can copy are: ■ Description, text that describes the file ■ Permissions, the Access Control List (ACL) specifying the users and roles that can access the file ■ ArchiveRules, rules that control how to age and expire the file If the file to upload already has these properties set, the settings for CopyFromLatestVersion take precedence.
Content	■ ContentType defines the type of file to upload, such as application/octet-stream or binary. ContentType is required. ■ ContentLength specifies the size of the attachment. ContentLength is optional. ■ ContentEncoding indicates the object encoding used, such as binary or application/octet-stream. ContentEncoding is optional. ■ Locale specifies the object locale. Locale is optional. ■ ContentData is the content of the attachment in the format HTTP requires for transmission across the internet.

Uploading an Actuate report

The following request uploads version 2 of an Actuate report object executable (.rox) file to the target volume specified in the SOAP header. The request keeps a maximum of six versions of the file in the Encyclopedia volume. BIRT iServer does not overwrite existing versions that have the same name as this file. If there are older versions of this file in the Encyclopedia volume, BIRT iServer copies three properties from the latest of those older versions to the new version.

```
<SOAP-ENV:Header>
   <TargetVolume>SeventySix</TargetVolume>
   <AuthId>g4yxAKHFJg9FY0JssYijJI5X=</AuthId>
   <Locale>en_US</Locale>
</SOAP-ENV:Header>
<SOAP-ENV:Body>
   <UploadFile>
      <NewFile>
         <Name>/Arizona/Phoenix_Q2.rox;2</Name>
```

```
      <ReplaceExisting>false</ReplaceExisting>
      <MaxVersions>6</MaxVersions>
   </NewFile>
   <CopyFromLatestVersion>
      <String>Permissions</String>
      <String>Description</String>
      <String>ArchiveRules</String>
   </CopyFromLatestVersion>
   <Content>
      <ContentId>PQ2.rox</ContentId>
      <ContentType>application/octet-stream</ContentType>
      <ContentLength>4189760</ContentLength>
      <ContentEncoding>utf-8</ContentEncoding>
   </Content>
</UploadFile>
</SOAP-ENV:Body>
```

The preceding request returns the FileId as a string when the request succeeds, as shown in the following example. If a request fails, an error message appears.

```
<SOAP-ENV:Body>
   <UploadFileResponse>
      <FileId>951</FileId>
   </UploadFileResponse>
</SOAP-ENV:Body>
```

Uploading a third-party report

The following example shows how to upload a Crystal Report (.rpt) file. The request identifies the file to upload using a relative path. It also specifies the content ID and type for the attachment.

```
<SOAP-ENV:Body>
   <UploadFile>
      <NewFile>
         <Name>/report/Phonelist.rpt</Name>
         <ReplaceExisting>true</ReplaceExisting>
      </NewFile>
      <Content>
         <ContentId>Phonelist.rpt</ContentId>
         <ContentType>application/octet-stream</ContentType>
      </Content>
   </UploadFile>
</SOAP-ENV:Body>
```

Copying file properties when uploading a file

Often, when you upload a new version of an executable file to an Encyclopedia volume, the new version must replace the previous version. You must therefore

ensure that the permissions and other properties of the previous version apply to the new one. To automate this task, use CopyFromLatestVersion in UploadFile. CopyFromLatestVersion is available whether you replace the existing version or create a new version during the upload. The following code example shows how to copy two properties, the description and the archive rules, from the previous version of the Sales report:

```
<SOAP-ENV:Body>
   <UploadFile>
      <NewFile>
         <Name>/Reports/Sales.rox</Name>
      </NewFile>
      <CopyFromLatestVersion>
         <String>Description</String>
         <String>ArchiveRules</String>
      </CopyFromLatestVersion>
      <Content>
         <ContentId>Sales.rox</ContentId>
         <ContentType>application/octet-stream</ContentType>
         <ContentEncoding>utf-8</ContentEncoding>
      </Content>
   </UploadFile>
</SOAP-ENV:Body>
```

Attaching or embedding a file in a request

When you upload or download a file, the content streams to or from the Encyclopedia volume using one of the following methods:

- Attach the file in the UploadFile response or DownloadFile request using HTTP chunked transfer-encoding. Chunked transfer-encoding breaks the data into discrete sections, or chunks, and sends them in a series. This method is useful when the file is long and when BIRT iServer begins sending the response before retrieving all the data. An attachment relies on maintaining a persistent connection, which is the default setting for HTTP 1.1. This method frees BIRT iServer between sections, though the connection remains open. The values used for chunking files must be precise, or the SOAP message may hang.
- Embed the file in the UploadFile response or DownloadFile request and send the message as a single block. Embedding works best with smaller files. To embed a file, specify a ContentLength in the HTTP header instead of chunked transfer-encoding. If you use HTTP 1.0, you typically choose to embed the file.

Although BIRT iServer System supports both methods, Actuate operations typically use attachments.

A chunked message consists of three parts:

- An HTTP header
- An Actuate SOAP message such as UploadFile or DownloadFile
- A file to embed or attach

Uploading a file as an attachment

To upload a file as an attachment, the client application must support the following tasks:

- Create the unique, identifying MIME boundary required by the MIME protocol.

  ```
  --MIME_boundary_763bc8438bvc34iyc2mcv
  ```

- Create an HTTP header for the message.
- Create a MIME header for the attachment. A MIME header follows each MIME boundary except the last. The following example shows a typical MIME header:

  ```
  Content-Type: rox
  Content-Transfer-Encoding: binary
  Content-ID: Forecast.rox
  ```

  where

  - Content-Type is the type of file to upload. Content-Type is an optional element.
  - Content-ID and Content-Transfer-Encoding are required elements. The Content-ID in the MIME header maps to the ContentId element of the UploadFile operation.

- Prepare and send the SOAP request. An UploadFile request must include the Content element.
- Send the attachment.
- End the message with a final MIME boundary followed by a zero (0).

  ```
  --MIME_boundary_gwt[heqhypodjh;
  0
  ```

About the HTTP header

A typical HTTP header that contains a MIME boundary looks like the following example:

```
POST / HTTP/1.1
Host: akiko:9000
Content-Type: multipart/related;
   boundary=MIME_boundary_763bc8438bvc34iyc2mcv;
type=text/xml; start=<request.xml>
Transfer-Encoding:chunked
MIME-Version:1.0
SOAPAction: ""
EA
```

where

- POST/HTTP/1.1 is a required element that indicates the version of HTTP the message uses.
- Host: akiko:9000 is the name and port number of the host machine.
- Content-Type: multipart/related is a required element.
- boundary=MIME_boundary_763bc8438bvc34iyc2mcv is the MIME boundary.
- start=<request.xml> is a required element that refers to the Content-ID in the first MIME heading.
- Transfer-Encoding is a required element to inform BIRT iServer that this is a chunked message.
- MIME-Version is the version of MIME the message uses.
- SOAPAction is a required element that the Actuate Information Delivery API does not use. Represent SOAPAction by a set of quotation marks.
- EA is a hexadecimal value that represents the size of the chunk.

The client application creates MIME boundaries randomly to ensure the message's uniqueness.

Writing the UploadFile request

The UploadFile request follows the first MIME boundary. The following example requests that the Encyclopedia volume upload one version of a file titled Forecast.rox:

```
<SOAP-ENV:Envelope>
   <SOAP-ENV:Header>
      <AuthId>8ywJQHtcZreNuzqEUboyrIU=</AuthId>
   </SOAP-ENV:Header>
   <SOAP-ENV:Body>
      <UploadFile>
         <NewFile>
            <Name>Forecast.rox</Name>
            <MaxVersions>1</MaxVersions>
         </NewFile>
```

```
        <Content>
           <ContentId>Forecast.rox</ContentId>
           <ContentType>application/octet-stream</ContentType>
           <ContentLength>true</ContentLength>
           <ContentEncoding>utf-8</ContentEncoding>
        </Content>
     </UploadFile>
   </SOAP-ENV:Body>
</SOAP-ENV:Envelope>

5a

--MIME_boundary
Content-Transfer-Encoding:binary
Content-ID:MultiSetTimeSeries.rox
…

--MIME_boundary--
0
```

The response to an UploadFile request is an identifier for the file or folder.

```
<SOAP-ENV:Body>
   <UploadFileResponse>
      <FileId>25</FileId>
   </UploadFileResponse>
</SOAP-ENV:Body>.
```

Downloading a file

To download a file from an Encyclopedia volume, use DownloadFile and specify the path and either a FileName or FileId, as shown in the following example:

```
<SOAP-ENV:Body>
   <DownloadFile>
      <FileName>/Inventory/FallPromo.rox;2</FileName>
   </DownloadFile>
</SOAP-ENV:Body>
```

The file streams to the client as an attachment to the response, which includes identifying information about the file, such as the file type, owner, length, version, page count, and content ID and type. The ContentId element maps to the Content_ID in the MIME header of the attachment.

```
<SOAP-ENV:Body>
   <DownloadFileResponse>
      <File>
         <Id>949</Id>
         <Name>/Marketing/FallPromo.rox</Name>
```

```
        <FileType>ROX</FileType>
        <TimeStamp>2008-03-06T21:58:05</TimeStamp>
        <Owner>Craig Lew</Owner>
        <UserPermissions>VSRWEDG</UserPermissions>
        <Version>2</Version>
        <PageCount>6</PageCount>
        <Size>38912</Size>
      </File>
      <Content>
        <ContentId>598</ContentId>
        <ContentType>application/octet-stream</ContentType>
      </Content>
   </DownloadFileResponse>
</SOAP-ENV:Body>
```

Downloading a file as an attachment

When BIRT iServer receives a DownloadFile request, it creates an HTTP header for the response. This header specifies the multipart-related content type and the chunked transfer-encoding method. The client application must be able to process the information in the header.

Following the HTTP header, BIRT iServer sends a DownloadFile response that includes a Content element. ContentId and ContentType in this element map to Content-ID and Content-Type in the MIME header of the attachment that follows the response.

```
<SOAP-ENV:Body>
   <DownloadFileResponse>
      <File>
        …
      </File>
      <Content>
        <ContentId>598</ContentId>
        <ContentType>application/octet-stream</ContentType>
      </Content>
   </DownloadFileResponse>
</SOAP-ENV:Body>
```

The requested file content streams to the client as an attachment. BIRT iServer creates MIME boundaries randomly to ensure that the message is unique.

Updating a file or folder

You can update a file or folder to create or remove a dependency, set or remove an archive rule, define a parameter, or change other properties. You can also grant or revoke a permission and copy the access control list (ACL) of a folder to its subfolders. To use UpdateFile to modify the properties of a file or folder, you

must have the write privilege on the file or folder. To update privileges to the file or folder, you must have the grant privilege on the file or folder.

The following request modifies the autoarchive rules of three files:

```
<SOAP-ENV:Body>
   <Administrate>
      <AdminOperation>
         <UpdateFile>
            <WorkingFolderId>170</WorkingFolderId>
            <UpdateFileOperationGroup>
               <UpdateFileOperation>
                  <SetArchiveRules>
                     <ArchiveRule>
                        <FileType>ROX</FileType>
                        <NeverExpire>false</NeverExpire>
                        <ArchiveOnExpiration>true
                        </ArchiveOnExpiration>
                        <ExpirationAge>86400</ExpirationAge>
                     </ArchiveRule>
                  </SetArchiveRules>
               </UpdateFileOperation>
            </UpdateFileOperationGroup>
            <IdList>
               <String>1570</String>
               <String>7840</String>
               <String>8621</String>
            </IdList>
         </UpdateFile>
      </AdminOperation>
   </Administrate>
</SOAP-ENV:Body>
```

The response to an UpdateFile request is an empty response if the request succeeds. If the request fails, an error message appears.

Updating a file's parameters

The following example updates a document by setting the ad hoc parameter AC_KEEP_WORKSPACE_DIRECTORY to Yes. This setting preserves the workspace directory after the document runs. Because IsAdHoc is True, ColumnName and ColumnType are required parameters. They apply only to ad hoc parameter definitions. ColumnName is the database column to which the parameter applies. ColumnType is the data type of the column. ColumnType can be any Actuate data type, such as Boolean, Double, and Integer. ColumnName and ColumnType are parameters of ParameterDefinition.

```
<Administrate>
   <AdminOperation>
      <UpdateFile>
         …
            <SetParameterDefinitions>
               <ParameterDefinition>
                  <Name>AC_KEEP_WORKSPACE_DIRECTORY</Name>
                  <DataType>String</DataType>
                  <DefaultValue>Yes</DefaultValue>
                  <IsRequired>false</IsRequired>
                  <IsPassword>false</IsPassword>
                  <IsHidden>false</IsHidden>
                  <IsAdHoc>true</IsAdHoc>
                  <ColumnName>KeepW</ColumnName>
                  <ColumnType>String</ColumnType>
               </ParameterDefinition>
            </SetParameterDefinitions>
         …
         <Id>467</Id>
      </UpdateFile
   </AdminOperation>
</Administrate>
```

Updating the privilege settings of a file or folder

Using UpdateFile, you can apply the ACL of a folder to files and folders within it. Depending on the suboperation you use, you can either replace an object's ACL with those of the folder that contains it or add a folder's privileges to those of an object in the folder.

For example, the ACL of the Marketing folder grants the Buyer security role visible privileges to Marketing. The ACL of a subdirectory within the Marketing folder grants the Buyer security role read and write privileges. Adding the ACLs of Marketing and the subdirectory within Marketing gives the Buyer security role visible, read, and write privileges to the subdirectory. On the other hand, if you replace the ACL of the subdirectory, the Buyer security role has only visible privileges to the subdirectory.

Whether you add or replace an ACL, you can choose to make the results of the operation recursive. Using the recursive option, you can apply the results to all files and folders in the working folder, including all files and folders in a subdirectory.

Replacing an object's ACL with that of the folder that contains it

To replace the privileges of a file or folder with those of the folder that contains it, use the SetPermissions suboperation of UpdateFile, as shown in the following example. In this example, the AccessRight element for each security role or user

defines the security role or user's privileges to the working folder. Use an empty Search element to replace the ACL of all files and folders in the working folder. The omission of the Recursive element indicates that the operation affects only the immediate descendants of the working folder.

```
<SOAP-ENV:Body>
   <Administrate>
      <AdminOperation>
         <UpdateFile>
            <WorkingFolderId>170</WorkingFolderId>
            <UpdateFileOperationGroup>
               <UpdateFileOperation>
                  <SetPermissions>
                     <Permission>
                        <RoleName>Regional Managers</RoleName>
                        <AccessRight>S</AccessRight>
                     </Permission>
                     <Permission>
                        <RoleName>Operator</RoleName>
                        <AccessRight>VSREWDG</AccessRight>
                     </Permission>
                     <Permission>
                        <RoleName>Active Portal Administrator
                        </RoleName>
                        <AccessRight>VSREWDG</AccessRight>
                     </Permission>
                  </SetPermissions>
               </UpdateFileOperation>
            </UpdateFileOperationGroup>
            <Search/>
         </UpdateFile>
      </AdminOperation>
   </Administrate>
</SOAP-ENV:Body>
```

Adding the ACL of a folder to an object in the folder

To add the ACL of a folder to that of an object in the folder, use the GrantPermissions suboperation of UpdateFile. In the following example, access rights to the working folder for two security roles and a user appear in the AccessRight element. The result of this operation is that these security roles and this user receive the same rights to files in the working folder.

```
<SOAP-ENV:Body>
   <Administrate>
      <AdminOperation>
         <UpdateFile>
            <WorkingFolderName>/Sales/Eastern Region
            </WorkingFolderName>
            <UpdateFileOperationGroup>
               <UpdateFileOperation>
                  <GrantPermissions>
                     <Permission>
                        <RoleName>Sales</RoleName>
                        <AccessRight>SVE</AccessRight>
                     </Permission>
                     <Permission>
                        <RoleName>Eastern Sales Managers
                        </RoleName>
                        <AccessRight>VSREWDG</AccessRight>
                     </Permission>
                     <Permission>
                        <UserName>Kevan Blaine</UserName>
                        <AccessRight>VSREWDG</AccessRight>
                     </Permission>
                  </GrantPermissions>
               </UpdateFileOperation>
            </UpdateFileOperationGroup>
            <Search/>
         </UpdateFile>
      </AdminOperation>
   </Administrate>
</SOAP-ENV:Body>
```

Use an empty Search element to update the ACL of all files and folders in the working folder. The omission of the Recursive element indicates that this operation affects only the immediate descendants of the working folder.

Adding privileges recursively

To add privileges from a directory to all files and folders within it, including subfolders and their contents, set the Recursive element to True.

```
<UpdateFile>
   <WorkingFolderName>/Sales/Eastern Region</WorkingFolderName>
   <Recursive>True</Recursive>
   …
</UpdateFile>
```

Selecting properties of a file or folder in an Encyclopedia volume

Use SelectFiles to retrieve the name or ID of a single file or folder or a list of files or folders in an Encyclopedia volume. Using ResultDef, you can also retrieve specific properties of each file or folder or list. SelectFiles does not retrieve file or folder content.

To select a file or folder and view its properties, use TargetVolume in the SOAP header to indicate which Encyclopedia volume contains the item. SelectFiles can search all subfolders in a directory. To restrict a search to the items in a single directory, not including subfolders, use GetFolderItems.

SelectFiles supports searches that use the following criteria:

- Use NameList or IdList to retrieve a list of files or folders in a directory.
- Use Name or Id to retrieve a single file or folder.
- Use Search to retrieve all files or folders that match a given condition.

In a SelectFiles request, you can identify by name or ID the working folder from which to select files. You can indicate whether the search is recursive, meaning that it includes subdirectories of the working folder. You can also specify whether to retrieve only the latest version of the file.

Use ResultDef to specify the file or folder properties to retrieve. The properties you set in ResultDef depend on the type of item. For example, if the item is a file, you can retrieve the file name, ID, description, file type, page count, date of creation or last update, owner, and version name and number. If the item is a folder, you cannot retrieve a file type, version name and number, file size, or page count.

Using SelectFiles, you can set a privilege filter that restricts the result to users in a given security role. When the results of a SelectFiles request exceed the FetchSize, the response returns a FetchHandle to support retrieving the total result.

Requesting a list of files or folders in a working directory using SelectFiles

The following request asks for a list of files and folders in the working directory that match certain criteria. ResultDef specifies the information to return about each file. The request in this example asks for items such as the file ID, name, file type, and version number.

The Recursive element directs BIRT iServer to search subdirectories of the working folder. Search sets the FetchSize and CountLimit.

```
<SOAP-ENV:Body>
   <SelectFiles>
      <WorkingFolderName>/</WorkingFolderName>
      <Recursive>true</Recursive>
      <LatestVersionOnly>true</LatestVersionOnly>
      <ResultDef>
         <String>Id</String>
         <String>FileType</String>
         <String>Version</String>
         <String>Name</String>
         <String>Size</String>
         <String>PageCount</String>
      </ResultDef>
      <Search>
         <FetchSize>500</FetchSize>
         <CountLimit>530</CountLimit>
      </Search>
   </SelectFiles>
</SOAP-ENV:Body>
```

The response to the preceding request is a list of files that match the search conditions. For each file, the response displays the information requested in ResultDef. If the item is a folder, Version, Size, and PageCount return zero (0).

```
<SOAP-ENV:Body>
   <SelectFilesResponse>
      <ItemList>
         <File>
            <Id>1</Id>
            <Name>/</Name>
            <FileType>Directory</FileType>
            <Version>0</Version>
            <Size>0</Size>
            <PageCount>0</PageCount>
         </File>
         <File>
            <Id>11</Id>
            <Name>/Regional Forecasts/mltd.roi</Name>
            <FileType>ROI</FileType>
            <Version>1</Version>
            <Size>19594</Size>
            <PageCount>6</PageCount>
         </File>
         …
      </ItemList>
      <TotalCount>38</TotalCount>
   </SelectFilesResponse>
</SOAP-ENV:Body
```

You can use file IDs in subsequent requests to move, copy, update, delete, or work in another way with one or more of these files.

About the Search element in SelectFiles

You can refine a SelectFiles search by adding criteria in the Search element. Use the Condition element to define the type of files to select. Add AccessType to the Search element to select private or shared files.

```
<SOAP-ENV:Body>
   <SelectFiles>
      <WorkingFolderName>/</WorkingFolderName>
      <Recursive>false</Recursive>
      <LatestVersionOnly>true</LatestVersionOnly>
      <ResultDef>
         <String>Id</String>
         <String>FileType</String>
         <String>Version</String>
         <String>Name</String>
         <String>VersionName</String>
         <String>Size</String>
         <String>PageCount</String>
      </ResultDef>
      <Search>
         <Condition>
            <Field>FileType</Field>
            <Match>Directory</Match>
         </Condition>
         <FetchSize>500</FetchSize>
         <CountLimit>1500</CountLimit>
         <AccessType>Private</AccessType>
      </Search>
   </SelectFiles>
</SOAP-ENV:Body>
```

For a folder, Version, Size, and PageCount always return zero (0) in SelectFiles:

```
<SOAP-ENV:Body>
   <SelectFilesResponse>
      <ItemList>
         <File>
            <Id>7</Id>
            <Name>/Queries</Name>
            <FileType>Directory</FileType>
            <Version>0</Version>
```

```
            <Size>0</Size>
            <PageCount>0</PageCount>
         </File>
         <File>
            <Id>3</Id>
            <Name>/Requirements</Name>
            <FileType>Directory</FileType>
            <Version>0</Version>
            <Size>0</Size>
            <PageCount>0</PageCount>
         </File>
      </ItemList>
      <TotalCount>2</TotalCount>
   </SelectFilesResponse>
</SOAP-ENV:Body>
```

Using a privilege filter with SelectFiles

A privilege filter ensures that the response displays only the data accessible to users in a given security role. You can use a privilege filter with SelectFiles. The following example requests every file in the Sales directory that is accessible to users in the Manager role who have read and write privileges:

```
<SOAP-ENV:Body>
   <SelectFiles>
      <WorkingFolderName>/Sales</WorkingFoderName>
      <ResultDef>
         <String>Id</String>
         <String>Name</String>
         <String>PageCount</String>
         <String>Size</String>
         <String>TimeStamp</String>
         <String>Owner</String>
      </ResultDef>
      <Search>
         <PrivilegeFilter>
            <GrantedRoleName>Manager</GrantedRoleName>
            <AccessRights>RW</AccessRights>
         </PrivilegeFilter>
      </Search>
   </SelectFiles>
</SOAP-ENV:Body>
```

Retrieving a property list for an item in a folder

GetFolderItems retrieves a list of files or folders in an Encyclopedia volume folder. It also retrieves the properties of those files or folders. To use

GetFolderItems, specify the name of the folder to search and use ResultDef to indicate which properties to return for each item.

The properties you can specify include:

- Name
- ID
- FileType
- Description
- PageCount
- Size
- TimeStamp of the most recent update
- Version
- VersionName
- Owner
- User privileges associated with the item

The response always includes the item name and ID.

If a request includes TimeStamp, the application accessing the time stamp must correct for the local time zone. GetFolderItems does not return item content.

Retrieving properties of an item in a folder

The following request looks for every item in the TimeStudy folder and asks for the name, ID, size, and version of each. To identify the folder, you must use a path.

```
<SOAP-ENV:Body>
   <GetFolderItems>
      <FolderName>/TimeStudy</FolderName>
      <ResultDef>
         <String>Name</String>
         <String>Id</String>
         <String>Size</String>
         <String>Version</String>
      </ResultDef>
   </GetFolderItems>
</SOAP-ENV:Body>
```

The preceding request returns the requested properties for each item in the folder and a total count of items returned.

```
<SOAP-ENV:Body>
   <GetFolderItemsResponse>
      <Files>
         <File>
            <Name>Engineering.rox</Name>
            <Id>642</Id>
            <Version>1</Version>
            <Size>38912</Size>
         </File>
         <File>
            <Name>chart.gif</Name>
            <Id>879</Id>
            <Version>6</Version>
            <Size>38912</Size>
         </File>
         <File>
            <Id>1380</Id>
            <Name>Research.rox</Name>
            <Version>3</Version>
            <Size>38912</Size>
         </File>
      </Files>
      <TotalCount>3</TotalCount>
   </GetFolderItemsResponse>
</SOAP-ENV:Body>
```

Setting a condition using GetFolderItems

To limit the search of a folder to those items that match a specific condition, use GetFolderItems and identify the condition in the Search element. Use ResultDef to specify the information to return about each item. For example, to search only for folders in the working directory, send the following request:

```
<SOAP-ENV:Body>
   <GetFolderItems>
      <FolderName>/</FolderName>
      <ResultDef>
         <String>Name</String>
         <String>FileType</String>
      </ResultDef>
      <Search>
         <Condition>
            <Field>FileType</Field>
            <Match>Directory</Match>
         </Condition>
```

```
        <FetchSize>100</FetchSize>
        <CountLimit>150</CountLimit>
      </Search>
   </GetFolderItems>
</SOAP-ENV:Body>
```

The preceding request returns the file name and file type of each directory in the working folder. It also returns an identifier for each file and a count of the items.

```
<SOAP-ENV:Body>
   <GetFolderItemsResponse>
      <ItemList>
         <File>
            <Id>14</Id>
            <Name>Belden</Name>
            <FileType>Directory</FileType>
         </File>
         <File>
            <Id>31</Id>
            <Name>Brothers</Name>
            <FileType>Directory</FileType>
         </File>
         …
      </ItemList>
      <TotalCount>10</TotalCount>
   </GetFolderItemsResponse>
</SOAP-ENV:Body>
```

Using GetFileDetails

GetFileDetails retrieves properties of a file or folder. For example, you can retrieve the access control list (ACL) or autoarchive rules of an Actuate or third-party report. Using the AccessType element in ResultDef, you can determine whether the file is private or shared. You also can retrieve information about file dependencies, file ownership, and the size of the file.

Getting the details of an Actuate report

The following request asks for the ACL, autoarchive rules, dependent files, and required files of a file identified by its ID number:

```
<SOAP-ENV:Body>
   <GetFileDetails>
      <FileId>146</FileId>
```

```
      <ResultDef>
         <String>ACL</String>
         <String>ArchiveRules</String>
      </ResultDef>
   </GetFileDetails>
</SOAP-ENV:Body>
```

Unlike other Get and Select operations, GetFileDetails returns all the properties for a file, even if you request specific properties.

```
<SOAP-ENV:Body>
   <GetFileDetailsResponse>
      <ArchiveRules>
         <File>
            <Id>146</Id>
            <Name>/CustomerOrders.dox</Name>
            <FileType>DOX</FileType>
            <Version>1</Version>
            <TimeStamp>2008-11-10T19:24:08</TimeStamp>
            <Owner>Administrator</Owner>
            <UserPermissions>VSRWEDG</UserPermissions>
            <PageCount>300</PageCount>
            <Size>5427267</Size>
         </File>
         <ACL>
            <Permission>
               <RoleName>Regional Managers</RoleName>
               <AccessRight>VSRWEDG</AccessRight>
            </Permission>
            <Permission>
               <UserName>Kevin Belden</UserName>
               <AccessRight>S</AccessRight>
            </Permission>
         </ACL>
      </ArchiveRules>
   </GetFileDetailsResponse>
</SOAP-ENV:Body>
```

Getting the details of a cube design profile

Use GetFileDetails to get properties of a cube design profile, cube parameter values file, cube, or cube view. You can request specific properties using ResultDef. The following example requests the properties of a cube design profile:

```
<SOAP-ENV:Body>
   <GetFileDetails>
      <FileName>SouthwestRegion.dp4</FileName>
      <ResultDef>
         <String>Version</String>
         <String>FileType</String>
         <String>AccessType</String>
      </ResultDef>
   </GetFileDetails>
</SOAP-ENV:Body>
```

The preceding request returns the access type, file type, a path to the file, the file ownership and privileges, and other details.

```
<SOAP-ENV:Body>
   <GetFileDetailsResponse>
      <File>
         <Id>8</Id>
         <AccessType>Shared</AccessType>
         <Name>/Queries/SouthwestRegion.dp4</Name>
         <FileType>DP4</FileType>
         <Version>1</Version>
         <TimeStamp>2008-11-12T21:58:05</TimeStamp>
         <Owner>Administrator</Owner>
         <UserPermissions>VSRWEDG</UserPermissions>
         <PageCount>3</PageCount>
         <Size>9216</Size>
      </File>
   </GetFileDetailsResponse>
</SOAP-ENV:Body>
```

Managing Encyclopedia volume items

The Actuate Information Delivery API supports managing the items in an Encyclopedia volume and updating volume properties using the Administrate element. Administrate is not an operation on its own. It is a grouping mechanism for the types of operations that an administrator performs. With these operations, an Encyclopedia volume administrator manages the users, groups, roles, channels, file types, files, folders, jobs, and job schedules in an Encyclopedia volume. The administrator also can set or update the properties of the Encyclopedia volume.

You can create a composite operation using the Administrate element. A composite operation accomplishes several tasks in a single operation. In general, the operations you can group into a composite operation are the Create, Update, and Delete operations. Many Administrate operations do not require SOAP responses unless all or part of the operation fails.

Ignoring error conditions in an Administrate operation

An Administrate operation provides two optional request elements that tell BIRT iServer to ignore any error condition it finds and continue the operation. These elements are IgnoreMissing and IgnoreDup. An Ignore element typically applies to the Name or NameList element of the primary object.

To ignore the error condition that BIRT iServer cannot find a specified object, set IgnoreMissing to True. For example, in an UpdateUser operation, if you specify an invalid user name, BIRT iServer ignores the missing name and the operation continues when IgnoreMissing is True. If you set IgnoreMissing to False, the operation stops and returns an error at the missing name.

To ignore the error condition that a specified object already exists, set IgnoreDup to True. BIRT iServer always rejects a duplicate request, regardless of the IgnoreDup setting. When you set IgnoreDup, you indicate whether the operation stops and BIRT iServer returns an error. BIRT iServer does not honor IgnoreDup if you attempt to update multiple objects that have the same name.

Creating an item in an Encyclopedia volume

To create an item such as a user, a folder, a security role, or a notification group in an Encyclopedia volume, you typically indicate the type of item to create, then create properties for it. The type of item you are creating determines the properties you create.

Creating a user

The following request creates three new users in the Encyclopedia volume and identifies them by various properties. To add more than one e-mail address for a user, separate the addresses with a comma. To refer to the user's home folder, include a complete path, as shown in the following request:

```
<SOAP-ENV:Body>
   <Administrate>
      <AdminOperation>
         <CreateUser>
            <User>
               <Name>Akiko Takagishi</Name>
               <Password>movies</Password>
               <EmailAddress>ATaka@grisworld.com</EmailAddress>
            </User>
            <User>
               <Name>Grandford Lynne</Name>
               <Password>hedge</Password>
            </User>
```

```
            <User>
               <Name>Sandy Browne</Name>
               <Password>nobhill</Password>
               <HomeFolder>/Financials/Sandy</HomeFolder>
            </User>
         </CreateUser>
      </AdminOperation>
   </Administrate>
</SOAP-ENV:Body>
```

Creating a folder

Many operations that create an item must be accomplished using multiple operations. The following example shows how to use CreateFolder to create a folder in the working directory. Then, it uses UpdateFile to set the access type and autoarchive rules. AccessType defines whether the folder is shared or private. ArchiveRule defines when and how to archive the folder. In ArchiveRule, the file type $$$ indicates a folder.

```
<SOAP-ENV:Body>
   <Administrate>
      <AdminOperation>
         <Transaction>
            <TransactionOperation>
               <CreateFolder>
                  <FolderName>/Requirements</FolderName>
                  <IgnoreDup>false</IgnoreDup>
               </CreateFolder>
               <UpdateFile>
                  <SetAttributes>
                     <AccessType>Private</AccessType>
                  </SetAttributes>
                  <SetArchiveRules>
                     <ArchiveRule>
                        <FileType>$$$</FileType>
                        <NeverExpire>false</NeverExpire>
                        <ArchiveOnExpiration>true
                        </ArchivnExpiration>
                        <ExpirationAge>86400</ExpirationAge>
                        <IsInherited>false</IsInherited>
                     </ArchiveRule>
                  </SetArchiveRules>
                  <Name>/Requirements</Name>
               </UpdateFile>
            </TransactionOperation>
```

```
        </Transaction>
      </AdminOperation>
   </Administrate>
</SOAP-ENV:Body>
```

The response to a successful CreateFolder request is an empty Administrate response if the request succeeds. If the request fails, an error message appears.

Creating a security role

To create a security role, you assign the role a name, then update it by choosing a parent or child role, and setting privileges.

```
<SOAP-ENV:Body>
   <Administrate>
      <AdminOperation>
         <Transaction>
            <TransactionOperation>
               <CreateRole>
                  <Role>
                     <Name>Field Sales</Name>
                  </Role>
                  <IgnoreDup>false</IgnoreDup>
               </CreateRole>
               <UpdateRole>
                  <SetParentRolesByName>
                     <String>Sales Representatives</String>
                  </SetParentRolesByName>
                  <NameList>
                     <Name>Field Sales</Name>
                  </NameList>
               </UpdateRole>
            </TransactionOperation>
         </Transaction>
      </AdminOperation>
   </Administrate>
</SOAP-ENV:Body>
```

The response to a successful CreateRole request is an empty Administrate response. If the request fails, an error message appears.

Deleting an item

The Actuate Information Delivery API supports deleting items from an Encyclopedia volume, such as a file, a user, a folder, a group, a job schedule, or a job notice.

There are three types of Delete operations:

- Delete a single item identified by Name or Id.
- Delete a list of items identified by NameList or IdList.
- Delete all items that match a given condition using Search.

For some Delete operations, you can indicate whether a deletion is recursive, meaning it applies to all items within the item to delete. For example, if DeleteFile is recursive and the file is a folder, the operation deletes the folder and any files and subfolders within it.

A Delete operation returns a status message when it completes successfully or stops at the first failed operation.

Deleting a file or folder

Use DeleteFile to delete a file or folder in an Encyclopedia volume. To delete lists of items, use IdList and specify the lists to delete, as shown in the following example:

```
<SOAP-ENV:Body>
   <Administrate>
      <AdminOperation>
         <DeleteFile>
            <IdList>
               <String>3</String>
               <String>760>/String>
               <String>814</String>
            </IdList>
         </DeleteFile>
      </AdminOperation>
   </Administrate>
</SOAP-ENV:Body>
```

Deleting a user

The following DeleteUser request is a transaction, which means that all deletions in the request must succeed for any deletions to occur.

```
<SOAP-ENV:Body>
   <Administrate>
      <AdminOperation>
         <Transaction>
            <TransactionOperation>
               <DeleteUser>
                  <IdList>
                     <String>5</String>
```

```
                    <String>461</String>
                    <String>587</String>
                    <String>853</String>
                    <String>1068</String>
                    <String>2360</String>
                  </IdList>
                </DeleteUser>
              </TransactionOperation>
            </Transaction>
          </AdminOperation>
      </Administrate>
</SOAP-ENV:Body>
```

A request to delete a user or list of users returns an empty Administrate response if the request succeeds. If the request fails, an error message appears.

Updating an item

You can update information about a user, a security role, a file, a folder, a notification group, a channel, a job schedule, an Encyclopedia volume property, or a file type. Updating an item is a two-part process. First, you specify the update operation to apply. Then, you specify the item or items to update.

For most items, there are three types of Update operations:

- Update a single item, using Name or Id.
- Update a list of items, using NameList or IdList.
- Update all items that match a given condition using Search.

To update a file type, use only NameList or Name.

The item you update determines the type of update operations available. For example, to update a notification group, you can add and remove users by name or ID, and change the group name. To update a file, you can add or remove dependencies, set and grant permissions, and change autoarchive rules. To update a file type, you can specify a web icon and a Windows icon.

Updating a job schedule

To change a property of a job schedule, use UpdateJobSchedule and change SetAttributes, SetParameters, SetSchedules, or another element of the operation. The following request changes the run frequency, the job priority, and the run time. Because this job is a transaction, each element of the update must succeed for the update to succeed.

```
<SOAP-ENV:Body>
   <Administrate>
      <AdminOperation>
         <Transaction>
            <TransactionOperation>
               <UpdateJobSchedule>
                  <UpdateJobScheduleOperationGroup>
                     <UpdateJobScheduleOperation>
                        <SetAttributes>
                           <RunLatestVersion>true
                           </RunLatestVersion>
                           <InputFileName>
                              /National Data/Nationalforecast.rox
                           </InputFileName>
                           <Priority>800</Priority>
                        </SetAttributes>
                        <SetParameters>
                           <RetryOption>VolumeDefault</RetryOption>
                        </SetParameters>
                        <SetSchedules>
                           <TimeZoneName>PST</TimeZoneName>
                           <ScheduleDetails>
                              <JobScheduleDetail>
                                 <ScheduleType>Daily</ScheduleType>
                                    <Daily>
                                       <FrequencyInDays>1
                                       </FrequencyInDays>
                                       <OnceADay>07:00:00</OnceADay>
                                    </Daily>
                              </JobScheduleDetail>
                           </ScheduleDetails>
                        </SetSchedules>
                     </UpdateJobScheduleOperation>
                  </UpdateJobScheduleOperationGroup>
                  <Id>1</Id>
               </UpdateJobSchedule>
            </TransactionOperation>
         </Transaction>
      </AdminOperation>
   </Administrate>
 </SOAP-ENV:Body>
```

Updating a channel

To update a channel, use SetAttributes to change the channel's name and other properties. In SetPermissions, update the roles or users who can access this

channel and the privileges of each role or user to the channel. Identify the channel to update using a name, an ID, or a list of names or IDs.

```
<SOAP-ENV:Body>
   <Administrate>
      <AdminOperation>
      <UpdateChannel>
         <UpdateChannelOperationGroup>
            <UpdateChannelOperation>
               <SetAttributes>
                  <Name>Regional Sales</Name>
               </SetAttributes>
               <SetPermissions>
                  <Permission>
                     <RoleName>Headquarters Staff - Accounting
                     </RoleName>
                     <AccessRight>R</AccessRight>
                  </Permission>
                  <Permission>
                     <RoleName>Regional Managers</RoleName>
                     <AccessRight>RW</AccessRight>
                  </Permission>
               </SetPermissions>
               <IdList>
                  <String>2</String>
                  <String>286</String>
                  <String>341</String>
            </UpdateChannelOperation>
         </UpdateChannelOperationGroup>
         </IdList>
         <IgnoreDup>false</IgnoreDup>
      </UpdateChannel>
   </Administrate>
</SOAP-ENV:Body>
```

Moving a file or folder

MoveFile moves a file or folder from the working directory to a location you specify using the Target element.

When you use MoveFile, you can indicate whether to create a new version of the file or folder if one with the same name already exists in the target location. If you create a new version, BIRT iServer overwrites the existing file with every update.

Using MaxVersions, you can specify the maximum number of versions to maintain on a BIRT iServer. For example, if you maintain four versions of a file, BIRT iServer deletes the earliest version when you add a fifth version. At this

point, BIRT iServer can archive the file, depending on the autoarchive rules that apply to the file.

There are three ways to move a file or folder:

- Move a single file or folder using Name or Id.
- Move all files or folders that match a given condition using Search.

  When you use Search, you can use the optional LatestVersionOnly element to move only the latest version of the file matching the search criteria. Search also supports recursive MoveFile operations.
- Move a list of files or folders using NameList or IdList.

The following request uses Name to move Timeshares.rox to the Inventory directory. It also specifies that the Encyclopedia volume keeps up to three versions of this file at a time.

```
<SOAP-ENV:Body>
   <Administrate>
      <AdminOperation>
         <MoveFile>
            <Target>/Inventory</Target>
            <Name>/Timeshares.rox</Name>
            <MaxVersions>3</MaxVersions>
         </MoveFile>
      </AdminOperation>
   </Administrate>
</SOAP-ENV:Body>
```

Copying a file or folder

CopyFile copies a file or folder from the working directory to a target location. You can indicate whether to create a new version of the file or folder if one with the same name already exists in the target location.

Using MaxVersions, you can specify the maximum number of versions to maintain on BIRT iServer. For example, if you maintain four versions of a file, BIRT iServer deletes the earliest version when you copy a fifth version to the Encyclopedia volume. At this point, BIRT iServer can also archive the file, depending on the file's autoarchive rules.

There are three ways to copy a file or folder:

- Copy all files or folders that match a given condition using Search.

  When you use Search, you can use the optional LatestVersionOnly parameter to specify that BIRT iServer copies only the latest version of the file that matches the search criteria. Search also supports recursive CopyFile operations.

- Copy a list of files or folders using NameList or IdList.
- Copy a single file or folder using Name or Id.

Specify the target directory using the Target element of CopyFile. The following example copies two files to two different directories:

```
<SOAP-ENV:Body>
   <Administrate>
      <AdminOperation>
         <Transaction>
            <TransactionOperation>
               <CopyFile>
                  <Target>/Headquarters</Target>
                  <Name>/EmployeeList.rox</Name>
               </CopyFile>
               <CopyFile>
                  <Target>/SouthwestSales</Target>
                  <Name>/Prospects.rox</Name>
               </CopyFile>
            </TransactionOperation>
         </Transaction>
      </AdminOperation>
   </Administrate>
</SOAP-ENV:Body>
```

About composite operations and transactions

Certain Administrate operations can be composite operations. That is, a single request can perform multiple administrative tasks, such as CreateGroup, DeleteUser, and CreateRole. In general, the operations you can group into a single message are those that create, update, or delete an item in an Encyclopedia volume.

A transaction is a composite operation identified in the Transaction element of the schema. If a failure occurs anywhere in the transaction sequence, all operations in the transaction fail.

The following example shows a composite request to add a user, Kevin Neery, to three groups. The groups are identified by their iServer-generated ID numbers in the IdList element.

```
<SOAP-ENV:Body>
   <Administrate>
      <AdminOperation>
         <UpdateGroup>
            <UpdateGroupOperationGroup>
               <UpdateGroupOperation>
                  <AssignedToUsersByName>
                     <String>Kevin Neery</String>
                  </AssignedToUsersByName>
               </UpdateGroupOperation>
            </UpdateGroupOperationGroup>
            <IdList>
                  <String>1024</String>
                  <String>3772</String>
                  <String>3781</String>
               </IdList>
         </UpdateGroup>
      </AdminOperation>
   </Administrate>
</SOAP-ENV:Body>
```

About sequences in composite Administrate operations

The operations in a composite Administrate operation execute sequentially. If the first two updates succeed but the update fails on the third object, BIRT iServer saves the updates to the first two objects, sends an error message for the third operation, and does not process subsequent updates.

For example, a request calls for adding two users to four groups. The request succeeds for the first user. The request fails to add the second user to the third group. BIRT iServer saves all successful operations and does not process requests that follow the failure.

Working with a transaction

In a composite Administrate operation, the failure of any single operation does not invalidate operations that complete successfully before the failure. To require that all operations succeed before any updates can occur, create a transaction.

In the following example, the two principal operations are CreateGroup and UpdateUser. UpdateUser consists of several additional operations, such as assigning security roles to users and adding those same users to two groups, including the group that this operation creates. The following operation performs all UpdateUser operations on every user in the NameList element:

```
<SOAP-ENV:Body>
   <Administrate>
      <AdminOperation>
         <CreateGroup>
            <Group>
               <Name>Marketing Directors</Name>
               <Description>Direct reports to the Marketing VP
               </Description>
            <Group>
         </CreateGroup>
         <Transaction>
            <TransactionOperation>
               <UpdateUser>
                  <UpdateUserOperationGroup>
                     <UpdateUserOperation>
                        <AddToGroupsByName>
                           <String>Marketing Directors</String>
                           <String>All Employees</String>
                        </AddToGroupsByName>
                        <AddToRolesByName>
                           <String>Administrator</String>
                           <String>Management Staff</String>
                        </AddToRolesByName>
                     </UpdateUserOperation>
                  </UpdateUserOperationGroup>
                  <NameList>
                     <String>Claude Normand</String>
                     <String>Akiko Takagishi</String>
                     <String>Colleen O'Grady</String>
                  </NameList>
               </UpdateUser>
            </TransactionOperation>
         </Transaction>
      </AdminOperation>
   </Administrate>
</SOAP-ENV:Body>
```

As with other composite operations, CreateUser transactions execute sequentially. The difference is that any failure within a transaction causes the entire transaction to fail. For example, if AddToRolesByName succeeds for Claude Normand and Akiko Takagishi but fails for Colleen O'Grady, no users receive administrative privileges. All users' privileges revert to their previous settings and the entire AddToGroupsByName sequence fails. CreateGroup comes before the transaction. If CreateGroup succeeds, the operation adds the new group to the database because CreateGroup completed before the failure. Operations that follow the failed transaction do not run.

About TransactionOperation and AdminOperation

Many programming languages are unable to store an array of objects of different data types. These languages cannot use the Administrate or Transaction elements alone. An Administrate operation that contains several different suboperations is likely to fail in these languages. A programmer working with one of these languages can perform multiple tasks in a single operation by using the AdminOperation and TransactionOperation elements.

An AdminOperation request represents a single unit of work within an Administrate operation. A TransactionOperation request represents a single unit of work within a Transaction. The external programming language treats each AdminOperation request or TransactionOperation request as one object. BIRT iServer processes each task within an AdminOperation request or TransactionOperation request as a single unit of work. Because AdminOperation is subordinate to Administrate, AdminOperation can contain any number of transactions. These transactions can contain any number of TransactionOperation requests.

In the following example, Administrate consists of two AdminOperation requests. The second AdminOperation request contains a single Transaction that consists of two TransactionOperation requests.

```
<SOAP-ENV:Body>
   <Administrate>
      <AdminOperation>
         <CreateGroup> … </CreateGroup>
      </AdminOperation>
      <AdminOperation>
         <Transaction>
            <TransactionOperation>
               <CreateUser>
                  <User>
                     <Name>jsheboah</Name>
                     <Password>grandee</Password>
                     <EmailAddress>jsheb@corporate.com
                     </EmailAddress>
                     <SendNoticeForSuccess>true
                     </SendNoticeForSuccess>
                     <SendNoticeForFailure>true
                     </SendNoticeForFailure>
                  </User>
                  <IgnoreDup>true</IgnoreDup>
               </CreateUser>
            </TransactionOperation>
```

```
            <TransactionOperation>
               <CopyFile>
                  <Target>/Headquarters</Target>
                  <Name>/EmployeeList.rox</Name>
               </CopyFile>
            </TransactionOperation>
         </Transaction>
      </AdminOperation>
   </Administrate>
</SOAP-ENV:Body>
```

In this example, if the first AdminOperation request succeeds, BIRT iServer saves the data about the new group and proceeds to the next request, CreateUser. If CreateUser fails, processing stops and BIRT iServer does not process CopyFile.

Searching within an Encyclopedia volume

There are two categories of Encyclopedia volume search operations:

- Select operations, which retrieve items or lists of items and properties you specify in the request
- Get operations, which retrieve all available properties of an item

These operations apply only to the Encyclopedia volume you specify in the TargetVolume element of the SOAP header. Identify the target Encyclopedia volume using TargetVolume and indicate the operation to use. For a Select operation, list the properties to retrieve with the item or list.

FetchHandle is available when you use the Search element of a Get or Select request. If the result set is larger than the maximum FetchSize, BIRT iServer returns a FetchHandle with the response to keep the connection open for the next group of results.

Selecting an item in an Encyclopedia volume

The following example requests a list of users in the Encyclopedia volume Roland. The Encyclopedia volume name is in the TargetVolume element. For each user, this operation requests the ID, name, e-mail address, and home folder. It asks for 100 users at a time in the search result.

```
<SOAP-ENV:Header>
   <TargetVolume>ROLAND</TargetVolume>
   <AuthId>W4RhQBq0jidFqdi+o+r57uy</AuthId>
   <Locale>he_IL</Locale>
</SOAP-ENV:Header>
```

```
<SOAP-ENV:Body>
   <SelectUsers>
      <ResultDef>
         <String>Id</String>
         <String>Name</String>
         <String>EmailAddress</String>
         <String>Homefolder</String>
      </ResultDef>
      <Search>
         <FetchHandle/>
         <CountLimit>300</CountLimit>
         <FetchSize>100</FetchSize>
         <FetchDirection>true</FetchDirection>
      </Search>
   </SelectUsers>
   </SOAP-ENV:Body>
```

This request returns the specified properties for each user in the Encyclopedia volume and a total count of users.

```
<SOAP-ENV:Body>
   <SelectUsersResponse>
      <Users>
         <User>
            <Name>Samuel Stein</Name>
            <Id>188</Id>
            <EmailAddress>stein@cowin.com</EmailAddress>
            <HomeFolder>/Sales</HomeFolder>
         </User>
         <User>
            <Name>Jack Morris</Name>
            <Id>143</Id>
            <EmailAddress>morris@keller.com</EmailAddress>
            <HomeFolder>/Marketing</HomeFolder>
         </User>
         …
      </Users>
      <TotalCount>300</TotalCount>
   </SelectUsersResponse>
</SOAP-ENV:Body>
```

Selecting a job or job list

SelectJobs returns states and information for job instances. To retrieve job schedules, use SelectJobSchedules. SelectJobs retrieves information about a single job, a list of jobs, or jobs that match a certain condition. The ResultDef element specifies the job properties to retrieve, as shown in the following example:

```
<SOAP-ENV:Body>
   <SelectJobs>
      <ResultDef>
         <String>JobName</String>
         <String>JobId</String>
         <String>State</String>
      </ResultDef>
      <Search>
         <Condition>
            <Fileld>Tokyo Forecasts</Fileld>
         </Condition>
      </Search>
   </SelectJobs>
</SOAP-ENV:Body>
```

This request returns properties for the specified job and any previously generated instances of the job. A job's state can be Pending, Running, Succeeded, Failed, Cancelled, or Expired. The response also includes the total count of jobs that match the condition.

```
<SOAP-ENV:Body>
   <SelectJobsResponse>
      <Jobs>
         <JobProperties>
            <JobId>2</JobId>
            <JobName>Tokyo Forecasts</JobName>
            <State>Succeeded</State>
         </JobProperties>
         <JobProperties>
            <JobId>1</JobId>
            <JobName>Tokyo Forecasts</JobName>
            <State>Scheduled</State>
         </JobProperties>
      </Jobs>
      <TotalCount>2</TotalCount>
   </SelectJobsResponse>
</SOAP-ENV:Body>
```

To retrieve information regarding job schedules, use SelectJobSchedules.

Getting Encyclopedia volume, printer, and file type information

Use the following Get requests to retrieve information about Encyclopedia volumes, printers, user printer settings, and file type parameters:

- GetVolumeProperties retrieves information about a specific Encyclopedia volume on BIRT iServer.

- GetSystemPrinters retrieves information about printers for the Encyclopedia volume to which the user is logged in.
- GetUserPrinterOptions retrieves information about a given user's printer settings for printers on the current Encyclopedia volume.
- GetFileTypeParameterDefinitions retrieves parameters associated with a given file type on the current Encyclopedia volume.

Getting Encyclopedia volume properties

To display information about the current Encyclopedia volume, specify the Encyclopedia volume in the header. Then use GetVolumeProperties and ResultDef to request details about one or more of the following properties:

- VolumeProperties requests metadata about the Encyclopedia volume, including the Encyclopedia volume name, the default viewing preference for the Encyclopedia volume, the default printer name, and information about how often to retry jobs.
- OnlineBackupSchedule requests the schedule for backing up the Encyclopedia volume.
- TranslatedRoleNames requests the security roles in the Encyclopedia volume.
- ExternalUserPropertyNames requests user names from an external source.
- PrinterOptions requests printer settings for printers that the Encyclopedia volume accesses.
- AutoArchiveSchedule requests the default schedule for aging and archiving files on the Encyclopedia volume.
- ArchiveLibrary requests the name of any archive libraries set for the volume.

Requesting general Encyclopedia volume properties

The following example requests metadata about an Encyclopedia volume named voltaire:

```
<SOAP-ENV:Header>
   <TargetVolume>voltaire</TargetVolume>
   <AuthId>Q4yxAKHFJg9FY0JssYijJI5XvkJqDO</AuthId>
   <Locale>en_US</Locale>
</SOAP-ENV:Header>
<SOAP-ENV:Body>
   <GetVolumeProperties>
      <ResultDef>
         <String>VolumeProperties</String>
      </ResultDef>
   </GetVolumeProperties>
</SOAP-ENV:Body>
```

The preceding request returns known properties of an Encyclopedia volume.

```
<SOAP-ENV:Body>
   <GetVolumePropertiesResponse>
      <VolumeProperties>
         <Name>voltaire</Name>
         <ActuateVersion>7 Development</ActuateVersion>
         <ActuateBuildNumber>DEV021230</ActuateBuildNumber>
         <SecurityIntegrationOption>0</SecurityIntegrationOption>
         <MaxJobRetryCount>0</MaxJobRetryCount>
         <JobRetryInterval>0</JobRetryInterval>
         <DefaultViewingPreference>DHTML
         </DefaultViewingPreference>
         <DHTMLPageCaching>false</DHTMLPageCaching>
         <OnlineBackupMode>false</OnlineBackupMode>
      </VolumeProperties>
   </GetVolumePropertiesResponse>
</SOAP-ENV:Body>
```

Requesting an online backup schedule for an Encyclopedia volume

The following example requests the online backup schedule for an Encyclopedia volume:

```
<SOAP-ENV:Header>
   <TargetVolume>radium</TargetVolume>
   <AuthId>Q4yxAKHFJg9FY0JssYijJI5XvkJqDOPBOo</AuthId>
   <Locale>en_US</Locale>
</SOAP-ENV:Header>
<SOAP-ENV:Body>
   <GetVolumeProperties>
      <ResultDef>
         <String>OnlineBackupSchedule</String>
      </ResultDef>
   </GetVolumeProperties>
</SOAP-ENV:Body>
```

The preceding request returns details about the backup schedule.

```
<SOAP-ENV:Body>
   <GetVolumePropertiesResponse>
      <OnlineBackupSchedule>
         <TimeZoneName>PST</TimeZoneName>
         <ScheduleDetails>
            <JobScheduleDetail>
               <ScheduleType>Daily</ScheduleType>
               <ScheduleStartDate>2008-12-20</ScheduleStartDate>
```

```
            <ScheduleEndDate>2008-05-22</ScheduleEndDate>
            <DurationInSeconds>1800</DurationInSeconds>
            <Daily>
               <FrequencyInDays>3</FrequencyInDays>
               <OnceADay>07:00:00</OnceADay>
            </Daily>
         </JobScheduleDetail>
      </ScheduleDetails>
   </OnlineBackupSchedule>
</GetVolumePropertiesResponse>
</SOAP-ENV:Body>
```

Getting BIRT iServer System printer information

The following operation requests all available information about a printer named MIRTH:

```
<SOAP-ENV:Header>
   <TargetVolume>radium</TargetVolume>
   <AuthId>E4yxAKHFJg9FY0JssYijJI5XvkJqDOs</AuthId>
   <Locale>en_US</Locale>
</SOAP-ENV:Header>
<SOAP-ENV:Body>
   <GetSystemPrinters>
      <PrinterName>MIRTH</PrinterName>
   </GetSystemPrinters>
</SOAP-ENV:Body>
```

The preceding request returns all available information about the printer.

```
<SOAP-ENV:Body>
   <GetSystemPrintersResponse>
      <Printers>
         <Printer>
            <Name>MIRTH</Name>
            <Manufacturer>HP</Manufacturer>
            <Model>HP LaserJet 4050 Series PS</Model>
            <Location>Near Sales Area</Location>
            <Description>4050N</Description>
            <Orientation>PORTRAIT</Orientation>
            <PageSize>Letter</PageSize>
            <Scale>100</Scale>
            <Resolution>300 X 300</Resolution>
            <NumberOfCopies>1</NumberOfCopies>
            <Collation>false</Collation>
            <PaperTray>Automatically Select</PaperTray>
            <Duplex>SIMPLEX</Duplex>
```

```
            <ColorMode>true</ColorMode>
            <SupportOrientation>true</SupportOrientation>
            <OrientationOptions>
               <String>PORTRAIT</String>
               <String>LANDSCAPE</String>
               <String>AUTO</String>
            </OrientationOptions>
            <SupportPageSize>true</SupportPageSize>
            <PageSizeOptions>
               <String>Letter</String>
               <String>Letter Small</String>
               …
            </PageSizeOptions>
            <SupportScale>true</SupportScale>
            <ScaleOptions>
               <Integer>100</Integer>
            </ScaleOptions>
            <SupportResolution>true</SupportResolution>
            <ResolutionOptions>
               <String>300 X 300</String>
               <String>600 X 600</String>
            </ResolutionOptions>
            <SupportNumberOfCopies>false</SupportNumberOfCopies>
            <SupportCollation>true</SupportCollation>
            <SupportPaperTray>true</SupportPaperTray>
            <PaperTrayOptions>
               <String>Automatically Select</String>
               …
            </PaperTrayOptions>
            <SupportDuplex>true</SupportDuplex>
            <DuplexOptions >
               <String>SIMPLEX</String>
               …
            </DuplexOptions>
            <SupportColorMode>false</SupportColorMode>
            <ColorModeOptions>
               <String>true</String>
            </ColorModeOptions>
         </Printer>
      </Printers>
   </GetSystemPrintersResponse>
</SOAP-ENV:Body>
```

Retrieving a user's printer settings

Printer settings include the user's default printer, the orientation and default paper size on each printer, and printer resolution. To retrieve the printer settings for a user, use GetUserPrinterOptions and specify the user by name or ID.

```
<SOAP-ENV:Header>
   <TargetVolume>radium</TargetVolume>
      <AuthId>E4yxAKHFJg9FY0JssYijJI5XvkJqDOs</AuthId>
      <Locale>en_US</Locale>
</SOAP-ENV:Header>
<SOAP-ENV:Body>
   <GetUserPrinterOptions>
      <UserId>515</UserId>
   </GetUserPrinterOptions>
</SOAP-ENV:Body>
```

The preceding request returns the settings for every printer available to the user.

```
<SOAP-ENV:Body>
   <GetUserPrinterOptionsResponse>
   <PrinterOptions>
      <PrinterOptions>
         <PrinterName>Corbet</PrinterName>
         <IsDefaultPrinter>false</IsDefaultPrinter>
         <Orientation>PORTRAIT</Orientation>
         <PageSize>Letter</PageSize>
         <Scale>100</Scale>
         <Resolution>300 X 300</Resolution>
         <NumberOfCopies>160</NumberOfCopies>
         …
      </PrinterOptions>
      <PrinterOptions>
         <PrinterName>Griswold</PrinterName>
         <IsDefaultPrinter>false</IsDefaultPrinter>
         <Orientation>PORTRAIT</Orientation>
         …
      </PrinterOptions>
   </PrinterOptions>
   </GetUserPrinterOptionsResponse>
</SOAP-ENV:Body>
```

Retrieving parameter definitions for a file type

GetFileTypeParameterDefinitions supports retrieving the parameter definitions for all files of a given type on an Encyclopedia volume.

```
<SOAP-ENV:Body>
   <GetFileTypeParameterDefinitions>
      <FileType>NewType</FileType>
   </GetFileTypeParameterDefinitions>
</SOAP-ENV:Body>
```

The ParameterDefinition element of the response returns details about every parameter associated with the specified file type. If the file type parameter is an ad hoc parameter, you must set ColumnName and ColumnType parameters in ParameterDefinition. The following example includes two parameter definitions:

```
<SOAP-ENV:Body>
   <GetFileTypeParameterDefinitionsResponse>
      <ParameterList>
         <ParameterDefinition>
            <Name>City</Name>
            <DataType>String</DataType>
            <DefaultValue>Boston</DefaultValue>
            <IsRequired>true</IsRequired>
            <IsPassword>false</IsPassword>
            <IsHidden>false</IsHidden>
            <IsAdHoc>false</IsAdHoc>
         </ParameterDefinition>
         <ParameterDefinition>
            <Name>Customer</Name>
            <DataType>String</DataType>
            <IsRequired>true</IsRequired>
            <IsPassword>false</IsPassword>
            <IsHidden>false</IsHidden>
            <DisplayName>Client</DisplayName>
            <IsAdHoc>false</IsAdHoc>
         </ParameterDefinition>
      </ParameterList>
   </GetFileTypeParameterDefinitionsResponse>
</SOAP-ENV:Body>
```

Extracting parameter definitions

Using the Actuate Information Delivery API, you can extract parameter definitions from a parameter values file. For example, you can determine whether a parameter is ad hoc, whether it is hidden, and what data type it is. To retrieve the parameter definitions from a file, use ExtractParameterDefinitionsFromFile and identify the file by name and file-type extension. Then submit the file as an attachment to the request or embed it in the request.

```
<SOAP-ENV:Body>
   <ExtractParameterDefinitionsFromFile>
      <Content>
         <ContentId>ROD_param.rop</ContentId>
         <ContentType>binary</ContentType>
         <ContentLength>62000</ContentLength>
      </Content>
   </ExtractParameterDefinitionsFromFile>
</SOAP-ENV:Body>
```

The preceding request returns a definition for each parameter in the attachment.

```
<SOAP-ENV:Body>
   <ExtractParameterDefinitionsFromFileResponse>
      <ParameterDefinitions>
         <ParameterDefinition>
            <Name>DCP_DEBUG_LEVEL</Name>
            <DataType>Integer</DataType>
            <DefaultValue>100</DefaultValue>
            <IsRequired>false</IsRequired>
            <IsPassword>false</IsPassword>
            <IsHidden>false</IsHidden>
            <IsAdHoc>false</IsAdHoc>
         </ParameterDefinition>
         <ParameterDefinition>
            <Name>DCP_ESPRESSO_LIB</Name>
            <DataType>String</DataType>
            <IsRequired>false</IsRequired>
            <IsPassword>false</IsPassword>
            <IsHidden>false</IsHidden>
            <IsAdHoc>false</IsAdHoc>
         </ParameterDefinition>
         …
      </ParameterDefinitions>
   </ExtractParameterDefinitionsFromFileResponse>
</SOAP-ENV:Body>
```

Exporting file parameters

ExportParameterDefinitionsToFile converts parameter definitions to an attached file that the client application can use as a report's parameter values file. Because the parameter in the following request is an ad hoc parameter, you must use ColumnName and ColumnType. ColumnName is the name of the database column to which this ad hoc parameter applies. ColumnType is the Actuate data type of the column.

```
<SOAP-ENV:Body>
   <ExportParameterDefinitionsToFile>
      <ParameterList>
         <ParameterDefinition>
            <Group>Clients</Group>
            <Name>OPS_HOME</Name>
            <DataType>String</DataType>
            <DefaultValue>default</DefaultValue>
            <IsRequired>True</IsRequired>
            <IsPassword>False</IsPassword>
            <IsHidden>True</IsHidden>
            <DisplayName>Home</DisplayName>
            <IsAdHoc>True</IsAdHoc>
            <ColumnName>Operations</ColumnName>
            <ColumnType>String</ColumnType>
         </ParameterDefinition>
      </ParameterList>
   </ExportParameterDefinitionsToFile>
</SOAP-ENV:Body>
```

This request returns the attachment and provides descriptive data about the attachment in the Content element.

```
<SOAP-ENV:Body>
   <ExportParameterDefinitionsToFileResponse>
      <Content>
         <ContentId>ExportParameterDefinitionsToFile</ContentId>
         <ContentType>application/octet-stream
         </ContentType>
      </Content>
   </ExportParameterDefinitionsToFileResponse>
</SOAP-ENV:Body>
```

Executing a predefined Encyclopedia volume command

Using the Actuate Information Delivery API, you can execute one of the following predefined Encyclopedia volume commands shown in Table 5-2.

Table 5-2 Predefined Encyclopedia volume commands

Command	Description
StartArchive	Starts the archive process for the Encyclopedia volume
StartPartitionPhaseOut	Starts the process of moving data out of a partition
SwitchToNormalMode	Switches the Encyclopedia volume from online backup mode to normal mode

Table 5-2 Predefined Encyclopedia volume commands

Command	Description
SwitchToOnlineBackup Mode	Switches the Encyclopedia volume from normal mode to online backup mode

The following request starts partition phaseout in 60 seconds:

```
<SOAP-ENV:Body>
   <ExecuteVolumeCommand>
      <VolumeName>Autry</VolumeName>
      <Command>StartPartitionPhaseOut</Command>
      <GracePeriodInSeconds>60</GracePeriodInSeconds>
   </ExecuteVolumeCommand>
</SOAP-ENV:Body>
```

This request returns a status for the command, either Succeeded or Failed.

```
<SOAP-ENV:Body>
   <ExecuteVolumeCommandResponse>
      <Status>Succeeded</Status>
   </ExecuteVolumeCommandResponse>
</SOAP-ENV:Body>
```

Diagnosing reporting environment problems

Use the Ping request to test whether a specific component of the reporting environment is operational and to retrieve other information. A Ping request must specify a destination. Using the Information Delivery API, you can test the following destinations:

- The Message Distribution Service (MDS)
- A BIRT iServer node running the Encyclopedia engine (EE)
- A BIRT iServer node running the Factory service (FS)
- A BIRT iServer node running the View service (VS)
- An Actuate open server driver (OSD)
- A connection to a data source

If a destination is not operational, BIRT iServer returns an error message. If a destination is operational, the response depends on the Ping request you send. For example, you can request a simple timestamp that shows the elapsed time between when a component receives the request and when it sends a reply. You also can request more detailed information.

A Ping request to the MDS has no security restrictions. For all other components, the request is subject to Encyclopedia volume authentication. The user must be an Encyclopedia volume administrator or a user in the Operator security role.

About Ping request options

A Ping request must specify a destination to test, expressed as a string. It can also specify an action to take, such as reading a file or writing a temporary file, and the level of detail to include in the response. Table 5-3 describes the elements of a Ping request.

Table 5-3 Ping request elements

Element	Description
Destination	The destination to test. This element is required. Valid values are: ■ MDS (Message Distribution Service) ■ EE (Encyclopedia Engine) ■ FS (Factory Service) ■ VS (View Service) ■ OSD (Open Server Driver)
Action	An optional element specifying the action to take at the destination. Valid values are: ■ Echo — Echoes data specified in the Payload parameter. ■ ReadFile — Opens a specified Encyclopedia volume file, reads its content, and closes the file. Destination must be EE, FS, or VS. ■ WriteFile — Creates a temporary file in a partition, writes a specified number of bytes, closes the file, and deletes it. Destination must be EE or FS. ■ Connect — Connects to a data source. If you do not specify a value, the destination component responds to the request without taking another action.
Mode	An optional element specifying the level of detail in the Ping response. Valid values are: ■ Concise — Returns the elapsed time between a component's receipt of the request and the time the component sends a reply. ■ Normal — Returns the names of components in the test path and the timestamps of the request entering and leaving each component.

Table 5-3 Ping request elements

Element	Description
Mode	■ Trace — Returns the timestamp of the request entering and leaving major subcomponents of the component being tested. For example, a request to a node running the Encyclopedia service can provide a timestamp for when the request enters and leaves the process queue. A Ping request in Trace mode also can return diagnostic information other than timing. For example, a request to test writing a temporary file to a partition can return the amount of free disk space on the partition.
Server	An optional element specifying which instance of a Factory service or View service to test. Works with the ProcessID parameter. To test all available instances of the Factory or View service, use an asterisk (*). If you do not use Server, the iServer load balancing mechanism allocates an available instance of the requested service to respond to the Ping request.
ProcessID	With Server, this optional element specifies the process ID of the Factory or View service to test.
FileName	If the Action is ReadFile, this element is required to indicate the Encyclopedia volume file to read. If you ping an open server driver, FileName specifies the executable file to prepare for execution.
ConnectionProperties	If the Action is Connect, ConnectionProperties specifies properties required to connect to a data source, such as user name and password. ConnectionProperties must define the DBType. Valid values are DB2, Informix, MSSQL, ODBC, Oracle, Progress, Progress SQL92, Sybase. A database can require the Ping request to define additional properties.
Payload	A Ping request can include binary data that returns in the response. This binary data is called the payload. If the Action is Echo, you can specify the length of the payload data.
PartitionName	If the Action is WriteFile, this optional element specifies the name of the partition on which to create the temporary file.
NumBytes	If the Action is ReadFile or WriteFile, specifies the number of bytes to read or write. If you do not specify NumBytes or the value is 0, the Factory uses the default value of 10 KB.

Sending a Ping request in Concise mode

The following example requests an echo from the Encyclopedia service and asks for the response in Concise mode. The request includes binary payload data for the response to return.

```
<SOAP-ENV:Header>
   <AuthId>MvEQLSkwhYEHEBl8PqbCum5+MLDk=</AuthId>
   <Locale>en_US</Locale>
   <TargetVolume>Legion</TargetVolume>
   <DelayFlush>true</DelayFlush>
</SOAP-ENV:Header>
<SOAP-ENV:Body>
   <Ping>
      <Destination>EE</Destination>
      <Action>Echo</Action>
      <Mode>Concise</Mode>
      <Payload>******************************</Payload>
   </Ping>
</SOAP-ENV:Body>
```

A Ping response in Concise mode sends the total elapsed time to send the request and receive the response. If the request includes payload data, the data returns in the response.

```
<SOAP-ENV:Body>
   <PingResponse>
      <Reply>Ping reply from EE received. Time elapsed= 10 ms
         </Reply>
      <Payload>******************************</Payload>
   </PingResponse>
</SOAP-ENV:Body>
```

Sending a Ping request in Normal mode

The following request asks the Encyclopedia service to read a file in the target volume and send a response in Normal mode:

```
<SOAP-ENV:Header>
   <AuthId>84yxAKHFJ=</AuthId>
   <Locale>en_US</Locale>
   <TargetVolume>Legion</TargetVolume>
   <DelayFlush>true</DelayFlush>
</SOAP-ENV:Header>
<SOAP-ENV:Body>
   <Ping>
      <Destination>EE</Destination>
      <Action>ReadFile</Action>
```

```
      <Mode>Normal</Mode>
      <FileName>WesternRegionalShipping.rox</FileName>
   </Ping>
</SOAP-ENV:Body>
```

A response in Normal mode shows each major component in the test path and the time each component receives the request and sends a reply. The following response shows request and reply times for the MDS and Encyclopedia service:

```
<SOAP-ENV:Body>
   <PingResponse>
      <Reply>
         MDS(Legion): Elapsed= 0 ms
         Received: 09:31:17.304
         Reply: 09:31:17.304
         EncycEngine(Legion): Elapsed= 0 ms
         Received: 09:31:17.304
         Reply: 09:31:17.304
         Action: Read 10240 bytes from file
      </Reply>
   </PingResponse>
</SOAP-ENV:Body>
```

Sending a Ping request in Trace mode

The following request asks the Encyclopedia service to read a file in the target volume and send a response in Trace mode:

```
<SOAP-ENV:Header>
   <AuthId>84yxAKHFJg9FY08PqbCum5+MLDk=</AuthId>
   <Locale>en_US</Locale>
   <TargetVolume>Legion</TargetVolume>
   <DelayFlush>true</DelayFlush>
</SOAP-ENV:Header>
<SOAP-ENV:Body>
   <Ping>
      <Destination>EE</Destination>
      <Action>ReadFile</Action>
      <Mode>Trace</Mode>
      <FileName>WesternRegionalShipping.rox</FileName>
   </Ping>
</SOAP-ENV:Body>
```

A response in Trace mode provides more detailed information about the objects in the test path than a response in Normal mode.

```
<SOAP-ENV:Body>
   <PingResponse>
      <Reply>
         09:31:37.963: MDS(Legion) received Ping message
         09:31:37.963: MDS(Legion) forwarding Ping request to
            node end00166
         09:31:37.963: EncycEngine(Legion) received Ping message
         09:31:37.963: EncycEngine(Legion) found file
            &apos;Design1.rox&apos;. Time= 0 ms
         09:31:37.973: EncycEngine(Legion) opened file in 10 ms
         09:31:37.973: EncycEngine(Legion) read 10240 bytes from
            file in 0 ms
         09:31:37.973: EncycEngine(Legion) replying to Ping
            message. Elapsed= 10 ms
         09:31:37.963: MDS(Legion) received Ping reply from node
            end00166. Roundtrip= 10 ms
         09:31:37.973: MDS(Legion) replying to Ping message.
            Elapsed= 10 ms
      </Reply>
   </PingResponse>
</SOAP-ENV:Body>
```

Monitoring BIRT iServer information

A system administrator can retrieve data about BIRT iServer. The Actuate Information Delivery API provides operations that support:

- Getting information about BIRT iServer
- Getting information about a running or pending job
- Getting information about Factory service processes

These operations help determine whether to cancel a report that blocks or overloads the system. To monitor BIRT iServer System information, you must be an iServer System administrator and use SystemLogin to get an administrator's AuthId.

Getting information about BIRT iServer

To obtain a list of BIRT iServer nodes and their properties, send GetSystemServerList. There are no request parameters for this operation. Identify the target volume in the SOAP header, as shown in the following example:

```
<SOAP-ENV:Header>
   <TargetVolume>RADIUM</TargetVolume>
   <AuthId>+zxJgKuMBr4lC1psWCGajW8GXIp7</AuthId>
   <Locale>en_US</Locale>
</SOAP-ENV:Header>
<SOAP-ENV:Body>
   <GetSystemServerList>
   </GetSystemServerList>
</SOAP-ENV:Body>
```

The response includes the list of BIRT iServer nodes, their state information, a list of services running on each node, and whether the node is the cluster master. ServerVersion is the Actuate release number of the node running on the machine.

```
<SOAP-ENV:Body>
   <GetSystemServerListResponse>
      <ServerList>
         <ServerInformation>
            <ServerName>Homeland</ServerName>
            <ServerStatusInformation>
               <ServerState>ONLINE</ServerState>
            </ServerStatusInformation>
            <ServiceList>
               <Service>Request</Service>
               <Service>Viewing</Service>
               <Service>Generation</Service>
            </ServiceList>
            <OwnsVolume>true</OwnsVolume>
            <ServerVersionInformation>
               <ServerVersion>10</ServerVersion>
               <ServerBuild>Production</ServerBuild>
               <OSVersion>Windows XP/2002 Service Pack3
               </OSVersion>
            </ServerVersionInformation>
            <ChangesPending>false</ChangesPending>
         </ServerInformation>
         …
      </ServerList>
   </GetSystemServerListResponse>
</SOAP-ENV:Body>
```

Getting information about a running or pending job

GetFactoryServiceJobs returns a list of synchronous jobs that are either running or pending on the node specified by the TargetServer element in the SOAP header. You can also request a list of synchronous and asynchronous reports currently running on the target machine and specific job properties.

GetFactoryServiceJobs always returns the following data in Table 5-4 for a running or a pending job.

Table 5-4 Job data for GetFactoryServiceJobs

Pending synchronous job	Running job
ConnectionHandle	ConnectionHandle for a synchronous job
IsTransient	IsSyncJob
ObjectId	ObjectId for a synchronous job
Volume	IsTransient for a synchronous job
	JobId for an asynchronous job
	Volume for synchronous and asynchronous jobs

You can use PendingSyncJobsResultDef and RunningJobsResultDef to define other properties to retrieve for a pending or a running job, as shown in the following example:

```
<SOAP-ENV:Header>
   <AuthId>G4RhQBxOo0HDEQLSkwhYEHFr2ZcApO1AA==</AuthId>
   <TargetServer>Tokyo</TargetServer>
</SOAP-ENV:Header>
<SOAP-ENV:Body>
   <GetFactoryServiceJobs>
      <PendingSyncJobsResultDef>
         <String>Owner</String>
         <String>ExecutableFileName</String>
         <String>ExecutableVersionNumber</String>
         <String>PendingTime</String>
         <String>ResourceGroup</String>
      </PendingSyncJobsResultDef>
      <RunningJobsResultDef>
         <String>Owner</String>
         <String>ExecutableFileName</String>
         <String>StartTime</String>
         <String>RunningTime</String>
         <String>ExecutionTimeout</String>
         <String>ResourceGroup</String
      </RunningJobsResultDef>
   </GetFactoryServiceJobs >
</SOAP-ENV:Body>
```

This request returns the default properties and those requested in ResultDef. For a pending job, the response includes details such as the full path to the executable file, the version number, the resource group to which the job is assigned, and the time since the report entered the queue, expressed in seconds. For a running job, the response can include the number of seconds the report has been running and

the number of seconds remaining before job execution times out. The following example shows a response that includes synchronous and asynchronous jobs:

```
<SOAP-ENV:Body>
   <GetFactoryServiceJobsResponse>
      <PendingSyncJobs>
         <PendingSyncJob>
            <ConnectionHandle>1DelRhsJO8Jo</ConnectionHandle>
            <ObjectId>25</ObjectId>
            <IsTransient>true</IsTransient>
            <Volume>Dresden</Volume>
            <Owner>Ray Morrell</Owner>
            <ExecutableFileName>/Marketing/Campaign2008.rox
            </ExecutableFileName>
            <ExecutableVersionNumber>2</ExecutableVersionNumber >
            <PendingTime>921</PendingTime >
            <ResourceGroup>Default Sync</ResourceGroup>
         </PendingSyncJob>
         …
      </PendingSyncJobs>
      <RunningJobs>
         <RunningJob>
            <IsSyncJob>true</IsSyncJob>
            <ConnectionHandle>1DelRhsJO8Jo</ConnectionHandle>
            <ObjectId>125</ObjectId>
            <IsTransient>true</IsTransient>
            <Volume>Corinth</Volume>
            <Owner>Pablo Ruiz</Owner>
            <ExecutableFileName>/Forecasts/detail.rox
            </ExecutableFileName>
            <StartTime>2008-10-03 06:11:51</StartTime>
            <RunningTime>821</RunningTime>
            <ExecutionTimeout>79</ExecutionTimeout>
            <ResourceGroup>Default Sync</ResourceGroup>
         </RunningJob>
         <RunningJob>
            <IsSyncJob>false</IsSyncJob>
            <ConnectionHandle>1DelRhsJO8Jo</ConnectionHandle>
            <ObjectId>3031</ObjectId>
            <IsTransient>true</IsTransient>
            <Volume>Rubio</Volume>
            <Owner>Frank Kitada</Owner>
            <ExecutableFileName>/Forecasts/regions.rox
            </ExecutableFileName>
            <StartTime>2008-10-03 06:13:41</StartTime>
            <RunningTime>438</RunningTime>
```

```
            <ExecutionTimeout>500</ExecutionTimeout>
            <ResourceGroup>Default Async</ResourceGroup>
         </RunningJob>
      </RunningJobs>
   </GetFactoryServiceJobs Response>
</SOAP-ENV:Body>
```

Getting information about Factory service processes

GetFactoryServiceInfo provides data about Factory processes currently running on a specific BIRT iServer. This operation supports checking the number of running and pending jobs against the capacity of BIRT iServer. It shows the percent of disk space in use, how many synchronous jobs are pending and running, the cache size, and other information useful to an administrator.

To use this operation, identify the target BIRT iServer in the SOAP envelope header and send GetFactoryServiceInfo without request parameters.

```
<SOAP-ENV:Header>
   <AuthId>G4RhQBqSkwhYEHFr2ZcApO1AA==</AuthId>
   <TargetServer>Wizard</TargetServer>
</SOAP-ENV:Header>
<SOAP-ENV:Body>
   <GetFactoryServiceInfo></GetFactoryServiceInfo>
</SOAP-ENV:Body>
```

The response to this request indicates that there are five synchronous jobs pending on a BIRT iServer named Wizard, which can queue a maximum of 100 synchronous jobs. Four jobs are running, three of which are synchronous.

The response also shows:

- SyncJobQueueWait, the length of time before the system deletes a synchronous job from the queue, expressed in seconds.
- TransientReportTimeout, the maximum length of time before the system deletes a temporary report from the synchronous cache, expressed in minutes. The configuration file sets this value.
- CurrentTransientReportTimeout, the actual length of time, expressed in minutes, before the system deletes a temporary report from the synchronous cache. BIRT iServer sets this value internally at runtime. This value must be less than the TransientReportTimeout value.
- MaxSyncJobRuntime, the maximum job execution time, expressed in seconds.

The response expresses cache sizes in megabytes. GetFactoryServiceInfo always returns all the data shown in the following example:

```
<SOAP-ENV:Body>
   <GetFactoryServiceInfoResponse>
      <ServerName>Wizard</ServerName>
      <PendingSyncJobs>5</PendingSyncJobs>
      <SyncJobQueueSize>100</SyncJobQueueSize>
      <RunningSyncJobs>3</RunningSyncJobs>
      <RunningJobs>4</RunningJobs>
      <SyncFactoryProcesses>3</SyncFactoryProcesses>
      <MaxFactoryProcesses>4</MaxFactoryProcesses>
      <TransientReportCacheSize>500</TransientReportCacheSize>
      <PercentTransientReportCacheInUse>7
      </PercentTransientReportCacheInUse>
      <CurrentTransientReportTimeout>900
      </CurrentTransientReportTimeout>
      <TransientReportTimeout>1800</TransientReportTimeout>
      <SyncJobQueueWait>600</SyncJobQueueWait>
      <MaxSyncJobRuntime>900</MaxSyncJobRuntime>
   <GetFactoryServiceInfoResponse>
</SOAP-ENV:Body>
```

Monitoring or canceling a request for a synchronous report

The Actuate Information Delivery API supports monitoring the progress of a synchronous report. If report generation takes longer than a configurable period of time, an Encyclopedia volume administrator can monitor the progress of the report and determine whether to cancel the request.

To monitor any system event, you must first log in as Administrator, using the SystemLogin operation. This section explains how to monitor and cancel a request for a synchronous report using the Actuate Information Delivery API.

Monitoring a request for a synchronous report

GetSyncJobInfo retrieves information about synchronous jobs on BIRT iServer. For example, you can get the status of the report, its position in the queue, the name of the BIRT iServer machine on which it is pending, whether the report is transient or persistent, and how soon the request times out. The status of a synchronous job is Completed, Pending, Running, or Failed. GetSyncJobInfo also returns an error description if the status is Failed.

To submit a GetSyncJobInfo request, you need a ConnectionHandle and the ObjectId of the requested job. ConnectionHandle returns in the response to ExecuteReport.

```
<SOAP-ENV:Header>
   <AuthId>G4RhQBq0jidFqdi+o+Kh5JDhWA==</AuthId>
   <ConnectionHandle>QBq0jidFqd</ConnectionHandle>
</SOAP-ENV:Header>
<SOAP-ENV:Body>
   <GetSyncJobInfo>
      <ObjectId>356</ObjectId>
   </GetSyncJobInfo>
</SOAP-ENV:Body>
```

This request returns known details about the job. In the following response, PendingTime is the number of seconds since the job entered the queue. QueueTimeout is the number of seconds remaining before BIRT iServer deletes the job from the queue. The default value for QueueTimeout is 600 seconds. An Encyclopedia volume administrator can configure a different value, to a maximum of 999 seconds. The response also shows the path to the executable file that creates the output, whether the report is transient, the resource group to which the job is assigned, and other information about the job.

```
<SOAP-ENV:Body>
   <GetSyncJobInfoResponse>
      <Status>Pending</Status>
      <PendingSyncJob>
         <ConnectionHandle>HxTYGwG77</ConnectionHandle>
         <ObjectId>356</ObjectId>
         <IsTransient>true</IsTransient>
         <Volume>Monaco</Volume>
         <ServerName>Melville</ServerName>
         <Owner>Bob Carlton</Owner>
         <ExecutableFileName>/Forecasts/Detail.rox
         </ExecutableFileName>
         <ExecutableVersionNumber>13</ExecutableVersionNumber>
         <ResourceGroup>Default Sync</ResourceGroup>
         <SubmissionTime>2008-09-11 09:30:47</SubmissionTime>
         <PendingTime>124</PendingTime>
         <QueueTimeout>176</QueueTimeout>
         <QueuePosition>26</QueuePosition>
      </PendingSyncJob>
   </GetSyncJobInfoResponse>
</SOAP-ENV:Body>
```

Canceling a request for a synchronous report

CancelReport supports canceling a request for a synchronous report. Any user who can send a request for a report can cancel their own request. Only an Encyclopedia volume administrator can cancel the request of another user.

CancelReport returns one of the following status messages:

- Failed, meaning that the cancellation request failed because of authentication issues or another cause
- Succeeded, meaning that the request is canceled
- InActive, meaning that report generation was complete when BIRT iServer received the request

A report user can cancel a request for a synchronous report at two stages:

- After submitting the synchronous job request and receiving a ConnectionHandle
- After receiving the first page of a progressive report

The report user cannot cancel a request until the response to ExecuteReport returns a ConnectionHandle.

The following example shows how to cancel a request for synchronous report generation using the ConnectionHandle from the ExecuteReport request and identifying the report to cancel by ObjectId. ObjectId comes from the response to ExecuteReport. AuthId does not have to be the same as AuthId for the user who generated the report.

```
<SOAP-ENV:Header>
   <AuthId>Ft7m4truCmY7k5EQLSkwhYEHEfic1c6pcWhvcxA==</AuthId>
   <Locale>en_us</Locale>
   <ConnectionHandle>RYEMWxKxEsxq0mQCiXCZHB8NiLDFwq1Q=
   </ConnectionHandle>
</SOAP-ENV:Header>
<SOAP-ENV:Body>
   <CancelReport>
      <ObjectId>435</ObjectId>
   </CancelReport>
</SOAP-ENV:Body>
```

The preceding request returns the status of the cancellation.

```
<SOAP-ENV:Body>
   <CancelReportResponse>
      <Status>Succeeded</Status>
   <CancelReportResponse>
</SOAP-ENV:Body>
```

Part Two

Developing Actuate Information Delivery API applications

Chapter

6

Developing Actuate Information Delivery API applications using Java

This chapter consists of the following topics:

- About the Apache Axis 1.4 client
- About the Actuate Information Delivery API framework
- Developing Actuate Information Delivery API applications
- SOAP-based event web service operations and data types

About the Apache Axis 1.4 client

BIRT iServer System contains a WSDL document that defines an Actuate web services schema for the Apache Axis 1.4 client. The Apache Axis 1.4 client is a Java-based framework for constructing a SOAP processor.

The Actuate Information Delivery API framework uses elements of the Apache Axis 1.4 code libraries to support the following features:

- The code emitter, org.apache.axis.wsdl.WSDL2Java, generates the Java source code package, com.actuate.schemas, from the Actuate WSDL document.

  The package contains the classes, including proxies, that you can use to write an Actuate Information Delivery API application to communicate with BIRT iServer System using SOAP messaging.

- The SOAP processor provides automatic JavaBean serialization and deserialization, using the com.actuate.schemas proxies, to encode and decode SOAP messages.

The following sections describe how to generate the com.actuate.schemas library and list the third-party code libraries required by the Actuate Information Delivery API development environment.

Generating the com.actuate.schemas library

The Apache Axis 1.4 client ships with BIRT iServer Integration Technology. In the web services examples, the Apache Axis 1.4 client is in the following directory:

```
\Actuate11\ServerIntTech\Web Services\Examples\Axis Client
```

You can generate the source code for the package, com.actuate.schemas, compile the classes, and archive the classes into a library file, using one of the following supplied methods:

- Batch

  To use the batch file, build.bat, open a command prompt. Navigate to the Axis Client directory. At the command line, type

  ```
  build
  ```

- Apache Ant

  - To use Apache Ant, you must first install the build tool on your computer. To obtain the software and installation instructions, go to the Apache Ant Project web site at http://ant.apache.org/.
  - To use Apache Ant, open a command prompt. Navigate to the Axis Client directory.

- To generate the source code for the package, com.actuate.schemas, type

  ```
  ant
  ```

- To compile the source code and generate the com.actuate.schemas library, type

  ```
  ant dist
  ```

- To generate Javadoc for the com.actuate.schemas library, type

  ```
  ant documentation
  ```

Each of these methods performs the operations by setting the properties that specify the locations and file names for the following resources:

- WSDL document

  The Actuate WSDL document is available at the following URL:

  ```
  http://localhost:8000/wsdl/v11/axis/all
  ```

- Source code

  The code emitter, WSDL2Java, generates Java source code from the Actuate WSDL document, placing the package, com.actuate.schemas, in the directory, \Actuate11\ServerIntTech\Web Services\Examples\Axis Client\source.

- Compiled code

  Both methods use javac to compile the source code, placing the compiled package, com.actuate.schemas, in the directory, \Actuate11 \ServerIntTech\Web Services\Examples\Axis Client\build.

- Library files

  Both methods use jar to archive the package, com.actuate.schemas. The batch method places the library file, idapi.jar, in the directory, \Actuate11\ServerIntTech\Web Services\Examples\Axis Client\lib.

  The Apache Ant method places the library file, ActuateClient-${DSTAMP}.jar, in the directory, \Actuate11\ServerIntTech \Web Services\Examples\Axis Client\dist\lib. DSTAMP is a variable in the file, build.xml, that represents the time when the JAR file was created. To run the example applications, copy the file, ActuateClient-${DSTAMP}.jar, to the directory, \Actuate11\ServerIntTech\Web Services\Examples\Axis Client \dist\lib, and change the file name to idapi.jar.

About third-party code libraries

The BIRT iServer Integration Technology example applications require code libraries from the following third-party sources:

- Apache Axis

  ```
  http://xml.apache.org/axis
  ```

- Apache Log4j

  `http://logging.apache.org`

- Jakarta Commons

  `http://jakarta.apache.org/commons`

- JavaBeans™ Activation Framework (JAF)

  `http://java.sun.com/products/javabeans/glasgow/jaf.html`

- JavaMail™

  `http://java.sun.com/products/javamail`

- SOAP with Attachments API for Java™

  `http://java.sun.com/xml/downloads/saaj.html`

- SourceForge.net Web Services Description Language for Java Toolkit (WSDL4J)

  `http://sourceforge.net/projects/wsdl4j`

- Xerces XML Parser

  `http://xml.apache.org/xerces2-j`

Actuate supplies the necessary libraries in the \lib directory of the BIRT iServer Integration Technology installation.

About the Actuate Information Delivery API framework

The org.apache.axis.wsdl.WSDL2Java tool generates the Actuate Information Delivery API application framework based on the Actuate WSDL document definitions. This framework contains the client-side bindings that the Actuate IDAPI application requires to implement SOAP processing.

The SOAP processor serializes, or transforms, a remote procedure call by the application into an XML-based SOAP message that asks BIRT iServer to perform a web service. The application sends the request across the network using the Hypertext Transfer Protocol (HTTP) transport layer.

BIRT iServer receives the request and deserializes the SOAP message. BIRT iServer performs an appropriate action and sends a response, in the form of a SOAP message, back to the application. The SOAP processor embedded in the Actuate Information Delivery API framework automates the serialization and deserialization of JavaBeans, relieving the developer of the necessity to program the application at this level. The framework code is visible in the com.actuate.schemas classes.

The following sections describe these key elements of the framework as background information to provide the developer with an understanding of the way the Actuate Information Delivery API framework operates.

Using a data type from a WSDL document to generate a JavaBean

When you generate the Actuate Information Delivery API source code, the WSDL2Java tool builds a Java class from each WSDL type definition. For example, WSDL2Java translates the following Login type definition into its Java equivalent:

```
<xsd:complexType name="Login">
   <xsd:sequence>
      <xsd:element name="User" type="xsd:string"/>
      <xsd:element name="Password" type="xsd:string"
         minOccurs="0"/>
      <xsd:element name="EncryptedPwd" type="xsd:string"
         minOccurs="0"/>
      <xsd:element name="Credentials" type="xsd:base64Binary"
         minOccurs="0"/>
      <xsd:element name="Domain" type="xsd:string"
         minOccurs="0"/>
      <xsd:element name="UserSetting" type="xsd:boolean"
         minOccurs="0"/>
      <xsd:element name="ValidateRoles" type="typens:
         ArrayOfString" minOccurs="0"/>
   </xsd:sequence>
</xsd:complexType>
```

The WSDL2Java tool gives the generated Java class the name that appears in the WSDL type definition. The class defines the attributes and data types for each WSDL element with corresponding accessor methods, as shown in the following code:

```
package com.actuate.schemas;

public class Login  implements java.io.Serializable {
   private java.lang.String user;
   private java.lang.String password;
   private java.lang.String encryptedPwd;
   private byte[ ] credentials;
   private java.lang.String domain;
   private java.lang.Boolean userSetting;
   private com.actuate.schemas.ArrayOfString validateRoles;
   public Login( ) {
   }
   …
```

```
   public java.lang.String getUser( ) {
      return user;
   }

   public void setUser(java.lang.String user) {
      this.user = user;
…
```

Using metadata to map XML to a Java type

Mapping XML to a Java type requires creating a collection of descriptors in the class to associate each Java attribute with its corresponding XML element. This mapping system manages any naming differences between the Java and XML pairs to support the serialization and deserialization of the data.

The WSDL2Java tool generates a static type descriptor for each Java and XML pair. The following code maps the qualified names of the Java attribute and XML element for User in the Login class:

```
…
private static org.apache.axis.description.TypeDesc typeDesc =
   new org.apache.axis.description.TypeDesc(Login.class, true);

   static {
      typeDesc.setXmlType(new javax.xml.namespace.QName(
         "http://schemas.actuate.com/actuate11", "Login"));
      org.apache.axis.description.ElementDesc elemField =
         new org.apache.axis.description.ElementDesc( );
      elemField.setFieldName("user");
      elemField.setXmlName(new javax.xml.namespace.QName(
         "http://schemas.actuate.com/actuate11", "User"));
      elemField.setXmlType(new javax.xml.namespace.QName(
         "http://www.w3.org/2001/XMLSchema", "string"));
      elemField.setNillable(false);
   typeDesc.addFieldDesc(elemField);
…
```

A class generated from a WSDL type is typically a JavaBean. The JavaBean uses classes from the org.apache.axis.encoding.ser package to encode and decode SOAP messages. In the following code example, getSerializer( ) instantiates and returns a reference to a BeanSerializer object using the Java and XML type descriptors:

```
…
public static org.apache.axis.encoding.Serializer getSerializer(
      java.lang.String mechType,
      java.lang.Class _javaType,
      javax.xml.namespace.QName _xmlType) {
```

```
   return
      new  org.apache.axis.encoding.ser.BeanSerializer(
         _javaType, _xmlType, typeDesc);
   }
…
```

Mapping the portType to a Service Definition Interface

WSDL2Java uses the portType and binding in the WSDL document to create the Service Definition Interface (SDI). The Service Definition Interface specifies the input and output messages of the request-response pairs for an operation and the service name and port.

The following WSDL code shows the specification of the input and output messages, Login and LoginResponse, and the binding of this request-response pair to the login operation:

```
…
<portType name="ActuateSoapPort">
   <operation name="login">
      <input message="wsdlns:Login"/>
      <output message="wsdlns:LoginResponse"/>
   </operation>
</portType>
…
<binding name="ActuateSoapBinding" type="wsdlns:ActuateSoapPort">
   <soap:binding style="document"
      transport="http://schemas.xmlsoap.org/soap/http"/>
   <operation name="login">
      <soap:operation soapAction=""/>
      <input>
         <soap:body use="literal" parts="Request"/>
      </input>
      <output>
         <soap:body use="literal" parts="Response"/>
      </output>
   </operation>
</binding>
…
```

The following WSDL code shows the specification of the service and port names, and the binding of the port to a machine address:

```
…
<service name="ActuateAPI">
```

```
   <port name="ActuateSoapPort"
   binding="wsdlns:ActuateSoapBinding">
      <soap:address location="http://localhost:8000"/>
   </port>
</service>
…
```

An application uses this information to construct an interface to access the operations available from the service using a remote procedure call (RPC), as shown in the following code:

```
package com.actuate.schemas;

public interface ActuateSoapPort_PortType extends java.rmi.Remote
   {
   public com.actuate.schemas.LoginResponse
      login(com.actuate.schemas.Login request)
      throws java.rmi.RemoteException;
…
```

In the example, the remote procedure call, login( ), submits a request, passing a Login object as a parameter, and returns a LoginResponse object in response from the BIRT iServer defined by ActuateSoapPort in the SDI.

Using a WSDL binding to generate a Java stub

A Java stub consists of a class containing the proxy code that allows an application to call a remote service as a local object. Using a proxy, a developer does not have to specify the URL, namespace, or parameter arrays that the Service and Call objects require.

The stub converts the call to a Java method to a SOAP call. The stub constructor instantiates the service then adds the references for each qualified name, serializable class, and the JavaBean serialization and deserialization factories to Vectors to complete the implementation of the ActuateSoapPort interface, as shown in the following code:

```
package com.actuate.schemas;

public class ActuateSoapBindingStub extends
   org.apache.axis.client.Stub
   implements com.actuate.schemas.ActuateSoapPort_PortType {
   private java.util.Vector cachedSerClasses = new
   java.util.Vector( );
   private java.util.Vector cachedSerQNames = new
   java.util.Vector( )
   private java.util.Vector cachedSerFactories = new
   java.util.Vector( );
   private java.util.Vector cachedDeserFactories = new
   java.util.Vector( );
…
```

```
public ActuateSoapBindingStub(javax.xml.rpc.Service service)
   throws org.apache.axis.AxisFault {
      if (service == null) {
         super.service = new org.apache.axis.client.Service( );
      } else {
         super.service = service;
      }
…
      qName = new javax.xml.namespace.QName(
         "http://schemas.actuate.com/actuate11", "Login");
         cachedSerQNames.add(qName);
         cls = com.actuate.schemas.Login.class;
         cachedSerClasses.add(cls);
         cachedSerFactories.add(beansf);
         cachedDeserFactories.add(beandf);
```

Implementing the Actuate API service

ActuateAPI interface extends javax.xml.rpc.Service and defines the methods that get the URL for an Actuate SOAP port. The ActuateAPILocator class implements ActuateAPI interface to bind the SOAP port to a physical address. It returns this address using getActuateSoapPortAddress( ), as shown in the following code:

```
package com.actuate.schemas;

public class ActuateAPILocator extends
   org.apache.axis.client.Service
   implements com.actuate.schemas.ActuateAPI {
private final java.lang.String ActuateSoapPort_address = "http://
   ENL2509:8000";

// Use to get a proxy class for ActuateSoapPort
public java.lang.String getActuateSoapPortAddress( ) {
   return ActuateSoapPort_address;
   }
```

ActuateAPI interface specifies two versions of getActuateSoapPort( ) method to access a physical address. ActuateAPILocator.getActuateSoapPort( ) returns the default address set using attribute, ActuateSoapPort_address, as shown in the following code:

```
public com.actuate.schemas.ActuateSoapPort_PortType
   getActuateSoapPort( )
   throws javax.xml.rpc.ServiceException {
   java.net.URL endpoint;
   try {
      endpoint = new java.net.URL(ActuateSoapPort_address);
   }
   catch (java.net.MalformedURLException e) {
      throw new javax.xml.rpc.ServiceException(e);
```

```
   }
   return getActuateSoapPort(endpoint);
}
```

The overloaded version of ActuateAPILocator.getActuateSoapPort(java.net.URL portAddress) accepts a URL as a parameter. This version creates the service using the URL parameter as the endpoint, as shown in the following code:

```
public com.actuate.schemas.ActuateSoapPort_PortType
   getActuateSoapPort
   (java.net.URL portAddress) throws
   javax.xml.rpc.ServiceException {
   try {
      com.actuate.schemas.ActuateSoapBindingStub _stub =
      new com.actuate.schemas.ActuateSoapBindingStub(portAddress,
   this);
      _stub.setPortName(getActuateSoapPortWSDDServiceName( ));
      return _stub;
   }
   catch (org.apache.axis.AxisFault e) {
      return null;
   }
}
```

Developing Actuate Information Delivery API applications

To run the BIRT iServer Integration Technology example applications for the Apache Axis 1.4 client, open a command prompt. Navigate to the Axis Client directory.

In a Windows environment, you can run the file, setClassPath.bat, to set the environment variables needed to access the required source code, compiled classes, libraries, and other resources. setClassPath.bat contains the following environment variable settings:

```
set SAMPLEBASEDIR=.
set LIBDIR=%SAMPLEBASEDIR%\lib
set AXIS_JAR=%LIBDIR%\axis.jar;%LIBDIR%\commons-
   discovery.jar;%LIBDIR%\commons-logging.jar;%LIBDIR%
   \jaxrpc.jar;%LIBDIR%\log4j-1.2.4.jar;%LIBDIR%\wsdl4j.jar
set SUN_JAR=%LIBDIR%\activation.jar;%LIBDIR%\mail.jar;%LIBDIR%
   \saaj.jar
set XMLPARSER_JAR=%LIBDIR%\xercesImpl.jar;%LIBDIR%
   \xmlParserAPIs.jar
set CLASSPATH=%AXIS_JAR%;%SUN_JAR%;%SAMPLEBASEDIR%
   \build;%SAMPLEBASEDIR%\source;%XMLPARSER_JAR%;%LIBDIR%
   \servlet.jar;
```

In a UNIX environment, you can run the shell script, setClassPath.sh. setClassPath.sh contains the following environment variable settings:

```
#!/bin/sh
export SAMPLEBASEDIR
export LIBDIR
export AXIS_JAR
export SUN_JAR
export XMLPARSER_JAR
export CLASSPATH
SAMPLEBASEDIR=`pwd`
LIBDIR=$SAMPLEBASEDIR/lib
AXIS_JAR=$LIBDIR/axis.jar:$LIBDIR/commons-discovery.jar:$LIBDIR/
   commons-logging.jar:$LIBDIR/jaxrpc.jar:$LIBDIR/log4j-
   1.2.4.jar:$LIBDIR/wsdl4j.jar
SUN_JAR=$LIBDIR/activation.jar:$LIBDIR/mail.jar:$LIBDIR/saaj.jar
XMLPARSER_JAR=$LIBDIR/xercesImpl.jar:$LIBDIR/xmlParserAPIs.jar
CLASSPATH=$AXIS_JAR:$SUN_JAR:$SAMPLEBASEDIR/build:$SAMPLEBASEDIR/
   source:$XMLPARSER_JAR:$LIBDIR/servlet.jar
```

The following sections describe the use of the Axis TCPMonitor utility to capture SOAP messages and the development process for following types of Actuate Information Delivery API applications:

- Logging in to an Encyclopedia volume
- Creating a user
- Performing a search operation
- Executing a transaction-based operation
- Uploading a file
- Downloading a file
- Executing a report
- Scheduling a custom event

The code examples and explanations in this chapter parallel the code examples and explanations in the Developing Actuate Information Delivery API applications using Microsoft .NET chapter.

Writing a program that logs in to an Encyclopedia volume

A login operation authenticates a user in an Encyclopedia volume. A login operation involves the following actions:

- An IDAPI application sends a login request to an Encyclopedia volume.
- The Encyclopedia volume sends a login response to the IDAPI application.

A login request receives a login response message from an Encyclopedia volume. When a login request succeeds, the login response message contains an AuthId, which is an encrypted, authenticated token. When a login request fails, a volume sends a login response containing an error code and a description of the error.

The authentication ID in the login response message remains valid for the current session. Any subsequent request that the application sends to an Encyclopedia volume must include the authentication ID in the message.

Each login operation uses the com.actuate.schemas classes to encode and decode the SOAP request and response messages. The following sections describe the SOAP messages, classes, and program interactions necessary to implement a successful login operation.

The following application derives from the code in the BIRT iServer Integration Technology example applications for the Apache Axis 1.4 client. AcLogin class logs in to the Encyclopedia volume to authenticate the user. If the login succeeds, the application prints a success message. If the login fails, the application prints a usage message.

```
import com.actuate.schemas.*;

public class AcLogin {
   public static final String usage =
      "Usage:\n"+
      "     java AcLogin [options]\n";

   public static void main(String[ ] args) {
      // set command line usage
      Arguments.usage = usage;

      // get command line arguments
      Arguments arguments = new Arguments(args);

      try {
         // login to actuate server
         AcController actuateControl = new
            AcController(arguments.getURL( ));
         actuateControl.setUsername(arguments.getUsername( ));
         actuateControl.setPassword(arguments.getPassword( ));
         actuateControl.setTargetVolume(
            arguments.getTargetVolume( ));
         if (actuateControl.login( )) {
            System.out.println("Congratulations!  You have
               successfully logged into Encyclopedia volume as
               "+actuateControl.getUsername( ));
            }
         else {
            System.out.println("Please try again.\n Usage:\n"+"
               java AcLogin [options]\n");
         }
```

```
      }
      catch (Exception e) {
         e.printStackTrace( );
      }

   }
}
```

About the auxiliary classes provided by the sample application

In the code example, the application makes use of the auxiliary classes provided by the BIRT iServer Integration Technology installation for the Apache Axis 1.4 client. These classes perform tasks common to most applications. The source code files for the auxiliary classes are in the source directory. The auxiliary classes are sample application components and are not part of the com.actuate.schemas package generated by the Actuate WSDL document:

- Arguments is an auxiliary class that analyzes the command line arguments to detect predefined options and enumerate any additional arguments. The following list describes the predefined options that can be specified at the command line:
  - serverURL

    -h hostname specifies the SOAP endpoint. The default value, http://localhost:8000, is set in ActuateControl, another auxiliary class.
  - username

    -u username specifies the user name. The default value, Administrator, is set in ActuateControl.
  - password

    -p password specifies the password. The default value, "", is set in ActuateControl.
  - volume

    -v volume specifies the target volume name. Actuate Release 11 requires a volume name in the SOAP header. For earlier releases, this specification is optional.
  - embeddedDownload

    -e turns on the download embedded option. When downloading a file, you can specify whether to embed the content in the response or transmit the file as an attachment. The default value, False, is set in Arguments.
  - printUsage

    -? prints the usage statement.
- ActuateControl is a controller class that handles routine interactions between the client application and the underlying com.actuate.schemas classes.

ActuateControl is a sample class. It is not a comprehensive implementation of all possible interactions. It implements the following essential parts of an IDAPI application:

- Instantiates an ActuateAPILocatorEx object that implements the required Actuate SOAP header extensions and sets the BIRT iServer URL, as shown in the following code example:

```
public ActuateControl( )
   throws MalformedURLException,ServiceException {
   actuateAPI = new ActuateAPILocatorEx( );
   setActuateServerURL(actuateServerURL);
}
```

- Sets the endpoint for the proxy to the specified value of the Encyclopedia volume URL, as shown in the following code example:

```
public void setActuateServerURL(String serverURL)
   throws MalformedURLException, ServiceException {
   if ((proxy == null) ||
      !serverURL.equals(actuateServerURL)) {
      if (serverURL != null)
      actuateServerURL = serverURL;
      System.out.println("Setting server to " +
         actuateServerURL);
      proxy =
         actuateAPI.getActuateSoapPort(
            new java.net.URL(actuateServerURL));
   }
}
```

- Creates and configures the Call object that sends the SOAP message to an Encyclopedia volume, as shown in the following code example:

```
public org.apache.axis.client.Call createCall( ) throws
   ServiceException {
   org.apache.axis.client.Call call =
   org.apache.axis.client.Call)
        actuateAPI.createCall( );
   call.setTargetEndpointAddress(this.actuateServerURL);
   return call;
}
```

- ActuateAPIEx interface extends com.actuate.schemas.ActuateAPI. This interface defines the necessary Actuate SOAP header extensions and the Call object that returns the SOAP header element. ActuateAPIEx defines the following Actuate SOAP header extensions:

  - AuthId is a system-generated, encrypted String returned by BIRT iServer in a login response. All requests, except a login request, must have a valid AuthId in the SOAP header.

- Locale specifies the language, date, time, currency and other conventions for BIRT iServer to use when returning the data to a client.
- TargetVolume indicates the Encyclopedia volume that receives the request.
- ConnectionHandle supports keeping a connection open to view a persistent report. If ConnectionHandle is present in the SOAP header, the system routes subsequent viewing requests to the same View service that returned the ConnectionHandle.
- DelayFlush tells BIRT iServer to write updates to the disk when the value is False.

The following example shows the code for the ActuateAPIEx interface:

```
public interface ActuateAPIEx extends
   com.actuate.schemas.ActuateAPI {
   public void setAuthId(java.lang.String authId);
   public void setLocale(java.lang.String locale);
   public void setTargetVolume(java.lang.String
      targetVolume);
   public void setConnectionHandle(java.lang.String
      connectionHandle);
   public void setDelayFlush(java.lang.Boolean delayFlush);

   public java.lang.String getAuthId( );
   public java.lang.String getLocale( );
   public java.lang.String getTargetVolume( );
   public java.lang.String getConnectionHandle( );
   public java.lang.Boolean getDelayFlush( );

   public org.apache.axis.client.Call getCall( );
}
```

- ActuateAPILocatorEx class extends com.actuate.schemas.ActuateAPILocator and implements the ActuateAPIEx interface. ActuateAPILocatorEx class creates the Call object and adds the Actuate SOAP header, as shown in the following code example:

```
public class ActuateAPILocatorEx
   extends com.actuate.schemas.ActuateAPILocator
   implements ActuateAPIEx {
…
public Call createCall( ) throws ServiceException {
   call = (org.apache.axis.client.Call) super.createCall( );
   if (null != authId)
      call.addHeader(new SOAPHeaderElement(null, "AuthId",
         authId));
   if (null != locale)
      call.addHeader(new SOAPHeaderElement(null, "Locale",
         locale));
```

```
      if (null != targetVolume)
         call.addHeader(
            new SOAPHeaderElement(null, "TargetVolume",
               targetVolume));
      if (null != connectionHandle)
         call.addHeader(
            new SOAPHeaderElement(
               null,
               "ConnectionHandle",
               connectionHandle));
      if (null != targetVolume)
         call.addHeader(
            new SOAPHeaderElement(null, "DelayFlush",
               delayFlush));
      return call;
   }
```

Logging in to the Encyclopedia volume

In the example application, AcLogin class calls ActuateControl.login( ) method. This method instantiates the com.actuate.schemas.Login object, then sets the values for username and password, as shown in the following code:

```
public boolean login( ) {
   boolean success = true;
   com.actuate.schemas.Login request =
      new com.actuate.schemas.Login( );
   request.setPassword(password);
   request.setUser(username);
```

ActuateControl.login( ) sets the AuthId to null, then uses the proxy to make a remote procedure call to BIRT iServer. If successful, the call returns a reference to com.actuate.schemas.LoginResponse object, as shown in the following code example:

```
…
   try {
      actuateAPI.setAuthId(null);
      com.actuate.schemas.LoginResponse response =
      proxy.login(request);
      authenticationId = response.getAuthId( );
      actuateAPI.setAuthId(authenticationId);
   }
   catch (java.rmi.RemoteException e) {
      // login failed
      success = false;
   }
   return success;
}
```

In the code example, the LoginResponse object contains the authentication ID returned by BIRT iServer. The application uses LoginResponse.getAuthId( ) to access the value, then calls ActuateAPIEx.setAuthId( ) to make the value available to the application to embed in the header of a subsequent SOAP request message.

Capturing SOAP messages using Axis TCPMonitor

The Actuate Information Delivery API uses SOAP messaging in a request and response pattern for communications between the client and BIRT iServer System. The Actuate Information Delivery API packages an XML request in a SOAP envelope and sends it to BIRT iServer System through an HTTP connection.

You can use Axis TCPMonitor (tcpmon) utility to monitor the SOAP messages between an application and the Encyclopedia volume. You configure TCPMonitor to listen at a port for an incoming message to the Encyclopedia volume. You redirect the client application to send a request message to the port where TCPMonitor listens.

TCPMonitor intercepts the message, displays the SOAP message in the request panel, then redirects the message to the Encyclopedia volume. When the Encyclopedia volume responds, TCPMonitor intercepts the message, displays the SOAP message in the response panel, then redirects the message to the client application.

TCPMonitor logs each request-response message pair. You can view a message pair by choosing an entry row in the top panel. You can also remove an entry, edit and resend a message, and save a message pair to a file.

The TCPMonitor utility is in the org.apache.axis.utils package in \lib\axis.jar. You can run TCPMonitor from the command line using the following syntax:

```
java org.apache.axis.utils.tcpmon [listenPort targetHost
   targetPort]
```

The following command line statement starts the TCPMonitor graphical user interface:

```
java org.apache.axis.utils.tcpmon
```

In TCPMonitor—Admin, configure the listener port for TCPMonitor, enter the target hostname for BIRT iServer, then enter the target port.

In Figure 6-1, TCPMonitor—Admin sets tcpmon to listen at port 8080, sets the target hostname for BIRT iServer to localhost, and sets the target port to 8000.

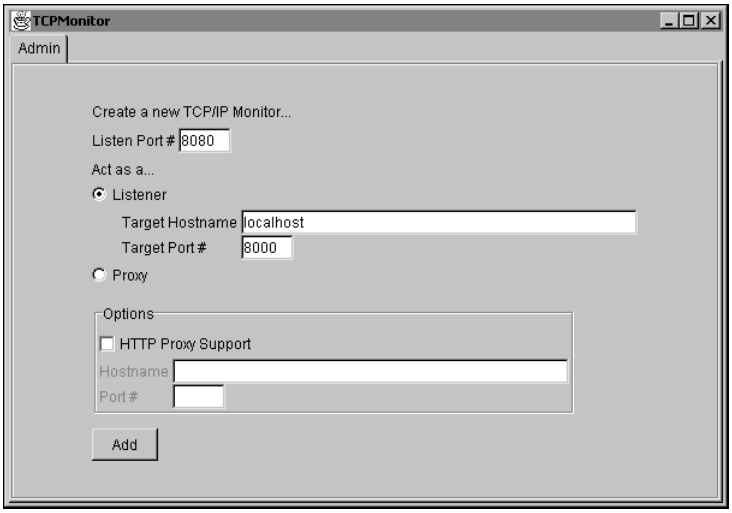

Figure 6-1 The TCP Monitor—Admin page

You can also configure TCPMonitor directly from the command line, as shown in the following example:

```
java org.apache.axis.utils.tcpmon 8080 localhost 8000
```

You can redirect a client application to send a request message to the port where TCPMonitor listens using a command line argument as shown in the following example:

```
java AcLogin -h http://localhost:8080
```

Figure 6-2 shows a request-response message pair from a login operation captured in TCPMonitor.

Writing a simple administration application

A simple administration application typically involves a create operation for one of the following BIRT iServer objects:

- User
- Folder
- Role
- Group

To perform an administration operation that acts on an existing object in the Encyclopedia volume, such as a select, update, or delete operation, you must apply a search condition to the operation. To perform an administration operation that contains a set of administration operations requests, submit the request as a batch or transaction.

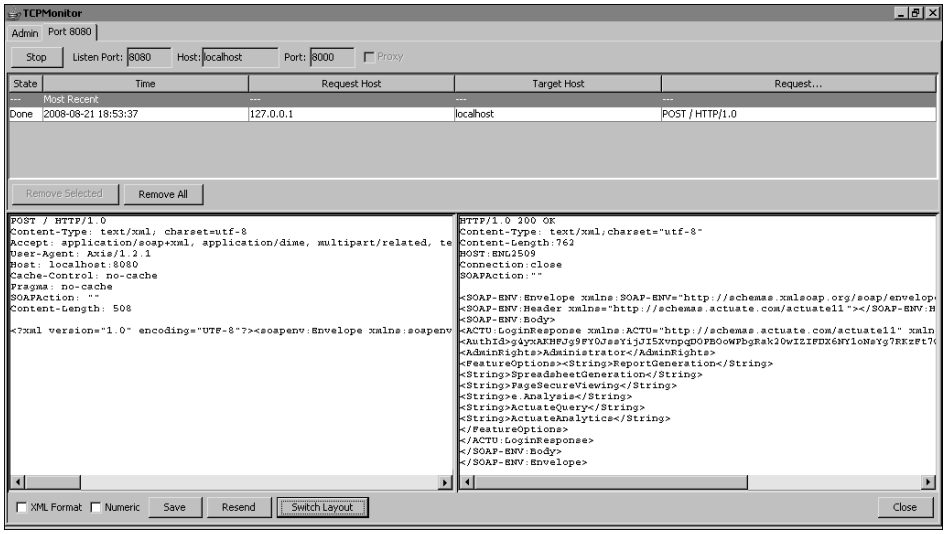

Figure 6-2 Example of a request-response message pair in TCP Monitor

The following sections describe the techniques for building an application that performs a simple administration operation that creates a user in the Encyclopedia volume.

Creating a user

The following application derives from the code in the BIRT iServer Integration Technology example applications for the Apache Axis 1.4 client. The application class, AcCreateUser, logs in to an Encyclopedia volume as Administrator and creates a user. AcCreateUser.createUser( ) method performs the following tasks.

- Instantiates a com.actuate.schemas.User object using ActuateControl.newUser( ) to set the username, password, and home folder:

  ```
  public class AcCreateUser {
  …
     public static void createUser(String userName, String
        homeFolder) throws RemoteException {

           // create a user with password same as userName
           User user = actuateControl.newUser(userName,
           userName, homeFolder);
  ```

  User is a complex data type that represents user attributes.

- Sets additional view preference, notification, e-mail, and job priority options in the User object.

```
// Set user view preference to DHTML
// (defaults to DHTML in standard configuration)
user.setViewPreference(UserViewPreference.DHTML);
   // set notice options
user.setSendNoticeForSuccess(new Boolean(true));
user.setSendNoticeForFailure(new Boolean(true));
// set email options
user.setSendEmailForSuccess(new Boolean(true));
user.setSendEmailForFailure(new Boolean(false));
// create fake email address UserName@localhost
user.setEmailAddress(userName + "@" + "localhost")
   // assign job priority
user.setMaxJobPriority(new Long(1000));
```

- Calls ActuateControl.createUser( ), passing the reference to the User object.

```
   // create the user
   actuateControl.createUser(user);
   System.out.println("User " + userName
      + ", view preferences, send notice and email features,
         plus job priority privileges created.");
   }
}
```

About ActuateControl.createUser( )

ActuateControl.createUser( ) performs the following tasks:

- Instantiates a com.actuate.schemas.CreateUser object.

```
public com.actuate.schemas.AdministrateResponse createUser(
   com.actuate.schemas.User user)
   throws RemoteException {
      com.actuate.schemas.CreateUser createUser =
      new com.actuate.schemas.CreateUser( );
```

  The CreateUser operation is only available to a user with the Administrator role.

- Passes the reference to the User object, containing the username, password, and home folder, and other settings, to the CreateUser object.

```
createUser.setUser(user);
```

- Sets IgnoreDup to True.

```
createUser.setIgnoreDup(Boolean.TRUE);
```

  If the value of IgnoreDup is True, an Encyclopedia volume ignores a duplicate request to create the user and does not report an error. If the value of

IgnoreDup is False, an Encyclopedia volume ignores the duplicate request and reports the error. The default value is False. An Encyclopedia volume always rejects a duplicate request regardless of the IgnoreDup setting.

- Instantiates an AdminOperation object.

```
com.actuate.schemas.AdminOperation adminOperation =
   new com.actuate.schemas.AdminOperation( );
```

An AdminOperation represents a single unit of work within an Administrate request. The list of attributes in the com.actuate.schemas. AdminOperation class lists the possible administration operations that BIRT iServer can perform within the scope of an Actuate Information Delivery API request.

- Passes the reference to the CreateUser object to AdminOperation.setCreateUser( ).

```
adminOperation.setCreateUser(createUser);
```

- Calls ActuateControl.runAdminOperation( ), returning a reference to the AdministrateResponse object that contains the Encyclopedia volume response.

```
      return runAdminOperation(adminOperation);
   }
}
```

About ActuateControl.runAdminOperation( )

ActuateControl.runAdminOperation( ) is an overloaded method that can assemble and run a single administration operation or an array of administration operations. The method that runs a single administration operation performs the following tasks:

- Instantiates an Administrate object.

```
public com.actuate.schemas.AdministrateResponse
   runAdminOperation(
   com.actuate.schemas.AdminOperation adminOperation) {
   com.actuate.schemas.Administrate administrate =
      new com.actuate.schemas.Administrate( );
```

Administrate is not an operation on its own. It is a mechanism for assembling the set of operations that the application is requesting BIRT iServer to perform. An Administrate request can be a composite operation and consist of multiple AdminOperation objects.

- Calls administrate.setAdminOperation( ) to construct the AdminOperation array, adding the AdminOperation object as an element.

```
administrate.setAdminOperation(
   new com.actuate.schemas.AdminOperation[ ] {
   adminOperation });
```

The com.actuate.schemas.Administrate object is an array of AdminOperation objects that can create, update, or delete an item or items in the Encyclopedia volume. An Actuate Information Delivery API application must submit even a single AdminOperation request in an Administrate object as an array of AdminOperations. The AdminOperation array can contain one or more elements.

- Makes the remote call to the Actuate SOAP port using proxy.Administrate( ).

```
com.actuate.schemas.AdministrateResponse administrateResponse =
   null;
try {
   administrateResponse = proxy.administrate(administrate);
```

- Handles a RemoteException.

```
} catch (java.rmi.RemoteException e) {
   org.apache.axis.AxisFault l_fault =
      org.apache.axis.AxisFault.makeFault(e);
   System.out.println(l_fault.getFaultString( ));
   System.out.println(l_fault.getFaultCode().toString( ));
   org.w3c.dom.Element[ ] l_details =
      l_fault.getFaultDetails( );
}
```

- Returns a reference to the com.actuate.schemas.AdministrateResponse object.

```
return administrateResponse;}
```

Performing a search operation

Many operations support acting on one or more items in an Encyclopedia volume. To target the items on which to act, you must apply a search condition to the operation. The com.actuate.schemas library contains many special classes for setting a search condition and implementing a search for an item in an Encyclopedia volume.

The Information Delivery API provides three sets of parameters that support searching for the data on which an operation acts. Typically, these parameters apply to operations that select, update, move, copy, or delete Encyclopedia volume items. The parameters are:

- Id or IdList
- Name or NameList
- Search

Using com.actuate.schemas.SelectFiles

Use com.actuate.schemas.SelectFiles to retrieve file properties using the ID or name of a single file or folder, or a list of files or folders, in an Encyclopedia

volume. SelectFiles can recursively search all subfolders in a directory. To restrict a search to the items in a single directory, not including subfolders, use GetFolderItems. SelectFiles does not retrieve file or folder content.

SelectFiles supports three types of searches:

- Use Name or Id to retrieve a single file or folder.
- Use NameList or IdList to retrieve a list of files or folders in a directory.
- Use Search to retrieve all files or folders that match a given condition.

The following application derives from the code in the BIRT iServer Integration Technology example applications for the Apache Axis 1.4 client. In the example application, AcSelectFiles.searchByCondition( ), calls ActuateControl.selectFiles( ), specifying a search condition, and performing the following operations:

- Specifies a search condition for the file type using the wildcard, *, to target all files that contain the character, R, as the first character in the file extension.

  ```
  public class AcSelectFiles {
     …
     public static String fileType = "R*";
  ```

  A wildcard is a character used in a search or conditional expression that matches one or more literal characters. Actuate wildcards include the ones in the following list:

  - ? matches any single one- or two-byte character
  - # matches any ASCII numeric character [0-9]
  - * matches any number of characters

  The wildcard expression in the example targets files in BIRT iServer such as a report executable file with the file extension, ROX, and a report document with the file extension, ROI.

