Building Reports with the SAP BusinessObjects Web Intelligence Java Report Panel

SAP BusinessObjects XI 3.1 Service Pack 3

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About Web Intelligence

chapter 1

How Web Intelligence performs business intelligence over the web

Web Intelligence provides business users with an easy to use interactive and flexible user interface for building and analyzing reports on corporate data over the web, on secured intranets and extranets. The Web Intelligence software is installed by your administrator on a web server on your corporate network.

To use Web Intelligence from your local computer, you log into the business intelligence portal InfoView via your Internet browser. Then, depending on your security profile, you can interact with the reports in corporate documents or edit or build your own documents using a Web Intelligence report panel or query panel.

How Web Intelligence performs business intelligence offline

Web Intelligence can be used offline as Web Intelligence Rich Client, a standalone Microsoft Windows application, equivalent to the Java Report Panel, that you can install on your computer. Web Intelligence Rich Client lets you continue to work with Web Intelligence (WID) documents when you are unable to connect to a CMS, when you want to perform calculations locally rather than on the server, and when you want to work with Web Intelligence documents without installing a CMS or application server.

Web Intelligence Rich Client can also be used when connected to a CMS.

Interacting with Web Intelligence reports

Depending on your security profile and on how Web Intelligence is deployed across your organization, you can view, analyze, or enhance and modify the data displayed on reports.

Viewing and printing Web Intelligence reports

Once logged into the business intelligence portal InfoView, you can access Web Intelligence documents and view reports. Onscreen navigation is made easy with page-to-page navigation buttons and a document map that allows you to jump from section to section or report to report.

The same document can provide the information adapted to each user due to prompts that request each user, who opens the document, to specify the data they want to return to the reports.

When you print, Web Intelligence automatically generates a copy of reports in Portable Document Format (PDF) format for optimum print quality. You can print reports directly from the Web Intelligence Java Report Panel or Web Intelligence Rich Client without exporting to PDF.

Drilling on Web Intelligence reports

Drilling on Web Intelligence reports enables you to analyze the detailed data behind the displayed results. You can turn the report you are viewing into a drillable report or drill on a duplicate of the original report to retain a version of the results before your drill analysis.

Once you have found the information you need, you can save a snapshot of the drilled report to share the results of your analysis with other Web Intelligence users, or save the document in Excel or Portable Document (PDF) format to print or email to other business contacts.

Performing on-report analysis

Viewing Web Intelligence reports in Interactive view format enables you to enhance reports and fine-tune the data reports contain, to highlight the information that most interests you on demand.

On-Report Analysis is designed for:

- users who need to build queries and then want to build reports
- report consumers who need to manipulate the reports created by others

With On-Report Analysis you can:

- view document metadata to understand the data behind reports and see how reports are structured and filtered
- filter and sort results
- add new tables and charts
- add formulas and create variables
- format and change the layout of charts and tables
- slice and dice results by adding other data to charts and tables

Note:
On-report analysis of Web Intelligence reports in Interactive view format is only available if your administrator has deployed Web Intelligence in JSP mode.

Creating and editing Web Intelligence documents

You can create or edit Web Intelligence documents using the Web Intelligence HTML Report Panel, Web Intelligence Query - HTML, Web Intelligence in Interactive mode, the Web Intelligence Java Report Panel and Web Intelligence Rich Client.

Web Intelligence Query - HTML

Designed for users requiring a pure HTML environment to build queries, Web Intelligence Query – HTML offers the ability to define the data content of documents on multiple data sources. You can use Query – HTML to create new documents from scratch or edit the queries in documents created using any of the other Web Intelligence tools.

Used together with On-Report Analysis, Query – HTML provides a complete solution for building queries and designing powerful reports in a pure HTML environment. Once you have run the queries to generate a standard report, you can leverage Web Intelligence On-Report Analysis features to format multiple reports, add formulas, and create variables.

Note:
Web Intelligence Query – HTML and On-Report Analysis in Interactive view format are only available, if your administrator has deployed Web Intelligence in JSP mode.

Web Intelligence Java Report Panel

The Java Report Panel is designed for users who need more flexibility with designing report layout and defining formulas and variables. A graphical Formula Editor enables you to build formulas rapidly using drag-and-drop.

Note:
The Web Intelligence Java Report Panel is available if your administrator has deployed Web Intelligence in ASP mode and if your administrator has deployed Web Intelligence in JSP mode.

Web Intelligence Rich Client

Web Intelligence Rich Client is a locally installed Microsoft Windows application that lets you work with Web Intelligence (WID) documents that are stored locally or in a CMS.

When working without a CMS connection you can work on your local machine with either CMS-secured or unsecured documents.

Web Intelligence Rich Client is based on the Web Intelligence Java Report Panel and provides equivalent document creation, editing, formatting, printing and saving capabilities.

There are a number of reasons for using Web Intelligence Rich Client to work with WID documents:

- You want to work with Web Intelligence documents but you are unable to connect to a CMS (while traveling, for example).
- You want to improve calculation performance: Web Intelligence Rich Client performs calculations locally, rather than on the server, and local calculations can perform better than server calculations.
- You want to work with Web Intelligence documents without installing a CMS or application server.

Web Intelligence HTML Report Panel

Designed for users who need to build basic reports, the HTML Report Panel provides query and report features in a simple wizard-like interface. Each document is based on a single data source and can contain multiple reports, displaying different subsets of information.

In addition, the HTML Report Panel is 508 compliant and can be customized for specialized deployments.

Note:
The Web Intelligence HTML Report Panel is only available if your administrator has deployed Web Intelligence in JSP mode.

Accessing Web Intelligence from InfoView

chapter 2

You access Web Intelligence reports and set global Web Intelligence options from InfoView, the corporate business intelligence portal.

To log in to InfoView

Before you can use InfoView and Web Intelligence you need the following information:

- a URL to the InfoView server
- the InfoView server name and port number
- your login and password
- your authentication, which controls the InfoView resources available to you

Contact your adminstrator for these details if you do not already know them.

Note:
By default the InfoView server name and authentification method are not displayed on the InfoView logon page. You need to supply this information only if your administrator has made these options visible.

You access Web Intelligence by using your web browser to log into InfoView, the corporate business intelligence portal. Once you are in InfoView, you can analyze and enhance Web Intelligence reports.

1. Launch your web browser.
2. Point your browser to the InfoView bookmark or URL.

   The InfoView login page appears.
3. If the **System** box is blank, type the name of the InfoView server followed by a colon (:), and then type the port number.
4. In the **Username** box, type your user name.
5. In the **Password** box, type your password.
6. In the **Authentication** box, select the authentication provided to you by your administrator.
7. Click **Log On**.

   The InfoView home page appears.

To log out of InfoView

When you finish using InfoView or Web Intelligence you need to log out, instead of simply closing your web browser.

Logging out of InfoView ensures that any preferences you modified during your InfoView session are saved. It also lets your administrator track how many users are logged into the system at any given time and thus optimize InfoView and Web Intelligence performance.

- Click **Log Out**.

  The login page appears. You are logged out of InfoView

Web Intelligence InfoView options

Web Intelligence document creation and viewing options

You can set your Web Intelligence options to determine how you create, view and interact with documents using Web Intelligence.

You create documents using a query editor to build the query to retrieve the document data. After the query returns the data to the document, you can view and interact with the data.

Document creation option	Description
Advanced	You create documents using the Java Report Panel, a Java applet than launches in your Web browser. The Java Report Panel is a combined query building, report editing and data analysis environment. If you choose **Advanced** as your document creation option, you also use the Java Report Panel for working with the data returned by the query. The **Select a default view format** option is not taken into account. The Java Report Panel provides the richest feature set of all Web Intelligence query building, report editing and data analysis environments.
Interactive	You build queries using Query - HTML, an HTML-based query editor.
Desktop	You build queries, edit reports and analyze data using Web Intelligence Rich Client, a standalone version of the Java Report Panel that runs outside your web browser.
Web Accessibility	You create reports using the HTML Report Panel, a 508-compliant query and report building environment.

You can use the following view formats to view and interact with existing Web Intelligence documents, or documents that you have just created using a query editor:

View format	Description
Web	Use Web (HTML) format when you want to open reports, answer prompts, navigate reports, and/or perform drill analysis.
Interactive	Use Interactive format when you want to apply filters, sorts, calculations, modify formatting and data displayed on tables and charts, and/or perform drill analysis. Use Interactive format if you are using Query – HTML to define queries, and you want to format reports based on those queries and add formulas and variables. Interactive format + Query HTML provides an approximate equivalent to the Java Report Panel or Web Intelligence Rich Client, in a pure HTML environment. You can also use Interactive format to view and work with reports generated from the HTML Report Panel. Unline Query - HTML, which is a pure query-building environment, the HTML Report Panel also allows you to define reports. After running your query, you can continue to work with the report either by using Interactive format, or by returning to the HTML Report Panel. Interactive view format is only available if your administrator has deployed Web Intelligence in JSP mode.

View format	Description
PDF	Use PDF mode when you want to view static reports.

To select the Web Intelligence query editor

1. Click the **Preferences** button on the InfoView toolbar.
2. Click **Web Intelligence Preferences** to display the Web Intelligence options.
3. Select the query editor beneath **Select a default creation/editing tool**.
4. Click **OK**.

To select the Web Intelligence view format

You can select different view formats for Web Intelligence documents depending on how you want to interact with the information displayed on the reports. You select your Web Intelligence view options in InfoView. When you modify your view options, the new settings are implemented the next time you open a Web Intelligence document.

1. Click the **Preferences** button on the InfoView toolbar.
2. Click **Web Intelligence Preferences** to display the Web Intelligence options.
3. In the **Select a view format** section, select the view format.

To select a default universe for new documents

1. Click **Preferences** on the Infoview toolbar.
2. Click**Web Intelligence Preferences** to display the Web Intelligence options.
3. Click **Browse** beneath **Select a default universe** and browse to the universe you want to select as the default.

Refresh option in Infoview

With SAP BusinessObjects XI 3.1 SP3 refresh of Web Intelligence documents created from custom data sources like text, excel files and Custom Data Provider plug-in are supported in Infoview.

Note:
The refresh option is available for Windows operating system only.

To refresh a text or excel file, set the `RefreshOnServer` registry to the following values:

`RefreshOnServer = NO or Disable` to disable refresh on Server.

`RefreshOnServer = YES or ENABLE` to enable refresh on Server, by default it is set to `YES` or `Enable`.

`RefreshOnServer = ALLOW_USE_WINDOWS_SHARE` to enable refresh on Windows server only.

The registry path is: **HKEY_LOCAL_MACHINE** > **SOFTWARE** > **Business Objects** > **Suite 12.0** > **Default** > **Web Intelligence** > **Calculator** > **PDP**.

Before refreshing a document from Infoview make sure that the following points are taken care:

1. The Custom Data Provider has to be on the BOE server, if it is clustered then each and every cluster needs to be updated with the same copy of Custom Data Provider.
2. Incase of a blocker issue and the file cannot be accessed from its original source location then the file should be placed in the default location for each server.

   The default server path is `<Installdir>Business Objects\PersonalDPFilessymantec`, you can change this path by changing the value of `Server_Path` in the registry.
3. The Server Intelligence Agent (SIA) should be managed by a user authentication valid in the network domain. Normally SIA is managed using local system account; this practice is not recommended when deploying Custom Data Provider in server.

4. For refreshing a document based on Generic WS, update the *net.properties* file present at: `<Installdir>\javasdk\jre\lib` with the following lines:

```
http.proxyHost=bluecoat-proxy
http.proxyPort=8080
http.nonProxyHosts=localhost|127.0.0.1|10.
```

   Where, `proxyHost` is the name of the proxy server (e.g. proxy.mydomain.com),

   `proxyPort` is the port number to use (default value is 80),

   `nonProxyHosts` is a '|' separated list of hostnames which should be accessed directly, ignoring the proxy server (default value is localhost & 127.0.0.1)

Note:
The `.pac` files are not supported, you have to explicitly configure the proxy server in the proxy settings for the URL.

To set Web Intelligence drill options

Drilling on reports lets you look deeper into data to discover the details behind a good or bad summary result displayed on a table, chart, or section. Before you begin a drill session, you can set your drill options in InfoView to specify how reports will change each time you drill.

1. Click **Preferences** on the Infoview toolbar.
2. Click **Web Intelligence Preferences** to display the Web Intelligence options.
3. Select the drill options under **Drill options** and **Start drill session**.

Hide drill toolbar option

When you drill on a value displayed on a report, the Drill toolbar appears and displays the value on which you drilled. The value displayed on the toolbar filters the results displayed on the drilled report.

For example, if you drill on year 2001, the results displayed on the drilled table are Q1, Q2, Q3, and Q4 for year 2001. This means that the quarterly values you drilled to are filtered by 2001.

Note:
If the drilled report includes dimensions from multiple queries, a ToolTip appears when you rest your cursor on the value displayed on the filter. The ToolTip displays the name of the query and the dimension for the value.

The Drill toolbar allows you to select alternative values on the same level, in order to filter the results differently. For example, if you use the Drill toolbar illustrated above to select “2002,□? the results displayed on the drilled table would be Q1, Q2, Q3, and Q4 for year 2002.

You can opt to hide the Drill toolbar when you start drill mode. The Drill toolbar is only useful if you want to select filters during your drill session.

Prompt when drill requires additional data option

When you drill the results displayed on a Web Intelligence report, you may want to drill to higher- or lower-level information that isn’t included in the scope of analysis for the document. When this is the case, Web Intelligence needs to run a new query to retrieve the additional data from the data source.

Since queries on large selections of data may take a long time to be completed, you can choose to be prompted with a message every time a new query is necessary. The prompt message asks you whether you want to run the additional query or not. In addition, the prompt lets you apply filters to the extra dimensions you include in the new query. This means you can restrict the size of the query to only the data necessary for your analysis.

You need permission from your administrator to drill out of the scope of analysis during a drill session.

Synchronize drill on report blocks option

When you select the **Sychronize drill on all report blocks** option, the display of all blocks changes to correspond with your drill actions. For example, if you drill down on a block from year to quarter, and your report also contains a chart showing data by year, the chart display also changes to display data by quarter.

If you do not select the option, only the drilled block changes in response to drill actions.

Start drill session option

The **Start drill session** option controls how Web Intelligence behaves when you start drill mode.

Start drill session on existing report option

When you select **Start drill session on existing report**, the current report becomes drillable when you start drill mode. When you end drill mode, the report displays the drilled values.

Start drill session on a duplicate report option

When you select **Start drill on a duplicate report**, Web Intelligence creates a duplicate of the current report when you start drill mode, and you drill on the duplicate. This allows you to compare the results of the original report with the results you discover during your drill analysis.

Web Intelligence locale options

Locales determine how Web Intelligence displays its interface (for example, menu items and button text) and data (for example, date and number formatting).

Web Intelligence has three locales:

Locale	Description
Product Locale	The locale in which the Web Intelligence interface is displayed
Document Locale	The locale of the data currently contained in the document
Preferred Viewing Locale	The user's preferred locale for displaying document data

The InfoView settings determine how the Document Locale and Preferred Viewing Locale interact to display document data.

Related Topics

- *To permanently associate a locale with a document*

The Product Locale

The product locale is used to display the Web Intelligence interface (for example, menu items and button text).

Note:
The `GetLocale` function returns the Product Locale.

To set the Product Locale

1. Click **Preferences** on the main InfoView toolbar.
2. Click **General** to display the general options.
3. Select the product locale from the **Product locale** list.

The Document Locale

The Document Locale formats the data in a document. For example, the Document Locale determines how Web Intelligence displays dates and numbers.

If the Web Intelligence settings in InfoView give the user's Preferred Viewing Locale priority through the **Use my Preferred Viewing Locale to format the data** setting, Web Intelligence sets the Document Locale to the Preferred Viewing Locale when the user opens a document. When the user saves the document, Web Intelligence saves this Document Locale with the document.

If the Web Intelligence settings do not give the user's Preferred Viewing Locale Priority, Web Intelligence formats the data according to the Document Locale saved with the document.

When a user creates a document, Web Intelligence always assigns the user's Preferred Viewing Locale as the initial Document Locale, whether or not the Web Intelligence settings in InfoView give the Preferred Viewing Locale priority.

A user can permanently associate the current Document Locale with a document by saving the document with the **Permanent Regional Formatting** option selected. Once a document has been saved with the option selected, Web Intelligence ignores the InfoView settings and always formats the document data using the saved Document Locale. This applies to all users, not just the user who selected the **Permanent Regional Formatting** option.

Note:
The `GetContentLocale` function returns the Document Locale.

Related Topics

- *To permanently associate a locale with a document*

To set the Document Locale

1. Click **Web Intelligence Preferences** to display the Web Intelligence options.
2. Click **Use the document locale to format the data** beneath **When viewing a document**.

The Preferred Viewing locale

The Preferred Viewing Locale is a user's preferred locale for displaying document data. The Document Locale becomes the user's Preferred Viewing Locale when the InfoView settings give the Preferred Viewing Locale priority.

Note:
The `GetPreferredViewingLocale` function returns the Preferred Viewing Locale. The `GetLocalized` function also uses the Preferred Viewing Locale to display translated strings.

To set the Preferred Viewing Locale

1. Click **Preferences** on the main InfoView toolbar.
2. Click **General** to display the general options.
3. Select the preferred viewing locale from the **Preferred viewing locale** list.
4. Click **Web Intelligence Preferences** to display the Web Intelligence options.

5. If you want data to be formatted using the preferred viewing locale, click **Use my Preferred Viewing Locale to format the data** beneath **When viewing a document**.

To permanently associate a locale with a document

1. In Web Intelligence Interactive, select **Document** > **Properties** from the menu to display the" Document Properties" dialog box, then select **Permanent regional formatting**.
2. In the Web Intelligence Java Report Panel or Web Intelligence Rich Client, right-click an empty area of the report, select **Document Properties** to display the **Document Properties** pane, then select **Permament Regional Formatting** in the **Document Options** section of the pane.
3. Save the document.

   The current Document Locale is associated permanently with the document.

Returning data using queries

chapter 3

Creating, editing and saving documents

You create Web Intelligence documents by first selecting a universe in InfoView. Each universe maps to a database containing corporate business information. When you connect to a universe, Web Intelligence automatically launches the document editor selected on the Web Intelligence Document Preferences page in InfoView.

After you have selected a universe, you use the objects in the universe to build a query to return data from the database to your Web Intelligence document.

After creating a document you can save it to the InfoView repository.

Building and working with queries

To build and run a query

1. On the InfoView Home page, click the arrow next to **New**, then select **Web Intelligence Document** on the top toolbar. Alternatively, click **Add Query** in the Query Panel if you are adding a query to a document that already contains at least one query.
2. Click the title of the universe on which you want to create a document.
3. In the **Data** tab, open a class.
4. Select the objects you want to include in the query and drag them to the **Result Objects** pane. To add all the objects in the class, drag the class to the **Result Objects** pane.
5. Repeat the previous step until the query contains all the objects you want to include.
6. Select the objects on which you want to define query filters and drag them to the **Query Filters** pane. To create a quick filter on an object, select the object in the Result Objects pane then click **Add Quick Filter** at the top right of the pane.
7. Set the scope of analysis and other query properties.
8. To remove an object from the **Result Objects** or **Query Filters** panes, click **Remove** at the top right corner of the pane.

9. To remove all objects from the **Result Objects** or **Query Filters** panes, click **Remove All** at the top right corner of the pane.
10. Click **Run Query** to run the query.

How universe objects map to data

Classes and subclasses

Objects are grouped into folders called classes. Each class can also contain one or more subclasses. Subclasses contain objects that are a further subcategory of the objects in the upper level of the class.

The role of classes is to organize the objects into logical groups. When you create queries on the universe, classes help you to find the objects that represent the information that you want to use in a query.

Dimension object

A dimension object represents data that provides the basis for analysis in a report. Dimension objects typically retrieve character-type data, for example; customer names, resort names, or dates.

Dimension objects appear as follows in the Web Intelligence query panel:

Detail object

A detail obect provides descriptive data about a dimension. A detail is always attached to the dimension for which it provides additional information. For example, [Age] is a detail object that is associated with the (Customer] dimension.

Detail objects appear as follows in the Web Intelligence query panel:

Measure object

The measure object retrieves numeric data that is the result of calculations on data in the database. For example, [Revenue] is the calculation of the number of items sold multiplied by item price. Measure objects are often located in a Measures class.

Measure objects appear as follows in the Web Intelligence query panel:

There are two types of measure:

- classic measures - calculated by Web Intelligence
- smart measures - calculated by the database on which the universe is based

In certain situations, smart measures impact the way in which Web Intelligence displays calculations. For more information on smart measures, see the *Using Functions, Formulas and Calculations in SAP BusinessObjects Web Intelligence* guide.

Displaying data from an added query

When a query is not the first query in the document, you need to specify in the New Query box how its data will be displayed.

Option	Description
Insert a table in a new report	Display the data on a new report in the document
Insert a table in the current report	Display the data on the currently selected report in a new table
Include the result objects in the document without generating a table	Include the data in the document without displaying the data on a report. (You can add the objects returned by the query to the report later.)

To interrupt a query

You can interrupt a query before Web Intelligence has returned all the data to the document.

When you interrupt a query, only partial data is returned to the document. The values displayed in the document do not accurately reflect the definition in the query.

Before returning the data to the document, Web Intelligence requests you to choose which version of the data you want retrieved

1. On the "Waiting - Refresh Data" dialog box, click **Cancel**.

   The "Interrupt Data Retrieval" dialog box appears.

2. Select one of the options on the "Interrupt Data Retrieval" dialog box.

Option	Description
Restore the results from the previous data retrieval	Web Intelligence restores the values to the document that were retrieved the last time the query was run. The values displayed will not be the most up to data information available on the database. You can run the query later to return the up to date values from the database
Purge all data from the document	Web Intelligence displays the document empty of values. The structure and formatting of the document is retained. You can run the query later to return the up to date values from the database
Return the partial results	Web Intelligence displays the new values retrieved so far in the appropriate parts of the document. The rest of the document will display the values retrieved the last time the query was run

To remove a query

1. Select a the query you want to remove by right-clicking the appropriate Query tab.
2. Click **Remove**.

To duplicate a query

If you want to build a different query on a universe already included in the document, you can duplicate the existing query on that universe and then modify it, instead of starting from scratch.

1. Select the query you want to duplicate by right-clicking the appropriate Query tab at the bottom of the report panel.
2. Select **Duplicate**

Multiple queries

You can include one or multiple queries in a Web Intelligence document. When you include multiple queries, those queries can be based on a single universe or on multiple universes available in InfoView.

For example, you can include product sales data and customer data in the same document. In this case, your corporate data for product line sales is available on one universe and data on customers is available on another universe. You want to present product line sales results and information on customer age groups in the same report. To do this, you create a single document that includes two queries; one query on each universe. You can then include and format results from both queries on the same report.

Defining multiple queries in a single document is necessary when the data you want to include in a document is available on multiple universes, or when you want to create several differently-focused queries on the same universe. You can define multiple queries when you build a new document or add more queries to an existing document. You can present the information from all of the queries on a single report or on multiple reports in the same document.

Multiple queries, combined queries and synchronized queries compared

Multiple queries can be related in a Web Intelligence document in different ways.

- Basic multiple queries draw unrelated data from different sources.

- “Synchronized queries” relate the data from different queries around a dimension that contains data common to both queries. These dimensions are called merged dimensions.

  You merge dimensions in the Web Intelligence reporting interface after you have created and run your multiple queries.

- “Combined queries” are a special kind of query created in the Web Intelligence query interface. Combined queries generate SQL containing the UNION, INTERSECT and MINUS operators (if the database supports them) or simulate the effect of these operators.

  Combined queries allow you to answer complex business questions that are difficult to formulate using standard queries.

  You cannot create combined queries in Query - HTML.

Viewing the SQL generated by a query

When you build a query in Web Intelligence, Web Intelligence generates SQL to run against the database to return the query result. S(tructured) Q(uery) L(anguage) is the query language understood by all relational databases.

You can view and edit the SQL generated by Web Intelligence.

Note:
You cannot view the SQL of queries that call database stored procedures.

To view and edit the generated SQL

Note:
You cannot edit the query SQL when the query contains optional prompts. Edit the query to remove the optional prompts before attempting to edit the SQL.

1. Click **SQL** on the query toolbar to display the "SQL Viewer" dialog box.

   When SQL is not editable, values supplied in response to prompts appear directly in the query.

For example, if "UK" was supplied in response to a prompt on [Country], a line similar to

```
Resort_country.country In ('UK')
```

appears in the query.

If no value has yet been supplied for the prompt, the Web Intelligence syntax for prompts (described below) appears in the query.

2. Click **Use custom SQL** to make the generated SQL editable.

   When you make the SQL editable, the Web Intelligence syntax for prompts appears in the query.

   For example, a line similar to

```
Resort_Country.country  =  @prompt('Enter Coun
try:','A','Resort\Country',
Mono,Free,Persistent,,User:0)
```

   appears in the query.

3. Click **Validate** after editing the SQL to check that your edits are valid.
4. Click **Copy** (Java Report Panel and Web Intelligence Rich Client only) to copy the SQL to the clipboard.
5. Click **Print** (Query - HTML only) to print the SQL.

Setting the scope of analysis

Scope of analysis

The scope of analysis for a query is extra data that you can retrieve from the database to give more details on the results returned by each of the objects in a query. This extra data does not appear in the initial result report, but it remains available in the data cube, so you can pull this data in to the report to allow you to access more detail at any time. This process of refining the data to lower levels of detail is called drilling down on an object.

In the universe, the scope of analysis corresponds to the hierarchical levels below the object selected for a query. For example, a scope of analysis of one level down for the object Year, would include the object Quarter, which appears immediately under Year.

You can set this level when you build a query. It allows objects lower down the hierarchy to be included in the query, without them appearing in the **Results Objects** pane. The hierarchies in a universe allow you to choose your scope of analysis, and correspondingly the level of drill available.

In the Java Report Panel and in Web Intelligence Rich Client, you can also create a custom scope of analysis by selecting specific dimensions for the **Scope of Analysis** pane.

Note:
You cannot set the scope of analysis when working in query drill mode because this drill mode causes Web Intelligence to modify the scope dynamically in response to drill actions.

Levels of scope of analysis

You can set the following levels for scope of analysis:

Level	Description
None	Only the objects that appear in the **Results Objects** pane are included in the query.
• One level down • Two levels down • Three levels down	For each object in the **Result Objects** pane, one, two, or three objects lower down the hierarchy tree are included in the query. The data from these objects is stored in the cube until you add them to the document.
Custom **Note:** This option is available in the Java Report Panel and in Web Intelligence Rich Client only.	All objects added manually to the Scope of Analysis panel are included in the query.

Including a scope of analysis in a document increases the document size significantly. This is because the data necessary for the scope you specify is saved with the document, even though it is not visible in the reports unless

you start drill mode and drill down to the data to display the corresponding values.

In order to minimize the size of documents and optimize performance, we recommend that you only include a scope of analysis in documents where you are certain that users will need to drill.

We suggest the following method because it will be easier for you to set the scope of analysis seeing the hierarchy of the classes and objects.

To set the scope of analysis

1. Click the **Show/Hide Scope of Analysis** Pane button so that it appears pressed in.

   The Scope of Analysis panel appears at the bottom of the Result Objects pane. The default scope of analysis is None. Each dimension in the Result Objects pane appears in the Scope of Analysis pane.
2. Click the down arrow in the **Scope of Analysis** drop-down list box.
3. Select a level for the scope of analysis.

