One Design
One Server
One User Experience

Working with Actuate Query

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Document No. 111021-2-530331 October 14, 2011

Contents

About Working with Actuate Query

Working with Actuate Query provides information about Actuate Query option and how to use it to create a query for an Actuate information object. This book also describes how to modify, run, and schedule a query for an Actuate information object.

Working with a query for an information object

This chapter contains the following topics:

- About information objects
- About creating a query for an information object
- Creating a query for an information object
- Specifying values for filters for an information object
- Modifying, running, and scheduling a query for an information object

About information objects

The Actuate Query Option supports creating a query using an information object and making the query available to other users. An information object contains a database connection and an Actuate SQL query. An information object does not, however, contain page layouts, controls, or formatting. For example, the information object example in this chapter contains the following Actuate SQL query:

```
SELECT Customers.customerNumber AS customerNumber,
   Customers.customerName AS customerName,
   Customers."Contact Name" AS "Contact Name",
   Customers.addressLine1 AS addressLine1,
   Customers.addressLine2 AS addressLine2, Customers.city AS city,
   Customers.state AS state, Customers.country AS country,
   Customers.postalCode AS postalCode, Customers.creditLimit AS
   creditLimit, Offices.country AS country_1, Offices.state AS
   state_1, Offices.city AS city_1,
   Offices.officeCode AS officeCode, Orders.orderNumber AS
   orderNumber, Orders.orderDate AS orderDate,
   Orders.requiredDate AS requiredDate, Orders.shippedDate AS
   shippedDate, Orders.status AS status,
   Products.productCode AS productCode_1, OrderDetails.priceEach
   AS priceEach, OrderDetails.quantityOrdered AS quantityOrdered,
   ( (Sum(OrderDetails.quantityOrdered *
   OrderDetails.priceEach)) ) AS Total, Products.productLine AS
   productLine,Products.productName AS productName,
   Products.MSRP AS MSRP,Products.buyPrice AS buyPrice,
   Products.quantityInStock AS quantityInStock,
   Employees.employeeNumber AS employeeNumber, Employees.lastName
   AS lastName, Employees.firstName AS firstName,
   Employees.officeCode AS officeCode_1
FROM "../Base Layer/Customers/Customers.iob" AS Customers
GROUP BY Customers.customerName, Customers.customerNumber,
   Customers.addressLine1, Customers.addressLine2, Customers.city,
   Customers.state, Customers.country, Customers.postalCode,
   Customers.phone, Customers.creditLimit, Offices.country,
   Offices.state, Offices.city, Offices.officeCode,
   Employees.email, Employees.lastName, Employees.firstName,
   Employees.employeeNumber, Orders.orderNumber, Orders.orderDate,
   Orders.requiredDate, Orders.shippedDate, Orders.status,
   Customers."Contact Name", OrderDetails.orderLineNumber,
   Products.productCode, OrderDetails.priceEach,
   OrderDetails.quantityOrdered, Orders.comments,
   Products.productLine, Products.productName,
   ProductLine.textDescription, Products.MSRP, Products.buyPrice,
   Products.quantityInStock
```

About creating a query for an information object

To create a query, complete the following tasks:

- Locate the information object that you want to use to create the query in the Encyclopedia volume. For more information about accessing an Encyclopedia volume, see *Using Information Console.*

  You must have read privilege on the information object. For more information about privileges, see *Using Information Console.*
- Using the information object and Actuate Query Wizard, create and save the query.
- Run the query and examine the output.
- If the query generates the required output, grant read and execute privileges on the saved query to the appropriate users and security roles.

  If the query does not generate the required output, modify the query as necessary and run it again.

The topics that follow in this section provide an overview of each of the Actuate Query Wizard options.

About including database columns in the query for an information object

Depending on how a report developer specifies database column names, you can include database columns by choosing from display names, column names, or data row variable names. If a report developer associates descriptive display names with database columns, the Actuate Query Wizard displays the descriptive names. If a report developer does not set the display names, the Actuate Query Wizard displays the column names as they appear in the database. The Actuate Query Wizard displays data row variable names instead of column names when no other information is available.

About grouping query data for an information object

You can organize query output data in one or more groups, such as grouping sales orders by customer or sales representative. Using more than one group creates a hierarchy of group levels. For example, you can organize a list of items that are sold using a customer name group level and an order number group level, as shown in Figure 1-1.

When you run the query, the query output displays order number groups in each customer name group, as shown in Figure 1-2.