- Instantiates a FileCondition object, setting the condition to match on FileField.FileType using the wildcard expression.

  ```
  public static void searchByCondition( ) {
     System.out.println("\nThis example demonstrates search by
        file type using search condition:\n");
     com.actuate.schemas.FileCondition fileCondition =
        new com.actuate.schemas.FileCondition( );
     fileCondition.setField(com.actuate.schemas.FileField.
        FileType);
     fileCondition.setMatch(fileType);
  ```

- Instantiates a FileSearch object, setting the search to the properties specified in the FileCondition object.

  ```
  com.actuate.schemas.FileSearch fileSearch =
     new com.actuate.schemas.FileSearch();
  fileSearch.setCondition(fileCondition);
  ```

  An application sets the search condition for a file using the FileSearch class. FileSearch is a complex data type that contains the list of properties to specify in a file search condition. An application can specify the search condition for a file using one or more of the following fields:

  - Name
  - FileType
  - Description
  - PageCount
  - Size
  - TimeStamp
  - Version
  - VersionName
  - Owner

  Use ArrayOfFileCondition to specify multiple search conditions.

- Sets up the fetch handle to process the results.

  ```
  fileSearch.setFetchSize(new Integer(2));
  System.out.println("Search fileType = " + fileType + "\n");
  String fetchHandle = null;
  int fetchCount = 1;
  while (true) {
     fileSearch.setFetchHandle(fetchHandle);
  ```

- Makes the call to ActuateControl.selectFiles( ), obtaining the reference to the fetch handle from the SelectFilesResponse object.

  ```
  com.actuate.schemas.SelectFilesResponse selectFilesResponse =
     actuateControl.selectFiles(fileSearch, null, null);
  fetchHandle = selectFilesResponse.getFetchHandle( );
  ```

  A fetch handle indicates that the number of items in the result set exceeds the fetch size limit. A fetch handle returns as a parameter in the response to a Select or Get request, such as SelectFiles or GetFolderItems.

  Use the fetch handle to retrieve more results from the result set. In the second and subsequent calls for data, you must specify the same search condition that

you used in the original call. All Get and Select requests, except SelectFileType, support the use of a fetch handle.

- Continues processing until there are no more results, printing an appropriate output message.

```
      System.out.println("\n  Fetch Size = " +
         fileSearch.getFetchSize( )
          + "; Fetch Count = " + fetchCount++ + "\n");
      if (fetchHandle == null)
         break;
   }
}
```

Using ResultDef

Use a ResultDef parameter to specify the object properties to retrieve from a search. The properties you set in ResultDef depend on the type of item. For example, if the item is a file or folder, you can retrieve the file or folder name, ID, description, date of creation or last update, owner, and version name and number.

ActuateControl.selectFiles( ) specifies and retrieves a list of file properties using a ResultDef parameter by performing the following tasks:

- Sets up the ResultDef String array containing the list of file properties.

```
public com.actuate.schemas.SelectFilesResponse selectFiles(
   com.actuate.schemas.FileSearch fileSearch,
   String name,
   ArrayOfString nameList) {
   com.actuate.schemas.ArrayOfString resultDef =
      newArrayOfString(
         new String[] {
            "Description",
            "FileType",
            "Id",
            "Name",
            "Owner",
            "PageCount",
            "Size",
            "TimeStamp",
            "UserPermissions",
            "Version",
            "VersionName" });
```

- Instantiates the SelectFiles object.

```
com.actuate.schemas.SelectFiles selectFiles =
   new com.actuate.schemas.SelectFiles( );
```

- Selects files based on a file name, list of file names, or uses com.actuate.schemas.ArrayOfString as a ResultDef parameter to specify the file properties to retrieve.

```
selectFiles.setResultDef(resultDef);
```

- If not null, sets the reference to either the search object, file name, or list of file names, depending on which parameter ActuateControl.selectFiles( ) receives.

```
if (fileSearch != null)
   selectFiles.setSearch(fileSearch);
else if (name != null)
   selectFiles.setName(name);
else if (nameList != null)
   selectFiles.setNameList(nameList);
```

- Makes the com.actuate.schemas.SelectFiles call using the proxy.

```
com.actuate.schemas.SelectFilesResponse selectFilesResponse =
   null;
try {
   selectFilesResponse = proxy.selectFiles(selectFiles);
```

- Loops through the SelectFileResponse item list, printing the file names and list of properties.

```
      com.actuate.schemas.ArrayOfFile itemList =
         selectFilesResponse.getItemList( );
      com.actuate.schemas.File[ ] files = itemList.getFile( );
      if (files != null) {
         for (int i = 0; i < files.length; i++) {
            printFile(System.out, files[i]);
         }
      }
   } catch (RemoteException e) {
      System.out.println("error !!!");
      e.printStackTrace();
   }
   return selectFilesResponse;
}
```

The Java application writes the messages shown in Figure 6-3 to a command prompt window when an Encyclopedia volume login succeeds and the select files operation completes.

```
C:\WINNT\system32\cmd.exe
C:\Actuate11\IDAPI>java AcSelectFiles -h http://localhost:8080
Setting server to http://localhost:8080
This example demonstrates search by file type using search condition:

Search fileType = R*

18      /report/SampleReport.rox                ROX     Administrator   0
2008-9-19T14:29:26      USRWEDG 1               44032
21      /output/SampleReport.roi                ROI     Administrator   2
2008-9-19T14:29:47      USRWEDG 1               6373

  Fetch Size = 2; Fetch Count = 1

C:\Actuate11\IDAPI>_
```

Figure 6-3 Message that shows a successful select files operation

Writing a batch or transaction application

Actuate Information Delivery API supports batch and transaction administration operations. An IDAPI application uses a mixture of developer and com.actuate.schemas classes to implement a batch or transaction administration operation, including:

- Administrate
- AdminOperation
- Transaction
- TransactionOperation

The following sections explain the use of these administration operation classes in detail.

About batch and transaction operations

A batch application submits an array of administration operation requests to an Encyclopedia volume using one composite Administrate message. An Administrate request can contain any number of AdminOperation requests in the batch.

An AdminOperation request can contain any number of Transaction requests. A Transaction request is a composite message that can contain any number of TransactionOperation requests. A TransactionOperation represents a single unit of work within a Transaction.

The default level of granularity for a transaction is an object. One operation run against one object is atomic. The use of an explicit Transaction tag in a composite Administrate message expands the transaction boundary to include multiple TransactionOperation requests.

To perform an administration operation that contains a set of requests, submit the request as a batch or transaction within one composite Administrate message. If a batch request fails, the operations that complete successfully before the failed operation still take effect. If a transaction operation fails, none of the operations in

the transaction take effect. BIRT iServer rolls all the work back, leaving the system in the state it was in just prior to the execution of the transaction operation.

Implementing a transaction-based application

The following application derives from the code in the BIRT iServer Integration Technology example applications for the Apache Axis 1.4 client. In the example application, AcAddUsers_Tran.addUsers( ) performs a transaction-based administration operation to add multiple Encyclopedia volume users. When the command line includes the optional ignoreDup argument, the program ignores errors if a user already exists.

AcAddUsers_Tran.addUsers( ) performs the following tasks:

- Defines a TransactionOperation array, dimensioning the array to the number of new users.

```
public class AcAddUsers_Tran {
…
public static void addUsers( ) throws RemoteException {

      // set up transaction operation array
      TransactionOperation[ ] transactionOperations =
         new TransactionOperation[numberOfUsers];

      System.out.println("\nAdding users… \n");
```

- In addUsers( ), within a loop, for each user:
  - Instantiates a com.actuate.schemas.User object, setting the user name, password, home folder, and other options such as view preference, notification, and e-mail.

```
//  begin loop to create a user transaction operation
for (int i = 0; i < numberOfUsers; i++) {

   // set User with user name, password, and home folder
   com.actuate.schemas.User user = new
      com.actuate.schemas.User();
   user.setName(userName);
   user.setPassword(password);
   user.setHomeFolder(homeFolder);
   …
```

  - Instantiates the CreateUser object, passing the reference to the current User object and setting IgnoreDup.

```
// create user
com.actuate.schemas.CreateUser createUser =
   new com.actuate.schemas.CreateUser( );
createUser.setUser(user);
createUser.setIgnoreDup(ignoreDup);
```

- Instantiates an AdminOperation object, passing the reference to the CreateUser object.

```
// set Administration operation for current user
com.actuate.schemas.AdminOperation adminOperation =
   new com.actuate.schemas.AdminOperation( );
adminOperation.setCreateUser(createUser);
```

- Instantiates a TransactionOperation object, passing the reference to the current User object to complete the set up of the transaction operation.

```
// set transaction operation for current user

TransactionOperation transactionOperation =
   new TransactionOperation( );
transactionOperation.setCreateUser(createUser);
```

- Adds the reference to the current TransactionOperation object to the TransactionOperation array.

```
   transactionOperations[i] = transactionOperation;
}
```

- After the end of loop, instantiates a Transaction object, passing the reference to the TransactionOperation array that contains the details of all the create user operations.

```
// set up the transaction with the transaction operations

Transaction transaction = new Transaction( );
transaction.setTransactionOperation(transactionOperations);
```

- Instantiates an AdminOperation object, passing the reference to the Transaction object to create the composite administration operation.

```
// set up Administration operation

AdminOperation adminOperation = new AdminOperation( );
adminOperation.setTransaction(transaction);
```

- Calls ActuateControl.runAdminOperation( ), passing the reference to the composite administration operation, and returning a reference to the AdministrateResponse object that contains the Encyclopedia volume response.

```
// run Administration operation
if (null == actuateControl.runAdminOperation(adminOperation)) {
```

- Prints an output message, indicating the success or failure of the transaction, depending on whether the reference to the AdministrateResponse object is null or valid.

```
        System.out.println("Create user transaction
           failed.\n");
   }
   else {
      System.out.println("Create user transaction succeeded.
         \n");
   }
}
```

Uploading a file

To upload a file to an Encyclopedia volume, you must identify the file to upload and the Encyclopedia volume in which to place the file. You can also specify how to work with existing versions of the file you upload. Using Actuate's open server technology, you can upload third-party file types and native Actuate file types.

About ways of uploading a file

When you upload a file, the content streams to the Encyclopedia volume. You can stream a report with a SOAP message in two ways:

- Embed the file in the response

  In embedding a file, the application specifies the ContentLength in the HTTP header. If you use HTTP 1.0, you typically choose to embed the file.

- Send the file as a MIME attachment

  A MIME attachment transmits the contents of the file outside the boundary of the SOAP message.

  A SOAP message with a MIME attachment consists of three parts:

  - HTTP header
  - Actuate SOAP message
  - File attachment

The following example uses a MIME attachment and relevant Actuate Information Delivery API classes to build an application that uploads a file to an Encyclopedia volume.

Using com.actuate.schemas.UploadFile

Use the com.actuate.schemas.UploadFile class to upload a file to an Encyclopedia volume. The file content streams to BIRT iServer as unchunked MIME attachment to the request. The UploadFile class contains the following attributes:

- NewFile is the com.actuate.schemas.NewFile object to upload.
- CopyFromLatestVersion is an array of Strings used to copy one or more of the following properties from the latest version of the file, if one exists, to the version of the file that you upload:
  - Description is a description of the file.
  - Permissions, the Access Control List (ACL) specifying the users and roles that can access the file.
  - ArchiveRule specifies the autoarchive rules for the file, which determine how BIRT iServer ages the file and when the file expires.
- Content is the com.actuate.schemas.Attachment object that specifies the content Id, content type, content length, content encoding, locale, and content data.

How to build an application that uploads a file

The following application derives from the code in the BIRT iServer Integration Technology example applications for the Apache Axis 1.4 client. In this example application, AcUploadFile.uploadFile( ) performs the following operations:

- Instantiates a NewFile object, then sets the Encyclopedia volume file location and name.

```
public class AcUploadFile {
…
   public static void uploadFile (String locFileName, String
      encycFileName) throws RemoteException,
      ServiceException {
      // set new file information

      com.actuate.schemas.NewFile newFile =
         new com.actuate.schemas.NewFile( );
      newFile.setName(encycFileName);
```

- Instantiates the Attachment object, then sets contentID attribute to the file location and name.

```
// set MIME content ID (must be same as AttachmentPart)

com.actuate.schemas.Attachment content =
   new com.actuate.schemas.Attachment( );
content.setContentId(locFileName);
```

- Instantiates the UploadFile object, then passes the references to the NewFile and Attachment objects.

```
// set upload message

com.actuate.schemas.UploadFile request =
   new com.actuate.schemas.UploadFile( );
request.setNewFile(newFile);
request.setContent(content);
```

- Sets up the data handler to read the file.

```
// use input file as data source

javax.activation.DataHandler dhSource =
   new javax.activation.DataHandler(new
      javax.activation.FileDataSource(locFileName));
```

- Instantiates the org.apache.axis.attachments.AttachmentPart object to contain the data, passes the reference to the data handler, then sets contentID attribute to the file location and name.

```
// set attachment in call
org.apache.axis.attachments.AttachmentPart attachmentPart =
   new org.apache.axis.attachments.AttachmentPart( );
attachmentPart.setDataHandler(dhSource);
attachmentPart.setContentId(locFileName);
```

- Performs the UploadFile administration operation by making a call to ActuateControl.uploadFile( ).

```
   // call upload file
   com.actuate.schemas.UploadFileResponse response =
      actuateControl.uploadFile(request, attachmentPart);
}
```

ActuateControl.uploadFile( ) performs the following operations:

- Sets up org.apache.axis.client.Call object:
  - Obtains a reference to the Call object using createCall( ).

```
public com.actuate.schemas.UploadFileResponse uploadFile(
   com.actuate.schemas.UploadFile request,
   org.apache.axis.attachments.AttachmentPart
      attachmentPart)
   throws RemoteException, RemoteException,
      ServiceException {
   org.apache.axis.client.Call call = createCall( );
```

  - Calls addParameter( ) specifying the following UploadFile parameters:
    - Parameter name
    - XML datatype for the parameter

- Java class for the parameter
- Parameter mode, indicating whether it is ParameterMode.IN, OUT or INOUT

```
call.addParameter(
   new javax.xml.namespace.QName(
      "http://schemas.actuate.com/actuate11",
      "UploadFile"),
   new javax.xml.namespace.QName(
      "http://schemas.actuate.com/actuate11",
      "UploadFile"),
   com.actuate.schemas.UploadFile.class,
   javax.xml.rpc.ParameterMode.IN);
```

- Sets the return type for the operation by specifying parameters that indicate the XML data type and Java class for UploadFileResponse.

```
call.setReturnType(
   new javax.xml.namespace.QName(
      "http://schemas.actuate.com/actuate11",
      "UploadFileResponse"));
```

- Sets the UseSOAPAction and SOAPAction URI parameters.

```
call.setUseSOAPAction(true);
call.setSOAPActionURI("");
```

- Sets the encoding style URI to null to use the default, binary.

```
call.setEncodingStyle(null);
```

- Sets org.apache.axis.AxisEngine.PROP_DOMULTIREFS to False.

```
call.setProperty(
   org.apache.axis.AxisEngine.PROP_DOMULTIREFS,
   Boolean.FALSE);
```

  PROP_DOMULTIREFS controls the serialization and deserialization processes and the way the client engine handles complex type parameters with multiple references.

- Sets org.apache.axis.client.Call.SEND_TYPE_ATTR to False.

```
call.setProperty(
   org.apache.axis.client.Call.SEND_TYPE_ATTR,
   Boolean.FALSE);
```

  SEND_TYPE_ATTR controls whether to send xsi type attributes.

- Sets the operation style to document

```
call.setOperationStyle("document");
```

- Converts the operation name String to a QName.

```
call.setOperationName(
   new javax.xml.namespace.QName(
      "http://schemas.actuate.com/actuate11",
      "UploadFile"));
```

- Adds the MIME attachment.

```
// set the actual MIME attachment
call.addAttachmentPart(attachmentPart);
```

- Makes the call, passing the reference to the UploadFile request in an Object array as required by the Apache Axis framework.

```
Object resp = call.invoke(new Object[ ] { request });
```

- If it occurs, handles a RemoteException, otherwise, casts the response into an UploadFileResponse object and returns it to AcUploadFile.uploadFile( ).

```
if (resp instanceof java.rmi.RemoteException) {
   throw (java.rmi.RemoteException) resp;
}
   else {
   try {
      return (com.actuate.schemas.UploadFileResponse) resp;
   }
   catch (java.lang.Exception e) {
      return (com.actuate.schemas.UploadFileResponse) org
         .apache
         .axis
         .utils
         .JavaUtils
         .convert(resp,
            com.actuate.schemas.UploadFileResponse.class);
      }
   }
}
```

For more information about the Apache Axis 1.4 client Java-based framework for implementing a SOAP processor, see http://ws.apache.org/axis/java.

Downloading a file

To download a file from an Encyclopedia volume, identify the file and indicate whether to embed the content in the response or use chunked transfer-encoding. In HTTP 1.0, you must embed the entire file in the response and send it in a long, uninterrupted file stream. In HTTP 1.1, you can send the file in smaller chunks, which increases the efficiency of the file transfer. Although the Encyclopedia volume supports both methods, BIRT iServer messages typically use chunked transfer-encoding.

The following example application uses chunked transfer-encoding and relevant com.actuate.schemas classes to build an application that downloads a file from an Encyclopedia volume.

Using com.actuate.schemas.DownloadFile

The com.actuate.schemas.DownloadFile class downloads a file from an Encyclopedia volume to the client. You can choose to embed the file content in the response or send it to the client as an attachment.

The DownloadFile class contains the following list of attributes:

- FileName or FileId is a String specifying the ID or name of the file to download.

  Specify either FileId or FileName.

- DecomposeCompoundDocument is a Boolean indicating whether to download a compound document as one file or multiple attachments.

  If the DecomposeCompoundDocument value is False, you can download the file as a single file. If the value is True, and the file is a compound document, the Encyclopedia volume splits the file into attachments containing the atomic elements of the compound document such as fonts and images. A decomposed document is not in a viewable format. The default value is False.

- DownloadEmbedded is a Boolean indicating whether to embed the content in the response or use chunked transfer-encoding.
- FileProperties is a String array specifying the file properties to return.

How to build an application that downloads a file

The following application derives from the code in the BIRT iServer Integration Technology example applications for the Apache Axis 1.4 client. In the example application, AcDownloadFile_Chunked class, downloads a file from the Encyclopedia volume, using the chunked option, and saves the file in the user's ~\temp directory.

The AcDownloadFile_Chunked class performs the following operations:

- Instantiates an org.apache.axis.client.Service object.

```
public class AcDownloadFile_Chunked {
   Service service = new Service( );
```

- In AcDownloadFile_Chunked.main( ), defines an attribute for the file name and initializes the downloadEmbedded flag to False.

```
public static void main(String[ ] args) {
   // download settings
   String  filename;
   Boolean downloadEmbedded = Boolean.FALSE;
```

- Gets the command line argument, specifying the file name.

```
Arguments arguments = new Arguments(args);
filename = arguments.getArgument();
```

- Creates a client Call object, using ActuateControl.createCall( ).

```
try {
   // create a call object
   org.apache.axis.client.Call call =
      actuateControl.createCall( );
```

The ActuateControl.createCall( ) method performs the following tasks:

- Uses ActuateAPI.createCall( ) to create a client Call object that can send a SOAP message to BIRT iServer
- Casts the Call object as an org.apache.axis.client.Call object as required by the Apache Axis framework
- Sets the target BIRT iServer URL
- Returns the Call object to AcDownloadFile_Chunked.main( )

The following example shows the code for ActuateControl.createCall( ):

```
public org.apache.axis.client.Call createCall( ) throws
   ServiceException {
   org.apache.axis.client.Call call =
      (org.apache.axis.client.Call) actuateAPI.createCall( );
   call.setTargetEndpointAddress(this.actuateServerURL);
   return call;
}
```

- AcDownloadFile_Chunked.main( ) sets up the Call parameters using a local method, prepareDownloadFileCall( ), passing in the reference to the Call object.

```
prepareDownloadFileCall(call);
```

The prepareDownloadFileCall( ) method sets up the org.apache.axis.client.Call parameters as shown in the following code:

```
public static void prepareDownloadFileCall(
   org.apache.axis.client.Call call) {
   call.addParameter(
      new javax.xml.namespace.QName(
         "http://schemas.actuate.com/actuate11",
         "DownloadFile"),
      new javax.xml.namespace.QName(
         "http://schemas.actuate.com/actuate11",
         "DownloadFile"),
      com.actuate.schemas.DownloadFile.class,
      javax.xml.rpc.ParameterMode.IN);
```

```
      call.setReturnType(
      new javax.xml.namespace.QName(
         "http://schemas.actuate.com/actuate11",
         "DownloadFileResponse"));
      call.setUseSOAPAction(true);
      call.setSOAPActionURI("");
      call.setEncodingStyle(null);
      call.setProperty(
         org.apache.axis.AxisEngine.PROP_DOMULTIREFS,
         Boolean.FALSE);
      call.setProperty(snew javax.xml.namespace.QName(
         "http://schemas.actuate.com/actuate11",
         "DownloadFile"));
   }
```

- Next, AcDownloadFile_Chunked.main( ) sets up the DownloadFile request object, specifying the downloadEmbedded flag and file name.

```
// set download message
com.actuate.schemas.DownloadFile request =
   new com.actuate.schemas.DownloadFile( );
request.setDownloadEmbedded(downloadEmbedded);
request.setFileName(filename);
```

- Invokes the Call object, passing the reference to the DownloadFile request in an Object array.

```
Object resp = call.invoke(new Object[ ] {request});
```

- Uses org.apache.axis.client.Call.getMessageContext( ) to obtain the reference to the org.apache.axis.MessageContext object.

```
MessageContext messageContext = call.getMessageContext();
```

- Uses MessageContext.getResponseMessage( ) to obtain the response message.

```
Message message = messageContext.getResponseMessage( );
```

- Uses an Iterator to get the attachments and stream the attachment parts to the Axis default location for the downloaded file in user ~/temp directory.

```
      Iterator iterator = message.getAttachments( );
      while (iterator.hasNext( )) {

         AttachmentPart attachmentPart =
            (AttachmentPart) iterator.next( );
```

```
            try {
               filename =
                  attachmentPart.getDataHandler( ).getName( );
               System.out.println("Attachment saved at " +
                  filename);
            }
            catch (SOAPException e) {
               e.printStackTrace( );
            }
         }

      }
      catch (Exception e) {

         e.printStackTrace( );
      }
   }
}
```

The Java application writes the following messages shown in Figure 6-4 to the command prompt window when the download succeeds. Notice that the path and file name in the output message provide the file name and location information for the attachment.

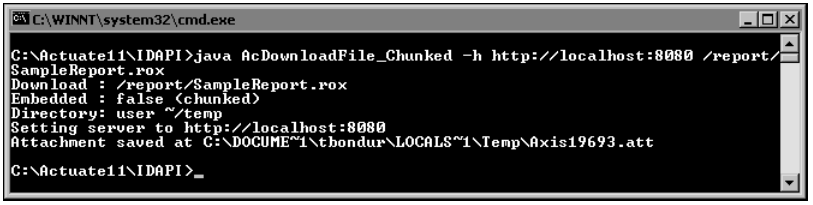

Figure 6-4 Output message for a successful download

Executing a report

An ExecuteReport operation generates a synchronous report from an executable file. The executable file can be an Actuate native file type or an external executable file type.

An ExecuteReport request identifies the input file. To save the output, you indicate the output file's destination by including a full path in the Name parameter for RequestedOutputFile.

An ExecuteReportResponse returns an Encyclopedia volume-generated ObjectId and the status of the report. For a persistent report, the ObjectId is valid until a user deletes the report. For a transient report, the ObjectId is a temporary identifier that lasts for a configurable period of time.

ExecuteReportResponse also returns a ConnectionHandle for a persistent report. Subsequent requests for the same report must use this ConnectionHandle. The ConnectionHandle remains valid throughout the session.

Understanding the structure of an ExecuteReport application

An ExecuteReport application typically uses a mix of developer and com.actuate.schemas classes to implement an ExecuteReport operation in an Encyclopedia volume. The following application derives from the code in the BIRT iServer Integration Technology example applications for the Apache Axis 1.4 client. In the example application, AcExecuteReport, performs these tasks:

- Instantiates the Arguments class, gets the input file (.rox) and output file (.roi) names as command line arguments, and passes these command line arguments to the constructor
- Instantiates the ActuateController class, getting a server URL from Arguments, if specified, at the command line
- Uses methods defined in the controller class to send a request to execute a report using the com.actuate.schemas.ExecuteReport and ExecuteReportResponse classes

The AcExecuteReport class looks like the following example:

```
public class AcExecuteReport {
   public static ActuateControl actuateControl;
   public static void main(String[ ] args) {
      // download settings
      String inputFileName;
      String outputFileName;
      Arguments arguments = new Arguments(args);
      inputFileName = arguments.getArgument( );
      outputFileName = arguments.getArgument( );
      try {
         actuateControl =
            new ActuateControl(arguments.getURL( ));
…
         actuateControl.setInputFileName(inputFileName);
         actuateControl.setOutputFileName(outputFileName);
         actuateControl.executeReport( );
      }
      catch (Exception e) {
         e.printStackTrace( );
      }
   }
}
```

ActuateControl.executeReport( ) performs the following tasks:

- Sets up an ExecuteReport object, specifying the job name, input file name, and output file flag
- Sets up a NewFile object to receive the requested output file
- Calls the proxy to submit the request and receives the response
- Outputs a status message

ActuateControl.executeReport( ) looks like the following example:

```
public void executeReport( ) throws RemoteException {
   com.actuate.schemas.ExecuteReport executeReport =
      new com.actuate.schemas.ExecuteReport( );
   executeReport.setJobName(jobName);
   executeReport.setInputFileName(inputFileName);
   boolean bSaveOutputFile = (!outputFileName.equals(""));
   executeReport.setSaveOutputFile(
      new Boolean(bSaveOutputFile));
   if (bSaveOutputFile) {
      com.actuate.schemas.NewFile requestedOutputFile =
         new com.actuate.schemas.NewFile( );
      requestedOutputFile.setName(outputFileName);
      executeReport.setRequestedOutputFile(requestedOutputFile);
   }
   com.actuate.schemas.ExecuteReportResponse executeReportResponse
   =
      proxy.executeReport(executeReport);
   System.out.println("Status " +
   executeReportResponse.getStatus( ));
}
```

Using the SelectPage class

SelectPage retrieves a page from an Actuate e.Report or other non-Java native report type specifying a page number, a page range, a component, or other search criteria.

A SelectPage application uses a mix of developer and com.actuate.schemas classes to implement a SelectPage operation. The following sample application, AcSelectPage, performs the following tasks:

- Instantiates the Arguments class, passing any command line arguments to the constructor
- Instantiates the ActuateController class, getting a server URL from Arguments, if specified in the command line

- Uses methods defined in the controller class to send a request to select a page using com.actuate.schemas.SelectPage, SelectPageResponse, ViewParameter, ObjectIdentifier, and PageIdentifier classes

The AcSelectPage class looks like the following example:

```
public class AcSelectPage {
   public static ActuateControl actuateControl;
   public static void main(String[ ] args) {
      // download settings
      String filename;
      int pageNumber;
      String downloadDirectory = "./download";
      String format = "DHTML";
      Arguments arguments = new Arguments(args);
      filename = arguments.getArgument( );
      pageNumber =
         Integer.parseInt(arguments.getOptionalArgument("1"));
      downloadDirectory =
         arguments.getOptionalArgument(downloadDirectory);
      String argument;
      argument = arguments.getOptionalArgument("");
      if ("Reportlet".equalsIgnoreCase(argument))
         format = "Reportlet";
      else if ("DHTML".equalsIgnoreCase(argument))
         format = "DHTML";
      …
      try {
         actuateControl =
            new ActuateControl(arguments.getURL( ));
         …
         // Test Viewing operations
         actuateControl.selectPage(filename,format,pageNumber,
            downloadDirectory);
      }
      catch (Exception e) {
         e.printStackTrace( );
      }
   }
}
```

ActuateControl.selectPage( ) selects a single page and saves the result in the specified directory. ActuateControl.selectPage( ) performs the following tasks:

- Sets up a ViewParameter object, specifying the format as DHTML and user agent as Mozilla/4.0
- Sets up an ObjectIdentifier object, specifying the name of the file to view
- Sets up a PageIdentifier object, specifying the page number to view

- Sets up a SelectPage object, passing the references to the ViewParameter, ObjectIdentifier, and PageIdentifier objects, and setting DownloadEmbedded flag to True
- Makes the remote call to the Actuate SOAP port using proxy.selectPage( ), returning a reference to the com.actuate.schemas.SelectPageResponse object
- Sets up the download directory using mkdir( )
- Saves the result in the download directory
- Returns the first attachment name

ActuateControl.selectPage( ) looks like the following example:

```
public String selectPage(
   String FileName,
   String format,
   int pageNumber,
   String downloadDirectory)
   throws RemoteException {
   // Set view parameter
   com.actuate.schemas.ViewParameter viewParameter =
      new com.actuate.schemas.ViewParameter( );
   viewParameter.setFormat(format);
   viewParameter.setUserAgent(
      "Mozilla/4.0 (compatible; MSIE 6.0; Windows NT 5.0; Q312461;
   .NET
         CLR 1.0.3705)");
   com.actuate.schemas.ObjectIdentifier objectIdentifier =
      new com.actuate.schemas.ObjectIdentifier( );
   objectIdentifier.setName(FileName);
   com.actuate.schemas.PageIdentifier pageIdentifier =
      new com.actuate.schemas.PageIdentifier( );
   pageIdentifier.setPageNum(new Long(pageNumber));
   com.actuate.schemas.SelectPage selectPage =
      new com.actuate.schemas.SelectPage( );
   selectPage.setObject(objectIdentifier);
   selectPage.setViewParameter(viewParameter);
   selectPage.setPage(pageIdentifier);
   selectPage.setDownloadEmbedded(new Boolean(true));
   com.actuate.schemas.SelectPageResponse selectPageResponse =
      proxy.selectPage(selectPage);
   new File(downloadDirectory).mkdir( );
   String firstAttachmentName =
      saveAttachment(selectPageResponse.getPageRef( ),
         downloadDirectory);
```

```
    saveAttachment(selectPageResponse.getPostResponseRef( ),
      downloadDirectory);
  return firstAttachmentName;
}
```

Using SelectJavaReportPage

SelectJavaReportPage retrieves a specific page from an Actuate BIRT or e.Spreadsheet report specifying a page number, a page range, a component, or other search criteria.

A SelectJavaReportPage application uses a mix of developer and com.actuate.schemas classes similar to a SelectPage operation. The following sample application, AcSelectJavaReportPage, selects a single page and saves the result in the specified directory by performing the following tasks:

- Instantiates the Arguments class, passing any command line arguments to the constructor
- Instantiates the ActuateController class, getting a server URL from Arguments, if specified in the command line
- Uses methods defined in the controller class to send a request to select a page using com.actuate.schemas.SelectJavaReportPage, SelectJavaReportPageResponse, ViewParameter, ObjectIdentifier, PageIdentifier, NameValuePair, and ArrayOfNameValuePair classes
- Instantiates the SelectJavaReportPage class and specifies the SelectJavaReportPage operation by performing the following tasks:
  - Sets up an ObjectIdentifier object, specifying the name and type of the file to view
  - Sets up a PageIdentifier object, specifying the page number to view and the page view mode
  - Sets up the references to the ObjectIdentifier and PageIdentifier objects in the SelectJavaReportPage object
  - Sets up the view properties used by the BIRT viewer using NameValuePair and ArrayOfNameValuePair classes

    The view properties include the following settings:

    - SVGFlag

      Specifies whether to use Scalable Vector Graphics (SVG), an XML language used to describe two-dimensional graphics, such as vector graphics shapes, images, and text. This flag is used by the chart engine to determine if SVG chart output is supported.
    - ContextPath

      Specifies a context path relative to the root directory of the web server.

- MasterPage
  Determines whether to use the master page, which defines the layout for the pages of a report.
- enableMetaData
  Enables the client to retrieve metadata required to communicate with the service.
- displayGroupIcon
  Enables the display of group icons for viewing related items.
- displayFilterIcon
  Enables the display of filter icons for viewing items using options a user selects.
- viewMode
  Specifies whether the report displays in HTML or PDF.

- Makes the remote call to the Actuate SOAP port using proxy.selectJavaReportPage( ), returning a reference to the com.actuate.schemas.SelectJavaReportPageResponse object
- Sets up the download directory using mkdir( )
- Saves the result in the download directory
- To obtain an image on a page in the document, the application performs the following tasks:
  - Gets the page reference
  - Calls Attachment.getContentData( ) to obtain the page content and sets up a ByteArrayInputStream
  - Calls getEmbed( ), passing in the references to ByteArrayInputStream and ActuateControl objects

  getEmbed( ) performs the following tasks:
  - Sets up an InputStreamReader to iteratively read pattern chunks, line-by-line, to decode the input stream
  - Compiles the generic image file name, specified in a regular expression, into a pattern instance, which allows the application to use a Matcher object to identify an embedded image
  - Uses Matcher.find( ) to scan a chunk to locate a sequence matching the specified pattern
  - Calls returnId( ) to get the image ID

- Sets up a GetJavaReportEmbededComponent object, specifying the file name, file type, and a name-value pair indicating the image component ID
- Sets the response connection handle, the session ID of the object.
- Calls ActuateControl.GetJavaReportEmbededComponent ( ) to get the embedded object
- Saves the Attachment to the download directory

AcSelectJavaReportPage class looks like the following example:

```
public class AcSelectJavaReportPage {
   public static ActuateControl actuateControl;
   // download settings
   static String filename;
   static String downloadDirectory = "download";
   static String format = "Reportlet";
   static int pageNumber = 1;
   static com.actuate.schemas.SelectJavaReportPageResponse
      resp=null;
   public static void main(String[ ] args)
   {
      // get command line arguments
      Arguments arguments = new Arguments(args);
      filename = arguments.getArgument( );
      pageNumber =
   Integer.parseInt(arguments.getOptionalArgument("1"));
      downloadDirectory =
   arguments.getOptionalArgument(downloadDirectory);

      …
         actuateControl.selectPage(
            filename,format,pageNumber,downloadDirectory);
         com.actuate.schemas.SelectJavaReportPage
            acselectjavarptpage = new
               com.actuate.schemas.SelectJavaReportPage( );

         com.actuate.schemas.ObjectIdentifier objId =
            new ObjectIdentifier( );
         objId.setName(filename);
         objId.setType("rptdocument");
         acselectjavarptpage.setObject(objId);

         PageIdentifier pgId = new PageIdentifier( );
         pgId.setPageNum(new Long(pageNumber));
         pgId.setViewMode(new Integer(1));

         acselectjavarptpage.setPage(pgId);
```

```
acselectjavarptpage.setOutputFormat(format);
acselectjavarptpage.setDownloadEmbedded(
   new Boolean(true));

com.actuate.schemas.NameValuePair nvpair =
   new com.actuate.schemas.NameValuePair( );
nvpair0.setName("SVGFlag");
nvpair0.setValue("false");

com.actuate.schemas.NameValuePair nvpair1 =
   new com.actuate.schemas.NameValuePair( );
nvpair1.setName("ContextPath");
nvpair1.setValue("/");

com.actuate.schemas.NameValuePair nvpair2 =
   new com.actuate.schemas.NameValuePair( );
nvpair2.setName("MasterPage");
nvpair2.setValue("true");

com.actuate.schemas.NameValuePair nvpair3 =
   new com.actuate.schemas.NameValuePair( );
nvpair3.setName("enableMetaData");
nvpair3.setValue("false");

com.actuate.schemas.NameValuePair nvpair4 =
   new com.actuate.schemas.NameValuePair( );
nvpair4.setName("displayGroupIcon");
nvpair4.setValue("false");

com.actuate.schemas.NameValuePair nvpair5 =
   new com.actuate.schemas.NameValuePair( );
nvpair5.setName("displayFilterIcon");
nvpair5.setValue("false");

com.actuate.schemas.NameValuePair nvpair6 =
   new com.actuate.schemas.NameValuePair();
nvpair6.setName("viewMode");
nvpair6.setValue("1");

com.actuate.schemas.NameValuePair  npair[ ] =
   {nvpair,nvpair1,nvpair2,nvpair3,
      nvpair4,nvpair5,nvpair6};

ArrayOfNameValuePair arr = new ArrayOfNameValuePair( );
arr.setNameValuePair(npair);
acselectjavarptpage.setViewProperties(arr);

resp = actuateControl.proxy.selectJavaReportPage(
   acselectjavarptpage);

// Save the result in download directory
new java.io.File(downloadDirectory).mkdir( );
```

```
      String firstAttachmentName =
         actuateControl.saveAttachment(resp.getPageRef( ),
            downloadDirectory);
      com.actuate.schemas.Attachment att = resp.getPageRef( );

      byte[ ] content = att.getContentData( );
      java.io.ByteArrayInputStream ba =
         new java.io.ByteArrayInputStream(content);

      getembed(ba,actuateControl);
   }
   catch (Exception e)
   {
      e.printStackTrace( );
   }

 public static void getembed(
   java.io.ByteArrayInputStream ba,
      ActuateControl actuateControl) throws Exception {
    Charset cs = Charset.forName("UTF-8");
    java.io.InputStreamReader isr =
        new java.io.InputStreamReader(ba,cs);

    Pattern p = Pattern.compile("__imageID=(\\S+\\.jpg)");

    java.io.BufferedReader br =
        new java.io.BufferedReader(isr);
    String chunk = null;

    while ((chunk = br.readLine( )) != null) {
      Matcher m = p.matcher(chunk);
      String image_id = null;

      if(m.find( ) ) {
        System.out.println("String read :" + chunk);
        String tmp =  m.group();
        image_id = returnId(tmp);
        String decoded_image_id =
           java.net.URLDecoder.decode(image_id, "UTF-8");
        GetJavaReportEmbededComponent jrptComp =
           new GetJavaReportEmbededComponent( );
        jrptComp.setDownloadEmbedded(new Boolean(true));
        ObjectIdentifier jobj = new ObjectIdentifier( );
        jobj.setName(filename);
        jobj.setType("rptdocument");
        jrptComp.setObject(jobj);
        com.actuate.schemas.NameValuePair jpair =
           new com.actuate.schemas.NameValuePair( );
        jpair.setName("compId");
        jpair.setValue(decoded_image_id);
```

```
            com.actuate.schemas.NameValuePair  njpair[ ] =
               {jpair};
            ArrayOfNameValuePair jarr =
               new ArrayOfNameValuePair( );
            jarr.setNameValuePair(njpair);
            jrptComp.setComponent(jarr);
            actuateControl.setConnectionHandle(
               resp.getConnectionHandle( ));
            GetJavaReportEmbededComponentResponse jresp =
            actuateControl.proxy.getJavaReportEmbededComponent(
               jrptComp);
            String imageName =
               actuateControl.saveAttachment(
               jresp.getEmbeddedRef( ), downloadDirectory);
            System.out.println( imageName);
            }
         }
      }
   public static String returnId (String str){
       int startPos;
       startPos = str.indexOf("=");
       String id = str.substring(startPos + 1);
       return id;
     }
}
```

Scheduling a custom event

BIRT iServer provides administrators with a flexible set of options for scheduling when a report runs. A report can be scheduled to run at a specific point in time. At times, running a report can be dependent on other data processing tasks, such as a pending update to a data warehouse or some other decision-support system. Unless these processes complete first, the report can be incomplete or contain out-of-date information. BIRT iServer supports event-based scheduling to facilitate these types of processing requirements.

BIRT iServer supports scheduling a report to run at a specific calendar date and time or when one of the following types of events occurs:

- File

  Specify an operating system file or folder as the event criteria. BIRT iServer runs the event-based job when it finds the file or folder in the specified location.

- Job

  Specify a scheduled job in the Encyclopedia volume as the event criteria. When the scheduled job completes, BIRT iServer runs the event-based job.

- Custom

  Specify a web service that BIRT iServer monitors. BIRT iServer communicates with the web service, continuously polling the service with an event name and parameters. BIRT iServer runs the custom-event based job when the web service returns the specified signal.

File and job events do not require custom programming. A custom event requires you to create the web service and configure BIRT iServer to communicate with the service.

The BIRT iServer installation program installs a default custom event web service and configures the Encyclopedia volume to use the service. BIRT iServer Integration Technology provides a customizable web service application as a sample, including the source code, in the Custom Event Web Service folder.

How to configure a custom event web service

iServer Configuration Console provides a system administration interface for setting up the custom event web service. To set up a custom event web service, perform the following tasks:

1. Log into the iServer Configuration Console, choose Advanced View, then choose System Volumes.
2. On Volumes—Properties, choose Events.
3. On Events, perform the following tasks:
   1. On Polling, specify the following parameters:
      1. Polling interval

         The amount of time between each polling interval. The default value is 5 minutes.
      2. Polling duration

         The amount of time that BIRT iServer continues polling the web service. BIRT iServer polls for the event status until the event occurs or the event expires. The default value is 300 minutes.
      3. Lag time

         The amount of time that an event occurrence is valid to satisfy an event requirement. For example, if BIRT iServer checks the status of an event with the lag time set to 10 minutes, and the event occurs in that 10-minute interval, the event satisfies the job requirement. If the event occurs after the 10-minute interval elapses, the occurrence does not satisfy the job requirement. The default value is 60 minutes.

      These values apply to all event types. A user can modify these default values in each SubmitJob or UpdateJobSchedule request by resetting the values in the accompanying Event object.

2 Select Enable custom events.

3 On Custom event web service configuration, specify the following parameters:

1 In IP address, type the machine name or IP address of the application server running the custom event service.

The default name on a Windows machine is localhost.

2 In SOAP port, type the application server SOAP port used by the custom event service.

The default port is 8900.

3 In Context string, type the application server context path used by the custom event service.

If the event service is in $AC_SERVER_HOME/servletcontainer/webapps/myEvent, the context is /myEvent/servlet/AxisServlet. The default context string is /acevent/servlet/AxisServlet.

If these parameters are not set, BIRT iServer uses the default values to connect to the sample event service. Figure 6-5 shows the default settings for a custom event configuration on a Windows machine.

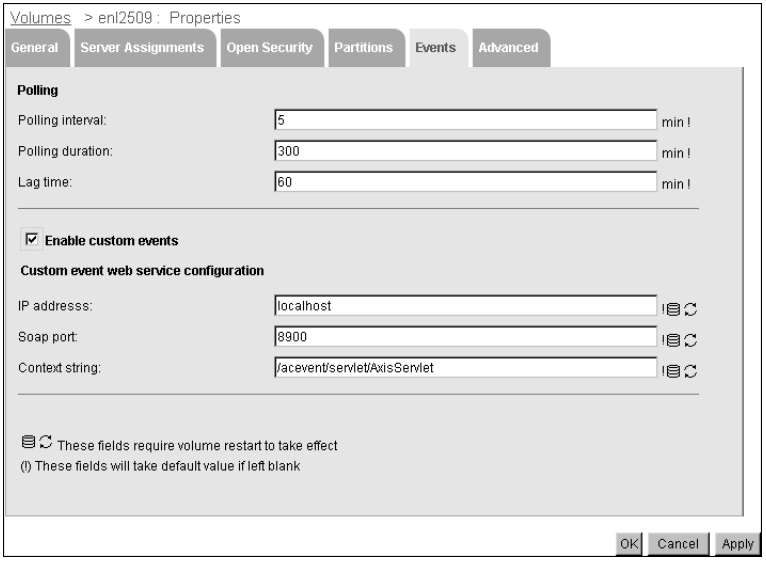

Figure 6-5 Default settings for a custom event configuration on a Windows system

To change the event service configuration, configure these settings in the acserverconfig.xml file:

```
<Volumes>
   <Volume>
         …
         EventPollingInterval="10"
         EventPollingDuration="300"
         EventLagTime=”60”
         CustomEventServiceIPAddress=”hostname or IP address”
         CustomEventServicePort=” 8900 or other port number”
         CustomEventServiceContextString=
            “/myEvent/servlet/AxisServlet”>
         …
   </Volume>
<Volumes>
```

Starting with release 11, the default location for acserverconfig.xml is AC_DATA_HOME/server/config. AC_DATA_HOME refers to the folder the installer specifies as the location for data during the iServer installation. By default, that path is C:/Actuate11/iServer/data on a Windows system, and /<Installation directory>/AcServer/data on a Linux system.

How to schedule a custom event

iServer Management Console provides an Encyclopedia volume administration interface for submitting, displaying, and modifying an event-based job.

To specify a custom event when scheduling a job, perform the following tasks:

1. Open iServer Management Console and log in to the Encyclopedia volume as Administrator.
2. On Files and Folders, navigate to the report to run, select the arrow to the left of the report, and choose New Background Job.
3. On Schedule, perform the following tasks, as shown in Figure 6-6:
   1. Select Wait for event.
   2. In the drop-down box next to Wait for event, select Custom Event.
   3. Enter the required event name and parameters.

Implementing a custom event service

The source code for the sample implementation of a custom event service is in the com.actuate11.event.sample package in the Custom Event Web Service folder of BIRT iServer Integration Technology. This package contains one class, SampleEventService.java. The JAR file for this application is in \lib. The Custom Event Web Service folder also contains a build.xml file for compiling the application using the Apache Ant build tool.

In the installed application, BIRT iServer polls the program using the custom event web service by calling SampleEventService.GetEventStatus( ). This method

returns the event status code, which indicates whether the event condition is satisfied or expired.

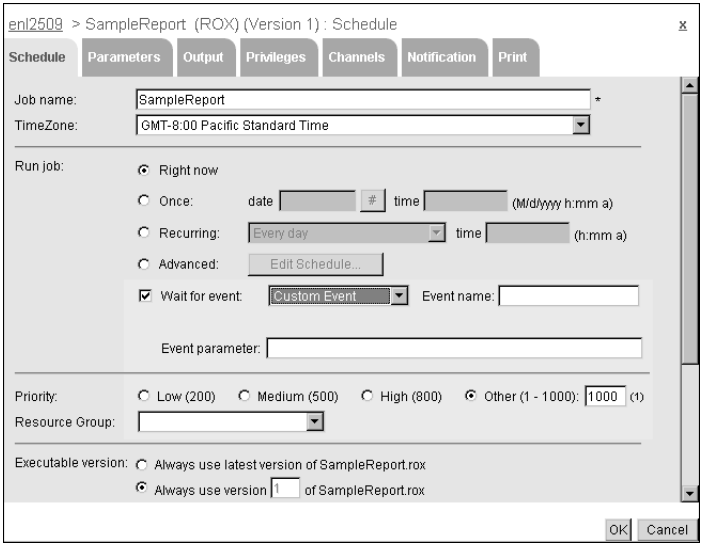

Figure 6-6 Example of job settings for a custom event

To implement a custom event service, modify the sample implementation or implement the interface in a class that you create. If you create a class, you must implement the GetEventStatus( ) method of the BIRT iServer EventService interface.

Building a custom event service

BIRT iServer Integration Technology supplies an Apache Ant build script, build.xml. Building the default target "build" using Ant creates eventSample.jar in $INSTALL_DIR\Actuate11\ServerIntTech\Custom Event Web Service\lib. Building the target with the "clean" option, cleans up generated class and jar files.

For information about Apache Ant, see the Apache Ant web site at http://ant.apache.org.

Deploying the service on an application server

Stop the application server that runs the event service, add the JAR file to the application server, configure the application server, and restart the server.

For the application server that ships with BIRT iServer, the following directory is the default context for the BIRT iServer custom event service:

```
$AC_SERVER_HOME/servletcontainer/webapps/acevent/WEB-INF/lib
```

To deploy the event service to the default context, copy the JAR file to the lib directory.

Update the event service class.properties file to point to the event service class file. If you deploy the event service using the BIRT iServer default context, update the contents of the class.properties file inside eventWsdl.jar located in the application server directory webapps/acevent/WEB-INF/lib.

The following example shows the setting for the sample event service class:

```
class=com.actuate11.event.sample.SampleEventService
```

As an alternative, you can also create the following application server directory and put the class.properties file in the directory:

```
/webapps/acevent/WEB-INF/classes/com/actuate11/event/wsdl
```

If you use a different context, specify the appropriate context. For example, if you use another folder under webapps called myEvent, then create the following folder myEvent/com/actuate11/event/wsdl/class.properties and point it to your class:

```
class=com.myCompany.myEvent
```

About the custom event web service sample

The SampleEventService class implements the BIRT iServer EventService interface. This interface specifies the GetEventStatus( ) method. You must implement this method with custom logic that provides the current status of each event in the input list.

In GetEventStatus( ), the supplied event service logic is minimal. The method performs the following operations, as shown in the next code example:

- Sets up an array to contain the input list received as an ArrayOfEvent object in the request from BIRT iServer
- Sets up an array to contain the output list sent back as an ArrayOfEventStatus object in the response to BIRT iServer
- Iterates through the input event list, instantiating an EventStatus object for each item in the list, and performing the following operations:
  - Sets the event number taken from the input list
  - Sets the status code by testing to see if the event occurred and setting the status to indicate satisfied or expired
  - Adds the EventStatus object to the output list
  - Returns the ArrayOfEventStatus array in the response to BIRT iServer

```
package com.actuate11.event.sample;
import com.actuate11.event.interfaces.*;
import com.actuate11.event.*;
```

```
public class SampleEventService implements EventService
{
   boolean logic = true;
   // Implement the custom event service logic here
   public ArrayOfEventStatus GetEventStatus( ArrayOfEvent
   eventList )
      throws SOAPException
   {
      logic = !logic;
      Event[ ] inputList = eventList.getEvent( );
      ArrayOfEventStatus outputList = new ArrayOfEventStatus( );
      EventStatus[ ] eventStatusList = new
         EventStatus[inputList.length];
      if(inputList == null)
         return null;
      for (int i = 0; i < inputList.length; i++) {
         Event inputEvent = inputList[i];
         EventStatus eventStatus = new EventStatus( );
         eventStatus.setEventNumber(inputEvent.
            getEventNumber( ));
         eventStatus.setStatusCode
            (logic?EventStatus_StatusCode.Satisfied:
            EventStatus_StatusCode.Expired);
         eventStatusList[i] = eventStatus;
      }
      outputList.setEventStatus(eventStatusList);
      return outputList;
   }
}
```

SOAP-based event web service operations and data types

This section describes the SOAP-based event web service operations and data types.

ArrayOfEvent

A complex data type representing an array of events.

Schema

```
<xsd:complexType name="ArrayOfEvent">
   <xsd:sequence>
      <xsd:element name="Event" type="typens:Event"
         maxOccurs="unbounded" minOccurs="0" />
```

```
   </xsd:sequence>
</xsd:complexType>
```

ArrayOfEventStatus

A complex data type representing an array of event status.

Schema

```
<xsd:complexType name="ArrayOfEventStatus">
   <xsd:sequence>
      <xsd:element name="EventStatus" type="typens:EventStatus"
         maxOccurs="unbounded" minOccurs="0" />
   </xsd:sequence>
</xsd:complexType>
```

Event

A complex data type representing an event.

Schema

```
<xsd:complexType name="Event">
   <xsd:sequence>
      <xsd:element name="EventNumber" type="xsd:long" />
      <xsd:element name="VolumeName" type="xsd:string" />
      <xsd:element name="EventName" type="xsd:string" />
      <xsd:element name="EventParameter" type="xsd:string" />
      <xsd:element name="LagTime" type="xsd:long" minOccurs="0" />
   </xsd:sequence>
</xsd:complexType>
```

Elements

EventNumber
The event number.

VolumeName
The volume name for the event.

EventName
The name of the event.

EventParameter
A parameter for the event.

LagTime
The event lag time.

EventStatus

A complex data type representing event status.

Schema

```
<xsd:complexType name="EventStatus">
   <xsd:sequence>
      <xsd:element name="EventNumber" type="xsd:long" />
      <xsd:element name="StatusCode">
         <xsd:simpleType>
            <xsd:restriction base="xsd:string">
               <xsd:enumeration value="Satisfied" />
               <xsd:enumeration value="Polling" />
               <xsd:enumeration value="Expired" />
            </xsd:restriction>
         </xsd:simpleType>
      </xsd:element>
   </xsd:sequence>
</xsd:complexType>
```

Elements

EventNumber
The event number.

StatusCode
The current status of the event. The event can be Satisfied, Polling, or Expired.

GetEventStatus

Returns the event status code, which indicates whether the event condition is satisfied or expired.

Request schema

```
<xsd:complexType name="GetEventStatus">
   <xsd:sequence>
      <xsd:element name="EventList" type="typens:ArrayOfEvent" />
   </xsd:sequence>
</xsd:complexType>
```

Request elements

EventList
The list of events from which to retrieve the event status.

Response schema

```
<xsd:complexType name="GetEventStatusResponse">
   <xsd:sequence>
      <xsd:element name="EventStatusList"
         type="typens:ArrayOfEventStatus" />
   </xsd:sequence>
</xsd:complexType>
```

Response elements

EventStatusList
The list of event status.

Chapter

7

Developing Actuate Information Delivery API applications using Microsoft .NET

This chapter consists of the following topics:

- About the Microsoft .NET client
- About the Actuate Information Delivery API framework
- Developing Actuate Information Delivery API applications

About the Microsoft .NET client

BIRT iServer System contains WSDL documents that define the Actuate web services schema for the Microsoft C# and Visual Basic development environments. The Microsoft .NET client provides a web services framework for building applications that communicate with BIRT iServer System, using SOAP messaging.

The Actuate Information Delivery API framework uses elements of the Microsoft .NET development platform to support the following features:

- Automatic generation of the Actuate Information Delivery API code library from an Actuate WSDL document.

  The library contains the classes, including server proxies, that you can use to write an Actuate Information Delivery API application.

- A SOAP processor that provides automatic encoding and decoding of SOAP messages.

A Microsoft .NET client solution containing example projects ships with BIRT iServer Integration Technology. The Microsoft .NET client is in the following directory:

```
\Actuate11\ServerIntTech\Web Services\Examples\MS .NET Client
```

The Microsoft .NET Client directory contains the following subdirectories:

- Source

  Contains the example projects.

- Report

  Contains the report files used by the example projects.

- Download

  Stores the files or reports downloaded by the example projects. This directory is initially empty.

- Build

  After building an example project, there are two subdirectories in the build directory, debug and release. Each directory contains copies of the executable files for the project.

There are two solution description files in the MS .NET Client root directory:

- Server Proxy.sln

  Open the server proxy solution first, then build it to generate the proxy DLL. The build process puts the Server Proxy.dll and Server Proxy.pdb files in a build directory for other projects to share and reference.

- Examples.sln

  After you build the server proxy, open the examples solution and build it to compile the example projects. Copy the server proxy files, Server Proxy.dll and Server Proxy.pdb, to the /Debug and /Release subfolders of the example projects.

If changes occur in the WSDL interface, download the latest WSDL file from the BIRT iServer and replace the ActuateAPI.wsdl file in the server proxy solution at the following location:

```
\Actuate11\ServerIntTech\Web Services\Examples\MS .NET Client
   \source\Server Proxy\Web References\localhost
```

Rebuild the proxy, then rebuild all the examples. To update the WSDL file using the Microsoft .NET development tool, perform the following tasks:

1. In Solution Explorer, expand Web References.
2. Select localhost, right-click, then choose Update Web Reference, as shown in Figure 7-1.

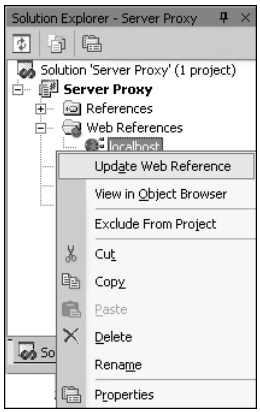

Figure 7-1 Updating the web reference for localhost

This procedure updates the local copy of the WSDL file from an BIRT iServer configured to run at the following default location:

```
http://localhost:8000/wsdl/v11/net/all
```

If you are using a BIRT iServer that listens at a different port on the local machine, change the URL property for the Web Reference, localhost. To update the URL property for the existing Web Reference, localhost, perform the following tasks:

1. In Solution Explorer, expand Web References.
2. Select localhost, right-click, then choose Properties, as shown in Figure 7-2.

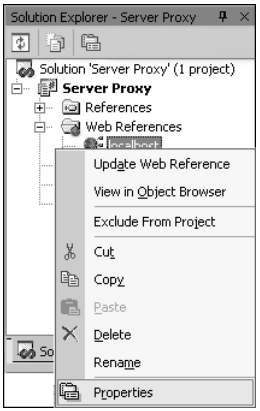

Figure 7-2 Changing the web reference for localhost

Properties appears, as shown in Figure 7-3.

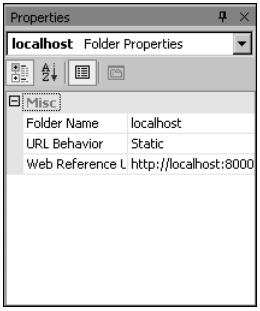

Figure 7-3 The Properties page for localhost

3 Change the Web Reference URL for localhost to the correct value.

Alternatively, you can delete the Web Reference, localhost, then add a new Web Reference that contains the correct URL property.

The \Actuate11\ServerIntTech\Web Services\Examples\MS .NET Client \source\Server Proxy\Web References\localhost directory also contains the following files:

- Reference.cs

  Contains the Actuate Information Delivery API classes generated from the Actuate WSDL document

- Reference.map

  Contains the following references:

  - Namespace declaration, xsd, used as a prefix for every Actuate Information Delivery API SOAP message to determine the scope of the XML namespace. The following namespace declaration indicates that a message

is based on the World Wide Web Consortium XML schema initially published in 2001:

```
xmlns:xsd="http://www.w3.org/2001/XMLSchema"
```

- Specific instance of the XML schema. In order to use namespace attribute types in an XML document, you must define the xsi namespace, as shown in the following example:

```
xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance"
```

- Web services system. The following reference specifies the ActuateAPI.wsdl document for Actuate 11:

```
url="http://localhost:8000/wsdl/v11/net/all"
   filename="ActuateAPI.wsdl"
```

The following sections describe how to build client applications that use the libraries provided by the Actuate Information Delivery API for development in a Microsoft .NET environment.

About the Actuate Information Delivery API framework

The Actuate Information Delivery API framework contains the client-side bindings that the Actuate IDAPI application requires to implement SOAP processing. The SOAP processor serializes, or transforms a remote procedure call by the application into an XML-based SOAP message that asks BIRT iServer to perform a web service. The application sends the request across the network using the Hypertext Transfer Protocol (HTTP) transport layer.

BIRT iServer receives the request and deserializes the SOAP message. BIRT iServer performs an appropriate action and sends a response, in the form of a SOAP message, back to the application.

The SOAP processor embedded in the Actuate Information Delivery API framework automates the serialization and deserialization of SOAP messages, relieving the developer of the necessity to program the application at this level.

The following sections describe these key elements of the framework as background information to provide the developer with an understanding of the way the Actuate Information Delivery API framework operates.

Using a data type from a WSDL document to generate a C# class

When you generate the Actuate Information Delivery API source code, Microsoft .NET builds a C# class from each WSDL type definition.

For example, the Login type definition translates the following WSDL into the C# equivalent:

```
<s:complexType name="Login">
   <s:sequence>
      <s:element name="User" type="s:string" />
         <s:element minOccurs="0" name="Password"
            type="s:string" />
         <s:element minOccurs="0" name="EncryptedPwd"
            type="s:string" />
         <s:element minOccurs="0" name="Credentials"
            type="s:base64Binary" />
         <s:element minOccurs="0" name="Domain"
            type="s:string" />
         <s:element minOccurs="0" name="UserSetting"
            type="s:boolean" />
         <s:element minOccurs="0" name="ValidateRoles"
            type="s0:ArrayOfString" />
   </s:sequence>
</s:complexType>
```

The C# class receives the name that appears in the WSDL type definition. The class defines the attributes and data types for each WSDL element. Applying a System.Xml.Serialization class, such as XmlElementAttribute, specifies how the .NET framework serializes and deserializes a C# attribute.

The following code shows the C# class definition for the Login class:

```
[System.Xml.Serialization.XmlTypeAttribute(
   Namespace="http://schemas.actuate.com/actuate11")]
public class Login {
   public string User;
   public string Password;
   public string EncryptedPwd;
      [System.Xml.Serialization.XmlElementAttribute(DataType=
         "base64Binary")]
      public System.Byte[ ] Credentials;
      public string Domain;
      public bool UserSetting;
      [System.Xml.Serialization.XmlIgnoreAttribute( )]
      public bool UserSettingSpecified;
      [System.Xml.Serialization.XmlArrayItemAttribute(
         String", IsNullable=false)]
      public string[] ValidateRoles;
}
```

Mapping the portType to a web service interface

The .NET framework uses the portType and binding in the WSDL document to create the web service interface. The web service interface specifies the input and output messages of the request-response pairs for an operation and the service name and port.

The following WSDL code shows the specification of the input and output messages, Login and LoginResponse, and the binding of this request-response pair to the login operation:

```
<wsdl:portType name="ActuateSoapPort">
   <wsdl:operation name="login">
      <wsdl:input message="tns:Login" />
      <wsdl:output message="tns:LoginResponse" />
   </wsdl:operation>
   …
```

The following WSDL code shows the specification of the service and port names and the binding of the port to a machine address:

```
<wsdl:binding name="ActuateSoapBinding"
   type="tns:ActuateSoapPort">
   <soap:binding transport="http://schemas.xmlsoap.org/soap
      /http" style="document" />
</wsdl:binding>
<wsdl:service name="ActuateAPI">
   <wsdl:port name="ActuateSoapPort"
      binding="tns:ActuateSoapBinding">
      <soap:address location="http://ENL2509:8000" />
   </wsdl:port>
</wsdl:service>
```

An application uses this information to construct an interface to access the operations available from the service using a remote procedure call (RPC). In the following code example, taken from ActuateAPI class, the client application performs the following tasks:

- Sets up the SOAP message.
- The remote procedure call, login( ), submits a request, passing a Login object as a parameter and returns a LoginResponse object in response from the BIRT iServer defined by ActuateSoapPort in the web service interface.

```
[System.Web.Services.Protocols.SoapHeaderAttribute
   ("HeaderValue")]
```

Developing Actuate Information Delivery API applications

The following sections describe the development process for following types of Actuate Information Delivery API applications:

- Logging in to an Encyclopedia volume
- Creating a user
- Performing a search operation
- Executing a transaction-based operation
- Uploading a file
- Downloading a file

The code examples and explanations in the Developing Actuate Information Delivery API using .NET chapter parallel the code examples and explanations in the Developing Actuate Information Delivery API using Java chapter.

Writing a program that logs in to an Encyclopedia volume

A login operation authenticates a user in an Encyclopedia volume. A login operation involves the following actions:

- An IDAPI application sends a login request to an Encyclopedia volume.
- The Encyclopedia volume sends a login response to the IDAPI application.

A Login action receives a LoginResponse message from an Encyclopedia volume. When a Login action succeeds, the LoginResponse message contains an AuthId, which is an encrypted, authenticated token. When a Login action fails, an Encyclopedia volume sends a LoginResponse message containing an error code and a description of the error.

The authentication ID in the LoginResponse message remains valid for the current session. Any subsequent request that the application sends to an Encyclopedia volume must include the authentication ID in the message. The following sections describe the SOAP messages, classes, and program interactions necessary to implement a successful login operation.

The following application derives from the code in the BIRT iServer Integration Technology example applications for the MS .NET Client. AcLogin class logs in to the Encyclopedia volume to authenticate the user. If the login succeeds, the application prints a success message. If the login fails, the application prints a usage message. In AcLogin class, Main function performs the following operations:

- Specifies Actuate namespace and calls Usage function, which analyzes the command line arguments as shown in the following code:

```
using System;
using System.Web.Services.Protocols;
using Server_Proxy.localhost;
   namespace Actuate
{
   class AcLogin
   {
      [STAThread]
      static void Main(string[ ] args)
      {
         string l_url;
         string l_userName;
         string l_password;
         string l_volumename;
         if ( Usage(args, out l_url, out l_userName,
            out l_volumename, out l_password) == 0) return;
```

  The following list describes the options that can be specified as command line arguments:

  - serverURL
    -h specifies the SOAP endpoint. The default value is http://localhost:8000.
  - username
    -u specifies the user name. The default value is Administrator.
  - password
    -p specifies the password. The default value is "".
  - volumename
    -v specifies the target volume name. Actuate Release 11 requires a volume name in the SOAP header. For earlier releases, this specification is optional.
  - printUsage
    -? prints the usage statement. The default value is the following string:

    ```
    Usage: Login -h http://localhost:8000 -u username -p password
       -? help
    ```

- Creates an instance of the server proxy and constructs the SOAP header:

```
ActuateAPI l_proxy = new ActuateAPI( );
l_proxy.HeaderValue = new Header( );
l_proxy.Url = l_url;
```

AcLogin uses the following classes defined in References.cs to perform these operations:

- ActuateAPI class is a subclasses of System.Web.Services.Protocols .SoapHttpClientProtocol that specifies the protocol for .NET to use at run time and defines the proxies used to make web service requests.
- Header class is a subclass of System.Web.Services.Protocols.SoapHeader that defines the following Actuate SOAP header extensions:
  - AuthId is a system-generated, encrypted string returned by BIRT iServer in a login response. All requests, except a login request, must have a valid AuthId in the SOAP header.
  - Locale specifies the language, date, time, currency, and other conventions for BIRT iServer to use when returning data to a client.
  - TargetVolume indicates the Encyclopedia volume that receives the request.
  - ConnectionHandle supports keeping a connection open to view a persistent report. If ConnectionHandle is present in the SOAP header, the system routes subsequent viewing requests to the same View service that returned the ConnectionHandle.
  - DelayFlush tells BIRT iServer to write updates to the disk when the value is False.

- Instantiates the Login object and prepares the login parameters.

```
Server_Proxy.localhost.Login l_req =
   new Server_Proxy.localhost.Login( );
l_req.Password = l_password;
l_req.User = l_userName;
l_req.Domain = l_volumename;
l_req.UserSetting = true;
l_req.UserSettingSpecified = true;
```

- Sends the login request, handling any exceptions by writing a usage statement to the console.

```
LoginResponse l_res;
try
{
   l_res = l_proxy.login(l_req);
}
catch(SoapException e)
{
   Console.WriteLine("Please try again.\n
   Usage: Login -h http://localhost:8000
   -u username -p password -v volumename -? help \n");
```

```
   PrintExceptionDetails((SoapException) e);
   return;
}
```

- Processes a successful login response by writing a success message to the console and storing AuthId as a SOAP header value for use in the next request.

```
Console.WriteLine("Congratulations!  You have successfully
logged into Encyclopedia volume as "+l_userName);
   // Store the authentication id
   l_proxy.HeaderValue.AuthId = l_res.AuthId;
}
```

AcLogin uses the Actuate Information Delivery API classes in References.cs, generated from the Actuate WSDL document. References.cs provides the following code definitions:

- Declares the proxy namespace, XML serialization, and web services protocols for the system.

```
namespace Server_Proxy.localhost {
   using System.Diagnostics;
   using System.Xml.Serialization;
   using System;
   using System.Web.Services.Protocols;
   using System.ComponentModel;
   using System.Web.Services;
```

- Defines the ActuateAPI class, which specifies the bindings for the SOAP HTTP client protocol, extended Actuate SOAP header values, and proxy calls.

```
[System.Web.Services.WebServiceBindingAttribute(
   Name="ActuateSoapBinding",
   Namespace="http://schemas.actuate.com/actuate11/wsdl")]
public class ActuateAPI
   : System.Web.Services.Protocols.SoapHttpClientProtocol {
public Header HeaderValue;
public ActuateAPI( ) {
   this.Url = "http://ENL2509:8000";
}
/// <remarks/>
[System.Web.Services.Protocols.SoapHeaderAttribute
   ("HeaderValue")]
[System.Web.Services.Protocols.SoapDocumentMethodAttribute(
      "", Use=System.Web.Services.Description.SoapBindingUse
      .Literal,ParameterStyle=
      System.Web.Services.Protocols.SoapParameterStyle.Bare)]
[return:
   System.Xml.Serialization.XmlElementAttribute(
      "LoginResponse",
```

```
      Namespace="http://schemas.actuate.com/actuate11")]
public LoginResponse
   login([System.Xml.Serialization.XmlElementAttribute
      (Namespace="http://schemas.actuate.com/actuate11")] Login
      Login) {
      object[ ] results = this.Invoke("login", new object[ ] {
         Login});
      return ((LoginResponse)(results[0]));
   }
```

Writing a simple administration application

A simple administration application typically involves a create operation for one of the following BIRT iServer objects:

- User
- Folder
- Role
- Group

To perform an administration operation that acts on an existing object in the Encyclopedia volume, such as a select, update, or delete operation, you must apply a search condition to the operation. To perform an administration operation that contains a set of administration operations requests, submit the request as a batch or transaction.

The following application derives from the code in the BIRT iServer Integration Technology example applications for the MS .NET Client. The application class, AcCreateUser, logs in to an Encyclopedia volume as Administrator and creates a user. AcCreateUser performs the following tasks:

- Instantiates a CreateUser object and prepares a create user operation.

  ```
  CreateUser l_createUser = new CreateUser( );
     l_createUser.IgnoreDup = true;
     l_createUser.IgnoreDupSpecified = true;
  ```

- Instantiates a User object, setting the username, password, and home folder.

  ```
  l_createUser.User = new User( );
     l_createUser.User.Name = l_UserName;
     l_createUser.User.Password = l_password;
     l_createUser.User.HomeFolder = l_homeFolder;
  ```

  User is a complex data type that represents user attributes.

- Sets additional view preference, notification, e-mail, and job priority options in the User object.

```
l_createUser.User.ViewPreference = UserViewPreference.DHTML;
l_createUser.User.ViewPreferenceSpecified = true;
l_createUser.User.SendNoticeForSuccess = true;
l_createUser.User.SendNoticeForSuccessSpecified = true;
l_createUser.User.SendNoticeForFailure = true;
l_createUser.User.SendNoticeForFailureSpecified = true;
l_createUser.User.SendEmailForSuccess = true;
l_createUser.User.SendEmailForSuccessSpecified = true;
l_createUser.User.SendEmailForFailure = true;
l_createUser.User.SendEmailForFailureSpecified = true;
l_createUser.User.EmailAddress = (l_createUserName + "@" +
   "localhost");
l_createUser.User.MaxJobPriority = 1000;
l_createUser.User.MaxJobPrioritySpecified = true;
```

- Instantiates an AdminOperation object and assigns the reference to the CreateUser object to it.

```
AdminOperation l_createUserOpt = new AdminOperation( );
l_createUserOpt.Item = l_createUser;
```

- Assembles the create user request in an AdminOperation array.

```
AdminOperation[ ] l_adminRequest = new AdminOperation[1];
l_adminRequest[0] = l_createUserOpt;
```

- Makes an administrate request using the proxy, passing in the reference to the AdminOperation array.

```
try {
   l_proxy.administrate(l_adminRequest);
}
catch(SoapException e) {
   PrintExceptionDetails(e);
   return;
}
```

Performing a search operation

Many operations support acting on one or more items in an Encyclopedia volume. To target the items on which to act, you must apply a search condition to the operation. The Actuate Information Delivery API library contains many special classes for setting a search condition and implementing a search for an item in an Encyclopedia volume.

The Actuate Information Delivery API provides three sets of parameters that support searching for the data on which an operation acts. Typically, these

parameters apply to operations that select, update, move, copy, or delete Encyclopedia volume items. The parameters are:

- Id or IdList
- Name or NameList
- Search

Use SelectFiles to retrieve file properties using the ID or name of a single file or folder, or a list of files or folders, in an Encyclopedia volume. SelectFiles can recursively search all subfolders in a directory. To restrict a search to the items in a single directory, not including subfolders, use GetFolderItems. SelectFiles does not retrieve file or folder content. SelectFiles supports three types of searches:

- Use Name or Id to retrieve a single file or folder.
- Use NameList or IdList to retrieve a list of files or folders in a directory.
- Use Search to retrieve all files or folders that match a given condition.

The following application derives from the code in the BIRT iServer Integration Technology example applications for the MS .NET Client. In the example application, AcSelectFiles specifies a search condition and performs the following operations:

- Specifies a search condition for the file type using the wildcard, *, to target all files that contain the character, R, as the first character in the file extension.

  ```
  namespace Actuate
  {
     class AcSelectFiles
     {
        …
           string fileType = "R*";
  ```

  A wildcard is a character used in a search or conditional expression that matches one or more literal characters. Actuate wildcards include the ones in the following list:

  - ? matches any single one- or two-byte character
  - # matches any ASCII numeric character [0-9]
  - * matches any number of characters

  The wildcard expression in the example targets files in BIRT iServer such as a report executable file with the file extension, ROX, and a report document with the file extension, ROI.

- Instantiates a FileCondition object, setting the condition to match on FileField.FileType using the wildcard expression.

```
static void SearchByCondition (string fileType)
{
   Server_Proxy.localhost.SelectFiles l_req = new
      SelectFiles( );
   FileCondition l_fileCondition = new FileCondition( );
   l_fileCondition.Field = FileField.FileType;
   l_fileCondition.Match = fileType;
```

- Instantiates a FileSearch object, setting the search to the properties specified in the FileCondition object.

```
FileSearch l_fileSearch = new FileSearch( );
l_fileSearch.Item = l_fileCondition;
```

  An application sets the search condition for a file using the FileSearch class. FileSearch is a complex data type that contains the list of properties to specify in a file search condition.

  An application can specify the search condition for a file using one or more of the following fields:

  - Name
  - FileType
  - Description
  - PageCount
  - Size
  - TimeStamp
  - Version
  - VersionName
  - Owner

  Use ArrayOfFileCondition to specify multiple search conditions.

- Specifies the fetch handle and SelectFilesResponse object for processing the results.

```
l_fileSearch.FetchSize  = 1;
l_fileSearch.FetchSizeSpecified = true;
SelectFilesResponse l_res;
```

- Makes the selectFiles( ) proxy call, obtaining the reference to the SelectFilesResponse object.

```
do
{
   try
   {
      l_res = l_proxy.selectFiles(l_req);
   }
   catch(Exception e)
   {
      PrintExceptionDetails(e);
      return;
   }
…
```

  A fetch handle indicates that the number of items in the result set exceeds the fetch size limit. A fetch handle returns as a parameter in the response to a Select or Get request, such as SelectFiles or GetFolderItems.

  Use the fetch handle to retrieve more results from the result set. In the second and subsequent calls for data, you must specify the same search condition that you used in the original call. All Get and Select requests, except SelectFileType, support the use of a fetch handle.

- Continues processing until there are no more results, printing an appropriate output message.

```
   File[ ] l_fileList = (File[ ]) l_res.Item;
      if (l_fileList != null)
   {
         for(int i = 0; i < l_fileList.Length; i++)
         {
            Console.WriteLine();
            Console.WriteLine("Item " + i + " Id:" +
               l_fileList[i].Id);
            Console.WriteLine("Item " + i + " Name:" +
               l_fileList[i].Name);
            Console.WriteLine("Item " + i + " Owner:" +
               l_fileList[i].Owner);
            Console.WriteLine("Item " + i + " Description:" +
               l_fileList[i].Description);
            Console.WriteLine("Item " + i + " File Type:" +
               l_fileList[i].FileType);
            Console.WriteLine("Item " + i + " File Size:" +
               l_fileList[i].Size);
         }
      }
   l_fileSearch.FetchHandle = l_res.FetchHandle;
} while(l_res.FetchHandle != null);
```

Writing a batch or transaction application

Actuate Information Delivery API supports batch and transaction administration operations. An IDAPI application uses a mixture of developer and API classes to implement a batch or transaction administration operation, including:

- Administrate
- AdminOperation
- Transaction
- TransactionOperation

The following sections explain the use of these administration operation classes in detail.

About batch and transaction operations

A batch application submits an array of administration operation requests to an Encyclopedia volume using one composite Administrate message. An Administrate request can contain any number of AdminOperation requests in the batch.

An AdminOperation request can contain any number of Transaction requests.

A Transaction request is a composite message that can contain any number of TransactionOperation requests. A TransactionOperation represents a single unit of work within a Transaction.

The default level of granularity for a transaction is an object. One operation run against one object is atomic. The use of an explicit Transaction tag in a composite Administrate message expands the transaction boundary to include multiple TransactionOperation requests.

To perform an administration operation that contains a set of requests, submit the request as a batch or transaction within one composite Administrate message. If a batch request fails, the operations that complete successfully before the failed operation still take effect. If a transaction operation fails, none of the operations in the transaction take effect. BIRT iServer rolls all the work back, leaving the system in the state it was in just prior to the execution of the transaction operation.

Implementing a transaction-based application

The following application derives from the code in the BIRT iServer Integration Technology example applications for the MS .NET Client. In the example application, AcAddUser_Tran performs a transaction-based administration operation to add multiple Encyclopedia volume users. When the command line includes the optional ignoreDup argument, the program ignores errors if a user already exists.

AcAddUsers_Tran.addUsers( ) performs the following tasks:

- Defines a TransactionOperation array, dimensioning the array to the number of new users.

```
namespace Actuate
{
   class AcAddUser_Tran
   {
   …
      TransactionOperation[ ] l_transOperation =
         new TransactionOperation[numberOfUsers];
```

- Within a loop, for each user:
  - Instantiates the CreateUser object and sets IgnoreDup.

```
CreateUser l_createUser = new CreateUser( );
l_createUser.IgnoreDup = true;
l_createUser.IgnoreDupSpecified = true;
```

  - Instantiates a User object, passing the reference to the CreateUser object, and setting the user name, password, home folder, and other options such as view preference, notification, and e-mail.

```
for (int i = 0; i < numberOfUsers; i++)
{
   l_createUser.User = new User( );
   l_createUser.User.Name = l_tranUserName;
   l_createUser.User.Password = l_tranPassword;
   l_createUser.User.HomeFolder = l_tranHomeFolder;
   …
```

  - Instantiates an AdminOperation object, passing the reference to the CreateUser object.

```
AdminOperation l_createUserOpt = new AdminOperation( );
l_createUserOpt.Item = l_createUser;
```

  - Instantiates a TransactionOperation object, passing the reference to the CreateUser object to complete the set up of the transaction operation.

```
l_transOperation[i] = new TransactionOperation( );
l_transOperation[i].Item = l_createUser;
```

- After the end of the loop, instantiates an AdminOperation object, passing the reference to the Transaction object to create the composite administration operation.

```
AdminOperation l_adminOperation = new AdminOperation( );
l_adminOperation.Item = l_transOperation;
```

- Instantiates an AdminOperation array, passing the reference to the AdminOperation object to complete the assembly of the administration operation request.

  ```
  AdminOperation[ ] l_adminRequest = new AdminOperation[1];
  l_adminRequest[0] = l_adminOperation;
  ```

- Makes the administrate proxy call, passing the reference to the administration operation array, handling any Exception that occurs.

  ```
  try
  {
     l_proxy.administrate(l_adminRequest);
  }
  catch(Exception e)
  {
     Console.WriteLine("Create user transaction failed.\n");
     PrintExceptionDetails(e);
     return;
  }
  ```

- Prints an output message, if the operation succeeds.

  ```
  Console.WriteLine("Create user transaction succeeded.\n");
  ```

Uploading a file

To upload a file to an Encyclopedia volume, you must identify the file to upload and the Encyclopedia volume in which to place the file. You can also specify how to work with existing versions of the file you upload. Using Actuate's open server technology, you can upload third-party file types and native Actuate file types.

About ways of uploading a file

When you upload a file, the content streams to the Encyclopedia volume. You can stream a report with a SOAP message in two ways:

- Embed the file in the response

  In embedding a file, the application specifies the ContentLength in the HTTP header. If you use HTTP 1.0, you typically choose to embed the file.

- Send the file as a MIME attachment

  A MIME attachment transmits the contents of the file outside the boundary of the SOAP message.

  A SOAP message with a MIME attachment consists of three parts:

  - HTTP header
  - Actuate SOAP message

- File attachment

The following example uses a MIME attachment and relevant Actuate Information Delivery API classes to build an application that uploads a file to an Encyclopedia volume.

Using UploadFile

Use the UploadFile class to upload a file to an Encyclopedia volume. The file content streams to BIRT iServer as an unchunked MIME attachment to the SOAP request. The UploadFile class contains the following attributes:

- NewFile is the NewFile object to upload.
- CopyFromLatestVersion is an array of strings used to copy one or more of the following properties from the latest version of the file, if one exists, to the version of the file that you upload:
  - Description is a description of the file.
  - Permissions, the Access Control List (ACL) specifying the users and roles that can access the file.
  - ArchiveRule specifies the autoarchive rules for the file, which determine how BIRT iServer ages the file and when the file expires.
- Content is the Attachment object that specifies the content Id, content type, content length, content encoding, locale, and content data.

How to build an application that uploads a file

The following application derives from the code in the BIRT iServer Integration Technology example applications for the MS .NET Client. In this example application, AcUploadFile performs the following operations:

- Instantiates an ActuateAPIEx object for specifying the Actuate IDAPI SOAP header extension elements, such as AuthId.

```
namespace Actuate
{
   class AcUploadFile
   {
   …
      ActuateAPI l_proxy;

      ActuateAPIEx l_proxyEx= new ActuateAPIEx( );
      l_proxyEx.Url = l_proxy.Url;
      l_proxyEx.HeaderValue = new Header( );
      l_proxyEx.HeaderValue.AuthId =
         l_proxy.HeaderValue.AuthId;
```

- Prepares the UploadFile request by instantiating UploadFile, NewFile, and Attachment objects, and specifying the file name, content type, and content ID.

```
UploadFile l_req = new UploadFile( );
l_req.NewFile = new NewFile( );
l_req.NewFile.Name = l_encFileName;
l_req.Content = new Attachment( );
l_req.Content.ContentType = "binary";
l_req.Content.ContentId = "Attachment";
```

- Opens the file for upload by constructing a FileStream object and passing the reference to the ActuateAPIEx object, handling any exception by outputting a message to the console.

```
try
{
   ActuateAPIEx.UploadStream =
      new FileStream(l_localFileName, FileMode.Open);
}
catch(Exception e)
{
   Console.WriteLine("Cannot open the file" + e.Message);
   return;
}
```

- Performs the UploadFile administration operation by making an upload file proxy call and closing the file stream after the operation completes.

```
UploadFileResponse l_res = null;
   try
   {
      l_res = l_proxyEx.uploadFile(l_req);
   }
   catch(Exception e)
   {
      PrintExceptionDetails(e);
   }
   Console.WriteLine("Uploaded " + l_localFileName + " with
      file id: "
      + l_res.FileId);
   ActuateAPIEx.UploadStream.Close( );
```

Downloading a file

To download a file from an Encyclopedia volume, identify the file and indicate whether to embed the content in the response or use chunked transfer-encoding. In HTTP 1.0, you must embed the entire file in the response and send it in a long, uninterrupted file stream. In HTTP 1.1, you can send the file in smaller chunks, which increases the efficiency of the file transfer. Although the Encyclopedia

volume supports both methods, BIRT iServer messages typically use chunked transfer-encoding.

The following example application uses chunked transfer-encoding and relevant com.actuate.schemas classes to build an application that downloads a file from an Encyclopedia volume.

Using DownloadFile

The DownloadFile class downloads a file from an Encyclopedia volume to the client. You can choose to embed the file content in the response or send it to the client as an attachment.

The DownloadFile class contains the following list of attributes:

- FileName or FileId is a string specifying the ID or name of the file to download.

  Specify either FileName or FileId.

- DecomposeCompoundDocument is a Boolean indicating whether to download a compound document as one file or multiple attachments.

  If the DecomposeCompoundDocument value is False, you can download the file as a single file. If the value is True, and the file is a compound document, the Encyclopedia volume splits the file into attachments containing the atomic elements of the compound document such as fonts and images. A decomposed document is not in a viewable format. The default value is False.

- DownloadEmbedded is a Boolean indicating whether to embed the content in the response or use chunked transfer-encoding.

- FileProperties is a string array specifying the file properties to return.

How to build an application that downloads a file

The following application derives from the code in the BIRT iServer Integration Technology example applications for the MS .NET Client. In the example application, AcDownloadFile_Chunked class, downloads a file from the Encyclopedia volume, using the chunked option, and saves the file in the specified directory.

The AcDownloadFile_Chunked class performs the following operations:

- Instantiates an ActuateAPIEx object for specifying the Actuate IDAPI SOAP header extension elements, such as AuthId.

```
namespace Actuate
{
   class AcDownloadFile_Chunked
   {
   …
      ActuateAPI l_proxy;
```

```
ActuateAPIEx l_proxyEx= new ActuateAPIEx( );
l_proxyEx.Url = l_proxy.Url;
l_proxyEx.HeaderValue = new Header( );
l_proxyEx.HeaderValue.AuthId =
   l_proxy.HeaderValue.AuthId;
```

- Prepares the DownloadFile request by instantiating DownloadFile and DownloadFileResponse objects, then specifying the file name, item type, and option to download an embedded file.

```
DownloadFile l_req = new DownloadFile( );
l_req.Item = l_filename;
l_req.ItemElementName = ItemChoiceType34.FileName;
l_req.DownloadEmbedded = false;
DownloadFileResponse l_res;
```

- Performs the DownloadFile administration operation by making the download file proxy call and handling any exceptions.

```
try
{
   l_res = l_proxyEx.downloadFile(l_req);
}
catch(Exception e)
{
   PrintExceptionDetails(e);
   return;
}
```

- Saves the downloaded file to the specified location and closes the file stream.

```
FileStream  l_fileStream = new FileStream(l_directory + "\\"
   + l_filename.Substring(l_filename.LastIndexOf("/")+1),
      FileMode.Create);
((MemoryStream)
   ActuateAPIEx.DownloadStream).WriteTo(l_fileStream);
l_fileStream.Close( );
```

Chapter

8

Actuate Information Delivery API operations

This chapter provides reference documentation for Actuate Information Delivery API operations listed in alphabetical order. Each entry includes a general description of the operation, its schema, and a description of its elements.

About the SOAP header

The SOAP header contains authentication data, locale information, and other required and optional data. The SOAP header element is mandatory for calls to the BIRT iServer. Table 8-1 lists all SOAP header elements that the Actuate Information Delivery API uses.

Table 8-1 SOAP header elements

Element	Description
AuthId	The system-generated, encrypted string that the system returns in the login response when the client logs in using the Actuate Information Delivery API. Required for all requests except login requests.
ConnectionHandle	An optional element that supports keeping a connection open to view a persistent report. If ConnectionHandle is present in the SOAP header, the system routes subsequent viewing requests to the same View service that returned the ConnectionHandle. If present, BIRT iServer System ignores the value of TargetVolume.
DelayFlush	A Boolean element that tells BIRT iServer to write updates to the disk when the value is False.
FileType	Specifies which type of file the request contains.
Locale	An optional element that specifies the locale to use for formatting locale-specific information, such as language, date and time, and other locale-specific conventions before returning the data to the client. If the client does not specify another locale, BIRT iServer System uses the client's default locale.
ReportType	An optional element that specifies which type of report to run.
RequestID	A unique value that identifies the SOAP message.
TargetResourceGroup	An optional element that assigns a synchronous report generation request to a specific resource group at run time.
TargetServer	An optional element that refers to the BIRT iServer in a cluster to which to direct the request. Use this element for requests pertaining to system administration tasks, such as GetFactoryServiceJobs and GetFactoryServiceInfo.
TargetVolume	An element that specifies the Encyclopedia volume to which to direct the request. In Release 10, TargetVolume is an optional element. In Release 11, Login and other subsequent messages must specify the Encyclopedia volume name using TargetVolume in the SOAP header.

Administrate

Specifies the AdminOperation element which controls abilities to modify an Encyclopedia volume. Only an Encyclopedia volume administrator or a user in the Administrator role uses Administrate operations.

Request schema

```
<xsd:complexType name="Administrate">
   <xsd:sequence>
      <xsd:element name="AdminOperation"
         type="typens:AdminOperation"
         maxOccurs="unbounded" minOccurs="0" />
   </xsd:sequence>
</xsd:complexType>
```

Request elements

AdminOperation
Specifies the type of Administrate operation.

Response schema

```
<xsd:complexType name="AdministrateResponse" />
```

AdminOperation

Controls the ability to create, delete, update, copy, and move items within an Encyclopedia volume. An AdminOperation request represents a single unit of work within an Administrate operation. Only an Encyclopedia volume administrator or a user in the Administrator role uses these operations.

Request schema

```
<xsd:complexType name="AdminOperation">
   <xsd:sequence>
      <xsd:choice>
         <xsd:element name="Transaction" type="typens:Transaction"
            minOccurs="0" />
         <xsd:element name="CreateUser" type="typens:CreateUser"
            minOccurs="0" />
         <xsd:element name="DeleteUser" type="typens:DeleteUser"
            minOccurs="0" />
         <xsd:element name="UndeleteUser"
            type="typens:UndeleteUser" minOccurs="0"/>
         <xsd:element name="UpdateUser" type="typens:UpdateUser"
            minOccurs="0" />
         <xsd:element name="CreateGroup" type="typens:CreateGroup"
            minOccurs="0" />
         <xsd:element name="DeleteGroup" type="typens:DeleteGroup"
         <xsd:element name="UpdateGroup" type="typens:UpdateGroup"
            minOccurs="0" />
         <xsd:element name="CreateChannel"
```

```
            type="typens:CreateChannel" minOccurs="0" />
          <xsd:element name="DeleteChannel"
            type="typens:DeleteChannel" minOccurs="0" />
          <xsd:element name="UpdateChannel"
            type="typens:UpdateChannel" minOccurs="0" />
          <xsd:element name="CreateRole" type="typens:CreateRole"
            minOccurs="0" />
          <xsd:element name="DeleteRole" type="typens:DeleteRole"
            minOccurs="0" />
          <xsd:element name="UpdateRole" type="typens:UpdateRole"
            minOccurs="0" />
          <xsd:element name="CreateFileType"
            type="typens:CreateFileType" minOccurs="0" />
           <xsd:element name="DeleteFileType"
            type="typens:DeleteFileType" minOccurs="0" />
          <xsd:element name="UpdateFileType"
            type="typens:UpdateFileType" minOccurs="0" />
          <xsd:element name="CreateFolder"
            type="typens:CreateFolder" minOccurs="0" />
          <xsd:element name="DeleteFile" type="typens:DeleteFile"
            minOccurs="0" />
          <xsd:element name="MoveFile" type="typens:MoveFile"
            minOccurs="0" />
          <xsd:element name="CopyFile" type="typens:CopyFile"
            minOccurs="0" />
          <xsd:element name="UpdateFile" type="typens:UpdateFile"
            minOccurs="0" />
          <xsd:element name="DeleteJob" type="typens:DeleteJob"
            minOccurs="0" />
          <xsd:element name="DeleteJobNotices"
            type="typens:DeleteJobNotices" minOccurs="0" />
          <xsd:element name="DeleteJobSchedule"
            type="typens:DeleteJobSchedule" minOccurs="0"/>
          <xsd:element name="UpdateJobSchedule"
            type="typens:UpdateJobSchedule" minOccurs="0" />
          <xsd:element name="UpdateVolumeProperties"
            type="typens:UpdateVolumeProperties" minOccurs="0" />
           <xsd:element name="UpdateOpenSecurityCache"
            type="typens:UpdateOpenSecurityCache" minOccurs="0" />
        </xsd:choice>
      </xsd:sequence>
    </xsd:complexType>
```

Request elements

Transaction

A packaging mechanism for Administrate operations. If a failure occurs anywhere in a transaction, all operations in the transaction fail.

CreateUser
Creates a user in the Encyclopedia volume.

DeleteUser
Deletes one or more users.

UndeleteUser
Undeletes one or more previously deleted users within the unit of work.

UpdateUser
Updates user properties in the Encyclopedia volume.

CreateGroup
Creates a notification group in an Encyclopedia volume.

DeleteGroup
Deletes one or more notification groups.

UpdateGroup
Updates notification group properties in the Encyclopedia volume.

CreateChannel
Creates a channel in an Encyclopedia volume.

DeleteChannel
Deletes channels from the Encyclopedia volume.

UpdateChannel
Updates channel properties in the Encyclopedia volume.

CreateRole
Creates a security role in the Encyclopedia volume.

DeleteRole
Deletes one or more security roles.

UpdateRole
Updates security role properties in the Encyclopedia volume.

CreateFileType
Creates a new file type in BIRT iServer.

DeleteFileType
Deletes file types.

UpdateFileType
Updates file type properties in the Encyclopedia volume.

CreateFolder
Creates a folder in an Encyclopedia volume.

DeleteFile
Deletes files or folders from the Encyclopedia volume.

MoveFile
Moves a file or folder from the working directory to a specified target directory in the Encyclopedia volume.

CopyFile
Copies a file or folder in the working directory to a specified target directory.

UpdateFile
Updates file or folder properties in the Encyclopedia volume.

DeleteJob
Deletes one or more jobs.

DeleteJobNotices
Deletes one or more job notices.

DeleteJobSchedule
Deletes a job schedule.

UpdateJobSchedule
Updates a job schedule.

UpdateVolumeProperties
Updates the properties of a specific Encyclopedia volume.

UpdateOpenSecurityCache
Flushes the Encyclopedia volume's open security data and retrieves new data from an external security source.

CallOpenSecurityLibrary

Calls the Report Server Security Extension (RSSE) API AcRSSEPassThrough function or PassThrough message, which calls the RSSE for general purposes. The application then interprets the value AcRSSEPassThrough or PassThrough returns, along with the return code. The RSSE library registered with BIRT iServer determines the returned value.

Request schema

```
<xsd:complexType name="CallOpenSecurityLibrary">
   <xsd:sequence>
      <xsd:element name="InputParameter" type="xsd:string"/>
   </xsd:sequence>
</xsd:complexType>
```

Request elements

InputParameter
The input parameter string.

Response schema

```
<xsd:complexType name="CallOpenSecurityLibraryResponse">
   <xsd:sequence>
      <xsd:element name="OutputParameter" type="xsd:string"/>
      <xsd:element name="ReturnCode" type="xsd:int"/>
   </xsd:sequence>
</xsd:complexType>
```

Response elements

OutputParameter
The output parameter string.

ReturnCode
The return code.

CancelJob

Terminates a job.

Request schema

```
<xsd:complexType name="CancelJob">
   <xsd:sequence>
      <xsd:element name="JobId" type="xsd:string" />
   </xsd:sequence>
</xsd:complexType>
```

Request elements

JobId
The id of the job to be canceled.

Response schema

```
<xsd:complexType name="CancelJobResponse">
   <xsd:sequence>
      <xsd:element name="Status" type="typens:CancelJobStatus" />
      <xsd:element name="ErrorDescription" type="xsd:string"
         minOccurs="0" />
   </xsd:sequence>
</xsd:complexType>
```

Response elements

Status
The status of the canceled job.

ErrorDescription
An error message regarding the canceled job.

CancelReport

Stops synchronous report execution. Synchronous report execution can be canceled only after the connection handle is received. ConnectionHandle is a session ID of the object.

Request schema

```
<xsd:complexType name="CancelReport">
   <xsd:sequence>
      <xsd:element name="ObjectId" type="xsd:string"/>
   </xsd:sequence>
</xsd:complexType>
```

Request elements

ObjectId
The object ID of the report to cancel.

Response schema

```
<xsd:complexType name="CancelReportResponse">
   <xsd:sequence>
      <xsd:element name="Status" type="xsd:string" minOccurs="0"/>
      <xsd:element name="ErrorDescription" type="xsd:string"
         minOccurs="0"/>
   </xsd:sequence>
</xsd:complexType>
```

Response elements

Status
The status of the request. One of the following values:

- Succeeded
  The synchronous report generation was successfully canceled.
- Failed
  The request failed.
- InActive
  The synchronous report generation is complete and cannot be canceled.

ErrorDescription
A description of any error that occurred.

CloseInfoObject

Closes an information object.

Request schema

```
<xsd:complexType name="CloseInfoObject">
   <xsd:sequence>
      <xsd:element name="DataFetchHandle" type="xsd:string" />
   </xsd:sequence>
</xsd:complexType>
```

Request elements

DataFetchHandle
The handle to the information object.

Response schema

```
<xsd:complexType name="CloseInfoObjectResponse" />
```

CopyFile

Copies files or folders to a new location. To copy a single file or folder, specify Name or Id. To copy a list of files or folders, specify NameList or IdList. To copy files or folders that match the specified conditions, specify Search.

Request schema

```
<xsd:complexType name="CopyFile">
   <xsd:sequence>
      <xsd:element name="Target" type="xsd:string"/>
         <xsd:choice minOccurs="0">
            <xsd:element name="WorkingFolderName"
               type="xsd:string"/>
            <xsd:element name="WorkingFolderId" type="xsd:string"/>
      </xsd:choice>
      <xsd:element name="Recursive" minOccurs="0"/>
      <xsd:choice>
         <xsd:element name="Search" type="typens:FileSearch"/>
         <xsd:element name="IdList" type="typens:ArrayOfString"/>
         <xsd:element name="NameList" type="typens:ArrayOfString"/>
         <xsd:element name="Id" type="xsd:string"/>
         <xsd:element name="Name" type="xsd:string"/>
      </xsd:choice>
      <xsd:element name="ReplaceExisting" type="xsd:boolean"
         minOccurs="0"/>
      <xsd:element name="MaxVersions" type="xsd:long"
         minOccurs="0"/>
      <xsd:element name="LatestVersionOnly" type="xsd:boolean"
         minOccurs="0"/>
   </xsd:sequence>
</xsd:complexType>
```

Request elements

Target
The new location for the file or folder. The following rules apply:

- If Target is a file, the operation fails if the source contains a folder.
- If Target is a folder that does not exist, a folder is created.
- If Target is a folder and the source contains a single folder, the contents of the source folder are copied to the target folder and merged with target folder contents.
- If Target is a folder and the source contains a single file or multiple files and folders, the source files and folders are copied to the target folders. All source folders are copied as children of the target folder.

WorkingFolderName
The name of the working folder of the file or folder to copy. Specify either WorkingFolderName or WorkingFolderId.

WorkingFolderId
The ID of the working folder of the file or folder to copy. Specify either WorkingFolderId or WorkingFolderName.

Recursive
Specifies whether to search subfolders. If True, the search includes subfolders. The default value is False.

Search
The search condition that specifies which folders or files to copy.

IdList
The list of file or folder IDs to copy. Specify either IdList or NameList.

NameList
The list of file or folder names to copy. Specify either NameList or IdList.

Id
The ID of the single file or folder to copy. Specify either Id or Name.

Name
The name of the single file or folder to copy. Specify either Name or Id.

ReplaceExisting
If True, the copied file replaces the existing file, if one exists. If the existing file has any dependencies, it is not replaced regardless of the ReplaceExisting setting. If False or if the existing file has any dependencies, a new version of the file is created. The default value is True.

MaxVersions
The maximum number of versions to create. MaxVersions applies only for files and is ignored for folders.

LatestVersionOnly
Specifies whether all versions of the file are copied or only the latest version. Used only when a Search tag is specified. If True, only the latest version of the file that matches the search criteria is copied. If False, all versions of the file are copied. The default value is False.

CreateChannel

Creates a channel. CreateChannel is available only to users with the Administrator role.

Request schema

```
<xsd:complexType name="CreateChannel">
   <xsd:sequence>
      <xsd:element name="Channel" type="typens:Channel"/>
      <xsd:element name="IgnoreDup" type="xsd:boolean"
```

```
        minOccurs="0"/>
   </xsd:sequence>
</xsd:complexType>
```

Request elements

Channel
The properties of the channel to create. A name is required.

IgnoreDup
Specifies whether to report an error when creating the channel if one with the same name already exists. BIRT iServer always rejects a duplicate request regardless of the IgnoreDup setting. If True, BIRT iServer does not report an error. If False, BIRT iServer reports an error. The default value is False.

CreateDatabaseConnection

Creates a connection to an Actuate Caching service (ACS) database. The operation returns an error if the database connection already exists.

Request schema

```
<xsd:complexType name="CreateDatabaseConnection">
   <xsd:sequence>
      <xsd:element name="DatabaseConnection"
         type="typens:DatabaseConnectionDefinition"/>
   </xsd:sequence>
</xsd:complexType>
```

Request elements

DatabaseConnection
Details about the connection object to create.

Response schema

```
<xsd:complexType name="CreateDatabaseConnectionResponse">
   <xsd:sequence>
      <xsd:element name="FileId" type="xsd:string"/>
      <xsd:element name="Warnings" minOccurs="0"
         type="typens:ArrayOfString"/>
   </xsd:sequence>
</xsd:complexType>
```

Response elements

FileId
The ID of the connection object.

Warnings
Any problems that occur when iServer attempts to connect to the ACS database.

CreateFileType

Adds a file type. Available only to users with the Administrator role. CreateFileType is not supported when the server is in the online backup mode.

Request schema

```
<xsd:complexType name="CreateFileType">
   <xsd:sequence>
      <xsd:element name="FileType" type="typens:FileType"/>
      <xsd:element name="IgnoreDup" type="xsd:boolean"
         minOccurs="0"/>
</xsd:sequence>
</xsd:complexType>
```

Request elements

FileType
The properties of the file type to add. The following properties are required:

- Name
- Extension
- IsNative
- IsExecutable
- OutputType
- IsPrintable

IgnoreDup
Specifies whether to report an error when creating the file type if one with the same name already exists. BIRT iServer always rejects a duplicate request regardless of the IgnoreDup setting. If True, BIRT iServer does not report an error. If False, BIRT iServer reports an error. The default value is False.

CreateFolder

Creates a folder in an Encyclopedia volume into which you are currently logged in. To create a folder, you must have permission to add folders to the Encyclopedia volume.

Request schema

```
<xsd:complexType name="CreateFolder">
   <xsd:sequence>
      <xsd:choice minOccurs="0">
         <xsd:element name="WorkingFolderName" type="xsd:string"/>
         <xsd:element name="WorkingFolderId" type="xsd:string"/>
      </xsd:choice>
      <xsd:element name="FolderName" type="xsd:string">
      </xsd:element>
      <xsd:element name="Description" type="xsd:string"
         minOccurs="0"/>
      <xsd:element name="IgnoreDup" type="xsd:boolean"
         minOccurs="0"/>
   </xsd:sequence>
</xsd:complexType>
```

Request elements

WorkingFolderName
The name of the working folder for the new folder. Specify either WorkingFolderName or WorkingFolderId.

WorkingFolderId
The ID of the working folder for the new folder. Specify either WorkingFolderId or WorkingFolderName.

FolderName
The name of the new folder, relative to the working folder, if specified. If you do not specify a working folder, you must specify a full path.

Description
The description of the folder.

IgnoreDup
Specifies whether to report an error when creating the folder if one with the same name already exists. BIRT iServer always rejects a duplicate request regardless of the IgnoreDup setting. If True, BIRT iServer does not report an error. If False, BIRT iServer reports an error. The default value is False.

CreateGroup

Creates a user group. CreateGroup is available only to users with the Administrator role.

Request schema

```
<xsd:complexType name="CreateGroup">
   <xsd:sequence>
      <xsd:element name="Group" type="typens:Group"/>
      <xsd:element name="IgnoreDup" type="xsd:boolean"
         minOccurs="0"/>
   </xsd:sequence>
</xsd:complexType>
```

Request elements

Group
The properties of the group to create. Only a name is required. BIRT iServer ignores the ID if it is specified.

IgnoreDup
Specifies whether to report an error when creating the group if one with the same name already exists. BIRT iServer always rejects a duplicate request regardless of the IgnoreDup setting. If True, BIRT iServer does not report an error. If False, BIRT iServer reports an error. The default value is False.

CreateParameterValuesFile

Creates a report object value (.rov) file. To create the ROV based on specified parameters, specify ParameterList. To create the ROV based an executable file, specify BasedOnFileName or BasedOnFileId. To create the ROV based on another ROV, specify ParameterFile. If you create the ROV based on either an executable or ROV, all parameters must be defined in the based-on file.

CreateParameterValuesFile ignores parameters not defined in the based-on file.

Request schema

```
<xsd:complexType name="CreateParameterValuesFile">
   <xsd:sequence>
      <xsd:choice>
         <xsd:element name="BasedOnFileName" type="xsd:string"/>
         <xsd:element name="BasedOnFileId" type="xsd:string"/>
      </xsd:choice>
      <xsd:element name="ParameterFile" type="typens:NewFile"/>
      <xsd:element name="ParameterValueList"
         type="typens:ArrayOfParameterValue"/>
      <xsd:element name="FileProperties"
         type="typens:ArrayOfString"
         minOccurs="0"/>
   </xsd:sequence>
</xsd:complexType>
```

Request elements

BasedOnFileName
The name of the executable file on which to base the ROV. Specify either BasedOnFileName or BasedOnFileId.

BasedOnFileId
The ID of the executable file on which to base the ROV. Specify either BasedOnFileId or BasedOnFileName.

ParameterFile
The existing ROV on which to base the ROV.

ParameterValueList
The list of parameters on which to base the ROV.

FileProperties
The file properties to return.

Response schema

```
<xsd:complexType name="CreateParameterValuesFileResponse"
   <xsd:sequence>
      <xsd:element name="ParameterValuesFile" type="typens:File"/>
   </xsd:sequence>
</xsd:complexType>
```

Response elements

ParameterValuesFile
The ROV attributes.

CreateQuery

Generates a data object value (.dov) file.

Request schema

```
<xsd:complexType name="CreateQuery">
   <xsd:sequence>
      <xsd:choice>
         <xsd:element name="BasedOnFileName" type="xsd:string"/>
         <xsd:element name="BasedOnFileId" type="xsd:string"/>
      </xsd:choice>
      <xsd:element name="QueryFile" type="typens:NewFile"/>
      <xsd:element name="Query" type="typens:Query"/>
      <xsd:element name="FileProperties"
   type="typens:ArrayOfString"
         minOccurs="0"/>
      <xsd:element name="CopyFromLatestVersion"
         type="typens:ArrayOfString" minOccurs="0"/>
   </xsd:sequence>
</xsd:complexType>
```

Request elements

BasedOnFileName
The name of the Actuate Basic information object executable (.dox) file on which to base the DOV. Specify either BasedOnFileName or BasedOnFileId.

BasedOnFileId
The ID of the DOX on which to base the DOV. Specify either BasedOnFileId or BasedOnFileName.

QueryFile
The DOV to use for the query.

Query
The query name.

FileProperties
The file properties to return.

CopyFromLatestVersion
Copies one or more of the following properties from the latest version of the file, if one exists, to the version of the file that you upload:

- Description
  The description of the file.
- Permissions

Access Control List (ACL) specifying the users and roles that can access the file.

- ArchiveRule
  The autoarchive rules for the file.

Response schema

```
<xsd:complexType name="CreateQueryResponse">
   <xsd:sequence>
      <xsd:element name="QueryFile" type="typens:File"/>
   </xsd:sequence>
</xsd:complexType>
```

Response elements

QueryFile
The DOV attributes.

CreateResourceGroup

Creates a resource group and specifies its properties.

Request schema

```
<xsd:complexType name="CreateResourceGroup">
   <xsd:sequence>
      <xsd:element name="ResourceGroup"
         type="typens:ResourceGroup"/>
      <xsd:element name="ResourceGroupSettingsList"
         type="typens:ArrayOfResourceGroupSettings"/>
   </xsd:sequence>
</xsd:complexType>
```

Request elements

ResourceGroup
The resource group details.

ResourceGroupSettingsList
The resource group settings.

Response schema

```
<xsd:complexType name="CreateResourceGroupResponse">
   <xsd:sequence/>
</xsd:complexType>
```

CreateRole

Creates a role for security purposes. Available only to users with the Administrator role.

Request schema

```
<xsd:complexType name="CreateRole">
   <xsd:sequence>
      <xsd:element name="Role" type="typens:Role"/>
      <xsd:element name="IgnoreDup" type="xsd:boolean"
```

```
        minOccurs="0"/>
   </xsd:sequence>
</xsd:complexType>
```

Request elements

Role
The properties of the role to create. A name is required.

IgnoreDup
Specifies whether to report an error when creating the role if one with the same name already exists. BIRT iServer always rejects a duplicate request regardless of the IgnoreDup setting. If True, BIRT iServer does not report an error. If False, BIRT iServer reports an error. The default value is False.

CreateUser

Creates a user. Available only to users with the Administrator role.

Request schema

```
<xsd:complexType name="CreateUser">
   <xsd:sequence>
      <xsd:element name="User" type="typens:User"/>
      <xsd:element name="IgnoreDup" type="xsd:boolean"
         minOccurs="0"/>
   </xsd:sequence>
</xsd:complexType>
```

Request elements

User
The properties of the user to create. Only a user name is required.

IgnoreDup
Specifies whether to report an error when creating the user if one with the same name already exists. BIRT iServer always rejects a duplicate request regardless of the IgnoreDup setting. If True, BIRT iServer does not report an error. If False, BIRT iServer reports an error. The default value is False.

CubeExtraction

Extracts data from a specified data cube object.

Request schema

```
<xsd:complexType name="CubeExtraction">
   <xsd:sequence>
      <xsd:element name="Object" type="typens:ObjectIdentifier"/>
      <xsd:element name="Component"
         type="typens:ArrayOfNameValuePair" minOccurs="0"/>
      <xsd:element name="Properties"
         type="typens:ArrayOfNameValuePair" minOccurs="0"/>
      <xsd:element name="Columns" type="typens:ArrayOfString"
```

```
            minOccurs="0"/>
         <xsd:element name="FilterList"
            type="typens:ArrayOfDataFilterCondition" minOccurs="0"/>
         <xsd:element name="SortColumnList"
            type="typens:ArrayOfDataSortColumn" minOccurs="0"/>
      </xsd:sequence>
   </xsd:complexType>
```

Request elements

Object
The ID of the object from which to extract the data.

Component
The name, display name, or ID, and the value of the component from which to retrieve the data.

Properties
The properties to retrieve.

Columns
The list of column names.

FilterList
The list of available filters.

SortColumnList
The list of columns on which to sort the query.

Response schema

```
<xsd:complexType name="CubeExtractionResponse">
   <xsd:sequence>
      <xsd:element name="ResultSetSchema"
         type="typens:ResultSetSchema" minOccurs="0"/>
      <xsd:element name="DataExtractionRef"
         type="typens:Attachment" minOccurs="0"/>
      <xsd:element name="ConnectionHandle" type="xsd:string"
         minOccurs="0"/>
   </xsd:sequence>
</xsd:complexType>
```

Response elements

ResultSetSchema
The complex data type that describes the result set schema.

DataExtractionRef
The reference to the complex data type that describes the object in the attachment and contains the attachment as binary data.

ConnectionHandle
The ID of the report. Supports viewing a report when the report is already in iServer System. Specified in the SOAP header.

DataExtraction

Extracts data from a specified object. DataExtraction does not support extraction from multiple components. If multiple components are specified, DataExtraction only extracts the data of the last component.

Request schema

```
<xsd:complexType name="DataExtraction">
   <xsd:sequence>
      <xsd:element name="Object" type="typens:ObjectIdentifier"/>
      <xsd:element name="Component"
         type="typens:ArrayOfNameValuePair" minOccurs="0"/>
      <xsd:element name="Properties"
         type="typens:ArrayOfNameValuePair" minOccurs="0"/>
      <xsd:element name="Columns" type="typens:ArrayOfString"
         minOccurs="0"/>
      <xsd:element name="FilterList"
         type="typens:ArrayOfDataFilterCondition" minOccurs="0"/>
      <xsd:element name="SortColumnList"
         type="typens:ArrayOfDataSortColumn" minOccurs="0"/>
      <xsd:element name="StartRowNumber" type="xsd:int"
         minOccurs="0"/>
   </xsd:sequence>
</xsd:complexType>
```

Request elements

Object
The ID of the object from which to extract the data.

Component
The name, display name, or ID, and the value of the component from which to retrieve the data.

Properties
The properties to retrieve.

Columns
The list of column names.

FilterList
The list of available filters.

SortColumnList
The list of columns on which to sort the query.

StartRowNumber
The row number from which to start data extraction.

Response schema

```
<xsd:complexType name="DataExtractionResponse">
   <xsd:sequence>
      <xsd:element name="ResultSetSchema"
         type="typens:ResultSetSchema" minOccurs="0"/>
      <xsd:element name="DataExtractionRef"
         type="typens:Attachment" minOccurs="0"/>
      <xsd:element name="ConnectionHandle" type="xsd:string"
         minOccurs="0"/>
   </xsd:sequence>
</xsd:complexType>
```

Response elements

ResultSetSchema
The complex data type that describes the result set schema.

DataExtractionRef
The reference to the complex data type that describes the object in the attachment and contains the attachment as binary data.

ConnectionHandle
The ID of the report. Supports viewing a report when the report is already in iServer System. Specified in the SOAP header.

DeleteChannel

Deletes channels. To delete a single channel, specify Name or Id. To delete several channels, specify NameList or IdList. To delete channels that match the specified conditions, specify Search.

Request schema

```
<xsd:complexType name="DeleteChannel">
   <xsd:sequence>
      <xsd:choice>
         <xsd:element name="Search" type="typens:ChannelSearch"/>
         <xsd:element name="IdList" type="typens:ArrayOfString"/>
         <xsd:element name="NameList" type="typens:ArrayOfString"/>
         <xsd:element name="Id" type="xsd:string"/>
         <xsd:element name="Name" type="xsd:string"/>
      </xsd:choice>
      <xsd:element name="IgnoreMissing" type="xsd:boolean"
         minOccurs="0"/>
   </xsd:sequence>
</xsd:complexType>
```

Request elements

Search
The search condition that specifies which channels to delete.

IdList
The list of channel IDs to delete. Specify either IdList or NameList.

NameList
The list of channel names to delete. Specify either NameList or IdList.

Id
The ID of the single channel to delete. Specify either Id or Name.

Name
The name of the single channel to delete. Specify either Name or Id.

IgnoreMissing
Specifies what to do if the specified channel does not exist. If True, BIRT iServer ignores the request. If False, the operation reports an error and stops. The default value is True.

DeleteDatabaseConnection

Deletes an Actuate Caching service (ACS) database connection object.

Request schema

```
<xsd:complexType name="DeleteDatabaseConnection">
   <xsd:sequence>
      <xsd:element name="FileName" type="xsd:string"/>
   </xsd:sequence>
</xsd:complexType>
```

Request elements

FileName
The name of the database connection object to delete.

Response schema

```
<xsd:complexType name="DeleteDatabaseConnectionResponse"/>
```

DeleteFile

Deletes files or folders. To delete a single file or folder, specify Name or Id. To delete several files or folders, specify NameList or IdList. To delete files or folders that match the specified conditions, specify Search.

Request schema

```
<xsd:complexType name="DeleteFile">
   <xsd:sequence>
      <xsd:choice minOccurs="0">
         <xsd:element name="WorkingFolderId" type="xsd:string"/>
         <xsd:element name="WorkingFolderName" type="xsd:string"/>
      </xsd:choice>
      <xsd:element name="Recursive" type="xsd:boolean"
         minOccurs="0"/>
      <xsd:element name="LatestVersionOnly" type="xsd:boolean"
         minOccurs="0"/>
      <xsd:choice>
```

```
            <xsd:element name="Search" type="typens:FileSearch"/>
            <xsd:element name="IdList" type="typens:ArrayOfString">
            <xsd:element name="NameList"
               type="typens:ArrayOfString"/>
            <xsd:element name="Id" type="xsd:string"/>
            <xsd:element name="Name" type="xsd:string"/>
         </xsd:choice>
         <xsd:element name="IgnoreMissing" type="xsd:boolean"
            minOccurs="0"/>
      </xsd:sequence>
   </xsd:complexType>
```

Request elements

WorkingFolderId
The ID of the working folder of the file or folder to delete. Specify either WorkingFolderId or WorkingFolderName.

WorkingFolderName
The name of the working folder of the file or folder to delete. Specify either WorkingFolderName or WorkingFolderId.

Recursive
Specifies whether to delete subfolders. If True, subfolders are deleted. If False, only the specified folder is deleted. The default value is False.

LatestVersionOnly
Specifies whether to delete only the latest version of the file. If True, only the latest version of the file is deleted. The default value is False.

Search
The search condition that specifies which folders or files to delete.

IdList
The list of file or folder IDs to delete. Specify either IdList or NameList.

NameList
The list of file or folder names to delete. Specify either NameList or IdList.

Id
The ID of the single file or folder to delete. Specify either Id or Name.

Name
The name of the single file or folder to delete. Specify either Name or Id.

IgnoreMissing
Specifies what to do if the specified file or folder does not exist. If True, BIRT iServer ignores the request. If False, the operation reports an error and stops. The default value is True.

DeleteFileType

Deletes file types. To delete a single file type, specify Name or Id. To delete several file types, specify NameList or IdList.

DeleteFileType is not supported when the server is in the online backup mode.

Request schema

```
<xsd:complexType name="DeleteFileType">
   <xsd:sequence>
      <xsd:choice>
         <xsd:element name="NameList" type="typens:ArrayOfString"/>
         <xsd:element name="Name" type="xsd:string"/>
      </xsd:choice>
      <xsd:element name="IgnoreMissing" type="xsd:boolean"
         minOccurs="0"/>
   </xsd:sequence>
</xsd:complexType>
```

Request elements

NameList
The list of file types to delete.

Name
The name of a single file type to delete.

IgnoreMissing
Specifies what to do if the specified file type does not exist. If True, BIRT iServer ignores the request. If False, the operation reports an error and stops. The default value is True.

DeleteGroup

Deletes notification groups. To delete a single group, specify Name or Id. To delete several groups, specify NameList or IdList. To delete groups that match the specified conditions, specify Search.

Request schema

```
<xsd:complexType name="DeleteGroup">
   <xsd:sequence>
      <xsd:choice>
         <xsd:element name="Search" type="typens:GroupSearch"/>
         <xsd:element name="IdList" type="typens:ArrayOfString"/>
         <xsd:element name="NameList" type="typens:ArrayOfString"/>
         <xsd:element name="Id" type="xsd:string"/>
         <xsd:element name="Name" type="xsd:string"/>
      </xsd:choice>
      <xsd:element name="IgnoreMissing" type="xsd:boolean"
         minOccurs="0"/>
```

```
   </xsd:sequence>
</xsd:complexType>
```

Request elements

Search
The search condition that specifies which groups to delete.

IdList
The list of group IDs to delete. Specify either IdList or NameList.

NameList
The list of group names to delete. Specify either NameList or IdList.

Id
The ID of the single group to delete. Specify either Id or Name.

Name
The name of the single group to delete. Specify either Name or Id.

IgnoreMissing
Specifies what to do if the specified group does not exist. If True, BIRT iServer ignores the request. If False, the operation reports an error and stops. The default value is True.

DeleteJob

Deletes scheduled, completed, canceled, or failed jobs. If an instance of a scheduled report is running when the request is submitted, an exception is thrown.

To delete a single job, specify Id. To delete several jobs, specify IdList. To delete jobs that match the specified conditions, specify Search.

```
Request schema
<xsd:complexType name="DeleteJob">
   <xsd:sequence>
      <xsd:choice>
         <xsd:element name="Search" type="typens:JobSearch"/>
         <xsd:element name="IdList" type="typens:ArrayOfString"/>
         <xsd:element name="Id" type="xsd:string"/>
      </xsd:choice>
      <xsd:element name="IgnoreMissing" type="xsd:boolean"
         minOccurs="0"/>
      <xsd:element name="IgnoreActiveJob" type="xsd:boolean"
         default=”false” minOccurs="0"/>
   </xsd:sequence>
</xsd:complexType>
```

Request elements

Search
The search conditions. If conditions apply to multiple fields, use ConditionArray.

IdList
The list of job IDs to delete.

Id
The ID of the single job to delete.

IgnoreMissing
Specifies what to do if the specified job does not exist. If True, BIRT iServer ignores the request. If False, the operation reports an error and stops. The default value is True.

IgnoreActiveJob
Flag indicating whether to delete a job if it is active.

DeleteJobNotices

Deletes job notices. A user with the Administrator role can delete all job notices. To delete all job notices, do not specify the user or group.

Request schema

```
<xsd:complexType name="DeleteJobNotices">
   <xsd:sequence>
      <xsd:element name="Search" type="typens:JobNoticeSearch"/>
   </xsd:sequence>
</xsd:complexType>
```

Request elements

Search
The search conditions. If conditions apply to multiple fields, use ConditionArray.

DeleteJobSchedule

Deletes a job chedule. If an instance of a scheduled report is running when the request is submitted, an exception is thrown.

To delete a job schedule, specify Id. To delete several jobs, specify IdList. To delete jobs that match the specified conditions, specify Search.

```
Request schema
<xsd:complexType name="DeleteJobSchedule">
   <xsd:sequence>
      <xsd:choice>
         <xsd:element name="Search"
            type="typens:JobScheduleSearch"/>
         <xsd:element name="IdList" type="typens:ArrayOfString"/>
         <xsd:element name="Id" type="xsd:string"/>
      </xsd:choice>
      <xsd:element name="IgnoreMissing" type="xsd:boolean"
```

```
        minOccurs="0"/>
      <xsd:element name="IgnoreActiveJob" type="xsd:boolean"
        default="false" minOccurs="0"/>
   </xsd:sequence>
</xsd:complexType>
```

Request elements

Search
The search conditions. If conditions apply to multiple fields, use ConditionArray.

IdList
The list of job schedule IDs to delete.

Id
The ID of the single job schedule to delete.

IgnoreMissing
Specifies what to do if the specified job does not exist. If True, BIRT iServer ignores the request. If False, the operation reports an error and stops. The default value is True.

IgnoreActiveJob
Flag indicating whether to delete a job if it is active.

DeleteResourceGroup

Deletes a resource group. You cannot delete a default resource group. If a scheduled job is assigned to a resource group that you delete, the job remains in a pending state when BIRT iServer runs the job. If job is running on a Factory assigned to a resource group that you delete, the job completes.

Request schema

```
<xsd:complexType name="DeleteResourceGroup">
   <xsd:sequence>
      <xsd:element name="Name" type="xsd:string"/>
   </xsd:sequence>
</xsd:complexType>
```

Elements

Name
The name of the resource group to delete.

Response schema

```
<xsd:complexType name="DeleteResourceGroupResponse">
   <xsd:sequence/>
</xsd:complexType>
```

DeleteRole

Deletes roles. To delete a single role, specify Name or Id. To delete several roles, specify NameList or IdList. To delete roles that match the specified conditions, specify Search.