   The level appears in the list box and the dimensions that are hierarchically below each dimension in the Result Objects pane appear in the **Scope of Analysis** pane.
4. If you want to add selected dimensions to the scope of analysis or create a custom scope of analysis, select dimensions in the Query Manager and drag them across to the **Scope of Analysis** panel.

Query contexts

What is an ambiguous query?

An ambiguous query is a query that contains one or more objects that can potentially return two different types of information.

In a universe, certain dimensions may have values that are used for two different purposes in the database. For example, the [Country] dimension in the query below can return two types of information:

- Customers and the country in which they spent their vacation.

- Customers and the country for which they have made their reservation.

The role that Country plays in this query is ambiguous. A country can be either the country where a vacation was sold, or a country where a vacation is reserved. One is existing information (sales), and the other is future information (reservations).

To avoid ambiguities in a query, the universe designer identifies the different ways that objects can be used in the universe, and implements restrictions on how these objects can be combined. These restrictions are called contexts.

What is a context?

A context is a defined group of objects that share a common business purpose. This business purpose is usually the type of information that these related objects represent. For example, a sales context is a grouping of all the objects that can be used to create sales queries. A reservations context is a grouping of all the objects that can be used in reservation queries. Contexts are defined in a universe by the universe designer.

You can combine any object within the same context to create a query. You can also combine objects in different contexts. If you use an object that is common to both contexts, Web Intelligence will try to determine the context that best fits the other objects in the query.

If it cannot determine a context, you are prompted to choose the context that you want to apply to the query.

Choosing a context when you run a query

When you create a query or refresh a report, you may be asked to choose a context before the query can run. Contexts are set up in a universe to avoid ambiguous queries.

To choose a context when you run a query

1. Run the query containing multiple contexts.
   The "Select a Context" dialog box appears.
2. Select the context in the "Select a Context" dialog box.

Web Intelligence query properties

Allow other users to edit all queries property

When selected, other users who have the appropriate editing rights can access Query View and modify the queries in the document. When cleared, only the report creator can modify the queries. This option is selected by default. Unlike the other query properties, which only apply to the selected query, this option applies to all of the queries in the document.

Max retrieval time query property

Maximum time that a query can run before the query is stopped. This can be useful when a query is taking too long due to an excess of data, or network problems. You can set a time limit so a query can stop within a reasonable time.

Max rows retrieved query property

The **Max rows retrieved** query property determines the maximum number of rows of data that are displayed when a query is run. If you only need a certain amount of data, you can set this value to limit the number of rows of data in your document.

Max rows retrieved does not operate at the database level. If you set **Max rows retrieved** to 1000, and your query returns 5000 rows, Web Intelligence initially retrieves all 5000 rows, before discarding 4000 and retaining only the first 1000 rows.

The **Sample result set** query property also applies a restriction on the number of rows in the query, but at the database level. If you set **Max rows retrieved** to 2000 and **Sample result set** to 1000, the query retrieves a maximum of 1000 rows only.

This setting can be overridden by the limits set by your administrator in your security profile. For example, if you set the **Max rows retrieved** setting to

400 rows, but your security profile limits you to 200 rows, only 200 rows of data will be retrieved when you run the query.

Query prompt order

Prompts are listed in the list. You can use the up and down arrows to move a prompt up or down the list to change the order in which they are executed.

Retrieve duplicate rows query property

In a database, the same data may be repeated over many rows. You can choose to have these repeated rows returned in a query, or to have only unique rows returned.

Query Stripping

Query Stripping enables you to optimize the query generation automatically. With Query Stripping enabled, Web Intelligence generates a query containing only those objects that effectively contribute to a report. It improves the performance of the report by sending the stripped query to the connection server.

Each time you refresh a query, Web Intelligence strips the objects which are not contributing to the report (directly or indirectly) from the report as well as from the SQL Viewer tab. It refreshes only the query that is directly related to the report. The stripped objects get deleted from the report and appear as bold in the Data map to allow easy identification of the stripped objects. You can drag and drop these objects if you want them to appear in the report again. Once you drag and drop these objects, the column header of the report displays the object definition and data cells display **#Refresh** . Refresh the query again to allow the stripped objects data to appear in the report.

Note:

- Query Stripping is applicable only for OLAP database users.
- In a Query Stripping enabled document, if a query filter is used on a Measure object, Web Intelligence does not strip the objects.

For more information about how to work with Web Intelligence, see *Building Reports with Web Intelligence Rich Client* guide on SAP Help Portal: *http://help.sap.com*

To control Query Stripping

You can control the automatic query optimization by enabling or disabling **Query Stripping** at two levels, namely, Query and Document level property.

- Query level property: At Query level property, Query Stripping can be enabled or disabled only by Power users, who create a Web Intelligence report and defines queries and initial structures of the report. Query Stripping at query level property is disabled by default. In case of multiple queries in the same document, the query set for Query Stripping will be stripped and other queries would remain unaffected.
- Document level property: At Document level property, Query Stripping can be enabled or disabled by all the users of Web Intelligence to change the report objects for analysis. Query Stripping at document level property is disabled by default.

When you create a Web Intelligence document, by default the Query Stripping is disabled. A power user needs to enable this parameter to strip an object for a specific query. Web Intelligence fails to strip a query if the document level property is enabled and query level property is disabled or vice-versa. Query Stripping works only when Query Stripping is enabled at both Query and document level properties.

Once the Query Stripping is disabled at the document level property, Web Intelligence retains the default pattern of refreshing all the objects selected in the query panel for a specific query sent to the connection server.

1. To enable Query Stripping at the query level for a specified query, select **Enable Query Stripping** in the "Query Properties" tab while creating a Web Intelligence report.

   Note:
   Enable Query Stripping parameter is set only by the Power users who needs to edit Query or create query rights. The user of a report will not be able to set this parameter.

2. To enable Query Stripping at the document level for a specified query, select **Enable Query Stripping** in the Document Properties tab.

As a result, Query Stripping is enabled for a specified query.

Reset contexts on refresh query property

When selected, you are prompted to choose a context each time a query requiring a context is run. When unselected, Web Intelligence retains the context specified the first time you run the query.

Clear contexts query property

When this property is selected, Web Intelligence clears the contexts listed in the list when you next run the query or refresh the data.

Sample result set query property

The **Sample result set** property determines the maximum number of rows that a query returns. The property applies this restriction at the database level. If the database supports sampling, Web Intelligence adds the restriction to the SQL that Web Intelligence generates to return the data.

If you select the **Fixed** option, Web Intelligence uses fixed sampling. At each data refresh, the query returns the same rows. If you do not set the **Fixed** option, Web Intelligence uses random sampling. At each data refresh, the query returns a different set of sampled rows.

Sample result set is more efficient than the **Max rows retrieved** property, which discards rows beyond the maximum limit only after retrieving all the rows in the query.

Not all databases support fixed and random sampling. If they are not supported, the properties are disabled (in the Java Report Panel) or invisible (in Query - HTML). Sampling is not available at all in the HTML Report Panel.

Filtering data using query filters

chapter 4

Query filters defined

You limit the data returned to the document by applying filters when you define the query. Using query filters enables you to secure the data that you don't want specific user groups to see and limits the size of the documents that are stored on your network. When you run the query on the document data, the Web Intelligence returns only the values that meet the query filter definitions.

Query filters limit the data Web Intelligence returns to a document. They retrieve a sub-set of the data from the database and return the corresponding values to the document. You define filters to match business questions. For example, you can filter the [Year] dimension to view only sales revenue for Year 2003; or filter the [Annual Income] dimension to view only customers whose annual income is equal to or greater than $1.5M.

Query filters allow you to:

- retrieve only the data you need to answer a specific business question
- hide the data you don't want specific users to see when they access the document
- minimize the quantity of data returned to the document to optimize performance

Example: In Q4 2002, which stores in my sales region gained margins above $130K?

As Regional Marketing Manager for Texas, you are only interested in analyzing margins for Texas, but the sales universe includes data US-wide. In addition, you only want to view information for stores where margins reached over your 4Q 2002 quarterly target figure: $130K. To create a document with only the information you need, you apply a filter on the [State], [Year], and [Quarter] dimensions and a filter on the [Margin] measure:

AND	Year Equal to 2002
	Quarter Equal to Q4
	State Equal to Texas
	Margin Greater than or equal to 130000

To avoid displaying the filtered values Texas, 2002, and Q4 in the table columns Year, Quarter, and State, you exclude the [Year], [Quarter], and [State] objects from the Result Objects pane. When you generate the report, the report values correspond to Texas stores with 4Q 2002 margins greater than or equal to $130K:

Store name	Sales Revenue	Margin
e-Fashion Houston	307,914	133,802
e-Fashion Houston Leighton	316,232	136,055

Query filters and report filters compared

You can apply filters at two levels within a document:

- query filters – these filters are defined on the query; they limit the data retrieved from the data source and returned to the Web Intelligence document.
- report filters – these filters limit the values displayed on reports, tables, charts, sections within the document, but they don't modify the data that is retrieved from the data source; they simply hide values at the report level.

Types of query filter

You can create the following types of query filter:

- predefined filters – created by your administrator
- custom filters – you define on the query
- quick filters - a simplified form of custom filter for simple filters
- prompts – you define these dynamic filters to display a question or a list of values so you or other users can select different filter value(s) at each run query

You can mix different types of filters on a single query.

Predefined query filters

Predefined filters make the specific data you most typically need for reports permanently available in Web Intelligence. They are created by an administrator and saved with the universe. Predefined filters often contain complex expressions that require a detailed knowledge of the database structure. Including predefined filters on the universe means you don't need to create the same custom filters every time you create new Web Intelligence documents based on the same universe.

As a Web Intelligence user, you cannot view the component parts of predefined filters or edit predefined filters.

To select a predefined query filter

- Double-click the predefined filter or drag it to the **Query Filters** pane.

When you run the query, the data corresponding to the query filters you selected is returned to the report.

Quick filters

Quick filters allow you to quickly define the values you want to retrieve for a specific object without launching the Filter Editor. By default, Quick filters use the Equal to operator if you select a single value or the In list operator if you select multiple values.

For example:

- If you select the [Payment Status] dimension and the value "unpaid? you create the filter: [Payment Status] Equal to "unpaid?

- If you select the [Country] dimension and the values US, Japan, Germany, you create the filter: [Country] In list “US;Japan;Germany?

To create or remove a quick filter

1. Select the column you want to filter.
2. Click the arrow to the right of **Add Filter** on the **Reporting** toolbar and click **Add Quick Filter**.

   The **List of Values** dialog box appears. The values for the selected object are listed.
3. Select the values you want to retrieve from the database.

   For example, to filter the query for values in Q1, select the [Quarter] dimension, then select Q1 from the list of values.
4. Click **OK**

   The new filter appears on the **Query Filters** pane.
5. To remove the filter, click the arrow to the right of **Add Filter** and select **Remove Filter**.

Custom query filters

You create custom query filters to limit document data to information corresponding to:

- a specific business question
- the business information needs of a specific group of users

For example, you can create custom filters to retrieve sales results data for specific dates, products, or services, or to view customer information only for customers who are high wage earners or who live in a particular region.

To add and remove custom query filters

1. Select the object you want to filter and drag it to the **Query Filters** pane.

   The query filter appears in outline in the **Query Filters** pane.
2. Click the arrow next to the default operator (In List) and select the query operator from the list of operators.

3. Click the arrow on the right of the query filter and select the type of filter you want to apply: **Constant**, **Value(s) from List**, **Prompt**, **Object from this query**, **Result from another query, Result from another query (Any)**, **Result from another query (All)**.

Option	Description
Constant	You compare the object against a constant value to filter the query result.
Value(s) from list	You compare the object against values from a list of values to filter the query result.
Prompt	You create a filter which requires the user to supply filter values on data refresh.
Object from this query	You compare the object against the values returned by an object from in the same query.
Result from another query	You compare the object against the values returned by an object from another query (the filtering query) to filter the query result.
Result from another query (Any)	You compare the object against any of the values returned by an object from another query (the filtering query) to filter the query result.
Result from another query (All)	You compare the object against all of the values returned by an object from another query (the filtering query) to filter the query result.

4. Type/select the constant, list of values or object you want to include in the filter.
5. To remove the filter, select it and click the Delete key, or click **Remove** at the top right corner of the **Query Filters** pane. To remove all filters, click **Remove All** at the top right corner of the **Query Filters** pane.

Related Topics

- *What is a prompt?*
- *Filtering a query on values returned from another query*

Filtering a query on values returned from another query

You can filter a query on values returned from another query. For example, if you want to return results for all the countries in Query 1 that have a corresponding country in Query 2, you can filter the `[Query 1].[Country]` object on the values of the `[Query 2].[Country]` object.

The filtered query must be in a universe based on a relational (RDBMS) data source. The query that supplies the filtering values (filtering query) can be based on a relational, OLAP or local data source.

When you are building a query on a query, the filtering query does not appear in the list of queries that can be used as filtering queries until it has been run or saved.

The filtering query is not refreshed when you refresh the filtered query.

The query filter can filter against all or any of the values returned by the filtering query. The supported combinations of operator and filter mode appear in the table below. If you do not choose an operator from the table, the **Result from another query** menu item is not available.

Operator	Filter mode	Description
Equal To	Any	Keep values in the filtered query that are equal to any value returned by the filtering query.
Not Equal To	All	Keep values in the filtered query that are different from all the values returned by the filtering query.
Greater Than Greater Than or Equal To	Any	Keep values in the filtered query that are greater than/greater than or equal to any of the values in the filtering query. In other words, keep values in the filtered query that are greater than/greater than or equal to the minimum value returned by the filtering query.
Greater Than Greater Than or Equal To	All	Keep values in the filtered query that are greater than all of the values in the filtering query. In other words, keep values in the filtered query that are greater than/greater than or equal to the maximum value returned by the filtering query.
Less Than Less Than or Equal To	Any	Keep values in the filtered query that are less than/less than or equal to any of the values in the filtering query. In other words, keep values in the filtered query that are less than/less than or equal to the maximum value returned by the filtering query.

Operator	Filter mode	Description
Less Than Less Than or Equal To	All	Keep values in the filtered query that are less than/less than or equal to any of the values in the filtering query. In other words, keep values in the filtered query that are less than/less than or equal to the minimum value returned by the filtering query.
InList	Any	Keep values in the filtered query that are equal to any value in the list of values returned by the filtering query.
Not InList	Any	Keep values in the filtered query that are not equal to any of the values in the list of values returned by the filtering query.

Query filter and prompt operators

Equal To operator

Use the Equal to operator to obtain data equal to a value.

For example, to return data for the US only, create the filter "County Equal To US".

Not Equal To operator

Use the Not Equal To operator to obtain data not equal to a value.

For example, to return data for all countries except the US create the filter "County Not Equal To US".

Different From operator

Use the Different From operator to retrieve data different from a value.

For example, to retrieve data for all quarters execpt Q4, create the filter [Quarter] Different From "Q4"

Greater Than operator

Use the Greater Than operator to retrieve data greater than a value.

For example, to retrieve data for customers aged over 60, create the filter "[Customer Age] Greater than 60".

Greater Than Or Equal To operator

Use the Greater Than Or Equal To operator to retrieve data greater than or equal to a value.

For example, to retrieve data for revenue starting from $1.5M, create the filter "[Revenue] Greater than or equal to 1500000".

Less Than operator

Use the Less Than operator to retrieve data lower than a value.

For example, to retrieve data for exam grades lower than 40, create the filter "[Exam Grade] Less Than 40".

Less Than Or Equal To operator

Use the Less Than Or Equal To operator to retrieve data less than or equal to a value.

For example, to retrieve data for customers whose age is 30 or less, create the filter "[Age] Less Than Or Equal To 30".

Between operator

Use the Between operator to retrieve data between and including two values.

For example, to retrieve data for weeks starting at week 25 and finishing at 36 (including week 25 and week 36), create the filter "[Week] Between 25 and 36".

Not Between operator

Use the Not Between operator to retrieve data outside the range of two values.

For example; to retrieve data for all the weeks of the year, except for and not including weeks 25 through 36, create the filter "[Week] Not between 25 and 36".

In List operator

Use the In List operator to retrieve data corresponding to values in a list of values.

For example, to retrieve data for the US, UK and Japan only, create the filter [Country] In List ("US";"UK";"Japan").

Not In List operator

Use the Not In List operator to retrieve data that does not correspond to multiple values.

For example, if you do not want to retrieve data for the US, UK and Japan, create the filter [Country] Not In ("US";"UK";"Japan").

Matches Pattern operator

Use the Matches Pattern operator to retrieve data that includes a specific string or part of a string.

For example, to retrieve customers whose date of birth is 1972, create the filter [DOB] Matches Pattern "72".

Different From Pattern operator

Use the Different From Pattern operator to return data that doesn't include a specific string.

For example, to retrieve customers whose date of birth is not 1972, create the filter [DOB] Different From Pattern '72'.

Both operator

Use the Both operator to retrieve data that corresponds to two values.

For example, to retrieve customers who have both a fixed and a mobile telephone, create the filter [Account Type] Both 'Fixed' And 'Mobile'.

Except operator

Use the Except operator to retrieve data that corresponds to one value and excludes another.

For example, to retrieve customers who have a fixed telephone and do not have a mobile telephone, create the filter [Account Type] 'Fixed' Except 'Mobile'.

The Except operator is more restrictive than `Different From` or `Not In List`. For example, a report that returns customers and that includes the filter `[Lines] Different From 'Accessories'` excludes all sales records where the item sold is part of the 'Accessories' line. If the same customer has purchased Accessories and non-Accessories items, the customer still appears in the report, but their spending total includes only non-Accessories sales.

If the filter is `[Lines] Except 'Accessories'`, only customers who have bought no accessories are included in the report.

Related Topics

- *Not In List operator*

- *Different From operator*

Combining query filters

Combining query filters

Typical business questions require you to retrieve information that matches more than one criteria. For example, if you are analyzing customer services data, you will most likely want to focus on customers for a specific time period and also for a specific region, and probably also for a specific level of customer service contract. You can retrieve data that answers several criteria like this by combining filters in the same query.

Example: Analyze sales revenue this year at stores where the floor size is over 4,000 square feet and sales revenue figures are equal to or less than $1.5M

In this example, you are an operations manager for a retail chain. You want to analyze information about the large retail stores in your chain that are making less than the sales revenue figure your company has set as the target.

To do this you add a predefined filter on the [Year] dimension to specify that you only want to retrieve values for this year. Then you create a second filter on the [Sales Floor Size] dimension to specify that you only want to retrieve data for stores where the floor size is greater than 4,000 square feet. After this, you create a third filter on the [Sales Revenue] measure to specify that you only want to retrieve data for stores where the sales revenue figures are equal to or less than $1.5M. Finally, you combine these three filters with the And operator:

AND	Last Year
	Sales Floor Size Group Greater than or equal to: 4000
	Sales Revenue Less than 1,500,000

When you run the query, only data for stores that satisfy all three criteria will be returned to the report.

To combine query filters

1. Create the filters and add them to the **Query Filters** pane.

   By default, Web Intelligence combines the filters with the AND operator.

2. Double-click the operator (Java Report Panel, Rich Client and Query - HTML) or click the arrow next to the operator checkbox and select the other operator (HTML Report Panel) to toggle between AND and OR.

Nesting query filters

Nesting query filters allows you to create more complex filter conditions than is possible when you combine filters at the same level.

When you nest filters, you set the order in which Web Intelligence evaluates them. For example, Web Intelligence can return the data given by two query filters joined in an OR relationship (where either one filter condition or the other is true) and then further restrict this data by applying another filter to it. In this case, the two filters in an OR relationship are nested, then compared with the other filter in an AND relationship.

The following example illustrates this:

Example: List all sales made in Japan either in Q4 or where the revenue was greater than 1000000

To answer this question you create the following nested query filter:

<table>
<tr><td rowspan="3">AND</td><td>Country Equal To Japan</td><td></td></tr>
<tr><td rowspan="2">OR</td><td>Quarter Equal To Q4</td></tr>
<tr><td>Revenue Greater Than 1000000</td></tr>
</table>

Web Intelligence first returns sales data where the sale was made in Q4 or the revenue was greater than 1000000, then restricts this data further by returning only those sales made in Japan.

To nest query filters

1. Drag and drop a report object onto an existing query filter.

   A query filter outline on the report object appears in a nested AND relationship with the existing query filter.

2. Define the new query filter.

Filtering data using prompts

chapter 5

What is a prompt?

A prompt is a special type of query filter. It is a dynamic filter that displays a question every time you refresh the data in a document. You answer prompts by either typing or selecting the value(s) you want to view before you refresh the data. Web Intelligence retrieves only the values you specified from the database and returns those values to the reports within the document. Prompts allow multiple users viewing a single document to specify a different sub-set of the database information and display it in the same report tables and charts. Prompts also reduce the time it takes for the data to be retrieved from the database.

A prompt contains the following elements:

- a filtered object
- an operator
- a message

For example, to prompt users to select a specific year, you define a prompt on the [Year] dimension:

```
Year Equal To ("Which year?°)
```

In this prompt, the filtered object is [Year], the operator is Equal To, and the prompt message is "Which year?".

You can define prompts on any dimension, measure, or detail object. For example, you can filter the [Year] dimension to return values for a specific year, filter the [Sales Revenue] measure to return values for a range of revenue figures, or filter the [Year/week] detail to return values for a specific week in a year.

You can create multiple prompts, related by the AND or OR operators, in the same query. You can also nest prompts. When the user runs a query, Web Intelligence displays the prompts.

Prompts appear in the SQL generated by a Web Intelligence query as either the value supplied in response to the prompt (when the SQL is read-only), or as Web Intelligence prompt syntax (when the SQL is editable). For example, a prompt on [Country] can appear in the generated SQL as

```
Resort_Country.country  =  @prompt('Enter Country:','A',
'Resort\Country', Mono,Free,Persistent,,User:0)
```

or as

```
Resort_country.country In ('UK')
```

Prompts can be optional. The user is not obliged to specfy a value for an optional prompt. If no value is specified, Web Intelligence ignores the prompt.

Merged prompts

When a document contains multiple data providers, any prompts that include (1) objects with the same data type, (2) operators of the same operator type, and that (3) use the same prompt text are merged.

When all the data providers are refreshed, a single prompt message appears for such prompts.

The List of Values displayed by the merged prompt is the list associated with the object in the prompt that has the most display property constraints.

Cascading prompts

Some objects cause Web Intelligence to display a cascading prompt when they are included in a prompt definition. The universe designer defines the lists of values of these objects hierarchically in relation to other object lists of values in the universe.

Cascading prompts help the user to focus on the object values they want to include in the prompt without the need to search all possible object values.

Example: Choosing a store

In this example the universe designer has defined the [Store Name], [City] and [State] objects in a hierarchy. If you include a prompt `[Store Name] Equal To <value>`, Web Intelligence displays these objects in a hierarchy in the Prompts dialog box. In order to select the store, the user must first select the state in which the store city is found, then the city in which the store is found, then the store itself. When the user selects the state, Web Intelligence restricts the values of City to the cities in the state; when the user selects the city, Web Intelligence restricts the stores to the stores in the city.

Hierarchical lists of values

If your universe contains hierararchical lists of values, these lists appear in tree form. You navigate down through the tree to the items you want.

Whether a list of values appears as a cascading prompt or hierarchically depends on how the list is configured in the universe. See your administrator for more information.

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If the filter is `[Lines] Except 'Accessories'`, only customers who have bought no accessories are included in the report.

Related Topics

- *Not In List operator*
- *Different From operator*

To create a prompt

1. From the **Data** tab, drag the object on which you want to apply a prompt and drop it onto the **Query Filters** pane.

   The query filter appears in outline in the **Query Filters** pane.
2. Click the arrow at the right of the Query Filter and select **Prompt** from the menu.
3. Type the prompt text in the text box.
4. Click the icon next to the text box and use the dialog box that appears to set the prompt properties.
   - If the prompt is for a date and you want users to see the popup calendar in order to select the date(s) then do not select **Prompt with List of Values**
   - If the document contains multiple data providers, and there is already a prompt that includes (1) objects with the same data type, (2) operators of the same operator type, and (3) that uses the same prompt text as the new prompt, Web Intelligence displays a warning to tell you that the two prompts will be merged. This means that whenever all the data providers are refreshed, a single prompt message will appear for the two prompts.
5. Select **Optional prompt** to make the prompt optional.
6. To delete a prompt, right-click it and select **Remove** from the menu.

The prompt appears at each document refresh.

Related Topics

- *Defining how prompts display*
- *Merged prompts*

To remove a prompt

- Select the prompt and then click the **Delete** key.

Defining how prompts display

By default, prompts display a box and a list of values. You answer the prompt by either typing the value(s) in the box or by selecting value(s) from the list.

You can modify how prompts display by checking one, some, or all of the following options:

If you want the prompt to display...	(useful when you...)	then...
the list of values associated with the filtered dimension, measure, or detail,	want to view all the values for the object and then select from those values	leave the option selected by default: **Prompt with List of Values**
the value(s) specified the last time the prompt was answered (users can select a different value(s)),	often reselect the same value(s) when you refresh the document, but want the ability to select a different value when necessary, such as the name of the current month	select the option: **Keep last values selected**
the value(s) you specify as the default (users can select a different value(s)),	almost always reselect the same value(s) when you refresh the document, but want the ability to select a different value when necessary, such as the number for the current year	select the option: **Set default value(s)**
a list of values from which users select a value(s),	prevent users from typing a value that might not exist on the database	select the option: **Select only from List**

To make the prompt optional, select **Optional prompt**. The user is not obliged to specify a value for the prompt. In this case, Web Intelligence ignores the prompt.

Note:
If the prompt is for a date and you want users to see the popup calendar in order to select the date(s) then do not select **Prompt with List of Values**

Combining prompts

Combining multiple prompts on a single query enables you to filter the data returned to the document so that each person viewing the reports sees only the information relevant to their business need. For example, you can combine the following three prompts on a Customer Accounts document:

- Which customer?
- Which account?
- Which calendar period: from? to?

This enables each accounts manager viewing the document to view report values for a specific customer account during a specific period.

You combine prompts in the same way that you combine query filters.

Combining prompts with query filters

Combining prompts and filters on a single query enables you decide the values for some of the selected objects on the query using filters and allow users to decide the values of other selected objects using prompts. For example, if you combine the following filters and prompts on a HR document:

- [Year] Equal to This Year
- [Job title] Not equal to Senior Executive
- Which employee?

Users viewing the document can choose which employee they view information for, but they can only view data for the current year and they can't view data for senior executives.

To change the order of prompts

1. Click the **Properties** tab in the Query Panel.
2. Select the prompt you want to move up or down in the prompt order in the **Prompt Order** box, then press the Up or Down arrow next to the box.

Using combined queries

chapter 6

Combined queries defined

A combined query is a group of queries that work together to return a single result. All queries in the group must be based on the same universe.

Types of combined query

You can combine queries in three relationships:

- union
- intersection
- minus

In a union combination, Web Intelligence takes the all the data from both queries, eliminates duplicate rows, and builds a combined data set.

In an intersection combination, Web Intelligence returns the data that is common to both queries.

In a minus combination, Web Intelligence returns the data in the first query that does not appear in the second.

Example: Union, intersect and minus queries

In this example you have two queries that return lists of countries as shown in the following table:

Query	Values
Query 1	US; UK; Germany; France
Query 2	US; Spain

Depending on the type of combined query, Web Intelligence returns the following values:

Combination type	Values
UNION	US; UK; Germany; France;Spain

Combination type	Values
INTERSECTION	US;
MINUS	UK; Germany; France

What can you do with combined queries?

Combined queries allow you to answer questions that are otherwise difficult or impossible to frame in a single Web Intelligence query.