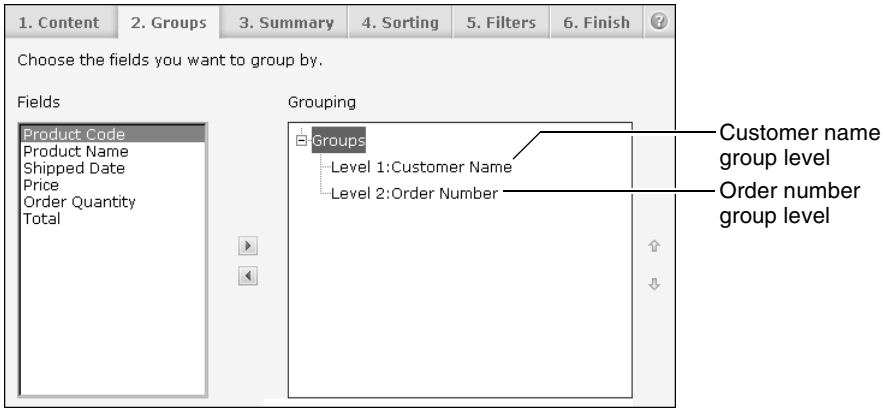

Figure 1-1 Grouping query data

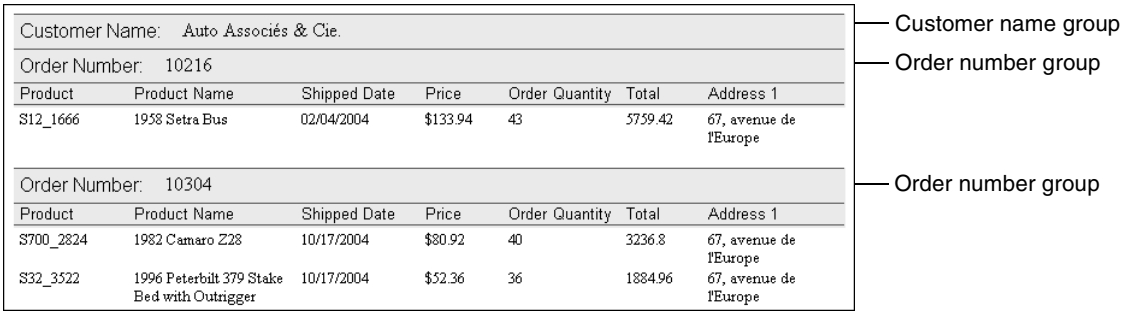

Figure 1-2 Query output displays order ID groups in each customer group

You can also add an additional column to a group heading. That column's value appears in the group heading in Actuate Query output. For example, you can add the address column. When you add a column to a group heading, Actuate Query Wizard appears as shown in Figure 1-3.

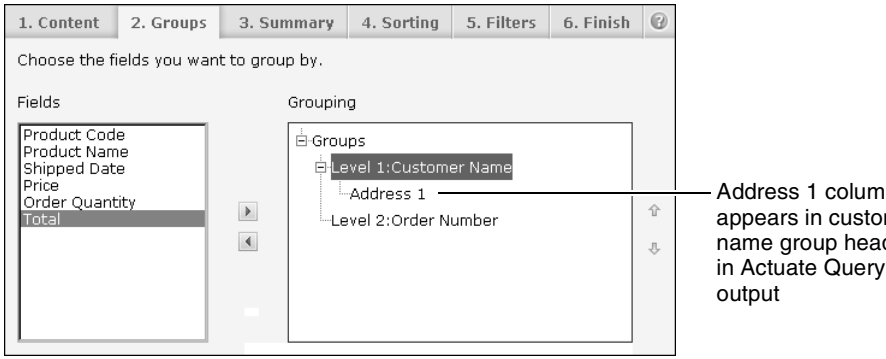

Figure 1-3 Adding a column name to a group heading

When you run the query, the query output displays both the group level and the additional column's value in the group heading. For example, the customer name and the address column values appear in the customer group heading, as shown in Figure 1-4.

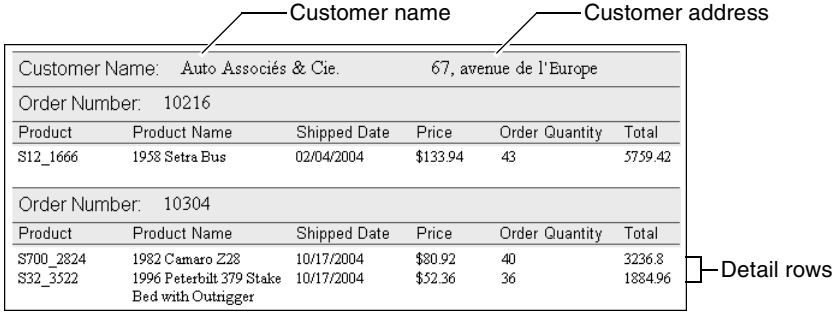

Figure 1-4 Displaying a column name in a group heading

If you add a column to a group heading, ensure that a one-to-one relationship exists between the group level and the column you add. For the example in Figure 1-4, only one customer address appears in the data source for each customer name.

If you add a column for which Actuate Query retrieves multiple values from a data source, the group heading displays only one of those values. The other column values that the query retrieves determine what data appears in the detail rows of the Actuate Query output. For example, if Actuate Query retrieves more than one customer address from the data source, only one of those addresses appears in the customer name group heading. The detail rows of the Actuate Query output, however, display the retrieved data from all of this customer's addresses.