Request schema

```
<xsd:complexType name="DeleteRole">
   <xsd:sequence>
      <xsd:choice>
         <xsd:element name="Search" type="typens:RoleSearch"/>
         <xsd:element name="IdList" type="typens:ArrayOfString"/>
         <xsd:element name="NameList" type="typens:ArrayOfString"/>
         <xsd:element name="Id" type="xsd:string"/>
         <xsd:element name="Name" type="xsd:string"/>
      </xsd:choice>
      <xsd:element name="IgnoreMissing" type="xsd:boolean"
           minOccurs="0"/>
   </xsd:sequence>
</xsd:complexType>
```

Request elements

Search
The search condition that specifies which roles to delete.

IdList
The list of role IDs to delete. Specify either IdList or NameList.

NameList
The list of role names to delete. Specify either NameList or IdList.

Id
The ID of the single role to delete. Specify either Id or Name.

Name
The name of the single role to delete. Specify either Name or Id.

IgnoreMissing
Specifies what to do if the specified role does not exist. If True, BIRT iServer ignores the request. If False, the operation reports an error and stops. The default value is True.

DeleteUser

Deletes users. To delete a single user, specify Name or Id. To delete several users, specify NameList or IdList. To delete users that match the specified conditions, specify Search.

Request schema

```
<xsd:complexType name="DeleteUser">
   <xsd:sequence>
      <xsd:choice>
         <xsd:element name="Search" type="typens:UserSearch"/>
         <xsd:element name="IdList" type="typens:ArrayOfString"/>
         <xsd:element name="NameList" type="typens:ArrayOfString"/>
         <xsd:element name="Id" type="xsd:string"/>
         <xsd:element name="Name" type="xsd:string"/>
      </xsd:choice>
      <xsd:element name="IgnoreMissing" type="xsd:boolean"
         minOccurs="0"/>
      <xsd:element name="PurgeUserInfo" type="xsd:boolean"
         minOccurs="0"/>
   </xsd:sequence>
</xsd:complexType>
```

Request elements

Search
The search condition that specifies which users to delete.

IdList
The list of user IDs to delete. Specify either IdList or NameList.

NameList
The list of user names to delete. Specify either NameList or IdList.

Id
The ID of the single user to delete. Specify either Id or the Name.

Name
The name of the single user to delete. Specify either Name or Id.

IgnoreMissing
Specifies what to do if the specified user does not exist. If True, BIRT iServer ignores the request. If False, the operation reports an error and stops. The default value is True.

PurgeUserInfo
Purges user information from the system.

DownloadFile

Downloads a file from an Encyclopedia volume. An attachment is included in the response packet, which refers to file content. The file content is streamed back using SOAP attachment.

Request schema

```
<xsd:complexType name="DownloadFile">
   <xsd:sequence>
      <xsd:choice>
         <xsd:element name="FileName" type="xsd:string"/>
         <xsd:element name="FileId" type="xsd:string"/>
      </xsd:choice>
      <xsd:element name="DecomposeCompoundDocument"
         type="xsd:boolean" minOccurs="0"/>
      <xsd:element name="DownloadEmbedded" type="xsd:boolean"
         default="false" minOccurs="0"/>
      <xsd:element name="FileProperties"
         type="typens:ArrayOfString"
         minOccurs="0"/>
   </xsd:sequence>
</xsd:complexType>
```

Request elements

FileName
The name of the file to download. Specify either FileName or FileId.

FileId
The ID of the file to download. Specify either FileId or FileName.

DecomposeCompoundDocument
Specifies whether to download a compound document as one file or multiple attachments. If False, you can download the file as a single file. If True, and the file is a compound document, BIRT iServer splits the file into several attachments. The default value is False.

DownloadEmbedded
Specifies whether to send the attachment embedded in the body of the SOAP message or in a separate MIME boundary. If True, the response contains the attachment as embedded data. If False, the attachment is in a separate MIME boundary. The default value is False.

FileProperties
The file properties to return.

Response schema

```
<xsd:complexType name="DownloadFileResponse">
   <xsd:sequence>
      <xsd:element name="File" type="typens:File"/>
         <xsd:choice>
            <xsd:element name="Content" type="typens:Attachment"/>
            <xsd:element name="ContainedFiles"
               type="typens:ArrayOfAttachment"/>
         </xsd:choice>
   </xsd:sequence>
</xsd:complexType>
```

Response elements

File
The file properties.

Content
The downloaded file in an embedded or chunked file operation.

ContainedFiles
The downloaded set of files in a decomposed compound document operation.

DownloadTransientFile

Downloads transient files. The request requires a FileId and can also indicate whether to decompose a compound document. File content can be attached or embedded in the response.

Request schema

```
<xsd:complexType name="DownloadTransientFile">
   <xsd:sequence>
      <xsd:element name="FileId" type="xsd:string" />
      <xsd:element name="DecomposeCompoundDocument"
         type="xsd:boolean" minOccurs="0" />
   </xsd:sequence>
</xsd:complexType>
```

Request elements

FileId
The file ID of the transient file.

DecomposeCompoundDocument
Flag indicating whether to decompose compound documents into separate attachments.

Response schema

```
<xsd:complexType name="DownloadTransientFileResponse">
   <xsd:sequence>
      <xsd:element name="FileId" type="xsd:string" />
      <xsd:choice>
         <xsd:element name="Content" type="typens:Attachment" />
         <xsd:element name="ContainedFiles"
            type="typens:ArrayOfAttachment" />
      </xsd:choice>
   </xsd:sequence>
</xsd:complexType>
```

Response elements

FileId
The file ID.

Content
An attachment containing the file content.

ContainedFiles
An array of any files contained within the transient file.

ExecuteQuery

Reads a query and generates a DOI.

Request schema

```
<xsd:complexType name="ExecuteQuery">
   xsd:sequence>
      <xsd:element name="JobName" type="xsd:string"/>
      <xsd:choice>
         <xsd:element name="InputFileName" type="xsd:string"/>
         <xsd:element name="InputFileId" type="xsd:string"/>
      </xsd:choice>
      <xsd:element name="SaveOutputFile" type="xsd:boolean"
         minOccurs="0"/>
      <xsd:element name="RequestedOutputFile" type="typens:NewFile"
         minOccurs="0"/>
      <xsd:choice minOccurs="0">
         <xsd:element name="QueryFileName" type="xsd:string"/>
         <xsd:element name="QueryFileId" type="xsd:string"/>
         <xsd:element name="Query" type="typens:Query"/>
      </xsd:choice>
      <xsd:element name="ProgressiveViewing" type="xsd:boolean"
         minOccurs="0"/>
      <xsd:element name="RunLatestVersion" type="xsd:boolean"
         minOccurs="0"/>
      <xsd:element name="IsBundled" type="xsd:boolean"
         minOccurs="0"/>
      <xsd:element name="WaitTime" type="xsd:int" minOccurs="0"/>
   </xsd:sequence>
</xsd:complexType>
```

Request elements

JobName
The job name.

InputFileName
The name of the file to use for the query.

InputFileId
The ID of the file to use for the query.

SaveOutputFile
Specifies whether the output file is transient or persistent. If True, the output file is transient. If False, the output file is persistent.

RequestedOutputFile
The output file attributes.

QueryFileName
The name of the output file.

QueryFileId
The ID of the output file.

Query
The query the user selected.

ProgressiveViewing
Specifies whether progressive viewing is enabled.

RunLatestVersion
Used only if the input file is a data object values (.dov) file. Specifies whether the DOV is merged with the latest version of the Actuate Basic information object executable (.dox) file. If True, the DOV is merged. If False, the DOV is not merged.

IsBundled
Specifies whether the report is bundled. If True, the report is bundled. If False, the report is not bundled. The default value is False.

WaitTime
The number of seconds BIRT iServer waits before sending a response to the report generation request. Use WaitTime to provide the ability to cancel a synchronous report generation request. The default value is 150 seconds.

Response schema

```
<xsd:complexType name="ExecuteQueryResponse">
   <xsd:sequence>
      <xsd:element name="Status"
         type="typens:ExecuteReportStatus">
      <xsd:element name="ErrorDescription" type="xsd:string"
         minOccurs="0"/>
      <xsd:element name="OutputFileType" type="xsd:string"
         minOccurs="0"/>
      <xsd:element name="ObjectId" type="xsd:string"/>
      <xsd:element name="ConnectionHandle" type="xsd:string"
         minOccurs="0"/>
      <xsd:element name="ExecutableFileId" type="xsd:string"
         minOccurs="0"/>
   </xsd:sequence>
</xsd:complexType>
```

Response elements

Status
The status of the request. One of the following values:

- Done
- Failed
- FirstPage

ErrorDescription
The description of the error. Returned if Status is Failed.

OutputFileType
The type of the report.

ObjectId
The object ID of the report.

ConnectionHandle
The ID of the report. Supports viewing a report when the report is already in iServer System. Specified in the SOAP header.

ExecutableFileId
The file ID of the executable returned from the query.

ExecuteReport

Triggers the execution of a report in synchronous mode. If you specify WaitTime, BIRT iServer sends a response within the specified time. Otherwise, BIRT iServer sends a response when the request is complete or, if progressive viewing is enabled, when the first page is complete.

Request schema

```
<xsd:complexType name="ExecuteReport">
   <xsd:sequence>
      <xsd:element name="JobName" type="xsd:string"/>
         <xsd:choice>
            <xsd:element name="InputFileName" type="xsd:string"/>
            <xsd:element name="InputFileId" type="xsd:string"/>
            <xsd:element name="InputFile" type="typens:Attachment"/>
         </xsd:choice>
         <xsd:element name="OutputFormat" type="xsd:string"
            minOccurs="0"/>
         <xsd:element name="SaveOutputFile" type="xsd:boolean"
            minOccurs="0"/>
         <xsd:element name="RequestedOutputFile"
            type="typens:NewFile" minOccurs="0"/>
         <xsd:choice minOccurs="0">
            <xsd:element name="ParameterValues"
               type="typens:ArrayOfParameterValue"/>
            <xsd:element name="ParameterValuesFileName"
               type="xsd:string"/>
            <xsd:element name="ParameterValuesFileId"
               type="xsd:string"/>
         </xsd:choice>
         <xsd:element name="IsBundled" type="xsd:boolean"
            minOccurs="0"/>
         <xsd:element name="OpenServerOptions"
            type="typens:OpenServerOptions" minOccurs="0"/>
         <xsd:element name="ProgressiveViewing" type="xsd:boolean"
```

```
            minOccurs="0"/>
          <xsd:element name="WaitTime" type="xsd:int"
            minOccurs="0"/>
    </xsd:sequence>
</xsd:complexType>
```

Request elements

JobName
The name of the job.

InputFileName
The name of the input executable file. Specify either InputFileName or InputFileId.

InputFileId
The ID of the input executable file. Specify either InputFileId or InputFileName.

InputFile
Specifies that the input executable file is an attachment in the response. Valid only if the value of SaveOutputFile is False.

OutputFormat
The display format for the output file.

SaveOutputFile
Specifies whether to use the RequestedOutputFile setting. If False, BIRT iServer ignores RequestedOutputFile. If True and RequestedOutputFile is missing, BIRT iServer reports an error.

RequestedOutputFile
The name to use for the output file. Required for persistent jobs.

ParameterValues
The parameter values with which to overwrite the default parameter values.

ParameterValuesFileName
The name of the report object value (.rov) file to create. If specified, BIRT iServer creates a persistent ROV. Otherwise, BIRT iServer creates a temporary ROV. Specify either ParameterValuesFileName or ParameterValuesFileId.

ParameterValuesFileId
The ID of the ROV to create. If specified, BIRT iServer creates a persistent ROV. Otherwise, BIRT iServer creates a temporary ROV. Specify either ParameterValuesFileId or ParameterValuesFileName.

IsBundled
Specifies whether the report is bundled. If True, the report is bundled. If False, the report is not bundled. The default value is False.

OpenServerOptions
The open server options to use. Valid options are:

- KeepWorkingSpace
- DriverTimeout
- PollingInterval

ProgressiveViewing
Specifies whether to enable progressive viewing. True enables progressive viewing. The default value is True.

WaitTime
The number of seconds BIRT iServer waits before sending a response to the report generation request. Use WaitTime to provide the ability to cancel a synchronous report generation request. The default value is 150 seconds.

Response schema

```
<xsd:complexType name="ExecuteReportResponse">
   <xsd:sequence>
      <xsd:element name="Status"
         type="typens:ExecuteReportStatus">
      <xsd:element name="ErrorDescription" type="xsd:string"
         minOccurs="0"/>
      <xsd:element name="OutputFileType" type="xsd:string"
         minOccurs="0"/>
      <xsd:element name="ObjectId" type="xsd:string"/>
      <xsd:element name="ConnectionHandle" type="xsd:string"
         minOccurs="0"/>
      </xsd:sequence>
</xsd:complexType>
```

Response elements

Status
Indicates the execution status of a synchronous job. One of the following values:

- Done
- Failed
- FirstPage
- Pending

ErrorDescription
The description of the error. Returned if Status is Failed.

OutputFileType
Sets the file type for the output file.

ObjectId
The object ID of the report.

ConnectionHandle
The ID of the report. Supports viewing a report when the report is already in iServer System. Specified in the SOAP header.

ExecuteVolumeCommand

Executes predefined Encyclopedia volume control commands.

Request schema

```
<xsd:complexType name="ExecuteVolumeCommand">
   <xsd:sequence>
      <xsd:element name="VolumeName" type="xsd:string"/>
      <xsd:element name="Command">
         <xsd:simpleType>
            <xsd:restriction base="xsd:string">
               <xsd:enumeration value="StartPartitionPhaseOut"/>
               <xsd:enumeration value="StartArchive"/>
               <xsd:enumeration value="StopArchive"/>
            </xsd:restriction>
         </xsd:simpleType>
      </xsd:element>
   </xsd:sequence>
</xsd:complexType>
```

Request elements

VolumeName
The Encyclopedia volume on which to execute the commands.

Command
One or more of the following commands to execute:

- StartPartitionPhaseOut
  Starts the partition phase out.
- StartArchive
  Starts an archive pass.
- StopArchive
  Stops an archive pass if one is currently running. If an archive pass is not curr ently running, this command returns a Failed status. This command is asynchronous. This means that the call returns without waiting for the archive pass to stop. To find out the status of the archive pass after sending this command, use GetVolumeProperties.

  Only a user with the Operator or Administrator role can issue this command.

Response schema

```
<xsd:complexType name="ExecuteVolumeCommandResponse">
   <xsd:sequence>
      <xsd:element name="Status">
         <xsd:simpleType>
```

```
            <xsd:restriction base="xsd:string">
               <xsd:enumeration value="Succeeded"/>
               <xsd:enumeration value="Failed"/>
            </xsd:restriction>
         </xsd:simpleType>
      </xsd:element>
   </xsd:sequence>
</xsd:complexType>
```

Response elements

Status
The status of command execution. One of the following values:

- Succeeded
  The command succeeded.
- Failed
  The command failed.

ExtractParameterDefinitionsFromFile

Retrieves the parameter definitions from the specified file.

Request schema

```
<xsd:complexType name="ExtractParameterDefinitionsFromFile>
   <xsd:sequence>
      <xsd:element name="Content" type="typens:Attachment"/>
   </xsd:sequence>
</xsd:complexType>
```

Request elements

Content
The parameter definitions to retrieve.

Response schema

```
<xsd:complexType
      name="ExtractParameterDefinitionsFromFileResponse">
   <xsd:sequence>
         <xsd:element name="ParameterList"
            type="typens:ArrayOfParameterDefinition"/>
      </xsd:sequence>
</xsd:complexType>
```

Response elements

ParameterList
The requested parameter definitions.

ExportParameterDefinitionsToFile

Exports parameter definitions associated with the specified file to a new file.

Request schema

```
<xsd:complexType name="ExportParameterDefinitionsToFile">
   <xsd:sequence>
      <xsd:element name="ParameterList"
         type="typens:ArrayOfParameterDefinition"/>
      <xsd:element name="DownloadEmbedded" type="xsd:boolean"
         default="false" minOccurs="0"/>
   </xsd:sequence>
</xsd:complexType>
```

Request elements

ParameterList
The parameters to export.

DownloadEmbedded
Specifies whether to send the attachment embedded in the body of the SOAP message or in a separate MIME boundary. If True, the response contains the attachment as embedded data. If False, the attachment is in a separate MIME boundary. The default value is False.

Response schema

```
<xsd:complexType name="ExportParameterDefinitionsToFileResponse">
   <xsd:sequence>
      <xsd:element name="Content" type="typens:Attachment"/>
   </xsd:sequence>
</xsd:complexType>
```

Response elements

Content
The exported parameter definitions.

FetchInfoObjectData

Retrieves data from an information object.

Request schema

```
<xsd:complexType name="FetchInfoObjectData">
   <xsd:sequence>
      <xsd:element name="DataFetchHandle" type="xsd:string" />
   </xsd:sequence>
</xsd:complexType>
```

Request elements

DataFetchHandle
The handle to the information object.

Response schema

```
<xsd:complexType name="FetchInfoObjectDataResponse">
   <xsd:sequence>
      <xsd:choice minOccurs="0">
         <xsd:element name="DataRef" type="typens:Attachment" />
         <xsd:element name="Data" type="typens:InfoObjectData" />
      </xsd:choice>
      <xsd:element name="DataFetchHandle" type="xsd:string"
         minOccurs="0" />
      <xsd:element name="ConnectionHandle" type="xsd:string"
```

```
        minOccurs="0" />
    </xsd:sequence>
</xsd:complexType>
```

Response elements

DataRef
An attachment containing the details of the information object data.

Data
The data from the information object.

DataFetchHandle
The handle to the information object.

ConnectionHandle
The ID of the object. Supports viewing objects that are already in the iServer System. Specified in the SOAP header.

GetChannelACL

Retrieves the ACL of the specified channel.

Request schema

```
<xsd:complexType name="GetChannelACL">
   <xsd:sequence>
      <xsd:choice>
         <xsd:element name="ChannelName" type="xsd:string"/>
         <xsd:element name="ChannelId" type="xsd:string"/>
      </xsd:choice>
      <xsd:choice minOccurs="0">
         <xsd:element name="GrantedUserId" type="xsd:string"
            minOccurs="0"/>
         <xsd:element name="GrantedUserName" type="xsd:string"
            minOccurs="0"/>
         <xsd:element name="GrantedRoleId" type="xsd:string"
            minOccurs="0"/>
         <xsd:element name="GrantedRoleName" type="xsd:string"
            minOccurs="0"/>
      </xsd:choice>
      <xsd:element name="FetchSize" type="xsd:int"
         minOccurs="0"/>
      <xsd:element name="FetchDirection" type="xsd:boolean"
         minOccurs="0"/>
      <xsd:element name="CountLimit" type="xsd:int"
         minOccurs="0"/>
      <xsd:element name="FetchHandle" type="xsd:string"
         minOccurs="0"/>
   </xsd:sequence>
</xsd:complexType>
```

Request elements

ChannelName
The name of the channel for which to retrieve the ACL. Specify either ChannelName or ChannelId.

ChannelId
The ID of the channel for which to retrieve the ACL. Specify either ChannelId or ChannelName.

GrantedUserId
The user ID. Specify either GrantedUserId or GrantedUserName.

GrantedUserName
The user name. Specify either GrantedUserName or GrantedUserId.

GrantedRoleId
The role ID. Specify either GrantedRoleId or GrantedRoleName.

GrantedRoleName
The role name. Specify either GrantedRoleName or GrantedRoleId.

FetchSize
The maximum number of records to retrieve and return in a result set. The default value is 500.

FetchDirection
If True, records are retrieved forward. If False, records are retrieved backward. The default value is True.

CountLimit
The maximum number of records to count. By default, CountLimit is equal to FetchSize. To count all records, set CountLimit to -1.

FetchHandle
Retrieves more items from the result set. In the second and subsequent calls for data, specify the same search criteria as in the original call.

Response schema

```
<xsd:complexType name="GetChannelACLResponse">
   <xsd:sequence>
      <xsd:element name="ACL" type="typens:ArrayOfPermission"
         minOccurs="0"/>
      <xsd:element name="FetchHandle" type="xsd:string"
         minOccurs="0"/>
      <xsd:element name="TotalCount" type="xsd:int" minOccurs="0"/>
   </xsd:sequence>
</xsd:complexType>
```

Response elements

ACL
The ACL of the channel.

FetchHandle
Indicates that the number of items in the result set exceeds the FetchSize limit.

TotalCount
The number of entries in the search result set.

GetConnectionPropertyAssignees

Retrieves the users and roles for a file.

Request Schema

```
<xsd:complexType name="GetConnectionPropertyAssignees">
   <xsd:sequence>
      <xsd:choice>
         <xsd:element name="FileName" type="xsd:string"
            minOccurs="0" />
          <xsd:element name="FileId" type="xsd:string"
            minOccurs="0" />
      </xsd:choice>
   </xsd:sequence>
</xsd:complexType>
```

Request elements

FileName
The name of the file.

FileId
The file ID of the file.

Response schema

```
<xsd:complexType name="GetConnectionPropertyAssigneesResponse">
   <xsd:sequence>
      <xsd:element name="UserNames" type="typens:ArrayOfString" />
      <xsd:element name="RoleNames" type="typens:ArrayOfString" />
   </xsd:sequence>
</xsd:complexType>
```

Response elements

UserNames
The user names attached to the file.

RoleNames
The roles of the associated user names.

GetContent

Retrieves the contents of the specified report component.

The response to GetContent contains the following data:

- The SOAP response.
- The attachment containing the data.

- If the request input format is Reportlet, an XML response as an attachment is retrieved. The response contains the post process data.

Request schema

```
<xsd:complexType name="GetContent">
   <xsd:sequence>
      <xsd:element name="Object" type="typens:ObjectIdentifier"/>
      <xsd:element name="ViewParameter"
         type="typens:ViewParameter"/>
      <xsd:element name="Component" type="typens:Component"/>
      <xsd:element name="MaxHeight" type="xsd:long"
         minOccurs="0"/>
      <xsd:element name="CustomInputPara" type="xsd:string"
         minOccurs="0"/>
      <xsd:element name="DownloadEmbedded" type="xsd:boolean"
         default="false" minOccurs="0"/>
   </xsd:sequence>
</xsd:complexType>
```

Request elements

Object
The ID of the object from which to retrieve the contents. Specify either the object ID or the object name and version number.

ViewParameter
The viewing parameters.

Component
The component from which to retrieve the contents. Specify either name, display name, or ID, and the value of the component. The following formats do not support specifying the component ID:

- ExcelData
- ExcelDisplay
- PDF
- RTF

To retrieve the entire report, specify 0.

MaxHeight
Required for a Reportlet. The maximum height, in points, based on the web page layout design. By default, MaxHeight is 0, which means there is no limit to the height of the Reportlet. In this case, the entire component is converted into a Reportlet.

CustomInputPara
The input parameters to send.

DownloadEmbedded
Specifies whether to send the attachment embedded in the body of the SOAP message or in a separate MIME boundary. If True, the response contains the

attachment as embedded data. If False, the attachment is in a separate MIME boundary. The default value is False.

Response schema

```
<xsd:complexType name="GetContentResponse">
   <xsd:sequence>
      <xsd:element name="ContentRef" type="typens:Attachment"/>
      <xsd:element name="PostResponseRef" type="typens:Attachment"
         minOccurs="0"/>
      <xsd:element name="ComponentId" type="xsd:string"/>
      <xsd:element name="FileExtension" type="xsd:string"
         minOccurs="0"/>
      <xsd:element name="FileDescription" type="xsd:string"
         minOccurs="0"/>
      <xsd:element name="ConnectionHandle" type="xsd:string"
         minOccurs="0"/>
   </xsd:sequence>
</xsd:complexType>
```

Response elements

ContentRef
Contains the following properties of the attachment:

- MimeType
- ContentEncoding
- ContentLength
- Locale

PostResponseRef
Used only when the request input format is Reportlet. Contains the Reportlet parameters.

ComponentId
The component ID.

FileExtension
The file extension.

FileDescription
The description of the file.

ConnectionHandle
The ID of the report. Supports viewing a report when the report is already in iServer System. Specified in the SOAP header.

GetCubeMetaData

Retrieves cube metadata describing a result set schema.

Request schema

```
<xsd:complexType name="GetCubeMetaData">
   xsd:sequence>
      <xsd:element name="Object" type="typens:ObjectIdentifier"/>
      <xsd:element name="Component"
         type="typens:ArrayOfNameValuePair" minOccurs="0"/>
   </xsd:sequence>
</xsd:complexType>
```

Request elements

Object
The object from which to retrieve the metadata.

Component
The name, display name, or ID, and the value of the component from which to retrieve the metadata.

Response schema

```
<xsd:complexType name="GetCubeMetaDataResponse">
   xsd:sequence>
   <xsd:element name="ArrayOfResultSetSchema"
   type="typens:ObjectIdentifier"/>
      type="typens:ArrayOfResultSetSchema" minOccurs="0"/>
   </xsd:sequence>
</xsd:complexType>
```

Response elements

ArrayOfResultSetSchema
The complex data type that represents an array of ResultSetSchema objects.

GetCustomFormat

Invokes the Actuate Basic AcReport::GetCustomFormat method. Use GetCustomFormatData to extract the results of calling the AcReport::GetCustomFormat method. For example, if you implement code to create an Excel file, use GetCustomFormatData to retrieve the generated Excel file.

Request schema

```
<xsd:complexType name="GetCustomFormat">
   <xsd:sequence>
      <xsd:element name="Object" type="typens:ObjectIdentifier"/>
      <xsd:element name="ViewParameter"
         type="typens:ViewParameter"/>
      <xsd:element name="ArgumentList"
         type="typens:ArrayOfArgument"/>
      <xsd:element name="DownloadEmbedded" type="xsd:boolean"
         default="false" minOccurs="0"/>
   </xsd:sequence>
</xsd:complexType>
```

Request elements

Object
The ID of the object from which to invoke the Actuate Basic AcReport:GetCustomFormat method.

ViewParameter
The viewing parameters.

ArgumentList
The list of the name and value pairs.

DownloadEmbedded
Specifies whether to send the attachment embedded in the body of the SOAP message or in a separate MIME boundary. If True, the response contains the attachment as embedded data. If False, the attachment is in a separate MIME boundary. The default value is False.

Response schema

```
<xsd:complexType name="GetCustomFormatResponse">
   <xsd:sequence>
      <xsd:element name="CustomRef" type="typens:Attachment"/>
      <xsd:element name="ConnectionHandle" type="xsd:string"
         minOccurs="0"/>
   </xsd:sequence>
</xsd:complexType>
```

Response elements

CustomRef
The details of the attachment such as contentId, contentType, contentLength, contentEncoding, locale, and contentData.

ConnectionHandle
The ID of the report. Supports viewing a report when the report is already in iServer System. Specified in the SOAP header.

GetDatabaseConnectionDefinition

Retrieves information about an ACS database connection object.

Request schema

```
<xsd:complexType name="GetDatabaseConnectionDefinition">
   <xsd:sequence>
      <xsd:element name="FileName" type="xsd:string"/>
   </xsd:sequence>
</xsd:complexType>
```

Request elements

FileName
The name of the database connection object for which to retrieve information.

Response schema

```
<xsd:complexType name="GetDatabaseConnectionDefinitionResponse">
   <xsd:sequence>
      <xsd:element name="DatabaseConnectionDefinition"
      type="typens:DatabaseConnectionDefinition"/>
   </xsd:sequence>
</xsd:complexType>
```

Response elements

DatabaseConnectionDefinition
Information about the database connection object.

GetDatabaseConnectionParameters

Retrieves the connection parameter definitions that the database requires. Typically, you call GetDatabaseConnectionTypes to retrieve the list of available database types, then call GetDatabaseConnectionParameters to retrieve the connection parameters for a specific database type.

Request schema

```
<xsd:complexType name="GetDatabaseConnectionParameters">
   <xsd:sequence>
      <xsd:element name="Type" type="xsd:string"/>
   </xsd:sequence>
</xsd:complexType>
```

Request elements

Type
The type of database.

Response schema

```
<xsd:complexType name="GetDatabaseConnectionParametersResponse">
   <xsd:sequence>
      <xsd:element name="List"
         type="typens:ArrayOfParameterDefinition"/>
   </xsd:sequence>
</xsd:complexType>
```

Response elements

List
Information about the connection parameters.

GetDatabaseConnectionTypes

Retrieves the list of available DBMS platforms. Table 8-2 lists the DBMS platforms that Actuate supports for Actuate Caching service (ACS) databases.

Table 8-2 DBMS platforms that are supported for ACS databases

DBMS	Operating system
SQL Server 7	Microsoft Windows

Table 8-2 DBMS platforms that are supported for ACS databases (continued)

DBMS	Operating system
SQL Server 2000, including Service Pack 3 and Service Pack 4	Microsoft Windows

Request schema

```
<xsd:complexType name="GetDatabaseConnectionTypes"/>
```

Response schema

```
<xsd:complexType name="GetDatabaseConnectionTypesResponse">
   <xsd:sequence>
      <xsd:element name="List" type="typens:ArrayOfString"/>
   </xsd:sequence>
</xsd:complexType>
```

Response elements

List
The list of available DBMS platforms.

Warnings
Any problems that occur.

GetDataExtractionFormats

Retrieves a list of DataExtractionFormat objects for a specific file type. These objects consist of an output format and a mime type.

Request schema

```
<xsd:complexType name="GetDataExtractionFormats">
   <xsd:sequence>
      <xsd:element name="FileType" type="xsd:string"/>
   </xsd:sequence>
</xsd:complexType>
```

Request elements

FileType
The name of the file type about which to retrieve information.

Response schema

```
<xsd:complexType name="GetDataExtractionFormatsResponse">
   <xsd:sequence>
      <xsd:element name="DataExtractionFormats"
         type="typens:ArrayOfDataExtractionFormat"/>
   </xsd:sequence>
</xsd:complexType>
```

Response elements

DataExtractionFormats
The list of DataExtractionFormat objects.

GetDocumentConversionOptions

Retrieves a list of DocumentConversionOptions. A document conversion option includes a file type, output format, mime type and parameter defitions.

Request schema

```
<xsd:complexType name="GetDocumentConversionOptions">
   <xsd:sequence>
      <xsd:element name="FileType" type="xsd:string"
         minOccurs="0"/>
      <xsd:element name="OutputFormat" type="xsd:string"
         minOccurs="0"/>
   </xsd:sequence>
</xsd:complexType>
```

Request elements

FileType
The file type about which to retrieve the conversion options. When FileType is not set, the response includes options for all the Java report documents. In this case, GetDocumentConversionOptions ignores OutputFormat.

When a FileType is set, GetDocumentConversionOptions returns the options for the conversion to the specified OutputFormat.

OutputFormat
The display format about which to retrieve the conversion options. When OutputFormat is not specified, the response includes parameters for all output formats.

If the FileType or OutputFormat fields specify unsupported formats, GetDocumentConversionOptions returns a SOAP fault.

Response schema

```
<xsd:complexType name="GetDocumentConversionOptionsResponse">
   <xsd:sequence>
      <xsd:element name="ConversionOptions"
         type="typens:ArrayOfDocumentConversionOptions"/>
   </xsd:sequence>
</xsd:complexType>
```

Response elements

ConversionOptions
The list of DocumentConversionOptions

GetDynamicData

Retrieves dynamic data from a report.

Request schema

```
<xsd:complexType name="GetDynamicData">
   <xsd:sequence>
      <xsd:element name="Object" type="typens:ObjectIdentifier"/>
      <xsd:element name="ViewParameter"
```

```
      type="typens:ViewParameter" minOccurs="0"/>
    <xsd:element name="Component" type="typens:ComponentType"/>
    <xsd:element name="DownloadEmbedded" type="xsd:boolean"
      default="false" minOccurs="0"/>
    <xsd:element name="CoordinateX" type="xsd:long"
      minOccurs="0"/>
    <xsd:element name="CoordinateY" type="xsd:long"
      minOccurs="0"/>
  </xsd:sequence>
</xsd:complexType>
```

Request elements

Object
The ID of the object from which to retrieve the dynamic data.

ViewParameter
The viewing parameters.

Component
The name, display name, or ID, and the value of the component for which to retrieve the dynamic data.

DownloadEmbedded
Specifies whether to send the attachment embedded in the body of the SOAP message or in a separate MIME boundary. If True, the response contains the attachment as embedded data. If False, the attachment is in a separate MIME boundary. The default value is False.

CoordinateX
The *x*-axis coordinate of the chart element the user chose. Required if Format is ImageMapURL.

CoordinateY
The *y*-axis coordinate of the chart element the user chose. Required if Format is ImageMapURL.

Response schema

```
<xsd:complexType name="GetDynamicDataResponse">
  <xsd:sequence>
    <xsd:element name="DynamicDataRef" type="typens:Attachment"/>
    <xsd:element name="ConnectionHandle" type="xsd:string"
      minOccurs="0"/>
    <xsd:element name="DataLinkingURL" type="xsd:string"
      minOccurs="0"/>
  </xsd:sequence>
</xsd:complexType>
```

Response elements

DynamicDataRef
The details of the attachment such as contentId, contentType, contentLength, contentEncoding, locale, and contentData.

ConnectionHandle
The ID of the report. Supports viewing a report when the report is already in iServer System. Specified in the SOAP header.

DataLinkingURL
If Format is ImageMapURL, the URL of the hyperlink. If no hyperlink is associated with the URL, an empty string is returned. If DataLinkingURL is used, an attachment is not returned.

GetEmbeddedComponent

Retrieves an embedded component from a report.

Request schema

```
<xsd:complexType name="GetEmbeddedComponent">
   <xsd:sequence>
      <xsd:element name="ObjectId" type="xsd:string"/>
      <xsd:element name="Operation" type="xsd:string"/>
      <xsd:element name="StreamName" type="xsd:string"
         minOccurs="0"/>
      <xsd:element name="Embed" type="xsd:int" minOccurs="0"/>
      <xsd:element name="ComponentId" type="xsd:string"
         minOccurs="0"/>
      <xsd:element name="ScalingFactor" type="xsd:long"
         minOccurs="0"/>
      <xsd:element name="AcceptEncoding" type="xsd:string"
         minOccurs="0"/>
      <xsd:element name="DownloadEmbedded" type="xsd:boolean"
         default="false" minOccurs="0"/>
      <xsd:element name="Format" type="xsd:string" minOccurs="0"/>
      <xsd:element name="CoordinateX" type="xsd:long"
         minOccurs="0"/>
      <xsd:element name="CoordinateY" type="xsd:long"\
         minOccurs="0"/>
      <xsd:element name="RedirectPath"type="xsd:string"
         minOccurs="0"/>
   </xsd:sequence>
</xsd:complexType>
```

Request elements

ObjectId
The ID of the object from which to retrieve the data.

Operation
The type of data to retrieve. Valid values are:

- GetStaticData
  Retrieves static data.

- GetDynamicData
  Retrieves dynamic data.
- GetStyleSheet
  Retrieves the style sheet.

StreamName
The stream name. Required if the operation is GetStaticData, optional otherwise.

Embed
Required if the operation is GetStaticData, optional otherwise.

ComponentId
The ID of the component from which to retrieve the data. Required if the operation is GetDynamicData, optional otherwise.

ScalingFactor
Supported only for GetDynamicData and GetStaticData operations. Adapts the size of a Reportlet to the Reportlet frame.

AcceptEncoding
The list of encoding methods the browser supports.

DownloadEmbedded
Specifies whether to send the attachment embedded in the body of the SOAP message or in a separate MIME boundary. If True, the response contains the attachment as embedded data. If False, the attachment is in a separate MIME boundary. The default value is False.

Format
Applies only if the operation is GetDynamicData. The format in which the report displays. To support users clicking a point in a chart to navigate to different report sections, set Format to ImageMapURL and set the CoordinateX and CoordinateY elements.

CoordinateX
The *x*-axis coordinate of the chart element the user chose. Required if Format is ImageMapURL.

CoordinateY
The *y*-axis coordinate of the chart element the user chose. Required if Format is ImageMapURL.

RedirectPath
The context path to the hyperlink.

Response schema

```
<xsd:complexType name="GetEmbeddedComponentResponse">
  <xsd:sequence>
    <xsd:element name="EmbeddedRef" type="typens:Attachment"/>
    <xsd:element name="EmbeddedRef" type="typens:Attachment"/>
```

```
      <xsd:element name="ConnectionHandle" type="xsd:string"
        minOccurs="0"/>
      <xsd:element name="DataLinkingURL" type="xsd:string"
        minOccurs="0"/>
   </xsd:sequence>
</xsd:complexType>
```

Response elements

EmbeddedRef
Contains the following properties of the attachment:

- MimeType
- ContentEncoding
- ContentLength
- Locale

ConnectionHandle
The ID of the report. Supports viewing a report when the report is already in iServer System. Specified in the SOAP header.

DataLinkingURL
The URL of the hyperlink if Format is set to ImageMapURL. If no hyperlink is associated with the URL, an empty string is returned. If DataLinkingURL is used, no attachment is returned.

GetFactoryServiceInfo

Retrieves general information about a Factory service. The node name is specified in the TargetServer element of the SOAP header.

GetFactoryServiceInfo is available only to a BIRT iServer System administrator. To log in as a BIRT iServer System administrator, use SystemLogin.

To retrieve a list of servers for which you can obtain information, use GetSystemServerList.

Request schema

```
<xsd:complexType name="GetFactoryServiceInfo"/>
```

Request elements

GetFactoryServiceInfo
Information about the Factory service.

Response schema

```
<xsd:complexType name="GetFactoryServiceInfoResponse">
   <xsd:sequence>
      <xsd:element name="ServerName" type="xsd:string"/>
      <xsd:element name="PendingSyncJobs" type="xsd:long"/>
      <xsd:element name="SyncJobQueueSize" type="xsd:long"/>
      <xsd:element name="RunningSyncJobs" type="xsd:long"/>
      <xsd:element name="RunningJobs" type="xsd:long"/>
```

```
      <xsd:element name="SyncFactoryProcesses" type="xsd:long"/>
      <xsd:element name="MaxFactoryProcesses" type="xsd:long"/>
      <xsd:element name="TransientReportCacheSize"type="xsd:long"/>
      <xsd:element name="PercentTransientReportCacheInUse"
         type="xsd:long"/>
      <xsd:element name="CurrentTransientReportTimeout"
         type="xsd:long"/>
      <xsd:element name="TransientReportTimeout" type="xsd:long"/>
      <xsd:element name="SyncJobQueueWait" type="xsd:long"/>
      <xsd:element name="MaxSyncJobRuntime" type="xsd:long"/>
   </xsd:sequence>
</xsd:complexType>
```

Response elements

ServerName
The node for which information is returned.

PendingSyncJobs
The number of synchronous jobs in queue.

SyncJobQueueSize
The maximum number of synchronous jobs allowed in the queue.

RunningSyncJobs
The number of synchronous jobs currently running.

RunningJobs
The total number of jobs currently running.

SyncFactoryProcesses
The number of Factories reserved for running synchronous jobs.

MaxFactoryProcesses
The maximum number of Factories that can run on the system.

TransientReportCacheSize
The maximum disk space available for transient reports, in megabytes.

PercentTransientReportCacheInUse
The currently used percentage of disk space available for transient reports.

CurrentTransientReportTimeout
The number of minutes after which transient reports are deleted from the synchronous cache adjusted according to disk space currently available in the synchronous cache.

TransientReportTimeout
Time after which transient reports are deleted from the synchronous cache, in minutes.

SyncJobQueueWait
The maximum time a job remains in the synchronous queue, in seconds.

MaxSyncJobRuntime
The maximum job execution time, in seconds.

GetFactoryServiceJobs

Retrieves information about pending synchronous jobs and all running jobs on the node. The node is specified in the TargetServer element of the SOAP header.

For pending synchronous jobs, GetFactoryServiceJobs always returns the following information in addition to any values you specify:

- ConnectionHandle
- ObjectId
- IsTransient
- Volume

For running jobs, GetFactoryServiceJobs always returns the following information in addition to any values you specify:

- IsSyncJob
- Volume
- ConnectionHandle
- ObjectId
- IsTransient for synchronous jobs or JobId for asynchronous jobs

To retrieve all information, specify All.

GetFactoryServiceJobs is available only to a BIRT iServer System administrator. To log in as a BIRT iServer System administrator, use SystemLogin.

Request schema

```
<xsd:complexType name="GetFactoryServiceJobs">
   <xsd:sequence>
      <xsd:element name="PendingSyncJobsResultDef"
         type="typens:ArrayOfString" minOccurs="0"/>
      <xsd:element name="RunningJobsResultDef"
         type="typens:ArrayOfString" minOccurs="0"/>
   </xsd:sequence>
</xsd:complexType>
```

Request elements

PendingSyncJobsResultDef
Requests the following information about pending synchronous jobs:

- Default
  ConnectionHandle, ObjectId, IsTransient, and Volume.

- All
  All information.
- ServerName
  The node on which the job originated.
- Owner
  The name of the user who submitted the job.
- ExecutableFileName
  The fully qualified name of the report executable file.
- ExecutableVersionNumber
  The fully qualified version number of the report executable file.
- ExecutableVersionName
  The fully qualified version name of the report executable file.
- SubmissionTime
  The time the job was submitted to the server.
- QueueTimeout
  The number of seconds remaining before the job is deleted from the queue.
- QueuePosition
  The job's position in the queue.

RunningJobsResultDef
Requests the following information about all running jobs:

- Default
  IsSyncJob, Volume, ConnectionHandle, ObjectId, IsTransient for synchronous jobs or JobId for asynchronous jobs.
- All
  All information.
- ServerName
  The node on which the job originated.
- Owner
  The name of the user who submitted the job.
- ExecutableFileName
  The fully qualified name of the report executable file.
- ExecutableVersionNumber
  The fully qualified version number of the report executable file.

- ExecutableVersionName
  The fully qualified version name of the report executable file.
- SubmissionTime
  The time the job was submitted to the server.
- StartTime
  The time at which the job execution started.
- ExecutionTimeout
  The number of seconds remaining before the job execution expires. Always zero (infinite) for asynchronous reports.
- IsSyncFactory
  True if the Factory is running synchronous jobs, False if the Factory is running asynchronous jobs.
- FactoryPid
  The Process ID of the Factory.

Response schema

```
<xsd:complexType name="GetFactoryServiceJobsResponse">
   <xsd:sequence>
      <xsd:element name="PendingSyncJobs"
         type="ArrayOfPendingSyncJob" minOccurs="0"/>
      <xsd:element name="RunningJobs"
         type="ArrayOfRunningJob" minOccurs="0"/>
   </xsd:sequence>
</xsd:complexType>
```

Response elements

PendingSyncJobs
Information about pending synchronous jobs on the node.

RunningJobs
Information about all running jobs on the node.

GetFileACL

Retrieves the ACL of the specified Encyclopedia file or folder.

Request schema

```
<xsd:complexType name="GetFileACL">
   <xsd:sequence>
      <xsd:choice>
         <xsd:element name="FileId" type="xsd:string"/>
         <xsd:element name="FileName" type="xsd:string">
         </xsd:element>
      </xsd:choice>
      <xsd:choice minOccurs="0">
         <xsd:element name="GrantedUserId" type="xsd:string"
            minOccurs="0"/>
         <xsd:element name="GrantedUserName" type="xsd:string"
            minOccurs="0"/>
         <xsd:element name="GrantedRoleId" type="xsd:string"
            minOccurs="0"/>
         <xsd:element name="GrantedRoleName" type="xsd:string"
            minOccurs="0"/>
      </xsd:choice>
         <xsd:element name="FetchSize" type="xsd:int"
            minOccurs="0"/>
         <xsd:element name="FetchDirection" type="xsd:boolean"
            minOccurs="0"/>
         <xsd:element name="CountLimit" type="xsd:int"
            minOccurs="0"/>
         <xsd:element name="FetchHandle" type="xsd:string"
            minOccurs="0"/>
   </xsd:sequence>
</xsd:complexType>
```

Request elements

FileId
The ID of the file or folder for which to retrieve the ACL. Specific either the FileId or the FileName.

FileName
The full name of the file or folder for which to retrieve the ACL. Specify either FileName or FileId.

GrantedUserId
The user ID.

GrantedUserName
The user name.

GrantedRoleId
The role ID.

GrantedRoleName
The role name.

FetchSize
The maximum number of records to retrieve and return in a result set. The default value is 500.

FetchDirection
If True, records are retrieved forward. If False, records are retrieved backward. The default value is True.

CountLimit
The maximum number of records to count. By default, CountLimit is equal to FetchSize. To count all records, set CountLimit to -1.

FetchHandle
Retrieves more items from the result set. In the second and subsequent calls for data, specify the same search criteria as in the original call.

Response schema

```
<xsd:complexType name="GetFileACLResponse">
   <xsd:sequence>
      <xsd:element name="ACL"type="typens:ArrayOfPermission"
         minOccurs="0"/>
      <xsd:element name="FetchHandle" type="xsd:string"
         minOccurs="0"/>
      <xsd:element name="TotalCount" type="xsd:int" minOccurs="0"/>
   </xsd:sequence>
</xsd:complexType>
```

Response elements

ACL
The ACL of the file or folder.

FetchHandle
Indicates that the number of items in the result set exceeds the FetchSize limit.

TotalCount
The number of entries in the search result set.

GetFileCreationACL

Retrieves the specified user's FileCreationACL. The FileCreationACL is the template applied to all new files the user creates.

Request schema

```
<xsd:complexType name="GetFileCreationACL">
   <xsd:sequence>
      <xsd:choice>
         <xsd:element name="CreatedByUserName" type="xsd:string"/>
         <xsd:element name="CreatedByUserId" type="xsd:string"/>
      </xsd:choice>
      <xsd:choice minOccurs="0">
         <xsd:element name="GrantedUserId" type="xsd:string"
```

```
            minOccurs="0"/>
          <xsd:element name="GrantedUserName" type="xsd:string"
            minOccurs="0"/>
          <xsd:element name="GrantedRoleId" type="xsd:string"
            minOccurs="0"/>
          <xsd:element name="GrantedRoleName" type="xsd:string"
            minOccurs="0"/>
        </xsd:choice>
        <xsd:element name="FetchSize" type="xsd:int" minOccurs="0"/>
        <xsd:element name="FetchDirection" type="xsd:boolean"
          minOccurs="0"/>
        <xsd:element name="CountLimit" type="xsd:int" minOccurs="0"/>
        <xsd:element name="FetchHandle" type="xsd:string"
          minOccurs="0"/>
    </xsd:sequence>
  </xsd:complexType>
```

Request elements

CreatedByUserName
The name of the user whose template to retrieve. Specify either CreatedByUserName or CreatedByUserId.

CreatedByUserId
The ID of the user whose template to retrieve. Specify either CreatedByUserId or CreatedByUserName.

GrantedUserId
The user ID. Specify either GrantedUserId or GrantedUserName.

GrantedUserName
The user name. Specify either GrantedUserName or GrantedUserId.

GrantedRoleId
The role ID. Specify either GrantedRoleId or GrantedRoleName.

GrantedRoleName
The role name. Specify either GrantedRoleName or GrantedRoleId.

FetchSize
The maximum number of records to retrieve and return in a result set. The default value is 500.

FetchDirection
If True, records are retrieved forward. If False, records are retrieved backward. The default value is True.

CountLimit
The maximum number of records to count. By default, CountLimit is equal to FetchSize. To count all records, set CountLimit to -1.

FetchHandle
Retrieves more items from the result set. In the second and subsequent calls for data, specify the same search criteria as in the original call.

Response schema

```
<xsd:complexType name="GetFileCreationACLResponse">
   <xsd:sequence>
      <xsd:element name="ACL" type="typens:ArrayOfPermission"
         minOccurs="0"/>
      <xsd:element name="FetchHandle" type="xsd:string"
         minOccurs="0"/>
      <xsd:element name="TotalCount" type="xsd:int" minOccurs="0"/>
   </xsd:sequence>
</xsd:complexType>
```

Response elements

ACL
The user's ACL.

FetchHandle
Indicates that the number of items in the result set exceeds the FetchSize limit.

TotalCount
The number of entries in the search result set.

GetFileDetails

Retrieves the properties of the specified file.

Request schema

```
<xsd:complexType name="GetFileDetails">
   <xsd:sequence>
      <xsd:choice>
         <xsd:element name="FileName" type="xsd:string"/>
         <xsd:element name="FileId" type="xsd:string"/>
      </xsd:choice>
      <xsd:element name="ResultDef" type="typens:ArrayOfString">
      </xsd:element>
   </xsd:sequence>
</xsd:complexType>
```

Request elements

FileName
The full name of the file for which to retrieve properties. Specify either FileName or FileId.

FileId
The ID of the file for which to retrieve properties. Specify either FileId or FileName.

ResultDef
The properties to retrieve. The file properties are always returned. In addition, you can specify one or more of the following:

- ACL
  The access control list (ACL) of the file.
- ArchiveRules
  The archive rules of the file.
- AccessType
  The access rights to the file, private or shared.

Response schema

```
<xsd:complexType name="GetFileDetailsResponse">
   <xsd:sequence>
      <xsd:element name="File" type="typens:File"/>
      <xsd:element name="ACL" type="typens:ArrayOfPermission"
         minOccurs="0"/>
      <xsd:element name="ArchiveRules"
         type="typens:ArrayOfArchiveRule"minOccurs="0"/>
   </xsd:sequence>
</xsd:complexType>
```

Response elements

File
The file properties.

ACL
The ACL. Returned only if ACL is specified in ResultDef.

ArchiveRules
The archive rules. Returned only if ArchiveRules is specified in ResultDef.

GetFileTypeParameterDefinitions

Retrieves parameters of the specified file type on the BIRT iServer to which the user is logged in.

Request schema

```
<xsd:complexType name="GetFileTypeParameterDefinitions">
   <xsd:sequence>
      <xsd:element name="FileType" type="xsd:string"/>
   </xsd:sequence>
</xsd:complexType>
```

Request elements

FileType
The name of the file type for which to retrieve information.

Response schema

```
<xsd:complexType name="GetFileTypeParameterDefinitionsResponse">
   <xsd:sequence>
      <xsd:element name="ParameterList"
```

```
            type="typens:ArrayOfParameterDefinition"/>
      </xsd:sequence>
   </xsd:complexType>
```

Response elements

ParameterList
The list of parameters.

GetFolderItems

Retrieves all specified objects in a specified folder, such as all files or folders, a list of files or folders, or all users.

To search all files or folders that match the specified conditions, specify Search.

Request schema

```
<xsd:complexType name="GetFolderItems">
   <xsd:sequence>
      <xsd:choice>
         <xsd:element name="FolderName" type="xsd:string">
         </xsd:element>
         <xsd:element name="FolderId" type="xsd:string"/>
      </xsd:choice>
      <xsd:element name="ResultDef" type="typens:ArrayOfString">
      </xsd:element>
      <xsd:element name="LatestVersionOnly" type="xsd:boolean"
         minOccurs="0"/>
      <xsd:element name="Search" type="typens:FileSearch"
         minOccurs="0"/>
   </xsd:sequence>
</xsd:complexType>
```

Request elements

FolderName
The full path and the name of the folder from which to retrieve objects. Specify either FolderName or FolderId.

FolderId
The ID of the folder from which to retrieve objects. Specify either FolderId or FolderName.

ResultDef
The properties to retrieve. By default, the Id and Name are always returned. In addition, you can specify the following properties:

- Description
- FileType
- Owner
- PageCount

- Size
- TimeStamp
- Version
- VersionName
- UserPermissions

LatestVersionOnly
Specifies whether only the latest version is returned. If True, only the latest version is returned. The default value is False.

Search
The search condition. If conditions apply to multiple fields, use ConditionArray.

Response schema

```
<xsd:complexType name="GetFolderItemsResponse">
   <xsd:sequence>
      <xsd:element name="ItemList" type="typens:ArrayOfFile"/>
      <xsd:element name="FetchHandle" type="xsd:string"
         minOccurs="0"/>
      <xsd:element name="TotalCount" type="xsd:int" minOccurs="0"/>
   </xsd:sequence>
</xsd:complexType>
```

Response elements

ItemList
The objects matching the search criteria.

FetchHandle
Indicates that the number of items in the result set exceeds the FetchSize limit.

TotalCount
The number of entries in the search result set.

GetFormats

Retrieves a list of locales and formats the server supports.

Request schema

```
<xsd:complexType name="GetFormats">
   <xsd:sequence>
      <xsd:element name="Object" type="typens:ObjectIdentifier"/>
      <xsd:element name="FormatType" type="typens:FormatType"
         minOccurs="0"/>
   </xsd:sequence>
</xsd:complexType>
```

Request elements

Object
The ID of the object from which to retrieve information.

FormatType
One of the following formats to return:

- 0
  All formats.
- 1
  View formats.
- 2
  Search formats.

If you do not specify a format, all formats are returned.

Response schema

```
<xsd:complexType name="GetFormatsResponse">
   <xsd:sequence>
      <xsd:element name="FormatList" type="typens:ArrayOfString"/>
   </xsd:sequence>
</xsd:complexType>
```

Response elements

FormatList
The list of formats.

GetInfoObject

Retrieves an information object.

Request schema

```
<xsd:complexType name="GetInfoObject">
   <xsd:sequence>
      <xsd:choice>
         <xsd:element name="InfoObjectName" type="xsd:string" />
         <xsd:element name="InfoObjectId" type="xsd:string" />
         <xsd:element name="SupportedQueryFeatures"
            type="typens:SupportedQueryFeatures" minOccurs="0" />
      </xsd:choice>
   </xsd:sequence>
</xsd:complexType>
```

Request elements

InfoObjectName
The name of the information object.

InfoObjectId
The object ID of the information object.

SupportedQueryFeatures
Other features on which to query the information object.

Response schema

```
<xsd:complexType name="GetInfoObjectResponse">
   <xsd:sequence>
      <xsd:element name="InfoObject" type="typens:Query" />
   </xsd:sequence>
</xsd:complexType>
```

Response elements

InfoObject
The information object.

GetJavaReportEmbeddedComponent

Retrieves an embedded component in the report document such as an image or a graph.

Request schema

```
<xsd:complexType name="GetJavaReportEmbeddedComponent">
   <xsd:sequence>
      <xsd:element name="Object" type="typens:ObjectIdentifier"/>
      <xsd:element name="Component"
         type="typens:ArrayOfNameValuePair"/>
      <xsd:element name="Attributes"
         type="typens:ArrayOfNameValuePair" minOccurs="0"/>
      <xsd:element name="DownloadEmbedded" type="xsd:boolean"
            default="false" minOccurs="0"/>
   </xsd:sequence>
</xsd:complexType>
```

Request elements

Object
The ID of the object from which to retrieve an embedded component in a report document.

Component
The name, display name, or ID, and the value of the component to retrieve.

Attributes
Currently not used by BIRT or e.Spreadsheet reports.

DownloadEmbedded
Specifies whether to send the attachment embedded in the body of the SOAP message or in a separate MIME boundary. If True, the response contains the attachment as embedded data. If False, the attachment is in a separate MIME boundary. The default value is False.

Response schema

```
<xsd:complexType name="GetJavaReportEmbeddedComponentResponse">
   <xsd:sequence>
      <xsd:element name="EmbeddedRef" type="typens:Attachment"/>
      <xsd:element name="ConnectionHandle" type="xsd:string"
         minOccurs="0"/>
   </xsd:sequence>
```

```
</xsd:complexType>
```

Response elements

EmbeddedRef
Contains the following properties of the attachment:

- MimeType
- ContentEncoding
- ContentLength
- Locale

ConnectionHandle
The ID of the report. Supports viewing a report when the report is already in iServer System. Specified in the SOAP header.

GetJavaReportTOC

Retrieves the table of contents (TOC) of the report document.

Request schema

```
<xsd:complexType name="GetJavaReportTOC">
   <xsd:sequence>
      <xsd:element name="Object" type="typens:ObjectIdentifier"/>
      <xsd:element name="DownloadEmbedded" type="xsd:boolean"
         default="false" minOccurs="0"/>
      <xsd:element name="Component"
         type="typens:ArrayOfNameValuePair" minOccurs="0"/>
      <xsd:element name="Recursive" type="xsd:boolean"
         minOccurs="0"/>
   </xsd:sequence>
</xsd:complexType>
```

Request elements

Object
The ID of the object from which to retrieve the TOC.

DownloadEmbedded
Specifies whether to send the attachment embedded in the body of the SOAP message or in a separate MIME boundary. If True, the response contains the attachment as embedded data. If False, the attachment is in a separate MIME boundary. The default value is False.

Component
The name, display name, or ID, and the value of the component from which to retrieve the TOC.

Recursive
Specifies whether to search subfolders. If True, the search includes subfolders. The default value is False.

Response schema

```
<xsd:complexType name="GetJavaReportTOCResponse">
   <xsd:sequence>
      <xsd:element name="TOCRef" type="typens:Attachment"
         minOccurs="0"/>
      <xsd:element name="ConnectionHandle" type="xsd:string"
         minOccurs="0"/>
   </xsd:sequence>
</xsd:complexType>
```

Response elements

TocRef
The details of the attachment such as contentId, contentType, contentLength, contentEncoding, locale, and contentData.

ConnectionHandle
The ID of the report. Supports viewing a report when the report is already in iServer System. Specified in the SOAP header.

GetJobDetails

Retrieves the properties of a specified job.

Request schema

```
<xsd:complexType name="GetJobDetails">
   <xsd:sequence>
      <xsd:element name="JobId" type="xsd:string"/>
      <xsd:element name="ResultDef" type="typens:ArrayOfString"/>
      <xsd:element name="GroupingEnabled" type="xsd:boolean"
         minOccurs="0"/>
      <xsd:element name="SupportedQueryFeatures"
         type="typens:SupportedQueryFeatures" minOccurs="0"/>
   </xsd:sequence>
</xsd:complexType>
```

Request elements

JobId
The ID of the job from which to retrieve properties.

ResultDef
The properties to retrieve. You can specify the following properties:

- JobAttributes
  The general job properties.
- InputDetail
  The job input parameters.
- Schedules
  The job schedule information.

- PrinterOptions
  The printer settings, if available.
- NotifyUsers
  The names of users to receive notifications about the job.
- NotifyGroups
  The names of groups to receive notifications about the job.
- NotifyChannels
  The names of channels to receive notifications about the job.
- DefaultOutputFileACL
  The output file ACL templates.
- Status
  The job status.
- ReportParameters
  The report parameters from the report parameters value file associated with the job.
- ResourceGroup
  The name of the resource group to which the job is assigned.

GroupingEnabled
Provided for backward compatibility. If the DOX was created using Actuate 7 Service Pack 2 or a later release, set GroupingEnabled to True. In this case, BIRT iServer Information and Management Console enable the grouping and aggregation pages. If the DOX came from an earlier version of an Actuate product, set GroupingEnabled to False.

SupportedQueryFeatures
Specifies additional query features.

Response schema

```
<xsd:complexType name="GetJobDetailsResponse">
   <xsd:sequence>
      <xsd:element name="JobAttributes" type="typens:JobProperties"
         minOccurs="0"/>
      <xsd:element name="InputDetail" type="typens:JobInputDetail"
         minOccurs="0"/>
      <xsd:element name="Schedules" type="typens:JobSchedule"
         minOccurs="0"/>
      <xsd:element name="PrinterOptions"
         type="typens:PrinterOptions" minOccurs="0"/>
      <xsd:element name="NotifyUsers" type="typens:ArrayOfString"
         minOccurs="0"/>
      <xsd:element name="NotifyGroups"
```

```
        type="typens:ArrayOfString">
      <xsd:element name="NotifyChannels"
        type="typens:ArrayOfString" minOccurs="0"/>
      <xsd:element name="DefaultOutputFileACL"
        type="typens:ArrayOfPermission" minOccurs="0"/>
      <xsd:element name="Status" type="xsd:string" minOccurs="0"/>
      <xsd:element name="ReportParameters"
        type="typens:ArrayOfParameterValue" minOccurs="0"/>
      <xsd:element name="Query" type="typens:Query"
        minOccurs="0"/>
      <xsd:element name="OutputFileAccessType"
        type="typens:FileAccess" minOccurs="0"/>
      <xsd:element name="WaitForEvent" type="typens:Event"
        minOccurs="0"/>
    </xsd:sequence>
  </xsd:complexType>
```

Response elements

JobAttributes
The general job attributes.

InputDetail
The job input parameters.

Schedules
The job schedule information.

PrinterOptions
The job printer settings.

NotifyUsers
The names of users to receive notifications about the job.

NotifyGroups
The names of groups to receive notifications about the job.

NotifyChannels
The names of channels to receive notifications about the job.

DefaultOutputFileACL
The output file access control list (ACL) templates.

Status
The job status.

ReportParameters
The report parameters from the report object value (.rov) file associated with the job.

Query
The data object values (.dov) file associated with the job.

OutputFileAccessType
The access rights to the output file. One of the following values:

- Private
  Only the owner of the file and an administrator can access the file.
- Shared
  All users and roles specified in the access control list (ACL) for the file can access the file.

WaitForEvent
An event that must complete before processing the response.

GetMetaData

Retrieves the metadata describing a result set schema.

Request schema

```
<xsd:complexType name="GetMetaData">
   xsd:sequence>
      <xsd:element name="Object" type="typens:ObjectIdentifier"/>
      <xsd:element name="Component"
         type="typens:ArrayOfNameValuePair" minOccurs="0"/>
   </xsd:sequence>
</xsd:complexType>
```

Request elements

Object
The object from which to retrieve the metadata.

Component
The name, display name, or ID, and the value of the component from which to retrieve the metadata.

Response schema

```
<xsd:complexType name="GetMetaDataResponse">
   <xsd:sequence>
      <xsd:element name="ArrayOfResultSetSchema"
         type="typens:ArrayOfResultSetSchema" minOccurs="0"/>
   </xsd:sequence>
</xsd:complexType>
```

Response elements

ArrayOfResultSetSchemat
The complex data type that represents an array of ResultSetSchema objects.

GetNoticeJobDetails

Retrieves the properties of the specified job notice.

Request schema

```
<xsd:complexType name="GetNoticeJobDetails">
   <xsd:sequence>
      <xsd:element name="JobId" type="xsd:string"/>
      <xsd:element name="ResultDef" type="typens:ArrayOfString"/>
      <xsd:element name="NotifiedChannelId" type="xsd:string"
         minOccurs="0"/>
      <xsd:element name="NotifiedChannelName" type="xsd:string"
         minOccurs="0"/>
      <xsd:element name="GroupingEnabled" type="xsd:boolean"
         minOccurs="0"/>
      <xsd:element name="SupportedQueryFeatures"
         type="typens:SupportedQueryFeatures" minOccurs="0"/>
   </xsd:sequence>
</xsd:complexType>
```

Request elements

JobId
The ID of the job from which to retrieve properties.

ResultDef
The properties to retrieve. You can specify the following properties:

- InputDetail
  The job input parameters.
- Schedules
  The job schedule information.
- PrinterOptions
  The printer settings, if available.
- NotifyUsers
  The names of users to receive notifications about the job.
- NotifyGroups
  The names of groups to receive notifications about the job.
- NotifyChannels
  The names of channels to receive notifications about the job.
- DefaultOutputFileACL
  The output file access control list (ACL) templates.
- Status
  The job status.
- ReportParameters
  The report parameters from the report object value (.rov) file associated with the job.

- ResourceGroup
  The name of the resource group to which the job is assigned.

NotifiedChannelId
The ID of the channel which received the notice.

NotifiedChannelName
The name of the channel which received the notice.

GroupingEnabled
Provided for backward compatibility. If the Actuate Basic information object executable (.dox) file was created using Actuate 7 Service Pack 2 or a later release, set GroupingEnabled to True. In this case, BIRT iServer Information and Management Consoles enable the grouping and aggregation pages. If the DOX was created using an earlier version of an Actuate product, set GroupingEnabled to False.

SupportedQueryFeatures
Specifies additional query features.

Response schema

```
<xsd:complexType name="GetNoticeJobDetailsResponse">
   <xsd:sequence>
      <xsd:element name="JobAttributes"
         type="typens:JobProperties"/>
      <xsd:element name="InputDetail" type="typens:JobInputDetail"
         minOccurs="0"/>
      <xsd:element name="Schedules" type="typens:JobSchedule"
         minOccurs="0"/>
      <xsd:element name="PrinterOptions"
         type="typens:JobPrinterOptions" minOccurs="0"/>
      <xsd:element name="NotifyUsers" type="typens:ArrayOfString"
         minOccurs="0"/>
      <xsd:element name="NotifyGroups" type="typens:ArrayOfString"
         minOccurs="0"/>
      <xsd:element name="NotifyChannels"
         type="typens:ArrayOfString" minOccurs="0"/>
      <xsd:element name="DefaultOutputFileACL"
         type="typens:ArrayOfPermission" minOccurs="0"/>
      <xsd:element name="Status" type="xsd:string" minOccurs="0"/>
      <xsd:element name="ReportParameters"
         type="typens:ArrayOfParameterValue" minOccurs="0"/>
      <xsd:element name="Query" type="typens:Query" minOccurs="0"/>
      <xsd:element name="OutputFileAccessType"
         type="typens:FileAccess" minOccurs="0"/>
      <xsd:element name="WaitForEvent" type="typens:Event"
         minOccurs="0"/>
   </xsd:sequence>
</xsd:complexType>
```

Response elements

JobAttributes
The general job attributes.

InputDetail
The job input parameters.

Schedules
The job schedule information.

PrinterOptions
The job printer settings.

NotifyUsers
The names of users to receive notifications about the job.

NotifyGroups
The names of groups to receive notifications about the job.

NotifyChannels
The names of channels to receive notifications about the job.

DefaultOutputFileACL
The output file access control list (ACL) templates.

Status
The job status.

ReportParameters
The report parameters from report object value (.rov) file associated with the job.

Query
The data object values (.dov) file associated with the job.

OutputFileAccessType
The access rights to the output file. One of the following values:

- Private
  Only the owner of the file and an administrator can access the file.
- Shared
  All users and roles specified in the ACL for the file can access the file.

WaitForEvent
An event that must be completed before the response is processed.

GetPageCount

Retrieves the number of pages in a report.

Request schema

```
<xsd:complexType name="GetPageCount">
   <xsd:sequence>
      <xsd:element name="Object" type="typens:ObjectIdentifier"/>
   </xsd:sequence>
</xsd:complexType>
```

Request elements

Object
The object from which to retrieve page count.

Response schema

```
<xsd:complexType name="GetPageCountResponse">
   <xsd:complexType>
      <xsd:sequence>
         <xsd:element name="PageCount" type="xsd:string"/>
         <xsd:element name="IsReportCompleted" type="xsd:boolean"/>
         <xsd:element name="ConnectionHandle" type="xsd:string"
            minOccurs="0"/>
      </xsd:sequence>
   </xsd:complexType>
</xsd:element>
```

Response elements

PageCount
The number of pages.

IsReportCompleted
True if report generation is complete, False otherwise.

ConnectionHandle
The ID of the report. Supports viewing a report when the report is already in iServer System. Specified in the SOAP header.

GetPageNumber

Retrieves the page number of a bookmark component in a report.

Request schema

```
<xsd:complexType name="GetPageNumber">
   <xsd:sequence>
      <xsd:element name="Object" type="typens:ObjectIdentifier"/>
      <xsd:element name="Component"
         type="typens:ArrayOfNameValuePair"/>
   </xsd:sequence>
</xsd:complexType>
```

Request elements

Object
The object from which to retrieve the page number.

Component
The name, display name, or ID, and the value of the component from which to retrieve the page number. The page number is a bookmark value in a report.

Response schema

```
<xsd:complexType name="GetPageNumberResponse">
   <xsd:sequence>
      <xsd:element name="PageNumber" type="xsd:string"/>
   </xsd:sequence>
</xsd:complexType>
```

Response elements

PageNumbert
The component element specifies ArrayOfNameValuePair as the data type. If multiple valid bookmarks are present inside a report, a response only returns the page number for first bookmark. Actuate IDAPI does not support getting the page number for multiple components. If you specify multiple components, the response only returns the page number for the first component.

GetParameterPickList

Retrieves the parameters names from a pick list in a report.

Request schema

```
<xsd:complexType name="GetParameterPickList">
   <xsd:sequence>
      <xsd:element name="Object" type="typens:ObjectIdentifier"
         minOccurs="0"/>
      <xsd:element name="CascadingGroupName" type="xsd:string"
         minOccurs="0"/>
      <xsd:element name="ParameterName" type="xsd:string"/>
      <xsd:element name="PrecedingParameterValues"
         type="typens:ArrayOfParameterValue" minOccurs="0"/>
      <xsd:element name="Filter" type="xsd:string" minOccurs="0"/>
      <xsd:element name="StartIndex" type="xsd:long"
         minOccurs="0"/>
      <xsd:element name="FetchSize" type="xsd:long" minOccurs="0"/>
      <xsd:element name="CountLimit" type="xsd:long"
         minOccurs="0"/>
   </xsd:sequence>
</xsd:complexType>
```

Request elements

Object
The identifier of the object from which to retrieve the parameter pick list.

CascadingGroupName
The cascading group name in the pick list containing the target list.

ParameterName
The name of the parameter. Each parameter name is unique within a report even between execution and view parameters.

PrecedingParameterValues
The values of the parameters that precede the specified parameter.

Filter
A string prefix to be applied to the overall selection list.

StartIndex
The index where the fetch operation starts.

FetchSize
The maximum number of records to retrieve and return in a result set. The default value is 500.

CountLimit
The Number of entried to be counted after FetchSize is reached. By default, CountLimit is equal to FetchSize. To count all records, set CountLimit to -1.

Response schema

```
<xsd:complexType name="GetParameterPickListResponse">
   <xsd:sequence>
      <xsd:element name="ParameterPickList"
         type="typens:ArrayOfNameValuePair"/>
      <xsd:element name="TotalCount" type="xsd:long"
         minOccurs="0"/>
   </xsd:sequence>
</xsd:complexType>
```

Response elements

ParameterPickList
List of parameters.

TotalCount
The number of parameters in the list.

GetQuery

Retrieves query information from a DOV, DOX, IOB, SMA, or a job.

If the query is performed on an IOB or SMA, Actuate uses the following order to determine which Actuate Query template to use:

- The value of the QueryTemplateName parameter.
- The Actuate Query template specified in the acserverconfig.xml file.
- The default Actuate Query template, AQTemplate<xxxxxxxxx>.rox, where <xxxxxxxxx> is the release identifier, for example 80A040610.

Request schema

```
<xsd:complexType name="GetQuery">
   <xsd:sequence>
      <xsd:choice>
         <xsd:element name="QueryFileName" type="xsd:string"/>
         <xsd:element name="QueryFileId" type="xsd:string"/>
         <xsd:element name="JobId" type="xsd:string"/>
      </xsd:choice>
```

```
      <xsd:element name="GroupingEnabled" type="xsd:boolean"
         minOccurs="0"/>
      <xsd:element name="QueryTemplateName" type="xsd:string"
         minOccurs="0"/>
      <xsd:element name="UseLatestInfoObject" type="xsd:boolean"
         minOccurs="0"/>
      <xsd:element name="SupportedQueryFeatures"
         type="typens:SupportedQueryFeatures" minOccurs="0"/>
      <xsd:element name="WithoutDynamicPickList" type="xsd:boolean"
         minOccurs="0"/>
   </xsd:sequence>
</xsd:complexType>
```

Request elements

QueryFileName
The name of the data object value (.dov), Actuate Basic information object executable (.dox), information object (.iob), or data source (.sma) file from which to retrieve information. Specify either QueryFileName, QueryFileId, or JobId.

QueryFileId
The ID of the file from which to retrieve information. Specify either QueryFileId, QueryFileName, or JobId.

JobId
The ID of the job from which to retrieve information. Specify either JobId, QueryFileName, or QueryFileId.

GroupingEnabled
Provided for backward compatibility. If the DOX was created using Actuate 7 Service Pack 2 or a later release, set GroupingEnabled to True. In this case, BIRT iServer Information and Management Console enable the grouping and aggregation pages. If the DOX was created using an earlier version of an Actuate product, set GroupingEnabled to False.

QueryTemplateName
Specifies the Actuate Query template to use. Applies only if the query is performed on an IOB or SMA. Ignored if the query is performed on a DOV or DOX.

UseLatestInfoObject
A flag indicating whether to use the most recent IOB.

SupportedQueryFeatures
Specifies additional query features.

WithoutDynamicPickList
If set to true, parameters will be returned without a dynamic pick list.

Response schema

```
<xsd:complexType name="GetQueryResponse">
   <xsd:sequence>
      <xsd:element name="Query" type="typens:Query"/>
   </xsd:sequence>
</xsd:complexType>
```

Response elements

Query
The attributes of the query.

GetReportParameters

Retrieves report parameter values.

Request schema

```
<xsd:complexType name="GetReportParameters">
   <xsd:sequence>
      <xsd:choice>
         <xsd:element name="JobId" type="xsd:string"/>
         <xsd:element name="ReportFileId" type="xsd:string"/>
         <xsd:element name="ReportFileName" type="xsd:string"/>
      </xsd:choice>
      <xsd:element name="ReportParameterType"
         type="typens:ReportParameterType" minOccurs="0"/>
      <xsd:element name="WithoutDynamicPickList"
         type="xsd:boolean" minOccurs="0"/>
   </xsd:sequence>
</xsd:complexType>
```

Request elements

JobId
The ID of the job from which to retrieve the parameter values. Specify JobId to retrieve the parameter values from the report file associated with the job.

ReportFileId
The ID of the file from which to retrieve the parameter values. Specify ReportFileId or Report FileName to retrieve parameter values from a report executable, document, or object value file, or a third-party compound storage file.

ReportFileName
The name of the file from which to retrieve the parameter values. Specify ReportFileName or Report FileId to retrieve parameter values from a report executable, document, or object value file, or a third-party compound storage file.

ReportParameterType
Optional parameter type can include Execution, View, and All. If not specified, only execution parameters return to maintain backward compatibility.

WithoutDynamicPickList
If set to true, parameters will be returned without a dynamic pick list.

Response schema

```
<xsd:complexType name="GetReportParametersResponse">
   <xsd:sequence>
      <xsd:element name="ParameterList"
         type="typens:ArrayOfParameterDefinition"/>
      <xsd:element name="ViewParameterList"
         type="typens:ArrayOfParameterDefinition" minOccurs="0"/>
   </xsd:sequence>
</xsd:complexType>
```

Response elements

ParameterList
The list of parameter definition values such as group, cascading parent name, name, data type, default value, display name, help text, and so forth.

ViewParameterList
The list of view parameter definition values such as format, user agent, scaling factor, accept encoding, view operation, path information, embedded object path, redirect path, and PDF quality.

GetResourceGroupInfo

Retrieves information about a specific resource group.

Request schema

```
<xsd:complexType name="GetResourceGroupInfo">
   <xsd:sequence>
      <xsd:element name="Name" type="xsd:string"/>
   </xsd:sequence>
</xsd:complexType>
```

Request elements

Name
The name of the resource group for which to retrieve information.

Response schema

```
<xsd:complexType name="GetResourceGroupInfoResponse">
   <xsd:sequence>
      <xsd:element name="ResourceGroup"
         type="typens:ResourceGroup"/>
      <xsd:element name="ResourceGroupSettingsList"
         type="typens:ArrayOfResourceGroupSettings"/>
   </xsd:sequence>
</xsd:complexType>
```

Response elements

ResourceGroup
Contains the following information about the resource group:

- Name
- Disabled
- Description
- Type

- MinPriority
  Applies only to an asynchronous resource group.
- MaxPriority
  Applies only to an asynchronous resource group.
- Reserved
  Applies only to a synchronous resource group.

ResourceGroupSettingsList
Contains the following information about the resource group:

- ServerName
- Activate
- MaxFactory
- FileTypes

GetResourceGroupList

Retrieves a list of resource groups available to a BIRT iServer. GetResourceGroupList returns two lists, one for asynchronous resource groups and one for synchronous resource groups.

Request schema

```
<xsd:complexType name="GetResourceGroupList">
   <xsd:sequence/>
</xsd:complexType>
```

Response schema

```
<xsd:complexType name="GetResourceGroupListResponse">
   <xsd:sequence>
      <xsd:element name="AsyncResourceGroupList"
         type="typens:ArrayOfResourceGroup"/>
      <xsd:element name="SyncResourceGroupList"
         type="typens:ArrayOfResourceGroup"/>
      <xsd:element name="ViewResourceGroupList"
         type="typens:ArrayOfResourceGroup"/>
   </xsd:sequence>
</xsd:complexType>
```

Response elements

AsyncResourceGroupList
The list of available asynchronous resource groups and the properties of each of those resource groups.

SyncResourceGroupList
The list of available synchronous resource groups and the properties of each of those resource groups.

ViewResourceGroupList
The list of available synchronous resource groups and the properties of each of those resource groups.

GetSavedSearch

Retrieves a saved search.

Request schema

```
<xsd:complexType name="GetSavedSearch">
   <xsd:sequence>
      <xsd:element name="SearchObject"
         type="typens:ObjectIdentifier" />
      <xsd:element name="BasedOnObject"
         type="typens:ObjectIdentifier" />
   </xsd:sequence>
</xsd:complexType>
```

Request elements

SearchObject
The item a search was created on.

BasedOnObject
The object within the search object to search.

Response schema

```
<xsd:complexType name="GetSavedSearchResponse">
   <xsd:sequence>
      <xsd:element name="SelectList"
         type="typens:ArrayOfComponentIdentifier" />
      <xsd:element name="SearchList" type="typens:ArrayOfComponent"
         minOccurs="0" />
   </xsd:sequence>
</xsd:complexType>
```

SelectList
The list of where to search within an object.

SearchList
The items to search for.

GetServerResourceGroupConfiguration

Retrieves information about resource groups available to the specified BIRT iServer.

Request schema

```
<xsd:complexType name="GetServerResourceGroupConfiguration">
   <xsd:sequence>
      <xsd:element name="ServerName" type="xsd:string"/>
```

```
   </xsd:sequence>
</xsd:complexType>
```

Request elements

ServerName
The name of the BIRT iServer from which to retrieve information.

Response schema

```
<xsd:complexType
     name="GetServerResourceGroupConfigurationResponse">
   <xsd:sequence>
      <xsd:element name="ServerResourceGroupSettingList"
         type="typens:ArrayOfServerResourceGroupSetting"/>
   </xsd:sequence>
</xsd:complexType>
```

Response elements

ServerResourceGroupSettingList
Contains the following information about each resource group:

- ResourceGroupName
- Activate
- Type
- MaxFactory
- FileTypes

GetStaticData

Retrieves static types of data from a report. Static data is information within a report that does not change during the run of the report, such as images or other resources.

Request schema

```
<xsd:complexType name="GetStaticData">
   <xsd:sequence>
      <xsd:element name="Object" type="typens:ObjectIdentifier"/>
      <xsd:element name="ViewParameter"
         type="typens:ViewParameter" minOccurs="0"/>
      <xsd:element name="Stream" type="typens:Stream"/>
      <xsd:element name="DownloadEmbedded" type="xsd:boolean"
         default="false" minOccurs="0"/>
   </xsd:sequence>
</xsd:complexType>
```

Request elements

Object
The ID of the object from which to retrieve static data.

ViewParameter
The viewing parameters.

Stream
The stream name and embedded property.

DownloadEmbedded
Specifies whether to send the attachment embedded in the body of the SOAP message or in a separate MIME boundary. If True, the response contains the attachment as embedded data. If False, the attachment is in a separate MIME boundary. The default value is False.

Response schema

```
<xsd:complexType name="GetStaticDataResponse">
   <xsd:sequence>
      <xsd:element name="StaticDataRef" type="typens:Attachment"/>
      <xsd:element name="ConnectionHandle" type="xsd:string"
         minOccurs="0"/>
   </xsd:sequence>
</xsd:complexType>
```

Response elements

StaticDataRef
The details of the attachment.

ConnectionHandle
The ID of the report. Supports viewing a report when the report is already in iServer System. Specified in the SOAP header.

GetStyleSheet

Retrieves the style sheet from a report.

Request schema

```
<xsd:complexType name="GetStyleSheet">
   <xsd:sequence>
      <xsd:element name="Object" type="typens:ObjectIdentifier"/>
      <xsd:element name="ViewParameter"
         type="typens:ViewParameter"/>
      <xsd:element name="DownloadEmbedded" type="xsd:boolean"
         default="false" minOccurs="0"/>
   </xsd:sequence>
</xsd:complexType>
```

Request elements

Object
The ID of the object from which to retrieve the style sheet.

ViewParameter
The viewing parameters.

DownloadEmbedded
Specifies whether to send the attachment embedded in the body of the SOAP message or in a separate MIME boundary. If True, the response contains the attachment as embedded data. If False, the attachment is in a separate MIME boundary. The default value is False.

Response schema

```
<xsd:complexType name="GetStyleSheetResponse">
   <xsd:sequence>
      <xsd:element name="StyleSheetRef" type="typens:Attachment"/>
      <xsd:element name="ConnectionHandle" type="xsd:string"
         minOccurs="0"/>
   </xsd:sequence>
</xsd:complexType>
```

Response elements

StyleSheetRef
The details of the attachment.

ConnectionHandle
The ID of the report. Supports viewing a report when the report is already in iServer System. Specified in the SOAP header.

GetSyncJobInfo

Retrieves information about a synchronous job.

GetSyncJobInfo is available only to a BIRT iServer System administrator. To log in as a BIRT iServer System administrator, use SystemLogin.

Request schema

```
<xsd:complexType name="GetSyncJobInfo">
   <xsd:complexType>
      <xsd:sequence>
         <xsd:element name="ObjectId" type="xsd:string">
         </xsd:element>
      </xsd:sequence>
   </xsd:complexType>
</xsd:element>
```

Request elements

ObjectId
The ID of the synchronous job for which to retrieve information.

Response schema

```
<xsd:complexType name="GetSyncJobInfoResponse">
   <xsd:sequence>
      <xsd:element name="Status">
         <xsd:simpleType>
            <xsd:restriction base="xsd:string">
               <xsd:enumeration value="Pending"/>
               <xsd:enumeration value="Running"/>
               <xsd:enumeration value="Completed"/>
               <xsd:enumeration value="Failed"/>
            </xsd:restriction>
         </xsd:simpleType>
      </xsd:element>
      <xsd:element name="ErrorDescription" type="xsd:string"
         minOccurs="0"/>
```

```
      <xsd:element name="Pending" type="PendingSyncJob"
         minOccurs="0"/>
      <xsd:element name="Running" type="RunningJob" minOccurs="0"/
   </xsd:sequence>
</xsd:complexType>
```

Response elements

Status
The status of the job. Valid values are:

- Pending
- Running
- Completed
- Failed

ErrorDescription
The description of the error. Returned if Status is Failed.

Pending
The properties of the pending synchronous job.

Running
The properties of the running synchronous job.

GetSystemMDSInfo

Retrieves the names and properties of an MDS in a cluster or stand-alone server without authenticating the client. Use GetSystemMDSInfo to route requests to an alternate MDS if the one to which the client connects fails.

Request schema

```
<xsd:complexType name="GetSystemMDSInfo">
   <xsd:sequence>
      <xsd:element name="OnlineOnly" type="xsd:boolean"
         minOccurs="0"/>
   </xsd:sequence>
</xsd:complexType>
```

Request elements

OnlineOnly
If True, information is retrieved only for an online MDS.

Response schema

```
<xsd:complexType name="GetSystemMDSInfoResponse">
   <xsd:sequence>
      <xsd:element name="MDSInfoList"
         type="typens:ArrayOfMDSInfo">
   </xsd:sequence>
</xsd:complexType>
```

Response elements

MDSInfoList
The information about each MDS.

GetSystemPrinters

Retrieves all system printer information on the BIRT iServer to which the user is logged in.

If GetSystemPrinters cannot retrieve the printer information, for example if the printer is temporarily unavailable, and you specified the PrinterName, the response contains empty or incomplete attributes. If GetSystemPrinters cannot retrieve the printer information and you did not specify PrinterName, a SOAP fault is generated.

Request schema

```
<xsd:complexType name="GetSystemPrinters">
   <xsd:sequence>
      <xsd:element name="PrinterName" type="xsd:string"
         minOccurs="0"/>
      <xsd:element name="GetAllPaperSizes" type="xsd:boolean"
         minOccurs="0"/>
   </xsd:sequence>
</xsd:complexType>
```

Request elements

PrinterName
The name of the printer for which to retrieve information. If not specified, information is retrieved for all printers configured for the volume.

GetAllPaperSizes
Indicates whether to retrieve all available paper sizes for the printer. If True, all paper sizes are retrieved. If False, only a subset of paper sizes are retrieved. The default value is False.

Response schema

```
<xsd:complexType name="GetSystemPrintersResponse">
   <xsd:sequence>
      <xsd:element name="Printers" type="typens:ArrayOfPrinter"/>
   </xsd:sequence>
</xsd:complexType>
```

Response elements

Printers
The printer information.

GetSystemServerList

Retrieves the list of BIRT iServers and their states.

GetSystemServerList can retrieve information about cluster servers and online stand-alone servers. GetSystemServerList cannot retrieve information about stand-alone servers that are offline.

GetSystemServerList is available only to a BIRT iServer System administrator. To log in as a BIRT iServer System administrator, use SystemLogin.

Request schema

```
<xsd:complexType name="GetSystemServerList"/>
```

Response schema

```
<xsd:complexType name="GetSystemServerListResponse">
   <xsd:sequence>
      <xsd:element name="ServerList"
         type="typens:ArrayOfServerInformation"/>
   </xsd:sequence>
</xsd:complexType>
```

Response elements

ServerList
Contains the following information about the server:

- Server name
- Server state
- Error code of a failed server
- Error description of a failed server

GetSystemVolumeNames

Retrieves the names of volumes in a stand-alone server or cluster system without authentication. You can retrieve the names of all volumes or only online volumes.

Use GetSystemVolumeNames to populate a Login page with volume names.

Request schema

```
<xsd:complexType name="GetSystemVolumeNames">
   <xsd:sequence>
      <xsd:element name="OnlineOnly" type="xsd:boolean"/>
   </xsd:sequence>
</xsd:complexType>
```

Request elements

OnlineOnly
Specifies whether names of all volumes or only online volumes are retrieved. If True, only names of online volumes are retrieved.

Response schema

```
<xsd:complexType name="GetSystemVolumeNamesResponse">
   <xsd:sequence>
      <xsd:element name="SystemName" type="xsd:string"/>
      <xsd:element name="SystemRestart" type="xsd:boolean"/>
      <xsd:element name="VolumeNameList"
         type="typens:ArrayOfString"/>
      <xsd:element name="SystemDefaultVolume" type="xsd:string"/>
      <xsd:element name="ServerVersionInformation"
         type="typens:ServerVersionInformation"/>
      <xsd:element name="ExpirationDate" type="xsd:string"/>
      <xsd:element name="DaysToExpiration" type="xsd:string"
         minOccurs="0"/
```

```
      <xsd:element name="NodeLockViolation" type="xsd:boolean"
        minOccurs="0"/>
   </xsd:sequence>
</xsd:complexType>
```

Response elements

SystemName
The name of the system.

SystemRestart
Specifies whether a system restart is required.

VolumeNameList
The list of volume names.

SystemDefaultVolume
The name of the default volume on a cluster server. Returns an empty value if no volume is specified as the default volume or if OnlineOnly is set to True and the default volume is offline.

ServerVersionInformation
Contains the following information about the server version:

- ServerVersion
- ServerBuild
- OSVersion

ExpirationDate
The expiration date. Returns NONE if the system license key does not expire.

DaysToExpiration
The number of days remaining until the System License Key expires.

NodeLockViolation
Specifies whether a licensing node-lock violation exists. The default value is False.

GetTOC

Returns the report's table of contents in XMLDisplay format.

Request schema

```
<xsd:complexType name="GetTOC">
   <xsd:sequence>
      <xsd:element name="Object" type="typens:ObjectIdentifier"/>
      <xsd:element name="ViewParameter"
        type="typens:ViewParameter"/>
      <xsd:element name="TocNodeId" type="xsd:string"/>
      <xsd:element name="Depth" type="xsd:string"/>
      <xsd:element name="DownloadEmbedded" type="xsd:boolean"
```

```
        default="false"
    </xsd:sequence>
</xsd:complexType>
```

Request elements

Object
The ID of the object from which to retrieve the table of contents.

ViewParameter
The viewing parameters. To support users clicking a point in a chart to navigate to different report sections, set the ViewParameter Format to ImageMapURL.

TocNodeId
The ID of the table of contents node.

Depth
The depth of the table of contents.

DownloadEmbedded
Specifies whether to send the attachment embedded in the body of the SOAP message or in a separate MIME boundary. If True, the response contains the attachment as embedded data. If False, the attachment is in a separate MIME boundary. The default value is False.

Response schema

```
<xsd:complexType name="GetTOCResponse">
   <xsd:sequence>
      <xsd:element name="TocRef" type="typens:Attachment"/>
      <xsd:element name="ConnectionHandle" type="xsd:string"
         minOccurs="0"/>
   </xsd:sequence>
</xsd:complexType>
```

Response elements

TocRef
The details of the attachment such as contentId, contentType, contentLength, contentEncoding, locale, and contentData.

ConnectionHandle
The ID of the report. Supports viewing a report when the report is already in iServer System. Specified in the SOAP header.

GetUserLicenseOptions

Retrieves the specified user's license options.

Request schema

```
<xsd:complexType name="GetUserLicenseOptions">
   <xsd:sequence>
      <xsd:choice>
         <xsd:element name="UserId" type="xsd:string"/>
         <xsd:element name="UserName" type="xsd:string"/>
      </xsd:choice>
   </xsd:sequence>
</xsd:complexType>
```

Request elements

UserId
The ID of the user for whom to retrieve the printer settings. Specify either UserId or UserName.

UserName
The name of the user for whom to retrieve the printer settings. Specify either UserName or UserId.

Response schema

```
<xsd:complexType name="GetUserLicenseOptionsResponse">
   <xsd:sequence>
      <xsd:element name="LicenseOptions"
         type="typens:ArrayOfString"/>
   </xsd:sequence>
</xsd:complexType>
```

Response elements

LicenseOptions
The license options.

GetUserPrinterOptions

Retrieves the specified user's printer settings.

If GetUserPrinterOptions cannot retrieve the printer information, for example if the printer is temporarily unavailable, and you specified the PrinterName, the response contains empty or incomplete attributes. If GetUserPrinterOptions cannot retrieve the printer information and you did not specify PrinterName, a SOAP fault is generated.

Request schema

```
<xsd:complexType name="GetUserPrinterOptions">
   <xsd:sequence>
      <xsd:choice>
         <xsd:element name="UserId" type="xsd:string"/>
         <xsd:element name="UserName" type="xsd:string"/>
      </xsd:choice>
      <xsd:element name="PrinterName" type="xsd:string"
         minOccurs="0"/>
   </xsd:sequence>
</xsd:complexType>
```

Request elements

UserId
The ID of the user for whom to retrieve the printer settings. Specify either UserId or UserName.

UserName
The name of the user for whom to retrieve the printer settings. Specify either UserName or UserId.

PrinterName
The name of the printer for which to retrieve the settings.

Response schema

```
<xsd:complexType name="GetUserPrinterOptionsResponse">
   <xsd:sequence>
      <xsd:element name="PrinterOptions"
         type="typens:ArrayOfPrinterOption"/>
   </xsd:sequence>
</xsd:complexType>
```

Response elements

PrinterOptions
The printer settings.

GetVolumeProperties

Retrieves properties of a specific volume.

Request schema

```
<xsd:complexType name="GetVolumeProperties">
   <xsd:sequence>
      <xsd:element name="ResultDef" type="typens:ArrayOfString">
      </xsd:element>
   </xsd:sequence>
</xsd:complexType>
```

Request elements

ResultDef
The properties to retrieve. By default, VolumeProperties are always returned. In addition, you can specify the following properties:

- ArchiveLibrary
- AutoArchiveSchedule
- ExternalUserPropertyNames
- OnlineBackupSchedule
- TranslatedRoleNames
- PrinterOptions
- VolumeProperties

Response schema

```
<xsd:complexType name="GetVolumePropertiesResponse">
   <xsd:sequence>
      <xsd:element name="VolumeProperties" type="typens:Volume"/>
      <xsd:element name="TranslatedRoleNames"
         type="typens:ExternalTranslatedRoleNames" minOccurs="0"/>
      <xsd:element name="ExternalUserPropertyNames"
         type="typens:ArrayOfString" minOccurs="0"/>
      <xsd:element name="PrinterOptions"
         type="typens:ArrayOfPrinterOptions" minOccurs="0"/>
      <xsd:element name="AutoArchiveSchedule"
         type="typens:JobSchedule" minOccurs="0"/>
      <xsd:element name="ArchiveLibrary" type="xsd:string"
         minOccurs="0"/>
      <xsd:element name="ArchiveServiceCmd" type="xsd:string"
         minOccurs="0"/>
      <xsd:element name="EventOptions" type="typens:EventOptions"
         minOccurs="0"/>
      <xsd:element name="LicenseOptions"
         type="typens:ArrayOfLicenseOption" minOccurs="0"/>
   </xsd:sequence>
</xsd:complexType>
```

Response elements

VolumeProperties
The volume properties.

TranslatedRoleNames
The translated role names.

ExternalUserPropertyNames
The external user properties.

PrinterOptions
The printer options.

AutoArchiveSchedule
The autoarchive schedule.

ArchiveLibrary
The name of the archive application for the Encyclopedia volume.

ArchiveServiceCmd
The archive service command for the Encyclopedia volume.

LicenseOptions
The license options for the Encyclopedia volume.

Login

Authenticates a user to the iServer System.

Request schema

```
<xsd:complexType name="Login">
   <xsd:sequence>
      <xsd:element name="User" type="xsd:string"/>
      <xsd:element name="Password" type="xsd:string"
         minOccurs="0"/>
      <xsd:element name="EncryptedPwd" type="xsd:string"
         minOccurs="0"/>
      <xsd:element name="Credentials" type="xsd:base64Binary"
         minOccurs="0"/>
      <xsd:element name="Domain" type="xsd:string" minOccurs="0"/>
      <xsd:element name="UserSetting" type="xsd:boolean"
         minOccurs="0"/>
      <xsd:element name="ValidateRoles" type="typens:ArrayOfString"
         minOccurs="0"/>
      <xsd:element name="RunAsUser" type="xsd:string"
         minOccurs="0"/>
   </xsd:sequence>
</xsd:complexType>
```

Request elements

User
The name of the user to log in.

Password
The password of the user to log in. You must specify either Password or Credentials.

EncryptedPwd
The password in encrypted format.

Credentials
Extended credentials data. Used for Report Server Security Extension (RSSE) integration. You must specify Either Credentials or Password.

Domain
The Encyclopedia volume to which to log in. In Release 11, the Login message must specify the Encyclopedia volume name using TargetVolume in the SOAP header and Domain in the SOAP message body.

UserSetting
Specifies whether the response includes detailed user information. If True, the response includes all user attributes. If False, the response does not include detailed user information. The default value is False.

ValidateRole
Checks whether the user has the specified roles.

RunAsUser
Specifies the user name in the run-time environment.

Response schema

```
<xsd:complexType=" LoginResponse">
   <xsd:sequence>
      <xsd:element name="AuthId" type="xsd:string"/>
      <xsd:element name="AdminRights" minOccurs="0">
         <xsd:simpleType>
            <xsd:restriction base="xsd:string">
               <xsd:enumeration value="Administrator"/>
               <xsd:enumeration value="Operator"/>
            </xsd:restriction>
         </xsd:simpleType>
      </xsd:element>
      <xsd:element name="User" type="typens:User" minOccurs="0"/>
      <xsd:element name="FeatureOptions"
         type="typens:ArrayOfString" minOccurs="0"/>
      <xsd:element name="ValidRoles" type="typens:ArrayOfString"
         minOccurs="0"/>
   </xsd:sequence>
</xsd:complexType>
```

Response elements

AuthId
The system-generated, encrypted, and authenticated token that the application uses in all subsequent requests.

AdminRights
Returned if the user has administrator rights.

User
All user attributes except the user's password.

FeatureOptions
The features available to the user:

- ReportGeneration
  e.Report Option.
- SpreadsheetGeneration
  e.Spreadsheet Option.
- e.Analysis
  e.Analysis Option.
- PageSecureViewing
  Page Level Security Option.

- ActuateQuery
  Query Option.

ValidRoles
The user's roles from the ValidateRoles list. Does not return the user's roles that ValidateRoles does not specify. For example, if ValidateRoles specifies Sales, Marketing, and Engineering and the user has Sales and Accounting roles, the response contains only Sales.

MoveFile

Moves files or folders to a new location. To move a single file or folder, specify Name or Id. To move a list of files or folders, specify NameList or IdList. To move files or folders that match the specified conditions, specify Search.

Request schema

```
<xsd:complexType name="MoveFile">
   <xsd:sequence>
      <xsd:element name="Target" type="xsd:string"/>
      <xsd:choice minOccurs="0">
         <xsd:element name="WorkingFolderName" type="xsd:string"/>
         <xsd:element name="WorkingFolderId" type="xsd:string"/>
      </xsd:choice>
      <xsd:element name="Recursive" minOccurs="0"/>
      <xsd:choice>
         <xsd:element name="Search" type="typens:FileSearch"/>
         <xsd:element name="IdList" type="typens:ArrayOfString"/>
         <xsd:element name="NameList" type="typens:ArrayOfString"/>
         <xsd:element name="Id" type="xsd:string"/>
         <xsd:element name="Name" type="xsd:string"/>
      </xsd:choice>
      <xsd:element name="ReplaceExisting" type="xsd:boolean"
         minOccurs="0"/>
      <xsd:element name="MaxVersions" type="xsd:long"
         minOccurs="0"/>
      <xsd:element name="LatestVersionOnly" type="xsd:Boolean"
         minOccurs="0"/>
   </xsd:sequence>
</xsd:complexType>
```

Request elements

Target
The new location for the file or folder. The following rules apply:

- If Target is a file, the operation fails if the source contains a folder.
- If the source is a folder and a folder with the same name exists in the target location, the operation fails.

- If the source is a file and a file with an identical name exists in the target location, the existing file in the target location is versioned or replaced, depending on the setting of the ReplaceExisting tag. If the existing file has any dependencies, the file is not replaced regardless of the ReplacedExisting setting.
- If Target is a folder that does not exist, a folder is created.

WorkingFolderName
The name of the working folder of the file or folder to move. Specify either WorkingFolderName or WorkingFolderId.

WorkingFolderId
The ID of the working folder of the file or folder to move. Specify either WorkingFolderId or WorkingFolderName.

Recursive
Specifies whether to search subfolders. If True, the search includes subfolders. The default value is False.

Search
The search condition that specifies which folders or files to move.

IdList
The list of file or folder IDs to move. Specify either IdList or NameList.

NameList
The list of file or folder names to move. Specify either NameList or IdList.

Id
The ID of the single file or folder to move. Specify either Id or Name.

Name
The name of the single file or folder to move. Specify either Name or Id.

ReplaceExisting
If True, the existing file, if one exists, is replaced. If the existing file has any dependencies, it is not replaced. If False or the existing file has any dependencies, the file is versioned. The default value is True.

MaxVersions
The maximum number of versions to create. MaxVersions applies only if a file is moved. If a folder is moved, MaxVersions is ignored.

LatestVersionOnly
Specifies whether all versions or only the latest version of the file is moved. Used only when a Search tag is specified. If True, only the latest version of the file is moved. The default value is False.

ODBOTunnel

Opens a connection to an OLAP server for ODBO API function.

Request schema

```
<xsd:complexType name="ODBOTunnel">
   <xsd:sequence>
      <xsd:element name="ODBORequest" type="xsd:base64Binary" />
      <xsd:element name="RequestConnectionHandle"
         type="xsd:boolean"
         minOccurs="0" />
   </xsd:sequence>
</xsd:complexType>
```

Request elements

OBDORequest
The OBDORequest

RequestConnectionHandle
A flag indicating whether a connection handle, or session ID for the object, is to be returned.

Response schema

```
<xsd:complexType name="ODBOTunnelResponse">
   <xsd:sequence>
      <xsd:element name="ODBOResponse" type="typens:Attachment"
         minOccurs="0" />
      <xsd:element name="ConnectionHandle" type="xsd:string"
         minOccurs="0" />
   </xsd:sequence>
</xsd:complexType>
```

Response elements

ODBOResponse
The response from the ODBO API.

ConnectionHandle
The handle to the ODBO connection.

OpenInfoObject

Opens an information object, returning handles to the object in its response.

Request schema

```
<xsd:complexType name="OpenInfoObject">
   <xsd:sequence>
      <xsd:choice>
         <xsd:element name="ObjectName" type="xsd:string" />
         <xsd:element name="ObjectId" type="xsd:string" />
      </xsd:choice>
      <xsd:element name="Query" type="typens:Query"
         minOccurs="0"/>
```

```
      <xsd:element name="DownloadEmbedded" type="xsd:boolean"
         minOccurs="0" />
      <xsd:element name="ReturnDataInBlocks" type="xsd:boolean"
         minOccurs="0" />
      <xsd:element name="FetchSize" type="xsd:long"
         minOccurs="0"/>
      <xsd:element name="Format" type="typens:InfoObjectDataFormat"
         minOccurs="0" />
      <xsd:element name="DownloadDoubleAsBinary" type="xsd:boolean"
         minOccurs="0" />
   </xsd:sequence>
</xsd:complexType>
```

Request elements

ObjectName
The name of the information object.

ObjectId
The ID of the information object.

Query
The query name.

ReturnDataInBlocks
A flag indicating whether to return data in blocks as specified for the database. If ReturnDataInBlocks is false, FetchSize is set to 0.

FetchSize
The maximum number of records to retrieve and return in a result set. The default value is 500.

Format
The format of the information object.

DownloadDoubleAsBinary
A flag indicating whether to download double values in binary format.

Response schema

```
<xsd:complexType name="OpenInfoObjectResponse">
   <xsd:sequence>
      <xsd:element name="DataFetchHandle" type="xsd:string" />
      <xsd:element name="ConnectionHandle" type="xsd:string"
         minOccurs="0" />
   </xsd:sequence>
</xsd:complexType>
```

Response elements

DataFetchHandle
The handle to the information object.

ConnectionHandle
The ID of the object. Supports viewing an item already in the iServer System.

Ping

Tests whether a specific component of BIRT iServer is operational and retrieves other diagnostic information about the component.

Request schema

```
<xsd:complexType name="Ping">
   <xsd:sequence>
      <xsd:element name="Destination">
         <xsd:simpleType>
            <xsd:restriction base="xsd:string">
               <xsd:enumeration value="MDS"/>
               <xsd:enumeration value="EE"/>
               <xsd:enumeration value="FS"/>
               <xsd:enumeration value="VS"/>
               <xsd:enumeration value="OSD"/>
               <xsd:enumeration value="AIS"/>
               <xsd:enumeration value="ACS"/>
            </xsd:restriction>
         </xsd:simpleType>
      </xsd:element>
      <xsd:element name="Action" minOccurs="0">
         <xsd:simpleType>
            <xsd:restriction base="xsd:string">
               <xsd:enumeration value="Echo"/>
               <xsd:enumeration value="ReadFile"/>
               <xsd:enumeration value="WriteFile"/>
               <xsd:enumeration value="Connect"/>
            </xsd:restriction>
         </xsd:simpleType>
      </xsd:element>
      <xsd:element name="Mode" minOccurs="0">
         <xsd:simpleType>
            <xsd:restriction base="xsd:string">
               <xsd:enumeration value="Normal"/>
               <xsd:enumeration value="Trace"/>
               <xsd:enumeration value="Concise"/>
            </xsd:restriction>
         </xsd:simpleType>
      </xsd:element>
      <xsd:element name="Server" type="xsd:string" minOccurs="0"/>
      <xsd:element name="ProcessID" type="xsd:string"
         minOccurs="0"/>
      <xsd:element name="FileName" type="xsd:string"
         minOccurs="0"/>
      <xsd:element name="PartitionName" type="xsd:string"
         minOccurs="0"/>
```

```
      <xsd:element name="NumBytes" type="xsd:long"
        minOccurs="0"/>
      <xsd:element name="ConnectionProperties"
        type="typens:ArrayOfParameterValue" minOccurs="0"/>
      <xsd:element name="Payload" type="xsd:string" minOccurs="0"/>
    </xsd:sequence>
  </xsd:complexType>
```

Request elements

Destination
The component to test. Valid values are

- MDS
  A Message Distribution Service.
- EE
  An Encyclopedia engine.
- FS
  A Factory service.
- VS
  A View service.
- OSD
  An Open Server driver.
- AIS
  An Actuate Integration service.
- ACS
  An Actuate Caching service.

Action
The optional action to take. Valid values are:

- Echo
  Echoes the data specified in Payload.
- ReadFile
  Opens the specified Encyclopedia volume file, reads the file's contents, then closes the file. Applies only if the value of Destination is EE, FS, or VS. Ping returns the timing of the read operation. Specify the file name in FileName.
- WriteFile
  Creates a temporary file on a partition, writes a specified number of bytes to the file, closes the file, then deletes the file. Applies only if the value of Destination is EE or FS. Ping returns the timing information for each step. Specify the partition in PartitionName. Specify the number of bytes to read in NumBytes.

- Connect
  Connects to a data source. Specify the connection parameters in ConnectionProperties.

Mode
The level of detail to return. Valid values are:

- Normal
  Returns the names of components in the test path and the timestamps of the request entering and leaving each component. This is the default mode.
- Trace
  Returns the timestamp of the request entering and leaving major subcomponents of the component being tested.
- Concise
  Returns the elapsed time between a component's receipt of the request and the time the component sends a reply.

Server
Specifies which instance of a Factory service or View service to test. Applies only if the value of Destination is FS or VS. Use Server in conjunction with the ProcessID element. To test all available instances of the Factory or View service, specify an asterisk (*). If not specified, the BIRT iServer load balancing mechanism allocates an available instance of the requested service to respond to the request.

ProcessID
Specifies the process ID of the Factory or View service to test. Use in conjunction with the Server element. Applies only if the value of Destination is FS or VS.

FileName
If the value of Action is ReadFile, indicates the Encyclopedia volume file to read. If the value of Destination is OSD, specifies the executable file to prepare for execution.

PartitionName
Specifies the name of the partition on which to create the temporary file. Applies only if the value of Action is WriteFile.

NumBytes
Specifies the number of bytes to read or write. Applies only if the value of Action is ReadFile or WriteFile. If NumBytes is not specified or 0, the default value of 10 KB is used.

ConnectionProperties
An array of property name and value pairs that specify the parameter values for establishing a data source connection. Applies only if the value of Action is Connect. To establish a connection, you must specify a property with a name

DBType and a value that specifies the type of database. You must also specify any other properties that the specific database interface requires. Table 8-3 lists the valid property names.

Table 8-3 Valid connection properties

Property name	Applicable database interface	Description
DBType	All	The type of database. Valid values are DB2, Informix, MSSQL ODBC, Oracle, Sybase, Progress, Progress SQL92
DllPath	DB2, Informix, MSSQL, ODBC, Oracle, Progress, Progress SQL92, Sybase	The name of the DLL providing the client database.
UserName	DB2, Informix, MSSQL, ODBC, Oracle, Progress, Progress SQL92, Sybase	The database user name.
Password	DB2, Informix, MSSQL, ODBC, Oracle, Progress, Progress SQL92, Sybase	The database password.
DataSource	DB2, ODBC	The name of the data source.
ConnectionString	ODBC	Any additional text that ODBC needs to establish the connection.
HostString	Oracle	The Oracle server name for the connection.
DatabaseEnvironment	Informix	The name of the database server, the database, or both database server and database to which to connect.
DatabaseList	Progress	The name of the database.
StartUpParameters	Progress	The Progress Open Interface Broker parameters.
Database	Progress SQL92	The name of the database.
Host	Progress SQL92	The host computer name for a remote database. Not used for a local database. Required if you are connecting to a database running on a database server.

Table 8-3 Valid connection properties (continued)

Property name	Applicable database interface	Description
ServiceOrPort	Progress SQL92	The database service name or port number on the database server. Not used for a local database. The port number is an unsigned 16-bit integer in the range 1–65535.

Payload
Specifies the payload data. Applies only if the value of Action is Echo. Payload is binary data attached to the request.

Response schema

```
<xsd:complexType name="PingResponse">
   <xsd:sequence>
      <xsd:element name="Reply" type="xsd:string"/>
      <xsd:element name="Payload" type="xsd:string" minOccurs="0"/>
   </xsd:sequence>
</xsd:complexType>
```

Response elements

Reply
The Ping reply, in plain text format. The information depends on the value of Mode.

Payload
If a value is specified for Payload in the request, the payload data as a string.

PrintReport

Prints a report. PrintReport requests are always executed in asynchronous mode.

The report prints to the specified printer. If a printer is not specified, the report prints to the user's default printer.

You can use PrintReport to print an e.Report document. PrintReport does not support printing a BIRT document. Alternatively, use SubmitJob to schedule design execution and printing of a document, including a BIRT document.

Request schema

```
<xsd:complexType name="PrintReport">
   <xsd:sequence>
      <xsd:element name="JobName" type="xsd:string"/>
      <xsd:element name="Priority" type="xsd:int"/>
         <xsd:choice>
            <xsd:element name="InputFileName" type="xsd:string"/>
            <xsd:element name="InputFileId" type="xsd:string"/>
         </xsd:choice>
         <xsd:element name="Schedules" type="typens:JobSchedule"
```

```
            minOccurs="0"/>
          <xsd:element name="PrinterOptions"
            type="typens:JobPrinterOptions" minOccurs="0"/>
          <xsd:element name="NotifyUsersByName"
            type="typens:ArrayOfString" minOccurs="0"/>
          <xsd:element name="NotifyGroupsByName"
            type="typens:ArrayOfString" minOccurs="0"/>
          <xsd:element name="NotifyChannelsByName"
            type="typens:ArrayOfString" minOccurs="0"/>
          <xsd:element name="NotifyUsersById"
            type="typens:ArrayOfString" minOccurs="0"/>
          <xsd:element name="NotifyGroupsById"
            type="typens:ArrayOfString" minOccurs="0"/>
          <xsd:element name="NotifyChannelsById"
            type="typens:ArrayOfString"minOccurs="0"/>
          <xsd:element name="SendSuccessNotice"
            type="xsd:boolean" minOccurs="0"/>
          <xsd:element name="SendFailureNotice" type="xsd:boolean"
            minOccurs="0"/>
          <xsd:element name="SendEmailForSuccess"
            type="xsd:boolean" minOccurs="0"/>
          <xsd:element name="SendEmailForFailure"
            type="xsd:boolean" minOccurs="0"/>
          <xsd:element name="OverrideRecipientPref"
            type="xsd:boolean"
          <xsd:element name="RecordSuccessStatus"
            type="xsd:boolean" minOccurs="0"/>
          <xsd:element name="RecordFailureStatus"
            type="xsd:boolean" minOccurs="0"/>
          <xsd:element name="RetryOptions"
            type="typens:RetryOptions" minOccurs="0"/>
      </xsd:sequence>
    </xsd:complexType>
```

Request elements

JobName
The job name.

Priority
The job priority. Limited by the user's Max job priority setting.

InputFileName
The name of the file to print. Specify either InputFileName or InputFileID.

InputFileId
The ID of the file to print. Specify either InputFileID or InputFileName.

Schedules
The schedule for the print job. If not specified, the print request is sent immediately.

PrinterOptions
The job printer settings. The printer settings have the following precedence:

- Job printer settings
- User printer settings
- System printer settings

NotifyUsersByName
The names of users to receive job completion notice. Specify either NotifyUsersByName or NotifyUsersById.

NotifyGroupsByName
The names of groups to receive the job completion notice. Specify either NotifyGroupsByName or NotifyGroupsById.

NotifyChannelsByName
The names of channels to receive the job completion notice. Specify either NotifyChannelsByName or NotifyChannelsById.

NotifyUsersById
The IDs of users to receive the job completion notice. Specify either NotifyUsersById or NotifyUsersByName.

NotifyGroupsById
The IDs of groups to receive the job completion notice. Specify either NotifyGroupsById or NotifyGroupsByName.

NotifyChannelsById
The IDs of channels to receive job completion notice. Specify either NotifyChannelsById or NotifyUsersByName.

SendSuccessNotice
Specifies whether notices are sent if report printing succeeds.

SendFailureNotice
Specifies whether notices are sent if report printing fails.

SendEmailForSuccess
Specifies whether an email is sent when report printing succeeds.

SendEmailForFailure
Specifies whether an email is sent when report printing fails.

OverrideRecipientPref
Specifies whether recipient preferences are overridden.

RecordSuccessStatus
Specifies whether the job status is kept if report printing succeeds.

RecordFailureStatus
Specifies whether the job status is kept if report printing fails.

RetryOptions
Specifies how to retry printing if the previous attempt failed. Used only if Retryable is specified.

Response schema

```
<xsd:complexType name="PrintReportResponse">
   <xsd:sequence>
      <xsd:element name="JobId" type="xsd:string"/>
   </xsd:sequence>
</xsd:complexType>
```

Response elements

JobId
The ID of the print job. Returned after the job is created.

SaveSearch

Saves the results of a search.

Request schema

```
<xsd:complexType name="SaveSearch">
   <xsd:sequence>
      <xsd:element name="BasedOnFile"
         type="typens:ObjectIdentifier" />
      <xsd:element name="SelectList"
         type="typens:ArrayOfComponentIdentifier" />
      <xsd:element name="SearchList" type="typens:ArrayOfComponent"
         minOccurs="0" />
      <xsd:element name="SearchFile" type="typens:NewFile" />
   </xsd:sequence>
</xsd:complexType>
```

Request elements

BasedOnFile
The file the search takes place in.

SelectList
The list of where to search within the file.

SearchList
The items to search for.

SearchFile
The file the search is saved to.

Response schema

```
<xsd:complexType name="SaveSearchResponse">
   <xsd:sequence>
      <xsd:element name="FileId" type="xsd:string" />
   </xsd:sequence>
</xsd:complexType>
```

Response elements

FileId
The ID of the saved file.

SaveTransientReport

Saves a report to a specified file.

Request schema

```
<xsd:complexType name="SaveTransientReport">
   <xsd:sequence>
      <xsd:element name="Object" type="typens:ObjectIdentifier"/>
      <xsd:element name="NewFile" type="typens:NewFile"/>
   </xsd:sequence>
</xsd:complexType>
```

Request elements

Object
The object identifier of the report.

NewFile
The file the report is saved in.

Response schema

```
<xsd:complexType name="SaveTransientReportResponse">
   <xsd:sequence>
      <xsd:element name="FileId" type="xsd:string"/>
   </xsd:sequence>
</xsd:complexType>
```

Response elements

FileId
File ID of created report file.

SearchReport

Searches a report for the specified criteria.

Request schema

```
<xsd:complexType name="SearchReport">
   <xsd:sequence>
      <xsd:element name="Object" type="typens:ObjectIdentifier"/>
      <xsd:element name="ViewParameter"
         type="typens:ViewParameter"/>
      <xsd:choice minOccurs="0">
         <xsd:element name="SearchReportByNameList"
            type="typens:SearchReportByNameList"/>
         <xsd:element name="SearchReportByIdList"
            type="typens:SearchReportByIdList"/>
         <xsd:element name="SearchReportByIdNameList"
            type="typens:SearchReportByIdNameList"/>
      </xsd:choice>
```

```
      <xsd:element name="Range" type="typens:Range"
        minOccurs="0"/>
      <xsd:element name="DownloadEmbedded" type="xsd:boolean"
        default="false" minOccurs="0"/>
      <xsd:element name="OutputProperties"
        type="typens:SearchResultProperties" minOccurs="0"/>
    </xsd:sequence>
</xsd:complexType>
```

Request elements

Object
The ID of the object to search.

ViewParameter
The viewing parameters. SearchReport uses a different set of formats than other operations that use the ViewParameter data type. Valid formats are:

- ANALYSIS
  Available only if the e.Analysis Option is installed. To extract the result with the ANALYSIS format, you must send the browser UserAgent to the cube builder. Microsoft Internet Explorer is the default UserAgent.
- CSV
- EXCEL
- TSV
- UNCSV
- UNTSV
- XMLDisplay

Optionally, you can specify the UserAgent. UserAgent specifies which browser to use for report viewing.

Range
The range containing the first and last record number. The range starts at 0.

DownloadEmbedded
Specifies whether to send the attachment embedded in the body of the SOAP message or in a separate MIME boundary. If True, the response contains the attachment as embedded data. If False, the attachment is in a separate MIME boundary. The default value is False.

OutputProperties
Applies only if Format is CSV. The properties to include in the search result are

- EnableColumnHeaders
  If True, column headers are included in the search result. The default value is True.

- UseQuoteDelimiter

  If True, each data item in the search result is enclosed in double quotes (" "). The default value is True.

Response schema

```
<xsd:complexType name="SearchReportResponse">
   <xsd:sequence>
      <xsd:element name="SearchRef" type="typens:Attachment"/>
      <xsd:element name="ConnectionHandle" type="xsd:string"
         minOccurs="0"/>
      <xsd:element name="ReportType" minOccurs="0">
         <xsd:simpleType>
            <xsd:restriction base="xsd:string">
               <xsd:enumeration value="ActuateBasic"/>
               <xsd:enumeration value="ActuateBasicInfoObj"/>
               <xsd:enumeration value="InfomationObject"/>
            </xsd:restriction>
         </xsd:simpleType>
      </xsd:element>
   </xsd:sequence>
</xsd:complexType>
```

Response elements

SearchRef
The details of the attachment such as contentId, contentType, contentLength, contentEncoding, locale, and contentData.

ConnectionHandle
The ID of the report. Supports viewing a report when the report is already in iServer System. Specified in the SOAP header.

ReportType
The report type. Valid report types are:

- ActuateBasic
- ActuateBasicInfoObj
- InformationObject

SelectChannels

Searches channels for specified information.

To search a single channel, specify Name or Id. To search a list of channels, specify NameList or IdList. To search channels matching the specified conditions, specify Search.

Request schema

```
<xsd:complexType name="SelectChannels">
   <xsd:sequence>
      <xsd:element name="ResultDef" type="typens:ArrayOfString"/>
         <xsd:choice>
            <xsd:element name="Search"
               type="typens:ChannelSearch"/>
            <xsd:element name="NameList"
               type="typens:ArrayOfString"/>
            <xsd:element name="IdList" type="typens:ArrayOfString"/>
            <xsd:element name="Name" type="xsd:string"/>
            <xsd:element name="Id" type="xsd:string"/>
         </xsd:choice>
   </xsd:sequence>
</xsd:complexType>
```

Request elements

ResultDef
The properties to retrieve.

Search
The search conditions. If conditions apply to multiple fields, use ConditionArray.

NameList
The list of channel names to search. Specify either NameList or IdList.

IdList
The list of channel IDs to search. Specify either IdList or NameList.

Name
The name of a single channel to search. Specify either Name or Id.

Id
The ID of the single channel to search. Specify either Id or Name.

Response schema

```
<xsd:complexType name="SelectChannelsResponse">
   <xsd:sequence>
      <xsd:element name="Channels" type="typens:ArrayOfChannel"/>
      <xsd:element name="FetchHandle" type="xsd:string"
         minOccurs="0"/>
      <xsd:element name="TotalCount" type="xsd:long"\
         minOccurs="0"/>
   </xsd:sequence>
</xsd:complexType>
```

Response elements

Channels
The selected channels.

FetchHandle
Indicates that the number of items in the result set exceeds the FetchSize limit.

TotalCount
The number of entries in the search result set.

SelectFiles

Retrieves information about a specified file.

To retrieve a single file or folder, specify Name or Id. To retrieve a list of files or folders, specify NameList or IdList. To search all file or folders that match specific condition, specify Search.

Request schema

```
<xsd:complexType name="SelectFiles">
   <xsd:sequence>
      <xsd:choice minOccurs="0">
         <xsd:element name="WorkingFolderId" type="xsd:string"/>
         <xsd:element name="WorkingFolderName"
               type="xsd:string"/>
      </xsd:choice>
      <xsd:element name="Recursive" type="xsd:boolean"
         minOccurs="0"/>
      <xsd:element name="LatestVersionOnly" type="xsd:boolean"
         minOccurs="0"/>
      <xsd:element name="ResultDef" type="typens:ArrayOfString"/>
      <xsd:choice>
         <xsd:element name="Search" type="typens:FileSearch"/>
         <xsd:element name="NameList"
            type="typens:ArrayOfString"/>
         <xsd:element name="IdList" type="typens:ArrayOfString"/>
         <xsd:element name="Name" type="xsd:string"/>
         <xsd:element name="Id" type="xsd:string"/>
      </xsd:choice>
      <xsd:element name="Content" minOccurs="0">
         <xsd:simpleType>
            <xsd:restriction base="xsd:string">
               <xsd:enumeration value="Embed"/>
               <xsd:enumeration value="Attach"/>
            </xsd:restriction>
         </xsd:simpleType>
      </xsd:element>
   </xsd:sequence>
</xsd:complexType>
```

Request elements

WorkingFolderId
The ID of the working folder in which to search for the file. Specify either WorkingFolderId or WorkingFolderName.

WorkingFolderName
The absolute path and the name of the working folder in which to search for the file. Specify either WorkingFolderName or WorkingFolderId.

Recursive
Specifies whether to search subfolders. If True, the search includes subfolders. The default value is False.

LatestVersionOnly
Specifies whether to search all versions of the file. If True, the search includes only the latest version. The default value is False.

ResultDef
The properties to retrieve.

Search
The search condition. If conditions apply to multiple fields, use ConditionArray.

NameList
The name of the file or folder list to retrieve. Specify either IdList or NameList.

IdList
The ID of the file or folder list to retrieve. Specify either IdList or NameList.

Name
The name of a single file or folder to retrieve. Specify either Name or Id.

Id
The ID of a file or folder to retrieve. Specify either Id or Name.

Content
Specifies whether the file is embedded in or attached to the response. Valid values are:

- Embed
  The file is embedded.
- Attach
  The file is attached.

Response schema

```
<xsd:element name="SelectFilesResponse">
   <xsd:sequence>
      <xsd:element name="ItemList" type="typens:ArrayOfFile"/>
      <xsd:element name="ContentItemList"
         type="typens:ArrayOfFileContent"/>
      <xsd:element name="FetchHandle" type="xsd:string"
         minOccurs="0"/>
      <xsd:element name="TotalCount" type="xsd:long"
         minOccurs="0"/>
   </xsd:sequence>
</xsd:complexType>
```

Response elements

ItemList
The list of attached items that match the search criteria.

ContentItemList
The list of embedded items that match the search criteria.

FetchHandle
Indicates that the number of items in the result set exceeds the FetchSize limit.

TotalCount
The number of entries in the search result set.

SelectFileTypes

Searches file types for specified information.

To search a single file type, specify Name. To search a list of file types, specify NameList. To search file types matching the specified conditions, specify Search. File names are case sensitive, and file type extensions are stored in uppercase. Specify uppercase for all file type extensions, for example, use ROX instead of rox.