Example: Return a data set using a combined query

The Island Resorts Marketing sample universe contains the dimension Year, which returns guests who have already stayed in a resort, and Reservation Year, which returns guests who have reserved to stay in the future. Because of the structure of the database and universe, these objects are incompatible, which means that you cannot include them in the same block in a report.

What if you want to return a single list of years that includes those years where more than n guests stayed in a resort and those years where more than n guests reserved to stay in a resort? You can do this using a combined query, as follows:

Query	Returns
Query 1	Years where more than n guests stayed in a resort
UNION	
Query 2	Years where more than n guests reserved to stay in a resort

The union between these two queries returns the list of years that you want.

How does Web Intelligence generate combined queries?

If your database supports the type of combination in your query, combined queries work at the database level: they alter the query that Web Intelligence submits to the database. They do so by generating SQL (Structured Query Language) queries containing UNION, INTERSECT and MINUS operators.

Note:
SQL is the standard query language of relational databases, although each database has its own dialect.

If your database does not support the type of combination in your query, Web Intelligence performs the query at the report level by generating multiple SQL queries whose data it resolves after retrieval from the database.

To build a combined query

1. Create an initial query in the Query Panel.
2. Click **Add a combined query** on the toolbar.

   Web Intelligence adds a copy of the initial query to the data provider. The second query has the following characteristics:
   - It contains the same report objects as the original query.
   - It does not contain the filters defined on the original query.
   - It is combined with the original query in a UNION relationship.
3. To switch to a query, click **Combined Query n** in the bottom left pane of the Query Panel.

   The individual queries in the combined queries are named Combined Query n.
4. To delete a query, right-click the Combined Query n you want to delete, then select **Remove** on the menu.
5. To change the combination type, double-click on the operator. The operator moves through the sequence UNION, INTERSECTION, MINUS.
6. Build each query within the combined query as you build any normal Web Intelligence query.
7. Click **Run Query**.

Combined query structure

The queries within a combined query must return the same number of objects of the same data type and the objects must be in the same order. You cannot combine queries when the number of objects in the query results and the data types of those objects are not identical. For example, you cannot combine a query than returns Year with a query that returns Year and Revenue, and you cannot combine a query that returns Year with a query that returns Revenue.

You must also pay attention to the semantics of your combined queries. While it is possible to combine a query that returns Year with a query that returns Region if both dimensions are of the same data type, the result - a mixed list of years and regions - is unlikely to be meaningful. Typically, if your first query contains a Year dimension, your second query also contains a dimension that returns a list of years.

To return a list of years and reservation years based on the number of guests

This example describes the workflow for the query described in the example Return a data set using a combined query. You want to build a query that returns a list of years consisting of years where more than n guests stayed in a resort and years where more than n guests reserved to stay in a resort.

1. Select the Island Resorts Marketing universe in the list of universes to open the Query Panel.
2. Drag the Year object to the **Result Objects** pane.
3. Drag the Number of Guests object to the **Query Filters** pane and create a report filter that restricts Number of Guests to greater than n.
4. Click **Combined Query**.

   The **Combined Query** pane appears in the bottom left of the Query panel with the two queries joined by UNION.
5. Click on the second query and remove the Year and Number of Guests objects.
6. Drag the Reservation Year object to the **Result Objects** pane.
7. Drag the Future Guests object to the **Query Filters** pane and create a report filter that restricts the future guests to greater than n.

8. Click Run Query.

The query returns the combined list of years and reservation years.

Related Topics

- *Return a data set using a combined query*

Combined query precedence

The order in which Web Intelligence executes query combinations in a combined query is crucial in determining the final result.

In the simplest form of combined query you combine two or more queries in a relationship as follows:

	Query 1
INTERSECTION	Query 2
	Query 3

In such a case, Web Intelligence first finds the set of data that represents the union/intersection/minus between Combined Query n and Combined Query n + 1, then finds the union/intersection/minus between that data set and the data returned by Combined Query n + 2. Web Intelligence continues in this way through all the queries in the relationship. This gives the following result for the above example:

Query	Data
Query 1	US; UK; France; Germany
Query 2	US; France; Finland
INTERSECTION of 1 and 2	US; France
Query 3	US; Spain
Final INTERSECTION	US

Multiple combined queries

You can combine multiple queries in complex relationships to determine the order of execution, as in the following example:

		Combined Query 1
	MINUS	
INTERSEC TION		Combined Query 2
	Combined Query 3	

Web Intelligence processes query groups from right to left as they appear in the Query Panel, and from top to bottom within each group. (Higher-precedence groups, such as the MINUS group in the above example, appear indented to the right in the Query Panel.) In the above query Web Intelligence first determines the result of the minus combination then finds the intersection of this result with the result of Combined Query 3 as shown in the following table:

Query	Result
Query 1	US; UK; Spain; Germany
Query 2	Germany
Query 1 MINUS Query 2	US; UK; Spain
Query 3	US; Spain; Finland
(Query 1 MINUS Query 2) INTERSECTION Query 3	US; Spain

Note:
If your database directly supports the type of combined query you wish to execute, Web Intelligence generates SQL containing combination operators. In this case the order of precedence depends on the order of precedence defined in the database. See your Web Intelligence administrator for more details.

To set the order of precedence of combined queries in the Java Report Panel

1. Build the first query in the Query Panel.
2. Click **Combined Query**.
3. Repeat these steps until you have built all the component queries.
4. To increase the precedence of a pair of queries, drag and drop a query on to the query with which you want to associate it in the higher-precedence pair.

   Web Intelligence indents the source and target queries in the drag-and-drop operation and combines them by default in a UNION.
5. Continue adding queries to the higher-precedence group by dragging and dropping them on to the space between any two queries already in the group.
6. To create further higher-precedence groups within an existing higher-precedence group, repeat the previous two steps.
7. Double-click the combination operators of all the groups in the query to change them as required.
8. Click **Run Query**.

Filtering data using subqueries

chapter 7

What is a subquery?

A subquery is a more flexible kind of query filter that allows you to restrict values in more sophisticated ways than is possible with a ordinary query filters.

Subqueries are more powerful than ordinary query filters for the following reasons:

- They allow you to compare the values of the object whose values are used to restrict the query with values from other objects.
- They allow you to restrict the values returned by the subquery with a WHERE clause.

What can you do with subqueries?

Subqueries allow you to pose complex questions that are difficult or impossible to formulate with simple query filters. For example: what is the list of customers and their associated revenue where the customer purchased a service that had previously been reserved (by any customer) in Q1 of 2003?

How do subqueries work?

Subqueries work by modifying the SQL that Web Intelligence generates to retrieve the query data. Web Intelligence generates SQL containining a subquery that restricts the data returned by an outer query. For more information on SQL subqueries, see any book on SQL.

Note:
SQL is the query language supported by all relational databases (RDBMS), although each database has its own syntax.

To build a subquery

1. Add the objects that you want to appear in the query to the **Result Objects** pane.
2. Select the object in the Result Objects pane that you want to filter with a subquery and click **Add a subquery** at the top right of the **Query Filters** pane.

The subquery outline appears in the **Query Filters** pane. By default the object you selected appears as the Filter object and Filter By object.

3. To add a WHERE condition to the subquery, drag a report object to the area of the subquery below the Drop an object here boxes.
4. To add a WHERE condition to the subquery, drag a report object to the area of the subquery below the **Drop an object here** boxes.

   You can use an existing subquery or standard query filter as a WHERE condition in a subquery. To do so, drag and drop the existing filter or subquery to the area of the subquery below the Drop an object here boxes. To copy rather than move the existing filter to the WHERE condition, hold down the Control key while dragging and dropping. In this case the existing filter remains in its initial place and becomes part of the WHERE condition of the subquery.
5. Select the operator and values used to filter the object in the WHERE condition.
6. Click **Subquery** to add an additional subquery to the query filter.

   In addition to linking subqueries in AND or OR relationships, you can nest them (create subqueries within subqueries) by dragging an existing subquery to the area beneath the **Drop an object here** boxes. In this case the inner subquery becomes part of the WHERE condition of the outer subquery. To copy rather than move the subquery to the WHERE condition, hold down the Control key while dragging and dropping. In this case the second subquery remains at the same level as the first, and becomes part of the WHERE clause of the first.

   By default the two subqueries are linked in an AND relationship. Click the AND operator to toggle between AND and OR.
7. To nest a subquery (create a subquery within a subquery), drag an existing subquery to the area beneath the **Drop an object here** boxes.

   To copy rather than move the subquery to the WHERE condition, hold down the Control key while dragging and dropping. In this case the second subquery remains at the same level as the first, and becomes part of the WHERE clause of the first

   The inner subquery becomes part of the WHERE condition of the outer subquery.

To find out which customers bought a service that had previously been reserved in Q1 of 2003, and how much revenue have they generated

1. Drag the Customer and Revenue objects to the Result Objects pane of the Query Panel.
2. Select the Service object.
3. Click **Subquery**.

   The subquery outline appears in the Query Filters pane.

   Note:
   The selected object appears in both boxes in the subquery outline. You often use the same object in both boxes, although this is not required. If the objects do not return any common values, the subquery returns no values, and the query therefore returns no values.

4. Drag the Reservation Year object to the area of the subquery outline beneath the Service objects.

   Web Intelligence adds a WHERE condition on the Reservation Year object.

5. Set the Reservation Year condition operator to Equal To.
6. Type ‘FY2003’ in the **Type a constant** box.
7. Drag the Reservation Quarter object to the area of the subquery outline beneath the Service objects.

   Web Intelligence adds the Reservation Quarter object to the WHERE condition.

8. Set the Reservation Quarter condition operator to Equal To.
9. Type ‘Q1’ in the **Type a constant** box.
10. Click **Run Query** to run the query.

Subquery parameters

A subquery or set of subqueries contains the following parameters:

Parameter	Description
Filter Object(s)	The object whose values are used to filter the result objects. You can include more than one Filter Object. If you do, Web Intelligence concatenates the values of the objects you specify.
Filter By Object(s)	The object that determines which Filter Object values the subquery returns. You can include more than one Filter By object. If you do, Web Intelligence concatenates the values of the objects you specify.
Operator	The operator that specifies the relationship between the Filter object and the Filter By object. Because of database restrictions you cannot use certain combinations of operators and Filter By objects together. For example, if you use the Equal To operator with a Filter By object that returns multiple values, the database rejects the SQL because this type of subquery requires the Filter By object to return one value only. In cases where the generated SQL is rejected by the database, you see an error message showing the error description returned by the database

Parameter	Description
WHERE condition (optional)	An additional condition that constrains the list of values of the Filter By object. You can use ordinary report objects, predefined conditions or existing query filters (including subqueries) in the WHERE condition.
Relationship operator	If there is more than one subquery, determines the relationship between the subqueries. AND - the conditions in all of the subqueries must be satisfied. OR - the conditions in any one of the subqueries must be satisfied.

Ranking data using database ranking

chapter 8

What is database ranking?

When you rank data you sort and filter it according to ranking criteria. Web Intelligence allows you to return unranked data from a database, then rank it in Web Intelligence.

A database ranking allows you to specify a ranking at the query and database level so that the data returned to Web Intelligence by the query is already ranked.

Database rankings allow you to answer questions like Return the top 3 customers based on the revenue they generated for each year? at the query level, without the need to return data that falls outside the ranking to Web Intelligence and then filter it using a Web Intelligence ranking.

Database ranking has the following advantages:

- Ranking data can be processing-intensive. By ranking at the database level you allow the server, which is typically far more powerful than the client machine, to perform this processing.
- Pre-ranking data reduces the amount of data retrieved across the network and stored in Web Intelligence.

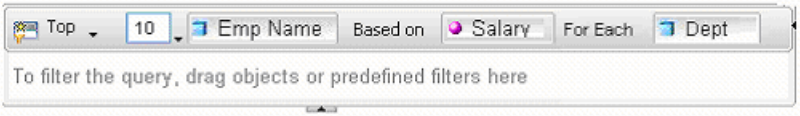
A database ranking works by modifying the SQL that Web Intelligence generates to retrieve the query data. If your database supports ranking, Web Intelligence generates SQL to rank the data. Web Intelligence uses the SQL-99 Rank function in ranking SQL. (SQL is the query language supported by all relational databases (RDBMS), although each database has its own syntax.)

Note:
You can perform a database ranking only if your database supports it. If this is not the case, the **Add a database ranking** button is disabled on the Query Panel toolbar. Databases that support ranking are Oracle, DB2, Terradata and Redbrick.

Related Topics
- *Ranking data*

Database ranking parameters

A database ranking appears as follows in the Query Filters pane of the Query Panel:



The following table describes the parameters from left to right in the ranking:

Parameter	Description
Top/Bottom	Ranking order. • Top - ranks in descending order. • Bottom - ranks in ascending order.
Number of records	The number of records to return in the ranking. For example, the top 10.
Ranking dimension	The dimension used in the ranking. For example, if the dimension is Region and the ranking is Top 10, the ranking returns the top 10 regions.
Based on	The measure by which the ranking dimension is ranked. For example, if the measure is Revenue and the dimension is Region, Web Intelligence ranks regions by the amount of revenue they generate
For Each (optional)	Dimension that specifies additional calculation context for the ranking. For example, if the ranking dimension is Region, the measure is Revenue and the For Each dimension is Country, Web Intelligence ranks regions by revenue within each country.

Parameter	Description
WHERE condition (optional)	Additional restriction on the values returned in the ranking that appears below the other parameters. For example, a ranking of regions with a condition that restricts Country to “USA□? ranks only those regions in the USA.

To create a database ranking

1. Add the objects that you want to appear in your query to the Result Objects pane of the Query Panel.
2. Select the dimension that you want to rank by.
3. Click **Add a database ranking** on the toolbar at the top of the **Query Filters** pane.

   The ranking outline appears in the **Query Filters** pane. The dimension you selected appears as the ranking dimension and the first measure in the query appears as the ranking measure in the **Based on** box.

   Note:
   The **Add a database ranking** button is disabled if your database does not support ranking.

4. Select the ranking direction (Top or Bottom).
5. Type the number of records you want the ranking to return in the box next to Top/Bottom.

   You can specify a prompt instead of a constant by clicking on the arrow next to the number. When you select a prompt the user must enter the ranking number when the query is run.

6. Drag the dimension that provides the calculation context for the measure to the **For Each** box.

   This dimension is optional. To display the **For Each** box, click the arrow to the right of the **Based on** measure.

7. Drag any dimensions that you want to include in the WHERE restriction to the area at the bottom of the ranking.
8. Click **Run Query**.

Related Topics

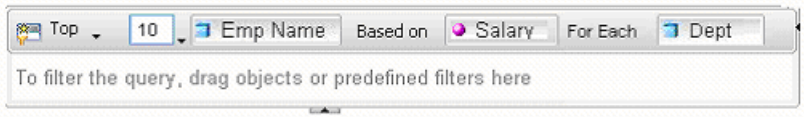
- *What is a subquery?*

To create a report that returns the top 10 employees based on salary, and calculated by department

1. Drag the Department, Employee Name, and Salary objects to the Report Objects pane within the Query Panel.
2. Select the Employee Name object.
3. Click **Add a database ranking** on the toolbar.

   Web Intelligence adds an outline database rank to the Query Filters pane. The ranking dimension is Employee Name and the ranking measure is Salary.
4. Set the ranking direction to Top.
5. Set the ranking number to 10.
6. Click the arrow next to the **Based on** measure if the **For Each** box is not already visible.
7. Set the For Each dimension to Department by dragging and dropping the dimension.

   The ranking now looks like this:



8. Click **Run Query**.

The Java Report Panel reporting interface

chapter 9

By default, the Java Report Panel report interface appears as follows:

- Report tabs - a collection of four tabs at the left of the screen that you use to work with reports.

Tab	Description
Data	Displays the universe objects, formulas and variables that can be included in the report.
Templates	Displays the tables, charts and cells that can be included in the report.
Map	Displays a hierarchical map of the report components (for examples tables, cells, sections, filters).
Properties	Displays the editable properties used to configure the appearance and behavior of the report. The list of properties varies depending on the report component selected.

- Toolbars

Toolbar	Description
Main	You use the main toolbar to switch between query view and report view, to save and print documents, and to activate data tracking and drill mode, and to configure the report interface. The main toolbar is always visible. All the other toolbars can be hidden.
Formatting	You use the formatting toolbar to format text and report objects.
Reporting	You use the report toolbar to add reporting features (for example filters, variables, rankings, calculations).
Page Navigation	You use the page navigation toolbar to navigate through the pages in a report.

- Reports - by default the reports contained in the Web Intelligence document appear to the right of the report tabs and below the toolbars. Each report appears on its own

You can configure the report interface (for example by hiding toolbars or changing the position of the report tabs) by selecting options from the **Configure View** menu on the main toolbar.

Web Intelligence viewing modes

chapter 10

To switch between viewing modes

You can view Web Intelligence reports in different modes depending on how you want to work with data and how you want the data to appear.

1. In Web Intelligence Interactive, select the report tab of the report you want to view.
2. Click the arrow next to the **View** button on the main toolbar above the report.
3. Select the viewing mode.

   Web Intelligence Interactive displays the report in the selected viewing mode.
4. In the Java Report Panel or Web Intelligence Rich Client, use **Switch Page/Quick Display** on the **Reporting** toolbar to alternate between Page mode and Quick Display mode.

Draft mode

Draft mode displays just the tables, reports, and free standing cells in reports.

Use Draft mode when you want to focus on analyzing results, add calculations or formulas, or add breaks or sorts to tables to organize results.

Page mode

Page mode displays the page layout of reports, including page margins, headers, and footers.

Use Page mode when you want to fine-tune the formatting of tables and charts and the layout of report pages.

PDF mode

PDF mode displays the report in PDF format.

Use PDF mode when you want to view the report in PDF format or print the report from within Adobe® Acrobat® Reader®.

Quick Display mode

Quick Display mode is the default display mode in Web Intelligence. It is a pagination mode that is based on the data, rather than the physical size of report pages. Quick Display mode displays just the tables, reports, and free standing cells in reports and displays a maximum number of records vertically and horizontally, depending on the Quick Display settings. Quick Display mode also specifies the minimum page width and height and the amount of padding around the edges of the report.

Because Quick display mode retricts the number of horizontal and vertical rows, a report might not contain all possible data.

Use Quick Display mode when you want to focus on analyzing results, add calculations or formulas, or add breaks or sorts to tables to organize results.

The Quick Display mode properties are configurable either by your administrator in the CMC, or directly in Web Intelligence.

Property	Where configured	Notes
Maximum vertical records	CMC	
Maximum horizontal records	CMC	
Minimum page width	CMC	
Minimum page height	CMC	
Right padding	CMC	

Property	Where configured	Notes
Bottom padding	CMC	
Horizontal records per page	Web Intelligence	• Impacts horizontal tables and crosstabs only • Horizontal tables are never cut vertically • The number of rows in a horizontal table is ignored in vertical records calculation
Vertical records per page	Web Intelligence	• Impacts vertical tables, forms and crosstabs only • The number of rows in a vertical table is ignored in horizontal records calculation

Other notes:

- Table headers and footers do not count as rows.
- Free standing cells and charts do not count as rows.
- Section cells do not count as rows when the section is not empty.
- Sections cells count as vertical rows when the section is empty.
- The Avoid Page Break in Block option has no effect in Quick Display mode

To change Quick Display mode settings in Web Intelligence

You can change the number of horizontal and vertical records per page in Quick Display mode in Web Intelligence.

1. In the Java Report Panel, set the **Page Content** > **Vertical Records per page** and **Page Content** > **Horizontal Records per page** properties.
2. In Web Intelligence Interactive, right-click the report background, select **Format Report** to display the "Format Report" dialog box, and set the **Number of vertical records per page** and **Number of horizontal records per page** in the **General** tab.

To select Enhanced Viewing mode

Your administrator can define minimum page margins, headers and footers that are applied only when you view reports onscreen. This means that the maximum amount of information on report pages is visible when you view reports via your computer screen. To apply the page definition set up by your administrator you need to select Enhanced Viewing mode.

1. Select **Document** > **Properties** (in Web Intelligence Interactive) or right-click a report and select **Document Properties** (in the Java Report Panel or Web Intelligence Rich Client).
2. Select **Enhanced viewing mode**.

Displaying and hiding report data

chapter 11

You can hide and display report data by folding and unfolding the display of different report elements.

You can fold and unfold sections, breaks and tables. Web Intelligence conceals and displays data in different ways depending on the report element.

Report element	Result
Section	When a section is folded, section details are hidden and free cells only are displayed.
Table or break	When a table or break is folded, the rows are concealed and headers and footers only are displayed. (Tables must have headers and footers to be folded and unfolded.) Vertical tables and crosstabs only can be folded and unfolded. **Note:** Folding and unfolding tables and breaks is supported by the Web Intelligence Java Report Panel and Web Intelligence Rich Client only.

To display and hide report data

1. Click **Fold/Unfold** on the report toolbar.

   The Fold/Unfold bar appears to the left of the report.
2. User the icons on the bar, which correspond to and are aligned with individual report elements, to fold and unfold specific report elements.
3. Use the icons at the bottom of the bar to fold and unfold all instances of a type of report element.

Displaying data in tables

chapter 12

Tables in Web Intelligence

When you create a new document and run the query the first time to display the results, Web Intelligence generates a report that includes all of the results in a vertical table. You can modify how the table is organized, remove or add data, change the table type to display the results differently or insert other tables. You can also insert free standing cells to display results in a single cell.

Table types in Web Intelligence

A Web Intelligence report displays results in a block. You can format the block as a specific type of table.

Vertical table

Vertical tables display header cells at the top of the table and the corresponding data in columns. By default, the header cells display the names of the dimensions, details, and measures included in the table. The body cells display the corresponding values.

Lines	Sales revenue	Margin
Accessories	$9,914,546	$3,809,135
City Skirts	$347,775	$132,302
City Trousers	$284,734	$104,346
Dresses	$2,915,620	$1,173,881
Jackets	$677,307	$286,130
Leather	$187,413	$70,599
Outerwear	$1,183,083	$474,302
Overcoats	$436,258	$185,522
Shirt Waist	$4,018,220	$1,616,218
Sweaters	$2,839,035	$1,000,673
Trousers	$903,320	$327,515

Horizontal table

Horizontal tables display header cells at the left of the table and the corresponding data in rows. By default, the header cells display the names of the dimensions, details, and measures included in the table. The body cells display the corresponding values.

Fiscal Period	FY01	FY02	FY03
Sales revenue	$8,095,814	$13,232,246	$15,059,143
Margin	$3,731,971	$5,187,886	$5,667,084

Crosstab

Crosstabs display values for dimensions across the top axis and on the left axis. The body displays the values of a measure that correspond to the cross-section of the dimensions. For example, this crosstab displays values for [Quarter] across the top axis and displays values for [State] on the left axis. The body displays values that [Sales Revenue] for each quarter in each state.

	Q1	Q2	Q3	Q4
California	$1,899,680	$1,760,148	$1,930,517	$1,889,225
Colorado	$525,682	$500,076	$510,777	$523,740
DC	$766,822	$706,447	$692,258	$796,423
Florida	$515,688	$489,998	$387,810	$485,663
Illinois	$846,408	$850,905	$610,765	$714,890
Massachusetts	$312,896	$291,431	$249,529	$429,850
New York	$1,987,115	$2,028,091	$1,672,581	$1,894,435
Texas	$2,875,569	$2,499,277	$2,146,303	$2,596,516

You can include multiple dimensions in crosstabs. For example, this crosstab displays two dimensions. The values for the [Sales Revenue] measure are values each state by quarter for each line.

	Q1	Q1	Q2	Q2	Q3	Q3	Q4	Q4
	City Skirts	City Trousers	City Skirts	City Trousers	City Skirts	City Trousers	City Skirts	City Trousers
California	$7,796	$8,496	$9,075	$1,248	$24,377	$11,924	$33,685	$26,517
Colorado	$726	$2,270	$2,375	$857	$6,421	$2,381	$8,015	$7,468
DC	$2,568	$4,026	$3,564	$1,121	$9,788	$5,338	$8,326	$10,448
Florida	$1,765	$1,737	$2,735		$4,927	$2,511	$7,377	$9,563
Illinois	$588	$2,139	$2,822	$459	$5,552	$5,305	$7,748	$12,987
Massachusetts	$1,194	$532	$2,373		$5,752	$-185	$2,134	$7,565
New York	$10,626	$14,203	$17,241	$1,769	$23,762	$18,689	$28,564	$41,324
Texas	$10,612	$12,604	$22,272	$1,663	$37,119	$20,239	$35,898	$49,539

When you create crosstabs that include a dimension(s) in the body, the body cell values are calculated according to a multi-dimensional data model. The values displayed in the body are calculated according to all of the coordinates on the table axes, whether or not there is a row for the specific coordinate in the SQL result.

	California	Colorado	DC
2001	Colorado Springs	Colorado Springs	Colorado Springs
2001	Los Angeles	Los Angeles	Los Angeles
2001	San Francisco	San Francisco	San Francisco
2001	Washington	Washington	Washington
2002	Colorado Springs	Colorado Springs	Colorado Springs
2002	Los Angeles	Los Angeles	Los Angeles
2002	San Francisco	San Francisco	San Francisco
2002	Washington	Washington	Washington
2003	Colorado Springs	Colorado Springs	Colorado Springs
2003	Los Angeles	Los Angeles	Los Angeles
2003	San Francisco	San Francisco	San Francisco
2003	Washington	Washington	Washington

Forms

Forms are useful in your report if you want to display detailed information per customer, product, or partner. For example, a form is a useful way of displaying individual customer records with information such as the customer account, name, address, and so on.

Forms are also useful for formatting address labels for envelopes.

East Japan

Ishimoto

Customer	Makino
Address	2435 Toyota Ave
Phone Number	3441 3486
Revenue	$257,795.00

Customer	Oneda
Address	94 Toyota Blvd
Phone Number	5183 9463
Revenue	$387,088.00

Structure View and Results View

The Web Intelligence Java Report Panel allows you to make modifications to documents and preview those changes in Structure View, without implementing each change on the Web Intelligence server. This enables you to make multiple formatting changes quickly and preview them. When you return to Results View, Web Intelligence requests the server to apply the changes and returns the modified format in a single operation.

You can create and format tables in either Structure View or Results View. If you have several modifications to make, however, we recommend you make the modifications in Structure View.

Creating and editing tables

To create a table by dragging objects onto a report

1. If the report is empty, select either a single object or a class folder on the **Data** tab, and then drag and drop the object or class onto the report.

2. If the report already contains tables or charts, press the Alt key, then with the Alt key pressed, drag an object onto an empty area of the report.

   A new table header and body cell appears on the report. The table header displays the name of the object.

3. To add another object to the table, drag another object from the **Data** tab and place it to the left or right of the existing column header.
4. When the “Drop here to insert a cell□? ToolTip appears, drop the object onto the left or right of the table header.

   A second column appears before or after the first column. The new column header displays the name of the object.

Web Intelligence displays the values in a vertical table. You can quickly turn the vertical table to a different table format, such as a crosstab by using the Turn To feature.

To create a table by selecting a template

1. Click **View Structure**.

   Working in Structure View allows you to define and preview the new table without requesting the server to apply each of your modifications. You then apply all your modifications and display the results in the new table, by returning to Results View.

2. Click the **Templates** tab.
3. Drag a template from the **Template** tab onto a blank area of the report.

   The template appears on the report.

4. Click the **Data** tab.

   The objects and variables that the document contains appear here. You can add any of these objects or variables to the table.