If you select Do not show detail rows, query output displays the group heading for each group level and includes only the summary rows, as shown in Figure 1-5.

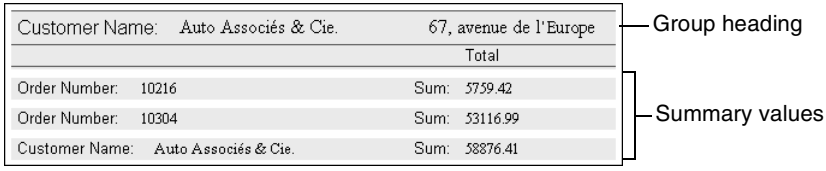

Figure 1-5 Displaying the group heading for each group level

About summarizing query data for an information object

You can summarize numerical query output data. The summary can appear as a sum, an average, or a minimum or maximum value. The summary value appears at the end of each group of data, as shown in Figure 1-6.

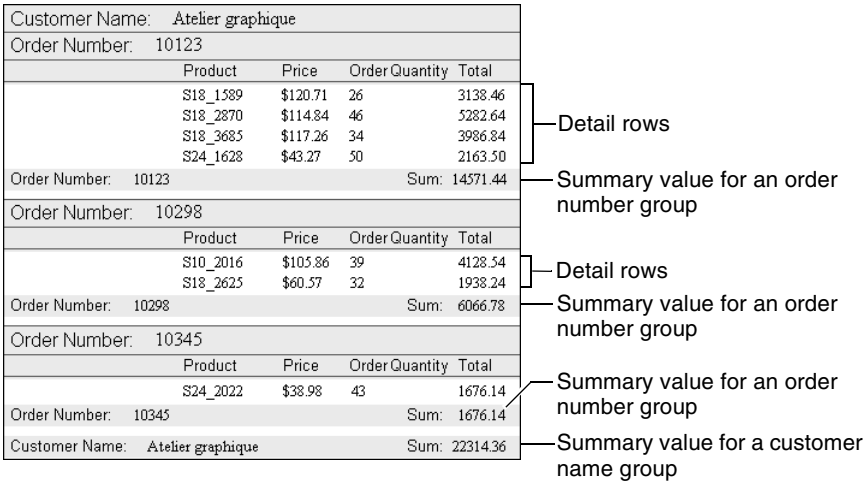

Figure 1-6 Summarizing query data

You can display group headings and summary information for each group and hide the detail rows in the query output, as shown in Figure 1-7.

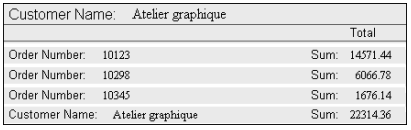

Figure 1-7 Hiding the detail rows in the query output

About sorting query data for an information object

You can sort query output data alphabetically, numerically, or by reversing the order in which the data appears in the data source. If you do not sort data, the data appears in the order in which it appears in the data source.

You can suppress the appearance of duplicate detail rows in Actuate Query output if you select Skip duplicate rows on Actuate Query Wizard—Content. If you sort column data that does not appear in the query output, duplicate data rows can appear in the query output. For example, if you sort the column, offices.state, and do not display the offices.state column data in the query output, the query output can display duplicate detail rows. If the query output displays duplicate detail rows, change the sorting options to ensure that all data source columns to which you apply sorting appear in the query output.

About specifying values for filters for an information object

You can specify values for predefined and custom filters.

About specifying a query output format for an information object

You can specify the following query output formats:

- Browser (DHTML) presents the query output in a web page when you run the query. From the DHTML Viewer toolbar, you can access other formats, such as Microsoft Excel, PDF, Microsoft PowerPoint, and RTF.
- Excel presents the query output in an Excel spreadsheet when you run the query. The run fails if the result set is too large to fit in the Excel document. The report retains basic data types for analysis in Excel. The output also includes column headings. This Excel output format option displays only data and not groups or summary values. You can display groups and summary information in Excel format by exporting the query output from the DHTML Viewer to Excel.
- PDF presents the query output as a PDF file when you run the query.
- e.Analysis presents the query output in Actuate e.Analysis if the Actuate e.Analysis Option is enabled for the BIRT iServer System. You can then analyze this data. You receive an error message if e.Analysis is not available. The run fails if multiple columns in the query have the same display name. For more information about Actuate e.Analysis, see *Using e.Analysis.*

About saving a query for an information object

You can save a query to support reusing it. Information Console saves the query as an Actuate Query Definition (.dov) file. A saved DOV uses the latest version of the information object when you run the DOV. You can also create multiple versions of a query in an Encyclopedia volume. If you modify an existing DOV file or create a new version of a DOV file, the DOV saves the properties, such as privileges and scheduling information, from the original DOV as the default behavior.

Creating a query for an information object

Use Actuate Query Wizard to create a query for an information object.

How to create a query for an information object

1. In an Encyclopedia volume, choose an information object. You can identify an information object in the following ways:
   - In Information Console, an information object appears in Information Objects You Can Query.