Request schema

```
<xsd:complexType name="SelectFileTypes">
   <xsd:sequence>
      <xsd:element name="ResultDef" type="typens:ArrayOfString"/>
         <xsd:choice minOccurs="0">
            <xsd:element name="NameList"
               type="typens:ArrayOfString"/>
            <xsd:element name="Name" type="xsd:string"/>
         </xsd:choice>
   </xsd:sequence>
</xsd:complexType>
```

Request elements

ResultDef
The properties to retrieve.

Search
The search conditions. If conditions apply to multiple fields, use ConditionArray.

NameList
The list of file types to search.

Name
The name of a single file type to search.

Response schema

```
<xsd:complexType name="SelectFileTypesResponse">
   <xsd:sequence>
      <xsd:element name="FileTypes" type="typens:ArrayOfFileType"/>
   </xsd:sequence>
</xsd:complexType>
```

Response elements

FileTypes
The specified file types.

SelectGroups

Searches groups for specified information.

To search a single group, specify Name or Id. To search a list of groups, specify NameList or IdList. To search groups matching the specified conditions, specify Search.

Request schema

```
<xsd:complexType name="SelectGroups">
   <xsd:sequence>
      <xsd:element name="ResultDef" type="typens:ArrayOfString"/>
         <xsd:choice>
            <xsd:element name="Search" type="typens:GroupSearch"/>
            <xsd:element name="IdList" type="typens:ArrayOfString"/>
            <xsd:element name="NameList"
               type="typens:ArrayOfString"/>
            <xsd:element name="Id" type="xsd:string"/>
            <xsd:element name="Name" type="xsd:string"/>
         </xsd:choice>
   </xsd:sequence>
</xsd:complexType>
```

Request elements

ResultDef
The properties to retrieve.

Search
The search conditions. If conditions apply to multiple fields, use ConditionArray. When using RSSE external registration, SelectGroups allows only one search condition.

IdList
The list of group IDs to search. Specify either IdList or NameList.

NameList
The list of group names to search. Specify either NameList or IdList.

Id
The ID of the single group to search. Specify either Id or Name.

Name
The name of the single group to search. Specify either Name or Id.

Response schema

```
<xsd:complexType name="SelectGroupsResponse">
   <xsd:sequence>
      <xsd:element name="Groups" type="typens:ArrayOfGroup"/>
      <xsd:element name="FetchHandle" type="xsd:string"
```

```
            minOccurs="0"/>
         <xsd:element name="TotalCount" type="xsd:long"
            minOccurs="0"/>
      </xsd:sequence>
   </xsd:complexType>
```

Response elements

Groups
The selected groups.

FetchHandle
Indicates that the number of items in the result set exceeds the FetchSize limit.

TotalCount
The number of entries in the search result set.

SelectJavaReportPage

Returns a report page formatted in the specified display format indicated by the Page or Component element.

Request schema

```
<xsd:complexType name="SelectJavaReportPage">
   <xsd:sequence>
      <xsd:element name="Object" type="typens:ObjectIdentifier"/>
      <xsd:choice>
         <xsd:element name="Page" type="typens:PageIdentifier"
            minOccurs="0"/>
         <xsd:element name="Component"
            type="typens:ArrayOfNameValuePair"minOccurs="0"/>
      </xsd:choice>
      <xsd:element name="ViewParameterValues"
            type="typens:ArrayOfParameterValue" minOccurs="0"/>
      <xsd:element name="OutputFormat" type="xsd:string"
         minOccurs="0"/>
      <xsd:element name="ViewProperties"
         type="typens:ArrayOfNameValuePair"minOccurs="0"/>
      <xsd:element name="DownloadEmbedded" type="xsd:boolean"
         default="false" minOccurs="0"/>
   </xsd:sequence>
</xsd:complexType>
```

Request elements

Object
The ID of the object from which to select the report page.

Page
The identifier of the page to retrieve.

Component
The name, display name, or ID, and the value of the component from which to retrieve the data.

ViewParameterValues
Include view parameters if defined in the report document. This feature is supported for an e.Spreadsheet report, but currently not for a BIRT report.

OutputFormat
For a BIRT report, the output format can be HTML, rptdocument, or PDF. The default is rptdocument. For an e.Spreadsheet report, the output format can be SOI or XLS. The default is SOI.

ViewProperties
Specifies the layout and contents of a report such as the name of a bookmark name, table of contents, or an object ID. ViewProperties is available to the BIRT render task as the java.util.Map object in the Engine AppContext under the key ServerViewProperties.

DowloadEmbedded
Specifies whether to send the attachment embedded in the body of the SOAP message or in a separate MIME boundary. If True, the response contains the attachment as embedded data. If False, the attachment is in a separate MIME boundary. The default value is False.

Response schema

```
<xsd:complexType name="SelectJavaReportPageResponse">
   <xsd:sequence>
      <xsd:element name="PageRef" type="typens:Attachment"/>
      <xsd:element name="ConnectionHandle" type="xsd:string"
         minOccurs="0"/>
      <xsd:element name="OutputProperties"
         type="typens:ArrayOfNameValuePair" minOccurs="0"/>
   </xsd:sequence>
</xsd:complexType>
```

Response elements

PageRef
Contains the following properties of the attachment:

- MimeType
- ContentEncoding
- ContentLength
- Locale

ConnectionHandle
The ID of the report. Supports viewing a report when the report is already in iServer System. Specified in the SOAP header.

OutputProperties
Applies only if Format is CSV. The properties to include in the search result are:

- EnableColumnHeaders
  If True, column headers are included in the search result. The default value is True.
- UseQuoteDelimiter
  If True, each data item in the search result is enclosed in double quotes (" "). The default value is True.

SelectJobs

Selects all jobs matching the specified conditions. SelectJobs returns states and information for job instances.

Request schema

```
<xsd:complexType name="SelectJobs">
   <xsd:sequence>
      <xsd:element name="ResultDef" type="typens:ArrayOfString"/>
      <xsd:choice>
         <xsd:element name="Search" type="typens:JobSearch"/>
         <xsd:element name="IdList" type="typens:ArrayOfString"/>
         <xsd:element name="Id" type="xsd:string"/>
      </xsd:choice>
   </xsd:sequence>
</xsd:complexType>
```

Request elements

ResultDef
The properties to retrieve.

Search
The search conditions. If conditions apply to multiple fields, use ConditionArray.

IdList
The list of job IDs to search.

Id
The ID of a single job to search.

Response schema

```
<xsd:complexType name="SelectJobsResponse">
   <xsd:sequence>
      <xsd:element name="Jobs" type="typens:ArrayOfJobProperties"/>
      <xsd:element name="FetchHandle" type="xsd:string"
         minOccurs="0"/>
      <xsd:element name="TotalCount" type="xsd:long"
         minOccurs="0"/>
   </xsd:sequence>
</xsd:complexType>
```

Response elements

Jobs
The selected jobs.

FetchHandle
Indicates that the number of items in the result set exceeds the FetchSize limit.

TotalCount
The number of entries in the search result set.

SelectJobNotices

Retrieves job notices matching the specified criteria.

Request schema

```
<xsd:complexType="SelectJobNotices">
   <xsd:sequence>
      <xsd:element name="ResultDef" type="typens:ArrayOfString">
      </xsd:element>
      <xsd:element name="Search" type="typens:JobNoticeSearch"
         minOccurs="0"/>
   </xsd:sequence>
</xsd:complexType>
```

Request elements

ResultDef
The properties to retrieve. You can specify the following properties:

- JobId
- JobName
- ActualHeadline
- CompletionTime
- ActualOutputFileId
- ActualOutputFileName
- VersionName
- OutputFileSize

Search
The search conditions. If conditions apply to multiple fields, use ConditionArray.

Response schema

```
<xsd:complexType name="SelectJobNoticesResponse">
   <xsd:sequence>
      <xsd:element name="JobNotices"
         type="typens:ArrayOfJobNotice"/>
      <xsd:element name="FetchHandle" type="xsd:string"
         minOccurs="0"/>
      <xsd:element name="TotalCount" type="xsd:long"
```

```
        minOccurs="0"/>
   </xsd:sequence>
</xsd:complexType>
```

Response elements

JobNotices
The selected job notices.

FetchHandle
Indicates that the number of items in the result set exceeds the FetchSize limit.

TotalCount
The number of entries in the search result set.

SelectJobSchedules

Selects all scheduled jobs matching the specified criteria. SelectJobSchedules also retrieves information for expired and canceled jobs.

Request schema

```
<xsd:complexType name="SelectJobSchedules">
   <xsd:sequence>
      <xsd:element name="ResultDef" type="typens:ArrayOfString">
      </xsd:element>
      <xsd:choice>
         <xsd:element name="Search"
            type="typens:ScheduledJobSearch"/>
         <xsd:element name="IdList" type="typens:ArrayOfString"/>
         <xsd:element name="Id" type="xsd:string"/>
      </xsd:choice>
   </xsd:sequence>
</xsd:complexType>
```

Request elements

ResultDef
The properties to retrieve.

Search
The search conditions. If conditions apply to multiple fields, use ConditionArray.

IdList
The list of job IDs to search.

Id
The ID of a single job to search.

Response schema

```
<xsd:complexType name="SelectJobSchedulesResponse">
   <xsd:sequence>
      <xsd:element name="Jobs" type="typens:ArrayOfJobProperties"/>
      <xsd:element name="FetchHandle" type="xsd:string"
         minOccurs="0"/>
      <xsd:element name="TotalCount" type="xsd:long"
```

```
        minOccurs="0"/>
    </xsd:sequence>
</xsd:complexType>
```

Response elements

Jobs
The selected jobs.

FetchHandle
Indicates that the number of items in the result set exceeds the FetchSize limit.

TotalCount
The number of entries in the search result set.

SelectPage

Retrieves a page or a set of pages. You can specify either a page number, a page range, a component, or other search criteria.

The response to SelectPage contains the following data:

- The SOAP response.
- The attachment containing the data.
- If the request input format is Reportlet, an XML response as an attachment. This response contains the post process data.

Request schema

```
<xsd:complexType name="SelectPage">
   <xsd:sequence>
      <xsd:element name="Object" type="typens:ObjectIdentifier"/>
      <xsd:element name="ViewParameter"
         type="typens:ViewParameter"/>
      <xsd:choice minOccurs="0">
         <xsd:element name="Page" type="typens:PageIdentifier"/>
         <xsd:element name="Component" type="typens:Component"/>
         <xsd:element name="SearchCriteria" type="xsd:string"/>
      </xsd:choice>
      <xsd:element name="MaxHeight"
         type="xsd:long" minOccurs="0"/>
      <xsd:element name="CustomInputPara" type="xsd:string"
         minOccurs="0"/>
      <xsd:element name="DownloadEmbedded" type="xsd:boolean"
         default="false" minOccurs="0"/>
      <xsd:element name="SplitOversizePages" type="xsd:boolean"
         minOccurs="0"
      <xsd:element name="PageWidth" type="xsd:int"
         minOccurs="0"/>
      <xsd:element name="PageHeight" type="xsd:int"
         minOccurs="0"/>
```

```
   </xsd:sequence>
</xsd:complexType>
```

Request elements

Object
The object from which to retrieve the page. Specify either the object ID or the object name and version number.

ViewParameter
The viewing parameters.

Page
The page or range of pages to retrieve.

Component
The name, display name, or ID, and the value of the component from which to retrieve the page. The following formats do not support specifying the component ID:

- ExcelData
- ExcelDisplay
- PDF
- RTF

SearchCriteria
The search criteria.

MaxHeight
The maximum height, in points, according to the web page layout design. Required for a Reportlet.

CustomInputPara
The input parameters to send.

DownloadEmbedded
Specifies whether to send the attachment embedded in the body of the SOAP message or in a separate MIME boundary. If True, the response contains the attachment as embedded data. If False, the attachment is in a separate MIME boundary. The default value is False.

SplitOversizePages
Specifies whether to split a page to print to an output format that is smaller than the page. If True, the page is split. The default value is True.

PageWidth
The page width page to use for printing the page.

PageHeight
The page height page to use for printing the page.

Response schema

```
<xsd:complexType name="SelectPageResponse">
   <xsd:sequence>
      <xsd:element name="PageRef" type="typens:Attachment"/>
      <xsd:element name="PostResponseRef" type="typens:Attachment"
         minOccurs="0"/>
      <xsd:element name="ConnectionHandle" type="xsd:string"
         minOccurs="0"/>
   </xsd:sequence>
</xsd:complexType>
```

Response elements

PageRef
Contains the following properties of the attachment:

- MimeType
- ContentEncoding
- ContentLength
- Locale

PostResponseRef
Contains the Reportlet parameters. Used PostResponseRef only when the request input format is Reportlet.

ConnectionHandle
The ID of the report. Supports viewing a report when the report is already in iServer System. Specified in the SOAP header.

SelectRoles

Searches roles for specified information.

To search a single role, specify Name or Id. To search a list of roles, specify NameList or IdList. To search roles matching the specified conditions, specify Search.

Request schema

```
<xsd:complexType="SelectRoles">
   <xsd:sequence>
      <xsd:element name="ResultDef" type="typens:ArrayOfString"/>
      <xsd:choice>
         <xsd:element name="Search" type="typens:RoleSearch"/>
         <xsd:element name="IdList" type="typens:ArrayOfString"/>
         <xsd:element name="NameList" type="typens:ArrayOfString"/>
         <xsd:element name="Id" type="xsd:string"/>
         <xsd:element name="Name" type="xsd:string"/>
      </xsd:choice>
   </xsd:sequence>
</xsd:complexType>
```

Request elements

ResultDef
The properties to retrieve.

Search
The search conditions. If conditions apply to multiple fields, use ConditionArray. When using RSSE external registration, SelectRoles allows only one search condition within the Search element.

In the following example, <Condition> and <AssignedToUserName> are search conditions:

```
<Search>
   <Condition>
      <Field>Name</Field>
      <Match>roleA</Match>
   </Condition>
   <ConditionArray xsi:nil="true"/>
   <ParentRoleName xsi:nil="true"/>
   <ChildRoleName xsi:nil="true"/>
   <WithRightsToChannelName xsi:nil="true"/>
   <AssignedToUserName>Administrator</AssignedToUserName>
   <ParentRoleId xsi:nil="true"/>
   <ChildRoleId xsi:nil="true"/>
   <WithRightsToChannelId xsi:nil="true"/>
   <AssignedToUserId xsi:nil="true"/>
</Search>
```

When using RSSE external registration, the previous search pattern is invalid, generating the following response:

```
<Description>
   <Message>The search pattern is too long or is incorrect.
      </Message>
   <Parameter1>More than one search condition is invalid under
      External Registration</Parameter1>
</Description>
```

IdList
The list of role IDs to search. Specify either IdList or NameList.

NameList
The list of role names to search. Specify either NameList or IdList.

Id
The ID of the single role to search. Specify either Id or Name.

Name
The name of the single role to search. Specify either Name or Id

Response schema

```
<xsd:complexType name="SelectRolesResponse">
   <xsd:sequence>
      <xsd:element name="Roles" type="typens:ArrayOfRole"/>
      <xsd:element name="FetchHandle" type="xsd:string"
         minOccurs="0"/>
      <xsd:element name="TotalCount" type="xsd:long"
         minOccurs="0"/>
   </xsd:sequence>
</xsd:complexType>
```

Response elements

Roles
The selected roles.

FetchHandle
Indicates that the number of items in the result set exceeds the FetchSize limit.

TotalCount
The number of entries in the search result set.

SelectUsers

Searches users for specified information.

To search a single user, specify Name or Id. To search a list of users, specify NameList or IdList. To search users matching the specified conditions, specify Search.

Request schema

```
<xsd:complexType name="SelectUsers">
   <xsd:sequence>
      <xsd:element name="ResultDef" type="typens:ArrayOfString"/>
      <xsd:choice minOccurs="0">
         <xsd:element name="Search" type="typens:UserSearch"/>
         <xsd:element name="IdList" type="typens:ArrayOfString"/>
         <xsd:element name="NameList" type="typens:ArrayOfString"/>
         <xsd:element name="Id" type="xsd:string"/>
         <xsd:element name="Name" type="xsd:string"/>
      </xsd:choice>
   </xsd:sequence>
</xsd:complexType>
```

Request elements

ResultDef
The properties to retrieve.

Search
The search conditions. If conditions apply to multiple fields, use ConditionArray. When using RSSE external registration, SelectUsers allows only one search condition.

IdList
The list of user IDs to search. Specify either IdList or NameList.

NameList
The list of user names to search. Specify either NameList or IdList.

Id
The ID of the single user to search. Specify either Id or Name.

Name
The name of the single user to search. Specify either Name or Id.

Response schema

```
<xsd:complexType name="SelectUsersResponse">
   <xsd:complexType>
      <xsd:sequence>
         <xsd:element name="Users" type="typens:ArrayOfUser"/>
         <xsd:element name="FetchHandle" type="xsd:string"
            minOccurs="0"/>
         <xsd:element name="TotalCount" type="xsd:long"
            minOccurs="0"/>
      </xsd:sequence>
   </xsd:complexType>
```

Response elements

Users
The selected users.

FetchHandle
Indicates that the number of items in the result set exceeds the FetchSize limit.

TotalCount
The number of entries in the search result set. Not used when querying an Encyclopedia volume that uses Open Security. In this case, TotalCount returns Null. To retrieve the number of entries from an Encyclopedia volume that uses Open Security, use an array length. For example, the following code returns Null:

```
com.actuate.schemas.SelectUsersResponse userSrchResponse =
   proxy.selectUsers( userSel );
com.actuate.schemas.ArrayOfUser userArr =
   userSrchResponse.getUsers();
com.actuate.schemas.User []user = userArr.getUser();
userSrchResponse.getTotalCount();
int noOfUsers1 = userSrchResponse.getTotalCount().intValue();
The following code returns the correct value:
com.actuate.schemas.SelectUsersResponse userSrchResponse =
   proxy.selectUsers( userSel );
com.actuate.schemas.ArrayOfUser userArr =
   userSrchResponse.getUsers();
com.actuate.schemas.User []user = userArr.getUser();
userSrchResponse.getTotalCount();
int noOfUsers2 = user.length;
```

SetConnectionProperties

Sets the connection properties for a file based on user or role.

Request Schema

```
<xsd:complexType name="SetConnectionProperties">
   <xsd:sequence>
      <xsd:choice>
         <xsd:element name="FileName" type="xsd:string"
            minOccurs="0"/>
         <xsd:element name="FileId" type="xsd:string"
            minOccurs="0"/>
      </xsd:choice>
      <xsd:choice>
         <xsd:element name="UserName" type="xsd:string"
            minOccurs="0"/>
         <xsd:element name="UserId" type="xsd:string"
            minOccurs="0"/>
         <xsd:element name="RoleName" type="xsd:string"
            minOccurs="0"/>
         <xsd:element name="RoleId" type="xsd:string"
            minOccurs="0"/>
      </xsd:choice>
      <xsd:element name="ConnectionProperties"
         type="typens:ArrayOfPropertyValue" />
   </xsd:sequence>
</xsd:complexType>
```

Request elements

FileName
The name of the file.

FileId
The file ID.

UserName
User name for which to set property values.

UserId
User ID for which to set property values.

RoleName
The role name for which to set property values.

RoleId
The role ID for which to set property values.

ConnectionProperties
An array of name-value pairs containing the connection properties being set.

Response Schema

```
<xsd:complexType name="SetConnectionPropertiesResponse" />
```

SetServerResourceGroupConfiguration

Sets or updates properties of all resource groups on a BIRT iServer. SetServerResourceGroupConfiguration is available only to an Encyclopedia volume administrator or a user with an Administrator role.

Request schema

```
<xsd:complexType="SetServerResourceGroupConfiguration">
   <xsd:sequence>
      <xsd:element name="ServerName" type="xsd:string"/>
      <xsd:element name="ServerResourceGroupSettingList"
         type="typens:ArrayOfServerResourceGroupSetting"
         minOccurs="0"/>
   </xsd:sequence>
</xsd:complexType>
```

Request elements

ServerName
The name of the BIRT iServer.

ServerResourceGroupSettingList
Contains one or more of the following properties to set or update:

- Activate
- MaxFactory
- FileTypes
  Cannot be set or updated for a default resource group.

Response schema

```
<xsd:complexType name=
      "SetServerResourceGroupConfigurationResponse"/>
   <xsd:sequence/>
</xsd:complexType>
```

SubmitJob

Generates and prints a report or information object in asynchronous mode. BIRT iServer sends the response after the request is created.

After generating a report in asynchronous mode, you can convert the generated document to one of the following formats:

- Advanced Function Printing (AFP)
- Comma-Separated Values (CSV)

- Excel XLS
- Excel XLSX
- PDF
- PostScript
- PowerPoint (PPT)
- PowerPoint (PPTX)
- PSV
- Tab-Separated Values (TSV)
- Word (DOC)
- Word (DOCX)

BIRT iServer only supports converting document output for asynchronous generation. Conversion is not supported for the following types of document output:

- Synchronous generation
- Report bursting
- Page-level security
- Actuate Query output

Use SubmitJob to schedule design execution and printing of a document, including a BIRT document. You can use PrintReport to print an e.Report document. PrintReport does not support printing a BIRT document.

When converting a document, the properties of the converted file are the same as the original document properties.

Request schema

```
<xsd:complexType name="SubmitJob">
   <xsd:sequence>
      <xsd:element name="JobName" type="xsd:string"/>
      <xsd:element name="Headline" type="xsd:string"
         minOccurs="0"/>
      <xsd:element name="Priority" type="xsd:int"/>
      <xsd:element name="ResourceGroup" type="xsd:string"
         minOccurs="0"/>
      <xsd:choice>
         <xsd:element name="InputFileName" type="xsd:string"/>
         <xsd:element name="InputFileId" type="xsd:string"/>
      </xsd:choice>
      <xsd:element name="RunLatestVersion" type="xsd:boolean"
         default="true" minOccurs="0"/>
      <xsd:element name="RequestedOutputFile"
         type="typens:NewFile" minOccurs="0"/>
```

```
<xsd:element name="Operation">
   <xsd:simpleType>
      <xsd:restriction base="xsd:string">
         <xsd:enumeration value="RunReport"/>
         <xsd:enumeration value="RunAndPrintReport"/>
         <xsd:enumeration value="ConvertReport"/>
         <xsd:enumeration value="PrintReport"/>
      </xsd:restriction>
   </xsd:simpleType>
</xsd:element>
<xsd:choice minOccurs="0">
   <xsd:element name="ParameterValues"
      type="typens:ArrayOfParameterValue"/>
   <xsd:element name="ParameterValueFileName"
      type="xsd:string"/>
   <xsd:element name="ParameterValueFileId"
      type="xsd:string"/>
   <xsd:element name="Query" type="typens:Query"/>
   <xsd:element name="QueryFileName" type="xsd:string"/>
   <xsd:element name="QueryFileId" type="xsd:string"/>
</xsd:choice>
<xsd:element name="Schedules" type="typens:JobSchedule"
   minOccurs="0"/>
<xsd:element name="PrinterOptions"
   type="typens:JobPrinterOptions" minOccurs="0"/>
<xsd:element name="NotifyUsersByName"
   type="typens:ArrayOfString" minOccurs="0"/>
<xsd:element name="NotifyGroupsByName"
   type="typens:ArrayOfString" minOccurs="0"/>
<xsd:element name="NotifyChannelsByName"
   type="typens:ArrayOfString" minOccurs="0"/>
<xsd:element name="NotifyUsersById"
   type="typens:ArrayOfString" minOccurs="0"/>
<xsd:element name="NotifyGroupsById"
   type="typens:ArrayOfString"MinOccurs="0"/>
<xsd:element name="NotifyChannelsById"
   type="typens:ArrayOfString" minOccurs="0"/>
<xsd:element name="SendSuccessNotice" type="xsd:boolean"
   minOccurs="0"/>
<xsd:element name="SendFailureNotice" type="xsd:boolean"
   minOccurs="0"/>
<xsd:element name="SendEmailForSuccess" type="xsd:boolean"
   minOccurs="0"/>
<xsd:element name="SendEmailForFailure" type="xsd:boolean"
   minOccurs="0"/>
<xsd:element name="AttachReportInEmail" type="xsd:boolean"
   minOccurs="0"/>
```

```
        <xsd:element name="OverrideRecipientPref" type="xsd:boolean"
          minOccurs="0"/>
        <xsd:element name="EmailFormat" type="xsd:string"
          minOccurs="0"/>
        <xsd:element name="RecordSuccessStatus" type="xsd:boolean"
          minOccurs="0"/>
        <xsd:element name="RecordFailureStatus" type="xsd:boolean"
          minOccurs="0"/>
        <xsd:element name="IsBundled" type="xsd:boolean"
          minOccurs="0"/>
        <xsd:element name="RetryOptions" type="typens:RetryOptions"
          minOccurs="0"/>
        <xsd:element name="OpenServerOptions"
          type="typens:OpenServerOptions" minOccurs="0"/>
        <xsd:element name="KeepOutputFile"
          type="xsd:boolean" minOccurs="0"/>
        <xsd:element name="ConversionOptions"
          type="typens:ConversionOptions" minOccurs="0"/>
        <xsd:element name="WaitForEvent" type="typens:Event"
          minOccurs="0"/>
        <xsd:element name="DataACL" type="typens:ArrayOfString"
          minOccurs="0"/>
    </xsd:sequence>
  </xsd:complexType>
```

Request elements

JobName
The name of the job.

Headline
The job headline.

Priority
The job priority. Job priority is limited by the user's Max job priority setting. Valid values are 0–1,000, where 1,000 is the highest priority.

ResourceGroup
The resource group to which to assign the job. Available only to an Encyclopedia volume administrator or a user with the Administrator role.

InputFileName
The full path, name, and version number of the file to use as input. If RunLatestVersion is specified, the version number is ignored.

InputFileId
The ID of the file to use as input.

RunLatestVersion
Specifies whether to run or print the most recent version of the executable file. If True, the latest version of the file is used. If True, the following rules apply:

- The version number in InputFileName is ignored.
- With an Actuate Basic document, if the input file is a data object values (.dov) file, the query is merged with the latest version of the Actuate Basic information object executable (.dox) file.

The default value is True.

RequestedOutputFile
The file name and extension for the output.

Operation
Specifies the type of task to perform, RunReport, RunAndPrintReport, ConvertReport, or PrintReport.

ParameterValues
A list of parameter values to use. Specify either ParameterValues, ParameterValueFileId, ParameterValueFileName, Query, QueryFileName, or QueryFileId.

ParameterValueFileName
The name of the parameter value file to use. Specify either ParameterValues, ParameterValueFileId, ParameterValueFileName, Query, QueryFileName, or QueryFileId.

ParameterValueFileId
The ID of the report object values file to use. Specify either ParameterValues, ParameterValueFileId, ParameterValueFileName, Query, QueryFileName, or QueryFileId.

Query
The query object to use. Specify either ParameterValues, ParameterValueFileId, ParameterValueFileName, Query, QueryFileName, or QueryFileId.

QueryFileName
The name of the data object values file, returned by GetQueryResponse, to use. Specify either ParameterValues, ParameterValueFileId, ParameterValueFileName, Query, QueryFileName, or QueryFileId.

QueryFileId
The ID of the data object values file, returned by GetQueryResponse, to use. Specify either ParameterValues, ParameterValueFileId, ParameterValueFileName, Query, QueryFileName, or QueryFileId.

Schedules
Specifies the schedule on which to run the report. If not specified, the job runs immediately.

PrinterOptions
If the job is to be printed, specifies the job printer settings. If the job is not to be printed, PrinterOptions is ignored. The printer settings have the following precedence:

- Job printer settings
- User printer settings
- System printer settings

NotifyUsersByName
The names of users to receive the job completion notice. Specify either NotifyUsersByName or NotifyUsersById.

NotifyGroupsByName
The names of groups to receive the job completion notice. Specify either NotifyGroupsByName or NotifyGroupsById.

NotifyChannelsByName
The names of channels to receive the job completion notice. Specify either NotifyChannelsByName or NotifyChannelsById.

NotifyUsersById
The IDs of users to receive the job completion notice. Specify either NotifyUsersById or NotifyUsersByName.

NotifyGroupsById
The IDs of groups to receive the job completion notice. Specify either NotifyGroupsById or NotifyGroupsByName.

NotifyChannelsById
The IDs of channels to receive the job completion notice. Specify either NotifyChannelsById or NotifyUsersByName.

SendSuccessNotice
Specifies whether success notices are sent if the job succeeds. Used only if OverrideRecipientPref is True. If SendSuccessNotice is True, notices are sent.

SendFailureNotice
Specifies whether failure notices are sent if the job fails. Used only if OverrideRecipientPref is True. If SendFailureNotice is True, failure notices are sent to specified users and groups if the job fails.

SendEmailForSuccess
Specifies whether e-mail notifications are sent if the job succeeds. Used only if OverrideRecipientPref is True. If True, e-mail notifications are sent to specified users and groups if the job succeeds. The default value is False.

SendEmailForFailure
Specifies whether e-mail notifications are sent to specified users and groups if the job fails. Used only if OverrideRecipientPref is True. If SendEmailForFailure is True, e-mail notifications are sent. The default value is False.

AttachReportInEmail
Specifies whether to attach a report to an e-mail completion notice. Used only if OverrideRecipientPref is True. If AttachReportInEmail is True, the output file is attached to the e-mail notification if the job succeeds. If False, only a link to the output file is sent. Specify the format for the attachment in the EmailFormat parameter. The default value is False.

OverrideRecipientPref
Specifies whether e-mail notifications and output attachments are sent according to job settings or user settings. If True, e-mail notifications and output attachments are sent according to job settings. If False, e-mail notifications and output attachments are sent according to user settings. The default value is False. If False, the following elements are ignored:

- AttachReportInEmail
- SendEmailForSuccess
- SendEmailForFailure
- SendSuccessNotice
- SendFailureNotice

EmailFormat
Specifies the output format of the report attached to the e-mail notification. The following formats are supported:

- ExcelDisplay
- PDF
- ROI
- rptdesign
- rptdocument

RecordSuccessStatus
Specifies whether to keep the job status for successful jobs. If True, the job status is kept if job execution succeeds.

RecordFailureStatus
Specifies whether to keep the job status for failed jobs. If True, the job status is kept if job execution fails.

IsBundled
Specifies whether a report is bundled. If True, the report is bundled. If False, the report is not bundled. The default value is False.

RetryOptions
Specifies how to retry the job if the previous attempt failed. Used only if Retryable is specified.

OpenServerOptions
Contains the following open server options:

- KeepWorkingSpace
  Specifies whether the workspace directory is removed after the job completes.
- DriverTimeout
  The time for the driver to return from executing a job.
- PollingInterval
  The time interval for the open server to get status messages. The minimum value is 10 seconds.

KeepOutputFile
Specifies whether the generated output file remains in the Encyclopedia volume if the generation request succeeds but the printing request fails. Used if Operation is RunAndPrintReport. If True, the output file remains in the Encyclopedia volume if the printing request fails. If False, the output file is deleted if the printing request fails. The default value is False.

ConversionOptions
Specifies the options for converting a report object instance (.roi) output to another format.

WaitForEvent
An event that must be completed before the response is processed.

DataACL
Specifies the access control list (ACL) restricting data privileges.

Response schema

```
<xsd:complexType name="SubmitJobResponse">
   <xsd:sequence>
      <xsd:element name="JobId" type="xsd:string"/>
   </xsd:sequence>
</xsd:complexType>
```

Response elements

JobId
The job ID. Use the job ID to refer to the job in subsequent requests during the current session.

SystemLogin

Logs the user in as the BIRT iServer administrator.

Request schema

```
<xsd:complexType name="SystemLogin">
   <xsd:complexType>
      <xsd:sequence>
         <xsd:element name="SystemPassword" type="xsd:string"
            minOccurs="0"/>
         <xsd:element name="SystemPasswordEncryptLevel"
            type="xsd:long" minOccurs="0"/>
      </xsd:sequence>
   </xsd:complexType>
</xsd:element>
```

Request elements

SystemPassword
The password.

SystemPasswordEncryptLevel
The encryption level of the SystemPassword. Valid values are:

- 0 - No encryption
- 1 - Two way encryption
- 2 - Hash encryption

The default is hash encryption.

Response schema

```
<xsd:complexType name="SystemLoginResponse">
   <xsd:complexType>
      <xsd:sequence>
         <xsd:element name="AuthId" type="xsd:string"/>
      </xsd:sequence>
   </xsd:complexType>
```

Response elements

AuthId
The system-generated, encrypted authenticated string all subsequent requests use.

Transaction

A packaging mechanism for Administrate operations. If a failure occurs anywhere in a transaction, all operations in the transaction fail.

Request schema

```
<xsd:complexType name="Transaction">
   <xsd:sequence>
      <xsd:element name="TransactionOperation"
         type="typens:TransactionOperation" maxOccurs="unbounded"
         minOccurs="0" />
   </xsd:sequence>
</xsd:complexType>
```

Request element

TransactionOperation
The transaction operation.

TransactionOperation

Controls the ability to create, delete, update, copy, and move items within an Encyclopedia volume. A TransactionOperation request represents a single unit of work within a Transaction. Only an Encyclopedia volume administrator or a user in the Administrator role uses these operations.

Request schema

```
<xsd:complexType name="TransactionOperation">
   <xsd:sequence>
      <xsd:choice>
         <xsd:element name="CreateUser" type="typens:CreateUser"
            minOccurs="0" />
         <xsd:element name="DeleteUser" type="typens:DeleteUser"
            minOccurs="0" />
         <xsd:element name="UndeleteUser" ype="typens:UndeleteUser"
            minOccurs="0"/>
         <xsd:element name="UpdateUser" type="typens:UpdateUser"
            minOccurs="0" />
         <xsd:element name="CreateGroup" type="typens:CreateGroup"
            minOccurs="0" />
         <xsd:element name="DeleteGroup" type="typens:DeleteGroup"
            minOccurs="0" />
         <xsd:element name="UpdateGroup" type="typens:UpdateGroup"
            minOccurs="0" />
         <xsd:element name="CreateChannel"
            type="typens:CreateChannel"
            minOccurs="0" />
         <xsd:element name="DeleteChannel"
            type="typens:DeleteChannel"
            minOccurs="0" />
         <xsd:element name="UpdateChannel"
            type="typens:UpdateChannel" minOccurs="0" />
         <xsd:element name="CreateRole" type="typens:CreateRole"
            minOccurs="0" />
         <xsd:element name="DeleteRole" type="typens:DeleteRole"
```

```
            minOccurs="0" />
          <xsd:element name="UpdateRole" type="typens:UpdateRole"
            minOccurs="0" />
          <xsd:element name="CreateFileType"
            type="typens:CreateFileType" minOccurs="0" />
           <xsd:element name="DeleteFileType"
            type="typens:DeleteFileType" minOccurs="0" />
          <xsd:element name="UpdateFileType"
            type="typens:UpdateFileType" minOccurs="0" />
          <xsd:element name="CreateFolder"
            type="typens:CreateFolder"
            minOccurs="0" />
          <xsd:element name="DeleteFile" type="typens:DeleteFile"
            minOccurs="0" />
          <xsd:element name="MoveFile" type="typens:MoveFile"
            minOccurs="0" />
          <xsd:element name="CopyFile" type="typens:CopyFile"
            minOccurs="0" />
          <xsd:element name="UpdateFile" type="typens:UpdateFile"
            minOccurs="0" />
          <xsd:element name="DeleteJob" type="typens:DeleteJob"
            minOccurs="0" />
          <xsd:element name="DeleteJobNotices"
            type="typens:DeleteJobNotices" minOccurs="0" />
          <xsd:element name="UpdateJobSchedule"
          <xsd:element name="DeleteJobSchedule"
            type="typens:DeleteJobSchedule" minOccurs="0"/>
            type="typens:UpdateJobSchedule" minOccurs="0" />
          <xsd:element name="UpdateVolumeProperties"
            type="typens:UpdateVolumeProperties" minOccurs="0" />
           <xsd:element name="UpdateOpenSecurityCache"
            type="typens:UpdateOpenSecurityCache" minOccurs="0" />
        </xsd:choice>
    </xsd:sequence>
  </xsd:complexType>
```

Request elements

CreateUser
Creates a user in the Encyclopedia volume.

DeleteUser
Deletes one or more users.

UndeleteUser
Undeletes one or more users.

UpdateUser
Updates user properties in the Encyclopedia volume.

CreateGroup
Creates a notification group in an Encyclopedia volume.

DeleteGroup
Deletes one or more notification groups.

UpdateGroup
Updates notification group properties in the Encyclopedia volume.

CreateChannel
Creates a channel in an Encyclopedia volume.

DeleteChannel
Deletes channels from the Encyclopedia volume.

UpdateChannel
Updates channel properties in the Encyclopedia volume.

CreateRole
Creates a security role in the Encyclopedia volume.

DeleteRole
Deletes one or more security roles.

UpdateRole
Updates security role properties in the Encyclopedia volume.

CreateFileType
Creates a new file type in BIRT iServer.

DeleteFileType
Deletes file types.

UpdateFileType
Updates file type properties in the Encyclopedia volume.

CreateFolder
Creates a folder in an Encyclopedia volume.

DeleteFile
Deletes files or folders from the Encyclopedia volume.

MoveFile
Moves a file or folder from the working directory to a specified target directory in the Encyclopedia volume.

CopyFile
Copies a file or folder in the working directory to a specified target directory.

UpdateFile
Updates file or folder properties in the Encyclopedia volume.

DeleteJob
Deletes one or more jobs.

DeleteJobNotices
Deletes one or more job notices.

JndeleteJobSchedule
Updates a job schedule.

UpdateJobSchedule
Updates a job schedule.

UpdateVolumeProperties
Updates the properties of a specific Encyclopedia volume.

UpdateOpenSecurityCache
Flushes the Encyclopedia volume's open security data and retrieves new data from an external security source.

UndeleteUser

Undeletes users, reversing a DeleteUser operation within the unit of work of an AdminOperation. To undelete a single user, specify Id. To delete several users, specify IdList.

Request schema

```
<xsd:complexType name="UndeleteUser">
   <xsd:sequence>
      <xsd:choice>
         <xsd:element name="IdList" type="typens:ArrayOfString"/>
         <xsd:element name="Name" type="xsd:string"/>
      </xsd:choice>
      <xsd:element name="IgnoreMissing" type="xsd:boolean"
         minOccurs="0"/>
      </xsd:sequence>
</xsd:complexType>
```

Request elements

IdList
The list of user IDs to undelete.

Id
The ID of the single user to undelete.

IgnoreMissing
Specifies what to do if the specified user does not exist. If True, BIRT iServer ignores the request. If False, the operation reports an error and stops. The default value is True.

UpdateChannel

Updates channel properties. To update channel properties, specify the types of updates to make using UpdateChannelOperationGroup, then specify which channels to update.

To update a single channel, specify Name or Id. To update a list of channels, specify NameList or IdList. To update channels matching the specified conditions, specify Search.

Request schema

```
<xsd:complexType name="UpdateChannel">
   <xsd:sequence>
      <xsd:element name="UpdateChannelOperationGroup"
         type="typens:UpdateChannelOperationGroup/>
      <xsd:choice>
         <xsd:element name="Search" type="typens:ChannelSearch"/>
         <xsd:element name="IdList" type="typens:ArrayOfString"/>
         <xsd:element name="NameList" type="typens:ArrayOfString"/>
         <xsd:element name="Id" type="xsd:string"/>
         <xsd:element name="Name" type="xsd:string"/>
      </xsd:choice>
      <xsd:element name="IgnoreMissing" type="xsd:boolean"
         minOccurs="0"/>
      <xsd:element name="IgnoreDup" type="xsd:boolean"
         minOccurs="0"/>
      <xsd:element name="SkipPermissionError" type="xsd:boolean"
         minOccurs="0"/>
   </xsd:sequence>
</xsd:complexType>
```

Request elements

UpdateChannelOperationGroup
The tasks to perform.

Search
The search condition that specifies which channels to update.

IdList
The list of channel IDs to update. Specify either IdList or NameList.

NameList
The list of channel names to update. Specify either NameList or IdList.

Id
The ID of the single channel to update. Specify either Id or Name.

Name
The name of the single channel to update. Specify either Name or Id.

IgnoreMissing
Specifies what to do if the specified channel does not exist. If True, BIRT iServer continues the operation. If False, the operation reports an error and stops. The default value is True.

IgnoreDup
Specifies whether to report an error for a duplicate request. BIRT iServer always rejects a duplicate request regardless of the IgnoreDup setting. If True, BIRT iServer does not report an error. In a name list or ID list, True prevents BIRT iServer from performing duplicate operations. If False, BIRT iServer reports an error. The default value is False.

SkipPermissionError
Specifies whether to continue the request if BIRT iServer produces a permission error. BIRT iServer produces this error if the user you are subscribing to the channel does not have read and write privileges to the channel. If True, the BIRT iServer ignores the error.

UpdateChannelOperation

Specifies the tasks to perform during the UpdateChannel operation.

Request schema

```
<xsd:complexType name="UpdateChannelOperation">
   <xsd:sequence>
      <xsd:element name="SetAttributes" type="typens:Channel"
         minOccurs="0"/>
      <xsd:element name="AddSubscribersByName"
         type="typens:ArrayOfString" minOccurs="0"/>
      <xsd:element name="RemoveSubscribersByName"
         type="typens:ArrayOfString" minOccurs="0"/>
      <xsd:element name="SetSubscribersByName"
         type="typens:ArrayOfString" minOccurs="0"/>
      <xsd:element name="AddSubscribersById"
         type="typens:ArrayOfString"
         minOccurs="0"/>
      <xsd:element name="RemoveSubscribersById"
         type="typens:ArrayOfString" minOccurs="0"/>
      <xsd:element name="SetSubscribersById"
         type="typens:ArrayOfString"
         minOccurs="0"/>
      <xsd:element name="GrantPermissions"
         type="typens:ArrayOfPermission" minOccurs="0"/>
      <xsd:element name="RevokePermissions"
         type="typens:ArrayOfPermission" minOccurs="0"/>
      <xsd:element name="SetPermissions"
         type="typens:ArrayOfPermission"
```

```
        minOccurs="0"/>
    </xsd:sequence>
  </xsd:complexType>
```

Request elements

SetAttributes
The general attributes to update.

AddSubscribersByName
The names of users to subscribe to the channel. Specify either AddSubscribersByName or AddSubscribersById.

RemoveSubscribersByName
The names of users to unsubscribe from the channel. Specify either RemoveSubscribersByName or RemoveSubscribersById.

SetSubscribersByName
The names of users for whom to update channel subscription. Specify either SetSubscribersByName or SetSubscribersById.

AddSubscribersById
The IDs of users to subscribe to the channel. Specify either AddSubscribersById or AddSubscribersByName.

RemoveSubscribersById
The IDs of users to unsubscribe from the channel. Specify either RemoveSubscribersById or RemoveSubscribersByName.

SetSubscribersById
The IDs of users for whom to update channel subscription. Specify either SetSubscribersById or SetSubscribersByName.

GrantPermissions
Adds an access control list (ACL) to the channel.

RevokePermissions
Removes an ACL from the channel.

SetPermissions
Updates the ACL for the channel.

UpdateChannelOperationGroup

Specifies the UpdateChannelOperation element used within the UpdateChannel operation.

Request schema

```
<xsd:complexType name="UpdateChannelOperationGroup">
  <xsd:sequence>
    <xsd:element name="UpdateChannelOperation"
      type="typens:UpdateChannelOperation" maxOccurs="unbounded"
```

```
        minOccurs="0"/>
   </xsd:sequence>
<xsd:complexType>
```

Request elements

UpdateChannelOperation
The UpdateChannelOperation element for the group.

UpdateDatabaseConnection

Updates an Actuate Caching service (ACS) database connection.

Request schema

```
<xsd:complexType name="UpdateDatabaseConnection">
   <xsd:sequence>
      <xsd:element name="DatabaseConnection"
         type="typens:DatabaseConnectionDefinition"/>
   </xsd:sequence>
</xsd:complexType>
```

Request elements

DatabaseConnection
The information to update.

Response schema

```
<xsd:complexType name="UpdateDatabaseConnectionResponse">
   <xsd:sequence>
      <xsd:element name="FileId" type="xsd:string"/>
      <xsd:element name="Warnings" minOccurs="0"
         type="typens:ArrayOfString"/>
   </xsd:sequence>
</xsd:complexType>
```

Response elements

FileId
The ID of the updated connection object.

Warnings
Any problems that occur when iServer attempts to update the ACS database connection.

UpdateFile

Updates files or folders. To update files or folders, specify the types of updates to make using UpdateFileOperationGroup, then specify which files or folders to update.

To update the properties of a file or folder, you must have the write privilege on the file or folder. To update privileges to the file or folder, you must have the grant privilege on the file or folder.

To update a single file or folder, specify Name or Id. To update a list of files or folders, specify NameList or IdList. To update files or folders matching the specified conditions, specify Search.

Request schema

```
<xsd:complexType name="UpdateFile">
   <xsd:sequence>
      <xsd:choice minOccurs="0">
         <xsd:element name="WorkingFolderId" type="xsd:string"/>
         <xsd:element name="WorkingFolderName" type="xsd:string"/>
      </xsd:choice>
      <xsd:element name="LatestVersionOnly" type="xsd:boolean"
            minOccurs="0"/>
      <xsd:element name="Recursive" type="xsd:boolean"
         minOccurs="0"/>
      <xsd:element name="UpdateFileOperationGroup"/>
      <xsd:choice>
         <xsd:element name="Search" type="typens:FileSearch"/>
         <xsd:element name="NameList" type="typens:ArrayOfString"/>
         <xsd:element name="IdList" type="typens:ArrayOfString"/>
         <xsd:element name="Id" type="xsd:string"/>
         <xsd:element name="Name" type="xsd:string"/>
      </xsd:choice>
      <xsd:element name="IgnoreMissing" type="xsd:boolean"
         minOccurs="0"/>
   </xsd:sequence>
</xsd:complexType>
```

Request elements

WorkingFolderId
The ID of the working folder of the file or folder to update. Specify either WorkingFolderId or WorkingFolderName.

WorkingFolderName
The name of the working folder of the file or folder to update. Specify either WorkingFolderName or WorkingFolderId.

LatestVersionOnly
Specifies whether to search all versions of the file. If True, the search includes only the latest version. The default value is False.

Recursive
Specifies whether to search subfolders. If True, the search includes subfolders. The default value is False.

UpdateFileOperationGroup
The tasks to perform.

Search
The search conditions. If conditions apply to multiple fields, use ConditionArray.

NameList
The list of file or folder names to update. Specify either NameList or IdList.

IdList
The list of file or folder IDs to update. Specify either IdList or NameList.

Id
The ID of the single file or folder to update. Specify either Id or Name.

Name
The name of the single file or folder to update. Specify either Name or Id.

IgnoreMissing
Specifies what to do if the specified file or folder does not exist. If True, BIRT iServer ignores the request. If False, the operation reports an error and stops. The default value is True.

UpdateFileOperation

Specifies the tasks to perform during the UpdateFile operation. To specify which files to update, use UpdateFile.

Request schema

```
<xsd:complexType name="UpdateFileOperationGroup">
   <xsd:sequence>
      <xsd:choice>
         <xsd:element name="SetAttributes" type="typens:File"
            minOccurs="0"/>
         <xsd:element name="AddDependentFilesByName"
            type="typens:ArrayOfString" minOccurs="0"/>
         <xsd:element name="RemoveDependentFilesByName"
            type="typens:ArrayOfString" minOccurs="0"/>
         <xsd:element name="SetDependentFilesByName"
            type="typens:ArrayOfString" minOccurs="0"/>
         <xsd:element name="AddRequiredFilesByName"
            type="typens:ArrayOfString" minOccurs="0"/>
         <xsd:element name="RemoveRequiredFilesByName"
            type="typens:ArrayOfString" minOccurs="0"/>
         <xsd:element name="SetRequiredFilesByName"
            type="typens:ArrayOfString" minOccurs="0"/>
         <xsd:element name="AddDependentFilesById"
            type="typens:ArrayOfString" minOccurs="0"/>
         <xsd:element name="RemoveDependentFilesById"
            type="typens:ArrayOfString" minOccurs="0"/>
         <xsd:element name="SetDependentFilesById"
            type="typens:ArrayOfString" minOccurs="0"/>
         <xsd:element name="AddRequiredFilesById"
            type="typens:ArrayOfString" minOccurs="0"/>
```

```
            <xsd:element name="RemoveRequiredFilesById"
              type="typens:ArrayOfString" minOccurs="0"/>
            <xsd:element name="SetRequiredFilesById"
              type="typens:ArrayOfString" minOccurs="0"/>
            <xsd:element name="GrantPermissions"
              type="typens:ArrayOfPermission" minOccurs="0"/>
            <xsd:element name="RevokePermissions"
              type="typens:ArrayOfPermission" minOccurs="0"/>
            <xsd:element name="SetPermissions"
              type="typens:ArrayOfPermission" minOccurs="0"/>
            <xsd:element name="AddArchiveRules"
              type="typens:ArrayOfArchiveRule" minOccurs="0"/>
            <xsd:element name="RemoveArchiveRules"
              type="typens:ArrayOfString" minOccurs="0"/>
            <xsd:element name="SetArchiveRules"
              type="typens:ArrayOfArchiveRule" minOccurs="0"/>
            <xsd:element name="SetParameterDefinitions"
              type="typens:ArrayOfParameterDefinition" minOccurs="0"/>
        </xsd:choice>
    </xsd:sequence>
</xsd:complexType>
```

Request elements

SetAttributes
The general attributes to update.

AddDependentFilesByName
The names of files to add as dependents. Specify either AddDependentFilesByName or AddDependentFilesById.

RemoveDependentFilesByName
The names of dependent files to remove. Specify either RemoveDependentFilesByName or RemoveDependentFilesById.

SetDependentFilesByName
The names of dependent files to update. Specify either SetDependentFilesByName or SetDependentFilesById.

AddRequiredFilesByName
The names of required files to add. Specify either AddRequiredFilesByName or AddRequiredFilesById.

RemoveRequiredFilesByName
The names of required files to remove. Specify either RemoveRequiredFilesByName or RemoveRequiredFilesById.

SetRequiredFilesByName
The names of required files to update. Specify either SetRequiredFilesByName or SetRequiredFilesById.

AddDependentFilesById
The IDs of files to add as dependents. Specify either AddDependentFilesById or AddDependentFilesByName.

RemoveDependentFilesById
The IDs of dependent files to remove. Specify either RemoveDependentFilesById or RemoveDependentFilesByName.

SetDependentFilesById
The IDs of dependent files to update. Specify either SetDependentFilesById or SetDependentFilesByName.

AddRequiredFilesById
The IDs of required files to add. Specify either AddRequiredFilesById or AddRequiredFilesByName.

RemoveRequiredFilesById
The IDs of required files to remove. Specify either RemoveRequiredFilesById or RemoveRequiredFilesByName.

SetRequiredFilesById
The IDs of required files to update. Specify either SetRequiredFilesById or SetRequiredFilesByName.

GrantPermissions
The new privileges to grant. You cannot grant privileges to a file with private access.

RevokePermissions
The privileges to revoke. You cannot revoke privileges to a file with private access.

SetPermissions
The privileges to update. You cannot update privileges to a file with private access.

AddArchiveRules
The new autoarchive rules.

RemoveArchiveRules
The autoarchive rules to remove.

SetArchiveRules
The autoarchive rules to update.

SetParameterDefinitions
The dynamic report parameters for third-party executable files.

UpdateFileOperationGroup

Specifies the UpdateFileOperation element within UpdateFile.

Request schema

```
<xsd:complexType name="UpdateFileOperationGroup">
   <xsd:sequence>
      <xsd:element name="UpdateFileOperation"
         type="typens:UpdateFileOperation"
         maxOccurs="unbounded" minOccurs="0"/>
      </xsd:sequence>
</xsd:complexType>
```

Request elements

UpdateFileOperation
The UpdateFileOperation element to use during the UpdateFile operation.

UpdateFileType

Updates file types. To update file types, specify the types of updates to make using UpdateFileTypeOperationGroup, then specify which file types to update.

To update a single file type, specify Name or Id. To update a list of file types, specify NameList or IdList.

UpdateFileType is not supported when the server is in the online backup mode.

Request schema

```
<xsd:complexType name="UpdateFileType">
   <xsd:sequence>
      <xsd:element name="UpdateFileTypeOperationGroup"
         type="typens:UpdateFileTypeOperationGroup"/>
      <xsd:choice>
         <xsd:element name="NameList" type="typens:ArrayOfString"/>
         <xsd:element name="Name" type="xsd:string"/>
      </xsd:choice>
      <xsd:element name="IgnoreMissing" type="xsd:boolean"
         minOccurs="0"/>
      <xsd:element name="IgnoreDup" type="xsd:boolean"
         minOccurs="0"/>
   </xsd:sequence>
</xsd:complexType>
```

Request elements

UpdateFileTypeOperationGroup
The tasks to perform.

NameList
The list of file types to update.

Name
The name of a single file type to update.

IgnoreMissing
Specifies what to do if the specified file type does not exist. If True, BIRT iServer ignores the request. If False, the operation reports an error and stops. The default value is True.

IgnoreDup
Specifies whether to report an error for a duplicate request. BIRT iServer always rejects a duplicate request regardless of the IgnoreDup setting. If True, BIRT iServer does not report an error. In a name list or ID list, True prevents BIRT iServer from performing duplicate operations. If False, BIRT iServer reports an error. The default value is False.

UpdateFileTypeOperation

Specifies the tasks to perform during the UpdateFileType operation.

Request schema

```
<xsd:complexType name="UpdateFileTypeOperation">
   <xsd:sequence>
      <xsd:choice>
         <xsd:element name="SetAttributes" type="typens:FileType"
            minOccurs="0"/>
         <xsd:element name="SetParameterDefinitions"
            type="typens:ArrayOfParameterDefinition" minOccurs="0"/>
         <xsd:element name="SetWindowsIcon" type="xsd:base64Binary"
            minOccurs="0"/>
         <xsd:element name="SetLargeWebIcon"
            type="xsd:base64Binary" minOccurs="0"/>
         <xsd:element name="SetSmallWebIcon"
            type="xsd:base64Binary" minOccurs="0"/>
      </xsd:choice>
   </xsd:sequence>
</xsd:complexType>
```

Request elements

SetAttributes
The general attributes to update.

SetParameterDefinitions
The parameters to update.

SetWindowsIcon
The Windows icon to display for the file type.

SetLargeWebIcon
The large icon to display for the file type in a browser.

SetSmallWebIcon
The small icon to display for the file type in a browser.

UpdateFileTypeOperationGroup

Specifies the UpdateFileTypeOperation element to use during the UpdateFileType operation.

Request schema

```
<xsd:complexType name="UpdateFileTypeOperationGroup">
   <xsd:sequence>
      <xsd:element name="UpdateFileTypeOperation"
         type="typens:UpdateFileTypeOperation"
            maxOccurs="unbounded"
         minOccurs="0"/>
   </xsd:sequence>
</xsd:complexType>
```

Request elements

UpdateFileOperation
The UpdateFileOperation element to use in the UpdateFileType operation.

UpdateGroup

Updates notification groups. To update groups, specify the types of updates to make using UpdateGroupOperationGroup, then specify which groups to update.

To update a single group, specify Name or Id. To update a list of groups, specify NameList or IdList. To update groups matching the specified conditions, specify Search.

Request schema

```
<xsd:complexType name="UpdateGroup">
   <xsd:sequence>
      <xsd:element name="UpdateGroupOperationGroup"
         type="typens:UpdateGroupOperationGroup"/>
      <xsd:choice>
         <xsd:element name="Search" type="typens:GroupSearch"/>
         <xsd:element name="IdList" type="typens:ArrayOfString"/>
         <xsd:element name="NameList" type="typens:ArrayOfString"/>
         <xsd:element name="Id" type="xsd:string"/>
         <xsd:element name="Name" type="xsd:string"/>
      </xsd:choice>
      <xsd:element name="IgnoreMissing" type="xsd:boolean"
         minOccurs="0"/>
      <xsd:element name="IgnoreDup" type="xsd:boolean"
         minOccurs="0"/>
   </xsd:sequence>
```

```
</xsd:complexType>
```

Request elements

UpdateGroupOperationGroup
The tasks to perform.

Search
The search condition that specifies which groups to update.

IdList
The list of group IDs to update. Specify either IdList or NameList.

NameList
The list of group names to update. Specify either NameList or IdList.

Id
The ID of the single group to update. Specify either Id or Name.

Name
The name of the single group to update. Specify either Name or Id.

IgnoreMissing
Specifies what to do if the specified group does not exist. If True, BIRT iServer ignores the request. If False, the operation reports an error and stops. The default value is True.

IgnoreDup
Specifies whether to report an error for a duplicate request. BIRT iServer always rejects a duplicate request regardless of the IgnoreDup setting. If True, BIRT iServer does not report an error. In a name list or ID list, True prevents BIRT iServer from performing duplicate operations. If False, BIRT iServer reports an error. The default value is False.

UpdateGroupOperation

Specifies the tasks to perform during the UpdateGroup operation.

Request schema

```
<xsd:complexType name="UpdateGroupOperation">
   <xsd:sequence>
      <xsd:choice>
         <xsd:element name="SetAttributes" type="typens:Group"
            minOccurs="0"/><xsd:element name="AddUsersByName"
            type="typens:ArrayOfString"minOccurs="0"/>
         <xsd:element name="RemoveUsersByName"
            type="typens:ArrayOfString" minOccurs="0"/>
         <xsd:element name="SetUsersByName"
            type="typens:ArrayOfString"minOccurs="0"/>
         <xsd:element name="AddUsersById"
            type="typens:ArrayOfString"
```

```
            minOccurs="0"/>
         <xsd:element name="RemoveUsersById"
            type="typens:ArrayOfString" minOccurs="0"/>
         <xsd:element name="SetUsersById"
            type="typens:ArrayOfString"
            minOccurs="0"/>
      </xsd:choice>
   </xsd:sequence>
</xsd:complexType>
```

Request elements

SetAttributes
The general attributes to update.

AddUsersByName
Adds the specified user names to the group. Specify either AddUsersByName or AddUsersById.

RemoveUsersByName
Removes the specified user names from the group. Specify either RemoveUsersByName or RemoveUsersById.

SetUsersByName
Updates the specified users' group membership. Specify either SetUsersByName or SetUsersById.

AddUsersById
Adds the specified user IDs to the group. Specify either AddUsersById or AddUsersByName.

RemoveUsersById
Removes the specified user IDs form the group. Specify either RemoveUsersById or RemoveUsersByName.

SetUsersById
Updates the specified users' group membership. Specify either SetUsersById or SetUsersByName.

UpdateGroupOperationGroup

Specifies the UpdateGroupOperation element to use during the UpdateGroup operation.

Request schema

```
<xsd:complexType name="UpdateGroupOperationGroup">
   <xsd:sequence>
      <xsd:element name="UpdateGroupOperation"
         type="typens:UpdateGroupOperation" maxOccurs="unbounded"
         minOccurs="0"/>
   </xsd:sequence>
```

```
</xsd:complexType>
```

Request elements

UpdateGroupOperation
The UpdateGroupOperation element for use with the UpdateGroup operation.

UpdateJobSchedule

Updates job schedules. To update scheduled jobs, specify the types of updates to make using UpdateJobScheduleOperationGroup, then specify which jobs to update.

To update a single scheduled job, specify Id. To update a list of scheduled jobs, specify IdList. To update scheduled jobs matching the specified conditions, specify Search.

Request schema

```
<xsd:complexType name="UpdateJobSchedule">
   <xsd:sequence>
      <xsd:element name="UpdateJobScheduleOperationGroup"
         type="typens:UpdateJobScheduleOperationGroup"/>
      <xsd:choice>
         <xsd:element name="Search" type="typens:JobSearch"/>
         <xsd:element name="IdList" type="typens:ArrayOfString"/>
         <xsd:element name="Id" type="xsd:string"/>
      </xsd:choice>
      <xsd:element name="IgnoreMissing" type="xsd:boolean"
         minOccurs="0"/>
   </xsd:sequence>
</xsd:complexType>
```

Request elements

UpdateJobScheduleOperationGroup
The tasks to perform.

Search
The search conditions. If conditions apply to multiple fields, use ConditionArray.

IdList
The list of job IDs to update.

Id
The ID of a single job to update.

IgnoreMissing
Specifies what to do if the specified job does not exist. If True, BIRT iServer ignores the request. If False, the operation reports an error and stops. The default value is True.

UpdateJobScheduleOperation

Specifies the tasks to perform during the UpdateJobSchedule operation.

Request schema

```
<xsd:complexType name="UpdateJobScheduleOperation">
   <xsd:sequence>
      <xsd:choice>
         <xsd:element name="SetAttributes"
            ype="typens:JobProperties" minOccurs="0"/>
         <xsd:element name="SetParameters"
            type="typens:JobInputDetail" minOccurs="0"/>
         <xsd:element name="SetPrinterOptions"
            type="typens:JobPrinterOptions" minOccurs="0"/>
         <xsd:element name="SetSchedules" type="typens:JobSchedule"
            minOccurs="0"/>
         <xsd:element name="AddUserNotificationByName"
            type="typens:ArrayOfString" minOccurs="0"/>
         <xsd:element name="RemoveUserNotificationByName"
            type="typens:ArrayOfString" minOccurs="0"/>
         <xsd:element name="SetUserNotificationByName"
            type="typens:ArrayOfString" minOccurs="0"/>
         <xsd:element name="AddGroupNotificationByName"
            type="typens:ArrayOfString" minOccurs="0"/>
            <xsd:element name="RemoveGroupNotificationByName"
            type="typens:ArrayOfString" minOccurs="0"/>
         <xsd:element name="SetGroupNotificationByName"
            type="typens:ArrayOfString" minOccurs="0"/>
         <xsd:element name="AddChannelNotificationByName"
            type="typens:ArrayOfString" minOccurs="0"/>
         <xsd:element name="RemoveChannelNotificationByName"
            type="typens:ArrayOfString" minOccurs="0"/>
         <xsd:element name="SetChannelNotificationByName"
            type="typens:ArrayOfString" minOccurs="0"/>
         <xsd:element name="AddUserNotificationById"
            type="typens:ArrayOfString" minOccurs="0"/>
         <xsd:element name="RemoveUserNotificationById"
            type="typens:ArrayOfString" minOccurs="0"/>
         <xsd:element name="SetUserNotificationById"
            type="typens:ArrayOfString" minOccurs="0"/>
         <xsd:element name="AddGroupNotificationById"
            type="typens:ArrayOfString" minOccurs="0"/>
         <xsd:element name="RemoveGroupNotificationById"
            type="typens:ArrayOfString" minOccurs="0"/>
         <xsd:element name="SetGroupNotificationById"
            type="typens:ArrayOfString" minOccurs="0"/>
         <xsd:element name="AddChannelNotificationById"
```

```
            type="typens:ArrayOfString" minOccurs="0"/>
          <xsd:element name="RemoveChannelNotificationById"
            type="typens:ArrayOfString" minOccurs="0"/>
          <xsd:element name="SetChannelNotificationById"
            type="typens:ArrayOfString" minOccurs="0"/>
          <xsd:element name="AddOutputFilePermissions"
            type="typens:ArrayOfPermission" minOccurs="0"/>
          <xsd:element name="RemoveOutputFilePermissions"
            type="typens:ArrayOfPermission" minOccurs="0"/>
          <xsd:element name="SetOutputFilePermissions"
            type="typens:ArrayOfPermission" minOccurs="0"/>
          <xsd:element name="SetParameterValues"
            type="typens:ArrayOfParameterValue" minOccurs="0"/>
          <xsd:element name="SetQuery" type="typens:Query"
            minOccurs="0"/>
          <xsd:element name="SetOutputFileAccess"
            type="typens:FileAccess"minOccurs="0"/>
          <xsd:element name="SetWaitForEvent" type="typens:Event"
            minOccurs="0"/>
        </xsd:choice>
      </xsd:sequence>
    </xsd:complexType>
```

Request elements

SetAttributes
The general attributes to update.

SetParameters
The input parameters, output parameters, autoarchive settings, and distribution location settings to update.

SetPrinterOptions
The printer options to update.

SetSchedules
The schedules to set.

AddUserNotificationByName
The name of the user to add to the notification list. Specify either AddUserNotificationByName or AddUserNotificationById.

RemoveUserNotificationByName
The name of the user to remove from the notification list. Specify either RemoveUserNotificationByName or RemoveUserNotificationById.

SetUserNotificationByName
The name of the user for whom to update notification. Specify either SetUserNotificationByName or SetUserNotificationById.

AddGroupNotificationByName
The name of the group to add to the notification list. Specify either AddGroupNotificationByName or AddGroupNotificationById.

RemoveGroupNotificationByName
The name of the group to remove from the notification list. Specify either RemoveGroupNotificationByName or RemoveGroupNotificationById.

SetGroupNotificationByName
The name of the group for which to update notification. Specify either SetGroupNotificationByName or SetGroupNotificationById.

AddChannelNotificationByName
The name of the channel to add to the notification list. Specify either AddChannelNotificationByName or AddUserNotificationById.

RemoveChannelNotificationByName
The name of the channel to remove from the notification list. Specify either RemoveChannelNotificationByName or RemoveChannelNotificationById.

SetChannelNotificationByName
The name of the channel for which to update notification. Specify either SetChannelNotificationByName or SetChannelNotificationById.

AddUserNotificationById
The ID of the user to add to the notification list. Specify either AddUserNotificationById or AddUserNotificationByName.

RemoveUserNotificationById
The ID of the user to remove from the notification list. Specify either RemoveUserNotificationById or RemoveUserNotificationByName.

SetUserNotificationById
The ID of the user for whom to update notification. Specify either SetUserNotificationById or SetUserNotificationByName.

AddGroupNotificationById
The ID of the group to add to the notification list. Specify either AddGroupNotificationById or AddGroupNotificationByName.

RemoveGroupNotificationById
The ID of the group to remove from the notification list. Specify either RemoveGroupNotificationById or RemoveGroupNotificationByName.

SetGroupNotificationById
The ID of the group for which to update notification. Specify either SetGroupNotificationById or SetGroupNotificationByName.

AddChannelNotificationById
The ID of the channel to add to the notification list. Specify either AddChannelNotificationById or AddUserNotificationByName.

RemoveChannelNotificationById
The ID of the channel to remove from the notification list. Specify either RemoveChannelNotificationById or RemoveChannelNotificationByName.

SetChannelNotificationById
The ID of the channel for which to update notification. Specify either SetChannelNotificationById or SetChannelNotificationByName.

AddOutputFilePermissions
The output file permissions to add. You cannot add file permissions to a file with private access.

RemoveOutputFilePermissions
The output file permissions to remove. You cannot remove file permissions from a file with private access.

SetOutputFilePermissions
The output file permissions to update. You cannot update file permissions of a file with private access.

SetParameterValues
The parameter values to update.

SetQuery
The query parameters to update.

SetOutputFileAccess
The access rights to the output file to update. Valid values are

- Private
  Only the owner of the file and an administrator can access the file.
- Shared
  All users and roles specified in the access control list (ACL) for the file can access the file.

SetWaitForEvent
The event to set that is being waited on. When set, processes that are waiting for this event will proceed.

UpdateJobScheduleOperationGroup

Specifies the UpdateJobScheduleOperation element within the UpdateJobSchedule operation.

Request schema

```
<xsd:complexType name="UpdateJobScheduleOperationGroup">
   <xsd:sequence>
      <xsd:element name="UpdateJobScheduleOperation"
         type="typens:UpdateJobScheduleOperation"
         maxOccurs="unbounded" minOccurs="0"/>
   </xsd:sequence>
</xsd:complexType>
```

Request elements

UpdateJobScheduleOperation
The UpdateJobScheduleOperation element for use with the UpdateJobSchedule operation.

UpdateOpenSecurityCache

Flushes the open security cache. Use UpdateOpenSecurityCache when information in the external data source has been changed and must be updated immediately.

Request schema

```
<xsd:complexType name="UpdateOpenSecurityCache"/>
```

UpdateResourceGroup

Updates resource group properties. You cannot update the resource group name, type, or the name of the BIRT iServer on which the resource group runs.

Request schema

```
<xsd:complexType name="UpdateResourceGroup">
   <xsd:sequence>
      <xsd:element name="ResourceGroup"
         type="typens:ResourceGroup"/>
      <xsd:element name="ResourceGroupSettingsList"
         type="typens:ArrayOfResourceGroupSettings" minOccurs="0"/>
   </xsd:sequence>
</xsd:complexType>
```

Request elements

ResourceGroup
Contains one or more of the following properties to update:

- Disabled
- Description
- MinPriority
- MaxPriority
- Reserved

ResourceGroupSettingsList
Contains one or more of the following properties to update:

- Activate
- MaxFactory
- FileTypes

Response schema

```
<xsd:complexType name="UpdateResourceGroupResponse">
   <xsd:sequence/>
</xsd:complexType>
```

UpdateRole

Updates roles. To update roles, specify the types of updates to make using UpdateRoleOperationGroup, then specify which roles to update.

To update a single role, specify Name or Id. To update a list of roles, specify NameList or IdList. To update roles matching the specified conditions, specify Search.

Request schema

```
<xsd:complexType name="UpdateRole">
   <xsd:sequence>
      <xsd:element name="UpdateRoleOperationGroup"
         type="typens:UpdateRoleOperationGroup"/>
         <xsd:choice>
            <xsd:element name="Search" type="typens:RoleSearch"/>
            <xsd:element name="IdList" type="typens:ArrayOfString"/>
            <xsd:element name="NameList"
               type="typens:ArrayOfString"/>
            <xsd:element name="Id" type="xsd:string"/>
            <xsd:element name="Name" type="xsd:string"/>
         </xsd:choice>
         <xsd:element name="IgnoreMissing" type="xsd:boolean"
            minOccurs="0"/>
         <xsd:element name="IgnoreDup" type="xsd:boolean"
            minOccurs="0"/>
   </xsd:sequence>
</xsd:complexType>
```

Request elements

UpdateRoleOperationGroup
The tasks to perform.

Search
The search condition that specifies which roles to update.

IdList
The list of role IDs to update. Specify either IdList or NameList.

NameList
The list of role names to update. Specify either NameList or IdList.

Id
The ID of the single role to update. Specify either Id or Name.

Name
The name of the single role to update. Specify either Name or Id.

IgnoreMissing
Specifies what to do if the specified role does not exist. If True, BIRT iServer ignores the request. If False, the operation reports an error and stops. The default value is True.

IgnoreDup
Specifies whether to report an error for a duplicate request. BIRT iServer always rejects a duplicate request regardless of the IgnoreDup setting. If True, BIRT iServer does not report an error. In a name list or ID list, True prevents BIRT iServer from performing duplicate operations. If False, BIRT iServer reports an error. The default value is False.

UpdateRoleOperation

Specifies the tasks to perform during the UpdateRole operation.

Request schema

```
<xsd:complexType name="UpdateRoleOperation">
   <xsd:sequence>
      <xsd:choice>
         <xsd:element name="SetAttributes" type="typens:Role"
            minOccurs="0"/>
         <xsd:element name="AssignedToUsersByName"
            type="typens:ArrayOfString" minOccurs="0"/>
         <xsd:element name="DroppedFromUsersByName"
            type="typens:ArrayOfString" minOccurs="0"/>
         <xsd:element name="SetBearingUsersByName"
            type="typens:ArrayOfString" minOccurs="0"/>
         <xsd:element name="AddChildRolesByName"
            type="typens:ArrayOfString" minOccurs="0"/>
         <xsd:element name="RemoveChildRolesByName"
            type="typens:ArrayOfString" minOccurs="0"/>
         <xsd:element name="SetChildRolesByName"
            type="typens:ArrayOfString" minOccurs="0"/>
         <xsd:element name="AddParentRolesByName"
         type="typens:ArrayOfString" minOccurs="0"/>
         <xsd:element name="RemoveParentRolesByName"
            type="typens:ArrayOfString" minOccurs="0"/>
         <xsd:element name="SetParentRolesByName"
```

```
            type="typens:ArrayOfString" minOccurs="0"/>
          <xsd:element name="AssignedToUsersById"
            type="typens:ArrayOfString" minOccurs="0"/>
          <xsd:element name="DroppedFromUsersById"
            type="typens:ArrayOfString" minOccurs="0"/>
          <xsd:element name="SetBearingUsersById"
            type="typens:ArrayOfString" minOccurs="0"/>
          <xsd:element name="AddChildRolesById"
            type="typens:ArrayOfString" minOccurs="0"/>
          <xsd:element name="RemoveChildRolesById"
            type="typens:ArrayOfString" minOccurs="0"/>
          <xsd:element name="SetChildRolesById"
            type="typens:ArrayOfString" minOccurs="0"/>
          <xsd:element name="AddParentRolesById"
            type="typens:ArrayOfString" minOccurs="0"/>
          <xsd:element name="RemoveParentRolesById"
            type="typens:ArrayOfString" minOccurs="0"/>
          <xsd:element name="SetParentRolesById"
          type="typens:ArrayOfString" minOccurs="0"/>
        </xsd:choice>
      </xsd:sequence>
    </xsd:complexType>
```

Request elements

SetAttributes
The general attributes to update.

AssignedToUsersByName
The names of roles to which to assign users. Specify either AssignedToUsersByName or AssignedToUsersById.

DroppedFromUsersByName
The names of roles from which to delete users. Specify either DroppedFromUsersByName or DroppedFromUsersById.

SetBearingUsersByName
The names of roles to which to reassign users. Specify either SetBearingUsersByName or SetBearingUsersById.

AddChildRolesByName
The names of roles to add to the role as descendant roles. Specify either AddChildRolesByName or AddChildRolesById.

RemoveChildRolesByName
The names of descendant roles to remove from the role. Specify either RemoveChildRolesByName or RemoveChildRolesById.

SetChildRolesByName
The names of the role's descendant roles. Specify either SetChildRolesByName or SetChildRolesById.

AddParentRolesByName
The names of roles to add to the role as its ascendant roles. Specify either AddParentRolesByName or AddParentRolesById.

RemoveParentRolesByName
The name of the parent role to remove. Specify either RemoveParentRolesByName or RemoveParentRolesById.

SetParentRolesByName
The names of the role's ascendant roles. Specify either SetParentRolesByName or SetParentRolesById.

AssignedToUsersById
The IDs of roles to which to assign users. Specify either AssignedToUsersById or AssignedToUsersByName.

DroppedFromUsersById
The IDs of roles from which to delete users. Specify either DroppedFromUsersById or DroppedFromUsersByName.

SetBearingUsersById
The IDs of roles to which to reassign users. Specify either SetBearingUsersById or SetBearingUsersByName.

AddChildRolesById
The IDs of roles to add to the role as descendant roles. Specify either AddChildRolesByName or AddChildRolesById.

RemoveChildRolesById
The IDs of descendant roles to remove from the role. Specify either RemoveChildRolesById or RemoveChildRolesByName.

SetChildRolesById
The IDs of the role's descendant roles. Specify either SetChildRolesById or SetChildRolesByName.

AddParentRolesById
The IDs of roles to add to the role as its ascendant roles. Specify either AddParentRolesById or AddParentRolesByName.

RemoveParentRolesById
The IDs of the ascendant roles to remove. Specify either RemoveParentRolesByName or RemoveParentRolesById.

SetParentRolesById
The IDs of the role's ascendant roles. Specify either SetParentRolesById or SetParentRolesByName.

UpdateRoleOperationGroup

Specifies the UpdateRoleOperation element to use during the UpdateRole operation.

Request schema

```
<xsd:complexType name="UpdateRoleOperationGroup">
   <xsd:sequence>
   <xsd:element name="UpdateRoleOperation"
         type="typens:UpdateRoleOperation"
         maxOccurs="unbounded" minOccurs="0"/>
   </xsd:sequence>
</xsd:complexType>
```

Request elements

UpdateRoleOperation
The UpdateRoleOperation element for use with the UpdateRole operation.

UpdateUser

Updates user properties. To update users, specify the types of updates to make using UpdateUserOperationGroup, then specify which users to update.

To update a single user, specify Name or Id. To update a list of users, specify NameList or IdList. To update users matching the specified conditions, specify Search.

Request schema

```
<xsd:complexType name="UpdateUser">
   <xsd:sequence>
      <xsd:element name="UpdateUserOperationGroup"
         type="typens:UpdateUserOperationGroup"/>
      <xsd:choice>
         <xsd:element name="Search" type="typens:UserSearch"/>
         <xsd:element name="IdList" type="typens:ArrayOfString"/>
         <xsd:element name="NameList" type="typens:ArrayOfString"/>
         <xsd:element name="Id" type="xsd:string"/>
         <xsd:element name="Name" type="xsd:string"/>
      </xsd:choice>
      <xsd:element name="IgnoreMissing" type="xsd:boolean"
         minOccurs="0"/>
      <xsd:element name="IgnoreDup" type="xsd:boolean"
         minOccurs="0"/>
      <xsd:element name="SkipPermissionError" type="xsd:boolean"
         minOccurs="0"/>
   </xsd:sequence>
</xsd:complexType>
```

Request elements

UpdateUserOperationGroup
The tasks to perform.

Search
The search conditions. If search conditions apply to multiple fields, use ConditionArray.

IdList
The list of user IDs to update. Specify either IdList or NameList.

NameList
The list of user names to update. Specify either NameList or IdList.

Id
The ID of a single user to update. Specify either Id or Name.

Name
The name of a single user to update. Specify either Name or Id.

IgnoreMissing
Specifies what to do if the specified user does not exist. If True, BIRT iServer ignores the request. If False, the operation reports an error and stops. The default value is True.

IgnoreDup
Specifies whether to report an error for a duplicate request. BIRT iServer always rejects a duplicate request regardless of the IgnoreDup setting. If True, BIRT iServer does not report an error. In a name list or ID list, True prevents BIRT iServer from performing duplicate operations. If False, BIRT iServer reports an error. The default value is False.

SkipPermissionError
Specifies whether to continue the request if BIRT iServer produces a permission error. BIRT iServer produces this error if the user you are subscribing to a channel does not have read and write privileges to the channel. If True, the BIRT iServer ignores the error.

UpdateUserOperation

Specifies the tasks to perform during the UpdateUser operation.

Request schema

```
<xsd:complexType name="UpdateUserOperation">
   <xsd:sequence>
      <xsd:choice>
         <xsd:element name="SetAttributes" type="typens:User"
            minOccurs="0"/>
         <xsd:element name="AddToGroupsByName"
            type="typens:ArrayOfString" minOccurs="0"/>
```

```
<xsd:element name="RemoveFromGroupsByName"
   type="typens:ArrayOfString" minOccurs="0"/>
<xsd:element name="SetGroupMembershipsByName"
   type="typens:ArrayOfString" minOccurs="0"/>
<xsd:element name="AssignRolesByName"
   type="typens:ArrayOfString" minOccurs="0"/>
<xsd:element name="DropRolesByName"
   type="typens:ArrayOfString"
   minOccurs="0"/>
<xsd:element name="SetRolesByName"
   type="typens:ArrayOfString"
   minOccurs="0"/>
<xsd:element name="SubscribeToChannelsByName"
   type="typens:ArrayOfString" minOccurs="0"/>
<xsd:element name="UnsubscribeFromChannelsByName"
   type="typens:ArrayOfString" minOccurs="0"/>
   <xsd:element name="SetChannelSubscriptionByName"
   type="typens:ArrayOfString" minOccurs="0"/>
<xsd:element name="AddToGroupsById"
   type="typens:ArrayOfString"
   minOccurs="0"/>
<xsd:element name="RemoveFromGroupsById"
   type="typens:ArrayOfString" minOccurs="0"/>
<xsd:element name="SetGroupMembershipsById"
   type="typens:ArrayOfString" minOccurs="0"/>
<xsd:element name="AssignRolesById"
   type="typens:ArrayOfString"
   minOccurs="0"/>
<xsd:element name="DropRolesById"
   type="typens:ArrayOfString"
   minOccurs="0"/>
<xsd:element name="SetRolesById"
   type="typens:ArrayOfString" minOccurs="0"/>
<xsd:element name="SubscribeToChannelsById"
   type="typens:ArrayOfString" minOccurs="0"/>
<xsd:element name="UnsubscribeFromChannelsbyId"
   type="typens:ArrayOfString" minOccurs="0"/>
<xsd:element name="SetChannelSubscriptionById"
   type="typens:ArrayOfString" minOccurs="0"/>
<xsd:element name="AddFileCreationPermissions"
   type="typens:ArrayOfPermission" minOccurs="0"/>
<xsd:element name="RemoveFileCreationPermissions"
   type="typens:ArrayOfPermission" minOccurs="0"/>
<xsd:element name="SetFileCreationPermissions"
   type="typens:ArrayOfPermission" minOccurs="0"/>
<xsd:element name="SetPrinterOptions"
   type="typens:ArrayOfPrinterOptions" minOccurs="0"/>
```

```
            <xsd:element name="SetLicenseOptions"
               type="typens:ArrayOfString" minOccurs="0"/>
            <xsd:element name="AddLicenseOptions"
               type="typens:ArrayOfString" minOccurs="0"/>
            <xsd:element name="RemoveLicenseOptions"
               type="typens:ArrayOfString" minOccurs="0"/>
         </xsd:choice>
      </xsd:sequence>
   </xsd:complexType>
```

Request elements

SetAttributes
The general attributes to update.

AddToGroupsByName
The names of groups to which to add users. Specify either AddToGroupsByName or AddToGroupsById.

RemoveFromGroupsByName
The names of groups from which to remove users. Specify either RemoveFromGroupsByName or RemoveFromGroupsById.

SetGroupMembershipsByName
The groups for which to update users' membership. Specify either SetGroupMembershipsByName or SetGroupMembershipsById.

AssignRolesByName
The names of roles to assign to users. Specify either AssignRolesByName or AssignRolesById.

DropRolesByName
The names of roles from which to remove users. Specify either DropRolesByName or DropRolesById.

SetRolesByName
The names of roles to update. Specify either SetRolesByName or SetRolesById.

SubscribeToChannelsByName
The names of channels to which to subscribe users. Specify either SubscribeToChannelsByName or SubscribeToChannelsById.

UnsubscribeFromChannelsByName
The names of channels from which to unsubscribe users. Specify either UnsubscribeFromChannelsByName or UnsubscribeFromChannelsById.

SetChannelSubscriptionsByName
The names of channels to update for users. Specify either SetChannelSubscriptionsByName or SetChannelSubscriptionsById.

AddToGroupsById
The IDs of groups to which to add users. Specify either AddToGroupsById or AddToGroupsByName.

RemoveFromGroupsById
The IDs of groups from which to remove users. Specify either RemoveFromGroupsById or RemoveFromGroupsByName.

SetGroupMembershipsById
The IDs of groups for which to update users' membership. Specify either SetGroupMembershipsById or SetGroupMembershipsByName.

AssignRolesById
The IDs of roles to assign to users. Specify either AssignRolesById or AssignRolesByName.

DropRolesById
The IDs of roles from which to remove users. Specify either DropRolesById or DropRolesByName.

SetRolesById
The IDs of roles to update for users. Specify either SetRolesById or SetRolesByName.

SubscribeToChannelsById
The IDs of channels to which to subscribe users. Specify either SubscribeToChannelsById or SubscribeToChannelsByName.

UnsubscribeFromChannelsById
The IDs of channels from which to unsubscribe users. Specify either UnsubscribeFromChannelsById or UnsubscribeFromChannelsByName.

SetChannelSubscriptionsById
The IDs of channels to update for users. Specify either SetChannelSubscriptionsById or SetChannelSubscriptionsByName.

AddFileCreationPermissions
Grants users the permissions to add files.

RemoveFileCreationPermissions
Revokes users' ability to add files.

SetFileCreationPermissions
Modifies users' ability to add files.

SetPrinterOptions
The printer options to set for the users.

SetLicenseOptions
The license options to set for the users.

AddLicenseOptions
Grants users the right to add license options.

RemoveLicenseOptions
Removes the right of users to add license options.

UpdateUserOperationGroup

Specifies the UpdateUserOperation element to use during the UpdateUser operation.

Request schema

```
<xsd:complexType name="UpdateUserOperationGroup">
   <xsd:sequence>
      <xsd:element name="UpdateUserOperation"
         type="typens:UpdateUserOperation"
         maxOccurs="unbounded" minOccurs="0"/>
   </xsd:sequence>
</xsd:complexType>
```

Request elements

UpdateUserOperation
The UpdateUserOperation element for use with the UpdateUser operation.

UpdateVolumeProperties

Updates an Encyclopedia volume. To update a volume, specify the types of updates to make using UpdateVolumeOperationGroup, then specify which Encyclopedia volume to update.

Request schema

```
<xsd:complexType name="UpdateVolumeProperties">
   <xsd:sequence>
      <xsd:element name="UpdateVolumePropertiesOperationGroup"
         type="typens:UpdateVolumePropertiesOperationGroup"/>
   </xsd:sequence>
</xsd:complexType>
```

Request elements

UpdateVolumePropertiesOperationGroup
The tasks to perform.

UpdateVolumePropertiesOperation

Specifies the tasks to perform during the UpdateVolumeProperties operation.

Request schema

```
<xsd:complexType name="UpdateVolumePropertiesOperation">
   <xsd:sequence>
      <xsd:choice>
         <xsd:element name="SetAttributes" type="typens:Volume"
            minOccurs="0"/>
         <xsd:element name="SetPrinterOptions"
            type="typens:ArrayOfPrinterOptions" minOccurs="0"/>
         <xsd:element name="SetSystemPrinters"
            type="typens:ArrayOfPrinter" minOccurs="0"/>
         <xsd:element name="ClearSystemPrinters"
            type="typens:ArrayOfString" minOccurs="0"/>
         <xsd:element name="SetAutoArchiveSchedules"
            type="typens:JobSchedule" minOccurs="0"/>
      </xsd:choice>
   </xsd:sequence>
</xsd:complexType>
```

Request elements

SetAttributes
Contains one or more of the following Encyclopedia volume properties to update:

- DefaultPrinterName
- MaxJobRetryCount
- JobRetryInterval
  The interval between retry attempts. Measured in seconds.
- DefaultViewingPreference
- DHTMLPageCaching
- DHTMLPageCachingExpiration
  If DHTMLPageCaching is True, set the DHTMLPageCachingExpiration to a valid value. To disable DHTMLPageCaching, set DHTMLPageCachingExpiration to -1.

SetPrinterOptions
The Encyclopedia volume printer options to update.

SetSystemPrinters
The printer to set as the system printer for the Encyclopedia volume.

ClearSystemPrinters
The printer to remove from the Encyclopedia volume.

SetAutoArchiveSchedules
The start of the autoarchive schedule for folders and files on the Encyclopedia volume.

UpdateVolumePropertiesOperationGroup

Specifies the UpdateVolumePropertiesOperation element to use during the UpdateVolumeProperties operation.

Request schema

```
<xsd:complexType name="UpdateVolumePropertiesOperationGroup">
   <xsd:sequence>
      <xsd:element name="UpdateVolumePropertiesOperation"
         type="typens:UpdateVolumePropertiesOperation"
         maxOccurs="unbounded" minOccurs="0"/>
   </xsd:sequence>
</xsd:complexType>
```

Request elements

UpdateVolumePropertiesOperation
The UpdateVolumePropertiesOperation element for use with the UpdateVolumeProperties operation.

UploadFile

Uploads a file to an Encyclopedia volume. You can upload the file as a MIME attachment or embed it in the request. To embed the file in the request, specify the ContentData element of the attachment.

Request schema

```
<xsd:complexType name="UploadFile">
   <xsd:sequence>
      <xsd:element name="NewFile" type="typens:NewFile"/>
      <xsd:element name="CopyFromLatestVersion"
         type="typens:ArrayOfString" minOccurs="0" maxOccurs="1"/>
      <xsd:element name="Content" type="typens:Attachment"/>
   </xsd:sequence>
</xsd:complexType>
```

Request elements

NewFile
The file to upload.

CopyFromLatestVersion
Copies one or more of the following properties from the latest version of the file, if one exists, to the version of the file that you upload:

- Description
  The description of the file.
- Permissions
  Access Control List (ACL) specifying the users and roles that can access the file.
- ArchiveRule

The autoarchive rules for the file.

Content
The information about the file, such as the encoding the file uses and the data to upload.

Response schema

```
<xsd:complexType name="UploadFileResponse">
   <xsd:sequence>
      <xsd:element name="FileId" type="xsd:string"/>
   </xsd:sequence>
</xsd:complexType>
```

Response elements

FileId
The ID of the uploaded file.

WaitForExecuteReport

Retrieves the status of the request to cancel synchronous report generation after receiving the Pending status. Send WaitForExecuteReport after sending CancelReport.

If progressive viewing is enabled, WaitForExecuteReport retrieves the status after the first page generates. Otherwise, WaitForExecuteReport waits until the report is complete.

If the current job status is Pending, WaitForExecuteReport waits for the report to generate.

Request schema

```
<xsd:complexType name="WaitForExecuteReport">
   <xsd:sequence>
      <xsd:element name="ObjectId" type="xsd:string"
         minOccurs="0"/>
   </xsd:sequence>
</xsd:complexType>
```

Request elements

ObjectId
The ID of the job.

Response schema

```
<xsd:complexType name="WaitForExecuteReportResponse">
   <xsd:sequence>
      <xsd:element name="Status"
         type="xsd:string"/>
      <xsd:element name="ErrorDescription" type="xsd:string"
         minOccurs="0"/>
      <xsd:element name="OutputFileType" type="xsd:string"
         minOccurs="0"/>
      <xsd:element name="ObjectId" type="xsd:string"/>
      <xsd:element name="ConnectionHandle" type="xsd:string"
         minOccurs="0"/>
```

```
    </xsd:sequence>
</xsd:complexType>
```

Response elements

Status
The status of the request. One of the following values:

- Done
- Failed
- FirstPage

ErrorDescription
The description of the error. Returned if Status is Failed.

OutputFileType
The type of the output file.

ObjectId
The object ID of the report.

ConnectionHandle
The ID of the report. Supports viewing a report when the report is already in iServer System. Specified in the SOAP header.

Chapter

9

Actuate Information Delivery API data types

This chapter provides reference documentation for the data types the Actuate Information Delivery API uses. Each entry includes a general description of the data type, its schema, and a description of its elements.

AbsoluteDate

A complex data type that describes a date and run options for a job.

Schema

```
<xsd:complexType name="AbsoluteDate">
   <xsd:sequence>
      <xsd:element name="RunOn" type="xsd:string"/>
      <xsd:element name="OnceADay" type="xsd:string"
         minOccurs="0"/>
      <xsd:element name="Repeat" type="typens:Repeat"
         minOccurs="0"/>
   </xsd:sequence>
</xsd:complexType>
```

Elements

RunOn
The date that a job is scheduled to run.

OnceADay
The days a job is to be run.

Repeat
Repeats the job run during a set start and stop time.

acDouble

A simple data type that represents a hexadecimal double.

Schema

```
<xsd:simpleType name="acDouble">
   <xsd:restriction base="xsd:hexBinary" />
</xsd:simpleType>
```

acNull

A simple data type that represents a null value.

Schema

```
<xsd:simpleType name="acNull">
   <xsd:restriction base="xsd:string">
      <xsd:maxLength value="0" />
   </xsd:restriction>
</xsd:simpleType>
```

Aggregation

A complex data type that describes the aggregation action to perform on a column.

Schema

```
<xsd:complexType name="Aggregation">
   <xsd:sequence>
      <xsd:element name="ColumnName" type="xsd:string"/>
      <xsd:element name="AggregationFunctions"
         type="typens:ArrayOfString">
      </xsd:element>
   </xsd:sequence>
</xsd:complexType>
```

Elements

ColumnName
The names of the columns on which to perform aggregation.

AggregationFunctions
The aggregation function to perform. Each column can have only one aggregation function. Valid functions are:

- MIN
- MAX
- AVG
- SUM

ArchiveRule

A complex data type that represents an archiving rule.

Schema

```
<xsd:complexType name="ArchiveRule">
   <xsd:sequence>
      <xsd:element name="FileType" type="xsd:string"/>
      <xsd:element name="NeverExpire" type="xsd:boolean"
         minOccurs="0"/>
      <xsd:element name="ExpireDependentFiles" type="xsd:boolean"
         minOccurs="0"/>
      <xsd:element name="ArchiveOnExpiration" type="xsd:boolean"
         minOccurs="0"/>
      <xsd:choice minOccurs="0"/>
         <xsd:element name="ExpirationAge" type="xsd:long"
            minOccurs="0"/>
         <xsd:element name="ExpirationTime" type="xsd:dateTime"
            minOccurs="0"/>
      </xsd:choice>
```

```
      <xsd:element name="IsInherited" type="xsd:boolean"
        minOccurs="0"/>
      <xsd:element name="InheritedFrom" type="xsd:string"
        minOccurs="0"/>
   </xsd:sequence>
</xsd:complexType>
```

Elements

FileType
The file type. Cannot exceed 20 characters.

NeverExpire
Specifies whether the object expires.

ExpireDependentFiles
Specifies whether the object's dependent files expire when the object is expired.

ArchiveOnExpiration
Specifies whether the object is archived before it is expired.

ExpirationAge
The expiration age for the object.

ExpirationTime
The expiration time for the object.

IsInherited
Specifies whether the rule is inherited.

InheritedFrom
The object from which the rule is inherited.

Argument

A complex data type that represents an argument.

Schema

```
<xsd:complexType name="Argument">
   <xsd:sequence>
      <xsd:element name="Name" type="xsd:string"/>
      <xsd:element name="Value" type="xsd:string"/>
   </xsd:sequence>
</xsd:complexType>
```

Elements

Name
The name of the argument.

Value
The value of the argument.

Arrays of data types

Data type definitions can be grouped into arrays. Each array has a specific definition for that data type.

The schema for an array of a data type generally follows the following pattern:

```
<xsd:complexType name="ArrayOfX">
   <xsd:sequence>
      <xsd:element name="X" type="typens:X"
         maxOccurs="unbounded"/>
   </xsd:sequence>
</xsd:complexType>
```

In the above listing, X is the data type of object the array contains. For example, the XML for an array of Aggregation objects is:

```
<xsd:complexType name="ArrayOfAggregation">
   <xsd:sequence>
      <xsd:element name="Aggregation" type="typens:Aggregation"
         maxOccurs="unbounded"/>
   </xsd:sequence>
</xsd:complexType>
```

The following data types have arrays defined in this manner:

- Aggregation
- ArchiveRule
- Argument
- Attachment
- Channel
- ChannelCondition
- ColumnDefinition
- ColumnSchema
- ComponentIdentifier
- DataExtractionFormat
- DataFilterCondition
- DataRow
- DataSortColumn
- DocumentConversionOptions
- FieldDefinition
- JobProperties
- JobScheduleCondition
- JobScheduleDetail
- LicenseOption
- MDSInfo
- NameValuePair
- ParameterDefinition
- ParameterValue
- PendingSyncJob
- Permission
- Printer
- PrinterOptions
- PropertyValue
- Record
- ResourceGroup

- File
- FileCondition
- FileContent
- FileType
- FilterCriteria
- Group
- GroupCondition
- Grouping
- JobCondition
- JobNotice
- JobNoticeCondition
- ResourceGroupSettings
- ResultSetSchema
- Role
- RoleCondition
- RunningJob
- ServerInformation
- ServerResourceGroupSetting
- Service
- SortColumn
- User
- UserCondition

Some array definitions are different from the ones listed above. These arrays have a type defintion for the element other than what appears in the array name. For example, the ArrayofDate is defined as:

```
<xsd:complexType name="ArrayOfDate">
   <xsd:sequence>
      <xsd:element name="Date" type="typens:string"
         maxOccurs="unbounded" minOccurs="0" />
   </xsd:sequence>
</xsd:complexType>
```

In this definition, the element name is Date, but its type is defined as a string. The ArrayOfDate type is defined as an array of string elements. The arrays in this format are listed in Table 9-1, along with the associated element type.

Table 9-1 Non-standard arrays

Array type	Element type
Date	string
String	string
Int	int
Component	ComponentType
Long	long

Attachment

A complex data type that describes the object in the attachment and contains the attachment as binary data.

Schema

```
<xsd:complexType name="Attachment">
   <xsd:all>
      <xsd:element name="ContentId" type="xsd:string"/>
      <xsd:element name="ContentType" type="xsd:string"/>
      <xsd:element name="ContentLength" type="xsd:long"
         minOccurs="0"/>
      <xsd:element name="ContentEncoding" type="xsd:string"
         minOccurs="0"/>
      <xsd:element name="Locale" type="xsd:string" minOccurs="0"/>
      <xsd:element name="ContentData" type="xsd:base64Binary"
         minOccurs="0"/>
   </xsd:all>
</xsd:complexType>
```

Elements

ContentId
Maps to the attachment's MIME header. ContentId is required.

ContentType
The type of file to upload, such as binary.

ContentLength
The length of the object.

ContentEncoding
The encoding the object uses. Cannot exceed 10 characters.

Locale
The object locale.

ContentData
The attachment as binary data. Use ContentData to embed the file in the request.

Boolean

A standard XML Boolean data type with a value of True or False.

CancelJobStatus

A simple data type that represents the status of a request to cancel a synchronous report.

Schema

```
<xsd:simpleType name="CancelJobStatus" base="xsd:string">
   <xsd:restriction base="xsd:string">
      <xsd:enumeration value="Succeeded"/>
      <xsd:enumeration value="Failed"/>
      <xsd:enumeration value="InActive"/>
```

```
   </xsd:restriction>
</xsd:simpleType>
```

Elements

Succeeded
The synchronous report generation was successfully canceled.

Failed
The request to cancel a synchronous report failed.

InActive
The synchronous report generation is complete and cannot be canceled.

Channel

A complex data type that describes a channel.

Schema

```
<xsd:complexType name="Channel">
   <xsd:all>
      <xsd:element name="Id" type="xsd:string" minOccurs="0"/>
      <xsd:element name="Name" type="xsd:string" minOccurs="0"/>
      <xsd:element name="PollingInterval" type="xsd:long"
         minOccurs="0"/>
      <xsd:element name="Description" type="xsd:string"
         minOccurs="0"/>
      <xsd:element name="Expiration" type="xsd:long"minOccurs="0"/>
      <xsd:element name="SmallImageURL" type="xsd:string"
         minOccurs="0"/>
      <xsd:element name="LargeImageURL" type="xsd:string"
         minOccurs="0"/>
      <xsd:element name="UserPermissions" type="xsd:string"
         minOccurs="0"/>
   </xsd:all>
</xsd:complexType>
```

Elements

Id
The channel ID.

Name
The channel name. Cannot exceed 50 characters.

PollingInterval
The number of seconds that elapses until the next time the BIRT iServer refreshes the contents of the channel. The minimum value is 10 seconds.

Description
The description of the channel. Cannot exceed 500 characters.

Expiration
The number of seconds an item remains on the channel before the item is removed.

SmallImageURL
The URL of the small custom image for the channel. Cannot exceed 100 characters.

LargeImageURL
The URL of the large custom image for the channel. Cannot exceed 100 characters.

UserPermissions
The permissions the current user has on the channel.

ChannelCondition

A complex data type that represents fields on which a search can be performed and the condition to match.

Schema

```
<xsd:complexType name="ChannelCondition">
   <xsd:sequence>
      <xsd:element name="Field" type="typens:ChannelField">
      <xsd:element name="Match" type="xsd:string"/>
   </xsd:sequence>
</xsd:complexType>
```

Elements

Field
The ChannelField that represents the field for the condition.

Match
The condition to match. If the condition includes special characters, for example a dash, either escape the special character with a backslash (\) or enclose it in brackets ([]). For example, to search for a file 05-25-04Report.roi, specify one of the following:

```
05\ -25\ -04Report.roi
05[-]25[-]04Report.roi
```

ChannelField

A simple data type that represents the field of a ChannelCondition.

Schema

```
<xsd:simpleType name="ChannelField">
   <xsd:restriction base="xsd:string">
      <xsd:enumeration value="Name"/>
      <xsd:enumeration value="PollingInterval"/>
```

```
      <xsd:enumeration value="Description"/>
      <xsd:enumeration value="Expiration"/>
      <xsd:enumeration value="SmallImageURL"/>
      <xsd:enumeration value="LargeImageURL"/>
   </xsd:restriction>
</xsd:simpleType>
```

ChannelSearch

A complex data type that represents a channel search.

Schema

```
<xsd:complexType name="ChannelSearch">
   <xsd:sequence>
      <xsd:choice minOccurs="0">
         <xsd:element name="Condition"
            type="typens:ChannelCondition"/>
         <xsd:element name="ConditionArray"
            type="typens:ArrayOfChannelCondition"/>
      </xsd:choice>
      <xsd:choice minOccurs="0">
         <xsd:element name="SubscribedUserId" type="xsd:string"/>
         <xsd:element name="SubscribedUserName" type="xsd:string"/>
         <xsd:element name="PrivilegeFilter"
            type="typens:PrivilegeFilter">
         </xsd:element>
      </xsd:choice>
      <xsd:element name="IncludeInheritedPrivilege"
         type="xsd:boolean" minOccurs="0"/>
      <xsd:element name="FetchSize" type="xsd:int" minOccurs="0"/>
      <xsd:element name="FetchDirection" type="xsd:boolean"
         minOccurs="0"/>
      <xsd:element name="CountLimit" type="xsd:int" minOccurs="0"/>
      <xsd:element name="FetchHandle" type="xsd:string"
         minOccurs="0"/>
   </xsd:sequence>
</xsd:complexType>
```

Elements

Condition
The search condition.

ConditionArray
An array of search conditions.

SubscribedUserId
The ID of the user subscribed to the channel.

SubscribedUserName
The name of the user subscribed to the channel.

PrivilegeFilter
The privileges for which to search. Use PrivilegeFilter to determine the channels to which the specified user or role has the specified privileges.

IncludeInheritedPrivilege
Specifies whether to search only the privileges directly assigned to the channel or to include inherited privileges.

FetchSize
The maximum number of records to retrieve and return in a result set. The default value is 500.

FetchDirection
If True, records are retrieved forward. If False, records are retrieved backward. The default value is True.

CountLimit
The maximum number of records to count. By default, CountLimit is equal to FetchSize. To count all records, set CountLimit to -1.

FetchHandle
Retrieves more items from the result set. In the second and subsequent calls for data, specify the same search criteria as in the original call.

ColumnDefinition

A complex data type that describes a column in a query.

Schema

```
<xsd:complexType name="ColumnDefinition">
   <xsd:sequence>
      <xsd:element name="Name" type="xsd:string"/>
      <xsd:element name="Description" type="xsd:string"
         minOccurs="0"/>
      <xsd:element name="DisplayName" type="xsd:string"/>
      <xsd:element name="Heading" type="xsd:string" minOccurs="0"/>
      <xsd:element name="HelpText" type="xsd:string"
         minOccurs="0"/>
      <xsd:element name="DataType" type="typens:DataType"
         minOccurs="0"/>
      <xsd:element name="DisplayLength" type="xsd:long"
         minOccurs="0"/>
      </xsd:element>
      <xsd:element name="DisplayFormat" type="xsd:string"
         minOccurs="0"/>
```

```
        </xsd:element>
          <xsd:element name="AnalysisType" minOccurs="0">
            <xsd:simpleType>
              <xsd:restriction base="xsd:string">
                <xsd:enumeration value="Automatic"/>
                <xsd:enumeration value="Dimension"/>
                <xsd:enumeration value="Measure"/>
              </xsd:restriction>
            </xsd:simpleType>
          </xsd:element>
          <xsd:element name="HorizontalAlignment" minOccurs="0">
            <xsd:simpleType>
              <xsd:restriction base="xsd:string">
                <xsd:enumeration value="Automatic"/>
                <xsd:enumeration value="Left"/>
                <xsd:enumeration value="Center"/>
                <xsd:enumeration value="Right"/>
              </xsd:restriction>
            </xsd:simpleType>
          </xsd:element>
          <xsd:element name="EnableFilter" type="xsd:boolean"/>
          <xsd:element name="TextFormat" minOccurs="0">
            <xsd:simpleType>
              <xsd:restriction base="xsd:string">
                <xsd:enumeration value="Plain" />
                <xsd:enumeration value="HTML" />
                <xsd:enumeration value="RTF" />
              </xsd:restriction>
            </xsd:simpleType>
          </xsd:element>
          <xsd:element name="Wrap" minOccurs="0">
            <xsd:simpleType>
              <xsd:restriction base="xsd:string">
                <xsd:enumeration value="None" />
                <xsd:enumeration value="Word" />
              </xsd:restriction>
            </xsd:simpleType>
          </xsd:element>
          <xsd:element name="CategoryPath" type="xsd:string"
            minOccurs="0" />
        </xsd:sequence>
      </xsd:complexType>
```

Elements

Name
The column name.

Description
The long description of the column.

DisplayName
The display name of the column. If not specified, the value of the Name element is used. If the query is performed on an information object (.iob) or data source map (.sma) file, DisplayName is used as the group label.

Heading
The text to display above the column in the output file.

HelpText
The text to display when the user holds the cursor over a column. For example, a value of a data column.

DataType
The data type of the column.

DisplayLength
The width of the column, in number of characters.

DisplayFormat
The format in which the data of the column appears in the output file.

AnalysisType
Specifies how data in the column is analyzed. One of the following values:

- Automatic
  Numeric values are analyzed as measures. Non-numeric values are analyzed as dimensions.
- Dimension
  Numeric values are analyzed as dimensions.
- Measure
  Numeric values are analyzed as measures.

HorizontalAlignment
Specifies how data in the column is aligned horizontally. One of the following values:

- Automatic
- Left
- Center
- Right

EnableFilter
Specifies whether filtering for the column is enabled. If True, the data in the column can be filtered.

TextFormat
Specifies text formatting. Valid values are:

- Plain
- HTML
- RTF

Wrap
Specifies word wrapping. Valid values are:

- None
- Word

CategoryPath
The category path for the column.

ColumnDetail

A complex data type that describes the type of data within a column.

Schema

```
<xsd:complexType name="ColumnDetail">
   <xsd:sequence>
      <xsd:element name="name" type="xsd:string" />
      <xsd:element name="type" type="typens:TypeName" />
      <xsd:element name="displayName" type="xsd:string" />
   </xsd:sequence>
</xsd:complexType>
```

Elements

name
The name of the column.

type
The type of data within the column.

displayName
The display name of the column.

ColumnSchema

A complex data type that describes the schema of a column.

Schema

```
<xsd:complexType name="ColumnSchema">
   <xsd:sequence>
   <xsd:element name="Name" type="xsd:string"/>
   <xsd:element name="Alias" type="xsd:string" minOccurs="0"/>
   <xsd:element name="DataType" type="xsd:int" minOccurs="0"/>
```

```
   <xsd:element name="TypeName" type="xsd:string"/>
   <xsd:element name="Label" type="xsd:string" minOccurs="0"/>
   <xsd:element name="Visibility" type="xsd:boolean"
      minOccurs="0"/>
</xsd:sequence>
</xsd:complexType>
```

Elements

Name
The column name.

Alias
User-defined name for column.

DataType
The data type of the column.

TypeName
The name of the data type.

Label
The column label.

Visibililty
Specifies whether column is visible. The default value is True.

ComponentIdentifier

A complex data type that identifies the component by ID or name.

Schema

```
<xsd:complexType name="ComponentIdentifier">
   <xsd:sequence>
      <xsd:choice>
         <xsd:element name="Id" type="xsd:string"/>
         <xsd:element name="Name" type="xsd:string"/>
      </xsd:choice>
      <xsd:element name="DisplayName" type="xsd:string"
         minOccurs="0"/>
      <xsd:element name="ClassId" type="xsd:string"
         minOccurs="0"/>
   </xsd:sequence>
</xsd:complexType>
```

Elements

Id
The ID of the component.

Name
The name of the component.

DisplayName
The display name of the component.

ClassId
The class ID of the component.

ComponentType

A complex data type that represents a component.

Schema

```
<xsd:complexType name="ComponentType">
   <xsd:all>
      <xsd:element name="Id" type="xsd:string" minOccurs="0"/>
      <xsd:element name="Name" type="xsd:string" minOccurs="0"/>
      <xsd:element name="Value" type="xsd:string" minOccurs="0"/>
      <xsd:element name="DisplayName" type="xsd:string"
         minOccurs="0" />
      <xsd:element name="ClassId" type="xsd:string"
         minOccurs="0"/>
   </xsd:all>
</xsd:complexType>
```

Elements

Id
The component ID.

Name
The component name.

Value
The component value.

DisplayName
The display name of the component.

ClassId
The class ID of the component.

ConversionOptions

A complex data type that specifies the options for converting a report object instance (.roi) output file to another format.

Schema

```
<xsd:complexType name="ConversionOptions">
   <xsd:sequence>
      <xsd:element name="Format" type="xsd:string"/>
      <xsd:element name="KeepROIIfSucceeded" type="xsd:boolean"
         minOccurs="0"/>
```

```
      <xsd:element name="KeepROIIfFailed" type="xsd:boolean"
        minOccurs="0"/>
   </xsd:sequence>
</xsd:complexType>
```

Elements

Format
The format to which to convert the ROI. Valid formats are:

- PDF
- Excel Display
- Excel Data
- RTF
- Fully Editable RTF

iServer rejects requests and produces a SOAP fault for unsupported formats.

KeepROIIfSucceeded
Specifies whether to keep the ROI if the request to convert the file succeeds. If True, the ROI remains. The default value is False.

KeepROIIfFailed
Specifies whether to keep the ROI if the request to convert the file fails. If True, the ROI remains. The default value is True.

CustomEvent

A complex data type that specifies information used within a custom event.

Schema

```
<xsd:complexType name="CustomEvent">
   <xsd:sequence>
      <xsd:element name="EventParameter" type="xsd:string" />
   </xsd:sequence>
</xsd:complexType>
```

Elements

EventParameter
A value used within the custom event.

Daily

A complex data type that describes daily types of job scheduling.

Schema

```
<xsd:complexType name="Daily">
   <xsd:sequence>
      <xsd:element name="FrequencyInDays" type="xsd:long"/>
      <xsd:element name="OnceADay" type="xsd:string"
```

```
        minOccurs="0"/>
      <xsd:element name="Repeat" type="typens:Repeat"
        minOccurs="0"/>
   </xsd:sequence>
</xsd:complexType>
```

Elements

FrequencyInDays
The number of times a job is run daily in days.

OnceADay
A string representing when a job is to be run once a day.

Repeat
The number of times the schedule is repeated.

DatabaseConnectionDefinition

A complex data type that describes an Actuate Caching service (ACS) database connection object in the Encyclopedia volume.

Schema

```
<xsd:complexType name="DatabaseConnectionDefinition">
   <xsd:all>
      <xsd:element name="Name" type="xsd:string" minOccurs="0"/>
      <xsd:element name="Id" type="xsd:string" minOccurs="0"/>
      <xsd:element name="Type" type="xsd:string" minOccurs="0"/>
      <xsd:element name="ConfigKey" type="xsd:string"
        minOccurs="0"/>
      <xsd:element name="ConnectionParameters"
        type="typens:ArrayOfParameterValue" minOccurs="0"/>
      <xsd:element name="DBUsername" type="xsd:string"
        minOccurs="0"/>
      <xsd:element name="DBPassword" type="xsd:string"
        minOccurs="0"/>
      <xsd:element name="DBAdminUsername" type="xsd:string"
        minOccurs="0"/>
      <xsd:element name="DBAdminPassword" type="xsd:string"
        minOccurs="0"/>
      <xsd:element name="DBLoadPath" type="xsd:string"
        minOccurs="0" />
   </xsd:all>
</xsd:complexType>
```

Elements

Name
The name of the data connection definition (.dcd) file to use for the connection.

Id
The ID of the DCD.

Type
The type of database to which to connect. The list of available database types is returned by GetDatabaseConnectionTypes.

ConfigKey
The ConfigKey for the database connection.

ConnectionParameters
Any parameters required to connect to the database.

DBUsername
The user name to use to access the database.

DBPassword
The password to use to access the database.

DBAdminUsername
The user name of the database administrator.

DBAdminPassword
The password of the database administrator.

DBLoadPath
The database load path.

DataCell

A complex data type describing the types of data within a data cell.

Schema

```
<xsd:complexType name="DataCell">
   <xsd:sequence>
      <xsd:choice>
         <xsd:element name="int" type="xsd:int" />
         <xsd:element name="sht" type="xsd:short" />
         <xsd:element name="dbl" type="xsd:double" />
         <xsd:element name="dbn" type="typens:acDouble" />
         <xsd:element name="cur" type="xsd:string" />
         <xsd:element name="dtm" type="xsd:dateTime" />
         <xsd:element name="str" type="xsd:string" />
         <xsd:element name="bln" type="xsd:boolean" />
         <xsd:element name="nll" type="typens:acNull" />
      </xsd:choice>
   </xsd:sequence>
</xsd:complexType>
```

DataExtractionFormat

A complex data type that describes the format of a file and its mime type.

Schema

```
<xsd:complexType name="DataExtractionFormat">
   <xsd:sequence>
      <xsd:element name="OutputFormat" type="xsd:string"/>
      <xsd:element name="MimeType" type="xsd:string"/>
</xsd:sequence>
</xsd:complexType>
```

Elements

OutputFormat
The format of the file.

MimeType
The file mime type.

DataFilterCondition

A complex data type that describes a filter condition.

Schema

```
<xsd:complexType name="DataFilterCondition">
   <xsd:sequence>
      <xsd:element name="ColumnName" type="xsd:string"/>
      <xsd:element name="Operation" type="xsd:string"/>
      <xsd:element name="Operand1" type="xsd:string"/>
      <xsd:element name="Operand2" type="xsd:string"
         minOccurs="0"/>
      <xsd:element name="Operand3" type="typens:ArrayOfString"
         minOccurs="0"/>
   </xsd:sequence>
</xsd:complexType>
```

Elements

ColumnName
The name of the column to filter.

Operation
The filtering operation.

Operand1
The first operand of the filter.

Operand2
The second operand of the filter.

Operand3
A list of operands for the filter.

DataRow

A complex data type that contains the information from a data row.

Schema

```
<xsd:complexType name="DataRow">
   <xsd:sequence>
      <xsd:element name="Cell" type="typens:DataCell"
         maxOccurs="unbounded" />
   </xsd:sequence>
</xsd:complexType>
```

Elements

Cell
A data cell from the row.

DataSchema

A complex data type that describes a data schema by column.

Schema

```
<xsd:complexType name="DataSchema">
   <xsd:sequence>
      <xsd:element name="Column" type="typens:ColumnDetail"
         maxOccurs="unbounded" minOccurs="0" />
   </xsd:sequence>
</xsd:complexType>
```

Elements

Column
The schema of the information stored within a column.

DataSortColumn

A complex data type that describes a sorted data column.

Schema

```
<xsd:complexType name="DataSortColumn">
   <xsd:sequence>
      <xsd:element name="ColumnName" type="xsd:string"/>
      <xsd:element name="SortDirection">
         <xsd:simpleType>
            <xsd:restriction base="xsd:string">
               <xsd:enumeration value="ASC"/>
               <xsd:enumeration value="DES"/>
            </xsd:restriction>
         </xsd:simpleType>
      </xsd:element>
   </xsd:sequence>
</xsd:complexType>
```

Elements

ColumnName
The name of the sorted column.

SortDirection
The direction of the sort. Valid values are:

- ASC - Ascending
- DES - Descending

DataSourceType

A simple data type that specifies the type of file in which a parameter exists.

Schema

```
<xsd:simpleType name="DataSourceType">
   <xsd:restriction base="xsd:string">
      <xsd:enumeration value="InfoObject"/>
      <xsd:enumeration value="ABInfoObject"/>
   </xsd:restriction>
</xsd:simpleType>
```

Elements

InfoObject
An information object.

ABInfoObject
An Actuate Basic information object.

DataType

A simple data type that specifies a data type.

Schema

```
<xsd:simpleType name="DataType"
   <xsd:restriction base="xsd:string">
      <xsd:enumeration value="Currency"/>
      <xsd:enumeration value="Date"/>
      <xsd:enumeration value="DateOnly"/>
      <xsd:enumeration value="Time"/>
      <xsd:enumeration value="Double"/>
      <xsd:enumeration value="Integer"/>
      <xsd:enumeration value="String"/>
      <xsd:enumeration value="Boolean"/>
      <xsd:enumeration value="Structure"/>
      <xsd:enumeration value="Table"/>
   </xsd:restriction>
</xsd:simpleType>
```

Elements

Currency
A Currency data type.

Date
A Date data type.

DateOnly
A DateOnly data type.

Time
A Time data type.

Double
A Double data type.

Integer
An Integer data type.

String
A String data type.

Boolean
A Boolean data type.

Structure
A structure.

Table
A table.

DocumentConversionOptions

A complex data type that describes conversion options of a file.

Schema

```
<xsd:complexType name="DocumentConversionOptions">
   <xsd:sequence>
      <xsd:element name="FileType" type="xsd:string"/>
      <xsd:element name="OutputFormat" type="xsd:string"/>
      <xsd:element name="MimeType" type="xsd:string"/>
      <xsd:element name="Options"
         type="typens:ArrayOfParameterDefinition" minOccurs="0"/>
   </xsd:sequence>
</xsd:complexType>
```

Elements

FileType
The file type of the file.

OutputFormat
The output format of the file.

MimeType
The mime type of the file.

Options
The list of conversion options.

Event

A complex type that describes an event and its status.

Schema

```
<xsd:complexType name="Event">
   <xsd:sequence>
      <xsd:choice>
         <xsd:element name="FileEvent" type="typens:FileEvent"
            minOccurs="0" />
         <xsd:element name="JobEvent" type="typens:JobEvent"
            minOccurs="0" />
         <xsd:element name="CustomEvent" type="typens:CustomEvent"
            minOccurs="0" />
      </xsd:choice>
      <xsd:element name="EventName" type="xsd:string" />
      <xsd:element name="EventType" type="typens:EventType" />
      <xsd:element name="PollingInterval" type="xsd:long"
         minOccurs="0" />
      <xsd:element name="PollingDuration" type="xsd:long"
         minOccurs="0" />
      <xsd:element name="LagTime" type="xsd:long" minOccurs="0" />
      <xsd:element name="EventStatus" minOccurs="0">
         <xsd:simpleType>
            <xsd:restriction base="xsd:string">
               <xsd:enumeration value="Uninitialized"/>
               <xsd:enumeration value="Polling"/>
               <xsd:enumeration value="Satisfied"/>
               <xsd:enumeration value="Expired"/>
            </xsd:restriction>
         </xsd:simpleType>
      </xsd:element>
   </xsd:sequence>
</xsd:complexType>
```

Elements

FileEvent
Specifies information for a file event.

JobEvent
Specifies information for a job event.

CustomEvent
Specifies information for a custom event.

EventName
The name of the event.

EventType
The type of event.

PollingInterval
Specifies the amount of time to wait between event status checks. The minimum value is 10 seconds.

PollingDuration
Specifies the amount of time to check the event status.

LagTime
Specifies lag time value for the event.

EventStatus
The current status of the event. Valid values are:

- Uninitialized
- Polling
- Satisfied
- Expired

EventOptions

A complex data type that describes polling and other options for an event.

Schema

```
<xsd:complexType name="EventOptions">
   <xsd:sequence>
      <xsd:element name="DefaultEventPollingInterval"
         type="xsd:long" minOccurs="0" />
      <xsd:element name="DefaultEventPollingDuration"
         type="xsd:long" minOccurs="0" />
      <xsd:element name="DefaultEventLagTime" type="xsd:long"
         minOccurs="0" />
      <xsd:element name="EnableCustomEventService"
         type="xsd:boolean" minOccurs="0" />
   </xsd:sequence>
</xsd:complexType>
```

Elements

DefaultEventPollingInterval
The amount of time to wait between polling the event.

DefaultEventPollingDuration
The duration of time to poll for an event.

DefaultEventLagTime
The amount of lag time for the event.

EnableCustomEventService
A flag indicating whether to enable the custom event service.

EventType

A simple data type that represents a type of event.

Schema

```
<xsd:simpleType name="EventType">
   <xsd:restriction base="xsd:string">
      <xsd:enumeration value="FileEvent" />
      <xsd:enumeration value="JobEvent" />
      <xsd:enumeration value="CustomEvent" />
      <xsd:enumeration value="NoEvent" />
   </xsd:restriction>
</xsd:simpleType>
```

Elements

FileEvent
A file type event.

JobEvent
A job type event.

CustomEvent
A custom type event.

NoEvent
No event.

ExecuteReportStatus

Asimple data type that represents the status of report execution.

Schema

```
<xsd:simpleType name="ExecuteReportStatus">
   <xsd:restriction base="xsd:string">
      <xsd:enumeration value="Done"/>
      <xsd:enumeration value="Failed"/>
      <xsd:enumeration value="FirstPage"/>
      <xsd:enumeration value="Pending"/>
   </xsd:restriction>
</xsd:simpleType>
```

Elements

Done
The report execution succeeded.

Failed
The report execution failed.

FirstPage
The first page is complete. Applies only if progressive viewing is enabled.

Pending
The job is either in the queue or in the process of generating. Applies only if WaitTime is specified.

ExternalTranslatedRoleNames

Acomplex data type that represents one of the following roles:

- Administrator
- Operator
- All

Schema

```
<xsd:complexType name="ExternalTranslatedRoleNames">
   <xsd:sequence>
      <xsd:element name="Administrator" type="xsd:string"/>
      <xsd:element name="Operator" type="xsd:string"/>
      <xsd:element name="All" type="xsd:string"/>
   </xsd:sequence>
</xsd:complexType>
```

FieldDefinition

A complex data type that describes a scalar parameter.

Schema

```
<xsd:complexType name="FieldDefinition">
   <xsd:all>
      <xsd:element name="Name" type="xsd:string"/>
      <xsd:element name="DisplayName" type="xsd:string"
         minOccurs="0"/>
      <xsd:element name="DataType" type="typens:ScalarDataType"
```

```
            minOccurs="0"/>
         <xsd:element name="IsHidden" type="xsd:boolean"
            minOccurs="0"/>
         <xsd:element name="IsRequired" type="xsd:boolean"
            minOccurs="0"/>
         <xsd:element name="DefaultValue" type="xsd:string"
            minOccurs="0"/>
         <xsd:element name="SelectValueList"
            type="typens:ArrayOfString"
            minOccurs="0"/>
         <xsd:element name="FieldControlType" minOccurs="0">
            <xsd:simpleType>
               <xsd:restriction base="xsd:string">
                  <xsd:enumeration value="ControlList"/>
                  <xsd:enumeration value="ControlListAllowNew"/>
               </xsd:restriction>
            </xsd:simpleType>
         </xsd:element>
         <xsd:element name="SelectNameValueList"
            type="typens:ArrayOfNameValuePair" minOccurs="0" />
      </xsd:all>
   </xsd:complexType>
```

Elements

Name
The name of the parameter.

