

One Design
One Server
One User Experience

Installing BIRT iServer for Linux and UNIX

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Contents

Introduction	Ίİ
Understanding ActuateOnev	ii
About the BIRT iServer documentation v	
Obtaining documentation	X
Using PDF documentation	хi
Obtaining late-breaking information and documentation updates	хi
About obtaining technical support	
About supported and obsolete productsx	ii
Typographical conventions	
Syntax conventions x	
About Installing BIRT iServer for Linux and UNIXxi	iii
Part 1	
- ·-·	
Architecture	
Chapter 1	
Understanding Actuate BIRT iServer architecture	3
Understanding BIRT iServer architecture	
Using a third-party RDBMS with an Encyclopedia volume	
Customizing Encyclopedia volume databases	5
Installing and configuring iServer System	6
Managing the backup, recovery, and failover capabilities of the Encyclopedia volume data-	
base and data files	7
Managing an iServer cluster	8
Understanding the iServer System process model	8
Understanding process flow in a stand-alone iServer	
Understanding process flow in an iServer cluster	11
Administering iServer System	14
About Migration and Administration Tools	16
Using JDBC to connect to an Encyclopedia volume database	18
API Compatibility	18
About international character sets	
Administrative reports	
Supported operating systems	9

Part 2

Installing

Installing BIRT iServer Preparing to install BIRT iServer Creating a dedicated user account for installing and running BIRT iServer Backing up iServer system and Encyclopedia volume metadata 24 About X frame buffer 25 Installing X frame buffer 26 About ilibstdc++ 27 About ilibstdc++ 28 About Openmotif 29 Performing a new installation 20 Understanding the iServer installation environment 20 Understanding the iServer installation environment 21 About unning different releases on the same machine 28 About Upgrading an iServer release to Actuate 11 30 About running different releases on the same machine 30 About upgrading an iServer with resource groups 31 About upgrading an iServer with resource groups 42 About the Java Software Development Kit 43 Accessing JAR files for report generation 44 Accessing JAR files for report generation 45 Gathering LDAP information 46 Following best practices 47 Using a test environment 48 Setting up a production staging area 49 Setting up a production environment 40 Chapter 3 Installing BIRT iServer using an alternative database 47 Preparing to install BIRT iServer using an alternative database 47 Creating the system and Encyclopedia volume schemas and iserver user in an alternative database 48 Creating the system and Encyclopedia volume schemas and iserver user in a pre-existing PostgreSQL database 49 Creating the system and Encyclopedia volume schemas and iserver user in a pre-existing PostgreSQL database 50 Creating the system and Encyclopedia volume schemas and iserver user in a pre-existing PostgreSQL database 51 Creating the system and Encyclopedia volume schemas and iserver user in a pre-existing DB2 database 52 Creating the system and Encyclopedia volume schemas and iserver user in a pre-existing DB2 database 53 Creating the system and Encyclopedia volume schemas and iserver user in a pre-existing DB2 database 54 Creating the system and Encyclopedia volume schemas and iserver user in a pre-existing DB2 database 55 Creating the system and Encyclopedia volume schemas and iserv	Chapter 2	
Creating a dedicated user account for installing and running BIRT iServer Backing up iServer system and Encyclopedia volume metadata .22 About X frame buffer .22 Installing X frame buffer .22 About Installing X frame buffer .22 About run levels .22 About Popenmotif .22 Performing a new installation .23 Performing a new installation .24 About migrating an earlier iServer release to Actuate 11 About migrating an earlier iServer release to Actuate 11 About running different releases on the same machine .43 About performance and disk space issues .44 About upgrading an iServer with resource groups .45 About the Java Software Development Kit .47 Accessing JAR files for report generation .48 Following best practices .49 Using a test environment .40 Setting up a production staging area .41 Setting up a production environment .42 Setting up a production environment .43 Chapter 3 Installing BIRT iServer using an alternative database .47 Preparing to install BIRT iServer using an alternative database .47 Creating the system and Encyclopedia volume schemas and iserver user in an alternative da tabase .47 Creating the system and Encyclopedia volume schemas and iserver user in a pre-existing .48 Creating the system and Encyclopedia volume schemas and iserver user in a pre-existing .49 Creating the system and Encyclopedia volume schemas and iserver user in a pre-existing .40 Creating the system and Encyclopedia volume schemas and iserver user in a pre-existing .41 Creating the system and Encyclopedia volume schemas and iserver user in a pre-existing .42 Creating the system and Encyclopedia volume schemas and iserver user in a pre-existing .43 Creating the system and Encyclopedia volume schemas and iserver user in a pre-existing .44 Creating the system and Encyclopedia volume schemas and iserver user in a pre-existing .45 Creating the system and Encyclopedia volume schemas and iserver user in a pre-existing .45 Creating the system and Encyclopedia volume metadata .55 Creating the system and Encyclopedia volume metadata .55 Cr		23
Creating a dedicated user account for installing and running BIRT iServer Backing up iServer system and Encyclopedia volume metadata .22 About X frame buffer .22 Installing X frame buffer .22 About Installing X frame buffer .22 About run levels .22 About Popenmotif .22 Performing a new installation .23 Performing a new installation .24 About migrating an earlier iServer release to Actuate 11 About migrating an earlier iServer release to Actuate 11 About running different releases on the same machine .43 About performance and disk space issues .44 About upgrading an iServer with resource groups .45 About the Java Software Development Kit .47 Accessing JAR files for report generation .48 Following best practices .49 Using a test environment .40 Setting up a production staging area .41 Setting up a production environment .42 Setting up a production environment .43 Chapter 3 Installing BIRT iServer using an alternative database .47 Preparing to install BIRT iServer using an alternative database .47 Creating the system and Encyclopedia volume schemas and iserver user in an alternative da tabase .47 Creating the system and Encyclopedia volume schemas and iserver user in a pre-existing .48 Creating the system and Encyclopedia volume schemas and iserver user in a pre-existing .49 Creating the system and Encyclopedia volume schemas and iserver user in a pre-existing .40 Creating the system and Encyclopedia volume schemas and iserver user in a pre-existing .41 Creating the system and Encyclopedia volume schemas and iserver user in a pre-existing .42 Creating the system and Encyclopedia volume schemas and iserver user in a pre-existing .43 Creating the system and Encyclopedia volume schemas and iserver user in a pre-existing .44 Creating the system and Encyclopedia volume schemas and iserver user in a pre-existing .45 Creating the system and Encyclopedia volume schemas and iserver user in a pre-existing .45 Creating the system and Encyclopedia volume metadata .55 Creating the system and Encyclopedia volume metadata .55 Cr	Preparing to install BIRT iServer	24
Backing up iServer system and Encyclopedia volume metadata	Creating a dedicated user account for installing and running BIRT iServer	24
About X frame buffer		
About run levels		
About Vopenmotif	Installing X frame buffer	26
About Openmotif Performing a new installation Quinderstanding the iServer installation environment About migrating an earlier iServer release to Actuate 11 About migrating an earlier iServer release to Actuate 11 About running different releases on the same machine About performance and disk space issues About upgrading an iServer with resource groups About the Java Software Development Kit Accessing JAR files for report generation Gathering LDAP information 44 Following best practices 45 Using a test environment 46 Setting up a production staging area Setting up a production environment 47 Setting up a production environment 48 Chapter 3 Installing BIRT iServer using an alternative database Creating a dedicated user account for installing and running BIRT iServer 47 Creating the system and Encyclopedia volume schemas and iserver user in an alternative database Creating the system and Encyclopedia volume schemas and iserver user in a pre-existing PostgresQL database Creating the system and Encyclopedia volume schemas and iserver user in a pre-existing Oracle database Creating the system and Encyclopedia volume schemas and iserver user in a pre-existing DB2 database Creating the system and Encyclopedia volume schemas and iserver user in a pre-existing DB2 database Creating the system and Encyclopedia volume schemas and iserver user in a pre-existing DB2 database Creating the system and Encyclopedia volume schemas and iserver user in a pre-existing DB2 database Creating the system and Encyclopedia volume metadata 55 Backing up iServer system and Encyclopedia volume metadata 55 Chapter 4 Upgrading BIRT iServer 75 Preparing to upgrade BIRT iServer	About libstdc++	26
Performing a new installation Understanding the iServer installation environment About migrating an earlier iServer release to Actuate 11 About running different releases on the same machine About performance and disk space issues About upgrading an iServer with resource groups About the Java Software Development Kit Accessing JAR files for report generation Gathering LDAP information 43 Following best practices Using a test environment Setting up a production staging area Setting up a production environment 44 Setting up a production environment 45 Chapter 3 Installing BIRT iServer using an alternative database Creating a dedicated user account for installing and running BIRT iServer user in an alternative database Creating the system and Encyclopedia volume schemas and iserver user in a pre-existing PostgreSQL database Creating the system and Encyclopedia volume schemas and iserver user in a pre-existing Oracle database Creating the system and Encyclopedia volume schemas and iserver user in a pre-existing DB2 database Creating the system and Encyclopedia volume schemas and iserver user in a pre-existing DB2 database Sinstalling an Encyclopedia volume schemas and iserver user in a pre-existing DB2 database Sinstalling an Encyclopedia volume metadata	About run levels	26
Understanding the iServer installation environment About migrating an earlier iServer release to Actuate 11 About running different releases on the same machine About performance and disk space issues About upgrading an iServer with resource groups 42 About the Java Software Development Kit 43 Accessing JAR files for report generation 44 Gathering LDAP information 45 Following best practices 45 Using a test environment 46 Setting up a production staging area 56 Setting up a production environment 47 Setting up a production environment 48 Chapter 3 Installing BIRT iServer using an alternative database Creating a dedicated user account for installing and running BIRT iServer 47 Creating the system and Encyclopedia volume schemas and iserver user in an alternative database Creating the system and Encyclopedia volume schemas and iserver user in a pre-existing PostgreSQL database Creating the system and Encyclopedia volume schemas and iserver user in a pre-existing Oracle database Creating the system and Encyclopedia volume schemas and iserver user in a pre-existing Oracle database Creating the system and Encyclopedia volume schemas and iserver user in a pre-existing DB2 database 55 Creating the system and Encyclopedia volume schemas and iserver user in a pre-existing DB2 database 55 Creating the system and Encyclopedia volume metadata 55 Backing up iServer system and Encyclopedia volume metadata 55 Backing up iServer system and Encyclopedia volume metadata 55 Chapter 4 Upgrading BIRT iServer 75 Preparing to upgrade BIRT iServer	About Openmotif	26
About migrating an earlier iServer release to Actuate 11		
About running different releases on the same machine		
About performance and disk space issues About upgrading an iServer with resource groups About the Java Software Development Kit Accessing JAR files for report generation Gathering LDAP information Following best practices Using a test environment Setting up a production staging area Setting up a production environment Chapter 3 Installing BIRT iServer using an alternative database Creating a dedicated user account for installing and running BIRT iServer Creating the system and Encyclopedia volume schemas and iserver user in an alternative database Creating the system and Encyclopedia volume schemas and iserver user in a pre-existing PostgreSQL database Creating the system and Encyclopedia volume schemas and iserver user in a pre-existing Oracle database Creating the system and Encyclopedia volume schemas and iserver user in a pre-existing Oracle database Signature Creating the system and Encyclopedia volume schemas and iserver user in a pre-existing Oracle database Signature Creating the system and Encyclopedia volume schemas and iserver user in a pre-existing DB2 database Signature DB2 database Signature S		
About upgrading an iServer with resource groups About the Java Software Development Kit Accessing JAR files for report generation Gathering LDAP information Following best practices Using a test environment Setting up a production staging area Setting up a production environment Setting up a production environment Chapter 3 Installing BIRT iServer using an alternative database Creating a dedicated user account for installing and running BIRT iServer Setting the system and Encyclopedia volume schemas and iserver user in an alternative database Creating the system and Encyclopedia volume schemas and iserver user in a pre-existing PostgreSQL database Creating the system and Encyclopedia volume schemas and iserver user in a pre-existing Oracle database Setting up iserver system and Encyclopedia volume schemas and iserver user in a pre-existing DB2 database Setting up iserver system and Encyclopedia volume schemas and iserver user in a pre-existing DB2 database Setting up iserver system and Encyclopedia volume schemas and iserver user in a pre-existing DB2 database Setting up iserver system and Encyclopedia volume schemas and iserver user in a pre-existing DB2 database Setting up iserver system and Encyclopedia volume schemas and iserver user in a pre-existing DB2 database Setting up iserver system and Encyclopedia volume metadata Setting up iserver system and Encyclopedia volume database		
About the Java Software Development Kit Accessing JAR files for report generation Gathering LDAP information 45 Following best practices Using a test environment Setting up a production staging area Setting up a production environment 45 Setting up a production environment 46 Chapter 3 Installing BIRT iServer using an alternative database Creating a dedicated user account for installing and running BIRT iServer 47 Creating the system and Encyclopedia volume schemas and iserver user in an alternative database Creating the system and Encyclopedia volume schemas and iserver user in a pre-existing PostgreSQL database Creating the system and Encyclopedia volume schemas and iserver user in a pre-existing Oracle database Creating the system and Encyclopedia volume schemas and iserver user in a pre-existing Oracle database Soft Creating the system and Encyclopedia volume schemas and iserver user in a pre-existing Oracle database Soft Creating the system and Encyclopedia volume schemas and iserver user in a pre-existing DB2 database Soft Creating the system and Encyclopedia volume schemas and iserver user in a pre-existing DB2 database Soft Creating the system and Encyclopedia volume schemas and iserver user in a pre-existing DB2 database Soft Creating the system and Encyclopedia volume schemas and iserver user in a pre-existing DB2 database Soft Creating the system and Encyclopedia volume schemas and iserver user in a pre-existing DB2 database Soft Creating the system and Encyclopedia volume metadata Soft Database Soft Datab		
Accessing JAR files for report generation		
Gathering LDAP information		
Following best practices Using a test environment Setting up a production staging area Setting up a production environment Chapter 3 Installing BIRT iServer using an alternative database Creating a dedicated user account for installing and running BIRT iServer Creating the system and Encyclopedia volume schemas and iserver user in an alternative database Creating the system and Encyclopedia volume schemas and iserver user in a pre-existing PostgreSQL database Creating the system and Encyclopedia volume schemas and iserver user in a pre-existing PostgreSQL database Creating the system and Encyclopedia volume schemas and iserver user in a pre-existing Oracle database Solution Creating the system and Encyclopedia volume schemas and iserver user in a pre-existing Oracle database Solution		
Using a test environment Setting up a production staging area Setting up a production environment Chapter 3 Installing BIRT iServer using an alternative database Preparing to install BIRT iServer using an alternative database Creating a dedicated user account for installing and running BIRT iServer 48 Creating the system and Encyclopedia volume schemas and iserver user in an alternative da tabase Creating the system and Encyclopedia volume schemas and iserver user in a pre-existing PostgreSQL database Creating the system and Encyclopedia volume schemas and iserver user in a pre-existing Oracle database Creating the system and Encyclopedia volume schemas and iserver user in a pre-existing Oracle database Solution So		
Setting up a production staging area Setting up a production environment Chapter 3 Installing BIRT iServer using an alternative database Preparing to install BIRT iServer using an alternative database Creating a dedicated user account for installing and running BIRT iServer 48 Creating the system and Encyclopedia volume schemas and iserver user in an alternative database Creating the system and Encyclopedia volume schemas and iserver user in a pre-existing PostgreSQL database Creating the system and Encyclopedia volume schemas and iserver user in a pre-existing Oracle database Creating the system and Encyclopedia volume schemas and iserver user in a pre-existing Oracle database Sincereating the system and Encyclopedia volume schemas and iserver user in a pre-existing DB2 database Backing up iServer system and Encyclopedia volume metadata Installing an Encyclopedia volume that uses an alternative database Chapter 4 Upgrading BIRT iServer Preparing to upgrade BIRT iServer		
Chapter 3 Installing BIRT iServer using an alternative database		
Chapter 3 Installing BIRT iServer using an alternative database		
Installing BIRT iServer using an alternative database	Setting up a production environment	45
Installing BIRT iServer using an alternative database	Chapter 3	
Preparing to install BIRT iServer using an alternative database Creating a dedicated user account for installing and running BIRT iServer Creating the system and Encyclopedia volume schemas and iserver user in an alternative database Creating the system and Encyclopedia volume schemas and iserver user in a pre-existing PostgreSQL database Creating the system and Encyclopedia volume schemas and iserver user in a pre-existing Oracle database Creating the system and Encyclopedia volume schemas and iserver user in a pre-existing Oracle database Creating the system and Encyclopedia volume schemas and iserver user in a pre-existing DB2 database Some Backing up iServer system and Encyclopedia volume metadata Installing an Encyclopedia volume that uses an alternative database Chapter 4 Upgrading BIRT iServer 73 Preparing to upgrade BIRT iServer		47
Creating a dedicated user account for installing and running BIRT iServer		
Creating the system and Encyclopedia volume schemas and iserver user in an alternative da tabase		
tabase		
Creating the system and Encyclopedia volume schemas and iserver user in a pre-existing PostgreSQL database		
PostgreSQL database		
Creating the system and Encyclopedia volume schemas and iserver user in a pre-existing Oracle database		
Oracle database		
Creating the system and Encyclopedia volume schemas and iserver user in a pre-existing DB2 database		
DB2 database	Creating the system and Encyclopedia volume schemas and iserver user in a pre-exist	ting
Backing up iServer system and Encyclopedia volume metadata		
Installing an Encyclopedia volume that uses an alternative database		
Upgrading BIRT iServer 73 Preparing to upgrade BIRT iServer 74		
Upgrading BIRT iServer 73 Preparing to upgrade BIRT iServer 74	Chapter 4	
Preparing to upgrade BIRT iServer	Ungrading BIRT iServer	73
Creating a dedicated user account for installing and running RIRT iServer		
	Creating a dedicated user account for installing and running RIRT iServer	7/

Backing up iServer system and Encyclopedia volume metadata	. 75
Performing an automatic in-place upgrade	
Performing an in-place upgrade from an earlier version of iServer Release 11	. 86
Performing a manual side-by-side upgrade	
Performing a manual side-by-side migration	108
Specifying Squirrel Data Exporter properties	.117
Specifying Encyclopedia Data Store Administrator properties	.118
Specifying System Data Store Administrator properties	125
Performing operations using System Data Store Administrator utility	127
Creating and Populating a System Schema	127
Performing operations using Encyclopedia Data Store Administrator utility	
Importing One or More Volumes into a New Schema	
Importing One or More Volumes into a Populated Schema	
Exporting All Volumes from a Schema	
Exporting A Single Volume from a Schema	129
Deleting All Volumes from a Schema	
Deleting a Single Volume from a Schema	
Creating a New Volume in an Empty Schema	
Creating a New Volume in a Populated Schema	
Creating a New Volume in a New Schema	
Configuring Squirrel Data Exporter and System or Encyclopedia Data Store Administr	
properties files	132
Chapter 5	
Installing a	
BIRT iServer cluster	122
Installing a BIRT iServer cluster node	
Preparing to install an iServer cluster	
Creating an account with the right privileges	
Installing X frame buffer	
About HP-UX 11i installation	
Working with large files on HP-UX-11i	
Installing Xvfb	
Performing a cluster installation using the wizard	137
Adding a node to a cluster	
Finding the BIRT iServer home directory	
About the Java Development Kit	
about the jura Development letters	101
Chapter 6	
Installing Information Console	153
Before you begin	154
About installing from an FTP download	

Installing Information Console on Linux and UNIX Using the script to install Using the WAR file to install General deployment tasks 160 Preparing the server 160 Preparing the WAR file About clusters of servers 162 Avoiding cache conflicts after installing Testing the installation Chapter 7 Installing iServer Integration Technology and Documentation Installing BIRT iServer Integration Technology Installing the localization and documentation files Part 3 Licensing	About performing a full installation	154
Using the script to install		
Using the WAR file to install		
General deployment tasks 160 Preparing the server 160 Preparing the server 160 Preparing the WAR file 161 About clusters of servers 162 Avoiding cache conflicts after installing 162 Testing the installation 163 Chapter 7 Installing iServer Integration Technology and Documentation 165 Installing BIRT iServer Integration Technology 166 Installing the localization and documentation files 168 Part 3 Licensing Chapter 8 Licensing BIRT iServer Tokyoking with licensing 176 Licensing with licensing 176 Licensing bir is in the licensing options 176 About a license file 179 About CPU binding 180 Understanding node-key licensing 180 Understanding the installation license key file 180 Collecting machine information for a node-key license 181 Installing the license key 182 Understanding CPU binding 183 Binding BIRT iServer to processors on a Sun Solaris machine 184 Binding to specific CPUs 185 Binding to multiple-CPUs 185 Binding to multiple-CPUs 186 Binding BIRT iServer bound processors 187 Determining the number of processors on an HP-UX 11i machine 186 Checking BIRT iServer bound processors 187 Determining the number of processors an iServer System uses 187 Understanding CPU binding validation when running iServer processes 188 Understanding CPU binding validation when running iServer processes 188 Understanding CPU binding validation when running iServer processes on lias Understanding CPU binding validation when running iServer processes on lias	Using the WAR file to install	160
Preparing the server		
Preparing the WAR file About clusters of servers About clusters of servers Avoiding cache conflicts after installing Testing the installation 162 Testing the installation 163 Chapter 7 Installing iServer Integration Technology and Documentation 165 Installing BIRT iServer Integration Technology 166 Installing the localization and documentation files 168 Part 3 Licensing Chapter 8 Licensing BIRT iServer 175 Working with licensing 176 Understanding the licensing options 176 About a license file 179 About CPU binding 180 Understanding node-key licensing 00taining the installation license key file 181 Collecting machine information for a node-key license 181 Installing the license key 182 Understanding CPU binding 183 Binding BIRT iServer to processors on a Sun Solaris machine 184 Binding to specific CPUs 185 Binding to multiple CPUs 186 Binding BIRT iServer to processors on an HP-UX 11i machine 186 Checking BIRT iServer bound processors 187 Determining the number of processors an iServer System uses 187 Understanding CPU binding validation while iServer is running 188 Understanding CPU binding validation when an Encyclopedia volume comes online 188 Understanding CPU binding validation when an Encyclopedia volume comes online 188 Understanding CPU binding validation when an Encyclopedia volume comes online 188 Understanding CPU binding validation when an Encyclopedia volume comes online 188 Understanding CPU binding validation when an Encyclopedia volume comes online 188		
About clusters of servers		
Testing the installation		
Chapter 7 Installing iServer Integration Technology and Documentation Installing BIRT iServer Integration Technology Installing BIRT iServer Integration Technology Installing the localization and documentation files Installing BIRT iServer Installing BIRT iServer Installing the licensing Options Installing the license file Installing the license file Installing the installation license key file Installing the installation license key file Installing the license key Installing the license key Installing BIRT iServer to processors on a Sun Solaris machine Installing to specific CPUs Installing to multiple CPUs Installing to multiple CPUs Installing to multiple CPUs Installing to multiple CPUs Installing BIRT iServer to processors on an HP-UX 11i machine Installing BIRT iServer to processors on an HP-UX 11i machine Installing BIRT iServer bound processors Installing CPU binding validation when an Encyclopedia volume comes online Installing CPU binding validation when an Encyclopedia volume comes online Installing CPU binding validation when an Encyclopedia volume comes online Installing CPU binding validation when an Encyclopedia volume comes online Installing CPU binding validation when an Encyclopedia volume comes online Installing CPU binding validation when an Encyclopedia volume comes online Installing CPU binding validation when running iServer processes	Avoiding cache conflicts after installing	162
Installing iServer Integration Technology and Documentation Installing BIRT iServer Integration Technology Installing BIRT iServer Integration Technology Installing the localization and documentation files Installing BIRT iServer Info Info Info Info Info Info Info Info	Testing the installation	163
Installing iServer Integration Technology and Documentation Installing BIRT iServer Integration Technology Installing BIRT iServer Integration Technology Installing the localization and documentation files Installing BIRT iServer Info Info Info Info Info Info Info Info	Chapter 7	
Installing BIRT iServer Integration Technology 168 Installing the localization and documentation files 168 Part 3 Licensing Chapter 8 Licensing BIRT iServer 175 Working with licensing 176 Understanding the licensing options 176 About a license file 179 About CPU binding 180 Understanding node-key licensing 180 Understanding the installation license key file 180 Collecting machine information for a node-key license 181 Installing the license key 182 Understanding CPU binding 183 Binding BIRT iServer to processors on a Sun Solaris machine 184 Binding to specific CPUs 184 Binding to multiple CPUs 185 Binding to multiple CPUs 185 Binding BIRT iServer to processors on an HP-UX 11i machine 186 Checking BIRT iServer bound processors 187 Determining the number of processors an iServer System uses 187 Understanding CPU binding validation when an Encyclopedia volume comes online 188 Understanding CPU binding validation when running iServer processes 188 Understanding CPU binding validation when running iServer processes 188	Installing iServer Integration Technology	
Installing the localization and documentation files	and Documentation	65
Installing the localization and documentation files	Installing BIRT iServer Integration Technology	166
Chapter 8 Licensing BIRT iServer		
Chapter 8 Licensing BIRT iServer	Part 3	
Chapter 8 Licensing BIRT iServer Working with licensing Understanding the licensing options About a license file About CPU binding Understanding node-key licensing Understanding the installation license key file Collecting machine information for a node-key license Installing the license key Understanding CPU binding Binding BIRT iServer to processors on a Sun Solaris machine Binding to specific CPUs Binding to multiple CPUs Binding to multiple CPUs Binding BIRT iServer to processors on an HP-UX 11i machine Checking BIRT iServer bound processors Determining the number of processors an iServer System uses Understanding CPU binding validation when an Encyclopedia volume comes online 188 Understanding CPU binding validation when running iServer processes 188		
Licensing BIRT iServer175Working with licensing176Understanding the licensing options176About a license file179About CPU binding180Understanding node-key licensing180Obtaining the installation license key file180Collecting machine information for a node-key license181Installing the license key182Understanding CPU binding183Binding BIRT iServer to processors on a Sun Solaris machine184Binding to specific CPUs184Binding to multiple CPUs185Binding to multiple-core CPUs186Binding BIRT iServer to processors on an HP-UX 11i machine186Checking BIRT iServer bound processors187Determining the number of processors an iServer System uses187Understanding CPU binding validation when an Encyclopedia volume comes online188Understanding CPU binding validation when running iServer processes188	Licensing	
Working with licensing	Chapter 8	
Understanding the licensing options		
Understanding the licensing options	Working with licensing	176
About CPU binding	Understanding the licensing options	176
Understanding node-key licensing		
Obtaining the installation license key file		
Collecting machine information for a node-key license		
Installing the license key182Understanding CPU binding183Binding BIRT iServer to processors on a Sun Solaris machine184Binding to specific CPUs184Binding to multiple CPUs185Binding to multiple-core CPUs186Binding BIRT iServer to processors on an HP-UX 11i machine186Checking BIRT iServer bound processors187Determining the number of processors an iServer System uses187Understanding CPU binding validation while iServer is running188Understanding CPU binding validation when an Encyclopedia volume comes online188Understanding CPU binding validation when running iServer processes188		
Understanding CPU binding	Collecting machine information for a node-key license	181
Binding BIRT iServer to processors on a Sun Solaris machine		
Binding to specific CPUs	Understanding CPU binding	183
Binding to multiple CPUs	Binding BIRT iServer to processors on a Sun Solaris machine	184
Binding to multiple-core CPUs	Binding to specific CPUs	184
Binding BIRT iServer to processors on an HP-UX 11i machine	Binding to multiple CPUs	185
Checking BIRT iServer bound processors		
Determining the number of processors an iServer System uses	Binding BIRT iServer to processors on an HP-UX 11i machine	186
Understanding CPU binding validation while iServer is running	Checking BIRT iServer bound processors	187
Understanding CPU binding validation while iServer is running	Determining the number of processors an iServer System uses	187
Understanding CPU binding validation when an Encyclopedia volume comes online .188 Understanding CPU binding validation when running iServer processes	Understanding CPU binding validation while iServer is running	188
Understanding CPU binding validation when running iServer processes188	Understanding CPU binding validation when an Encyclopedia volume comes online .	188
Configuring e-mail for CPU license problems	Understanding CPU binding validation when running iServer processes	188
	Configuring e-mail for CPU license problems	189

Part 4

Backing Up

Chapter !	9
-----------	---

Backing up an Encyclopedia volume	. 193
Performing an Encyclopedia volume backup	
Managing the backup and recovery of Encyclopedia volume metadata and data files .	194
Using RDBMS and file system backup utilities	195
Avoiding conflict with the autoarchive file purging process	196
Backing up and restoring an Encyclopedia volume that uses a PostgreSQL database	197
Backing up an Encyclopedia volume using pg_dump	198
Restoring an Encyclopedia volume using pg_restore	202
Backing up and restoring an Encyclopedia volume that uses an Oracle database	206
Backing up an Encyclopedia volume using Oracle Data Pump Export (expdp)	206
Restoring an Encyclopedia volume using Oracle Data Pump Import (impdp)	208
Backing up and restoring an Encyclopedia volume that uses a DB2 database	210
Backing up an Encyclopedia volume	211
Restoring an Encyclopedia volume	213
Index	. 217



Understanding ActuateOne

ActuateOneTM includes Release 11 of Actuate® Corporation's value-added products for the Eclipse BIRT open source project. ActuateOne institutes a paradigm shift in Business Intelligence technology from individualized tools to a suite of integrated capabilities within a single environment. ActuateOne is one designer, one server, one integrated environment providing a single unified user experience. A common architecture is precisely what today's information-rich global environment requires for development and deployment. This unified Actuate technology continues to enable information management and delivery while supporting advanced security, massive scalability, flexibility through programming, and reuse. ActuateOne realizes our corporate vision of a single user experience by providing extended new analytics capabilities reaching a broader spectrum of users. The new dashboard functionality supports building gadgets to enhance the visual presentation of information. Export to Excel® and other formats integrates Actuate output with other tools on the end-user desktop. Actuate's cloud-ready server supports elastic clustering for dynamic provision of uninterrupted efficient service.

Information, live demos, and endorsements about this release are available from birt-exchange.com and actuate.com. The Actuate site also makes "The Forrester WaveTM: Open Source Business Intelligence (BI), Q3 2010" report freely available. The report recognizes Actuate and its value-added offerings for BIRT as a leader in Open Source Business Intelligence.

About the BIRT iServer documentation

The printed and online documentation includes the materials described in Table I-1. You can obtain HTML and PDF files from the BIRT Exchange or Actuate Customer Support site.

Documentation updates are created in response to customer requirements and are available at both sites.

 Table I-1
 BIRT iServer documentation

For information about this topic	See the following resource
Installing BIRT iServer for Linux and UNIX	Installing BIRT iServer for Linux and UNIX
Installing BIRT iServer for Windows	Installing BIRT iServer for Windows
Late-breaking information and documentation updates	Release notes and updated localization, HTML help, and PDF files posted on birt-exchange.com and Actuate Support
Configuring BIRT iServer Use Configuration Console to: Add additional Encyclopedia volumes Configure clusters of iServers Tune iServer services and processes Configure e-mail notification Review and update license options Open ports for iServer use Manage iServer printers and resources Configure diagnostic logging	Configuring BIRT iServer

Table I-1 BIRT iServer documentation (continued)

For information about this topic

Managing an Encyclopedia Volume Use Management Console to:

- Set up user accounts
- Set up channels and notification groups
- Assign security roles
- Manage files and folders
- Schedule, run, and manage reports
- Back up the Encyclopedia volume
- Use Actuate Open Security

Information Console Developer Guide

- Overview of Information Console concepts and web applications
- Using, customizing, and configuring the Deployment Kit
- Using code components for JSPs, URL parameters, JavaScript files, Java servlets, Java Beans, and security facilities

See the following resource

Managing an Encyclopedia Volume

Information Console Developer Guide

Using BIRT iServer Integration Technology

- Overview of Actuate web services and SOAP messaging
- Managing an Encyclopedia volume
- Developing API applications using Java or .NET
- Using Java Report Server Security Extension (RSSE) APIs
- Using logging, performance monitoring, and archiving features
- Customizing the Actuate software installation process
- Actuate Information Delivery API operations and data types reference

Usina BIRT iServer Integration Technology

(continues)

Table I-1 BIRT iServer documentation (continued)

For information about this topic	See the following resource
 Using Information Console Overview of Information Console concepts and online reporting Accessing and managing files and folders; running designs 	Using Information Console
 Using Actuate JavaScript API Overview of programming with Actuate JavaScript Creating custom pages using Actuate JavaScript Reference for BIRT JavaScript classes and methods 	Using Actuate JavaScript API
Deploying to a BIRT iServer System Describes how to deploy designs and information objects to iServer	Deploying to a BIRT iServer System
Actuate Glossary Definitions of product terminology	Actuate Glossary
Adobe Acrobat Catalog A utility that can search all the documents in the Actuate manuals directory	Adobe Acrobat Catalog

Obtaining documentation

Actuate provides technical documentation in PDF, HTML, and print formats. You can download PDF or view HTML versions of the documentation from

birt-exchange.com. If you purchase the product, you can also download documentation using ftp as instructed in the e-mail from Actuate Distribution.

If you request a physical package, install the files using the Online Documentation and Localization Resource Files DVD, which ships as part of your Actuate software package. If you accept the default location for the installation directory when you install from the DVD, the installation program creates the /home/Actuate/AcServer/manuals directory.

Using PDF documentation

In each PDF version of a book, the table of contents and the index page numbers contain links to the corresponding topics in the text. In the table of contents, you access the link by positioning the pointer over the topic. In the index, you access the link by positioning the pointer over the page number.

The /home/Actuate/AcServer/manuals directory contains a file, masterindex.pdx, which is an Adobe Acrobat Catalog utility that can search all the documents in the Actuate Manuals directory. This tool provides a convenient way to find information on a particular topic in Actuate documentation.

Obtaining late-breaking information and documentation updates

The release notes contain late-breaking news about Actuate products and features. The release notes are available on the Actuate Support site at the following URL:

http://support.actuate.com/documentation/releasenotes

Updates to documentation in PDF form are available at the following URL:

http://support.actuate.com/documentation

If you are a new user, you must first register on the site and log in to view the release notes. Birt-exchange.com and actuate.com also provide product update information.

About obtaining technical support

You can contact Customer Support by e-mail or telephone. For contact information, go to the following URL:

http://www.actuate.com/services/support/contact-support.asp

About supported and obsolete products

The Actuate Support Lifecycle Policy and Supported Products Matrix are available on the Actuate Support web site at the following URL:

http://support.actuate.com/documentation/spm

Typographical conventions

Table I-2 describes the typographical conventions in this document.

Table I-2 Typographical conventions

Item	Convention	Example
Code examples	Monospace	Dim Text1 As String
File names	Initial capital letter, except where file names are case-sensitive	Detail.roi
Key combination	A + sign between keys means to press both keys at the same time	Ctrl+Shift
Menu items	Capitalized, no bold	File
Submenu items	Separated from the main menu item with a small arrow	File→New
User input or user response	Monospace	M*16*
User input in XML and Java code	Monospace italics	chkjava.exe cab_name.cab

Syntax conventions

Table I-3 describes the symbols used to present syntax.

Table I-3 Syntax conventions

Symbol	Description	Example	
[]	Optional item	[Alias <alias name="">]</alias>	
	Array subscript	matrix[]	

Table I-3 Syntax conventions

Symbol	Description	Example
{}	Groups two or more mutually exclusive options or arguments when used with a pipe	{While Until}
	Defines array contents	{0, 1, 2, 3}
	Delimiter of code block	<pre>public ACJDesigner(){}</pre>
1	Separates mutually exclusive options or arguments in a group	Exit {Do For Function Sub}
	Java OR operator	int length 4
<>	Argument you must supply	<expression format="" to=""></expression>
	Delimiter in XML	<xsd:sequence></xsd:sequence>

About Installing BIRT iServer for Linux and UNIX

Installing BIRT iServer for Linux and UNIX includes the following chapters:

- *Introduction*. Provides an overview of this guide, BIRT iServer documentation, and the typographical conventions in this book.
- *Part 1. Architecture.* Describes BIRT iServer architecture.
- Chapter 1. Understanding Actuate BIRT iServer architecture. Describes BIRT iServer architecture, the iServer System process model, and system administration, including new utilities and third-party relational database management systems (RDBMS) used to store iServer system and Encyclopedia volume metadata.
- Part 2. Installing. Describes how to install BIRT iServer.
- Chapter 2. Installing BIRT iServer. Describes how to install BIRT iServer using the out-of-the-box (OOTB) PostgreSQL relational database management system (RDBMS) in a Linux or UNIX environment.
- Chapter 3. Installing BIRT iServer using an alternative database. Describes how to install BIRT iServer using an alternative RDBMS, such as a pre-existing PostgreSQL or Oracle RDBMS, in a Linux and UNIX environment.
- Chapter 4. Upgrading BIRT iServer. Describes how to upgrade BIRT iServer in a Linux and UNIX environment.

- Chapter 5. Installing a BIRT iServer cluster. Describes how to install an BIRT iServer cluster node in Linux and UNIX.
- Chapter 6. Installing Information Console. Describes how to install Actuate Information Console in Linux and UNIX.
- Chapter 7. Installing iServer Integration Technology and Documentation. Describes how to install BIRT iServer Integration Technology and Documentation in Linux and UNIX.
- *Part 3. Licensing.* Describes the licensing for BIRT iServer.
- Chapter 8. Licensing BIRT iServer. Describes licensing options, license key installation, and CPU-binding policies for BIRT iServer.
- *Part 4. Backing Up.* Describes how to back up a BIRT iServer.
- *Chapter 9. Backing up an Encyclopedia volume.* Describes how to back up and restore BIRT iServer Encyclopedia volume metadata and data.

Part One

Architecture

Understanding Actuate BIRT iServer architecture

This chapter contains the following topics:

- Understanding BIRT iServer architecture
- Understanding the iServer System process model
- Administering iServer System

Understanding BIRT iServer architecture

Before Release 11, Actuate BIRT iServer used a proprietary relational database management system (RDBMS), known internally as the Squirrel database, to store the metadata related to iServer System and Encyclopedia volume configuration. In Release 11, Actuate replaced this out-of-the-box (OOTB) database with a customized version of the open-source, third-party database, PostgreSQL.

Actuate also adapted iServer to support alternative, customizable, third-party database installations. In Release 11 Service Pack 3, Actuate currently supports DB2, Microsoft SQL Server, Oracle, or a pre-existing PostgreSQL instance.

In these third-party RDBMS, iServer stores metadata in the following schemas:

System

Contains settings related to iServer configuration, such as servers, templates, volumes, and partitions

Encyclopedia volume

Contains settings related to volume configuration, such as users, roles, groups, channels, folders, files, and other objects.

In Release 11, Actuate provides the following installation options:

- Install a new iServer with a PostgreSQL or other supported, alternative, thirdparty database
- Upgrade the Actuate proprietary database installation from a previous major release, such as Release 10 Service Pack 1, to a Release 11 version
- Upgrade an earlier Release 11 version to a newer Release 11 service pack, such an upgrade from Release 11 Service Pack 2 to Service Pack 3
- Maintain a mix of Actuate PostgreSQL and third-party database implementations side-by-side in an iServer System installation

Using a third-party RDBMS with an Encyclopedia volume

Actuate automatically installs the iServer system and Encyclopedia volume schemas in the OOTB PostgreSQL RDBMS installation. Installation of these schemas in a pre-existing PostgreSQL RDBMS or alternative RDBMS, such as DB2, Oracle, or SQL Server, requires manually running a SQL script containing the appropriate Data Definition Language (DDL) statements. The Installing section of this book contains chapters that provide detailed, step-by-step descriptions on how to perform these operations.

Actuate provides the iServer administrator with the ability to install the metadata for Encyclopedia volumes in databases in the same schema, separate schemas, or separate databases. By default, Actuate uses separate schemas for each Encyclopedia volume database, but provides the administrator with the option to specify whether to have volume databases share a schema. Actuate recommends using a separate schema for each Encyclopedia volume database for ease of administration.

In a PostgreSQL installation, the database administrator can manage an Encyclopedia volume either as an individual PostgreSQL database or as a schema in a PostgreSQL database. The same instance of a PostgreSQL server can manage multiple Encyclopedia volumes that use a mix of these configuration options. In PostgreSQL technical jargon, multiple databases managed by the same instance of the PostgreSQL server are in a PostgreSQL database cluster.

In Oracle, there is a one-to-one relationship between a database user and a schema. A schema is not a separate entity. An Actuate DB2, PostgreSQL, or SQL Server installation also requires this one-to-one relationship between a database user and a schema for consistency.

In a typical pre-existing RDBMS installation, the database administrator first creates a schema owner and a database user by running a SQL script. During iServer installation, the iServer system administrator provides the schema owner and database user credentials. The iServer installation program connects to the RDBMS, creates the necessary Encyclopedia volume database structures, then loads the metadata. The iServer application interacts with the third-party RDBMS using these database user credentials.

Only the metadata that specifies the Encyclopedia volume configuration are in the database. Designs, documents, information objects, and other iServer data objects are stored in the file system.

Customizing Encyclopedia volume databases

Actuate supports read-only operations on the system and Encyclopedia volume metadata in the tables of the OOTB or other third-party database. Actuate does not support the addition, deletion, or modification of these metadata tables.

Actuate does permit the creation of additional indexes on these tables. For example, a customer can create an index on the job completion notices table to expedite database processing.

Actuate does not recommend any customization of the system metadata database. Any customization that the customer does on the Encyclopedia volume database must be redone when migrating, reinstalling, or upgrading iServer. Actuate iServer does not track the objects that a customer creates. Actuate reserves the right to change the structure of the schema in future releases.

Installing and configuring iServer System

The installation, configuration, and administration of an iServer System can include the following tasks:

- Install a new iServer using one of the following options:
 - Automated installation

Run the installation program to configure iServer and the OOTB PostgreSQL database or an alternative, supported RDBMS.

Cloud deployment

Deploy a prepared image of an installed iServer run-time environment. The administrator can create a customized image by generating an archive of an installed iServer run-time environment. Alternatively, an out-of-the-box (OOTB) image is available as a separate iServer distribution package for Windows. The administrator deploys the image by unbundling the archive or installing a virtual image on the target machine.

- Upgrade an earlier iServer installation to Release 11 using the installation program to overwrite automatically the earlier installation.
 - Upgrades an earlier iServer system in place, such as Release 10 Service Pack 1, automatically migrating one or more Encyclopedia volumes.
- Upgrade an earlier iServer installation to Release 11 using the installation program to install iServer, then manually migrate Encyclopedia volume metadata and data from an earlier to the new installation.

Upgrades an earlier iServer system in place, such as Release 10 Service Pack 1, without migrating any Encyclopedia volumes. During installation, the administrator chooses to migrate the volumes manually.

After installation, the administrator uses the Squirrel Data Exporter and Encyclopedia Data Store Administrator utilities to migrate the existing iServer installation to either an in-place or a new, side-by-side instance of iServer Release 11 when upgrading from an earlier major release. When upgrading a Release 11 installation to a new Release 11 service pack, the administrator uses the Encyclopedia Data Store Upgrader utility. These utilities are Java programs run from the command line.

For more information on changes to iServer utilities in Release 11, see "About Migration and Administration Tools," later in this chapter.

Managing the backup, recovery, and failover capabilities of the Encyclopedia volume database and data files

The iServer administrator uses third-party RDBMS tools to manage the backup, recovery, and failover capabilities of the Encyclopedia volume database. The iServer administrator uses standard operating system or other third-party tools to manage the backup and recovery of the data files.

Since iServer Release 11 no longer uses the internal proprietary Squirrel database to store Encyclopedia volume metadata, the automatic backup, recovery, and failover features available in earlier iServer releases are now obsolete. For information on the recommended procedures to back up an iServer system and Encyclopedia volume schemas in the Release 11 environment, see Chapter 9, "Backing up an Encyclopedia volume," later in this book.

Consult the third-party RDBMS documentation for detailed information on how to use native system tools to configure backup, recovery, and failover operations for an externally managed Encyclopedia volume database.

Documentation for a PostgreSQL RDBMS is available at:

http://www.postgresql.org/docs/8.4/static/release-8-4.html

Documentation for an Oracle RDBMS is available at:

http://www.oracle.com/technetwork/database/enterprise-edition/ documentation/index.html

Documentation for Microsoft SQL Server RDBMS is available at:

http://msdn.microsoft.com/en-us/sqlserver/bb671149

Documentation for IBMDB2 RDBMS is available at:

https://www-304.ibm.com/support/docview.wss?uid=swg27009474

The third-party database schemas that contain iServer system and Encyclopedia volume metadata are critical components of BIRT iServer System. To guard against data loss, the database administrator must back up the Encyclopedia volume schemas and all related file data to ensure the recoverability in the event of failure. For more information on backing an iServer installation, see Chapter 9, "Backing up an Encyclopedia volume," later in this book.