5. Drag an object or variable onto an empty header or body cell of the table.
6. When the ToolTip “Drop here to replace cell□? appears, drop the object onto the table.

   The empty cell is replaced by the object. If you are working in Results View, the values of the objects display on the table. If you are working in Structure View, the name of the object displays on the table.

7. To add more objects to the template, drag an object from the **Data** tab and drop it onto the template.

Once you have allocated objects to each part of the table template, you can add more objects to increase the size of the table. Each additional object inserts more columns or rows onto the table.

8. To add another object and create an additional table column or row, drag an object from the Data tab and drop it onto a row or column.
   - If you drop the object onto the left of a column, you create a new column before the existing column.
   - If you drop the object onto the right of a column, you create a new column after the existing column.
   - If you drop the object onto the top edge of a row, you create a new row above the existing row.
   - If you drop the object onto the bottom edge of a row, you create a new row below the existing row.
9. If you are working in Structure View, click **View Results** to display the values in the new table.

To duplicate a table

1. Select a table on a report.

   A gray border appears around the table, when the table is selected.
2. Keep your pointer pressed in and press the Ctrl key.

   Web Intelligence creates a duplicate table on top of the original table.
3. With your pointer and the Ctrl key pressed in, drag the duplicate table to an empty area of the report.

   The duplicate table appears on the report.

To apply a different template to a table by using drag and drop

1. Select the report tab that contains the table you want to modify.
2. Click the **Templates** tab.

   If the **Templates** tab is hidden, click the **Show/Hide Manager** button on the Report toolbar. The Templates appear.
3. Drag a template from the Template tab onto a table. You must drop the template directly on the existing report block.

Web Intelligence applies the new template to the table values.

To apply a different template to a table with Turn To

1. To select the table you want to reformat, click the top edge of the table.

   A gray border appears around the table.
2. Right-click the report block.
3. On the shortcut menu, click **Turn To**.

   The "Turn To" dialog box appears.
4. On the **Tables** tab or on one of the **Chart** tabs, select the table or chart template you want to apply to the table.
5. Click **OK**.

If you turned a table to a chart, the unicode font is not retained in the chart if the font for the text on the table was unicode, and if unicode is not defined as your default font for charts. You need to format the chart with the unicode font, if this font is available on your computer. If this is not the case, you need to contact your administrator to configure the Web Intelligence server and your computer appropriately.

To add rows or columns to tables using drag and drop

- Drag the object you want to add to the table from the Data tab, and drop the object where you want to add it:
  - To add the object into a new column to the left of an existing column, drag the object onto the left edge of a column header.
  - To add the object into a new column to the right of an existing column , drag the object onto the right edge of a column header.
  - To add the object into a new row before an existing row, drag the object onto the top edge of a row header.
  - To add the object into a new row after an existing row, drag the object onto the bottom edge of a row header.

  The name of the object appears in the new column or row header, and the values appear in the new body cells.

To add table rows or columns using the Insert row or column toolbar menu

1. Select the table you want to reformat.
2. Select the column or row next to which you want to insert the new column or row.
3. The **Insert column or row** button automatically displays one of the insert options.
4. Click the displayed option or click the arrow next to the **Insert** button, and then select the appropriate option from the drop-down menu.

   Web Intelligence adds a blank column or row to the table.
5. Drag an object from the **Data** tab, and drop the object onto the blank column or row.

   Web Intelligence allocates the selected object to the new column or row. The name of the object displays in the column or row header, and the values for the object display on the body cells.

To remove table rows or columns

- Right-click the table column or row you want to remove and select **Remove Row**, **Remove Column** or **Remove** from the shortcut menu.

To move a row or column

- Drag the selected column or row and drop it before or after another column or row on the table.

  When you drag a row or column, the column or row header displays next to your pointer.

To swap a row or column

- Drag the selected column or row onto the column or row with which you want to make the swap

Web Intelligence swaps the two columns or rows.

To replace a row or column

1. Select the report tab that contains the table you want to modify.
2. Click the **Data** tab.
3. Drag the object you want to add to the table from the **Data** tab, and then drop the object onto the row, column, or body you want to replace.

   The values for the new object display on the table.

To clear cell contents from a table

You can clear cell contents and then use the empty cells to display images, hyperlinks, formulas, or text you type.

You can clear the following types of cell in a table:

- header cells – you can clear each header cell separately
- footer cells – you can clear each footer cell separately
- related body cells – when you clear one body cell, you automatically clear all of the body cells in the same column or row of the table

1. To select the cell you want to clear, click the cell.

   The cell borders are highlighted.
2. Right-click the selected cell.

   The shortcut menu appears.
3. The shortcut menu appears.
4. Click **Clear Cell Contents**.

   Web Intelligence clears the contents from the selected cell(s).

To remove a table

1. To select the table you want to remove, click the top edge of the table.

   A gray border appears around the table.

2. Press the **Delete** key, or right-click the selected table and select **Remove** from the shortcut menu.

Formatting tables and table cells

To select a background color for the table

1. Select the table or table cell for which you want to format a background.
2. Right-click the table border, then select **Format**, or right-click within the table, then select **Format** > **Table** from the shortcut menu.

   The **Properties** tab displays the table formatting options.
3. Select the drop-down arrow next to **Appearance** > **Background color**.

   A list of available colors appears.
4. Click the color you want to apply to the selected table or table cell, or click **Custom**, and then create a custom color, using the **Swatches**, **HSB** (Hue, Saturation, Brightness), or **RGB** (Red, Green, Blue) tab, and click **OK**.

   If you know the RGB hexadecimal color reference, you can type the reference into the combo boxes next to the **+** and **-** buttons on the **RGB** tab.

   Web Intelligence applies the background color to the selected table or cell.

To define alternate row and column colors for a table

1. Select the table for which you want to format alternate row colors.

   When the table is selected, a gray border appears around the table.
2. Right-click the table border, then select **Format**, or right-click within the table, then select **Format** > **Table** from the shortcut menu.

   The **Properties** tab displays the table formatting options.
3. Open the **Appearance** > **Alternate Row/Column color** property group.
4. Set the frequency for the alternate row color in the combo box next to **Frequency** by clicking the **+** or **-** sign, or by entering a number.
5. Click the arrow next to **Color**.

6. Select a color from the list of colors, or click **Custom**, and then create a custom color, using the **Swatches**, **HSB** (Hue, Saturation, Brightness), or **RGB** (Red, Green, Blue) tab, and click **OK**.

   If you know the RGB hexadecimal color reference, you can type the reference into the combo boxes next to the **+** and **-** buttons on the **RGB** tab.

To insert an image or skin in a table

1. Right-click the table border, then select **Format**, or right-click within the table, then select **Format** > **Table** from the shortcut menu.

   The **Properties** tab displays the table formatting options.
2. Click the **...** button next to **Background image** in the **Appearance** property sub-group to display the "Background Image" dialog box.
3. To display a skin, select **Skin** then select the skin from the list.
4. To reference an image using a URL, select **Image from URL** then type the URL.
   - To access an image on the corporate Web Intelligence server, type the image name. Web Intelligence inserts `boimg://` when you click **Apply**.
   - To access an image file directly, click **Image from file**, then click **Browse** to browse to the file.
5. If you chose to reference an image file, use the **Display** and **Position** lists to determine how the image appears.

To format table or cell borders

1. Right-click the table or cell, then select **Format** > **Table** or **Format** > **Cell** from the shortcut menu.

   The **Properties** tab displays the table or cell formatting options depending on which option you selected.
2. Click the **...** button next the the **Text Format** > **Borders** property.
3. Use the buttons in the "Border Editor" dialog box to set the border style.

   You can also set the borders of header cells, body cells and footer cells in the table properties. To do so, click the **...** button next to the **Borders**

property in the **Header cells**, **Body cells** and **Footer cells** property sub-groups.

To format text in table cells

1. Right-click the table border, then select **Format**, or right-click within the table, then select **Format** > **Table** from the shortcut menu.

   The **Properties** tab displays the table formatting options.
2. Click the **...** button next to the the **Text format** property in the **Appearance** > **Header cells/Body cells/Footer cells** property sub-group.
3. Format the text in the **Format Text** dialog box.

   You can also format cell text by selecting the cell then setting the **Appearance** > **Text Format** property in the **Properties** tab.

To set cell height and width

You can define the height and width of cells by using drag and drop or specifying the size of cells on the **Properties** tab.

If you want to hide cell contents on reports, you can set the cell width to 0.1 cm so that the cell width can be modified to display the cell contents later.

1. Drag the cell borders until the cell is the height and width you want, or:
2. Click the table.

   The **Properties** tab displays the table formatting options.
3. Set the **Width** and **Height** properties in the **Display** properties group.
4. If you want to set the cell to autofit, select **Autofit Width** and/or **Autofit Height**.

   Some Web Intelligence functions are incompatible with AutoFit cells. If you place any of these functions in an AutoFit cell, Web Intelligence returns the #RECURSIVE error message as the function output.

   You can also set AutoFit cell width and height by double-clicking the cell borders.

   - To set AutoFit cell width, double-click the right border of the cell
   - To set AutoFit cell height, double-click the bottom border of the cell

AutoFit retains the current cell size as the minimum size and enlarges the cell size, if the string or image that the cell contains is larger than the minimum size specified.

Documents that contain tables with the cell size set to AutoFit, take longer to display in the Java Report Panel or InfoView than documents where tables contain cells with a fixed cell width and cell height. We recommend that for large documents, you specify a fixed sized for cell width and cell height for tables.

Effects of autofit and wrap text

The following table lists the effects of the autofit and wrap text features, when used seperately and in combination:

Feature	Effect
Wrap text	Text is wrapped at the end of the cell.
Autofit width	Cell width is adjusted to display all the text.
Autofit height	Cell height is adjusted to display all the text.
Autofit width + autofit height	Cell width and height is adjusted to display all the text
Wrap text + autofit width	Cell width is adjusted to accomodate the longest word. Because the cell height is not adjusted to the number of lines of text, text might be truncated vertically.
Wrap text + autofit height	Cell height is adjusted to accommodate the number of lines of text created by the wrap text. Because the cell width is not adjusted to the longest word, text might be truncated horizontally.
Wrap text + autofit height + autofit width	Cell height and width is adjusted to the text and there is no horizontal or vertical truncation.

To copy formatting using the Format Painter

You can quickly apply the formatting from a report, table or cell to other reports, tables or cells using the Format Painter.

The formatting options applied depend on the objects you choose as the source and target. In general, only properties that affect the visual formatting (for example font style, background color) are applied. Properties that affect the display of data (for example, table properties such as "Avoid duplicate row aggregation" property) are not applied.

1. Select the report, table or cell whose formatting you want to apply.
2. Click the Format Painter to apply the formatting once, or double-click to apply the formatting multiple times.

   The Format Painter is the button furthest to the right on the **Formatting** toolbar.

3. Click the report, table or cell to which you want to apply the formatting.

   Web Intelligence applies the formatting to the report, table or cell you selected. If you single-clicked the Format Painter, it is deactivated.

   If you double-clicked the Format Painter, it remains activated.

4. If you double-clicked, click the Format Painter again or press Esc to cancel the formatting operation. (You can do this before applying the formatting for the first time if you decide to abandon the formatting operation.)

To set the position of a table or chart on the report page

1. Select the border of the table or chart.

   The properties appear in the **Properties** tab.

2. Open the **Page layout** > **Relative Position** property group on the **Properties** tab, then click ... next to the property.
3. Use the "Relative Position" dialog box to set the position.

To layer tables and cells

Layering determines how tables and cells appear when they occupy the same space in a report. An object further forward in the layering order appears over an object further backward in the layering order.

1. Select the table or cell whose layer you want to set.
2. Right-click, click **Order** and click the layering option.

Option	Description
Bring to front	Make the table or cell the first object in the layering order.
Send to back	Make the table or cell the last object in the layering order.
Bring forward	Bring the table or cell one layer forward in the layering order.
Send backward	Send the table or cell one layer backward in the layering order.

To merge table cells

1. Select the cells you want to merge by holding down the Ctrl button and clicking the cells.
2. Select **Yes** next to the **Appearance** > **Text Format** > **Merge Cells** property on the **Properties** tab.

   When you merge cells the merged cell contains the data from the first cell you selected only. Data from all the other cells is lost.

Modifying tables to create crosstabs

To create a crosstab by adding an object to a vertical or horizontal table

1. Drag an object from the **Data** tab onto the top edge of the table or the left side of the table where you want to create the new axis and form the crosstab.
2. When the ToolTip “Drop here to create a crosstab? appears, drop the selected object onto the report.

   Web Intelligence creates a second axis to form a crosstab and inserts the object on the new axis.

To create a crosstab by moving a column or row

1. Select the table column or row you want to move to create the crosstab.
2. Drag the selected column or row onto the top edge of the table or the left side of the table where you want to create the new axis and form the crosstab.
3. Drop the column or row onto the header.

   Web Intelligence creates a second axis to form a crosstab, and displays the data of the column or row you moved on the new axis.

Controlling data display in tables

Showing or hiding empty tables, rows or columns

Sometimes tables or specific rows and columns display no values. For example, if a sales of a specific product are discontinued, table rows or columns that normally show results for that product appear empty. By default, Web Intelligence displays such empty rows, columns, or tables. You can choose to display or hide empty tables, rows or columns.

To show or hide empty tables, rows or columns

1. Select within the table, right-click and select **Format** > **Table** on the menu.

   The **Properties** tab displays the table formatting options.
2. Select **Display** > **Show when empty** to display empty tables.
3. Select **Display** > **Show rows/columns with empty measure values** to display rows or columns with empty measure values.
4. Select **Display** > **Show rows/columns with empty dimension values** to display rows/columns with empty dimension values.

Aggregating duplicate rows

When rows contain duplicate data, Web Intelligence aggregates measure values by default.

To avoid duplicate row aggregation

1. Select within the table, right-click and select **Format** > **Table** on the menu.
   The **Properties** tab displays the crosstab formatting options.
2. Select **Display** > **Avoid duplicate row aggregation**.

To show or hide headers and footers

1. Select within the table, right-click and select **Format** > **Table** on the menu.
   The **Properties** tab displays the crosstab formatting options.
2. Select **Display** > **Show table headers** to display the headers.
3. Select **Display** > **Show table footers** to display the footers.

To start tables on a new report page

1. Select within the table, right-click and select **Format** > **Table** on the menu.
   The **Properties** tab displays the crosstab formatting options.
2. Select **Page Layout** > **Relative Position** > **Start on a new page**.

To display object names in headers on crosstabs

1. Select within the table, right-click and select **Format** > **Table** on the menu.
   The **Properties** tab displays the crosstab formatting options.
2. Click **Display** > **Show object name** to display the object names in additional headers on the crosstab.

To avoid page breaks in tables

1. Select within the table, right-click and select **Format** > **Table** on the menu.

   The **Properties** tab displays the crosstab formatting options.
2. Select **Page Layout** > **Relative Position** > **Avoid page breaks in table**.

To repeat table headers or footers on report pages

1. Select within the table, right-click and select **Format** > **Table** on the menu.

   The **Properties** tab displays the crosstab formatting options.
2. Select **Page Layout** > **Relative Position** > **Repeat header on every page** to repeat the header on every page.
3. Select **Page Layout** > **Relative Position** > **Repeat footer on every page** to repeat the footer on every page.

Copying tables

To copy a table

You can copy and paste tables within a report or into external applications such as Microsoft Word and Excel. You cannot copy tables from one instance of Web Intelligence to another.

1. Select the table, right-click and select Copy on the menu.
2. To paste the table to another part of the report, right-click where you want the table to appear and click **Paste** on the menu.
3. To paste the table into another application, paste the contents of the clipboard from within the other application.

   You can also copy a table into another application by dragging and dropping the table directly into the open document in the target application.

   The table appears as a picture in the open document if pasted to another application.

To copy a table as text

You can copy the data in a table as plain text into another application. For example, if you copy a table as text into Microsoft Excel, Web Intelligence copies the text in each table cell to a cell in the Excel worksheet. Web Intelligence copies the text to the clipboard as tab-separated text.

1. Select the table, right-click and select **Copy as text** on the menu.
2. Paste the contents of the clipboard into the target application.

   If you choose **Copy as text**, then paste the table into the current Web Intelligence report, the table appears as a normal Web Intelligence table.

Displaying data in free-standing cells

chapter 13

Free-standing cells defined

Free-standing cells are single cells that stand alone in a report. You can place any text or formula in a blank free-standing cell, or you can use pre-defined free standing cells that display specific information.

The free-standing cells are available in the **Templates** tab in the Java Report Panel and Web Intelligence Rich Client, or in the **Table, chart and cell types** tab in the Left Panel in the Web Intelligence HTML viewer.

The available free-standing cells are listed below.

- Formula and Text Cells:
  - Blank Cell - Empty cell in which you can enter any text or formula.
  - Drill Filters - Uses the `DrillFilters` function to display details of the drill filters applied to the report.
  - Last Refresh Date - Uses the `LastExecutionDate` function to display the last date when the document was refreshed.
  - Document Name - Uses the `DocumentName` function to display the document name.
  - Query Summary - Uses the `QuerySummary` function to display details of the queries in the document.
  - Prompt Summary - Uses the `PromptSummary` function to display details of the prompts in the document.
  - Report Filter Summary - Uses the `ReportFilterSummary` function to display the report filters applied to the report.
- Page Number Cells:
  - Page Number - Uses the `Page` function to display the number of pages in the report.
  - Page Number/Total Pages - Uses the `Page` and `NumberOfPages` functions to display the current page number and the total number of pages in the report.
  - Total Number of Pages - Uses the `NumberOfPages` function to display the total number of pages in the report.

For more information on the functions used in free-standing cells, see the *Using Functions, Formulas and Calculations in SAP BusinessObjects Web Intelligence* guide, or see the online help.

To insert a free-standing cell in a report

1. Ensure that the **Templates** tab is displayed.

   You can display the Templates tab by selecting **Configure View** > **Data** on the main menu.

2. Expand the **Report Elements** > **Free-Standing Cells** element in the **Templates** tab to display the free-standing cells.

   The free-standing cells are divided into two groups: **Formula and Text Cells** and **Page Number Cells**.

3. Drag the free-standing cell you want onto the report.
4. Add your own text or formula iif the cell you inserted is a blank cell.
5. Right-click the cell and select **Edit Format** to display the cell format properties on the **Properties** tab.
6. Set the properties on the **Properties** tab to format the cell.
7. To delete the cell, select it and click the Delete button.

To copy a free-standing cell

You can copy and paste free-standing cells within a report or into external applications such as Microsoft Word and Excel. You cannot copy free-standing cells from one instance of Web Intelligence to another.

1. Select the free-standing cell, right-click and select **Copy** on the menu.
2. To paste the free-standing cell to another part of the report, right-click where you want the free-standing cell to appear and click **Paste** on the menu.
3. To paste the free-standing cell into another application, paste the contents of the clipboard from within the application.

   You can also copy a free-standing cell into another application by dragging and dropping the free-standing cell directly into the open document in the target application.

   The free-standing cell appears as a picture in the open document if pasted to another application.

To copy a free-standing cell to another application as text

You can copy the data in a free-standing cell as plain text into another application. For example, if you copy a free-standing cell as text into Microsoft Excel, Web Intelligence copies the text in the free-standing cell to a cell in the Excel worksheet.

1. Select the free-standing cell, right-click and select **Copy as text** on the menu.
2. Paste the contents of the clipboard into the target application.

   If you choose **Copy as text**, then paste the free-standing cell into the current Web Intelligence report, the free-standing cell appears as a normal Web Intelligence free-standing cell.

Organizing data with sections, breaks and sorts

chapter 14

Using sections to group data

Grouping information with sections

Sections allow you to split report information into smaller, more comprehensible parts.

Example: Grouping quarterly revenue results into sections on a report

You are the regional sales manager in Texas. You receive a report showing 2003 annual revenue for stores in your region, broken down by cities and quarters.

City	Quarter	Sales revenue
Austin	Q1	314430
Austin	Q2	273608
Austin	Q3	294798
Austin	Q4	252644
Dallas	Q1	215874
Dallas	Q2	194689
Dallas	Q3	204066
Dallas	Q4	188791
Houston	Q1	572177
Houston	Q2	619924
Houston	Q3	533765
Houston	Q4	520332

To make a comparison of the results for each city per quarter, you set [Quarter] as a section value. The report is broken up into four separate sections by quarter.

Q1

City	Sales revenue
Austin	314430
Dallas	215874
Houston	572177

Q2

City	Sales revenue
Austin	273608
Dallas	194689
Houston	619924

Q3

City	Sales revenue
Austin	294798
Dallas	204066
Houston	533765

Q4

City	Sales revenue
Austin	252644
Dallas	188791
Houston	520332

You can create a single section or include multiple sections with subsections in a report. You can also remove and reposition sections within a report.

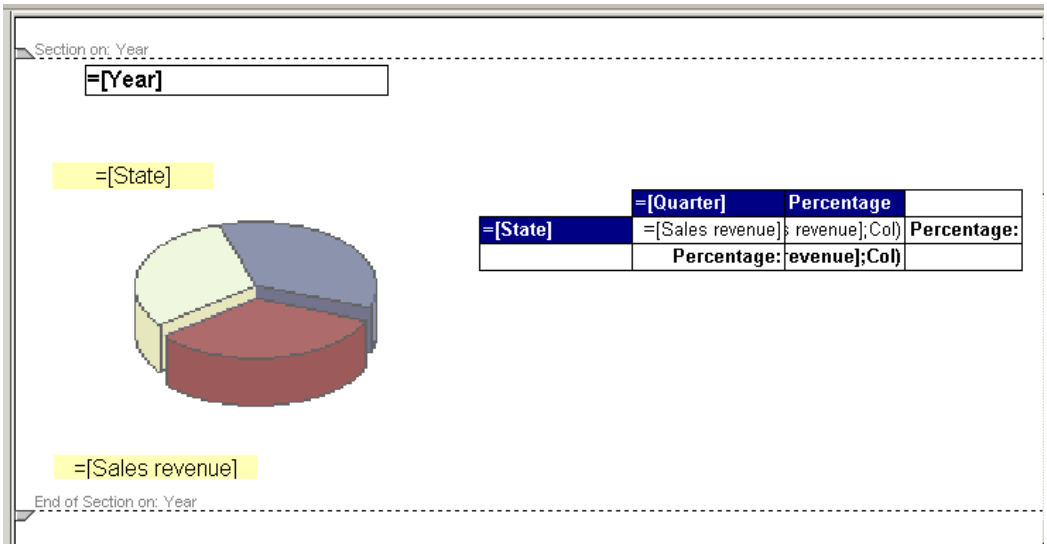
You can create a section from one of two sources:

- on a dimension already displayed on a table or chart
- on a dimension included in the document but not displayed on a table or chart

You cannot create a section with a measure object.

Sections in Structure View

The following illustration shows a report with sections in Structure View. When you view a report in Structure View, each section is clearly indicated by a section divider.It is easier to format sections when you work in Structure View.



Creating and removing sections and subsections

To create a section by moving a cell from a table

1. Verify you are viewing the report in Report View.
2. Select the header cell on the table that displays the name of the dimension, or select a body cell on the table that displays a value for the dimension.

   For example, if you want a section for each state, either select the header cell labelled “State□? or select one of the cells that displays the name of a state.
3. Drag the selected cell above the table and drop it onto the report background.

   A section is created for each value of the selected dimension.

To create a section by adding a dimension from the Data tab

1. Click the **Data** tab.

2. Select a dimension object and, then drag the dimension over to an empty area of the report.
3. Position and drop the dimension where you want the section cell to appear.

   If the report includes tables or charts, then drop the section cell above the tables and charts that you want to be included in the section.

   - If you are in Results View, a cell containing one value for each unique value for the added object appears above the table or crosstab. The data in the table or crosstab is automatically sorted according to the cell value.
   - If you are in Structure View, a cell is added above the table or crosstab.
4. If you are in Structure View, click **View Results** to see the results.

   Web Intelligence applies the section to the report and displays the results.

Creating subsections

You can create a report with multiple sections. You create multiple sections in the same way you create a section:

- by moving a cell from a table and dropping the cell below an existing section cell
- by selecting a dimension object listed on the **Data** tab (in the Java Report Panel or Web Intelligence Rich Client) , and then dragging and dropping the dimension below an existing section cell.

To remove a section cell or section

1. To delete a section, click the beginning or end divider of the section, then press the **Delete** key.
2. To delete a section cell, right-click the cell, then select **Remove** from the menu.

Section properties

You can set the following properties for a section:

- name the section
- specify your criteria for when you consider a section to be empty. (For example, you may consider a section of no interest for your analysis

whenever a specific table or chart within that section is empty. In this case you can choose to specify that the section is to be considered empty.)

- hide or show sections that you consider empty
- include links to sections in the report map so you can jump from section-to-section when navigating the report

To set the section display properties

1. Make sure you are in Report View.
2. Click **View Structure**.

   In Structure View you can see the start and end divider of each section on the report. This makes it easy for you to select a specific section and then choose the properties you want to apply to the selected section.
3. Right-click the section divider.

   The **Properties** tab shows the properties relevant to sections
4. Set the section properties.

If you want to...	then...
Name of the section with a different name from the name of the dimension selected for the section,	type a name for the section in the **General** > **Name** property.
Specify the component(s) of the section that will qualify the entire section as an “empty section,□? if there is no data on the database for that component(s),	Check the components in the drop-down list next to the **Display** > **Hide section when empty** property.
Show the section when there is no data on the database for this section,	check **Show when empty**. (To hide empty sections, uncheck this option.)

5. Click the **View Results** button to view the properties applied to the results on the report.

   Web Intelligence applies the properties to the section and displays the results on the report.

To set the page layout for a section

1. To set the cell position, right-click the section cell then click **Format** on the menu, then set the **Page Layout** > **Relative Position** > **Left edge** and **Top edge** properties on the **Properties** tab.
2. To control the section page breaks, select the section divider, then set the **Page Layout** > **Avoid page break in section** property in the **Properties** tab.
3. To repeat the section cell on each new page, select the section, then select **Page Layout** > **Start on new page** on the **Properties** tab.

Using breaks

Breaks defined

A break is a division within a block in which data is grouped according to a selected dimension, detail, or measure into self contained sections. These sections are represented as smaller tables within the same block of data.

You use breaks to display all the data for each unique value of an object in separate parts.

Using breaks has two main advantages:

- You can more efficiently organize how your data is represented.
- You can display subtotals.

Breaks compared to sections

A section breaks up the data into multiple free-standing cells called section headers. Each section header contains one value for a dimension, with a block of data that corresponds to the dimension value.

A break divides the data up within one block. One column contains the values for a dimension, detail, or measure, which are repeated for each other row of values in the block.

Default sort order in breaks

When you insert a break on an object, the values for the object are automatically sorted in ascending order as follows:

- If the values are numeric, the lowest value appears in the first row of the table, the highest in the last row.
- If the values are alphabetical characters, then the values are sorted in alphabetical order from top to bottom.

You can change this sort order at any time.

You can set multiple breaks and set a sort priority on each break, so that you control how the data is displayed when you insert multiple breaks across several dimensions details, or measures.

To insert a break

1. Click a table cell in the column or row where you want to insert a break.
2. Click **Insert/Remove Break** on the Reporting toolbar.

   Web Intelligence divides the table up into as many mini tables as there are unique values for the selected cell. Web Intelligence inserts a footer at the end of each break.

To prioritize breaks

A table can contain multiple breaks that you can prioritize. For example, you can decide to break on [Year] then on [Quarter], or on [Quarter] then on [Year].