- In Management Console, Actuate Information Object appears in Type for an information object.

2 On Actuate Query—Content, set up report content:

1. Select the columns to include in the query:

- To add specific columns to the query, select the columns in Available Columns then choose the right arrow.

- To add all available columns to Selected Columns, choose the double right arrow.

- To remove a column from Selected Columns, select the column then choose the left arrow.

- To remove all columns from Selected Columns, choose the double left arrow.

The columns you add to the query appear in Selected Columns, as shown in Figure 1-8. The order of the selected columns is the order in which the columns appear in the query output.

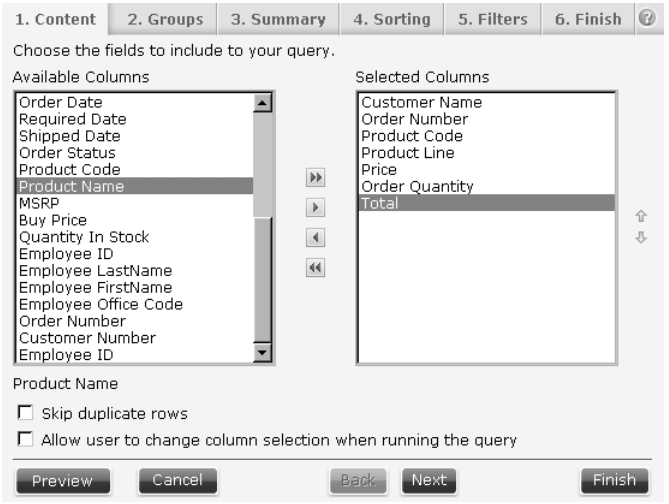

Figure 1-8 Columns you add to the query appear in Selected Columns

2. To change the order of items in Selected Columns, select an item and choose the up arrow or the down arrow.
3. To prevent duplicate detail data rows from appearing in the query output, select Skip duplicate rows.
4. To support changing column selection or order when a user runs the query, select Allow user to change column selection when running the query.

To continue with the query setup, choose Next.

3 On Actuate Query—Groups, set up grouping:

1 Choose the columns by which to group data:

- To add a column, select the column in Fields then choose the right arrow.

- To remove a column from Grouping, select the column then choose the left arrow.

- To nest a group within a group, select a column in Fields and a column in Grouping, then choose the right arrow.

In Figure 1-9, Grouping displays how to group data using an order number group level in each customer name group level.

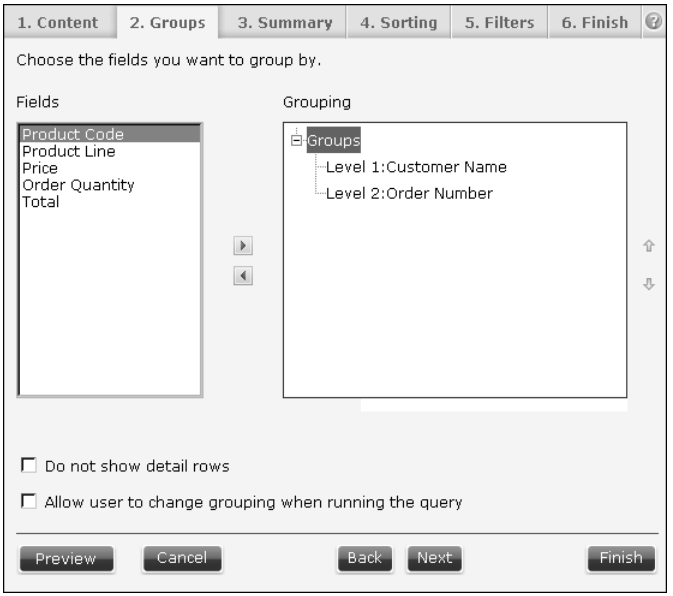

Figure 1-9 Grouping displays how to group data

2 To hide the detail rows in the query output, select Do not show detail rows.

3 To support changing the grouping when a user runs the query, select Allow user to change grouping when running the query.

To continue with the query setup, choose Next.

4 On Actuate Query—Summary, set up summary information for the report:

1 Choose the summaries to include in your report, as shown in Figure 1-10.

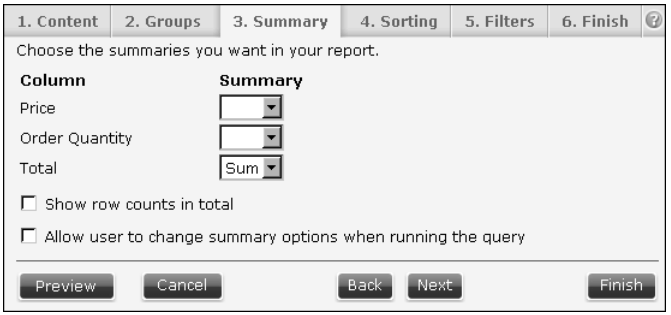

Figure 1-10 Choosing the summaries to include in your report

2 To display row counts in the totals, select Show row counts in total.

A row count is the number of data rows from the data source that the query uses to calculate a summary value.