In Release 11, it is not necessary to back up the iServer system schema, although future versions may require this operation to protect critical system metadata. The administrator can restore a corrupted or missing system schema using the System Data Store Administrator utility. For more information on this utility, see "Specifying System Data Store Administrator properties," in Chapter 4, "Upgrading BIRT iServer," later in this book.

An Actuate system administrator must take all necessary precautions to ensure that a database is properly backed up and available to safeguard Encyclopedia

volume metadata. Please consult Actuate Support at the time of installation if you have any questions about the backup, recovery, or failover procedures necessary to protect against the possibility of catastrophic failure.

Managing an iServer cluster

In Actuate Release 11 and later, the concept of a master node no longer exists. Any node in a cluster has the ability to modify the shared server configuration file. The node performing these operations typically depends on which node the system administrator uses when connecting to iServer system through an administration console.

In Release 11 and earlier, iServer used multicasting to broadcast event information and synchronize operations in a cluster. Some cloud computing environments do not support multicasting. Starting in Release 11 Service Pack 1, iServer uses the third-party RDBMS as a shared repository for storing cluster information. This enhancement replaces multicasting as a way of managing cluster information.

In Actuate Release 11 and later, there is no concept of volume failover, since each node in a cluster can operate on all the volumes. Configuring system and Encyclopedia volume database failover is the responsibility of the third-party RDBMS administrator. The database administrator must use the facilities available in the RDBMS to configure failover capability.

Understanding the iServer System process model

In Release 11, the Actuate BIRT iServer System platform uses a multi-threaded, multi-process model, running single instances of the following components on each iServer node:

Encyclopedia volume

Stores metadata in an OOTB (PostgreSQL) or alternative RDBMS and coordinates processing for designs, documents, information objects, and other iServer data objects stored in the file system.

Process Management Daemon (PMD)

Distributes service requests among available iServer services and nodes.

iServer servlet container

Provides the run-time environment for client applications, such as Actuate Information, Management, and Configuration Consoles. Client applications communicate with iServer System using SOAP-based messaging.

In addition, the iServer platform supports multiple instances of the following services on each iServer node:

Factory

Executes requests to generate queries and documents and perform server-side printing.

View

Supports viewing documents in DHTML and other output formats, such as Excel and PDF. Handles requests to download files from an Encyclopedia volume.

Integration

Coordinates the running of information object (IOB) files that extract data from multiple data sources.

Caching

Controls the Actuate Caching process that manages an information object cache and enables caching of data retrieved from data sources.

This loosely-coupled iServer architecture model provides the following maintenance and performance benefits:

- Startup and shutdown of an iServer is fast because it is independent of the RDBMS that manages the Encyclopedia volume. The database server can remain online when shutting down an iServer and is available when the iServer starts up.
- Controlling the sequence of an Encyclopedia volume startup is not necessary.
 All volumes are either already online in the database server or come online as the database server starts.
- Downtime to apply a patch or diagnostic fix for an iServer is reduced. The RDBMS does not have to be shutdown.

Understanding process flow in a stand-alone iServer

Figure 1-1 illustrates the iServer RDBMS process architecture for a stand-alone, two-volume, out-of-the-box (OOTB) PostgreSQL database configuration. In this configuration, the iServer administrator starts and stops an iServer instance by running scripts from the command line or using the graphical user interface (GUI) available in Configuration Console.

The PostgreSQL RDBMS runs as a service in Windows or a process in Linux or UNIX. The RDBMS can be configured to start automatically or run manually, using a script similar to the iServer startup script.

Client applications, such as Actuate Information, Management, and Configuration Consoles, run in a servlet container. These applications communicate with iServer using the Actuate Information Delivery API or IDAPI.

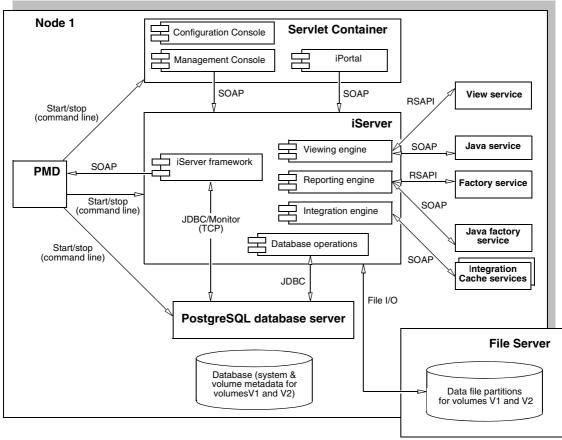


Figure 1-1 iServer RDBMS process architecture for a stand-alone, two-volume, OOTB database

An IDAPI application uses a SOAP processor that serializes, or transforms, a remote procedure call by the application into an XML-based SOAP request to iServer to perform a web service. The application sends the message across the network using the Hypertext Transfer Protocol (HTTP) transport layer.

The Process Management Daemon (PMD) is a message distribution service that routes the request to iServer. iServer receives the request and deserializes the SOAP message. iServer performs the appropriate action and sends a response in the form of a SOAP message back to the application.

For example, iServer receives a request to run a design, such as a BIRT design, immediately or as a scheduled job. iServer communicates with the internal iServer framework and Encyclopedia volume metadata databases as necessary to locate the design and identify the resources required to run the design in the system.

The reporting engine selects a Java Factory service to run the BIRT design and checks job status. iServer uses an asynchronous Java Factory service to generate a temporary document or a synchronous Java Factory service to generate a scheduled document.

The View service renders the document in DHTML format, or converts the output to other supported formats, such as Excel and PDF, and handles requests to download files from the Encyclopedia volume. The View service sends the document to the requesting application for viewing.

A design that uses an information object utilizes the Integration and Caching services to perform the following processing:

- Run a query and extract data from an external data source
- Cache data in iServer System for high availability and to reduce load on the network, data source, and Encyclopedia volume by avoiding repetitive data retrieval operations

iServer stores system and Encyclopedia volume metadata in the third-party RDBMS, communicating with the RDBMS as necessary using JDBC. iServer uses the physical file system to read and store designs, documents, information objects, and other iServer objects as data in Encyclopedia volume partitions.

The out-of-the-box (OOTB) iServer PostgreSQL installation configures the Encyclopedia volume database on the local disk to increase the reliability and performance of file input and output (I/O) operations. PostgreSQL discourages creating databases accessed using a Network File Systems (NFS) for these reasons. For more information, see section 17.2.1 Network File Systems at the following URL:

http://www.postgresql.org/docs/8.3/static/creating-cluster.html

The iServer OOTB PostgreSQL database server starts multiple instances to handle connections for running queries and accessing data. In database jargon, PostgreSQL uses a process-per-user, client/server model. For more information, refer to the PostgreSQL documentation at the following URL:

http://www.postgresql.org/docs/8.4/static/connect-estab.html

Understanding process flow in an iServer cluster

Figure 1-2 illustrates the iServer RDBMS process architecture for a clustered, two-node, two-volume, OOTB database configuration. A node is a machine running an iServer instance.

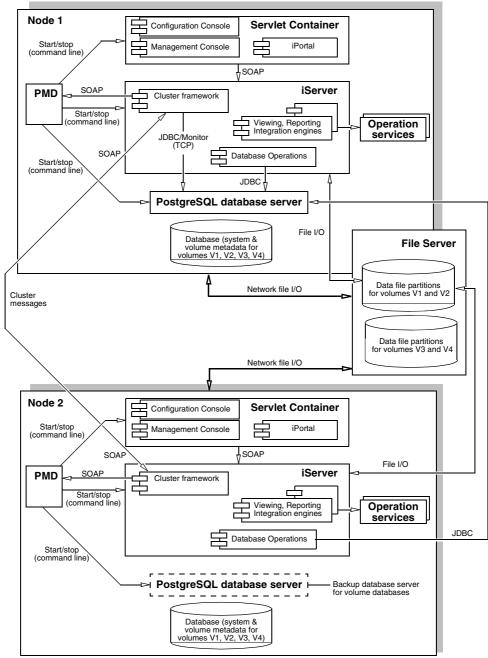


Figure 1-2 iServer RDBMS process architecture for a clustered, two-node, two-volume, OOTB database

An iServer administrator adds a node to a cluster to scale iServer System to the necessary processing requirements. There are two methods of adding a new node to the cluster:

- Perform an automated, custom installation, using the wizard-driven installation program.
- Perform a manual installation or cloud deployment, using a prepared image of an installed iServer run-time environment.

Every cluster node must have network access to the following directory and resources to join the cluster:

- The shared configuration home directory
- Cluster resources, such as printers, database systems, and disk storage systems

Each node gets its configuration from a template in acserverconfig.xml, which is located in a shared configuration home directory along with the license file, acserverlicense.xml.

The acserverconfig.xml file contains the server templates as well as other configuration parameters specifying the host names, volume names, port numbers, printers, and services used by nodes in the cluster. When the Process Management Daemon (PMD) starts up, it reads these configurations and exposes them to the process environment variable list. When a node joins a cluster, it configures itself using its template.

After deployment and configuring the appropriate environment variables in acpmdconfig.xml, the administrator launches a deployed iServer image from the command line by passing the necessary arguments or creates a script that executes the commands. Nodes with the same cluster ID, running on the same sub-net, automatically detect and join each other to form the cluster. This feature is known as elastic iServer clustering.

The cluster automatically detects the on-off status of any node. Single-point node failure does not affect the availability of other nodes.

In the two-node cluster example, shown in Figure 1-2, client applications, such as Actuate Information, Management, and Configuration Consoles, run in a servlet container. These applications support distributing requests to multiple machines. The cluster communicates across the network using standard HTTP/IP addressing.

One or more nodes in the cluster manage the request message routing. The Process Management Daemons (PMDs) located on each node coordinate processing among available iServer services based on message type to balance load across the nodes.

This loosely-coupled model provides the following improvements to intra-cluster messaging:

- Each iServer node in the cluster is relatively independent and identical in terms of components and functionality. Intra-cluster messages are limited to messages for cluster membership and load balancing.
- Operations like design execution and viewing typically require intermediate information from the Encyclopedia volume metadata database. This information is now directly retrieved from or updated in the RBDMS, eliminating internal messages to Encyclopedia services on other nodes.

This increased scalability of operations at the iServer level can create bottlenecks at the RDBMS level. Important factors to consider when configuring nodes and ancillary resources include estimating processing power and access to hardware and software resources, such as printers and database drivers.

iServer instances running on multiple machines maintain iServer system and Encyclopedia volume metadata in databases and control access to shared volume data. The volume data can be on machines that are not running iServer, but must be shared and accessible to each iServer instance.

This loosely-coupled cluster model provides the following maintenance and performance benefits:

- Startup and shutdown of an iServer is fast because it is independent of the RDBMS that manages the Encyclopedia volume. An RDBMS can remain online when shutting down an iServer and the RDBMS is available when the iServer starts up.
- Controlling the sequence of Encyclopedia volume startup is not necessary. All volumes are either already online in the RDBMS or come online as the RDBMS starts.
- Downtime to apply a patch fix patch or a diagnostic fix for an iServer is reduced. The RDBMS, including the OOTB PostgreSQL database server, does not have to be shutdown. In an iServer cluster, the patch or diagnostic fix can be applied to one iServer node at a time.

This operational model lends itself well to grid, cloud, and other data-center types of deployments.

For more information about the cluster installation option, see Chapter 9, "Clustering," in Configuring BIRT iServer.

Administering iServer System

Administering an iServer System includes the following tasks:

Setting up users, roles, groups, channels, folders, files, and other administrative tasks

An administrator creates, configures, and manages users, roles, groups, files, folders, and channels, including assigning and updating privileges, managing security role and group memberships, and providing access to channels. User, role, group, and channel privileges selectively control access to the Encyclopedia volume and its data objects.

Scheduling jobs to run designs and generate documents

Each stand-alone iServer and node in an iServer cluster has a job scheduler and dispatcher. A job dispatcher send jobs to the local resource group factories.

In this loosely-coupled cluster model, the dispatcher sends a job from the pending queue to available factories, balancing the load across the cluster. Multiple job schedulers running on the nodes in a cluster allow iServer System to scale processing to handle thousands of scheduled jobs at the same time.

- Reviewing logs and auditing the information to diagnose system problems iServer can capture usage and error information in log files to assist an administrator in evaluating resource usage and troubleshoot problems. The usage and error logging applications are open framework applications, which are available as DLLs in Windows and shared libraries in Linux or UNIX.
- Configuring a cluster using automated installation programs and cloud computing base images

The administrator can run the installation program to configure iServer or deploy a prepared image of an installed iServer run-time environment. Each cluster node gets its configuration from a template in acserverconfig.xml, located in a shared configuration home directory. Nodes with the same cluster ID, running on the same sub-net, automatically detect and join each other to form the cluster.

Using Actuate Server Integration Technologies scripts and tools to develop client applications and extend iServer functionality

The Actuate Information Delivery application programming interface (IDAPI) supports integrating and administering iServer using extensible markup language (XML) and the simple object access protocol (SOAP). Using the IDAPI, developers can create applications that perform such tasks as scheduling a custom event, running an Report Server Security Extension (RSSE) application to manage users and roles in an external system such as an LDAP server, and installing and customizing usage and error logging and performance monitoring extensions.

A BIRT iServer administrator uses the Actuate Information, Management, and Configuration Consoles, command-line utilities, and Server Integration Technology components to perform these tasks.

Please consult the following Actuate iServer Release 11 documentation for more information on how to administer an iServer System using these components:

Installing BIRT iServer for Windows or Installing BIRT iServer for Linux and UNIX

Describes iServer System architecture. Provides detailed instructions on how to use automated installation programs and command-line utilities to install stand-alone iServer and clustered nodes that store Encyclopedia volume metadata in an external, third-party RDBMS, such as DB2, Oracle, PostgreSQL, or SQL Server. Also describes Actuate licensing policies and procedures and backup and recovery operations.

Managing an Encyclopedia Volume

Describes how to use Management Console and command-line options to perform tasks such as managing Encyclopedia volume user accounts, assigning privileges, scheduling jobs, and distributing documents.

■ Configuring BIRT iServer

Describes how to use Configuration Console to perform tasks such as managing an iServer cluster, adding Encyclopedia volumes to iServer, connecting to databases, updating the license, and configuring iServer properties, such as logging levels, e-mail notification, and printing from iServer.

Using BIRT iServer Integration Technology

Provides information about application programming using the SOAP-based Actuate Information Delivery API (IDAPI), including a Java developer guide and sections on logging, auto archiving, and using the Java Report Server Security Extension (RSSE).

About Migration and Administration Tools

In Actuate BIRT iServer Release 11, the following utilities are obsolete and no longer exist:

AcExport

Formerly used to write a copy of the Encyclopedia volume metadata to a file, so the administrator can import the metadata into another release of iServer.

AcImport

Formerly used to populate an Encyclopedia volume with metadata previously written to an exported file.

In an upgrade from an earlier major release to Release 11, use the Squirrel Data Exporter and the System and Encyclopedia Data Store Administrator utilities that Actuate provides to migrate Encyclopedia volume metadata from the Squirrel database to an alternative RDBMS. Use the Encyclopedia Data Store Upgrader utility to upgrade an earlier Release 11 installation to a newer Release 11 service pack.

Back up the database using the utilities that the RDBMS provides. For example, PostgreSQL provides the pg_dump and pg_restore utilitiesto create and restore a database backup.

Use operating system or other third-party tools to backup and load designs, documents, information objects, and other iServer data objects stored in the file system. For more information on the recommended procedures to back up an iServer system and Encyclopedia volume schemas in the Release 11 environment, refer to Chapter 9, "Backing up an Encyclopedia volume," later in this book.

AcToc

Formerly used to list the contents of an export directory. In Release 11, no comparable functionality exists.

AcVerify

Formerly used to validate an offline Encyclopedia volume and repair problems.

In Release 11, use the tools available in the third-party RDBMS containing the Encyclopedia volume metadata to verify data integrity and make repairs.

AcExtern

Formerly used to convert Encyclopedia volume user security from internal to external registration to allow administration from another system, such as an LDAP server. In Release 11, use the iServer Integration Technology custom application as a reference to configure the Report Server Security Extension (RSSE) when implementing external registration.

AcIntern

Formerly used to convert Encyclopedia volume user security from external to internal registration from an LDAP or other system to iServer. In Release 11, no comparable functionality exists. For more information on how to install and configure RSSE in the Release 11 environment, refer to Chapter 11, "Configuring iServer security," in *Configuring BIRT iServer* and Chapter 10, "Using Java Report Server Security Extension" in Using BIRT iServer *Integration Technology.*

AcMode

Formerly used to put an Encyclopedia volume in and out of online backup mode. In Release 11, a dynamic backup no longer requires putting the system into online backup mode. The administrator performs an Encyclopedia volume metadata backup using the tools provided by the third-party RDBMS, which provides comparable features. The administrator uses standard operating system or other third-party tools to back up the data files.

AcEncycUpgrade

Formerly used to convert an older Encyclopedia volume to the latest version. In a manual Release 11 upgrade process, the administrator uses the Squirrel Data Exporter and Encyclopedia Data Store Administrator utilities to migrate the existing iServer installation to either an in-place or a new, side-by-side instance of iServer Release 11. These utilities are Java programs run from the command line.

For more information on how to upgrade iServer and Encyclopedia volume to Release 11, refer to the appropriate iServer installation manual, either *Installing* Using JDBC to connect to an Encyclopedia volume database

Using JDBC to connect to an Encyclopedia volume database

iServer uses JDBC for connecting to an Encyclopedia volume database. The iServer run-time JRE environment uses Java 1.6. Any JDBC driver must be compatible with JRE version 1.6 or earlier.

iServer requires a JDBC driver that complies with the JDBC 3.0 specification or later. The function Driver.jdbcCompliant() must return TRUE. DatabaseMetadata .getJDBCMajorVersion() must return 3 or greater than 3.

An administrator, who decides to customize iServer to connect to a database other than the OOTB PostgreSQL database, must ensure that the JDBC driver returns adequate information about the types on the database. At a minimum, the database must return the common data types, such as integer, floating-point, and character. If the database does not return these common data types, then the database administrator must customize the database mapping framework to specify the types.

The JDBC driver must also support the following features:

- Scrollable cursor
- Retention of a cursor after commit
- Update using a prepared cursor

When using connection pooling, the tracing functionality of the JDBC driver is used to capture the connection pool run-time statistics.

API Compatibility

Actuate Release 11 provides full backward compatibility with existing applications. Upgrading to an Actuate Release 11 iServer that utilizes an RDBMS has no impact on any applications that utilize Actuate APIs, such as IDAPI and RSSE.

About international character sets

iServer operates on the assumption that the volume database is configured to run with UTF-8 encoding. Any other database encoding scheme requires configuring the connection parameters to specify the database encoding. The driver must handle the conversion to UCS2.

Administrative reports

The default iServer Encyclopedia volume contains sample BIRT reports that provide information using the metadata and data extracted from the OOTB database, including job schedule, file, and user tracking and usage and error logging. Installing the sample volume is an option in a custom installation.

Supported operating systems

Actuate BIRT iServer Release 11 Service Pack 3 supports the following operating systems:

- Windows
- Solaris
- Linux

Part Two

Installing

Installing BIRT iServer

This chapter discusses the following topics:

- Preparing to install BIRT iServer
- Performing a new installation
- Understanding the iServer installation environment

Preparing to install BIRT iServer

When installing BIRT iServer Release 11, the administrator must choose to use the out-of-the-box (OOTB) PostgreSQL relational database management system (RDBMS) or another data store, such as DB2, Microsoft SQL Server, Oracle, or a pre-existing PostgreSQL instance to store Encyclopedia volume metadata. This chapter describes how to install a new instance of BIRT iServer Release 11, using the out-of-the-box (OOTB) PostgreSQL RDBMS.

For more information about installing BIRT iServer using an alternative data store, see Chapter 3, "Installing BIRT iServer using an alternative database," later in this book. For more information about upgrading an existing BIRT iServer installation, see Chapter 4, "Upgrading BIRT iServer," later in this book. For information about the new Release 11 BIRT iServer System architecture, see Chapter 1, "Understanding Actuate BIRT iServer architecture," earlier in this book.

Creating a dedicated user account for installing and running BIRT iServer

Actuate recommends creating a dedicated user account for installing and running iServer. Having a dedicated user account isolates iServer-specific issues and events on a machine, making it easier to administer the environment.

Before installing iServer, create a user account with privileges to access the relevant files and directories. Like other Linux and UNIX processes, the processes that perform BIRT iServer tasks run under a specific user account. Creating a special user account for running Actuate iServer System is the recommended practice. However, you can install the software from an existing account.

If you exercise the same control over the user account for BIRT iServer as your site exercises for other system administrator and root accounts, you can maintain the same level of security for BIRT iServer. Installation of iServer under the root account is not recommended since the PostgreSQL server must be started and maintained under an unprivileged user ID to prevent compromising system security. If installed under the root account, the default installation is unable to set up the PostgreSQL schema and Actuate Encyclopedia sample volume.

Backing up iServer system and Encyclopedia volume metadata

The third-party database schemas that contain iServer system and Encyclopedia volume metadata are critical components of BIRT iServer System. To guard against data loss, the database administrator must back up the schemas using the tools and resources of the third-party database system.

An iServer system administrator must take all necessary precautions to ensure that the schemas are properly backed up to safeguard the metadata. Please consult Actuate Support at the time of installation if you have any questions about these backup procedures to protect against the possibility of catastrophic failure. For information on the recommended procedures to back up an iServer system and Encyclopedia volume schemas in the Release 11 environment, refer to Chapter 9, "Backing up an Encyclopedia volume," later in this book.

When installing BIRT iServer, be sure to run the same versions of all products. Upgrade all products at the same time to maintain consistency in the versions you run.

If you are a purchasing customer, you can download iServer from an Actuate ftp site or install from a product DVD. If you are evaluating BIRT iServer, you can download iServer from BIRT Exchange at the following location:

http://www.birt-exchange.com

About X frame buffer

Xvfb is an X Windows server that has neither a graphics card nor a physical graphics display. BIRT iServer uses the X server for font-rendering information and to generate graphics in reports. Typically, an X server requires a graphics card and physical graphics display on the iServer machine, but you can use Xvfb in place of these components.

The Xvfb software installed with BIRT iServer includes Type 1 fonts. Actuate maps these fonts to Microsoft Windows fonts for consistent graphics rendering on the various platforms.

The Xvfb software uses:

X libraries installed on the BIRT iServer machine

If you choose to install Xvfb, the installation script searches for the required libraries and displays a message if the install script cannot find the required libraries on the machine.

- Variables set to the path of the Xvfb libraries
 - XVFBDISPLAY variable in start_srvr.sh.
 - display_value in pmd11.sh.

To view and print the reports from BIRT iServer, you need to set these variables only if you install Xvfb software.

The DISPLAY environment variable specifies the X Windows server used by the iServer machine. For example, if the iServer machine is running X Windows, it sets DISPLAY to the local machine:

setenv DISPLAY :0.0

If you use a separate machine as the X Windows server, specify the machine name in the environment variable DISPLAY. The following example sets DISPLAY to use an X Windows server on a machine named urup:

```
# setenv DISPLAY urup:0.0
```

The original source code for Xvfb is included as a component of X11R6, but not in earlier X Window system releases.

Installing X frame buffer

Actuate distributes Xvfb for the Sun and AIX operating systems, and installation and configuration of Xvfb is a BIRT iServer installation option in these environments. To use Xvfb in HP-UX, you must install Xvfb before you install BIRT iServer.

About libstdc++

The libstdc++ library is a prerequisite for installing Actuate BIRT iServer on Linux and UNIX systems. This library is present by default on most systems. If it is not present, the administrator must install it before installing iServer.

About run levels

The iServer installation process requires running Linux or UNIX at run level 5. This level supports networking and multi-user mode with a graphical window manager. Run level 5 is typically the default on most Linux or UNIX operating system distributions.

About Openmotif

On Linux platforms, the Openmotif bundle is required and must be installed before installing BIRT iServer. BIRT iServer needs libXm.so.3 or libXm.so.4, which are part of Openmotif 2.2 and 2.3, respectively. If the BIRT iServer installation is unable to locate the required libXm.so.x library, create a symbolic link, as shown in the following example:

```
ln -s libXm.so.3 libXm.so.4
```

Performing a new installation

Installing a new Release 11 BIRT iServer creates a default Encyclopedia volume without migrating data from a pre-existing volume. The default installation program performs the following operations:

 Installs and initializes iServer and the PostgreSQL relational database management system (RDBMS)

- Creates a database in the PostgreSQL RDBMS containing Encyclopedia volume data
- Creates the iserver user in the PostgreSQL RDBMS to access the system
- Creates the system and volume schema, initializing these schema with basic configuration information
- Creates the iServer configuration file, specifying system, volume, and connection information for the default installation

The default installation program also initializes the iserver, system, and volume user passwords to the PostgreSQL superuser password.

The following section describes how to install a new, stand-alone instance of BIRT iServer Release 11 in the UNIX and Linux operating system.

How to perform a new stand-alone installation of BIRT iServer Release 11 in UNIX and Linux

To reduce network traffic, you can install BIRT iServer on the same host machine as your database. You can install BIRT iServer on a different host machine to dedicate resources to the database.

Actuate recommends running the installation procedure from an account created exclusively for BIRT iServer administration. To install iServer, perform the following steps:

- 1 Insert the installation DVD, mount the DVD device on your system, and set the working directory to the mounted DVD directory, or download the required files.
- **2** To install the server files, execute the isinstall script:

```
sh ./isinstall.sh
```

The script displays a series of prompts. Respond to the prompts as described in the following procedures.

3 The license agreement appears, as shown in Figure 2-1.

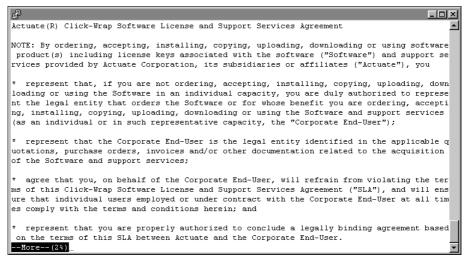


Figure 2-1 Reviewing the license agreement

4 Read the license agreement, then press Enter to continue the installation. At the prompt, type y for yes if you accept the licensing terms, as shown in Figure 2-2.

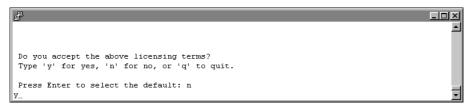


Figure 2-2 Accepting the licensing terms

5 The introduction to the installation appears, as shown in Figure 2-3.

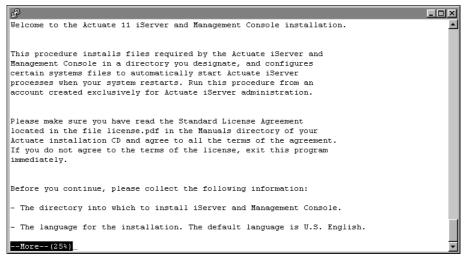


Figure 2-3 Reviewing the introductory information

6 Press Return or Enter after finishing the review of the introductory information, as shown in Figure 2-4.

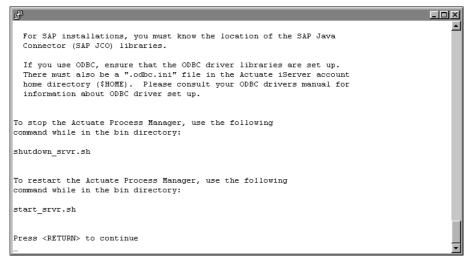


Figure 2-4 Finishing the review of introductory information

7 Press Enter to accept the default installation directory for Actuate iServer binaries, as shown in Figure 2-5. Alternatively, type a different directory and press Enter.

The installation program creates the Actuate directory in the chosen location. iServer uses this location to resolve the path to all binaries that it launches.

The default path is /home/Actuate. This documentation uses the environment variable AC_SERVER_HOME to refer to \$HOME/AcServer in case the installer chooses a path that is different from the default path.

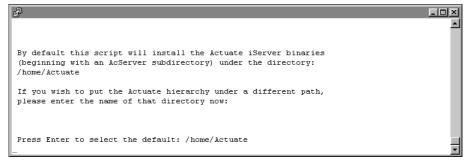


Figure 2-5 Specifying the installation directory

8 Press Enter to accept the default installation directory, AC_SERVER_HOME/data, for iServer data, as shown in Figure 2-6. Alternatively, choose a different directory for iServer data.

iServer uses this data location to store the iServer Encyclopedia volume data, including PostgreSQL metadata, logs, and other files.

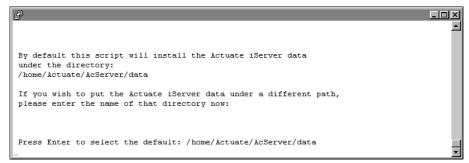


Figure 2-6 Specifying the data installation directory

9 Press Enter to accept the default option of creating the directory for data, as shown in Figure 2-7. Alternatively, type n for no, or q to quit, and press Enter.

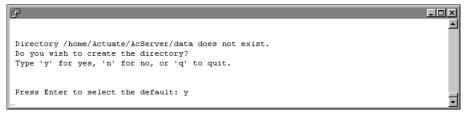


Figure 2-7 Creating the AC_DATA_HOME directory

10 The installer copies prerequisite files to the destination folder, as shown in Figure 2-8. After the prerequisite files are copied, the installation continues.



Figure 2-8 Copying prerequisite files

11 Press Enter to accept the default iServer component combination, which includes Management Console, as shown in Figure 2-9. Alternatively, choose a different component combination and press Enter.

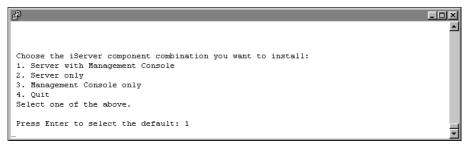


Figure 2-9 Choosing the components to install

12 Press Enter to accept the default stand-alone Server installation, as shown in Figure 2-10. Alternatively, choose a different type of iServer to install. For information on how to install an iServer cluster, see Chapter 5, "Installing a BIRT iServer cluster.".

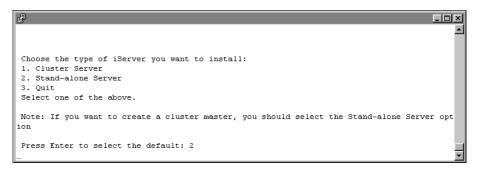


Figure 2-10 Specifying the type of iServer to install

13 Type a name to use for the BIRT iServer System name, as shown in Figure 2-11. iServer assigns this name to the default Encyclopedia volume. Additionally, iServer inserts this name into the names iServer creates for the Encyclopedia volume schema and the iServer system schema.



Figure 2-11 Specifying the BIRT iServer System name

14 Press Enter to choose the default embedded PostgreSQL database to store the Encyclopedia volume metadata, as shown in Figure 2-12.

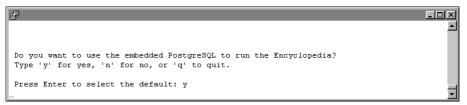


Figure 2-12 Choosing the embedded PostgreSQL

15 Press Enter to choose the default PostgreSQL superuser name, postgres, as shown in Figure 2-13. Alternatively, type a different PostgreSQL superuser name. This superuser administers the PostgreSQL relational database management system (RDBMS).

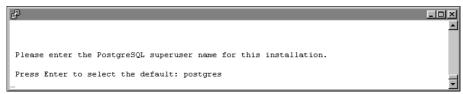


Figure 2-13 Choosing the PostgreSQL superuser name

16 Type a PostgreSQL superuser password that conforms to the password security policy requirements within your organization, then press Enter, as shown in Figure 2-14.



Figure 2-14 Typing the PostgreSQL superuser password

17 Re-enter the password for PostgreSQL superuser, then press Enter, as shown in Figure 2-15.



Figure 2-15 Re-entering the PostgreSQL superuser password

18 Press Enter to accept the default port on which PostgreSQL listens for requests, as shown in Figure 2-16. Alternatively, enter a different port number.

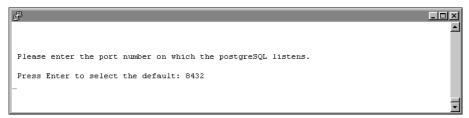


Figure 2-16 Choosing the PostgreSQL port number

19 Press Enter to select the default locale, which is English, as shown in Figure 2-17. Alternatively, select a different locale. If you do not see the locale for your region, type m for more and press Enter.



Figure 2-17 Specifying a locale

20 Press Enter to select the default time zone, which is America/Los_Angeles, as shown in Figure 2-18. Alternatively, select another time zone from the numbered list.

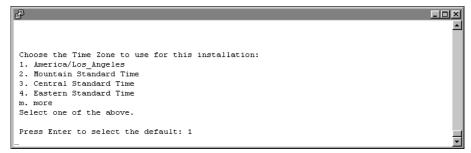


Figure 2-18 Specifying a time zone

21 To evaluate the product using the included evaluation software license press Enter, as shown in Figure 2-19. Alternatively, type 2, then type the path to a purchased license file.

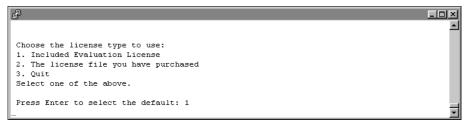


Figure 2-19 Specifying license type

22 Press Enter to accept the hostname of the machine that Management Console uses to contact the Process Management Daemon (PMD), as shown in Figure 2-20. Alternatively, type a different IP address.

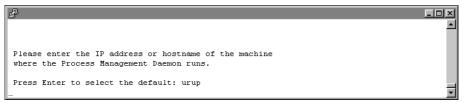


Figure 2-20 Specifying the hostname that Management Console uses to contact the PMD

23 Press Enter to accept the default port number, 8100, where Process Management Daemon (PMD) listens for requests, as shown in Figure 2-21. Alternatively, type a different port number and press Enter.

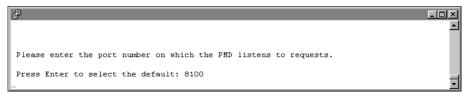


Figure 2-21 Specifying the port number on which the PMD listens

24 Press Enter to accept the default hostname, the name of the machine on which iServer runs, as shown in Figure 2-22. Alternatively, type a different hostname or IP address, then press Enter.

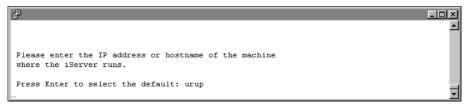


Figure 2-22 Specifying the machine on which the iServer runs

25 Press Enter to accept the default port number where iServer listens to requests, as shown in Figure 2-23. Alternatively, type a different port number and press Enter.

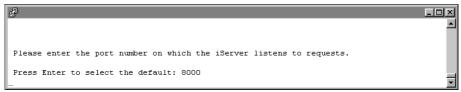


Figure 2-23 Specifying the port number on which the iServer listens

26 Specify the iServer administrator password, as shown in Figure 2-24. You use this password to log into the iServer Configuration Console.



Figure 2-24 Specifying the iServer administrator password

27 Re-enter the password of the iServer administrator, as shown in Figure 2-25. You use this password to log in to Configuration Console.



Figure 2-25 Re-entering the iServer administrator password

28 Press Enter to accept the default option to use a volume name for the Encyclopedia, as shown in Figure 2-26. Alternatively, type n for no to not use a volume name for the Encyclopedia, or q to quit the installation.

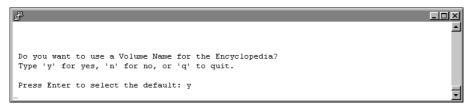


Figure 2-26 Specifying whether to use an Encyclopedia volume name

29 Press Enter to accept the default Encyclopedia volume name, the name of your machine, as shown in Figure 2-27. Alternatively, type a different Encyclopedia volume name.

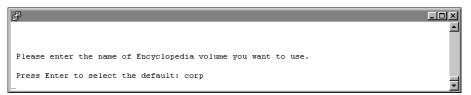


Figure 2-27 Specifying the Encyclopedia volume name

30 Press Enter to accept the default option to start iServer automatically, as shown in Figure 2-28. Alternatively, type n for no.



Figure 2-28 Specifying whether to start iServer automatically

31 Press Enter to accept the default option to not integrate LDAP with iServer, as shown in Figure 2-29. Alternatively, you can edit the setting.

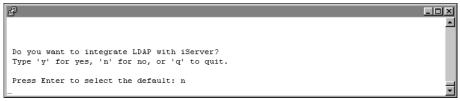


Figure 2-29 Specifying whether to integrate LDAP with iServer

32 Press Enter to accept the default option to not use any database drivers/clients, as shown in Figure 2-30. Alternatively, type y for yes, and specify the database drivers/clients you want to use.

```
Do you want to use any database drivers / clients?
Type 'y' for yes, 'n' for no, or 'q' to quit.

Press Enter to select the default: n
```

Figure 2-30 Specifying whether to use database drivers/clients

33 Specify what kind of X-Server you want to use, if any. To accept the default, press Enter, as shown in Figure 2-31.

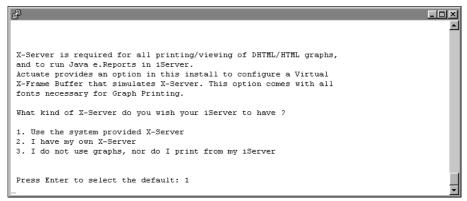


Figure 2-31 Specifying what kind of X-Server to use, if any

34 Press Enter to accept the hostname of the machine that Management Console uses to contact the Process Management Daemon (PMD), as shown in Figure 2-32. Alternatively, type a different IP address.

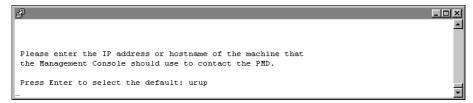


Figure 2-32 Specifying the hostname that Management Console uses to contact the PMD

35 Press Enter to accept the default port number, 8100, on which the Process Management Daemon (PMD) listens for requests from Management Console, as shown in Figure 2-33. Alternatively, type a different port number.

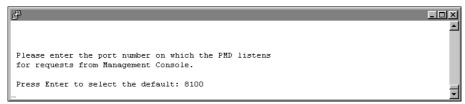


Figure 2-33 Specifying the port number for the PMD to listen for requests from Management Console

36 Press Enter to accept the hostname or enter the IP address of the machine that Management Console uses to contact iServer, as shown in Figure 2-34. Alternatively, type a different IP address.

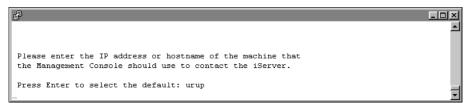


Figure 2-34 Specifying the hostname that Management Console uses to contact iServer

37 Press Enter to accept the default port number, 8000, on which iServer listens for requests from Management Console, as shown in Figure 2-35. Alternatively, type a different port number.

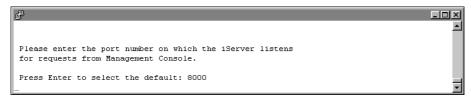


Figure 2-35 Specifying the port number on which iServer listens for requests from Management Console

38 Press Enter to accept the name of the default Encyclopedia volume to use with Management Console, as shown in Figure 2-36. Alternatively, type a different name for the Encyclopedia volume.

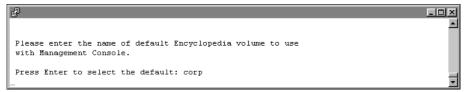


Figure 2-36 Specifying the name of the default Encyclopedia volume

39 Press Enter to accept the default name, acadmin, for the HTTP server context root for Management Console configuration, as shown in Figure 2-37. Alternatively, type a different name.



Figure 2-37 Specifying the name of the HTTP server context root

40 Press Enter to accept the default HTTP port number, 8900, on which the application container listens to requests, as shown in Figure 2-38. Alternatively, choose a different port.

You connect to the port from your browser when accessing various features of iServer.

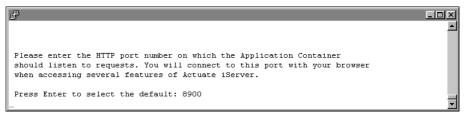


Figure 2-38 Specifying the application container listening port number

41 Review the settings, as shown in Figure 2-39, then specify whether you accept the settings. Press Enter to accept the default, y for yes. Alternatively, type n for no, or q to quit.

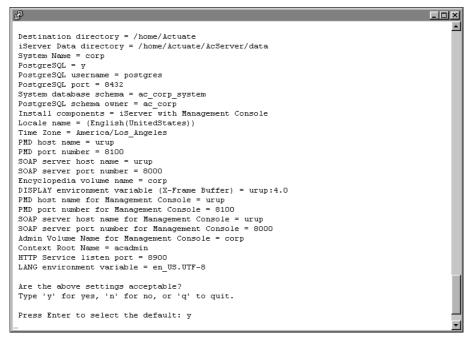


Figure 2-39 Reviewing the installation settings

42 The installation program installs iServer, displaying an indicator that shows the progress of the installation, as shown in Figure 2-40.



Figure 2-40 Viewing iServer installation progress

43 At the end of the installation, the program asks if you want to start iServer. Accept the default, y for yes, to start iServer, as shown in Figure 2-41.

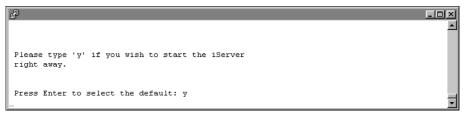


Figure 2-41 Specifying whether to start iServer

44 When the installation program finishes, it provides additional information about localization, logging in using an account with root permissions to start iServer, and installing online help and manuals, as shown in Figure 2-42.

```
Using X Frame Buffer as Xserver
Creating sample encyclopedia...
 If your current working directory is on the dvdrom,
nlease manually change to some directory that is not
on the dydrom in order to unmount the dydrom.
To use locale specific features, you must set the LANG environment
variable in /home/Actuate/AcServer/bin/pmd11.sh.
For example, if you view reports with AcChart and AcGraph controls
the LANG environment variable must be set properly.
See the document "Working with Multiple Locales" for more information.
The first phase of the installation process completed.
Next, please log into an account with root permissions and issue
the command which causes the Actuate iServer to
start automatically after system reboot:
/home/Actuate/AcServer/bin/update rclocal.sh
Install online help and manuals using
http://www.actuate.com/docupdate11sp2/docupdate.html.
[Actuate@urup Linux] $ _
```

Figure 2-42 Viewing information about localization, logging in, and installing online help

Understanding the iServer installation environment

The following sections provide supplementary information about the iServer installation environment that is useful for an administrator to know.

About migrating an earlier iServer release to Actuate 11

To upgrade an iServer earlier than Release 8 Service Pack 1, you must first upgrade to Release 8 Service Pack 1, 9, or 10 then upgrade to Release 11. To upgrade from an earlier release to Actuate 11 by replacing the older version, install Release 11 in the same directory as the earlier release, or perform a side-by-side installation, as described in Chapter 4, "Upgrading BIRT iServer."

The upgrade program preserves any previous iServer configuration information and reuses the earlier settings. The installation program resolves any differences in default values between releases, ignoring old configuration defaults in favor of new default values. For example, the installation does not prompt the user for port information and machine name. The installation detects the current port numbers and machine name and keeps those settings.

About running different releases on the same machine

An Actuate 11 iServer can coexist on the same machine with an earlier major release, such as Release 10, and any associated minor release, such as Release 10 Service Pack 1.

Actuate does not support running multiple releases from the same version on a machine. For example, you cannot run Release 11 and Release 11 Service Pack 3 on the same machine.

To run different iServer major releases on the same machine, install the releases in separate directories. Change the default port settings for one release to enable running both versions at the same time.

About performance and disk space issues

During an upgrade installation, the following operations can consume more disk space and take longer than a fresh installation:

- File comparison
- The copy operation to back up original files

During an upgrade, disk space requirements typically double. The installation routine copies files to the local machine for comparison between the original files and the new files. If you perform multiple upgrade installations, the installation routine consumes even more disk space for the backup files you need to restore previous installations.

About upgrading an iServer with resource groups

When you upgrade BIRT iServer System, iServer creates a resource group on an iServer node that has the Factory service and the View service enabled. If no node has the Factory service and the View service enabled, iServer creates resource groups with zero Factory processes.