1. Right-click the table that contains multiple breaks and select **Format** > **Table**.

   The **Properties** tab shows the properties relevant to a table.
2. Click the **...** button next to the **Breaks** > **Break priority** property to display the "Breaks" dilaog box
3. Click **Vertical breaks** or **Horizontal breaks** to display the type of break you want to prioritize.

- If the selected table is a vertical table, then all the breaks are applied to columns. These are called Vertical breaks.
- If the selected table is a horizontal table, then all the breaks are applied to rows. These are called Horizontal breaks.
- If the selected table is a crosstab, then breaks can be applied to rows or to columns. You can choose the priority for the Horizontal breaks and for the Vertical breaks.

4. Select the break whose priority you want to change and click the Up/Down buttons to promote/demote the break in the list of breaks.

To define display properties of a break

You can define the following display properties of a break:

Property	Description
Show break header	A header is displayed for each part of the table, crosstab, or form when you insert a break.
Show break footer	A footer is added after the last row for a table or column for a crosstab when you insert a break. When you apply a calculation to the data, the result is shown in the footer.
Remove duplicate values	Removes all duplicate values from the data in a table or crosstab when you insert a break. Each value is only shown once.
Center values across break	Active when **Remove Duplicates** is selected. It merges empty cells and centers the value name over the merged cells.
Apply implicit sort to values	

Property	Description
Start on a new page	Displays each part of the table crosstab, or form created by a break on a new page.
Avoid page breaks in tables	Where possible, keeps each break section on the same page. This option is not taken into account when a block is larger than one page.
Repeat header on every page	Repeats the header at the top of the table on every new page when a table goes over onto a new page.
Repeat footer on every page	Repeats the footer at the bottom of the table on every new page when a table goes over onto a new page.
Repeat break value on a new page	Repeats the current value on each new page.

1. Click a cell in the column/row on which you have defined a break.
2. Open the **Breaks** property group in the **Properties** tab.
3. Set the break properties in the **Breaks** property group.

   Some of the properties are contained in the **Breaks** > **Page layout** property subgroup.

To remove a break

1. Select the column that contains the break.
2. Click **Insert/Remove Break** on the **Reporting** toolbar.

Using sorts to organize data

Sorting the results displayed on reports

You can apply sorts to the values displayed in tables and sections to organize the order in which values are displayed in a report.

The following sort orders are available:

Sort order	Description
Default	This is sometimes referred to as the natural order. Depending on the type of data in the column or row, the results are sorted as follows: • ascending numeric order for numeric data • ascending chronological order for date • Chronological order for months • alphabetical order for alphanumeric data
Ascending	When selected, results are arranged in ascending order: The smallest value at the top of the column moving to the highest value at the bottom. For example: 100, 200, 300 or California, Colorado, Florida.

Sort order	Description
Descending	When selected, results are arranged in descending order: The highest value at the top of the column moving to the smallest value at the bottom. For example: 300, 200, 100 or Florida, Colorado, California.
Custom (available in the Java Report Panel)	You define your own sort order.

To apply an ascending or descending sort

1. Select the section cell or table cells you want to sort.
2. Click the down arrow next to the **Apply/Remove Sort** button on the Report toolbar and then, select **Ascending** or **Descending** from the drop-down list.
3. Repeat the previous step to apply multiple sorts.

To apply a custom sort

1. Select the section cell or table cells you want to sort.
2. Click the down arrow next to the **Apply/Remove Sort** button on the Report toolbar then select **Custom sort** from the drop-down list.
3. Select a value in the list of sorted values and click the **Up** and **Down** buttons to promote/demote it in the sort order.
4. To add an additional temporary value to the list of sorted values, type the value in the **Temporary Values** box, then click **>>** to add it to the sort list.

To prioritize multiple sorts

1. Right-click the table and select **Format** > **Table** to display the **Properties** tab.
2. Click the **...** button next to the **Sorts** > **Sort priority** property to display the "Sorts" dialog box.
3. Click **Vertical sorts** to display the vertical sorts or **Horizontal sorts** to display the horizontal sorts.
4. Select the sort whose priority you want to change and click the **Up/Down** buttons to promote/demote it in the list of sorts.

Displaying data in charts

chapter 15

Creating charts

You can include one or multiple charts on the reports in a Web Intelligence document. You can create a chart when you build or new document or insert charts into an existing document.

If you are building a new document, you need to define the data definition of the document by building a query before you select a chart template.

Once you have defined the query you go to Report View to define the chart(s) on report(s).

To create a chart, you follow three steps:

- select a chart template
- allocate dimensions and measures to the chart axes
- view the results displayed on the chart

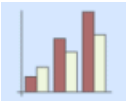
If you want to create a chart that displays the same data as a table on a report, you can copy the table first and then turn the duplicate table into a chart using the "Turn To" dialog box.

Chart types in Web Intelligence

A Web Intelligence report displays results in a block. You can format the block as a specific type of chart.

Bar charts

Bar charts display data in bar form, either vertically or horizontally. Bar charts are useful if you want to compare similar groups of data; for example one time period to another. There are five types of bar charts: grouped, bar and line, stacked, percent, and 3D.



2D bar charts include the optional Z-Axis. Including data on the Z-Axis enables you to show an additional break down of the results displayed on the chart bars.

3D bar charts do not include an axis legend. You can clearly see what information is displayed on the chart bars by looking at the axis labels.

Line charts

Line charts connect specific data values with lines, either horizontally or vertically. Line charts are useful if you want to show trends or changes in data over time. There are five types of line charts: mixed, stacked, percent, 3D, and 3D surface.

Area charts

Area charts are line charts in which the area between the lines and axis are filled in. Area charts are useful if you want to emphasize the size of the total data in a report, as opposed to the changes in the data. You may not want to use an area chart if you have a sharp contrast between specific data points. Use a line chart instead.

You can use more than one measure object on the Y-axis as long as the measures are of the same type and scale; for example, Number of Guests, and Future Guests. There are five types of area charts: absolute, stacked, percent, 3D area, and 3D surface.

Pie charts

Pie charts display data as segments of a whole. Pie charts are useful if you want to show how each part of your report data contributes to the total.

Pie charts have a single axis displayed on the body of the pie. This is the Y-Axis. Each segment of the pie chart displays a value for the measure on the Y-Axis. The pie chart legend indicates the dimension on the X-Axis.

You can only include one measure object in a pie chart. If you have several measures in your report, you should choose another chart type. There are four types of pie charts: pie, 3D pie, ring, 3D ring.

Radar, polar and scatter charts

In radar charts, the X- and Y-axis connect at the chart's center. Radar charts are useful if you want to look at several different factors related to one item. For example, you could use a radar chart to display revenue data for different services within a hotel. On one axis, you could display revenue for the rooms. On another you could display revenue for the restaurant, and so on.

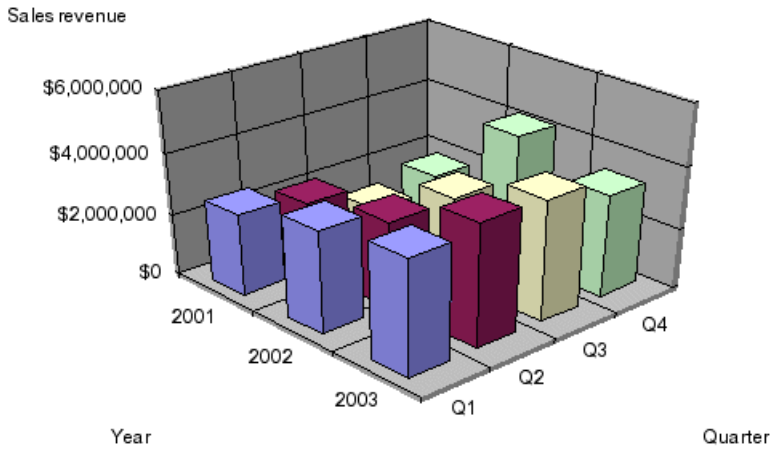
Scatter charts are similar to line graphs, except that the data points are plotted without a line connecting them. Scatter charts are useful if you want to make a comparison between specific data points.

There are four types of radar, polar, and scatter charts: radar line, stacked radar, polar, and scatter.

3D charts

3D charts include three axes: the Y-Axis always displays values for measures (such as sales totals, margins, quantities and so on); the X- and Z-Axis

display values for dimensions (that is, key indicators, such as time, geography, service lines, and so on). In the 3d bar chart displayed below, the chart bars display sales revenue per quarter, per year. The [Sales revenue] measure is on the Y-Axis, the [Quarter] dimension is on the X-Axis, and the [Year] dimension is on the Z-Axis



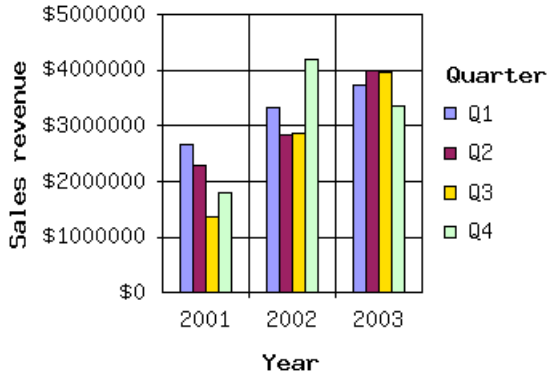
The same data can be displayed in a 2D bar chart.

Related Topics

- *2D charts*

2D charts

The 2D bar chart below includes an optional Z-Axis with the values for quarter. Including data on the Z-Axis enables you to show an additional break down of the results displayed on the chart bars. The [Sales revenue] measure is on the Y-Axis, the [Year] dimension is on the X-Axis, and the [Quarter] dimension is on the Z-Axis. Notice that because the Z-Axis cannot be represented graphically on a 2D chart, the legend provides the information for the Z-Axis values.



The same data can be displayed in a 3D bar chart.

Related Topics

- *3D charts*

Adding, copying and removing charts

To add a chart to a report

It is recommended you work in Structure View when you insert a new chart. This is because Results View is designed to display the data contained in reports. Therefore, you can only view charts in Results View after you have allocated dimensions and measures to the empty chart template.

1. Click **View Structure** on the report panel toolbar.
2. Click the **Templates** tab.
3. Select the chart template drag it onto an empty area of the report.

   The empty template appears on the report.
4. Click the **Data** tab.
5. Drag a dimension or measure object onto the chart axis, where you want the results for that dimension or measure to appear on the chart.
6. Drop the dimension or measure onto the axis when the “Place dimension objects here□? or the “Place measure objects here□? ToolTip appears.

7. To allocate more dimension and measure objects to each chart axis, repeat the previous two steps.
8. To display the results in the chart, click the **View Results** button on the Report toolbar.

   The chart displays the results corresponding to the objects you allocated to the chart axes.

To copy a chart

1. Select the chart, right-click and select **Copy** on the menu.

   Web Intelligence copies the chart to the clipboard.
2. To paste the chart to another part of the report, right-click where you want the chart to appear then click **Paste** on the menu.
3. To paste the chart into another application, paste the contents of the clipboard from within the other application.

   You can also copy a chart into another application by dragging and dropping it directly into the open document in the target application.

   The chart appears as a picture in the open document if pasted to another application.

To remove a chart

- Right-click the chart and click **Remove**, or verify that the **Data** tab is displayed, then drag the chart from the Document pane and drop it onto the **Data** tab.

Changing the chart type

To change the chart type by using drag and drop

1. Click the **Templates** tab.
2. Drag a template onto the chart or table you want to modify. You must drop the template directly on the existing report block. If you drop the template outside the existing report block, you create a separate chart.

3. If you want to move the dimensions or measures to different axes, click the **View Structure** button on the report panel toolbar, then drag the objects you want to move onto the **Data** tab, and then drag and drop the objects you want to display on the chart from the **Data** tab onto each chart axis

To change the chart type by using TurnTo

1. Right-click the table or chart.
2. Click **Turn To**.

   The "Turn To" dialog box appears.
3. Click the tab corresponding to the chart type you want, then click a format.
4. Click **OK**.

   If the new chart type does not have data allocated to both the X-axis and the Y-axis, the chart will not appear when you view the report in Results View or in Drill mode. In this case, click the **View Structure** button on the report panel toolbar, and then click the **Data** tab and drag the appropriate dimensions or measures onto the axes on the new chart template. When you click **View Results**, the chart appears.

   If the font for the text on the table was unicode, and if unicode is not defined as your default font for charts, the unicode font is not retained in the chart. You need to format the chart with the unicode font if available on your computer. If this is not the case, you need to contact your administrator to configure the Web Intelligence server and your computer appropriately.

   Web Intelligence applies the selected template to the block and displays the data in the chart type you chose.

Positioning and sizing charts

To set the position of a table or chart on the report page

1. Select the border of the table or chart.

   The properties appear in the **Properties** tab.

2. Open the **Page layout** > **Relative Position** property group on the **Properties** tab, then click ... next to the property.
3. Use the "Relative Position" dialog box to set the position.

To position a chart in relation to another chart or table

If you have more than one block (table, chart, or form) in your report, you can use relative positioning. Relative positioning allows you to position a selected block (for example, a chart) in relation to other blocks in the report.

If new data on the database modifies the size of the tables or charts, relative positioning ensures that the different tables and charts display correctly without overlapping each other.

Note:
If you position a chart in relation to another block (that is, a chart, table, or form), the position of the related block changes automatically, if you reposition the chart.

1. Right-click the chart and click **Format**.
2. Open the **Page layout** > **Relative Position** property group on the **Properties** tab.
3. Click **...** next to the **Relative Position** property to open the **Relative Position** dialog box.

   If the report does not contain multiple elements, the Relative Position dialog box is not available.
4. Select the distance of the upper left point of the chart in relation to another report element by entering - the number of pixels; the part of the other report element from which you want to measure the pixels (in the first drop-down list); the report element from which you want to measure the pixels (in the second drop-down list).
5. Repeat this for the distance of the lower left point of the chart.

To resize a chart

1. Right-click the chart and click **Format**.
2. Open the **Display** property group on the **Properties** tab.

3. Type the chart width in the **Width** property and the height in the **Height** property.

Formatting charts

To insert and format a chart title

1. Right-click the chart and click **Format**.
2. Click **Yes** next to the**Appearance** > **Title** property.

   The property becomes a property group.
3. Open the **Title** property group and type the title in the **Text** property.
4. Click **...** next to **Text Format** and use the **Format Text** dialog box to format the title.
5. Click **...** next to **Borders** and use the Border Editor dialog box to format the title borders.
6. Select the title background color from the **Background color** list.

To display a chart with a 3D look

1. Right-click the chart and click **Format**.
2. Open the **Display** property group on the **Properties** tab.
3. Select **3D look**.

To add background colors to a chart

1. Right-click the chart and click **Format**.
2. Open the **Appearance** property group on the **Properties** tab.
3. Click the arrow next to **Background color** to display the color palette.
4. Select a color from the color palette or click **More Colors** to display the **Choose Color** dialog box.

To modify chart borders

1. Right-click the chart and click **Format**.
2. Click ... next to **Appearance** > **Borders**.
3. Use the Border Editor dialog box to format the borders.

To select and format chart floors and walls

Floors and walls give depth to charts and help to set off the data displayed on the chart bars or lines. 3D charts have a floor, a left wall, and a right wall. 2D charts just have a floor. You can specify a color for the floor and walls.

1. Right-click the chart and click **Format**.
2. Open the **Display** property group on the **Properties** tab.
3. Select **Show floor** to display the chart floor, **Show left wall** to display the chart left wall and **Show right wall** to display the chart right wall.

   The availability of these options depends on the type of chart.
4. Set the wall and floor color by clicking the **Wall color** and **Floor color** properties in the **Appearance** property group and using the "Color Palette" or the "Choose Color" dialog box to set the color.

To show and format axis legends

1. Right-click the report and select **Format**.
2. Click **Yes** next to the**Appearance** > **Legend** property.

   The property becomes a property group.
3. Open the property group and select the legend position from the **Position** list.
4. Use the **Title** and **Values** subgroups to set the legend title and format the title and legend values.

To avoid page breaks in charts

1. Right-click the chart and click **Format**.

2. Open the**Page Layout** property group on the **Properties** tab.
3. Select **Avoid page breaks in chart**.

To show axis labels on pie charts

1. Right-click the chart and select **Format**.
2. Open the **Appearance** > **Data** > **Values** property group.
3. Select **Show segment labels**.

To format axis label text, borders, and background

1. Right-click the chart and click **Format**.
2. Click **Yes** next to the **Appearance** > **X/Y/Z Axis > Label** property.

   The property becomes a property group and the object name appears on the label.
3. Select **Show object name** to show the object name on the label.
4. Type the text into **Other label** if you want to assign custom text to the label in place of the object name.
5. To format the text, click **...** next to **Text Format** to open the "Text Format" dialog box.
6. Use the "Text Format" dialog box to format the text.

   You can set many of the properties in the "Text Format " dialog box directly from the property list, where they appear beneath **Text Format**.
7. Click **...** next to **Borders** and use the "Border Editor" to format the label borders.

To show, hide or format the axes grid

1. Right-click the chart and select **Format**.
2. Click **Yes** next to **Appearance** > **X/Y/Z** > **Grid** in the **Properties** tab to show the grid.
3. Select **Appearance** > **X/Y/Z** > **Grid** > **Show markers** to show the grid markers.
4. Select**Appearance** > **X/Y/Z** > **Grid** > **Grid color** to select the grid color.

Displaying and formatting chart data

To show a chart when empty

Sometimes charts display no values. For example, if sales of a specific product are discontinued, a chart that normally displays results for that product will appear empty. By default, Web Intelligence displays such empty charts on reports. If wished, you set Web Intelligence to hide charts whenever they are empty.

1. Right-click the chart and click **Format**.
2. Open the **Display** property group in the **Properties** tab.
3. Select **Show when empty**.

To specify a color palette for the chart data

1. Right-click the report and select **Edit**.
2. Open the **Appearance** > **Data** property group in the **Properties** tab.
3. Click **...** next to **Palette** to display the "Choose Palette" dialog box and select one of the predefined palettes in the **Predefined Palettes** list.
4. To edit a pallete, select the pallete, then click **Edit Pallete**.

   The "Edit Palette" dialog box opens
5. Select a color in the palette.

   The "Custom Color" dialog box opens.
6. Create a custom color using the **Custom Color** dialog box, then click **OK**.
7. To set all the colors in the palette to the same color, click **Set All Colors**.

To format axis values numbers and text

1. Select the chart and click **Format**.
2. Open the **Appearance** > **Values** property group in the Properties tab.
3. Click **...** next to the **Number format** property to display the **Number Format** dialog box.
4. Use the "Number Format" dialog box to define the format.

5. Click **...** next to the **Text Format** property to display the "Text Format" dialog box.
6. Use the "Text Format" dialog box to format the text.

   You can set many of the properties in the "Text Format" dialog box directly from the property list, where they appear beneath **Text Format**.

To define the axis value frequency

1. Right-click the chart and click **ormat**.
2. Open the **Appearance** > **X/Y/Z Axis > Values** property group in the **Properties** tab.
3. Select **Automatic frequency** to set the frequency to automatic.
4. Type the frequency in **Frequency** to set the frequency to a specific value.

   Automatic frequency must be unselected before you can type a custom frequency.

   When you set the frequency to n, Web Intelligence displays every n values on the axis.

To show a specific range of axis values

1. Right-click the report and click **Format**.
2. Open the **Appearance** > **X/Y/Z Axis > Scale** property group on the **Properties** tab.
3. Enter the minimum value in **Min. value** and the maximum value in **Max. value**.

   Web Intelligence displays the minimum and/or maximum values you specified on the axis.

   Web Intelligence enables you to auto scale Y-axis by calculating the nearest value for the maximum and minimum range of values set for each chart block in a given report. Auto scale Y- axis is applicable for all kinds of charts, except the pie-chart.

   To enable auto scale Y-axis select **Auto Scale** in the chart **Properties** tab. After enabling the autoscale Y-axis, the minimum and maximum range of values set for a document initially is not displayed.

To show or hide data values

1. Right-click the chart and select **Format**.
2. Open the **Appearance** > **Data** > **Values** group in the **Properties** tab.
3. Select **Show data** to show the data.

To vary the data markers for each result

1. Right-click the chart and select **Format**.
2. Open the**Appearance** > **Data** property group in the **Properties** tab.
3. Select **Vary data markers**.

   You can only vary the data markers for each result on the following chart types: 2D Line charts, 2D Bar and Line charts, and Radar charts.

Linear and logarithmic axes scales

By default, Web Intelligence displays the Y-axis on charts as a linear scale. You can set the axis to a logarithmic scale. Logarithmic scales allow you to examine values that span many orders of magnitude without losing information on the smaller scales.

In a linear scale, the axis markers are evenly spaced. Linear scales are based on addition. Consider, for example, the linear sequence: 1, 3, 5, 7, 9

To get the next number in the sequence, you add 2 to the previous number.

Logarithmic scales are based on multiplication rather than addition. In a logarithmic scale, the steps increase or decrease in size. Logarithmic scales are based on multiplication (or division). Consider, for example, the logarithmic sequence: 2, 4, 8, 16, 32

To get the next number in the sequence, you multiply the previous number by 2. We can say that this sequence represents ``base 2."

Consider the following sequence: 1, 10, 100, 1000, 10000

This sequence represents ``base 10," because you get the next term in the sequence by multiplying the previous term by 10.

To display the Y Axis logarithmically

1. Right-click the chart and select Edit Format.
2. Open the **Appearance** > **Y Axis** > **Scale** property group in the **Properties** tab.
3. Select **Logarithmic**.

   A logarithmic scale uniformly presents percent changes rather than point changes. In other words, the distance from 1 to 2 (100% increase) is the same as the distance from 2 to 4 (another 100% increase).

Formatting numbers and dates

chapter 16

Predefined and custom formats

You can change how values display in specific cells or on chart axes. You do this by applying predefined formats available in Web Intelligence or by creating your own custom formats. You can save your custom formats for reuse on multiple blocks and reports in the same document.

Predefined formats

You can change how values display in specific cells or on chart axes. You do this by applying predefined formats available in Web Intelligence or by creating your own custom formats. You can save your custom formats for reuse on multiple blocks and reports in the same document.

The following predefined formats are available for cells:

Format	Description
Default	The format defined for the object on the universe.
Number	Formats for decimal or integer values.
Currency	Formats for currency values.
Date/Time	Date and time formats.
Boolean	Formats for true and false values.

Related Topics

- *To apply a custom number format to a cell*
- *To define a custom format*

To apply a predefined format to a cell

1. Right-click a cell and click **Format Number** on the shortcut menu.
   The "Format Number" dialog box appears.

2. Click a format in the **Format Type** list.

   The available formats for the format type you selected appear in the **Properties** pane.

3. Click **OK**.

   Web Intelligence applies the new format to the cell.

Custom formats

You can use the Custom format type to define a customized format for any cell. The following table lists the strings you can use to create custom formats:

Character(s)	Display(s)	Example
#	The corresponding digit. If the number has less digits than the number of # characters used to specify the format, no leading zeros are inserted.	'12345' with the format #,##0 gives '12,345' (if your locale defines the grouping separator as a comma) or '12 345' (if your locale defines the grouping separator as a space)
0	The corresponding digit. If the number has less digits than the number of 0 characters used to specify the format, a leading zero(s) is inserted before the number.	'123' with the format #0,000 gives '0,123'
,	The grouping separator as defined by your locale.	'1234567' with the format #,##0 gives '1,234,567' (if you locale defines the grouping separator as a comma) or '1 234 567' (if your locale defines the grouping separator as a non-breaking space)

Character(s)	Display(s)	Example
.	The decimal separator as defined by your locale.	‘12.34’ with the format #.#0 gives ‘12.34’ (if your locale defines the decimal separator as a period) or ‘12,34’ (if your locale defines the decimal separator as a comma)
[%]%	Displays a percentage sign (%) after the result and multiplies the result by 100.	
%	The % sign after the result, but does not multiply the result by 100.	
	A non-breaking space ( )	‘1234567’ with the format # ##0 gives ‘1234 567’
1, 2, 3, a, b, c, $, £, € (and so on)	The alphanumeric character.	‘705.15’ with the format $#.#0 gives ‘$705.15’ or with the format #,#0 € gives ‘705,15 €’
[Red], [Blue], [Green], [Yellow], [Gray], [White], [Dark Red], [Dark Blue], [Dark Green]	The value in the specified color.	‘150’ with the format #,##0[Red] gives ‘150’ #,##0[Blue] gives -’150’
d	The number of the day in the month with no leading zeros. If the date for day is less than two characters, the date displays without a zero before it.	The first day of a month with the format d gives ‘1’

Character(s)	Display(s)	Example
dd	The number of the day with leading zeros. If the date for day is less than two characters, the date displays with a zero before it.	The first day of a month with the format dd gives ‘01’
ddd	The name of the day abbreviated. The first letter is capitalized.	Monday’ with the format ddd gives ‘Mon’
dddd	The name of the day in full. The first letter is capitalized.	‘Monday’ with the format dddd gives ‘Monday’
dddd dd	The day of the week followed by a space and the number of the day.	‘Monday’ with the format dddd dd gives ‘Monday 01’
M	The number of the month with no leading zeros. If the number for month is less than two characters, the number displays without a zero before it.	‘January’ with the format M gives '1'
MM	The number of the month with leading zeros. If the number for month is less than two characters, the number displays with a zero before it.	‘January’ with the format MM gives 01
mmm	The name of the month abbreviated. The first letter is capitalized.	‘January’ with the format mmm gives Jan
mmmm	The name of the month in full. The first letter is capitalized.	‘January’ with the format mmmm gives January

Character(s)	Display(s)	Example
yy	The last two digits for year.	‘2003’ with the format yy gives ‘03’
yyyy	All four digits for year.	‘2003’ with the format yyyy gives ‘2003’
h:mm:ss a	The hour with no leading zeros and the minutes and seconds with leading zeros. The “a□? character displays AM or PM after the time.	‘21:05:03’ with the format h:mm:ss a gives ‘9:05:03 PM’
HH	The hour according to the 24-hour clock.	‘21:00’ with the format HH gives ‘21’
hh	The hour according to the 12-hour clock.	‘21:00’ with the format hh gives ‘09’
HH:mm	The hour and minutes with leading zeros.	‘7.15 am’ with the format HH:mm gives ‘07:15’
HH:mm:ss	The hour, minutes, and seconds with leading zeros.	‘7.15 am’ with the format HH:mm:ss gives ‘07:15:00’
mm:ss	The minutes, and seconds with leading zeros.	‘07:15:03’ with the format mm:ss gives ‘15:03’

To define a custom format

1. Right-click the cell(s) to which you want to apply a custom format.
2. Select Format Number.

   The "Number Format" dialog box appears.
3. In the **Format Type** list, select the format category that corresponds to the data type in the selected cell.
4. Select the **Custom** check box.

Text boxes appear for you to type your custom format(s).

5. Select a format listed in the **Properties** pane, and then edit the selected format by typing additional characters in one or more text boxes.

   For example, if you want to create a custom format for Number values, type the custom format you want in the **Positive**, **Negative**, and **Equal to Zero** boxes. If you want to create a custom format for Boolean values, type the custom format you want in the **True** and **False** boxes.

6. Click **Add**.

   You cannot delete or edit custom formats. To change a custom format, you need to create a new custom format and apply the new format to the selected cell(s). Any custom formats not applied to cells in a document are deleted automatically when you close the Web Intelligence Java Report Panel.

To apply a custom number format to a cell

1. Right-click the cell(s) to which you want to apply the custom format.
2. Select **Format Number**.

   The **Number Format** dialog box appears.

3. Select **Custom**.
4. The list of custom formats already included in the document appears in the **Properties** pane.
5. Select the custom format you want.
6. Click **OK**.