DisplayName
The display name of the parameter.

DataType
The data type of the parameter. Valid values are:

- Currency
- Date
- Double
- Integer
- String
- Boolean

IsHidden
Specifies whether the parameter is hidden.

IsRequired
Specifies whether the parameter is required.

DefaultValue
The default value of the parameter.

SelectValueList
The list of available parameter values.

FieldControlType
The type of control used to represent the parameter. Valid values are:

- ControlListAllowNew
  A text box.
- ControlList
  A drop-down list.

SelectNameValueList
A list of name-value pairs used within the field.

FieldValue

A complex data type that describes a table parameter.

Schema

```
<xsd:complexType name="FieldValue">
   <xsd:all>
      <xsd:element name="Name" type="xsd:string"/>
      <xsd:element name="Value" type="xsd:string"/>
   </xsd:all>
</xsd:complexType>
```

Elements

Name
The name of the parameter.

Value
The value of the parameter.

File

A complex data type that describes a file.

Schema

```
<xsd:complexType name="File">
   <xsd:all>
      <xsd:element name="Id" type="xsd:string" minOccurs="0"/>
      <xsd:element name="Name" type="xsd:string" minOccurs="0"/>
      <xsd:element name="FileType" type="xsd:string"
         minOccurs="0"/>
      <xsd:element name="Description" type="xsd:string"
         minOccurs="0"/>
      <xsd:element name="PageCount" type="xsd:long"
```

```
            minOccurs="0"/>
         <xsd:element name="Size" type="xsd:long"
            minOccurs="0"/>
         <xsd:element name="TimeStamp" type="xsd:dateTime"
            minOccurs="0"/>
         <xsd:element name="Version" type="xsd:long"
            minOccurs="0"/>
         <xsd:element name="VersionName" type="xsd:string"
            minOccurs="0"/>
         <xsd:element name="Owner" type="xsd:string" minOccurs="0"/>
         <xsd:element name="UserPermissions" type="xsd:string"
            minOccurs="0"/>
         </xsd:element>
         <xsd:element name="AccessType" type="typens:FileAccess"
            minOccurs="0"/>
      </xsd:all>
   </xsd:complexType>
```

Elements

Id
The file ID.

Name
The name of the file. Actuate's internal data store imposes a fixed upper limit on the length of certain text strings.

FileType
The file type.

Description
The description of the file.

PageCount
The number of pages in the file.

Size
The size of the file.

TimeStamp
The time the file was created or modified, in Coordinated Universal Time (UTC).

Version
The version number.

VersionName
The version name.

Owner
The owner of the file.

UserPermissions
The current user's permissions for the file.

AccessType
The file's access type. Valid values are:

- Private
  Only the owner of the file and an administrator can access the file.
- Shared
  All users and roles specified in the access control list (ACL) for the file can access the file.

FileAccess

A simple data type that specifies the file's access type.

Schema

```
<xsd:simpleType name="FileAccess">
   <xsd:restriction base="xsd:string">
      <xsd:enumeration value="Private"/>
      <xsd:enumeration value="Shared"/>
   </xsd:restriction>
</xsd:simpleType>
```

Elements

Private
Only the owner of the file and an administrator can access the file.

Shared
All users and roles specified in the access control list (ACL) for the file can access the file.

FileCondition

A complex data type that represents the fields on which a search can be performed and the condition to match.

Schema

```
<xsd:complexType name="FileCondition">
   <xsd:sequence>
      <xsd:element name="Field" typens:FileField/>
      <xsd:element name="Match" type="xsd:string"/>
   </xsd:sequence>
</xsd:complexType>
```

Elements

Field
File fields on which a search can be performed.

Match
The condition to match. If the condition includes special characters, for example a dash, either escape the special character with a backslash (\) or enclose it in brackets ([]). For example, to search for a file 05-25-04Report.roi, specify one of the following:

```
05\ -25\ -04Report.roi
05[-]25[-]04Report.roi
```

FileContent

A complex data type that represents a list of attached files or the content of embedded files.

Schema

```
<xsd:complexType name="FileContent">
   <xsd:all>
      <xsd:element name="File" type="typens:File"/>
      <xsd:element name="Content" type="typens:Attachment"
         minOccurs="0"/>
   </xsd:all>
</xsd:complexType>
```

Elements

File
The attached file.

Content
The content of an embedded file.

FileEvent

A complex data type that contains information pertaining to file type events.

Schema

```
<xsd:complexType name="FileEvent">
   <xsd:sequence>
      <xsd:element name="MonitoredFilePath" type="xsd:string" />
   </xsd:sequence>
</xsd:complexType>
```

Elements

MonitoredFilePath
The file path of the file the event is monitoring.

FileField

A simple type that describes different fields that may exist for a file.

Schema

```
<xsd:simpleType name="FileField">
   <xsd:restriction base="xsd:string">
      <xsd:enumeration value="Name"/>
      <xsd:enumeration value="FileType"/>
      <xsd:enumeration value="Description"/>
      <xsd:enumeration value="PageCount"/>
      <xsd:enumeration value="Size"/>
      <xsd:enumeration value="TimeStamp"/>
      <xsd:enumeration value="Version"/>
      <xsd:enumeration value="VersionName"/>
      <xsd:enumeration value="Owner"/>
   </xsd:restriction>
</xsd:simpleType>
```

FileSearch

A complex data type that represents a file search.

Schema

```
<xsd:complexType name="FileSearch">
   <xsd:sequence>
      <xsd:choice minOccurs="0">
         <xsd:element name="Condition"
            type="typens:FileCondition">
         <xsd:element name="ConditionArray"
            type="typens:ArrayOfFileCondition"/>
      </xsd:choice>
      <xsd:element name="Owner" type="xsd:string" minOccurs="0"/>
      <xsd:choice minOccurs="0">
         <xsd:element name="DependentFileName" type="xsd:string"/>
         <xsd:element name="DependentFileId" type="xsd:string"/>
         <xsd:element name="RequiredFileName" type="xsd:string"/>
         <xsd:element name="RequiredFileId" type="xsd:string"/>
         <xsd:element name="PrivilegeFilter"
            type="typens:PrivilegeFilter"/>
      </xsd:choice>
      <xsd:element name="AccessType" type="typens:FileAccess"
         minOccurs="0"/>
      <xsd:element name="FetchSize" type="xsd:int" minOccurs="0"/>
      <xsd:element name="FetchDirection" type="xsd:boolean"
         minOccurs="0"/>
      <xsd:element name="CountLimit" type="xsd:int" minOccurs="0"/>
      <xsd:element name="FetchHandle" type="xsd:string"
         minOccurs="0"/>
      <xsd:element name="IncludeHiddenObject" type="xsd:boolean"
         minOccurs="0" />
   </xsd:sequence>
```

```
</xsd:complexType>
```

Elements

Condition
The search condition.

ConditionArray
An array of search conditions. Use if search conditions apply to multiple fields.

Owner
The file owner.

DependentFileName
The name of the dependent file.

DependentFileId
The ID of the dependent file.

RequiredFileName
The name of the required file.

RequiredFileId
The ID of the required file.

PrivilegeFilter
The privileges for which to search. Use PrivilegeFilter to determine whether the specified user or role has the specified privileges on the file.

AccessType
The file's access type. Valid values are:

- Private
  Only the owner of the file and an administrator can access the file.
- Shared
  All users and roles specified in the access control list (ACL) for the file can access the file.

FetchSize
The maximum number of records to retrieve and return in a result set. The default value is 500.

FetchDirection
If True, records are retrieved forward. If False, records are retrieved backward. The default value is True.

CountLimit
The maximum number of records to count. By default, CountLimit is equal to FetchSize. To count all records, set CountLimit to -1.

FetchHandle
Retrieves more items from the result set. In the second and subsequent calls for data, specify the same search criteria as in the original call.

IncludeHiddenObject
Flag indicating if search should include hidden objects.

FileType

A complex data type that describes a file type.

Schema

```
<xsd:complexType name="FileType">
   <xsd:all>
      <xsd:element name="Name" type="xsd:string" minOccurs="0"/>
      <xsd:element name="IsNative" type="xsd:boolean"
         minOccurs="0"/>
      <xsd:element name="IsExecutable" type="xsd:boolean"
         minOccurs="0"/>
      <xsd:element name="IsPrintable" type="xsd:boolean"
         minOccurs="0"/>
      <xsd:element name="IsRequired" type="xsd:boolean"
         minOccurs="0"/>
      <xsd:element name="OutputType" type="xsd:string"
         minOccurs="0"/>
      <xsd:element name="LocalExtension" type="xsd:string"
         minOccurs="0"/>
      <xsd:element name="DisplayType" type="xsd:string"
         minOccurs="0"/>
      <xsd:element name="ShortDescription" type="xsd:string"
         minOccurs="0"/>
      <xsd:element name="LongDescription" type="xsd:string"
         minOccurs="0"/>
      <xsd:element name="SmallImageURL" type="xsd:string"
         minOccurs="0"/>
      <xsd:element name="LargeImageURL" type="xsd:string"
         minOccurs="0"/>
      <xsd:element name="ExportBeforeViewing" type="xsd:boolean"
         minOccurs="0"/>
      <xsd:element name="DriverName" type="xsd:string"
         minOccurs="0"/>
      <xsd:element name="MutexClass" type="xsd:string"
         minOccurs="0"/>
      <xsd:element name="ContentType" type="xsd:string"
         minOccurs="0"/>
      <xsd:element name="EnableAutoParamCollection"
         type="xsd:boolean" minOccurs="0"/>
```

```
      <xsd:element name="IsCompoundDoc" type="xsd:boolean"
        minOccurs="0"/>
      <xsd:element name="AllowViewTimeParameter" type="xsd:boolean"
        minOccurs="0"/>
   </xsd:all>
</xsd:complexType>
```

Elements

Name
The file type name.

IsNative
Specifies whether the file is an internal Actuate type. IsNative is read-only. Providing an input value for this attribute in CreateFileType or UpdateFileType causes SetAttributes to be ignored.

IsExecutable
Specifies whether the file is executable. If False, the file type is set to Document file type. The OutputType and ExportBeforeViewing attributes do not apply to Document file type.

IsPrintable
Specifies whether the file is printable. If the file type is Executable, IsPrintable refers to the output file.

IsRequired
Specifies whether the file is required.

OutputType
The file type for the output file. Required if the file type is Executable.

LocalExtension
The local extension.

DisplayType
Specifies either Simple or Advanced display types.

ShortDescription
The short description of the file type.

LongDescription
The long description of the file type.

SmallImageURL
The URL of the small image for the file.

LargeImageURL
The URL of the large image for the file.

ExportBeforeViewing
Specifies whether the file is exported before viewing.

DriverName
The name of the driver. Required if file type is Executable or Printable.

MutexClass
The mutex class name.

ContentType
The content type.

EnableAutoParamCollection
True enables automatic parameter collection for the file type.

IsCompoundDoc
Specifies whether the file is a compound document. The default value is False.

AllowViewTimeParameter
Specifies whether to allow view-time parameters. The default value is True.

FilterCriteria

A complex data type that describes the filter criteria for a query.

Schema

```
<xsd:complexType name="FilterCriteria">
   <xsd:sequence>
      <xsd:element name="Name" type="xsd:string"/>
      <xsd:element name="Value" type="xsd:string"/>
      <xsd:element name="Operation" type="xsd:string"/>
      <xsd:element name="PromptFilterCriteria" type="xsd:boolean"/>
   </xsd:sequence>
</xsd:complexType>
```

Elements

Name
The name of the filter.

Value
The operand to use.

Operation
The operator to use. The available operators vary according to the data type of the column. Table 9-2 describes the available operators and the data types to which each operator applies.

Table 9-2 Filter criteria operators

Operator	Data types
=	String, Integer, Double, Currency, DateTime, Boolean
<	String, Integer, Double, Currency, DateTime, Boolean

Table 9-2 Filter criteria operators (continued)

Operator	Data types
<=	String, Integer, Double, Currency, DateTime, Boolean
>	String, Integer, Double, Currency, DateTime, Boolean
>=	String, Integer, Double, Currency, DateTime, Boolean
<>	String, Integer, Double, Currency, DateTime
LIKE	String, Integer, Double, Currency, DateTime, Boolean
NOT LIKE	String
IN	String, Integer, Double, Currency, DateTime, Boolean
IS NULL	String, Integer, Double, Currency, DateTime, Boolean
IS NOT NULL	String, Integer, Double, Currency, DateTime, Boolean

PromptFilterCriteria
Specifies whether the user can change filter criteria. If True, the user can change the filter criteria.

FormatType

A simple data type that specifies a format type.

Schema

```
<xsd:simpleType name="FormatType">
   <xsd:restriction base="xsd:long">
      <xsd:enumeration value="0"/>
      <xsd:enumeration value="1"/>
      <xsd:enumeration value="2"/>
   </xsd:restriction>
</xsd:simpleType>
```

Elements

0
All formats.

1
View formats.

2
Search formats.

Group

A complex data type that describes a notification group.

Schema

```
<xsd:complexType name="Group">
   <xsd:sequence>
      <xsd:element name="Id" type="xsd:string" minOccurs="0"/>
      <xsd:element name="Name" type="xsd:string" minOccurs="0"/>
      <xsd:element name="Description" type="xsd:string"
         minOccurs="0"/>
   </xsd:sequence>
</xsd:complexType>
```

Elements

Id
The group ID.

Name
The name of the group. Cannot exceed 50 characters.

Description
The description of the group. Cannot exceed 500 characters.

GroupCondition

A complex data type that represents the fields on which a search can be performed and the condition to match.

Schema

```
<xsd:complexType name="GroupCondition">
   <xsd:sequence>
      <xsd:element name="Field" type=”typens:GroupField”/>
      <xsd:element name="Match" type="xsd:string"/>
   </xsd:sequence>
</xsd:complexType>
```

Elements

Field
Fields on which a search can be performed.

Match
The condition to match. If the condition includes special characters, for example a dash, either escape the special character with a backslash (\) or enclose it in brackets ([]). For example, to search for a file 05-25-04Report.roi, specify one of the following:

```
05\ -25\ -04Report.roi
05[-]25[-]04Report.roi
```

GroupField

A simple data type that represents fields on which a search can be performed.

Schema

```
<xsd:simpleType name="GroupField">
   <xsd:restriction base="xsd:string">
      <xsd:enumeration value="Name"/>
      <xsd:enumeration value="Description"/>
   </xsd:restriction>
</xsd:simpleType>
```

Grouping

A complex data type that describes how to group data in a query.

Schema

```
<xsd:complexType name="Grouping">
   <xsd:sequence>
      <xsd:element name="GroupKey" type="xsd:string"/>
      <xsd:element name="GroupSortOrder">
         <xsd:simpleType>
            <xsd:restriction base="xsd:string">
               <xsd:enumeration value="ASC"/>
               <xsd:enumeration value="DES"/>
            </xsd:restriction>
         </xsd:simpleType>
      </xsd:element>
      <xsd:element name="GroupHeadingFields"
         type="typens:ArrayOfString" minOccurs="0"/>
   </xsd:sequence>
</xsd:complexType>
```

Elements

GroupKey
The key for grouping data.

GroupSortOrder
The grouping order. ASC specifies ascending order and DES specifies descending order.

GroupHeadingFields
The columns to include in the group.

GroupSearch

A complex data type that represents a notification group search.

Schema

```
<xsd:complexType name="GroupSearch">
   <xsd:sequence>
      <xsd:choice minOccurs="0">
         <xsd:element name="Condition"
            type="typens:GroupCondition"/>
         <xsd:element name="ConditionArray"
            type="typens:ArrayOfGroupCondition"/>
      </xsd:choice>
      <xsd:choice minOccurs="0">
         <xsd:element name="WithUserName" type="xsd:string"/>
         <xsd:element name="WithUserId" type="xsd:string"/>
      </xsd:choice>
      <xsd:element name="FetchSize" type="xsd:int" minOccurs="0"/>
      <xsd:element name="FetchDirection" type="xsd:boolean"
         minOccurs="0"/>
      <xsd:element name="CountLimit" type="xsd:int" minOccurs="0"/>
      <xsd:element name="FetchHandle" type="xsd:string"
         minOccurs="0"/>
   </xsd:sequence>
</xsd:complexType>
```

Elements

Condition
The search condition.

ConditionArray
An array of search conditions.

WithUserName
The user name.

WithUserId
The user ID.

FetchSize
The maximum number of records to retrieve and return in a result set. The default value is 500.

FetchDirection
If True, records are retrieved forward. If False, records are retrieved backward. The default value is True.

CountLimit
The maximum number of records to count. By default, CountLimit is equal to FetchSize. To count all records, set CountLimit to -1.

FetchHandle
Retrieves more items from the result set. In the second and subsequent calls for data, specify the same search criteria as in the original call.

Header

The SOAP header that contains authentication data, locale information, and other required or optional data.

Schema

```
<xsd:complexType name="Header">
   <xsd:sequence>
      <xsd:element name="AuthId" type="xsd:string" />
      <xsd:element name="TargetVolume" type="xsd:string"
         minOccurs="0" />
      <xsd:element name="Locale" type="xsd:string" minOccurs="0" />
      <xsd:element name="ConnectionHandle" type="xsd:string"
         minOccurs="0" />
      <xsd:element name="TargetServer" type="xsd:string"
         minOccurs="0" />
      <xsd:element name="DelayFlush" type="xsd:boolean"
         minOccurs="0" />
      <xsd:element name="FileType" type="xsd:string"
         minOccurs="0"/>
      <xsd:element name="TargetResourceGroup" type="xsd:string"
         minOccurs="0"/>
      <xsd:element name="RequestID" type="xsd:string"
         minOccurs="0"/>
   </xsd:sequence>
</xsd:complexType>
```

Elements

AuthId
A system-generated, encrypted string. All requests except login requests must have a valid AuthId in the SOAP header. The header passes this ID to BIRT iServer for validation.

TargetVolume
The Encyclopedia volume to which to direct the request.

Locale
Locale is used to format data using the language, date and time conventions, currency and other locale-specific conventions.

ConnectionHandle
An optional element that supports keeping a connection open to view a persistent report.

TargetServer
An optional element that refers to the BIRT iServer within a cluster to which to direct the request.

DelayFlush
A Boolean element that tells BIRT iServer to write updates to the disk when the value is False.

FileType
An optional element that supports specifying the file type to run, such as an Actuate Basic source (.bas) file, HTML, or Actuate report object executable (.rox) file.

TargetResourceGroup
An optional element that supports assigning a synchronous report generation request to a specific resource group at run time.

RequestID
A unique value that identifies the SOAP message.

Integer

A standard XML Integer data type that represents a number. Integer derives from Decimal data types by fixing the value of scale at 0.

InfoObjectData

A complex data type that describes the data from an information object.

Schema

```
<xsd:complexType name="InfoObjectData">
   <xsd:sequence>
      <xsd:element name="DataSchema" type="typens:DataSchema"
         minOccurs="0" />
      <xsd:element name="DataRows" type="typens:ArrayOfDataRow"
         minOccurs="0" />
   </xsd:sequence>
</xsd:complexType>
```

Elements

DataSchema
The schema for the data rows.

DataRows
The data rows from the information object.

InfoObjectDataFormat

A simple data type that describes an information object's data format.

Schema

```
<xsd:simpleType name="InfoObjectDataFormat">
   <xsd:restriction base="xsd:NMTOKEN">
      <xsd:enumeration value="XML" />
      <xsd:enumeration value="CSV" />
   </xsd:restriction>
</xsd:simpleType>
```

Elements

XML
The file is in XML format.

CSV
The file is in comma separated values format.

JobCondition

A complex data type that represents the fields on which a search can be performed and the condition to match.

Schema

```
<xsd:complexType name="JobCondition">
   <xsd:sequence>
      <xsd:element name="Field" type="typens:JobField"/>
      <xsd:element name="Match" type="xsd:string"/>
   </xsd:sequence>
</xsd:complexType>
```

Elements

Field
An element that includes one or more of the fields on which a search can be performed.

Match
The condition to match. If the condition includes special characters, for example a dash, either escape the special character with a backslash (\) or enclose it in brackets ([]). For example, to search for a file 05-25-04Report.roi, specify one of the following:

```
05\ -25\ -04Report.roi
05[-]25[-]04Report.roi
```

JobEvent

A complex data type that represents the information pertaining to a job type event.

Schema

```
<xsd:complexType name="JobEvent">
   <xsd:sequence>
      <xsd:element name="JobId" type="xsd:string" />
      <xsd:element name="JobName" type="xsd:string"
         minOccurs="0"/>
      <xsd:element name="JobStatus" type="typens:ArrayOfString"
         minOccurs="0" />
   </xsd:sequence>
</xsd:complexType>
```

Elements

JobId
The ID of the job.

JobName
The job name.

JobStatus
The job status.

JobField

A simple data type that represents the fields on which a search can be performed.

Schema

```
<xsd:simpleType name="JobField">
   <xsd:restriction base="xsd:string">
      <xsd:enumeration value="JobName"/>
      <xsd:enumeration value="Owner"/>
      <xsd:enumeration value="JobType"/>
      <xsd:enumeration value="Priority"/>
      <xsd:enumeration value="RoutedToNode"/>
      <xsd:enumeration value="StartTime"/>
      <xsd:enumeration value="DurationSeconds"/>
      <xsd:enumeration value="CompletionTime"/>
      <xsd:enumeration value="State"/>
      <xsd:enumeration value="NotifyCount"/>
      <xsd:enumeration value="OutputFileSize"/>
   </xsd:restriction>
</xsd:simpleType>
```

Elements

JobName
The job name.

Owner
The owner of the job.

JobType
The type of job. Valid values are:

- RunReport
- PrintReport
- RunAndPrintReport
- ConvertReport

Priority
The job priority.

RoutedToNode
The node to which the job is routed.

StartTime
The start time.

DurationSeconds
The job duration.

CompletionTime
The time the job is completed.

State
The state of the job. Valid values are:

- Scheduled
- Pending
- Running
- Succeeded
- Failed
- Canceled
- Expired

NotifyCount
The number of notifications sent about the job.

OutputFileSize
The size of the output file.

JobInputDetail

A complex data type that describes the job input and output files.

Schema

```
<xsd:complexType name="JobInputDetail">
  <xsd:all>
    <xsd:element name="OutputFileVersionName" type="xsd:string"
      minOccurs="0"/>
    <xsd:element name="ReplaceLatestVersion" type="xsd:boolean"
      minOccurs="0"/>
    <xsd:element name="OutputMaxVersion" type="xsd:int"
      minOccurs="0"/>
    <xsd:element name="ValueFileType" minOccurs="0">
      <xsd:simpleType>
        <xsd:restriction base="xsd:string">
          <xsd:enumeration value="Temporary"/>
          <xsd:enumeration value="Permanent"/>
        </xsd:restriction>
      </xsd:simpleType>
    </xsd:element>
    <xsd:element name="ValueFileVersionName" type="xsd:string"
      minOccurs="0"/>
    <xsd:element name="IsBundled" type="xsd:boolean"
      minOccurs="0"/>
    <xsd:element name="RetryOption" type="typens:RetryOptionType"
      minOccurs="0"/>
    <xsd:element name="MaxRetryCount" type="xsd:int"
      minOccurs="0"/>
    <xsd:element name="RetryInterval" type="xsd:int"
      minOccurs="0"/>
    <xsd:element name="MaxVersions" type="xsd:long"
      minOccurs="0"/>
    <xsd:element name="NeverExpire" type="xsd:boolean"
      minOccurs="0"/
    <xsd:element name="ArchiveRuleInherited" type="xsd:boolean"
      minOccurs="0"/>
    <xsd:element name="ExpirationAge" type="xsd:int"
      minOccurs="0"/>
    <xsd:element name="ExpirationDate" type="xsd:dateTime"
      minOccurs="0"/>
    <xsd:element name="ArchiveOnExpire" type="xsd:boolean"
      minOccurs="0"/>
    <xsd:element name="KeepWorkspace" type="xsd:boolean"
      minOccurs="0"/>
    <xsd:element name="DriverTimeout" type="xsd:int"
      minOccurs="0"/>
    <xsd:element name="PollingInterval" type="xsd:int"
      minOccurs="0"/>
    <xsd:element name="DebugInstruction" type="xsd:string"
      minOccurs="0"/>
    <xsd:element name="SendSuccessNotice" type="xsd:boolean"
```

```
            minOccurs="0"/>
        <xsd:element name="SendFailureNotice" type="xsd:boolean"
            minOccurs="0"/>
        <xsd:element name="SendEmailForSuccess" type="xsd:boolean"
            minOccurs="0"/>
        <xsd:element name="SendEmailForFailure" type="xsd:boolean"
            minOccurs="0"/>
        <xsd:element name="AttachReportInEmail" type="xsd:boolean"
            minOccurs="0"/>
        <xsd:element name="OverrideRecipientPref" type="xsd:boolean"
            minOccurs="0"/>
        <xsd:element name="EmailFormat" type="xsd:string"
            minOccurs="0"/>
        <xsd:element name="RecordSuccessStatus" type="xsd:boolean"
            minOccurs="0"/>
        <xsd:element name="RecordFailureStatus" type="xsd:boolean"
            minOccurs="0"/>
        <xsd:element name="KeepOutputFile" type="xsd:boolean"
            minOccurs="0"/>
        <xsd:element name="ConversionOptions"
            type="typens:ConversionOptions" minOccurs="0"/>
        <xsd:element name="DataACL" type="typens:ArrayOfString"
            minOccurs="0"/>
    </xsd:all>
</xsd:complexType>
```

Elements

OutputFileVersionName
The output file version.

ReplaceLatestVersion
Specifies whether to replace the latest version of the file with the current version.

OutputMaxVersion
The maximum number of versions to keep after a new version is generated.

ValueFileType
Specifies whether a value file is temporary or permanent.

ValueFileVersionName
The value file name.

IsBundled
Specifies whether the output object is bundled with the input object.

RetryOption
The retry settings. Valid values are:

- Disabled
- VolumeDefault

- Specified

MaxRetryCount
The maximum number of retry attempts.

RetryInterval
The interval between retry attempts. Measured in seconds.

MaxVersions
The maximum number of versions to keep in the Encyclopedia volume.

NeverExpire
Specifies whether the item expires.

ArchiveRuleInherited
Specifies whether the archive rules are inherited from another object.

ExpirationAge
Specifies the expiration age for the object.

ExpirationDate
The date when the job expires.

ArchiveOnExpire
Specifies whether the object is archived before it is expired.

KeepWorkspace
Specifies whether to keep or remove the workspace directory after executing the job.

DriverTimeout
The time for the driver to return from executing the job.

PollingInterval
The time interval to get status messages. The minimum value is 10 seconds.

DebugInstruction
The debug instructions.

SendSuccessNotice
Specifies whether success notices are sent if the job succeeds. Used only if OverrideRecipientPref is True.

SendFailureNotice
Specifies whether failure notices are sent if the job fails. Used only if OverrideRecipientPref is True.

SendEmailForSuccess
Specifies whether e-mail notifications are sent if the job succeeds. Used only if OverrideRecipientPref is True. If SendEmailForSuccess is True, e-mail

notifications are sent to specified users and groups if the job succeeds. The default value is False.

SendEmailForFailure
Specifies whether e-mail notifications are sent if the job fails. Used only if OverrideRecipientPref is True. If SendEmailForFailure is True, e-mail notifications are sent to specified users and groups if the job fails. The default value is False.

AttachReportInEmail
Specifies whether the output file is attached to the e-mail notification for successful jobs. Used only if OverrideRecipientPref is True. If AttachReportInEmai is True, the output file is attached to the e-mail notification. If False, only a link to the output file is sent. Specify the format for the attachment in the EmailFormat element. The default value is False.

OverrideRecipientPref
Specifies whether e-mail notifications and output attachments are sent according to job settings or user settings. If True, e-mail notifications and output attachments are sent according to job settings. If False, e-mail notifications and output attachments are sent according to user settings. The default value is False. If False, the following elements are ignored:

- AttachReportInEmail
- SendEmailForSuccess
- SendEmailForFailure
- SendSuccessNotice
- SendFailureNotice

EmailFormat
Specifies the output format of the report attached to the e-mail notification. Valid formats are:

- ROI
- PDF
- ExcelDisplay
- ExcelData

RecordSuccessStatus
Specifies whether to record job success notices.

RecordFailureStatus
Specifies whether to record job failure notices.

KeepOutputFile
Specifies whether the generated output file remains in the Encyclopedia volume if the generation request succeeds but the printing request fails. Used if the job is to be generated and printed. If True, the output file remains in the Encyclopedia volume. If False, the output file is deleted if the printing request fails. The default value is False.

ConversionOptions
Specifies options for converting a report object instance (.roi) output to another format.

DataACL
Specifies the access control list (ACL) restricting data privileges.

JobNotice

A complex data type that describes a job notice.

Schema

```
<xsd:complexType name="JobNotice">
   <xsd:all>
      <xsd:element name="JobId" type="xsd:string" minOccurs="0"/>
      <xsd:element name="JobName" type="xsd:string" minOccurs="0"/>
      <xsd:element name="Headline" type="xsd:string"
         minOccurs="0"/>
      <xsd:element name="JobState" minOccurs="0">
         <xsd:simpleType>
            <xsd:restriction base="xsd:string">
               <xsd:enumeration value="Succeeded"/>
               <xsd:enumeration value="Failed"/>
               <xsd:enumeration value="Cancelled"/>
            </xsd:restriction>
         </xsd:simpleType>
      </xsd:element>
      <xsd:element name="CompletionTime" type="xsd:dateTime"
         minOccurs="0"/>
      <xsd:element name="ActualOutputFileName" type="xsd:string"
         minOccurs="0"/>
      <xsd:element name="OutputFileName" type="xsd:string"
         minOccurs="0"/>
      <xsd:element name="OutputFileVersionName" type="xsd:string"
         minOccurs="0"/>
      <xsd:element name="ActualOutputFileSize"
         type="xsd:unsignedLong"minOccurs="0"/>
      <xsd:element name="ActualOutputFileId" type="xsd:string"
         minOccurs="0"/>
      <xsd:element name="NotifiedUserId" type="xsd:string"
```

```
            minOccurs="0"/>
        <xsd:element name="NotifiedUserName" type="xsd:string"
            minOccurs="0"/>
        <xsd:element name="NotifiedChannelId" type="xsd:string"
            minOccurs="0"/>
        <xsd:element name="NotifiedChannelName" type="xsd:string"
            minOccurs="0"/>
        <xsd:element name="OutputFileVersion" type="xsd:long"
            minOccurs="0"/>
    </xsd:all>
</xsd:complexType>
```

Elements

JobId
The job ID.

JobName
The name of the job.

Headline
The job headline.

JobState
The state of the job. Valid values are:

- Succeeded
- Failed
- Canceled

CompletionTime
The time the job is completed.

ActualOutputFileName
The output file name that the BIRT iServer generated.

OutputFileName
The output file name.

OutputFileVersionName
The output file version name.

ActualOutputFileSize
The size of the output file.

ActualOutputFileId
The output file ID that the BIRT iServer generated.

NotifiedUserId
The ID of the user who received the notice.

NotifiedUserName
The name of the user who received the notice.

NotifiedChannelId
The ID of the channel that received the notice.

NotifiedChannelName
The name of the channel that received the notice.

OutputFileVersion
The output file version number.

JobNoticeCondition

A complex data type that represents the fields on which a search can be performed and the condition to match.

Schema

```
<xsd:complexType name="JobNoticeCondition">
   <xsd:sequence>
      <xsd:element name="Field">
         <xsd:simpleType>
            <xsd:restriction base="xsd:string">
               <xsd:enumeration value="JobId"/>
               <xsd:enumeration value="JobName"/>
               <xsd:enumeration value="OutputFileName"/>
               <xsd:enumeration value="JobState"/>
               <xsd:enumeration value="HeadLine"/>
               <xsd:enumeration value="CompletionTime"/>
            </xsd:restriction>
         </xsd:simpleType>
      </xsd:element>
      <xsd:element name="Match" type="xsd:string"/>
   </xsd:sequence>
</xsd:complexType>
```

Elements

Field
The fields on which a search can be performed.

Match
The condition to match. If the condition includes special characters, for example a dash, either escape the special character with a backslash (\) or enclose it in brackets ([]). For example, to search for a file 05-25-04Report.roi, specify one of the following:

```
05\ -25\ -04Report.roi
05[-]25[-]04Report.roi
```

JobNoticeField

A simple data type that represents the fields on which a search can be performed.

Schema

```
<xsd:simpleType name="JobNoticeField">
   <xsd:restriction base="xsd:string">
      <xsd:enumeration value="JobId"/>
      <xsd:enumeration value="JobName"/>
      <xsd:enumeration value="OutputFileName"/>
      <xsd:enumeration value="JobState"/>
      <xsd:enumeration value="HeadLine"/>
      <xsd:enumeration value="CompletionTime"/>
   </xsd:restriction>
</xsd:simpleType>
```

JobNoticeSearch

A complex data type that represents the job notice search.

Schema

```
<xsd:complexType name="JobNoticeSearch">
   <xsd:sequence>
      <xsd:choice minOccurs="0">
         <xsd:element name="Condition"
            type="typens:JobNoticeCondition"/>
         <xsd:element name="ConditionArray"
            type="typens:ArrayOfJobNoticeCondition"/>
      </xsd:choice>
      <xsd:choice minOccurs="0">
         <xsd:element name="NotifiedUserId" type="xsd:string"/>
         <xsd:element name="NotifiedUserName" type="xsd:string"/>
         <xsd:element name="NotifiedChannelId" type="xsd:string"/>
         <xsd:element name="NotifiedChannelName"
            type="xsd:string">
      </xsd:choice>
      <xsd:element name="FetchSize" type="xsd:int" minOccurs="0"/>
      <xsd:element name="FetchDirection" type="xsd:boolean"
         minOccurs="0"/>
      <xsd:element name="CountLimit" type="xsd:int" minOccurs="0"/>
      <xsd:element name="FetchHandle" type="xsd:string"
         minOccurs="0"/>
   </xsd:sequence>
</xsd:complexType>
```

Elements

Condition
The search condition.

ConditionArray
An array of search conditions.

NotifiedUserId
The ID of the user who received the notice.

NotifiedUserName
The name of the user who received the notice.

NotifiedChannelId
The ID of the channel that received the notice.

NotifiedChannelName
The name of the channel that received the notice.

FetchSize
The maximum number of records to retrieve and return in a result set. The default value is 500.

FetchDirection
If True, records are retrieved forward. If False, records are retrieved backward. The default value is True.

CountLimit
The maximum number of records to count. By default, CountLimit is equal to FetchSize. To count all records, set CountLimit to -1.

FetchHandle
Retrieves more items from the result set. In the second and subsequent calls for data, specify the same search criteria as in the original call.

JobPrinterOptions

A complex data type that describes the job printer options.

Schema

```
<xsd:complexType name="JobPrinterOptions">
   <xsd:sequence>
      <xsd:element name="PrinterName" type="xsd:string"/>
      <xsd:element name="Orientation" type="xsd:string"
         inOccurs="0"/>
      <xsd:element name="PageSize" type="xsd:string"
         minOccurs="0"/>
      <xsd:element name="Scale" type="xsd:long" minOccurs="0"/>
      <xsd:element name="Resolution" type="xsd:string"
         minOccurs="0"/>
      <xsd:element name="NumberOfCopies" type="xsd:long"
         minOccurs="0"/>
      <xsd:element name="CollationOption" type="xsd:boolean"
```

```
            minOccurs="0"/>
        <xsd:element name="PaperTray" type="xsd:boolean"
            minOccurs="0"/>
        <xsd:element name="Duplex" type="xsd:string" minOccurs="0"/>
        <xsd:element name="IsColor" type="xsd:boolean"
            minOccurs="0"/>
        <xsd:element name="PaperLength" type="xsd:long"
            minOccurs="0"/>
        <xsd:element name="PaperWidth" type="xsd:long"
            minOccurs="0"/>
        <xsd:element name="PageRange" type="xsd:string"
            minOccurs="0"/>
        <xsd:element name="FormName" type="xsd:string"
            minOccurs="0"/>
        <xsd:element name="PrintToFile" type="xsd:string"
            minOccurs="0"/>
    </xsd:sequence>
</xsd:complexType>
```

Elements

PrinterName
The printer name.

Orientation
The paper orientation.

PageSize
The page size.

Scale
The scaling factor.

Resolution
The resolution.

NumberOfCopies
The number of copies.

CollationOption
Specifies whether the printer's collation property is set.

PaperTray
Specifies whether the printer's paper tray option is set.

Duplex
The value of the printer's duplex property.

IsColor
Specifies whether the printer can print in color.

PaperLength
The paper length.

PaperWidth
The paper width.

PageRange
The page range. Cannot exceed 20 characters.

FormName
The form name.

PrintToFile
The setting of the print to file property. Cannot exceed 256 characters.

JobProperties

A complex data type that specifies the general job attributes, such as input document file name, output file name, and job execution status.

Schema

```
<xsd:complexType name="JobProperties">
   <xsd:sequence>
      <xsd:element name="JobId" type="xsd:string" minOccurs="0"/>
      <xsd:element name="JobName" type="xsd:string" minOccurs="0"/>
      <xsd:element name="Priority" type="xsd:long" minOccurs="0"/>
      <xsd:element name="ResourceGroup" type="xsd:string"
         minOccurs="0"/>
      <xsd:element name="Owner" type="xsd:string" minOccurs="0"/>
      <xsd:element name="JobType" minOccurs="0">
         <xsd:simpleType>
            <xsd:restriction base="xsd:string">
               <xsd:enumeration value="RunReport"/>
               <xsd:enumeration value="PrintReport"/>
               <xsd:enumeration value="RunAndPrintReport"/>
               <xsd:enumeration value="ConvertReport"/>
            </xsd:restriction>
         </xsd:simpleType>
      </xsd:element>
      <xsd:element name="State" minOccurs="0">
         <xsd:simpleType>
            <xsd:restriction base="xsd:string">
               <xsd:enumeration value="Scheduled"/>
               <xsd:enumeration value="Pending"/>
               <xsd:enumeration value=”Waiting”/>
               <xsd:enumeration value="Running"/>
               <xsd:enumeration value="Succeeded"/>
               <xsd:enumeration value="Failed"/>
```

```
            <xsd:enumeration value="Cancelled"/>
            <xsd:enumeration value="Expired"/>
        </xsd:restriction>
    </xsd:simpleType>
</xsd:element>
<xsd:element name="InputFileId" type="xsd:string"
    minOccurs="0"/>
<xsd:element name="InputFileName" type="xsd:string"
    minOccurs="0"/>
<xsd:element name="RunLatestVersion" type="xsd:boolean"
    minOccurs="0"/>
<xsd:element name="ParameterFileId" type="xsd:string"
    minOccurs="0"/>
<xsd:element name="ParameterFileName" type="xsd:string"
    minOccurs="0"/>
<xsd:element name="ActualOutputFileId"type="xsd:string"
    minOccurs="0"/>
<xsd:element name="ActualOutputFileName" type="xsd:string"
    minOccurs="0"/>
<xsd:element name="RequestedOutputFileName" type="xsd:string"
    minOccurs="0"/>
<xsd:element name="OutputFileVersionName" type="xsd:string"
    minOccurs="0"/>
<xsd:element name="SubmissionTime" type="xsd:dateTime"
    minOccurs="0"/>
<xsd:element name="CompletionTime" type="xsd:dateTime"
    minOccurs="0"/>
<xsd:element name="PageCount" type="xsd:long" minOccurs="0"/>
<xsd:element name="OutputFileSize" type="xsd:long"
    minOccurs="0"/>
<xsd:element name="RoutedToNode" type="xsd:string"
    minOccurs="0"/>
<xsd:element name="DurationSeconds" type="xsd:long"
    minOccurs="0"/>
<xsd:element name="StartTime" type="xsd:dateTime"
    minOccurs="0"/>
<xsd:element name="NextStartTime" type="xsd:dateTime"
    minOccurs="0"/>
<xsd:element name="RequestedHeadline" type="xsd:string"
    minOccurs="0"/>
<xsd:element name="ActualHeadline" type="xsd:string"
    minOccurs="0"/>
<xsd:element name="NotifyCount" type="xsd:string"
    minOccurs="0"/>
<xsd:element name="EventName" type="xsd:string"
    minOccurs="0"/>
<xsd:element name="EventType" type="typens:EventType"
```

```
        minOccurs="0"/>
        minOccurs="0"/>
      <xsd:element name="EventStatus" type="xsd:string"
        minOccurs="0"/>
      <xsd:element name="EventParameter" type="xsd:string"
        minOccurs="0"/>
    </xsd:sequence>
  </xsd:complexType>
```

Elements

JobId
The job ID.

JobName
The name of the job.

Priority
The job priority.

ResourceGroup
The name of the resource group to which a job is assigned, if any.

Owner
The owner of the job.

JobType
The type of job. Valid values are:

- RunReport
- PrintReport
- RunAndPrintReport
- ConvertReport

State
The state of the job. Valid values are:

- Scheduled
- Pending
- Running
- Succeeded
- Failed
- Canceled
- Expired

InputFileId
The input file ID.

InputFileName
The input file full name and version number.

RunLatestVersion
Specifies whether to run the latest version of the file.

ParameterFileId
The parameter file ID. Exists only if the parameter file is specified.

ParameterFileName
The parameter file name. Exists only if the parameter file is specified.

ActualOutputFileId
The output file ID that the BIRT iServer generated.

ActualOutputFileName
The output file name that the BIRT iServer generated. This might be different than the RequestedOutputFileName.

RequestedOutputFileName
The requested name for the output file.

OutputFileVersionName
The output file version name.

SubmissionTime
The time the job was submitted.

CompletionTime
The time the job is completed.

PageCount
The number of pages.

OutputFileSize
The size of the output file.

RoutedToNode
The node to which the job is routed.

DurationSeconds
The job duration.

StartTime
The start time.

NextStartTime
The next time the job is scheduled to run. Applies only to scheduled jobs.

RequestedHeadline
The headline for the job.

ActualHeadline
The headline that the BIRT iServer generated.

NotifyCount
The number of notifications sent about the job.

EventName
The name of the job event.

EventType
The job event type.

EventStatus
The job event status.

EventParameter
The parameter for the job event.

JobSchedule

A complex data type that represents details about a job schedule.

Schema

```
<xsd:complexType name="JobSchedule">
   <xsd:sequence>
      <xsd:element name="TimeZoneName" type="xsd:string"
         minOccurs="0"/>
      <xsd:element name="ScheduleDetails"
         type="typens:ArrayOfJobScheduleDetail"/>
   </xsd:sequence>
</xsd:complexType>
```

Elements

TimeZoneName
The time zone. Cannot exceed 32 characters.

ScheduleDetails
The schedule details.

JobScheduleCondition

A complex data type that represents the fields on which a search can be performed and the condition to match.

Schema

```
<xsd:complexType name="JobScheduleCondition">
   <xsd:sequence>
      <xsd:element name="Field" type="typens:JobScheduleField"/>
      <xsd:element name="Match" type="xsd:string"/>
   </xsd:sequence>
```

```
   <xsd:complexType name="ArrayOfJobScheduleCondition">
      <xsd:sequence>
         <xsd:element name="JobScheduleCondition"
            type="typens:JobScheduleCondition" maxOccurs="unbounded"
            minOccurs="0"/>
      </xsd:sequence>
</xsd:complexType>
```

Elements

Field
Fields on which a search can be performed.

Match
The condition to match. If the condition includes special characters, for example a dash, either escape the special character with a backslash (\) or enclose it in brackets ([ ]). For example, to search for a file 05-25-04Report.roi, specify one of the following:

```
05\ -25\ -04Report.roi
05[-]25[-]04Report.roi
```

ArrayOfJobScheduleCondition
Fields on which a job schedule search can be performed.

JobScheduleDetail

A complex data type that specifies a schedule for running a job.

Schema

```
<xsd:complexType name="JobScheduleDetail">
   <xsd:sequence>
      <xsd:element name="ScheduleType">
         <xsd:simpleType>
            <xsd:restriction base="xsd:string">
               <xsd:enumeration value="AbsoluteDate"/>
               <xsd:enumeration value="Daily"/>
               <xsd:enumeration value="Weekly"/>
               <xsd:enumeration value="Monthly"/>
            </xsd:restriction>
         </xsd:simpleType>
      </xsd:element>
      <xsd:element name="ScheduleStartDate" type="xsd:string"
         minOccurs="0"/>
      <xsd:element name="ScheduleEndDate" type="xsd:string"
         minOccurs="0"/>
      <xsd:element name="DatesExcluded" type="typens:ArrayOfDate"
         minOccurs="0"/>
      <xsd:choice>
         <xsd:element name="AbsoluteDate"
```

```
            type="typens:AbsoluteDate"/>
         <xsd:element name="Daily" type="typens:Daily"/>
         <xsd:element name="Weekly" type="typens:Weekly"/>
         <xsd:element name="Monthly" type="typens:Monthly"/>
      </xsd:choice>
   </xsd:sequence>
</xsd:complexType>
```

Elements

ScheduleType
The type of schedule. Valid values are:

- AbsoluteDate
- Daily
- Weekly
- Monthly

ScheduleStartDate
The date on which to start the schedule. Express the date as a standard XML String data type in the format YYYY-MM-DDThh:mm:ss-sss. Milliseconds, if specified, are ignored.

ScheduleEndDate
The date on which to end the schedule. Express the date as a standard XML String data type using the format YYYY-MM-DDThh:mm:ss-sss. Milliseconds, if specified, are ignored.

DatesExcluded
An array of dates to exclude from the schedule.

JobScheduleField

A simple data type describing fields upon which a search can be performed.

Schema

```
<xsd:simpleType name="JobScheduleField">
   <xsd:restriction base="xsd:string">
      <xsd:enumeration value="JobName"/>
      <xsd:enumeration value="Owner"/>
      <xsd:enumeration value="JobType"/>
      <xsd:enumeration value="Priority"/>
      <xsd:enumeration value="NextStartTime"/>
      <xsd:enumeration value="State"/>
      <xsd:enumeration value="ParameterFileId"/>
   </xsd:restriction>
</xsd:simpleType>
```

JobScheduleSearch

A complex data type that represents a job schedule search.

Schema

```
<xsd:complexType name="JobScheduleSearch">
   <xsd:sequence>
      <xsd:choice minOccurs="0">
         <xsd:element name="Condition"
            type="typens:JobScheduleCondition"/>
         <xsd:element name="ConditionArray"
            type="typens:ArrayOfJobScheduleCondition"/>
      </xsd:choice>
      <xsd:element name="RequestedOutputFileName" type="xsd:string"
         minOccurs="0"/>
      <xsd:element name="InputFileName" type="xsd:string"
         minOccurs="0"/>
      <xsd:element name="InputFileId" type="xsd:string"
         minOccurs="0"/>
      <xsd:element name="EventType" type="typens:EventType"
         minOccurs="0" />
      <xsd:choice minOccurs="0">
         <xsd:element name="NotifiedUserId" type="xsd:string"/>
         <xsd:element name="NotifiedUserName" type="xsd:string"/>
         <xsd:element name="NotifiedChannelId"
            type="xsd:string">
         <xsd:element name="NotifiedChannelName"
            type="xsd:string"/>
      </xsd:choice>
      <xsd:element name="FetchSize" type="xsd:int" minOccurs="0"/>
      <xsd:element name="FetchDirection" type="xsd:boolean"
         minOccurs="0"/>
      <xsd:element name="CountLimit" type="xsd:int" minOccurs="0"/>
      <xsd:element name="FetchHandle" type="xsd:string"
         minOccurs="0"/>
   </xsd:sequence>
</xsd:complexType>
```

Elements

Condition
The search condition.

ConditionArray
The array of search conditions.

RequestedOutputFileName
The output file name.

InputFileName
The input file name.

InputFileId
The input file ID.

EventType
The event type of the job.

NotifiedUserId
The ID of the user to notify.

NotifiedUserName
The name of the user to notify.

NotifiedChannelId
The ID of the channel to notify.

NotifiedChannelName
The name of the channel to notify.

FetchSize
The maximum number of records to retrieve and return in a result set. The default value is 500.

FetchDirection
If True, records are retrieved forward. If False, records are retrieved backward. The default value is True.

CountLimit
The maximum number of records to count. By default, CountLimit is equal to FetchSize. To count all records, set CountLimit to -1.

FetchHandle
Retrieves more items from the result set. In the second and subsequent calls for data, specify the same search criteria as in the original call.

JobSearch

A complex data type that represents a job search.

Schema

```
<xsd:complexType name="JobSearch">
   <xsd:sequence>
      <xsd:choice>
         <xsd:element name="Condition" type="typens:JobCondition"/>
         <xsd:element name="ConditionArray"
            type="typens:ArrayOfJobCondition"/>
      </xsd:choice>
      <xsd:element name="Owner" type="xsd:string" minOccurs="0" />
```

```
        <xsd:element name="ActualOutputFileName" type="xsd:string"
          minOccurs="0"/>
        <xsd:element name="ActualOutputFileId" type="xsd:string"
          minOccurs="0"/>
        <xsd:element name="RequestedOutputFileName" type="xsd:string"
          minOccurs="0"/>
        <xsd:element name="InputFileName" type="xsd:string"
          minOccurs="0"/>
        <xsd:element name="InputFileId" type="xsd:string"
          minOccurs="0"/>
        <xsd:choice minOccurs="0">
          <xsd:element name="NotifiedUserId" type="xsd:string"/>
          <xsd:element name="NotifiedUserName" type="xsd:string"/>
          <xsd:element name="NotifiedChannelId"
            type="xsd:string">
          <xsd:element name="NotifiedChannelName"
            type="xsd:string"/>
        </xsd:choice>
        <xsd:element name="FetchSize" type="xsd:int"
          minOccurs="0"/>
        <xsd:element name="FetchDirection" type="xsd:boolean"
          minOccurs="0"/>
        <xsd:element name="CountLimit" type="xsd:int"
          minOccurs="0"/>
        <xsd:element name="FetchHandle" type="xsd:string"
          minOccurs="0"/>
    </xsd:sequence>
  </xsd:complexType>
```

Elements

Condition
The search condition.

ConditionArray
The array of search conditions.

Owner
The owner of the job.

ActualOutputFileName
The output file name that the BIRT iServer generated.

ActualOutputFileId
The output file ID that the BIRT iServer generated.

RequestedOutputFileName
The output file requested name.

InputFileName
The input file name.

InputFileId
The input file ID.

NotifiedUserId
The ID of the user who received notification.

NotifiedUserName
The name of the user who received notification.

NotifiedChannelId
The ID of the channel that received notification.

NotifiedChannelName
The name of the channel that received notification.

FetchSize
The maximum number of records to retrieve and return in a result set. The default value is 500.

FetchDirection
If True, records are retrieved forward. If False, records are retrieved backward. The default value is True.

CountLimit
The maximum number of records to count. By default, CountLimit is equal to FetchSize. To count all records, set CountLimit to -1.

FetchHandle
Retrieves more items from the result set. In the second and subsequent calls for data, specify the same search criteria as in the original call.

LicenseOption

A complex data type that represents a license option.

Schema

```
<xsd:complexType name="LicenseOption">
   <xsd:all>
      <xsd:element name="Name" type="xsd:string" minOccurs="0"/>
      <xsd:element name="Description" type="xsd:string"
         minOccurs="0"/>
      <xsd:element name="ShortDescription" type="xsd:string"
         minOccurs="0"/>
      <xsd:element name="Value" type="xsd:string" minOccurs="0"/>
   </xsd:all>
</xsd:complexType>
```

Elements

Name
The name of the license option.

Description
The description of the option.

ShortDescription
A shorter description of the option.

Value
The value of the option.

MDSInfo

A complex data type that describes a Message Distribution Service (MDS).

Schema

```
<xsd:complexType name="MDSInfo">
   <xsd:sequence>
      <xsd:element name="ServerName" type="xsd:string"/>
      <xsd:element name="MDSIPAddress" type="xsd:string"/>
      <xsd:element name="MDSPortNumber" type="xsd:int"/>
      <xsd:element name="ServerState" type="typens:ServerState"/>
   </xsd:sequence>
</xsd:complexType>
```

Elements

ServerName
The server name.

MDSIPAddress
The IP address of the MDS.

MDSPortNumber
The port number the MDS uses.

ServerState
The server state.

Monthly

A complex data type that describes monthly job scheduling.

Schema

```
<xsd:complexType name="Monthly">
   <xsd:sequence>
      <xsd:element name="FrequencyInMonths" type="xsd:long" />
      <xsd:element name="OnDay" minOccurs="0">
         <xsd:simpleType>
            <xsd:restriction base="xsd:int">
               <xsd:minInclusive value="0" />
               <xsd:maxInclusive value="31" />
            </xsd:restriction>
```

```
            </xsd:simpleType>
         </xsd:element>
         <xsd:element name="OnWeekDay" minOccurs="0">
            <xsd:simpleType>
               <xsd:restriction base="xsd:int">
                  <xsd:minInclusive value="0" />
                  <xsd:maxInclusive value="23" />
               </xsd:restriction>
            </xsd:simpleType>
         </xsd:element>
         <xsd:element name="RunOn" minOccurs="0">
            <xsd:complexType>
               <xsd:sequence>
                  <xsd:element name="WeekDay">
                     <xsd:simpleType>
                        <xsd:restriction base="xsd:string">
                           <xsd:enumeration value="Mon" />
                           <xsd:enumeration value="Tue" />
                           <xsd:enumeration value="Wed" />
                           <xsd:enumeration value="Thu" />
                           <xsd:enumeration value="Fri" />
                           <xsd:enumeration value="Sat" />
                           <xsd:enumeration value="Sun" />
                        </xsd:restriction>
                     </xsd:simpleType>
                  </xsd:element>
                  <xsd:element name="Occurrence">
                     <xsd:simpleType>
                        <xsd:restriction base="xsd:string">
                           <xsd:enumeration value="First" />
                           <xsd:enumeration value="Second" /> )
                           <xsd:enumeration value="Third" />
                           <xsd:enumeration value="Fourth" />
                           <xsd:enumeration value="Last" />
                        </xsd:restriction>
                     </xsd:simpleType>
                  </xsd:element>
               </xsd:sequence>
            </xsd:complexType>
         </xsd:element>
         <xsd:element name="OnceADay" type="xsd:string"
            minOccurs="0" />
         <xsd:element name="Repeat" type="typens:Repeat"
            minOccurs="0"/>
      </xsd:sequence>
   </xsd:complexType>
```

Elements

FrequencyInMonths
The amount of times a job is to be run, in months.

OnDay
The day of the month the job is to run.

RunOn
Specifies what day of a week to run a job on, and which day of the month to run it. For example, the third Tuesday of the month.

OnceADay
Specifies the time the job is to be run.

Repeat
Specifies how often the schedule is to be repeated.

NameValuePair

A complex data type that represents a named piece of data and its value.

Schema

```
<xsd:complexType name="NameValuePair">
   <xsd:all>
      <xsd:element name="Name" type="xsd:string" />
      <xsd:element name="Value" type="xsd:string" />
   </xsd:all>
  </xsd:complexType>
```

Elements

Name
The data's name.

Value
The data's value.

NewFile

A complex data type that describes a file.

Schema

```
<xsd:complexType name="NewFile">
   <xsd:all>
      <xsd:element name="Name" type="xsd:string"/>
      <xsd:element name="VersionName" type="xsd:string"
         minOccurs="0"/>
      <xsd:element name="ReplaceExisting" type="xsd:Boolean"
         minOccurs="0"/>
      <xsd:element name="Versioning" type="typens:VersioningOption"
         minOccurs="0"/>
```

```
      <xsd:element name="MaxVersions"type="xsd:long"
         minOccurs="0"/>
      <xsd:element name="Description" type="xsd:string"
         minOccurs="0"/>
      <xsd:element name="ArchiveRule" type="typens:ArchiveRule"
         minOccurs="0"/>
      <xsd:element name="ACL" type="typens:ArrayOfPermission"
         minOccurs="0"/>
      <xsd:element name="AccessType" type="typens:FileAccess"
         minOccurs="0"/>
   </xsd:all>
</xsd:complexType>
```

Elements

Name
The name of the file.

VersionName
The version name of the file.

ReplaceExisting
Deprecated. Use Versioning instead of ReplaceExisting. Specifies whether to overwrite the latest existing version when uploading a file. If the existing file has any dependencies, BIRT iServer does not overwrite the file and creates a new version, regardless of the ReplaceExisting setting.

Versioning
Specifies what to do with the latest existing version when uploading a file. Valid values are:

- CreateNewVersion
  Always creates a new version. This is the default value.
- ReplaceLatestIfNoDependents
  Replaces the latest existing version if it does not have any dependent files. If the existing version has any dependants, BIRT iServer creates a new version instead of replacing the existing version.
- ReplaceLatestDropDependency
  Replaces the latest existing version if it does not have any dependent files. If the existing version has any dependants, BIRT iServer drops the dependency.
- ReplaceLatestMigrateDependency
  Replaces the latest existing version if it does not have any dependent files. If the existing version has any dependants, BIRT iServer moves the dependency to the new version.

MaxVersions
The maximum number of versions to keep in the Encyclopedia volume.

Description
The description of the file.

ArchiveRule
The autoarchive rules for the file.

ACL
The access rights to the file.

AccessType
The file's access type. Valid values are:

- Private
  Only the owner of the file and an administrator can access the file.
- Shared
  All users and roles specified in the access control list (ACL) for the file can access the file.

ObjectIdentifier

A complex data type that describes object identifiers.

Schema

```
<xsd:complexType name="ObjectIdentifier">
   <xsd:sequence>
      <xsd:element name="Id" type="xsd:string" minOccurs="0"/>
      <xsd:element name="Name" type="xsd:string" minOccurs="0"/>
      <xsd:element name="Type" type="xsd:string" minOccurs="0"/>
      <xsd:element name="Version" type="xsd:long" minOccurs="0"/>
   </xsd:sequence>
</xsd:complexType>
```

Elements

Id
The ID of the object.

Name
The name of the object.

Type
The object type.

Version
The object version number.

OpenServerOptions

A complex data type that describes open server options.

Schema

```
<xsd:complexType name="OpenServerOptions">
   <xsd:sequence>
      <xsd:element name="KeepWorkingSpace" type="xsd:boolean"/>
      <xsd:element name="DriverTimeout" type="xsd:long"/>
      <xsd:element name="PollingInterval" type="xsd:long"/>
   </xsd:sequence>
</xsd:complexType>
```

Elements

KeepWorkingSpace
Specifies whether the workspace directory is removed after the job completes.

DriverTimeout
The time for the driver to return from executing a job.

PollingInterval
The time interval for the open server to get status messages. The minimum value is 10 seconds.

PageIdentifier

A complex data type that describes page numbers.

Schema

```
<xsd:complexType name="PageIdentifier">
   <xsd:sequence>
      <xsd:element name="Range" type="xsd:string" minOccurs="0" />
      <xsd:element name="PageNum" type="xsd:long" minOccurs="0" />
      <xsd:element name="ViewMode" type="xsd:int" minOccurs="0" />
   </xsd:sequence>
</xsd:complexType>
```

Elements

Range
A page range.

PageNum
A page number.

ViewMode
The page viewing mode.

ParameterDefinition

A complex data type that defines a report parameter.

Schema

```
<xsd:complexType name="ParameterDefinition">
   <xsd:all>
      <xsd:element name="Group" type="xsd:string" minOccurs="0"/>
      <xsd:element name="CascadingParentName" type="xsd:string"
```

```
      minOccurs="0"/>
   <xsd:element name="Name" type="xsd:string"/>
   <xsd:element name="Position" type="xsd:int" minOccurs="0"/>
   <xsd:element name="DataType" type="typens:DataType"
      minOccurs="0"/>
   <xsd:element name="DefaultValue" type="xsd:string"
      minOccurs="0"/>
   <xsd:element name="DefaultValueIsNull" type="xsd:boolean"
      minOccurs="0"/>
   <xsd:element name="IsRequired" type="xsd:boolean"
      minOccurs="0"/>
   <xsd:element name="IsPassword" type="xsd:boolean"
      minOccurs="0"/>
   <xsd:element name="IsHidden" type="xsd:boolean"
      minOccurs="0"/>
   <xsd:element name="DisplayName" type="xsd:string"
      minOccurs="0"/>
   <xsd:element name="HelpText" type="xsd:string"
      minOccurs="0"/>
   <xsd:element name="IsAdHoc" type="xsd:boolean"
      minOccurs="0"/>
   <xsd:element name="ColumnName" type="xsd:string"
      minOccurs="0"/>
   <xsd:element name="ColumnType" type="typens:DataType"
      minOccurs="0"/>
   <xsd:element name="SelectValueList"
      type="typens:ArrayOfString" minOccurs="0"/>
   <xsd:element name="SelectNameValueList"
      type="typens:ArrayOfNameValuePair" minOccurs="0"/>
   <xsd:element name="ControlType" minOccurs="0">
      <xsd:simpleType>
         <xsd:restriction base="xsd:string">
            <xsd:enumeration value="AutoSuggest"/>
            <xsd:enumeration value="ControlRadioButton"/>
            <xsd:enumeration value="ControlList"/>
            <xsd:enumeration value="ControlListAllowNew"/>
            <xsd:enumeration value="ControlCheckBox"/>
            <xsd:enumeration value="FilterSimple"/>
            <xsd:enumeration value="FilterAdvanced"/>
         </xsd:restriction>
      </xsd:simpleType>
   </xsd:element>
   <xsd:element name="OperatorList"
         type="typens:ArrayOfString" minOccurs="0"/>
   <xsd:element name="RecordDefinition"
      type="typens:ArrayOfFieldDefinition" minOccurs="0"/>
   <xsd:element name="DefaultTableValues"
```

```
        type="typens:ArrayOfRecord" minOccurs="0"/>
      <xsd:element name="DataSourceType"
        type="typens:DataSourceType" minOccurs="0"/>
      <xsd:element name="IsViewParameter" type="xsd:boolean"
        minOccurs="0"/>
      <xsd:element name="AutoSuggestThreshold" type="xsd:long"
        minOccurs="0"/>
      <xsd:element name="IsDynamicSelectionList" type="xsd:boolean"
      minOccurs="0"/>
    </xsd:all>
  </xsd:complexType>
```

Elements

Group
The parameter group.

CascadingParentName
The cascading parent name for this parameter definition.

Name
The parameter name.

Position
The index location of the parameter in the information object (.iob) or data source map (.sma) file. The index is 1-based. If this is a regular parameter, do not specify a value or specify 0.

DataType
The data type of the parameter. Valid values are:

- Currency
- Date
- Double
- Integer
- String
- Boolean
- Structure
- Table

DefaultValue
The default value of the parameter.

DefaultValueIsNull
Flag indicating the default value is null.

IsRequired
Specifies whether the parameter is required.

IsPassword
Specifies whether a password is required.

IsHidden
Specifies whether the parameter is hidden.

DisplayName
The display name of the parameter.

HelpText
The text to display when the user holds the cursor over a parameter. For example, a value of a data column.

IsAdHoc
Specifies whether the parameter is ad hoc.

ColumnName
The name of the column on which the ad hoc parameter operates. Required for operations that include a Query element with IsAdHoc set to True, ignored otherwise.

ColumnType
The type of the column on which the ad hoc parameter operates. Required for operations that include a Query element with IsAdHoc set to True, ignored otherwise.

SelectValueList
The list of available parameter values.

SelectNameValueList
The list of available parameter names.

ControlType
The type of control used to represent the parameter. Valid values are:

- AutoSuggest
  An auto suggest control.
- ControlRadioButton
  A radio button.
- ControlList
  A drop-down list.
- ControlListAllowNew
  A text box.
- ControlCheckBox
  A check box.

- FilterSimple
  A simple filter.
- FilterAdvanced
  An advanced filter.

OperatorList
Contains the operators used with ad hoc parameters.

RecordDefinition
The name and value of the field in the table. Used for a table parameter.

DefaultTableValues
The default values of table rows. Used for a table parameter.

DataSourceType
The type of file in which the parameter exists. Valid values are:

- ABInfoObject
  An Actuate Basic information object. This is the default value.
- InfoObject
  An information object.

IsViewParameter
Whether the parameter is a view parameter. The default value is False.

AutoSuggestThreshold
The minimum number of characters to be entered before the AutoSuggest selection list is displayed.

IsDynamicSelectionList
Flag indicating whether the selection list is dynamic or static.

ParameterValue

A complex data type that defines the value of a report parameter.

Schema

```
<xsd:complexType name="ParameterValue">
   <xsd:all>
      <xsd:element name="Group" type="xsd:string" minOccurs="0"/>
      <xsd:element name="Name" type="xsd:string"/>
      <xsd:element name="DipslayName" type="xsd:string"
         minOccurs="0"/>
      <xsd:element name="Position" type="xsd:int" minOccurs="0"/>
      <xsd:element name="Value" type="xsd:string" minOccurs="0"/>
      <xsd:element name="ValueIsNull" type="xsd:boolean"
         minOccurs="0"/>
```

```
      <xsd:element name="PromptParameter" type="xsd:boolean"
        minOccurs="0"/>
      <xsd:element name="TableValue" type="typens:ArrayOfRecord"
        minOccurs="0"/>
      <xsd:element name="DataSourceType"
        type="typens:DataSourceType" minOccurs="0"/>
      <xsd:element name="IsViewParameter" type="xsd:boolean"
        minOccurs="0"/>
    </xsd:all>
</xsd:complexType>
```

Elements

Group
The parameter group.

Name
The parameter name.

DipslayName
The label or display name for the parameter that appears in the user interface.

Position
The index location of the parameter in the information object (.iob) or data source map (.sma) file. The index is 1-based. If this is a regular parameter, do not specify a value or specify 0.

Value
The parameter value. Specification of both TableValue and Value causes TableValue to take precedence over Value.

ValueIsNull
A flag indicating a null value.

PromptParameter
Allows the user to select the parameter.

TableValue
The value of a table parameter. Specification of both TableValue and Value causes TableValue to take precedence over Value.

DataSourceType
The type of file in which the parameter exists. Valid values are:

- ABInfoObject
  An Actuate Basic information object. This is the default value.
- InfoObject
  An information object.

PendingSyncJob

A complex data type that describes a job in the queue waiting for Factory processing.

Schema

```
<xsd:complexType name="PendingSyncJob">
   <xsd:sequence>
      <xsd:element name="ConnectionHandle"
         type="xsd:base64binary">
      <xsd:element name="ObjectId" type="xsd:string"/>
      <xsd:element name="IsTransient" type="xsd:boolean"/>
      <xsd:element name="Volume" type="xsd:string"/>
      <xsd:element name="ServerName" type="xsd:string"
         minOccurs="0"/>
      <xsd:element name="Owner" type="xsd:string" minOccurs="0"/>
      <xsd:element name="ExecutableFileName" type="xsd:string"
         minOccurs="0"/>
      <xsd:element name="ExecutableVersionNumber" type="xsd:long"
         minOccurs="0"/>
      <xsd:element name="ExecutableVersionName" type="xsd:string"
         minOccurs="0"/>
      <xsd:element name="ResourceGroup" type="xsd:string"
         minOccurs="0" />
      <xsd:element name="SubmissionTime" type="xsd:dateTime"
         minOccurs="0"/>
      <xsd:element name="PendingTime" type="xsd:long"
         minOccurs="0"/>
      <xsd:element name="QueueTimeout" type="xsd:long"
         minOccurs="0"/>
      <xsd:element name="QueuePosition" type="xsd:long"
         minOccurs="0"/>
   </xsd:sequence>
</xsd:complexType>
```

Elements

ConnectionHandle
An optional element that supports keeping a connection open to view a persistent report. If ConnectionHandle is present in the SOAP header, the system routes subsequent viewing requests to the same View service that returned the ConnectionHandle. If present, BIRT iServer System ignores the value of TargetVolume.

ObjectId
The ID of the synchronous report for which to retrieve information.

IsTransient
True if the synchronous report is transient, False if the synchronous report is persistent.

Volume
The Encyclopedia volume on which the job originated.

ServerName
The node on which the job is pending.

Owner
The name of the user who submitted the job.

ExecutableFileName
The fully qualified name of the report executable file.

ExecutableVersionNumber
The fully qualified version number of the report executable file.

ExecutableVersionName
The fully qualified version name of the report executable file.

SubmissionTime
The time at which the job was submitted to the server.

PendingTime
The number of seconds elapsed since the job entered the queue.

QueueTimeout
The number of seconds remaining before the job is deleted from the queue.

QueuePosition
The job's position in the queue.

Permission

A complex data type that describes a user's or role's privileges.

Schema

```
<xsd:complexType name="Permission">
   <xsd:sequence>
      <xsd:sequence>
         <xsd:choice minOccurs="0">
            <xsd:element name="RoleName" type="xsd:string"/>
            <xsd:element name="UserName" type="xsd:string"/>
         </xsd:choice>
         <xsd:choice minOccurs="0">
            <xsd:element name="RoleId" type="xsd:string"/>
            <xsd:element name="UserId" type="xsd:string"/>
         </xsd:choice>
      </xsd:sequence>
      <xsd:element name="AccessRight" type="xsd:string">
      </xsd:element>
```

```
   </xsd:sequence>
</xsd:complexType>
```

Elements

RoleName
The role name.

UserName
The user name.

RoleId
The role ID.

UserId
The user ID.

AccessRight
The privileges the user or role has on an object. One or more of the following characters representing a privilege:

- D—Delete
- E—Execute
- G— Grant
- V—Visible
- S—Secured Read
- R—Read
- W—Write

Printer

A complex data type that describes a printer.

Schema

```
<xsd:complexType name="Printer">
   <xsd:all>
      <xsd:element name="Name" type="xsd:string" minOccurs="0"/>
      <xsd:element name="Manufacturer" type="xsd:string"
         minOccurs="0"/>
      <xsd:element name="Model" type="xsd:string" minOccurs="0"/>
      <xsd:element name="Location" type="xsd:string"
         minOccurs="0"/>
      <xsd:element name="Description" type="xsd:string"
         minOccurs="0"/>
      <xsd:element name="SupportOrientation" type="xsd:boolean"
         minOccurs="0"/>
      <xsd:element name="Orientation" type="xsd:string"
         minOccurs="0"/>
```

```
<xsd:element name="OrientationOptions"
   type="typens:ArrayOfString"
   minOccurs="0"/>
<xsd:element name="SupportPageSize" type="xsd:boolean"
   minOccurs="0"/>
<xsd:element name="PageSize" type="xsd:string"
   minOccurs="0"/>
<xsd:element name="PageSizeOptions"
   type="typens:ArrayOfString"
   minOccurs="0"/>
<xsd:element name="SupportScale" type="xsd:boolean"
   minOccurs="0"/>
<xsd:element name="Scale" type="xsd:long" minOccurs="0"/>
<xsd:element name="ScaleOptions" type="typens:ArrayOfInteger"
   minOccurs="0"/>
<xsd:element name="SupportResolution" type="xsd:boolean"
   minOccurs="0"/>
<xsd:element name="Resolution" type="xsd:string"
   minOccurs"=0"/>
<xsd:element name="ResolutionOptions"
   type="typens:ArrayOfString" minOccurs="0"/>
<xsd:element name="SupportNumberOfCopies" type="xsd:boolean"
   minOccurs="0"/>
<xsd:element name="NumberOfCopies" type="xsd:long"
   minOccurs="0"/>
<xsd:element name="SupportCollation" type="xsd:boolean"
   minOccurs="0"/>
<xsd:element name="Collation" type="xsd:boolean"
   minOccurs="0"/>
<xsd:element name="SupportPaperTray" type="xsd:boolean"
   minOccurs="0"/>
<xsd:element name="PaperTray" type="xsd:boolean"
   minOccurs="0"/>
<xsd:element name="PaperTrayOptions"
   type="typens:ArrayOfString" minOccurs="0"/>
<xsd:element name="SupportDuplex" type="xsd:boolean"
   minOccurs="0"/>
<xsd:element name="Duplex" type="xsd:string" minOccurs="0"/>
<xsd:element name="DuplexOptions" type="typens:ArrayOfString"
   minOccurs="0"/>
<xsd:element name="SupportColorMode" type="xsd:boolean"
   minOccurs="0"/>
<xsd:element name="ColorMode" type="xsd:boolean"
   minOccurs="0"/>
<xsd:element name="ColorModeOptions"
   type="typens:ArrayOfString" minOccurs="0"/>
<xsd:element name="Status" type="xsd:string" minOccurs="0"/>
```

```
        </xsd:all>
</xsd:complexType>
```

Elements

Name
The name of the printer. Cannot exceed 50 characters.

Manufacturer
The manufacturer of the printer.

Model
The model of the printer.

Location
The location of the printer.

Description
The description of the printer.

SupportOrientation
Specifies whether the printer supports setting paper orientation.

Orientation
The setting of the printer's orientation property.

OrientationOptions
The setting of the printer's orientation options.

SupportPageSize
Specifies whether page size can be set on the printer.

PageSize
The setting of the printer's page size property.

PageSizeOptions
The page sizes the printer supports.

SupportScale
Specifies whether the printer supports setting the scaling factor.

Scale
The setting of the printer's scaling factor.

ScaleOptions
The setting of the printer's scaling options.

SupportResolution
Specifies whether the printer supports setting the resolution.

Resolution
The setting of the printer's resolution property.

ResolutionOptions
The setting of the printer's resolution options.

SupportNumberOfCopies
Specifies whether the printer supports setting the number of copies.

NumberOfCopies
The setting of the number of copies property.

SupportCollation
Specifies whether the printer supports setting the collation.

Collation
The setting of the printer's collation property.

SupportPaperTray
Specifies whether the printer supports setting the paper tray.

PaperTray
The setting of the printer's paper tray property.

PaperTrayOptions
The setting of the printers's paper tray options.

SupportDuplex
Specifies whether the printer supports duplex printing.

Duplex
The setting of the printer's duplex property.

DuplexOptions
The setting of the printer's duplex options.

SupportColorMode
Specifies whether the printer supports printing in color.

ColorMode
The setting of the printer's color mode property.

ColorModeOptions
The setting of printer's color mode options.

Status
Indicates printer's availability.

PrinterOptions

A complex data type that describes printer options.

Schema `<xsd:complexType name="PrinterOptions">`

```
    <xsd:sequence>
      <xsd:element name="PrinterName" type="xsd:string"/>
      <xsd:element name="Orientation" type="xsd:string"
        minOccurs="0"/>
      <xsd:element name="PageSize" type="xsd:string"
        minOccurs="0"/>
      <xsd:element name="Scale" type="xsd:long" minOccurs="0"/>
      <xsd:element name="Resolution" type="xsd:string"
        minOccurs="0"/>
      <xsd:element name="NumberOfCopies" type="xsd:long"
        minOccurs="0"/>
      <xsd:element name="CollationOption" type="xsd:boolean"
        minOccurs="0"/>
      <xsd:element name="PaperTray" type="xsd:string"
        minOccurs="0"/>
      <xsd:element name="Duplex" type="xsd:string" minOccurs="0"/>
      <xsd:element name="IsColor" type="xsd:boolean"
        minOccurs="0"/>
      <xsd:element name="IsDefaultPrinter" type="xsd:boolean"
        minOccurs="0"/>
    </xsd:sequence>
  </xsd:complexType>
```

Elements

PrinterName
The name of the printer.

Orientation
The paper orientation.

PageSize
The page size.

Scale
The scaling factor.

Resolution
The resolution.

NumberOfCopies
The number of copies.

CollationOption
Turns collation on and off.

PaperTray
The paper tray.

Duplex
Sets duplex printing.

IsColor
Specifies whether the printer can print in color.

IsDefaultPrinter
Specifies whether the printer is the default printer.

PrivilegeFilter

A complex data type that represents a privilege filter. Use PrivilegeFilter to retrieve only the data accessible to roles or users with the specified privileges and to determine whether a user or role has the specified privileges on an item.

Schema

```
<xsd:complexType name="PrivilegeFilter">
   <xsd:sequence>
      <xsd:choice>
         <xsd:element name="GrantedUserName" type="xsd:string"/>
         <xsd:element name="GrantedUserId" type="xsd:string"/>
         <xsd:element name="GrantedIRoleName" type="xsd:string"/>
         <xsd:element name="GrantedRoleId" type="xsd:string"/>
      </xsd:choice>
      <xsd:element name="AccessRights" type="xsd:string"/>
   </xsd:sequence>
</xsd:complexType>
```

Elements

GrantedUserName
The name of the user whose privileges to retrieve.

GrantedUserId
The ID of the user whose privileges to retrieve.

GrantedRoleName
The name of the role whose privileges to retrieve.

GrantedRoleId
The ID of the role whose privileges to retrieve.

AccessRights
The privileges.

PropertyValue

A complex data type that specifies a name-value pair.

Schema

```
<xsd:complexType name="PropertyValue">
   <xsd:sequence>
      <xsd:element name="Name" type="xsd:string" />
      <xsd:element name="Value" type="xsd:string" minOccurs="0" />
```

```
   </xsd:sequence>
</xsd:complexType>
```

Elements

Name
The name of the property.

Value
The value of the property.

Query

A complex data type that describes a query.

Schema

```
<xsd:complexType name="Query">
   <xsd:sequence>
      <xsd:element name="AvailableColumnList"
         type="typens:ArrayOfColumnDefinition" minOccurs="0"/>
      <xsd:element name="ParameterDefinitionList"
         type="typens:ArrayOfParameterDefinition" minOccurs="0"/>
      <xsd:element name="SelectColumnList"
         type="typens:ArrayOfString" minOccurs="0"/>
      <xsd:element name="PromptSelectColumnList" type=”xsd:boolean”
         minOccurs="0"/>
      <xsd:element name="GroupingList"
         type="typens:ArrayOfGrouping" minOccurs="0"/>
      <xsd:element name="PromptGroupingList" type="xsd:boolean"
         minOccurs="0"/>
      <xsd:element name="AggregationList"
         type="typens:ArrayOfAggregation" minOccurs="0"/>
      <xsd:element name="PromptAggregationList" type="xsd:boolean"
      <xsd:element name="GroupingEnabled" type="xsd:boolean"
         minOccurs="0"/>
      <xsd:element name="ShowRowCount" type="xsd:boolean"
         minOccurs="0"/>
      <xsd:element name="FilterList"
         type="typens:ArrayOfFilterCriteria" minOccurs="0"/>
      <xsd:element name="ReportParameterList"
         type="typens:ArrayOfParameterValue" minOccurs="0"/>
      <xsd:element name="SortColumnList"
         type="typens:ArrayOfSortColumn" minOccurs="0"/>
      <xsd:element name="PromptSortColumnList" type=”xsd:boolean”
         minOccurs="0"/>
      <xsd:element name="OutputFormat" type=”xsd:string”
         minOccurs="0"/>
      <xsd:element name="PromptOutputFormat" type=”xsd:boolean”
         minOccurs="0"/>
```

```
        <xsd:element name="Layout" type="xsd:string" minOccurs="0"/>
        <xsd:element name="PageHeader" type="xsd:string"/>
        <xsd:element name="ActuateQueryType" minOccurs="0"/>
          <xsd:simpleType>
            <xsd:restriction base="xsd:string">
              <xsd:enumeration value="DOX"/>
              <xsd:enumeration value="IOB"/>
              <xsd:enumeration value="SMA"/>
            </xsd:restriction>
          </xsd:simpleType>
        </xsd:element>
        <xsd:element name="QueryTemplateName" type="xsd:string"
          minOccurs="0"/>
        <xsd:element name="SuppressDetailRows" type="xsd:boolean"
          minOccurs="0" />
        <xsd:element name="OutputDistinctRowsOnly" type="xsd:boolean"
          minOccurs="0" />
        <xsd:element name="SupportedQueryFeatures"
          type="typens:SupportedQueryFeatures" minOccurs="0" />
        <xsd:element name="SupportedQueryFeaturesExtended"
          type="typens:ArrayOfPropertyValue" minOccurs="0" />
    </xsd:sequence>
  </xsd:complexType>
```

Elements

AvailableColumnList
The database columns available for the query.

ParameterDefinitionList
The list of available parameter definitions.

SelectColumnList
The list of columns to include in the output file.

PromptSelectColumnList
Allows the user to select the columns for the query.

GroupingList
The group keys and group sort order for the output file.

PromptGroupingList
Allows the user to change the group keys and group sort order.

AggregationList
The aggregation functions to perform, such as getting totals, subtotals, averages, and minimum and maximum counts. Each aggregation function must correspond to a data column.

PromptAggregationList
Allows the user to change the aggregation function for a column when running the query.

GroupingEnabled
Provides backward compatibility. Specifies whether an Actuate Basic information object executable (.dox) file was created using Actuate 7 Service Pack 2 or higher.

If the DOX was created using Actuate 7 Service Pack 2 or a later release, set GroupingEnabled to True. In this case, BIRT iServer Information and Management Consoles enable the grouping and aggregation pages. If the DOX was created using an earlier version of an Actuate product, set GroupingEnabled to False.

ShowRowCount
Specifies whether to include a count of the data rows. A row count can only appear with subtotal information.

FilterList
The list of available filters.

ReportParameterList
The list of available report parameters.

SortColumnList
The list of columns on which to sort the query.

PromptSortColumnList
Allows the user to select the column on which to sort the query.

OutputFormat
The format of the output file. Query only supports the DOI format.

PromptOutputFormat
Allows the user to select the format of the output file.

Layout
The layout format of the query.

PageHeader
A title that appears at the top of each page in the output file.

ActuateQueryType
The type of file to query. Valid values are:

- DOX
  An Actuate Basic information object executable file. This is the default value.
- IOB
  An Information Object file.

- SMA
  A data source file.

QueryTemplateName
Specifies the Actuate Query template to use. Applies only if the value of ActuateQueryType is IOB or SMA. If not specified, the default Actuate Query template is used. The default Actuate Query template is AQTemplate<xxxxxxxxx>.rox, where <xxxxxxxxx> is the release identifier, for example 80A040610.

If the value of AcutateQueryType is DOX, this element is ignored.

SuppressDetailRows
Flag indicating whether detail rows should be suppressed.

OutputDistinctRowsOnly
Flag indicating whether only distinct rows are output.

SupportedQueryFeatures
Specifies additional query features.

SupportedQueryFeaturesExtended
An array of property values for use by the query.

Range

A complex data type that specifies a start and end range for a search.

Schema

```
<xsd:complexType name="Range">
   <xsd:sequence>
      <xsd:element name="Start" type="xsd:long"/>
      <xsd:element name="End" type="xsd:long"/>
   </xsd:sequence>
</xsd:complexType>
```

Elements

Start
The start range for the search.

End
The end range for the search.

Repeat

A complex data type that describes how often a job run is to be repeated.

Schema

```
<xsd:complexType name="Repeat">
   <xsd:sequence>
```

```
      <xsd:element name="StartTime" type="xsd:string" />
      <xsd:element name="EndTime" type="xsd:string" />
      <xsd:element name="IntervalInSeconds" type="xsd:long" />
   </xsd:sequence>
</xsd:complexType>
```

Elements

StartTime
The time that the job is to start repeatedly running.

EndTime
The time that the job is to no longer run.

IntervalInSeconds
The time to wait between job runs.

Record

A complex data type that represents a table parameter.

Schema

```
<xsd:complexType name="Record">
   <xsd:sequence>
      <xsd:element name="FieldValue" type="typens:FieldValue
         maxOccurs="unbounded"/>
   </xsd:sequence>
</xsd:complexType>
```

Elements

FieldValue
The value of the table parameter.

ReportParameterType

A simple data type that describes parameter types.

Schema

```
<xsd:simpleType name="ReportParameterType">
   <xsd:restriction base="xsd:string">
      <xsd:enumeration value="Execution" />
      <xsd:enumeration value="All" />
      <xsd:enumeration value="View" />
   </xsd:restriction>
</xsd:simpleType>
```

Elements

Execution
An execution parameter

View
A view parameter.

All
An all parameter type.

ResourceGroup

A complex data type the describes a resource group.

Schema

```
<xsd:complexType name="ResourceGroup">
   <xsd:sequence>
      <xsd:element name="Name" type="xsd:string"/
      <xsd:element name="Disabled" type="xsd:boolean"
         minOccurs="0"/>
      <xsd:element name="Description" type="xsd:string"
         minOccurs="0"/>
      <xsd:element name="Type" type="xsd:string" minOccurs="0"/>
      <xsd:element name="ReportType" type="xsd:string"
         minOccurs="0"/>
      <xsd:element name="Volume" type="xsd:string" minOccurs="0"/>
      <xsd:element name="MinPriority" type="xsd:long"
         minOccurs="0"/>
      <xsd:element name="MaxPriority" type="xsd:long"
         minOccurs="0"/>
      <xsd:element name="Reserved" type="xsd:boolean"
         minOccurs="0"/>
      <xsd:element name="StartArguments" type="xsd:string"
         minOccurs="0"/>
      <xsd:element name="WorkUnitType" type="xsd:string"
         minOccurs="0"/>
   </xsd:sequence>
</xsd:complexType>
```

Elements

Name
The name of the resource group.

Disabled
Specifies whether the resource group can run jobs. If True, resource group does not run jobs. The default value is False.

Description
The description of the resource group.

Type
The type of jobs the resource group runs. Valid values are:

- Sync
  The resource group runs synchronous jobs.

- Async
  The resource group runs asynchronous jobs.

ReportType
The type of report the resource group creates.

Volume
The name of an Encyclopedia volume to which to assign the resource group. Valid values are:

- An empty string
  Assigns all Encyclopedia volumes on the BIRT iServer.
- A volume name
  Assigns the specified Encyclopedia volume.

MinPriority
Applies only to an asynchronous resource group. Specifies the minimum priority for the resource group. Valid values are 0–1,000, where 1, 000 is the highest priority. MinPriority must be less than MaxPriority. The default value is 0.

MaxPriority
Applies only to an asynchronous resource group. Specifies the maximum priority for the resource group. Valid values are 0–1,000, where 1, 000 is the highest priority. MaxPriority must be more than MinPriority. The default value is 1,000.

Reserved
Applies only to a synchronous resource group. True reserves the resource group to run only the jobs assigned to it. Use the TargetResourceGroup element in the SOAP header of an ExecuteReport request to assign a job.

StartArguments
The starting arguments for the resource group.

WorkUnitType
The license option type. An aggregate licensing model that defines iServer System features in terms of work units.

ResourceGroupSettings

A complex data type that describes the settings of a resource group.

Elements

```
<xsd:complexType name="ResourceGroupSettings">
   <xsd:sequence>
      <xsd:element name="TemplateName" type="xsd:string"/>
      <xsd:element name="Activate" type="xsd:boolean"
         minOccurs="0"/>
      <xsd:element name="MaxFactory" type="xsd:int" minOccurs="0"/>
```

```
      <xsd:element name="MinFactory" type="xsd:int" minOccurs="0"/>
      <xsd:element name="FileTypes" type="typens:ArrayOfString"
        minOccurs="0"/>
      <xsd:element name="StartArguments" type="xsd:string"
        minOccurs="0"/>
   </xsd:sequence>
</xsd:complexType>
```

Elements

TemplateName
The name of the BIRT iServer template on which the resource group runs.

Activate
Specifies whether the BIRT iServer is a member of the resource group. If True, the BIRT iServer is a member of the resource group. The default value is False.

MaxFactory
The maximum number of Factory processes available to the resource group.

MinFactory
The minimum number of Factory processes available to the resource group.

FileTypes
The file types the resource group can run.

StartArguments
The starting arguments for the resource group.

ResultSetSchema

A complex data type that describes the result set schema.

Elements

```
<xsd:complexType name="ResultSetSchema">
   <xsd:sequence>
   <xsd:element name="ResultSetName" type="xsd:string"
      minOccurs="0"/>
   <xsd:element name="ResultSetDisplayName" type="xsd:string"
      minOccurs="0"/>
   <xsd:element name="ArrayOfColumnSchema"
      type="typens:ArrayOfColumnSchema" minOccurs="0"/>
</xsd:sequence>
</xsd:complexType>
```

Elements

ResultSetName
Name of the result set.

ArrayOfColumnSchema
An array of ColumnSchema objects.

ResultSetDisplayName
The display name of the result set. If not specified, the value of the Name element is used. If the query is performed on an information object (.iob) or data source map (.sma) file, DisplayName is used as the group label.

RetryOptions

A complex data type that describes how to retry report generation or printing jobs that have failed.

Schema

```
<xsd:complexType name="RetryOptions">
   <xsd:sequence>
      <xsd:element name="RetryOption"
         type="typens:RetryOptionType"/>
      <xsd:element name="MaxRetryCount" type="xsd:long"
         minOccurs="0"/>
      <xsd:element name="RetryInterval"type="xsd:long"
         minOccurs="0"/>
   </xsd:sequence>
</xsd:complexType>
```

Elements

RetryOption
The retry options.

MaxRetryCount
The maximum number or retry attempts.

RetryInterval
The interval between retry attempts. Measured in seconds.

RetryOptionType

A simple data type that describes a retry option for failed jobs.

Schema

```
<xsd:simpleType name=”RetryOptionType”>
   <xsd:restriction base="xsd:string">
      <xsd:enumeration value="Disabled"/>
      <xsd:enumeration value="VolumeDefault"/>
      <xsd:enumeration value="Specified"/>
   </xsd:restriction>
</xsd:simpleType>
```

Role

A complex data type that describes a role.

Schema

```
<xsd:complexType name="Role">
   <xsd:sequence>
      <xsd:element name="Id" type="xsd:string" minOccurs="0"/>
      <xsd:element name="Name" type="xsd:string" minOccurs="0"/>
      <xsd:element name="Description" type="xsd:string"
         minOccurs="0"/>
   </xsd:sequence>
</xsd:complexType>
```

Elements

Id
The role ID.

Name
The name of the role. Cannot exceed 50 characters.

Description
The description of the role. Cannot exceed 500 characters.

RoleCondition

A complex data type that represents the fields on which a search can be performed and the condition to match.

Schema

```
<xsd:complexType name="RoleCondition">
   <xsd:sequence>
      <xsd:element name="Field" type=”typens:RoleField”/>
      <xsd:element name="Match" type="xsd:string"/>
   </xsd:sequence>
</xsd:complexType>
```

Elements

Field
The fields on which a search can be performed.

Match
The condition to match. If the condition includes special characters, for example a dash, either escape the special character with a backslash (\) or enclose it in brackets ([]). For example, to search for a file 05-25-04Report.roi, specify one of the following:

```
05\ -25\ -04Report.roi
05[-]25[-]04Report.roi
```

RoleField

A simple data type that describes the fields within a role.

Schema

```
<xsd:simpleType>
   <xsd:restriction base="xsd:string">
      <xsd:enumeration value="Name"/>
      <xsd:enumeration value="Description"/>
   </xsd:restriction>
</xsd:simpleType>
```

RoleSearch

A complex data type that represents a role search.

Schema

```
<xsd:complexType name="RoleSearch">
   <xsd:sequence>
      <xsd:choice minOccurs="0">
         <xsd:element name="Condition"
            type="typens:RoleCondition"/>
         <xsd:element name="ConditionArray"
            type="typens:ArrayOfRoleCondition"/>
      </xsd:choice>
      <xsd:choice minOccurs="0">
         <xsd:element name="ParentRoleName" type="xsd:string"/>
         <xsd:element name="ChildRoleName" type="xsd:string"/>
         <xsd:element name="WithRightsToChannelName"
            type="xsd:string"/>
         <xsd:element name="AssignedToUserName" type="xsd:string"/>
         <xsd:element name="ParentRoleId" type="xsd:string"/>
         <xsd:element name="ChildRoleId" type="xsd:string"/>
         <xsd:element name="WithRightsToChannelId"
            type="xsd:string"/>
         <xsd:element name="AssignedToUserId" type="xsd:string"/>
      </xsd:choice>
      <xsd:element name="FetchSize" type="xsd:int" minOccurs="0"/>
      <xsd:element name="FetchDirection" type="xsd:boolean"
         minOccurs="0"/>
      <xsd:element name="CountLimit" type="xsd:int" minOccurs="0"/>
      <xsd:element name="FetchHandle" type="xsd:string"
         minOccurs="0"/>
   </xsd:sequence>
</xsd:complexType>
```

Elements

Condition
The search condition.

ConditionArray
An array of search conditions.

ParentRoleName
The name of the parent role.

ChildRoleName
The name of the child role.

WithRightsToChannelName
The name of the channel to which the role has access rights.

AssignedToUserName
The name of the user assigned to the role.

ParentRoleId
The ID of the parent role.

ChildRoleId
The ID of the child role.

WithRightsToChannelId
The ID of the channel to which the role has access rights.

AssignedToUserId
The ID of the user assigned to the role.

FetchSize
The maximum number of records to retrieve and return in a result set. The default value is 500.

FetchDirection
If True, records are retrieved forward. If False, records are retrieved backward. The default value is True.

CountLimit
The maximum number of records to count. By default, CountLimit is equal to FetchSize. To count all records, set CountLimit to -1.

FetchHandle
Retrieves more items from the result set. In the second and subsequent calls for data, specify the same search criteria as in the original call.

RunningJob

A complex data type that describes a job the Factory is currently processing.

Schema

```
<xsd:complexType name="RunningJob">
   <xsd:sequence>
      <xsd:element name="IsSyncJob" type="xsd:boolean"/>
      <xsd:element name="ConnectionHandle" type="xsd:base64Binary"
         minOccurs="0"/>
      <xsd:element name="ObjectId" type="xsd:string"
      minOccurs="0"/>
      <xsd:element name="IsTransient" type="xsd:boolean"
         minOccurs="0"/>
      <xsd:element name="IsProgressive" type="xsd:boolean"
         minOccurs="0"/>
      <xsd:element name="JobId" type="xsd:string" minOccurs="0"/>
      <xsd:element name="Volume" type="xsd:string"/>
      <xsd:element name="ServerName" type="xsd:string"
         minOccurs="0"/>
      <xsd:element name="Owner" type="xsd:string" minOccurs="0"/>
      <xsd:element name="ExecutableFileName" type="xsd:string"
         minOccurs="0"/>
      <xsd:element name="ExecutableVersionNumber" type="xsd:long"
         minOccurs="0"/>
      <xsd:element name="ExecutableVersionName" type="xsd:string"
         minOccurs="0"/>
      <xsd:element name="ResourceGroup" type="xsd:string"
         minOccurs="0"/>
      <xsd:element name="SubmissionTime" type="xsd:dateTime"
         minOccurs="0"/>
      <xsd:element name="StartTime" type="xsd:dateTime"
         minOccurs="0"/>
      <xsd:element name="RunningTime" type="xsd:long"
         minOccurs="0"/>
      <xsd:element name="ExecutionTimeout" type="xsd:long"
         minOccurs="0"/>
      <xsd:element name="IsSyncFactory" type="xsd:boolean"
         minOccurs="0"/>
      <xsd:element name="FactoryPid" type="xsd:long"
         minOccurs="0"/>
   </xsd:sequence>
</xsd:complexType>
```

Elements

IsSyncJob

Specifies whether the job is synchronous. True if the job is synchronous, False if the job is asynchronous.

ConnectionHandle

An optional element that supports keeping a connection open to view a persistent report. If ConnectionHandle is present in the SOAP header, the system routes subsequent viewing requests to the same View service that returned the

ConnectionHandle. If present, BIRT iServer System ignores the value of TargetVolume.

ObjectId
The ID of the synchronous report for which to retrieve information.

IsTransient
Specifies whether the synchronous report is transient. True if the synchronous report is transient, False if the synchronous report is persistent.

IsProgressive
Specifies whether progressive viewing is enabled. True if progressive viewing is enabled.

JobId
The ID of the asynchronous job.

Volume
The Encyclopedia volume on which the job originated.

ServerName
The node on which the job is running.

Owner
The name of the user who submitted the job.

ExecutableFileName
The fully qualified name of the report executable file.

ExecutableVersionNumber
The version number of the report executable file.

ExecutableVersionName
The version name of the report executable file.

ResourceGroup
The resource group for the job.

SubmissionTime
The time at which the job was submitted to the server.

StartTime
The time at which job execution started.

RunningTime
The time elapsed since job execution started.

ExecutionTimeout
The number of seconds remaining before job execution times out. The number is always zero (infinite) for asynchronous reports.

IsSyncFactory
Specifies whether the Factory is running synchronous jobs. True if the Factory is running synchronous jobs, False if the Factory is running asynchronous jobs.

FactoryPid
The process ID of the Factory.

ScalarDataType

A simple data type that specifies a scalar parameter.

Schema

```
<xsd:simpleType name="ScalarDataType">
   <xsd:restriction base="xsd:string">
      <xsd:enumeration value="Currency"/>
      <xsd:enumeration value="Date"/>
      <xsd:enumeration value="DateOnly"/>
      <xsd:enumeration value="Time"/>
      <xsd:enumeration value="Double"/>
      <xsd:enumeration value="Integer"/>
      <xsd:enumeration value="String"/>
      <xsd:enumeration value="Boolean"/>
   </xsd:restriction>
</xsd:simpleType>
```

Elements

Currency
A Currency parameter.

Date
A Date parameter.

DateOnly
A DateOnly paramenter.

Time
A Time parameter.

Double
A Double parameter.

Integer
An Integer parameter.

String
A String parameter.

Boolean
A Boolean parameter.

SearchReportByIdList

A complex data type that describes what items to search for within a report.

Schema

```
<xsd:complextType="SearchReportByIdList">
   <xsd:sequence>
      <xsd:element name="SelectByIdList"
         type="typens:ArrayOfString"/>
      <xsd:element name="SearchByIdList"
            type="typens:ArrayOfComponent" minOccurs="0"/>
   </xsd:sequence>
</xsd:complexType>
```

Elements

SearchReportByIdList
The list of report IDs to search. Specify one of the following items:

- SelectByIdList
  The list of report IDs to select.
- SearchByIdList
  The list of report IDs and values to search.

SearchReportByIdNameList

A complex data type that describes what items to search for within a report.

Schema

```
<xsd:complexType name="SearchReportByIdNameList">
   <xsd:sequence>
      <xsd:element name="SelectList"
         type="typens:ArrayOfComponentIdentifier"/>
      <xsd:element name="SearchList" type="typens:ArrayOfComponent"
         minOccurs="0"/>
   </xsd:sequence>
</xsd:complexType>
```

Elements

SearchReportByIdNameList
The list of reports to search. Use for creating a search list in which some components are identified by ID and others are identified by name. Specify one of the following items:

- SelectList
  The list of reports to select.
- SearchList
  The list of reports to search.

SearchReportByNameList

A complex data type that describes what items to search for within a report.

Schema

```
<xsd:complexType name="SearchReportByNameList">
   <xsd:sequence>
      <xsd:element name="SelectByNameList"
         type="typens:ArrayOfString"/>
      <xsd:element name="SearchByNameList"
         type="typens:ArrayOfComponent" minOccurs="0"/>
   </xsd:sequence>
</xsd:complexType>
```

Elements

SearchReportByNameList
The list of report names to search. Specify one of the following items:

- SelectByNameList
  The list of report names to select.
- SearchByNameList
  The list of report names and values to search.

SearchResultProperty

A complex data type that describes search results.

Schema

```
<xsd:complexType name="SearchResultProperty">
   <xsd:all>
      <xsd:element name="EnableColumnHeaders" type="xsd:boolean"
         minOccurs="0" />
      <xsd:element name="UseQuoteDelimiter" type="xsd:boolean"
         minOccurs="0" />
   </xsd:all>
</xsd:complexType>
```

Elements

EnableColumnHeaders
Flag indicating whether column headers are enabled.

UseQuoteDelimiter
Flag indicating whether quotes are used as the delimiter.

ServerInformation

A complex data type that describes a BIRT iServer.

Schema

```
<xsd:complexType name="ServerInformation">
   <xsd:sequence>
      <xsd:element name="ServerName" type="xsd:string"/>
      <xsd:element name="TemplateName" type="xsd:string" />
      <xsd:element name="ServerStatusInformation"
      type="typens:ServerStatusInformation"/>
      <xsd:element name="ServiceList"
         type="typens:ArrayOfService"/>
      <xsd:element name="OwnsVolume" type="xsd:boolean"/>
      <xsd:element name="Description" type="xsd:string"
         minOccurs="0"/>
      <xsd:element name="ServerVersionInformation"
         type="typens:ServerVersionInformation"/>
      <xsd:element name="ChangesPending" type="xsd:string"/>
      <xsd:element name="NodeLockViolation" type="xsd:boolean"
         minOccurs="0"/>
      <xsd:element name="NodeLockViolationExpirationDate"
         type="xsd:string" minOccurs="0"/>
      <xsd:element name="ServerIPAddress" type="xsd:string"
         minOccurs="0" />
       <xsd:element name="PmdPortNumber" type="xsd:int"
         minOccurs="0" />
       <xsd:element name="LocalServer" type="xsd:boolean"
         minOccurs="0" />
   </xsd:sequence>
</xsd:complexType>
```

Elements

ServerName
The name of the BIRT iServer.

TemplateName
The name of the BIRT iServer configuration template.

ServerStatusInformation
The status of the BIRT iServer. Valid values are:

- ServerState
- SystemType
- StatusErrorCode
- StatusErrorDescription

ServiceList
The list of available services.

OwnsVolume
True if there are any volumes on the BIRT iServer, False otherwise.

Description
The description of the BIRT iServer.

ServerVersionInformation
The following information about the BIRT iServer version:

- ServerVersion
- ServerBuild
- OSVersion

ChangesPending
Server configuration has changed and the BIRT iServer or the system must be restarted for the changes to take effect.

NodeLockViolation
Specifies whether a licensing node-lock violation exists. The default value is False.

NodeLockViolationExpirationDate
The date on which the grace period for a node-lock violation expires and the node lock takes effect. Contact Actuate Licensing about a node-lock licensing problem.

ServerIPAddress
The name of the BIRT iServer configuration template.

PmdPortNumber
The port where the Process Management Daemon (PMD) listens.

LocalServer
The local name of BIRT iServer.

ServerResourceGroupSetting

A complex data type that describes the settings of a resource group available to a BIRT iServer.

Schema

```
<xsd:complexType name="ServerResourceGroupSetting">
   <xsd:sequence>
      <xsd:element name="ResourceGroupName" type="xsd:string"/>
      <xsd:element name="Activate" type="xsd:boolean"
         minOccurs="0"/>
      <xsd:element name="Type" type="xsd:string" minOccurs="0"/>
      <xsd:element name="MaxFactory" type="xsd:int"
         minOccurs="0"/>
      <xsd:element name="MinFactory" type="xsd:int" minOccurs="0"/>
      <xsd:element name="FileTypes" type="typens:ArrayOfString"
         minOccurs="0"/>
```

```
      <xsd:element name="StartArguments" type="xsd:string"
        minOccurs="0"/>
   </xsd:sequence>
</xsd:complexType>
```

Elements

ResourceGroupName
The name of the resource group.

Activate
Specifies whether the BIRT iServer is a member of the resource group. If True, the BIRT iServer is a member of the resource group. The default value is False.

Type
The type of jobs the resource group runs. Valid values are:

- Sync
  The resource group runs synchronous jobs.
- Async
  The resource group runs asynchronous jobs.

MaxFactory
The maximum number of Factory processes available to the resource group.

MinFactory
The minimum number of Factory processes available to the resource group.

FileTypes
The file types the resource group can run.

StartArguments
The list of arguments used when starting a resource group process. For example, the Default Java Async resource group uses the following arguments:

```
-Xmx256M -Djava.awt.headless=true -
   Djava.protocol.handler.pkgs=com.actuate.javaserver.protocol
   com.actuate.javaserver.Server
```

ServerState

A simple data type that describes the state of an Actuate iServer.

Schema

```
<xsd:simpleType name="ServerState">
   <xsd:restriction base="xsd:string">
      <xsd:enumeration value="OFFLINE"/>
      <xsd:enumeration value="STARTING"/>
      <xsd:enumeration value="ONLINE"/>
      <xsd:enumeration value="STOPPING"/>
      <xsd:enumeration value="FAILED"/>
```

```
   </xsd:restriction>
</xsd:simpleType>
```

Elements

Offline
The server is offline.

Starting
The server is starting.

Online
The server is online.

Stopping
The server is stopping.

Failed
The server failed.

ServerStatusInformation

A complex data type that describes the status of an Actuate iServer.

Schema

```
<xsd:complexType name="ServerStatusInformation">
   <xsd:sequence>
      <xsd:element name="ServerState" type="ServerState"/>
      <xsd:element name="SystemType" type="SystemType"/>
      <xsd:element name="StatusErrorCode" type="xsd:long"
         minOccurs="0"/>
      <xsd:element name="StatusErrorDescription" type="xsd:string"
         minOccurs="0"/>
   </xsd:sequence>
</xsd:complexType>
```

Elements

ServerState
The state of the Actuate iServer. Valid values are:

- Offline
- Starting
- Online
- Stopping
- Failed

SystemType
The type of Actuate iServer, cluster or standalone.

StatusErrorCode
The code of the error if status is Failed.

StatusErrorDescription
The description of the error if status is Failed.

ServerVersionInformation

A complex data type that describes the version of an Actuate iServer.

Schema

```
<xsd:complexType name="ServerVersionInformation">
   <xsd:sequence>
      <xsd:element name="ServerVersion" type="xsd:string"/>
      <xsd:element name="ServerBuild" type="xsd:string"/>
      <xsd:element name="OSVersion" type="xsd:string"/>
   </xsd:sequence>
</xsd:complexType>
```

Elements

ServerVersion
The version of the Actuate iServer.

ServerBuild
The build number of the Actuate iServer.

OSVersion
The version of the operating system.

Service

A simple data type that represents a service.

Schema

```
<xsd:simpleType name="Service">
   <xsd:restriction base="xsd:string">
      <xsd:enumeration value="Request"/>
      <xsd:enumeration value="Viewing"/>
      <xsd:enumeration value="Generation"/>
      <xsd:enumeration value="Caching" />
      <xsd:enumeration value="Integration" />
   </xsd:restriction>
</xsd:simpleType>
```

Elements

Request
A Message Distribution Service (MDS).

Viewing
A View service.

Generation
A Factory service.

Caching
A Caching service.

Integration
An Integration service.

SortColumn

A complex data type that specifies the column on which to sort a query and the sorting order.

Schema

```
<xsd:complexType name="SortColumn">
   <xsd:sequence>
      <xsd:element name="Name" type="xsd:string"/>
      <xsd:element name="SortOrder">
         <xsd:simpleType>
            <xsd:restriction base="xsd:string">
               <xsd:enumeration value="ASC"/>
               <xsd:enumeration value="DES"/>
            </xsd:restriction>
         </xsd:simpleType>
      </xsd:element>
   </xsd:sequence>
</xsd:complexType>
```

Elements

Name
The name of the column.

SortOrder
The sort order. ASC specifies ascending order and DES specifies descending order.

Stream

A complex data type that represents a streamed image.

Schema

```
<xsd:complexType name="Stream">
   <xsd:sequence>
      <xsd:element name="Name" type="xsd:string"/>
      <xsd:element name="EmbeddedProperty" type="xsd:boolean"/>
   </xsd:sequence>
</xsd:complexType>
```

Elements

Name
The name of the image.

EmbeddedProperty
Specifies whether the image is embedded.

SupportedQueryFeatures

A simple type that describes the types of queries that can be made.

Schema

```
<xsd:simpleType name="SupportedQueryFeatures">
   <xsd:restriction base="xsd:string">
      <xsd:enumeration value="UI_Version_2" />
   </xsd:restriction>
</xsd:simpleType>
```

Elements

UI_Version_2
The current version number.

SystemType

A simple data type that describes the type of BIRT iServer System.

Schema

```
<xsd:simpleType name="SystemType">
   <xsd:restriction base="xsd:string">
      <xsd:enumeration value="Cluster"/>
      <xsd:enumeration value="Standalone"/>
   </xsd:restriction>
</xsd:simpleType>
```

Elements

Cluster
A cluster system.

Standalone
A stand-alone system.

TypeName

A simple data type that describes names of data types.

Schema

```
<xsd:simpleType name="TypeName">
   <xsd:restriction base="xsd:NMTOKEN">
      <xsd:enumeration value="int" />
      <xsd:enumeration value="sht" />
      <xsd:enumeration value="dbl" />
      <xsd:enumeration value="dbn" />
      <xsd:enumeration value="cur" />
      <xsd:enumeration value="dtm" />
```

```
      <xsd:enumeration value="str" />
      <xsd:enumeration value="bln" />
      <xsd:enumeration value="nll" />
   </xsd:restriction>
</xsd:simpleType>
```

TypeName
The name of the type.

User

A complex data type that describes a user.

Schema

```
<xsd:complexType name="User">
   <xsd:sequence>
      <xsd:element name="Id" type="xsd:string" minOccurs="0"/>
      <xsd:element name="Name" type="xsd:string" minOccurs="0"/>
      <xsd:element name="Password" type="xsd:string"
         minOccurs="0"/>
      <xsd:element name="Description" type="xsd:string"
         minOccurs="0"/>
      <xsd:element name="IsLoginDisabled" type="xsd:boolean"
         minOccurs="0"/>
      <xsd:element name="EmailAddress" type="xsd:string"
         minOccurs="0"/>
      <xsd:element name="HomeFolder" type="xsd:string"
         minOccurs="0"/>
      <xsd:element name="ViewPreference" minOccurs="0">
         <xsd:simpleType>
            <xsd:restriction base="xsd:string">
               <xsd:enumeration value="Default"/>
               <xsd:enumeration value="DHTML"/>
               <xsd:enumeration value="LRX"/>
            </xsd:restriction>
         </xsd:simpleType>
      </xsd:element>
      <xsd:element name="MaxJobPriority" type="xsd:long"
         minOccurs="0"/>
      <xsd:element name="SendNoticeForSuccess" type="xsd:boolean"
         minOccurs="0"/>
      <xsd:element name="SendNoticeForFailure" type="xsd:boolean"
         minOccurs="0"/>
      <xsd:element name="SuccessNoticeExpiration" type="xsd:long"
         minOccurs="0"/>
      </xsd:element>
      <xsd:element name="FailureNoticeExpiration" type="xsd:long"
```

```
        minOccurs="0"/>
      <xsd:element name="SendEmailForSuccess" type="xsd:boolean"
        minOccurs="0"/>
      <xsd:element name="SendEmailForFailure" type="xsd:boolean"
        minOccurs="0"/>
      <xsd:element name="AttachReportInEmail" type="xsd:boolean"
        minOccurs="0"/>
      <xsd:element name="DefaultPrinterName" type="xsd:string"
        minOccurs="0"/>
   </xsd:sequence>
</xsd:complexType>
```

Elements

Id
The user's user ID.

Name
The user's name. A user name is a string of 1 to 256 characters, including any character except a control character. A user name is not case-sensitive. BIRT iServer stores a user name in mixed case, always displaying it exactly the way it was typed during creation.

Password
The user's password. A password is a string of 1 to 256 characters, including any character except a control character or space. Security experts recommend using passwords of at least eight characters, including mixed-case alphabetic and numeric characters. A password is case-sensitive. The Administrator can change any user's password. Users can only change their own passwords. BIRT iServer encrypts a user's password.

Description
The description of the user.

IsLoginDisabled
Specifies whether the user can log in.

EmailAddress
The user's e-mail address.

HomeFolder
The user's home folder.

ViewPreference
The user's viewer, Default or DHTML.

MaxJobPriority
The maximum priority that the user can assign to a job.

SendNoticeForSuccess
Specifies whether the BIRT iServer sends success notices to the user.

SendNoticeForFailure
Specifies whether the BIRT iServer sends failure notices to the user.

SuccessNoticeExpiration
Specifies the minimum number of minutes success notices remain in the Completed folder. After this time elapses, BIRT iServer removes the notices the next time it removes requests from the volume's Requests\Completed folder. If not set or set to 0, DefaultSuccessNoticeExpiration specified in Volume is used. To set the user's success notices to never expire, set the value to 0xffffffff.

FailureNoticeExpiration
Specifies the minimum number of minutes failure notices remain in the Completed folder. After this time elapses, BIRT iServer removes the notices the next time it removes requests from the volume's Requests\Completed folder. If not set or set to 0, DefaultFailureNoticeExpiration specified in Volume is used. To set the user's failure notices to never expire, set the value to 0xffffffff.

SendEmailForSuccess
Specifies whether the BIRT iServer sends success notices in an e-mail message to the user.

SendEmailForFailure
Specifies whether the BIRT iServer sends failure notices in an e-mail message to the user.

AttachReportInEmail
Specifies whether to attach a report to an e-mail completion notice.

DefaultPrinterName
The name of the user's default printer.

UserCondition

A complex data type that represents the fields on which a search can be performed and the condition to match.

Schema

```
<xsd:complexType name="UserCondition">
   <xsd:sequence>
      <xsd:element name="Field" type="typens:UserField">
      <xsd:element name="Match" type="xsd:string"/>
   </xsd:sequence>
</xsd:complexType>
```

Elements

Field
The fields on which a search can be performed.

Match
The condition to match. If the condition includes special characters, for example a dash, either escape the special character with a backslash (\) or enclose it in brackets ([]). For example, to search for a file 05-25-04Report.roi, specify one of the following:

```
05\ -25\ -04Report.roi
05[-]25[-]04Report.roi
```

UserField

A simple data type that describes the fields within a user element.

Schema

```
<xsd:simpleType name="UserField">
   <xsd:restriction base="xsd:string">
      <xsd:enumeration value="Name"/>
      <xsd:enumeration value="Description"/>
      <xsd:enumeration value="IsLoginDisabled"/>
      <xsd:enumeration value="EmailAddress"/>
      <xsd:enumeration value="HomeFolder"/>
      <xsd:enumeration value="ViewPref"/>
      <xsd:enumeration value="MaxJobPriority"/>
      <xsd:enumeration value="SuccessNoticeExpiration"/>
      <xsd:enumeration value="FailureNoticeExpiration"/>
      <xsd:enumeration value="SendNoticeForSuccess"/>
      <xsd:enumeration value="SendNoticeForFailure"/>
      <xsd:enumeration value="SendEmailForSuccess"/>
      <xsd:enumeration value="SendEmailForFailure"/>
      <xsd:enumeration value="AttachReportInEmail"/>
      <xsd:enumeration value="DefaultPrinterName"/>
   </xsd:restriction>
</xsd:simpleType>
```

UserSearch

A complex data type that represents a user search.

Schema

```
<xsd:complexType name="UserSearch">
   <xsd:sequence>
      <xsd:choice minOccurs="0">
         <xsd:element name="Condition"
            type="typens:UserCondition"/>
         <xsd:element name="ConditionArray"
            type="typens:ArrayOfUserCondition"/>
      </xsd:choice>
```

```
      <xsd:choice minOccurs="0">
         <xsd:element name="MemberOfGroupName" type="xsd:string"/>
         <xsd:element name="WithRoleName" type="xsd:string"/>
         <xsd:element name="SubscribedToChannelName"
            type="xsd:string"/>
         <xsd:element name="MemberOfGroupId" type="xsd:string"/>
         <xsd:element name="WithRoleId" type="xsd:string"/>
         <xsd:element name="WithLicenseOption" type="xsd:string"/>
         <xsd:element name="SubscribedToChannelId"
            type="xsd:string"/>
      </xsd:choice>
      <xsd:element name="FetchSize" type="xsd:int" minOccurs="0"/>
      <xsd:element name="FetchDirection" type="xsd:boolean"
         minOccurs="0"/>
      <xsd:element name="CountLimit" type="xsd:int" minOccurs="0"/>
      <xsd:element name="FetchHandle" type="xsd:string"
         minOccurs="0"/>
   </xsd:sequence>
</xsd:complexType>
```

Elements

Condition
The search condition.

ConditionArray
An array of search conditions.

MemberOfGroupName
The name of the group of which the user is a member.

WithRoleName
The name of the role to which the user belongs.

SubscribedToChannelName
The name of the channel to which the user is subscribed.

MemberOfGroupId
The ID of the group of which the user is a member.

WithRoleId
The ID of the role to which the user belongs.

WithLicenseOption
The name of the license option assigned to the user.

SubscribedToChannelId
The ID of the channel to which the user is subscribed.

FetchSize
The maximum number of records to retrieve and return in a result set. The default value is 500.

FetchDirection
If True, records are retrieved forward. If False, records are retrieved backward. The default value is True.

CountLimit
The maximum number of records to count. By default, CountLimit is equal to FetchSize. To count all records, set CountLimit to -1.

FetchHandle
Retrieves more items from the result set. In the second and subsequent calls for data, specify the same search criteria as in the original call.

VersioningOption

A simple data type that specifies the options for handling the latest existing version when uploading a file.

Schema

```
<xsd:simpleType name="VersioningOption">
   <xsd:restriction base="xsd:string">
      <xsd:enumeration value="CreateNewVersion" />
      <xsd:enumeration value="ReplaceLatestIfNoDependents" />
      <xsd:enumeration value="ReplaceLatestDropDependency" />
      <xsd:enumeration value="ReplaceLatestMigrateDependency" />
   </xsd:restriction>
</xsd:simpleType>
```

Elements

CreateNewVersion
Always creates a new version. This is the default value.

ReplaceLatestIfNoDependents
Replaces the latest existing version if it does not have any dependent files. If the existing version has any dependants, BIRT iServer creates a new version instead of replacing the existing version.

ReplaceLatestDropDependency
Replaces the latest existing version if it does not have any dependent files. If the existing version has any dependants, BIRT iServer drops the dependency.

ReplaceLatestMigrateDependency
Replaces the latest existing version if it does not have any dependent files. If the existing version has any dependants, BIRT iServer moves the dependency to the new version.

ViewParameter

A complex data type that describes a viewing parameter.

Schema

```
<xsd:complexType name="ViewParameter">
   <xsd:all>
      <xsd:element name="Format" type="xsd:string" minOccurs="0"/>
      <xsd:element name="UserAgent" type="xsd:string"
         minOccurs="0"/>
      <xsd:element name="ScalingFactor" type="xsd:long"
         minOccurs="0"/>
      <xsd:element name="AcceptEncoding" type="xsd:string"
         minOccurs="0"/>
      <xsd:element name="ViewOperation" minOccurs="0">
         <xsd:simpleType>
            <xsd:restriction base="xsd:string">
               <xsd:enumeration value="view"/>
               <xsd:enumeration value="print"/>
            </xsd:restriction>
         </xsd:simpleType>
      </xsd:element>
      <xsd:element name="PathInformation" type="xsd:string"
         minOccurs="0"/>
      <xsd:element name="EmbeddedObjPath" type="xsd:string"
         minOccurs="0"/>
      <xsd:element name="RedirectPath" type="xsd:string"
         minOccurs="0"/>
      <xsd:element name="PdfQuality" type="xsd:long"
         minOccurs="0"/>
   </xsd:all>
</xsd:complexType>
```

Elements

Format

The format in which the report displays. Valid formats are:

- CSS
- DHTML
- DHTMLLong
- DHTMLRaw
- ExcelData
  Does not support specifying component ID.
- ExcelDisplay
  Does not support specifying component ID.
- ImageMapURL
- PDF
  Does not support specifying component ID.

- PPT
- PPTFullyEditable
- Reportlet
  Valid only if ShowInReportlet is enabled during report design.
- RTF
  Does not support specifying component ID.
- RTFFullyEditable
  Does not support specifying component ID.
- XMLCompressedDisplay
- XMLCompressedExcel
- XMLCompressedPDF
- XMLCompressedPPT
- XMLCompressedReportlet
- XMLCompressedRTF
- XMLData
- XMLDisplay
- XMLReportlet
- XMLStyle

To support users clicking a point in a chart to navigate to different report sections, set Format to ImageMapURL.

SearchReport uses a different set of formats than other operations that use the ViewParameter data type. For SearchReport, valid formats are:

- ANALYSIS
  Available only if the e.Analysis Option is installed. Send the browser UserAgent to the cube builder to extract the result with the ANALYSIS format. Microsoft Internet Explorer is the default UserAgent.
- CSV
- EXCEL
- TSV
- UNCSV
- UNTSV
- XMLDisplay

UserAgent
The browser to use for report viewing, such as Mozilla/4.0.

ScalingFactor
Adapts the size of a Reportlet to the Reportlet frame.

AcceptEncoding
The list of encoding methods the browser supports.

ViewOperation
The view operation, View or Print.

PathInformation
The path to the report.

EmbeddedObjPath
The base URL to prepend to a static or dynamic object in a report. When viewing a report in a browser, the URL of an image, chart, JavaScript, or another resource refers to the Encyclopedia volume. Use EmbeddedObjPath to change this URL.

RedirectPath
Maps from the current URL to a new target.

PdfQuality
The viewing quality of a PDF.

Volume

A complex data type that describes an Encyclopedia volume.

Schema

```
<xsd:complexType name="Volume">
   <xsd:all>
      <xsd:element name="Name" type="xsd:string"/>
      <xsd:element name="ActuateVersion" type="xsd:string"
         minOccurs="0"/>
      <xsd:element name="ActuateBuildNumber" type="xsd:string"
         minOccurs="0"/>
      <xsd:element name="SecurityIntegrationOption" type="xsd:long"
         minOccurs="0"/>
      <xsd:element name="OpenSecuritySelectUsersOfRole"
         type="xsd:boolean" minOccurs="0"/>
      <xsd:element name="OpenSecuritySelectGroupsOfUser"
         type="xsd:boolean" minOccurs="0"/>
      <xsd:element name="DefaultPrinterName" type="xsd:string"
         minOccurs="0"/>
      <xsd:element name="MaxJobRetryCount" type="xsd:long"
         minOccurs="0"/>
      <xsd:element name="JobRetryInterval" type="xsd:long"
```

```
            minOccurs="0"/>
         <xsd:element name="DefaultViewingPreference" minOccurs="0">
            <xsd:simpleType>
               <xsd:restriction base="xsd:string">
                  <xsd:enumeration value="LRX"/>
                  <xsd:enumeration value="DHTML"/>
               </xsd:restriction>
            </xsd:simpleType>
         </xsd:element>
         <xsd:element name="DHTMLPageCaching" type="xsd:boolean"
            minOccurs="0"/>
         <xsd:element name="DHTMLPageCachingExpirationAge"
            type="xsd:long" minOccurs="0"/>
         <xsd:element name="IsAutoArchiveRunning" type="xsd:boolean"
            minOccurs="0"/>
            <xsd:element name="AuthorizationIsExternal"
               type="xsd:boolean" minOccurs="0"/>
         <xsd:element name="ConnectionPropertiesAreExternal"
            type="xsd:boolean" minOccurs="0"/>
         <xsd:element name="DefaultSuccessNoticeExpiration"
            type="xsd:long" minOccurs="0"/>
         <xsd:element name="DefaultFailureNoticeExpiration"
            type="xsd:long" minOccurs="0"/>
         <xsd:element name="ResourcePath" type="xsd:string"
            minOccurs="0"/>
      </xsd:all>
   </xsd:complexType>
```

Elements

Name
The name of the volume.