About the Java Software Development Kit

The iServer installation routine installs the IDK files in:

AC SERVER HOME/jdk160

To use a different JDK with iServer, change the files in the installation directory or change the values of the following environment variables:

- AC JAVA HOME
- AC JVM HOME
- AC_JRE_HOME

■ AC_JRE64_HOME

Using an earlier release of JDK can cause some Actuate features to fail or to work improperly. For example, using an earlier release of JDK can cause Actuate products to display Actuate report charts incorrectly.

The following types of Actuate report object executable files use AC_JRE_HOME and AC_JVM_HOME:

- Files containing charts use AC_JVM_HOME to locate the java.exe to generate the chart.
- Files using the Actuate Java Object Interface use AC_JVM_HOME to locate the JVM DLL or library.

Accessing JAR files for report generation

To generate some reports, iServer requires access to jar files in the Jar directory of the iServer installation files In UNIX and Linux, specify the CLASSPATH in the Process Management Daemon (PMD) startup script, pmd11.sh.

Gathering LDAP information

An optional Open Security application ships with Actuate iServer Integration Technology. This application uses a Lightweight Directory Access Protocol (LDAP) security database to control access to the Encyclopedia volume. To use the Open Security application, you need to perform a custom installation and specify the following additional information:

- Name of the LDAP server and the port on which the LDAP server listens
- LDAP account and password used to query the LDAP server
- LDAP server organization that contains the Actuate users, roles, and groups
- LDAP base domain names and object classes that contain Actuate user, role, and group information
- LDAP group name assigned as the Actuate Encyclopedia volume administrator role

Actuate Open Security uses an LDAP configuration file to map the Encyclopedia volume user information to LDAP object attributes. For more information on Actuate Open Security, see the reference implementations available in Actuate Server Integration Technology.

Following best practices

Before deploying a new release in a production environment, Actuate recommends testing the installation.

Using a test environment

Set up a test environment then migrate to Actuate 11 when the testing is complete. Earlier Actuate releases and Actuate 11 can coexist on the same machine. You must install products at different release levels in different folders. You cannot mix Actuate products from different release levels. For example, you can not use Actuate 10 design tools with BIRT iServer Release 11.

How and when you upgrade to Actuate 11 depends on your site configuration and requirements. Complete the following general tasks in this order to determine how to upgrade your site to Actuate 11:

- Create a test environment for Actuate 11. The test environment can be on the same machine that hosts the earlier Actuate installation or on a separate machine.
- Install the software in the test environment and upgrade earlier versions of report designs and files. Also update any custom applications that you built using Actuate iServer Integration Technology. Verify that your applications work properly in the test environment.
- Ask application developers and a few users to perform some typical tasks in the test environment.
- Create a production staging area.
- Install the remaining Actuate 11 desktop products, if required, in production environments on the user workstations. Verify that the desktop products function properly.
- Schedule a low-impact time to switch to Actuate 11 to complete the transition.

Setting up a production staging area

A production staging area is one that you can use for testing and also configure as the live production system. The production staging area can be a separate configuration on the live production machine or a separate machine. You can install all Actuate 11 products or the Actuate 11 server products and a subset of the desktop products.

If you plan to test Actuate 11 desktop products, identify which users to include in the final testing. Developers and users can then confirm that applications perform as expected in the Actuate 11 production staging environment.

Complete the following general tasks to test Actuate 11:

- Install BIRT iServer Release 11 software in a production staging area.
- Install Actuate 11 desktop software on the test user machines. Using separate folders, you can install Actuate 11 desktop software in conjunction with the earlier desktop software. Users can continue to use the existing Actuate software in production while testing the Actuate 11 desktop software.

- Verify that the Actuate 11 production staging environment works correctly.
- Install the remaining Actuate 11 desktop products, if you installed a subset earlier.
- Verify that all the Actuate 11 desktop products work correctly.
- Begin setting up a production environment, described in the following section.

Setting up a production environment

When testing is complete, confirm that your applications work as expected in the Actuate 11 environment. Set up the production environment and schedule a date and time to switch from earlier versions to Actuate 11.

When you switch to Actuate 11, use the following procedure list as a general guideline:

- Shut down all Actuate servers.
- Back up earlier Actuate Encyclopedia volumes.
- Upgrade existing Encyclopedia volumes and archive volumes. Install upgraded designs and report files.

To upgrade from Actuate 10, for example, perform one of the following operations:

- If you are replacing your Actuate 10 system, upgrade Encyclopedia volumes by installing Actuate 11 in the same directory, overwriting Actuate 10.
 - Uninstall BIRT iServer Release 11 from your production staging area and reinstall it in place of your existing Actuate 10 installation. The installer upgrades the Encyclopedia volumes when it starts.
- If you are running both Actuate 10 and Actuate 11, you can migrate volumes to the Actuate 11 location.
 - Use the Actuate 11 Squirrel Data Exporter and Encyclopedia Data Store Administrator utilities to migrate an Actuate 10 Encyclopedia volume to the Actuate 11 Encyclopedia location. Confirm that all partitions for Actuate 11 are in the active state before you use these utilities.
- Install upgraded design and report files.
 - Encyclopedia volume data is located separately from iServer binaries in Release 11.
- Start BIRT iServer Release 11.
- Inform users that they can start using Actuate 11 design tool products.

3

Installing BIRT iServer using an alternative database

This chapter discusses the following topics:

- Preparing to install BIRT iServer using an alternative database
- Installing an Encyclopedia volume that uses an alternative database

Preparing to install BIRT iServer using an alternative database

When installing BIRT iServer Release 11, the administrator must choose to use the out-of-the-box (OOTB) PostgreSQL database or another data store, such as DB2, Oracle, or a pre-existing PostgreSQL instance to store Encyclopedia volume metadata. This chapter describes how to install a new instance of BIRT iServer Release 11, using an alternative data store.

For all database systems other than OOTB PostgreSQL, the database administrator must create the system and Encyclopedia volume schemas and an iserver application user before installing BIRT iServer. During the iServer installation, the administrator provides the iServer system name, plus the system and Encyclopedia volume schema owner, and iServer application user credentials. The iServer installation program creates the necessary database structures, then loads the metadata.

Creating a dedicated user account for installing and running BIRT iServer

Actuate recommends creating a dedicated user account for installing and running iServer. Having a dedicated user account isolates iServer-specific issues and events on a machine, making it easier to administer the environment.

If you exercise the same control over the user account for BIRT iServer as your site exercises for other system administrator and root accounts, you can maintain the same level of security for BIRT iServer. Actuate does not recommend installing iServer under the root account since the PostgreSQL server must be started and maintained under an unprivileged user ID to prevent compromising system security. If installed under the root account, the default installation is unable to set up the PostgreSQL schemas and Actuate Encyclopedia sample volume.

Creating the system and Encyclopedia volume schemas and iserver user in an alternative database

Before installing BIRT iServer to use a pre-existing RDBMS, the database administrator must first run SQL scripts that contain the appropriate Data Definition Language (DDL) statements to create a database and the following schema owner and application user accounts with appropriate privileges:

- iServer system schema owner
- Encyclopedia volume schema owner
- iserver application user

Restrict schema and the iServer application user names to alphanumeric and underscore characters with an initial alphabetic character in the pattern [a-z][a-z 0-9]*. Do not use a hyphen.

In an environment containing multiple Encyclopedia volume schemas, Actuate recommends using one iserver application user with privileges on all the schemas. This configuration allows iServer to maximize connection pooling and minimize the number of connections to the RDBMS.

Creating the system and Encyclopedia volume schemas and iserver user in a pre-existing PostgreSQL database

The following SQL scripts provide an example of DDL statements that create the database, schema owners, and an iserver application user role, then grant privileges in a pre-existing PostgreSQL server installation. These steps are not necessary when adding an Encyclopedia volume to an existing schema.

The PostgreSQL database administrator may need to modify these SQL command examples for the specific PostgreSQL installation. In the commands, substitute system and schema names appropriate to your environment.

Creating a database

Connect to the PostgreSQL system database as a user with full administrator privileges, typically named postgres, and execute the following SQL commands to create a database named iserver:

```
CREATE DATABASE iserver
WITH OWNER = "postgres"
TEMPLATE = template0 ENCODING = 'UTF-8';
REVOKE ALL ON DATABASE iserver FROM PUBLIC;
```

Create the plpgsql procedural language by executing the following SQL command:

```
CREATE LANGUAGE plpgsql;
```

Plpgsql is a superset of PostgreSQL SQL that supports advanced programming features, such as variables, conditional expressions, iterative constructs, and events. If the language is already installed, an error message appears. If so, ignore the message.

Creating the system schema owner

In an iServer installation, the system schema owner must have the same name as the system schema. The system schema owner has all privileges on the schema used for the system data store and can grant privileges to other users. The system schema owner must be able to create database objects, such as tables and indexes.

The following commands create a user role named ac_corp_system with appropriate privileges to connect to the previously created iserver database.

Connect to the PostgreSQL system database as a user with full administrator privileges and execute the following SQL commands:

```
CREATE ROLE ac_corp_system LOGIN PASSWORD 'password';
GRANT CONNECT ON DATABASE iserver TO ac corp system;
```

Creating the Encyclopedia volume schema owner

In an iServer installation, the Encyclopedia volume schema owner must have the same name as the Encyclopedia volume schema. The Encyclopedia volume schema owner has all privileges on the schema used for the Encyclopedia volume data store and can grant privileges to other users. The Encyclopedia volume schema owner must be able to create database objects, such as tables and indexes.

The following commands create a user role named ac_corp with appropriate privileges to connect to the previously created iserver database. Connect to the PostgreSQL system database as a user with full administrator privileges and execute the following SQL commands:

```
CREATE ROLE ac corp LOGIN PASSWORD 'password';
GRANT CONNECT ON DATABASE iserver TO ac corp;
```

Creating the iServer application user

iServer connects to the database as an application user. The application user requires only the privileges necessary to perform basic SQL Data Manipulation Language (DML) operations, such as SELECT, INSERT, UPDATE, and DELETE. This user does not require privileges to create or modify the structure of the database.

The following SQL script provides an example of DDL statements that create the iserver user role in a pre-existing PostgreSQL database. Connect to the PostgreSQL system database as a user with full administrator privileges and execute the following SQL commands:

```
CREATE ROLE iserver LOGIN PASSWORD 'password';
GRANT CONNECT ON DATABASE iserver TO iserver;
```

Creating the system schema

The system schema must have the same name as the system schema owner. The following commands create a system schema named ac_corp_system, owned by the user, ac_corp_system, then grant privileges to use that schema to the application user role named iserver. Connect to the iserver application database, not the PostgreSQL system database, as a user with full administrator privileges and execute the following commands:

```
CREATE SCHEMA ac corp system AUTHORIZATION ac corp system;
GRANT USAGE ON SCHEMA ac corp system TO iserver;
```

Creating the Encyclopedia schema

In an iServer installation, the Encyclopedia schema must have the same name as the Encyclopedia schema owner. The following commands create an Encyclopedia volume schema named ac_corp, owned by the user, ac_corp, then grant privileges to use the schema to the application user role named iserver. Connect to the iserver application database, not the PostgreSQL system database, as a user with full administrator privileges and execute the following commands:

```
CREATE SCHEMA ac_corp AUTHORIZATION ac_corp; GRANT USAGE ON SCHEMA ac_corp TO iserver;
```

Creating the system and Encyclopedia volume schemas and iserver user in a pre-existing Oracle database

In Oracle, there is a one-to-one relationship between a user and a schema. A schema is not a separate entity. The iServer system schema owner has the same name as the system schema. The Encyclopedia volume schema owner also has the same name as the Encyclopedia volume schema.

The following SQL scripts provide an example of DDL statements that create the database, schema owners, and iserver application user, then grant privileges in a pre-existing Oracle database. These steps are not necessary when adding an Encyclopedia volume to an existing schema.

The Oracle database administrator may need to modify these SQL command examples for a specific Oracle installation. In the commands, substitute system and volume schema names appropriate to your environment.

Creating the system schema owner

The iServer system schema owner has all privileges on the schema used for the system data store and can grant privileges to other users. The system schema owner must be able to create database objects, such as tables and indexes.

The following SQL script provides an example of DDL statements that create the iServer system schema owner and grant privileges in a pre-existing Oracle database:

```
DROP USER ac_corp_system CASCADE;

CREATE USER ac_corp_system
   IDENTIFIED BY password
   DEFAULT TABLESPACE USERS
   TEMPORARY TABLESPACE TEMP;

GRANT CREATE TABLE TO ac_corp_system;

GRANT CREATE VIEW TO ac_corp_system;

GRANT CREATE SEQUENCE TO ac_corp_system;

GRANT CREATE ANY TYPE TO ac_corp_system;

GRANT CREATE PROCEDURE TO ac_corp_system;

GRANT CREATE OPERATOR TO ac_corp_system;

GRANT CREATE TRIGGER TO ac_corp_system;
```

```
GRANT CREATE SESSION TO ac corp system;
ALTER USER ac corp system QUOTA UNLIMITED ON USERS;
COMMIT;
```

Creating the Encyclopedia volume schema owner

The Encyclopedia volume schema owner has all privileges on the schema used for the volume data store and can grant privileges to other users. The Encyclopedia volume schema owner must be able to create database objects, such as tables and indexes.

The following SQL script provides an example of DDL statements that create the Encyclopedia volume schema owner and grant privileges in a pre-existing Oracle database:

```
CREATE USER ac corp
  IDENTIFIED BY password
 DEFAULT TABLESPACE USERS
 TEMPORARY TABLESPACE TEMP;
GRANT CREATE TABLE TO ac corp;
GRANT CREATE VIEW TO ac corp;
GRANT CREATE SEQUENCE TO ac corp;
GRANT CREATE ANY TYPE TO ac corp;
GRANT CREATE PROCEDURE TO ac corp;
GRANT CREATE OPERATOR TO ac corp;
GRANT CREATE TRIGGER TO ac corp;
GRANT CREATE SESSION TO ac corp;
ALTER USER ac corp QUOTA UNLIMITED ON USERS;
COMMIT;
```

Creating the iServer application user

iServer connects to the database as an application user. The application user requires only the privileges necessary to perform basic SQL Data Manipulation Language (DML) operations, such as SELECT, INSERT, UPDATE, and DELETE. This user does not require privileges to create or modify the structure of the database.

The iServer installation process automatically grants the schema privileges required by the application user. The RDBMS database administrator does not have to configure these privileges manually.

The following SQL script provides an example of DDL statements that create the iserver user in a pre-existing Oracle database:

```
DROP USER iserver CASCADE;
CREATE USER iserver
  IDENTIFIED BY password
```

```
DEFAULT TABLESPACE USERS
  TEMPORARY TABLESPACE TEMP;
GRANT CREATE SESSION TO iserver:
ALTER USER iserver QUOTA UNLIMITED ON USERS;
COMMIT:
```

Creating the system and Encyclopedia volume schemas and iserver user in a pre-existing DB2 database

The following SQL scripts provide an example of DDL statements that create the database, schema owners, and iserver application user, then grant privileges in a pre-existing DB2 database. These steps are not necessary when adding an Encyclopedia volume to an existing schema.

The DB2 database administrator (DBA) may need to modify these SQL command examples for the specific DB2 installation. In the commands, substitute system and schema names appropriate to your environment.

Creating user accounts

DB2 uses operating system accounts instead of internally defined database users. A database user must exist as an operating system user account, using the native security mechanisms that the operating system provides, before a user can be referenced in a DB2 system. Once a user exists in the operating system, the DB2 system administrator can assign privileges to that user using DDL statements.

Creating a database

Actuate requires a DB2 database to support VARGRAPHIC columns. DB2 does not support UCS-2 or UTF-16 as the primary encoding for a database. DB2 also sizes the VARCHAR data type in bytes, not characters. To work around these issues, iServer uses VARGRAPHIC instead of VARCHAR. VARGRAPHIC stores UTF-16 data and sizes this data in characters.

Actuate also requires a DB2 database to use a case-insensitive collation, such as UCA500R1_LEN_S2, which is not the default. DB2 supports this functionality only in DB2 9.5 Fix Pack 1 and later versions.

To create the iserver database, connect to the DB2 system as a user with full administrator privileges and execute the following SQL command:

```
CREATE DATABASE iserver
  AUTOMATIC STORAGE YES
  USING CODESET UTF-8
  TERRITORY US
  COLLATE USING UCA500R1 LEN S2
  PAGESIZE 8192
```

Creating the system schema owner

The iServer system schema owner has all privileges on the schema used for the system data store and can grant privileges to other users. The system schema owner must be able to create database objects, such as tables and indexes.

To create the iServer system schema owner and grant privileges in a pre-existing DB2 database, execute the following command:

GRANT CONNECT, LOAD ON DATABASE TO USER ac corp system;

Creating the Encyclopedia volume schema owner

The Encyclopedia volume schema owner has all privileges on the schema used for the volume data store and can grant privileges to other users. The Encyclopedia schema owner must be able to create database objects, such as tables and indexes.

To create the Encyclopedia volume schema owner and grant privileges in a preexisting DB2 database, execute the following command:

GRANT CONNECT, LOAD ON DATABASE TO USER ac corp;

Creating the iServer application user

iServer connects to the database as an application user. The application user requires only the privileges necessary to perform basic SQL Data Manipulation Language (DML) operations, such as SELECT, INSERT, UPDATE, and DELETE. This user does not require privileges to create or modify the structure of the database.

The iServer installation process automatically grants the schema privileges required by the application user. The RDBMS database administrator does not have to configure these privileges manually.

To create the iserver user in a pre-existing DB2 database, execute the following command:

GRANT CONNECT ON DATABASE TO USER iserver:

Creating the system schema

The system schema must have the same name as the system schema owner. To create a system schema named ac_corp_system and grant ownership to the user named ac_corp_system, execute the following command:

CREATE SCHEMA ac_corp_system AUTHORIZATION ac_corp_system;

Creating the Encyclopedia volume schema

In an iServer installation, the Encyclopedia volume schema must have the same name as the Encyclopedia volume schema owner. To create an Encyclopedia

volume schema named ac_corp and grant ownership to the user named ac_corp, execute the following command:

CREATE SCHEMA ac corp AUTHORIZATION ac corp;

Backing up iServer system and Encyclopedia volume metadata

The third-party database schemas that contain iServer system and Encyclopedia volume metadata are critical components of BIRT iServer System. To guard against data loss, the database administrator must back up the schemas using the tools and resources of the third-party database system.

An iServer system administrator must take all necessary precautions to ensure that the schemas are properly backed up to safeguard the metadata. Please consult Actuate Support at the time of installation if you have any questions about these backup procedures to protect against the possibility of catastrophic failure. For information on the recommended procedures to back up an iServer system and Encyclopedia volume schemas in the Release 11 environment, refer to Chapter 9, "Backing up an Encyclopedia volume," later in this book.

When installing BIRT iServer, be sure to run the same versions of all products. Upgrade all products at the same time to maintain consistency in the versions you run.

If you are a purchasing customer, you can download iServer from an Actuate ftp site or install from a product DVD. If you are evaluating BIRT iServer, you can download iServer from BIRT Exchange at the following location:

http://www.birt-exchange.com

For information about the new Release 11 BIRT iServer System architecture, see Chapter 1, "Understanding Actuate BIRT iServer architecture," earlier in this book

The following sections describe how to install BIRT iServer Release 11 using Oracle as an alternative data store.

Installing an Encyclopedia volume that uses an alternative database

The following procedures use a pre-existing Oracle database and schema as the example. During the iServer installation, the administrator provides the following installation details and any related credentials:

External Oracle database host name or IP address, such as urup

- iServer Encyclopedia volume name, which by default is the machine name, in this case, urup
- Oracle database iServer system schema name, such as ac_corp_system
- Oracle database Encyclopedia volume schema name, such as ac_corp
- Oracle database iServer application user name, such as iserver

The iServer installation program creates the necessary volume database structures, then loads the metadata.

How to install an Encyclopedia volume that uses an alternative database

To install iServer, perform the following steps:

- 1 Insert the installation DVD, mount a DVD on your system and set your working directory to the mounted DVD directory, or download the required files.
- **2** To install the server files, execute the following isinstall script:

```
sh ./isinstall.sh
```

The script displays a number of prompts. Respond to the prompts as described in the following procedure.

3 The license agreement appears, as shown in Figure 3-1.

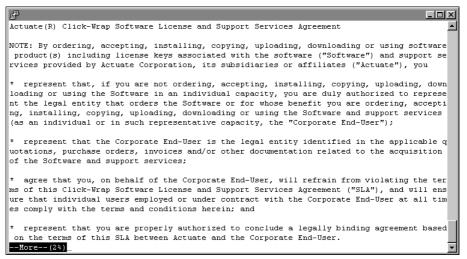


Figure 3-1 Reviewing the license agreement

4 Read the license agreement and press Enter to continue the installation. At the prompt, type y for yes if you accept the licensing terms, as shown in Figure 3-2.

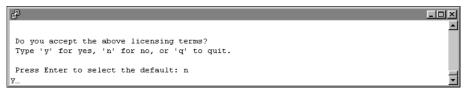


Figure 3-2 Accepting the licensing terms

5 The introduction to the installation appears, as shown in Figure 3-3.

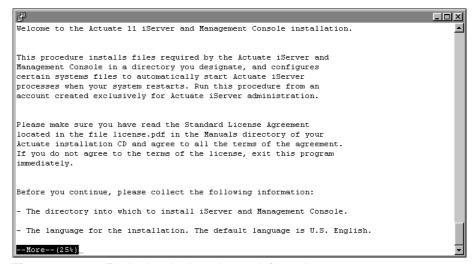


Figure 3-3 Reviewing the introductory information

6 Press Enter after reviewing the introductory information, as shown in Figure 3-4.

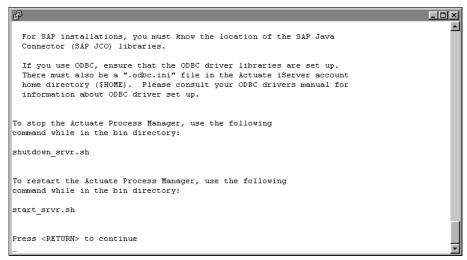


Figure 3-4 Finishing the review of introductory information

7 Press Enter to accept the default location for the installation, as shown in Figure 3-5. Alternatively, type a different directory and press Enter.

The installation program creates the AcServer directory in the chosen location and installs the files.

iServer uses this location to resolve paths to all the binaries that it launches. The default path for this location is \$HOME/AcServer, which is referred to in the iServer documentation by the environment variable, AC_SERVER_HOME.

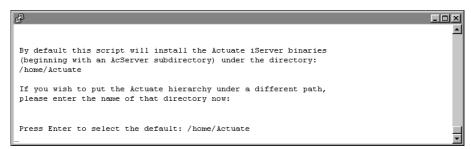


Figure 3-5 Specifying the installation directory

8 Press Enter to accept the default installation directory, AC_SERVER_HOME/data, for iServer data, as shown in Figure 3-6. Alternatively, choose a different directory for iServer data.

iServer uses this data location to store the iServer Encyclopedia volume data, logs, and other files. The default path is AC_SERVER_HOME/data, which is referred to in the iServer documentation by the environment variable AC_DATA_HOME.

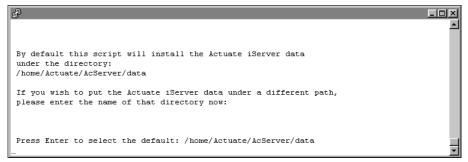


Figure 3-6 Specifying the data installation directory

9 Press Enter to accept the default option of creating the directory for data, as shown in Figure 3-7. Alternatively, type n for no, or q to quit, and press Enter.

```
Directory /home/Actuate/AcServer/data does not exist.

Do you wish to create the directory?

Type 'y' for yes, 'n' for no, or 'q' to quit.

Press Enter to select the default: y
```

Figure 3-7 Creating the AC_DATA_HOME directory

10 The installer copies prerequisite files to the destination folder, as shown in Figure 3-8. After copying the prerequisite files, the installation continues.

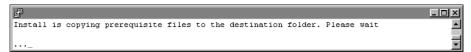


Figure 3-8 Copying prerequisite files

11 Press Enter to accept the default iServer component combination, iServer with Management Console, as shown in Figure 3-9. Alternatively, choose a different iServer component combination and press Enter.

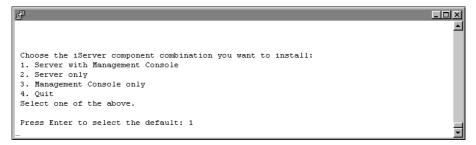


Figure 3-9 Choosing the iServer component combination

12 Press Enter to accept the default stand-alone iServer installation, as shown in Figure 3-10. Alternatively, choose a different type of iServer to install.

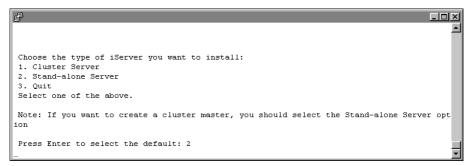


Figure 3-10 Specifying the type of iServer to install

13 Type a name to use for the BIRT iServer System name, as shown in Figure 3-11. iServer assigns this name to the default Encyclopedia volume. Additionally, iServer inserts this name into the names iServer creates for the Encyclopedia volume schema and the iServer system schema.



Figure 3-11 Specifying the BIRT iServer System name

14 Type n for no, and press Enter, as shown in Figure 3-12. You do not want to install the embedded PostgreSQL database if you are using an alternative database such as Oracle to store Encyclopedia volume metadata.

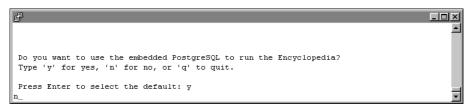


Figure 3-12 Choosing to not use Embedded PostgreSQL

15 Type 1 to choose Oracle as the external database to work with iServer Encyclopedia and press Enter, as shown in Figure 3-13.

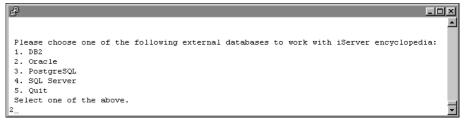


Figure 3-13 Choosing an external database for iServer Encyclopedia

16 Specify the external Oracle database TNS server, if any, and press Enter, as shown in Figure 3-14. If there is no external Oracle database TNS Server, leave the field blank and press Enter.

```
If you are using Oracle TNS service, please type the TNS Server name:
(Press Enter if you are not using Oracle TNS service.)
```

Figure 3-14 Specifying the external Oracle database TNS Server

17 Specify the name of the external Oracle database host name or IP address and press Enter, as shown in Figure 3-15.



Figure 3-15 Specifying the external Oracle database server name

18 Specify the external Oracle database port number and press Enter, as shown in Figure 3-16. Typically, Oracle uses port 1521 as the database port.



Figure 3-16 Specifying the external Oracle database port

19 Specify the external Oracle database service name, such as orcl.actuate.com, that identifies the Oracle database server on which you want to install the Encyclopedia volume metadata and press Enter, as shown in Figure 3-17.



Figure 3-17 Specifying the external Oracle database service name

20 Specify the external Oracle database user name, such as iserver, and press Enter, as shown in Figure 3-18.



Figure 3-18 Specifying the external Oracle database user name

21 Specify the external Oracle database user password and press Enter, as shown in Figure 3-19.



Figure 3-19 Specifying the external Oracle database user password

22 Re-enter the external Oracle database user password and press Enter, as shown in Figure 3-20.



Figure 3-20 Confirming the external Oracle database user password

23 Specify the system database schema for iServer, such as ac_corp_system, and press Enter, as shown in Figure 3-21.



Figure 3-21 Specifying the system database schema

24 Specify the System database schema password, and press Enter, as shown in Figure 3-22.

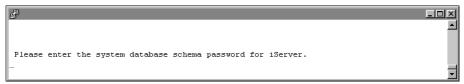


Figure 3-22 Specifying the system database schema password

25 Re-enter the system database schema password and press Enter, as shown in Figure 3-23.

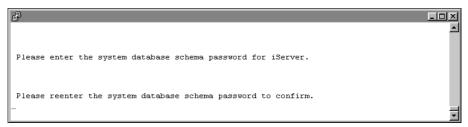


Figure 3-23 Confirming the system database schema password

26 Specify the external Oracle database schema for the Encyclopedia volume, such as ac_corp, and press Enter, as shown in Figure 3-24.

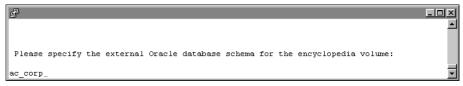


Figure 3-24 Specifying the schema for the Encyclopedia volume

27 Specify the external Oracle database schema password, and press Enter, as shown in Figure 3-25.



Figure 3-25 Specifying the external Oracle database schema password

28 Re-enter the external Oracle database schema password and press Enter, as shown in Figure 3-26.

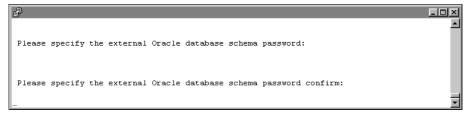


Figure 3-26 Confirm the external Oracle database schema password

29 Press Enter to select the default locale, which is English (United States), as shown in Figure 3-27. Alternatively, select a different locale. If you do not see the locale for your region, type m for more and press enter.

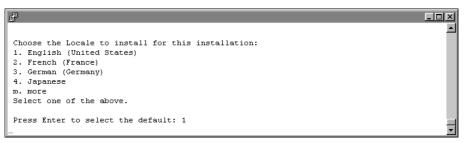


Figure 3-27 Specifying a locale

30 Press Enter to select the default time zone, America/Los_Angeles, as shown in Figure 3-28. Alternatively, select another time zone from the numbered list.

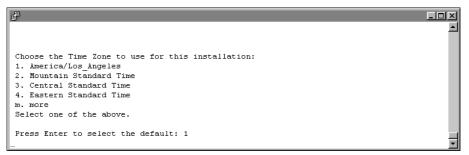


Figure 3-28 Specifying a time zone

31 To evaluate the product using the included evaluation software license, press Enter, as shown in Figure 3-29. Alternatively, type 2, then type the path to the license file you purchased.



Figure 3-29 Specifying license type

32 Press Enter to accept the hostname of the machine that Management Console uses to contact the Process Management Daemon (PMD), as shown in Figure 3-30. Alternatively, type a different IP address.

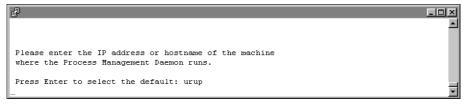


Figure 3-30 Specifying the hostname that Management Console uses to contact the PMD

33 Press Enter to accept the default port number, 8100, where Process Management Daemon (PMD) listens for requests, as shown in Figure 3-31. Alternatively, type a different port number.



Figure 3-31 Specifying the port number on which the PMD listens

34 Press Enter to accept the default host name, the name of your machine, as shown in Figure 3-32. Alternatively, type a different IP address.

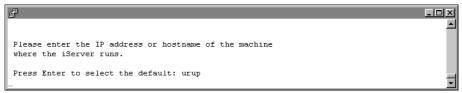


Figure 3-32 Specifying the machine on which the iServer runs

35 Press Enter to accept the default port number, 8000, where iServer listens for requests, as shown in Figure 3-33. Alternatively, type a different port number.

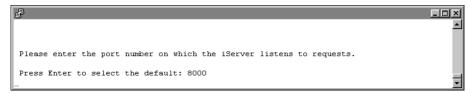


Figure 3-33 Specifying the port number on which the iServer listens

36 Specify the iServer administrator password, as shown in Figure 3-34. You use this password to log in to the iServer Configuration Console.



Figure 3-34 Specifying the iServer administrator password

37 Re-enter the password of the iServer administrator, as shown in Figure 3-35.



Figure 3-35 Re-entering the iServer administrator password

38 Press Enter to accept the default option to use a volume name for the Encyclopedia, as shown in Figure 3-36. Alternatively, type n for no to not use a volume name for the Encyclopedia, or q to quit the installation.

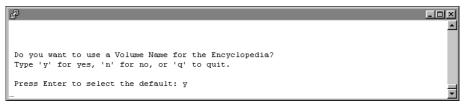


Figure 3-36 Specifying whether to use a volume name

39 Press Enter to accept the default Encyclopedia volume name, the name of your machine, as shown in Figure 3-37. Alternatively, type a different Encyclopedia volume name.

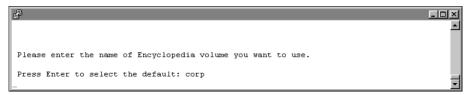


Figure 3-37 Specifying the Encyclopedia volume name

40 Press Enter to accept the default option to start iServer automatically, as shown in Figure 3-38. Alternatively, type n for no.

```
Do you want the PMD to start the iServer automatically?
Type 'y' for yes, 'n' for no.

Press Enter to select the default: y
```

Figure 3-38 Specifying whether to start iServer automatically

41 Press Enter to accept the default option of not integrating LDAP with iServer, as shown in Figure 3-39. Alternatively, type n for no, or q to quit the installation.

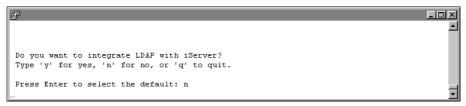


Figure 3-39 Specifying whether to integrate LDAP with iServer

42 Press Enter to accept the default option to not use any database drivers/clients, as shown in Figure 3-40. Alternatively, type y for yes, and specify the database drivers/clients you want to use.

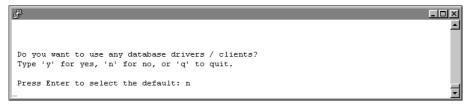


Figure 3-40 Specifying whether to use database drivers/clients

43 Specify what kind of X-Server you want to use, if any. To accept the default, press Enter, as shown in Figure 3-41.

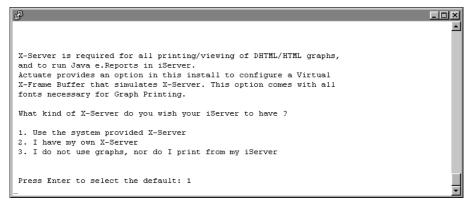


Figure 3-41 Specifying what kind of X-Server to use, if any

44 Press Enter to accept the default hostname of the machine that Management Console uses to contact the Process Management Daemon (PMD), as shown in Figure 3-42. Alternatively, type a different IP address.

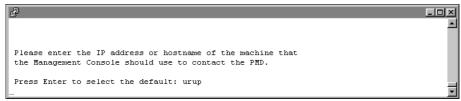


Figure 3-42 Specifying the machine host name that Management Console uses to contact the PMD

45 Press Enter to accept the default port number, 8100, on which the Process Management Daemon (PMD) listens for requests from Management Console, as shown in Figure 3-43. Alternatively, type a different port number.

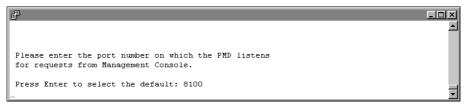


Figure 3-43 Specifying the port number for the PMD to listen for requests from Management Console

46 Press Enter to accept the default hostname, the name of your machine, that Management Console uses to contact iServer, as shown in Figure 3-44. Alternatively, type a different IP address.

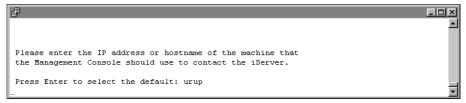


Figure 3-44 Specifying the name Management Console uses to contact iServer

47 Press Enter to accept the default port number, 8000, on which iServer will listen for requests from Management Console, as shown in Figure 3-45. Alternatively, type a different port number.

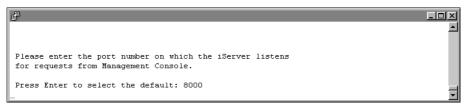


Figure 3-45 Specifying the port number for listening for requests from Management Console

48 Press Enter to accept the default name of the Encyclopedia volume to use with Management Console, as shown in Figure 3-46. Alternatively, type a different name for the Encyclopedia volume.

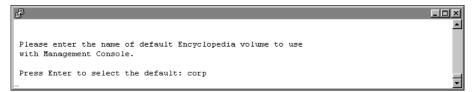


Figure 3-46 Specifying the name of the default Encyclopedia volume

49 Press Enter to accept the default name, acadmin, for the HTTP server's context root, as shown in Figure 3-47. Alternatively, type a different name.



Figure 3-47 Specifying the name of the HTTP server context root

50 Press Enter to accept the default port number, 8900, on which the application container listens for requests, as shown in Figure 3-48. Alternatively, choose a different port.

You connect to the port from your browser when accessing various iServer features.

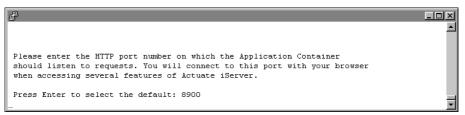


Figure 3-48 Specifying the application container listening port number

51 Review the settings, as shown in Figure 3-49, then specify whether to accept the settings. Press Enter to accept the default, y for yes. Alternatively type n for no, or q to quit.

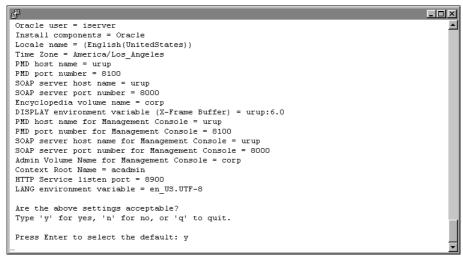


Figure 3-49 Reviewing your settings

52 The installation program installs iServer, displaying an indicator that shows the progress of the installation, as shown in Figure 3-50.

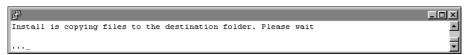


Figure 3-50 Copying iServer files to your destination folder

53 At the end of the installation, the program asks if you want to start iServer. Accept the default, y for yes, to start the Process Management Daemon (PMD), as shown in Figure 3-51.



Figure 3-51 Specifying whether to start iServer

54 The installation program provides additional information about localization, logging in using an account with root permissions to start iServer, and installing online help and manuals, as shown in Figure 3-52.

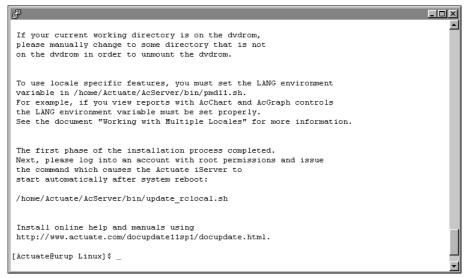


Figure 3-52 Specifying information about localization, logging in, and installing online help

Upgrading BIRT iServer

This chapter discusses the following topics:

- Preparing to upgrade BIRT iServer
- Performing an automatic in-place upgrade
- Performing a manual side-by-side upgrade

Preparing to upgrade BIRT iServer

When upgrading to BIRT iServer Release 11, the administrator must choose to use the out-of-the-box (OOTB) PostgreSQL database or another data store, such as DB2, Oracle, or a pre-existing PostgreSQL instance to store Encyclopedia volume metadata. The administrator upgrades iServer and the Encyclopedia volume database using one of the following options:

- Automatic in-place upgrade Upgrades an earlier iServer system in place, such as Release 10 Service Pack 1, automatically migrating one or more existing Encyclopedia volumes during the installation process.
- Manual side-by-side upgrade Upgrades a new Release 11 iServer system in the environment side-by-side with an earlier iServer System, such as Release 10 Service Pack 1. During installation, the administrator chooses whether to install the default volume with sample designs and documents. After installation, the administrator uses the Squirrel Data Exporter and Encyclopedia Data Store Administrator utilities to migrate the volumes manually from the older system to the Release 11 iServer.

Creating a dedicated user account for installing and running BIRT iServer

Actuate recommends creating a dedicated user account for installing and running iServer. Having a dedicated user account isolates iServer-specific issues and events on a machine, making it easier to administer the environment.

Before installing iServer, create a user account with privileges to access the relevant files and directories. Like other Linux and UNIX processes, the processes that perform BIRT iServer tasks run under a specific user account. Creating a special user account for running Actuate iServer System is the recommended practice. However, you can install the software from an existing account.

If you exercise the same control over the user account for BIRT iServer as your site exercises for other system administrator and root accounts, you can maintain the same level of security for BIRT iServer. Installation of iServer under the root account is not recommended since the PostgreSQL server must be started and maintained under an unprivileged user ID to prevent compromising system security. If installed under the root account, the default installation is unable to set up the PostgreSQL schema and Actuate Encyclopedia sample volume.

Backing up iServer system and Encyclopedia volume metadata

When upgrading iServer to Release 11, be sure to create a backup of the earlier Encyclopedia volume before performing the upgrade operation. In Release 11, there is no automatic rollback capability during an upgrade. In the event of a failure, the administrator must uninstall the new version of iServer, reinstall the previous version, and use the backup to restore the Encyclopedia volume to its previous state if a rollback becomes necessary.

The third-party database schemas that contain iServer system and Encyclopedia volume metadata are critical components of BIRT iServer System. To guard against data loss, the database administrator must back up the schemas using the tools and resources of the third-party database system. It is necessary to back up all Encyclopedia volume metadata and file data to ensure the recoverability of the volume in the event of failure.

In Release 11, it is not necessary to back up the iServer system schema, although future versions may require this operation to protect critical system metadata. The administrator can restore a corrupted or missing system schema using the System Data Store Administrator utility. For more information on this utility, see "Specifying System Data Store Administrator properties," later in this chapter.

An iServer system administrator must take all necessary precautions to ensure that the schemas are properly backed up to safeguard the metadata. Please consult Actuate Support at the time of installation if you have any questions about these backup procedures to protect against the possibility of catastrophic failure. For information on the recommended procedures to back up an iServer system and Encyclopedia volume schemas in the Release 11 environment, refer to Chapter 9, "Backing up an Encyclopedia volume," later in this book.

When installing BIRT iServer, be sure to run the same versions of all products. Upgrade all products at the same time to maintain consistency in the versions you run.

To upgrade an iServer earlier than Release 8 Service Pack 1, you must first migrate to Release 8 Service Pack 1, 9, or 10, then upgrade to Release 11.

If you are a purchasing customer, you can download iServer from an Actuate ftp site or install from a product DVD. If you are evaluating BIRT iServer, you can download iServer from BIRT Exchange at the following location:

http://www.birt-exchange.com

For information about the new Release 11 BIRT iServer System architecture, see Chapter 1, "Understanding Actuate BIRT iServer architecture."

The following sections describe how to install BIRT iServer Release 11 as an upgrade using the available installation options.

Performing an automatic in-place upgrade

In an automatic in-place upgrade from an earlier major release, such as Release 10 Service Pack 1, the installation program performs the following operations:

- Installs and initializes iServer and the OOTB PostgreSQL relational database management system (RDBMS)
- Creates the iserver user in the OOTB PostgreSQL RDBMS to access the system, initializing the iserver user password to the PostgreSQL superuser password
- Updates the iServer configuration file, specifying the volume, database, and connection information for the default volume

The automatic option also performs the following operations during installation:

- Creates the system and volume schema, initializing these schema with basic configuration information
- Creates the iServer configuration file, specifying system, volume, and connection information for the default installation

Alternatively, iServer supports a manual, side-by-side upgrade to a new Release 11 iServer in a path separate from the earlier release. For more information, see "Performing a manual side-by-side migration," later in this chapter.

The following procedure describes step-by-step how to perform an automatic or manual upgrade in place of an earlier version of iServer to BIRT Release 11.

How to perform an automatic in-place upgrade from an earlier major release to iServer Release 11

The installation program can encounter a problem over-writing a file linked with a running process. Stop all iServer processes before proceeding with the upgrade.

- 1 Although the install program saves these files during an upgrade, Actuate recommends that you make a backup copy of the following files before installing:
 - encyc directories from all nodes
 - acserverconfig.xml in the /etc directory
 - acpmdconfig.xml in the /etc directory
 - RSSE code and associated files if you use the Open Security option
- **2** Insert the installation DVD, mount a DVD on your system and set your working directory to the mounted DVD directory, or download the required files.
- **3** To install the server files, execute the isinstall script:

```
sh ./isinstall.sh
```

The script displays a number of prompts. Respond to the prompts as described in the following procedure.