   Web Intelligence applies the custom format to the selected cell(s).

Filtering report data

chapter 17

Report filters defined

You can filter reports to limit the results that are displayed to specific information that interests you. For example, you can limit the displayed results to information for a specific customer or a sales period. The data you filter out remains within the Web Intelligence document; it is simply not displayed in the report tables or charts. This means you can change or remove report filters in order to view the hidden values, without modifying the query definition behind the document.

You can apply different filters to different parts of a report. For example, you can limit the results in the entire report to a specific product line and then limit results in a table or chart further to focus on results for a specific region or customer profile.

To create a report filter, you need to specify three elements:

- a filtered object
- an operator
- a value(s)

You can include multiple filters in a report.

Applying filters to sections

You can apply section filters based on the values in the section header or on values that appear within the section.

Applying a section filter to the section header

If you have a report with a section on [Country], the filter `[Country] = "US"` filters out all sections on countries other than the US.

Applying a section filter to the section data

If you have a report with a section on [Region] and you apply the filter `[Product]="Drinks"` to the section, Web Intelligence retains all sections that contain the product "Drinks".

In this case, the sections remaining in the report contain products other than drinks if these products were sold in these regions. This is because the

section filter retains regions in which drinks were sold, but does not exclude other products from the data in the section.

In other words, Web Intelligence bases the filter on the data in the section, but applies it indirectly to the data in the section header.

Types of report filter

There are three types of report filter in Web Intelligence:

- Standard report filters (available in all forms of Web Intelligence).

  Standard report filters are the most flexible type of report filter. They can use any filter operator and can filter on single values or lists of values.

- Quick filters (available in the Java Report Panel and Web Intelligence Rich Client).

  Quick filters provide an easy way to create filters using the Equal To operator. They can filter on single values or lists of values.

- Simple report filters (available in the Web Intelligence HTML viewer, the Java Report Panel and Web Intelligence Rich Client).

  Simple report filters provide an easy way to create filters using the Equal To operator. They can filter on single values only.

Query filters and report filters compared

You can apply filters at two levels within a document:

- query filters – these filters are defined on the query; they limit the data retrieved from the data source and returned to the Web Intelligence document.
- report filters – these filters limit the values displayed on reports, tables, charts, sections within the document, but they don't modify the data that is retrieved from the data source; they simply hide values at the report level.

Report filter operators

Equal To operator

Use the Equal to operator to obtain data equal to a value.

For example, to return data for the US only, create the filter "County Equal To US".

Not Equal To operator

Use the Not Equal To operator to obtain data not equal to a value.

For example, to return data for all countries except the US create the filter "County Not Equal To US".

Different From operator

Use the Different From operator to retrieve data different from a value.

For example, to retrieve data for all quarters execpt Q4, create the filter [Quarter] Different From "Q4"

Greater Than operator

Use the Greater Than operator to retrieve data greater than a value.

For example, to retrieve data for customers aged over 60, create the filter "[Customer Age] Greater than 60".

Greater Than Or Equal To operator

Use the Greater Than Or Equal To operator to retrieve data greater than or equal to a value.

For example, to retrieve data for revenue starting from $1.5M, create the filter "[Revenue] Greater than or equal to 1500000".

Less Than operator

Use the Less Than operator to retrieve data lower than a value.

For example, to retrieve data for exam grades lower than 40, create the filter "[Exam Grade] Less Than 40".

Less Than Or Equal To operator

Use the Less Than Or Equal To operator to retrieve data less than or equal to a value.

For example, to retrieve data for customers whose age is 30 or less, create the filter "[Age] Less Than Or Equal To 30".

Between operator

Use the Between operator to retrieve data between and including two values.

For example, to retrieve data for weeks starting at week 25 and finishing at 36 (including week 25 and week 36), create the filter "[Week] Between 25 and 36".

Not Between operator

Use the Not Between operator to retrieve data outside the range of two values.

For example; to retrieve data for all the weeks of the year, except for and not including weeks 25 through 36, create the filter "[Week] Not between 25 and 36".

In List operator

Use the In List operator to retrieve data corresponding to values in a list of values.

For example, to retrieve data for the US, UK and Japan only, create the filter [Country] In List ("US";"UK";"Japan").

Not In List operator

Use the Not In List operator to retrieve data that does not correspond to multiple values.

For example, if you do not want to retrieve data for the US, UK and Japan, create the filter [Country] Not In ("US";"UK";"Japan").

Is Null operator

Use the Is Null operator to retrieve data for which there are no values in the database.

For example, to retrieve customers without children (the children column in the database has no value), create the filter [Children] Is Null.

Is Not Null operator

Use the Is Not Null operator to return data for which there is a value in the database.

For example, to return customers with children, create the filter [Children] Is not Null.

Creating, editing and deleting report filters

To create a report filter using the Quick Filter option

1. Click the report tab of the report you want to filter.
2. If you want to filter a block (that is, a table, chart, or form), then click the top edge of the block to select it. If you want to filter a section, and not just the section cell, click **View Structure** and then select either the start section or end section divider.
3. Click the arrow to the right of the **Add Filter** button on the Report toolbar and select **Add Quick Filter**.

   The **List of Values** dialog box appears. The values for the selected section or block are listed.
4. Select the value(s) you want to display in the section or block.
5. Click **OK**.

   The selected section or block only displays values that correspond to the value you selected.
6. To delete the quick filter, click the arrow to the right of **Add Filter** and select **Remove Filter**.

To create a report filter using the Filter Editor

1. Click the report tab of the report you want to filter.
2. On the Report toolbar, click the **Show/Hide Filter Pane** button to display the Report Filters pane.
3. Select the part of the report you want to filter.

   The **Report Filters** pane displays the name of the selected part of the report. For example, if you select a table, the Report Filter pane displays the name of the selected table.
4. In the **Data** tab, select the object you want to filter.
5. Drag the selected object onto the **Report Filters** pane.

   The Filter Editor appears. The name of the object you selected is displayed below **Filtered Object**.

6. Select the operator.
7. Select **Constant** or **Value(s) from list**.

   When you define filters on measures or variables, you cannot select value(s) from the list of values; you need to type a constant(s).
8. If you selected Constant, type the value(s), you want to retrieve, in the **Constant** box. If you selected **Value(s)**, select the value(s), you want to retrieve, from the displayed List of Values and add them to the **Values Selected** box, by clicking the **>>** button.
9. Click **OK** to confirm the filter definition.

   The selected report, section, or table, chart, or form displays only the values you specified in the custom filter.

To combine multiple filters on a report

1. Create each filter.

   By default Web Intelligence combines all the filters with the AND operator.
2. Double-click the AND operator to toggle between AND or OR.

Related Topics

- *To create a report filter using the Quick Filter option*
- *To create a report filter using the Filter Editor*

To edit a report filter

1. Click the **Show/Hide Filter Pane** button on the Report toolbar to display the **Report Filters** pane.
2. Click the area of the report for which you edit the filters.

   The filters on the selected area display in the **Report Filters** pane.
3. Double-click the filter you want to edit.

   The Filter Editor appears. The name of the filtered object is listed under **Filtered Object**.
4. Edit the filter using the Filter Editor.

To edit a report filter from the report map

1. Select the **Map** tab.
2. Click **Structure** at the top of the tab.
3. Click the report element on which the filter is applied in the report structure.
4. Click **Filters** at the top of the tab.
5. Right-click the filter and select **Edit Filter** to display the filter editor.
6. Edit the filter using the Filter Editor.

To delete a report filter

1. Click the **Show/Hide Filter Pane** button on the Report toolbar to display the **Report Filters** pane.
2. Click the area of the report from which you want to remove the filters.

   The filters on the selected area display in the **Report Filters** pane.
3. Select the filter you want to delete and press **Delete**.
4. You can also delete filter by selecting the filtered object, selecting the arrow to the right of the **Filter** button on the **Reporting** toolbar, and selecting **Remove filter**.

To create simple report filters

The Report Filter toolbar provides a quick method for adding simple report filters to reports.

Simple report filters have the form `<report_object>=<value>`. They can contain the "=" operator only and can filter on a single value only.

For more complex filters, use quick filters (which can contain the "=" or "Inlist" operators) or standard report filters (which can contain any operator).

Note:
You also use the Report Filter toolbar when drilling on reports. In the context of Drill, the Report Filter toolbar is known as the Drill toolbar.

1. Click **Show/hide Report Filter toolbar** on the main menu to display the toolbar.

2. In Web Intelligence HTML, click the icon on the toolbar and select the object on which you want to filter from the menu.

   You can add multiple objects to the toolbar to create multiple filters.

3. In the Java Report Panel or Web Intelligence Rich Client, drag the object on which you want to filter to the toolbar.

   You can add multiple objects to the toolbar to create multiple filters.

4. Select the value on which you want to filter from the drop down list of values.

   Web Intelligence filters the report on the value of the object you selected. For example, if you selected "US" from the list of values of the Country object, Web Intelligence filters the report to exclude all rows where Country does not have the value "US".

5. To remove a filter, select it and click Delete.

To view the filters on a report

1. Click on the area of the report for which you want to see filters. (To view filters defined on the entire report, click outside any table, chart or section.)
2. Click the **Map** tab, then click **Filters**.

   Web Intelligence displays the filters on the area of the report you clicked.

Answering prompts

chapter 18

To enter values to answer a prompt

1. With a report in a Web Intelligence document open, click **Refresh Data** on the right of the main toolbar above the report.

   The "Prompts" dialog box appears.

2. Select a prompt question.

   If the prompts are organized hierarchically in a tree, you need to select the prompt at the lowest level of the hierarchy first. This type of prompt is referred to as a cascading prompt.

   The values you can choose are listed in the pane on the lower left.

   If the list of values is not available, click **Refresh values** to display it. The list of values now appears together with the date on which it was last refreshed.

   If the prompt has been answered previously, the values selected the last time appear in the prompt answer pane on the right. You can either leave those values selected or use **<<** to remove them.

   The options you see when you answer prompts depend on (1) whether this is the first time the results have been refreshed or not and (2) the properties set for the prompts when they were created.

3. Select the values from the list of choices in the pane on the left, for which you want to view results, or type the values into the text box, and click the **>>** to add them to the prompt answer box on the right.

   If you type multiple values, you need to separate each value with a semi-colon (;). For example: Florida;Texas.

4. Click **Run Query**.

   Web Intelligence retrieves the data for the values you specified, and returns the results to the reports.

   Note:
   If the prompt is optional, click **Run Query** without supplying a value. Web Intelligence ignores the prompt.

To enter dates to answer a prompt

1. With a report in a Web Intelligence document open, click **Refresh Data** on the right of the main toolbar above the report.

The "Prompts" dialog box appears.

2. To select a date, click the arrow to the right of the text box, select a date from the popup calendar, and then click **>>** to add the date you selected to the list on the right.

   If the prompt has been answered previously, the values selected the last time appear in the prompt answer pane on the right. You can either leave those values selected or use **<<** to remove them.

3. If the prompt allows you to select multiple dates, and you want to view results for more than one date, repeat the previous step.
4. Click **Run Query**.

   Web Intelligence retrieves the data for the values you specified, and returns the results to the reports.

   Note:
   If the prompt is optional, click **Run Query** without supplying a value. Web Intelligence ignores the prompt.

Filtering data using input controls

chapter 19

Input controls defined

Input controls provide a convenient, easily-accessible method for filtering and analyzing report data. You define input controls using standard windows controls such as text boxes and radio buttons. You associate these controls with report elements such as tables or section headers, and use the controls to filter the data in the report elements. When you select values in the input control, Web Intelligence filters the values in the associated report elements.

You can also define tables and charts as input controls. When you select a value in the table or chart, Web Intelligence filters the values in the associated report elements.

You can use input controls to analyze different scenarios by changing the value of variables. You define a variable with a constant value, then assign an input control, for example a slider, to the variable. You can then change the value of the variable using the slider control; if the variable is part of a formula, you can use the slider control to examine different formula results based on the variable value.

Input controls are report-specific. They are grouped on the **Input Controls** tab.

To add an input control

You must have sufficient document modification rights to add input controls.

1. Select the **Input Controls** tab.
2. Click **New** at the top of the **Input Controls** pane, or right-click an object in a table or chart and select **New input control** to display the input controls wizard.

   If you selected an entire table or chart before clicking **New**, you can select **Include objects from selected block only** to restrict the list of objects in the wizard to the objects in the table or chart you selected. If you did not select a table or chart, or if you used the **New input control** menu to display the input controls wizard, this option is not available.

3. Select the report object to supply values for the input control, then click **Next**.

If you right-clicked an object and selected **New input control** from the menu, the object you right-clicked is already selected.

4. Select the input control type.

   The list of control types is determined by the data type of the report object.

5. Define the input control properties.

   The available properties are determined by the control type and whether you are using Web Intelligence Interactive or the Web Intelligence Java Report Panel/Web Intelligence Rich Client.

Property	Description
Label	The name of the input control
Description	The description of the input control
List of values	The list of values available in the input control. You can use all values of the report object on which the input control is based (the default) or define your own custom list of values.
Use restricted list of values	If you define a custom list of values for the report object, this setting filters the data in the report element you assign to the input control based on this list of values. Even when no values are selected in the input control, Web Intelligence excludes any values not in the restricted list from the report element filtered by the input control. For example, if an input control based on the [Country] dimension is restricted to the values "US" and "France", a table filtered by the input control shows data for US and France only, even when no value is selected in the input control. If you deselect **Use restricted list of values**, all values of [Country] appear in the table when no value is selected in the input control.
Operator	The operator that the input control uses to filter the associated report elements
Default values	The default values that the input control uses to filter the associated report element

Property	Description
Number of lines	The number of lines that the input control displays in the Input Control pane. For example a list of five radio buttons with **Number of lines** set to 3 displays three radio buttons only by default. You access the other two radio buttons by using the scrollbar.
Minimum value	The minimum numerical value you can select in the input control
Maximum value	The maximum numerical value you can select in the input control
Increment	The amount by which the input control increases/decreased a numerical value when you are choosing a value

6. Click **Next** to display the **Assign Report Elements** wizard step.
7. Select the report elements you want the input control to filter.

   Note:
   Each time you save a document, Web Intelligence removes any input controls that have no associated report elements.

8. Click **Finish**.

   The input control appears on the **Input Controls** pane.

To edit an input control

1. Select the **Input Controls** tab.
2. Click **Edit** on the input control to display the **Edit Input Control** dialog box.
3. Edit the input control properties on the **Properties** tab.
4. Edit the report elements associated with the input control on the **Dependencies** tab.

To highlight input control dependencies

1. Select the **Input Controls** tab.
2. Click **Highlight dependencies** on the input control.

The report elements associated with the input control are highlighted.

To organize and remove input controls

1. Select the **Input Controls** tab.
2. Drag and drop input controls to move them up or down on the **Input Controls** pane in Web Intelligence Java Report Panel and Web Intelligence Rich Client. Select an input control, then click **Move the selected input control up/down** at the top of the **Input Controls** pane to move the control up or down in Web Intelligence Interactive.
3. Select an input control, then click **Remove** at the top of the control to remove it from the **Input Controls** pane.

To view the input controls map

1. Select the **Input Controls** tab.
2. Click **Map** at the top of the **Input Controls** tab (Web Intelligence Interactive) or select the **Map** tab, then click **Input controls** at the top of the tab (Web Intelligence Java Report Panel and Rich Client).

Using tables and charts as input controls

You can define tables and charts as input controls. Table- and chart-based input controls appear in the **Input Controls** panel in the same way as regular input controls, but you select values in the table or chart itself to filter the dependent report elements. When you select cells, columns or rows in tables, or clickable data areas in charts, Web Intelligence filters the values in the associated report elements according to the values you selected.

When you click on a table or chart-based control in the **Input Controls** panel, Web Intelligence highlights the table or chart used as an input control.

When a report is in drill mode, table- and chart-based input controls are disabled. They are re-enabled when drill mode is deactivated.

To define a table or chart as an input control

1. Select the table or chart, right-click and select **Define as input control**.

2. Select **All objects** to define all the objects in the table or chart as the filtering objects, or select **Single object** and select the object to define a single object in the table or chart as the filtering object.

   Note:
   You can select dimensions only as filtering objects when you define a table or chart as an input control.

3. Click **Next** and type a name and a description for the input control.
4. Click **Next** and select the report elements to be filtered by the input control.

   Note:
   You cannot select the table or chart that you are defining as an input control from the list of report elements.

5. Click **Finish.**

   The table or chart input control appears in the **Input Controls** pane. When you click on the control, Web intelligence highlights the table or chart defined as the input control.

Related Topics

- *To edit an input control*

To filter data using input controls

1. Display the **Input Controls** pane by selecting the **Input Controls** tab.

   Note:
   The input control displays the message "No dependent report elements" if the report elements filtered by the input control are no longer in the report.

2. Select values in the input control.

   Web Intelligence filters the associated report elements based on the values you select. For example, if you select the "US" value of the [Country] dimension, the filter operator is Equal To, and there is a table associated with the input control, Web Intelligence filters the table on the condition [Country] = "US".

3. To filter using a table or chart defined as an input control, select dimension values in the table (rows, columns or cells) or chart (clickable data areas).

Note:

- Tables or charts defined as input controls can filter using dimension values only.
- The input control shows the message "The table or chart is not in the report" if the table or chart is no longer in the report.
- The input control shows the message "Filtering dimensions not available" if the filtering dimensions are no longer in the table or chart. The input control becomes usable again if you add the dimensions to the table or chart.
- The input control shows the message "Control not usuable while the report is in drill mode" if the report is in drill mode. Drill mode must be turned off to make the input control usable.
- Table- and chart-based input controls are indicated by an icon in the top right-hand corner of the table or chart. Right-clicking the icon displays the following menu:

Command	Description
Edit	Edits the input control
Highlight dependen-cies	Highlights the report elements filtered by the input control
Reset	Removes the filters applied by the input control
Disable/Enable	Disables or enables the input control

4. To remove all filters applied by input controls, click **Reset** at the top of the **Input Controls** pane.

Enhancing reports with calculations, formulas and variables

chapter 20

Calculations, formulas and variables

You can add calculations, formulas and variables (named formulas) to your Web Intelligence reports. For detailed information on the calculation power that calculations, formulas and variables add to your reports, see the *Using Functions, Formulas and Calculations in SAP BusinessObjects Web Intelligence* guide or the online help.

Working with standard calculations

To insert a standard calculation in a table or crosstab

You can insert standard calculations in tables or crosstabs to make quick calculations on table data. For more information on the standard calculations available in Web Intelligence, see the *Using Functions, Formulas and Calculations in SAP BusinessObjects Web Intelligence* guide or in the online help.

You can insert multiple calculations in a table or crosstab. When you apply two calculations to a table or crosstab, a footer is added for each calculation result. You insert multiple calculations in a table or crosstab in the same way that you insert one calculation, but you repeat the procedure for as many calculations as you want to insert.

1. Click **Configure View** > **Toolbars** > **Reporting** (Java Report Panel) or **View** > **Toolbars** > **Report** (Web Intelligence Interactive) to display the **Report** toolbar.
2. Click the table cell that contains the data you want to calculate.
3. Click the arrow at the right of the **Insert calculation-name** button (where calculation-name is the currently-selected calculation) on the **Report** toolbar, then select the calculation you want to insert from the drop-down menu. You can also click the button directly to insert the currently-selected calculation.

   The currently-selected calculation is shown by the mathematical symbol on the button, and changes according to the type of data you select. For example, if the calculation is Sum, the button displays the Σ symbol.

Note:
If you insert a percentage calculation, the results of the percentage are displayed in an additional column or row of the table.

4. To insert other calculations, click the arrow at the right of the button and select the calculation from the drop-down menu.

   A new row is added at the bottom of the table. The aggregated value appears in the new row cell.

To remove a standard calculation

1. Right-click the cell that contains the calculation.
2. Depending on the table type, select **Remove** > **Row** or **Remove** > **Col umn** from the shortcut menu.

Working with formulas

The Formula toolbar

You display the Formula toolbar by clicking the **Show/Hide Formula Toolbar** button on the **Reporting** toolbar (Java Report Panel) or **View** > **Toolbars** > **Formula** (Web Intelligence Interactive). Now, when you select a cell, its formula appears in the Formula toolbar.

The Formula toolbar has the following buttons (the order is different depending on the type of Web Intelligence you are using):

Button	Description
Open Formula Editor	Opens the Formula Editor which allows you to build a formula using a graphical interface
Create variable	Allows you to save a formula as a variable

Button	Description
Clear changes	Clears all changes made to the formula since the last save or validation
Validate formula	Verifies the formula syntax and replaces the current formula

To enter a formula directly into the Formula toolbar without using the Variable Editor, you can type the formula or drag report objects (Java Report Panel only) to the formula toolbar.

To enter a formula in the Formula toolbar by typing the formula

1. Click **Show/Hide Formula Toolbar** (Java Report Panel or Web Intelligence Rich Client) or **View** > **Toolbars** > **Formula** (Web Intelligence Interactive) to display the Formula toolbar.
2. In the Formula toolbar, type the formula.

   For example, to calculate the average revenue generated per item sold, type: `=[Sales Revenue]/[Quantity Sold]`.

   Web Intelligence gives you suggestions for completing the component of the formula you are typing. To select a Web Intelligence suggestion, press the down arrow button to highlight it, then press Return, or select the suggestion with your cursor.
3. To select a Web Intelligence suggestion, press the down arrow button to highlight it, then press Return.

To enter a formula in the Formula toolbar by using drag and drop

- Drag reports objects onto the Formula toolbar.

  Note:
  You cannot drag objects to the Formula toolbar in Web Intelligence Interactive.

  When you release an object, it appears in the Formula toolbar at the cursor position as if you had typed it directly.

To build a formula using the Formula Editor

1. Click the **Open Formula Editor** button on the Formula toolbar to display the Formula Editor.
2. Select the cell on the report where you want to include the formula.
3. In the **Data**, **Functions** and **Operators** panes, double-click the report objects, functions and operators you want to include in the formula, or type the formula directly.

   For example, to create the formula `=Average([Revenue])`, double-click the `Average()` function, then double-click the Revenue object.

   When you double-click a function to include it in a formula, Web Intelligence places the cursor between the function parentheses.

Working with variables

To create a variable from a formula

1. Display the Formula toolbar.
2. Type your formula in the Formula toolbar or select a cell containing a formula.
3. Click **Create variable** on the Formula toolbar

   The "Create Variable" (Java Report Panel or Web Intelligence Rich Client) or "Variable Editor" (Web Intelligence Interactive) dialog box appears.
4. Type the variable name in the **Name** box.
5. Select the variable type by selecting **Dimension**, **Measure** or **Detail**.
6. If you select **Detail**, an "Associated Dimension" box appears. Click **...** next to the box to open the "Objects and Variables" dialog box and select the dimension you want to associate with the detail.
7. Click **OK**.

   The variable appears in the list of report variables in the **Data** tab.

To create a variable using the Variable Editor

1. Click **Show Variable Editor** on the **Reporting** toolbar (Java Report Panel or Web Intelligence Rich Client) or **Variable** > **New** on the **Available Objects** tab of the Left Panel (Web Intelligence Interactive).
2. Type your formula in the **Formula** pane or use the functions and operators on the **Functions** and **Operators** tab to build the formula.
3. Type the variable name in the **Name** box.
4. Select the variable type by selecting **Dimension**, **Measure** or **Detail**.
5. If you select **Detail**, an **Associated Dimension** box appears. Click **...** next to the box to open the **Objects and Variables** dialog box and select the dimension you want to associate with the detail.
6. Click **OK**.

   The variable appears in the list of report variables.

To edit a variable

1. Select the variable in the list of report variables (on the **Data** tab in the Java Report Panel/Web Intelligence Rich Client or the **Available Objects** tab on the Left Panel in Web Intelligence Interactive).
2. Click the right mouse button and click **Edit (Variable)** on the shortcut menu.

   The Variable Editor appears.
3. Edit the variable.
4. Click **OK** to save the new variable definition.

To delete a variable

1. Select the variable in the list of report variables (on the **Data** tab in the Java Report Panel/Web Intelligence Rich Client or the **Available Objects** tab on the Left Panel in Web Intelligence Interactive).
2. Click the right mouse button and click **Delete** on the shortcut menu.

Drilling on report data

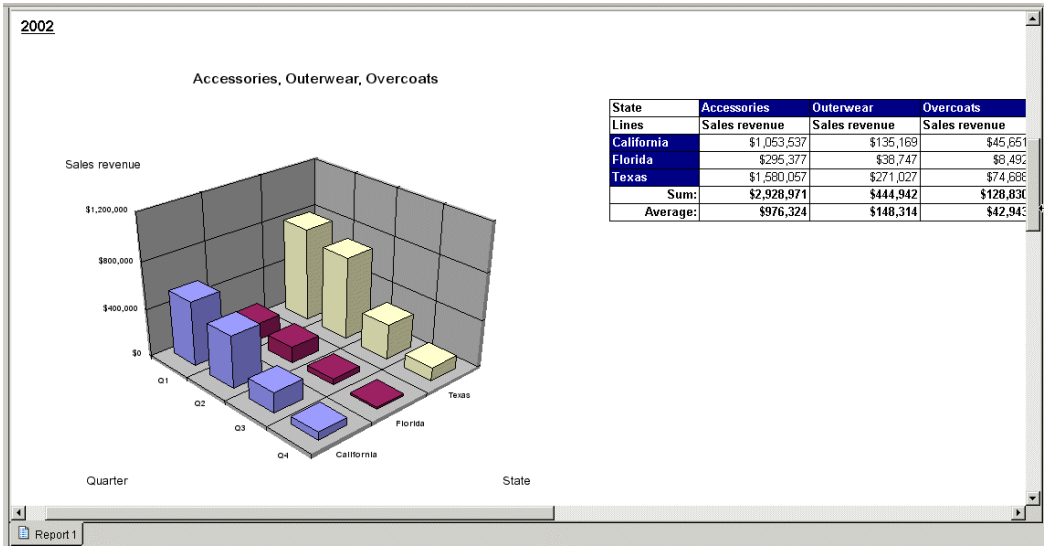
chapter 21

What is drill?

You use drill to analyze the results displayed in reports. Drilling on reports lets you look deeper into your data to discover the details behind a good or bad summary result displayed in tables, charts, or sections.

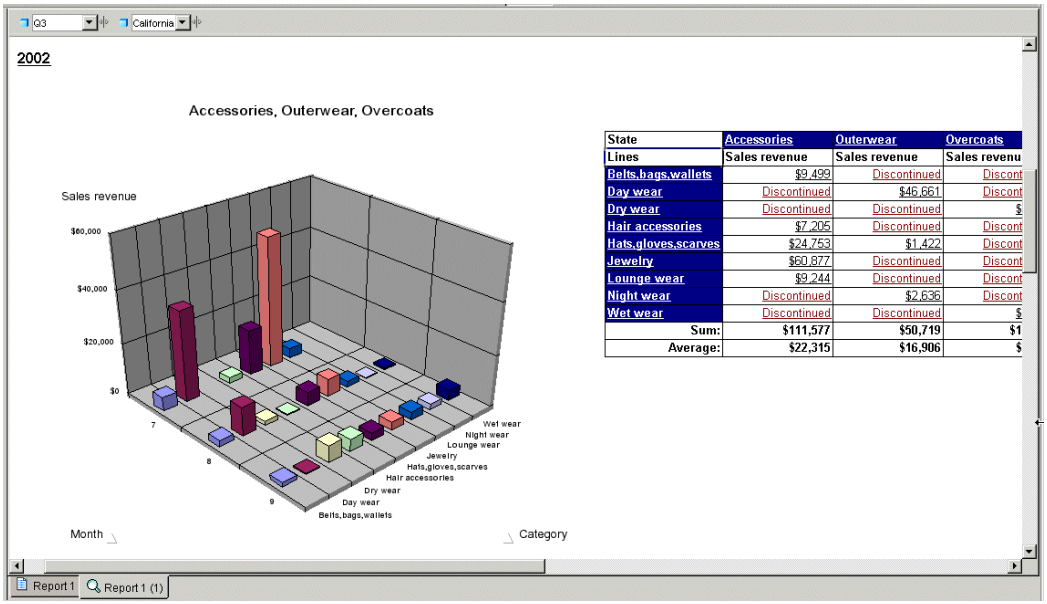
Example: Why did sales of accessories, outwear, and overcoats rise in Q3?