ActuateVersion
The version number.

AcutateBuildNumber
The build number.

SecurityIntegrationOption
The security integration option.

OpenSecuritySelectUsersOfRole
Applies only if using external registration security level. Indicates whether the SelectUsers operation for a role is supported. If the operation is supported, iServer enables appropriate features in iServer Management Console.

OpenSecuritySelectGroupsOfUser
Applies only if using external registration security level. Indicates whether the SelectGroups operation for a user is supported. If the operation is supported, iServer enables appropriate features in iServer Management Console.

DefaultPrinterName
The name of the default printer.

MaxJobRetryCount
The maximum number of retry attempts.

JobRetryInterval
The interval between retry attempts. Measured in seconds.

DefaultViewingPreference
The default viewer.

DHTMLPageCaching
True enables DHTML page caching.

DHTMLPageCachingExpirationAge
If DHTMLPageCaching is True, set DHTMLPageCachingExpirationAge to a valid value. To disable DHTMLPageCaching, set DHTMLPageCachingExpirationAge to -1.

IsAutoArchiveRunning
Determines whether an archive pass is currently running. If True, an archive pass is running.

AuthorizationIsExternal
True enables external user registration.

ConnectionPropertiesAreExternal
Specifies whether connection properties are externalized using the Report Server Security Extension (RSSE).

DefaultSuccessNoticeExpiration
Specifies the minimum number of minutes success notices remain in the Completed folder. After this time elapses, BIRT iServer removes the notices the next time it removes requests from the volume's Requests\Completed folder. This time applies to all users whose SuccessNoticeExpiration time is not set or is set to 0. The default value is 0, which means notices never expire.

DefaultFailureNoticeExpiration
Specifies the minimum number of minutes failure notices remain in the Completed folder. After this time elapses, BIRT iServer removes the notices the next time it removes requests from the volume's Requests\Completed folder. This time applies to all users whose SuccessNoticeExpiration time is not set or is set to 0. The default value is 0, which means notices never expire.

ResourcePath
The resource path to the volume.

Weekly

A complex data type describing weekly job scheduling.

Schema

```
<xsd:complexType name="Weekly">
   <xsd:sequence>
      <xsd:element name="FrequencyInWeeks" type="xsd:long" />
      <xsd:element name="RunOn" type="xsd:string" />
      <xsd:element name="OnceADay" type="xsd:string"
         minOccurs="0"/>
      <xsd:element name="Repeat" type="typens:Repeat"
         minOccurs="0"/>
   </xsd:sequence>
</xsd:complexType>
```

Elements

FrequencyInWeeks
The number of times a job is to run, in weeks.

RunOn
The day to run the job.

OnceADay
The time to run the job.

Repeat
The number of times to repeat the schedule.

Part Three

Working with BIRT iServer integration APIs

Chapter

10

Using Java Report Server Security Extension

This chapter consists of the following topics:

- About the Java Report Server Security Extension
- Implementing the Java RSSE interface
- About installing a Java RSSE application
- Using page-level security
- SOAP-based Report Server Security Extension (RSSE) operations
- SOAP-based Report Server Security Extension (RSSE) data types

About the Java Report Server Security Extension

BIRT iServer System provides a SOAP-based API that supports running a BIRT iServer Report Server Security Extension (RSSE) application as a web service. Using the Java RSSE framework, a developer can create an application that provides one of the following security features:

- External authentication

  Authenticates a user's password using an interface to an external security system such as Lightweight Directory Access Protocol (LDAP) or Microsoft Active Directory. Users, roles, notification groups, access control lists (ACLs), and other information remain on the Encyclopedia volume.

- External registration

  Manages users, roles, notification groups, access control lists (ACLs), and other information using an interface to an external security system such as Lightweight Directory Access Protocol (LDAP) or Microsoft Active Directory. The Encyclopedia volume no longer manages this information.

- Page-level security

  Controls user access to sensitive information in an Actuate Basic report by implementing page-level security. A page-level security application requires an Actuate Page Level Security Option license.

The following sections describe how to build, install, and customize these Java RSSE security applications in the Actuate Information Delivery API development environment.

Implementing the Java RSSE interface

BIRT iServer Integration Technology provides sample applications that show how to implement the Java RSSE interface. In the installation, each sample application is located in a separate subdirectory under the Java Report Server Security Extension directory.

Each sample application provides the following resources:

- The reference implementation of the RSSE interface.

  Table 10-1 lists the package for each sample application.

Table 10-1 Sample application packages

RSSE application	Package
LDAP authentication	com.actuate11.rsse.authenticationSample

Table 10-1 Sample application packages

RSSE application	Package
LDAP external registration	com.actuate11.rsse.ldapSample
Page Security	com.actuate11.rsse.aclSample

- The file, lib/rsse.jar, contains the RSSE interface and related classes.

  The documentation for the package, com.actuate11.rsse.interfaces, is in the Java Report Server Security Extension/docs folder. To implement a class for the RSSE interface, refer to this API reference.

- The object renderer package, com.actuate11.rsse.or, contains a set of helper classes for logging RSSE objects to a file.

  The package uses the open source logging tool, Apache log4j. Using the Apache log4j API, a developer can write log statements in the application code, then configure the logging level through a property file.

  To configure the logging level for a Java RSSE application, modify the property, log4j.logger.com.actuate11.rsse, in the file, log.properties. The file, log.properties, is in the application package.

  Apache log4j supports logging at the following levels:

  - FATAL describes a severe error event that typically causes the application to abort.
  - ERROR describes an error event that typically allows the application to continue running.
  - WARN provides an alert to a potential problem.
  - INFO provides a general message that describes the application's progress.
  - DEBUG provides information on an application event that is useful for debugging.
  - ALL turns on all logging options.
  - OFF turns off logging.

  For more information about the Apache Logging Services Project and the log4j tool, see http://logging.apache.org/.

About installing a Java RSSE application

To set up and run a Java RSSE application, perform the following tasks:

- Build the Java RSSE application
- Install the Java RSSE application on an Encyclopedia volume

- Enable a web service to use the Java RSSE application

How to build a Java RSSE sample application

Install and use the Apache Ant tool to build a Java RSSE sample application. Go to the Apache Ant Project web site at http://ant.apache.org/ to obtain the software and installation instructions.

In the BIRT iServer Integration Technology installation, each sample application subdirectory contains a file, build.xml. Using the project settings specified in the file, build.xml, Ant performs the following operations:

- Compiles the Java RSSE application source files
- Creates a lib directory
- Archives the compiled classes in a JAR file in the lib directory

  Table 10-2 lists the archive file generated for each Java RSSE sample application.

Table 10-2 Archive files that are generated for the Java RSSE sample applications

RSSE application	Archive file
LDAP authentication	rsseAuthenticate.jar
LDAP external registration	rsseLdap.jar
Page Security	rsseAcl.jar

To build a sample application using the Ant tool, navigate to the application directory. At the command line, type:

```
ant
```

Installing a Java RSSE application

Configure each Encyclopedia volume that runs RSSE web service applications separately. A SOAP-based RSSE application runs as a web service in the BIRT iServer servlet container.

The default location for an RSSE web service application is $SERVER_HOME/servletcontainer/webapps/acrsse. To run multiple, SOAP-based, RSSE applications on multiple Encyclopedia volumes on BIRT iServer, configure a separate location for each RSSE application.

How to install a Java RSSE application on an Encyclopedia volume

Install Java RSSE applications on Encyclopedia volumes to run on BIRT iServer by performing the following tasks:

1. Make a copy of the $SERVER_HOME/servletcontainer/webapps/acrsse directory. For example, copy the directory to the following location:

   ```
   $SERVER_HOME/servletcontainer/webapps/myacrsse
   ```

2. Copy the application archive file to the lib directory of the BIRT iServer servlet container in the following location:

   ```
   $SERVER_HOME/servletcontainer/webapps/myacrsse/WEB-INF/lib
   ```

3. Extract the file, class.properties, from the application archive file, to the following location:

   ```
   $SERVER_HOME /servletcontainer/webapps/myacrsse/WEB-INF
      /classes/com/actuate11/rsse/wsdl
   ```

   If necessary, create the subdirectories, /com/actuate11/rsse/wsdl, manually or use the archive extraction tool to create the subdirectories when extracting the class.properties file.

4. Using a source code editor, open the class.properties file and change its single line of code to reference the main class of the application in the archive file:

   ```
   class=com.actuate11.rsse.mySampleApp.SampleRSSE
   ```

Configuring and deploying an LDAP configuration file

To use a Java RSSE sample application that utilizes LDAP for external user authentication or registration, configure and deploy an LDAP configuration file to BIRT iServer's etc. directory before enabling the web service on the Encyclopedia volume.

How to configure and deploy an LDAP configuration file for external authentication

To configure and deploy the LDAP configuration file for external authentication perform the following operations:

1. Using a source code editor, create the LDAP configuration file by typing the following code, substituting the values appropriate for the LDAP server installation such as:

   - Name of the LDAP server
   - Port number where the LDAP server listens
   - UserBaseDN, including the attributes for the organizational unit, ou, and domain components, dc

   ```
   <!-- ldapconfig_$volumeName.xml -->
   <!--"-->
   <Config>
      <!--The name of the LDAP server.-->
   ```

```
      <Server>servername.actuate.com</Server>
      <!--The port number where the LDAP server listens.-->
      <Port>389</Port>
      <!--The base DN used for user queries.-->
      <UserBaseDN>ou=actuate users, dc=actuate, dc=com
         </UserBaseDN>
   </Config>
```

2 Save the file to the following location, naming the file, ldapconfig_$volumeName.xml, changing $volumeName to the Encyclopedia volume name:

```
\Program Files\Actuate11\iServer\etc\
```

How to configure and deploy an LDAP configuration file for external registration

Install the Java RSSE external registration example on an Encyclopedia volume of BIRT iServer by performing the following tasks:

1 Using a source code editor, create an LDAP configuration file and copy or type the following code, substituting the values appropriate for the LDAP server installation:

```
<!--"-->
<Config>
   <!-- Name of the LDAP server. -->
   <Server>servername</Server>
      <!-- Port number where the LDAP server listens. The
      default port is 389. -->
   <Port>389</Port>
   <!-- LDAP distinguished name that the RSSE application uses
   for a query operation to the LDAP server. The Open Security
   application uses this account to validate users, roles, ACLs,
   and other Encyclopedia user information.  Account with READ
   privilege is sufficient. -->
   <QueryAccount>uid=admin, ou=Administrators,
      ou=TopologyManagement, o=NetscapeRoot</QueryAccount>
   <!-- Password for the LDAP account specified by the
   QueryAccount parameter. -->
   <QueryPassword>actuate</QueryPassword>

   <!-- LDAP distinguished name that the RSSE application uses
   to locate the LDAP user object, including attributes for the
   organizational unit, ou, and domain components, dc. -->
   <UserBaseDN>ou=AcUsers,dc=actuate,dc=com</UserBaseDN>

   <!-- Name of  LDAP object class that the Actuate open
   security application uses to find Actuate user names. -->
   <UserObject>inetorgperson</UserObject>
```

```
<!-- Actuate role attribute that indicates that an LDAP user
object can perform Encyclopedia volume administration. -->
   <AdminRole>AcAdmin</AdminRole>

   <!-- LDAP role object name that maps to the Encyclopedia
   volume Operator role. -->
   <OperatorRole>AcAdmin</OperatorRole>

   <!-- LDAP role object that maps to the All role in the
   Encyclopedia volume. -->
   <AllRole>All</AllRole>

   <!-- LDAP distinguished name that the RSSE application uses
   to locate the LDAP role object. -->
   <RoleBaseDN>ou=AcRoles,dc=actuate, dc=com</RoleBaseDN>

   <!-- LDAP object class that the Actuate open security
   application uses to find Actuate role names. -->
   <RoleObject>groupofuniquenames</RoleObject>

   <!-- LDAP distinguished name that the RSSE application uses
   to locate the LDAP Actuate notification group object.
   GroupBaseDN can be the same as the role DN, if Group
   information is not separately maintained. -->
   <GroupBaseDN>ou=groups,dc=actuate, dc=com</GroupBaseDN>

   <!-- LDAP object class that the Actuate open security
   application uses to find Actuate notification group
   names. -->
   <GroupObject>groupofuniquenames</GroupObject>

   <!-- Name of the LDAP group used for notifications of all job
   requests made in the iServer. The base DN is obtained from
   GroupBaseDN. -->
   <GroupToNotify>specialGroup</GroupToNotify>

   <!-- LDAP attribute used to retrieve the EmailAddress
   property of the user. No default value. -->

   <EmailAddressAttr>mail</EmailAddressAttr>

   <!-- LDAP attribute used to retrieve the license option
   property of the user. No default value. -->
   <LicenseOptionsAttr>actuatelicenseoptions
      </LicenseOptionsAttr>

   <!-- LDAP attribute used to retrieve the HomeFolder property
   of the user. No default value. -->
   <HomeFolderAttr>actuateHomeFolder</HomeFolderAttr>

   <!-- LDAP attribute used to retrieve the AttachReportInEmail
   property of the user. -->
```

```
<AttachReportInEmailAttr>actuateEmailForm
</AttachReportInEmailAttr>

<!-- Permitted values are "included" or "linked". The default
value is "linked". -->
<AttachReportInEmailDefault>linked
</AttachReportInEmailDefault>

<!-- LDAP attribute used to retrieve the email preferences,
SendEmailForSuccess and SendEmailForFailure properties of the
user.  For some object classes such as inetorgperson, an e-
mail attribute exists in the standard LDAP schema. -->
<SendEmailAttr>actuateEmailWhen</SendEmailAttr>

<!-- Permitted values are "never", "always", "failures", or
"successes". -->
<SendEmailDefault>never</SendEmailDefault>

<!-- LDAP attribute used to retrieve the notification
preferences, SendNoticeForSuccess and SendNoticeForFailure
properties of the user. -->
<SendNoticeAttr>actuateFolderWhen</SendNoticeAttr>

<!-- Permitted values are  "never", "always", "failures",
"successes". -->
<SendNoticeDefault>always</SendNoticeDefault>

<!-- LDAP attribute used to retrieve the
SuccessNoticeExpiration property of the user. The default
value causes BIRT iServer to delete notices according to
volume settings.-->
   <SuccessNoticeExpirationAttr>
   actuateSuccessNoticeExpiration
</SuccessNoticeExpirationAttr>

<!-- Value to use for SuccessNoticeExpirationAttr when LDAP
does not contain a value for that attribute. The value is the
number of minutes. The default value of 0 (zero) causes BIRT
iServer to delete notices according to volume settings. A
value of -1 means that BIRT iServer keeps notices
indefinitely. -->
<SuccessNoticeExpirationDefault>0
</SuccessNoticeExpirationDefault>

<!-- LDAP attribute used to retrieve the
FailureNoticeExpiration property of the user. The default
value causes BIRT iServer to delete notices according to
volume settings. -->
<FailureNoticeExpirationAttr>actuateFailNoticeExpiration
</FailureNoticeExpirationAttr>

<!-- Value to use for FailureNoticeExpirationDefault when
LDAP does not contain a value for that attribute. The value
```

```
is the number of minutes. The default value of 0 (zero)
causes BIRT iServer to delete notices according to volume
settings. A value of -1 means that BIRT iServer keeps notices
indefinitely. -->
<FailureNoticeExpirationDefault>0
</FailureNoticeExpirationDefault>

<!-- LDAP attribute used to retrieve the privilege template
for a user. Value is a comma-separated list of user or role
privileges. A user permission is a user name followed by "="
and a string of 0 (zero) or more permission characters. A
role permission is a role name followed by a "~" and a string
of permission characters.
   Permissible characters and their meanings are:
   "r" = read
   "w" = write
   "e" = execute
   "d" = delete
   "v" = visible
   "s" = secure read (page level read)
   "g" = grant
   Examples: bob=rwed,  viewing only~rv -->
<PrivilegeTemplateAttr>actuateDefaultPriv
</PrivilegeTemplateAttr>

   <!-- Value to use for PrivilegeTemplateAttr when LDAP does
   not contain a value for that attribute. -->
   <PrivilegeTemplateDefault/>

<!-- LDAP attribute used to retrieve the MaxJobPriority
property of the user. The default value is 500. The
permissible range is 0-1000. -->
<MaxJobPriorityAttr>actuateMaxPriority
</MaxJobPriorityAttr>

<!-- Value to use for MaxJobPriority when LDAP does not
contain a value for that attribute. Default is 500. -->
<MaxJobPriorityDefault>500</MaxJobPriorityDefault>

<!-- LDAP attribute used to retrieve the ViewPreference
property of the user. -->
<ViewPreferenceAttr>actuateViewingPref
</ViewPreferenceAttr>

<!-- Value to use for ViewPreferenceAttr when LDAP does not
contain a value for that attribute. Permissible values are
"default" and "dhtml".-->
<ViewPreferenceDefault>default</ViewPreferenceDefault>
```

```
<!-- LDAP attribute used to retrieve the channel subscription
list of the user. The values are specified as a comma-separated
list. -->
   <ChannelSubscriptionListAttr>actuateChannelList
   </ChannelSubscriptionListAttr>

   <!-- Value to use for ChannelSubscriptionListAttr when LDAP
   does not contain a value for that attribute. The value is a
   comma-separated lists of channel names or is empty. -->
   <ChannelSubscriptionListDefault/>
   <ConnectionPropertyList>
      <ConnectionProperty>
         <Name>username</Name>
         <Value>testUser</Value>
      </ConnectionProperty>
      <ConnectionProperty>
         <Name>password</Name>
         <Value>mypassword</Value>
      </ConnectionProperty>
   </ConnectionPropertyList>
   <!--  LDAP attributes used when externalizing
   ConnectionPropertyList, containing username and password.
   Typically used when implementing pass-through security. Do
   not include the ConnectionPropertyList if not externalizing
   these properties. -->
   <ConnectionPropertyList>
      <ConnectionProperty>
         <Name>username</Name>
         <Value>testUser</Value>
      </ConnectionProperty>
      <ConnectionProperty>
         <Name>password</Name>
         <Value>mypassword</Value>
      </ConnectionProperty>
   </ConnectionPropertyList>
</Config>
```

2 Save the file to the following location, naming the file, ldapconfig_$volumeName.xml, changing $volumeName to the Encyclopedia volume name:

```
\Program Files\Actuate11\iServer\etc\
```

How to prepare an Encyclopedia volume to use external user registration

To use a Java RSSE sample application that utilizes LDAP for external user registration, in the properties section of the chosen Encyclopedia volume, enable the open security web service, choose OK, and then restart the volume. Also, configure an LDAP server database to contain the Encyclopedia volume's user

information. For more information about configuring the LDAP server database, see the LDAP server documentation.

How to enable the open security web service to use the Java RSSE application

To enable Open Security as a web service on an Encyclopedia volume, perform the following operations:

1. Log into the iServer Configuration Console, choose Advanced View, and perform the following operations:
   1. Choose Volumes.
   2. In Volumes, from the Encyclopedia volume's drop-down list, choose Properties, as shown in Figure 10-1.

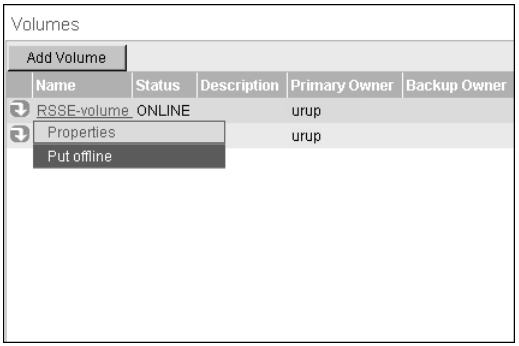

Figure 10-1 System volume properties

   3. On Volume—Properties, choose Open Security.
   4. On Open Security, in Enable/Disable, choose Enable as web service.

      In Web service, specify the following information as required:

      - IP address or machine name where the web service resides
      - SOAP port where the web service listens
      - Context string indicating the path for BIRT iServer to use when sending messages to the web service.

      Open Security looks like Figure 10-2.

Figure 10-2 The Open Security tab

Choose OK.

Starting with release 11, the default location for acserverconfig.xml and acserverlicense.xml is AC_DATA_HOME/server/config. AC_DATA_HOME refers to the folder the installer specified as the location for data during the iServer installation. By default, that path is C:/Actuate11/iServer/data on a Windows system, and /<Installation directory>/AcServer/data on a Linux system.

5 From the Encyclopedia volume's drop-down list, choose Put offline, as shown in Figure 10-3.

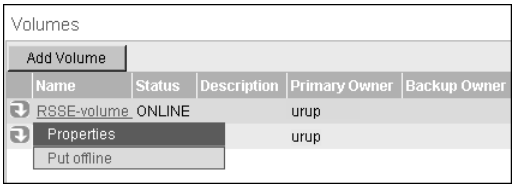

Figure 10-3 Putting an Encyclopedia volume offline

2 Take the Encyclopedia volume online.

3 Test the installation of the Java RSSE application.

For example, log in to the Encyclopedia volume using iServer Management Console as the user, Administrator, as defined in the LDAP configuration file, typing the password specified in the LDAP server.

Installing the page-level security application

To install the Java RSSE page-level security sample application on BIRT iServer, deploy an external access control list (ACL) file with the application. Perform this operation before enabling the web service on the Encyclopedia volume.

For more information about deploying the ACL file in the page-level security application installation, see "How to install the Java RSSE page-level security application," later in this chapter.

To complete the installation, perform the following steps:

1. Load a sample executable report to the Encyclopedia volume.
2. Run the executable report to create a report document.
3. Configure permissions for these report files to test the sample application installation.

Migrating a Java RSSE application to a new Actuate release

When migrating a Java RSSE application from an older release of Actuate software to a newer release, the application may require recompilation using the new release's libraries.

When modifying the software, update any references of the older release to reference the new release, and place all relevant JAR files that contain classes for the new version into their proper locations.

Using page-level security

Using the iServer Report Server Security Extension (RSSE) framework, a developer can create an RSSE service that manages page-level security in Actuate e.Reports and Actuate BIRT designs by retrieving a user's access control list (ACL) externally.

By default, when a secure report asks for the ACL of a user, the Encyclopedia volume returns a list that includes the user ID and the roles in which the user is a member. Frequently, the information in BIRT iServer security does not match the information in a database used by a secure design. An RSSE page security application can translate a BIRT iServer ACL to a design-specific ACL.

How to install the Java RSSE page-level security application

BIRT iServer Integration Technology contains an example of how external page-level security works using Java RSSE and an e.Report in the subdirectory, Page_Security_Example. For information about Actuate BIRT design page-level security, see *Using Actuate BIRT.*

To install the page-level security sample application on BIRT iServer, deploy an external ACL file with the application. Perform this operation before enabling the web service on the Encyclopedia volume.

To include the ACL file provided with the sample application in the build, perform the following operations:

1. Copy the file, user.acls, located in the Page_Security_Example directory to the following location:

   ```
   /com/actuate11/rsse/aclSample
   ```

2. Using a source code editor, in Page_Security_Example directory, open the file, build.xml, and perform the following operations:

   1. In build.xml, navigate to the buildACL element specifying the contents of the file, rsseAcl.jar.
   2. Modify the fileset list to contain the following line of code:

      ```
      <include name="com/**/*.acls" />
      ```

      The buildACL element looks like the following example:

      ```
      <target name="buildACL" depends="buildACL.clean, compileACL">
         <mkdir dir="lib"/>
         <jar jarfile="lib/rsseAcl.jar">
            <fileset dir=".">
               <include name="com/**/*.class" />
         <include name="com/**/*.properties" />
               <include name="com/**/*.acls" />
            </fileset>
         </jar>
      </target>
      ```

3. Build the application using the Apache Ant tool.

   For more information about building a Java RSSE application using Apache Ant, see "How to build a Java RSSE sample application," earlier in this chapter.

4. Copy the file, rsseAcl.jar, to the lib directory of the BIRT iServer servlet container and configure the class.properties file.

   For more information about copying the archive file for a Java RSSE application to the lib directory for the BIRT iServer servlet container and configuring the class.properties file, see "How to install a Java RSSE application on an Encyclopedia volume," earlier in this chapter.

5. Configure the Encyclopedia volume to use open security as a web service.

   For more information about enabling an RSSE application to run as a web service on an Encyclopedia volume, see "How to enable the open security web service to use the Java RSSE application," earlier in this chapter.

Creating an access control list (ACL)

The file, user.acls, stores a user's access control list (ACL) using the following format:

```
Username=acl1, acl2, ..
```

The user name field matches the name of user in the Encyclopedia volume. An equal ('=') sign separates the user name from the ACL list. An ACL list can contain zero, one, or more ACL specifications, as shown in the following code example:

```
user1=acl1, acl2, acl3, acl4
user2=acl5, acl6, acl7, acl8
user3=acl9
user4=acl10
```

If there is more than one ACL specification in the list, separate each ACL using a comma. The scanner reading the users.acls file eliminates any white space or backslash.

All the user name specifications in the example are legal. A list can contain users that do not appear in the Encyclopedia. The information for these users is ignored.

Deploying a report to an Encyclopedia volume

Test page-level security by deploying the sample design, office_replist_PLS.rox, to the Encyclopedia volume. The report shows information about the sales reps in the following city offices:

- NYC
- Boston
- Philadelphia

User1 has access to the pages with information about NYC office, user2 to the Boston office, and user3 to the Philadelphia office. The file, user.acls, contains the following access control list specifications:

```
user1=NYC
user2=Boston
user3=Philadelphia
```

To deploy the sample design to an Encyclopedia volume, perform the following steps:

1. Using iServer Management Console, log in to the Encyclopedia volume as Administrator.
2. In Files and Folders, choose Add File and upload the design, office_replist_PLS.rox, to the Encyclopedia volume, as shown in Figure 10-4.

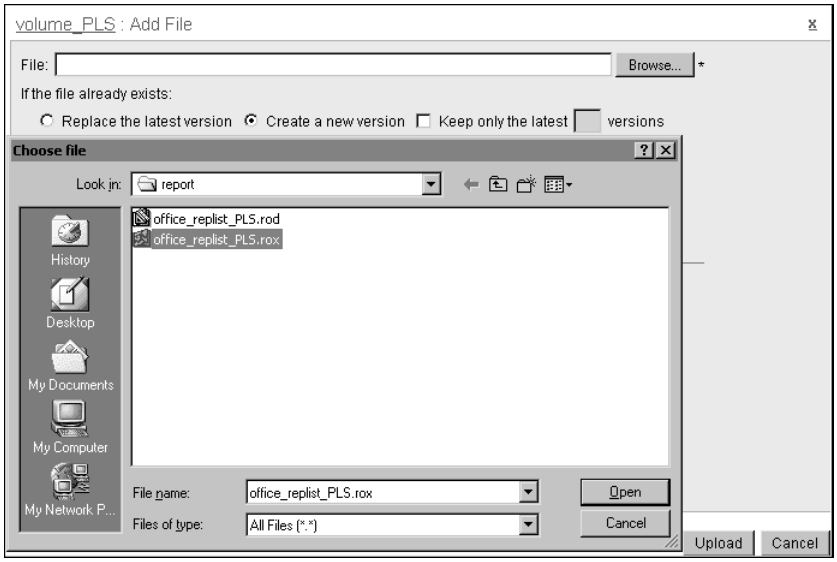

Figure 10-4 Selecting a file to deploy to the Encyclopedia volume

3 In Files and Folders, from the design file drop-down list, choose Run to execute the design, as shown in Figure 10-5.

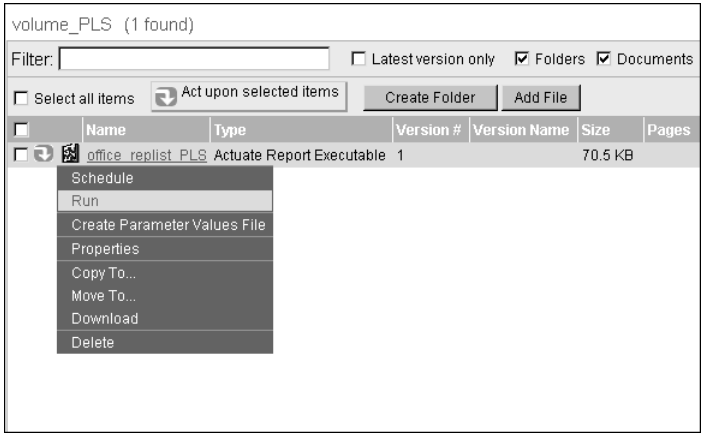

Figure 10-5 Running an immediate job

On Parameters, select Save the output document to create a document on the Encyclopedia volume, as shown in Figure 10-6.

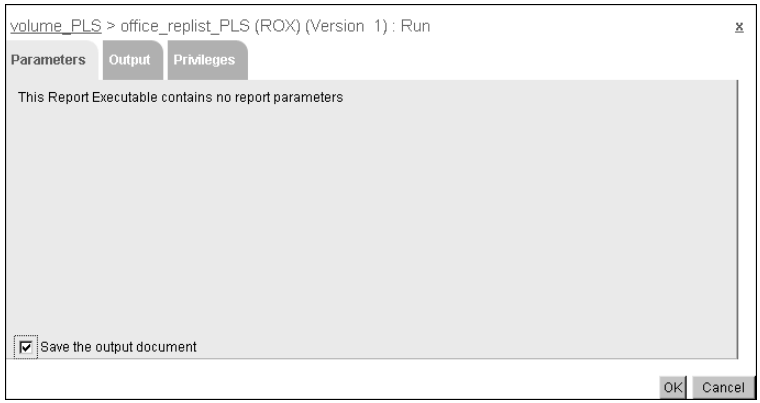

Figure 10-6 Specifying whether to save a document on the Encyclopedia volume

Choose OK to view the document output.

The administrator is able to see all three offices.

4 On Users, choose Create User to create a new user.

In New User, create user1, as shown in Figure 10-7.

Choose OK.

Repeat step 4 to create user2 and user3.

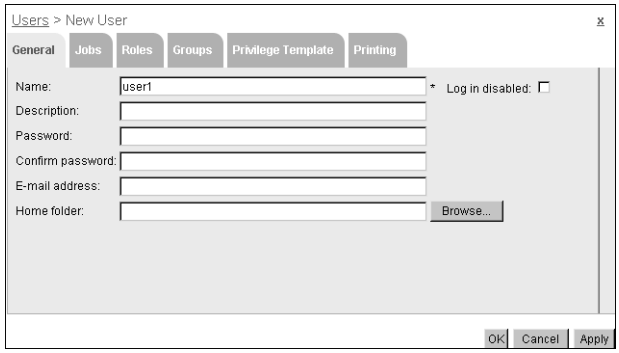

Figure 10-7 Creating a new user

5 In Files and Folders, from the design file drop-down list, choose Properties, then perform the following operations:

1. To set the privileges on the design file, choose Privileges.
2. On Privileges, in Available, select All, then choose the right arrow to copy All to Selected.
3. Select Read.

Privileges for All on office_replist_PLS.rox looks like Figure 10-8.

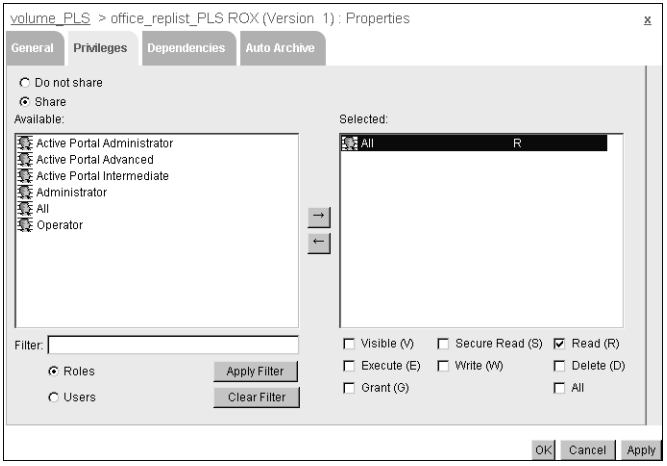

Figure 10-8 Specifying user privileges

4 Choose OK.

6 On Files and Folders, from the document drop-down list, choose Properties, then perform the following operations:

1 To set the privileges on the design file, choose Privileges.

2 On Privileges, in Available, select All, then choose the right arrow to copy All to Selected.

3 Select Visible and Secure Read.

Privileges on office_replist_PLS.roi looks like Figure 10-9.

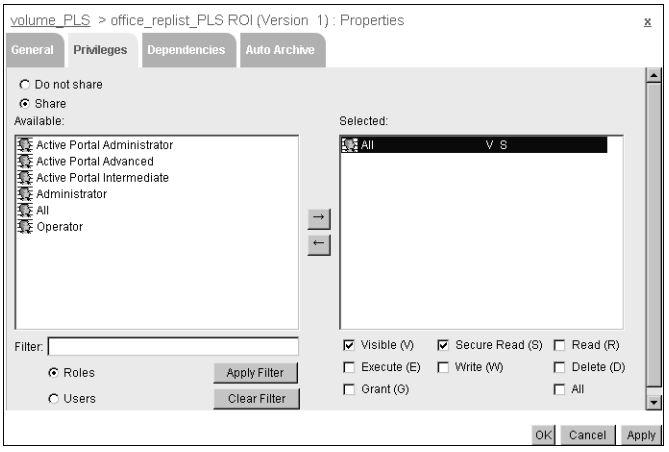

Figure 10-9 Example of privileges on an ROI

7 Log out from the Encyclopedia volume.

8 Log in to the Encyclopedia volume as user1.

9 Select office_replist_PLS.roi to view the document.

User1 can only see the information for the NYC office, as shown in Figure 10-10.

Figure 10-10 Example of document output

10 Repeat steps 8 and 9, logging in as user2, then user3.

User2 can only see the information for the Boston office and user3 can only see the information for the Philadelphia office.

To change the assignments in the file, user.acls, wait for the volume cache time-out period. Alternatively, put the Encyclopedia volume offline, restart the BIRT iServer application container, then take the Encyclopedia volume online again before checking to see if the changes are effective.

About the design

Using e.Report Designer Professional, open the file, office_replist_PLS.rod, to view the design, as shown in Figure 10-11.

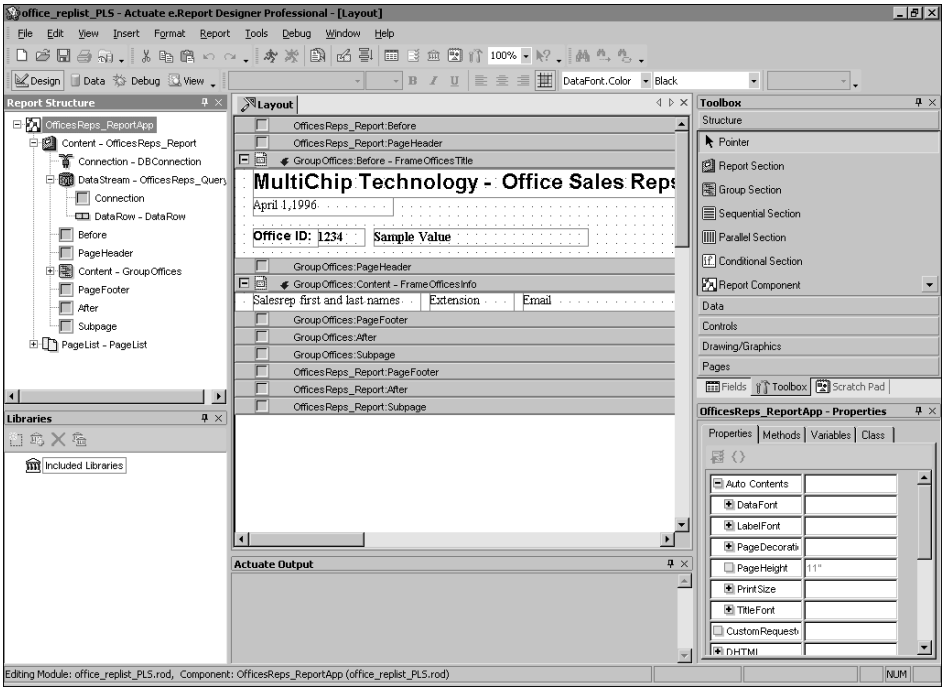

Figure 10-11 Example of a design

The design contains the following page-level security elements:

- The design component class, OfficesReps_ReportApp, contains an overridden Actuate Basic method, GetUserACL( ), that gets the current user access control list (ACL), as shown in the following code example:

```
Function GetUserACL( acl As String ) As String
GetUserACL = Super::GetUserACL( acl )
   'Grab the list of user SIDs
   CurrentUserACL = GetUserACL
End Function
```

- The group section class, GroupOffices, contains a security property, GrantExp, that controls access to each design page based on the value for offices.city, as shown in Figure 10-12.

Figure 10-12 The GrantExp property

The secure read privilege on the document restricts user access to only the pages for the cities specified in the user.acls file.

- In the Page Style section, the text control, City_Text, contains the property setting for ValueExp, GetPageList( ).GetCurrentPageACL( ), as shown in Figure 10-13.

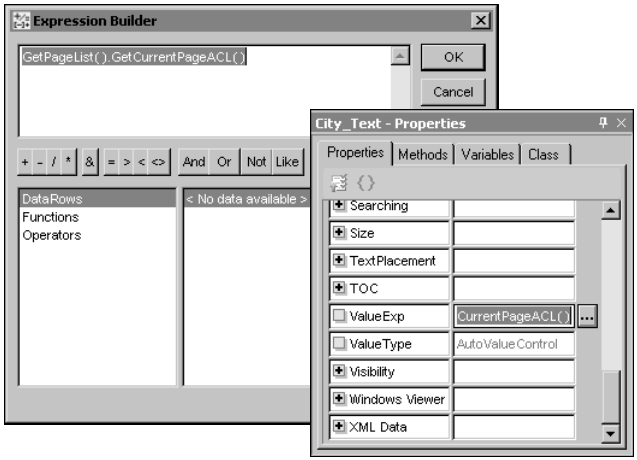

Figure 10-13 The ValueExp property

This function gets the value of the current page ACL string and displays it in the text control. If the ACL list for a page matches with the user's ACL list, the user is able to view the page.

- In the Page Style section, the label control class, CurrentACL_Label, contains an overridden Actuate Basic method, GetText( ), which gets the value of the

current user ACL string, displaying the list of user IDs in the design, as shown in the following code example:

```
Function GetText( ) As String
' Displays list of User IDs.
' Uses custom variable CurrentUserACL and
' Overridden GetUserACL in Report component
   GetText = GetValue( GetReport(), "CurrentUserACL" )
End Function
```

SOAP-based Report Server Security Extension (RSSE) operations

This section describes the SOAP-based RSSE operations.

Authenticate

Verifies that the user is authorized to access the BIRT iServer System. Implement Authenticate for external user authentication and external user registration.

Request schema

```
<xsd:complexType name="Authenticate">
   <xsd:sequence>
      <xsd:element name="User" type="xsd:string"/>
      <xsd:element name="Password" type="xsd:string"
         minOccurs="0"/>
      <xsd:element name="Credentials" type="xsd:base64Binary"
         minOccurs="0"/>
      <xsd:element name="UserSetting" type="xsd:boolean"
         minOccurs="0"/>
   </xsd:sequence>
</xsd:complexType>
```

Request elements

User
The name of the user logging on to BIRT iServer.

Password
The user's password.

Credentials
Additional credentials for authenticating the user.

UserSetting
Specifies whether to return the user's properties. If True, returns the user's properties.

Response schema

```
<xsd:complexType name="AuthenticateResponse">
   <xsd:sequence>
      <xsd:element name="UserAndProperties"
         type="typens:UserAndProperties" minOccurs="0"/>
   </xsd:sequence>
</xsd:complexType>
```

Response elements

UserAndProperties
The user's name and properties.

DoesGroupExist

Verifies whether the group exists in the external directory. BIRT iServer can call this function to clear references to deleted groups.

Request schema

```
<xsd:complexType name="DoesGroupExist">
   <xsd:sequence>
      <xsd:element name="GroupName" type="xsd:string"/>
   </xsd:sequence>
</xsd:complexType>
```

Request elements

GroupName
The name of the group to verify.

Response schema

```
<xsd:complexType name="DoesGroupExistResponse">
   <xsd:sequence>
      <xsd:element name="Exists" type="xsd:boolean"/>
   </xsd:sequence>
</xsd:complexType>
```

Response elements

Exists
Indicates whether the group exists. If True, the group exists.

DoesRoleExist

Verifies whether the role exists in the external directory. BIRT iServer can call this function to clear references to deleted roles.

Request schema

```
<xsd:complexType name="DoesRoleExist">
   <xsd:sequence>
      <xsd:element name="RoleName" type="xsd:string"/>
   </xsd:sequence>
</xsd:complexType>
```

Request elements

RoleName
The name of the role to verify.

Response schema

```
<xsd:complexType name="DoesRoleExistResponse">
   <xsd:sequence>
      <xsd:element name="Exists" type="xsd:boolean"/>
   </xsd:sequence>
</xsd:complexType>
```

Response elements

Exists
Indicates whether the role exists. If True, the role exists.

DoesUserExist

Verifies whether the user exists in the external directory. BIRT iServer can call this function to clear references to deleted users.

Request schema

```
<xsd:complexType name="DoesUserExist">
   <xsd:sequence>
      <xsd:element name="UserName" type="xsd:string"/>
   </xsd:sequence>
</xsd:complexType>
```

Request elements

UserName
The name of the user to verify.

Response schema

```
<xsd:complexType name="DoesUserExistResponse">
   <xsd:sequence>
      <xsd:element name="Exists" type="xsd:boolean"/>
   </xsd:sequence>
</xsd:complexType>
```

Response elements

Exists
Indicates whether the user exists. If True, the user exists.

GetConnectionProperties

Retrieves the connection properties for a user or role from an external data source for a pass-through security operation. In pass-through security, an information object's DCD file sets the securityPolicy to TranslatedCredential. The proxy user name and password settings, specifying the user login credentials in the DCD, contain empty quotes and are ignored by the implementation.

Request schema

```
<xsd:complexType name="GetConnectionProperties">
   <xsd:sequence>
      <xsd:element name="FileName" type="xsd:string"/>
      <xsd:element name="UserName" type="xsd:string"/>
   </xsd:sequence>
</xsd:complexType>
```

Request elements

FileName
The fully qualified name of an information object's Data Connection Definition (DCD) file.

UserName
The name of the user or role.

Response schema

```
<xsd:complexType name="GetConnectionPropertiesResponse">
   <xsd:sequence>
      <xsd:element name="ConnectionProperties"
         type="typens:ArrayOfPropertyValue"/>
   </xsd:sequence>
</xsd:complexType>
```

Response elements

ConnectionProperties
The requested name and value pairs.

GetTranslatedRoleNames

Maps the external security role names to Actuate security role names. Either use GetTranslatedRoleNames in conjunction with the external registration security level, or use the same role names for the external and Actuate roles.

For example, a user with the Actuate Administrator security role can manage all items in an Encyclopedia volume. If the Administrator role in the external security system has a different meaning, GetTranslatedRoleNames can map the external security role to an Actuate role with a different name.

Request schema

```
<xsd:complexType name="GetTranslatedRoleNames"/>
```

Response schema

```
<xsd:complexType name="GetTranslatedRoleNamesResponse">
   <xsd:sequence>
      <xsd:element name="TranslatedRoleNames"
         type="typens:TranslatedRoleNames"/>
</xsd:complexType>
```

Response elements

TranslatedRoleNames
The names that Actuate uses for external security roles.

GetUserACL

Retrieves the user's ACL. GetUserACL applies only if using page-level security. Page-level security controls printing, navigating, and all aspects of user viewing. Page-level security requires the Page Level Security Option on BIRT iServer.

Request schema

```
<xsd:complexType name="GetUserACL">
   <xsd:sequence>
      <xsd:element name="UserName" type="xsd:string"/>
   </xsd:sequence>
</xsd:complexType>
```

Request elements

UserName
The name of the user whose ACL to retrieve.

Response schema

```
<xsd:complexType name="GetUserACLResponse">
   <xsd:sequence>
      <xsd:element name="ACL" type="typens:ArrayOfString"/>
   </xsd:sequence>
</xsd:complexType>
</xsd:element>
```

Response elements

ACL
The list of pages of a document to which the user has access.

GetUserProperties

Retrieves the user's properties from an external directory. Regardless of security level implementation, implement GetUserProperties when the user's properties are stored in an external security source.

Request schema

```
<xsd:complexType name="GetUserProperties">
   <xsd:sequence>
      <xsd:element name="Users" type="typens:ArrayOfString"/>
      <xsd:element name="ResultDef" type="typens:ArrayOfString">
      </xsd:element>
   </xsd:sequence>
</xsd:complexType>
```

Request elements

User
The name of the user whose properties to retrieve.

ResultDef
The properties to retrieve.

Response schema

```
<xsd:complexType name="GetUserPropertiesResponse">
   <xsd:sequence>
      <xsd:element name="ArrayOfUserAndProperties"
         type="typens:ArrayOfUserAndProperties"/>
   </xsd:sequence>
</xsd:complexType>
```

Response elements

ArrayOfUserAndProperties
The user properties.

GetUsersToNotify

Retrieves the list of users to notify about completed jobs.

Request schema

```
<xsd:complexType="GetUsersToNotify"/>
```

Response schema

```
<xsd:complexType name="GetUsersToNotifyResponse">
   <xsd:sequence>
      <xsd:element name="Users" type="typens:ArrayOfString"/>
   </xsd:sequence>
</xsd:complexType>
```

Response elements

Users
The list of users to notify.

PassThrough

Calls the RSSE for general purposes such as changing or refreshing the internal library state. If implemented, the RSSE calls PassThrough in response to the BIRT iServer receiving the Information Delivery API CallOpenSecurityLibrary request.

The RSSE passes the ReturnCode as a response to CallOpenSecurityLibrary, RSSE does not interpret the parameter.

Request schema

```
<xsd:complexType name="PassThrough">
   <xsd:sequence>
      <xsd:element name="Input" type="xsd:string"/>
   </xsd:sequence>
</xsd:complexType>
```

Request elements

Input
The input parameter string.

Response schema

```
<xsd:complexType name="PassThroughResponse">
   <xsd:sequence>
      <xsd:element name="Output" type="xsd:string"/>
      <xsd:element name="ReturnCode" type="xsd:int"/>
   </xsd:sequence>
</xsd:complexType>
```

Response elements

Output
The output parameter string.

ReturnCode
The integer parameter that the caller of CallOpenSecurityLibrary interprets.

SelectGroups

Retrieves the names of groups that match the specified criteria. To retrieve a list of a user's group memberships, specify a name in UserName. SelectGroupsResponse then returns the list of the user's groups. SelectGroups is required when using external registration security level.

Request schema

```
<xsd:complexType="SelectGroups">
   <xsd:sequence>
      <xsd:sequence>
         <xsd:element name="QueryPattern" type="xsd:string"/>
         <xsd:element name="UserName" type="xsd:string"/>
      </xsd:sequence>
      <xsd:element name="FetchSize" type="xsd:int" minOccurs="0"/>
   </xsd:sequence>
</xsd:complexType>
```

Request elements

QueryPattern
The string match.

UserName
The name of a user whose group membership to retrieve. Must not be an empty string.

FetchSize
The maximum number of records to retrieve and return in a result set. The default value is 500.

Response schema

```
<xsd:element name="SelectGroupsResponse">
   <xsd:complexType>
      <xsd:sequence>
         <xsd:element name="Groups" type="typens:ArrayOfString"/>
         <xsd:element name="TotalCount" type="xsd:int"/>
      </xsd:sequence>
   </xsd:complexType>
</xsd:element>
```

Response elements

Groups
The list of users matching the search criteria.

TotalCount
The number of entries in the search result set.

SelectRoles

Searches for roles that match the specified criteria. Required if using an external registration security level.

SelectRoles can also retrieve a user's roles. To retrieve a user's roles, specify a name in UserName. SelectRolesResponse then returns the list of the user's roles.

The SelectRoles SOAP message invokes the SelectRolesOfUser method within the Java code, and does not invoke the SelectRoles method. The Security Roles tab in the Management Console invokes the SelectRoles method. iServer does not use the SelectRoles method to link a user account to a role.

Request schema

```
<xsd:complexType name="SelectRoles">
   <xsd:sequence>
      <xsd:choice>
         <xsd:element name="QueryPattern" type="xsd:string"/>
         <xsd:element name="UserName" type="xsd:string"/>
      </xsd:choice>
      <xsd:element name="FetchSize" type="xsd:int" minOccurs="0"/>
   </xsd:sequence>
</xsd:complexType>
```

Request elements

QueryPattern
The string match.

UserName
The name of a user whose information to retrieve.

FetchSize
The maximum number of records to retrieve and return in a result set. The default value is 500.

Response schema

```
<xsd:complexType name="SelectRolesResponse">
   <xsd:sequence>
      <xsd:element name="Roles" type="typens:ArrayOfString"/>
      <xsd:element name="TotalCount" type="xsd:int"/>
   </xsd:sequence>
</xsd:complexType>
```

Response elements

Roles
The list of roles matching the search criteria.

TotalCount
The number of entries in the search result set.

SelectUsers

Retrieves the names of users that match the specified criteria. For example, to retrieve the names of all users in the Sales group, specify Sales in GroupName.

SelectUsers is required if using an external registration security level.

Request schema

```
<xsd:complexType name="SelectUsers">
   <xsd:sequence>
      <xsd:choice>
         <xsd:element name="QueryPattern" type="xsd:string"/>
      <xsd:element name="RoleName" type="xsd:string"/>
         <xsd:element name="GroupName" type="xsd:string"/>
      </xsd:choice>
      <xsd:element name="FetchSize" type="xsd:int" minOccurs="0"/>
   </xsd:sequence>
</xsd:complexType>
```

Request elements

QueryPattern
The string match.

RoleName
The name of the role whose members to retrieve.

GroupName
The name of the group whose members to retrieve.

FetchSize
The maximum number of records to retrieve and return in a result set. The default value is 500.

Response schema

```
<xsd:complexType name="SelectUsersResponse">
      <xsd:sequence>
         <xsd:element name="Users" type="typens:ArrayOfString"/>
         <xsd:element name="TotalCount" type="xsd:int"/>
      </xsd:sequence>
</xsd:complexType>
```

Response elements

Users
The list of users matching the search criteria.

TotalCount
The number of entries in the search result set.

Start

Initializes the RSSE. Implement Start to initialize RSSE.

Request schema

```
<xsd:complexType name="Start">
   <xsd:sequence>
      <xsd:element name="ServerHome" type="xsd:string"/>
      <xsd:element name="Volume" type="xsd:string"/>
      <xsd:element name="LogFile" type="xsd:string"/>
      <xsd:element name="Version" type="xsd:string"/>
   </xsd:sequence>
```

```
</xsd:complexType>
```

Request elements

ServerHome
The path to the BIRT iServer installation, for example C:\Program Files\Actuate11\Server on Windows.

Volume
The name of the Encyclopedia volume.

LogFile
The path to the log file for RSSE activity.

Version
The BIRT iServer version number.

Response schema

```
<xsd:complexType name="StartResponse">
   <xsd:sequence>
      <xsd:element name="IntegrationLevel" type="xsd:string"
         minOccurs="0"/>
      <xsd:element name="ExternalProperties"
         type="typens:ArrayOfString" minOccurs="0"/>
      <xsd:element name="RSSEVersion" type="xsd:string"/>
      <xsd:element name="UserACLExternal" type="xsd:boolean"
         minOccurs="0"/>
      <xsd:element name="ConnectionPropertyExternal"
         type="xsd:boolean" minOccurs="0"/>
      <xsd:element name="SelectUsersOfRole" type="xsd:boolean"
         minOccurs="0"/>
      <xsd:element name="SelectGroupsOfUser" type="xsd:boolean"
         minOccurs="0"/>
   </xsd:sequence>
</xsd:complexType>
```

Response elements

IntegrationLevel
The integration level of external security. One of the following values:

- External_Authentication
- External_Registration
- None

ExternalProperties
One or more of the following external user or role properties:

- EmailAddress
  The user's e-mail address.
- HomeFolder
  The user's home folder.

- EmailForm
  The form of the e-mail attachment, included or linked.
- EmailWhen
  The type of notification to use for a completed job.
- FolderWhen
  An indicator of when the user uses the Completed folder.
- SuccessNoticeExpiration
  The number of minutes that elapse before the Encyclopedia service deletes a successful job notice.
- FailNoticeExpiration
  The number of minutes that elapse before the Encyclopedia service deletes a failed job notice.
- DefaultObjectPrivileges
  The privileges that the user has by default on the objects the user creates.
- MaxPriority
  The maximum request priority the user can set when creating a report printing or generation request.
- ViewPreference
  The user's web viewing preference, default or DHTML.
- ChannelSubscriptionList
  A list of channels to which the user subscribes.

RSSEVersion
The version of RSSE.

UserACLExternal
Specifies whether the user's access list is stored externally. Applies only if using Page-level security.

ConnectionPropertyExternal
Specifies whether the user's connection properties are retrieved externally from the RSSE. If True, the connection properties are retrieved externally. In this case, BIRT iServer directs requests to set connection properties to the RSSE and does not use GetConnectionProperties.

SelectUsersOfRole
Applies only under External Registration. Specifies whether the Role element in SelectUsers is implemented. The setting indicates whether BIRT iServer enables this feature. The default value is False.

SelectGroupsOfUser
Applies only under External Registration. Specifies whether the User element in SelectGroups is implemented. The setting indicates whether BIRT iServer enables this feature. The default value is False.

Stop

Stops the RSSE. Implement Stop to close the RSSE and free system resources.

Request schema

```
<xsd:complexType name="Stop"/>
```

Response schema

```
<xsd:complexType name="StopResponse"/>
```

SOAP-based Report Server Security Extension (RSSE) data types

This section describes the SOAP-based RSSE data types. Some data types have the same name as data types within the IDAPI, but do not have the same content.

Arrays of data types

Data type definitions can be grouped into arrays. Each array has a specific definition for that data type.

The schema for an array of a data type generally follows the following pattern:

```
<xsd:complexType name="ArrayOfX">
   <xsd:sequence>
      <xsd:element name="X" type="typens:X"
         maxOccurs="unbounded"/>
   </xsd:sequence>
</xsd:complexType>
```

In the above listing, X is the data type of object the array contains. For example, the XML for an array of Aggregation objects is:

```
<xsd:complexType name="ArrayOfPropertyValue">
   <xsd:sequence>
      <xsd:element name="PropertyValue"
         type="typens:PropertyValue"
         maxOccurs="unbounded"/>
   </xsd:sequence>
</xsd:complexType>
```

The following data types have arrays defined and used in the RSSE:

- Permission
- PropertyValue
- String
- UserAndProperties

Permission

A complex data type that describes a user's access rights.

Schema

```
<xsd:complexType name="Permission">
   <xsd:sequence>
      <xsd:choice>
         <xsd:element name="RoleName" type="xsd:string" />
         <xsd:element name="UserName" type="xsd:string" />
      </xsd:choice>
      <xsd:element name="AccessRight" type="xsd:string" />
   </xsd:sequence>
  </xsd:complexType>
```

Elements

RoleName
The role name.

UserName
The user name.

AccessRight
The privileges the user or role has on an object. One or more of the following characters representing a privilege:

- D—Delete
- E—Execute
- G— Grant
- V—Visible
- S—Secured Read
- R—Read
- W—Write

PropertyValue

A complex data type that describes a name-value pair.

Schema

```
<xsd:complexType name="PropertyValue">
   <xsd:all>
      <xsd:element name="Name" type="xsd:string" />
      <xsd:element name="Value" type="xsd:string" minOccurs="0" />
   </xsd:all>
</xsd:complexType>
```

Elements

Name
The name portion of the name-value pair.

Value
The value portion of the name-value pair.

TranslatedRoleNames

A complex data type that describes the role names RSSE uses that match external role names.

Schema

```
<xsd:complexType name="TranslatedRoleNames">
   <xsd:all>
      <xsd:element name="Administrator" type="xsd:string" />
      <xsd:element name="Operator" type="xsd:string" />
      <xsd:element name="All" type="xsd:string" />
   </xsd:all>
  </xsd:complexType>
```

Elements

Administrator
The administrator role name.

Operator
The operator role name.

All
All other role names.

User

A complex data type describing an RSSE user and their attributes.

Schema

```
<xsd:complexType name="User">
   <xsd:all>
      <xsd:element name="Name" type="xsd:string" />
      <xsd:element name="EmailAddress" type="xsd:string"
         minOccurs="0" />
      <xsd:element name="HomeFolder" type="xsd:string"
         minOccurs="0" />
      <xsd:element name="LicenseOptions"
         type="typens:ArrayOfString" minOccurs="0" />
      <xsd:element name="ViewPreference" type="xsd:string"
         minOccurs="0" />
      <xsd:element name="MaxJobPriority" type="xsd:long"
         minOccurs="0" />
      <xsd:element name="SendNoticeForSuccess" type="xsd:boolean"
         minOccurs="0" />
      <xsd:element name="SendNoticeForFailure" type="xsd:boolean"
         minOccurs="0" />
      <xsd:element name="SuccessNoticeExpiration" type="xsd:long"
         minOccurs="0" />
      <xsd:element name="FailureNoticeExpiration" type="xsd:long"
         minOccurs="0" />
      <xsd:element name="SendEmailForSuccess" type="xsd:boolean"
         minOccurs="0" />
      <xsd:element name="SendEmailForFailure" type="xsd:boolean"
         minOccurs="0" />
      <xsd:element name="AttachReportInEmail" type="xsd:boolean"
         minOccurs="0" />
      </xsd:all>
</xsd:complexType>
```

Elements

Name
The user's name.

EmailAddress
The user's e-mail address.

HomeFolder
The users's home folder.

LicenseOptions
The user's license options.

ViewPreference
The user's viewer, Default or DHTML.

MaxJobPriority
The maximum priority that the user can assign to a job.

SendNoticeForSuccess
Specifies whether the BIRT iServer sends success notices to the user.

SendNoticeForFailure
Specifies whether the BIRT iServer sends failure notices to the user.

SuccessNoticeExpiration
Specifies the minimum number of minutes success notices remain in the Completed folder. To set the user's success notices to never expire, set the value to 0xffffffff.

FailureNoticeExpiration
Specifies the minimum number of minutes failure notices remain in the Completed folder. To set the user's failure notices to never expire, set the value to 0xffffffff.

SendEmailForSuccess
Specifies whether the BIRT iServer sends success notices in an e-mail message to the user.

SendEmailForFailure
Specifies whether the BIRT iServer sends failure notices in an e-mail message to the user.

AttachReportInEmail
Specifies whether to attach a report to an e-mail completion notice.

Chapter

11

Using Actuate logging and monitoring APIs

This chapter contains the following topics:

- About Usage Logging and Error Logging extensions
- Installing and using Usage Logging and Error Logging extensions
- Customizing the Usage Logging extension
- Customizing the Error Logging extension
- About the usage log
- About the error log
- About BIRT iServer usage and error log consolidator
- About the usage and error logging report examples
- About Actuate Performance Monitoring Extension
- Installing and using Actuate Performance Monitoring Extension
- Customizing Actuate Performance Monitoring Extension
- About counters

About Usage Logging and Error Logging extensions

BIRT iServer System provides a monitoring framework that logs BIRT iServer usage and error information. You can use this information to understand how BIRT iServer uses system resources and to troubleshoot problems.

BIRT iServer and iServer Integration Technology provide usage and error logging extensions that retrieve and write the logging data to files. The Usage Logging and Error Logging extensions are DLLs on a Windows platform and shared libraries on a UNIX system. BIRT iServer Integration Technology provides the customizable source code for the usage and error logging extensions as reference implementations.

BIRT iServer Integration Technology provides a reference implementation of BIRT iServer usage and error log consolidator, an application that reads data from BIRT iServer usage and error log files and adds the information to a database. Actuate also provides an extension to the Windows system monitoring tool that can collect data on BIRT iServer System resources.

Installing and using Usage Logging and Error Logging extensions

The usage and error logging extensions are open framework applications. A developer can customize the way the DLL or shared library handles the usage and error log information.

BIRT iServer Integration Technology provides a reference implementation for the usage and error log extensions. For more information about the usage and error log extensions, refer to the readme files in ACTUATE_HOME/ServerIntTech/User Activity Logging Extension and Error Logging Extension. BIRT iServer installs the reference implementation for both the Usage Logging and Error Logging extensions in $AC_SERVER_HOME/bin.

These reference implementations log the information that the BIRT iServer monitoring framework captures to files.

A usage log, usage_log.csv, is a comma-separated values (CSV) file. BIRT iServer System creates a primary log directory that contains the usage log records for the default volume in AC_SERVER_HOME/UsageErrorLogs/primary.

BIRT iServer System creates secondary log directories for additional volumes as required in AC_SERVER_HOME/UsageErrorLogs/secondary_$VOLUMENAME. The directory for a usage log file is not configurable. The error log, error_log.csv, is a comma-separated values (CSV) file. BIRT iServer System writes the error log file to the primary log directory for the

default volume or the appropriate secondary log directory for an additional volume. The directory for an error log file is not configurable.

How to configure usage logging

To configure usage logging, perform the following tasks:

1. Log in to iServer Configuration Console and choose Advanced View.
2. On System—Status, choose Properties.
3. On System—Properties—General, choose Usage Logging.

   System—Properties—Usage Logging appears as shown in Figure 11-1.

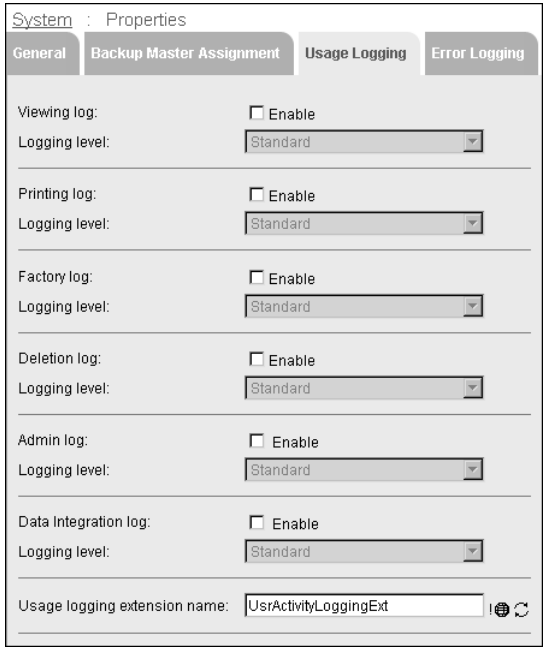

Figure 11-1 The Usage Logging tab

4. Select the usage logging information you want to capture from the following list of logging options:
   - Viewing
   - Printing
   - Factory
   - Deletion
   - Admin
   - Data Integration

1. Select Enable to activate the logging option.
2. Select Standard or Detail for the logging level.

   For viewing, deletion, and printing logging, standard and detail information are the same in the logging application that ships with BIRT iServer.

   For Factory logging, detailed information includes report parameters. Logging detailed Factory information, instead of standard Factory information, causes performance degradation.

5. In Usage logging extension name, enter the name of the usage logging extension.

   UsrActivityLoggingExt is the name of the default usage logging extension.

   Choose OK.

How to configure error logging

To configure usage logging, perform the following tasks:

1. Log in to iServer Configuration Console and choose Advanced View.
2. On System—Status, choose Properties.
3. On System—Properties—General, choose Error Logging.

   System—Properties—Error Logging appears as shown in Figure 11-2.

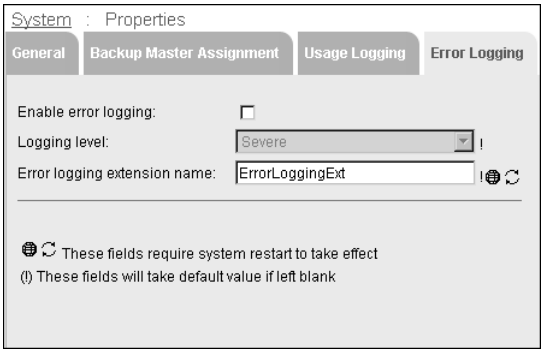

Figure 11-2 The Error Logging tab

4. Select Enable error logging.
5. Select the error logging level you want to capture from the following list of options:

   - Information
     Logs informational messages to helps track BIRT iServer behavior.

- Warning
  Logs warning errors that typically do not impact normal BIRT iServer operation.
- Severe
  Logs errors that can cause BIRT iServer to abort execution if you do not rectify the cause of the error. A severe error does not typically cause BIRT iServer to abort execution immediately.
- Fatal
  Logs critical errors from which BIRT iServer cannot recover. A fatal error typically causes BIRT iServer to abort execution.

6 In Error logging extension name, enter the name of the error logging extension.

ErrorLoggingExt is the name of the default error logging extension.

Choose OK.

Customizing the Usage Logging extension

To customize the Usage Logging extension, you must install BIRT iServer Integration Technology. BIRT iServer Integration Technology provides the C and C++ source code that you modify to customize the Usage Logging extension. The Usage Logging extension source code file, usagelogext.c, installs in $ACTUATE_HOME/ServerIntTech/User Activity Logging Extension.

The usagelogext.c source code implements the following functionality:

- Specifies the name and extension of the usage log file, and the location or path to the file
  These properties are defined as constants. For example:

  ```
  #define USAGELOG_FILE_NAME "usage_log"
  #define USAGELOG_FILE_EXT ".csv"
  ```

  The AcStartUsageLog function implements this functionality.
- Writes information about every transaction that BIRT iServer captures to a log file
  The AcLogUsage function implements this functionality.
- Stops logging information and releases the resources the extension uses
  The AcStopUsageLog function implements this functionality.
- Specifies whether the extension is multithread-safe

The AcIsThreadSafe function implements this functionality. If the extension is not multithread-safe, AcIsThreadSafe must return False. The reference implementation is not multithread-safe.

Customizing the Error Logging extension

To customize the Error Logging extension, you must install BIRT iServer Integration Technology. BIRT iServer Integration Technology provides the C and C++ source code that you modify to customize the Error Logging extension. The Error Logging extension source code file, usagelogext.c, installs in $ACTUATE_HOME/ServerIntTech/Error Logging Extension.

The errorlogext.c source code implements the following functionality:

- Specifies the name and extension of the log file, and the location or path to the log file

  These properties are defined as constants. For example:

  ```
  #define ERRORLOG_FILENAME "error_log"
  #define ERRORLOG_FILE_EXT ".csv"
  ```

  The AcStartErrorLog function implements this functionality.

- Writes the information about every error that BIRT iServer encounters to a log file

  The AcLogError function implements this functionality.

- Stops logging information and releases the resources the extension uses

  The AcStopErrorLog function implements this functionality.

- Specifies whether or not the extension is multithread-safe

  The AcIsThreadSafe function implements this functionality. If the extension is not multithread-safe, AcIsThreadSafe must return False. The reference implementation in not multithread-safe.

About the usage log

The usage log, usage_log.csv, is a comma-separated values (CSV) file. The usage log records the following events:

- Report viewing
- Report printing
- Report generation
- Report deletion

- Administrative
- Data integration

About types of recorded events

For each type of event, you can set the logging level to Standard or Detail. If you are using the default usage logging extension, UsrActivityLoggingExt, the logging level does not affect how the file records the following types of events:

- Report viewing
- Report printing
- Report deletion

If you set the logging level for report generation or factory events to Detail, the usage log includes report parameters. Setting the logging level to Detail for report generation events decreases performance.

Understanding a usage log entry

Each usage log entry is a comma-separated list containing up to 40 fields of information about an event. The following example describes a delete user event:

```
3272649170,5,1,3272649170,3272649170,-,-,0,Administrator,3,
   enl2509,enl2509,enl2509,User,testUser,-,-,-,-,-,-,-,-,-,-,
   2,0,0,0,0,0,0,0,0,0,0,0,0,0,0,0
```

The usage log organizes the entry fields into the following information groups:

- Fields 1 through 10 contain general information:
  - Fields 1, 4, and 5 contain the log file time stamp, start time, and finish time. The time is in seconds since 00:00:00, Jan. 1, 1901, GMT.
  - Field 2 contains the event type. The numeric values in Table 11-1 indicate the event types.

Table 11-1 Event types and the corresponding event values

Event type	Event value
ReportGeneration	1
ReportPrinting	2
ReportViewing	3
ReportDeletion	4
Admin	5
Query	6
Search	7

- Field 3 contains the event result. The value for the event result is either 1 or 0, indicating success or failure.
- Fields 6 through 8 contain report output information, indicating the file name, version, and file size. The report output group information appears only with report events. A dash indicates a field is not used.
- Fields 9 and 10 contain execution information, indicating the user name and the BIRT iServer subsystem where the operation executed. The numeric values in Table 11-2 indicate the BIRT iServer subsystems.

Table 11-2 BIRT iServer subsystems and the corresponding ID numbers

Subsystem	ID number
ReportEngine	1
ViewEngine	2
EncycEngine	3
IntegrationEngine	4
Cache	5

- Fields 11 through 25 contain operational information in string format, including the Encyclopedia volume, BIRT iServer, and cluster names. Fields 26 through 40 contain operational information in numeric format.

  The values in these fields depend on the value for the event type in field 2. Table 11-3 summarizes some of the information available for each event type at Standard level.

Table 11-3 Examples of information that is available about the different types of events

Event type	Event value	Operation data available
Report generation	1	String fields 11 through 21 display the following information: – `,executable name, executable version, volume name, server name, cluster name, resource group name, node running request, page count, job name, request ID` A dash indicates a field is not used. Numeric fields 26 through 29 display the following information: `number of pages,submit time, job type, job priority`

Table 11-3 Examples of information that is available about the different types of events (continued)

Event type	Event value	Operation data available

Report printing	2	String fields 11 through 18 display the following information:
		`page numbers printed, volume name, printer name, server name, cluster name, node sent to, file type, server request id`
		Numeric fields 26 through 29 display the following information:
		`number of pages printed, submit time, job type, job priority`

Report viewing	3	String fields 11 through 18 display the following information: `output format, report page numbers, volume name, server name, cluster name` Numeric field 26 displays the number of pages viewed.
Administrative	5	String fields 11 through 13 display the following information: `volume name, server name, cluster name` Numeric field 26 displays an operation ID for an administration event. The following list provides the event name for each operation ID: ■ 1 Create ■ 2 Delete ■ 3 Modify ■ 4 Login

(continues)

Table 11-3 Examples of information that is available about the different types of events (continued)

Event type	Event value	Operation data available

Actuate Integration service	6	String fields 11 through 14 display the following information:
		`volume name, server name, cluster name, server request id`
		Numeric fields 26 and 27 display the following information:
		`request wait time, request generation time`

Search	7	String fields 11 through 15 display the following information: `report format, page numbers, volume name, server name, cluster name` Numeric field 26 displays the number of pages viewed.

About the error log

The error log, error_log.csv, is a comma-separated values (CSV) file. If you use the default error logging extension, ErrorLoggingExt, you can set the logging level to:

- Information
  The error log records messages that trace BIRT iServer behavior.
- Warning
  The error log records warnings. The errors do not necessarily affect the operation of BIRT iServer.
- Severe
  The error log records errors that can result in BIRT iServer failure if you do not correct them.
- Fatal
  The error log records critical errors from which BIRT iServer cannot recover and that can result in failure.

Understanding an error log entry

Each error log entry is a comma-separated list containing up to 12 fields about an error-related event. The following example describes an error in a submit job event:

```
3272648796,2,3230,SubmitJob,Administrator,"Invalid start time or
   end time.",enl2509,enl2509,enl2509,-,-,-
```

The error log organizes the entry fields into the following information groups:

- Fields 1 through 9 contain general information:
  - Field 1 contains the log file time stamp. The time is in seconds since 00:00:00, Jan. 1, 1901, GMT.
  - Field 2 contains the error severity level, an integer between 1 and 4. The numeric values in Table 11-4 indicate the level.

    Table 11-4 Error severity levels and the corresponding values

Error severity level	Value
Information	1
Warning	2
Severe	3
Fatal	4

  - Field 3 contains the Error ID code.
  - Field 4 contains the Service name, indicating the subsystem where the error occurred such as the Factory, Encyclopedia, View, or Request service.
  - Field 5 indicates the Encyclopedia volume user.
  - Field 6 contains the error message.
  - Field 7 contains the Encyclopedia volume name.
  - Field 8 contains the BIRT iServer cluster name.
  - Field 9 contains the BIRT iServer node name.
  - Depending on the error, fields 10 through 12 can contain information such as a file name and ID number. A dash indicates a field is not used.

Table 11-5 summarizes some of the information available in fields 10 through 12 for an error log entry at Standard level.

Table 11-5 Information that is available for error log entries at the Standard level

Type of error	Operation data available
Cluster master failover	Fields 10 and 11 display the following data: ■ Original cluster master ■ New cluster master
Encyclopedia volume user activity	Fields 10 through 12 can contain error parameters such as the following items: ■ Object name ■ ID number
Volume failover	Fields 10 and 11 contain the following data: ■ Primary server ■ Backup server used
Volume online or offline	Fields 10 and 11 contain the following data: ■ Volume name ■ Operation type either online or offline
BIRT iServer node start or stop	Field 10 contains the BIRT iServer name
Service enable or disable	Fields 10 and 11 contain the following data: ■ Server name ■ List of services
Archive service error	Fields 10 through 12 contain error parameters
Encyclopedia volume job purging field 4 is Job Purge	Fields 10 through 12 contain error parameters
Encyclopedia volume health monitoring field 4 is Encyclopedia Health Monitor	Fields 10 through 12 contain error parameters

About BIRT iServer error messages

Table 11-6 lists the general categories of BIRT iServer error messages.

Table 11-6 Categories of BIRT iServer error messages

Error ID range	Error description
0001 - 1000	System errors such as Out of memory or Low thread count

Table 11-6 Categories of BIRT iServer error messages

Error ID range	Error description
1001 - 3000	BIRT iServer errors such as Corrupt encyclopedia or Transient storage full Within this error category, the following sub-categories exist: ■ 1001 - 2000 Actuate internal datastore ■ 2001 - 3000 Actuate internal
3001 - 6000	User errors such as Permission denied or ROX not found Within this error category, the following sub-categories exist: ■ 3001 - 4000 Encyclopedia engine ■ 4001 - 5000 Report engine ■ 5001 - 6000 View engine
6001 - 12000	■ 6001 - 7000 SOAP engine ■ 7001 - 8000 Process management daemon ■ 8001 - 9000 Cluster engine ■ 10001 - 11000 Server configuration ■ 11001 - 12000 XML parsing
12001 - 13000	Viewing server errors
13000 - 14000	AcMail exceptions
100001 -100600	Actuate Information service
100601 - 100699	Actuate Caching service
100700 - 150000	Shared by Actuate Information service and Actuate Caching service

About BIRT iServer usage and error log consolidator

The log consolidator application is a Java application that reads data from an BIRT iServer usage or error log file and uses JDBC to add the information to a database. In an BIRT iServer cluster, you must install and run the log consolidator application on each BIRT iServer node to consolidate the cluster's usage and error log information in a database. Before running the log consolidator application, you must install the following components:

- BIRT iServer
- Log consolidator application files
- Log consolidator configuration file
- Database used by the log consolidator application

BIRT iServer installs the required JAR files for the log consolidator application in $ACTUATE_HOME/Jar/UsageAndErrorConsolidator. These files include:

- usageanderrorconsolidator.jar
  The com.actuate.consolidator application class and properties files.
- Java Architecture for XML Binding (JAXB) JAR files
  JAXB provides a framework that supports run-time mapping between XML and Java objects.
- ojdbc14.jar
  The supported Oracle JDBC Driver. The reference implementation uses Oracle as the example database.
- naming-java.jar
  Contains the handler for the Java namespace.

The log consolidator application also uses the following Microsoft Windows Registry key or UNIX environment variable set by BIRT iServer installation process:

- On Windows, make sure the following registry key exists:

  ```
  HKEY_LOCAL_MACHINE\SOFTWARE\Actuate\Common\9.0\AC_JRE_HOME
  ```

  The log consolidator application uses java.exe from:

  ```
  AC_JRE_HOME\bin
  ```

- On UNIX, make sure the following environment variable exists:

  ```
  AC_JRE_HOME
  ```

  The log consolidator application uses java.exe from:

  ```
  $AC_JRE_HOME/bin
  ```

In BIRT iServer Integration Technology, the UsageAndErrorConsolidator directory contains additional files that you must use to complete the installation of the log consolidator application:

- /DBScripts contains the SQL script, CreateActuateLogTables.sql, which creates the tables in the Oracle database used by the Actuate log consolidator sample application. A readme.txt file describes this SQL script file.
- /jar contains the JAR files required by the log consolidator application.
- /Setup contains the following files that startup and shutdown the log consolidator application:
  - consolidatorconfig.xml is the sample consolidator configuration file that specifies settings such as the following items:
    - Database driver, URL, encoding, schema, user name, and password

    - Usage and error log details, such as the file names, refresh interval, number of logs, and whether a log file is enabled
  - The UNIX version uses the scripts, start_consolidator.sh and stop_consolidator.sh, to start up and shut down the log consolidator application.
  - The Windows version uses a setup application, consolidatorwin.exe, that installs the log consolidator application as a Windows service and starts and stops the application.
  - A readme.txt file describes how to use these components.
- /src contains the following items:
  - usageanderrorconsolidator.jar, the JAR file for the log consolidator application
  - consolidatormake.xml, an Ant build file
  - com.actuate.consolidator, the log application source code

How to install the log consolidator application

1. Edit the following settings in consolidatorconfig.xml:
   - JDBC driver name
   - URL, specifying the type of JDBC driver and database connection information, including host name, port, and database instance (SID) or service name, using the following syntax:

     ```
     jdbc:oracle:thin:@//[HOST][:PORT][:SID/SERVICE]
     ```
   - Database login information, including schema, user name and password
   - Refresh interval

     Measured in seconds. The default value is 10 seconds.

     You may need to change the refresh interval depending on the amount of logging your system performs. The log consolidator application commits transactions to the database every 10 seconds or when the number of transactions exceeds 80, whichever occurs first.
   - Usage and error log settings:
     - Log file names
     - Number of log files for each type of file

     The log file names and number of files must match the actual BIRT iServer configuration.

If you change a BIRT iServer setting, you must also change the corresponding consolidator configuration setting and restart BIRT iServer and the log consolidator application.

The following code example shows the default settings for consolidatorconfig.xml:

```
<?xml version="1.0" encoding="UTF-8" standalone="yes"?>
<LogConsolidator>
   <Database>
      <DriverName>oracle.jdbc.OracleDriver</DriverName>
         <URL>jdbc:oracle:thin:@dbsrv4-w2k:1521:Oran9i</URL>
         <Encoding>UTF8</Encoding>
         <Schema>Users</Schema>
         <DatabasePropertyList>
            <Properties>
               <Name>UserName</Name>
               <Value>actest</Value>
            </Properties>
            <Properties>
               <Name>Password</Name>
               <Value>systest</Value>
            </Properties>
         </DatabasePropertyList>
   </Database>
   <Consolidator>
      <RefreshInterval>10</RefreshInterval>
      <UsageLogEnabled>true</UsageLogEnabled>
      <ErrorLogEnabled>false</ErrorLogEnabled>
      <UsageLogProperties>
         <LogFileName>usage_log</LogFileName>
         <NumberOfLogFiles>2</NumberOfLogFiles>
      </UsageLogProperties>
      <ErrorLogProperties>
         <LogFileName>error_log</LogFileName>
         <NumberOfLogFiles>2</NumberOfLogFiles>
      </ErrorLogProperties>
   </Consolidator>
</LogConsolidator>
```

2 Copy the configuration file, consolidatorconfig.xml, to the following BIRT iServer directory:

```
$AC_SERVER_HOME/etc
```

3 Install and run the startup and shutdown files after setting up the database:

- On a UNIX system, the following Actuate scripts start and stop the consolidator application:

- start_consolidator.sh

  Starts the log consolidator application. The script takes $AC_SERVER_HOME as an argument and uses it to set the following path variables:

  - Configuration file
  - JAR file directory
  - CLASSPATH

  The script stores the process ID or PID in $AC_SERVER_HOME/etc /consolidator.pid. Add this script to BIRT iServer script start_srvr.sh to start the consolidator application whenever you start BIRT iServer. start_consolidator.sh attempts to start the application five times.

- stop_consolidator.sh

  Stops the log consolidator application. The script takes $AC_SERVER_HOME as an argument and uses it to read the log consolidator application PID from $AC_SERVER_HOME/etc/ consolidator.pid and kills the process. Add this script to BIRT iServer script stop_srvr.sh to stop the consolidator application whenever you stop the BIRT iServer.

- On a Windows system, the consolidatorwin.exe utility installs and removes the application as a Windows service, and starts and stops the consolidator application. The BIRT iServer installation process installs and runs the utility in the following directory:

  ```
  $AC_SERVER_HOME\bin
  ```

  Use the consolidator.exe utility to install and configure the consolidator application. This utility assumes it is running in the BIRT iServer \bin directory.

  The consolidatorwin.exe utility supports the following command line syntax:

  ```
  consolidatorwin [-H/-?] [-SserviceType] [-UuserName] [-
     Ppassword]
  ```

  The command-line arguments specify the following options:

  - -H requests help on usage
  - -S specifies the following types of service:
    - auto adds the log consolidator as the Actuate Usage and Error Logging Consolidator 9 service that starts automatically when Windows restarts.

- manual adds the log consolidator as the Actuate Usage and Error Logging Consolidator 9 service that requires manual startup when Windows restarts.
- console starts the consolidator at a Windows command prompt.
- remove stops the service.

- -U specifies the username

  The Windows user starting the consolidator application. Actuate recommends using the same user as the user that starts BIRT iServer.

- -P specifies the password

  The user's password.

The following command adds the consolidator application as a Windows service that starts automatically when Windows starts:

```
consolidatorwin -Sauto -UUsername -PPassword
```

How to configure the log consolidator database

1. Configure a database server machine, Oracle server, and database.
2. Using Oracle SQL*Plus, log in as the system database administrator.
3. Run the CreateActuateLogTables.sql script.

   The following command runs the CreateActuateLogTables.sql script from the default directory in the BIRT iServer Integration Technology installation for Windows:

```
SQL> @"C:\Program Files\Actuate11\ServerIntTech
   \UsageAndErrorConsolidator\DBScripts
   \CreateActuateLogTables.sql";
```

CreateActuateLogTables.sql drops the ActuateLog and ActuateLogUser users, performs cascading deletes on all their objects, including sequences, tables, and indexes, and recreates these objects. The script creates the following database objects:

- Tables to contain the usage and error log data

  INSERT statements add pre-defined codes and descriptions for the event, file, job, object, operation, output format, service, and status types, after creating the tables.

- Sequence generators to provide the values for usage and error event IDs when inserting log data

  Each usage and error event ID is a unique value.

- Indexes to contain primary and foreign key columns in the tables:

- Primary key constraints on columns containing pre-defined codes ensure that these values are unique and not null.
- Foreign key references on columns containing pre-defined codes ensure that these values are consistent with the values in the primary keys.

The ActuateLog schema contains the following tables and indexes:

- AcAdminEvent

  Contains the log records for administration operation events, including the following data:

  - Event ID
  - Object type code, indicating a User, Role, Channel, Group, File, or Folder object
  - Object operation code, indicating a Create, Delete, Modify, Login, Logout, or Download operation
  - Object name, version name, size, and attribute
  - Old and new values

  Table 11-7 shows the structure of the AcAdminEvent table.

Table 11-7 Structure of the AcAdminEvent table

Column	Data type	Constraint	References	Key
EventId	INTEGER	AcApEv _AdEvId _Idx	AcEvent .EventId	Primary
ObjectTypeCode	INTEGER		AcObject Type .Object TypeCode	
ObjectOperationCode	INTEGER		AcObject Operation .Object Operation Code	
ObjectName	VARCHAR2 (1000)			
ObjectVersionName	VARCHAR2 (255)			
ObjectSize	INTEGER			
ObjectAttribute	VARCHAR2(50)			

Table 11-7 Structure of the AcAdminEvent table (continued)

Column	Data type	Constraint	References	Key
OldValue	VARCHAR2 (2000)			
NewValue	VARCHAR2 (2000)			

- AcApplicationEvent
  Contains the log records for application events, including the following data:
  - Event ID
  - Executable name
  - Executable version, indicating an ROI, ROX, or other file type
  - Job type code, indicating an Async, Persistent, and Transient job type
  - Resource group ID
  - Dispatch node, indicating the volume, system, and server
  - Output format code, indicating PDF, XLS, HTML, or other output format

  Table 11-8 shows the structure of the AcApplicationEvent table.

Table 11-8 Structure of the AcApplicationEvent table

Column	Data type	Constraint	References	Key
EventId	INTEGER	AcApEv _ApEvId _Idx	AcEvent .EventId	Primary
ExecutableName	VARCHAR2(1000)			
ExecutableVersion	VARCHAR2(100)		AcFileType .FileType Code	
FileTypeCode	INTEGER			
Parameters	VARCHAR2(2000)			
JobName	VARCHAR2(100)			
JobTypeCode	INTEGER		AcJobType .JobType Code	
JobSubmittedTimestamp	DATE			

Table 11-8 Structure of the AcApplicationEvent table

Column	Data type	Constraint	References	Key
ResourceGroupId	INTEGER		AcResource Group .Resource GroupId	
DispatchNode	INTEGER		AcSystem Component .System Component Id	
RequestId	VARCHAR2(100)			
RequestWaitTime	INTEGER			
RequestRunningTime	INTEGER			
OutputName	VARCHAR2(1000)			
OutputVersion	VARCHAR2(100)			
OutputFormatCode	INTEGER		AcOutput Format .Output FormatCode	
OutputSize	INTEGER			
PageCount	INTEGER			
PageNumbersViewed	VARCHAR2(50)			

- AcErrorEvent
  Contains the log records for error events, including the following data:
  - Error event ID
  - System component ID, indicating the volume, system, and server
  - User name
  - Error code, category, severity, parameters, and message

  Table 11-9 shows the structure of the AcErrorEvent table.

Table 11-9 Structure of the AcErrorEvent table

Column	Data type	Constraint	References	Key
ErrorEventId	INTEGER	AcErEv_ErEvId _Idx	AcEvent .EventId	Primary

(continues)

Table 11-9 Structure of the AcErrorEvent table (continued)

Column	Data type	Constraint	References	Key
EventTimestamp	DATE			
SystemComponentId	INTEGER		AcSystem Component .System Component Id	
UserName	VARCHAR2(255)			
ErrorCode	INTEGER			
ErrorCategory	VARCHAR2(255)			
ErrorSeverity	INTEGER			
ErrorParameter1	VARCHAR2(50)			
ErrorParameter2	VARCHAR2(50)			
ErrorParameter3	VARCHAR2(50)			
ErrorMessage	VARCHAR2(255)			

- AcErrorLogOffset
  Contains the following usage log data:
  - File offsets
  - Volume names
  - Last update timestamp

  Table 11-10 shows the structure of the AcErrorLogOffset table.

Table 11-10 Structure of the AcErrorLogOffset type

Column	Data type/Values	Constraint	References	Key
FileIndex	NUMBER,			
FileOffset	NUMBER			
VolumeName	VARCHAR2(50)	NOT NULL		Primary
LastUpdateTimeStamp	NUMBER			

- AcEvent
  Contains the log records for events, including the following data:
  - Event ID
  - Event timestamp
  - System component ID, indicating the volume, system, and server

- Event type code, indicating a Generate, Print, View, Delete, Admin, Query, or Search event type
- Start and end timestamps
- Status code, indicating Success or Failure
- Service type code, indicating a Factory, View, Encyclopedia, Integration, or Cache service type

Table 11-11 shows the structure of the AcEvent table.

Table 11-11 Structure of the AcEvent table

Column	Data type	Constraint	References	Key
EventId	INTEGER	AcSt_StCo_Idx		Primary
EventTimestamp	DATE			
SystemComponentId	INTEGER		AcSystemComponent .SystemComponentId	
UserName	VARCHAR2(50)			
EventTypeCode	INTEGER		AcEventType .EventTypeCode	
StartTimestamp	DATE			
EndTimestamp	DATE			
StatusCode	INTEGER		AcStatus.StatusCode	
ServiceTypeCode	INTEGER	EventId	AcServiceType .ServiceTypeCode	

- AcEventType
  Contains the codes and descriptions for event types, including the following data:
  - Event type code, including the following pre-defined values:
    `1 through 7`
  - Event type description, including the following pre-defined values:
    `Generate, Print, View, Delete, Admin., Query, Search`

  Table 11-12 shows the structure of the AcEventType table.

Table 11-12 Structure of the AcEventType table

Column	Data type/Values	Constraint	References	Key
EventTypeCode	INTEGER1-7	AcEvTy_EvTyCo_Idx		Primary
EventTypeDescription	VARCHAR2(50)			

- AcFileType
  Contains the codes and descriptions for the following file type data:
  - File type codes, including the following pre-defined values:

    `1 through 39`
  - File types, including the following pre-defined values:

    ```
    UNKNOWN, DOX, DOI, CB4, CVW, DCD, DOV, DP4, HTM, HTML, ICD,
       IOB, ODP, PDF, ROD, ROI, ROL, ROP, ROS, ROV, ROW, ROX,
       RPT, RPTDESIGN, RPTDOCUMENT, RPTLIBRARY, RPTTEMPLATE, RPW,
       RTF, SMA, SOD, SOI, SOX, TXT, VTF, VTX, XLS
    ```

  Table 11-13 shows the structure of the AcFileType table.

Table 11-13 Structure of the AcFileType table

Column	Data type/Value	Constraint	References	Key
FileTypeCode	INTEGER1-39	AcFiTy_FiTyCo_Idx		Primary
FileType	VARCHAR2(20)			

- AcJobType
  Contains the codes and descriptions for the following job type data:
  - Job type codes, including the following pre-defined values:

    `1 through 3`
  - Job type descriptions, including the following pre-defined values:

    `Async, Persistent, Transient`

  Table 11-14 shows the structure of the AcJobType table.

Table 11-14 Structure of the AcJobType table

Column	Data type/Value	Constraint	References	Key
JobTypeCode	INTEGER1-3	AcJoTy_JoTyCo_Idx		Primary
JobTypeDescription	VARCHAR2(20)			

- AcObjectOperation
  Contains the codes and descriptions for the following object operation data:
  - Object operation codes, including the following pre-defined values:

    `1 through 6`
  - Object operation descriptions, including the following pre-defined values:

    `Create, Delete, Modify, Login, Logout, Download`

Table 11-15 shows the structure of the AcObjectOperation table.

Table 11-15 Structure of the AcObjectOperation table

Column	Data type/Value	Constraint	References	Key
ObjectOperationCode	INTEGER	AcObOp_ObOpCo_Idx		Primary
ObjectOperation Description	VARCHAR2(20)			

- AcObjectType
  Contains the codes and descriptions for the following object type data:
  - Object type codes, including the following pre-defined values:

    `1 through 6`
  - Object type descriptions, including the following pre-defined values:

    `User, Role, Channel, Group, File, Folder`

  Table 11-16 shows the structure of the AcObjectType table.

Table 11-16 Structure of the AcObjectType table

Column	Data type/Values	Constraint	References	Key
ObjectTypeCode	INTEGER	AcObTy_ObTyCo_Idx		Primary
ObjectTypeDescription	VARCHAR2(20)			

- AcOutputFormat
  Contains the codes and descriptions for the following output format data:
  - Output format codes, including the following pre-defined values:

    `1 through 42`
  - Output format descriptions, including the following pre-defined values:

    ```
    UNKNOWN, PDF, XLS, ROW, DHTML, HTML, HTM, ROI, RPT, RTF, DOI,
       CB4, CVW, REPORTLET, XMLDISPLAY, XMLCOMPRESSEDDISPLAY,
       DHTMLRAW, DHTMLLONG, CSS, ANALYSIS, EXCELDISPLAY,
       EXCELDATA, EXCELDATADUMP, RTFFULLYEDITABLE, UNCSV, TSV,
       EXCEL, XMLDATADUMP, XMLREPORTLET, XMLCOMPRESSEDREPORTLET,
       XMLCOMPRESSEDEXCEL, XMLCOMPRESSEDPDF, XMLCOMPRESSEDRTF,
       XMLSTYLE, XMLDATA, SOI, RPTDOCUMENT, RPTLIBRARY,
       RPTTEMPLATE, ODP
    ```

Table 11-17 shows the structure of the AcOutputFormat table.

Table 11-17 Structure of the AcOutputFormat table

Column	Data type/Values	Constraint	References	Key
OutputFormatCode	INTEGER1-42	AcOuFo_OuFoCo_Idx		Primary
OutputFormat Description	VARCHAR2(30)			

- AcResourceGroup
  Contains the codes and descriptions for the following resource group data:
  - Resource group ID, including the following pre-defined value:

    `0`
  - Resource group name, including the following pre-defined value:

    `NULL`

  Table 11-18 shows the structure of the AcResourceGroup table.

Table 11-18 Structure of the AcResourceGroup table

Column	Data type/Values	Constraint	References	Key
ResourceGroupId	INTEGER	AcReGr_ReGrId_Idx		Primary
ResourceGroupName	VARCHAR2(128)			

- AcServiceType
  Contains the codes and descriptions for the following service type data:
  - Service type code, including the following pre-defined values:

    `1 through 5`
  - Service type description, including the following pre-defined values:

    `Factory, View, Encyclopedia, Integration, Cache`

  Table 11-19 shows the structure of the AcServiceType table.

Table 11-19 Structure of the AcServiceType table

Column	Data type/Values	Constraint	References	Key
ServiceTypeCode	INTEGER	AcSeTy_SeTyCo_Idx		Primary
ServiceTypeDescription	VARCHAR2(50)			

- AcStatus
  Contains the codes and descriptions for the following status type data:

- Status codes, including the following pre-defined values:

  `0 through 1`

- Status descriptions, including the following pre-defined values:

  `Failure, Success`

Table 11-20 shows the structure of the AcStatus table.

Table 11-20 Structure of the AcStatus type

Column	Data type/Values	Constraint	References	Key
StatusCode	INTEGER	AcSt_StCo_Idx		Primary
StatusDescription	VARCHAR2(20)			

- AcSystemComponent
  Contains the log records for system components, including the following data:
  - System component ID
  - Volume, system, and server names

  Table 11-21 shows the structure of the AcSystemComponent table.

Table 11-21 Structure of the AcSystemComponent table

Column	Data type/ Values	Constraint	References	Key
SystemComponentId	INTEGER	AcSt_StCo _Idx		Primary
VolumeName	VARCHAR2(50)			
SystemName	VARCHAR2(50)			
ServerName	VARCHAR2(50)			

- AcUsageLogOffset
  Contains the following usage log data:
  - File offsets
  - Volume names
  - Last update timestamp

Table 11-22 shows the structure of the AcUsageLogOffset table.

Table 11-22 Structure of the AcUsageLogOffset type

Column	Data type/ Values	Constraint	References	Key
FileIndex	NUMBER,			
FileOffset	NUMBER			
VolumeName	VARCHAR2(50)	NOT NULL		Primary
LastUpdateTime Stamp	NUMBER			

The ActuateLog schema contains the following indexes listed in Table 11-23.

Table 11-23 Indexes in the ActuateLog schema

Index	Table.Column(s)
AcApEv_AdEvId_Idx	AcAdminEvent.EventId
AcApEv_ApEvId_Idx	AcApplicationEvent.EventId
AcApEv_ExNa_Idx	AcApplicationEvent.ExecutableName
AcApEv_FiTyCo_Idx	AcApplicationEvent.FileTypeCode
AcApEv_JoTyCo_Idx	AcApplicationEvent.JobTypeCode
AcAdEv_ObNa_Idx	AcAdminEvent.ObjectName
AcApEv_OuNa_Idx	AcApplicationEvent.OutputName
AcAdEv_ObTyCo_ObOpCo_Idx	AcAdminEvent.ObjectTypeCode, ObjectOperationCode
AcErEv_ErCo_Idx	AcErrorEvent.ErrorCode
AcErEv_ErEvId_Idx	AcErrorEvent.ErrorEventId
AcErEv_ErSe_Idx	AcErrorEvent.ErrorSeverity
AcErEv_EvTi_Id	AcErrorEvent.EventTimestamp
AcErEv_SyCoId_Idx	AcErrorEvent.SystemComponentId
AcErEv_UsNa_Idx	AcErrorEvent.UserName
AcEv_EvId_Idx	AcStatus.EventId
AcEv_SyCoId_Idx	AcEvent.SystemComponentId
AcEv_StCo_Idx	AcEvent.StatusCode
AcEv_SyTyCo_Idx	AcEvent.ServiceTypeCode
AcEv_EvTi_Idx	AcEvent.EventTimestamp
AcEv_EvTyCo_Idx	AcEvent.EventTypeCode

Table 11-23 Indexes in the ActuateLog schema

Index	Table.Column(s)
AcEv_UsNa_Idx	AcEvent.UserName
AcEvTy_EvTyCo_Idx	AcEventType.EventTypeCode
AcFiTy_FiTyCo_Idx	AcFileType.FileTypeCode
AcJoTy_JoTyCo_Idx	AcJobType.JobTypeCode
AcObOp_ObOpCo_Idx	AcObjectOperation.ObjectOperation Code
AcObTy_ObTyCo_Idx	AcObjectType.ObjectTypeCode
AcOuFo_OuFoCo_Idx	AcOutputFormat.OutputFormatCode
AcReGr_ReGrId_Idx	AcResourceGroup.ResourceGroupId
AcSeTy_SeTyCo_Idx	AcServiceType.ServiceTypeCode
AcSt_StCo_Idx	AcStatus.StatusCode
AcSyCo_SyCoId_Idx	AcSystemComponent.System ComponentId

About the usage and error logging report examples

The BIRT iServer Integration Technology installation contains e.Report and BIRT examples that show how to create reports that extract useful information from a BIRT iServer usage and error log database. For example, the e.Report examples contain report design (.ROD) files for the following reports:

- System Activity
  Displays bar charts showing the hourly and daily activity on a BIRT iServer System.
- Top N Documents Viewed
  Lists the most frequently viewed documents.
- Top N Executables
  Lists the most frequently run documents.
- Top N Users By Activity
  Lists the most active users.
- Top N Users By Logins
  Lists the most frequent user logins.

Figure 11-3 shows a section of the layout for the System Activity report in Actuate e.Report Designer Professional.

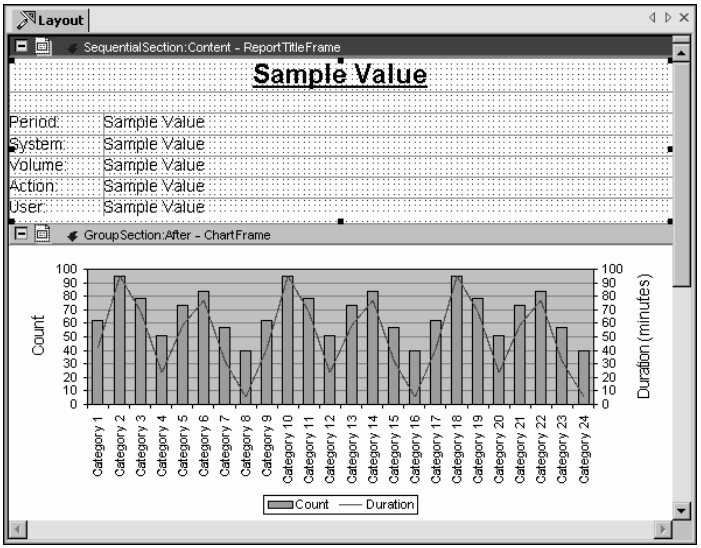

Figure 11-3 Sample layout for the System Activity report

Each report executes Query-By-Example (QBE) code to retrieve the specified data from the usage and error log database. The System Activity report executes the following QBE code to retrieve time stamp information from the log database and populate the chart components with data:

```
SELECT
   "EventTimestamp",
   "StartTimestamp",
   "EndTimestamp"
FROM
   "ActuateLog"."AcEvent"
   JOIN "ActuateLog"."AcEventType" ON
      ("ActuateLog"."AcEvent"."EventTypeCode" =
      "ActuateLog"."AcEventType"."EventTypeCode")
   JOIN "ActuateLog"."AcSystemComponent" ON
      ("ActuateLog"."AcEvent"."SystemComponentId" =
      "ActuateLog"."AcSystemComponent"."SystemComponentId")
WHERE
   ("ActuateLog"."AcEvent"."EventTypeCode" IN (1, 2, 3, 6, 7))
   AND ("ActuateLog"."AcEvent"."EventTimestamp" >=
      :z200_FromDateTime)
   AND ("ActuateLog"."AcEvent"."EventTimestamp" <=
      :z300_ToDateTime)
   AND :?z600_SystemName
   AND :?z700_VolumeName
   AND :?z800_EventTypeDescription
   AND :?z900_UserName
```

The examples folder also contains a library file, UsageAndErrorLogging.rol. To run a usage and error logging report, you must modify the connection class settings in the library to refer to the database where you store the consolidate usage and error log data.

How to modify the library connection class settings

1. To modify the connection class settings, in Actuate e.Report Designer Professional, open the UsageAndErrorLogging.rol file as a non-visual component.
2. From the Actuate e.Report Designer Professional menu, choose View➛Library Structure.
3. In Library Structure, expand UsageAndErrorLogging.rol and select UsageAndErrorLoggingConnection, as shown in Figure 11-4.

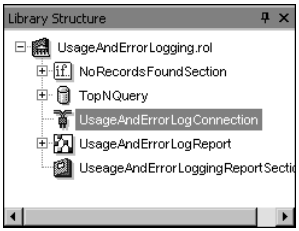

Figure 11-4 Accessing the usage and error log connection settings

4. On UsageAndErrorLogConnection—Properties, select Properties, and modify the following settings:
   - DBInterface specifies the name of the database server that you are using to store usage and error log information.
     Enter the Oracle System Identifier (SID) or name of the Oracle instance. ORCL is the default SID.
   - Host String
     Enter the schema owner. ActuateUser is the default schema owner.
   - Password
     Enter schema owner's password.
   - User Name
     Enter a database user name. ActuateLogUser is the default user.

   Figure 11-5 shows UsageAndErrorLogConnection—Properties.

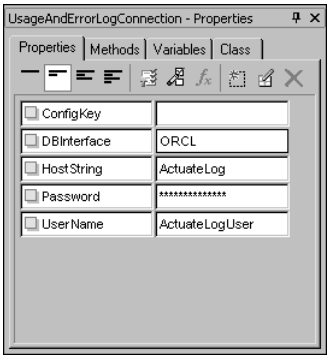

Figure 11-5 Usage and error log connection properties

About Actuate Performance Monitoring Extension

Actuate provides an extension to the Windows system monitoring tool that collects data on BIRT iServer System resources. You can use Actuate Performance Monitoring Extension counters to evaluate resource utilization, diagnose problems, and observe how changes in the system affect behavior.

Use Actuate Performance Monitoring Extension to make a baseline measurement of BIRT iServer System resources. Then use the logging features available through Microsoft Management Console to accumulate statistics over time, as activity and load on the system change, to determine how to make adjustments that improve performance.

BIRT iServer and iServer Integration Technology include an Actuate Performance Monitoring Extension reference implementation. In addition, BIRT iServer Integration Technology provides the customizable code for the implementation.

Installing and using Actuate Performance Monitoring Extension

The shared library for Actuate Performance Monitoring Extension, AcPerfMonExt.dll, contains the BIRT iServer performance counters. You install BIRT iServer through the Windows Registry interface. The Actuate Performance Monitoring Extension is not available on UNIX platforms.

When you install AcPerfMonExt.dll, Windows loads the Actuate performance monitoring extension into the Windows system environment. You can then use Microsoft Management Console to display BIRT iServer System performance counters.

BIRT iServer provides the following files required to install and run the application in $AC_SERVER_HOME/bin:

- AcPerfMonExt.dll
- PerfMonExt.ini
- PerfMonExt.reg
- PerfMonExtDef.h

Actuate Performance Monitoring Extension, including the C and C++ source code, ships with BIRT iServer Integration Technology in $ACTUATE_HOME \ServerIntTech\Performance Monitoring Extension. C or C++ developers can customize the application by adding or removing counters.

The Windows system monitoring tool and Microsoft Management Console interact with the Actuate Performance Monitoring Extension DLL through the Windows Registry interface. To install the Actuate Performance Monitoring Extension, in $AC_SERVER_HOME/bin, perform the following tasks:

- Using a text editor, open PerfMonExt.reg.
  PerfMonExt.reg contains the following settings:

  ```
  REGEDIT4
  [HKEY_LOCAL_MACHINE\SYSTEM\CurrentControlSet\Services
     \__AC_ENCYC_SERVER\Performance]
  "Library" = "C:\\Program Files\\Actuate11\\ServerIntTech
     \\Performance Monitoring Extension\\AcPerfMonExt.dll"
  "Open" = "OpenRSPerformanceData"
  "Collect" = "CollectRSPerformanceData"
  "Close" = "CloseRSPerformanceData"
  "hostname" = "MyMachineName"
  "port" = dword:01F40
  ```

- In the text editor, edit the settings for PerfMonExt.reg by performing the following tasks:
  - In Library, verify the name and location of AcPerfMonExt.dll.
    You must escape all backslashes (\) in the path to the DLL with a second backslash (\).
  - In hostname, replace MyMachineName with the name of your computer.
  - In port, verify the hexadecimal port number for communicating with BIRT iServer.
    The decimal equivalent of 01F40 is 8000. If you use a different port, change the port value. For example, if you use the port 9010, change port value to the hexadecimal equivalent 02332.
- Open a Command Prompt and perform the following tasks:

- Navigate to $AC_SERVER_HOME/bin.
- To load the PerfMonExt.reg settings in Windows Registry, type:

  ```
  regedit PerfMonExt.reg.
  ```

  Regedit creates the registry key HKEY_LOCAL_MACHINE\SYSTEM \CurrentControlSet\Services__AC_ENCYC_SERVER\Performance.
- To run the application, type:

  ```
  lodctr PerfMonExt.ini
  ```

  Lodctr loads the Actuate counters in the Microsoft Management Console environment.

To open Microsoft Management Console, perform the following tasks:

- Choose Start➛Settings➛Control Panel.
- In Control Panel, double-click Administrative Tools.
- In Administrative Tools, double-click Performance.

  Microsoft Management Console appears.

On Microsoft Management Console, to view Actuate counters, perform the following tasks:

- Choose Add as shown in Figure 11-6.

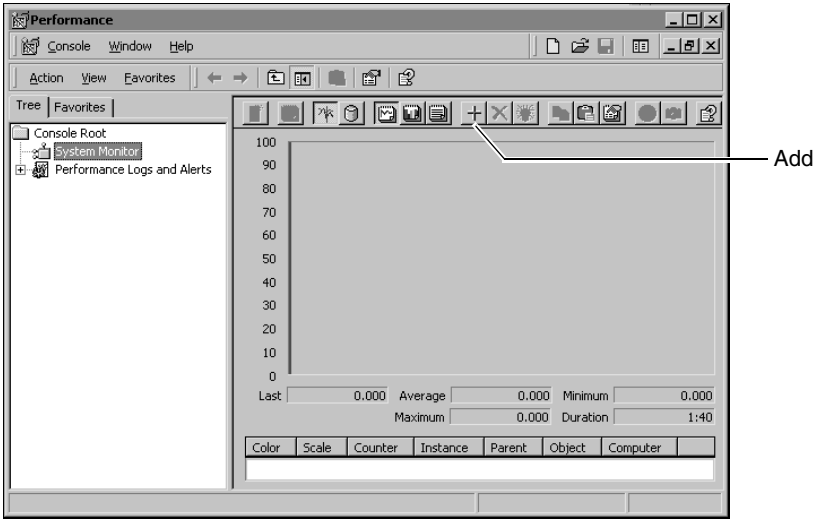

Figure 11-6 Adding counters

- On Add Counters, perform the following tasks:
  - In Performance object, select BIRT iServer 11 from the drop-down list.

- Select All counters as shown in Figure 11-7.
- Choose Add.
- Choose Close.

  Microsoft Management Console appears. System Monitor displays a performance graph and the list of Actuate counters, as shown in Figure 11-8.

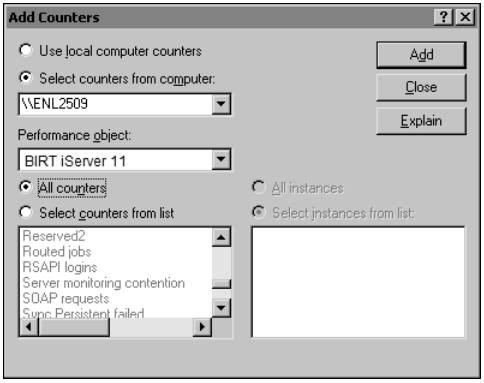

Figure 11-7 Selecting counters to add

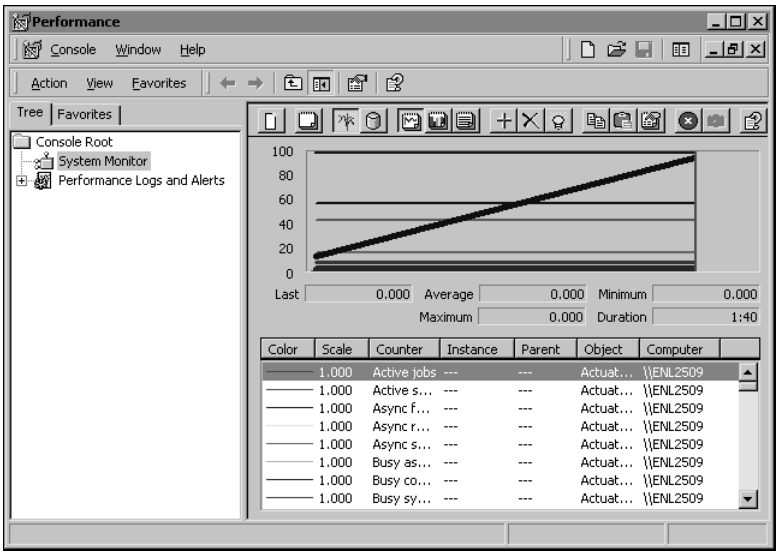

Figure 11-8 Viewing counters

To uninstall the Actuate Performance Monitoring Extension, open a Command Prompt and perform the following tasks:

- To unload the Actuate counters, type:

  ```
  unlodctr __AC_ENCYC_SERVER
  ```

- To open Windows Registry Editor, type:

  ```
  regedit
  ```

In Windows Registry Editor, delete the Performance registry key by performing the following tasks:

- Expand HKEY_LOCAL_MACHINE\SYSTEM \CurrentControlSet\Services__AC_ENCYC_SERVER folder.

- Select the registry key, Performance.
  Right-click and choose Delete as shown in Figure 11-9.

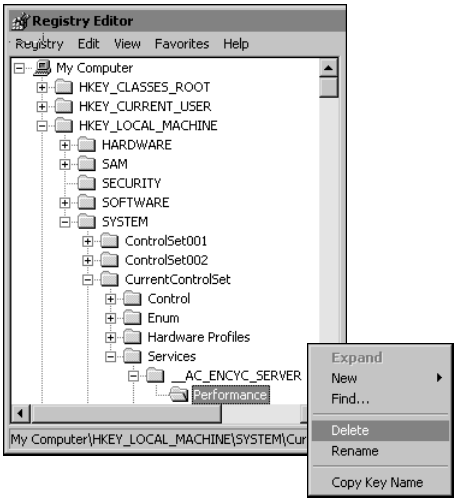

Figure 11-9 Deleting the Performance registry key

Customizing Actuate Performance Monitoring Extension

To customize Actuate Performance Monitoring Extension, you must install BIRT iServer Integration Technology. BIRT iServer Integration Technology provides C and C++ source code that you can modify to select counters to monitor. To modify the source code, you add and remove counters from PerfMonUtil.c and recompile the DLL.

BIRT iServer publishes counters using an XML and SOAP interface. BIRT iServer Integration Technology provides AcSoapInterface.lib, which encapsulates the SOAP interface to BIRT iServer and provides the C and C++ interface to retrieve counter information.

The Actuate Performance Monitoring Extension API provides the following operations for requesting counter information:

- GetAllCounterValues requests values of all counters.
- GetAllCounterValuesResponse returns information about all counters.
- GetCounterValues requests information about specified counters.
- GetCounterValuesResponse returns information about specified counters.
- ResetCounters resets specified counters to zero.

To use this API, construct a SOAP request specifying the Counter ID in the CounterIDList element of the request.

The following example requests information about counters 1001, 1002, and 1003:

```
<GetCounterValues>
   <CounterIDList>
      <CounterId>1001</CounterId>
      <CounterId>1002</CounterId>
      <CounterId>1003</CounterId>
   </CounterIDList>
</GetCounterValues>
```

GetCounterValues returns the counter descriptions and values:

```
<GetCounterValuesResponse>
   <CounterInfoList>
      <CounterInfo>
         <CounterId >1001</CounterId >
         <CounterName>SyncFreeFact</CounterName>
         <CounterValue>5</CounterValue>
      </CounterInfo>
      …
   </CounterInfoList>
</GetCounterValuesResponse>
```

About counters

The tables in this section list the counters that Actuate Performance Monitoring Extension monitors by type. A counter resets when BIRT iServer restarts or receives a reset counter request.

About SOAP endpoint counters

Table 11-24 lists counters that record information about BIRT iServer SOAP requests.

Table 11-24 SOAP endpoint counters

Counter ID	Counter name	Counter description
1	NumberAllRequests	Total number of SOAP requests
2	LastRequest ProcessTime	Processing time for the last SOAP request, in milliseconds
3	TotalRequest ProcessTime	Total processing time for all SOAP requests, in milliseconds
4	DispatchedRequest	Total number of dispatched SOAP requests
5	CurrentRequest	Number of SOAP requests BIRT iServer is currently processing. Indicates the load on BIRT iServer

About report engine counters

Table 11-25 lists counters that record information about report generation requests.

Table 11-25 Report engine counters

Counter ID	Counter name	Counter description
1001	Sync_Free_Fact	Number of idle synchronous Factory instances
1002	Sync_Busy_Fact	Number of busy synchronous Factory instances
1003	Sync_Trans_Success	Number of successful transient requests
1004	Sync_Trans_Failed	Number of failed transient requests
1005	Sync_Pers_Success	Number of successful persistent synchronous requests
1006	Sync_Pers_Failed	Number of failed persistent synchronous requests
1007	Sync_Running	Number of running synchronous requests
1008	Sync_Pending	Number of pending synchronous requests in queue
1009	Sync_Timed_Out	Number of synchronous requests timed out from the queue
1010	Sync_Trans_Space	Space available for transient report storage, in kilobytes
1011	Async_Free_Fact	Number of idle asynchronous Factory instances
1012	Async_Busy_Fact	Number of busy asynchronous Factory instances
1013	Async_Fact_Success	Total number of successful asynchronous requests
1014	Async_Fact_Failed	Number of failed asynchronous requests

Table 11-25 Report engine counters

Counter ID	Counter name	Counter description
1015	Async_Print_Success	Number of successful printing requests
1016	Async_Print_Failed	Number of failed printing requests
1017	Async_Running	Number of running asynchronous requests

About Encyclopedia volume counters

Table 11-26 lists counters that record information about Encyclopedia volume operations.

Table 11-26 Encyclopedia volume counters

Counter ID	Counter name	Counter description
2001	RSAPI_Logins	Number of RSAPI login operations
2002	Encyc_Requests	Total number of SOAP requests received by Encyclopedia volume
2003	Encyc_Available_Space	Reserved for future use
2004	Encyc_Space	Reserved for future use
2005	Pending_Factory_Jobs	Number of pending Factory jobs
2006	Pending_Printing_Jobs	Number of pending printing jobs
2007	Routing_Jobs	Number of jobs routed
2008	Active_Jobs	Number of jobs in process
2009	Completed_Jobs	Number of completed Encyclopedia volume requests

About view counters

Table 11-27 lists counters that record information about report viewing requests.

Table 11-27 View counters

Counter ID	Counter name	Counter description
3001	Requests	Total number of viewing requests
3002	Comp_Requests	Number of completed viewing requests

About cluster framework counters

Table 11-28 lists counters that record information about BIRT iServers in a cluster.

Table 11-28 Cluster framework counters

Counter ID	Counter name	Counter description
4001	Active_Servers	Number of active BIRT iServers in the cluster
4002	Offline_Servers	Number of offline BIRT iServers in the cluster
4003	Busy_Connection	Number of busy client connections for a single node in the connection pool
4004	Idle_Connection	Number of idle client connections for a single node in the connection pool

About Encyclopedia database counters

Table 11-29 lists counters that record information about the BIRT iServer Encyclopedia database subsystem.

Table 11-29 Encyclopedia database counters

Counter ID	Counter name	Counter description
5001	Read_Pages	Number of pages read.
5002	Write_Pages	Number of writes to data pages.
5003	Log_Flushes	Number of times the transaction log was forced to disk. More flushes means fewer transactions lost during a crash at a cost of fewer transactions occurring each second. Used internally.
5004	Log_Size	Total amount of written log file data, in kilobytes. This is a proxy for the amount of add and update activities.
5005	Cache_Hits	Number of times the data was found in the cache.
5006	Cache_Misses	Number of times the data was not found in the cache. Increase BufferPoolSize starting with 100 MB to increase the hit ratio. Size of cache depends on size of Encyclopedia, load, and available memory.
5007	New_Pages	Number of newly created pages to handle inserts into the Encyclopedia database. This number indicates how much the Encyclopedia database is growing. The Encyclopedia volume stores a file object such as ROX or ROI in the file system. The size of file objects does not affect this counter.
5008	Lock_Exclusive	Number of exclusive lock requests. Used internally.
5009	Lock_Shared	Number of shared lock requests. Used internally.

Table 11-29 Encyclopedia database counters

Counter ID	Counter name	Counter description
5010	Lock_Repeated	Number of requests to lock a page that is already locked by another transaction. Used internally.
5011	Lock_Waited	Number of times a thread waits to obtain a lock. Used internally.
5012	Lock_Upgraded	Number of upgraded lock requests. Indicates a read or shared lock was upgraded to an exclusive lock. An upgraded lock can cause a deadlock. Used internally.
5013	Deadlocks	Number of deadlocks that result from locking. The Encyclopedia database automatically retries a deadlock.

About lock contention counters

Table 11-30 lists counters that measure lock contention to BIRT iServer.

Table 11-30 Lock contention counters

Counter ID	Counter name	Counter description
6001	SyncEvent	Synchronous event lock contention. Used internally.
6002	TrnStoreMgr	Transient store manager lock contention. Used internally.
6003	TrnReqInfo	Transient report information lock contention. Used internally.
6004	ErrorLog	Error logging framework lock contention. Used internally.
6005	UsageLog	Usage logging framework lock contention. Used internally.
6006	ServerMonitor	Server monitoring framework lock contention. Used internally.
6007	OpServerProcess	Operation server process contention. Used internally.
6008	MutexCounters	Mutex lock contention. Mutex (mutual exclusion object) is a semaphore locking mechanism that allows multiple threads to access a resource such as a file in series. Used internally.
6009	SyncJobsTable	Synchronous jobs table contention. Used internally.

About memory usage counters

Table 11-31 lists counters that record information about memory usage in BIRT iServer.

Table 11-31 Memory usage counters

Counter ID	Counter name	Counter description
7001	Free_16Bytes	Memory free page size 16 bytes
7002	Free_32Bytes	Memory free page size 32 bytes
7003	Free_64Bytes	Memory free page size 64 bytes
7004	Free_128Bytes	Memory free page size 128 bytes
7005	Free_256Bytes	Memory free page size 256 bytes
7006	Free_512Bytes	Memory free page size 512 bytes
7007	Free_1KBytes	Memory free page size 1 kilobyte
7008	Hit_16Bytes	Memory hit page size 16 bytes
7009	Hit_32Bytes	Memory hit page size 32 bytes
7010	Hit_64Bytes	Memory hit page size 64 bytes
7011	Hit_128Bytes	Memory hit page size 128 bytes
7012	Hit_256Bytes	Memory hit page size 256 bytes
7013	Hit_512Bytes	Memory hit page size 512 bytes
7014	Hit_1KBytes	Memory hit page size 1 kilobyte
7015	Page_16Bytes	Memory allocated in page size 16 bytes
7016	Page_32Bytes	Memory allocated in page size 32 bytes
7017	Page_64Bytes	Memory allocated in page size 64 bytes
7018	Page_128Bytes	Memory allocated in page size 128 bytes
7019	Page_256Bytes	Memory allocated in page size 256 bytes
7020	Page_512Bytes	Memory allocated in page size 512 bytes
7021	Page_1KBytes	Memory allocated in page size 1 kilobyte
7022	Oversize	Amount of oversize memory allocated
7023	HeapFree	Amount of memory in heap free

About synchronous reporting manager cache counters

Table 11-32 lists counters that record information about synchronous reporting manager in BIRT iServer.

Table 11-32 Synchronous reporting manager cache counters

Counter ID	Counter name	Counter description
9001	Number_Of_Caches	Number of caches
9011	Size_Entry	Synchronous reporting manager cache size entry
9012	Size_Limit	Synchronous reporting manager cache size limit in kilobytes
9013	Capacity_Entry	Synchronous reporting manager cache capacity entry
9014	Capacity_Limit	Synchronous reporting manager cache capacity limit in kilobytes
9015	Used_Entry	Synchronous reporting manager cache used entry
9016	Used_KB	Synchronous reporting manager cache used in kilobytes

About database buffer pool cache counters

Table 11-33 lists counters that record information about the database buffer pool in BIRT iServer.

Table 11-33 Database buffer pool cache counters

Counter ID	Counter name	Counter description
9021	Size_Entry	DB buffer pool cache size entry
9022	Size_Limit	DB buffer pool cache size limit in kilobytes
9023	Capacity_Entry	DB buffer pool cache capacity entry
9024	Capacity_Limit	DB buffer pool cache capacity limit in kilobytes
9025	Used_Entry	DB buffer pool cache used entry
9026	Used_KB	DB buffer pool cache used in kilobytes

Chapter

12

Actuate logging and monitoring functions

This chapter provides an alphabetical list of the functions of the Actuate Usage Logging, Error Logging, and Performance Monitoring Extensions. It contains the following topics:

- About Usage Logging Extension functions
- About Error Logging Extension functions
- About the Performance Monitoring API

About Usage Logging Extension functions

The Usage Logging Extension supports retrieving usage information that BIRT iServer captures and writing that information to a log file.

AcIsThreadSafe

Specifies whether the Usage Logging Extension is multithread-safe. If the extension is not multithread-safe, AcIsThreadSafe must return False and BIRT iServer serializes all calls to the extension.

Syntax

```
USAGELOGEXT_API int AcIsThreadSafe ( );
```

AcLogUsage

Called by BIRT iServer for every transaction it logs.