4 The license agreement appears, as shown in Figure 4-1.

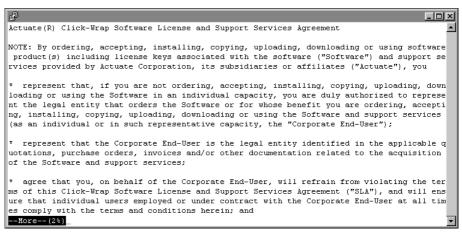


Figure 4-1 Reviewing the license agreement

5 Read the license agreement, then press Enter to continue the installation. At the prompt, type y for yes if you accept the licensing terms, as shown in Figure 4-2

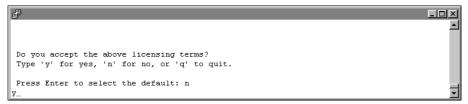


Figure 4-2 Accepting the licensing terms

6 The introduction to the installation appears, as shown in Figure 4-3.

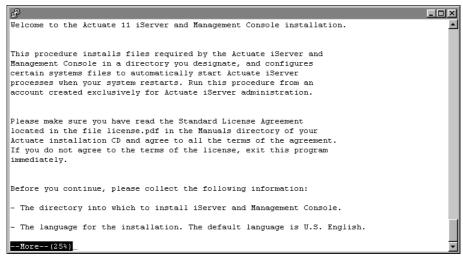


Figure 4-3 Reviewing the introductory information

7 Press Enter after reviewing the introductory information, as shown in Figure 4-4.

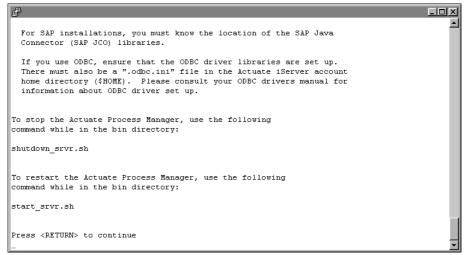


Figure 4-4 Finishing the review of introductory information

8 Press Enter to select the default directory as the location of the Actuate 10 installation, as shown in Figure 4-5. Alternatively, type the appropriate path to that location and press Enter.

iServer uses this location to resolve paths to all the binaries that it launches. The default path for this location is \$HOME/AcServer, which is referred to in the iServer documentation by the environment variable AC_SERVER_HOME.

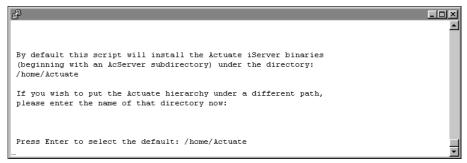


Figure 4-5 Specifying the installation directory

9 The installer detects the previous iServer version, and asks whether to perform an upgrade to the new iServer version, as shown in Figure 4-6. Press Enter to accept the default option of upgrading the older version. Alternatively, type n for no, or q to quit.

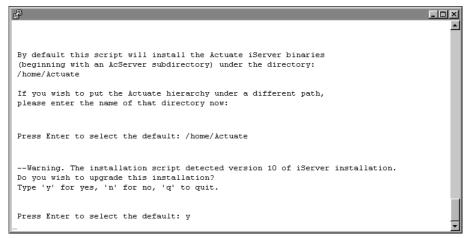


Figure 4-6 Choosing to upgrade iServer

10 If the installer detects that the Actuate servers are currently running, it will try to stop the servers then continue with the installation, as shown in Figure 4-7. This process might take a few minutes.



Figure 4-7 Shutting down the servers

11 Type the path to a new directory in which to install the iServer binaries, as shown in Figure 4-8.



Figure 4-8 Specifying a new location for the iServer binaries

12 Press Enter to accept the default option of creating the folder you specified in the previous step, as shown in Figure 4-9. Alternatively, type n for no, or q to quit, and press Enter.

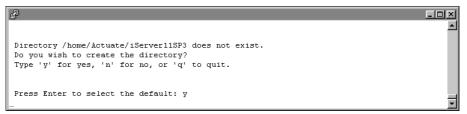


Figure 4-9 Creating the new installation directory

13 Press Enter to accept the default installation directory, AC_SERVER_HOME/data, to install iServer data, as shown in Figure 4-10. Alternatively, choose a different directory for iServer data.

iServer uses this data location to store the iServer Encyclopedia volume data, including PostgreSQL metadata, logs, and other files. The default path is AC_SERVER_HOME/data, which is referred to in the iServer documentation by the environment variable AC_DATA_HOME.

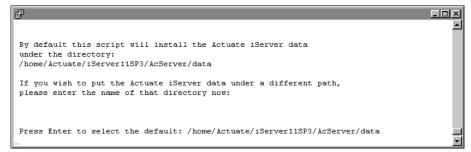


Figure 4-10 Specifying the data installation directory

14 The installer asks whether you want to create the directory for AC_DATA_HOME. Press Enter to accept the default option to create the folder, as shown in Figure 4-11. Alternatively, type n for no, or q to quit, and press Enter.

```
Directory /home/Actuate/iServer11/AcServer/data does not exist.

Do you wish to create the directory?

Type 'y' for yes, 'n' for no, or 'q' to quit.

Press Enter to select the default: y
```

Figure 4-11 Creating the AC_DATA_HOME directory

15 The installer copies the prerequisite files to the destination folder, as shown in Figure 4-12.

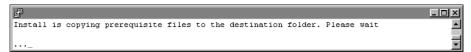


Figure 4-12 Copying prerequisite files

16 Press Enter to accept the default iServer component combination, as shown in Figure 4-13. Alternatively, choose a different iServer component combination and press Enter.

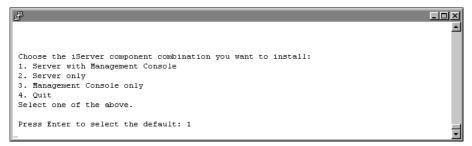


Figure 4-13 Choosing the iServer components to install

17 Press Enter to accept the default stand-alone Server installation, as shown in Figure 4-14.

```
Choose the type of iServer you want to install:

1. Cluster Server
2. Stand-alone Server
3. Quit
Select one of the above.

Note: If you want to create a cluster master, you should select the Stand-alone Server opt ion

Press Enter to select the default: 2
```

Figure 4-14 Choosing the iServer installation type

18 Type a name to use for the BIRT iServer System name, as shown in Figure 4-15. iServer assigns this name to the default Encyclopedia volume. Additionally,

iServer inserts this name into the names iServer creates for the Encyclopedia volume schema and the iServer system schema.



Specifying the BIRT iServer System name Figure 4-15

19 Press Enter to choose the default PostgreSQL superuser name, postgres, as shown in Figure 4-16. Alternatively, type a different PostgreSQL superuser name.

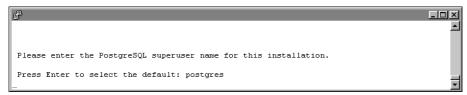


Figure 4-16 Choosing the PostgreSQL superuser name

20 Type a PostgreSQL superuser password that conforms to the password security policy requirements within your organization, then press Enter, as shown in Figure 4-17.



Figure 4-17 Typing the PostgreSQL superuser password

21 Re-enter the password for PostgreSQL superuser, as shown in Figure 4-18, and press Enter.

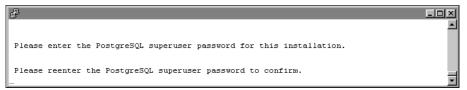


Figure 4-18 Re-entering the PostgreSQL superuser password

22 Press Enter to accept the default port on which the PostgreSQL database server listens for requests, as shown in Figure 4-19. Alternatively, type a different port number.



Figure 4-19 Entering the port number which PostgreSQL uses

23 Specify the iServer administrator password, as shown in Figure 4-20. You use this password to log into the iServer Configuration Console.

```
Please enter the administrator password for this installation.
```

Figure 4-20 Specifying the iServer administrator password

24 Re-enter the password of the iServer administrator, as shown in Figure 4-21. You use this password to log in to Configuration Console.



Figure 4-21 Re-entering the iServer administrator password

25 Press Enter to accept the default option to upgrade the iServer license file, as shown in Figure 4-22. Alternatively, press n for no, or q to quit.

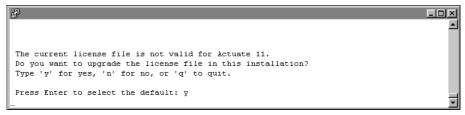


Figure 4-22 Accepting to upgrade the iServer license

26 To evaluate the product using the included evaluation software license press Enter, as shown in Figure 4-23. Alternatively, type 2, then type the path to a the license file you purchased.

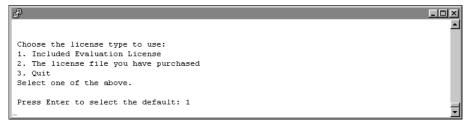


Figure 4-23 Specifying license type

27 Press Enter to accept the default option of not using any database drivers/clients, as shown in Figure 4-24. Alternatively, type y for yes, specify the database drivers/clients you want to use, and press Enter.

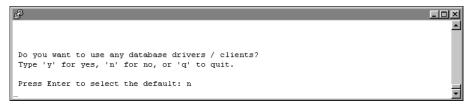


Figure 4-24 Specifying whether to use database drivers/clients

28 Specify what kind of X-Server you want to use, if any. To accept the default, press Enter, as shown in Figure 4-25.

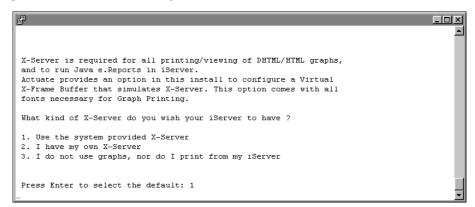


Figure 4-25 Specifying what kind of X-Server to use

29 Review the settings, as shown in Figure 4-26, then specify whether you accept the settings. Press Enter to accept the default, y for yes. Alternatively, type n for no, or q to quit.

```
iServer installation will use the following settings:

Old upgrading iServer location= /home/Actuate

Destination directory = /home/Actuate/iServer11SP3
iServer Data directory = /home/Actuate/iServer11SP3/AcServer/data

System Name = corp

PostgreSQL username = postgres

PostgreSQL username = postgres

PostgreSQL encyclopedia schema owner = ac_corp
Install components = iServer with Management Console

DISPLAY environment variable (X-Frame Buffer) = urup:4.0

LANG environment variable = en_US.UTF-8

Are the above settings acceptable?

Type 'y' for yes, 'n' for no, or 'q' to quit.

Press Enter to select the default: y
```

Figure 4-26 Reviewing the installation settings

30 The installation program installs iServer, displaying an indicator that shows the progress of the installation, as shown in Figure 4-27.



Figure 4-27 Viewing iServer installation progress

31 At the end of the installation, the program asks if you want to start iServer. Accept the default, y for yes, to start iServer, as shown in Figure 4-28.

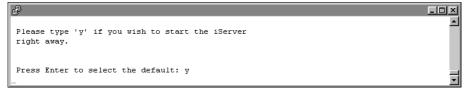


Figure 4-28 Specifying whether to start iServer

32 When the installation program finishes, it provides additional information about localization, logging in using an account with root permissions to start iServer, and installing online help and manuals, as shown in Figure 4-29.

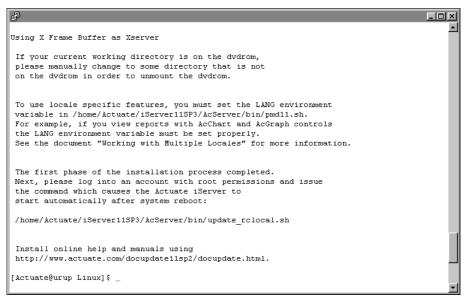


Figure 4-29 Viewing information about localization, logging in, and installing online help

33 Log in to Management Console. In Files and Folders, the data from the previous release appears.

Performing an in-place upgrade from an earlier version of iServer Release 11

When upgrading BIRT iServer from an earlier Release 11 version, you install the new iServer version in the same directory as the earlier version. After completing the install procedure, you run a utility that updates the volume schema, enabling the new iServer version to work with your existing Encyclopedia volume or volumes. Then, you bring the volume or volumes online.

How to perform an automatic in-place upgrade from an earlier Release 11 installation

The installation program can encounter a problem over-writing a file linked with a running process. Be sure to stop all iServer processes before proceeding with the upgrade.

- 1 Although the install program saves these files during an upgrade, Actuate recommends that you make a backup copy of the following files before installing:
 - encyc directories from all nodes
 - acserverconfig.xml in the /etc directory

- acpmdconfig.xml in the /etc directory
- RSSE code and associated files if you use the Open Security option
- **2** Insert the installation DVD, mount a DVD on your system and set your working directory to the mounted DVD directory, or download the required files.
- **3** To install the server files, execute the isinstall script:

```
sh ./isinstall.sh
```

The script displays a number of prompts. Respond to the prompts as described in the following procedure.

4 The license agreement appears, as shown in Figure 4-30.

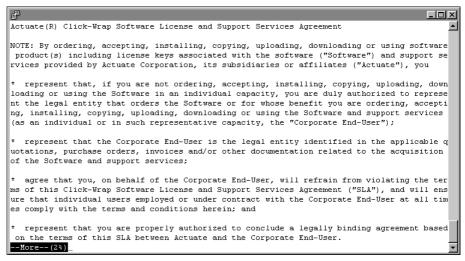


Figure 4-30 Reviewing the license agreement

5 Read the license agreement, then press Enter to continue the installation. At the prompt, type y for yes if you accept the licensing terms, as shown in Figure 4-31

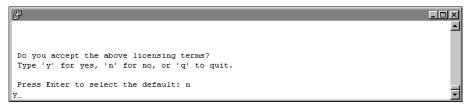


Figure 4-31 Accepting the licensing terms

6 The introduction to the installation appears, as shown in Figure 4-32.

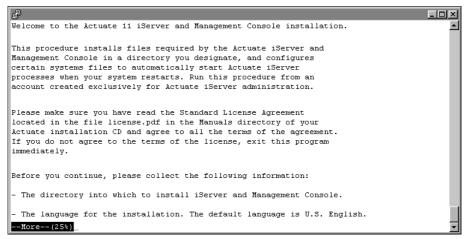


Figure 4-32 Reviewing the introductory information

7 Press Enter after reviewing the introductory information, as shown in Figure 4-33.

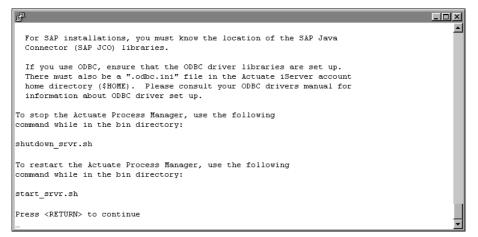


Figure 4-33 Finishing the review of introductory information

8 Press Enter to select the default directory as the location of the earlier Release 11 installation. Alternatively, type the appropriate path to that location and press Enter, as shown in Figure 4-34.

iServer uses this location to resolve paths to all the binaries that it launches. The default path for this location is \$HOME/AcServer, which is referred to in the iServer documentation by the environment variable AC_SERVER_HOME.

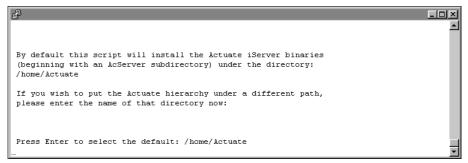


Figure 4-34 Specifying the installation directory

9 The installer detects the previous iServer version, and asks whether to perform an upgrade to the new iServer version, as shown in Figure 4-35. Press Enter to accept the default option of upgrading to the new version. Alternatively, type n for no, or q to quit.

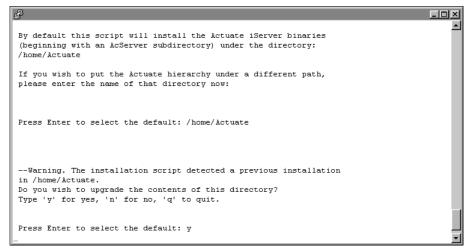


Figure 4-35 Choosing to upgrade iServer

10 If the installer detects that the Actuate servers are currently running, it will try to stop the servers then continue with the installation, as shown in Figure 4-36. This process might take a few minutes.



Figure 4-36 Shutting down the servers

11 Type the path to a new directory in which to install the iServer binaries, as shown in Figure 4-37.



Figure 4-37 Specifying a new location for the iServer binaries

12 Press Enter to accept the default option of creating the folder you specified in the previous step, as shown in Figure 4-38. Alternatively, type n for no, or q to quit, and press Enter.

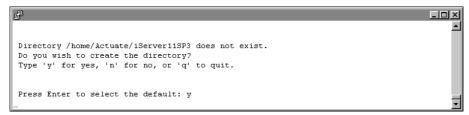


Figure 4-38 Creating the new installation directory

The installer copies prerequisite files to the new installation directory, as shown in Figure 4-39.

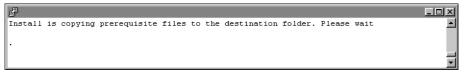


Figure 4-39 Copying prerequisite files to the new installation directory

13 Press Enter to accept the default iServer component combination, as shown in Figure 4-40. Alternatively, choose a different iServer component combination and press Enter.

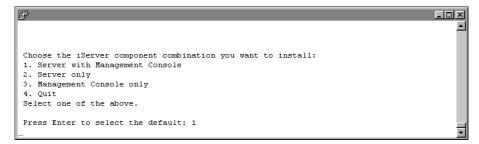


Figure 4-40 Choosing the iServer components to install

14 Press enter to accept the default stand-alone Server installation, as shown in Figure 4-41.

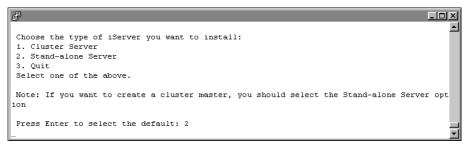


Figure 4-41 Choosing the iServer installation type

15 Specify the iServer administrator password, as shown in Figure 4-42. You use this password to log into the iServer Configuration Console.



Figure 4-42 Specifying the iServer administrator password

16 Re-enter the password of the iServer administrator, as shown in Figure 4-43. You use this password to log in to Configuration Console.



Figure 4-43 Re-entering the iServer administrator password

17 Press Enter to accept the default option of not using any database drivers/clients, as shown in Figure 4-44. Alternatively, type y for yes, specify the database drivers/clients you want to use, and press Enter.

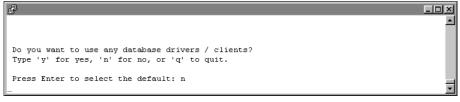


Figure 4-44 Specifying whether to use database drivers/clients

18 Specify what kind of X-Server you want to use, if any. To accept the default, press Enter, as shown in Figure 4-45.

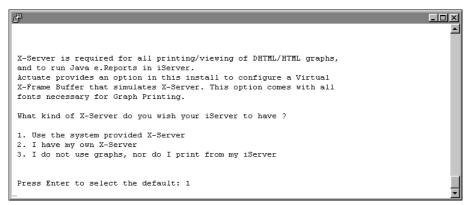


Figure 4-45 Specifying what kind of X-Server to use, if any

19 Review the settings, as shown in Figure 4-46, then specify whether you accept the settings. Press Enter to accept the default, y for yes. Alternatively, type n for no, or q to quit.

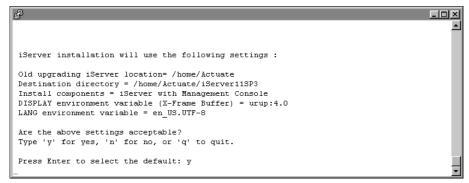


Figure 4-46 Reviewing the installation settings

20 The installation program installs iServer, displaying an indicator that shows the progress of the installation, as shown in Figure 4-47.



Figure 4-47 Viewing iServer installation progress

21 At the end of the installation, the program asks if you want to start iServer. Accept the default, y for yes, to start iServer, as shown in Figure 4-48.



Figure 4-48 Specifying whether to start iServer

22 When the installation program finishes, it provides additional information about localization, logging in using an account with root permissions to start iServer, and installing online help and manuals, as shown in Figure 4-49.

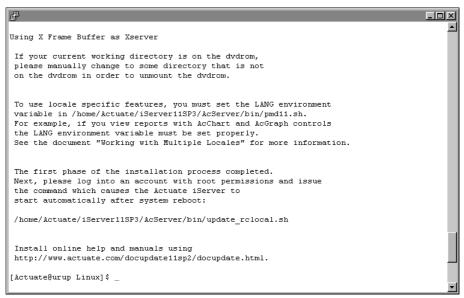


Figure 4-49 Viewing information about localization, logging in, and installing online help

Performing a manual side-by-side upgrade

In a manual side-by-side upgrade, the administrator installs a new Release 11 iServer in a path separate from the earlier release. The installation program performs the following operations using a PostgreSQL relational database management system (RDBMS) as the example:

 Installs and initializes iServer and the PostgreSQL relational database management system (RDBMS)

- Creates the iserver user in the PostgreSQL RDBMS to access the system, initializing the iserver user password to the PostgreSQL superuser password
- Creates the system and volume schema, initializing these schema with basic configuration information
- Creates the iServer configuration file, specifying system, volume, and connection information for the default installation

This manual option requires the system administrator to export the volume metadata and data from the earlier iServer volume to a temporary workspace, then import these resources into the new Release 11 installation. Actuate provides the Squirrel Data Exporter and Encyclopedia Data Store Administrator utilities to perform these tasks.

The following procedure describes how to perform a manual side-by-side upgrade of an earlier iServer version to BIRT iServer Release 11.

How to perform a manual side-by-side upgrade to iServer Release 11

You can leave the iServer service for the earlier iServer release running when you perform the side-by-side upgrade procedure. The Release 11 install program detects the presence of the earlier iServer version and does not try to use any port number the earlier iServer release uses.

- 1 Insert the installation DVD, mount a DVD on your system and set your working directory to the mounted DVD directory, or download the required files.
- **2** To install the server files, execute the isinstall script:

```
sh ./isinstall.sh
```

The script displays a number of prompts. Respond to the prompts as described in the following procedure.

3 The license agreement appears, as shown in Figure 4-50.

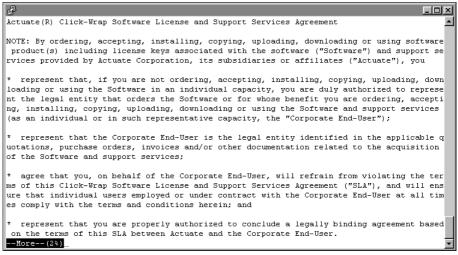


Figure 4-50 Reviewing the license agreement

4 Read the license agreement, then press Enter to continue the installation. At the prompt, type y for yes if you accept the licensing terms, as shown in Figure 4-51.

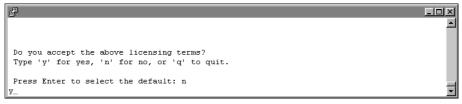


Figure 4-51 Accepting the licensing terms

5 The introduction to the installation appears, as shown in Figure 4-52.

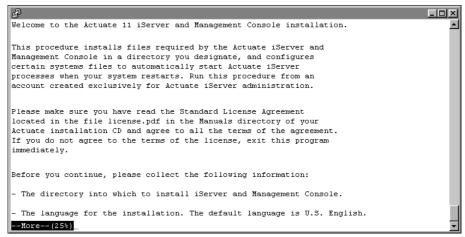


Figure 4-52 Reviewing the introductory information

6 Press Enter after reviewing the introductory information, as shown in Figure 4-53.

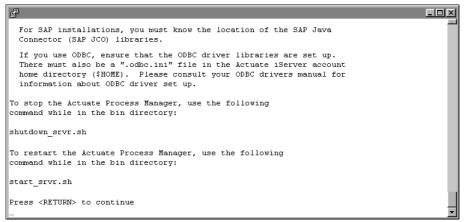


Figure 4-53 Finishing the review of introductory information

7 Type the name of a new directory in /home/Actuate, where the install program installs BIRT iServer Release 11. Specify both the path and the directory, and press enter, as shown in Figure 4-54.

iServer uses this location to resolve paths to all the binaries that it launches. The default path for this location is \$HOME/AcServer, which is referred to in the iServer documentation by the environment variable AC_SERVER_HOME. For example, using the new directory name shown in Figure 4-54, AC_SERVER_HOME refers to /home/Actuate/iServer11/AcServer.

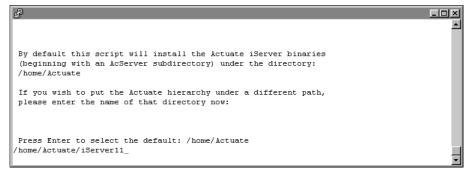


Figure 4-54 Specifying the installation directory

8 Press Enter to accept the default option of creating the folder you specified in the previous step, as shown in Figure 4-55. Alternatively, type n for no, or q to quit, and press Enter.

```
Directory /home/Actuate/iServer11 does not exist.

Do you wish to create the directory?

Type 'y' for yes, 'n' for no, or 'q' to quit.

Press Enter to select the default: y
```

Figure 4-55 Creating the new installation directory

9 Press Enter to accept the default installation directory, AC_SERVER_HOME/data, to install iServer data, as shown in Figure 4-56. Alternatively, choose a different directory for iServer data.

iServer uses this data location to store the iServer Encyclopedia volume data, including PostgreSQL metadata, logs, and other files. The default path is AC_SERVER_HOME/data, which is referred to in the iServer documentation by the environment variable AC_DATA_HOME.

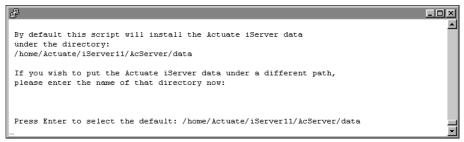


Figure 4-56 Specifying the data installation directory

10 The installer asks whether you want to create the directory for AC_DATA_HOME. Press Enter to accept the default option to create the

folder, as shown in Figure 4-57. Alternatively, type n for no, or q to quit, and press Enter.

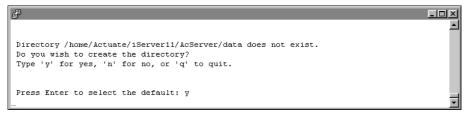


Figure 4-57 Creating the AC_DATA_HOME directory

11 The installer copies the prerequisite files to the destination folder, as shown in Figure 4-58.



Figure 4-58 Copying prerequisite files

12 Press Enter to accept the default iServer component combination, as shown in Figure 4-59. Alternatively, choose a different iServer component combination and press Enter.

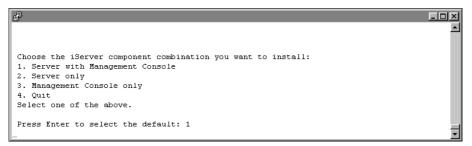


Figure 4-59 Choosing the iServer components to install

13 Press Enter to accept the default stand-alone Server installation, as shown in Figure 4-60.

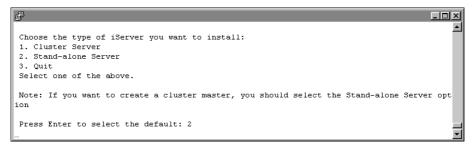


Figure 4-60 Choosing the iServer installation type

14 Type a name to use for the BIRT iServer System name, as shown in Figure 4-61. iServer assigns this name to the default Encyclopedia volume. Additionally, iServer inserts this name into the names iServer creates for the Encyclopedia volume schema and the iServer system schema.



Figure 4-61 Specifying the BIRT iServer System name

15 Press Enter to choose the default embedded PostgreSQL database to store the Encyclopedia volume metadata, as shown in Figure 4-62.

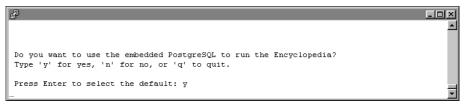


Figure 4-62 Choosing the embedded PostgreSQL

16 Press Enter to choose the default PostgreSQL superuser name, postgres, as shown in Figure 4-63. Alternatively, type a different PostgreSQL superuser name.

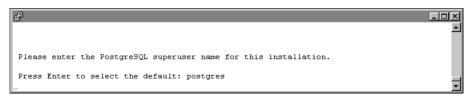


Figure 4-63 Choosing the PostgreSQL superuser name

17 Type a PostgreSQL superuser password that conforms to the password security policy requirements within your organization, then press Enter, as shown in Figure 4-64.



Figure 4-64 Typing the PostgreSQL superuser password

18 Re-enter the password for PostgreSQL superuser, as shown in Figure 4-65, and press Enter.



Re-entering the PostgreSQL superuser password Figure 4-65

19 Press Enter to accept the default port on which the PostgreSQL database server listens for requests, as shown in Figure 4-66. Alternatively, type a different port number.



Figure 4-66 Entering the port number which PostgreSQL uses

20 Press Enter to select the default locale, which is English, as shown in Figure 4-67. Alternatively, select a different locale. If you do not see the locale for your region, type m for more and press Enter.

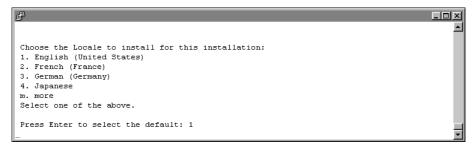


Figure 4-67 Specifying a locale

21 Press Enter to select the default time zone, which is America/Los_Angeles, as shown in Figure 4-68. Alternatively, select another time zone from the numbered list.



Figure 4-68 Specifying a time zone

22 To evaluate the product using the included evaluation software license press Enter, as shown in Figure 4-69. Alternatively, type 2, then type the path to a purchased license file.

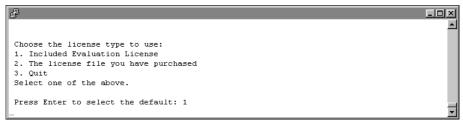


Figure 4-69 Specifying license type

23 Press Enter to accept the hostname of the machine that Management Console uses to contact the Process Management Daemon (PMD), as shown in Figure 4-70. Alternatively, type a different IP address.

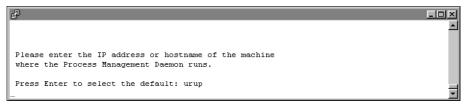


Figure 4-70 Specifying the hostname that Management Console uses to contact the PMD

24 Press Enter to accept the default port number, 8100, where Process Management Daemon (PMD) listens for requests, as shown in Figure 4-71. Alternatively, type a different port number and press Enter.

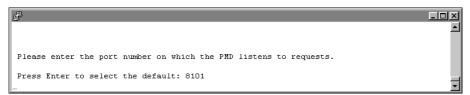


Figure 4-71 Specifying the port number on which the PMD listens

25 Press Enter to accept the default hostname, the name of the machine on which iServer runs, as shown in Figure 4-72. Alternatively, type a different hostname or IP address, then press Enter.

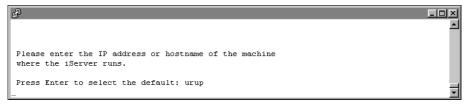


Figure 4-72 Specifying the machine on which the iServer runs

26 Press Enter to accept the default port number where iServer listens to requests, as shown in Figure 4-73. Alternatively, type a different port number and press Enter.

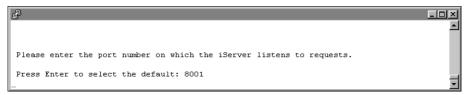


Figure 4-73 Specifying the port number on which the iServer listens

27 Specify the iServer administrator password, as shown in Figure 4-74. You use this password to log into the iServer Configuration Console.



Figure 4-74 Specifying the iServer administrator password

28 Re-enter the password of the iServer administrator, as shown in Figure 4-75. You use this password to log in to Configuration Console.



Figure 4-75 Re-entering the iServer administrator password

29 Choose n for no, to prevent iServer from using a volume name, as shown in Figure 4-76. In a side-by-side upgrade, you migrate your volumes from your earlier iServer release.

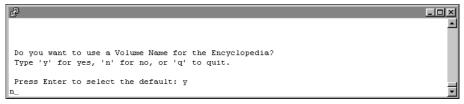


Figure 4-76 Choosing not to use a volume name

30 Press Enter to accept the default option to start iServer automatically, as shown in Figure 4-77. Alternatively, type n for no.

```
Do you want the PMD to start the iServer automatically?
Type 'y' for yes, 'n' for no.

Press Enter to select the default: y
```

Figure 4-77 Specifying whether to start iServer automatically

31 Press Enter to accept the default option to not integrate LDAP with iServer, as shown in Figure 4-78. Alternatively, you can edit the setting.

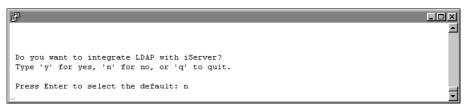


Figure 4-78 Specifying whether to integrate LDAP with iServer

32 Press Enter to accept the default option to not use any database drivers/clients, as shown in Figure 4-79. Alternatively, type y for yes, and specify the database drivers/clients you want to use.

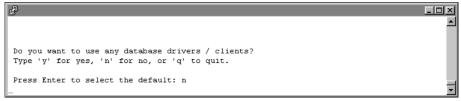


Figure 4-79 Specifying whether to use database drivers/clients

33 Specify what kind of X-Server you want to use, if any. To accept the default, press Enter, as shown in Figure 4-80.

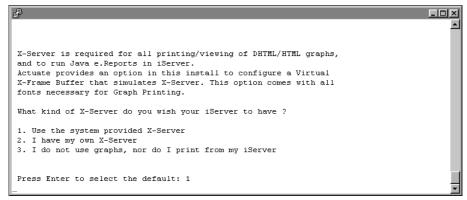


Figure 4-80 Specifying what kind of X-Server to use, if any

34 Press Enter to accept the hostname of the machine that Management Console uses to contact the Process Management Daemon (PMD), as shown in Figure 4-81. Alternatively, type a different IP address.

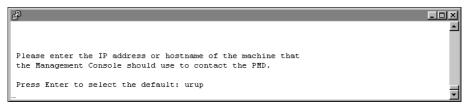


Figure 4-81 Specifying the hostname that Management Console uses to contact the PMD

35 Press Enter to accept the default port number, 8100, on which the Process Management Daemon (PMD) listens for requests from Management Console, as shown in Figure 4-82. Alternatively, type a different port number.

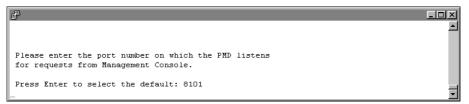


Figure 4-82 Specifying the port number for the PMD to listen for requests from Management Console

36 Press Enter to accept the hostname or enter the IP address of the machine that Management Console uses to contact iServer, as shown in Figure 4-83. Alternatively, type a different IP address.

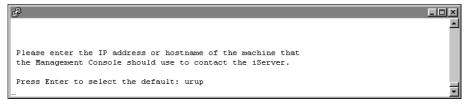


Figure 4-83 Specifying the hostname that Management Console uses to contact iServer

37 Press Enter to accept the default port number, 8000, on which iServer listens for requests from Management Console, as shown in Figure 4-84. Alternatively, type a different port number.

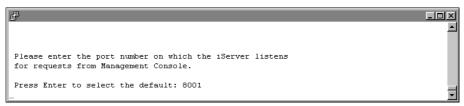


Figure 4-84 Specifying the port number on which iServer listens for requests from Management Console

38 Press Enter to accept the name of the default Encyclopedia volume to use with Management Console, as shown in Figure 4-85. Alternatively, type a different name for the Encyclopedia volume.

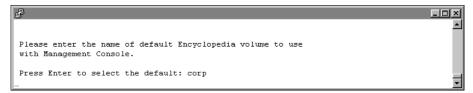


Figure 4-85 Specifying the name of the default Encyclopedia volume

39 Press Enter to accept the default name, acadmin, for the HTTP server context root for Management Console configuration, as shown in Figure 4-86. Alternatively, type a different name.



Figure 4-86 Specifying the name of the HTTP server context root

40 Press Enter to accept the default HTTP port number, 8900, on which the application container listens to requests, as shown in Figure 4-87. Alternatively, choose a different port.

You connect to the port from your browser when accessing various features of iServer.

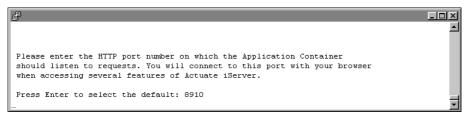


Figure 4-87 Specifying the application container listening port number

41 Review the settings, as shown in Figure 4-88, then specify whether you accept the settings. Press Enter to accept the default, y for yes. Alternatively, type n for no, or q to quit.

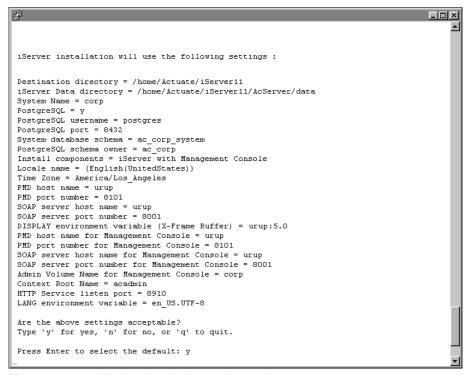


Figure 4-88 Reviewing the installation settings

42 The installation program installs iServer, displaying an indicator that shows the progress of the installation, as shown in Figure 4-89.

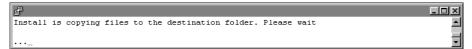


Figure 4-89 Viewing iServer installation progress

43 At the end of the installation, the program asks if you want to start iServer. Accept the default, y for yes, to start iServer, as shown in Figure 4-90.

```
Please type 'y' if you wish to start the iServer right away.

Press Enter to select the default: y
```

Figure 4-90 Specifying whether to start iServer

44 When the installation program finishes, it provides additional information about localization, logging in using an account with root permissions to start iServer, and installing online help and manuals, as shown in Figure 4-91.

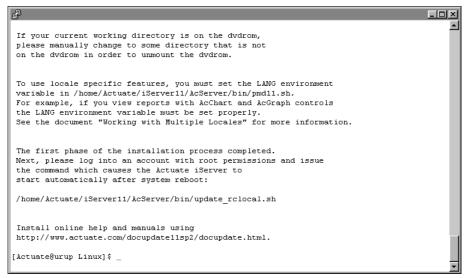


Figure 4-91 Viewing information about localization, logging in, and installing online help

Performing a manual side-by-side migration

The following section describes how to perform a manual migration of a single Encyclopedia volume in a side-by-side installation. In a side-by-side installation, the administrator installs a new BIRT iServer Release 11 in a path separate from the earlier release.

The administrator manually copies the contents of the old encyc directory, containing the Encyclopedia volume data, to a new BIRT iServer Release 11 Encyclopedia volume folder. Next, the administrator migrates the Encyclopedia volume schema and metadata from the earlier release to the new BIRT iServer Release 11 in two steps, using the Squirrel Data Exporter and Encyclopedia Data Store Administrator utilities. The administrator then creates a new volume in Configuration Console for the migrated volume.

Alternatively, iServer supports a manual upgrade to an Oracle RDBMS for storing Encyclopedia volume metadata. For more information on installing an iServer that uses an Oracle RDMBS, see "Installing an Encyclopedia volume that uses an alternative database," in Chapter 3, "Installing BIRT iServer using an alternative database."

The following procedure describes how to migrate an Encyclopedia volume to BIRT iServer Release 11 in a side-by-side installation.

How to perform a manual export of an Encyclopedia volume in a side-by-side installation

To migrate an Encyclopedia volume from an earlier iServer release to BIRT iServer Release 11, you must first export this release to a staging area using the Squirrel Data Exporter utility. To export the earlier release, perform the following tasks:

- **1** In a web browser, type:
 - http://localhost:8910/acadmin/config
- **2** Log into the BIRT iServer Release 11 Configuration Console as Administrator.
- **3** If you have not migrated a volume from an earlier release to BIRT iServer Release 11 yet, you must first delete the default partition that the installation program creates. If you have already performed this step, skip to step 4. Otherwise, perform the following tasks:
 - Choose Advanced view.
 - 2 From the side menu, choose Partitions. On Partitions, point to the arrow next to DefaultPartition and choose Delete, as shown in Figure 4-92.

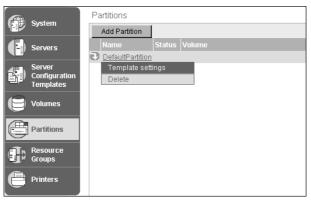


Figure 4-92 Deleting DefaultPartition

- **4** Create a partition on BIRT iServer Release 11 for the volume that you are going to migrate from the previous iServer release. To create a new partition, perform the following tasks:
 - 1 In the operating system, create a folder for a new partition in AC_DATA_HOME, which points to the location of the iServer data specified during the BIRT iServer Release 11 installation.
 - 2 Log in to Configuration Console.
 - 3 Choose Advanced view.
 - 4 From the side menu, choose Partitions, then choose Add Partition.
 - In Partition name, type the name of the earlier iServer release partition that specifies the path to the volume that you want to migrate. For example, if the name of the Encyclopedia volume partition on the earlier iServer release is ac_corp_partition, type that name in Partition name, as shown in Figure 4-93.



Figure 4-93 Creating a partition for a migrated volume

- 6 In Partition Path, type the path to the iServer Release 11 Encyclopedia volume folder, as shown in Figure 4-93. This path does not need to match the partition path to the same volume on the earlier iServer release. Choose OK.
- **5** Copy the file, filetype, and status folders from the old Encyclopedia volume folder to the iServer Release 11 Encyclopedia volume folder. For example, if you want to migrate the default volume from release 10SP1, the location of these folders is AC_SERVER_HOME/encyc. The default AC_SERVER_HOME path in release 10SP1 is /home/Actuate/AcServer.
- **6** In this step, create a new schema to use to create a new volume. In the Advanced view of Configuration Console, from the side menu, choose Volumes.

On Volumes, point to the icon next to Default ActuatePostgreSQL MetadataDatabase and choose Add volume schema, as shown in Figure 4-94.

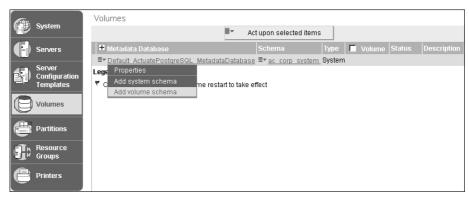


Figure 4-94 Choosing to add a new schema

On Volumes—New Schema, perform the following tasks:

- In Schema name, type a name for the schema. Restrict the schema name to alphanumeric and underscore characters with an initial alphabetic character in the pattern [a-z][a-z 0-9]*. Do not use a hyphen.
- 2 In Database schema name, type a name for the Database schema. The name must be less than 30 characters. Observe the same naming restrictions for this schema as the volume schema name.
- 3 In Database schema password, type a new password.
- 4 In Database schema password confirm, re-type the new password.
- 5 In Database superuser, type the database superuser name. For the PostgreSQL RDBMS that installs with iServer by default, the PostgreSQL superuser name is postgres.

6 In Database superuser password, type the superuser password. This password is the same password that the installer provides when installing iServer. Choose OK.

Volumes—New Schema appears as shown in Figure 4-95.

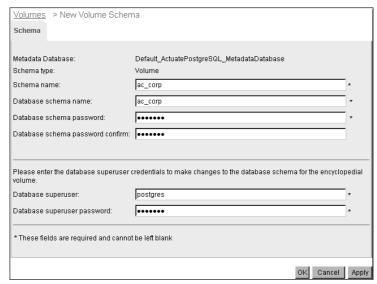


Figure 4-95 Creating a new schema

The new schema appears in the list of schemas on Volumes, as shown in Figure 4-96.

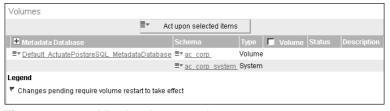


Figure 4-96 Viewing the new schema

- **7** Shut down the earlier iServer release by performing the following tasks:
 - 1 In a web browser type:

http://localhost:8900/acadmin/config

- 2 Log into Configuration Console as Administrator.
- 3 Choose Advanced view.
- 4 From the side menu, choose System. In System—Status, choose Stop to shut down iServer.

Make sure the earlier iServer is offline before performing the next operation, as shown in Figure 4-97.



Figure 4-97 iServer is offline

8 Add the following string to the PATH variable on your machine:

```
<AC SERVER HOME>/bin
```

In this instance, AC_SERVER_HOME refers to the release 11 AC_SERVER _HOME. For example, using the default value for AC_SERVER_HOME, add:

/home/Actuate/iServer11/AcServer/bin

- **9** Run the Squirrel Data Exporter by performing the following tasks:
 - 1 Navigate to AC_SERVER_HOME/bin.
 - 2 Create a properties file named SquirrelDataExporter.properties. You pass this file to the Squirrel Data Exporter utility when you execute it. Use the following example to create SquirrelDataExporter.properties:

```
AC SERVER HOME = /home/Actuate/iServer11/AcServer
SQUIRREL DATA HOME = /home/Actuate/AcServer/ac corp partition
SQUIRREL EXPORT FOLDER = /home/Actuate/SquirrelData/ac corp
SQUIRREL EXPORT FORMAT = PostgreSQL
NEW SCHEMA NAME = ac corp
NEW VOLUME NAME = corp
```

See Table 4-1 for descriptions of the required Squirrel Data Exporter properties. See Table 4-2 for descriptions of the optional Squirrel Data Exporter properties. See "Specifying Squirrel Data Exporter properties" and "Specifying Encyclopedia Data Store Administrator properties" for additional notes on property files.