3 To support changing the summary options when a user runs the query, select Allow user to change summary options when running the query.

To continue with the query setup, choose Next.

5 On Actuate Query—Sorting, specify the sort order for a query's output:

1 In Groups, specify the sort order for groups.

2 In Detail, specify the sort order for detail rows:

- Select a field from the drop-down list.
- After you select a field on which to sort, choose Ascending or Descending from the drop-down list. An additional set of sort fields appears.
- To specify an additional column on which to sort, use a new sort field, as shown in Figure 1-11.

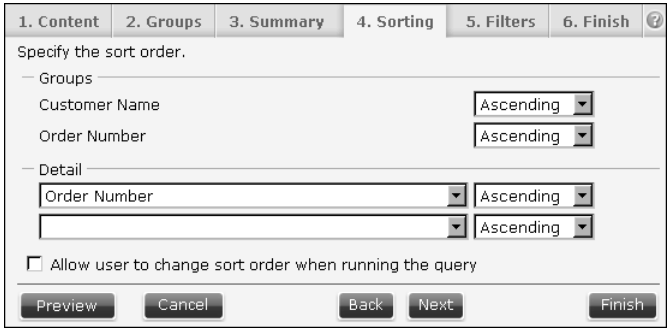

Figure 1-11 Specifying the sort order

3 To support changing the sort order when a user runs the query, select Allow user to change sort order when running the query.

To continue with the query setup, choose Next.

6 On Actuate Query—Filters, specify default values for predefined and custom filters:

1 In Predefined Filters (Parameters), specify default values for predefined filters.

For an ad hoc parameter, you can type a single value or create a QBE expression. To create a QBE expression:

1 Choose the QBE expression builder icon to the right of the field. The expression builder appears, as shown in Figure 1-12.

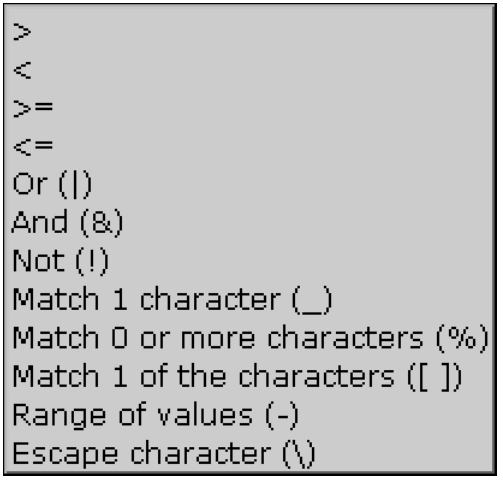

Figure 1-12 Expression builder

2 Create a QBE expression. For information about QBE syntax, see *Using Information Console.*

3 To support changing the value of a predefined filter when a user runs the query, select the check box at the right of the field. If you do not select the check box, the query uses the default value.

2 In Custom Filters, set up the custom filters:

- Choose a column name from the drop-down list and specify an operator and an operand, if necessary. You can create multiple filters for each column.
- To support changing the value of a custom filter when a user runs the query, select the check box at the right of the field, as shown in

Figure 1-13. If you do not select the check box, the query uses the default value.

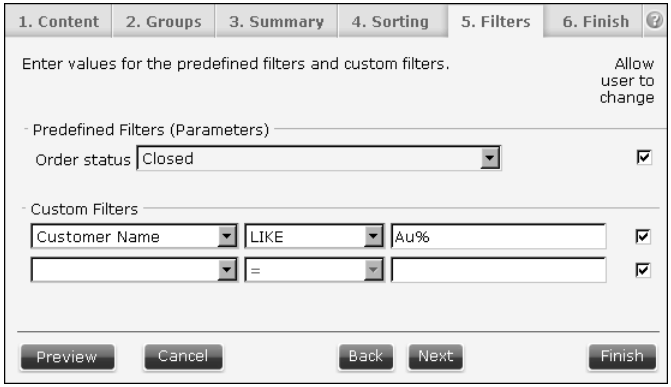

Figure 1-13 Setting up custom filters

To complete the query setup, choose Finish.

7 On Actuate Query—Finish, as shown in Figure 1-14, complete the following settings:

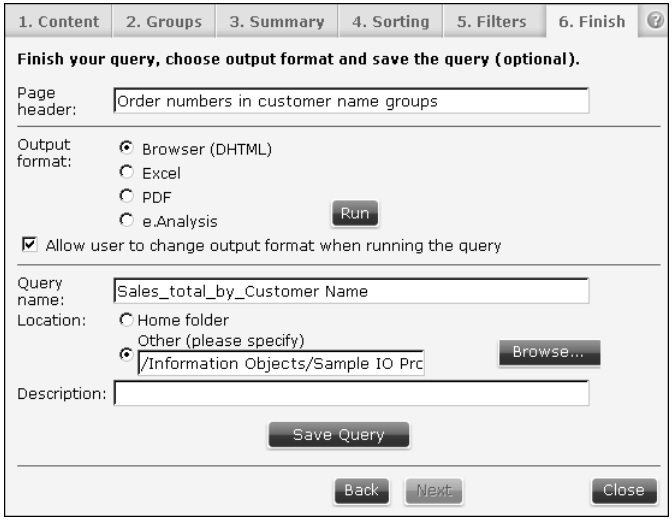

Figure 1-14 Specifying options on Actuate Query—Finish

- In Page header, type an appropriate heading for the query. The page header appears on every page of the finished report.
- Select an output format for the query result.
- To support changing the output format selection when a user runs the query, select Allow user to change output format when running the query.