You work for a US national fashion retail chain, and are in charge of sales of accessories, outerwear and overcoat clothing lines in western states. You see that revenue is much higher for Q3 than the other quarters.



State	Accessories	Outerwear	Overcoats
Lines	Sales revenue	Sales revenue	Sales revenue
California	$1,053,537	$135,169	$45,651
Florida	$295,377	$38,747	$8,492
Texas	$1,580,057	$271,027	$74,688
Sum:	$2,928,971	$444,942	$128,830
Average:	$976,324	$148,314	$42,943

To understand why, you drill down to look at the factors behind the result.



State	Accessories	Outerwear	Overcoats
Lines	Sales revenue	Sales revenue	Sales revenu
Belts,bags,wallets	$9,499	Discontinued	Discont
Day wear	Discontinued	$46,661	Discont
Dry wear	Discontinued	Discontinued	$
Hair accessories	$7,205	Discontinued	Discont
Hats,gloves,scarves	$24,753	$1,422	Discont
Jewelry	$60,877	Discontinued	Discont
Lounge wear	$9,244	Discontinued	Discont
Night wear	Discontinued	$2,636	Discont
Wet wear	Discontinued	Discontinued	$
Sum:	$111,577	$50,719	$1
Average:	$22,315	$16,906	$

You see that jewelry sales escalated in July (month #7).

Scope of analysis

The scope of analysis for a query is extra data that you can retrieve from the database to give more details on the results returned by each of the objects in a query. This extra data does not appear in the initial result report, but it remains available in the data cube, so you can pull this data in to the report to allow you to access more detail at any time. This process of refining the data to lower levels of detail is called drilling down on an object.

In the universe, the scope of analysis corresponds to the hierarchical levels below the object selected for a query. For example, a scope of analysis of one level down for the object Year, would include the object Quarter, which appears immediately under Year.

You can set this level when you build a query. It allows objects lower down the hierarchy to be included in the query, without them appearing in the **Results Objects** pane. The hierarchies in a universe allow you to choose your scope of analysis, and correspondingly the level of drill available.

In the Java Report Panel and in Web Intelligence Rich Client, you can also create a custom scope of analysis by selecting specific dimensions for the **Scope of Analysis** pane.

Note:
You cannot set the scope of analysis when working in query drill mode because this drill mode causes Web Intelligence to modify the scope dynamically in response to drill actions.

Levels of scope of analysis

You can set the following levels for scope of analysis:

Level	Description
None	Only the objects that appear in the **Results Objects** pane are included in the query.
• One level down • Two levels down • Three levels down	For each object in the **Result Objects** pane, one, two, or three objects lower down the hierarchy tree are included in the query. The data from these objects is stored in the cube until you add them to the document.
Custom **Note:** This option is available in the Java Report Panel and in Web Intelligence Rich Client only.	All objects added manually to the Scope of Analysis panel are included in the query.

Including a scope of analysis in a document increases the document size significantly. This is because the data necessary for the scope you specify is saved with the document, even though it is not visible in the reports unless you start drill mode and drill down to the data to display the corresponding values.

In order to minimize the size of documents and optimize performance, we recommend that you only include a scope of analysis in documents where you are certain that users will need to drill.

We suggest the following method because it will be easier for you to set the scope of analysis seeing the hierarchy of the classes and objects.

To set the scope of analysis

1. Click **Show/Hide Scope of Analysis Pane** on the Query toolbar to display the **Scope of Analysis** pane.

   All the dimensions in the **Result Objects** pane appear in the **Scope of Analysis** pane. This corresponds to the default scope of analysis - None. (There are no additional levels available for analysis.)

2. Select the analysis level from the **Scope level** list at the top-right corner of the **Scope of Analysis** pane.

   The objects hierarchically below the objects in the **Result Objects** pane appear in the **Scope of Analysis** pane down to the number of levels you selected.

3. To add selected dimensions to the scope of analysis or create a custom scope of analysis, select dimensions in the Query Manager and drag them across to the **Scope of Analysis** pane.

Drill paths and hierarchies

When you analyze data in drill mode, you move along a drill path. These paths are based on the dimension hierarchies set by the designer of the universe. Universe designers organize objects in classes in a hierarchy with the most summary objects at the top and the most detailed at the bottom. So if you want to make a high-level report, you know that your query should include objects at the top of the list. If you want to see more detailed information, you can then switch to Drill mode and drill down on each dimension value displayed in the reports.

For example, if the data from [Quarter] did not sufficiently explain a result, you could drill down to [Month] or [Week], depending on how the universe designer set up the hierarchy. When you drill to a different level, measures, such as a [Revenue] or [Margin], are recalculated accordingly.

Drill paths usually follow the same hierarchy order as the classes on a universe. For example, a class called Time typically includes the [Year] dimension at the top of the class, followed by the [Quarter], [Month], and [Week] dimensions. The hierarchies for drill within the Time hierarchy typically follow the same order, because users want to drill annual results to analyze details for quarter, month, and so on. However, the universe designer can also define custom hierarchies.

Note:
A dimension can belong to several hierarchies. When you drill a result on a dimension that belongs to more than one hierarchy, Web Intelligence prompts you to select the drill path.

To view drill hierarchies

1. Open a document in Edit mode.
2. Verify you are in Query View.
3. Click the **Data** tab.
4. Click the **Hierarchies** radio button.

To switch to drill mode

To start drilling on a report you either switch to Drill mode or, if the report is saved in Drill mode, drill directly.

1. With a document open, verify you are in Report View.
2. Select the report you want to drill.

   The **Drill** button appears in the Web Intelligence toolbar.
3. Click the **Drill** button (you can also select **Analysis** > **Drill** in Web Intelligence Rich Client).

   Note:
   When you open a document that was saved in Drill mode, the document opens in Drill mode if you have the right to drill on documents. If not, it opens in Results view..

   By default, a drill icon appears on the tab of the drillable report. Depending on the drill options you selected on the Web Intelligence Document Preferences page in InfoView, Web Intelligence either makes the selected report drillable or creates a duplicate of the selected report, in drill mode.

Related Topics

- *Start drill session on a duplicate report option*

Retrieving more levels of data to the report

When you are drilling a Web Intelligence report, you may want to drill up or down to a dimension that lies outside the scope of analysis defined for the document. To return the additional data, Web Intelligence must run a new query that includes the additional dimension(s) you specify. This is called extending the scope of analysis.

You can extend the scope of analysis during your drill sessions only if your security profile allows you to do so. Your security profile is controlled by your BusinessObjects Enterprise administrator.

If your Drill options are not set to display the Extend the Scope of Analysis prompt message during drill, you will not be given the option to select filters if you drill beyond the data already available in the document. In this case, Web Intelligence immediately runs a new query and returns data for all the values on the dimensions you are drilling.

To drill out of the scope of analysis

1. Hold your mouse cursor over a dimension value that is at the end of the scope of analysis.

   A ToolTip informs you that a new query is necessary to return the additional data to the document.

2. Drill on the dimension.

   If your Drill options are set for Web Intelligence to prompt you when a drill action requires a new query, the Extend the Scope of Analysis dialog box appears.

   The dialog box lists the dimensions in the hierarchy above and below the drilled value. The dimensions already included in the document are checked. The dialog box also displays the filters that you can select to filter the new query.

3. Select the check boxes next to the dimensions you want to drill.
4. Select the check boxes next to the filters you want to use to filter the query.
5. Click **OK**.

   Web Intelligence runs a new query and returns the additional data to the document and the results for the dimension you drilled to appear on the table.

To choose a drill path when more than one is available

A dimension can belong to multiple hierarchies. When you drill down on such a dimension value, Web Intelligence does not know which drill path to follow. You must define the drill path.

Note:
If the dimension value you choose to drill on is the result of a previous drill, the drill path is already known. Therefore you do not need to select a drill path.

1. Drill on the dimension.

   The "Select Drill Path" dialog box appears. The dialog box lists the dimensions in the hierarchy above and below the drilled value. A check box appears next to each dimensions below the current dimension you are drilling, so that you can select which of these dimensions you want to retrieve from the database, in order to continue your drill action. The dialog box also displays the filters that you can select to filter the new query.
2. Select the path you want to drill.
3. Click **OK**.

To take a drill snapshot

- Click **Snapshot** on the main toolbar.

  Web Intelligence makes a copy of the current state of the drilled report as a seperate report.

Drilling on dimensions in tables and sections

Dimensions typically represent character-type data, such as customer or business names, and dates. Web Intelligence makes calculations based on the dimensions in a report. For example, if you create a report that calculates a region's total sales revenue for a given year, Web Intelligence calculates the [Sales revenue] measure based on the two dimensions: [State] and [Year].

When you drill on a dimension to see the more data behind the displayed result, the sales revenue is calculated according to the values to which you drill. If you drill on [Year] in the above example, Web Intelligence calculates and displays sales revenue by state and quarter, because [Quarter] is the next dimension in the time hierarchy below [Year].

Note:
You cannot drill on detail objects.

Drilling down

You drill down to see the lower-level data that makes up the summary results displayed on reports. This helps explain why high or low results occurred.

Example: Using drill analysis to find out why sales decreased dramatically in 2003

In this example, you receive a report that shows sales revenue results for the accessories line at the eFashion retail store. The following crosstab shows that the Accessories line decreased in 2003.

	2001	2002	2003
Accessories	$2,546,222	$5,468,919	$1,899,405

To analyze more precisely when the decrease occurred, you drill down on the cell value 2003, to view the detailed data for each quarter.

	2001	2002	2003
Accessories	$2,546,222	$5,468,919	$

Drill down to Quarter

When you drill down on the cell value 2003, a filter appears in the Drill toolbar to show that the quarterly values you have drilled to are filtered for the year 2003. The drilled chart clearly shows that the problem arose in Q4 of 2003.

2003

	Q1	Q2	Q3	Q4
Accessories	$357,835	$526,371	$645,055	$370,144

To find out which of the of the categories within the Accessories line was responsible for the drop in revenue, you drill down again on the cell value Accessories.

2003 Accessories

	Q1	Q2	Q3	Q4
Belts,bags,wallets	$195,102	$235,769	$105,772	$223,218
Hair accessories	$83,574	$1,133	$46,847	$15,490
Hats,gloves,scarves	$14,954	$1,553	$12,771	$8,310
Jewelry	$12,118	$10,601	$28,436	$7,406
Lounge wear	$16,266	$59,282	$149,401	$22,105
Samples	$35,821	$218,034	$301,828	$93,616

The drilled crosstab shows which categories were responsible for low revenue in Q4.

Note:
If you try to drill to a dimension that is already displayed in another column or row of the same table, Web Intelligence automatically displays the next available dimension in the drill path.

To drill down on a dimension value in a table or section cell

1. Verify you are in Drill mode
2. On a table or section cell, place your pointer over the dimension value on which you want to drill.

   A ToolTip appears, showing the next dimension in the drill path. If the drilled report includes dimensions from multiple data providers, the ToolTip displays the name of the query and the dimension for the value.
3. Click the value.

   The drilled table or section displays data one dimension level down. The Drill toolbar, at the top of the report, displays the values from which you drilled. These values filter the values displayed on the drilled table.

Drilling up

You drill up on a dimension value to see how the more detailed data aggregates to a higher-level result. For example, you may have drilled down on Year to examine data for each quarter. If you want to see how this data aggregates to yearly results, you can drill up.

When you drill up on a dimension value, you move along the drill path from lower- to higher-level data. For example, you may have drilled down on [Year] to [Quarter]. If you drill up on [Quarter], you return to [Year].

You can only drill up on a dimension value if you have previously drilled down to that dimension, or you have defined the appropriate drill path in the scope of analysis.

To drill up on a dimension value

1. Verify you are in Drill mode.
2. On a table or section cell, right-click the dimension value on which you want to drill up, then on the shortcut menu click **Drill up** , or click the Drill Up icon next to the dimension value you want to drill up.

   If the table is a crosstab without headers that display the names of the dimensions on the table, then the Drill Up icon appears next to each value from which you can drill up.

The report now displays data one dimension level up. The filters that filtered the value you drilled up from, are removed from the Drill toolbar.

Drilling by

When you drill down or up, you move through a hierarchy one dimension at a time. However, you can get another view of the data by slicing it in a different way, and then look at the data in other hierarchies. To do this, you drill by the other dimensions that interest you.

Note:
You can only Drill by to a dimension that is included in the scope of analysis of the document.

Example: Drilling by the Products hierarchy to slice sales revenue results by product

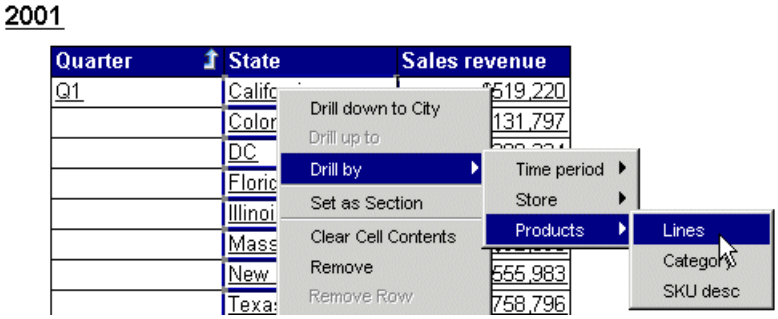
You work as regional manager for California in a retail clothing store, and have been sent the following report that shows quarterly sales revenue by state:

2001

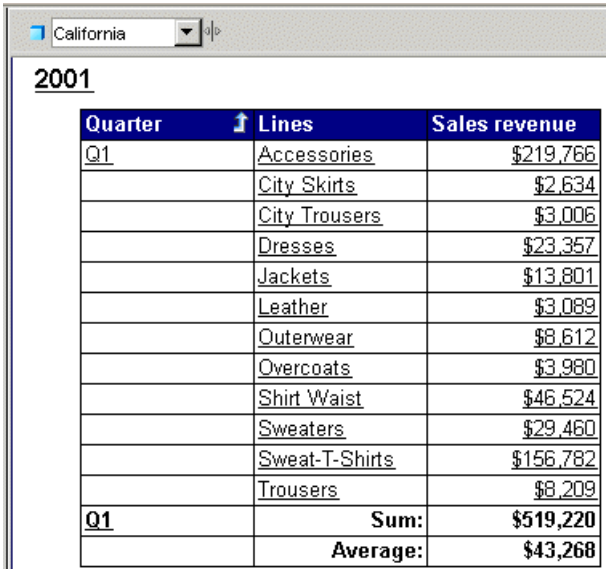
Quarter	State	Sales revenue
Q1	California	$519,220
	Colorado	$131,797
	DC	$208,324
	Florida	$137,530
	Illinois	$256,454
	Massachusetts	$92,595
	New York	$555,983
	Texas	$758,796
Q1	**Sum:**	**$2,660,699**
	Average:	**$332,587**

You are only interested in analyzing the results in the state of California. In addition, you want to analyze the sales revenue broken down by each product line you sell. To drill on California data, you place your pointer on the table cell that says California.

If you drilled down now, however, you would drill to results for each city within California, because [City] is the dimension below [State]. Instead, you select Drill by from the drill menu and then you navigate through the dimensions on the Products hierarchy by selecting the sub-menus until you reach the [Lines] dimension.



The drilled report displays the detailed sales revenue results for each product line sold in California.



Quarter	Lines	Sales revenue
Q1	Accessories	$219,766
	City Skirts	$2,634
	City Trousers	$3,006
	Dresses	$23,357
	Jackets	$13,801
	Leather	$3,089
	Outerwear	$8,612
	Overcoats	$3,980
	Shirt Waist	$46,524
	Sweaters	$29,460
	Sweat-T-Shirts	$156,782
	Trousers	$8,209
Q1	**Sum:**	**$519,220**
	Average:	**$43,268**

To drill by a dimension value

1. Verify you are in Drill mode.
2. On a table or section cell, right-click the dimension value you want to drill by.

   A shortcut menu appears, displaying the available drill paths.
3. Place your pointer on **Drill by**, then on the class to which you want to drill.
4. Click the dimension to which you want to drill.

   The report now displays data for the dimension to which you drilled.

Drilling on measures in tables and sections

When you drill on a measure value, Web Intelligence performs the drill action one level down for each related dimension in the block and displays the new measure calculation for the displayed dimensions.

Example: **Drill on annual sales revenue results to see the breakdown by city and quarter**

For example, you drill down on the year 2003 sales revenue value for California, which is displayed on a crosstab that shows sales revenue by year in by state.

The drilled report displays sales revenue by quarter by city for California – the state on which you drilled.

To drill down on a measure value

1. Verify you are in Drill mode.
2. Place your pointer over the measure value on which you want to drill.

A ToolTip appears, displaying the next dimension(s) in each related drill path

3. Click the measure value.

   Your report now displays data one dimension level down. The table headers display the names of the dimensions you drilled to and the drill up arrow, which indicates you can drill back up to the summary results if wished. The Drill toolbar displays the values that filter the results displayed on the drilled table or section.

To drill up on a measure value

1. Verify you are in Drill mode.
2. Right-click the measure value on which you want to drill up, then click the **Drill up** option on the shortcut menu, or click the **Drill Up** icon next to the measure value you want to analyze.

   The drilled table now displays data one dimension level up.

Synchronizing drill across multiple tables and charts

A Web Intelligence report can contain several tables or charts. The generic term used to refer to tables and charts in this guide is a block. There are two ways to drill on a report with multiple blocks:

- drill simultaneously on each block in the report the contains the drilled dimension
- drill on only the current block of data

You set how Web Intelligence performs drill on reports with the Synchronize drill on report blocks option.

If you set Web Intelligence to synchronize drilling across a report, you drill on each block in the report containing that drilled dimension. The next dimension in the drill path replaces the previous dimension in all blocks of the report.

If you set Web Intelligence not to synchronize drilling on all blocks in a report, the next dimension in the drill path replaces the previous dimension only in the current block of the report.

Related Topics

- *Synchronize drill on report blocks option*

Drilling on charts

Drilling down, up, or by on a chart, provides you with a graphical explanation for why summary results are particularly high or low.

You can drill on:

- dimensions – by drilling on chart axes
- dimensions – by drilling on the chart legend
- measures – by drilling on the data bars or markers in the body of the chart

You cannot Drill by dimensions on chart axes. However, you can Drill by dimensions on chart legends.

Related Topics

- *Drilling on axis legends*

Drilling on dimensions via chart axes

On 2D charts, you can drill on dimensions via the X-Axis. On 3D charts, you can drill on dimensions via the X-Axis and the Z-Axis. Charts can contain one or multiple dimensions on a single axis. When an axis contains multiple dimensions, each possible combination of the dimension values appear on the axis (this is sometimes referred to as a cartesian product).

When you drill on an axis value with multiple dimensions, the drilled results are filtered by both dimensions.

To drill on a chart axis

1. Verify you are in Drill mode.
2. Place your pointer over the dimension value on which you want to drill.
3. If you want to drill down on the dimension value, click the value. If you want to drill up on the dimension value, right-click the value then select **Drill Up**. If you want to drill down on the dimension value, right-click the

value then select **Drill Down**. If you want to drill by the dimension value, right-click the value then select **Drill By**

Note:
Drill by is not available if the axis has multiple dimensions.

Drilling on measures in charts

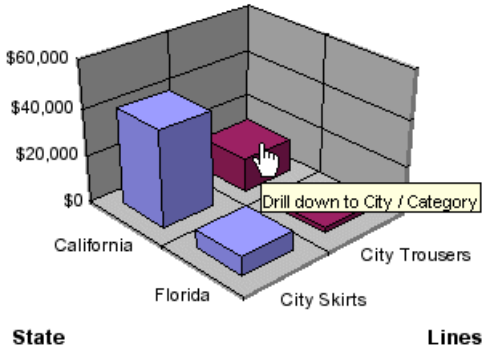
You can drill on the measures displayed on the following types of chart:

- bar charts – by drilling on the bars
- line and radar line charts – by drilling on the data markers
- pie chart – by drilling on the segments

When you drill on measures, Web Intelligence performs the drill action on each dimension displayed on the chart axes. The new measure calculations displayed on the bars or data markers on the drilled chart, correspond to the lower- or higher-level dimensions to which you drilled. The chart axis labels display the names of the drilled dimensions.

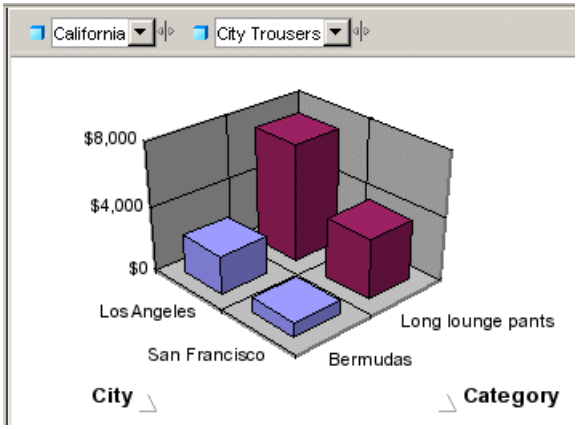
Example: Analyze detailed information for the sales revenue measure on a chart

For example, this 3D bar chart displays values for the [State] dimension on the X-Axis and displays values for the [Lines] dimension on the Z-Axis. This means that the chart bars display values for sales revenue per state per line.



As the example below shows, when you drill down on the bar for “City Trousers□? in “California□? you also drill down from [State] to [City] on the X-Axis and from [Lines] to [Category] on the Y-Axis.

The drilled chart displays sales revenue per city per category for the “City Trousers□? clothing line.



To drill on a measure in a chart

1. Verify you are in Drill mode.
2. Place your pointer on the measure value on which you want to drill.

   On charts, each measure is represented by a bar (on bar charts) or by a data marker (on a line charts and radar line charts).
3. If you want to drill down on the measure value, click the bar or data marker. If you want to drill up on the measure value, right-click the bar or data marker, and then click **Drill up**.

Limitations when drilling measures on charts

When you drill on charts that are not bar charts, Web Intelligence may perform the drill action only on certain dimensions instead of performing the drill action on all of the dimensions on the chart axes. When you drill on measures in the following chart types, Web Intelligence only performs the drill action on the values in the axis legend:

- area charts – 2D, 3D, and stacked
- radar and scatter charts – all types

Note:
You cannot drill on measures in 3D surface charts.

Drilling on axis legends

You can drill on charts via the chart legend whenever the legend lists the dimensions displayed on the chart. When the chart legend lists the measures displayed on the chart, drilling on the legend is not possible.

Drilling on a legend is useful, if you are working with a pie chart, because the axis labels, which display the names of the dimensions represented by each pie segment, are not often displayed.

Note:
You can only Drill by on a chart legend, if there is a single dimension on the axis.

To drill on an axis legend

1. Verify you are in Drill mode.
2. Place your pointer over the value on which you want to drill.
3. To drill down the dimension value, click the color associated with the value. To drill up the dimension value, right-click the color associated with the value, then click **Drill up** ; or click the **Drill Up** icon. To drill by the dimension value, right-click the color associated with the value, then click **Drill by** .

Using filters when you drill

When you drill on a dimension or measure value in a table or chart, Web Intelligence filters the drilled results by the dimension or measure you drilled on. The filter is applied to all of the results displayed on the drilled report.

Filters appear as list boxes in the Drill toolbar. Each list box contains the values associated with that filter. You select the data displayed in a table or chart by choosing the appropriate values from the list boxes.

Note:
You can also use the Drill toolbar outside Drill mode to quickly add simple report filters to reports. In this context the toolbar is known as the Report Filter toolbar.

Example: Filtering drilled reports by different US states

For example, if you drill down on a table cell displaying “California,□? to view results for cities in California, Web Intelligence filters the values in the entire report for California and only displays results for California in the report.

By changing the value of each filter, you can then see data for other values on the drilled dimension. For example, you can select Colorado in the filter on State.

Note:
If the drilled report includes dimensions from multiple data providers, a ToolTip appears when you rest your cursor on the value displayed on the filter. The ToolTip displays the name of the query and the dimension for the value.

Related Topics

- *To create simple report filters*

To change a filter value on the Drill toolbar

1. Verify you are in Drill mode.
2. In the Drill toolbar, click the drop-down arrow relating to the dimension you want to filter.
3. Click the value you want.

To add or remove a drill filter

1. Verify you are in Drill mode.
2. Drag the dimension containing the values around which you want to filter your report and drop it onto the Drill toolbar.

A list box for the new filter appears on the Drill toolbar. You can select a value from the list of values to filter the results displayed on the drilled table, chart, or report.

3. To remove a drill filter, drag the dimension away from the Drill toolbar.

Saving reports with drill filters

When you save a document with reports in drill mode, Web Intelligence maintains any filters that have been generated during drill. When you open a document saved in drill mode, Web Intelligence displays the Drill toolbar on the drilled reports showing the filters generated during the last drill session.

Note:
Documents saved in drill mode take longer to open than documents saved in results mode.

Refreshing data in a drilled report with prompts

Some Web Intelligence reports contain prompts. When you refresh the document, the prompt(s) require(s) you to specify the value(s) you want to retrieve from the database and return to the report(s) in the document. For example, a prompt can require you to specify a year, for which you want to retrieve data. This drilled report shows values for Year 2003 – the year selected for the prompt.

If the drilled report is filtered for Year 2003, and you then refresh the document and select year 2002 to answer the prompt, Web Intelligence retrieves results for 2002 instead of 2003. The drilled report then displays values for 2002.

Drilling with query drill

Query drill defined

You can set Web Intelligence to drill in query drill mode, which behaves differently from the standard drill mode described so far in this chapter. When

you activate query drill, Web Intelligence drills by modifying the underlying query (adding and removing dimensions and query filters) in addition to applying drill filters.

Example: Drilling down from month to week

In this example, Month is the lowest dimension currently available in the query from a time hierarchy, and Week is the dimension immediately below it in the hierarchy.

If you drill down on Month = January, three things happen:

- Web Intelligence adds Week to the query scope of analysis.
- Web Intelligence adds a query filter to restrict Month to January.
- Web Intelligence adds a drill filter to restrict Month to January.

If you drill up from Week to Month, the process is reversed:

- Web Intelligence removes Week from the query scope of analysis.
- Web Intelligence removes the query filter.
- Web Intelligence removes the drill filter.

Note:
Drill filters are not strictly necessary in query drill mode. Web Intelligence applies them for consistency with standard drill mode. For example, the `DrillFilters` function returns the correct value in query drill mode because Web Intelligence applies drill filters to match the query filters.

When do you use query drill?

You use query drill when your report contains aggregate measures calculated at the database level. It is designed in particular to provide a drill mode adapted to databases such as Oracle 9i OLAP, which contain aggregate functions that Web Intelligence either does not support, or cannot calculate accurately at the report level during a drill session.