10 Run the export_squirrel_data.sh file using the following command line syntax:

```
sh ./export_squirrel_data.sh SquirrelDataExporter.properties
```

Alternatively, you can execute the utility by running the upgrdeds.sh script, using the following command-line syntax:

```
sh ./exportsd.sh SquirrelDataExporter.properties
```

The batch file performs the following operations, as shown in Listing 4-1.

 Checks to see if the administrator submitted a property file on the command line when running the script

- If the administrator does not submit an argument, the script echoes a usage statement that describes the command-line syntax
- Calls the set_tools_environment.sh script, which sets the environment variables
- Executes the Squirrel Data Exporter utility using the name of the properties file as an argument

Listing 4-1 export_squirrel_data.sh

```
#!/bin/sh
if [ "x$1" = "x" ]; then
  echo "Usage: export squirrel data.sh <properties file name>"
  exit 1
fi
# Set up environment variables
. `dirname $0`/set tools environment.sh
# Export Squirrel data
java com.actuate.iserver.encyclopedia.datastore.admin
  .SquirrelDataExporter "$PROPERTY FILE"
```

How to import an Encyclopedia volume in a side-by-side installation

To import an Encyclopedia volume from an earlier iServer release to BIRT iServer Release 11 from the staging area, you use the Encyclopedia Data Store Administrator utility. To migrate the volume, perform the following tasks:

- 1 Run the Encyclopedia Data Store Administrator by performing the following tasks:
 - 1 In AC_SERVER_HOME/bin, create a properties file named VolumeImport.properties. You pass this file to the Encyclopedia Data Store Administrator utility when you execute it. Use the following example to create VolumeImport.properties:

```
AC SERVER HOME = /home/Actuate/iServer11/AcServer
DATABASE TYPE = PostgreSQL
DATABASE NAME = iserver
DATABASE HOST = localhost
DATABASE PORT = 8432
SUPERUSER = postgres
SUPERUSER PASSWORD = <your superuser password>
SCHEMA NAME = ac corp
SCHEMA PASSWORD = <your schema password>
IMPORT DATA = true
DATA IMPORT FOLDER = /home/Actuate/SquirrelData/ac corp
```

See Table 4-3 for descriptions of the required Encyclopedia Data Store Administrator properties. See Table 4-4 for descriptions of the optional Encyclopedia Data Store Administrator properties. See "Specifying Squirrel Data Exporter properties" and "Specifying Encyclopedia Data Store Administrator properties" for additional notes on property files.

2 Run the administrate_encyclopedia_data_store.sh file using the following command line syntax:

```
sh ./administrate encyclopedia data store.sh VolumeImport
.properties
```

The batch file performs the following operations, as shown in Listing 4-2.

- Checks to see if the administrator submitted a property file on the command line when running the script
- If the administrator does not submit an argument, the script echoes a usage statement that describes the command-line syntax
- Calls the set_tools_environment.sh script, which sets the environment variables
- Executes the Encyclopedia Data Store Administrator utility using the name of the properties file as an argument

Listing 4-2 administrate_encyclopedia_data_store.sh

```
#!/bin/sh
if [ "x$1" = "x" ]; then
  echo "Usage: administrate encyclopedia data store.sh
  cproperties file name>"
  exit 1
fi
# Set up environment variables
. `dirname $0`/set_tools_environment.sh
# Administrate data store
java com.actuate.iserver.encyclopedia.datastore.admin
   .EncyclopediaDataStoreAdministrator "$PROPERTY FILE"
```

- **2** Create a new volume for the migrated volume by performing the following tasks:
 - 1 Log in to Configuration Console and choose Advanced view.
 - **2** From the side menu, choose Volumes.
 - 3 On Volumes, point to the icon next to a schema and choose Add Volume, as shown in Figure 4-98.

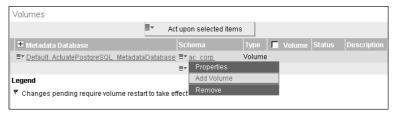


Figure 4-98 Choosing to add a volume

- 4 On New Volume—General, perform the following tasks:
 - 1 In Volume name, type the name you specified for NEW_VOLUME_NAME in SquirrelDataExporter.properties.
 - 2 In Primary partition, specify the partition you created previously, as shown in Figure 4-99.

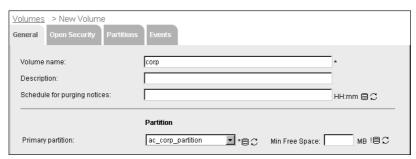


Figure 4-99 Specifying volume and partition name

Choose Partitions.

- 5 On New Volume—Partitions, perform the following tasks:
 - 1 In Available partitions, select the partition that you specified in the previous step, then move it to Selected by choosing the right arrow.
 - 2 In Selected partitions, select the partition. Choose Start, as shown in Figure 4-100.

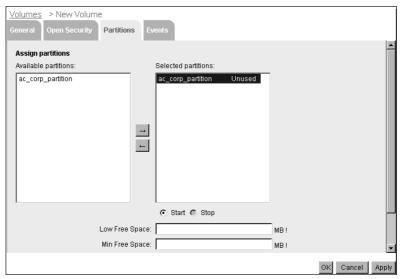


Figure 4-100 Assigning a partition

Choose OK.

3 On Volumes, point to the icon next to the new volume name and choose Take online, as shown in Figure 4-101.

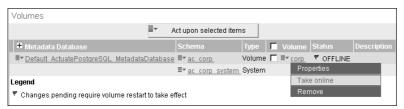


Figure 4-101 Viewing the new volume

The new volume comes online, as shown in Figure 4-102.

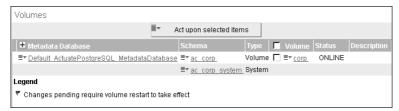


Figure 4-102 Viewing the new volume after it comes online

4 Log on to Management Console. In Files and Folders, the data from your previous release appears.

5 If you are satisfied that the contents of the migrated volume are correct and complete, delete the folder specified in SQUIRREL_EXPORT_FOLDER property in the SquirrelDataExporter.properties file.

Specifying Squirrel Data Exporter properties

Table 4-1 describes the required Squirrel Data Exporter properties used to configure the environment for a manual export operation.

Table 4-1 Required Squirrel Data Exporter properties

Parameter	Description
AC_SERVER_HOME	Points to the location of the iServer binaries, which you specify during the BIRT iServer Release 11 installation.
NEW_SCHEMA_NAME	The name of the target schema into which the Squirrel Data Exporter loads data. Restrict the schema name to alphanumeric and underscore characters with an initial alphabetic character in the pattern [a-z][a-z 0-9]*. Do not use a hyphen.
NEW_VOLUME_NAME	The name of the migrated volume on BIRT iServer Release 11. This name does not need to match the name this volume had on your earlier iServer release.
SQUIRREL_DATA _HOME	Absolute path to the folder on your earlier iServer release containing the Encyclopedia volume you want to migrate.
SQUIRREL_EXPORT _FOLDER	Absolute path to the folder that Squirrel Data Exporter creates, containing the volume data from SQUIRREL_DATA_HOME, which Encyclopedia Data Store Administrator loads into the new volume on BIRT iServer Release 11.
SQUIRREL_EXPORT _FORMAT	Format of exported data. Specify Oracle or PostgreSQL.

Table 4-2 describes the optional Squirrel Data Exporter properties to specify in a SquirrelDataExporter.properties file for performing logging.

Table 4-2 Optional Squirrel Data Exporter properties

Property	Value	Default Value
FILE_LOG_LEVEL	The minimum logging level for messages sent to the log file. This parameter only works for AcLogger. Supported values are CONFIG, FINE, FINER, and FINEST.	CONFIG
LOG_FILE_COUNT	Maximum number of log files to create before starting to overwrite previous log files. Must be a valid integer. Data Store Administrator tools do not generate large logs.	5
LOG_FILE_SIZE	Approximate maximum size of log files, in byte, before a new log file starts. Must be a valid integer. Data Store Administrator tools do not generate large logs.	10,000,000
LOG_FOLDER	Absolute path to the log folder.	{AC_DATA_HOME/ server/log.

Specifying Encyclopedia Data Store Administrator properties

Table 4-3 describes the required Encyclopedia Data Store Administrator properties used to configure the environment for a manual migration operation.

Table 4-3 Required Encyclopedia Data Store Administrator properties

Parameter	Description
AC_SERVER_HOME	Points to the location of the iServer binaries, which you specify during the BIRT iServer Release 11 installation.
DATABASE_TYPE	Type of supported RDBMS that contains the data store: PostgreSQL or Oracle
LOG_FOLDER	Absolute path to the log folder
SCHEMA_FILE_NAME	Base name of the file without the extension that contains the meta-schema definition

Table 4-3 Required Encyclopedia Data Store Administrator properties

Parameter	Description
SCRIPT_HOME	Absolute path to the root of the folder hierarchy that contains the scripts and the meta-schema definition

Table 4-4 describes optional Encyclopedia Data Store Administrator properties. The properties used depend on the type of operation performed and the installation environment.

Optional Encyclopedia Data Store Administrator properties Table 4-4

Description	Default Value	Supported Databases
Application user ID for connecting to the database for normal operations. Must be a legal SQL identifier. Typically iserver. This parameter is required when creating or populating a schema. Restrict the iServer application user name to alphanumeric and underscore characters with an initial alphabetic character in the pattern [a-z][a-z 0-9]*. Do not use a hyphen.		All
Application user password for connecting to the database for normal operations. Required when creating a schema. The password is not encrypted.		All
Specifies the schema definition in acserverconfig.xml. Required when USE_SERVER_CONFIG _FILE is true. The schema name can be different from the database schema name.	False	All
	Application user ID for connecting to the database for normal operations. Must be a legal SQL identifier. Typically iserver. This parameter is required when creating or populating a schema. Restrict the iServer application user name to alphanumeric and underscore characters with an initial alphabetic character in the pattern [a-z][a-z 0-9]*. Do not use a hyphen. Application user password for connecting to the database for normal operations. Required when creating a schema. The password is not encrypted. Specifies the schema definition in acserverconfig.xml. Required when USE_SERVER_CONFIG_FILE is true. The schema name can be different from the database	Application user ID for connecting to the database for normal operations. Must be a legal SQL identifier. Typically iserver. This parameter is required when creating or populating a schema. Restrict the iServer application user name to alphanumeric and underscore characters with an initial alphabetic character in the pattern [a-z][a-z 0-9]*. Do not use a hyphen. Application user password for connecting to the database for normal operations. Required when creating a schema. The password is not encrypted. Specifies the schema definition in acserverconfig.xml. Required when USE_SERVER_CONFIG_FILE is true. The schema name can be different from the database

(continues)

Table 4-4 Optional Encyclopedia Data Store Administrator properties (continued)

Parameter	Description	Default Value	Supported Databases
CREATE_SCHEMA	Set to true to create a new schema, false to use an existing schema. Specifies whether to create a new Encyclopedia schema. PostgreSQL only, not supported for Oracle. Creating a schema automatically creates the schema owner and application user if necessary.	False	PostgreSQL
DATA_EXPORT _FOLDER	Absolute path to the folder to which data is exported. This parameter is required if EXPORT_DATA is true. Folder is on the database machine.		All
DATA_EXPORT _FORMAT	Format of exported data. Specify 'Oracle' or 'PostgreSQL'.	{DATABASE _TYPE}	All
DATA_IMPORT _FOLDER	Absolute path to the folder from which data is imported. This parameter is required if IMPORT_DATA is true. For PostgreSQL, the data must be on the database server.		PostgreSQL
DATA_IMPORT _FORMAT	Format of imported data. Specify 'Oracle' or 'PostgreSQL'.	{DATABASE _TYPE}	PostgreSQL
DATABASE_HOST	Hostname or IP address of the machine hosting the database. This value is required for PostgreSQL. Required for Oracle if not using TNS.		All
DATABASE _INSTANCE	RDBMS instance that manages the database.		SQL Server
DATABASE_NAME	Database name for PostgreSQL. For Oracle not using TNS, the database service name. For Oracle using TNS, the TNS net service name.		All

Table 4-4 Optional Encyclopedia Data Store Administrator properties (continued)

Parameter	Description	Default Value	Supported Databases
DATABASE_PORT	The port that the database server uses. This value is required for PostgreSQL. Required for Oracle if not using TNS.		All
DATABASE_TYPE	Type of relational database system that contains the data store. Actuate Release 11 currently supports PostgreSQL and Oracle.		All
DELETE_ALL_DATA	Set to true to delete all data from the data store. Does not delete data from other tables in the schema.	False	All
DELETE_DATA	Set to true to delete filtered data from the data store. This parameter only works when a filter value is available.	False	All
DEPOPULATE _SCHEMA	Set to true to delete data store elements such as tables, views, stored functions, and procedures from the schema. Does not remove any other objects in the schema.	False	All
DROP_SCHEMA	Set to true to delete the schema.	False	PostgreSQL
EXPORT_ALL_DATA	Set to true to export all data from the data store.	False	All
EXPORT_DATA	Set to true to export filtered data from the data store. This parameter only works when a filter value is available.	False	All
FILE_LOG_LEVEL	The minimum logging level for messages sent to the log file. This parameter only works for AcLogger, and is a standard JUL Level name. Supported values are CONFIG, FINE, FINER, and FINEST.	CONFIG	All

(continues)

Table 4-4 Optional Encyclopedia Data Store Administrator properties (continued)

Parameter	Description	Default Value	Supported Databases
IMPORT_DATA	Set to true to import data into the data store.	False	All
INITIALIZE_DATA	Set to true to initialize the data in the data store, using the data initialization script.	False	All
LOG_FILE_COUNT	Maximum number of log files to create before starting to overwrite previous log files. Must be a valid integer. Data Store Administrator tools do not generate large logs.	5	All
LOG_FILE_NAME	The name of the log file. Do not add a file extension. The extension is set to .log. A unique number is appended automatically to the file name to prevent overwriting previous logs.	Encyclopedia DataStore Administrator <number>.log</number>	
LOG_FILE_SIZE	Approximate maximum size of log files, in byte, before a new log file starts. Must be a valid integer. Data Store Administrator tools do not generate large logs.	10,000,000	All
LOG_FOLDER	The full path of folder to write logs.	AC_DATA _HOME/ server/log.	
NEW_SCHEMA_NAME	Name of the new schema to be created, or the name of the target schema for data export. This name is required if {SCHEMA_NAME} is not present. Restrict schema name to alphanumeric and underscore characters with an initial alphabetic character in the pattern [a-z][a-z 0-9]*. Do not use a hyphen.	{SCHEMA _NAME}	All
NEW_SCHEMA _PASSWORD	Password of the database superuser. This parameter is required if {NEW_SCHEMA_NAME} is present.	{NEW _SCHEMA _PASSWORD}	All

Table 4-4 Optional Encyclopedia Data Store Administrator properties (continued)

Description	Default Value	Supported Databases
Name of the new volume to be created, or the name of the target schema for data export. Do not use a hyphen in a volume name.	{NEW _VOLUME _NAME}	All
Absolute path to the Oracle TNS names file. This path can be used instead of {DATABASE_HOST} and {DATABASE_PORT} to generate a JDBC URL.		Oracle
Set to true to populate the schema with data store elements such as tables, views, stored functions, and procedures. Set to false if the data store elements already exist. Use Configuration Console to populate schema when possible. Schema automatically populates when defined in Configuration Console.	{CREATE _SCHEMA}	All
Set to true to create the schema objects necessary for data to be loaded. Set to false to prevent this schema object creation. Imports data without building indexes for fast load.	{POPULATE _SCHEMA}	All
Set to true to create schema objects phase one does not create. Set to false to prevent this schema object creation. Builds indexes and other ancillary structures in database.	{POPULATE _SCHEMA}	All
	Name of the new volume to be created, or the name of the target schema for data export. Do not use a hyphen in a volume name. Absolute path to the Oracle TNS names file. This path can be used instead of {DATABASE_HOST} and {DATABASE_PORT} to generate a JDBC URL. Set to true to populate the schema with data store elements such as tables, views, stored functions, and procedures. Set to false if the data store elements already exist. Use Configuration Console to populate schema when possible. Schema automatically populates when defined in Configuration Console. Set to true to create the schema objects necessary for data to be loaded. Set to false to prevent this schema object creation. Imports data without building indexes for fast load. Set to true to create schema objects phase one does not create. Set to false to prevent this schema object creation. Builds indexes and other ancillary structures in	Name of the new volume to be created, or the name of the target schema for data export. Do not use a hyphen in a volume name. Absolute path to the Oracle TNS names file. This path can be used instead of {DATABASE_HOST} and {DATABASE_PORT} to generate a JDBC URL. Set to true to populate the schema with data store elements such as tables, views, stored functions, and procedures. Set to false if the data store elements already exist. Use Configuration Console to populate schema when possible. Schema automatically populates when defined in Configuration Console. Set to true to create the schema objects necessary for data to be loaded. Set to false to prevent this schema object creation. Imports data without building indexes for fast load. Set to true to create schema objects phase one does not create. Set to false to prevent this schema object creation. Builds indexes and other ancillary structures in

(continues)

Table 4-4 Optional Encyclopedia Data Store Administrator properties (continued)

Parameter	Description	Default Value	Supported Databases
SCHEMA_NAME	Name of the existing schema. Must be a legal SQL identifier. This parameter is required when performing operations on an existing schema. Restrict schema name to alphanumeric and underscore characters with an initial alphabetic character in the pattern [a-z][a-z 0-9]*. Do not use a hyphen.	{NEW _SCHEMA _NAME}	All
SCHEMA_PASSWORD	Name of the existing schema. Must be a legal SQL identifier. This parameter is required when performing operations on an existing schema.	{SCHEMA _NAME}	All
SUPERUSER	User ID of the database superuser. This parameter is required if CREATE_SCHEMA is true or when importing data into PostgreSQL Typically postgres in a PostgreSQL database.		PostgreSQL
SUPERUSER _PASSWORD	Password of the database superuser. This parameter is required if CREATE_SCHEMA is true or when importing data into PostgreSQL		PostgreSQL
SYSTEM_DATABASE _NAME	Name of the system database.		PostgreSQL
TABLESPACE_NAME	Name of the application tablespace.		PostgreSQL
TABLESPACE _LOCATION	Absolute path to the application tablespace folder.		PostgreSQL
TIME_ZONE	Local time zone for installation.		All
USE_SERVER_CONFIG _FILE	Reads connection information from acserverconfig.xml. Password is not picked up from acserverconfig.xml. Default value is false.	False	All

Optional Encyclopedia Data Store Administrator properties (continued) Table 4-4

Parameter	Description	Default Value	Supported Databases
VOLUME_NAME	Name of the volume or target schema for data import.	{VOLUME _NAME}	All

Specifying System Data Store Administrator properties

The system data store is a separate schema in the database that stores iServer metadata. The system schema is a required element for any iServer installation. In a cluster, the nodes share the system schema metadata and use this information to communicate and coordinate processing.

In Release 11, it is not necessary to back up the iServer system schema, although future versions may require this procedure to protect critical system metadata. If a system schema becomes corrupted or is accidentally deleted, the administrator can use the System Data Store Administrator utility to create a new schema. You can define a new system schema in Configuration Console or edit acserverconfig.xml to refer to the current system schema.

Use the System Data Store Administrator utility to perform the following tasks:

- Create or delete a schema.
- Populate or depopulate a schema.
- Import or export data.

Before running the System Data Store Administrator utility, add the following string to the PATH variable on your machine:

```
<AC SERVER HOME>/bin
```

In this instance, AC_SERVER_HOME refers to the release 11 AC_SERVER _HOME. For example, using the default value for AC_SERVER_HOME, add:

/home/Actuate/iServer11/AcServer/bin

To run the System Data Store Administrator utility, perform the following tasks:

- **1** Navigate to AC_SERVER_HOME/bin.
- **2** Create a properties file containing the property definitions necessary to perform an operation, such as creating and populating a system schema, described in "Creating and Populating a System Schema," later in this book. You pass this file to the System Data Store utility when you execute it.
- **3** Run the administrate_system_data_store.sh file using the following command line syntax:

```
sh ./administrate system data store.sh systemdatastore
  .properties
```

Alternatively, you can execute the utility by running the upgrdsds.sh script, using the following command-line syntax:

```
sh ./adminsds systemdatastore.properties
```

The batch file performs the following operations, as shown in Listing 4-3.

- Checks to see if the administrator submitted a property file on the command line when running the script
- If the administrator does not submit an argument, the script echoes a usage statement that describes the command-line syntax
- Calls the set_tools_environment.sh script, which sets the environment variables
- Executes the System Data Store Administrator utility using the name of the properties file as an argument

Listing 4-3 administrate_system_data_store.sh

```
#!/bin/sh
if [ "x$1" = "x" ]; then
  echo "Usage: administrate system data store.sh  properties
  file name>"
  exit 1
fi
# Set up environment variables
. `dirname $0`/set tools environment.sh
# Administrate data store
java com.actuate.iserver.system.datastore.admin
   .SystemDataStoreAdministrator "$PROPERTY FILE"
```

The SystemDataStoreAdministrator class has the same parent class as the Encyclopedia Data Store Administrator and uses the same property settings. System Data Store Administrator properties include the following categories:

- Properties that specify details of the iServer installation environment, such as AC SERVER HOME and AC DATA HOME
- Database properties specify the RDBMS type and JDBC connection details, such as the schema, application user, and superuser names and passwords
- Schema operation properties that specify an action to perform, such as create, populate, or delete a schema
- Logging properties that control messages sent to the console and log files

 Engineering properties used by Actuate Support or Professional Services to assist with diagnosing or resolving specific issues

Refer to the required and optional properties tables in "Specifying Encyclopedia Data Store Administrator properties," earlier in this chapter for detailed information about these properties.

Performing operations using System Data Store Administrator utility

The System Data Store Administrator utility supports a range of import and export operations in the BIRT iServer environment. The following sections describe a mix of operational scenarios that an administrator can perform using this utility.

Creating and Populating a System Schema

This operation is only supported for PostgreSQL. Creating and populating a schema requires superuser privileges. The System Data Store Administrator utility creates the database and users if these items do not already exist.

Configure the properties as shown in the following example:

```
AC_SERVER_HOME = /home/Actuate/iServer11/AcServer
DATABASE TYPE = PostgreSQL
DATABASE NAME = iserver
DATABASE HOST = localhost
DATABASE PORT = 8432
SYSTEM DATABASE NAME = postgres
SUPERUSER = postgres
APPLICATION USER = iserver
CREATE SCHEMA = true
INITIALIZE DATA = true
```

Performing operations using Encyclopedia Data Store Administrator utility

The Encyclopedia Data Store Administrator utility supports a wide range of import and export operations in the BIRT iServer environment. The following sections describe a mix of operational scenarios that an administrator can perform using this utility.

Importing One or More Volumes into a New Schema

This operation is only supported for PostgreSQL. NEW_SCHEMA_NAME does not need to match the schema name from which the Squirrel Data Exporter utility exported the data. Do not change the volume names, since these names are defined in the exported data.

Creating a schema requires superuser privileges. The Encyclopedia Data Store Administrator utility creates the database and users if these items do not already exist.

Configure these properties as shown in the following example:

```
AC SERVER HOME = /home/Actuate/iServer11/AcServer
DATABASE TYPE = PostgreSQL
SYSTEM DATABASE NAME = postgres
SUPERUSER = postgres
SUPERUSER PASSWORD = <your superuser password>
DATABASE NAME = iserver
DATABASE HOST = localhost
DATABASE PORT = 8432
CREATE SCHEMA = true
NEW SCHEMA NAME =   cprovide a name>
APPLICATION USER = iserver
IMPORT DATA = true
DATA IMPORT FOLDER = {SQUIRREL EXPORT FOLDER}
```

Importing One or More Volumes into a Populated Schema

This operation is only supported for PostgreSQL. Typically, you perform this operation to import an additional volume into a shared schema that already contains one or more volumes.

SCHEMA NAME does not need to match the schema name from which the Squirrel Data Exporter utility exported the data. Do not change the volume names, because these names are defined in the exported data. Importing data into PostgreSQL requires superuser privileges.

Configure these properties as shown in the following example:

```
AC SERVER HOME = /home/Actuate/iServer11/AcServer
DATABASE TYPE = PostgreSQL
SUPERUSER = postgres
SUPERUSER PASSWORD = <your superuser password>
DATABASE NAME = iserver
DATABASE HOST = localhost
DATABASE PORT = 8432
```

```
IMPORT DATA = true
DATA IMPORT FOLDER = {SQUIRREL EXPORT FOLDER}
```

Exporting All Volumes from a Schema

Squirrel Data Exporter generates bulk load script files in the same folder as the exported data. You can omit NEW_SCHEMA_NAME if it is the same as SCHEMA_NAME.

Configure these properties as shown in the following example:

```
AC SERVER HOME = /home/Actuate/iServer11/AcServer
DATABASE TYPE = PostgreSQL
DATABASE NAME = iserver
DATABASE HOST = localhost
DATABASE PORT = 8432
SCHEMA NAME =   cprovide a name>
SCHEMA PASSWORD =   cprovide a password>
EXPORT ALL DATA = true
NEW SCHEMA NAME =      rovide a name>
DATA EXPORT FOLDER = home/Projects/DataStores/Data
DATA EXPORT FORMAT = Oracle
```

Exporting A Single Volume from a Schema

Squirrel Data Exporter generates bulk load script files in the same folder as the exported data. You can omit NEW SCHEMA NAME if it is the same as SCHEMA_NAME. You can omit NEW_VOLUME_NAME if it is the same as VOLUME NAME.

Configure these properties as shown in the following example:

```
AC SERVER HOME = /home/Actuate/iServer11/AcServer
DATABASE TYPE = PostgreSQL
DATABASE NAME = iserver
DATABASE HOST = localhost
DATABASE PORT = 8432
SCHEMA NAME =   cprovide a name>
EXPORT DATA = true
NEW_SCHEMA_NAME =   rovide a name>
NEW VOLUME NAME =   cprovide a name>
DATA EXPORT FOLDER = home/Projects/DataStores/Data
DATA EXPORT FORMAT = Oracle
```

Deleting All Volumes from a Schema

Perform this operation to remove all volumes from the schema that SCHEMA_NAME specifies.

Configure these properties as shown in the following example:

```
AC SERVER HOME = /home/Actuate/iServer11/AcServer
DATABASE TYPE = PostgreSQL
DATABASE NAME = iserver
DATABASE HOST = localhost
DATABASE PORT = 8432
SCHEMA NAME =   cprovide a name>
SCHEMA PASSWORD =   cprovide a password>
DELETE ALL DATA = true
```

Deleting a Single Volume from a Schema

Perform this operation to remove the volume that VOLUME NAME specifies from the schema that SCHEMA_NAME specifies.

Configure these properties as shown in the following example:

```
AC SERVER HOME = /home/Actuate/iServer11/AcServer
DATABASE TYPE = PostgreSQL
DATABASE NAME = iserver
DATABASE HOST = localhost
DATABASE PORT = 8432
SCHEMA PASSWORD =   cprovide a password>
DELETE DATA = true
```

Creating a New Volume in an Empty Schema

iServer performs this operation when you create a new volume in Configuration Console and bring the volume online. When creating a new volume using Encyclopedia Data Store Administrator, set INITIALIZE DATA to true and specify a name for NEW_VOLUME_NAME.

Setting POPULATE SCHEMA to true to have Encyclopedia Data Store Administrator create schema elements, such as tables and indexes in an empty schema. The schema owner and application user must already exist and have appropriate privileges.

Configure these properties as shown in the following example:

```
AC SERVER HOME = /home/Actuate/iServer11/AcServer
DATABASE TYPE = Oracle
DATABASE NAME = xe
DATABASE HOST = localhost
```

```
DATABASE PORT = 1521
SCHEMA NAME =   cprovide a name>
SCHEMA PASSWORD =   cprovide a password>
APPLICATION USER = iserver
POPULATE SCHEMA = true
INITIALIZE DATA = true
NEW VOLUME NAME =   rovide a name>
TIME ZONE = America/Los Angeles
```

Creating a New Volume in a Populated Schema

iServer performs this operation when you create a new volume in Configuration Console and bring the volume online. Typically, you perform this operation to add a volume to a shared schema that already contains one or more volumes.

When creating a new volume using Encyclopedia Data Store Administrator, set INITIALIZE_DATA to true and specify a name for NEW_VOLUME_NAME. The schema owner and application user must already exist and have appropriate privileges.

Configure these properties as shown in the following example:

```
AC SERVER HOME = /home/Actuate/iServer11/AcServer
DATABASE TYPE = Oracle
DATABASE NAME = xe
DATABASE HOST = localhost
DATABASE PORT = 1521
SCHEMA NAME = cprovide a name>
APPLICATION USER = iserver
INITIALIZE DATA = true
NEW VOLUME NAME =   rovide a name>
TIME ZONE = America/Los Angeles
```

Creating a New Volume in a New Schema

This operation is only supported for PostgreSQL. iServer typically performs this operation when you create a new volume in Configuration Console and bring the volume online.

Creating a schema requires superuser privileges. Encyclopedia Data Store Administrator creates the database and users if these items do not already exist.

Configure these properties as shown in the following example:

```
AC SERVER HOME = /home/Actuate/iServer11/AcServer
DATABASE TYPE = PostgreSQL
DATABASE NAME = iserver
DATABASE HOST = localhost
DATABASE PORT = 8432
```

```
SYSTEM DATABASE NAME = postgres
SUPERUSER = postgres
SUPERUSER PASSWORD = <your superuser password>
CREATE SCHEMA = true
NEW SCHEMA NAME =      rovide a name>
APPLICATION USER = iserver
INITIALIZE DATA = true
TIME_ZONE = America/Los_Angeles
```

Configuring Squirrel Data Exporter and System or **Encyclopedia Data Store Administrator properties files**

When configuring Squirrel Data Exporter and System or Encyclopedia Data Store Administrator properties files, observe the following rules:

- Use / in path settings. \ is an escape character.
- Use Unicode property values. Save the property file in UTF-8 format, including the UTF-8 byte order mark (BOM).
- Use # at the start of a line to add a comment or selectively comment out properties.

When reading the property files, the utilities remove leading and trailing whitespace automatically, but preserve embedded whitespace.

Installing a **BIRT iServer cluster**

This chapter discusses the following topics:

- Installing a BIRT iServer cluster node
- Preparing to install an iServer cluster
- Performing a cluster installation using the wizard
- Finding the BIRT iServer home directory
- About the Java Development Kit

Installing a BIRT iServer cluster node

A node is a machine running an BIRT iServer instance. An iServer administrator adds a node to an iServer cluster to scale the cluster installation to necessary processing requirements.

There are two methods of adding a new node to the cluster:

- Perform an automated, custom installation, using the wizard-driven installation program
- Perform a manual installation or cloud deployment, using a prepared image of an installed iServer run-time environment

Every cluster node must have network access to the following directory and resources to join the cluster:

- The shared configuration home directory
- Cluster resources, such as printers, database systems, and disk storage systems

Each node gets its configuration from a template in acserverconfig.xml, which is located in a shared configuration home directory along with the license file, acserverlicense.xml.

The acserverconfig.xml file contains the server templates as well as other configuration parameters specifying the host names, volume names, port numbers, printers, and services used by nodes in the cluster. When the Process Management Daemon (PMD) starts up, it reads these configurations and exposes them to the process environment variable list. When a node joins a cluster, it configures itself using its template.

After deployment and configuring the appropriate environment variables in acpmdconfig.xml, the administrator launches a deployed iServer image from the command line by passing the necessary arguments or creates a script that executes the commands. Nodes with the same cluster ID, running on the same sub-net, automatically detect and join each other to form the cluster. This feature is known as elastic iServer clustering.

The cluster communicates across the network using standard HTTP/IP addressing. The cluster automatically detects the on-off status of any node. Single-point node failure does not affect the availability of other nodes.

One or more nodes in the cluster manage the request message routing. The Process Management Daemons (PMDs) located on each node coordinate processing among available iServer services based on message type to balance load across the nodes.

iServer instances running on multiple machines maintain iServer system and Encyclopedia volume metadata in databases and control access to shared volume data. The volume data can be on machines that are not running iServer, but must be shared and accessible to each iServer instance.

This loosely-coupled cluster model provides the following maintenance and performance benefits:

- Startup and shutdown of an iServer is fast because it is independent of the RDBMS that manages the Encyclopedia volume. An RDBMS can remain online when shutting down an iServer and the RDBMS is available when the iServer starts up.
- Controlling the sequence of Encyclopedia volume startup is not necessary. All volumes are either already online in the RDBMS or come online as the RDBMS starts.
- Downtime to apply a patch fix patch or a diagnostic fix for an iServer is reduced. The RDBMS, including the OOTB PostgreSQL database server, does not have to be shutdown. In an iServer cluster, the patch or diagnostic fix can be applied to one iServer node at a time.

This operational model lends itself well to grid, cloud, and other data-center types of deployments.

Actuate provides a prepared, out-of-the-box (OOTB) image of an installed iServer run-time environment for Windows. This image is available as a separate iServer distribution package. An administrator must create a customized image for Linux or UNIX manually by generating an archive of an installed iServer run-time environment.

For more information about the pre-packaged Actuate, cloud computing deployment option, see Chapter 6, "Installing BIRT iServer in a cloud," in Installing BIRT iServer for Windows. For more information about administering an installed iServer cluster, see Chapter 9, "Clustering," in Configuring BIRT iServer.

Preparing to install an iServer cluster

When you create a BIRT iServer cluster, you must install and run all cluster nodes using the same administrative user account.

Creating an account with the right privileges

Before installing iServer, create a user account with the privileges to access the relevant files and directories. Like other Linux and UNIX processes, the processes that perform BIRT iServer tasks run under a specific account.

Actuate recommends creating a dedicated user account for installing and running iServer. Having a dedicated user account isolates iServer-specific issues and events on a machine, making it easier to administer the environment.

If you exercise the same control over the operating system account for BIRT iServer that your site exercises for other system administrator and root accounts, you can maintain the same level of security. Installation of the iServer under the root account is not recommended since the PostgreSQL server must start and be maintained under an unprivileged user ID to prevent system security compromise. If installed under the root account, the default installation will be unable to set up the PostgreSQL schema and Actuate sample Encyclopedia.

About X frame buffer

Xvfb is an X Windows server that has neither a graphics card nor a physical graphics display. iServer uses the X server for font-rendering information and to generate graphics in documents. Normally, an X server requires a graphics card and physical graphics display on the BIRT iServer machine, but you can use Xvfb in place of these components.

The Xvfb software installed with iServer includes Type 1 fonts. Actuate maps these fonts to Microsoft Windows fonts for consistent graphics rendering on the various platforms.

The Xvfb software requires:

- X libraries installed on the iServer machine If you choose to install Xvfb, the installation script searches for the required libraries and displays a message if the install script cannot find the required libraries on the machine.
- Variables set to the path of the Xvfb libraries
 - XVFBDISPLAY variable in start_srvr.sh.
 - display_value in pmd11.sh.

To view and print the reports from iServer, you need to set these variables only if you install Xvfb software yourself.

The DISPLAY environment variable specifies the X Windows server used by the BIRT iServer machine. For example, if the BIRT iServer machine is running X Windows, it sets DISPLAY to the local machine:

```
# setenv DISPLAY :0.0
```

If you use a separate machine as the X Windows server, specify the machine name in the environment variable DISPLAY. The following example sets DISPLAY to use an X Windows server on a machine named Bermuda:

```
# setenv DISPLAY bermuda:0.0
```

The original source code for Xvfb is included as a component of X11R6, but not in earlier X Window system releases.

Installing X frame buffer

Actuate distributes Xvfb for the Sun and AIX operating systems. The installation and configuration of Xvfb are BIRT iServer installation options in these environments. To use Xvfb in the HP-UX operating system, you must install Xvfb before you install BIRT iServer.

About HP-UX 11i installation

Minimum hardware requirements for HP-UX 11i are a PA-RISC 2.0 processor and 1024 MB of RAM. For more information about HP-UX system requirements, see the Supported Products and Obsolescence Policy on the Actuate web site at the following URL:

http://support.actuate.com/documentation/spm

Working with large files on HP-UX-11i

Actuate works with large files, greater than two gigabytes, on all platforms. You must reconfigure the HP-UX 11i file system as a large file system for this feature to take effect. The disk where the file resides must be a local disk. Contact HP Customer Support for information about how to reconfigure the file system.

Installing Xvfb

Actuate does not provide an Xvfb library for HP-UX 11i. If you choose to use an X frame buffer configured by the BIRT iServer installation instead of using an existing X server, your machine must have the Xvfb binary installed.

How to configure X frame buffer

To configure X frame buffer after the Actuate BIRT iServer System installation, perform the following steps:

- **1** Download and install the Xvfb patch from HP.
- **2** Create a symbolic link to the X frame buffer under AC_SERVER_HOME/ xvfb/bin.
- **3** Start your Actuate BIRT iServer System.

Performing a cluster installation using the wizard

The following section describes how to install an iServer Release 11 cluster node in the Linux or UNIX operating system using a Linux system as the example.

How to install a cluster node in Linux

- 1 Insert the installation DVD, mount a DVD on your system and set your working directory to the mounted DVD directory, or download the required files.
- **2** To install the server files, execute the isinstall script:

```
sh ./isinstall.sh
```

The script displays a series of prompts. Respond to the prompts as described in the following procedures.

3 The license agreement appears, as shown in Figure 5-1.

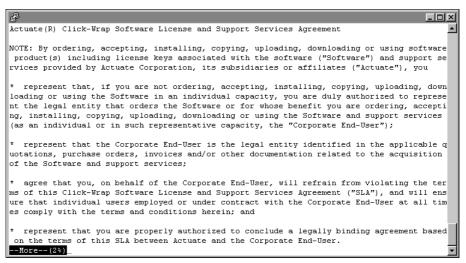


Figure 5-1 Reviewing the license agreement

4 Read the license agreement and press Enter to continue the installation. At the prompt, type y for yes if you accept the licensing terms, as shown in Figure 5-2.

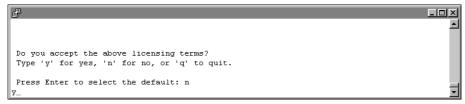


Figure 5-2 Accepting the licensing terms

5 The introduction to the installation appears, as shown in Figure 5-3.

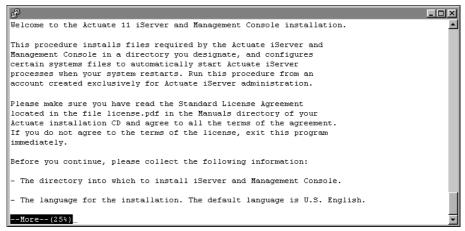


Figure 5-3 Reviewing the introductory information

6 Press Enter after reviewing the introductory information, as shown in Figure 5-4.

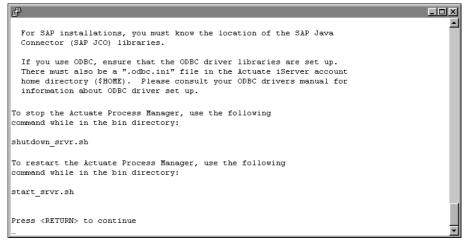


Figure 5-4 Finishing the review of introductory information

7 Press Enter to accept the default location for installation, as shown in Figure 5-5. Alternatively, type a different directory and press Enter.

The installation program creates the AcServer directory in your chosen location and installs the files.

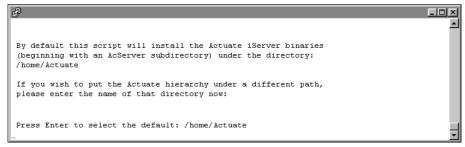


Figure 5-5 Specifying the installation directory

8 Press Enter to accept the default installation directory for data, AC_SERVER_HOME/data, for the iServer data as shown in Figure 5-6. Alternatively, choose a different directory.

iServer uses this data location to store the iServer Encyclopedia volume data, including PostgreSQL metadata, logs, and other files. The default path is AC_SERVER_HOME/data, which is referred to in the iServer documentation by the environment variable AC_DATA_HOME.

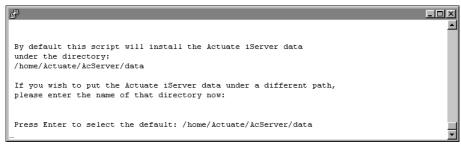


Figure 5-6 Specifying the data installation directory

9 Press Enter to accept the default option of creating the directory for data, as shown in Figure 5-7. Alternatively, type n for no, or q to quit, and press Enter.

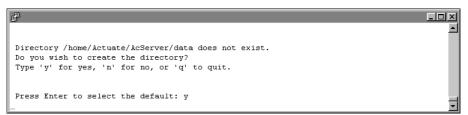


Figure 5-7 Creating the AC_DATA_HOME directory

10 The installer copies prerequisite files to the destination directory, as shown in Figure 5-8. After copying the prerequisite files, the installation continues.

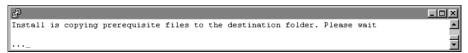


Figure 5-8 Copying prerequisite files

11 Press Enter to choose the default option, Server with Management Console, as shown in Figure 5-9. A cluster node must have access to Configuration Console. Configuration Console installs with Management Console.

```
Choose the iServer component combination you want to install:

1. Server with Management Console

2. Server only

3. Management Console only

4. Quit
Select one of the above.

Press Enter to select the default: 1
```

Figure 5-9 Choosing the components to install

12 Type 1 and press Enter to select Cluster Server for installation, as shown in Figure 5-10. Alternatively, choose a different type of iServer to install.

```
Choose the type of iServer you want to install:

1. Cluster Server

2. Stand-alone Server

3. Quit
Select one of the above.

Note: If you want to create a cluster master, you should select the Stand-alone Server opt ion

Press Enter to select the default: 2

1_
```

Figure 5-10 Specifying the type of iServer to install

13 Specify the path to the configuration home location, and press Enter, as shown in Figure 5-11.

The configuration home location is the shared directory of the cluster containing the files, acserverconfig.xml, acserverlicence.xml, and acconfigowner.lock.In a Release 11 Service Pack 3 installation, the configuration files are located in AC_DATA_HOME/config/11SP3 by default.



Figure 5-11 Specifying the configuration home location

14 If the specified location for the configuration home directory does not yet exist, you are prompted to create the directory. Press Enter to accept the default option which creates the directory, as shown in Figure 5-12. Alternatively, press n for no, or q to quit.

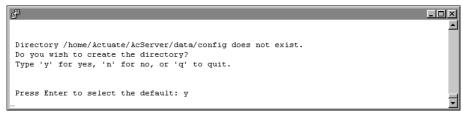


Figure 5-12 Creating the configuration home location

- **15** If you chose to install Server with Management Console instead of Server only, perform the following steps:
 - Press Enter to select the default locale, which is English (United States), as shown in Figure 5-13. Alternatively, select a different locale. If you do not see the locale for your region, type m for more and press Enter.



Figure 5-13 Specifying a locale

2 Press Enter to select the default time zone, which is America/Los Angeles as shown in Figure 5-14. Alternatively, select another time zone from the numbered list.

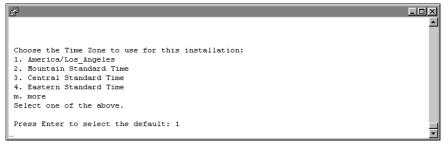


Figure 5-14 Specifying a time zone

16 To evaluate the product using the included evaluation software license, press Enter, as shown in Figure 5-15. Alternatively, type 2, then type the path to the license file that you purchased.



Figure 5-15 Specifying license type

17 Press Enter to select the default host name, the name of your machine, where the Process Management Daemon (PMD) runs, as shown in Figure 5-16. Alternatively, type a different IP address or hostname.

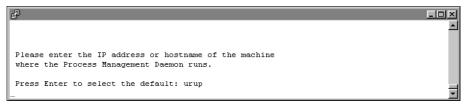


Figure 5-16 Specifying the machine on which the PMD runs

18 Press Enter to accept the default port number where the Process Management Daemon (PMD) listens for requests, as shown in Figure 5-17. Alternatively, type a different port number.



Figure 5-17 Specifying the port number on which the PMD listens

19 Specify the administrator password, as shown in Figure 5-18. You use this password to log in to the iServer Configuration Console.