Syntax

```
USAGELOGEXT_API void AcLogUsage (UsageInformation* usageinfo);
```

Parameters

usageInfo
The usage information that BIRT iServer captures.

AcStartUsageLog

Specifies the path to the usage log file and the BIRT iServer to monitor. For example, if you write the usage information to a database, AcStartUsageLog provides a placeholder to open the database connection.

The server and cluster parameters are WideChar pointers. The function uses the data type WideChar for Unicode compatibility. Actuate pushes out all string data in UCS-2 format.

Syntax

```
USAGELOGEXT_API int  AcStartUsageLog (const char* serverHome, const
    WideChar* server, const WideChar* cluster);
```

Parameters

serverHome
The path to the usage log file. The path must be $AC_SERVER_HOME/bin.

server
The name of the BIRT iServer to monitor.

cluster
The name of the cluster of which the BIRT iServer is a member.

AcStopUsageLog

Stops logging usage information and releases resources.

Syntax USAGELOGEXT_API void AcStopUsageLog ( );

About Error Logging Extension functions

This section provides an alphabetical list of the Error Logging Extension functions. Each entry includes a general description of the function, its syntax, and a description of its parameters.

The Error Logging Extension supports retrieving error information that BIRT iServer captures and writing that information to a log file.

AcIsThreadSafe

Indicates whether the Error Logging Extension is multithread-safe. If the extension is not multithread-safe, AcIsThreadSafe must return False and BIRT iServer serializes all calls to the extension.

Syntax ERRORLOGEXT_API int AcIsThreadSafe ( );

AcLogError

Called by BIRT iServer for every error it encounters.

Syntax ERRORLOGEXT_API void AcLogError (ErrorInformation* errorInfo);

Parameters

errorInfo
The error information that BIRT iServer captures.

AcStartErrorLog

Specifies the path to the error log file and the BIRT iServer to monitor. For example, if you write the error information to a database, AcStartErrorLog provides a placeholder to open the database connection.

The server and cluster parameters are WideChar pointers. The function uses the data type WideChar for Unicode compatibility. Actuate pushes out all string data in UCS-2 format.

Syntax ERRORLOGEXT_API int AcStartErrorLog (const char* serverHome, const WideChar* server, const WideChar* cluster);

Parameters

serverHome
The path to the error log file. The path must be $AC_SERVER_HOME/bin.

server
The name of the BIRT iServer to monitor.

cluster
The name of the cluster of which the BIRT iServer is a member.

AcStopErrorLog

Stops logging error information and releases resources.

Syntax ERRORLOGEXT_API void AcStopErrorLog ( );

About the Performance Monitoring API

This section provides an alphabetical list of the Performance Monitoring Extension API operations and data types. Each entry includes a general description of the operation, its schema, and a description of its elements.

The Performance Monitoring Extension supports monitoring various server counters by Windows perfmon. These functions are found within the WSDL.

ArrayOfCounterInfo

A complex data type that represents an array of CounterInformation objects.

Schema

```
<xsd:complexType name="ArrayOfCounterInfo">
   <xsd:sequence>
      <xsd:element name="CounterInfo" type="typens:CounterInfo"
         minOccurs="0" maxOccurs="unbounded"/>
   </xsd:sequence>
</xsd:complexType>
```

CounterInfo

A complex data type that describes a counter.

Schema

```
<xsd:complexType name="CounterInfo">
   <xsd:sequence>
      <xsd:element name="CounterId" type="xsd:long"/>
      <xsd:element name="CounterName" type="xsd:string"/>
      <xsd:element name="CounterValue" type="xsd:long"/>
   </xsd:sequence>
</xsd:complexType>
```

Elements

CounterId
The ID of the counter.

CounterName
The name of the counter.

CounterValue
The value of the counter.

GetAllCounterValues

Retrieves the values of all counters.

Request schema

```
<xsd:complexType name="GetAllCounterValues"/>
```

Response schema

```
<xsd:complexType name="GetAllCounterValuesResponse">
<xsd:complexType>
   <xsd:sequence>
      <xsd:element name="CounterInfoList"
         type="typens:ArrayOfCounterInfo"/>
   </xsd:sequence>
</xsd:complexType>
```

Response elements

CounterInfoList
The values of all counters.

GetCounterValues

Retrieves the IDs, names, and values of specific counters.

Request schema

```
<xsd:complexType name="GetCounterValues">
   <xsd:sequence>
      <xsd:element name="CounterIDList" type="typens:ArrayOfLong"/>
   </xsd:sequence>
</xsd:complexType>
```

Request elements

CounterIDList
The list of counters for which to retrieve information.

Response schema

```
<xsd:complexType name="GetCounterValuesResponse">
   <xsd:sequence>
      <xsd:element name="CounterInfoList"
         type="typens:ArrayOfCounterInfo"/>
   </xsd:sequence>
</xsd:complexType>
```

Response elements

CounterInfoList
The IDs, names, and values of the specified counters.

ResetCounters

Resets the values of the specified logging and monitoring counters to zero.

Request schema

```
<xsd:complexType name="ResetCounters">
   <xsd:sequence>
      <xsd:element name="CounterIDList" type="typens:ArrayOfLong"/>
   </xsd:sequence>
</xsd:complexType>
```

Request elements

CounterIDList
The list of counters to reset.

Response schema

```
<xsd:element name="ResetCountersResponse"/>
```

Chapter

13

Aging and archiving Encyclopedia volume items

This chapter contains the following topics:

- Automating report archival and removal
- Aging and archiving an item using the Actuate Information Delivery API

Automating report archival and removal

Reports, folders, and other items accumulate in an Encyclopedia volume unless you archive or remove them. Archiving is the process of placing a file in an archive directory. Aging an item means setting a limit on the length of time to retain the file before deleting it from the volume. When you set aging rules, you indicate whether to archive the item before deleting it. Expiring a file means removing it from the volume. When a file expires, the system either deletes it or places it in the archive directory, depending on the file's archive rules.

The Actuate Information Delivery API supports automating the aging and archiving processes for Encyclopedia volume items. Autoarchiving is the process of archiving and removing items on a specific schedule, using the archive rules that you create.

You set autoarchive rules when you create or update report files, folders, and job completion notices. For example, you can create a rule that removes all quarterly sales reports older than one year, or a rule that removes all successful job notifications older than ten days, or one that archives the oldest instance of a daily stock report when the volume contains more than five newer instances.

The Encyclopedia volume administrator creates the archive to hold the archived files. Each volume has a single archive.

About Actuate Online Archive Driver

Archiving files and folders requires installation of an archive driver. You configure a single archive driver for an Encyclopedia volume. When BIRT iServer archives a file in an Encyclopedia volume, BIRT iServer creates a copy of the file, then sends the copy to the Actuate archive driver. The driver creates an archive that retains the same folder structure as the Encyclopedia volume.

Actuate Online Archive Driver is the Java application that copies an archive to another Encyclopedia volume. This application copies expired Encyclopedia volume files to the second Encyclopedia volume that serves as a file archive. The archive created by the Online Archive Driver remains accessible as a folder in BIRT iServer System.

The Actuate Online Archive Driver IDAPI provides a SOAP-based interface between BIRT iServer and external archive software. Actuate iServer Release 8 and later provides a reference implementation of Actuate Online Archive Driver in the Online Archive Driver folder of BIRT iServer Integration Technology.

Using this application requires the Online Archive Option for BIRT iServer System. You must have this option installed on BIRT iServer to use the driver or the source code.

Configuring the Online Archive Driver

The Online Archive Driver implementation supports retaining file attributes in an archive. In the Java application's XML configuration file, onlinearchive.cfg, you can specify that an archive retains its file attributes using the following settings:

- RetainTimestamp

  Specifies whether to retain the time stamp. The default is False.

- RetainOwner

  Specifies whether to retain the owner. The default is False.

  The online archive application attempts to match any user or role in the file's access control list (ACL) with the same name in the archive Encyclopedia volume.

- RetainPermission

  Specifies whether to preserve the permissions in the access control list (ACL). The default is False.

  If you do not archive the access control list (ACL) of a file, the file owner has full access. If the user or role does not exist in the archive Encyclopedia volume, you can configure the application to create a user or role with the same name.

- CopyDependOnFile

  Specifies whether to copy the dependent files for the archive file. The default is True.

  If the online archive application archives a file that has a dependency on another file, the application archives both files. The application does not delete the file on which the archived file has a dependency unless the application is archiving both files.

In the configuration file, you can also specify the following options:

- CreateUserRole

  Specifies whether to create missing user or roles in the target volume in order to retain the owner or permissions. The default is True.

  The online archive application does not enable a login for a user or role it creates.

- ArchiveRoot

  Specifies the root encyc folder for all archived files. The default is /.

- CreateArchiveSubFolder

  Specifies whether to create the archive as a subfolder under the root folder that contains a time stamp. The default is True.

The online archive application creates a folder in the archive Encyclopedia volume and places the files from the archive session into the subfolder. Within the archive, the archive driver creates a folder hierarchy identical to the one in the Encyclopedia volume and places the files in the hierarchy.

The archive root folder name contains the start date and time of the archive session in the following format:

```
YYYY_mm_dd.hh_mm_ss
```

For example, if you optionally specify the name of the root archive folder in the configuration files as /MyArchive and the archive sessions starts at 6:00 A.M. May 31, 2008, the application copies the archived files to the following folder:

```
/MyArchive2008_05_31.06_00_00
```

If you set CreateArchiveSubFolder to False, the online archive application suppresses the creation of the time stamp folder and does not create the archive as a subfolder. The archive volume mimics the folder structure of the production volume. The CreateArchiveSubFolder option preserves the version numbers of the archived files by placing the archive folder in a separate root folder that has a time stamp.

- LogLevel
  Specifies the level of detail in log file. Valid values are Summary, Detail, and Trace. The default is Summary.

BIRT iServer installs an onlinearchive.cfg file in the following location:

```
$AC_SERVER_HOME\Actuate11\iServer\etc
```

Actuate Server Integration Technology also provides a copy of onlinearchive.cfg in the Online Archive Driver folder. The following example shows the onlinearchive.cfg code:

```
<?xml version="1.0" encoding="UTF-8"?>
<archiveconfig>
   <!-- ACTUATE ONLINE ARCHIVE DRIVER CONFIGURATION FILE     -->
   <!-- See README.html in the onlinearchive directory in    -->
   <!-- Server Integration Technology installation for usage -->
   <!-- and licensing information                            -->

   <!--TargetServer, TargetSOAPPort: [Required]              -->
   <!--    Name or IP of server and port for connecting to   -->
   <!--    the SOAP dispatcher service of the target volume  -->
   <TargetServer>127.0.0.1</TargetServer>
   <TargetSOAPPort>8000</TargetSOAPPort>
   <!--ArchiveVolume: [Required]                             -->
   <!--    Name of target volume to copy archived files to   -->
   <ArchiveVolume>DefaultVolume</ArchiveVolume>
```

```
  <!--AdminUser, AdminPassword: [Required]                  -->
  <!--    Name and password of a user in the target volume  -->
  <!--    that belongs to the Administrator role            -->
  <AdminUser>administrator</AdminUser>
  <AdminPassword></AdminPassword>

  <!--RetainTimestamp: [Optional, default: false]           -->
  <!--    Whether timestamp of archived file is preserved   -->
  <RetainTimestamp>false</RetainTimestamp>

  <!--RetainOwner: [Optional, default: false]               -->
  <!--    Whether Owner of archived file is preserved       -->
  <RetainOwner>false</RetainOwner>

  <!--RetainPermission: [Optional, default: false]          -->
  <!--    Whether Permission (ACL) of archived file is      -->
  <!--    preserved                                         -->
  <RetainPermission>false</RetainPermission>

  <!--CopyDependOnFile: [Optional, default: true]           -->
  <!--    Whether files depended on by archived file are    -->
  <!--    copied                                            -->
  <CopyDependOnFile>true</CopyDependOnFile>

  <!--CreateUserRole: [Optional, default: true]             -->
  <!--    Whether to create missing user or roles in target -->
  <!--    volume in order to retain Owner or Permissions    -->
  <CreateUserRole>true</CreateUserRole>

  <!--ArchiveRoot: [Optional, default: /]                   -->
  <!--    Root encyc folder for all archived files          -->
  <ArchiveRoot>/</ArchiveRoot>

  <!--CreateArchiveSubFolder: [Optional, default: true]     -->
  <!--    Whether to create a timestamp dependent subfolder -->
  <!--    under ArchiveRoot for each archive session        -->
  <CreateArchiveSubFolder>true</CreateArchiveSubFolder>

  <!-- LogLevel: [Optional, default: Summary]               -->
  <!--    Leve of detail in log file. Valid values are:     -->
  <!--    Summary, Detail and Trace -->
  <LogLevel>Summary</LogLevel>

</archiveconfig>
```

How to install an online archive configuration file

1. Copy and rename the $AC_SERVER_HOME\Actuate11\iServer\etc\onlinearchive.cfg file to contain the name of the Encyclopedia volume, using the following format:

   ```
   onlinearchive_<volume>.cfg
   ```

The configuration file name looks like the following example:

```
onlinearchive_enl2509.cfg
```

2 Edit the online archive configuration file by performing the following tasks:

   1 Navigate to the following code:

```
<!-- ArchiveVolume: [Required] -->
<!-- Name of target volume to copy archived files to -->
<ArchiveVolume>DefaultVolume</ArchiveVolume>
```

   2 Change the parameter for <ArchiveVolume> from DefaultVolume to the name of the Encyclopedia volume.

   The code now looks like the following example:

```
<!-- ArchiveVolume: [Required] -->
<!-- Name of target volume to copy archived files to -->
<ArchiveVolume>enl2509</ArchiveVolume>
```

   3 Save and close onlinearchive_<volume>.cfg.

To complete the installation, you must configure the online archive service provider in the Encyclopedia volume. BIRT iServer installs a shell script for starting the online archive service in the following location:

```
$AC_SERVER_HOME\Actuate11\iServer\bin
```

In a Windows installation, the name of the script is aconlinearchive.bat. In a UNIX or Linux installation, the name of the script is aconlinearchive.sh. These scripts configure the Java application run-time environment for the archive driver by performing the following tasks:

- Specifies the Java Runtime Environment (JRE) by setting the environment variable, ARCHIVE_DRIVER_JRE, to the BIRT iServer default JRE specified by $AC_JRE_HOME.

  You can use a different JRE, but this version is the only JRE version which has been tested.

- Specifies the class path for Online Archive Driver JAR file by setting the environment variable, DRIVER_JAR_PATH to %AC_SERVER_HOME% \drivers.

  BIRT iServer installs aconlinearchive.jar, the application library, and aconlinearchiveDEP.jar, the dependent library files, in $AC_SERVER_HOME \drivers.

- Starts the online archive service by making a call to execute the class, com.actuate.onlinearchivedriver.Main.

How to configure the Volume archive service provider

1 Log into the iServer Configuration Console and choose Advanced View.

2 From the side menu, choose System Volumes.

3 On Volumes, select the icon to the left of the Encyclopedia volume. Choose Properties.

4 On Volume—Properties, perform the following tasks:

5 In Volume archive service provider, select Use command line. Type:

```
aconlinearchive.bat
```

Volume—Properties looks like Figure 13-1.

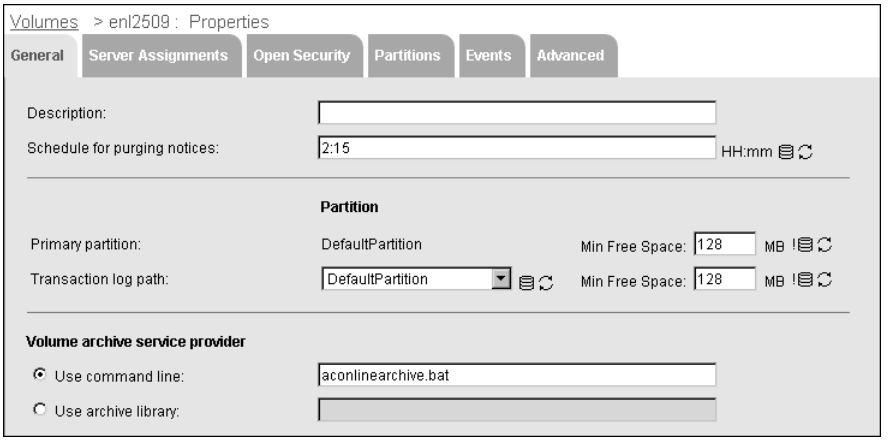

Figure 13-1 Configuring the Volume archive service provider

Choose OK.

6 Log out of iServer Configuration Console.

Understanding aging and archiving rules for items in an Encyclopedia volume

You can set an expiration policy for a folder that affects all items in that folder. Alternatively, you can set the policy for an individual report.

An item ages and expires according to a set of rules you apply to the item itself, to the folder that contains it, or to the entire Encyclopedia volume. The following aging and archiving rules apply to Encyclopedia volume items:

- Volume archiving rules apply to every folder in the volume, including subfolders. By default, the Encyclopedia volume archives files and folders once a day. The system administrator can change this default setting to specify when and how often to archive files and folders.
- Folder archiving rules apply to the entire hierarchy of reports in the folder, unless subfolders also have age or date properties.

- Subfolder archiving rules supersede age or date properties of folders higher in the hierarchy.
- A rule for a file overrides a rule inherited from the folder that contains the file.
- Folder aging and archiving properties specify the file type to which those properties apply. You can specify file types explicitly or use default values.
- The aging process does not remove folders during archival, only their contents.
- Archive rules determine whether the system ages dependent files along with the original files.

Understanding precedence in archiving

The autoarchive rule for a file takes precedence, if the file has a rule. If a file does not have an autoarchive rule, Actuate applies the next available autoarchive rule in the following order of precedence:

- The file's autoarchive rules take precedence.
- If the file has no autoarchive rules, the system applies the rules for the file type. You set file type rules for at the folder level, so the system looks for the file type rules in the file's folder hierarchy.
- If there are no rules for a file type in the file's folder hierarchy, the system applies the general autoarchive rule for folders in the file's folder hierarchy.
- If there are no general autoarchive rules for folders in the file's folder hierarchy, the system applies the Encyclopedia volume's settings.

Aging and archiving an item using the Actuate Information Delivery API

Archiving and aging rules apply to Actuate reports, third-party reports, folders, and job notifications. Using the Actuate Information Delivery API, an application developer can create, update, view, and remove autoarchive rules for these items.

A developer also can set autoarchive rules for all the files in an Encyclopedia volume or for a particular file or file type.

A user running the application must have delete and write privileges to modify autoarchive settings.

Setting and updating autoarchive rules using IDAPI

Use the following Actuate Information Delivery API operations to set autoarchive rules programmatically:

- SubmitJob and UpdateFile

  To set archive rules when you use SubmitJob, set one or more elements of ArchiveRule.

  To add or update autoarchive rules for an existing file or folder, use the SetArchiveRules, AddArchiveRules, or RemoveArchiveRules suboperations of UpdateFile. Each of these suboperations has an ArchiveRule element.

  You can set the following elements of ArchiveRule, described in Table 13-1.

Table 13-1 ArchiveRule elements

Element	Description
ArchiveOnExpiration	True if you want to archive the file before the system deletes it.
ExpirationAge	The number of minutes before expiration. If you set ExpirationAge, you cannot set ExpirationTime.
ExpirationTime	The time of day for the expiration. If you set ExpirationTime, you cannot set ExpirationAge.
ExpireDependentFiles	True if dependent files expire with the original file.
FileType	The file type to which the rule applies. To set the rule for a folder and its subfolders, specify Directory.
InheritedFrom	The source of an inherited rule.
IsInherited	True if the item inherits archiving rules. If this element is True, the system ignores all other elements except FileType.
NeverExpire	True if the file does not have an expiration date or expiration age. If this element is True, the system ignores ExpirationAge and ExpirationTime.

- UpdateJobSchedule

  Use the SetParameters suboperation to change the autoarchive rules for the job output file. You can change the following archive-related elements of SetParameters, described in Table 13-2.

Table 13-2 Archive-related elements of SetParameters

Element	Description
ArchiveOnExpire	True if you want to archive the file before the system deletes it
ArchiveRuleInherited	Indicates whether the job output file inherits archive rules

(continues)

Table 13-2 Archive-related elements of SetParameters (continued)

Element	Description
ExpirationAge	The number of minutes before the output file expires
ExpirationDate	The date on which the output file expires
NeverExpire	True if the file does not have an expiration date or expiration age

- UpdateVolumeProperties
  Use the SetAutoArchiveSchedules suboperation to update the autoarchive schedule details for the volume.

Setting default autoarchive rules when creating a folder

Use CreateFolder followed by UpdateFile to set autoarchive rules for a folder when you create the folder. In UpdateFile, set the ArchiveRule element of SetArchiveRules. In the following example, FileType $$$ indicates that the file is a folder. The autoarchive rules you set in the request apply to all file types in the folder except those that already have archive rules. When NeverExpire is False, you must set either an expiration date or an expiration age. Express the expiration age in minutes.

```
<SOAP-ENV:Body>
   <Administrate>
      <Transaction>
         <CreateFolder>
            <FolderName>/Inventory/Timeshares</FolderName>
            <IgnoreDup>false</IgnoreDup>
         </CreateFolder>
         <UpdateFile>
            <SetArchiveRules>
               <ArchiveRule>
                  <FileType>$$$</FileType>
                  <NeverExpire>false</NeverExpire>
                  <ArchiveOnExpiration>true</ArchiveOnExpiration>
                   <ExpirationAge>14400</ExpirationAge>
                  <IsInherited>false</IsInherited>
               </ArchiveRule>
            </SetArchiveRules>
            <Name>/Inventory/Timeshares</Name>
         </UpdateFile>
      </Transaction>
   </Administrate>
</SOAP-ENV:Body>
```

As with other Administrate operations, the response to this request is empty when the operation succeeds. In the event of failure, the response is an error message.

Setting autoarchive rules when creating a job schedule

Set properties of the ArchiveRule element, as shown in the following example, to set autoarchive rules for a report when you create a schedule for the report. If you set an expiration age, express the age in minutes. For example, to set an expiration age of 30 days, express the age as 43200 minutes. If you want the file to inherit archive rules from a file or folder, set IsInherited to True and use InheritedFrom to show the path to the file or folder from which the file inherits its rules.

```
<SOAP-ENV:Body>
   <SubmitJob>
      <JobName>pie</JobName>
      <Priority>500</Priority>
      <InputFileName>/Inventory/pie.rox</InputFileName>
      <RunLatestVersion>true</RunLatestVersion>
      <RequestedOutputFile>
         <Name>/Inventory/pie.roi</Name>
         <ReplaceExisting>false</ReplaceExisting>
         <ArchiveRule>
            <FileType>roi</FileType>
            <ArchiveOnExpiration>true</ArchiveOnExpiration>
            <ExpirationAge>43200</ExpirationAge>
            <IsInherited>false</IsInherited>
         </ArchiveRule>
         …
   </SubmitJob>
</SOAP-ENV:Body>
```

The response to this operation is the JobId if the job succeeds. If the job fails, an error message appears.

Updating autoarchive rules for a file or folder

Use UpdateFile and modify the ArchiveRule property of the SetArchiveRules element to update the autoarchive rules for a file or folder. Express the expiration age in minutes.

```
<SOAP-ENV:Body>
   <Administrate>
      <UpdateFile>
         <SetArchiveRules>
            <ArchiveRule>
               <FileType>ROX</FileType>
               <NeverExpire>false</NeverExpire>
               <ArchiveOnExpiration>true</ArchiveOnExpiration>
```

```
            <ExpirationAge>28800</ExpirationAge>
         </ArchiveRule>
      </SetArchiveRules>
      <IdList>
         <String>4</String>
      </IdList>
   </UpdateFile>
</Administrate>
</SOAP-ENV:Body>
```

As with other Administrate operations, the response to this request is empty when the operation succeeds. In the event of failure, the response is an error message.

Updating autoarchive rules for a job output file

Use UpdateJobSchedule to change autoarchive rules for the output of a job when you update the job schedule. For example, you can change rules about using the inherited archive policy for the document's file type, about deleting the output, or about archiving the document before deletion. The following example updates the autoarchive rules for inheritance, expiration age, and whether to archive the file at expiration:

```
<SOAP-ENV:Body>
   <Administrate>
      <UpdateJobSchedule>
         <SetAttributes>
            <RunLatestVersion>false</RunLatestVersion>
            <InputFileName>/detail.rox; 2</InputFileName>
         </SetAttributes>
         <SetParameters>
            <OutputMaxVersion>0</OutputMaxVersion>
            <RetryOption>VolumeDefault</RetryOption>
            <ArchiveRuleInherited>false</ArchiveRuleInherited>
            <ExpirationAge>86400</ExpirationAge>
            <ArchiveOnExpire>true</ArchiveOnExpire>
         </SetParameters>
         <SetParameterValues>
            <ParameterValue>
               <Group>Office Parameters</Group>
               <Name>DataSource::offices_city</Name>
            </ParameterValue>
            …
         </SetParameterValues>
         <Id>13</Id>
      </UpdateJobSchedule>
   </Administrate>
</SOAP-ENV:Body>
```

As with other Administrate operations, the response to this request is empty when the operation succeeds. In the event of failure, the response is an error message.

Updating the autoarchive rules for a file type in a folder or volume

Use UpdateFile to change the default autoarchive rules for a file type in a folder or volume. Indicate the file type in the ArchiveRule element. In the NameList element, specify the folder to which the new rules apply. In the following example, the new rules apply to all files with the .rpt extension in the Inventory folder, unless individual files of that type already have autoarchive rules. Express the expiration age in minutes.

```
<SOAP-ENV:Body>
   <Administrate>
      <UpdateFile>
         <SetArchiveRules>
            <ArchiveRule>
               <FileType>rpt</FileType>
               <NeverExpire>false</NeverExpire>
               <ArchiveOnExpiration>true</ArchiveOnExpiration>
               <ExpirationAge>2880</ExpirationAge>
            </ArchiveRule>
         </SetArchiveRules>
         <NameList>
            <String>/Inventory</String>
         </NameList>
      </UpdateFile>
   </Administrate>
</SOAP-ENV:Body>
```

As with other Administrate operations, the response to this request is empty when the operation succeeds. If the request fails, the response is an error message.

Setting an autoarchive schedule when updating an Encyclopedia volume

Use UpdateVolumeProperties and change properties of SetAutoArchiveSchedules to change an Encyclopedia volume's autoarchive schedule.

```
<SOAP-ENV:Body>
   <Administrate>
      <UpdateVolumeProperties>
         <SetAutoArchiveSchedules>
```

```
            <SetSchedules>
               <TimeZoneName>PST</TimeZoneName>
               <ScheduleDetails>
                  <JobScheduleDetail>
                     <ScheduleType>Daily</ScheduleType>
                     <ScheduleStartDate>2008-12-12
                        </ScheduleStartDate>
                     <ScheduleEndDate>2008-12-28</ScheduleEndDate>
                     <DatesExcluded>
                        <Date>2008-12-25</Date>
                     </DatesExcluded>
                     <DurationInSeconds>1800</DurationInSeconds>
                     <Daily>
                        <FrequencyInDays>1</FrequencyInDays>
                        <OnceADay>07:00:00</OnceADay>
                     </Daily>
                  </JobScheduleDetail>
               </ScheduleDetails>
            </SetSchedules>
         </SetAutoArchiveSchedules>
      </UpdateVolumeProperties>
   </Administrate>
</SOAP-ENV:Body>
```

As with other Administrate operations, the response to this request is empty when the operation succeeds. If the request fails, the response is an error message.

Starting an archive process for an Encyclopedia volume

Use ExecuteVolumeCommand and set the StartArchive command to start archiving the items in an Encyclopedia volume.

```
<SOAP-ENV:Body>
   <ExecuteVolumeCommand>
      <VolumeName>Monaco</VolumeName>
      <Command>StartArchive</Command>
   </ExecuteVolumeCommand>
</SOAP-ENV:Body>
```

The response returns a status of the command.

```
<SOAP-ENV:Body>
   <ExecuteVolumeCommandResponse>
      <Status>Succeeded</Status>
   </ExecuteVolumeCommandResponse>
</SOAP-ENV:Body>
```

Retrieving autoarchive rules for a file or folder

Use GetFileDetails to retrieve the autoarchive rules for a file or folder. Identify the file, then specify ArchiveRules as a string in ResultDef, as shown in the following example:

```
<SOAP-ENV:Body>
   <GetFileDetails>
      <FileId>4</FileId>
      <ResultDef>
         <String>ArchiveRules</String>
      </ResultDef>
   </GetFileDetails>
</SOAP-ENV:Body>
```

The response returns identifying information about the file, followed by the autoarchive rules for the file and the folder that contains it. In the following example, the file type $$$ indicates that the rule applies to a folder. The expiration age is in minutes.

```
<SOAP-ENV:Body>
   <GetFileDetailsResponse>
      <File>
         <Id>4</Id>
         <Name>/Inventory/pie.rox</Name>
         <FileType>ROX</FileType>
         <TimeStamp>2008-12-11T22:12:17</TimeStamp>
         <Owner>Administrator</Owner>
         <UserPermissions>VSRWEDG</UserPermissions>
         <Version>1</Version>
         <PageCount>12</PageCount>
         <Size>74240</Size>
      </File>
      <ArchiveRules>
         <ArchiveRule>
            <FileType>ROX</FileType>
            <NeverExpire>false</NeverExpire>
            <ExpirationAge>23040</ExpirationAge>
            <ExpireDependentFiles>false</ExpireDependentFiles>
            <ArchiveOnExpiration>true</ArchiveOnExpiration>
            <IsInherited>false</IsInherited>
         </ArchiveRule>
         <ArchiveRule>
            <FileType>$$$</FileType>
            <NeverExpire>false</NeverExpire>
            <ExpirationAge>23040</ExpirationAge>
```

```
            <ExpireDependentFiles>false</ExpireDependentFiles>
            <ArchiveOnExpiration>true</ArchiveOnExpiration>
            <IsInherited>true</IsInherited>
            <InheritedFrom>/Inventory</InheritedFrom>
         </ArchiveRule>
      </ArchiveRules>
   </GetFileDetailsResponse>
</SOAP-ENV:Body>
```

Setting job notice expiration for all users

Use the DefaultSuccessNoticeExpiration and DefaultFailureNoticeExpiration elements of Volume to set the job notice expiration attribute for all users whose notice expiration is not set or is set to 0. You can set the expiration time for a success notice or a failure notice when you create or update a volume. Express the expiration time in minutes.

In the following example, the volume properties are updated to set the default success notices to expire in three days and default failure notices to never expire. These expiration rules apply to all users whose respective notice expiration is not set or is set to 0.

```
<SOAP-ENV:Body>
   <Administrate>
      <UpdateVolumeProperties>
         <SetAttributes>
            <DefaultSuccessNoticeExpiration>4320
            </DefaultSuccessNoticeExpiration>
            <DefaultFailureNoticeExpiration>0
            </DefaultFailureNoticeExpiration>
         </SetAttributes>
      </UpdateVolumeProperties>
   </Administrate>
</SOAP-ENV:Body>
```

Setting job notice expiration for a user

Use the User element of CreateUser to set the user's job notice expiration attribute. You can set the expiration time for a success notice or a failure notice when you create or update a user. Express the expiration time in minutes. If you do not set the expiration time or set it to 0, the value specified for all users applies. To set the user's notices to never expire, set the value to 0xffffffff. In the following example, the user's success notices expire in three days and failure notices never expire:

```
<SOAP-ENV:Body>
   <Administrate>
      <Transaction>
         <CreateUser>
            <User>
               …
               <SuccessNoticeExpiration>4320
                  </SuccessNoticeExpiration>
               …
               <FailureNoticeExpiration>0xffffffff
                  </FailureNoticeExpiration>
            </User>
         </CreateUser>
         …
      </Transaction>
   </Administrate>
</SOAP-ENV:Body>
```

Chapter

14

Archiving APIs

This chapter provides an alphabetical list of SOAP-based archiving API operations and data types. Each entry includes a general description of the operation, its schema, and a description of its elements. The archiving API to creates an application that archives files from an Encyclopedia volume. This chapter consists of the following topics:

- SOAP-based archiving API operations
- SOAP-based archiving data types

SOAP-based archiving API operations

This section describes SOAP-based archiving operations.

DeleteExpiredFiles

Informs iServer that the files in ExpiredFileIds are archived and instructs iServer to delete those files.

iServer deletes the file only if the file is expired. iServer sends the ID of each expired file in the GetNextExpiredFiles response. If ExpiredFileIds contains an ID of a file that iServer did not send, iServer ignores it.

If there are no IDs of expired files in any DeleteExpiredFiles call, iServer keeps expired files in the Encyclopedia volume and sends them to the archive application at the next archive pass.

Request schema

```
<xsd:complexType name="DeleteExpiredFiles">
   <xsd:sequence>
      <xsd:element name="SessionID" type="xsd:string"/>
      <xsd:element name="ExpiredFileIds"
         type="typens:ArrayOfString"/>
   </xsd:sequence>
</xsd:complexType>
```

Request elements

SessionID
The ID that iServer generates for the current archiving session.

ExpiredFileIds
The IDs of the files that were archived and can be deleted.

Response schema

```
<xsd:complexType name="DeleteExpiredFilesResponse"/>
```

EndArchive

Ends an archiving session. After iServer receives the first StartArchive call, it allows 24 hours between subsequent archive requests. If iServer does not receive any archive requests within this time period, it automatically terminates the archive session.

Request schema

```
<xsd:complexType name="EndArchive">
   <xsd:sequence>
      <xsd:element name="SessionID" type="xsd:string"/>
   </xsd:sequence>
</xsd:complexType>
```

Request elements

SessionID
The ID that iServer generates for the current archiving session.

Response schema

```
<xsd:complexType name="EndArchiveResponse"/>
```

GetNextExpiredFiles

Retrieves information about expired files.

iServer always returns the ID, name, version, type, and location of each expired file. Use the ResultDef element to retrieve additional information.

Request schema

```
<xsd:complexType name="GetNextExpiredFiles">
   <xsd:sequence>
      <xsd:element name="SessionID" type="xsd:string"/>
      <xsd:element name="ResultDef" type="typens:ArrayOfString"
         minOccurs="0"/>
      <xsd:element name="MaxFiles" type="xsd:long"
         minOccurs="0"/>
   </xsd:sequence>
</xsd:complexType>
```

Request elements

SessionID
The ID that iServer generates for the current archiving session.

ResultDef
Requests the following information about the expired files:

- Description
  The description of the file.
- PageCount
  The number of pages in the file.
- Size
  The size of the file.
- TimeStamp
  The time the file was created or modified, in Coordinated Universal Time (UTC).
- VersionName
  The version name of the file.
- Owner
  The owner of the file.

- AccessType
  The file's access type, private or shared.
- ACL
  The access rights to the file.
- DependOnFiles
  Information about the files on which the file depends.

MaxFiles
The maximum number of files to retrieve and return in the result set. If not specified, the value is 1. iServer can return up to 500 files.

Response schema

```
<xsd:complexType name="GetNextExpiredFilesResponse">
   <xsd:sequence>
      <xsd:element name="ExpiredFiles"
         type="typens:ArrayOfFileInfo"/>
      <xsd:element name="HasMore" type="xsd:boolean"/>
   </xsd:sequence>
</xsd:complexType>
```

Response elements

ExpiredFiles
Information about the expired files.

HasMore
Indicates whether more expired files are available. If True, more expired files are available.

StartArchive

Starts an archive pass. StartArchive is the first call that the API makes after initializing. After iServer receives the command to start the archive application, iServer waits five minutes to receive the StartArchive request. If it does not receive the request, iServer ignores the command and invalidates the SessionID.

Request schema

```
<xsd:complexType name="StartArchive">
   <xsd:sequence>
      <xsd:element name="SessionID" type="xsd:string"/>
      <xsd:element name="ProviderName" type="xsd:string"
         minOccurs="0"/>
      <xsd:element name="IncludeFolder" type="xsd:boolean"
         minOccurs="0" />
   </xsd:sequence>
</xsd:complexType>
```

Request elements

SessionID
The ID that iServer generates for the current archiving session.

ProviderName
A string identifying the archiving application.

IncludeFolder
A flag indicating whether to include subfolders.

Response schema

```
<xsd:complexType name="StartArchiveResponse"/>
```

SOAP-based archiving data types

This section describes SOAP-based archiving data types.

ArrayOfFileInfo

A complex data type that represents an array of FileInfo elements.

Schema

```
<xsd:complexType name="ArrayOfFileInfo">
   <xsd:sequence>
      <xsd:element name="FileInfo" type="typens:FileInfo"
         maxOccurs="unbounded" minOccurs="0" />
   </xsd:sequence>
</xsd:complexType>
```

ArrayOfPermission

A complex data type that represents an array of Permission elements.

Schema

```
<xsd:complexType name="ArrayOfPermission">
   <xsd:sequence>
      <xsd:element name="Permission" type="typens:Permission"
         maxOccurs="unbounded" minOccurs="0" />
   </xsd:sequence>
</xsd:complexType>
```

FileAccess

A simple data type that states whether a file is private or shared.

Schema

```
<xsd:simpleType name="FileAccess">
   <xsd:restriction base="xsd:string">
      <xsd:enumeration value="Private" />
      <xsd:enumeration value="Shared" />
   </xsd:restriction>
</xsd:simpleType>
```

FileInfo

A complex data type that contains file information.

Schema

```
<xsd:complexType name="FileInfo">
   <xsd:sequence>
      <xsd:element name="Id" type="xsd:string" />
      <xsd:element name="Name" type="xsd:string" />
      <xsd:element name="Version" type="xsd:long" />
      <xsd:element name="FileType" type="xsd:string" />
      <xsd:element name="FileLocation" type="xsd:string" />
      <xsd:element name="Description" type="xsd:string"
         minOccurs="0" />
      <xsd:element name="PageCount" type="xsd:long"
         minOccurs="0"/>
      <xsd:element name="Size" type="xsd:long" minOccurs="0" />
      <xsd:element name="TimeStamp" type="xsd:dateTime"
         minOccurs="0" />
      <xsd:element name="VersionName" type="xsd:string"
         minOccurs="0" />
      <xsd:element name="Owner" type="xsd:string" minOccurs="0" />
      <xsd:element name="AccessType" type="typens:FileAccess"
         minOccurs="0" />
      <xsd:element name="ACL" type="typens:ArrayOfPermission"
         minOccurs="0" />
      <xsd:element name="DependOnFiles"
         type="typens:ArrayOfFileInfo" minOccurs="0" />
   </xsd:sequence>
</xsd:complexType>
```

Elements

Id
The file ID.

Name
The file name.

Version
The file version number.

FileType
The file type.

FileLocation
The location of the file.

Description
A description of the file.

PageCount
The number of pages within the file.

Size
The size of the file.

TimeStamp
The timestamp on the file.

VersionName
The file version name.

Owner
The owner of the file.

AccessType
The file access type.

ACL
The access control list for the file.

DependOnFiles
A list of files that this file is dependent on.

Permission

A complex data type that describes access rights for roles or users.

Schema

```
<xsd:complexType name="Permission">
   <xsd:sequence>
      <xsd:choice>
         <xsd:element name="RoleName" type="xsd:string" />
         <xsd:element name="UserName" type="xsd:string" />
      </xsd:choice>
      <xsd:element name="AccessRight" type="xsd:string" />
   </xsd:sequence>
</xsd:complexType>
```

Elements

RoleName
The role name being described.

UserName
The user name being described.

AccessRight
The privileges the user or role has on an object. One or more of the following characters representing a privilege:

- D—Delete
- E—Execute
- G— Grant
- V—Visible
- S—Secured Read
- R—Read
- W—Write

Chapter

15

Customizing installation on Windows systems

This chapter discusses the following topics:

- Modifying the installed files and registry entries
- Localizing the installation
- Creating a silent installation
- Performing a silent installation
- Performing a silent installation removal
- Performing a silent removal of Actuate Localization and Online Documentation

Modifying the installed files and registry entries

You can customize the appearance of the Actuate product installation on Windows by modifying Custom.ini to make the following changes to the Actuate installation:

- Change the full paths to files that install with an Actuate product.
- Install custom files during the Actuate installation.
- Change registry key settings during the Actuate installation.

Use caution when you edit Windows registry keys. Changes to registry key entries and values can affect the Windows operating system.

The custom.ini file is located in the /custom directory from the Actuate product DVD to your hard disk. After you modify custom.ini, create your new installation media that contains custom.ini and your custom files.

How to modify custom.ini

1. Using Windows Explorer, copy the Actuate product directory from the product DVD to your local machine.

   For example, for BIRT iServer installation, copy the installation files from the DVD's iServer directory on the DVD to C:\Actuate11\iServer.

2. In a text editor, open custom.ini in the Actuate product directory.

   For all products, the custom.ini contains code that lists an external DLL and registry file, similar to the following excerpt:

```
; Modify the following entries to allow custom installation
     of files and/or registry entries. Uncomment the
     entries to use them.

[AC_EXTERNAL_FILES]
;FILE1=c:\tmp\abc.dll
;FILE2=d:\tmp\abc.pdf

[AC_REGISTRY_ENTRY]
;RegistryFile1=aaaa.reg
```

3. To add files to the installation, perform the following steps:

   1. Uncomment code in the [AC_EXTERNAL_FILES] list by deleting the semicolon (;) that precedes the code.
   2. Edit the code to include the files you want to install. You must use full file paths to specify the directories into which to install files.

For example, type

```
FILE1=C:\WINDOWS\system32\My_dll.dll
FILE2=C:\Program Files\Actuate11\iServer\Help
   \My_help_file.pdf
FILE<n>=C:\Program Files\Actuate11\iServer\Help
   \My_help_file.html
```

In this example, <n> is the total number of files. You can add files up to the limit of your InstallShield version.

3 Copy the files that you added in the paths in substep 2 to the \custom subdirectory of the product directory on your installation medium.

4 To add custom registry entries with the installation, perform the following steps:

1 Uncomment code in the [AC_REGISTRY_ENTRY] list by deleting the semicolon (;) that precedes the code.

2 Edit the code to include the registry file that contains the custom registry entries. For example, type:

```
RegistryFile1=Customer.reg
```

where Customer.reg is the registry file. A Customer.reg entry looks like the following entry:

```
[HKEY_LOCAL_MACHINE\SOFTWARE\MyProduct\TestEntry\Custom Key]
"MyApp"="C:\\MyDirectory\\MyApplication"
"AppVersion"="8.0.0.0"
"Value"=dword:00000002
```

In this example, double quotation marks enclose strings and string values. A numeric value appears in the following example:

```
"Value"=dword:00000002
```

3 Copy the registry file to the \custom subdirectory of the product directory on your installation medium.

5 Save custom.ini.

6 Test the installation by running the Actuate product directory's Setup.exe file from your hard disk.

Localizing the installation

Actuate uses InstallShield, and assumes you are familiar with it. You can change the installation appearance to suit regional preferences by using locale-specific installation libraries provided by Actuate or by directly customizing the InstallShield installation.

To localize an Actuate installation, you can use InstallShield in the following ways:

- Change the Setup.gif image that appears at the start of the installation.
- Change the application name that appears during the installation by modifying Setup.ini.
- Change the text of the resource IDs in brand.rc for an Actuate product, and rebuild ac_brand.dll to change the content of the Actuate dialog boxes that appear during the installation.
- Change custom InstallShield dialog boxes by extracting _isuser.dll from a cabinet file and modifying _isuser.dll.

After you change these files, test the installation process, then make your installation media. The following procedures refer to the setup files on the Actuate product DVD. Copy the files to your hard disk to modify them, and use the modified files to create a custom installation.

How to change the image that appears during installation

To replace the image that appears in the dialog box at the start of the installation, replace setup.gif on the Actuate product DVD with another .gif (graphics interchange format) file. This image is also called a splash screen. The file name must be setup.gif for InstallShield to find and use your image.

How to change values that appear during installation

Edit the Setup.ini file to change the application name, the company name, the number of seconds the splash screen appears, and other values. The following steps explain how to change the application name:

1. Using a text editor, open Setup.ini on the Actuate product DVD.

   The key<n> entries refer to the ac_brand files that Actuate supplies. Table 15-1 lists the files. Not all Actuate products support all locales.

Table 15-1 ac_brand files supplied by Actuate

Locale	File name	Code
Chinese	ac_brand.chs	0x0804
English	ac_brand.dll	0x0009
French	ac_brand.fra	0x040c
German	ac_brand.deu	0x0007
Japanese	ac_brand.jpn	0x0011
Korean	ac_brand.kor	0x0012
Spanish	ac_brand.esp	0x000a

2 Change the value of AppName to the desired name.

3 Save Setup.ini.

How to change the text of the Actuate installation dialog boxes

This procedure uses Microsoft Visual C++ version 6.0 to customize the text in the Actuate dialog boxes that appear during installation. You can customize this text to localize the Actuate installation dialog boxes for languages other than U.S. English. For more information about using Visual C++, see the Microsoft Visual C++ documentation.

To customize or localize InstallShield custom dialog boxes, you must modify a DLL file that is on your Actuate products installation DVD.

1 Using Microsoft Visual C++, open the ac_brand.dll on your Actuate product DVD as Resources in an executable file, as shown in Figure 15-1.

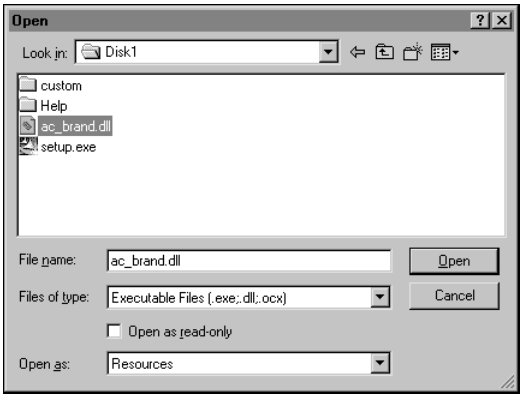

Figure 15-1 Customizing InstallShield dialog boxes

2 In ac_brand.dll, expand the following items:

- Bitmap
- String Table
- Version

The expanded view appears, as shown in Figure 15-2.

3 Right-click a resource, such as a bitmap, and choose Properties.

4 In Properties, you can change the following settings:

- For Bitmap, change the Language, Condition, and File name.
- For String Table, change the Language.
- For Version, change Language and Condition.

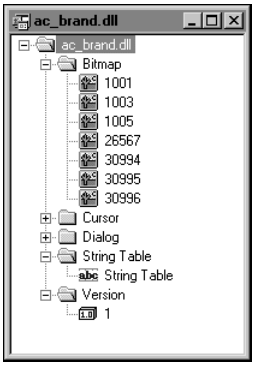

Figure 15-2 ac_brand.dll, expanded

5 To modify the text for a dialog box, perform the following steps:

1. In the expanded view, double-click String Table.

   A list of IDs, values, and captions appears in the right pane, as shown in Table 15-2.

   Table 15-2 Sample dialog box IDs, values, and captions

ID	Value	Caption
IDS_MSG_COPYING	13004	Copying files to your computer.
IDS_SETUP_FINISH_MSG	13019	Setup completed successfully.

2. Double-click a caption to modify its text.
3. In String Properties, modify the caption text.

   To save the change, close String Properties.
4. Repeat steps 2 and 3 for all dialog box captions.

6 Save ac_brand.dll.

How to change InstallShield's custom dialog boxes

The following procedure uses InstallShield's utility, IsCab.exe, to extract the internal DLL, _isuser.dll. To customize the text in InstallShield's custom dialog boxes, modify _isuser.dll using Visual C++. The _isuser.dll is in the data1.cab cabinet file. For more information about using IsCab.exe, refer to the InstallShield documentation.

1 Using Windows Explorer, copy data1.cab from the Actuate product DVD to your local machine.

2 Copy IsCab.exe to the directory that contains data1.cab.

3 Create a configuration file for the InstallShield IsCab utility.

1. Create a text file named file.ini in the directory that contains data1.cab.
2. Type the following lines into the file:

```
[ISCAB Info]
Product=ISCAB
Version=2.0

[<Support>Language Independent OS Independent Files]
File1="_Isuser.dll"
```

3. Save and close the file.

4. Choose Start➛Programs➛Accessories➛Command Prompt.
5. In Command Prompt, change directories to the directory that contains data1.cab.
6. To extract _isuser.dll from data1.cab, type the following command, then press Enter:

```
iscab data1.cab -x -ifile.ini
```

IsCab.exe extracts _isuser.dll to the local directory.

7. Using Visual C++, modify _isuser.dll to customize the dialog boxes. Do not change ID names or values in the file.
8. To remove the original _isuser.dll file from the cabinet file, type the following command at the command prompt, then press Enter:

```
iscab data1.cab -r -ifile.ini
```

9. To add the modified _isuser.dll to the cabinet file, type the following command, then press Enter:

```
iscab data1.cab -a -ifile.ini
```

Creating a silent installation

You can customize your installation so that InstallShield installs and uninstalls Actuate products silently, without user interaction. By specifying which dialog boxes appear, you create a completely or partially silent installation. You can also collect any messages or other output in a log file. During a completely silent installation, the splash screen and input dialog boxes do not appear.

To create a silent installation, provide an XML file that drives the silent installation for the Actuate product. This file contains parameters to control the installation. You can install the following Actuate products silently:

- BIRT Designer Professional
- BIRT iServer

- BIRT iServer Integration Technology
- e.Report Designer Professional
- Information Console
- Localization and Online Documentation

The silent installation uses the following files listed in Table 15-3. Actuate provides these files in the Actuate product directory on the product installation DVD.

Table 15-3 Silent installation files

File name	Description
acis.iss	The InstallShield response file. Do not modify this file.
acinstallinput.xml	The silent installation sample input. The default version of this file creates a completely silent installation. Customize this file to match your installation requirements.
acinstallinput.xsd	The silent installation schema. Use this file with an XML development tool to edit the silent installation file.

You can customize the silent installation of an Actuate product by editing the acinstallinput.xml file.

You cannot perform a silent rollback of an upgrade installation for BIRT iServer or Information Console.

The root element in acinstallinput.xml is Config. Config has three child elements, as described in Table 15-4.

Table 15-4 Config child elements

Element	Description
VersionInfo	Information about the software version. For more information about VersionInfo, see "Specifying version information," later in this chapter.
GeneralDlgs	All dialog boxes that appear during a typical installation. For more information about GeneralDlgs, see "Customizing installation dialog boxes," later in this chapter.
CustomDlgs	All dialog boxes that appear only in a custom installation. For more information about CustomDlgs, see "Customizing installation dialog boxes," later in this chapter.

How to modify the silent installation file

The following procedure uses a text editor to modify the acinstallinput.xml file for BIRT iServer. The modifications create a partially silent custom installation. Modify the acinstallinput.xml file for other products in a similar way.

1. Using Windows Explorer, copy the Actuate product directory from the product DVD to your local machine.

   For example, for BIRT iServer, copy the installation files from the DVD's iServer directory to C:\Actuate11\iServer.

2. Using a text editor that can handle UTF-8 encoding, open C:\Actuate11 \iServer\acinstallinput.xml.

   acinstallinput.xml appears in the editor's work area.

3. Search for WelcomeDlg. Change its Visible value to True, as shown in the following example:

   ```
   <WelcomeDlg Visible="true"/>
   ```

   This causes the Welcome dialog box to appear during the installation. Because all dialog boxes have their Visible element set to False by default, only the Welcome dialog box appears during the installation.

4. Search for SetupTypeCtl. Change its value to Custom, as shown in the following example:

   ```
   <SetupTypeCtl>Custom</SetupTypeCtl>
   ```

   This creates a custom installation. acinstallinput.xsd specifies that only Typical and Custom are valid values for SetupTypeCtl.

5. Search for ComponentsDlg. Change the value of the Examples element to False, as shown in the following example:

   ```
   <Examples>false</Examples>
   ```

   This change means that the installation does not install the Example files.

6. Search for ProgramFolderCtl. Change Actuate 11 to Actuate 11 iServer, as shown in the following example:

   ```
   <ProgramFolderCtl>Actuate 11 iServer </ProgramFolderCtl>
   ```

   This change places iServer in the Start menu as Start➛Programs➛Actuate 11 iServer➛iServer Configuration Console.

7. Save and close acinstallinput.xml.

8. Repeat the steps in "How to use acinstallinput.xml to perform a silent installation," earlier in this chapter, to test your modified acinstallinput.xml file.

During the installation, the only dialog box that appears is the Welcome dialog box. After the installation, use Windows Explorer to view the contents of C:\Program Files\Actuate11\iServer. There is no Examples subdirectory. Also verify that the Start➛Programs➛Actuate 11 iServer➛iServer menu item exists.

Specifying version information

VersionInfo is an optional element with two optional child elements, named Version and Copyright. The default acinstallinput.xml file contains version and copyright information, as shown in the following example:

```
<VersionInfo>
   <Version>10 Development M13 (Build DEV081023)</Version>
   <Copyright>Copyright &#x00a9;1995-2008 Actuate Corporation
      </Copyright>
</VersionInfo>
```

The installation checks the version only if <VersionInfo><Version> exists and is not empty. If the version checking fails, the installation procedure writes a message to the log file and the installation continues.

Specifying license information

BIRT iServer requires a valid license file to install and enable the options you have purchased. To specify the license file location, set the <LicenseFileCtl> element of <LicenseFileDlg>. The default license file location is empty, as shown in the following example:

```
<LicenseDlg Visible="false">
   <AgreementCtl>yes</AgreementCtl>
</LicenseDlg>
```

To add your license file location, edit the control as shown in the following example:

```
<LicenseFileCtl>C:\Temp\ServerLicense.xml</LicenseFileCtl>
```

Only the acinstallinput.xml file for BIRT iServer includes license information.

Customizing installation dialog boxes

This section describes how to customize typical and custom installation dialog boxes. It is only necessary to customize the dialog boxes used by your custom installation.

Both typical and custom installations require the GeneralDlgs of acinstallinput.xml. Each dialog box element in GeneralDlgs corresponds to a dialog box in the installation user interface. For example, SetupTypeDlg is the

dialog box that asks if this will be a typical or custom installation and where to install the software.

Only a custom installation uses the CustomDlgs of acinstallinput.xml. Each dialog box element in CustomDlgs corresponds to a dialog box that appears only during a custom installation. For example, ComponentsDlg is the dialog box that asks which product components to install. If your silent installation is a typical install, then you can omit the CustomDlgs component.

Specifying dialog box information

Each dialog box element has a Visible attribute and an unlimited number of control child elements. For instance, SetupTypeDlg has SetupTypeCtl and LocationCtl child elements that correspond to the setup type control and installation location control in the dialog box. Set the Visible attribute to False to prevent the display of a dialog box. Include the necessary control elements and the values to supply the dialog box's data. For a completely silent installation, set all Visible attributes to False. For a partially silent installation, set Visible to True for only those dialog boxes that require user interaction.

Each Actuate product uses its own set of dialog boxes. Examine the default acinstallinput.xml and acinstallinput.xsd files for a product to see the available elements and controls and view their default values.

Encrypting dialog box information

You can install BIRT iServer such that it requires a password to log in to the Configuration Console. The default BIRT iServer acinstallinput.xml file contains the following dialog box definition for the system administrator account:

```
<ConfigActuateSystemAdminDlg Visible="false">
   <PasswordCtl Password="" Encrypt="false">
   </PasswordCtl>
</ConfigActuateSystemAdminDlg>
```

There is no default password. To add a default password in clear text, replace the empty Password string with a password, as shown in the following example:

```
<PasswordCtl Password="ThePassword" Encrypt="false">
```

In this example, the string ThePassword is the default password.

To encrypt the password, use the Actuate acencrypt utility to first encode the password before you place it in acinstallinput.xml. Actuate provides acencrypt.exe in the Actuate product directory on the product installation DVD.

Using acencrypt

The acencrypt command-line utility converts the first line of text in a file to an encrypted line in an output file. The acencrypt utility accepts ASCII and non-ASCII strings.

Table 15-5 lists the acencrypt parameters.

Table 15-5 acencrypt parameters

Parameter	Description
-input <inputFile>	Required parameter specifies the file to encrypt. Only the first line will be processed as the password and any subsequent entries are ignored.
-output <outputFile>	Optional parameter specifies the encrypted output file. The default is to display the encrypted string on standard out.

To use an encrypted password, use acencrypt to encrypt the password, copy and paste the encrypted password in acinstallinput.xml, and set the Encrypt attribute to True. Using the value of True for the Encrypt attribute means the installation program decrypts the password before using it. Otherwise, use the default value, False, and provide the password as plain text.

How to encrypt a string with acencrypt

The following procedure encrypts a clear text password, ThePassword, and adds the encrypted text to an installation file:

1. Using a text editor, create clear.txt, with ThePassword as its only line.

   ```
   ThePassword
   ```

2. Save and close clear.txt.
3. Choose Start➛Programs➛Accessories➛Command Prompt.

   Command Prompt appears.

4. At the command prompt, type the following command, then press Enter:

   ```
   acencrypt -input clear.txt -output encrypted.txt
   ```

   The acencrypt utility creates the file encrypted.txt.

5. Using your text editor, open encrypted.txt. It contains the following line:

   ```
   24262b27292c23242e2625272e292e2a2c2828262d25
   ```

6. Using your editor, open acinstallinput.xml for the Actuate installation you are customizing.

7 In acinstallinput.xml, copy and paste the encrypted string from encrypted.txt into the dialog box's password control and set Encrypt to True, as shown in the following example:

```
<PasswordCtl
   Password="24262b27292c23242e2625272e292e2a2c2828262d25"
   Encrypt="true">
```

Performing a silent installation

You use the default acinstallinput.xml file to silently install an Actuate product. Before acinstallinput.xml can be used to perform the silent installation, you have to provide the following minimal information:

- <AgreemenCtl> must be set to yes
- LicenseFileTypeCtl must be set to trial, or a path to the license file must be provided
- In <ServiceProfile> the <usernameCtl> and <PasswordCtl> must be provided wit the appropriate user name and password information.
- The typical installation uses PostgreSQL database. A passwored must be provided for <PostgreSQLServiceProfile> and <PostgreSQLDatabaseProfile> through <PasswordCtl> in acinstallinput.xml.

The following procedure illustrates how to perform a silent installation.

How to use acinstallinput.xml to perform a silent installation

This procedure uses the provided acinstallinput.xml for a default silent installation configuration. For information about creating a custom silent installation file, see "How to modify the silent installation file," earlier in this chapter.

1 Using Windows Explorer, copy the Actuate product directory from the product DVD to your local machine.

   For example, for BIRT iServer, copy the installation files from the iServer directory on the DVD to C:\Actuate11\iServer.

2 Choose Start➛Programs➛Accessories➛Command Prompt.

   Command Prompt appears.

3 At the command prompt, go to the product installation directory that you created on your local machine. For example, type the following command, then press Enter:

```
cd C:\Actuate11\iServer
```

4 Invoke the silent installation in asynchronous or synchronous mode.

- For asynchronous silent installation, type the following command, then press Enter:

  ```
  setup.exe -s -f1"C:\Actuate11\iServer\acis.iss"
     -acinput "C:\Actuate11\iServer\acinstallinput.xml"
     -acoutput "C:\Actuate11\iServer\iServer_log.xml"
  ```

  The command prompt reappears, and the installation completes in the background.

- For synchronous silent installation, type the following command, then press Enter:

  ```
  start /wait setup.exe -s -f1"C:\Actuate11\iServer
     \acis.iss"
     -acinput "C:\Actuate11\iServer\acinstallinput.xml"
     -acoutput "C:\Actuate11\iServer\iServer_log.xml"
  ```

  The command prompt reappears after the installation completes.

You must fully specify the files for the -f1, -acinput, and -acoutput options. There is no space between -f1 and the full acis.iss file name. There is a space between the -acinput and -acoutput options and their file names. The -acoutput file name may contain only ASCII characters. If you do not specify an -acoutput file, the installation generates the default log file, acinstparam.xml, in the installation destination folder. The XML log file for the silent installation appears in the directory where acinstallinput.xml and the Actuate product installation executable file, Setup.exe, reside.

In a default acinstallinput.xml there are two destination folders for the installation, the Binary location and the Data location. IServer uses the Binary location to resolve paths to all the binaries that it launches. The default path for the Binary location is C:\Program Files\Actuate11\iServer, and is referred to in the iServer documentation by the environment variable AC_SERVER_HOME. iServer uses the Data location to store iServer logs, iServer Encyclopedia including PostgreSQL data, MC logs, and IC logs, and all other data. The default path for the Data location is C:\Actuate11\iServer\data, and is referred to in the iServer documentation by the environment variable AC_DATA_HOME.

How to verify a successful silent installation

You verify a silent installation on a Windows server by examining the installation log. The -acoutput option creates a log in the directory where acinstallinput.xml and the Actuate product installation executable, Setup.exe, reside.

1 In a text editor, open the log created by the -acoutput option.

The file contains the following information after a successful silent installation:

```
<Config>
   <Result>success</Result>
   <Reason/>
   <RebootDlg>
      <RebootRequired>FALSE</RebootRequired>
   </RebootDlg>
   <MessageBox>Setup completed successfully.</MessageBox>
</Config>
```

2. Look at the RebootRequired parameter value to determine whether the installation requires that you reboot. True means you must reboot the machine to finish the installation.
3. Verify that the value for Result is success. This result indicates a successful installation.

   If the Result value is not success, read the Reason parameter value to determine the nature of the problem.

Performing a silent installation removal

Execute acuninstall.exe from the command line to remove an installation. The syntax is:

```
acuninstall -a -p acuninst.txt
```

The acuninstall utility has one option, the RemoveAll InstallShield option. The following example silently uninstalls a standard installation of BIRT iServer from the local machine:

```
C:\Windows\System32\acuninstall -a
   -p "C:\Program Files\Actuate11\iServer\AcUninst.txt"
```

For each Actuate product, the silent installation creates a log file, acuninst.txt, in the product's top-level directory during installation. For example, the BIRT iServer acuninst.txt file is:

```
C:\Program Files\Actuate11\iServer\AcUninst.txt
```

Performing a silent removal of Actuate Localization and Online Documentation

For Actuate Release 11, you install Actuate localization and online documentation files after installing Actuate products. To perform a silent removal of the Actuate Localization and Online Documentation, perform the following tasks:

- Modify the configuration file, acinstallinput.xml, for the Actuate Localization and Online Documentation.
- Perform a silent installation using the modified XML file.

In the acinstallinput.xml file for the Actuate Localization and Online Documentation, the default value of the MaintenanceTypeCtl element is MODIFY.

```
<MaintenanceTypeCtl>MODIFY</MaintenanceTypeCtl>
```

Change the value to REMOVEALL.

```
<MaintenanceTypeCtl>REMOVEALL</MaintenanceTypeCtl>
```

Chapter

16

Customizing installation on UNIX and Linux systems

This chapter discusses the following topics:

- About customizing the installation
- Creating a silent installation
- Modifying the parameter template file
- Performing a silent installation
- Performing a silent installation removal

About customizing the installation

You modify installation shell script files to customize the installation. You can modify install script prompts and specify custom environment variables in the shell script files.

Table 16-1 lists the shell script file names for installations of BIRT iServer and BIRT iServer Integration Technology.

Table 16-1 Shell script file names for Actuate product installations

Actuate product	Files that contain most of the textual prompts	Files that contain most of the programming logic
BIRT iServer	isconst.sh	isinstall.sh
BIRT iServer Integration Technology	isitconst.sh	isitinstall.sh

Creating a silent installation

This section covers the following topics:

- Modifying the parameter template file
- Performing a silent installation
- Performing a silent installation removal

The following procedures describe how to create a silent installation. A silent installation requires no user interaction after the installation starts. You cannot perform a silent rollback of an upgrade installation for BIRT iServer. You modify the template file that contains all input parameters for the installation. This file contains all user information the installation shell script requires. The entries in the template are default values for an installation. Change the default values to configure the silent installation. During the installation, the installation shell script file reads the parameter file. The parameter template files and the installation shell script files are located at the root level of the Actuate installation DVD. The names for the parameter template files and the installation shell script files for BIRT iServer and BIRT iServer Integration Technology appear in Table 16-2.

Table 16-2 Parameter template and installation script names

Actuate product	Parameter template file	Install shell script file
BIRT iServer	isinstall.cfg	isinstall.sh

Table 16-2 Parameter template and installation script names

Actuate product	Parameter template file	Install shell script file
BIRT iServer Integration Technology	isitinstall.cfg	isitinstall.sh

Modifying the parameter template file

You modify the parameter template file for an Actuate product to enable silent installations. On the Actuate DVD, the parameter template file is located in the same directory as the product's installation script file. The parameter template file contains all the required variables for a silent installation.

About isinstall.cfg

The parameter template file, isinstall.cfg, ships on the DVD with BIRT iServer. The file isinstall.cfg contains all parameters required by the installation shell script file for BIRT iServer installation. Comments in the code provide information about the parameters in each section.

Modifying isinstall.cfg

The following procedure uses the BIRT iServer parameter template file, isinstall.cfg, as an example.

How to modify isinstall.cfg

1. Log in as root and insert the DVD.
2. Mount the DVD.
3. Copy the parameter template file rsinstall.cfg from the DVD to your local drive.
4. Save isinstall.cfg as orig_isinstall.cfg so that you have a copy of the original parameter template file.
5. In a text editor, open the parameter template file, isinstall.cfg.
6. Change the values for variables to customize the installation. Comments in the code provide information about variables and values.

   For the installation information for LDAP and database drivers sections in the code, setting the first variable value to n means the installation does not use the additional values in the section. For example, isinstall.cfg contains the following code, which means that the installation does not include settings for LDAP:

```
# Installation information for LDAP

S_AC_RS_INTEGRATE_LDAP=n
S_AC_RS_LDAP_MACHINE=build1-sun
S_AC_RS_LDAP_PORT=2222
```

Because the value for S_AC_RS_INTEGRATE_LDAP is n, the installation does not use the values for the machine name and port number.

7 Save the modified parameter file.

8 Include the modified parameter file in the same directory as the installation shell script file on your new installation DVDs.

Performing a silent installation

After you modify the parameter template file, include the modified file in the same directory as the installation shell script file on the installation DVD you create. The silent installation for BIRT iServer and BIRT iServer Integration Technology uses command line entries and creates log files that appear in Table 16-3.

Table 16-3 Silent installation command line entries and log files

Actuate product	Command line entry	Installation log file
BIRT iServer	./isinstall.sh -s isinstall.cfg	/tmp/$LOGNAME /isinstall.log
BIRT iServer Integration Technology	./isitinstall.sh -s isitinstall.cfg	/tmp/$LOGNAME /isitinstall.log

A new log file is created every time a user installs an Actuate product. The log files are distinguished by including the user's login name ($LOGNAME) in the log file's path.

How to perform a silent installation

This procedure uses the silent installation for BIRT iServer as an example.

1 Create a BIRT iServer directory. For example, if your installation is on /home/actuate, type:

```
cd /home/actuate
mkdir sit
```

2 Log in using the account created for installing and running iServer and insert the DVD.

3 Mount the DVD.

4 Change your working directory to the root directory of the DVD.

5 To start the silent installation, type the following, then press Enter:

```
./isinstall.sh -s isinstall.cfg
```

The silent installation completes and creates the installation log file, /tmp/isinstall.log.

In a default acinstallinput.xml there are two destination folders for the installation, the Binary location and the Data location. IServer uses the Binary location to resolve paths to all the binaries that it launches. The default path for the Binary location is $HOME/AcServer, and is referred to in the iServer documentation by the environment variable AC_SERVER_HOME. iServer uses the Data location to store data, including Encyclopedia volume data, iServer logs, PostgreSQL data, MC logs, and IC logs. The default path is AC_SERVER_HOME/data, and is referred to in the iServer documentation by the environment variable AC_DATA_HOME.

Performing a silent installation removal

The silent uninstall with the -s option removes all files and directories added during installation of the Actuate product. Only the uninstall log file remains.

The silent uninstall for BIRT iServer and BIRT iServer Integration Technology uses command line entries and creates log files listed in Table 16-4.

Table 16-4 Silent uninstall command line entries and log files

Actuate product	Command line entry	Uninstallation log file
BIRT iServer	./isuninstall.sh -s	/tmp/$LOGNAME /isuninstall.log
BIRT iServer Integration Technology	./isituninstall.sh -s	/tmp/$LOGNAME /isituninstall.log

How to remove a silent installation

The following procedure shows how to perform a silent uninstall for BIRT iServer:

1 Change directories to the directory that contains rsuninstall.sh.

2 To start the silent uninstall script, type the following command, then press Enter:

```
./isuninstall.sh -s
```

The command removes all BIRT iServer directories and files added during the installation, and creates /tmp/isuninstall.log.

Appendix

A

Text string limits in Actuate operations

Actuate's internal data store imposes a fixed upper limit on the length of certain text strings. An application that uses elements such as user names, URLs, file types, and descriptions must adhere to these limits. Table A-1 lists the maximum field lengths for text elements in BIRT iServer Information and Management Consoles and for elements you create using Actuate Information Delivery API.

Table A-1 Text string limits in Actuate operations

Complex data type	Element name	Maximum length, in characters
ArchiveRule	FileType	20
Attachment	ContentEncoding	10
Channel	Name	50
	Description	500
	SmallImageURL	100
	LargeImageURL	100
File	Name	255
	FileType	20
	Description	500
	VersionName	100

(continues)

Table A-1 Text string limits in Actuate operations (continued)

Complex data type	Element name	Maximum length, in characters
FileType	Name	20
	DriverName	100
	MutexClass	50
	ShortDescription	40
	LongDescription	60
	LocalExtension	20
	OutputType	20
	SmallImageURL	100
	LargeImageURL	100
	ContentType	200
JobProperties	JobName	100
	InputFileName	276
	RequestedOutputFileName	1000
	ActualOutputFileName	1000
	RequestedHeadline	100
	ActualHeadline	100
JobNotice	JobName	100
	OutputFileName	276
	OutputFileVersionName	100
	Headline	100
JobPrinterOptions	PageRange	20
	PrintToFile	256
Group	Name	50
	Description	500
Printer	Name	50
	Manufacturer (UNIX only)	50
	Model (UNIX only)	50
	Location (UNIX only)	50
	Description	100
	Orientation	20
Printer *(continued)*	PageSize	50

Table A-1 Text string limits in Actuate operations (continued)

Complex data type	Element name	Maximum length, in characters
	Resolution	20
	PaperTray	50
	Duplex	20
Role	Name	50
	Description	500
JobSchedule	TimeZoneName	32
User	Name	256
	Password	256
	EmailAddress	80
	DefaultPrinterName	50
	Description	100

Index

Symbols

, (comma) character 577
; (semicolon) character 56
? wildcard 209, 256
" (double quotation mark) character
  search results and 106, 375, 383, 541
  SOAPAction directive and 17
[] (brackets) characters 447
* (asterisk) character 16
* wildcard 120, 209, 256
\ (backslash) character 447, 633
wildcard 209, 256
< operator 85
< > operator 85
<= operator 85
= (equal sign) character 577
> operator 85
>= operator 85
= operator 85
$$$ (file type) value 149, 665

A

ABInfoObject element 460
ABInfoObject value 515
AbsoluteDate data type 440
AbsoluteDate value 501
AC_DATA_HOME variable 690, 697
AC_EXTERNAL_FILES registry key 678
AC_JRE_HOME variable 614
AC_KEEP_WORKSPACE_DIRECTORY parameter 135
AC_SERVER_HOME variable 690, 697
AcAdminEvent table 619
AcApplicationEvent table 620
Accept directive 16
AcceptEncoding element 317, 557
access control lists
  applying 136, 137, 408, 510
  archiving 653
  changing 581
  creating 577
  deploying external 575
  displaying 583
  getting information about 120, 123
  getting templates for 125, 324
  installing sample application for 576
  matching names or roles in 653
  replacing 136
  retrieving channel 124, 305
  retrieving external 575, 582, 587
  retrieving file or folder 123, 126, 322, 327
  updating 138
access restrictions 120
access right attributes 519
access rights
  See also privileges
  getting 123, 126, 327
  retrieving ACL templates for 125
  setting 137, 510
  uploading files and 282, 436
access type attributes 469
access types 48, 469
accessing
  Apache Axis clients 188
  Encyclopedia volumes 120
  executable files 244
  iServer 26
  Online Archive Driver 652
  performance counters 632
  plug-ins 16
  PostgreSQL database 690, 697
  proxy objects 14
  sample applications 564
  sample reports 629
  third-party code libraries 189
  web services 10, 14
  WSDL schemas 11
AccessRight element
  archiving API operations 676
  GrantPermissions suboperations 137
  Information Deliverry API 519
  Java RSSE operations 596
AccessRights element 524
AccessType element
  File data type 469

FileInfo data type 675
FileSearch data type 472
NewFile data type 127, 510
SelectFiles operations 141
UploadFile operations 127
AccessType property 327
AcCreateUser class 205, 254
acDouble data type 440
AcDownloadFile_Chunked class 221, 264
acencrypt utility 687, 688
AcErrorEvent table 621
AcErrorLogOffset table 622
AcEvent table 622
AcEventType table 623
AcExecuteReport class 225
AcExecuteReport sample application 225
acextern utility 572
AcFileType table 624
–acinput command line option 690
AcIsThreadSafe function 606, 646, 647
AcJobType table 624
ACL element
FileInfo data type 675
GetChannelACL operations 306
GetFileACL operations 324
GetFileCreationACL operations 326
GetFileDetails operations 327
GetUserACL operations 588
NewFile data type 510
ACL property 327
AcLogError function 606, 647
AcLogin class 198, 250, 253
AcLogUsage function 605, 646
ACLs. *See* access control lists
aclSample package 565
AcMail exceptions 613
acnotification.xml 63
acNull data type 440
AcObjectOperation table 624
AcObjectType table 625
aconlinearchive.bat 656
aconlinearchive.jar 656
aconlinearchive.sh 656
aconlinearchiveDEP.jar 656
–acoutput command line option 690
AcOutputFormat table 625
AcPerfMonExt.dll 632
AcResourceGroup table 626
acrsse directory 566
AcRSSEPassThrough function 42, 272
ACS. *See* Caching service
AcSelectFiles class 256
AcSelectJavaReportPage class 229, 231
AcSelectJavaReportPage sample application 229
AcSelectPage class 227
AcSelectPage sample application 226
acserverconfig.xml 574
acserverlicense.xml 574
AcServiceType table 626
AcSoapInterface.lib 637
AcStartErrorLog function 606, 647
AcStartUsageLog function 605, 646
AcStatus table 626
AcStopErrorLog function 606, 648
AcStopUsageLog function 605, 647
AcSystemComponent table 627
action attributes (Ping) 366
Action element 172, 366
Activate element 532, 544
Activate property 393, 425
Active Directory servers 42, 564
Active_Jobs counter 639
Active_Servers counter 640
ActualHeadline element 499
ActualOutputFileId element 490, 498, 504
ActualOutputFileName element 490, 498, 504
ActualOutputFileSize element 490
Actuate API service 195
Actuate Basic methods 310, 582, 583, 591
Actuate Basic reports 26, 375, 564
See also reports
Actuate Basic source files 20
Actuate namespace 251
Actuate Query. *See* Query Option
ActuateAnalytics value 121
ActuateAPI class 249, 252
ActuateAPI interface 195–196
ActuateAPI service 10, 11
ActuateAPIEx interface 200, 201
ActuateAPIEx objects 262, 264
ActuateAPILocator class 195
ActuateAPILocatorEx class 201

ActuateAPILocatorEx objects 200
ActuateControl class 199
ActuateLog schema 619, 628
ActuateQuery value 121, 361
ActuateQueryType element 527
ActuateSoapPort interface 194
ActuateSoapPort_address attribute 195
ActuateVersion element 558
acuninstall utility 691
AcUploadFile class 217, 262
AcUsageLogOffset table 627
AcutateBuildNumber element 558
ad hoc parameters 54, 135, 168, 514
AddArchiveRules element 413
AddArchiveRules operations 659
AddChannelNotificationById element 423
AddChannelNotificationByName element 422
AddChildRolesById element 428
AddChildRolesByName element 427
AddDependentFilesById element 413
AddDependentFilesByName element 412
AddFileCreationPermissions element 433
AddGroupNotificationById element 422
AddGroupNotificationByName element 422
adding
  applications to Start menu 685
  archiving rules 652, 657, 659
  e-mail attachments 59
  file types 277, 473, 699
  folders 149, 278
  page headers 527
  users to Encyclopedia 148, 205, 214, 254, 283
  users to notification groups 418, 421
AddLicenseOptions element 434
AddOutputFilePermissions element 423
addParameter method 218
AddParentRolesById element 428
AddParentRolesByName element 428
AddRequiredFilesById element 413
AddRequiredFilesByName element 412
address (SOAP port) 195
addressing e-mail notifications 60, 148
AddSubscribersById element 408
AddSubscribersByName element 408
AddToGroupsById element 433
AddToGroupsByName element 432
AddUserNotificationById element 422
AddUserNotificationByName element 421
addUsers method 214, 260
AddUsersById element 418
AddUsersByName element 418
Admin event type 607, 609
Administrate element 147
Administrate method 208
Administrate objects 207, 208
Administrate operations
  copying Encyclopedia items and 156
  creating folders and 149
  creating security roles and 150
  creating users and 148, 283
  defining batch operations and 213, 259
  defining SOAP responses for 147
  defining transaction operations and 213, 214, 259
  deleting Encyclopedia items and 151
  deleting users and 151
  described 269
  grouping transactions in 30
  handling errors with 148, 208
  managing Encyclopedia items and 29, 31
  moving file or folders and 155
  running composite 157, 159, 213, 215, 259, 260
  running single 207
  updating Encyclopedia and 152, 153
Administrate requests 207, 213, 255, 259
Administrate responses 207, 208, 215
Administrate type definition 269
AdministrateResponse type definition 269
administration applications 204, 254
administration operation classes 213, 259
administration operations
  See also Administrate operations: AdminOperation operations
  developing 204, 207, 254, 269
  running 207
  submitting requests for
    Apache Axis clients 204, 207, 208, 213
    Microsoft .NET clients 254, 255, 259
  viewing events for 619
administrative events 609
administrator accounts 687

Administrator element 597
Administrator role 30, 465
administrators
  archiving and 652, 657
  authenticating 123
  creating login requests for 401
  directing requests and 21
  getting job information and 64
  managing Encyclopedia and 29, 120, 147
AdminOperation arrays 207, 208, 261
AdminOperation class 207
AdminOperation element 159, 269
AdminOperation operations 207, 269
AdminOperation requests 159, 213, 259
AdminOperation type definition 269
AdminRights element 360
aggregating data 81, 441, 526
Aggregation data type 441
aggregation functions 83, 441
aggregation pages 334, 338, 343
AggregationFunctions element 441
AggregationList element 83, 526
aging rules 652, 657
  See also archiving
AgreemenCtl element 689
AIS. *See* Integration service
Alias element 453
alignment attributes 451
All element 530, 597
ALL logging level 565
All role 465
AllowViewTimeParameter element 475
ANALYSIS format 556
ANALYSIS parameter 374
AnalysisType element 451
Analytics Cube Designer 98
  See also cube reports
Analytics Option 98
analyzing data 98, 451
Apache Ant utility 188, 566
Apache Axis code libraries 188, 189
Apache Axis environments 9, 188
Apache AXIS TCPMonitor utility 197, 203–204
Apache client sample application 196, 198
Apache Log4j utility 190
Apache log4j utility 565
Apache Logging Services Project 565
application events 620
application names 680
application programming interfaces (APIs)
  archiving and 652, 658, 669
  developing with xix
  implementing RSSE applications and 564, 565
  logging system information and 602, 645
  performance monitoring and 637, 648
application/dime media type 16
application/soap media type 16
applications
  accessing client-side bindings for 190, 247
  accessing sample 564
  accessing web services and 14
  adding to Start menu 685
  building security 564, 575, 577
  building web-based 4, 100
  calling remote services for 194, 249
  consolidating logging information and 602, 613
  customizing localized installations and 680
  customizing performance monitoring 633, 636
  customizing silent installs and 683, 685, 686, 694
  defining locale-specific data for 21
  developing 4, 5, 196, 250
  downloading files and 221, 264
  enabling SOAP messaging for 190, 247
  integrating with iServer 5
  monitoring SOAP messages for 203
  running sample 196, 250
  translating messages and 4
  uploading files and 131, 217, 262
  writing administration 204, 254
  writing batch or transaction 213, 259
archive directory 652
archive driver 652–658
archive libraries 163, 358
archive service 656
archive service command 358
archive service errors 612
archive service provider 656
archive settings 421, 653

ARCHIVE_DRIVER_JRE variable 656
archiveconfig element 654
ArchiveLibrary element 358
ArchiveLibrary property 163, 357
ArchiveOnExpiration element 442, 659
ArchiveOnExpire element 487, 659
ArchiveRoot file attribute 653
ArchiveRule data type 441, 699
ArchiveRule element 510
ArchiveRule operations
  See also archiving rules
  changing defaults for 663
  creating folders and 149, 660
  submitting jobs and 659, 661
  updating rules for 661
ArchiveRule property 282, 436
ArchiveRuleInherited element 487, 659
ArchiveRules element 327
ArchiveRules property 128, 327
ArchiveRules value 665
archives 652, 653
ArchiveServiceCmd element 358
ArchiveVolume element 656
archiving
  See also archiving operations
  access control lists 653
  files 669
  folders 149, 660, 673
  notifications 652
  reports 652
archiving API 669
archiving operations
  See also archiving; archiving rules
  configuring driver for 652, 653
  copying dependent files and 653
  defaults for 657
  deleting files and 670
  developing 652, 658
  reference for 669
  retrieving schedules for 163
  scheduling 435, 661, 663
  setting expiration policy for 657
  setting root folder for 653, 654
  starting 302, 664, 672
  stopping 302, 670
  testing for 559
archiving precedence 658
archiving rules
  applying to data cubes 48
  applying to folders 660
  changing 135, 659, 662, 663
  creating 652, 657, 658, 659
  defining attributes of 441
  getting 327, 665
  inheriting 442, 661, 662
  removing 413
  scheduling jobs and 661
  setting default 660
  setting file-specific 413, 510
  updating 413, 659, 661–663
  updating files and 134, 413
  uploading files and 282, 437
archiving software 652
Argument data type 442
ArgumentList element 311
arguments 442
  See also command line arguments; parameters
Arguments class 199
array definitions 444
ArrayOfColumnSchema element 532
ArrayOfCounterInfo data type 648
ArrayOfEvent data type 240
ArrayOfEventStatus data type 241
ArrayOfFileCondition data type 210, 257
ArrayOfFileInfo data type 673
ArrayOfNameValuePair class 229
ArrayOfPermission data type 673
ArrayOfResultSetSchema element 310
ArrayOfResultSetSchemat element 336
ArrayOfString data type 212
ArrayOfUserAndProperties element 588
arrays 159, 391, 443, 595
ASC value 460
ascendant roles 428
ascending sort order 460
AssignedToUserId element 536
AssignedToUserName element 536
AssignedToUsersById element 428
AssignedToUsersByName element 427
AssignRolesById element 433
AssignRolesByName element 432
asterisk (*) character 16
Async value 531

Async_Busy_Fact counter 638
Async_Fact_Failed counter 638
Async_Fact_Success counter 638
Async_Free_Fact counter 638
Async_Print_Failed counter 639
Async_Print_Success counter 639
Async_Running counter 639
asynchronous commands 302
asynchronous job IDs 538
asynchronous jobs 68, 69, 321, 369, 531, 544
asynchronous mode 393
asynchronous resource groups 68, 346, 531
asynchronous silent installations 690
AsyncResourceGroupList element 346
Attachment class 217, 262
Attachment data type 444, 699
Attachment objects 217, 263
AttachmentPart objects 218
attachments
  creating 59
  determining contents 444
  downloading 134, 295
  embedding 105, 315, 331
  getting custom formats for 311
  HTTP connections and 16, 130
  returning search results as 101, 106
  sending data as 113, 317, 349
  sending files as 114, 130, 133, 295, 470
  sending reports as 59, 300, 399, 551, 599
  sending specific pages as 382, 387
  sending to multiple locales 64
  setting output formats for 399, 488
  setting size 128
  uploading 131, 436
AttachReportInEmail element 399, 488, 551, 599
attributes
  See also properties
  archiving and 653
  binding definitions and 9
  declaring web service 6
  defining responses and 22
  getting job 335, 339
  mapping Java types and 192
Attributes element 331
Authenticate operations 584
Authenticate type definition 584
AuthenticateResponse type definition 585
authentication 42, 120, 123, 359, 564
authentication application 564, 566
authentication data 19
authentication IDs 19, 121, 198, 203, 268
authentication operations 584
authenticationSample package 564
AuthId element
  Login responses 121, 198, 250, 360
  SOAP headers and 19, 268, 480
  SystemLogin operations 401
AuthId variable 200, 252
AuthorizationIsExternal element 559
auto suggest controls 514, 515
AutoArchiveSchedule element 358
AutoArchiveSchedule property 163, 357
autoarchiving 652
  See also archiving; archiving operations
autoarchiving rules. *See* archiving rules
Automatic analysis type 451
AutoSuggest value 514
AutoSuggestThreshold element 515
AvailableColumnList element 83, 90, 526
averages 81
AVG function 441
Axis environments. *See* Apache Axis environments

B

backing up Encyclopedia 164, 171
backslash (\) character 447, 633
backup mode 277, 289
backup schedules 163, 164
BasedOnFile element 372
BasedOnFileId element 280, 281
BasedOnFileName element 89, 280, 281
BasedOnObject element 347
Basic. *See* Actuate Basic methods; Actuate Basic source files
Basic reports. *See* Actuate Basic reports
batch applications 213, 259
batch files 188
batch operations 213, 259
batch requests 213, 259
Batch utility 188
beans 190, 191, 192

BeanSerializer objects 192
binary encoding 128
binary files 100, 101, 690, 697
binding definitions 9, 10
binding element 6, 9, 10
BIRT reports 26, 229, 382, 575, 629
BIRT viewer 229
bookmarks 341
Boolean data type 445, 461, 513
Boolean element 461, 539
Boolean parameter 539
Boolean values 445
brackets ([]) characters 447
branding 116, 680
browsers. *See* web browsers
buffer pool cache performance counters 643
build numbers 546, 558
build.xml 566, 576
bundling report files 298, 300, 400, 486
Busy_Connection counter 640
button controls 514

C

C/C++ applications 605, 606, 633, 636
C# applications 14
C# classes 247
cache 17, 180, 268, 424, 643
cache database. *See* Caching service database
Cache_Hits counter 640
Cache_Misses counter 640
Cache-Control directive 17
Caching element 547
Caching service 366, 547, 613
Caching service database
  connecting to 277, 409, 456
  disconnecting from 287
  getting connection information for 311
  getting DBMS connection types for 312
Call objects 200, 201, 218, 222
CallOpenSecurityLibrary operations 42, 272
CallOpenSecurityLibrary requests 589
CallOpenSecurityLibrary type definition 272
CallOpenSecurityLibraryResponse type definition 273
canceled jobs 385
CancelJob element 67
CancelJob operations 36, 67, 273
CancelJob type definition 273
CancelJobResponse element 67
CancelJobResponse type definition 273
CancelJobStatus data type 445
Cancelled value 162
CancelReport element 183
CancelReport operations 36, 182, 273
CancelReport type definition 274
CancelReportResponse element 183
CancelReportResponse type definition 274
Capacity_Entry counter 643
Capacity_Limit counter 643
capturing SOAP messages 203
cascading parameters 513
cascading style sheets. *See* style sheets
CascadingGroupName element 341
CascadingParentName element 513
case sensitivity 5, 379, 550
CategoryPath element 452
.cb4 files 48
Cell element 459
cells 457, 459
ChangesPending element 543
changing
  access control lists 581
  application names 680
  archiving rules 135, 659, 662, 663
  file or folder privileges 136, 409, 413
  file properties 134, 409
  filter conditions 84, 476
  folder properties 409
  images 680
  notification options 61
  passwords 550
  refresh intervals 615
  registry keys 678
  schedules 93
  user privileges 433
Channel data type 446, 699
Channel element 277
channel icons 447
channel IDs 491
channel operations 29
ChannelCondition data type 447
ChannelField data type 447
ChannelId element 124, 306

ChannelName element 124, 306
channels
adding subscribers to 408, 432
adding to notification lists 422
changing properties for 153
creating 276
defining attributes of 446
deleting 286
getting ACLs for 124, 305
getting job information for 66
getting privileges for 126
getting subscribed users for 553
handling missing 407
naming 446
programming tasks for 29
removing subscribers from 408
searching 375, 447, 448
sending notifications to 60, 62, 63
specifying multiple 63
updating 153, 406, 407, 408, 446
Channels element 376
ChannelSearch data type 448
ChannelSubscriptionList property 594
character sets 16, 115
character strings. *See* strings
characters
access control lists and 577
directory paths 633
multilingual reporting and 116
not displaying 64
passwords and 550
search conditions and 447, 470, 477
text string limitations for 699
user names and 550
charset attribute 16
charts 315, 317, 331, 556, 630
check boxes 514
child roles 427, 536
ChildRoleId element 536
ChildRoleName element 536
choice element 8
chunked attachments 16, 220
chunked messages 131
chunked transfer-encoding 130, 221, 264
class files 246
class libraries 188
class paths 656
classes
building RSSE applications and 565
creating proxy objects and 14
defining search conditions and 208, 255
executing reports and 225
generating C# 247
generating code libraries for 5, 244
generating from WSDL types 192
generating Java 191
implementing custom event service and 238, 239
login operations and 198, 199
mapping Java types and 192
retrieving report pages and 227, 229
ClassId element 454
ClearSystemPrinters element 435
client-initiated requests 16
CloseInfoObject operations 35, 274
CloseInfoObject type definition 274
CloseInfoObjectResponse type definition 274
Cluster element 548
cluster engine error messages 613
cluster framework performance counters 640
cluster master failover errors 612
cluster node lock violations 543
cluster nodes 176, 484, 498, 612
clusters 68, 352, 353, 548, 613, 640
code
archive driver and 652
compiling 189
configuring RSSE logging levels and 565
creating LDAP configuration files and 567, 568
custom event web services and 237
generating 189
log consolidator application 615
logging extensions and 602, 605, 606
Performance Monitoring Extension and 633, 636
code emitter 188, 189
code libraries 5, 188, 189, 244
code pages 64
Collation element 522
CollationOption element 494, 523
color printers 494, 522, 524
ColorMode element 522
ColorModeOptions element 522

Column element 459
column headers 541
column headings 106, 451
column names 441, 450, 514
column schemas 452
ColumnDefinition data type 449
ColumnDefinition element 84
ColumnDetail data type 452
ColumnName element
  Aggregation data type 441
  as required parameter 135
  DataFilterCondition data type 458
  DataSortColumn data type 460
  ParameterDefinition data type 514
columns
  See also output columns
  adding to queries 449, 526
  aligning data in 451
  defining help text for 451
  defining query output 81, 87
  filtering values in 84, 458
  getting information about 90
  grouping 478
  setting type 452
  sorting on 284, 285, 459, 527, 547
Columns element 284, 285
ColumnSchema data type 452
ColumnType element 135, 514
comma (,) character 577
comma-separated values files 374, 383
comma-separated values formats 374, 482, 556
command attributes 303
Command element 302
command line arguments
  acencrypt utility and 688
  Apache clients and 199, 214
  log consolidator and 617
  Microsoft .NET clients and 251
  silent installs 690, 696
  silent uninstalls 691, 697
command line utilities 572, 687, 691
command status attributes 303
commands (Encyclopedia) 170, 302
Comp_Requests counter 639
company logos 116
company names 680
Completed folder 551, 594, 599
completed jobs 34, 589
Completed value 181
Completed_Jobs counter 639
completion notices 371, 398, 551, 599
  See also notifications
CompletionTime element 484, 490, 498
Component element
  CubeExtraction operations 284
  DataExtraction operations 285
  GetContent operations 308
  GetCubeMetaData operations 310
  GetDynamicData operations 315
  GetJavaReportEmbeddedComponent 331
  GetJavaReportTOC operations 332
  SelectJavaReportPage operations 382
  SelectPage operations 387
component IDs 102, 308, 453
component names 102, 453
ComponentId element 309, 317
ComponentIdentifier data type 453
components
  assigning values to 454
  creating 453, 454
  determining if operational 171
  getting content of 102, 307
  getting embedded 105, 316, 331
  logging information for 627
  retrieving specific 102
  searching for 105
ComponentType data type 454
composite messages 14, 42, 156
composite operations 30, 147, 156, 157
compound documents 295
Concise mode 172, 174, 367
Condition element
  ChannelSearch data type 448
  FileSearch data type 472
  GroupSearch data type 479
  JobNoticeSearch data type 492
  JobScheduleSearch data type 502
  JobSearch data type 504
  RoleSearch data type 536
  Search element and 141
  UserSearch data type 553
ConditionArray element
  ChannelSearch data type 448

FileSearch data type 472
GroupSearch data type 479
JobNoticeSearch data type 493
JobScheduleSearch data type 502
JobSearch data type 504
RoleSearch data type 536
UserSearch data type 553
conditions
See also search conditions
applying to jobs 161
changing filter 84
deletion requests and 120
retrieving privileges and 126
setting filter 458
wildcards and 120
Config element 684
ConfigKey element 457
Configuration Console
enabling archive service provider 656
enabling Open Security web services 573
setting passwords for 687
setting up custom event web services and 235
setting up error logging and 604
setting up usage logging and 603
configuration error messages 613
configuration files. *See* configurations
configurations
archive drivers 652, 653
archive service provider 656
custom event web service 235
encrypted passwords 688
error logging 604, 605
external user authentication 567
external user registration 568, 572
install dialogs 682
iServer 543
log consolidator application 614, 615
log consolidator database 618
Open Security applications 573
Performance Monitoring Extension 633
resource groups 28, 73, 74
RSSE applications 565, 566
silent installs 683, 685, 694, 695
TCPMonitor utility 203
uninstalling localization and documentation files 692
usage logging 603, 604
Connect requests 367
Connect value 172
connection classes 631
connection definition files. *See* database connection definition files
connection handles. *See* ConnectionHandle element
connection objects 277, 311
connection parameters 312
connection types (DBMS) 312
ConnectionHandle element
CubeExtraction operations 284
DataExtraction operations 286
ExecuteQuery operations 299
ExecuteReport operations 48, 225, 302
FetchInfoObjectData operations 305
GetContent operations 309
GetCustomFormatData operations 311
GetDynamicData operations 316
GetEmbeddedComponent operations 318
GetJavaReportEmbeddedComponent 332
GetJavaReportTOC operations 333
GetPageCount operations 340
GetStaticData operations 349
GetStyleSheet operations 350
GetTOC operations 355
Header data type 480
ODBOTunnel operations 363
OpenInfoObject operations 364
PendingSyncJob data type 517
RunningJobs data type 537
SearchReport operations 375
SelectJavaReportPage operations 382
SelectPage operations 388
SOAP headers and 20, 181, 268
WaitForExecuteReport operations 438
ConnectionHandle variable 201, 252
ConnectionParameters element 457
ConnectionProperties element 173, 367, 392, 587
ConnectionPropertiesAreExternal element 559
ConnectionPropertyExternal element 594
connections
deleting Caching service database 287
externalizing 559

getting information about 311, 312
getting properties for 307, 586, 594
opening OLAP server 363
pinging 28, 367
preserving 20, 130, 268
running logging reports and 631
setting Caching service database 277, 456
setting properties for 392
testing iServer System and 173
updating Caching service database 409
ConnectionString property 368
consolidator application. *See* log consolidator application
consolidatorconfig.xml 614
consolidatormake.xml 615
consolidatorwin.exe 617
ContainedFiles element 296
content components 308
Content element
DownloadFile operations 134, 296
DownloadTransientFile operations 296
ExportParameterDefinitionsToFile operations 304
ExtractParameterDefinitionsFromFile operations 303
FileContent data type 470
SelectFiles operations 378
UploadFile operations 128, 437
content types 64
Content variable 217, 262
ContentData element 128, 445
ContentEncoding element 128, 445
ContentEncoding property 309, 318, 332
Content-ID directive 131, 133, 134
ContentId element 133, 134, 445
ContentItemList element 379
Content-Length directive 17
ContentLength element 128, 130, 445
ContentLength property 309, 318, 332
ContentRef element 309
Content-Transfer-Encoding directive 131
Content-Type directive 16, 131, 134
ContentType element 128, 134, 445, 475
context paths 236, 238, 317
Context string parameter 236
ContextPath property 229
control commands 170, 302
control type attributes 467, 514
ControlCheckBox value 514
ControlList value 514
ControlListAllowNew value 514
ControlRadioButton value 514
ControlType element 514
conversion options 314, 394, 454, 461
ConversionOptions data type 454
ConversionOptions element 314, 400, 489
CoordinateX element 315, 317
CoordinateY element 315, 317
copy operations 155
CopyDependOnFile file attribute 653
CopyFile element 156, 272, 404
CopyFile operations 32, 98, 155, 275
CopyFile type definition 275
CopyFromLatestVersion element 128, 130, 281, 436
CopyFromLatestVersion variable 217, 262
copying
archive driver configurations 655
archives 652
file properties 128, 129
files 155, 275, 653
folders 155, 275
Copyright element 686
copyright information 686
Counter IDs 637
CounterId element 649
CounterIDList element 637, 649, 650
CounterInfo data type 648
CounterInfoList element 649, 650
CounterInformation objects 648
CounterName element 649
counters 27, 28, 650
See also performance counters
CounterValue element 649
counting
ACL entries 324
channel users 124
data rows 527
items in folders 329
objects 112
records 112, 449
report pages 110, 339
system users 124
CountLimit element

ChannelSearch data type 449
FileSearch data type 472
GetChannelACL operations 306
GetFileACL operations 324
GetFileCreationACL operations 325
GetParameterPicklist operations 342
GroupSearch data type 479
JobNoticeSearch data type 493
JobScheduleSearch data type 503
JobSearch data type 505
RoleSearch data type 536
UserSearch data type 554
CountLimit parameter 112
create operations 147
CreateActuateLogTables.sql 614, 618
CreateArchiveSubFolder file attribute 653
CreateArchiveSubFolder property 654
createCall method 222
CreateChannel element 271, 404
CreateChannel operations 276
CreateChannel type definition 276
CreateDatabaseConnection operations 35, 277
CreateDatabaseConnection type 277
CreateDatabaseConnectionResponse type definition 277
CreatedByUserId element 325
CreatedByUserName element 125, 325
CreateFileType element 271, 404
CreateFileType operations 32, 277
CreateFileType type definition 278
CreateFolder element 149, 271, 404
CreateFolder operations 32, 149, 278, 660
CreateFolder type definition 278
CreateGroup element 158, 271, 404
CreateGroup operations 34, 279
CreateGroup type definition 279
CreateNewVersion element 554
CreateNewVersion value 509
CreateParameterValuesFile element 54
CreateParameterValuesFile operations 36, 54, 98, 280
CreateParameterValuesFile type definition 280
CreateParameterValuesFileResponse element 55
CreateParameterValuesFileResponse type definition 280
CreateQuery element 85, 88
CreateQuery operations 37, 81, 88, 281
CreateQuery requests 79, 85
CreateQuery type definition 281
CreateQueryResponse element 90
CreateQueryResponse type definition 282
CreateResourceGroup element 69, 70
CreateResourceGroup operations 68, 70, 282
CreateResourceGroup type definition 282
CreateResourceGroupResponse element 70
CreateResourceGroupResponse type definition 282
CreateRole element 150, 271, 404
CreateRole operations 42, 282
CreateRole type definition 282
CreateUser element 148, 271, 403
createUser method 205, 206
CreateUser objects 206, 214, 254, 260
CreateUser operations 43, 148, 283
CreateUser type definition 283
CreateUserRole file attribute 653
creating
access control lists 577
administration applications 204, 254
administrator login requests 401
archiving rules 652, 657, 658, 659
batch applications 213, 259
channels 276
composite operations 30, 147, 156
cube profiles 48, 98
folders 149, 278
job requests 56, 393
job schedules 455, 499, 500, 506, 560
LDAP configuration files 567, 568
localized installations 679, 680
log consolidator database 618
login requests 121, 123
notification groups 398, 476
page headers 527
print jobs 369
queries 85, 281, 525
report components 453, 454
report files 154, 508
report generation requests 47, 299
report parameters 511

resource groups 26, 68, 69, 282, 530
security roles 150, 282, 465, 534, 535
silent installs 683, 694, 695
SOAP headers 19–21
SOAP messages 9, 14, 15, 21, 190, 247
temporary files 173
transaction applications for Apache Axis clients 213, 214
transaction applications for Microsoft .NET clients 259
users 148, 205, 254, 283, 579
web service interfaces 249
web-based applications 4, 100
WSDL schemas 5–11
credentials 121, 359
See also login information
Credentials element 359, 584
critical errors 605
cross-platform reporting 4, 14, 115
Crystal reports 129
CSS format 102, 555
See also style sheets
CSV element 482
CSV files 374, 383
CSV parameter 374, 556
cube builder 556
cube designer 98
cube metadata 309
cube parameter values files 146
cube profiles 48, 98, 146
cube reports 26, 98
See also data cubes
CubeExtraction operations 283
CubeExtraction type definition 283
CubeExtractionRef element 284
CubeExtractionResponse type definition 284
Currency data type 461, 513
Currency element 461, 539
Currency parameter 539
CurrentRequest counter 638
CurrentTransientReportTimeout element 180, 319
custom event web service 235, 237, 238, 239
custom events 235, 237
custom formats 111, 310
custom installation 678, 686, 694
CustomDlgs element 684, 687
CustomEvent data type 455
CustomEvent element 463, 464
CustomInputPara element 308, 387
customizing
dialog boxes 681, 682, 686
e-mail notifications 63
events 455
logging extensions 605, 606
performance monitoring 633, 636
queries 79
reports 100
silent installs 684, 685, 695
splash screens 680
CustomRef element 311

D

Daily data type 455
Daily value 501
data
aggregating 81, 441, 526
aligning 451
analyzing 98, 451
defining operation-specific 118–120
deleting 120
duplicating 18
extracting 283, 285, 313, 458
filtering 84, 284, 285, 451, 475, 527
formatting 310
grouping 80, 478
including in attachments 113, 130
localizing 5
retrieving 18, 105, 314, 316, 348, 630
scaling 317
searching for specific 119
data components 315
data cubes
See also cube reports
assigning privileges to 48
generating 48, 98
getting properties of 146
programming operations for 98
saving 48
searching 556
setting properties for 48
data directory 690, 697
Data element 305

data extraction operations. *See* DataExtraction operations
data filters 139, 142
See also filter conditions
data handlers 218
data object executable files
backward compatibility for 527
described 81
enabling grouping for 338
generating data object value files from 281
generating queries with 79
generating reports with 81
getting query information and 90
merging parameter value files with 298
setting paths for 88
submitting job requests for 397
data object instance files
creating queries and 86
described 81
generating 79, 81, 297
searching 105
data object value files
creating queries and 86, 88
described 81
extracting parameter definitions from 303
generating 35, 79, 81, 88, 281
generating reports from 397
merging with executable files 298
data rows 459, 481, 527
data schemas 459
data source map files 342
data sources 18
data streams 113, 317
data transfer protocols 4, 14
data type definitions 7–8, 443, 595
data type reference 240, 439, 595, 673
data types
assigning to parameters 466, 513
building C# classes and 247
building JavaBeans and 191
building RSSE applications and 595
building web service applications and 240
filtering and 85
naming 8, 548
setting filtering criteria and 475
specifying 457, 460
storing object arrays and 159
database connection definition files 456, 586
database connection definitions 311, 456
database drivers 614, 695
database management system. *See* DBMS
database performance counters 640, 643
Database property 368
database types 368
DatabaseConnection element 277, 409
DatabaseConnectionDefinition data type 456
DatabaseConnectionDefinition element 312
DatabaseEnvironment property 368
DatabaseList property 368
databases
See also data sources
consolidating logging information and 602, 613, 614, 615, 618
getting column information for 90
getting connection parameters for 312
getting connection types for 312
installing system 689, 690, 697
logging system information and 630
monitoring performance for 640, 643
pinging 368
programming tasks for 35
retrieving access control lists from 575
DataCell data type 457
DataExtraction operations 35, 285
DataExtraction type definition 285
DataExtractionFormat data type 458
DataExtractionFormats element 313
DataExtractionRef element 286
DataExtractionResponse type definition 286
DataFetchHandle element 274, 304, 305, 364
DataFilterCondition data type 458
DataLinkingURL element 316, 318
DataRef element 305
DataRow data type 459
DataRows element 481
DataSchema data type 459
DataSchema element 481
DataSortColumn data type 459
DataSource property 368
DataSourceType data type 460
DataSourceType element 515, 516
DataType data type 460
DataType element 451, 453, 466, 513
date arrays 501

Date data type 461, 513
Date element 461, 539
date formats 501
date parameters 53, 539
dated reports 652
DateOnly data type 461
DateOnly element 461, 539
DatesExcluded element 501
DaysToExpiration element 354
DBAdminPassword element 457
DBAdminUsername element 457
DBInterface property 631
DBLoadPath element 457
DBMS platforms 312
DBPassword element 457
DBType property 368
DBUsername element 457
.dcd files. *See* database connection definition files
Deadlocks counter 641
DEBUG logging level 565
DebugInstruction element 487
DecomposeCompoundDocument element 295, 296
DecomposeCompoundDocument variable 221, 264
default ACL templates 324
default archiving rules 660
Default Async value 68
default character set 16
default Encyclopedia volumes 354
default locales 116
default passwords 687
default port 11
default printer 524, 559
default resource group 68, 292
Default Sync value 68
default values 513, 687, 694
default viewer 559
DefaultEventLagTime element 464
DefaultEventPollingDuration element 464
DefaultEventPollingInterval element 463
DefaultFailureNoticeExpiration element 559, 666
DefaultObjectPrivileges property 594
DefaultOutputFileACL element 64, 335, 339
DefaultOutputFileACL property 334, 337
DefaultPrinterName element 551, 559
DefaultPrinterName property 435
DefaultSuccessNoticeExpiration element 559, 666
DefaultTableValues element 515
DefaultValue element 466, 513
DefaultValueIsNull element 513
DefaultViewingPreference element 559
DefaultViewingPreference property 435
definitions element 6
DelayFlush element 20, 268, 481
DelayFlush variable 201, 252
delete events 607
Delete operations 147, 151, 607
delete privilege 519, 676
Delete requests 120
DeleteChannel element 271, 404
DeleteChannel operations 286
DeleteChannel type definition 286
DeleteDatabaseConnection operations 35, 287
DeleteDatabaseConnection type definition 287
DeleteDatabaseConnectionResponse type definition 287
DeleteExpiredFiles operations 670
DeleteExpiredFiles type 670
DeleteExpiredFilesResponse type 670
DeleteFile element 151, 272, 404
DeleteFile operations 32, 98, 287
DeleteFile type definition 287
DeleteFileType element 271, 404
DeleteFileType operations 32, 289
DeleteFileType type definition 289
DeleteGroup element 271, 404
DeleteGroup operations 34, 289
DeleteGroup type definition 289
DeleteJob element 272, 405
DeleteJob operations 37, 290
DeleteJob type definition 290
DeleteJobNotices element 272, 405
DeleteJobNotices operations 37, 291
DeleteJobNotices type definition 291
DeleteJobSchedule element 272
DeleteJobSchedule operations 291
DeleteJobSchedule type definition 291
DeleteResourceGroup element 76

DeleteResourceGroup operations 76, 292
DeleteResourceGroup type definition 292
DeleteResourceGroupResponse type 292
DeleteRole element 271, 404
DeleteRole operations 43, 293
DeleteRole type definition 293
DeleteUser element 151, 271, 403
DeleteUser operations 43, 293
DeleteUser type definition 294
deleting
  archiving rules 413
  Caching service connections 287
  channel subscribers 408
  channels 286
  data 120
  file dependencies 412
  file types 289
  files 151, 287, 652, 670
  folders 151, 287
  job schedules 291
  jobs 290
  list of Encyclopedia items 151
  notification groups 289
  notifications 291
  resource groups 26, 76, 292
  security roles 293, 427
  system printers 435
  user names 294
  users 151, 293, 405
delimiters 375, 383, 541
dependencies. *See* file dependencies
dependent file names 472
dependent files 442, 509, 554, 653
DependentFileId element 472
DependentFileName element 472
DependOnFiles element 675
deploying
  external access control lists 575
  LDAP configuration files 567, 568
  reports 577–581
  web services 4, 238
Depth element 355
DES value 460
descendant roles 427
descending sort order 460
Description element
  Channel data type 446
  ColumnDefinition data type 450
  CreateFolder operations 279
  File data type 468
  FileInfo data type 675
  Group data type 477
  LicenseOption data type 506
  NewFile data type 510
  Printer data type 521
  ResourceGroup data type 530
  Role data type 534
  ServerInformation data type 543
  User data type 550
Description property
  CopyFromLatestVersion element 128, 281, 436
  GetFolderItems operation 143
  ResourceGroup element 424
  ResultDef element 328
descriptions 699
design files 581, 629
destination attributes (Ping) 366
Destination element 172, 366
Detail logging level 604, 607, 654
detail rows 528
developers 5, 100, 565, 633
developing
  applications. *See* applications
  web-based services 4
development environments 9
development languages 14
DHTML formats 102, 227, 555
DHTML reports 559
DHTMLPageCaching element 559
DHTMLPageCaching property 435
DHTMLPageCachingExpiration property 435
DHTMLPageCachingExpirationAge element 559
diagnostic information 173, 365
diagnostic operations 171
  See also Ping operations
dialog boxes
  creating silent installs and 683
  customizing 681, 682, 686
  encrypting information in 687, 688
  hiding 687
  replacing setup images in 680

viewing default values for 687
Dimension analysis type 451
directories
Apache Axis client sample reports 189
archiving and 652, 653, 654
copying items in 155
customizing installations and 678
getting contents of 139
installing log consolidator and 614, 617
logging error information and 603, 647
logging usage information and 602, 646
Microsoft .NET clients 244
moving items in 154
preserving workspace 135
running RSSE applications and 566
running silent installs and 690, 694
running silent uninstalls and 696, 697
searching 139, 209, 256
directory paths. *See* paths
Disabled element 530
Disabled property 424
disk space 180
dispatch node (consolidator database) 620
DispatchedRequest counter 638
DispatchNode entry (consolidator database) 620
display formats 110, 451
See also formats
display options
reports 399, 555
search result sets 374
displayFilterIcon property 230
DisplayFormat element 451
displayGroupIcon property 230
displaying
access control lists 583
file properties 139
folder properties 139
performance counters 632, 634
query output 79
query parameters 90
Reportlets 308, 309
reports 99, 100, 229, 554
search results 106
SOAP messages 203
specific report pages 100
WSDL schema definitions 11
DisplayLength element 451
DisplayName element
ColumnDefinition data type 451
ComponentIdentifier data type 454
ComponentType data type 454
FieldDefinition data type 466
ParameterDefinition data type 514
displayName element 452
DisplayType element 474
distributed environments 4
distributing reports. *See* deploying reports
DllPath property 368
DLLs 244, 602, 633
document conversion options 314, 394, 454, 461
documentation xix
DocumentConversionOptions data type 461
documents
See also reports
attaching to e-mail 59
creating specific versions of 56
delivering multilingual 115
downloading 295
generating 46
getting table of contents for 332
preserving workspace directories for 135
searching 105
tracking usage information for 629
updating 135
DoesGroupExist operations 585
DoesGroupExist type definition 585
DoesGroupExistResponse type definition 585
DoesRoleExist operations 585
DoesRoleExist type definition 585
DoesRoleExistResponse type definition 586
DoesUserExist operations 586
DoesUserExist type definition 586
DoesUserExistResponse type definition 586
.doi files. *See* data object instance files
Domain element 359
domains 121, 359
Done element 465
Done status message 50
Double data type 461, 513
Double element 461, 539
Double parameter 539

double quotation mark (") character
search results and 106, 375, 383, 541
SOAPAction directive and 17
double values 440
.dov files. *See* data object values files
DowloadEmbedded element 382
download applications 221, 264
DownloadDoubleAsBinary element 364
DownloadEmbedded element
DownloadFile operations 295
ExportParameterDefinitionsToFile operations 304
GetContent operations 308
GetCustomFormatData operations 311
GetDynamicData operations 315
GetEmbeddedComponent operations 317
GetJavaReportEmbeddedComponent 331
GetJavaReportTOC operations 332
GetStaticData operations 349
GetStyleSheet operations 349
GetTOC operations 355
SearchReport operations 374
SelectPage operations 387
DownloadEmbedded option 113
DownloadEmbedded variable 221, 264
DownloadFile class 221, 264
DownloadFile element 133
DownloadFile objects 223, 265
DownloadFile operations 32, 98, 133, 134, 265, 294
DownloadFile requests 130, 223, 265
DownloadFile type definition 295
DownloadFileResponse attribute 114, 115
DownloadFileResponse element 133, 134
DownloadFileResponse objects 265
DownloadFileResponse type definition 295
downloading
compound documents 295
files 113, 133, 134, 220, 263, 294, 296
query output 79
DownloadTransientFile operations 32, 296
DownloadTransientFile type definition 296
DownloadTransientFileResponse type definition 296
.dox files. *See* data object executable files
DOX value 527
.dp4 files 48
driver names 475, 615
DRIVER_JAR_PATH variable 656
DriverName element 475
drivers
configuring archive 652, 653
consolidating logging information and 614
creating silent installations and 695
diagnosing problems with 366
polling 487, 511
DriverTimeout element 487, 511
drop-down lists 467, 514
DroppedFromUsersById element 428
DroppedFromUsersByName element 427
DropRolesById element 433
DropRolesByName element 432
DSTAMP variable 189
Duplex element 494, 522, 523
DuplexOptions element 522
duplicate names 18, 283, 362
duplicate requests 148, 206, 277
duplicating file types 278
DurationSeconds element 484, 498
dynamic data 105, 314, 317
dynamic link libraries. *See* DLLs
DynamicDataRef element 315

E

e.Analysis formats 79
e.Analysis Option 556
e.Analysis value 121, 360
e.Report Designer Professional 683
e.Reporting Server. *See* iServer
e.Reporting System. *See* iServer System
e.Spreadsheet reports. *See* spreadsheet reports
Echo requests 174, 366
Echo value 172
elementFormDefault attribute 7
elements
binding definitions and 10
case sensitivity for 5
character limits for 699
defining data types and 8
HTTP headers and 16
mapping to Java types 192

multiple data sources and 18
SOAP messaging and 5, 15
e-mail
See also notifications
addressing 60, 148
directing to external users 590, 593, 597
overriding recipient preferences for 62, 399, 488
sending attachments with. *See* attachments
sending to multiple locales 64
setting notification options for. *See* notifications
specifying content type for 64
e-mail templates 63, 64
EmailAddress element 550, 598
EmailAddress property 593
EmailForm property 594
EmailFormat element 399, 488
EmailWhen property 594
Embed element 317
embedded components 105, 316, 331
embedded files 470
embedded images 331, 548
embeddedDownload variable 199
EmbeddedObjPath element 557
EmbeddedProperty element 548
EmbeddedRef element 318, 332
EnableAutoParamCollection element 475
EnableColumnHeaders element 541
EnableColumnHeaders property 374, 383
EnableCustomEventService element 464
EnableFilter element 84, 451
enableMetaData property 230
encoding 64, 437
encoding attribute 7
encoding methods 557
encoding restrictions 116
encoding schemes 128, 130
encoding style URIs 219
Encrypt attribute 687, 688
encrypted tokens 360
EncryptedPwd element 359
encryption 687, 688
encryption levels 401
Encyc_Available_Space counter 639
Encyc_Requests counter 639
Encyc_Space counter 639
Encyclopedia engine 172, 366
Encyclopedia Health Monitor 612
Encyclopedia service
deleting notifications and 594
overview 118
pinging 28, 173
Encyclopedia volume failover errors 612
Encyclopedia volume performance counters 639
Encyclopedia volumes
adding folders to 278
assigning resource groups to 68, 69, 531
authenticating users for 121, 359
backing up 164, 171
configuring Open Security applications for 573
configuring RSSE applications for 566
controlling access to 120
copying objects in 155
creating archives for 652, 653, 656, 664
creating archiving rules for 657, 658
creating items for 148–150
creating users for 148, 205, 214, 254
custom event web services and 235
defining attributes of 557
deleting items in 150–152, 652
deleting resource groups for 76
deploying reports to 577–581
downloading files from 133, 220, 263, 294, 296
executing commands for 170, 302
external registration and 564, 572
getting default 354
getting iServer options for 121
getting job information for 64
getting names 28, 353
getting properties for 163, 357
installing system database for 689, 690, 697
integrating third-party reports with 4
logging in to 121, 197, 202, 250, 359
managing 4, 29, 127, 147, 269
monitoring iServer and 176
monitoring performance for 639
moving items in 154
naming 558
pinging 174, 175, 367

programming tasks for 31
retrieving access control lists from 575, 577
searching 160, 208, 255
selecting items in 139, 141, 160
sending requests to 17, 21, 203, 204, 207, 268
setting system printer for 435
testing for 542
updating items in 30, 134, 152–154
updating properties for 434, 436
uploading files to 127–133, 216, 261, 436
viewing error log entries for 612
End element 528
EndArchive operations 670
EndArchive type 670
EndArchiveResponse type 671
EndTime element 529
Envelope attribute 18
environment variables 196
environments 4, 14
equal sign (=) character 577
erroneous data 18
error codes 22, 545
error event IDs 618
error events 621
error log consolidator 602, 613
error log database 630
error log files 602, 606, 610, 647
error log settings 615
error logging configurations 604
error logging example reports 629
Error Logging extension 602, 606, 647
error logging functions 647
ERROR logging level 565
Error Logging page 604
error messages 21, 22, 57, 59, 612
error parameters 612
error severity levels 611
error_log.csv 602, 610
ErrorDescription element
CancelJob operations 273
CancelReport operations 274
ExecuteQuery operations 298
ExecuteReport operations 301
GetSyncJobInfo operations 351
WaitForExecuteReport operations 438
ErrorLog counter 641
ERRORLOG_FILE_EXT property 606
ERRORLOG_FILENAME property 606
errorlogext.c 606
errors
Administrate operations and 148, 208
channel subscriptions and 407
download file operations and 265
duplicate element names and 18
failed jobs and 59
failed SOAP requests and 22
iServer status and 546
job information retrieval and 64
logging. *See* error log; error logging
login requests and 252
namespace directives and 18
report execution and 605
RSSE applications and 565
upload file operations and 220, 263
user property update operations and 430
viewing log file entries for 611, 612
escape characters 447, 470, 477, 633
event array 240
Event data type 241, 462
event IDs 618
event lag time setting 235
Event objects 235
event service class files 239
event service sample application 235, 237, 238, 239
event status array 241
event status codes 237, 242, 463
event type code (consolidator database) 623
event types 464, 623
event-based scheduling 234, 235, 237
EventList element 242
EventName element 241, 463, 499
EventNumber element 241, 242
EventOptions data type 463
EventParameter element 241, 455, 499
events
customizing 455
defining attributes of 241, 462
defining options for 463
getting status of 242
logging error information and 611
logging usage information and 606, 607, 608

monitoring RSSE applications and 565
monitoring system 181
scheduling reports and 234, 235, 237
viewing administration operation 619
viewing application 620
viewing error 621
viewing logging information for 622
eventSample.jar 238
EventService interface 239
EventStatus data type 242
EventStatus element 463, 499
EventStatusList element 242
EventType data type 464
EventType element 463, 499, 503
EventTypeCode entry (consolidator database) 623
Example files 685
Examples element 685
Examples.sln 245
Excel formats 103, 104, 455, 555
EXCEL parameter 374, 556
Excel spreadsheets 104, 310
See also spreadsheet reports
executable file types 474
executable files
accessing 244
attaching to responses 300
backward compatibility for 527
creating queries and 81
creating resource groups and 69
enabling grouping for 338
generating data object value files from 281
generating report object value files from 54, 280
generating reports from 81, 224
getting parameters from 53, 344
input file dependencies and 56
running 47, 57
setting paths for 88
setting privileges on 579
submitting job requests for 397
third-party reports and 4, 46, 413
uploading 128, 129
ExecutableFileId element 299
ExecutableFileName element 518, 538
ExecutableVersionName element 518, 538
ExecutableVersionNumber element 518, 538
execute privilege 519, 676
ExecuteQuery element 82
ExecuteQuery operations 35, 81, 297
ExecuteQuery requests 79
ExecuteQuery type definition 297
ExecuteQueryResponse element 84
ExecuteQueryResponse type definition 298
ExecuteReport application 225
ExecuteReport applications 225–226
ExecuteReport element 47, 48, 50, 52
executeReport method 226
ExecuteReport operations
assigning resource groups and 76
building applications for 225–226
defining 299
generating data cubes and 48, 98
generating reports and 37, 50, 224
running reports and 47–48, 51
setting response wait times for 49–50
ExecuteReport type definition 299
ExecuteReportResponse element 48, 49, 50, 52
ExecuteReportResponse type definition 301
ExecuteReportStatus data type 464
ExecuteVolumeCommand element 171, 664
ExecuteVolumeCommand operations 31, 170, 302
ExecuteVolumeCommand type definition 302
ExecuteVolumeCommandResponse element 171, 664
ExecuteVolumeCommandResponse type definition 302
executing
jobs 55, 56, 73, 440, 536
queries 88, 297
reports 47, 51, 234, 299, 437
sample applications 196, 250
silent installs 689, 694, 696
silent uninstalls 691, 692, 697
Execution element 529
execution information 608
execution requests. *See* ExecuteReport operations
execution status attributes 301, 438
ExecutionTimeout element 538
Exists element 585, 586

expiration age 660, 661
See also archiving operations
expiration dates 660
Expiration element 447
expiration intervals 442, 551, 599, 666
expiration notices 652, 666
expiration policy 657
ExpirationAge element 442, 487, 659, 660
ExpirationDate element 354, 487, 660
ExpirationTime element 442, 659
expired jobs 385
Expired value 162
ExpireDependentFiles element 442, 659
ExpiredFileIds element 670
ExpiredFiles element 672
ExportBeforeViewing element 474
exporting
files 474
parameter definitions 169, 303
ExportParameterDefinitionsToFile element 170
ExportParameterDefinitionsToFile operations 37, 169, 303
ExportParameterDefinitionsToFile type definition 304
ExportParameterDefinitionsToFileResponse element 170
ExportParameterDefinitionsToFileResponse type definition 304
ExportParametersToFile operations 98
extensible markup language. *See* XML
Extension property 278
external access control lists 575
external archive software 652
external authentication 564, 567, 584
external connections 559
external data sources 586
external file types 127
external page-level security 575
external registration
authenticating users and 584
configuring LDAP files for 568
creating roles and 558
described 564
enabling 559
preparing Encyclopedia for 572
external registration application 565, 566
external security integration levels 593
external security systems 42, 564
external user names 163
external user properties 358, 588, 593
external users 586, 591, 597
ExternalProperties element 593
ExternalTranslatedRoleName data type 465
ExternalUserPropertyNames element 358
ExternalUserPropertyNames property 163, 357
ExtractParameterDefinitionsFromFile element 169
ExtractParameterDefinitionsFromFile operations 37, 168, 303
ExtractParameterDefinitionsFromFile Response element 169
ExtractParameterDefinitionsFromFile Response type definition 303
ExtractParametersFromFile type definition 303