- To save the query, complete the following tasks in this order:
  - In Query name, type an appropriate name for the query.
  - In Location, choose Browse to navigate to the appropriate folder in the Encyclopedia volume. Choose OK.
  - In Description, type an appropriate description.
  - Choose Save Query. If the query already exists, you can replace the existing query.

8 To run the query, choose Run. The query output appears in a new window, as shown in Figure 1-15.

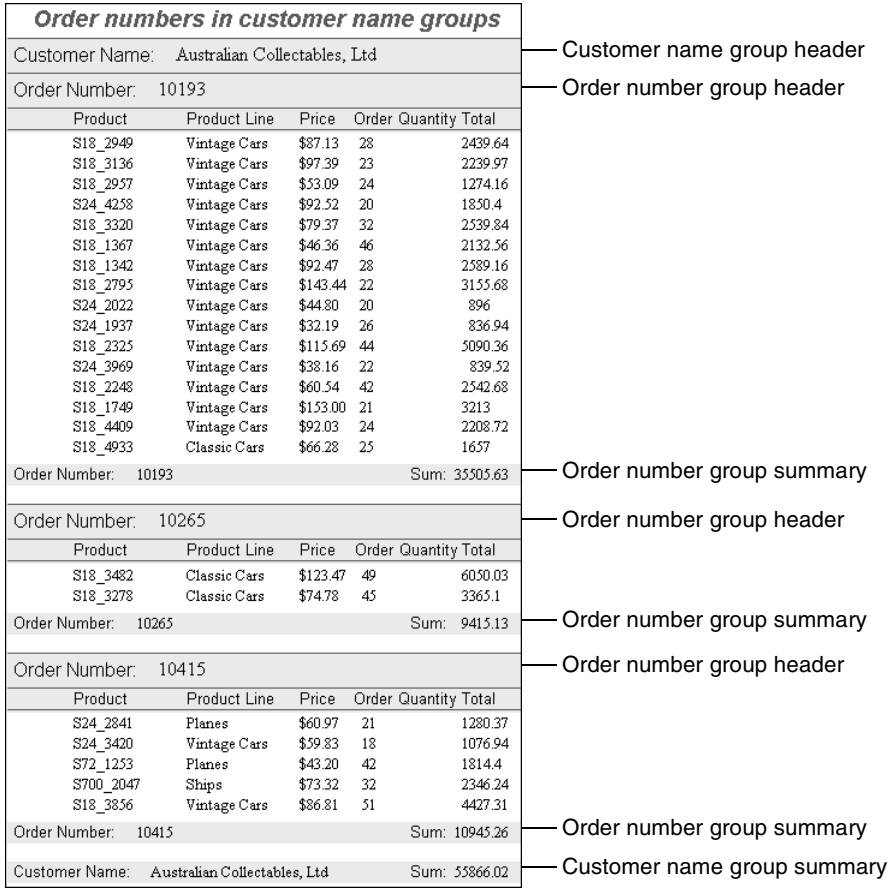

Figure 1-15 Displaying query output

How to display groups and summary information in query output in Excel format

If you specify groups on Actuate Query Wizard—Groups and summary values on Actuate Query Wizard—Summary, complete the following procedure to display the groups and summary values in query output:

1. In Output format on Actuate Query Wizard—Finish, select Browser (DHTML). Choose Run.

   The query output appears in the web browser.

2. To export the data from the query output in the DHTML Viewer to Microsoft Excel, retaining groups and summary values, choose Download.

3. In Export Report on Download, complete the following tasks:

   - Select Excel Data or Excel Display.
   - Choose View Report or Save Report.

   The exported query output data retains the groups and summary values.

Specifying values for filters for an information object

You can specify values for predefined and custom filters for an information object.

Specifying values for predefined filters for an information object

A report developer defines predefined filters. A predefined filter can use a single value or a QBE expression. For more information about QBE expressions, see *Using Information Console.*

Specifying values for custom filters for an information object

For a custom filter, you can specify a database column, an operator, and an operand using QBE syntax. The following operators are available:

- =
- <
- <=
- >
- >=
- <> (Not equal)

- LIKE
- NOT LIKE
- IS NULL
- IS NOT NULL
- IN

Table 1-1 shows the resulting SQL when the database column is Customer and the operand is ABB Kent.