Figure 5-18 Specifying the administrator password

20 Re-enter the password of the administrator, as shown in Figure 5-19.



Figure 5-19 Re-entering the administrator password

21 Press Enter to accept the default option of not using any database drivers/clients, as shown in Figure 5-20. Alternatively type y for yes, specify the database drivers/clients you wish to use and press Enter.

```
Do you want to use any database drivers / clients?
Type 'y' for yes, 'n' for no, or 'q' to quit.

Press Enter to select the default: n
```

Figure 5-20 Specifying whether to use database drivers/clients

22 Specify what kind of X-Server you want to use, if any. To accept the default, press Enter, as shown in Figure 5-21.

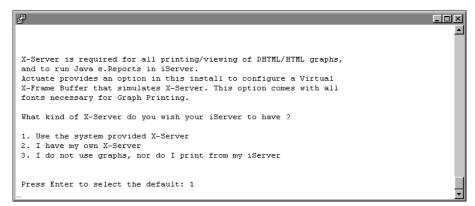


Figure 5-21 Specifying what kind of X-Server to use, if any

- **23** If you chose to install Server with Management Console instead of Server only, perform the following steps:
 - Press Enter to accept the default hostname, the name of your machine, that Management Console uses to contact the Process Management Daemon (PMD), as shown in Figure 5-22. Alternatively, type a different IP address.

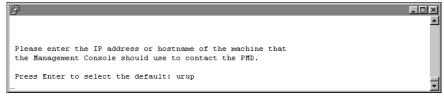


Figure 5-22 Specifying the machine host name that Management Console uses to contact the PMD

2 Press Enter to accept the default port number, 8100, on which the Process Management Daemon (PMD) listens for requests from Management Console, as shown in Figure 5-23. Alternatively, type a different port number.

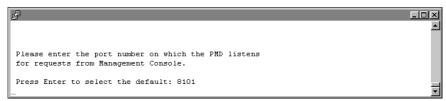


Figure 5-23 Specifying the port number for the PMD to listen for requests from Management Console

3 Press Enter to accept the default hostname, the name of your machine, as shown in Figure 5-24. Alternatively, type a different IP address.

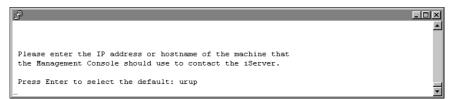


Figure 5-24 Specifying the name Management Console uses to contact iServer

4 Press Enter to accept the default port number, 8000, as shown in Figure 5-25. Alternatively, type a different port number.



Figure 5-25 Specifying the port number for listening for requests from Management Console

5 Press Enter to accept the default name, the name of your machine, for the Encyclopedia volume to use with Management Console, as shown in Figure 5-26. Alternatively, type a different name for the Encyclopedia volume.



Figure 5-26 Specifying the name of the default Encyclopedia volume

6 Press Enter to accept the default name, acadmin, for the HTTP server context root, as shown in Figure 5-27. Alternatively, type a different name.



Figure 5-27 Specifying the name of the HTTP server context root

24 Press Enter to accept the default port number, 8900, on which the application container listens for requests, as shown in Figure 5-28. Alternatively, choose a different port.

You connect to the port from your browser when accessing various features of iServer.

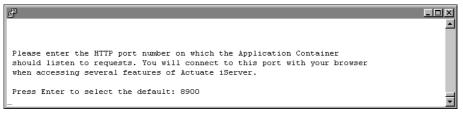


Figure 5-28 Specifying the application container listening port number

25 Review the settings, as shown in Figure 5-29, then specify whether you accept the settings. Press Enter to accept the default, y for yes. Alternatively, type n for no, or q to quit.

```
iServer installation will use the following settings :
Destination directory = /home/Actuate
iServer Data directory = /home/Actuate/AcServer/data
Configuration Home Location = /home/Actuate/AcServer/data/config
Install components = iServer with Management Console
Locale name = (English(UnitedStates))
Time Zone = America/Los_Angeles
PMD host name = urup
PMD port number = 8100
DISPLAY environment variable (X-Frame Buffer) = urup:4.0
PMD host name for Management Console = urup
PMD port number for Management Console = 8100
SOAP server host name for Management Console = urup
SOAP server port number for Management Console = 8000
Admin Volume Name for Management Console = urup
Context Root Name = acadmin
HTTP Service listen port = 8900
LANG environment variable = en US.UTF-8
Are the above settings acceptable?
Type 'y' for yes, 'n' for no, or 'q' to quit.
Press Enter to select the default: y
```

Figure 5-29 Reviewing settings for a Server with Management Console install

26 The installation program installs iServer, and displays an indicator showing how the installation is progressing, as shown in Figure 5-30.



Figure 5-30 Copying iServer files to your destination folder

27 At the end of the installation, the program asks if you want to start iServer. Accept the default, y for yes, to start the Process Management Daemon (PMD), as shown in Figure 5-31.

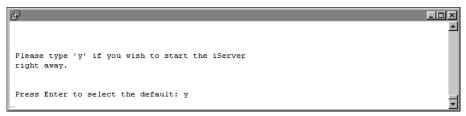


Figure 5-31 Specifying whether to start iServer

28 When the installation program finishes, it provides additional information about localization, logging in using an account with root permissions to start iServer, and installing online help and manuals, as shown in Figure 5-32.

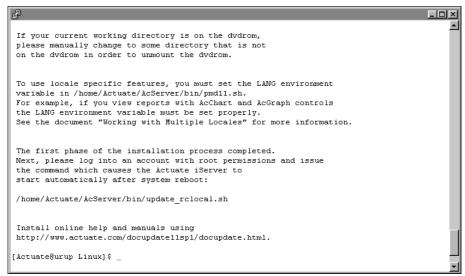


Figure 5-32 Viewing information about localization, logging in, and installing online help

Adding a node to a cluster

After installing a node as an iServer instance on a machine, the administrator must still add the node to the cluster. When adding a node to a cluster setup, the administrator must verify that the configuration home directory specified during the install procedure points to the shared configuration home directory for the cluster and all Encyclopedia volume resources are accessible.

The cluster node must have shared, read-write access to the following system resources:

- AC_DATA_HOME/config, including any version-related subfolders on the primary node
 - In a Release 11 Service Pack 3 installation, the configuration files are located in AC_DATA_HOME/config/11SP3 by default.
- AC_DATA_HOME/encyc or other volumes, including all file, fileType, status, and tempRov subfolders

In an iServer installation, where there has been no activity on the system, the status or tempRov folders may not exist. These folders contain information about job details and completion notices and do not appear until a job executes.

The administrator must verify or edit the shared acpmdconfig.xml file to contain the following information:

- <AC_CONFIG_HOME> to point to the shared configuration home directory for the cluster
- <AC_TEMPLATE_NAME> to specify the server template from the available server templates listed in the shared acserverconfig.xml file

How to verify and edit acpmdconfig.xml file settings

To verify and edit acpmdconfig.xml file settings, perform the following tasks:

- **1** Shut down the recently installed cluster node.
- **2** Using a text editor, open acpmdconfig.xml, which by default is located in AC_SERVER_HOME/etc.
- **3** Verify or edit <AC_CONFIG_HOME> to point to the shared configuration home directory for the cluster.
 - This location is the path that you specified for the configuration home directory during the install procedure. The configuration home location is the shared directory containing acserverconfig.xml, acserverlicence.xml, and acconfigowner.lock files for the cluster. In a Release 11 Service Pack 3 installation, the configuration files are located in AC_DATA_HOME/config/11SP3 by default.
- **4** Verify or edit <AC_TEMPLATE_NAME>to specify the server template name from the available server templates listed in the shared acserverconfig.xml file.
- **5** Save acpmdconfig.xml.

The administrator must also verify or edit the shared acserverconfig.xml file to contain the following information:

- <ServerFileSystemSetting> points to the shared drive location that contains the Encyclopedia volume data files
- server <ConnectionProperty> specifies the network name of the node that contains the shared Encyclopedia volume database

How to verify and edit acserverconfig.xml file settings

To verify and edit acserverconfig.xml file settings, perform the following tasks:

- 1 Stop the Actuate BIRT iServer 11 service running on the cluster node that contains the shared configuration home directory.
- **2** Using a text editor, open the acserverconfig.xml file in the configuration home directory.

The configuration home directory is the shared directory on the node that contains the acserverconfig.xml, acserverlicence.xml, and acconfigowner.lock files for the cluster. In a Release 11 Service Pack 3 installation, the

- configuration files are located in AC_DATA_HOME/config/11SP3 by default. The location is the path that you specified for the configuration home directory during the install procedure.
- **3** In <Template> settings for the node, verify or edit <ServerFileSystemSettings> to make sure that it points to the location that contains the Encyclopedia data files.
- **4** In <MetadataDatabase> settings, verify or edit the <ConnectionProperty> for the server to make sure that it specifies the network name of the node on which the Encyclopedia volume database resides.
- **5** Save acpmdconfig.xml.

Start Actuate BIRT iServer 11 on each cluster node. The new cluster node will automatically read the settings in the acserverconfig.xml file in the shared configuration home directory to access its template, then join the cluster.

How to start an iServer cluster using Configuration Console

To start iServer using Configuration Console, perform the following tasks:

- 1 On the node containing the configuration home directory for the cluster, log in to Configuration Console and choose Advanced view. Choose Servers, then choose Start New Server.
- **2** On Servers—Start New Server perform the following tasks:
 - 1 In Server name, type the name of the cluster node.
 - 2 In Host Name or IP Address, type the name or IP address of the cluster node.
 - 3 In iServer Process Manager Port Number, type the Daemon listen port number. The default value for this port is 8100. You specify this port number during the install procedure.
 - 4 In Server template name, choose the name of the template that the cluster node uses.
 - Choose OK.
- **3** Log out of Configuration Console.
- **4** Restart the Actuate BIRT iServer 11 services on the node containing the configuration home directory for the cluster then the new node.
- **5** Log in to Configuration Console and choose Advanced view. Choose Servers from the side menu. The new cluster node automatically reads the acserverconfig.xml in the shared configuration home directory to access its template, then joins the cluster.

Finding the BIRT iServer home directory

The environment variable for the iServer home directory is AC_SERVER_HOME. The iServer installation program sets the variable to the path of your iServer login environment.

How to find the home directory for BIRT iServer on a Linux or UNIX system

If you use the C Shell on a Linux or UNIX system, you can look in your .cshrc file to see the value of AC_SERVER_HOME:

```
$ setenv AC SERVER HOME /usr/local/AcServer
```

If an iServer process is running on the system, you can also use the following ps command piped to the grep command to find the pmd11 executable, which runs from the iServer home bin directory:

```
# ps -ef | grep pmd
```

About the Java Development Kit

The BIRT iServer installation routine installs the Java SDK files under the directory specified in the environment variable AC SERVER HOME:

```
AC_SERVER_HOME/jdk160
```

Some operating systems require an operating system upgrade or patch to use JRE 6.0. For information about requirements for your operating system, see your operating system documentation. Also, see the Actuate Support Lifecycle Policy and Supported Products Matrix on the Actuate Support web site. You can access the Support site at the following URL:

http://support.actuate.com/documentation/spm

To use a different JDK with iServer, change the files in the installation directory or change the values of the following Linux and UNIX environment variables:

- AC_JAVA_HOME
- AC_JVM_HOME
- AC_JRE_HOME in the PMD startup script, pmd11.sh
- AC_JRE64_HOME

Using an earlier release of JDK can cause some Actuate features to fail or to work improperly. For example, using an earlier release of JDK can cause Actuate products to display Actuate charts incorrectly.

6

Installing Information Console

This chapter discusses the following topics:

- Before you begin
- Installing Information Console on Linux and UNIX

Before you begin

Before installing Information Console, you must prepare the operating system environment to ensure that you have all the necessary software and configuration resources in place. This section describes how to prepare prior to an installation.

About installing from an FTP download

If you download an Actuate product from the Actuate FTP site, keep all the files together in their original relative locations when you extract them. The installation program verifies that all necessary files are present before beginning the installation process.

If any files are missing, the installation program exits. Files can be missing if you download the DVD image, extract the files, move only some of the files to a new location, and attempt to install from that location.

About performing a full installation

For Actuate 11, if you perform a full installation for iServer and Information Console, install BIRT iServer System products in the following order:

- BIRT iServer and Management Console
- Information Console
- BIRT iServer Integration Technology

To access online documentation, such as the online help and PDF files of the product manuals, you must install the documentation files, which are on the documentation DVD that ships with your Actuate Software.

Installing Information Console on Linux and UNIX

This section describes how to install Information Console for Linux and UNIX. Before you begin the installation process, ensure that you have Actuate administrator, system administrator, and web administrator privileges. If you download an Actuate product for Linux and UNIX from the Actuate FTP site, keep all the files together in their original relative locations after you extract them.

Information Console installation requires the following information:

- Installation directory \$HOME, the account's home directory, is the default installation directory.
- Port used by the Apache Tomcat Information Console service

If you are using a firewall, ensure that the firewall passes the port number you select. The default port is 8900.

- Value of the SPINLOOPTIME environment variable

 If you use AIX in a multiple-CPU environment, Information Console installation sets value of the SPINLOOPTIME environment variable to 2000. For more information about SPINLOOPTIME, see your AIX documentation.
- Encyclopedia volume name that Information Console accesses
 The default is the current machine.

You can install Information Console in following ways:

- Use an installation script.
 - The installation script configures Information Console, creates shortcuts, and extracts and installs all necessary files. Use this option for automated configuration.
- Deploy a WAR file to an Application Server.
 Deploying directly requires that you configure Information Console for your application server. Use this option if your application server supports configuration of an application from a WAR file.

Using the script to install

Complete the steps in the following section to install Information Console using the installation script.

How to install using a script

- 1 Insert the installation DVD, mount a DVD on your system and set your working directory to the mounted DVD directory, or download the required files.
- **2** To install the Information Console files, type:
 - sh ./infoconsoleinstall.sh
 - The script displays a series of prompts. Respond to the prompts as described in the following procedures.
- **3** The license agreement appears, as shown in Figure 6-1.

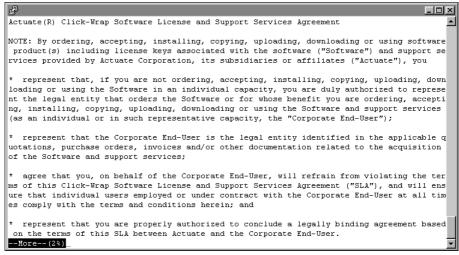


Figure 6-1 The license agreement

4 Read the license agreement and press Enter to continue installation. At the prompt, type y for yes if you accept the licensing terms, as shown in Figure 6-2.

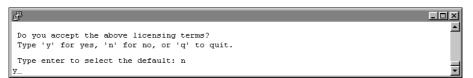


Figure 6-2 Specifying whether you accept the license agreement

5 The introduction to the installation appears, as shown in Figure 6-3. Review the information, then press Enter to continue.

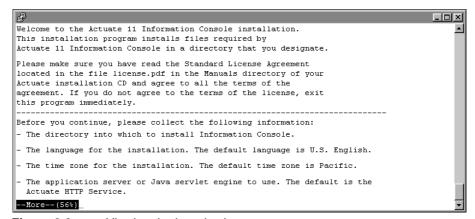


Figure 6-3 Viewing the introduction

6 Type the path for the Information Console installation, for example /home /Actuate/IC, as shown in Figure 6-4. Alternatively, press Enter to accept the default directory.

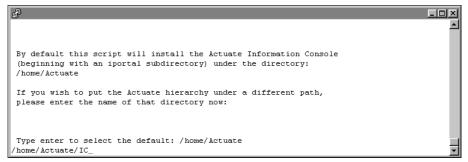


Figure 6-4 Specifying the Information Console install directory

7 Press Enter to select the default locale, which is English, as shown in Figure 6-5. Alternatively, select a different locale. If you do not see the locale for your region, type m for more and press Enter.

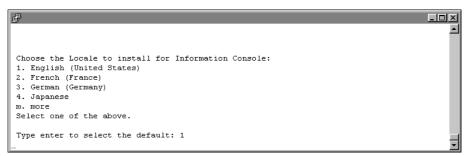


Figure 6-5 Specifying a locale

8 Press Enter to select the default time zone, which is America/Los_Angeles as shown in Figure 6-6. Alternatively, select another time zone from the numbered list.

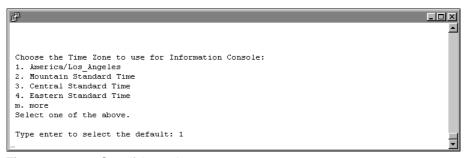


Figure 6-6 Specifying a time zone

9 Type a default profile name that you will use in Information Console, as shown in Figure 6-7.



Figure 6-7 Specifying the default profile name

10 Type the IP address or host name of the machine where iServer runs, or accept the default, your machine name, as shown in Figure 6-8.

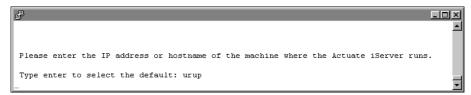


Figure 6-8 Specifying the machine on which the iServer runs

11 Type the number of the port where iServer listens for requests, or accept the default, 8000, as shown in Figure 6-9.

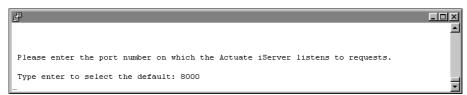


Figure 6-9 Specifying the port number on which iServer listens

12 Type the Encyclopedia volume name that you want to use, or accept the default, your machine name, as shown in Figure 6-10.



Figure 6-10 Specifying the Encyclopedia volume name

13 The installation program displays the settings that you specified during the install process. Review these settings, as shown in Figure 6-11, then specify whether you accept them. Press Enter to accept the default option, y for yes. Alternatively, type n for no, or type q to quit.

```
Information Console installation will use the following settings:

Destination Directory = /home/Actuate
Locale Name = (English(UnitedStates))
Time Zone = America/Los_Angeles
Repository Directory = /home/Actuate/iportal/WEB-INF/repository
Repository Temporary Directory = /home/Actuate/iportal/temp
HTTP Service listen port = 8700
Context Root Name = iportal
Default profile name = corp
SOAP server host name = urup
SOAP server port number = 8800
Admin Volume Name = corp

Are the above settings acceptable?
Type 'y' for yes, 'n' for no, or 'q' to quit.

Type enter to select the default: y
```

Figure 6-11 Reviewing your settings

14 The installation program installs Information Console, and displays an indicator showing the progress of the installation, as shown in Figure 6-12.

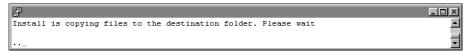


Figure 6-12 The install program copies files to your destination folder

15 When the installation completes, review the information, as shown in Figure 6-13. Issuing the command: sh ./update_rclocal_infoconsole.sh starts the Information Console service at system startup.

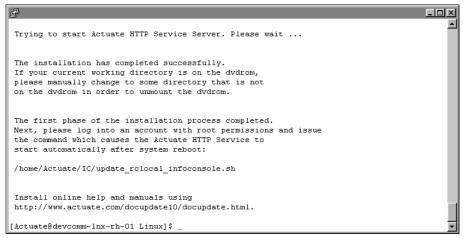


Figure 6-13 Typing the command to start the service

Using the WAR file to install

If Actuate supports your application server, you can deploy Information Console as a WAR (web archive) file. See the application server documentation about how to deploy a WAR file. For information about application servers on which Actuate supports deployment of Information Console, see the Supported Products Matrix for this release on the Actuate Support site at the following URL:

http://support.actuate.com/documentation/spm

Customize Information Console for your local environment, if necessary, before beginning deployment. To customize these applications for your local environment, follow the steps in "Preparing the WAR file," and deploy the customized Information Console WAR file to the application server instead of ActuateInformationConsole.war on the installation DVD.

General deployment tasks

You must configure the Information Console WAR file and application server to integrate them. You must also verify that you have a standard J2EE installation.

To integrate the application server with Actuate, complete the following tasks:

- Configure the server for best performance with Actuate products.
- Configure the Information Console WAR to integrate with the application server as described in "Preparing the WAR file."
- Deploy Information Console to the application server.
 - If the application server has deployment tools, use those tools to integrate the application server with Actuate products. For more information about deployment tools, see the application server documentation.
 - If the application server does not have deployment tools, add the Actuate context root to the application server, typically by modifying the application server configuration file.

Preparing the server

Actuate recommends the following configuration for best performance:

- Use at least a two-CPU machine for Information Console.
- If iServer uses more than four CPUs, configure one CPU for Information Console for every two CPUs that iServer uses.

Set the following configuration values on the application or web server:

- On a machine with 1 GB of physical memory, set the Java heap size to a value between 256 MB and 512 MB.
- Set the number of threads to a value between 50 and 75.

Preparing the WAR file

You can use a WAR file to deploy Information Console to many supported servers. Table 6-1 describes the Information Console configuration parameters to review and update before deployment.

Table 6-1 Information Console configuration parameters

Parameter name	Description	Action
BIRT _RESOURCE _PATH	The location of the standard templates and properties files that BIRT Studio uses. This location can be in a WAR file or on a disk.	If you specify a location on disk, copy the contents of the Information Console resources folder to this physical location on the file system.
DEFAULT _LOCALE	The default locale is en_US. You can leave this value unchanged. A user can select the locale at login.	If you change the locale, select the new locale from the locales in /WEB-INF/Localemap.xml.
DEFAULT _TIMEZONE	The default time zone is Pacific Standard Time (PST). You can leave this value unchanged. A user can select a time zone at login.	If you change the time zone, select the new time zone from the time zones in the TimeZones.xml. file, in the WEB-INF directory.
SERVER _DEFAULT	This value specifies the iServer URL to which the Information Console application connects if you do not specify a server URL. The default value is http://localhost:8000	Update this value to the machine and port of the server. Change localhost to the iServer machine name or IP address. Change 8000 to the iServer port number.
DEFAULT _VOLUME	This value specifies the default Encyclopedia volume for Information Console. If you do not specify a volume in an Information Console URL, the JSP application attempts to log in to this volume. The default value is localhost.	Update this value to the name of an Encyclopedia volume.
BIRT_VIEWER _LOG_DIR	The location of the files that log BIRT viewer activity.	You must create this physical location on the file system.
LOG_FILE _LOCATION	The location of the files that log Information Console activity.	You must create this physical location on the file system.
TEMP_FOLDER _LOCATION	The location where Information Console creates temporary files.	You must create this physical location on the file system.
TRANSIENT _STORE_PATH	The location where Information Console creates temporary files.	You must create this physical location on the file system.

How to customize the WAR file

The following steps describe the generic procedure for customizing an Information Console WAR file:

- **1** Insert the iServer System installation DVD.
- **2** Create a temporary directory, such as /home/Actuate/ic_temp.
 - If you use an existing directory, ensure that this directory is empty.
- **3** Copy Information Console WAR file to the temporary directory, as shown in the following example:

```
cp WL TOMCAT ActuateInformationConsole.war /home/Actuate/
  ic temp
```

4 Decompress the WAR file, as shown in the following example:

```
jar -xf WL TOMCAT ActuateInformationConsole.war
```

The Information Console files appear in the temporary directory.

5 Using a text editor that accepts UTF-8 encoding, edit web.xml to configure Information Console for your application server.

If you used the temporary path in step 3, the file location is /home/Actuate /ic temp/WEB-INF/Web.xml. Refer to Table 6-1 for a list of entries to modify in web.xml.

- **6** Save and close web.xml.
- **7** Type the following command:

```
jar -cf ../newinformationconsole.war *
```

This command creates newinformation console war in the /ic temp directory. This new WAR file for Information Console contains the modified configuration values.

Use newinformationconsole.war to deploy Information Console to your application server.

About clusters of servers

If your application server supports clustering, see your application server documentation for more information about setting up clusters and deploying web applications such as Information Console.

Avoiding cache conflicts after installing

Information Console uses Java Server Page (JSP) technology. Application servers and browsers cache pages. A browser can use a cached copy of a page instead of the new page. After you install, using a cached copy of some pages can lead to errors or missing functionality.

To avoid this problem, clear the application server cache after you install Information Console. With some application servers, you must restart the application server. For more information about the necessary steps for clearing the cache, see the application server documentation.

If possible, also clear the browser cache to ensure that the browser does not use an old copy of the page from its cache. Alternatively, you can refresh recently visited pages or clear the browser cache if a problem occurs. For more information about clearing the browser's cache and refreshing a page, see the browser documentation.

Testing the installation

Complete the steps in the following section to test the Information Console installation.

How to test the installation

- **1** Start the application server, if necessary.
- **2** Open a web browser.
- **3** Type the URL for the Information Console home page.

You can use a URL similar to the following example:

```
http://Actuate1:8900/iportal/getfolderitems.do
?repositoryType=Enterprise&volume=volume1
&serverurl=http://iServer1:8000
```

where

- Actuate1:8900 is the name of your computer and the port you use to access Information Console.
- iportal is the context root for Information Console.
- ? indicates the beginning of a parameter that indicates where to access Information Console files.
- getfolderitems.do is the call to the default Information Console home page.
- repositoryType=Enterprise indicates that this Information Console connects to iServer.
- &volume=volume1&serverurl=http://iServer1:8000 specifies the Encyclopedia volume and URL to the BIRT iServer.

The Information Console login page appears.

On the Information Console login page:

• For enterprise mode Information Console, in Volume, select an Encyclopedia Volume.

- In User name, type your login name.
- In Password, type your password.
- In Language, select a locale.
- In Time zone, select a time zone.
- 4 Choose Log In.

7

Installing iServer Integration Technology and Documentation

This chapter discusses the following topics:

- Installing BIRT iServer Integration Technology
- Installing the localization and documentation files

Installing BIRT iServer Integration Technology

This section describes how to install BIRT iServer Integration Technology for Linux and UNIX. If you download an Actuate product for UNIX or Linux from the Actuate FTP site, keep all the files together in their original relative locations atter you extract them.

How to install

In a default installation, BIRT iServer Integration Technology installs in \$HOME /ServerIntTech. To install BIRT iServer Integration Technology, perform the following steps:

- 1 Insert the installation DVD, mount a DVD on your system and set your working directory to the mounted DVD directory, or download the required files.
- **2** To install the server files, execute the isitinstall script:

```
sh ./isitinstall.sh
```

The script displays a number of prompts. Respond to the prompts as described in the following procedure.

3 The license agreement appears, as shown in Figure 7-1.

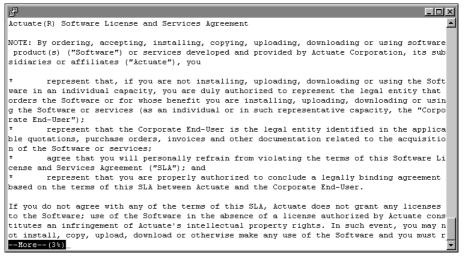


Figure 7-1 Reviewing the license agreement

4 Read the license agreement and press Enter to continue installation. At the prompt, type y for yes if you accept the licensing terms, as shown in Figure 7-2.

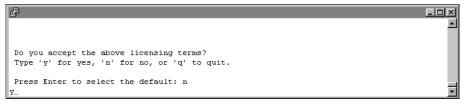


Figure 7-2 Accepting the license agreement

5 The introduction to the installation appears, as shown in Figure 7-3. Press Enter after reviewing the introductory information.

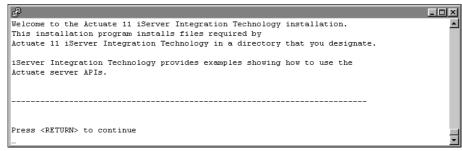


Figure 7-3 Reviewing introductory information

6 Press Enter to accept the default location for installation, \$HOME/ ServerIntTech as shown in Figure 7-4. Alternatively, type a different directory and press Enter.

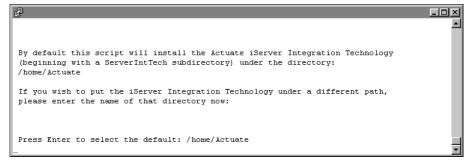


Figure 7-4 Specifying the installation directory

7 Review the settings, as shown in Figure 7-5, then specify whether to accept the settings. Press Enter to accept the default, y for yes. Alternatively type n for no, or q to quit.

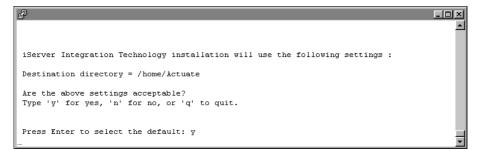
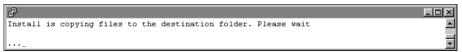


Figure 7-5 Reviewing settings before copying files

The installation program installs iServer Integration Technology, and displays an indicator showing how the installation is progressing, as shown in Figure 7-6.



Copying files to your destination folder Figure 7-6

9 When the installation program finishes, it provides additional information about changing the working directory and installing online help and manuals, as shown in Figure 7-7.

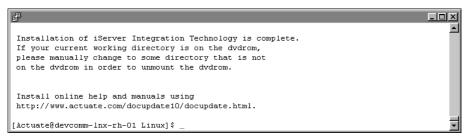


Figure 7-7 Viewing information about changing the working directory and installing online help

Installing the localization and documentation files

The information in the printed manuals is available as Adobe Acrobat PDF files and as a context-sensitive help system for Actuate products. After installing Actuate products, install the localization and documentation files from the Documentation DVD, which ships with Actuate software.

Both localization and documentation resource file updates can become available between releases. The Actuate Localization and Online Documentation Update tool provides replacements and additional files for PDF documentation, contextsensitive help, and localization of installed Actuate products. The tool is available from the following Actuate web site location:

http://support.actuate.com/documentation/releasenotes

Updates to documentation in PDF form are available at the following Actuate web site locations:

http://support.actuate.com/documentation

http://www.actuate.com/docupdate11sp1/docupdate.html

If you do not see an update tool for your release on the Support site, no updates exist for the release.

How to install the localization and documentation files

To install the iServer localization and documentation files, perform the following steps:

1 After downloading the tar file, decompress it using the tar command:

```
tar -xvf FILE NAME.tar
```

2 To begin the installation, move to the newly decompressed directory and execute the helpinstall script:

```
sh ./helpinstall.sh
```

The script displays a series of prompts. Respond to the prompts as described in the following procedures.

3 The license agreement appears, as shown in Figure 7-8.

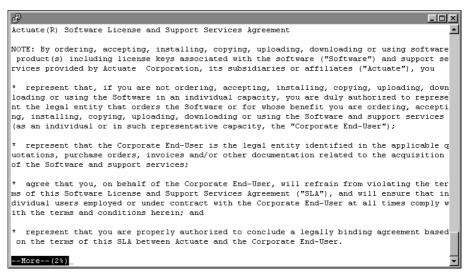


Figure 7-8 Reviewing the license agreement

4 Read the license agreement and press Enter to continue installation. At the prompt, type y for yes if you accept the licensing terms, as shown in Figure 7-9.

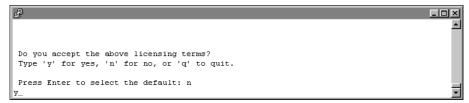


Figure 7-9 Accepting the license agreement

5 Choose the products that you wish to update in this install, as shown in Figure 7-10. If you want to choose more than one, just enter the numbers separated by a space. For example, type 1 2 3 to select all products.



Figure 7-10 Selecting a product combination

6 Enter the full path of the product installation directory that you chose to update, as shown in Figure 7-11. If you chose to update more than one product, you are asked for the full path of every product directory in your selection.

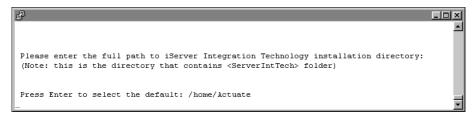


Figure 7-11 Specifying a product directory

7 Review the settings, as shown in Figure 7-12, then specify whether you accept the settings. Press Enter to accept the default, y for yes. Alternatively, type n for no, or q to quit.

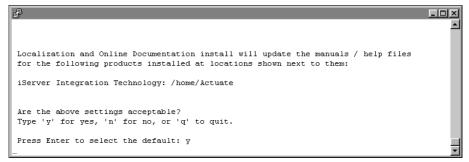


Figure 7-12 Reviewing settings before copying files

8 The installation program starts and displays an indicator showing how the installation is progressing, as shown in Figure 7-13.



Figure 7-13 Copying files to your destination folder

9 When the installation program finishes, it provides additional information about changing the working directory, as shown in Figure 7-14.

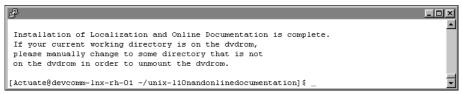


Figure 7-14 Viewing information about changing the working directory

Part Three

Licensing

Licensing BIRT iServer

This chapter discusses the following topics:

- Working with licensing
- Understanding the licensing options
- About a license file
- Understanding node-key licensing
- Obtaining the installation license key file
- Collecting machine information for a node-key license
- Installing the license key
- Understanding CPU binding

Working with licensing

BIRT iServer System licensing supports running BIRT iServer with sets of features grouped as license options. You enable BIRT iServer System options using either a Named User or Platform License.

The following list describes the types of licenses:

Named User License

Specifies the maximum number of named users that can use an BIRT iServer System. A named user is a distinct individual who receives content and value from BIRT iServer.

In Release 11, a BIRT iServer administrator must specify the options that a user can access in an Encyclopedia volume. The administrator makes this specification by configuring the user Licensed Options properties in Management Console.

When you license an option, such as BIRT Option, e.Report Option, or e.Spreadsheet Option, the license entitles the user to access a single volume in the BIRT iServer System. If the user needs additional Encyclopedia volumes for multiple applications, archiving, or other purposes, you must license the Multi-Tenant Option or Online Archive Option for each additional Encyclopedia volume the user needs to access.

Platform License

Specifies a hybrid model that supports combining Named User Licenses with CPU Licenses for Actuate end-user components and the BIRT iServer System infrastructure. In a multiple-CPU environment, Actuate typically uses the Standard Performance Evaluation Corporation (SPEC) standard benchmark, for measuring machine capacity based on CPU, memory, disk, and network capacity.

 Work Unit (WU) License Specifies iServer features and functionality using an aggregate model. This plan defines each iServer system resource as a work unit.

Understanding the licensing options

Table 8-1 lists and describes BIRT iServer System license options. BIRT iServer System options are separately licensed products. Some license options require

other options to be licensed before their functionality is available to users. Table 8-1 also describes these prerequisites.

Table 8-1 BIRT iServer System license options

Option	Description	Supported releases
Actuate Analytics	Allows building a cube and displaying a cube report for the purpose of multidimensional analysis. The Analytic Option enables BIRT iServer to extract data from a database and build a compressed OLAP file. When you analyze the cube, you can aggregate or categorize data, summarize data, and create graphs based on data. You can save and share views of the analysis you perform in the Encyclopedia volume.	
Actuate Query	Supports retrieving information using an information object.	10, 11
BIRT	Allows a user to publish and run a BIRT design using BIRT iServer. This option is a requirement for BIRT Page Level Security Option.	10, 11
BIRT 360	Allows a user to create, execute, and view dashboard files.	11
BIRT Data Analyzer	Allows a user to create, view, and modify cubeview files.	11
BIRT Interactive Viewer	Allows a user who has the BIRT Option to use BIRT Interactive Viewer to view and interact with a BIRT document.	10, 11
BIRT Page Level Security	Controls access to structured content available on the web. This option works for reports created using BIRT Designer Professional and requires the BIRT Option. Access privileges are based on user name or security role.	10, 11
BIRT SmartSheet Security	Controls access to structured content available on the web. This option works for reports created using BIRT Spreadsheet Designer and requires BIRT Spreadsheet Option. Access privileges are based on user name or security role.	10, 11
BIRT Spreadsheet	Allows a user to deploy and run a spreadsheet built using BIRT Spreadsheet Designer. This tool enables customers to save reports as richly formatted Excel spreadsheets and manage them in an Encyclopedia volume.	10, 11
BIRT Studio	Allows a user to create a BIRT design and to run it in BIRT iServer. BIRT Studio Option supports access to an information object on BIRT iServer System.	10, 11
		(continues)

Table 8-1 BIRT iServer System license options (continued)

Option	Description	Supported releases
Data Integration	Supports using an information object to combine data from two or more disparate sources. This option is required where data joining is not supported through separately licensed third-party databases or other separately licensed technology. BIRT iServer System Enterprise Information Integration (EII) services provide a standardized way to access data from different data sources.	10, 11
e.Analysis	Supports analysis of search results from an Actuate Basic report written in dynamic hypertext markup language (DHTML). This tool is available as an additional purchase with BIRT iServer and requires the e.Report (Actuate Basic Report) Option.	10, 11
e.Report (Actuate Basic Report)	Allows a user to deploy and run an e.report built using Actuate e.Report Designer Professional on an Encyclopedia volume. This option is a requirement for e.Analysis Option and e.Report Page Level Security Option.	10, 11
e.Report Page Level Security	Controls access to structured content available on the web. This option works for reports created using Actuate e.Report Designer Professional and requires the e.Report (Actuate Basic Report) Option. Access privileges are based on user name or security role.	10, 11
Information Object Caching	Provides the ability to cache data from an information object in a third-party database. This option requires separate licensing of a third party database server for data storage. This option is not available for an information object based on Actuate Basic technology.	10, 11
Multi-Tenant	Allows a BIRT iServer System user to access more than one Encyclopedia volume. This option is available with an Unlimited User CPU License.	11

To determine the license options installed on iServer, log in to Configuration Console, and choose Show License. The license options appear, as shown in Figure 8-1.

The license for this system is a named-user license The CPU core limit is 4 Listed below are the Work Units licensed Listed below are the options currently licensed: . e.Report (Actuate Basic Report) Option (25 users) · BIRT SpreadSheet Option (25 users) . Multi-Tenant Option (25 users) • e.Analysis Option (25 users) e.Report Page Level Security Option (25 users) · Actuate Query Option (25 users) Actuate Analytics Option (25 users) . BIRT Option (25 users) . BIRT SmartSheet Security Option (25 users) . BIRT Interactive Viewer Option (25 users) . BIRT Studio Option (25 users) . BIRT Page Level Security Option (25 users) . BIRT 360 Option (25 users) . BIRT Data Analyzer Option (25 users) Listed below are the options currently not licensed:

Figure 8-1 iServer License options

About a license file

Actuate provides a temporary BIRT iServer license key file to use for the initial installation. The temporary BIRT iServer System license key expires 45 days after installation. A design or document run using a temporary license appears with a watermark when viewed.

After installing BIRT iServer System, the customer must collect information about the system in which BIRT iServer is running and transmit the information to Actuate Licensing. After receiving this information, Actuate Licensing issues a new BIRT iServer System license key file.

This license key file specifies the available iServer license options and node-key information for the cluster nodes. This license file must be in a shared location, specified by the ConfigHomeDirectory variable in the acpmdconfig.xml file of each node, and accessible to all nodes in the cluster.

A node key associates an iServer node with the machine ID. The node-key licensing mechanism restricts the iServer node installation to that machine.

On startup, each node in the cluster checks the shared license file, verifies the installed options, and determines whether its node key, which is generated at runtime, matches the license information. If the node key matches, the nodes joins the cluster. Otherwise, it shutdowns with an error if the node lock violation grace period has been exceeded.

When upgrading a cluster node or installing iServer on a new machine, the customer must request a new node-key file and supply the machine ID of the new machine.

About CPU binding

BIRT iServer System supports CPU-binding on a machine with an appropriate CPU-based license. CPU-binding restricts a process or processes to run on a subset of CPUs. If you bind the BIRT iServer System to a subset of CPUs, only those CPUs count toward the total number of licensed CPUs. The CPU limit in the license file applies to all CPUs for all machines in the cluster.

The following sections provide a detailed description of how the license key process works in Actuate Releases 10 and 11.

Understanding node-key licensing

Actuate license enforcement for Release 11 requires a single, shared license key for all nodes in a cluster. You receive a temporary license key from Actuate Licensing when you purchase the product.

The name for the BIRT iServer license key file uses the following format:

Actuate iServer key xxxxx.xml

XXXXX is a unique five-digit number generated by Actuate Licensing when it creates the license key file.

The following sections describe the BIRT iServer System license installation process.

Obtaining the installation license key file

New customers receive an e-mail that contains the license key file information when Actuate processes the order. If you have a problem with a license key file, contact Actuate Licensing at licensing@actuate.com.

To obtain a new file for licensed products, visit the Support web site at:

http://support.actuate.com

A maintenance customer should have login information for the Actuate Support web site. If you do not have access, please contact Actuate Support at support@actuate.com.

If you are not a direct Actuate customer, the partner or distributor who provides the product arranges for your license key file. If you have a problem obtaining your license key file, please contact Actuate Licensing at licensing@actuate.com.

A license key file can be an expiring file that is valid until a specific date. If your license key file is an expiring file, you are reminded that the file expires on a certain date when you log in to the Configuration or Management Consoles. Reminders also appear in the system log file. To arrange for a permanent license key file, or if you have a problem with an expiring file, please contact Actuate Licensing at licensing@actuate.com.

You can easily modify your decisions about Actuate license options by contacting Actuate Licensing. If you are an Actuate international customer, please be aware that the an e-mail message sent to Actuate goes to Actuate headquarters, and we route your request to a team in the appropriate country.

Collecting machine information for a node-key license

After installing BIRT iServer System using the temporary license key file, you must collect information about the machine running this Actuate software and send it to Actuate Licensing. During the installation process, the InstallShield Wizard prompts you to provide the location of the

Actuate_iServer_key_xxxxx.xml file. After providing the location of the license key, the InstallShield Wizard issues a prompt similar to the following message:

The iServer system license file is locked to the machines that are used in the iServer system. The following machine id must be used to request a node key file from Actuate.

00-13-02-4e-3a-8e00-15-5a-2b-27-0fe0-16-ce-ec-43-52

Please contact Actuate Licensing (licensing@actuate.com or http://www.actuate.com/licensing), or your representative, and request a node key file.

The machine id required for the node key file can also be generated by using the acmachineid utility that can be found in the AC SERVER HOME/bin folder.

Press Enter to continue.

The format of the alphanumeric string for the machine ID and location of the node-key file are different depending on the operating system. On a Linux system, the unique identifier for the network card is the source of the machine ID. You must have the network card enabled on the BIRT iServer machine to obtain the machine ID.

Make a note of the machine ID in the installation prompt and send it to Actuate Licensing. Actuate Licensing processes your request and sends two new license keys, the BIRT iServer System and node-key license files.

You can also run the BIRT iServer utility, acmachineid, from the command line to generate the machine ID information as shown in the following Linux-based example:

```
AC SERVER HOME/bin$ ./acmachineid
STATUS:
                OK
GEN VERSION:
                11
```

GEN BUILD: 10C081031

MACHINEID: 00-13-02-4e-3a-8e00-15-5a-2b-27-0fe0-16-ce-ec-43-52

The acmachineid utility is located in the bin folder of the BIRT iServer installation.

Installing the license key

After installing BIRT iServer System using the temporary license key, the login screen displays two messages.

The following message about expiration of the initial license key always appears on the login screen regardless of the node-key license status:

Reminder

Your BIRT iServer license expires in [the number of days] days, on [the specified date]. When the current license expires, the iServer will require a new license to restart. Please contact Actuate to purchase a new license.

The following message about how to obtain the second set of license keys from Actuate Licensing appears until you install the new license keys issued by Actuate Licensing:

Reminder

One or more iServers in your BIRT iServer System are in violation of the node locked BIRT iServer license. After the grace period expires the iServers that violate the node locked BIRT iServer license cannot be restarted. Please contact Actuate Licensing (licensing@actuate.com or http://www.actuate.com/licensing), or your representative, and request a new license file for the iServer nodes that are in violation. Please restart the iServers on the nodes after updating the node key file.

You have 45 days to apply for and install the node-key license after you install BIRT iServer System.

How to install the license key file

To update the license key file, perform the following tasks:

1 Verify that the format of the Actuate_iServer_key_XXXXX.xml license file name is correct.

An Actuate license key is an XML file. Actuate Licensing sends this XML file to you with an appended .txt file extension because transmitting a file with an .xml extension can cause problems in an e-mail system. You must remove the .txt extension from the file name before installing the license key file in the BIRT iServer System. Make sure that the file name contains the unique five-digit number generated by Actuate Licensing.

- **2** Copy the Actuate_iServer_key_XXXXX.xml license file to the location of the temporary license file.
- 3 Log in to Configuration Console. For example, type http://localhost:8900/acadmin/config/ in Address of a browser, and use the system configuration password you specified during installation.
- 4 Choose Update License.
- **5** Navigate to the location of the new license key file and select the file. Choose OK.
- **6** Restart any node where the node-key configuration changed.

If you change the machine for a node in a BIRT iServer cluster, you must reapply to Actuate Licensing for a new license file. If you replace the network card on a machine, such as a Windows system, you may be required to obtain a new license file, since the unique identifier for the network card is the source of the machine ID. Use the acmachineid utility to obtain the machine ID information and transmit the new information to Actuate Licensing.