F

–f1 command line option 690
Factory processes 67, 69, 180, 532, 539
Factory service
building reports and 46
creating e-mail attachments and 59
creating resource groups and 67, 70, 71, 532
enabling 546
getting information about 27, 318
logging usage information for 604
overview 46
pinging 28, 172, 173, 366, 367
running jobs and 27, 177, 517, 536
FactoryPid element 539
Failed element 446, 465, 545
failed jobs 59, 465, 533
Failed message 50, 67, 183
failed requests 50
Failed value 162, 181, 545
FailNoticeExpiration property 594
failover errors 612
failure message templates 63
failure notices 371, 398, 551, 594, 599, 666
FailureNoticeExpiration element 551, 599

FATAL logging level 565
fatal logging level 610
Fault attribute 22
Fault messages 22
FeatureOptions element 122, 360
features 360
fetch handles 210, 258
FetchDirection element
  ChannelSearch data type 449
  FileSearch data type 472
  GetChannelACL operations 306
  GetFileACL operations 324
  GetFileCreationACL operations 325
  GroupSearch data type 479
  JobNoticeSearch data type 493
  JobScheduleSearch data type 503
  JobSearch data type 505
  RoleSearch data type 536
  UserSearch data type 554
FetchDirection parameter 112
FetchHandle element
  ChannelSearch data type 449
  FileSearch data type 473
  GetChannelACL operations 306
  GetFileACL operations 324
  GetFileCreationACL operations 125, 326
  GetFolderItems operations 329
  GroupSearch data type 479
  JobNoticeSearch data type 493
  JobScheduleSearch data type 503
  JobSearch data type 505
  RoleSearch data type 536
  SelectChannels operations 376
  SelectFiles operations 379
  SelectGroups operations 381
  SelectJobs operations 384, 385
  SelectJobSchedules operations 386
  SelectRoles operations 390
  SelectUsers operations 391
  UserSearch data type 554
FetchHandle parameter 112
FetchInfoObjectData operations 35, 304
FetchInfoObjectData type definition 304
FetchInfoObjectDataResponse type definition 304
FetchSize element
  ChannelSearch data type 449
  FileSearch data type 472
  GetChannelACL operations 306
  GetFileACL operations 324
  GetFileCreationACL operations 325
  GetParameterPicklist operations 342
  GroupSearch data type 479
  JobNoticeSearch data type 493
  JobScheduleSearch data type 503
  JobSearch data type 505
  OpenInfoObject operations 364
  RoleSearch data type 536
  SelectGroups operations 590
  SelectRoles operations 591
  SelectUsers operations 592
  UserSearch data type 553
FetchSize parameter 112
Field element
  ChannelCondition data type 447
  FileCondition data type 469
  GroupCondition data type 477
  JobCondition data type 482
  JobNoticeCondition data type 491
  JobScheduleCondition data type 500
  RoleCondition data type 534
  UserCondition data type 551
FieldControlType element 467
FieldDefinition data type 465
fields. *See* columns
FieldValue data type 467
FieldValue element 529
file access types 469
file attributes 653
File data type 467, 699
file dependencies
  archiving and 653, 658
  creating files and 127, 509
  executable files and 56
  moving files and 362
  specifying 412
  uploading files and 554
file descriptions 468, 474, 510
File element 295, 327, 470
file events 234
file IDs 139, 468
file lists 139
file name extensions 309, 379, 474
file names 139, 362, 379, 468, 690

File objects 218, 223, 263, 265
file operations 31
file permissions 136, 138, 413, 423, 653
file properties
  changing 134
  copying 128, 129
  displaying 139
  getting 139, 145, 212, 326
  setting 127
  updating 409
file size 468
file streams 263
file type attributes 474
file type codes (consolidator database) 624
file type events 470
file type icons 415, 474
file types
  adding 277, 473, 699
  archiving and 658, 660, 663
  defining resource groups and 69, 71
  deleting 289
  developing cube reports and 98
  duplicating 278
  generating executable files and 224
  generating information objects and 81
  getting conversion options for 314
  getting parameters for 163, 167, 327
  searching 379
  specifying 20, 56, 268, 301, 532
  updating 152, 414, 415, 416
  uploading files and 127
  viewing logging information for 624
FileAccess data type 469, 673
FileCondition data type 469
FileCondition objects 209, 257
FileContent data type 470
file-creation privileges 125, 126
FileCreationACL template 324
FileDescription element 309
FileEvent data type 470
FileEvent element 462, 464
FileExtension element 309
FileField data type 470
FileId element
  CreateDatabaseConnection operations 277
  DownloadFile operations 133, 295
  DownloadTransientFile operations 296
  GetConnectionPropertyAssignees operations 307
  GetFileACL operations 323
  GetFileDetails operations 326
  SaveSearch operations 373
  SaveTransientReport operations 373
  SetConnectionProperties operations 392
  UpdateDatabaseConnection operations 409
  UploadFile operations 437
FileId variable 221, 264
FileInfo data type 674
FileInfo elements 673
FileLocation element 675
FileName element
  DeleteDatabaseConnection operations 287
  DownloadFile operations 133, 295
  GetConnectionProperties operations 587
  GetConnectionPropertyAssignees operations 307
  GetDatabaseConnectionDefinition operations 311
  GetFileACL operations 323
  GetFileDetails operations 326
  Ping operations 173, 367
  SetConnectionProperties operations 392
FileName variable 221, 264
FileProperties element 280, 281, 295
FileProperties variable 221, 264
files
  applying ACLs to 136
  archiving 135, 658, 661, 665, 669
  attaching to e-mail messages 59, 114, 470
  attaching to SOAP requests or responses 130, 133
  bundling 298, 300, 400, 486
  copying 155, 275, 653
  creating 154, 508
  defining attributes of 467
  defining fields in 470
  deleting 151, 287, 652, 670
  determining if private or shared 673
  downloading 113, 133, 134, 220, 263, 294, 296
  embedding 113, 130, 220, 470
  encrypting 688
  exporting 474

exporting parameters to 169, 303
getting access rights to 125
getting ACLs for 123, 322
getting expired 671
getting parameters from 303, 344
getting privileges for 125, 126
handling missing 411
installing log consolidator and 614
localizing installations and 680
logging error information to. *See* error log files
logging RSSE objects to 565
logging usage information to. *See* usage log files
monitoring 470
moving 154, 361
naming. *See* file names
overwriting 127, 154, 362, 509
programming tasks for 31
reading 218
returning information about 377, 674
returning list of 139, 142, 377
returning location of 328
running custom installs and 678
running or printing 56
running silent installs and 684, 690, 694, 696
running silent uninstalls and 697
saving 300
searching for 139, 141, 379, 469, 471
selecting 139, 377
setting expiration policy for 652, 657
setting location of license 686
setting privileges for 136, 138, 413, 423
setting properties for. *See* file properties
specifying input 396
uninstalling localization and online documentation 692
updating 134, 135, 152, 409, 411, 414
uploading 113, 127, 131, 216, 261, 436
versioning options for 127, 554
FileSearch class 210, 257
FileSearch data type 471
FileSearch objects 210, 257
FileType data type 473, 700
FileType element
ArchiveRule data type 442, 659
CreateFileType operations 278
DocumentConversionOptions data type 461
File data type 468
FileInfo data type 675
GetDataExtractionFormats operations 313
GetDocumentConversionOptions operations 314
GetFileTypeParameterDefinitions operations 327
Header data type 481
SOAP headers and 20, 268
FileType entry (consolidator database) 624
FileType method 209
FileType property 143, 328
FileType variable 201, 257
FileTypeCode entry (consolidator database) 624
FileTypes element 380, 532, 544
FileTypes property 393, 425
filter conditions 84, 458, 476
Filter element 342
FilterAdvanced value 515
FilterCriteria data type 475
FilterCriteria element 85
filtering data 84, 284, 285, 451, 475, 527
filtering options 84
FilterList element 284, 285, 527
filters 139, 142
FilterSimple value 515
finding data 105, 373
See also searching
firewalls 14
FirstPage element 465
FirstPage status message 50
folder IDs 139, 328
folder lists 139
folder names 139, 279, 328
folder operations 31
FolderId element 328
FolderName element 279, 328
folders
adding privileges to 138
adding to Encyclopedia 278
applying ACLs to 136, 137
applying archiving rules to 657, 658, 661, 662

archiving 149, 660, 673
changing privileges for 136
changing properties 409
copying 155, 275
creating 149, 278
customizing silent installs and 685
deleting 151, 287
getting ACLs for 123, 322
getting archiving rules for 665
getting files in 142, 143, 328, 377
getting properties for 139, 145
handling missing 411
listing available 139
moving 154, 361
programming tasks for 31
running online archive driver and 652, 653, 654
searching 143, 144
setting expiration policy for 657
setting home 148, 550, 593
updating 134, 409, 411, 414
FolderWhen property 594
foreign keys 619
Format element 317, 364, 455, 555
format type attributes 330, 476
FormatList element 330
formats
converting report instances and 393, 455
creating job schedules and 501
displaying dynamic data and 317
displaying query output and 79
displaying reports and 102, 451, 555
displaying search results and 106, 374
e-mail attachments and 60, 62, 399, 488
extracting data and 313, 458
generating locale-specific data and 5
getting conversion options for 314
getting custom 111, 310
getting display 110
getting supported 27, 329
localizing reports and 21, 116
MAPI encoding and 64
overriding preferences for 59
retrieving information objects and 481
running jobs and 59
searching reports and 556
selecting 527
specifying component IDs and 308
specifying text 452
specifying type 330, 476
FormatType data type 476
FormatType element 330
FormName element 495
Free_128Bytes counter 642
Free_16Bytes counter 642
Free_1KBytes counter 642
Free_256Bytes counter 642
Free_32Bytes counter 642
Free_512Bytes counter 642
Free_64Bytes counter 642
freeing resources 605
FrequencyInDays elements 456
FrequencyInMonths element 508
FrequencyInWeeks element 560
functions
aggregating data and 441
retrieving error information and 647
retrieving usage information and 646
searching external security systems and 42
fundamental data types. *See* data types

G

GeneralDlgs element 684, 686
generating
C# classes 247
code libraries 5, 244
data cubes 48, 98
data object instance files 79, 81, 297
data object value files 35, 79, 81, 88, 281
Java classes 191
JavaBeans 191, 192
Javadoc 189
locale-specific data 5
open server reports 35
query output 81, 87
report object value files 54, 280, 300
reports 46, 47, 56, 224
source code 189
table of contents 108
third-party reports 46
XML documents 103
Generation element 546
generation events (reports) 608

generation requests
assigning to resource groups 21, 268
cancelling 51, 67, 181, 182, 437, 445
creating 47, 299
monitoring performance for 638
prioritizing 594
retrying 533
scheduling 57
setting status of 464
setting wait intervals for 49, 50, 298, 301
submitting jobs for 397
Get operations 160
Get requests 162
getActuateSoapPort method 195
getActuateSoapPortAddress method 195
GetAllCounterValues operations 637, 649
GetAllCounterValues type definition 649
GetAllCounterValuesResponse operations 637
GetAllCounterValuesResponse type definition 649
GetAllPaperSizes element 352
getAuthId method 203
GetChannelACL element 124, 126
GetChannelACL operations 43, 124, 126, 305
GetChannelACL type definition 305
GetChannelACLResponse element 125, 127
GetChannelACLResponse type definition 306
GetConnectionProperties operations 586, 594
GetConnectionProperties type definition 586
GetConnectionPropertiesResponse type definition 587
GetConnectionPropertyAssignees operations 43, 307
GetConnectionPropertyAssignees type definition 307
GetConnectionPropertyAssigneesResponse type definition 307
GetContent element 104
GetContent operations 37, 99, 102, 307
GetContent type definition 308
getContentData method 230
GetContentResponse element 104
GetContentResponse type definition 309
GetCounterValues element 637
GetCounterValues operations 637, 649
GetCounterValues type definition 649
GetCounterValuesResponse element 637
GetCounterValuesResponse operations 637
GetCounterValuesResponse type definition 650
GetCubeMetaData operations 309
GetCubeMetaData type definition 310
GetCubeMetaDataResponse type definition 310
GetCurrentPageACL method 583
GetCustomFormat element 111, 310
GetCustomFormat method 38, 111, 310
GetCustomFormat operations 38, 99, 111, 310
GetCustomFormatResponse type definition 311
GetDatabaseConnectionDefinition operations 35, 311
GetDatabaseConnectionDefinition type definition 311
GetDatabaseConnectionDefinitionResponse type definition 312
GetDatabaseConnectionParameters operations 35, 312
GetDatabaseConnectionParameters type definition 312
GetDatabaseConnectionParametersResponse type definition 312
GetDatabaseConnectionTypes operations 35, 312
GetDatabaseConnectionTypes type definition 313
GetDatabaseConnectionTypesResponse type definition 313
GetDataExtractionFormats operations 32, 313
GetDataExtractionFormats type definition 313
GetDataExtractionFormatsResponse type definition 313
GetDocumentConversionOptions operations 38, 314
GetDocumentConversionOptions type definition 314
GetDocumentConversionOptionsResponse type definition 314
GetDynamicData operations 38, 314
GetDynamicData type definition 314

GetDynamicData value 317
GetDynamicDataResponse type definition 315
getEmbed method 230
GetEmbeddedComponent element 105
GetEmbeddedComponent operations 38, 99, 105, 316
GetEmbeddedComponent type definition 316
GetEmbeddedComponentResponse element 105
GetEmbeddedComponentResponse type definition 317
GetEventStatus data type 242
GetEventStatus method 237, 239
GetFactoryServiceInfo element 180, 318
GetFactoryServiceInfo operations 318
GetFactoryServiceInfo type definition 318
GetFactoryServiceInfoResponse element 181
GetFactoryServiceInfoResponse type definition 318
GetFactoryServiceJobs element 178
GetFactoryServiceJobs operations 320
GetFactoryServiceJobs type definition 320
GetFactoryServiceJobsResponse element 179
GetFactoryServiceJobsResponse type definition 322
GetFileACL element 124
GetFileACL operations 43, 123, 322
GetFileACL type definition 323
GetFileACLResponse element 124
GetFileACLResponse type definition 324
GetFileCreationACL element 125, 126
GetFileCreationACL operations 43, 125, 126, 324
GetFileCreationACL type definition 324
GetFileCreationACLResponse element 125, 126
GetFileCreationACLResponse type definition 326
GetFileDetails element 145, 147, 665
GetFileDetails operations
  archiving and 665
  defining 326
  generating data cubes and 98, 146
  generating reports and 32, 145
  returning properties and 145
GetFileDetails type definition 326
GetFileDetailsResponse element 146, 147, 665
GetFileDetailsResponse type definition 327
GetFileTypeParameterDefinitions element 163, 168
GetFileTypeParameterDefinitions operations 33, 167, 327
GetFileTypeParameterDefinitions type definition 327
GetFileTypeParameterDefinitionsResponse element 168
GetFileTypeParameterDefinitionsResponse type definition 327
GetFolderItems element 143, 144
GetFolderItems operations
  defining 328
  generating data cubes and 98
  managing report files and 33
  returning properties and 142, 143
  searching and 139, 144, 209, 256
GetFolderItems type definition 328
GetFolderItemsResponse element 144, 145
GetFolderItemsResponse type definition 329
GetFormats element 110
GetFormats operations 99, 110, 329
GetFormats type definition 329
GetFormatsResponse element 111
GetFormatsResponse type definition 330
GetInfoObject operations 35, 330
GetInfoObject type definition 330
GetInfoObjectResponse type definition 331
GetJavaReportEmbeddedComponent operations 38, 331
GetJavaReportEmbeddedComponent Response type definition 331
GetJavaReportEmbeddedComponent type definition 331
GetJavaReportTOC operations 38, 332
GetJavaReportTOC type definition 332
GetJavaReportTOCResponse type definition 333
GetJobDetails element 64, 78, 92
GetJobDetails operations
  defining 333
  executing queries and 81, 92
  generating data cubes and 98

retrieving job properties and 38, 64
retrieving resource group information and 78
GetJobDetails type definition 333
GetJobDetailsResponse element 65, 79, 92
GetJobDetailsResponse type definition 334
getMessageContext method 223
GetMetaData operations 35, 336
GetMetaData type definition 336
GetMetaDataResponse type definition 336
GetNextExpiredFiles operations 671
GetNextExpiredFiles type 671
GetNextExpiredFilesResponse type 672
GetNoticeJobDetails element 66, 96
GetNoticeJobDetails operations
defining 336
executing jobs and 39, 65
executing queries and 81, 96
GetNoticeJobDetails type definition 337
GetNoticeJobDetailsResponse element 96
GetNoticeJobDetailsResponse type definition 338
GetPageCount element 110
GetPageCount operations 39, 99, 110, 339
GetPageCount type definition 340
GetPageCountResponse element 110
GetPageCountResponse type definition 340
GetPageNumber operations 39, 340
GetPageNumber type definition 340
GetPageNumberResponse type definition 341
GetParameterPickList operations 39, 341
GetParameterPickList type definition 341
GetParameterPickListResponse type definition 342
GetQuery element 90
GetQuery operations 39, 81, 90, 342
GetQuery type definition 342
GetQueryResponse element 91
GetQueryResponse type definition 344
GetReportParameters element 53, 57
GetReportParameters operations 39, 53, 344
GetReportParameters type definition 344
GetReportParametersResponse element 53
GetReportParametersResponse type definition 345
GetResourceGroupInfo element 72
GetResourceGroupInfo operations 72, 345
GetResourceGroupInfo type definition 345
GetResourceGroupInfoResponse element 72
GetResourceGroupInfoResponse type definition 345
GetResourceGroupList element 71
GetResourceGroupList operations 71, 346
GetResourceGroupList type definition 346
GetResourceGroupListResponse element 72
GetResourceGroupListResponse type definition 346
getResponseMessage method 223
GetSavedSearch operations 42, 347
GetSavedSearch type definition 347
GetSavedSearchResponse type definition 347
getSerializer method 192
GetServerResourceGroupConfiguration element 73
GetServerResourceGroupConfiguration operations 73, 347
GetServerResourceGroupConfiguration Response element 73
GetServerResourceGroupConfiguration Response type definition 348
GetServerResourceGroupConfiguration type definition 347
GetStaticData operations 39, 348
GetStaticData type definition 348
GetStaticData value 316
GetStaticDataResponse type definition 349
GetStyleSheet operations 39, 99, 349
GetStyleSheet type definition 349
GetStyleSheet value 317
GetStyleSheetResponse type definition 350
GetSyncJobInfo element 181
GetSyncJobInfo operations 39, 350
GetSyncJobInfo type definition 350
GetSyncJobInfoResponse element 182
GetSyncJobInfoResponse type definition 350
GetSystemMDSInfo operations 351
GetSystemMDSInfo type definition 351
GetSystemMDSInfoResponse type definition 351
GetSystemPrinters element 163, 165
GetSystemPrinters operations 352
GetSystemPrinters type definition 352
GetSystemPrintersResponse element 165

GetSystemPrintersResponse type definition 352
GetSystemServerList element 176
GetSystemServerList operations 352
GetSystemServerList type definition 353
GetSystemServerListResponse element 177
GetSystemServerListResponse type definition 353
GetSystemVolumeNames operations 353
GetSystemVolumeNames type definition 353
GetSystemVolumeNamesResponse type definition 353
GetText method 583
GetTOC element 109
GetTOC operations 39, 99, 108, 354
GetTOC type definition 354
GetTOCResponse element 109
GetTOCResponse type definition 355
GetTranslatedRoleNames operations 587
GetTranslatedRoleNames type definition 587
GetTranslatedRoleNamesResponse type definition 587
GetUserACL method 582
GetUserACL operations 587
GetUserACL type definition 588
GetUserACLResponse type definition 588
GetUserLicenseOptions operations 43, 355
GetUserLicenseOptions type definition 356
GetUserLicenseOptionsResponse type definition 356
GetUserPrinterOptions element 163, 167
GetUserPrinterOptions operations 39, 356
GetUserPrinterOptions type definition 356
GetUserPrinterOptionsResponse element 167
GetUserPrinterOptionsResponse type definition 357
GetUserProperties operations 588
GetUserProperties type definition 588
GetUserPropertiesResponse type definition 588
GetUsersToNotify element 589
GetUsersToNotify operations 589
GetUsersToNotifyResponse type definition 589
GetVolumeProperties element 162, 163, 164
GetVolumeProperties operations 31, 163, 357
GetVolumeProperties type definition 357
GetVolumePropertiesResponse element 164
GetVolumePropertiesResponse type definition 358
grant privilege 519, 676
GrantedRoleId element
  GetChannelACL operations 126, 306
  GetFileACL operations 323
  GetFileCreationACL operations 325
  PrivilegeFilter data type 524
GrantedRoleName element
  GetChannelACL operations 126, 306
  GetFileACL operations 323
  GetFileCreationACL operations 325
  PrivilegeFilter data type 524
GrantedUserId element
  GetChannelACL operations 126, 306
  GetFileACL operations 323
  GetFileCreationACL operations 325
  PrivilegeFilter data type 524
GrantedUserName element
  GetChannelACL operations 126, 306
  GetFileACL operations 323
  GetFileCreationACL operations 325
  PrivilegeFilter data type 524
GrantExp property 582
GrantPermissions element 138, 408, 413
GrantPermissions operations 137
graphics 116, 547, 680
graphs. *See* charts
Group data type 476, 700
Group element 279, 513, 516
group keys 526
group operations 34
Group property 51
GroupCondition data type 477
GroupField data type 477
GroupHeadingFields element 478
grouping data 80, 478
Grouping data type 478
grouping pages 334, 338, 343
GroupingEnabled element
  GetJobDetails operations 334
  GetNoticeJobDetails operations 338
  GetQuery operations 343
  Query data type 527
  Query element and 84

GroupingList element 83, 526
GroupKey element 478
GroupName element 585, 592
groups
  See also notification groups; resource groups
  creating user 279
  deleting 289
  programming tasks for 34
  searching 380, 477, 478
  sorting 526
  testing for external 585
Groups element 381, 590
GroupSearch data type 478
GroupSortOrder element 478

H

HasMore element 672
Header class 252
Header data type 480
header elements (messages) 9
  See also SOAP headers
headers (output) 527
Heading element 451
Headline element 396, 490
headlines 396, 490, 498
health monitoring errors 612
HeapFree counter 642
helper classes 565
HelpText element 451, 514
hexadecimal values 440
hidden objects 473
hidden parameters 57, 466, 514
Hit_128Bytes counter 642
Hit_16Bytes counter 642
Hit_1KBytes counter 642
Hit_256Bytes counter 642
Hit_32Bytes counter 642
Hit_512Bytes counter 642
Hit_64Bytes counter 642
home folder 148, 550, 593
HomeFolder element 550, 598
HomeFolder property 593
HorizontalAlignment element 451
Host directive 16
Host property 368
Host String property 631
hostname parameter 633
HostString property 368
HTML reports 20
HTTP connections
  accessing iServer and 26
  chunked transfer-encoding and 130
  determining version for 16
  embedding files and 130
  sending and receiving over 14, 113
HTTP headers 15, 16, 131, 134
hypercharts 556
hyperlinks
  See also URLs
  getting context paths for 317
  redirecting 317
  retrieving dynamic data and 316
  sending output files and 59, 399
  setting chart 315, 556
hypertext transfer protocol. *See* HTTP

I

icons
  defining channel 447
  setting file type 415
  specifying URLs for 474
Id element
  as search criteria 139
  Channel data type 446
  ComponentIdentifier data type 453
  ComponentType data type 454
  CopyFile operations 276
  DatabaseConnectionDefinition type 456
  DeleteChannel operations 287
  DeleteFile operations 288
  DeleteGroup operations 290
  DeleteJob operations 291, 292
  DeleteRole operations 293
  DeleteUser operations 294, 405
  File data type 468
  FileInfo data type 674
  Group data type 477
  MoveFile operations 362
  ObjectIdentifier data type 510
  Role data type 534
  SelectChannels operations 376

SelectFiles operations 378
SelectGroups operations 380
SelectJobs operations 383
SelectJobSchedules operations 385
SelectRoles operations 389
SelectUsers operations 391
UpdateChannel operations 406
UpdateFile operations 411
UpdateGroup operations 417
UpdateJobSchedule operations 419
UpdateRole operations 426
UpdateUser operations 430
User data type 550
Id parameter 118, 208, 256
ID property 143
IDAPI. *See* Information Delivery API
IDAPI applications 196, 250
See also applications
idapi.jar 189
IDE 5
identifiers 17
Idle_Connection counter 640
IdList element
as search criteria 139
CopyFile operations 276
DeleteChannel operations 286
DeleteFile operations 151, 288
DeleteGroup operations 290
DeleteJob operations 291, 292
DeleteRole operations 293
DeleteUser operations 294, 405
MoveFile operations 362
SelectChannels operations 376
SelectFiles operations 378
SelectGroups operations 380
SelectJobs operations 383
SelectJobSchedules operations 385
SelectRoles operations 389
SelectUsers operations 391
UpdateChannel operations 406
UpdateFile operations 411
UpdateGroup operations 417
UpdateJobSchedule operations 419
UpdateRole operations 425
UpdateUser operations 430
IdList parameter 118, 208, 256
IDS_MSG_COPYING value 682
IDS_SETUP_FINISH_MSG value 682
IgnoreActiveJob element 291, 292
ignoreDup argument 214, 259
IgnoreDup element
CreateChannel operations 277
CreateFileType operations 278
CreateFolder operations 279
CreateGroup operations 279
CreateRole operations 283
CreateUser operations 283
error conditions and 148
UpdateChannel operations 407
UpdateFileType operations 415
UpdateGroup operations 417
UpdateRole operations 426
UpdateUser operations 430
IgnoreMissing element
DeleteChannel operations 287
DeleteFile operations 288
DeleteFileType operations 289
DeleteGroup operations 290
DeleteJob operations 291, 292
DeleteRole operations 293
DeleteUser operations 294, 405
error conditions and 148
UpdateChannel operations 407
UpdateFile operations 411
UpdateFileType operations 415
UpdateGroup operations 417
UpdateJobSchedule operations 419
UpdateRole operations 426
UpdateUser operations 430
image components 105, 331
image IDs 230
ImageMapURL format 103, 555
ImageMapURL value 317
images 116, 230, 547, 680
immediate jobs 397
ImportParametersFromFile operations 98
IN operator 85
InActive element 446
InActive message 67, 183
IncludeFolder element 673
IncludeHiddenObject element 473
IncludeInheritedPrivilege element 449
INFO logging level 565
InfoObject element 331, 460

InfoObject value 515
InfoObjectData data type 481
InfoObjectDataFormat data type 481
InfoObjectId element 330
InfoObjectName element 330
information. *See* data
Information Console 100, 527, 684, 699
Information Delivery API
  Apache Axis clients and 188, 190
  archiving and 652, 658–667, 669
  constructing composite messages and 14, 42, 156
  data type reference for 240, 439, 673
  developing with 4, 5, 196, 250
  HTTP transmissions and 26
  installing archive driver and 652
  login mechanisms for 120
  Microsoft .NET clients and 244, 247
  multidimensional data and 98
  multilingual reporting and 115
  operations reference for 267
  required libraries for 188
  retrieving multiple objects and 112
  running queries and 79, 80, 81
  searching external users and 42
  SOAP messaging protocol for 14, 15, 113
  text string maximum lengths 699
information object file types 81
information object files 342, 460
  See also specific type
information objects
  closing 274
  defining data formats for 481
  getting 330
  opening 363
  programming tasks for 35
  querying 79, 330, 527
  retrieving data from 304, 481
  searching 375
  storing parameters in 460, 515, 516
  submitting job requests for 393
Information service 613
informational messages 610
InheritedFrom element 442, 659, 661
inheriting archive rules 661, 662
–input command line option 688
Input element 589
input element 10
input file IDs 56
input files
  encrypting 688
  executing queries and 81
  executing reports and 224
  generating data cubes and 48
  setting version numbers for 56
  specifying 396
  submitting jobs and 56, 484, 497
input message element 9
input messages 9, 10, 193, 249
  See also requests
input parameters 308, 421, 694
InputDetail element 64, 335, 339
InputDetail property 333, 337
InputFile element 300
InputFileId element
  ExecuteQuery operations 297
  ExecuteReport operations 300
  JobProperties data type 497
  JobScheduleSearch data type 503
  JobSearch data type 505
  PrintReport operations 370
  SubmitJob operations 396
InputFileName element
  ExecuteQuery operations 297
  ExecuteReport operations 300
  JobProperties data type 498
  JobScheduleSearch data type 503
  JobSearch data type 504
  PrintReport operations 370
  SubmitJob operations 56, 396
InputFileVersionName element 498
InputParameter element 272
installation
  Apache Ant utility 566
  archive driver 652, 655
  customizing 678, 694
  Localization and Online Documentation 692
  localizing 679, 680
  log consolidator application 613, 614, 615
  logging extensions 602
  Page Security application 575
  Performance Monitoring Extension 632–636

RSSE applications 565, 566
testing 680
installation libraries 679
installation scripts (UNIX) 694
InstallShield utility 680, 681, 682, 683
Integer data type 461, 481, 513
Integer element 461, 539
Integer parameter 539
integers 481
integrated development environment 5
See also development environments
Integration element 547
Integration service 366, 547, 610
IntegrationLevel element 593
IntervalInSeconds element 529
invalid locales 116
invalid user names 148
invisible characters 64
.iob files. *See* information object files
IOB value 527
IP addresses 236, 506
IS NOT NULL operator 85
IS NULL operator 85
IsAdHoc element 54, 135, 514
IsAutoArchiveRunning element 559
IsBundled element 298, 300, 400, 486
IsCab utility 682
IsColor element 494, 524
IsCompoundDoc element 475
IsDefaultPrinter element 524
IsDynamicSelection element 515
iServer
See also servers
accessing 26
accessing Online Archive Driver and 652
accessing reports and 26
assigning resource groups to 69, 74, 532, 543
authenticating users for 123, 359
defining attributes of 541
defining version information for 546
deleting expired files on 670
deleting resource groups for 76
getting available options for 121
getting capacity of 180
getting list of 27, 176
getting resource groups for 27, 71, 73, 346
getting state of 352
getting supported formats for 27, 329
getting supported locales for 27
getting system printer for 27, 352
getting version of 354
installing log consolidator for 613, 615
logging error information for 604, 606, 611, 647
logging resource usage for 602
logging usage information for 603, 605, 608, 646
monitoring performance for 640, 642
naming 542, 543
pinging 365
programming tasks for 26
running custom installs for 694
running jobs and 67, 234, 236
running RSSE applications on 566, 575
running silent installs for 683, 694, 696
running silent uninstalls for 697
sending SOAP messages to 11, 14, 21, 268
setting notification options for 59, 62
setting response times for 49
setting state 544
setting status 545
updating resource groups for 393, 424
viewing error log entries for 612
viewing error messages for 613
iServer Integration Technology
implementing logging extensions and 602, 605, 606
implementing RSSE interface and 564
monitoring performance and 632, 636
running custom installs for 694
running silent installs for 684, 695, 696
running silent uninstalls for 697
iServer objects 204, 254
iServer operations 26
iServer services
See also specific service
enabling 546
getting information about 177, 180, 318
viewing error log entries for 612
viewing event logs for 623
viewing logging information for 626
iServer System
authenticating users for 121

creating silent installs for 683, 694, 695
customizing installations for 678, 694
defining type 548
encoding restrictions for 116
getting licensing options for 355, 553
localizing installations for 679, 680
logging in to 123, 401
monitoring 176–181
multidimensional data and 98
setting licensing options for 505
tracking resources for 632
tracking usage and error information for 627, 629
uninstalling 691, 697
IsExecutable element 474
IsExecutable property 278
IsHidden element 466, 514
IsInherited element 442, 659, 661
IsLoginDisabled element 550
IsNative element 474
IsNative property 278
IsPassword element 514
IsPrintable element 474
IsPrintable property 278
IsProgressive element 538
IsReportCompleted element 340
IsRequired element 466, 474, 513
IsSyncFactory element 539
IsSyncJob element 537
IsTransient element 517, 538
IsViewParameter element 515
ItemList element 329, 378
iterators 223

J

Jakarta Commons code libraries 190
JAR files 14, 189, 566, 614
Java Architecture for XML Binding 614
Java classes 191
Java objects 614
Java RSSE framework 564
See also Report Server Security Extension; RSSE applications
Java Runtime Environment 656
Java stubs 194
Java types 192
JavaBeans 190, 191, 192
JavaBeans Activation Framework 190
javac compiler 189
Javadoc 189
JavaMail code libraries 190
JavaServer Pages 100
JAXB framework 614
JDBC drivers 614, 615
job attributes 440
job details 484
job events 234, 482
job IDs 59, 67, 497
job names 497
job operations 36
See also jobs
job printer settings 371, 493
job purging errors 612
job state attributes 162, 484, 490, 497
job status attributes 301, 351
job type attributes 484, 497, 530
job type code (consolidator database) 620, 624
job type descriptions (consolidator database) 624
JobAttributes element 64, 66, 335, 339
JobAttributes property 333
JobCondition data type 482
JobEvent data type 482
JobEvent element 462, 464
JobField data type 483
JobId element
CancelJob operations 273
GetJobDetails operations 333
GetNoticeJobDetails operations 337
GetQuery operations 343
GetReportParameters operations 344
JobEvent data type 483
JobNotice data type 490
JobProperties data type 497
PrintReport operations 372
RunningJobs data type 538
SubmitJob operations 400
JobInputDetail data type 484
JobName element
ExecuteQuery operations 297
ExecuteReport operations 300
JobEvent data type 483

JobNotice data type 490
JobProperties data type 497
PrintReport operations 370
SubmitJob operations 396
JobNotice data type 489, 700
JobNoticeCondition data type 491
JobNoticeField data type 492
JobNotices element 385
JobNoticeSearch data type 492
JobPrinterOptions data type 493, 700
JobProperties data type 495, 700
JobRetryInterval element 559
JobRetryInterval property 435
jobs
archiving 662
assigning resource groups to 67, 77, 497
cancelling 67, 273, 445
changing autoarchiving rules and 659
changing priorities for 152
defining pending 517
deleting 290
event-based scheduling and 234
executing queries and 87, 93
expiring notifications for 666
failing 59
getting information about 161, 177, 181, 320, 350
getting iServer capacity for 180
getting parameters for 53, 335, 344
getting properties of 64, 65, 161, 333, 337
getting resource groups for 78
monitoring performance of 482, 638
preserving status information for 399
prioritizing 69, 152, 370, 396
programming tasks for 36
removing resource groups and 292
removing schedules 291
repeating 528
restarting iServer and 57
retrying 533
running 55, 56, 73, 440, 536
scheduling 455, 499, 500, 506, 560
searching for 482, 499, 501, 502, 503
selecting 383, 385
sending notifications for 59, 60, 61, 384, 489
setting parameters for 57
setting printer options for 371, 493
setting properties for 495
setting retry options for 486
setting state 162, 484, 490, 497
setting status of 301, 351, 464
submitting 56, 393
updating schedules for 419, 420, 423
viewing logging information for 624
Jobs element 384, 386
JobSchedule data type 499, 701
JobScheduleCondition data type 499
JobScheduleDetail data type 500
JobScheduleField data type 501
JobScheduleSearch data type 502
JobSearch data type 503
JobState element 490
JobStatus element 483
JobType element 484, 497
JobTypeCode entry (consolidator database) 620, 624
JobTypeDescription entry (consolidator database) 624
JRE (Java Runtime Environment) 656
JSP pages 100

K

KeepOutputFile element 400, 489
KeepROIIfFailed element 455
KeepROIIfSucceeded element 455
KeepWorkingSpace element 511
KeepWorkspace element 487

L

Label element 453
Lag time parameter 235
LagTime element 241, 463
language-independent reporting 115
large files 130
large icons 415, 447, 474
LargeImageURL element 447, 474
LastRequestProcessTime counter 638
LatestVersionOnly element
CopyFile operations 155, 276
DeleteFile operations 288
GetFolderItems operations 329
MoveFile operations 362

Search element and 155
SelectFiles operations 378
UpdateFile operations 410
Layout element 527
LDAP authentication application 564, 566
LDAP configuration files 567, 568
LDAP drivers 695
LDAP external registration application 565, 566
LDAP servers 42, 564, 567, 572
ldapSample package 565
libraries
accessing performance counters in 632
accessing third-party code 189
accessing web services and 14
Apache Axis environments and 188
calling RSSE API 272
compiling schemas 188
generating code 5, 244
getting archive 163, 358
localizing installations and 679, 681, 682
migrating RSSE applications and 575
running logging extensions and 602
running Performance Monitoring Extension and 633, 636
running sample logging reports and 631
library files 189
Library parameter 633
Library Structure dialog 631
license files 686
license keys 354
license options 355, 505, 553
LicenseFileCtl element 686
LicenseFileDlg element 686
LicenseOption data type 505
LicenseOptions element 358, 598
LiceseFileTypeCtl element 689
Lightweight Directory Access Protocol. *See* LDAP servers
LIKE operator 85
links 59
See also hyperlinks; URLs
Linux servers
configuring online archive provider for 656
customizing installations for 694
running silent installs for 694, 695, 696–697
running silent uninstalls for 697
list controls 467, 514
List element 312, 313
listening port 203, 245
literal attribute 10
literal messages 10
Locale element
Attachment data type and 445
Header data type 480
SelectPageResponse element and 101
SOAP headers and 21, 268
UploadFile requests and 128
locale information 19
locale keys 680
Locale parameter 5, 116
Locale property 309, 318, 332
Locale variable 201, 252
locales
customizing installations for 679, 680
defined 115
developing for 4
formatting data for 21
generating reports for 5, 115
getting supported 27, 329
sending attachments and 445
sending e-mail to multiple 64
setting invalid 116
specifying 21
updating job schedules for 421
viewing specific pages and 101
LocalExtension element 474
localhost parameter 10, 245
Localization and Online Documentation files 684, 692
locating data 105, 373
See also searching
Location element 521
location settings 421
lock contention performance counters 641
Lock_Exclusive counter 640
Lock_Repeated counter 641
Lock_Shared counter 640
Lock_Upgraded counter 641
Lock_Waited counter 641
locks 543, 640, 641

log consolidator application 602, 613–628
log consolidator command line arguments 617
log consolidator database 613, 618
log consolidator database tables 619–628
log consolidator schema 619, 628
log files
  archiving report files and 654
  naming 604, 605, 606
  running silent installs and 683, 690, 696
  running silent uninstalls and 691, 697
  setting paths for 646, 647
  tracking error and usage information and 602, 605, 606
Log_Flushes counter 640
Log_Size counter 640
log.properties file 565
log4j API 565
LogConsolidator element 616
LogFile element 593
logging
  error information 602, 604, 613, 647
  RSSE objects 565
  system resources 632
  usage information 602, 603, 613, 646
logging APIs 602
Logging Consolidator service 617
logging counters 650
logging extensions 602, 605, 606, 647
logging functions 646, 647
logging in to
  Configuration Console 687
  Encyclopedia volumes 121, 197, 202, 250, 359
  iServer System 123, 401
logging levels
  error logs 604, 610
  online archive driver 654
  RSSE applications 565
  usage logs 604, 607
logging refresh intervals 615
logging sample reports 629
logging tool 565
logical values 445
login actions 197, 250
login applications 198, 199, 202
Login class 192, 248
Login element 122
login information 586, 629
  See also credentials
login method 194, 202, 249
Login objects 202, 252
login operations
  See also SystemLogin operations
  authenticating users and 43, 121
  defining 197, 250, 359
  generating authentication IDs for 19, 198, 250
Login pages 353
Login requests
  creating 121
  disabling 550
  embedding authentication IDs in 203
  input and output child elements in 10
  sending 198, 252
  type definitions for 8
Login responses 121, 198, 250, 253
login settings 121
Login type definition 8, 191, 248, 359
LoginResponse element 122
LoginResponse objects 202
LoginResponse type definition 360
logins 193
LogLevel file attribute 654
$LOGNAME variable 696
logos 116
LongDescription element 474

M

mail. *See* e-mail
mail transfer protocols 4
MaintenanceTypeCtl element 692
Management Console 527, 558, 699
Manufacturer element 521
map files. *See* data source map files
MAPI notifications 4, 64
MasterPage property 230
Match element
  ChannelCondition data type 447
  FileCondition data type 470
  GroupCondition data type 477
  JobCondition data type 482
  JobNoticeCondition data type 491

JobScheduleCondition data type 500
RoleCondition data type 534
UserCondition data type 552
MAX function 441
MaxFactory element 532, 544
MaxFactory property 393, 425
MaxFactoryProcesses element 319
MaxFiles element 672
MaxHeight element 308, 387
MaxJobPriority element 550, 598
MaxJobRetryCount element 559
MaxJobRetryCount property 435
MaxPriority element 531
MaxPriority property 424, 594
MaxRetryCount element 487, 533
MaxSyncJobRuntime element 180, 320
MaxVersions element
CopyFile operations 276
JobInputDetail data type 487
MoveFile operations 154, 362
NewFile data type 509
UploadFile operations 127, 128
MDSInfo data type 506
MDSInfoList element 351
MDSIPAddress element 506
MDSPortNumber element 506
Measure analysis type 451
media types 16, 64
MemberOfGroupId element 553
MemberOfGroupName element 553
memory usage performance counters 642
Message Distribution Service
defining attributes of 506
enabling 546
getting information about 27, 351
pinging 28, 172, 366
message element 6, 9
message IDs 481
message namespace declaration 7
MessageContext objects (downloads) 223
messages
See also error messages; status messages
accessing multiple data sources and 18
Administrate operations and 147
binding to operations 5, 9, 10, 193, 249
cancelling report generation requests and 183
capturing 203
chunking 131
combining transactions in 30
creating locale-specific 116
creating silent installs and 683
creating SOAP 9, 14, 15, 21, 190, 247
cross-platform applications and 4
decoding and encoding 192
defining composite 14, 156
defining literal 10
displaying SOAP 203
embedding attachments in 295
embedding data in 113
embedding files in 113, 130
encoding scheme for 7
grouping operations in 156
logging in to Encyclopedia and 193, 198, 200, 249, 250
parsing 19
referencing namespace declarations in 18
required elements of 17, 19
search operations and 42
sending and receiving 14, 113
sequence of elements in 8
setting length 17
specifying media types for 16
streaming reports with 216, 261
uploading files and 131
Messaging Application Programming Interface. *See* MAPI notifications
messaging systems 4, 14
metadata 163, 192, 309, 336
metadata components 310
methods. *See* Actuate Basic methods
Microsoft .NET clients 244–247
Microsoft .NET environments 9
Microsoft Active Directory servers 42, 564
Microsoft C# development environments 244
Microsoft Exchange messaging protocol 4
Microsoft Management Console 632, 634
Microsoft Windows. *See* Windows systems
MIME attachments 216, 220, 261
MIME boundaries 131, 134
MIME encoding 16
MIME headers 131
MIME_boundary directive 101, 103, 131
MimeType element 458, 462

MimeType property 309, 318, 332
MIN function 441
MinFactory element 532, 544
MinPriority element 531
MinPriority property 424
missing channels 407
missing files or folders 411
mode attributes (Ping) 367
Mode element 172, 367
Model element 521
MonitoredFilePath element 470
monitoring counters 650
  See also performance counters
monitoring SOAP messages 203
monitoring tools 602, 648
  See also performance monitoring
Monthly data type 506
Monthly value 501
MoveFile element 155, 272, 404
MoveFile operations 33, 98, 154, 361
MoveFile type definition 361
multidimensional data 98
  See also data cubes
multilingual reporting 115
  See also locales
multipart/related media type 16
multithread tests 606, 646, 647
MutexClass element 475
MutexCounters counter 641

N

Name element
  Argument data type 442
  as search criteria 139
  Channel data type 446
  ColumnDefinition data type 450
  ColumnSchema data type 453
  ComponentIdentifier data type 453
  ComponentType data type 454
  CopyFile operations 276
  DatabaseConnectionDefinition type 456
  DeleteChannel operations 287
  DeleteFile operations 288
  DeleteFileType operations 289
  DeleteGroup operations 290
  DeleteResourceGroup operations 292
  DeleteRole operations 293
  DeleteUser operations 294
  FieldDefinition data type 466
  FieldValue data type 467
  File data type 468
  FileInfo data type 674
  FileType data type 474
  FilterCriteria data type 475
  GetResourceGroupInfo operations 345
  Group data type 477
  LicenseOption data type 505
  MoveFile operations 362
  NameValuePair data type 508
  NewFile data type 509
  ObjectIdentifier data type 510
  ParameterDefinition data type 513
  ParameterValue data type 516
  Printer data type 521
  PropertyValue data type 525, 597
  ResourceGroup data type 530
  Role data type 534
  SelectChannels operations 376
  SelectFiles operations 378
  SelectFileTypes operations 379
  SelectGroups operations 380
  SelectRoles operations 389
  SelectUsers operations 391
  SortColumn data type 547
  Stream data type 547
  UpdateChannel operations 406
  UpdateFile operations 411
  UpdateFileType operations 415
  UpdateGroup operations 417
  UpdateRole operations 426
  UpdateUser operations 430
  User data type 550, 598
  Volume data type 558
name element 452
Name parameter 118, 119, 208, 256
Name property 51, 143, 278
name value pairs 508, 524
NameList element
  as search criteria 139
  CopyFile operations 276
  DeleteChannel operations 287
  DeleteFile operations 288
  DeleteFileType operations 289

DeleteGroup operations 290
DeleteRole operations 293
DeleteUser operations 294
MoveFile operations 362
SelectChannels operations 376
SelectFiles operations 378
SelectFileTypes operations 379
SelectGroups operations 380
SelectRoles operations 389
SelectUsers operations 391
UpdateChannel operations 406
UpdateFile operations 411, 663
UpdateFileType operations 414
UpdateGroup operations 417
UpdateRole operations 426
UpdateUser operations 430
NameList parameter 118, 119, 208, 256
names
See also user names
defining file types and driver 475
duplicating 18, 283, 362
getting parameter 514
getting volume 28, 353
localizing installations and 680
portType definitions and 9
retrieving translated role 358, 587
text string limits for 699
namespace attribute types 18, 247
namespace declarations 6, 17, 18, 246, 251, 253
NameValuePair class 229
NameValuePair data type 508
naming
channels 446
data types 8, 548
Encyclopedia volumes 558
files 379, 468
folders 279
iServers 542, 543
log files 604, 605, 606
output files 300
parameters 466, 513
printers 523, 559
resource groups 530, 544
security roles 534
web services 10
naming collisions 18
naming-java.jar 614
native file types 127
.NET client sample application 250
.NET client solutions 244
NeverExpire element 442, 487, 659, 660
New_Pages counter 640
NewFile data type 508
NewFile element 127, 373, 436
NewFile objects 263
NewFile variable 217, 262
newUser method 205
NextStartTime element 498
no-cache attribute 17
node start or stop errors 612
NodeLockViolation element 354, 543
NodeLockViolationExpirationDate element 543
nodes. *See* cluster nodes
NoEvent element 464
non-native reports. *See* third-party reports
Normal mode 172, 174, 367
NOT LIKE operator 85
notification groups
adding users 156, 418, 421
creating 398, 476
deleting 289
getting properties for 380
getting users in 380, 589, 590
removing users 418
scheduling jobs and 34, 422
searching 477, 478
sending e-mail to 59, 60, 61, 371, 398
updating 152, 416, 417, 418
notifications
addressing 60, 148
archiving 652
customizing 63
data transfer protocols for 4
deleting 291
directing to channels 60, 62, 63, 491
directing to external users 590, 594, 597
expiring 666
getting information about 96
getting properties for 336, 384
overriding recipient preferences for 62, 399, 488
overview 59

removing users 421
searching 491, 492
selecting 384
sending attachments with. *See* attachments
sending completion 371, 551, 599
sending large messages and 113
sending to multiple locales 64
setting expiration intervals for 551, 559, 599
setting number sent 484, 499
submitting jobs and 59, 60, 61, 384, 489
NotifiedChannelId element
GetNoticeJobDetails operations 338
JobNotice data type 491
JobNoticeSearch data type 493
JobScheduleSearch data type 503
JobSearch data type 505
NotifiedChannelName element
GetNoticeJobDetails operations 338
JobNotice data type 491
JobNoticeSearch data type 493
JobScheduleSearch data type 503
JobSearch data type 505
NotifiedUserId element 490, 493, 503, 505
NotifiedUserName element 491, 493, 503, 505
NotifyChannels element 64, 335, 339
NotifyChannels property 334, 337
NotifyChannelsById element 371, 398
NotifyChannelsByName element 371, 398
NotifyCount element 484, 499
NotifyGroups element 64, 335, 339
NotifyGroups property 334, 337
NotifyGroupsById element 371, 398
NotifyGroupsByName element 371, 398
NotifyUsers element 64, 335, 339
NotifyUsers property 334, 337
NotifyUsersById element 371, 398
NotifyUsersByName element 371, 398
null values 440, 513, 516
Number_Of_Caches counter 643
NumberAllRequests counter 638
NumberOfCopies element 494, 522, 523
NumBytes element 173, 367
numeric values 451, 481

O

OBDORequest element 363
Object element
CubeExtraction operations 284
DataExtraction operations 285
GetContent operations 308
GetCustomFormatData operations 310, 311
GetDynamicData operations 315
GetFormats operations 329
GetJavaReportEmbeddedComponent 331
GetJavaReportTOC operations 332
GetMetaData operations 336
GetPageCount operations 340
GetPageNumbers operations 340
GetParameterPicklist operations 341
GetStaticData operations 348
GetStyleSheet operations 349
GetTOC operations 355
SaveTransientReport operations 373
SearchReport operations 374
SelectJavaReportPage operations 381
SelectPage operations 387
object IDs 48, 224, 510
object operation code (consolidator database) 619
object operation descriptions (consolidator database) 624
object renderer package 565
object type code (consolidator database) 619
object type descriptions (consolidator database) 625
ObjectId element
CancelReport operations 274
ExecuteQuery operations 299
ExecuteReport operations 224, 301
GetEmbeddedComponent operations 316
GetSyncJobInfo operations 350
OpenInfoObject operations 364
PendingSyncJob data type 517
RunningJobs data type 538
WaitForExecuteReport operations 437, 438
ObjectIdentifier data type 510
ObjectName element 364
ObjectOperationCode entry (consolidator database) 619, 624

ObjectOperationDescription entry (consolidator database) 624
objects
  counting 112
  getting custom formats for 310, 311
  getting properties for 211
  ignoring duplicate 148
  mapping 614
  not finding 148
  retrieving 112
  searching for hidden 473
  setting expiration intervals for 442
  setting privileges for 594
  updating multiple 148
  viewing logging information about 624
ObjectTypeCode entry (consolidator database) 619, 625
ObjectTypeDescription entry (consolidator database) 625
ODBO API functions 363
ODBOResponse element 363
ODBOTunnel operations 363
ODBOTunnel type definition 363
ODBOTunnelResponse type definition 363
OFF logging level 565
office_replist_PLS.rod 581
office_replist_PLS.roi 581
office_replist_PLS.rox 577
Offline element 545
Offline value 545
Offline_Servers counter 640
ojdbc14.jar 614
OLAP servers 28, 363
OnceADay element 440, 456, 508, 560
OnDay element 508
Online Archive Driver 652–658
Online Archive Driver folder 652, 654
Online Archive Option 652
online archive service 656
online archive service provider 656
online backup mode 277, 289, 302
online backup schedules 163, 164
online documentation xix
Online element 545
online help. *See* online documentation
Online value 545
onlinearchive.cfg 653, 654, 655
OnlineBackupSchedule property 163, 164, 357
OnlineOnly element 351, 353
Open Security applications 391, 558
Open Security cache 424
Open Security library 272, 589
Open Security page 573
Open Security web service 573
open server applications 400
open server drivers
  pinging 28, 172, 173, 366
  setting time-out intervals for 511
open server options 301, 510
open server reports 35
open server technology 4, 46
open source logging tool 565
OpenInfoObject operations 35, 363
OpenInfoObject type definition 363
OpenInfoObjectResponse type definition 364
OpenSecuritySelectGroupsOfUser element 558
OpenSecuritySelectUsersOfRole element 558
OpenServerOptions data type 510
OpenServerOptions element 301, 400
Operand1 element 458
Operand2 element 458
Operand3 element 458
operating systems 14, 546
Operation element
  DataFilterCondition data type 458
  FilterCriteria data type 85, 475
  GetEmbeddedComponent operations 316
  SubmitJob operations 56, 397
operation element 9
operation ID lists 118
operation IDs 118
operational information 608
operations
  See also specific type
  accessing channels and 29
  accessing iServer and 26
  applying ACLs and 136
  archiving files and 659
  binding to messages 5, 9, 10, 193, 249
  creating 9, 699
  defining composite 30, 147, 156
  defining data for 98, 118–120

defining web service 5, 10
deleting items and 151
displaying schema definitions for 11
grouping administrative 147
handling errors with 148
logging usage information and 604
managing report files and 31, 35
managing users and 42
managing volume data and 29, 207, 254
performance monitoring and 637, 648
retrieving external users and 584
retrieving multiple objects and 112
running jobs and 35
running multiple 14
running queries and 35, 79, 80, 81
searching reports and 41
sending notifications and 34
transactions and 61, 156, 157
viewing data and 99
viewing logging information for 624
operations reference 267
Operator element 597
Operator role 465
operators 85, 475
OpServerProcess counter 641
optimizing performance 632, 648
optional data 19
options 360
Options element 462
Oracle databases 614, 618
Orientation element 494, 521, 523
OrientationOptions element 521
OSVersion element 546
outdated reports 652
–output command line option 688
output
converting 394
creating silent installs and 683
formatting. *See* output formats
generating query 79
preserving 47
saving 224
sending notifications and 59, 62
output columns 81, 87, 451, 526
Output element 589
output element 10
output file access types 336, 339
output file types 48, 301, 438, 474
output files
adding page headers to 527
assigning to jobs 484, 498
changing archive rules for 659
creating job notifications and 399, 490, 491
defining attributes of 47
defining columns in 526
encrypting 688
executing queries and 83
formatting content 62, 451, 527
getting access rights to 336
naming 300, 397
running silent installs and 690
saving 47, 300, 400, 489
sending as attachments 59, 399
specifying 56
updating archiving rules for 662
updating job schedules and 423
output format code (consolidator database) 620, 625
output format descriptions (consolidator database) 625
output formats
getting conversion options for 314
overriding 59, 399, 488
sending e-mail attachments and 62, 399, 488
sending third-party reports and 59
viewing logging information for 625
viewing query output and 79
output message element 9
output messages
See also responses
defining 9, 10
printing 216, 261
specifying 193, 249
output parameters 421
OutputDistinctRowsOnly element 528
OutputFileAccessType element 336, 339
OutputFileName element 490
OutputFileSize element 484, 498
OutputFileType element 299, 301, 438
OutputFileVersion element 491
OutputFileVersionName element 486, 490
OutputFormat element
DataExtractionFormat data type 458

DocumentConversionOptions data type 461
ExecuteReport operations 300
GetDocumentConversionOptions operations 314
Query data type 84, 527
SelectJavaReportPage operations 382
OutputFormatCode entry (consolidator database) 620, 625
OutputFormatDescription entry (consolidator database) 625
OutputMaxVersion element 486
OutputParameter element 273
OutputProperties element 374, 383
OutputType element 474
OutputType property 278
OverrideRecipientPref element 371, 399, 488
overriding
aging and archiving rules 658
notification preferences 62, 399, 488
output formats 59, 399, 488
report execution wait times 41
viewer preferences 41
Oversize counter 642
oversize pages 102, 387
overwriting report files 127, 154, 362, 509
Owner element
File data type 468
FileInfo data type 675
FileSearch data type 472
JobProperties data type 483, 497
JobSearch data type 504
PendingSyncJob data type 518
RunningJobs data type 538
owner information 653
Owner property 143, 328
OwnsVolume element 542

P

packages 564
page components 387
Page element 100, 381, 387
page headers 527
page heights 102, 387
Page Level Security Option 564
page numbers 340, 511
page properties 101
page ranges 511
Page Security application 565, 566, 575
page size attributes 102
page widths 102, 387
Page_128Bytes counter 642
Page_16Bytes counter 642
Page_1KBytes counter 642
Page_256Bytes counter 642
Page_32Bytes counter 642
Page_512Bytes counter 642
Page_64Bytes counter 642
Page_Security_Example directory 575
PageCount element 340, 468, 498, 675
PageCount property 143, 328
PageHeader element 84, 527
PageHeight element 387
PageIdentifier data type 511
page-level security 564, 575, 577
page-level security application. *See* Page Security application
page-level security sample report 581
PageNum element 100, 511
PageNumber element 341
PageRange element 495
PageRef element 101, 382, 388
pages
counting 110, 339
retrieving 226, 229, 381, 386
searching for 386, 528
setting range of 100, 495
setting size 102, 494, 521, 523
PageSecureViewing value 121, 360
PageSize element 494, 521, 523
PageSizeOptions element 521
PageWidth element 387
paging order 112
paper orientation 494, 521, 523
paper size 102, 352, 495
paper trays 494, 522, 523
PaperLength element 495
PaperTray element 494, 522, 523
PaperTrayOptions element 522
PaperWidth element 495
parameter definitions 168, 303, 345, 511
parameter groups 513, 516
parameter lists 467, 514

parameter names 514
parameter pick lists 341, 343, 344
parameter template files 694, 695, 696
parameter types 529
parameter values files 38
  See also data object value files; report object value files
ParameterDefinition data type 511
ParameterDefinition element 136, 168
ParameterDefinitionList element 526
ParameterFile element 280
ParameterFileId element 57, 498
ParameterFileName element 57, 498
ParameterList element 303, 304, 328, 345
ParameterName element 341
ParameterPickList element 342
parameters
  adding to queries 527
  assigning data types to 466, 513
  assigning values to 513, 515
  configuring custom event web service 235
  configuring Performance Monitoring Extension 633
  creating silent installs and 683, 688, 694, 695
  defining control type attributes for 467, 514
  defining help text for 514
  defining report 511
  defining scalar 465, 539
  defining table 467
  enabling auto collection for 475
  encrypting passwords and 688
  exporting 169, 303
  generating locale-specific data and 5
  getting database connection 312
  getting definitions for 168, 303, 345
  getting file type 163, 167, 327
  getting query 90
  getting values of 53, 344
  logging error information and 612, 647
  logging usage information and 646
  naming 466, 513
  prompting for 516
  running reports and 51, 57
  search operations and 106, 208, 211, 255
  selecting 516
  setting name-value pairs for 47
  submitting job requests and 57, 397, 423
  testing for 57
  uploading files and 218, 219
  viewing Reportlets and 309
  writing to files 54, 280
  writing to information objects 460, 515, 516
ParameterValue data type 515
ParameterValueFileId element 397
ParameterValueFileName element 397
ParameterValueList element 280
ParameterValues element 51, 57, 300, 397
ParameterValuesFile element 281
ParameterValuesFileId element 300
ParameterValuesFileName element 300
parent role 428, 536
ParentRoleId element 536
ParentRoleName element 536
parser 19
partition names 173
PartitionName element 173, 367
partitions 171, 302
PassThrough message 42, 272
PassThrough operations 589
pass-through security 586
PassThrough type definition 589
PassThroughResponse type definition 589
Password element 359, 550, 584
Password property 368, 631
password variable 199, 251
PasswordCtl element 689
passwords
  changing 550
  creating silent installs and 687, 689
  creating system 401
  creating user 359, 550
  encrypting 687, 688
  external authentication and 564, 586
  logging in to Encyclopedia and 121, 202
  logging in to iServer Systems and 123
  requiring 514
  specifying default 687
  starting logging consolidator and 618
PathInformation element 557
paths
  creating folders and 279

downloading files and 133
getting display formats and 110
getting page counts and 110
installation 678, 690, 697
Performance Monitoring Extension and 633
searching folders and 143
setting data object executable 88
setting error log 647
setting usage log 646
uploading files and 129
Payload element 173, 369
PDF formats 103, 455, 555
PDF reports 102
PdfQuality element 557
Pending element 351, 465
pending job attributes 320
pending job status 465
pending jobs
defining attributes of 517
determining number of 180
getting information about 177, 320
restarting iServer and 57
pending requests 50
Pending status message 50
Pending value 162, 181
Pending_Factory_Jobs counter 639
Pending_Printing_Jobs counter 639
PendingSyncJob data type 517
PendingSyncJobs element 319, 322
PendingSyncJobsResultDef element 178, 320
PendingTime element 182, 518
PercentTransientReportCacheInUse element 319
perfmon utility 648
PerfMonExt.reg 633
PerfMonUtil.c 636
performance counters
displaying 632, 634
getting information about 637, 649
getting values of 649
monitoring system resources and 632
resetting 637
running perfmon utility and 648
types listed 637–643
unloading 636
Performance Monitoring API 648
Performance Monitoring Extension 632–643
performance monitoring operations 632, 648
Performance registry key 634, 636
Permission data type 518, 596, 675
Permission element 138, 673
Permissions property 128, 281, 436
permissions. *See* privileges
persistent connections 130
persistent objects 46
persistent reports 47, 48, 56, 224, 480
personal channels 60
physical address (SOAP port) 195
pick lists 341, 343, 344
Ping element 174, 175
Ping operations 365
Ping requests
creating 171, 172
returning diagnostic information and 173
sending 174, 175
setting payload length for 173
Ping responses 172, 173
Ping type definition 365
PingResponse element 174, 175, 176
PingResponse type definition 369
plain text messages 64
platform-independent reporting 4, 14, 115
plug-ins 16
PMD. *See* Process Management Daemon
polling parameters 235
PollingDuration element 463
PollingInterval element 446, 463, 487, 511
port names 10, 193
port parameter 633
ports 11, 195, 236, 506, 633
portType definitions 9, 10
portType element 6, 9, 193, 249
Position element 513, 516
POST directive 16
PostgreSQL database 689, 690, 697
PostgreSQLDatabaseProfile element 689
PostgreSQLServiceProfile element 689
PostResponseRef element 309, 388
PPT formats 103, 556
Pragma directive 17
PrecedingParameterValues element 341
preferences
setting default viewer 121, 559

setting user 206, 255
prepareDownloadFileCall method 222
primary keys 619
primary log directory 602
print jobs
cancelling 67
creating 369
preserving status information for 399
prioritizing 594
retrying 372, 533
running immediately 397
scheduling 57, 370, 397
setting printer options for 57, 493
setting priority for 370
print requests. *See* print jobs
print to file property 495
Printer data type 519, 700
printer options 57, 371, 493, 522
printer settings. *See* printer options
PrinterName element 352, 357, 494, 523
PrinterOptions data type 522
PrinterOptions element
GetJobDetails operations 64, 335
GetNoticeJobDetails operations 339
GetUserLicenseOptions operations 356
GetUserPrinterOptions operations 357
GetVolumeProperties operations 358
PrintReport operations 371
SubmitJob operations 398
PrinterOptions property 163, 334, 337, 357
printers
assigning to Encyclopedia 435
defining system 519
getting information about 163, 165, 352
getting settings for 163, 167, 356
naming 523, 559
setting options for 57, 371, 493, 522
specifying default 524
updating options for 435
updating user list for 433
Printers element 352
printing
oversize pages 387
reports 46, 56, 101, 369
to files 495
printing events 607, 609
printing requests. *See* print jobs
PrintReport operations 40, 369
PrintReport type definition 369
PrintReportResponse type definition 372
PrintToFile element 495
printUsage variable 199, 251
prioritizing jobs 69, 152, 370, 396
Priority element 370, 396, 484, 497
Private element 469
private files 127, 141, 469, 673
Private value 469
privilege attributes 519
privilege filters 139, 142
PrivilegeFilter data type 524
PrivilegeFilter element 142, 449, 472
privileges
accessing report files and 137, 138, 409
archiving reports and 675
assigning 518
changing 136, 413, 433
filtering 524
retrieving 124, 125, 126
searching for 449, 472
sending output files and 59
setting on data cubes 48
setting on report executables 579
subscribing to channels and 153, 407, 408, 447
testing RSSE sample applications and 575
updating 135, 136, 423
validating external users and 583, 596
process IDs 539
Process Management Daemon 613
ProcessID element 173, 367
ProgramFolderCtl element 685
programmers 5, 100, 565, 633
programming environments 9
programming languages 14
progressive viewing 47, 49, 51, 301, 538
ProgressiveViewing element 298, 301
PromptAggregationList element 83, 527
PromptFilterCriteria element 476
PromptGroupingList element 83, 526
PromptOutputFormat element 84, 527
PromptParameter element 516
prompts 694
PromptSelectColumnList element 83, 526
PromptSortColumnList element 84, 527

PROP_DOMULTIREFS parameter 219
properties
  archive service provider 657
  channels 153, 406
  connections 307, 392, 586, 594
  cube design profiles 146
  data cubes 48, 146
  Encyclopedia volumes 148, 357, 434, 436
  error log files 604, 606
  file copy operations 128, 129
  file selection operations 139
  file update operations 134, 409
  file upload operations 127, 436
  folders 139, 145, 409
  get file details operations 145, 326
  get folder item operations 142, 143
  iServer 176
  jobs
    getting 64, 65, 161, 177, 333, 337
    setting 495
  logging examples 631
  notification groups 380
  notifications 336, 384
  Open Security applications 573
  output 394
  page-level security 582
  queries 86, 90, 92
  resource groups
    changing 70
    getting 72, 73, 346
    setting 68, 74, 393
    updating 70, 424
  RSSE applications 593, 597
  search results 211, 374, 383
  security roles 389, 425
  select page operations 101, 229
  usage log files 603, 605
  users 429, 430, 434, 588
Properties element 284, 285
property files 565
property name-value definitions 524, 597
PropertyValue data type 524, 597
ProviderName element 673
proxy classes 5
proxy DLLs 244
proxy namespaces 253
proxy objects 14, 251
proxy servers 194, 200, 244
publishing performance counters 637
PurgeUserInfo element 294
purging errors 612

Q

queries
  See also query output
  adding columns to 449, 526
  adding parameters to 527
  aggregating data with 526
  changing schedules for 93
  creating 85, 281, 525
  customizing 79
  filtering data cubes with 284
  filtering data with 84–86, 285, 475, 527
  getting content of 102
  getting information about 342
  getting status of 84
  grouping data with 478
  programming tasks for 81
  retrieving data with 630
  running 88, 297
  scheduling 86–88
  setting properties for 86
  setting sort order for 547
  updating parameters for 423
  viewing details of 90, 92, 96
Query data type 525
Query element
  CreateQuery operations 88, 89, 281
  ExecuteQuery operations 83, 298
  GetJobDetails operations 65, 335
  GetNoticeJobDetails operations 339
  GetQuery operations 344
  OpenInfoObject operations 364
  SubmitJob operations 86, 397
Query event type 607
query file type attributes 527
query operators 85, 475
Query Option 79
query output 79, 80, 81, 87
query output formats 84, 527
query status attributes 298
query templates 342, 528
query types 548

QueryFile element 89, 281, 282
QueryFileId element 298, 343, 397
QueryFileName element 297, 343, 397
QueryPattern element 590, 591, 592
QueryTemplateName element 343, 528
QueuePosition element 518
QueueTimeout element 182, 518

R

radio buttons 514
Range data type 528
Range element 107, 374, 511
read privilege 519, 676
Read_Pages counter 640
ReadFile requests 366
ReadFile value 172
Reason element 691
RebootRequired element 691
reboots 691
Record data type 529
RecordDefinition element 515
RecordFailureStatus element 372, 399, 488
records 112, 449
  See also rows
RecordSuccessStatus element 371, 399, 488
recurring jobs 456, 508, 528
recurring reports 560
Recursive element
  CopyFile operations 276
  DeleteFile operations 288
  GetJavaReportTOC operations 332
  MoveFile operations 362
  SelectFiles operations 378
  UpdateFile operations 138, 410
recursive operations 136, 139, 151
RedirectPath element 317, 557
References.cs 253
refresh intervals 615
Registry Editor 634, 636
registry keys 678, 679
relative paths 129
remote procedure calls 190, 194, 247, 249
remote services 194, 249
RemoteException parameter 220
RemoveAll InstallShield parameter 691
RemoveArchiveRules element 413
RemoveArchiveRules operations 659
RemoveChannelNotificationById element 423
RemoveChannelNotificationByName element 422
RemoveChildRolesById element 428
RemoveChildRolesByName element 427
RemoveDependentFilesById element 413
RemoveDependentFilesByName element 412
RemoveFileCreationPermissions element 433
RemoveFromGroupsById element 433
RemoveFromGroupsByName element 432
RemoveGroupNotificationById element 422
RemoveGroupNotificationByName element 422
RemoveLicenseOptions element 434
RemoveOutputFilePermissions element 423
RemoveParentRolesById element 428
RemoveParentRolesByName element 428
RemoveRequiredFilesById element 413
RemoveRequiredFilesByName element 412
RemoveSubscribersById element 408
RemoveSubscribersByName element 408
RemoveUserNotificationById element 422
RemoveUserNotificationByName element 421
RemoveUsersById element 418
RemoveUsersByName element 418
removing. *See* deleting
renderer package 565
Repeat data type 528
Repeat element 440, 456, 508, 560
ReplaceExisting element 127, 276, 362, 509
ReplaceLatestDropDependency element 554
ReplaceLatestDropDependency value 509
ReplaceLatestIfNoDependents element 554
ReplaceLatestIfNoDependents value 509
ReplaceLatestMigrateDependency element 554
ReplaceLatestMigrateDependency value 509
ReplaceLatestVersion element 486
Reply element 369
report components 307, 453, 454
  See also components; reports
report design files 581, 629
report documents. *See* documents; reports

report engine performance counters 638
report execution requests. *See* ExecuteReport operations
report files
See also specific report file type
applying ACLs to 136
archiving 135, 658, 661, 665, 669
attaching to e-mail messages 59, 114, 470
attaching to SOAP requests or responses 130, 133
bundling 298, 300, 400, 486
changing properties for 409
copying 155, 275, 653
copying properties of 129
creating 154, 508
defining attributes of 467
deleting 151, 287, 652, 670
determining if private or shared 673
downloading 113, 133, 134, 220, 263
embedding 113, 130, 220
encrypting 688
exporting 474
getting access rights to 125
getting ACLs for 123, 322
getting expired 671
getting privileges for 125, 126
getting properties for 139, 145, 326
monitoring 470
moving 154, 361
naming. *See* file names
overwriting 127, 154, 362, 509
programming tasks for 31
reading 218
returning information about 377, 674
returning list of 139, 142, 377
returning location of 328
running or printing 56
searching for 139, 141, 379, 469, 471
selecting 139, 377
setting expiration policy for 652, 657
setting privileges for 136, 138, 413, 423
specifying type 268
updating 134, 152, 409, 411, 414
updating parameters for 135
uploading 113, 127, 131, 216, 261, 436
versioning options for 127, 554
report generation events 608
report generation requests
assigning to resource groups 21, 268
cancelling 51, 67, 181, 182, 437, 445
creating 47, 299
monitoring performance for 638
prioritizing 594
retrying 533
scheduling 57
setting status of 464
setting wait intervals for 49, 50, 298, 301
submitting jobs for 397
report IDs 540
report object design files 581, 629
report object executable files
See also executable files
generating report object value files from 280
setting privileges on 579
submitting job requests for 397
uploading 128
report object instance files
counting pages in 110
getting display formats for 110
searching 107
setting conversion options for 393, 454
report object value files
creating 54, 280, 300
exporting parameter definitions in 303
generating reports from 397
naming 54
retrieving parameters in 53, 168, 303, 344
saving 300
sending as attachments 169
submitting jobs and 57
report objects. *See* reports
report parameters. *See* parameters
Report Server Security Extension 564
See also RSSE applications; RSSE API
report servers. *See* iServer; servers
report status attributes 274, 301
ReportDeletion event type 607
ReportFileId element 344
ReportFileName element 344
ReportGeneration event type 607, 608
ReportGeneration value 121, 360
reporting system. *See* iServer System
Reportlet format 103, 556

Reportlet parameters 309
Reportlets 103, 308, 557
ReportParameterList element 527
ReportParameters element 65, 335, 339
ReportParameters property 334, 337
ReportParameterType data type 529
ReportParameterType element 344
ReportPrinting event type 607, 609
reports
  assigning to resource groups 76
  building security applications for 564, 575
  cancelling 273
  controlling access to 582, 596
  converting output for 393, 454
  counting number of pages in 110, 339
  customizing 100
  deploying 577–581
  displaying 99, 100, 229, 554
  embedding files in 470
  generating 46, 47, 56, 224
  getting contents of 102, 307
  getting currently running 177
  getting custom formats for 111, 310
  getting dynamic data from 314
  getting embedded components in 316
  getting specific pages in 100, 226, 386
  getting status of 48, 464
  getting style sheets for 349
  getting supported formats for 110
  loading RSSE sample 575
  localizing 5
  managing third-party 4
  monitoring 181, 632
  printing 46, 56, 101, 369
  running 47, 51, 234, 299, 437
  saving output for 47
  saving temporary 373
  searching 41, 105, 373, 540, 541
  splitting across multiple pages 102
  submitting job requests for 56, 393
  tracking logging information and 629
  uploading 128, 129, 577
  viewing first or last page of 100
ReportType element 268, 375, 531
ReportViewing event type 607, 609
Request element 546
RequestConnectionHandle element 363
RequestedHeadline element 498
RequestedOutputFile element 297, 300, 397
RequestedOutputFileName element 498, 502, 504
RequestID element 21, 268, 481
request-response message pairs 9, 14, 203
requests
  See also specific operation request
  ad hoc parameters and 168
  adding authentication IDs for 121
  adding time stamps to 143
  administering Encyclopedia and 204, 208, 213, 254, 255, 259
  archiving and 664, 665, 670, 672
  attaching files to 130
  caching directive for 17
  creating message definitions for 9
  creating resource groups and 69
  defining 9, 21
  deleting data and 120
  directing to Actuate iServer 14, 18
  downloading files and 133, 134
  duplicating 148, 277
  embedding files in 113, 130
  executing reports and 48, 50
  extending wait times for 50
  failing 22
  forwarding to targets 17
  grouping transactions and 30
  identifying 21
  initiating 16
  locale-specific reports and 5, 116
  monitoring performance of 638
  recursive search operations and 139
  required elements of 19, 480
  retrieving multiple objects and 112
  routing to alternate MDS 351
  search operations and 105, 107
  sending 21, 203, 204, 268
  specifying output file names for 56
  testing reporting environment and 28
  unsupported formats and 455
  uploading files and 131, 132
Requests counter 639
required data 19
required files 472
required parameters 57, 466, 513

required passwords 514
RequiredFileId element 472
RequiredFileName element 472
Reserved element 531
Reserved property 424
reserved resource groups 68, 424, 531
ResetCounters operations 637, 650
ResetCounters type definition 650
ResetCountersResponse type definition 650
Resolution element 494, 521, 523
ResolutionOptions element 522
resource group names 78
resource group settings 531
resource groups
  assigning to
    Actuate iServer 69, 74, 543
    Encyclopedia volumes 68, 69
    jobs 67, 77, 396, 497
    reports 76
    requests 21, 268
  changing properties of 70
  configuring 28
  creating 26, 68, 69, 282, 530
  deleting 26, 76, 292
  enabling or disabling 68
  getting information about 27, 345, 347
  getting job-specific 78
  getting list of 27, 71, 346
  getting properties for 72, 73
  naming 530, 544
  overview 67
  reserving 70
  running jobs and 530, 544
  setting priority for 531
  setting properties for 68, 74, 393
  specifying as reserved 68
  specifying asynchronous 68
  specifying synchronous 70
  updating 393, 424
  viewing logging information for 626
ResourceGroup data type 530
ResourceGroup element
  CreateResourceGroup operations 282
  GetResourceGroupInfo operations 345
  JobProperties data type 497
  RunningJob data type 538
  SubmitJob operations 396
  UpdateResourceGroup operations 424
ResourceGroup property 334, 338
ResourceGroupId entry (consolidator database) 626
ResourceGroupName element 544
ResourceGroupName entry (consolidator database) 626
ResourceGroupSettings data type 531
ResourceGroupSettingsList element 282, 346, 425
ResourcePath element 559
resources 602, 605, 632, 681
responses
  See also specific operation response
  Administrate operations and 147
  archiving and 661, 664, 665
  attaching files to 130, 133, 300
  creating message definitions for 9
  creating multilingual 116
  defining 9, 21
  disabling caching for 17
  downloading files and 134
  embedding files in 114, 130, 220
  executing reports and 50
  grouping transactions and 30
  locale-specific reports and 116
  omitting 9
  retrieving multiple objects and 112
  retrieving printer information and 352, 356
  retrieving report content and 102, 307
  selecting report pages and 386
  sending attachments and 113, 114
  setting wait intervals for 49, 301
  specifying media types for 16
  testing report completion and 110
  viewing specific pages and 100, 101
restricting access to Encyclopedia 120
Result element 691
result set schemas 309, 336, 532
result sets 112, 554
  See also queries; search results
ResultDef element
  GetFileDetails operations 327
  GetFolderItems operations 143, 328
  GetJobDetails operations 92, 333
  GetNextExpiredFiles operations 671

GetNoticeJobDetails operations 96, 337
GetUserProperties operations 588
GetVolumeProperties operations 163, 357
SelectChannels operations 376
SelectFiles operations 139, 378
SelectFileTypes operations 379
SelectGroups operations 380
SelectJobNotices operations 384
SelectJobs operations 161, 383
SelectJobSchedules operations 385
SelectRoles operations 389
SelectUsers operations 390
ResultDef parameter 211
ResultDef String array 211
ResultSetName element 532
ResultSetSchema data type 532
ResultSetSchema element 284, 286
RetainOwner file attribute 653
RetainPermission file attribute 653
RetainTimestamp file attribute 653
retry intervals 533
retry options 372, 533
RetryInterval element 487, 533
RetryOption element 486, 533
RetryOptions data type 533
RetryOptions element 372, 400
RetryOptionType data type 533
ReturnCode element 273, 589
ReturnDataInBlocks element 364
RevokePermissions element 408, 413
rich text formats. *See* RTF formats
.rod files. *See* report object design files
.roi files. *See* report object instance files
Role data type 534, 701
Role element 283
role names 534, 535, 587
RoleCondition data type 534
RoleField data type 535
RoleId element 392, 519
RoleName element
DoesRoleExist operations 585
Permission data type 519, 596, 675
SelectUsers operations 592
SetConnectionProperties operations 392
RoleNames element 307
roles
adding to login requests 121
administering Encyclopedia and 30
archiving 653
assigning privileges 518, 675
creating 150, 282, 465, 534, 535
deleting 293, 427
duplicating 283
getting privileges for 124, 126
getting properties for 389
getting volume-specific 163
mapping external users to 587, 597
naming 534
searching 388, 534, 535, 590
setting filters for 139, 142
setting properties for 593
testing for external 585
testing reporting environment and 28
translating 587
updating 120, 425, 426, 429, 432
validating 121, 360
Roles element 390, 591
RoleSearch data type 535
rolling back upgrade installations 684, 694
RoutedToNode element 484, 498
Routing_Jobs counter 639
.rov files. *See* report object value files
rows 459, 481, 527
See also records
.rox files. *See* report object executable files
RPT files. *See* Crystal reports
RPX files. *See* Crystal reports
RSAPI_Logins counter 639
RSSE API 42
RSSE API library 272
RSSE API reference 565
RSSE applications
See also Report Server Security Extension
accessing sample 564
building 566, 576
configuring logging levels for 565
enabling web services for 573
initializing 592
installing 565, 566
migrating 575
running as web services 564, 566, 567
specifying credentials for 359
stopping 595
translating access control lists and 575

RSSE data types 595
RSSE external registration 389, 390
RSSE interface 564
RSSE objects 565
RSSE operations 584
RSSE service 575
rsse.jar 565
rsseAcl.jar 566
rsseAuthenticate.jar 566
rsseLdap.jar 566
RSSEVersion element 594
RTF formats 64, 103, 455, 556
rules. *See* aging rules; archiving rules
run requests. *See* report generation requests
runAdminOperation method 207, 215
RunAndPrintReport value 56
RunAsUser element 360
RunLatestVersion element 56, 298, 397, 498
running
  jobs 55, 56, 73, 440, 536
  queries 88, 297
  reports 47, 51, 234, 299, 437
  sample applications 196, 250
  silent installs 689, 694, 696
  silent uninstalls 691, 692, 697
Running element 351
running job attributes 321
Running value 162, 181
RunningJobs data type 536
RunningJobs element 319, 322
RunningJobsResultDef element 178, 321
RunningSyncJobs element 319
RunningTime element 538
RunOn element 440, 508, 560
RunReport value 56
run-time generation requests 21, 268

S

–s command line option 696, 697
sample applications
  accessing code libraries for 189
  accessing Java RSSE 564
  building Java RSSE 566, 576
  logging in to Encyclopedia and 198, 202
  running 196, 250
sample custom event web service 235, 237, 238, 239
sample files 685
sample package 237
sample projects 244
sample reports 575, 577, 629
SampleEventService class 237, 239
SaveOutputFile element 297, 300
SaveSearch operations 42, 372
SaveSearch type definition 372
SaveSearchResponse type definition 372
SaveTransientReport operations 33, 373
SaveTransientReport type definition 373
SaveTransientReportResponse type definition 373
saving
  data cubes 48
  output files 47, 300, 400, 489
  query output 79
  report object value files 300
  report output 224
  search results 372
  temporary reports 373
scalar parameters 465, 539
ScalarDataType data type 539
Scale element 494, 521, 523
ScaleOptions element 521
scaling factor (printer) 494, 521
scaling options 521
ScalingFactor element 317, 557
schedule attributes 440
schedule type attributes 501
scheduled jobs 292, 385
  See also jobs
ScheduleDetails element 499
ScheduleEndDate element 501
schedules
  changing properties for 152
  creating job 455, 499, 500, 506, 560
  getting archiving 163
  getting information about 385
  getting online backup 163, 164
  running queries and 86–88, 93
  searching 499, 501, 502
  setting archiving 435, 661, 663
  setting report generation 57, 234, 397, 661
  updating 152, 419, 420, 423

Schedules element
GetJobDetails operations 64, 335
GetNoticeJobDetails operations 339
PrintReport operations 370
SubmitJob operations 87, 397
Schedules property 333, 337
ScheduleStartDate element 501
ScheduleType element 501
scheduling reports 57, 234, 397, 661
schemas 9, 309, 336, 443, 459, 532, 619
See also WSDL schemas
schemas classes 198, 225
schemas library 188
schemas package 188, 199
scripts 614, 616
SDI. *See* Service Definition Interface
search conditions
defining parameters for 208, 211, 255
entering special characters in 447, 470, 477
entering wildcards in 209, 256
moving files and 362
retrieving files and 139, 141, 144, 210, 257
retrieving security roles and 389
setting 105, 208, 255
specifying multiple 210, 257
search criteria. *See* search conditions
Search element
CopyFile operations 276
defining as empty 137, 138
DeleteChannel operations 286
DeleteFile operations 288
DeleteGroup operations 119, 290
DeleteJob operations 290, 292
DeleteJobNotices operations 291
DeleteRole operations 293
DeleteUser operations 294
GetFolderItems operations 329
MoveFile operations 362
SelectChannels operations 376
SelectFiles operations 139, 141, 378
SelectFileTypes operations 379
SelectGroups operations 380
SelectJobNotices operations 384
SelectJobs operations 383
SelectJobSchedules operations 385
SelectRoles operations 389
SelectUsers operations 390
UpdateChannel operations 406
UpdateFile operations 410
UpdateGroup operations 417
UpdateJobSchedule operations 419
UpdateRole operations 425
UpdateUser operations 430
Search event type 607, 610
search events 610
search field attributes 447
search fields 477, 483, 492
search formats 330, 476
search lists 540, 541
search operations
See also searching
constructing composite messages for 42
copying files and 155
creating 105, 107, 208, 255
defining as recursive 139
described 160
external security systems and 42
limiting scope of 119
moving files and 155
programming tasks for 42
setting conditions for. *See* search conditions
Search parameter 119, 208, 256
search results
defining attributes for 541
displaying 106
exceeding limits of 112, 376
getting 347
retrieving items from 306
retrieving number of 391
saving 372
setting CSV options for 374, 383
setting range of pages for 107
search viewing parameters 374
searchByCondition method 209
SearchByIdList value 540
SearchByNameList value 541
SearchCriteria element 387
SearchFile element 372
searching
See also search operations
channels 375, 447, 448
CSV files 374, 383
directories 139

Encyclopedia volumes 139, 141, 160, 208, 255
external users 591
files 139, 141, 469, 471
folders 139, 143, 144
for specific components 105
for specific data 119
groups 380, 477, 478
hidden objects and 473
jobs 482, 503
notifications 491, 492
range of pages 107, 386, 528
reports 41, 105, 373, 540, 541
schedules 499, 501, 502
security roles 388, 534, 535, 590
specific file types 379
subfolders 139, 276, 332, 362, 378
users 390, 551, 552
SearchList element 347, 372
SearchList value 540
SearchObject element 347
SearchRef element 375
SearchReport element 106, 107
SearchReport operations 42, 105, 107, 373, 556
SearchReport type definition 373
SearchReportByIdList data type 540
SearchReportByIdList element 540
SearchReportByIdNameList data type 540
SearchReportByIdNameList element 540
SearchReportByNameList data type 541
SearchReportByNameList element 541
SearchReportResponse element 108
SearchReportResponse type definition 375
SearchResultProperty data type 541
secondary log directories 602
secure read privilege 519, 583
secured read privilege 676
security applications 564, 575, 576, 577
security integration options 558
security operations 42, 120
security roles
adding to login requests 121
administering Encyclopedia and 30
archiving 653
assigning privileges 518, 675
creating 150, 282, 465, 534, 535
deleting 293, 427
duplicating 283
getting privileges for 124, 126
getting properties for 389
getting volume-specific 163
mapping external users to 587, 597
naming 534
searching 388, 534, 535, 590
setting filters for 139, 142
setting properties for 593
testing for external 585
testing reporting environment and 28
translating 587
updating 120, 425, 426, 429, 432
validating 121, 360
SecurityIntegrationOption element 558
SeedFunding.rox 54
Select operations 160
SelectByIdList value 540
SelectByNameList value 541
SelectChannels operations 375
SelectChannels type definition 376
SelectChannelsResponse type definition 376
SelectColumnList element 83, 90, 526
SelectFiles element 140, 142
selectFiles method 209, 210, 211, 258
SelectFiles objects 211
SelectFiles operations
defining 377
generating data cubes and 99
returning properties and 139–142, 208, 256
searching and 42
SelectFiles type definition 377
SelectFilesResponse element 140, 141
SelectFilesResponse objects 210, 258
SelectFilesResponse type definition 378
SelectFileTypes operations 42, 379
SelectFileTypes type definition 379
SelectFileTypesResponse type definition 379
SelectGroups operations 34, 380, 590
SelectGroups type definition 380, 590
SelectGroupsOfUser element 595
SelectGroupsResponse type definition 380, 590
selection lists. *See* pick lists
SelectJavaReportPage application 229
SelectJavaReportPage class 229

selectJavaReportPage method 230
SelectJavaReportPage operations 40, 381
SelectJavaReportPage type definition 381
SelectJavaReportPageResponse type definition 382
SelectJobNotices operations 40, 384
SelectJobNotices type definition 384
SelectJobNoticesResponse type definition 384
SelectJobs element 162
SelectJobs operations 40, 161, 383
SelectJobs type definition 383
SelectJobSchedules operations 40, 385
SelectJobSchedules type definition 385
SelectJobSchedulesResponse type definition 385
SelectJobsResponse element 162, 383
SelectList element 347, 372
SelectList value 540
SelectNameValueList element 467, 514
SelectPage application 226
SelectPage class 227
SelectPage element 100, 102
selectPage method 227
SelectPage operations
  printing and 101
  retrieving specific pages and 226, 229, 386
  viewing reports and 40, 99, 100
SelectPage type definition 386
SelectPageResponse element 101
SelectPageResponse type definition 388
SelectRoles method 591
SelectRoles operations 44, 388, 590
SelectRoles type definition 388, 591
SelectRolesOfUser method 591
SelectRolesResponse type definition 390, 591
SelectUsers element 161
SelectUsers operations 44, 160, 390, 591
SelectUsers type definition 390, 592
SelectUsersOfRole element 594
SelectUsersResponse element 161
SelectUsersResponse type definition 391, 592
SelectValueList element 467, 514
semicolon (;) character 56
SEND_TYPE_ATTR parameter 219
SendEmailForFailure element
  JobInputDetail data type 488
  PrintReport operations 371
  SubmitJob operations 399
  User data type 551, 599
SendEmailForSuccess element
  JobInputDetail data type 487
  PrintReport operations 371
  SubmitJob operations 398
  User data type 551, 599
SendFailureNotice element 371, 398, 487
sendmail utility 4
SendNoticeForFailure element 551, 599
SendNoticeForSuccess element 550, 599
SendSuccessNotice element 371, 398, 487
sequence element 8
ser package 192
Serialization class 248
serializing SOAP messages 16
server configuration error messages 613
Server element 173, 367
server home argument 617
Server Proxy.sln 244
server state attributes 545
server status attributes 542
ServerBuild element 546
ServerHome element 593
ServerInformation data type 541
ServerList element 353
ServerMonitor counter 641
ServerName element
  GetFactoryServiceInfo operations 319
  GetServerResourceGroupConfiguration operations 348
  MDSInfo data type 506
  PendingSyncJob data type 518
  RunningJobs data type 538
  ServerInformation data type 542
  SetServerResourceGroupConfiguration operations 393
ServerResourceGroupSetting data type 543
ServerResourceGroupSettingList element 348, 393
servers
  See also iServer
  changing configurations for 543
  creating log consolidator databases and 618
  failing 545

getting default Encyclopedia volumes for 354
getting information about 176
getting list of 352
managing Encyclopedia volumes on 4
timing out 49
viewing error messages for 613
ServerState data type 544
ServerState element 506, 545
ServerStatusInformation data type 545
ServerStatusInformation element 542
serverURL variable 199, 251
ServerVersion element 177, 546
ServerVersionInformation data type 546
ServerVersionInformation element 354, 543
Service data type 546
Service Definition Interface 193
service definitions 10–11
service element 6, 10
service enable or disable errors 612
service type code (consolidator database) 623
service type descriptions (consolidator database) 626
ServiceList element 542
ServiceOrPort property 369
ServiceProfile element 689
services
See also specific iServer service; web services
calling remote 194, 249
developing web-based 4, 5, 9
event-based scheduling and 235, 237, 238
getting information about 177, 180, 318
page-level security and 575
running RSSE applications as 564, 566, 567
viewing logging information for 617, 626
ServiceTypeCode entry (consolidator database) 623, 626
ServiceTypeDescription entry (consolidator database) 626
servlets 16
SessionID element 670, 671, 672
setAdminOperation method 207
SetArchiveRules element 413, 661
SetArchiveRules operations 659, 660
SetAttributes element
UpdateChannel element and 154
UpdateChannelOperation operations 408
UpdateFileOperation operations 412
UpdateFileTypeOperationGroup operations 415
UpdateGroupOperation operations 418
UpdateJobSchedule element and 152
UpdateJobScheduleOperation operations 421
UpdateRoleOperation operations 427
UpdateUserOperation operations 432
UpdateVolumePropertiesOperation operations 435
setAuthId method 203
SetAutoArchiveSchedules element 435, 663
SetAutoArchiveSchedules operations 660
SetBearingUsersById element 428
SetBearingUsersByName element 427
SetChannelNotificationById element 63, 423
SetChannelNotificationByName element 63, 422
SetChannelSubscriptionsById element 433
SetChannelSubscriptionsByName element 432
SetChildRolesById element 428
SetChildRolesByName element 427
setClassPath shell script 197
setClassPath.bat 196
SetConnectionProperties operations 44, 392
SetConnectionProperties type definition 392
SetConnectionPropertiesResponse type definition 393
setCreateUser method 207
SetDependentFilesById element 413
SetDependentFilesByName element 412
SetFileCreationPermissions element 433
SetGroupMembershipsById element 433
SetGroupMembershipsByName element 432
SetGroupNotificationById element 422
SetGroupNotificationByName element 422
setIgnoreDup method 206
SetLargeWebIcon element 415
SetLicenseOptions element 433
setOperationName method 220
setOperationStyle method 219
SetOutputFileAccess element 423
SetOutputFilePermissions element 423

SetParameterDefinitions element 136, 413, 415
SetParameterDefinitions operations 135
SetParameters element 152, 421
SetParameters operations 659
SetParameterValues element 423
SetParentRolesById element 428
SetParentRolesByName element 428
SetPermissions element 137, 153, 408, 413
SetPermissions operations 136
SetPrinterOptions element 421, 433, 435
SetQuery element 93, 423
SetRequiredFilesById element 413
SetRequiredFilesByName element 412
SetRolesById element 433
SetRolesByName element 432
SetSchedules element 152, 421
SetServerResourceGroupConfiguration element 75
SetServerResourceGroupConfiguration operations 74, 393
SetServerResourceGroupConfiguration Response type definition 393
SetServerResourceGroupConfiguration type definition 393
SetSmallWebIcon element 416
SetSubscribersById element 408
SetSubscribersByName element 408
SetSystemPrinters element 435
settings. *See* properties
SetupTypeCtl element 685
SetupTypeDlg element 686
setUser method 206
SetUserNotificationById element 422
SetUserNotificationByName element 421
SetUsersById element 418
SetUsersByName element 418
SetWaitForEvent element 423
SetWindowsIcon element 415
severe logging level 610
severity levels (error logs) 611
Shared element 469
shared files 127, 141, 469, 673
shared libraries 602, 632
Shared value 469
shell script files 694
shell scripts 694
ShortDescription element 474, 506
ShowInReportlet property 103
ShowRowCount element 84, 527
silent installations
  adding license file locations to 686
  creating 683, 694, 695
  customizing 684, 685, 695
  defining version and copyright information for 686
  encrypting passwords for 687, 688
  hiding dialog boxes for 687
  running 689, 694, 696
  verifying 690
silent uninstalls 691, 692, 697
simple object access protocol. *See* SOAP
Size element 468, 675
Size property 143, 329
Size_Entry counter 643
Size_Limit counter 643
SkipPermissionError element 407, 430
.sma files. *See* data source map files
SMA value 528
small icons 416, 447, 474
SmallImageURL element 447, 474
SMTP messaging protocol 4
SOAP archiving data types 673
SOAP archiving operations 669, 670
SOAP endpoint performance counters 638
SOAP endpoints 14
SOAP engine error messages 613
SOAP envelopes 14, 15, 17–18
SOAP header element 268
SOAP header extensions 200
SOAP headers
  adding authentication IDs to 121
  adding multilingual functionality to 116
  adding namespace declarations to 18
  binding definitions and 10
  creating 19–21
  defining attributes of 480
  overview 268
  targeting resource groups and 68, 76
  uploading files and 127
SOAP interface (performance monitoring) 637
SOAP message IDs 481
SOAP messaging 4, 14

See also messages
soap namespace prefix 7
SOAP ports 10, 11, 195, 236
SOAP processor 188, 190, 244, 247
SOAP requests. *See* requests
SOAP responses. *See* responses
SOAP RSSE applications 566
SOAP RSSE data types 595
SOAP RSSE operations 584
SOAP VersionMismatch error 18
SOAP web service operations 240
SOAP with Attachments API for Java code libraries 190
SOAPAction directive 17
soapAction element 10
soapAction parameter 219
sort columns 284, 285, 459, 527, 547
sort fields. *See* sort columns
sort order 478, 526, 547
sort order attributes 460
SortColumn data type 547
SortColumnList element 84, 284, 285, 527
SortDirection element 460
SortOrder element 547
source code
archive driver and 652
compiling 189
configuring RSSE logging levels and 565
creating LDAP configuration files and 567, 568
custom event web services and 237
generating 189
log consolidator application 615
logging extensions and 602, 605, 606
Performance Monitoring Extension and 633, 636
SourceForge.net code libraries 190
special characters 447, 470, 477
splash screens 680, 683
SplitOversizePages element 387
spreadsheet reports
accessing 26
converting output for 393, 454
retrieving specific pages for 229
SpreadsheetGeneration value 121, 360
SQL databases 312
SQL script files 614
SQL statements. *See* queries
Standalone element 548
stand-alone servers 352, 353, 548
Standard logging level 604, 612
Start element 528
Start menu 685
Start operations 592
Start type definition 592
start_consolidator.sh 617
StartArchive command 170, 302, 664
StartArchive operations 672
StartArchive type 672
StartArchiveResponse type 673
StartArguments element 531, 532, 544
StartIndex element 342
starting
log consolidator application 614, 616, 617
RSSE applications 592
TCPMonitor utility 203
starting dates 501
Starting element 545
Starting value 545
StartPartitionPhaseOut command 170, 302
StartResponse type definition 593
StartRowNumber element 285
StartTime element 484, 498, 529, 538
StartUpParameters property 368
State element 484, 497
state information 177
static data 105, 316, 348
StaticDataRef element 349
status code (consolidator database) 623
Status element
CancelJob operations 273
CancelReport operations 274
ExecuteQuery operations 298
ExecuteReport operations 301
ExecuteVolumeCommand operations 303
GetJobDetails operations 64, 335
GetNoticeJobDetails operations 339
GetSyncJobInfo operations 351
WaitForExecuteReport operations 438
status information 48, 464, 626
See also Status element; status messages
status messages
cancelled jobs and 67
channel notifications and 60

data cubes 48
delete operations and 151
returning 183
setting polling interval for 487, 511
transaction operations and 216, 261
wait-time generated delays and 50
Status property 334, 337
StatusCode element 242
StatusCode entry (consolidator database) 623, 627
StatusDescription entry (consolidator database) 627
StatusErrorCode element 545
StatusErrorDescription element 546
Stop operations 595
Stop type definition 595
stop_consolidator.sh 617
StopArchive command 302
stopping
log consolidator application 614, 616, 617
report execution 273
RSSE applications 595
usage and error logging 647, 648
Stopping element 545
Stopping value 545
StopResponse type definition 595
Stream data type 547
Stream element 349
streaming 130, 216, 261, 547
StreamName element 317
streams 113, 263, 317
String data type 461, 513
String element 461, 539
String parameter 539
string tables 682
strings
access control lists and 577, 583
creating job schedules and 501
encryption and 688
limitations for characters in 699
naming report files and 468
passwords and 550
Ping requests and 172
user names and 550
Structure data type 513
Structure element 461
style sheets 105, 317, 349
StyleSheetRef element 350
subdirectories 139
subfolders
assigning privileges to 138
creating archives and 653, 654
deleting 288
searching 139, 276, 332, 362, 378
setting archiving rules for 658
SubmissionTime element 498, 518, 538
submit job events 611
SubmitJob element 56, 57, 60, 62
SubmitJob operations
archiving and 659
defining 393
generating data cubes and 99
printing requests and 55, 57
running queries and 81, 86, 87
running reports and 40, 55, 56, 57, 235
sending notifications and 59, 60, 62
specifying resource groups in 77
SubmitJob type definition 394
SubmitJobResponse element 59
SubmitJobResponse type definition 400
SubscribedToChannelId element 553
SubscribedToChannelName element 553
SubscribedUserId element 448
SubscribedUserName element 449
subscribers 60, 407, 408
SubscribeToChannelsById element 433
SubscribeToChannelsByName element 432
subtotals 80, 81
Succeeded element 446
Succeeded message 67, 183
Succeeded value 162
success notices 371, 398, 551, 594, 599, 666
success notification template 63
SuccessNoticeExpiration element 551, 599
SuccessNoticeExpiration property 594
SUM function 441
Summary logging level 654
SupportCollation element 522
SupportColorMode element 522
SupportDuplex element 522
SupportedQueryFeatures data type 548
SupportedQueryFeatures element
GetInfoObject operations 330
GetJobDetails operations 334

GetNoticeJobDetails operations 338
GetQuery operations 343
Query data type 528
SupportedQueryFeaturesExtended element 528
SupportNumberOfCopies element 522
SupportOrientation element 521
SupportPageSize element 521
SupportPaperTray element 522
SupportResolution element 521
SupportScale element 521
SuppressDetailRows element 528
SVGFlag property 229
SwitchToNormalMode command 170
SwitchToOnlineBackupMode command 171, 302
Sync value 530
Sync_Busy_Fact counter 638
Sync_Free_Fact counter 638
Sync_Pending counter 638
Sync_Pers_Failed counter 638
Sync_Pers_Success counter 638
Sync_Running counter 638
Sync_Timed_Out counter 638
Sync_Trans_Failed counter 638
Sync_Trans_Space counter 638
Sync_Trans_Success counter 638
SyncEvent counter 641
SyncFactoryProcesses element 319
synchronous job status attributes 301, 351
synchronous jobs
cancelling 445
creating 537
getting information about 27, 320, 350
getting list of 177
monitoring requests for 181
pending 517
running 68, 530, 544
synchronous report states 36
synchronous reporting manager cache counters 643
synchronous reports
cancelling 181, 182, 183, 273
generating 76
monitoring 181
running 47, 51, 224
synchronous resource groups 70, 346, 347, 531
synchronous silent installations 690
SyncJobQueueSize element 319
SyncJobQueueWait element 180, 319
SyncJobsTable counter 641
SyncResourceGroupList element 346
SyncStoreTimeout element 180
System Activity logging report 629
system administrators 21, 123, 687
See also administrators
system component ID (consolidator database) 621, 622
system component log records 627
system database 689, 690, 697
system errors 612
system information 162, 176
system passwords 123, 401
system printers 27, 165, 352, 435, 519
system resources 602
SystemComponentId entry (consolidator database) 621, 622
SystemDefaultVolume element 354
system-generated tokens 360
SystemLogin element 123
SystemLogin operations 44, 123, 181, 401
SystemLogin type definition 401
SystemLoginResponse element 123
SystemLoginResponse type definition 401
SystemName element 354
SystemPassword element 401
SystemPasswordEncryptLevel element 401
SystemRestart element 354
SystemType data type 548
SystemType element 545

T

Table data type 513
Table element 461
table of contents 108, 332, 354
table parameters 467, 515, 516, 529
tables 614, 618
TableValue element 516
Target element 154, 156, 275, 361
target volumes 21, 123, 160, 199, 251
See also Encyclopedia volumes

targetNamespace attribute 7
TargetResourceGroup element 21, 76, 268, 481
TargetResourceGroup variable 201
TargetServer element 21, 177, 268, 480
TargetVolume element 21, 123, 160, 268, 480
TargetVolume variable 201, 252
tcpmon utility. *See* Apache AXIS TCPMonitor
template files 694, 695
templates
  retrieving access control list 125, 324
  sending notifications and 63, 64
  specifying query 343, 528
temporary files 46, 173, 296, 366
temporary objects 46, 48, 297
temporary reports 48, 224, 319, 373, 538
testing
  iServer components 28
  page-level security 577
  report generation 110
  Windows installations 680
text 229, 681, 688, 699
text boxes 467, 514
text files 374, 383
text formats 452
text strings. *See* strings
text wrapping attributes 452
TextFormat element 452
third-party code libraries 189
third-party files 53, 344, 413
third-party reports
  attaching to e-mail 59
  generating 46
  managing 4
  selecting output formats for 59
  uploading 129, 216, 261
threads 606
Time data type 461
Time element 461, 539
Time parameters 539
time stamps 143, 468, 630, 653
time zones 143, 499
time-out intervals 182
TimeStamp element 143, 468, 675
TimeStamp property 143, 329
TimeZoneName element 499
TocNodeId element 355
TocRef element 333, 355
tokens 360
Top N Documents Viewed logging report 629
Top N Executables logging report 629
Top N Users By Activity logging report 629
Top N Users By Logins logging report 629
TotalCount element
  GetChannelACL operations 124, 307
  GetFileACL operations 124, 324
  GetFileCreationACL operations 326
  GetFolderItems operations 329
  GetParameterPicklist operations 342
  SelectChannels operations 376
  SelectFiles operations 379
  SelectGroups operations 381, 590
  SelectJobs operations 384, 385
  SelectJobSchedules operations 386
  SelectRoles operations 390, 591
  SelectUsers operations 391, 592
TotalCount parameter 112
TotalRequestProcessTime counter 638
totals 80, 81
Trace logging level 654
Trace mode 173, 175, 367
transaction applications
  for Apache Axis clients 213, 214
  for Microsoft .NET clients 259
Transaction element 61, 158, 270
transaction logs 605, 646
Transaction objects 215, 260
Transaction operations
  Administrate operations and 31, 157, 213
  creating 401
  UpdateJobSchedule operations and 61
Transaction requests 213, 259
Transaction tag 213, 259
Transaction type definition 402
TransactionOperation element 159, 259, 402
TransactionOperation objects 215, 260
TransactionOperation operations 402
TransactionOperation requests 159, 213, 259
TransactionOperation type definition 402
transactions 156, 157, 213, 402, 615
  See also Transaction operations
transfer protocols 4, 14
transient files. *See* temporary files

transient reports. *See* temporary reports
TransientReportCacheSize element 319
TransientReportTimeout element 319
TranslatedRoleNames data type 597
TranslatedRoleNames element 358, 587
TranslatedRoleNames property 163, 357
TrnReqInfo counter 641
TrnStoreMgr counter 641
TSV parameter 374, 556
type descriptors 192
Type element
  DatabaseConnectionDefinition type 457
  GetDatabaseConnectionParameters operations 312
  ObjectIdentifier data type 510
  ResourceGroup type 68, 70, 530
  ServerResourceGroupSetting type 544
type element 452
TypeName data type 548
TypeName element 453, 549
typens namespace prefix 7
types. *See* data types
types element 6, 7–8
typical installation 686

U

UI_Version_2 element 548
UNCSV parameter 374, 556
undefined parameters 280
UndeleteJobSchedule element 405
UndeleteUser element 403
UndeleteUser operations 405
Unicode character sets 16, 115
Uniform Resource Locators. *See* URLs
uninstall log files 691, 697
uninstall scripts (UNIX) 697
uninstalling
  iServer System 691, 697
  localization and online documentation files 692
  Performance Monitoring Extension 636
universal hyperlinks. *See* hyperlinks
Universal Resource Identifiers. *See* URIs
UNIX messaging protocol 4
UNIX systems
  See also Linux servers
  configuring archive provider for 656
  creating notifications for 64
  creating silent installs for 694, 695
  customizing installations for 694
  installing Performance Monitoring Extension for 632
  MAPI encoding for 64
  running log consolidator application and 614, 615, 616
  running logging extensions for 602
  running sample applications and 197
  running silent installs for 696–697
  running silent uninstalls for 697
unloading performance counters 636
UnsubscribeFromChannelsById element 433
UnsubscribeFromChannelsByName element 432
unsupported formats 455
UNTSV parameter 374, 556
update operations
  composite operations and 30, 147
  file or folder properties and 33, 409
  handling errors with 148
  job information and 41
  managing Encyclopedia items and 31
  notification groups and 34
  user information and 44, 152
update requests 120
UpdateChannel element 154, 271, 404
UpdateChannel operations 153, 406
UpdateChannel type definition 406
UpdateChannelOperation element 409
UpdateChannelOperation operations 407
UpdateChannelOperation type definition 407
UpdateChannelOperationGroup element 406
UpdateChannelOperationGroup operations 408
UpdateChannelOperationGroup type definition 408
UpdateDatabaseConnection operations 35, 409
UpdateDatabaseConnection type definition 409
UpdateDatabaseConnectionResponse type definition 409

UpdateFile element 135, 272, 404
UpdateFile operations
archiving and 659, 660, 661, 663
defining 134, 409
generating data cubes and 99
updating privileges and 136
UpdateFile type definition 410
UpdateFileOperation element 414, 416
UpdateFileOperation operations 411
UpdateFileOperationGroup element 410
UpdateFileOperationGroup operations 414
UpdateFileOperationGroup type definition 411, 414
UpdateFileType element 271, 404
UpdateFileType operations 414
UpdateFileType type definition 414
UpdateFileTypeOperation element 416
UpdateFileTypeOperation operations 415
UpdateFileTypeOperationGroup element 414
UpdateFileTypeOperationGroup operations 416
UpdateFileTypeOperationGroup type definition 415, 416
UpdateGroup element 271, 404
UpdateGroup operations 416
UpdateGroup type definition 416
UpdateGroupOperation element 419
UpdateGroupOperation operations 417
UpdateGroupOperation type definition 417
UpdateGroupOperationGroup element 417
UpdateGroupOperationGroup operations 418
UpdateGroupOperationGroup type definition 418
UpdateJobSchedule element 93, 153, 272, 405
UpdateJobSchedule operations
archiving and 659, 662
changing properties and 152
defining 419
executing queries and 81, 93
Factory service tasks and 55
generating data cubes and 99
running reports and 235
sending notifications and 59, 61, 63
UpdateJobSchedule type definition 419
UpdateJobScheduleOperation element 424
UpdateJobScheduleOperation operations 420
UpdateJobScheduleOperation type definition 420
UpdateJobScheduleOperationGroup element 419
UpdateJobScheduleOperationGroup operations 423
UpdateJobScheduleOperationGroup type definition 424
UpdateOpenSecurityCache element 272, 405
UpdateOpenSecurityCache operations 44, 424
UpdateOpenSecurityCache type definition 424
UpdateResourceGroup element 71
UpdateResourceGroup operations 70, 424
UpdateResourceGroup type definition 424
UpdateResourceGroupResponse type definition 425
UpdateRole element 120, 271, 404
UpdateRole operations 425
UpdateRole type definition 425
UpdateRoleOperation element 429
UpdateRoleOperation operations 426
UpdateRoleOperation type definition 426
UpdateRoleOperationGroup element 425
UpdateRoleOperationGroup operations 429
UpdateRoleOperationGroup type definition 429
updates 20
UpdateUser element 158, 271, 403
UpdateUser operations 429
UpdateUser type definition 429
UpdateUserOperation element 434
UpdateUserOperation operations 430
UpdateUserOperation type definition 430
UpdateUserOperationGroup element 430
UpdateUserOperationGroup operations 434
UpdateUserOperationGroup type definition 434
UpdateVolumeProperties element 272, 405
UpdateVolumeProperties operations 434, 660, 663
UpdateVolumeProperties type definition 434
UpdateVolumePropertiesOperation element 436

UpdateVolumePropertiesOperation
operations 434
UpdateVolumePropertiesOperation type
definition 435
UpdateVolumePropertiesOperationGroup
element 434
UpdateVolumePropertiesOperationGroup
operations 436
UpdateVolumePropertiesOperationGroup
type definition 436
updating
access control lists 138
archiving rules 413, 659, 661–663
channels 153, 406, 407, 408, 446
file types 152, 414, 415, 416
files 134, 152, 409, 411, 414
folders 134, 409, 411, 414
multiple objects 148
notification groups 152, 416, 417, 418
Open Security cache 424
privileges 135, 136, 423
resource groups 393, 424
roles 120, 425, 426, 429, 432
schedules 152, 419, 420, 423
user properties 429, 430, 434
upgrades 684, 694
upload applications 217, 262
UploadFile class 217, 262
UploadFile element 127
uploadFile method 217, 218
UploadFile objects 218, 263
UploadFile operations
building applications and 218, 263
copying file properties and 129
defining 127, 128, 436
generating data cubes and 99
managing files and folders and 34
uploading third-party reports and 129
UploadFile requests 131, 132, 263
UploadFile responses 130
UploadFile type definition 436
UploadFileResponse type definition 437
uploading
external files 127
files 113, 127, 131, 216, 261, 436
reports 128, 577
third-party reports 129, 216, 261
URIs 16, 17, 219
URL property 245
URLs
accessing web services and 10
accessing WSDL documents and 11, 189
configuring log consolidator and 615
getting embedded 105
getting SOAP port 195, 196
logging in to Encyclopedia and 200
retrieving dynamic data and 316
setting file type icon 474
specifying media types and 16
text string limits for 699
URNs (Uniform Resource Names) 16
usage event IDs 618
Usage function 251
usage log consolidator 602, 613
usage log data 622, 627
usage log database 630
usage log files 602, 605, 606, 627, 646
usage log settings 615
usage logging configurations 603
usage logging example reports 629
Usage Logging extension 602, 605, 646
usage logging functions 646
Usage Logging page 603
usage_log.csv 602, 606
UsageAndErrorConsolidator directory 614
usageanderrorconsolidator.jar 614, 615
UsageAndErrorLogging.rol 631
UsageLog counter 641
USAGELOG_FILE_EXT property 605
USAGELOG_FILE_NAME property 605
usagelogext.c 605
Used_Entry counter 643
Used_KB counter 643
UseLatestInfoObject element 343
UseQuoteDelimiter element 541
UseQuoteDelimiter property 375, 383
user activity errors 612
user attributes 549, 552
User data type 549, 597, 701
User element
Authenticate operations 584
CreateUser operations 283, 666
GetUserProperties operations 588
Login requests 359

Login responses 360
user error messages 613
user IDs 294, 405, 490, 550
User Name property 631
user names
adding to access control lists 577
connecting to external data sources and 586
consolidating logging information and 618
deleting 294
duplicating 283
getting 163
sending notifications and 491
setting 202, 550
specifying invalid 148
User objects 206, 254
See also users
user operations 42
user preferences 121, 206, 255, 549, 552
User property 143
user.acls 576, 577, 581
UserACLExternal element 594
User-Agent directive 16
UserAgent element 557
UserAgent parameter 374
UserAndProperties element 585
UserCondition data type 551
UserField data type 552
UserId element 356, 357, 392, 519
UserName element
DoesUserExist operations 586
GetConnectionProperties operations 587
GetUserACL operations 588
GetUserLicenseOptions operations 356
GetUserPrinterOptions operations 357
Permission data type 519, 596, 676
SelectGroups operations 590
SelectRoles operations 591
SetConnectionProperties operations 392
UserName property 368
username variable 199, 251
UserNames element 307
UserPermissions element 447, 469
UserPermissions property 329
users
adding to notification groups 418, 421
assigning privileges 518, 675
authenticating 359, 584
checking for existence of 586
creating 148, 205, 254, 283, 579
defining access control lists for 577
defining available features for 360
defining groups of 279
defining login settings for 121
deleting 151, 293, 405
developing for external 564
getting access control lists for 575, 582
getting ACL templates for 125, 324
getting job information for 64, 65
getting licensing options for 355, 553
getting list of 160
getting printer settings for 163, 167, 356
getting privileges for 124, 126
getting properties for 588
identifying 125
logging usage information for 629
managing volume data and 30, 121
programming tasks for 42
removing from notifications 418, 421
searching 380, 390, 551, 552
sending notifications to 60, 61, 148, 371, 398
setting home folders for 148
setting licensing options for 505
setting notification options for 59, 62
setting output format options for 60, 62
setting passwords for 550
setting preferences for 121, 206, 255, 549, 552
setting properties for 593
updating properties for 429, 430, 434
updating roles for 427
viewing error messages for 613
Users element 391, 589, 592
UserSearch data type 552
UserSetting element 359, 584
useSOAPAction parameter 219
UTF-8 character set 16
utils package 203

V

ValidateRole element 360
ValidateRoles element 121, 122
validating security roles 121

ValidRoles element 361
Value element
  Argument data type 442
  ComponentType data type 454
  FieldValue data type 467
  FilterCriteria data type 85, 475
  LicenseOption data type 506
  NameValuePair data type 508
  ParameterValue data type 516
  PropertyValue data type 525, 597
Value property 51
ValueFileType element 486
ValueFileVersionName element 486
ValueIsNullValue element 516
values
  See also data
  assigning to data components 454, 508
  retrieving date 53
  setting parameter 511, 515
  setting property 524, 597
variables 695
version attributes 509, 543
Version element 468, 510, 593, 674, 686
version information 546, 686
version names 468, 509, 675
version numbers 56, 124, 127
version options 554
Version property 143, 329
VersionInfo element 684, 686
Versioning element 509
VersioningOption data type 554
VersionName element 468, 509, 675
VersionName property 143, 329
View element 529
view formats 330, 476
view parameters 345, 374, 515, 529, 554
  See also ViewParameter element
view performance counters 639
View service
  creating e-mail attachments and 59
  enabling 546
  getting formats for 110, 111
  overview 99
  pinging 28, 172, 173, 366, 367
viewer preferences 121, 559, 594
viewing
  access control lists 583
  file properties 139
  folder properties 139
  performance counters 632, 634
  query output 79
  query parameters 90
  Reportlets 308, 309
  reports 99, 100, 229, 554
  search results 106
  SOAP messages 203
  specific report pages 100
  WSDL schema definitions 11
Viewing element 546
viewing events 607, 609
viewing formats 110, 451
  See also formats
viewing options
  reports 399, 555
  search result sets 374
viewing parameters. *See* view parameters
viewing preferences. *See* viewer preferences
viewing requests 639
ViewMode element 100, 511
viewMode property 230
ViewOperation element 557
ViewParameter data type 554
ViewParameter element
  GetContent operations 308
  GetCustomFormat operations 111
  GetCustomFormatData operations 311
  GetDynamicData operations 315
  GetStaticData operations 348
  GetStyleSheet operations 349
  GetTOC operations 355
  SearchReport operations 374
  SelectPage operations 387
ViewParameterList element 345
ViewParameterValues element 382
ViewPreference element 550, 598
ViewPreference property 594
ViewProperties element 382
ViewResourceGroupList element 347
view-time parameters 475
Visibililty element 453
Visible attribute 687
visible privilege 519, 676
Vista computers. *See* Windows systems
Visual Basic development environments 244

volume administrators 30, 120
See also administrators
Volume archive service provider property 657
Volume data type 557
Volume element 518, 531, 538, 593
volume failover errors 612
volume health monitoring errors 612
volume job purging errors 612
volume-level operations 31, 127
volume names 28, 353
volume online or offline errors 612
volume performance counters 639
volume user activity errors 612
volume variable 199
VolumeName element 241, 302
volumename variable 251
VolumeNameList element 354
VolumeProperties element 358
VolumeProperties property 163, 357
volumes. *See* Encyclopedia volumes

W

wait intervals 49, 301
WaitForEvent element 336, 339, 400
WaitForExecuteReport element 51
WaitForExecuteReport operations 50, 437
WaitForExecuteReport type definition 437
WaitForExecuteReportResponse element 51
WaitForExecuteReportResponse type definition 437
WaitTime element 49, 298, 301
WaitTime requests 49
WaitTime responses 50
WARN logging level 565
warnings 610
Warnings element 277, 313, 409
web applications 4
See also applications
web browsers 374, 415, 557
web icons 415, 474
web service attributes 5, 6
web service definitions 10–11
Web Service Description Language. *See* WSDL
web service interfaces 193, 249
web service namespace declaration 7
web service operations 5, 10, 240
web service sample application 235
web services
accessing 10, 14
Apache Axis clients and 188
calling 14–15
creating 10
defined 4
deploying 4, 238
developing for 4, 5, 9
enabling for RSSE applications 573
event-based scheduling and 235, 237, 238
integrating with iServer 5
Microsoft .NET clients and 244
naming 10
page-level security and 575
polling 235
running remote 194, 249
running RSSE applications as 564, 566, 567
setting content types for 16
Weekly data type 560
weekly reports 57, 560
Weekly value 501
Welcome dialog box 685
WelcomeDlg element 685
well-formed messages 14
wildcard characters 120, 209, 256
Windows messaging protocol 4
Windows Registry. *See* Registry Editor
Windows systems
changing registry keys for 678
configuring archive provider for 656
creating notifications for 64
creating silent installs for 683–689
customizing installations for 678–679
installing Performance Monitoring Extension for 632, 633
localizing installations for 679–683
MAPI encoding for 64
monitoring iServer System resources and 632
running log consolidator application and 614, 615, 617
running logging extensions for 602
running sample applications and 196
running silent installs for 689–691

running silent uninstalls for 691, 692
testing installations for 680
WithLicenseOption element 553
WithoutDynamicPickList element 343, 344
WithRightsToChannellId element 536
WithRightsToChannelName element 536
WithRoleId element 553
WithRoleName element 553
WithUserId element 479
WithUserName element 479
word wrapping 452
working directories 154
WorkingFolderId element
CopyFile operations 276
CreateFolder operations 279
DeleteFile operations 288
MoveFile operations 362
SelectFiles operations 377
UpdateFile operations 410
WorkingFolderName element
CopyFile operations 275
CreateFolder operations 279
DeleteFile operations 288
MoveFile operations 362
SelectFiles operations 377
UpdateFile operations 410
workspace directories 135, 511
Wrap element 452
write privilege 519, 676
Write_Pages counter 640
WriteFile requests 366
WriteFile value 172
WSDL (defined) 5
WSDL documents
accessing 189
Apache Axis environments and 188
creating SDIs and 193
creating web service interfaces and 249
generating C# classes from 247
generating JavaBeans from 191
Microsoft .NET clients and 244
subclassing IDAPI classes and 14
WSDL files
accessing 11
binding definitions in 9
data type definitions in 7–8, 443
message definitions in 9
namespace declarations in 6
portType definitions in 9
scoping messages to 7
service definitions in 10–11
structure described 5
updating 245
WSDL interface 245
WSDL schemas
accessing 11
case sensitivity in 5
creating 5–11
defining data type arrays and 443
defining operations with 5
development environments for 9
displaying operation-specific 11
omitting responses and 9
overview 5
WSDL2Java code emitter 189
WSDL2Java tool 191, 192, 193
wsdlns namespace prefix 7

X

x-axis coordinates (charts) 315, 317
Xerces XML Parser 190
XML documents 17, 18, 103
XML element 482
XML elements
binding definitions and 10
case sensitivity for 5
character limits for 699
defining data types and 8
HTTP headers and 16
mapping to Java types 192
multiple data sources and 18
SOAP messaging and 5
XML files 683
XML formats 103, 556
XML interface (performance monitoring) 637
XML language support 4
XML namespace 17, 18
XML objects 614
XML Parser 190
XML parsing error messages 613
XML reports. *See* XML documents
XML schemas 5, 7, 18, 443
See also WSDL schemas

XMLDisplay parameter 374, 556
XP computers. *See* Windows systems
xsd namespace prefix 7
xsi namespace 18
xsi type attributes 219

Y

y-axis coordinates (charts) 315, 317