Table 1-1 SQL examples

Operator	SQL
=	Customer = 'ABB Kent'
<	Customer < 'ABB Kent'
<=	Customer <= 'ABB Kent'
>	Customer > 'ABB Kent'
>=	Customer >= 'ABB Kent'
<>	Customer <> 'ABB Kent'
LIKE	Customer LIKE 'ABB Kent%'
NOT LIKE	Customer NOT LIKE 'ABB Kent%'
IN	Customer LIKE 'ABB Kent%'

For more information about QBE expressions, see *Using Information Console.*

Using NULL and IS NOT NULL for a custom filter for an information object

The operators IS NULL and IS NOT NULL are available. Table 1-2 shows the resulting SQL when you use the IS NULL and IS NOT NULL operators with the Customer database column.

Table 1-2 SQL examples using IS NULL and IS NOT NULL operators

Operator	SQL
IS NULL	Customer IS NULL
IS NOT NULL	Customer IS NOT NULL

Table 1-3 lists additional examples of custom filter operators, operands, and the SQL statements that Information Console uses.

Table 1-3 Examples of custom filter operators, operands, and SQL statements

Operator	Operand	SQL
=	Null	= 'Null'
<>	Null	<> 'Null'
LIKE	\Null	LIKE 'Null%'
LIKE	Null%	LIKE 'Null%'
LIKE	Null	IS NULL
NOT LIKE	\Null	NOT LIKE 'Null%'
NOT LIKE	Null	IS NOT NULL

Using the IN operator for a custom filter for an information object

Using the IN operator, you specify an operand using QBE syntax. You can use the IN operator with a column of any data type. Table 1-4 lists examples of operands for the IN operator and the SQL statements that Information Console uses.

Table 1-4 SQL examples using the IN operator for a custom filter

Operator	Operand	SQL
IN	6|21	Column = 6 OR Column = 21
IN	1|3-5	Column = 1 OR Column BETWEEN 3 AND 5
IN	CA|CT|NV	Column LIKE 'CA%' OR Column LIKE 'CT%' OR Column LIKE 'NV%'
IN	'CA'|'CT'|'NV'	Column = 'CA' OR Column = 'CT' OR Column = 'NV'

For Actuate Query, BIRT iServer implements custom filters using QBE syntax. BIRT iServer does not distinguish between the following QBE expressions:

```
CustomerID = 6
CustomerID IN 6
```

BIRT iServer returns = 6 to the client application no matter how a user specified and saved the custom filter.

In Actuate Query custom filters, the following limitations apply to the IN operator:

- The IN operator does not support using operators in a list of values, for example:

```
!50|>100|<50|null|(1&2)
```

- Actuate Query does not support NOT IN. To specify such a filter condition, define multiple custom filters on the same column using the inequality operator, <>, for example:

```
CustomerState <> 'CA'
CustomerState <> 'NY'
```

For more information about QBE expressions, see *Using Information Console.*

Modifying, running, and scheduling a query for an information object

You can make a query for an information object available to other users by granting read and execute privileges on the Actuate Query Definition (.dov) file to the appropriate users and security roles. Users with those privileges can:

- Modify the query.
- Run the query.
- Schedule the query to run at a later time.

How to modify a query for an information object

1. Complete one of the following tasks:
   - In Information Console on Documents in Queries, choose Edit for the query to modify.

   - In Management Console, choose the icon to the left of an Actuate Query Definition. Choose Edit Query.

   Actuate Query Wizard appears, displaying the current settings for the query.
2. Modify the settings in Content, Groups, Summary, Sorting, Filters, and Finish as necessary.

How to run a query for an information object

1. Complete one of the following tasks:
   - In Information Console on Documents in Queries, choose the query to run.

   - In Management Console, choose the icon to the left of an Actuate Query Definition. Choose Run Query.

Actuate Query Wizard appears, displaying the current settings for the query. The options available depend on the settings that the query developer specifies.