Understanding CPU binding

CPU binding can work only on a machine with an appropriate CPU-based license. CPU binding restricts a process or processes to run on a subset of CPUs. If you bind the BIRT iServer System to a subset of CPUs, only those CPUs count toward the total number of licensed CPUs. Depending on the operating system and specific system command, you can restrict other processes from running on the processor to which you bind a process.

You can bind BIRT iServer processes to a specific set of processors on a machine that runs a Windows, Sun Solaris, or HP-UX 11i operating system. The default configuration does not bind BIRT iServer to a set of processors. In the default configuration, all processors on an BIRT iServer machine count toward the maximum number of licensed CPUs. For more information about performing CPU binding on a Windows machine, see Chapter 7, "Licensing BIRT iServer," in *Installing BIRT iServer for Windows*.

To bind BIRT iServer to a set of processors, bind the Actuate Process Management Daemon (PMD) to the processors. The Actuate PMD starts all BIRT iServer processes. The processes inherit the binding from the Actuate PMD.

In a cluster, BIRT iServer counts only the processors on nodes that join the cluster and run the encycsrvr11 process. An encycsrvr11 process runs when a node is online. BIRT iServer counts the number of processors on a machine when the first encycsrvr11 process starts.

When deploying BIRT iServer on a machine with multi-threaded CPUs that use logical processors, the customer receives a license based on the number of physical processors in the system. To accommodate the use of logical processors, the customer receives a license key that specifies two or four times the number of physical processors.

This section contains the following topics:

- Binding BIRT iServer to processors on a Sun Solaris machine
- Binding BIRT iServer to processors on an HP-UX 11i machine
- Checking BIRT iServer bound processors
- Configuring e-mail for CPU license problems

Binding BIRT iServer to processors on a Sun Solaris machine

You can perform single processor binding and processor set binding on a Solaris machine with the following types of binding:

- With single processor binding, you bind a process to a single processor using the processor_bind() system call or the pbind command.
- With processor set binding, you bind a process to a group of processors on a Solaris machine. If you bind a process to multiple processor sets, the sets must not overlap.

To create a processor set, use the pset_create() system call or psrset command. Then, you can bind a process to the set using the pset_bind() system call or the psrset command. The psrset command restricts other processes from running on the processors to which you bind a BIRT iServer process.

For more information about processor binding and the processor binding commands, refer to your Solaris documentation.

Binding to specific CPUs

On Solaris, you bind a CPU to BIRT iServer using one of the following commands:

pbind Binds the BIRT iServer to a single CPU. Does not prevent other applications from using the CPU.

For example, in an 8-CPU Solaris server, you can use pbind to bind the BIRT iServer to CPU 2. An Oracle database running on the same server that is not bound to a CPU can impact BIRT iServer performance. While BIRT iServer can use only the processing power of CPU 2, the Oracle database can use all CPUs, including CPU 2. BIRT iServer cannot fully utilize CPU 2 if the Oracle database obstructs access.

psrset

Binds the BIRT iServer to one or more CPUs or cores. Prevents other applications from using the CPUs or cores.

For example, in a 4-CPU Solaris server, you can use psrset to bind the BIRT iServer to CPUs 1 and 2. WebLogic Application Server runs on the same server and is restricted to run on CPUs 3 and 4. BIRT iServer and WebLogic cannot obstruct access to the CPUs assigned to the other process.

To bind to a single CPU, shut down BIRT iServer and determine the process ID of the Actuate Process Management Daemon (PMD) using the ps -e command. Type the pbind command to bind the PMD process to a subset of CPUs using the following syntax:

```
pbind -b processor Actuate_pid
```

where

- Actuate_pid is the process ID of the PMD, as reported by ps -e
- processor is the processor number as reported by /usr/sbin/psrinfo.

The following example shows binding to a specific CPU on Solaris:

```
pbind -b 0 8209 # Binds process 8209 to CPU 0
```

Binding to multiple CPUs

You use Solaris processor sets to bind BIRT iServer to multiple CPUs. Solaris processor sets are non-overlapping groups of processors.

To bind to multiple CPUs, shut down BIRT iServer and determine the process ID of the PMD using the ps -e command. Create a processor set using the psrset command, and display its ID as follows:

```
psrset -c [processor_id...]
where
```

processor_id is the individual or multiple processor numbers.

Bind a processor set to BIRT iServer as follows:

```
psrset -b processor_set_id Actuate_pid
```

where

- processor_set_id is the ID returned by the psrset -c command.
- Actuate_pid is the process ID of the PMD, as reported by ps -e.

Binding to multiple-core CPUs

CPU binding is done at the operating system level, which means that BIRT iServer can bind to any logical CPU. For example, the UltraSPARC T1 processor has eight cores and four threads per core, which is a total of 32 logical CPUs to the operating system.

BIRT iServer System can bind to any logical CPU to the granularity of a thread, not just to the core on a T1 system, which is the same as binding to one physical CPU on a 32-CPU system. The commands to bind to a thread or logical CPU on a T1 system are the same as binding to a physical CPU as shown in the previous examples.

Binding on different logical CPUs can have different effects in terms of Actuate system throughput due to scalability factors across cores and threads. For example, on a T1 system, binding to logical CPU 0, 4, 8, and 12, which belong to four separate cores, has better overall throughput than binding to logical CPU 0, 1, 2, and 3, which belong to same core.

Binding BIRT iServer to processors on an HP-UX 11i machine

You can perform processor set binding on an HP-UX 11i machine. The software for creating a processor set runs only on HP-UX 11i or later. Before you use processor sets, you must install the HP-UX 11i June 2004 or later Quality Pack and download the software to create processor sets from the HP web site. The software to create processor sets is not installed with HP-UX 11i.

To create a processor set, use the pset_create() system call or psrset command. Then, you can bind a process to the set using the pset_bind() system call or the psrset command.

Like Solaris processor sets, HP-UX 11i processor sets are non-overlapping groups of processors. You can download HP-UX 11i processor sets at no charge from the following location:

http://www.software.hp.com

The HP UX 11i psrset utility controls the management of processor sets. Processor sets allow you to isolate a subset of processors for use by specific threads and processes. Processes in a set have equal access to CPU cycles on their cores through the HP-UX standard scheduler.

To bind to one or more CPUs, use the pbind or psrset commands, as described for Solaris. For more information about processor binding and the processor binding commands, see your HP-UX 11i documentation.

Checking BIRT iServer bound processors

BIRT iServer performs the following bound processor checks:

- The number of processors a cluster uses
- The set of bound processors

Determining the number of processors an iServer System uses

When the PMD starts the first encycsrvr11 process on a machine, the PMD determines the number of processors to which BIRT iServer is bound and stores the list of bound processors.

If you change the processor binding, BIRT iServer does not recognize the changes until you shut down all encycsrvr11 processes on the machine and restart one of the encycsrvr11 processes.

For example, a cluster that has a maximum licensed CPU limit of nine processors consists of two nodes, machine A and machine B.

The machines have the following configuration:

- Machine A has four processors with no processor binding. All the processors can run Actuate processes. BIRT iServer manages an Encyclopedia volume.
- Machine B has eight processors with BIRT iServer bound to five processors. There is no encycsrvr11 process running on the machine, only the PMD.

The cluster counts four processors, the processors on machine A. If you start an encycsrvr11 process on machine B, BIRT iServer on machine A counts the five bound processors on the machine and increases the cluster processor count to nine, four on machine A and five on machine B.

If you bind the PMD on machine B to six processors, the change has no effect until you shut down all the running encycsrvr11 processes on machine B and restart an encycsrvr11 process on machine B.

After you stop the encycsrvr11 processes and restart an encycsrvr11 process on machine B, BIRT iServer System detects that the number of processors in the cluster is ten, which is greater than the maximum number of nine licensed processors. When the number of CPUs exceeds the number of CPUs your license permits, BIRT iServer does not start and returns an error message to Configuration Console.

Understanding CPU binding validation while iServer is running

When BIRT iServer is running, each encycsrvr11 process periodically compares the list of processors to which it is bound with the list to which it was bound when it started. If the lists differ:

- BIRT iServer writes a message with the processor information to the log file. The message contains the maximum number of processors the BIRT iServer license file permits and the following information:
 - Current and original number of bound processors
 - Current and original list of bound processors
- If configured, BIRT iServer sends an e-mail message to the administrator. The message states that the BIRT iServer System will shut down in one hour if the list of bound processors is not corrected. The e-mail message contains the information that BIRT iServer sends to the log file.

You must rebind the encycsrvr11 process to the same processors to which it was originally bound.

During the next hour, any attempt to use the encycsrvr11 services fails and a message is written to the appropriate log file. If the list of processors is not restored after an hour, each BIRT iServer in the cluster shuts down and writes an error to its log file.

Understanding CPU binding validation when an Encyclopedia volume comes online

BIRT iServer uses a separate encycsrvr11 process to manage each Encyclopedia volume on a machine. When you take an Encyclopedia volume online, the PMD starts an encycsrvr11 process.

- When the PMD starts an encycsrvr11 process, the PMD compares the list of processors to which the encycsrvr11 process is bound to the original list of processors to which the PMD is bound. If the lists differ:
- The encycsrvr11 process writes an error to its log file and shuts down.
- BIRT iServer does not take the volume online. A message in the configuration states that the binding of the new process differs from the original binding of the parent process.

Understanding CPU binding validation when running iServer processes

Each Factory and View process periodically compares its list of bound processors with the list of processors to which it was bound at startup. If the lists differ, the process writes an error to its log file and shuts down.

Configuring e-mail for CPU license problems

BIRT iServer System can send e-mail messages to an administrator if a change in processor binding violates the maximum number of licensed CPUs for BIRT iServer System. To send e-mail about a CPU license problem, set up BIRT iServer System by completing the following tasks in this order:

- 1 Configure every BIRT iServer node to send e-mail.
- **2** Specify the administrator e-mail address for BIRT iServer System.

Specify an administrator e-mail address as the value for the Account to receive administrative e-mail parameter. Set the value by logging into Configuration Console, and choosing System—Properties—Advanced—Cluster Operation—Administrative.

For example, the following e-mail address sends e-mail to a user named admin at a company for which the domain is mycompany:

admin@mycompany.com

3 Restart BIRT iServer System. Restarting applies the changes after you set or change the e-mail address.

Part Four

Backing Up

9

Backing up an Encyclopedia volume

This chapter discusses the following topics:

- Performing an Encyclopedia volume backup
- Backing up and restoring an Encyclopedia volume that uses a PostgreSQL database
- Backing up and restoring an Encyclopedia volume that uses an Oracle database
- Backing up and restoring an Encyclopedia volume that uses a DB2 database

Performing an Encyclopedia volume backup

When performing a volume backup, it is important to note that there are two types of data:

Metadata

Information about iServer system and Encyclopedia volume settings and data objects stored in third-party relational database management system (RDBMS) schemas

Data

iServer system and Encyclopedia volume data objects, such as designs, documents, and information objects, stored as files on disk partitions, and the acserverconfig.xml file containing iServer configuration information

The administrator must back up all Encyclopedia volume metadata and data to ensure the recoverability of a volume in the event of failure. In Release 11, it is not necessary to back up the iServer system schema, although future versions may require this operation to protect critical system metadata. The administrator can restore a corrupted or missing system schema using the System Data Store Administrator utility. For more information on this utility, see "Specifying System Data Store Administrator properties," in Chapter 4, "Upgrading BIRT iServer."

The third-party database that contains Actuate Encyclopedia metadata is a critical component of Actuate iServer System. An Actuate system administrator must take all necessary precautions to ensure that this database is properly backed up and available to safeguard Encyclopedia volume metadata. Please consult Actuate Support at the time of installation if you have any questions about the backup, recovery, or failover procedures necessary to protect against the possibility of catastrophic failure.

Managing the backup and recovery of Encyclopedia volume metadata and data files

A complete Encyclopedia volume backup must include the following items:

- A database backup of the Encyclopedia volume schema containing the metadata
- A copy of the folders from all Encyclopedia volume disk partitions containing file data
- A copy of the acserverconfig.xml file containing iServer configuration information

In the Linux/UNIX Actuate 11 Service Pack 3 environment, the default AC_SERVER_HOME path is:

/home/Actuate/AcServer/

The default AC_DATA_HOME path is:

/home/Actuate/AcServer/data/

The default Encyclopedia volume path is:

/home/Actuate/AcServer/data/encyc

The default acserverconfig.xml file path is:

/home/Actuate/AcServer/data/config/11SP3

Back up the Encyclopedia volume metadata in the RDBMS at the same time that you back up the disk partition data files. A carefully coordinated backup ensures that a one-to-one correspondence exists between each entry in the volume metadata database and the data files.

The Encyclopedia volume metadata backup on the RDBMS must be done before the backup of the data on the disk partitions. Files that are partially created when the metadata backup begins are either not yet registered in the database or are marked incomplete in the database. The metadata database does not retain a record of incomplete files.

When contacting Actuate Support to troubleshoot problems, it is best to provide a snapshot of the Encyclopedia volume configuration, including the following items and information:

- A database backup of the Encyclopedia volume schema containing the metadata
- The name of the Encyclopedia volume schema and user that iServer uses to connect to the RDBMS
- A copy of the acserverconfig.xml file containing iServer configuration information
- A copy of the iServer logs

Using RDBMS and file system backup utilities

The administrator must perform the Encyclopedia volume metadata backup using the tools provided or supported by the RDBMS. Copying the physical files of a database at the operating system level while an RDBMS is running does not create a valid backup.

Most RDBMS backup tools can be scripted and run while iServer is using the database. PostgreSQL, Oracle, and DB2 also provide graphical administration tools in addition to command-line tools. For more information on using these RDBMS tools to backup and restore an Encyclopedia volume, see the related sections, later in this chapter.

How to perform an Encyclopedia volume backup

To back up an Encyclopedia volume, perform the following tasks:

- **1** Make sure that the autoarchive file purging process is not running.
- **2** Make an online backup of the volume schema using the tools provided by the RDBMS.
- **3** Backup the volume data files using the tools available in the operating system environment.

Avoiding conflict with the autoarchive file purging process

A metadata backup is consistent with a data backup only if the file purging process that runs during an autoarchive operation does not occur between the time you back up the metadata and the time you back up the data. In Volumes— Properties—Advanced—Archiving And Purging, the administrator can specify when the file purging process runs.

How to configure Archiving And Purging

To configure the autoarchive file purging process, perform the following tasks:

- **1** From the Advanced view of Configuration Console, choose Volumes.
- **2** On Volumes, point to the icon next to a volume name and choose Properties. In Volumes—Properties, choose Advanced. In Advanced, choose Archiving And Purging.
- **3** In Archiving And Purging, configure the following time-related file purging properties to times that do not conflict with the time when the backup operation runs, as shown in Figure 9-1:
 - Purge deleted files time Specifies the time when the file purging process runs to permanently delete expired files.
 - Expiration time of deleted files Specifies the length of time that must elapse before the file purging process permanently deletes an expired file.

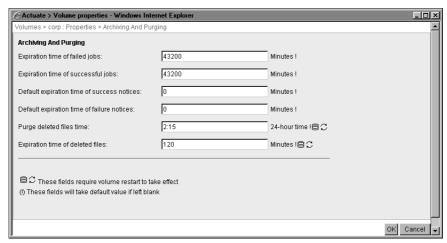


Figure 9-1 Configuring file purging properties

Choose OK.

For information on other aspects of archiving, see Chapter 12 "Archiving files," in *Configuring BIRT iServer*.

Backing up and restoring an Encyclopedia volume that uses a PostgreSQL database

PostgreSQL provides the pgAdmin graphical administration tool or the pg_dump and pg_restore command-line utilities to back up and restore a database. These PostgreSQL utilities run on the client not the server.

To back up an Encyclopedia volume in the OOTB PostgreSQL RDBMS environment, the administrator performs the following operations:

- Backs up Encyclopedia volume metadata using the pgAdmin graphical administration tool or the pg_dump PostgreSQL command-line utility
- Backs up Encyclopedia volume data and configuration files using operating system copy commands

Note that a backup of a PostgreSQL database is not portable across all operating systems.

To restore an Encyclopedia volume in the OOTB PostgreSQL RDBMS environment, the administrator performs the following operations:

 Restores Encyclopedia volume metadata using the pgAdmin graphical administration tool or the pg_restore PostgreSQL command-line utility Restores Encyclopedia volume data and configuration files using operating system copy commands

The following sections describe how to backup and restore an Encyclopedia volume that uses the OOTB PostgreSQL database to store the metadata. These demonstrations serve as a detailed reference example. Other RDBMS environments, such as a DB2, Microsoft SQL Server, or Oracle RDBMS, require similar procedures, which are covered in sections later in this chapter.

Backing up an Encyclopedia volume using pg_dump

To back up an Encyclopedia volume using the pg_dump utility, perform the following tasks:

- Create a folder to contain the metadata and volume data backup files
- Backup Encyclopedia volume metadata using the PostgreSQL pg_dump utility
- Back up the acserverconfig.xml file and volume data folders to the backup folder

The following example shows a typical pg_dump command used to export the contents of an Encyclopedia volume schema to a backup file:

```
pg dump -F c -n ac corp -f ac corp schema.dmp -h dbhost
  -p 8432 -U postgres dbname
```

This pg_dump command example uses the following arguments:

- F Specifies the output format. The value c is an abbreviation for custom, which creates a compressed archive that can be used as input to pg_restore.
- Species the schema. Use multiple -n arguments to specify a list. Use wildcard notation to specify a character pattern, such as ac_*. to specify all volumes names that start with the prefix ac_. If -n is not specified, pg_dump exports all non-system schemas.
- Specifies the output file, such as ac_corp_schema.dmp.
- Specifies the host name of the machine where the PostgreSQL server is running, such as dbhost.
- Specifies the port where the server listens for connection requests.
- U

Specifies the user name for the connection to the PostgreSQL server, such as postgres.

dbname

Replace this string in the example with the database name, such as actuate_db.

Re-run the command to backup each Encyclopedia volume schema to a separate archive. To run multiple volume schema backups using a script, set up auto-login using a .pgpass file. The file should contain connection information in the following format:

hostname:port:database:username:password

More information about setting up a scripted backup using a .pgpass file is available at:

http://www.postgresql.org/docs/8.4/static/libpq-pgpass.html

Create a folder to contain the metadata and volume data backup files outside the iServer data installation environment. To provide protection against single-point media failure, it is best to store the backup files on a partition that is physically separate from the Encyclopedia volume data location.

In a Linux environment, create a folder to contain the metadata and volume data backup files by performing the following tasks.

How to create a new backup folder

1 Navigate to your home folder, which by default is:

/home/Actuate

2 Create the following new folder, as shown in Figure 9-2:

/home/Actuate/encyc backup



Figure 9-2 Creating a backup folder

Backup Encyclopedia volume metadata using pg_dump by performing the following tasks.

How to run pg_dump

1 Navigate to the following location:

/home/Actuate/AcServer/postgresgl/bin

- **2** Execute the following command. Substitute your machine name for devcomm-lnx-rh-01 in this example:
 - ./pg_dump --host devcomm-lnx-rh-01 --port 8432 --username postgres --format custom --blobs --verbose --file "/home/ Actuate/AcServer/encyc_backup/iserver.backup" iserver

This operation backs up the entire iserver database. If the -n argument specifying a specific schema or list of schemas is not specified, pg_dump exports all non-system schemas. Alternatively, you can back up only one Encyclopedia volume schema, such as ac_corp, by using the -n argument to to specify a particular schema.

3 The command line appears as shown in Figure 9-3.

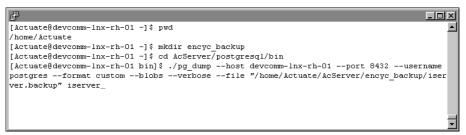


Figure 9-3 Entering the command to execute pg_dump

4 Type the postgres superuser password. The administrator specified this password during the iServer installation procedure.

pg_dump executes, writing status messages to the command prompt.

After backing up the Encyclopedia volume metadata, back up the acserverconfig.xml file and volume data directories to the backup directory by performing the following tasks.

How to back up the volume data folders

1 Navigate to AC_DATA_HOME, which is the location of the iServer data. You specified this location on Setup Type during the install procedure. The default path for AC DATA HOME is:

/home/Actuate/AcServer/data

2 In AC_DATA_HOME, navigate to the config folder that contains acserverconfig.xml file. In Actuate Release 11 Service Pack 3, the acserverconfig.xml file is located in the config/11SP3 subfolder.

Copy acserverconfig.xml to the following backup location, as shown in Figure 9-4:

/home/Actuate/encyc backup

Figure 9-4 Copying acserverconfig.xml to the backup location

3 Navigate to AC_SERVER-HOME/encyc.

Copy the file, fileType, status, and tempRov folders to the following backup location, as shown in Figure 9-5:

/home/Actuate/encyc_backup

```
[Actuate@devcomm-lnx-rh-01 config] pwd
/home/Actuate/AcServer/data/config
[Actuate@devcomm-lnx-rh-01 config] cd ..
[Actuate@devcomm-lnx-rh-01 data] cd encyc
[Actuate@devcomm-lnx-rh-01 encyc] cf ls
file fileType postgresql status tempRov
[Actuate@devcomm-lnx-rh-01 encyc] cp -R file fileType status tempRov /home/Actuate/encyc_b
ackup
[Actuate@devcomm-lnx-rh-01 encyc] cp -R file fileType status tempRov /home/Actuate/encyc_b
```

Figure 9-5 Copying the volume data folders to the backup location

In a backup taken immediately after an iServer installation, where there has been no activity on the system, the status or tempRov folders may not exist. These folders contain information about job details and completion notices and do not appear until a job executes. If these folders are not present in the environment, simply back up the file and fileType folders.

Do not back up the postgresql folder in an Encyclopedia volume backup operation. The postgres folder contains data, such as log files, from the OOTB PostgreSQL RDBMS installation, which remains active. Inadvertently including these files in an iServer backup, then accidentally overwriting the files with a stale version in a restore operation can cause problems in the PostgreSQL RDBMS installation.

The contents of the backup folder appear as shown in Figure 9-6.

```
[Actuate@devcomm-lnx-rh-01 encyc] $ pwd
/home/Actuate/AcServer/data/encvc
[Actuate@devcomm-lnx-rh-01 encyc] $ cd
[Actuate@devcomm-lnx-rh-01 ~] $ pwd
/home/Actuate
[Actuate@devcomm-lnx-rh-01 ~] $ cd encyc backup
[Actuate@devcomm-lnx-rh-01 encyc backup] $ ls
acserverconfig.xml file fileType iserver.backup status tempRov
[Actuate@devcomm-lnx-rh-01 encyc_backup] $ _
```

Figure 9-6 Viewing the contents of the backup folder

Restoring an Encyclopedia volume using pg restore

To restore a backed-up Encyclopedia volume, perform the following tasks:

- Take the Encyclopedia volume offline
- Delete the acserverconfig.xml and volume data folders in AC_DATA_HOME
- Copy the backed up acserverconfig.xml file and volume data folders from the backup folder to AC_DATA_HOME
- Restore the Encyclopedia volume metadata using the PostgreSQL pg_restore utility
- Take the Encyclopedia volume online

The pg_restore utility runs using arguments similar to the pg_dump utility. The following example shows a typical pg_restore command used to import the contents of a backup file to an Encyclopedia volume schema:

```
pg_restore -h mydbhost -p 8432 -U postgres -d db_name
  ac corp schema.dmp
```

Run pg_restore by performing the following tasks.

How to take the Encyclopedia volume offline

1 In a web browser type:

```
http://localhost:8900/acadmin/config
```

Log into Configuration Console as Administrator.

- **2** On the Simple view, choose Advanced view. Choose Volumes.
- **3** On Volumes, take the volume offline, as shown in Figure 9-7.



Figure 9-7 Taking the volume offline

How to restore the backed up volume data folders

1 Navigate to AC_DATA_HOME/config/11SP3.

Delete acserverconfig.xml, as shown in Figure 9-8.

Figure 9-8 Deleting acserverconfig.xml

2 In AC_DATA_HOME, open the encyc folder.

In AC_DATA_HOME/encyc, delete the file, fileType, status, and tempRov folders, as shown in Figure 9-9.

In a backup taken immediately after an iServer installation where there has been no activity on the system, the status or tempRov folders may not exist. Be sure to not delete the postgresql folder.



Figure 9-9 Deleting the file, filetype, status, and tempRov folders

3 Navigate to the following location:

/home/Actuate/encyc backup

Copy acserverconfig.xml to AC_DATA_HOME/config/11SP3, as shown in Figure 9-10.

```
[Actuate@devcomm-lnx-rh-01 encyc] $ pwd
/home/Actuate/AcServer/data/encvo
[Actuate@devcomm-lnx-rh-01 encyc] $ cd
[Actuate@devcomm-lnx-rh-01 ~] $ cd encyc backup
[Actuate@devcomm-lnx-rh-01 encyc_backup] $ ls
acserverconfig.xml file fileType iserver.backup status tempRov
[Actuate@devcomm-lnx-rh-01 encyc backup] cp acserverconfig.xml /home/Actuate/AcServer/data
/config
[Actuate@devcomm-lnx-rh-01 encyc backup]$ _
```

Figure 9-10 Copying acserverconfig.xml to AC_DATA_HOME/config/11SP3 The contents of AC_DATA_HOME/config/11SP3 appear as shown in Figure 9-11.

```
[Actuate@devcomm-lnx-rh-01 encyc backup] $ pwd
/home/Actuate/encvc backup
[Actuate@devcomm-lnx-rh-01 encyc_backup] $ cd
[Actuate@devcomm-lnx-rh-01 ~] $ cd AcServer/data/config
[Actuate@devcomm-lnx-rh-01 config] $ ls
acconfigowner.lock acserverconfig.xml acserverconfig.xml.booted acserverlicense.xml
[Actuate@devcomm-lnx-rh-01 config]$ _
```

Figure 9-11 Viewing the contents of AC_DATA_HOME/config/11SP3

4 Copy the file, fileType, status, and tempRov folders to AC_DATA_HOME/ encyc, as shown in Figure 9-12.

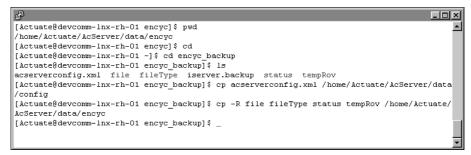


Figure 9-12 Copying the volume data folders to AC_DATA_HOME/encyc The contents of AC_DATA_HOME/encyc appear as shown in Figure 9-13.



Figure 9-13 Viewing the contents of AC_DATA_HOME/encyc

How to run pg_restore

1 Navigate to the following location:

/home/Actuate/AcServer/postgresql/bin

2 Execute the following command. Substitute your machine name for devcomm-lnx-rh-01 in this example:

```
./pg_restore --host devcomm-lnx-rh-01 --port 8432 --username
  postgres --dbname iserver --clean --verbose "/home/Actuate/
  AcServer/encyc_backup/iserver.backup"
```

3 The command line appears as shown in Figure 9-14.

```
[Actuate@devcomm-lnx-rh-01 encyc] pwd
/home/Actuate/AcServer/data/encyc
[Actuate@devcomm-lnx-rh-01 encyc] cd ../..
[Actuate@devcomm-lnx-rh-01 encyc] cd postgresql/bin
[Actuate@devcomm-lnx-rh-01 bin] s ./pg_restore --host devcomm-lnx-rh-01 --port 8432 --userna me postgres --dbname iserver --clean --verbose "/home/Actuate/AcServer/encyc_backup/iserver .backup"_
```

Figure 9-14 Entering the command to execute pg_restore

How to take the Encyclopedia volume online

1 In a web browser type:

http://localhost:8900/acadmin/config

Log into Configuration Console as Administrator.

- **2** On the Simple view, choose Advanced view. Choose Volumes.
- **3** On Volumes, take the volume online, as shown in Figure 9-15.

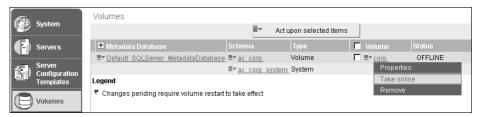


Figure 9-15 Taking the volume online

More information about backing up and restoring an Encyclopedia volume schema using the PostgreSQL pg_dump and pg_restore utilities is available at the following location:

http://www.postgresql.org/docs/8.4/static/backup.html

Backing up and restoring an Encyclopedia volume that uses an Oracle database

Oracle provides the Data Pump Export (expdp) and Import (impdp) commandline utilities to back up and restore a database. Oracle Data Pump utilities enable high-speed uploading and downloading of data and metadata in an Oracle RDBMS. Unlike the PostgreSQL backup and restore utilities, the Oracle Data Pump utilities run on the server, not the client, for greater efficiency.

To back up an Encyclopedia volume stored in an Oracle RDBMS, the administrator performs the following operations:

- Backs up Encyclopedia volume metadata using the Oracle Data Pump Export (expdp) command-line utility
- Backs up Encyclopedia volume data and configuration file using operating system copy commands

To restore an Encyclopedia volume in an Oracle RDBMS, the administrator performs the following operations:

- Restores Encyclopedia volume metadata using the Oracle Data Pump Import (impdp) command-line utility
- Restores Encyclopedia volume data and configuration file using operating system copy commands

The following sections provide more information on how to perform these backup and restore operations.

Backing up an Encyclopedia volume using Oracle Data Pump Export (expdp)

Oracle Data Pump utilities require the database administrator to map a database dump directory to a physical directory in the file system. The Oracle RDBMS writes to and reads from this directory when performing export and import operations.

Create a directory to contain the metadata and volume data backup files outside the iServer data installation environment. To provide protection against singlepoint media failure, it is best to store the backup files on a partition that is physically separate from the Encyclopedia volume data location.

To back up an Encyclopedia volume metadata using expdp, perform the following tasks:

 Create a directory to contain the metadata and volume data backup files using sqlplus

- Backup Encyclopedia volume metadata using the Oracle Data Pump Export (expdp) utility
- Back up the acserverconfig.xml file and volume data directories to the backup folder

How to create a back up of the Encyclopedia volume metadata

- 1 In Linux, open a command window.
- **2** Use sqlplus, an Oracle SQL editing tool, to log in as the system administrator, as shown in the following example:

```
sqlplus system/password@db_host/dbname.actuate.com
```

The example specifies the system administrator and password, the host name of the machine where the Oracle server is running, and the full database domain name.

3 In sqlplus, create a backup directory to contain the Encyclopedia volume metadata, as shown in the following example:

Exit sqlplus.

4 Backup the Encyclopedia volume metadata using the Oracle Data Pump Export (expdp) utility, as shown in the following example:

```
expdp system/password@db_host/dbname.actuate.com
   SCHEMAS=corp
   DIRECTORY=encyc_backup
   DUMPFILE=ac_corp_schema.dmp
```

The expdp example uses the following arguments:

- system/password@db_host/dbname.actuate.com
 Specifies the system administrator and password, the host name of the machine where the Oracle server is running, and the full database domain name
- SCHEMAS
 Specifies the Encyclopedia volume schema to export, such as corp
- DIRECTORY
 Specifies the directory for writing the database dump, such as encyc_backup, created by the system administrator in sqlplus
- DUMPFILE
 Specifies the name of the output file, such as ac_corp_schema.dmp

After backing up the Encyclopedia volume metadata, back up the acserverconfig.xml file and volume data directories to the backup directory by performing the following tasks.

How to back up the volume data directories

1 Navigate to AC_DATA_HOME, the location of the iServer data. The administrator specified this location on Setup Type during the install. The default path for AC_DATA_HOME is:

/home/Actuate/AcServer/data

2 In AC_DATA_HOME, navigate to the config folder. In Actuate Release 11 Service Pack 3, the acserverconfig.xml file is located in the config/11SP3 subfolder.

Copy acserverconfig.xml to the following backup location:

/home/Actuate/encyc_backup

3 Navigate to AC_DATA_HOME/encyc, then copy the file, fileType, status, and tempRov directories to the following backup location:

/home/Actuate/encyc_backup

In a backup taken immediately after an iServer installation where there has been no activity on the system, the status or tempRov directories may not exist. These directories contain information about job details and completion notices and do not appear until a job executes. If these directories are not present in the environment, simply back up the file and fileType directories.

Restoring an Encyclopedia volume using Oracle Data Pump Import (impdp)

To restore a backed-up Encyclopedia volume using Oracle Data Pump Import (impdp), perform the following tasks:

- Take the Encyclopedia volume offline
- Delete the acserverconfig.xml file and volume data directories in AC_DATA_HOME
- Copy the backed up acserverconfig.xml file and volume data directories from the backup directory to AC_DATA_HOME
- Restore the Encyclopedia volume metadata using the Oracle impdp utility
- Take the Encyclopedia volume online

Take the Encyclopedia volume offline by performing the following tasks.

How to take the Encyclopedia volume offline

1 In a web browser type:

http://localhost:8900/acadmin/config

Log into Configuration Console as Administrator.

- **2** On the Simple view, choose Advanced view. Choose Volumes.
- **3** On Volumes, take the volume offline, as shown in Figure 9-16.

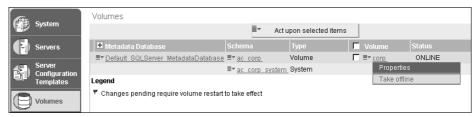


Figure 9-16 Taking the volume offline

How to restore the backed up volume data directories

- In Linux, open a command window.
- 2 Navigate to AC_DATA_HOME/config/11SP3 directory and delete the acserverconfig.xml file.
- 3 Navigate to AC_DATA_HOME/encyc directory and delete the file, fileType, status, and tempRov directories.

In a backup taken immediately after an iServer installation where there has been no activity on the system, the status or tempRov directories may not exist.

4 Navigate to the following backup directory location:

/home/Actuate/encyc backup

- **5** From the backup directory location, perform the following tasks:
 - 1 Copy acserverconfig.xml to AC_DATA_HOME/config/11SP3.
 - 2 Copy the file, filetype, status, and tempROV directories to AC_DATA_HOME/encyc.

Restore the Encyclopedia volume metadata using the Oracle Data Pump Import (impdp) command-line utility, by performing the following tasks.

How to restore a back up of the Encyclopedia volume metadata

1 Restore the Encyclopedia volume metadata using the impdp utility, as shown in the following example:

```
impdp system/password@db host/dbname.actuate.com
  SCHEMAS=corp
```

```
DIRECTORY=encyc backup
DUMPFILE=ac corp schema.dmp
```

The Oracle impdp utility runs using arguments similar to the expdp utility. Take the Encyclopedia volume online by performing the following tasks.

How to take the Encyclopedia volume online

1 In a web browser type:

```
http://localhost:8900/acadmin/config
```

Log into Configuration Console as Administrator.

- **2** On the Simple view, choose Advanced view. Choose Volumes.
- **3** On Volumes, take the volume online, as shown in Figure 9-17.

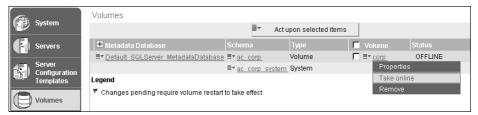


Figure 9-17 Taking the volume online

For more information about backing up and restoring an Encyclopedia volume schema using the Oracle Data Pump utilities, go to the following location:

http://download.oracle.com/docs/cd/B19306_01/server.102/b14215/ dp overview.htm

Backing up and restoring an Encyclopedia volume that uses a DB2 database

To back up an Encyclopedia volume in the DB2 RDBMS environment, the administrator performs the following operations:

- Backs up Encyclopedia volume metadata using DB2 commands
- Backs up Encyclopedia volume data and configuration files using operating system copy commands

To restore an Encyclopedia volume in the DB2 RDBMS environment, the administrator performs the following operations:

- Restores Encyclopedia volume data and configuration files using operating system copy commands
- Restores Encyclopedia volume metadata using DB2 commands

The following sections show how to perform these backup and restore operations.

Backing up an Encyclopedia volume

To back up an Encyclopedia volume, perform the following tasks:

- Create a folder to contain the backup files
- Back up Encyclopedia volume metadata
- Back up the acserverconfig.xml file and volume data folders to the backup folder

Create a folder to contain the volume data backup files outside the iServer data installation environment. To provide protection against single-point media failure, it is best to store the backup files on a partition that is physically separate from the Encyclopedia volume data location.

In a Windows environment, create a folder to contain the volume data backup files by performing the following tasks.

How to create a new backup folder

1 Navigate to your home folder, which by default is:

/home/Actuate

2 Create the following new folder:

/home/Actuate/encyc_backup

Backup Encyclopedia volume metadata by performing the following tasks.

How to create a backup of the Encyclopedia volume metadata

- 1 Add the path to db2profile to the PATH variable on your machine.
- **2** Execute the following command to perform an online backup of the entire database and compress the backup image:

```
BACKUP DATABASE ISERVER ONLINE

TO "/home/Actuate/encyc_backup"

WITH 2 BUFFERS BUFFER 1024 PARALLELISM 1

COMPRESS WITHOUT PROMPTING
```

After backing up the Encyclopedia volume metadata, back up the acserverconfig.xml file and volume data directories to the backup directory by performing the following tasks.

How to back up the volume data folders

1 Navigate to AC_DATA_HOME, which is the location of the iServer data. The administrator specified this location on Setup Type during the install procedure. The default path for AC_DATA_HOME is:

/home/Actuate/AcServer/data

2 In AC_DATA_HOME, navigate to the config directory. In Actuate Release 11 Service Pack 3, the acserverconfig.xml file is located in the config/11SP3

Copy acserverconfig.xml to the following backup location, as shown in Figure 9-18:

/home/Actuate/encyc_backup



Figure 9-18 Copying acserverconfig.xml to the backup location

3 Navigate to AC SERVER-HOME/encyc.

Copy the file, fileType, status, and tempRov folders to the following backup location, as shown in Figure 9-19:

/home/Actuate/encyc_backup



Figure 9-19 Copying the volume data folders to the backup location

In a backup taken immediately after an iServer installation where there has been no activity on the system, the status or tempRov folders may not exist. These folders contain information about job details and completion notices and do not appear until a job executes. If these folders are not present in the environment, simply back up the file and fileType folders.

The contents of the backup folder appear as shown in Figure 9-20.

Figure 9-20 Viewing the contents of the backup folder

Restoring an Encyclopedia volume

To restore a backed-up Encyclopedia volume, perform the following tasks:

- Take the Encyclopedia volume offline
- Delete the acserverconfig.xml file and volume data folders in AC_DATA_HOME
- Copy the backed up acserverconfig.xml file and volume data folders from the backup folder to AC_DATA_HOME
- Restore the Encyclopedia volume metadata
- Take the Encyclopedia volume online

Take the Encyclopedia volume offline by performing the following tasks.

How to take the Encyclopedia volume offline

1 In a web browser type:

```
http://localhost:8900/acadmin/config
```

Log into Configuration Console as Administrator.

- **2** On the Simple view, choose Advanced view. Choose Volumes.
- **3** On Volumes, take the volume offline, as shown in Figure 9-21.

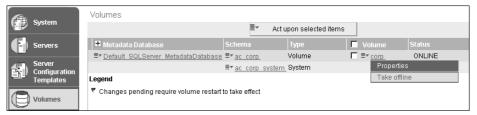


Figure 9-21 Taking the volume offline

How to restore the backed up volume data folders

1 Navigate to AC_DATA_HOME/config/11SP3. In Actuate Release 11 Service Pack 3, the acserverconfig.xml file is located in the config/11SP3 subfolder.

Delete acserverconfig.xml, as shown in Figure 9-22.

```
_|_|X
[Actuate@devcomm-lnx-rh-01 ~] $ pwd
/home/Actuate
[Actuate@devcomm-lnx-rh-01 ~] cd AcServer/data/config
[Actuate@devcomm-lnx-rh-01 config] $ ls
acconfigowner.lock acserverconfig.xml acserverconfig.xml.booted acserverlicense.xml
[Actuate@devcomm-lnx-rh-01 config] frm acserverconfig.xml
[Actuate@devcomm-lnx-rh-01 config] $ _
```

Figure 9-22 Deleting acserverconfig.xml

2 In AC_DATA_HOME, open the encyc folder.

In AC_DATA_HOME/encyc, delete the file, fileType, status, and tempRov folders, as shown in Figure 9-23.

In a backup taken immediately after an iServer installation where there has been no activity on the system, the status or tempRov folders may not exist.

```
[Actuate@devcomm-lnx-rh-01 config] $ pwd
/home/Actuate/AcServer/data/config
[Actuate@devcomm-lnx-rh-01 config] $ cd ..
[Actuate@devcomm-lnx-rh-01 data] $ cd encyc
[Actuate@devcomm-lnx-rh-01 encyc] $ ls
file fileType postgresql status tempRov
[Actuate@devcomm-lnx-rh-01 encyc] rm -R file fileType status tempRov
[Actuate@devcomm-lnx-rh-01 encyc] $ _
```

Figure 9-23 Deleting the file, filetype, status, and tempRov folders

3 Navigate to the following location:

/home/Actuate/encyc backup

Copy acserverconfig.xml to AC_DATA_HOME/config/11SP3, as shown in Figure 9-24.

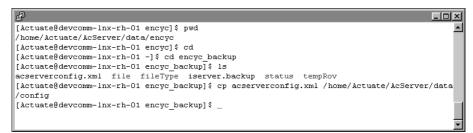


Figure 9-24 Copying acserverconfig.xml to AC_DATA_HOME/config

4 Copy the file, fileType, status, and tempRov folders to AC_DATA_HOME/ encyc, as shown in Figure 9-25.

```
[Actuate@devcomm-lnx-rh-01 encyc] pwd
/home/Actuate/AcServer/data/encyc
[Actuate@devcomm-lnx-rh-01 encyc] cd
[Actuate@devcomm-lnx-rh-01 encyc_backup
[Actuate@devcomm-lnx-rh-01 encyc_backup] s ls
acserverconfig.xml file fileType iserver.backup status tempRov
[Actuate@devcomm-lnx-rh-01 encyc_backup] cp acserverconfig.xml /home/Actuate/AcServer/data/config
[Actuate@devcomm-lnx-rh-01 encyc_backup] cp -R file fileType status tempRov /home/Actuate/AcServer/data/encyc
[Actuate@devcomm-lnx-rh-01 encyc_backup] cp -R file fileType status tempRov /home/Actuate/AcServer/data/encyc
[Actuate@devcomm-lnx-rh-01 encyc_backup] cp -R file fileType status tempRov /home/Actuate/AcServer/data/encyc
```

Figure 9-25 Copying the volume data folders to AC_DATA_HOME/encyc The contents of AC_DATA_HOME/config appear as shown in Figure 9-26.

Figure 9-26 Viewing the contents of AC_DATA_HOME/config
The contents of AC_DATA_HOME/encyc appear as shown in Figure 9-27.

```
[Actuate@devcomm-lnx-rh-01 config] pwd
/home/Actuate/AcServer/data/config
[Actuate@devcomm-lnx-rh-01 config] cd ..
[Actuate@devcomm-lnx-rh-01 data] cd encyc
[Actuate@devcomm-lnx-rh-01 encyc] ls
file fileType postgresql status tempRov
[Actuate@devcomm-lnx-rh-01 encyc] ...
```

Figure 9-27 Viewing the contents of AC_DATA_HOME/encyc

How to restore a back up of the Encyclopedia volume metadata

- **1** Add the path to db2profile to your PATH variable.
- **2** Execute the following command to perform an online backup of the entire database and compress the backup image:

```
db2 RESTORE DATABASE ISERVER FROM "C:\Actuate\iserver\
  encyc_backup" TAKEN AT 20111004180138 WITH 2 BUFFERS BUFFER
  1024 PARALLELISM 1 WITHOUT ROLLING FORWARD WITHOUT PROMPTING;
```

where

20111004180138

is the time stamp of the backup image.

Take the Encyclopedia volume online by performing the following tasks.

How to take the Encyclopedia volume online

1 In a web browser type:

http://localhost:8900/acadmin/config

Log into Configuration Console as Administrator.

- **2** On the Simple view, choose Advanced view. Choose Volumes.
- **3** On Volumes, take the volume online, as shown in Figure 9-28.



Figure 9-28 Taking the volume online

For more information about backing up and restoring an Encyclopedia volume schema using the DB2 database utilities, go to the following location:

http://www.ibm.com/developerworks/data/library/techarticle/ dm-0910db2incrementalbackup/index.html

Index

A	acserverconfig.xml 13, 134
	activity logs 161
AC_CONFIG_HOME 149	AcToc utility 17
AC_DATA_HOME variable 140	Actuate Analytics Option 177
AC_JAVA_HOME variable 42, 151	Actuate Basic reports 178
AC_JRE_HOME variable 42, 151	Actuate Customer Support xi
AC_JRE64_HOME variable 43, 151 AC_JVM_HOME variable 42, 151	Actuate licensing options 176, 181
	Actuate product information 151
AC_SERVER_HOME parameter 117, 118	Actuate Query Option 177
AC_SERVER_HOME variable 30, 78, 151	Actuate Support Lifecycle Policy xii
AC_TEMPLATE_NAME variable 149	actuate.com vii
acadmin context root 39	ActuateOne technology vii
accessing data 11	AcVerify utility 17
	adding
Encyclopedia system database 18	backup folders 211
Encyclopedia volumes 43, 176, 178	cluster nodes 13, 134
help files x, xi	e-mail accounts 189
help topics xi	Encyclopedia volumes 26, 178
iServer features 43, 176	indexes 5
machine ID information 182	licensing options 181
online documentation 154	processor sets 184, 185, 186
resources 161	user accounts 24, 48, 74
web-based content 177, 178	users 48, 49, 50, 52, 54
accounts	volume partitions 109
cluster configurations and 135	administration tools 16
connecting to databases and 54	administrative reports 19
creating application users and 50, 52	administrator accounts 27
creating dedicated iServer 24, 48	See also accounts
installing alternate databases and 48	administrator passwords 35
installing iServer and 24, 27	administrators
licensing iServer and 189	customizing third-party databases and 18
managing 16	installing iServer and 24, 41, 48
upgrades and 74	licensing iServer and 176
AcEncycUpgrade utility 17	managing Encyclopedia and 7
AcExport utility 16	managing iServer System and 14
AcExtern utility 17	migrating to current release and 44, 45,
AcImport utility 16	108
AcIntern utility 17	optimizing iServer System and 13, 134
acmachineid utility 182	preventing data loss and 7, 24, 55
AcMode utility 17	storing user information and 5
acpmdconfig.xml 13, 134	upgrading iServer and 74, 75
Acrobat Catalog. See Adobe Acrobat Catalog	Adobe Acrobat Catalog utility xi
AcServer directory 139	aggregation 177

AIX servers 26, 137, 155	binary files 29,78
Analytics Option 177	BIRT 360 Option 177
analyzing	BIRT Data Ånalyzer Option 177
data 177	BIRT Designer Professional 177
search results 178	BIRT Exchange URL 25
Apache Tomcat service 154	BIRT Interactive Viewer Option 177
application pages. See web pages	BIRT iServer System names 31
application programming interfaces	BIRT iServer. See iServer
(APIs) 18	BIRT open source projects vii
application servers 160, 162	BIRT Option 177
See also servers	BIRT Page Level Security option 177
APPLICATION_USER parameter 119	BIRT reports 177
APPLICATION_USER_PASSWORD	See also reports
parameter 119	BIRT Spreadsheet Designer 177
applications	BIRT Spreadsheet Option 177
See also specific iServer application	BIRT Studio 161
accessing Encyclopedia and 43	BIRT Studio Option 177
backward compatibility with 18	BIRT viewer 161
creating production environment for 45	BIRT_RESOURCE_PATH parameter 161
creating test environments for 44	BIRT_VIEWER_LOG_DIR parameter 161
developing 15	birt-exchange.com vii
installing Öpen Security 43	browsers. See web browsers
restricting processes for 183, 184	bulk loading utiltities 17
running iServer processes and 8	Business Intelligence technology vii
upgrading and 76	•
archives (cloud deployments) 6	C
Archiving and Purging page 196	cache 162
archiving report files 196	caching
asynchronous Factory service 11	data 178
automated installation option 6	
automatic upgrades 74, 76	web pages 162
_	Caching service 9, 11
В	changing cluster machines 183
backing up	CPU binding 187, 189
database schemas 7, 25, 55	databases 54
Encyclopedia volumes 75, 198, 211	default locales 161
folders 212	IP addresses 34, 35
metadata 24, 55, 75	licensing options 181
PostgreSQL databases 197	locales 33
report data files 75	network cards 183
report files 17, 76	superuser names 32
system schemas 75, 125	time zones 33, 161
volume databases 17	volume metadata 5
backing up Encyclopedia volumes 194–197	volume names 36, 128
backward compatibility 18	character sets 19
Basic reports 178	charts 43, 177

CLASSPATH variable 43	setting passwords for 35, 83, 102
clearing web browser cache 163	updating license keys and 183
client applications 8, 15	viewing licensing information and 178
client/server models 11	configuration files 27, 76, 132, 141
cloud deployments 6	configuration home location 141
cluster IDs 13, 134	configuration parameters 134
cluster nodes 8, 13, 134	accessing 13
Cluster Server for installation option 141	Data Store Administrator 118
clusters	Squirrel Data Exporter 117, 118
accessing Configuration Console and 141	configuration templates 13, 134
adding nodes to 13, 134	configurations
associating with machine IDs 179, 181	accessing security database and 43
binding iServer processes to 184, 188	binding iServer processes and 183
changing machines for 183	deploying product files and 155
configuring HP-UX servers for 137	deploying WAR files and 160, 161, 162
configuring X Windows servers for 136–	installing cluster nodes and 141, 150
137	installing Information Console and 160
connecting to iServer System and 8	installing iServer and 27
creating user accounts for 135	installing X frame buffer and 26, 137
deploying to 162	licensing iServer and 179, 183
determining number of processors for 187	managing external volume databases
exceeding CPU licenses for 188	and 7
failing 13, 134	master cluster nodes and 8
installing IServer as 135, 137	overwriting previous installations and 41
installing Xvfb software for 136, 137	running large files and 137
licensing 179, 180, 181, 182	specifying licensing options and 176
load balancing for 13, 134	testing installations and 44
running iServer processes and 11, 13	upgrading and 132
running iServer services and 8	upgrading iServer and 76
setting up Encyclopedia database for 11,	configuring
13	iServer 9
storing volume metadata and 5	iServer System 6
upgrading iServer and 180	LDAP servers 43
command-line options 16	system data store 125
command-line utilities 16	third-party databases 5, 9, 11, 13
comments 132	upgrade utilities 132
CONFIG_SCHEMA_NAME parameter 119	X Windows servers 25, 26, 136
ConfigHomeDirectory variable 179	connection parameters 19
Configuration Console	connection pooling 18, 49
accessing documentation for 16	connections
adding cluster nodes and 150	accessing volume database and 18, 49
cluster configurations and 13, 141	cluster configurations and 8
creating Encyclopedia and 130, 131	creating application users for 50, 52
distributing requests for 9	creating user accounts and 54
installing 141	running Information Console and 161
migrating Encyclopedia and 108	running queries and 11
sending notifications and 189	context roots 39, 105, 146, 160
-	

context-sensitive help 168	D
corrupted schemas 75	
CPU binding 180, 183–189	dashboards vii, 177
CPU binding validation 188, 189	data
CPU-based licenses 183, 187, 188, 189	accessing 11
CPUs	analyzing 177
AIX servers and multiple 155	backing up 75
configuring X Windows servers for 25, 26,	backing up Encyclopedia and 194
136	exporting 121
deploying iServer over multi-	importing 122
threaded 184	preventing loss of 7, 24, 55
	recovering 7
determining number of 187	specifying default locations for 30
licensing and 183	upgrades and 6
measuring machine capacity for 176	data cache 178
restricting processes for 183, 184	data cubes. See cubes
running Information Console and 160	Data Definition Language statements 48
viewing maximum number of 188	data directory 30
CREATE_SCHEMA parameter 120	Data Exporter configurations 132
creating	Data Exporter utility
backup folders 211	See also Squirrel Data Exporter
cluster nodes 13, 134	data files 140
data cubes 177	
database schema owners 48, 49, 50, 51, 52,	Data Integration Option 178
54	data objects files 5
database schemas 48, 51, 54	data sources 11, 178
e-mail accounts 189	data store 161
Encyclopedia 130, 131	Data Store Administrator
Encyclopedia volumes 26	configuring 132
indexes 5	migrating iServer installations and 6, 16
processor sets 184, 185, 186	running 127
production environments 45	upgrading iServer and 118, 127
production staging areas 44	Data Store Upgrader
report designs 177	migrating volume data and 6
system databases 11, 49	upgrading iServer and 16
test environments 44	Data Store Upgrader configurations 132
user accounts 24, 48, 74	data stores 48, 125
users 48, 49, 50, 52, 54	data types 18
cube reports 177	DATA_EXPORT_FOLDER parameter 120
cubes 177	DATA_EXPORT_FORMAT parameter 120
cubeview files 177	DATA_IMPORT_FOLDER parameter 120
	DATA_IMPORT_FORMAT parameter 120
custom applications 44 custom installations 43	database administration tool
	backing up Encyclopedia and 198, 211
Customer Support xi	restoring Encyclopedia and 213
customizing	database clients 37, 144
third-party databases 5, 18	database drivers 37, 144
WAR files 162	database objects 50, 52

database schema owner 54	DDL statements 48
database schema owners 5, 48, 49, 50, 51	decompressing localization and
database schemas 195	documentation files 169
assigning privileges 49, 54	default directories. See directories
backing up 24, 55	default Encyclopedia volume 39
creating 48, 51, 54	default hostname 35
creating system 27	default installation directory 154
populating 127	default locales 33, 142, 161
preventing data loss and 7	default paths 30
storing volume information and 4, 5	default time zone 33, 142, 161
upgrades and 75	default values 41
DATABASE_HOST parameter 120	default volume name 36
DATABASE_NAME parameter 120	DEFAULT_LOCALE parameter 161
DATABASE_PORT parameter 121	DEFAULT_TIMEZONE parameter 161
DATABASE_TYPE parameter 118, 121	DEFAULT_VOLUME parameter 161
databases	DELETE_ALL_DATA parameter 121
accessing Encyclopedia and 43	DELETE_DATA parameter 121
adding indexes for 5	deleting Encyclopedia volumes 130
analyzing data and 177	deploying
backing up Encyclopedia and 195	Information Console 160, 161, 162
backing up metadata for 7, 24	iServer 6, 13, 134, 184
backing up system 17	new releases 43
caching information objects and 178	spreadsheets 177
changing 54	deployment tools 160
changing volume metadata and 5	DÉPÓPULATE_SCHEMA parameter 121
committing resources to 27	design files 5
configuring third-party RDBMS 8, 9, 11, 13	designers vii, 44
connecting to 50, 52, 54	designs 11, 44, 177
CPU binding and 185	desktop products 44
creating system 11, 49	developing applications 15
customizing 5, 18	DHTML formats 178
installing alternate metadata 48, 55	diagnostic fixes 9, 14, 135
installing as system schema 50	directories
installing as volume schema 51	backing up 76
installing iServer and 24, 27	configuring cluster nodes and 13, 134
installing system 32	customizing WAR files and 162
integrating 178	extracting product files to 154
managing Encyclopedia and 7	installing cluster nodes and 139, 141
running iServer clusters and 14	installing documentation files and xi
setting passwords for 32	installing Information Console and 154,
specifying default locations for 30	155, 157
storing user information and 4, 5	installing iServer and 27, 29
storing volume metadata and 32	installing iServer Integration Technology
upgrades and 6,74	and 166
DB2 database administration tool	installing Java SDK files and 151
backing up Encyclopedia and 211	installing JDK files and 42
restoring Encyclopedia and 213	installing upgrades and 76, 86

locating home 151	Encyclopedia Data Store Administrator
migrating Encyclopedia and 108	configuring 132
running multiple releases and 42	migrating iServer installations and 6, 16
upgrading iServer and 41	running 127
directory paths 29, 78, 161	upgrading iServer and 118, 127
disk space 42	Encyclopedia Data Store Upgrader
DISPLAY environment variable 25	migrating volume data and 6
display_value variable 25	upgrading iServer and 16
displaying	Encyclopedia Data Store Upgrader
charts 43	configurations 132
cube reports 177	Encyclopedia processes. <i>See</i> encycsrvr11
images 25	processes
licensing information 178, 182	Encyclopedia volumes
machine ID information 182	accessing multiple 178
process IDs 185	accessing objects in 176
reports 25, 177	adding partitions for 109
DLLs 43	backing up 75, 194–197, 198, 211
document files 5	backing up metadata for 24
document generation service 11	connecting to database for 18
documentation	controlling access to 43
accessing vii–xi, 154	CPU binding and 188
administering iServer System and 15	creating default 26
downloading xi	creating new 130, 131
installing xi, 168	creating schema database for 51
managing Encyclopedia and 7	creating schema owner for 50, 52, 54
documentation conventions xii	creating schemas for 54
documentation updates 168	customizing system database for 5, 18
downloading	deleting 130
documentation files x	exporting 129
HP-UX processor sets 186	failover operations for 7, 8
product files 25, 154	importing 113, 128
drivers 11, 14, 18, 37, 144	installing alternate database for 55
DROP_SCHEMA parameter 121	installing Information Console and 155,
dynamic link libraries 43	158
dynamic mix notatics 45	installing Management Console and 146
E	installing schema database for 48, 51, 55
	installing system database for 4, 6
e.Analysis Option 178	iServer processes and 8
e.Report Designer Professional 178	localizing 19
e.Report Option 178	managing 7
e.reporting server. See iServer	migrating 45, 74, 108
e.reports 178	migrating data for 16
Eclipse BIRT open source projects vii	naming 36
elastic iServer clustering 13, 134	preventing data loss for 7, 24, 55
e-mail. See notifications	renaming 36, 128
encoding 19	restoring 197, 210, 213
encyc directory 76, 108	running iServer clusters and 14, 134
	ranning iociver clusicis and 14, 104

running system database for 4,9	backing up 17,75,76
setting system name for 31	backing up Encyclopedia and 196
setting up sample 48	configuring upgrade utilities and 132
specifying default 39, 161	downloading documentation x
specifying metadata locations for 32	downloading product 25, 154
starting 9	extracting program 27
storing user information for 4, 5, 11	installing iServer and 25
upgrading iServer and 6, 16, 75	installing JDK software and 42
encycsrvr11 processes 184, 187, 188	installing online help 168, 169
Enterprise Information Integration (EII)	managing 7
services 178	overwriting product 6,41
environment variables 13, 25, 42, 134, 151	purging 196
environments 154	specifying default directories for 29, 30
error logging reports 19	storing report-specific 5
error messages 187	transmitting license keys and 183
errors 162	updating 168
escape characters 132	upgrading iServer and 44
evaluation copies 25, 34, 143	firewalls 155
example reports 19	fixes 9, 14, 135
Excel formats vii	Flash gadgets vii
Excel spreadsheets 177	folders 161
executable files 43	backing up 212
Expiration time of deleted files property 196	creating 211
export utilities 127	fonts 25
EXPORT_ALL_DATA parameter 121	formats vii
EXPORT_DATA parameter 121	Forrester Wave Open Source Business
exporting	Intelligence report vii
data 121	ftp distributions xi, 154
Encyclopedia volumes 129	full installations 154
external data sources 11	
external security system 43	G
extracting product files 154	gadgets vii
extracting program files 27	generating
_	charts 43
F	images 25
Factory processes 42, 188	machine ID information 182
Factory service 9, 11, 42	reports 43
failover operations 7, 8	temporary documents 11
features xi, 43, 151, 176	getJDBCMajorVersion method 18
file I/O operations 11	graphical window manager 26
file name extensions 183	graphics cards 25
file systems 5, 11, 137	graphics displays 25
FILE_LOG_LEVEL parameter 118, 121	graphs. See charts
files	grep command 151
accessing online help x, xi	0 1
archiving 196	

Н	setting default Encyclopedia for 161
hoop size 160	setting IP address or host name for 158
heap size 160	stand-alone configurations and 9
help 154, 168	starting 163
See also documentation	testing installations for 163
help files x, xi	Information Console service 159
help topics xi	Information Delivery API 16
helpinstall script 169	information delivery solutions vii
home directory 151, 154	Information Object Caching Option 178
host machines 27	information object files 5
hostnames 34, 35	information objects 177, 178
hosts 161	INITIALIZE_DATA parameter 122
HP-UX servers	in-place upgrades 74, 76, 86
configuring X frame buffer for 137	installation
CPU binding and 186	alternative schema databases and 48
installing as cluster 137	alternative volume databases and 55
installing iServer System on 137	cache conflicts and 162
installing Xvfb software for 26, 137	Configuration Console 141
reconfiguring as large file systems 137	desktop products 44
HTML documentation vii, x	disk space and 42
HTTP port 39, 106	documentation files 169
HTTP server context 39	Encyclopedia volume database 4, 5, 6
HTTP server context root 105	Information Console 154
	iServer 6, 24, 26–40, 48
I	iServer clusters 135, 137
I/O operations 11	iServer Integration Technology 166–168
IDAPI applications 10, 16	iServer System 6, 154
images 25	iServer System components 31
import utilities 127	Java Software Development Kit 42, 151
IMPORT_DATA parameter 122	license keys 182
importing	Management Console 142, 144
data 122	online documentation xi, 168, 169
Encyclopedia volumes 113, 128	Open Security application 43
indexed searches 5	previous releases and 42
infoconsoleinstall.sh 155	testing 44, 163
Information Console	upgrades and 41
assigning CPUs to 160	X frame buffer 26, 137
caching web pages for 162	X Windows servers 37
cluster configurations and 13	Xvfb software 25, 26, 136, 137
configuring 162	installation guides 16
connecting to 161	installation prerequisites 24, 48, 154
deploying 155, 160, 161, 162	installation requirements 154
installing 154	installation scripts 27, 87, 155, 166, 169
logging activities for 161	Integration service 9, 11, 178
logging in to 163	Interactive Viewer 177
	international character sets 19
preventing cache conflicts for 163	
setting context root for 160	international customer licensing 181

IP addresses 34, 35	creating schema owner for 49, 51
iServer	deploying new releases and 43
accessing functionality 176	downloading files for 25, 154
assigning CPUs to 160	
	installation options for 6
changing CPU binding and 187, 189	installing schema database for 51
checking bound processors for 187–188	licensing options for 176, 181
configuring 9	optimizing 13, 134
configuring system data store for 125	running multiple releases and 42
configuring X Windows servers for 25, 26,	upgrade options for 74, 76
136	upgrading 75
deploying 6, 13, 134, 184	iServer System components 31, 154, 170
downloading evaluation copies for 25	iServer System names 31
getting machine ID for 181	iserver user 27
initializing 26	isinstall script 27,76
installing 6, 24, 26–40, 48	isitinstall script 166
installing as cluster 135, 137, 180	
integrating LDAP servers with 36	J
locating home directory for 151	J2EE installations 160
optimizing performance for 14, 135	JAR files 43
running 14, 24, 48, 134	Java heap 160
setting hostnames for 38	Java Object Interface 43
setting machine names for 35	Java Runtime Environment (JRE) 151
setting port number for 35	Java Server Pages. See JSPs
setting up user accounts for 24, 48, 74	Java Software Development Kit (JDK) 42, 151
setting up volume database and 5, 9	JDBC drivers 11, 18
starting 36, 103	jdbcCompliant method 18
storing volume information and 4, 5	jobs 10
testing new releases for 43-45	JSPs 162
upgrades and 6,41	JOI 3 102
upgrading 74, 76	K
viewing licensing information for 178, 182	K
iServer Integration Technology 16, 166–168	keys. See license keys
iServer processes	
binding to CPUs 180, 183–189	L
	large files 127
cluster configurations and 135	large files 137
creating resource groups and 42	LDAP configuration file 43
running 8, 13, 134	LDAP security database 43
specifying user accounts for 24	LDAP servers 36, 43
upgrading and 76	libraries 25, 26, 43
iServer services 8	libstdc++ library 26
See also specific iServer service	license files 34
iServer servlet container 8	license key file names 180, 183
iServer System	license key files 180, 181, 182
administering 14	license keys 179, 180, 182, 183, 184
cluster connecctions and 8	licensed CPUs 183, 187, 188, 189
configuring 6	licenses 178, 179, 180, 181
creating dedicated account for 24	licensing options 176, 181
	1101 in a priorie 170, 101

links (documentation) xi	Management Console
Linux servers	accessing documentation for 16
downloading product files for 154	cluster configurations and 13
getting home directory for 151	installing 142, 144
installation prerequisites for 24, 48	licensing iServer and 176
installing cluster nodes for 135, 137	setting context root for 146
installing Information Console for 154,	setting default volume for 39
155, 160	setting host names for 143, 144
installing iServer for 27	setting iServer hostnames for 38
installing iServer Integration Technology	setting machine names for 34
for 166	setting passwords for 143
installing JDK files for 151	setting port number for 38
installing Xvfb software for 25, 26	setting port numbers for 145
running iServer processes on 24	stand-alone configurations and 9
setting classpaths for 43	manual in-place upgrades 74, 76
setting default locale for 33	manual iServer system upgrades 6
setting run level for 26	manual side-by-side upgrades 74, 76, 93
setting up user accounts for 24, 48, 74	manuals. See documentation
testing new releases for 43–45	mapping fonts 25
upgrading iServer for 41, 74, 76	mapping user information 43
load balancing (clusters) 13, 134	master cluster nodes 8
Localemap.xml 161	master index file xi
locales	message routing (requests) 13
changing 33	metadata
encoding character sets for 19	backing up 24, 55, 75
obtaining licenses for 181	changing 5
setting default 33, 142, 161	Encyclopedia volumes 196
updating resource files for 168	preventing loss of 7, 24, 55
localhost parameter 161	specifying default locations for 30, 32
Localization and Online Documentation	storing 48, 125
Update tool 168	
log files 30, 161, 188	storing volume information and 4, 11
	upgrades and 6 metadata database 5, 48, 195
LOG_FILE_COUNT parameter 118, 122	metadata database schemas 195
LOG_FILE_LOCATION parameter 161	
LOG_FILE_NAME parameter 122	Microsoft Excel spreadsheets 177
LOG_FILE_SIZE parameter 118, 122	migration 6, 16, 41, 44, 45, 74, 108
LOG_FOLDER parameter 118, 122	migration utilities 45
logging in to Information Console 163	missing functionality 162
logging levels 118	missing installation files 154
logging operations 118	missing system schemas 75
losing data 24, 55	multicast configurations 8
M	multidimensional data analysis 177
IVI	multiple CPU environments 155
machine IDs 179, 181	multiple Encyclopedia volumes 178
machine names 34, 35, 41, 155	multiple product releases 42
maintenance licenses 180	multiple upgrade installations 42
	multiple-core CPU binding 186

Multi Tanant Ontion 170	and the second section for 7
Multi-Tenant Option 178	accessing documentation for 7
multi-threaded CPUs 184 multi-user mode 26	connecting to 52
mun-user mode 20	CPU binding and 185
N	creating schema owner for 51, 52 installing as schema database 48, 51, 55
named user licenses 176	installing iServer and 24
naming	storing user information and 5
Encyclopedia volumes 36	upgrades and 74
iServer System 31	ORACLE_TNS_NAMES_FILE
naming conventions 49	parameter 123
network cards 181, 183	output 11 output formats vii
Network File Systems (NFS) 11	
networked environments 13, 26, 27, 134	overwriting previous installations 41
NEW_SCHEMA_NAME parameter 117, 122	overwriting product files 6, 41
NEW_SCHEMA_PASSWWORD	P
parameter 122	
NEW_VOLUME_NAME parameter 117, 123	Page Level Security Option 178
newinformationconsole.war 162	page-level security 177, 178
node keys 179	parameters
node-key license files 181	configuring clusters and 13, 134
node-key licensing 179, 180, 181, 182	Data Store Administrator 118
notifications 188, 189	encoding volume data and 19
	Squirrel Data Exporter 117, 118
0	partitions 109
O obsolete command-line utilities 16	partitions 109 passwords
	partitions 109 passwords installing iServer and 27
obsolete command-line utilities 16	partitions 109 passwords installing iServer and 27 installing Management Console and 143
obsolete command-line utilities 16 obsolete features 7	partitions 109 passwords installing iServer and 27 installing Management Console and 143 logging in to Configuration Console
obsolete command-line utilities 16 obsolete features 7 obsolete product information xii	partitions 109 passwords installing iServer and 27 installing Management Console and 143 logging in to Configuration Console and 83, 102
obsolete command-line utilities 16 obsolete features 7 obsolete product information xii online documentation	partitions 109 passwords installing iServer and 27 installing Management Console and 143 logging in to Configuration Console and 83, 102 setting administrator 35
obsolete command-line utilities 16 obsolete features 7 obsolete product information xii online documentation accessing vii–xi, 154	partitions 109 passwords installing iServer and 27 installing Management Console and 143 logging in to Configuration Console and 83, 102 setting administrator 35 setting superuser 32
obsolete command-line utilities 16 obsolete features 7 obsolete product information xii online documentation accessing vii–xi, 154 administering iServer System and 15	partitions 109 passwords installing iServer and 27 installing Management Console and 143 logging in to Configuration Console and 83, 102 setting administrator 35 setting superuser 32 patches 9, 14, 135
obsolete command-line utilities 16 obsolete features 7 obsolete product information xii online documentation accessing vii–xi, 154 administering iServer System and 15 downloading xi installing xi, 168 managing Encyclopedia and 7	partitions 109 passwords installing iServer and 27 installing Management Console and 143 logging in to Configuration Console and 83, 102 setting administrator 35 setting superuser 32 patches 9, 14, 135 paths 29, 78, 161
obsolete command-line utilities 16 obsolete features 7 obsolete product information xii online documentation accessing vii–xi, 154 administering iServer System and 15 downloading xi installing xi, 168 managing Encyclopedia and 7 Online Documentation and Localization	partitions 109 passwords installing iServer and 27 installing Management Console and 143 logging in to Configuration Console and 83, 102 setting administrator 35 setting superuser 32 patches 9, 14, 135 paths 29, 78, 161 pbind command 184, 187
obsolete command-line utilities 16 obsolete features 7 obsolete product information xii online documentation accessing vii–xi, 154 administering iServer System and 15 downloading xi installing xi, 168 managing Encyclopedia and 7 Online Documentation and Localization resource files xi	partitions 109 passwords installing iServer and 27 installing Management Console and 143 logging in to Configuration Console and 83, 102 setting administrator 35 setting superuser 32 patches 9, 14, 135 paths 29, 78, 161 pbind command 184, 187 PDF documentation vii, x, xi, 154, 168
obsolete command-line utilities 16 obsolete features 7 obsolete product information xii online documentation accessing vii–xi, 154 administering iServer System and 15 downloading xi installing xi, 168 managing Encyclopedia and 7 Online Documentation and Localization resource files xi online documentation conventions xii	partitions 109 passwords installing iServer and 27 installing Management Console and 143 logging in to Configuration Console and 83, 102 setting administrator 35 setting superuser 32 patches 9, 14, 135 paths 29, 78, 161 pbind command 184, 187 PDF documentation vii, x, xi, 154, 168 performance
obsolete command-line utilities 16 obsolete features 7 obsolete product information xii online documentation accessing vii–xi, 154 administering iServer System and 15 downloading xi installing xi, 168 managing Encyclopedia and 7 Online Documentation and Localization resource files xi online documentation conventions xii online Encyclopedia volumes 9	partitions 109 passwords installing iServer and 27 installing Management Console and 143 logging in to Configuration Console and 83, 102 setting administrator 35 setting superuser 32 patches 9, 14, 135 paths 29, 78, 161 pbind command 184, 187 PDF documentation vii, x, xi, 154, 168 performance cluster configurations and 14, 135
obsolete command-line utilities 16 obsolete features 7 obsolete product information xii online documentation accessing vii–xi, 154 administering iServer System and 15 downloading xi installing xi, 168 managing Encyclopedia and 7 Online Documentation and Localization resource files xi online documentation conventions xii online Encyclopedia volumes 9 online help. See online documentation	partitions 109 passwords installing iServer and 27 installing Management Console and 143 logging in to Configuration Console and 83, 102 setting administrator 35 setting superuser 32 patches 9, 14, 135 paths 29, 78, 161 pbind command 184, 187 PDF documentation vii, x, xi, 154, 168 performance cluster configurations and 14, 135 file input/output operations and 11
obsolete command-line utilities 16 obsolete features 7 obsolete product information xii online documentation accessing vii–xi, 154 administering iServer System and 15 downloading xi installing xi, 168 managing Encyclopedia and 7 Online Documentation and Localization resource files xi online documentation conventions xii online Encyclopedia volumes 9 online help. See online documentation Open Security applications 43, 76	partitions 109 passwords installing iServer and 27 installing Management Console and 143 logging in to Configuration Console and 83, 102 setting administrator 35 setting superuser 32 patches 9, 14, 135 paths 29, 78, 161 pbind command 184, 187 PDF documentation vii, x, xi, 154, 168 performance cluster configurations and 14, 135 file input/output operations and 11 iServer processes and 9
obsolete command-line utilities 16 obsolete features 7 obsolete product information xii online documentation accessing vii–xi, 154 administering iServer System and 15 downloading xi installing xi, 168 managing Encyclopedia and 7 Online Documentation and Localization resource files xi online documentation conventions xii online Encyclopedia volumes 9 online help. See online documentation Open Security applications 43, 76 open source projects vii	partitions 109 passwords installing iServer and 27 installing Management Console and 143 logging in to Configuration Console and 83, 102 setting administrator 35 setting superuser 32 patches 9, 14, 135 paths 29, 78, 161 pbind command 184, 187 PDF documentation vii, x, xi, 154, 168 performance cluster configurations and 14, 135 file input/output operations and 11 iServer processes and 9 upgrades and 42
obsolete command-line utilities 16 obsolete features 7 obsolete product information xii online documentation accessing vii–xi, 154 administering iServer System and 15 downloading xi installing xi, 168 managing Encyclopedia and 7 Online Documentation and Localization resource files xi online documentation conventions xii online Encyclopedia volumes 9 online help. See online documentation Open Security applications 43, 76 open source projects vii operating systems 19, 151, 183	partitions 109 passwords installing iServer and 27 installing Management Console and 143 logging in to Configuration Console and 83, 102 setting administrator 35 setting superuser 32 patches 9, 14, 135 paths 29, 78, 161 pbind command 184, 187 PDF documentation vii, x, xi, 154, 168 performance cluster configurations and 14, 135 file input/output operations and 11 iServer processes and 9 upgrades and 42 pgAdmin database administration tool
obsolete command-line utilities 16 obsolete features 7 obsolete product information xii online documentation accessing vii–xi, 154 administering iServer System and 15 downloading xi installing xi, 168 managing Encyclopedia and 7 Online Documentation and Localization resource files xi online documentation conventions xii online Encyclopedia volumes 9 online help. See online documentation Open Security applications 43, 76 open source projects vii operating systems 19, 151, 183 optimizing iServer System 13, 134	partitions 109 passwords installing iServer and 27 installing Management Console and 143 logging in to Configuration Console and 83, 102 setting administrator 35 setting superuser 32 patches 9, 14, 135 paths 29, 78, 161 pbind command 184, 187 PDF documentation vii, x, xi, 154, 168 performance cluster configurations and 14, 135 file input/output operations and 11 iServer processes and 9 upgrades and 42 pgAdmin database administration tool backing up Encyclopedia and 198
obsolete command-line utilities 16 obsolete features 7 obsolete product information xii online documentation accessing vii–xi, 154 administering iServer System and 15 downloading xi installing xi, 168 managing Encyclopedia and 7 Online Documentation and Localization resource files xi online documentation conventions xii online Encyclopedia volumes 9 online help. See online documentation Open Security applications 43, 76 open source projects vii operating systems 19, 151, 183 optimizing iServer System 13, 134 options (licensing) 176, 181	partitions 109 passwords installing iServer and 27 installing Management Console and 143 logging in to Configuration Console and 83, 102 setting administrator 35 setting superuser 32 patches 9, 14, 135 paths 29, 78, 161 pbind command 184, 187 PDF documentation vii, x, xi, 154, 168 performance cluster configurations and 14, 135 file input/output operations and 11 iServer processes and 9 upgrades and 42 pgAdmin database administration tool backing up Encyclopedia and 198 platform licenses 176
obsolete command-line utilities 16 obsolete features 7 obsolete product information xii online documentation accessing vii–xi, 154 administering iServer System and 15 downloading xi installing xi, 168 managing Encyclopedia and 7 Online Documentation and Localization resource files xi online documentation conventions xii online Encyclopedia volumes 9 online help. See online documentation Open Security applications 43, 76 open source projects vii operating systems 19, 151, 183 optimizing iServer System 13, 134 options (licensing) 176, 181 Oracle database application users 54	partitions 109 passwords installing iServer and 27 installing Management Console and 143 logging in to Configuration Console and 83, 102 setting administrator 35 setting superuser 32 patches 9, 14, 135 paths 29, 78, 161 pbind command 184, 187 PDF documentation vii, x, xi, 154, 168 performance cluster configurations and 14, 135 file input/output operations and 11 iServer processes and 9 upgrades and 42 pgAdmin database administration tool backing up Encyclopedia and 198 platform licenses 176 PMD port 34, 38
obsolete command-line utilities 16 obsolete features 7 obsolete product information xii online documentation accessing vii–xi, 154 administering iServer System and 15 downloading xi installing xi, 168 managing Encyclopedia and 7 Online Documentation and Localization resource files xi online documentation conventions xii online Encyclopedia volumes 9 online help. See online documentation Open Security applications 43, 76 open source projects vii operating systems 19, 151, 183 optimizing iServer System 13, 134 options (licensing) 176, 181	partitions 109 passwords installing iServer and 27 installing Management Console and 143 logging in to Configuration Console and 83, 102 setting administrator 35 setting superuser 32 patches 9, 14, 135 paths 29, 78, 161 pbind command 184, 187 PDF documentation vii, x, xi, 154, 168 performance cluster configurations and 14, 135 file input/output operations and 11 iServer processes and 9 upgrades and 42 pgAdmin database administration tool backing up Encyclopedia and 198 platform licenses 176

POPULATE_SCHEMA parameter 123	installing Information Console and 154
POPULATE_SCHEMA_PHASE_ONE	upgrading iServer and 74
parameter 123	process IDs 185
PÔPULATE_SCHEMA_PHASE_TWO	Process Management Daemon
parameter 123	CPU binding and 183
port numbers 41	running cluster configurations and 13, 134
ports	running iServer processes and 8, 10
HTTP listening 39, 106	setting hostnames for 34
Information Console 155, 161	setting listening port for 34, 38
iServer 35	starting encycsrvr processes and 187, 188
Management Console 38, 145	Process Management Daemon processes 185
multiple product releases and 42	processor set binding 184, 186
PMD listening 34, 38	processor sets 184, 185, 186
system database 33	processor_bind method 184
postgres superuser 32	processors. See CPUs
postgres system database 49	product files 6, 25, 41, 154
PostgreSQL databases	product information xii, 151
accessing documentation for 7	product updates xi, 168
backing up 17, 197	production environments 45
cluster configurations and 11, 13	production staging areas 44
connecting to 50	profile names (users) 158
creating alternate 49	program files 27
creating schema owner for 49, 50	prompts (installation) 27
file I/O operations and 11	properties
installing as alternate 49	Éncyclopedia Data Store
installing as schema database 48, 50, 51, 55	Administrator 118
installing iServer and 24, 27	purging report files and 196
setting passwords for 32	Squirrel Data Exporter 117, 118
setting superuser names for 32	System Data Store Administrator 126
specifying default locations for 30	properties files 132, 161
stand-alone configurations and 9	ps command 151
storing user information and 4, 5	pset_bind method 184, 186
upgrades and 74	pset_create method 184, 186
PostgreSQL listening port 33	psrset command 184, 185, 186
PostgreSQL servers 5, 11, 24	psrset utility 186
PostgreSQL superuser name 110	publishing reports 177
prerequisites (installation) 24, 48	Purge deleted files time property 196
previous releases 6, 41, 75	purging
printers 14	report files 196
printing 25	•
privileges	Q
cluster configurations and 135	queries 11, 50, 52, 54
creating application users and 50, 52	Query Option 177
creating schema owners and 49, 50, 51, 52	Query opion in
creating user accounts and 24	R
creating users and 49	
installing alternate databases and 48,54	RDBMS connections 49

RDBMS databases 4, 5, 14	resource files 168
RDBMS tools 7, 8, 17	resource folders 161
rebinding encycsrvr11 processes 188	resource groups 42
recovering data 7	resources
refreshes 163	creating cluster nodes and 13, 14, 134
relational databases. See databases	installing iServer and 24, 27
release notes xi	licensing iServer and 176
remote procedure calls 10	restoring Encyclopedia volumes 197, 210, 213
removing Encyclopedia volumes 130	rollbacks 75
renaming	RSSE applications 76
Encyclopedia volumes 36	run levels 26
postgres superuser 32	running
rendering reports 25	iServer 24, 48, 176
replacing previous releases 41	iServer processes 8, 24, 180, 183
report design files 5	iServer services 8
report designers vii, 44	jobs 10
report designs 11, 44, 177	multiple product releases 42
report document files 5	PostgreSQL servers 24
report document generation service 11	queries 11,54
report files	report designs 177
archiving 196	spreadsheet reports 177
backing up 17,75	Squirrel Data Exporter 112
backing up Encyclopedia and 196	•
managing 7	S
purging 196	sample Encyclopedia volume 48
specifying default directories for 29, 30	sample reports 19
storing 5	saving reports 177
upgrading iServer and 6, 44	scalability vii
report object executable files 43	schema owner 54
report templates 161	schema owners 5, 48
report viewer activity logs 161	SCHEMA_FILE_NAME parameter 118
report viewers 177	SCHEMA_NAME parameter 124, 128
reporting applications. See applications	SCHEMA_PASSWORD parameter 124
reporting server. See iServer	schemas 195
reporting services. See specific iServer service	assigning privileges 49, 54
reports	backing up 24, 55
accessing sample 19	creating 48, 51, 54
displaying 25, 177	creating system 27
generating 43	populating 127
printing 25	preventing data loss and 7
publishing 177	storing volume information and 4, 5
rendering 25	upgrades and 75
saving 177	SCRIPT_HOME parameter 119
requests	scripts 4, 48, 119
remote procedure calls and 10	See also installation scripts
running cluster configurations and 13, 134	search results 178
setting listening ports for 33, 34, 35, 38	

searching online documentation xi	SQL scripts 4, 48
security vii, 24, 48, 74	See also installation scripts
security application 43	Squirrel Data Exporter
security database 43	migrating volume data and 6, 16
sending notifications 189	upgrades and 112, 117
server context roots 39, 105	Squirrel Data Exporter configurations 132
server templates 13, 134	Squirrel database 4
SERVER_DEFAULT parameter 161	SQUIRREL_DATA_HOME parameter 117
servers	SQUIRREL_EXPORT_FOLDER
See also iServer	parameter 117
binding iServer processes to 184, 186	SQUIRREL_EXPORT_FORMAT
caching web pages and 162	parameter 117
changing cluster machines and 183	stand-alone Encyclopedia database
configuring as cluster node 150	configurations 9
configuring as clusters 11, 13	stand-alone iServer installations 31
configuring Xvfb 25–26, 136	starting
controlling Encyclopedia access and 43	Encyclopedia volumes 9
deploying Information Console to 160,	Information Console 163
161, 162	Information Console service 159
deploying to clusters and 162	iServer 36, 103
exceeding CPU licenses for 188	iServer processes 183
installing Information Console on 155	Squirrel Data Exporter 112
installing stand-alone 31	startup scripts 43, 159
installing X Windows 37	stopping
integrating Actuate products with 160	iServer processes 76
integrating with Actuate products vii	Sun operating systems 26, 137
preventing cache conflicts for 163	superuser name 32
running as clusters 135, 137, 150	SUPERUSER parameter 124
running PostgreSQL 24	superuser password 27, 32
shutting down iServer and 9	SÚPERUSÉR_PASSWORD parameter 124
storing volume metadata and 5	Supported Products Matrix xii, 151
services. See specific iServer service	synchronous Factory service 11
servlet container 8	syntax conventions (documentation) xii
shared licenses 179, 180	system data store 125
sharing metadata databases 5	System Data Store Administrator 75, 125, 127
side-by-side migrations 108	system databases 32, 49
side-by-side upgrades 74, 76, 93, 113	See also PostgreSQL database
single processor binding 184	system metadata 24, 55
single-point node failure 13, 134	system names 31
SmartSheet Security Option 177	system schema owner 49, 51, 54
SOAP messages 10	system schemas 27, 48, 50, 51, 54, 75, 125, 127
SOAP processor 10	SYSTEM_DATABASE_NAME
Solaris servers 184–186	parameter 124
SPINLOOPTIME variable 155	-
spreadsheet reports 177	Т
SQL data manipulation operations 50, 52	table of contents (documentation) xi
SQL queries 11, 54	,

tables 5	inetallation proroquisites for 24 49
	installation prerequisites for 24, 48
TABLESPACE_LOCATION parameter 124	installing cluster nodes for 135, 137
TABLESPACE_NAME parameter 124	installing help system for 169
Taking volume offline 202, 209, 213	installing Information Console for 154,
Taking volume online 205, 210, 216	155, 160
tar command 169	installing iServer for 27
technical support xi	installing iServer Integration Technology
TEMP_FOLDER_LOCATION parameter 161	for 166
templates 161	installing JDK files for 42, 151
temporary directories 162	installing Xvfb software for 25, 26, 137
temporary documents 11	reconfiguring as large file systems 137
temporary files 161	running iServer processes on 24
temporary licenses 179, 181	setting classpaths for 43
testing	setting default locale for 33
desktop products 44	setting run level for 26
Information Console installations 163	setting up user accounts for 24, 48, 74
new releases 43–45	starting Information Console on 163
text files 183	testing new releases for 43–45
third-party databases	upgrading iServer for 41, 74, 76
caching information objects and 178	unprivileged user IDs 24
combining data in 178	updates (documentation) viii, xi
creating indexes for 5	updates (product) xi, 168
customizing 5, 18	updating license key files 182
installing as alternate 48	upgrade options 74, 76
installing iServer and 24, 48	upgrade utilities 132
preventing data loss and 7, 24, 55	Upgrader utility configurations 132
running iServer clusters and 8, 11, 13, 14	Upgrader utility. See Encyclopedia Data Store
upgrades and 74, 75	Upgrader
third-party deployment tools 160	upgrades
threads 160	backing up files for 76
time zones 33, 142, 161	creating backups and 75
TIME_ZONE parameter 124	customizing volume database and 5
TimeZones.xml 161	determining if needed 44
Tomcat service 154	disk space and 42
transient files 161	Encyclopedia volumes 45
TRANSIENT_STORE_PATH parameter 161	installing product files and 75
transport protocol (requests) 10, 13, 134	iServer 74, 76
typographic conventions	licensing options and 180
(documentation) xii	maintaining version consistency for 25, 55
()	migrating volume data and 16
U	overwriting previous releases and 6
	previous releases and 41
UCS2 conversions 19	rolling back 75
UNIX systems	running iServer processes and 76
collecting licensing information for 181	user accounts and 74
downloading product files for 154	URLs
getting home directory for 151	
	Actuate product information xii, 151

Actuate technical support xi documentation updates xi evaluation copies 25 Information Console 161, 163 Localization and Online Documentation Update tool 169 Network File Systems 11 PDF documentation 169 release notes xi usage reports 19 USE_SERVER_CONFIG_FILE parameter 124 user accounts cluster configurations and 135 connecting to databases and 54	volume partitions 109 volume schema owner 50, 51, 52 volume schemas 27, 48, 51 VOLUME_NAME parameter 125 volumes. See Encyclopedia volumes W WAR files 155, 160, 161, 162 watermarks 179 web browsers 39, 106, 162 web pages 162, 177, 178 web servers 160 See also servers Windows systems 184
creating application users and 50, 52 installing alternate databases and 48 installing iServer and 24	Windows systems 184 Work Unit Licenses 176 work units 176
iServer installations and 24, 48 licensing iServer and 189 managing 16 upgrades and 74 user credentials 5, 48 user IDs 24 user information 4, 43 user names 32, 49 user tracking reports 19 users 27, 48, 50, 52, 54, 176	X frame buffer 25, 26, 136, 137 X libraries 25 X Windows cluster configurations 136 X Windows servers 25, 26, 37, 144 XML files 183 Xvfb cluster configurations 136, 137 Xvfb libraries 25 Xvfb servers 25, 26 Xvfb software 25, 26, 136, 137 XVFBDISPLAY variable 25
View processes 188 View service 9, 11, 42 viewer activity logs 161 viewers 177 viewing charts 43 cube reports 177 images 25 licensing information 178, 182 machine ID information 182 process IDs 185 reports 25, 177 volume data 194 volume metadata 32, 55, 196 volume metadata database 195 volume metadata schemas 195 volume names 36, 128, 155	