2 Modify the settings as necessary.

3 Choose Finish. Actuate Query—Finish appears, as shown in Figure 1-16.

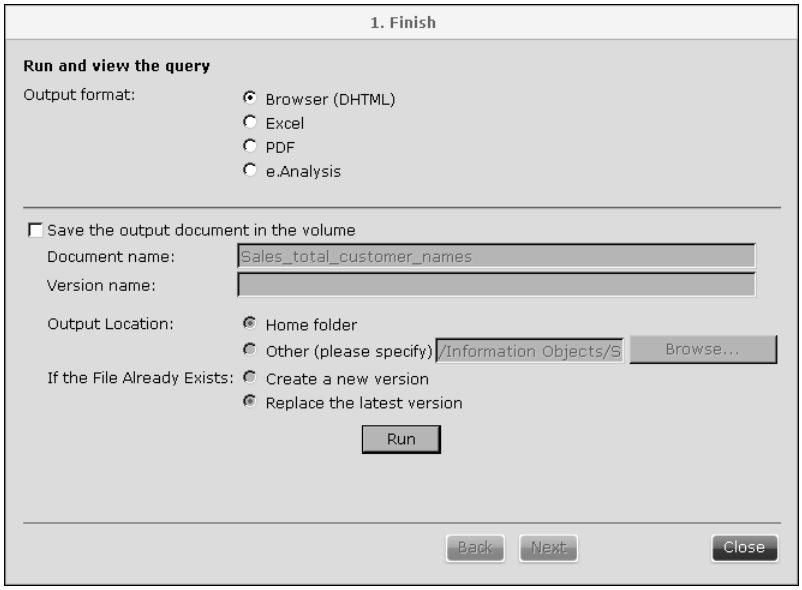

Figure 1-16 Actuate Query—Finish

4 Complete the following tasks:

1 To save the output document, select Save the output document in the volume and specify a document name, version name, output location, and whether to create a new version of the file or replace the latest version. Information Console saves the output document as an Actuate Query Output file.

2 Choose Run to run the query and view the query output.

How to schedule a query for an information object

1 Complete one of the following tasks:

- In Information Console on Documents in Queries, choose the clock icon for the query to schedule.

- In Management Console, choose the icon to the left of an Actuate Query Definition. Choose Schedule Query.

2 On Actuate Query—Schedule, in Job Name, type a job name, then select one of the following scheduling options and specify its settings:

- Right now, as shown in Figure 1-17, schedules the query to run immediately.

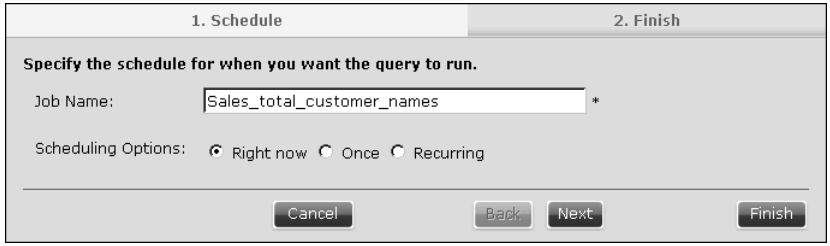

Figure 1-17 Actuate Query—Schedule shows the Right now option

- Once, as shown in Figure 1-18, schedules a date and time at which to run the query. If you select Once, specify the date and time at which to run the query.

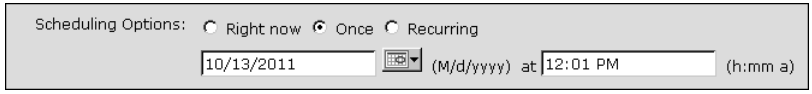

Figure 1-18 Actuate Query—Schedule shows the Once option

- Recurring, as shown in Figure 1-19, schedules the query to run regularly at a specified interval. If you select Recurring, specify the recurrence interval, the time at which to run the query, and the start and end dates to use.

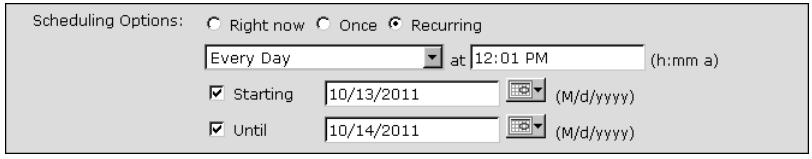

Figure 1-19 Actuate Query—Schedule shows the Recurring option

Choose Next.

Actuate Query Wizard—Finish appears, displaying the current settings for the query. The options available depend on the settings that the query developer specifies.

3 On Actuate Query—Finish, as shown in Figure 1-20, complete the following settings:

- Specify a document name, version name, output location, and whether to create a new version of the file or replace the latest version. Information Console saves the output document as an Actuate Query Output file.
- In Notification:

- To receive an e-mail notification when the job completes, select Send me an e-mail notification.
- To attach an output document to the e-mail, select a format for the attachment from the drop-down list. The available formats are PDF, Excel, PowerPoint, RTF, and Fully editable RTF.

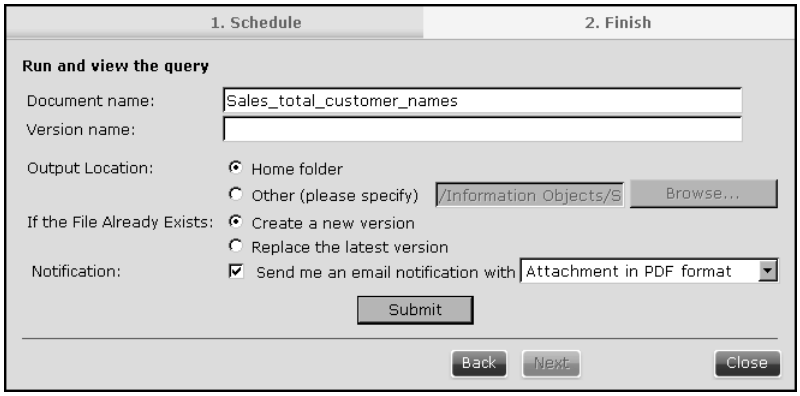

Figure 1-20 Actuate Query—Finish

4 To submit the job, choose Submit.

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