The kinds of aggregate functions that are candidates for drilling in query drill mode are: percentages, distinct counts, ranks, standard deviations and variances, running aggregates, lead and lag functions. Because query drill modifies the query at each drill operation, it ensures that these aggregates are recalculated by the server each time you drill.

Query drill is also useful for reducing the amount of data that Web Intelligence must store locally during a drill session. Because query drill reduces the scope of analysis when you drill up, Web Intelligence is able to purge unecessary data.

To activate query drill

1. Right-click on the document anywhere outside a table or chart and click **Document Properties** to display the **Document Properties** pane.
2. Open the **Document Options** group within the tab.
3. Check **Use query drill**.

   If your report already has a scope of analysis defined, you see a message telling you to clear the scope of analysis before activating query drill.

Drilling with query drill

Drilling down with query drill

When you drill down, query drill behaves similarly to standard drill at the point where the data moves outside the scope of analysis.

When Web Intelligence filters a drilled dimension in query drill mode it does so by adding a query filter in addition to a drill filter. For example, if you drill on Year=2001, Web Intelligence adds a filter at the query level to restrict the Year dimension to 2001. For this reason, the only value that appears in the drill toolbar for the drilled dimension is the value on which you drilled (in this case 2001). This is different from standard drill mode, in which all values of the dimension are visible in the toolbar. As a result, you cannot change filter values in query drill mode (for example, drill on Year=2001 then switch to Year=2003) as you can in standard drill mode.

Because query drill automatically extends the scope of analysis, you can use it only if your BusinessObjects XI administrator has granted you the the right to drill outside the scope. See your administrator for more details.

Drilling up with query drill

When you drill up, query drill removes dimensions from the query. For example, if you drill up from Month to Quarter, Web Intelligence removes Month from the query. This has two consequences:

- Query drill is incompatible with drill snapshots.

- Web Intelligence does not allow you to drill up beyond any dimension that appears as one of the report objects. For example, if your report displays Year, Quarter and Revenue, you cannot drill up from Quarter to Year because this would remove quarter from the list of report objects.

Related Topics

- *Query drill and drill snapshots*

Query drill and drill snapshots

Do not use drill snapshots when working in query drill mode, because query drill means that snapshots cannot be guaranteed to stay the same.

In query drill mode, snapshots change when you drill up beyond a dimension that you included in a snapshot. Because the drill up removes the dimension from the underlying query, it also removes the dimension from the snapshot.

Query drill and other reports based on the same data provider

If your document contains other reports that contain dimensions on which you drill in query drill mode, these reports are affected because the query drill modifies the dimensions they contain.

You can avoid this (at the cost of retrieving duplicate data into Web Intelligence) by creating a new data provider and rebuilding the other report against it. Now when you drill in query drill mode, the other report remains unaffected.

Example: Drilling on a dimension that appears in another report

If you have two reports based on a query that contains Year, Quarter and Sales Revenue, and you use query drill to drill down to Year = 2001 on the first report, Web Intelligence also filters the data for Year in the second report to include 2001 only.

Merging dimensions from multiple data providers

chapter 22

Merged dimensions defined

You can include multiple data providers in a Web Intelligence document. You often need to synchronize the data returned by these data providers. You do this by incorporating common dimensions into a merged dimension.

Merged dimensions and data synchronization were introduced in Web Intelligence XI R2. They enormously increase the power and flexibility of Web Intelligence by allowing you to synthesise data from different sources in the same report, rather than simply including the data.

For example, if you have one database that contains detailed customer information and another database that contains sales data, you can synchronize the two data sources around the customer.

When to merge dimensions

You merge dimensions when your report draws related data from different data providers. For example, you have a report showing revenue and sales targets. The report contains sections based on the year, and each section shows revenue and sales targets. If revenue and sales target data comes from two different data providers, Web Intelligence does not know that it is related. You tell Web Intelligence that the data is related by merging the two data providers on the common dimension, year.

When you merge dimensions, Web Intelligence creates a new dimension that contains all the values from the original dimensions that make up the merged dimension. You use this dimension in reports as you use any other report object. You can add report objects from all the data providers synchronized through the merged dimension in the same block as the merged dimension.

Choosing which dimensions to merge

The only restriction that Web Intelligence imposes on merged dimensions is that they must be of the same data type: for example, character data. But it does not make sense to merge unrelated dimensions even when their data types are the same. For example, it does not make sense to merge a

dimension containing customer names with a dimension containing sales regions.

Merged dimensions often have the same name in both data sources, but this is not obligatory. It can make sense to merge dimensions with different names if they contain related data.

To merge dimensions correctly you need to be aware of the semantics of the data (what the data refers to) in the different data sources. The dimension data types and names are an approximate guide only to dimensions' suitability for merging.

Merged dimension example

The following example with two data providers illustrates the effect of merging dimensions:

Example: Merging City dimensions

Data Provider 1:

Country	City
US	New York
US	Los Angeles
France	Paris
France	Toulouse

Data Provider 2:

City	Revenue
New York	100000
Los Angeles	75000
Paris	90000

City	Revenue
Toulouse	60000

If you merge the City dimensions and display the Country, merged City dimensions and Revenue measure in a table, Web Intelligence returns the following result:

If the City dimensions are not merged, Web Intelligence displays the following result:

Country	City	Revenue
US	New York	325000
US	Los Angeles	325000
France	Paris	325000
France	Toulouse	325000

Because there is no link between the two data providers through a merged dimension, Web Intelligence is unable to relate the city revenues to countries. As a result Web Intelligence displays the total revenue against each Country/City pair.

If the City dimensions are merged, Web Intelligence displays the following result:

Country	City	Revenue
US	New York	100000
US	Los Angeles	75000
France	Paris	90000
France	Toulouse	60000

Forcing merged calculations with the ForceMerge function

By default, Web Intelligence does not account for merged dimensions in calculations if the merged dimensions do not explicitly appear in the calculation context.

Example: Calculating revenue with ForceMerge

This example has two data providers as follows:

Data Provider 1:

Country	City
US	New York
US	Los Angeles
France	Paris
France	Toulouse

Data Provider 2:

City	Revenue
New York	100000
Los Angeles	75000
Paris	90000
Toulouse	60000

If you merge the [City] dimensions, then create a table with [Country] and [Revenue], Web Intelligence displays the following result:

Country	Revenue
US	325000
US	325000
France	325000
France	325000

Because [City], the merged dimension, does not appear in the table, Web Intelligence does not take the merge into account when calculating revenue. Web Intelligence lists the total revenue in the second data provider against each country.

To display the correct result, replace [Revenue] in the second column with the formula `ForceMerge([Revenue])`:

City	Revenue
US	175000
US	175000
France	150000
France	150000

Web Intelligence now takes the relationship between countries and cities into account when calculating revenue.

Note:
If [Revenue] is a smart measure in the above example, `ForceMerge([Revenue])` returns #MULTIVALUE. This is because the grouping set (Country) does not exist for the [Revenue] measure. `ForceMerge([smart_measure])` always returns #MULTIVALUE, unless by chance no aggregation is required to calculate the measure.

Creating, editing and deleting merged dimensions

To merge dimensions

1. Click **Merge Dimensions** on the toolbar (you can also select**Data** > **Merge Dimensions** in Web Intelligence Rich Client).

   The "Merge Dimensions" dialog box appears.
2. Select the dimensions you want to merge in the boxes at the top of the dialog box.

   When you select a dimension, all dimensions of different data types are disabled because you cannot merge dimensions of different data types.
3. Click **Values** to view the values associated with the dimensions.
4. Click **Merge**.

   The "Create Merged Dimension" dialog box appears. You use this dialog box to specify the properties of the merged dimension.
5. Select the dimension in the **Source Dimension** drop-down list.

   The source dimension provides the default name, description and number formats for the merged dimension.
6. Type the merged dimension name in the **Merged Dimension Name** box and the merged dimension description in the **Description** box.
7. Click **OK**.

   The merged dimension name appears in the "Merged Dimensions" box and the dimensions that are part of the merged dimension appear in the boxes alongside it. Because an original dimension can be part of one merged dimension only, it no longer appears in the box above that lists the original dimensions in the query.
8. Click **OK** to close the "Merged Dimensions" dialog box.

   Web Intelligenceadds the merged dimensions to the list of merged dimensions in the **Data** tab.

To define a merged dimension

You define a merged dimension in the "Create Merged Dimension" dialog box.

1. Type the merged dimension name in the **Merged Dimension Name** box.
2. Type the merged dimension description in the **Description** box
3. To use the name and description of one of the source dimensions in the merged dimension, select the source dimension from the **Source Dimension** list.
4. Click **OK**.

To merge dimensions automatically

You can set Web Intelligence to merge dimensions automatically under the following circumstances:

- The dimensions have the same name
- The dimensions have the same data type
- The dimensions are in the same universe

1. Right-click outside any block or chart and click **Document Properties** on the popup menu.
2. Click **Auto-merge dimensions**.

To control auto merge dimensions

You can set Web Intelligence to not merge dimensions automatically even if the auto-merge dimensions criteria exist.

For Java Report Panel and Interactive editors, complete the following steps to disable merging dimensions automatically:

1. Login to Central Management Console.
2. Click **Applications**.
3. Click **Web Intelligence**.
4. Uncheck **Auto-Merge dimensions**.
5. Click **Save**.

To edit a merged dimension

1. In the **Data** tab, select the dimension in the **Merged Dimensions** folder and click the right mouse button.
2. Select **Edit Merged Dimension** from the menu.

   The "Merged Dimensions" dialog box appears.
3. Edit the merged dimension.

Related Topics

- *To merge dimensions*

To delete a merged dimension

1. Select the dimension in the **Merged Dimensions** folder in the **Data** tab and click the right mouse button.
2. Select **Delete Merged Dimension** from the menu.

Understanding the effects of merged dimensions

Data synchronization through merged dimensions adds enormous power to Web Intelligence. Merged dimensions also have implications for the results that Web Intelligence displays in certain situations. You need to understand these implications to work effectively with merged dimensions and synchronized data.

Synchronizing data providers with different aggregation levels

You can synchronize data providers with different aggregation levels. This can have implications for the way in which Web Intelligence calculates measures.

Example: Synchronizing data providers with different aggregation levels

In this example you have two data providers as follows:

Customer	Year	Revenue
Jones	2004	1500
Jones	2005	2000
Smith	2005	1200

Customer	Number of sales
Jones	12
Smith	10

If you merge the two data providers and the table properties **Avoid duplicate rows aggregation** and **Show rows with empty dimension values** are unchecked, Web Intelligence returns the following:

Customer	Year	Revenue	Number of sales
Jones	2004	1500	12
Jones	2005	1200	12
Smith	2005	1200	10

Web Intelligence cannot determine the number of sales per year for customer Jones because the data provider that stores the number of sales does not break them down by year. Web Intelligence therefore reproduces the total number of sales on each row.

Note:
Although the Number of Sales values are duplicated, if you add a standard calculation to the bottom of the column (for example a Sum or Average calculation), the result is correct.

One way of adressing this issue is to add the dimensions to the second data provider that allow Web Intelligence to calculate to the appropriate level of data. If this is not possible, you must be aware of any situations where Web Intelligence cannot aggregate the data to the necessary level of detail.

Detail objects and merged dimensions

Detail objects are associated with dimensions and provide additional information about the dimension.

Web Intelligence XI R2 requires a one-to-one relationship between dimensions and details (this means that a detail object can have one value only for each value of its associated dimension) and does not take detail objects into account when synchronizing data. The following example illustrates why this is necessary.

Previous versions of Web Intelligence, as well as Desktop Intelligence and BusinessObjects, allow a one-to-many relationship between dimensions and details. If you migrate a report created using any of these products and the detail object contains multiple values, Web Intelligence places the #MULTIVALUE error in the detail cell.

Example: Synchronizing data providers with detail objects

In this example you have two data providers, and [Address] is a detail object related to [Customer]:

Customer	Address	Revenue
John	London	10000
Paul	Liverpool	15000

Customer	Telephone Number
John	1234
Paul	5678

If you create a merged Customer dimension to synchronize the data providers, and Address can have more than one value for each customer, the result is ambiguous because there is no common value around which Web Intelligence can synchronize the data.

For example, Paul might have addresses in Liverpool and London, which means that there is no unique ‘Paul’ row with which Web Intelligence can synchronize Paul's telephone number. Paul has a different telephone number for each address, and Web Intelligence does not know which address to associate with the telephone number:

Customer	Address	Telephone Number
John	London	1234
Paul	#MULTIVALUE	5678

If the relationship between Customer and Address is one-to-one, Web Intelligence can ignore Address in the synchronization. This removes the ambiguity:

Customer	Address	Telephone Number
John	London	1234
Paul	Liverpool	5678

Incompatible objects and merged dimensions

As a general rule, Web Intelligence does not allow you to place dimensions from different data providers in the same table. This is to avoid Cartesian products (the display of all possible combinations of values from unrelated objects) or other ambiguous results, depending on the universe structure.

You can always place measures from different data providers in a table. Web Intelligence calculates the measure depending on what dimensions are available. For example, if you place a measure in a table that contains no dimensions from the same data provider as the measure, Web Intelligence displays its total value in the table.

You can place a merged dimension in a table as long as the table contains other dimensions from a data provider that participates in the merge. You can also place details from different data providers in a table, as long as the details are associated with dimensions that participate in a merged dimension.

In certain situations, it can be valid to place a dimension from another data provider in a table, even when Web Intelligence does not permit this. This occurs when the incompatible dimension has a one-to-one or one-to many relationship with a dimension already in the table. The important point is that there is only one value of the incompatible dimension associated with the dimension in the table (one-to-one). On the other hand, the same value of the incompatible dimension can be associated with multiple values of the dimension in the table (one-to-many).

In the table below, the relationship between Address and Name conforms to these rules: Address has a one-to-one or one-to-many association with Name. There is no one-to-many association in the other direction, between Name and Address (one name with more than one address):

Dimension in table (Name)	Incompatible dimension (Address)
John	London
Paul	London
George	Liverpool

In this case the universe design is incorrect - the incompatible dimension (Address) should be defined as a detail of the dimension in the table (Name).

If you encouter this situation, see your Business Objects administrator and ask for a redesign of the universe.

If it is not practical to change the universe, create a variable at the report level. Define this variable as a detail, associate it with the dimension in the table, and supply the name of the incompatible dimension as the variable definition. The variable simply returns the same values as the incompatible dimension. Because it is defined as a detail of the dimension in the table, Web Intelligence allows you to place it in the same table as the dimension.

Filtering merged dimensions

Merging dimensions has implications for the way in which Web Intelligence applies filters.

Note:
You cannot apply a filter a on merged dimension. You apply filters on the dimensions that make up the merged dimension.

Report filters and merged dimensions

When you apply a report filter to a dimension that is part of a merged dimension, Web Intelligence applies the filter to all data providers that are synchronized through the merged dimension.

Example: Filtering a merged dimension

In this example you have a report with the following data providers, which are merged on the Country dimension

Country	Resort	Revenue
France	French Riviera	835,420
US	Bahamas Beach	971,444
US	Hawaiian Club	1,479,660

Country	Future Guests
France	46
US	56

If you apply the filter Country=□?US□? to the first block, Web Intelligence also filters the second block to give the following result:

Country	Future Guests
US	56

If the Country dimensions are not merged the second block is unaffected by the filter.

Section filters and merged dimensions

When a dimension that is part of a merged dimension is set as a section header, any filter applied to the section also applies to blocks from synchronized data providers within the section.

Related Topics

- *Filtering a merged dimension*

Block filters and merged dimensions

When you apply a block filter to a dimension that is part of a merged dimension, Web Intelligence applies the filter to the block. Web Intelligence does not apply the filter to other data providers synchronized through the merged dimension.

Drilling on merged dimensions

When you merge dimensions, the new merged dimension belongs to the hierarchies of all dimensions involved in the merge.

When you drill upon a merged dimension, the application provides you the query name and context for the object being drilled upon. You need to select the appropriate context applicable for a document.

Extending the values returned by merged dimensions

Merged dimensions were a new concept in Web Intelligence XI R2. Synchronizing data providers already existed in Desktop Intelligence/BusinessObjects but it did not involve the creation of a new merged dimension. BusinessObjects reports use the original dimensions that make up a merged dimension in Web Intelligence.

You can use these original dimensions in a Web Intelligence report. When you place them in the report, Web Intelligence returns by default only those dimension values that have corresponding values in the data providers synchronized through the merge. You need to be aware of this when migrating reports from Desktop Intelligence and BusinessObjects because BusinessObjects/Desktop Intelligence behaves differently.

Example: Web Intelligence and Desktop Intelligence/BusinessObjects behavior when dimensions are merged

You have a report with the following data providers:

Country of origin	Revenue
Germany	470

Country of origin	Revenue
Japan	499

If you include the Country of Origin dimension from Data Provider 1 and the Revenue measure from Data Provider 2 in the same block, Web Intelligence returns the following result:

Country of origin	Revenue
Germany	

The same block in Desktop Intelligence/BusinessObjects returns the following result:

Country of origin	Revenue
Germany	
Japan	499

The block is different in Desktop Intelligence/BusinessObjects because BusinessObjects extends the values of the Country of Origin dimension through the values returned by the Revenue measure.

To extend dimension values

1. Right-click your report outside any blocks or charts and select **Document Properties** on the shortcut menu.

   The **Document Properties** pane appears on the right side of the report.

2. Check the **Extend merged dimension values** option.

Ranking report data

chapter 23

Ranking data

Ranking allows you to isolate the top and bottom records in a set based on a variety of criteria. For example, if you have a block showing countries and associated revenues, ranking allows you to rank the data in the block to show the top 3 countries only, based on the revenue they generate.

Ranking allows you to answer business questions such as:

- Which 3 regions generate the most revenue?
- Which are the bottom 10% of stores in terms of revenue generation?
- What is the group of the best-performing stores that generates a combined revenue of up to $10,000,000?

Web Intelligence allows you to rank data in many ways to answer these kinds of business questions. You can:

- rank the top and/or bottom n records by dimension (for example Country) based on the sum of a related measure (for example Revenue)
- rank the top and/or bottom n% of the total number of records by dimension based on the value of a related measure as a percentage of the total value of the measure
- rank the top and/or bottom n records by dimension based on the cumulative sum of a related measure
- rank the top and/or bottom n records by dimension based on the value of a related measure as a cumulative percentage of the total value of the measure

Rankings and sorts

Web Intelligence sorts data as part of applying a ranking. For example, if you rank the top 3 stores by revenue, Web Intelligence sorts the stores in descending order by revenue generated.

The sorts that Web Intelligence applies in rankings take precendence over sorts that you have previously applied to your data. For example, if you have previously sorted the list of stores in alphabetical order, Web Intelligence overrides this sort when applying the ranking.

Tied rankings

Web Intelligence assigns equal ranking values to tied rankings and pushes back the ranking values of the rows after the tie. This means that a bottom n ranking can return more than n records.

Example: Top and bottom tied rankings

The following table shows a tied ranking. The Top 3 ranking column shows how Web Intelligence ranks these records in a top 3 ranking; the Bottom 3 Ranking column shows how Web Intelligence ranks these records in a bottom 3 ranking.

Dimension	Measure	Top 3 Ranking	Bottom 3 Ranking
A	10	4	1
B	20	3	2
C	30	1	3
D	30	1	3

In each case Web Intelligence includes records up to and including rank 3. This results in the following for a top 3 ranking:

Dimension	Measure
D	30
C	30
B	20

It results in the following for a bottom 3 ranking:

Dimension	Measure
A	10
B	20
C	30
D	30

Ranking parameters

Parameter	Description
Top/bottom	When the calculation mode is Count, the ranking returns the top/bottom n records based on the measure specified in the Based on parameter. For example, the top 3 countries by revenue generated, the bottom 3 year/quarter combinations by revenue generated. When the calculation mode is Percentage, the ranking returns the top/bottom n% of the total number of records based on the measure specified in the Based on parameter. For example, if there are 100 records and you rank the top 10%, the ranking returns the top 10 records. When the calculation mode is Cumulative Sum, the ranking returns the top/bottom records for which the cumulative sum of the measure specified in Based on does not exceed n. When the calculation mode is Cumulative Percentage, the ranking returns the top/bottom records for which the cumulative sum of the measure specified in Based on does not exceed n% of the total of the measure.

Parameter	Description
n/n%	When the calculation mode is Count - the number of records to retrieve based on the measure. When the calculation mode is Percentage - the percentage of records to retrieve based on the measure. When the calculation mode is Cumulative Sum - the cumulative sum that the measure must not pass. When the calculation mode is Cumulative Percentage - the cumulative sum of the measure, represented as a percentage of the total, that the measure must not pass.
Based on	The measure on which the ranking is based.
Ranked By	The ranking dimension. If you specify a ranking dimension, Web Intelligence uses the aggregated values of the Based on measure, calculated for the dimension, to determine the ranking. If you do not specify this dimension, Web Intelligence uses the values of the Based on measure calculated for all dimensions in the block. (In other words, Web Intelligence returns the top/bottom X rows in the block based on the measure.)
Calculation mode	The type of calculation used to create the ranking. See the description of the Top/Bottom and n/n% parameters at the top of this this table for more information.

Example of a ranking

A table contains the following data:

Year	Quarter	Revenue
2006	Q1	100
2006	Q2	200
2006	Q3	300
2006	Q4	500
2007	Q1	400
2007	Q2	700
2007	Q3	300
2007	Q4	600
2008	Q1	200
2008	Q2	200
2008	Q3	400
2008	Q4	500

Total for Q1: 700

Total for Q2: 1100

Total for Q3: 1000

Total Q4: 1600

If you rank the top 2 of each Quarter based on Revenue, Web Intelligence filters out all the rows for Q1 and Q3 because Q4 and Q2 have the highest aggregate revenues.

Ranking and data order

You cannot rank on an object whose values depend on the data order. This is because the ranking changes the data order, which in turn changes the object data, which then requires Web Intelligence to recalculate the ranking. The result is a circular dependency between the ranking and the object that Web Intelligence cannot resolve.

If you create a rank on a measure whose values depend on the data order, for example a measure that that uses the `Previous` function or any of the running aggregate functions such as `RunningSum`, Web Intelligence displays the #RANK error message in all cells in the block.

Ranking workflows

There are two ways of ranking data in Web Intelligence. You can:

- create a ranking by using the Web Intelligence interface
- use the `Rank` function to return a ranking value

When you rank the data in a block by using the Web Intelligence interface, you tell Web Intelligence to sort and filter the data in the block according to the rank. For example, if you rank the top 3 countries in a block by revenue, Web Intelligence sorts the countries in descending order by revenue, then filters the block to remove all countries other than the 3 with the highest revenue.

Note:
When you create a ranking using the interface, Web Intelligence uses the `Rank` function behind the scenes to assign ranking values.

To create a ranking

1. Select the block that you want to rank.
2. Click **Rank**.

   The "Create Rank" dialog box appears
3. Click **Top** and select the number of records if you want to rank the highest records in the block.

4. Click **Bottom** and select the number of records if you want to rank the lowest records in the block .
5. Select the measure on which the ranking is based in the **Based on** list.
6. Click **Ranked By** and select the dimension on which the ranking is based if you want to rank by a particular dimension rather than by all dimensions in the block.
7. Select the rank calculation mode in the **Calculation mode** list.
8. Click **OK**.

Ranking examples

In the following examples, you have a dimension, Region, and a measure, Revenue, which give the following values:

Region	Revenue	% of Total Revenue
South East	1000000	7%
South West	2000000	13%
North East	3000000	20%
North West	4000000	24%
Central	5000000	33%

Example: Rank the top 3 regions by revenue generated

1000000

Parameter	Value
Top/Bottom	Top
n/n%	3

Parameter	Value
For Each	Region (or unspecified because region is the only dimension in the block and therefore the default ranking dimension)
Based on	Revenue
Calculation mode	Count

This ranking gives the following result:

Region	Revenue
Central	5000000
North West	4000000
North East	3000000

To calculate this ranking, Web Intelligence:

- sorts the records in descending order
- displays the top 3 records

Example: Rank the bottom 40% of regions by revenue

To perform this ranking you set the following parameters

Parameter	Value
Top/Bottom	Bottom
n/n%	40%
For Each	Region

Parameter	Value
Based on	Revenue
Calculation mode	Percentage

This ranking gives the following result:

Region	Revenue
South East	1000000
South West	2000000

To calculate this ranking, Web Intelligence:

- sorts the records in ascending order
- works through the records until 40% of the total number of records are displayed

---

Example: Rank the top regions whose cumulative revenue is less than or equal to 10,000,000

To perform this ranking you set the following parameters:

Parameter	Value
Top/Bottom	Top
n/n%	10000000
For Each	Region
Based on	Revenue
Calculation mode	Cumulative sum

This ranking gives the following result:

Region	Revenue
Central	5000000
North West	4000000

To calculate this ranking, Web Intelligence:

- sorts the records in descending order
- works through the records until it reaches the record that causes the the cumulative total of the measure to pass 10,000,000
- includes those records that do not cause the cumulative total to pass 10,000,000

Example: Rank the bottom regions whose cumulative revenue is less than or equal to 30% of the total revenue

To perform this ranking you set the following parameters:

Parameter	Value
Top/Bottom	Bottom
n/n%	30%
For Each	Region
Based on	Revenue
Calculation mode	Cumulative percentage

This ranking gives the following result:

Region	Revenue
South East	1000000

Region	Revenue
South West	2000000

To calculate this ranking, Web Intelligence:

- sorts the records in ascending order
- works through the records until it reaches the record that causes the cumulative total of the measure, expressed as a percentage of the overall total of the measure, to exceed 30%
- displays those records that do not cause the cumulative percentage to pass 30%

Using alerters to highlight results

chapter 24

Alerters defined

Alerters enable you to highlight results that meet or fail specific business targets. You can create a simple alerter to highlight particularly high or low results with a specific color or with a text comment, such as “High Performer".

An alerter can contain up to six conditions. This enables you to highlight information that meets multiple business criteria. For example, you can define an alerter that highlights high revenue for a specific business activity or customer sector.

You can apply alerters to table body cells (by column or row), to section cells, to header cells, and to free-standing cells. However, you cannot apply alerters to entire tables or forms, or to charts.

Business Objects officially supports up to 30 alerters in a Web Intelligence document. You can apply those alerters to a maximum of 20 table columns or rows, free-standing cells, or section cells on the reports.

Business Objects officially supports up to 10 different alerters on a single table column or row, free-standing cell, or section cell.

You can define alerters to activate the following formatting changes to the selected table columns/rows or cells:

- text color, size and style
- cell border colors and style
- cell background display – specific colors, images, or hyperlinks to web pages

You can also define alerters that display a text or formula, an image, or a hyperlink. In this case, the results that meet the condition defined in the alerter will be replaced by the text for formula.

If you define an alerter with multiple conditions, each condition generates the same formatting changes. To generate different formatting changes for different conditions, you must use sub-alerters.

Alerters are dynamic. This means that when you refresh reports with the latest data on the database, the alerters highlight the new results accordingly.

If you apply an alerter to a table row or column with a break, the alerter is only activated when the value that meets the condition in the alerter appears on the first row of that break.

Web Intelligence Interactive displays the formatting effects of alerters created using the Java Report Panel or Web Intelligence Rich Client. You cannot create new alerters in Web Intelligence Interactive.

Sub-alerters

An alerter can be made of multiple sub-alerters, each containing one or multiple conditions. Sub-alerters allow you to apply different conditions and different formatting to a single object.

You must use sub-alerters if you want different conditions to generate different formats. If you define an alerter with multiple conditions, the alerter format is applied to all of the conditions.

For example, in a single alerter defined for [Sales revenue], one sub-alerter can highlight high results in green and a second sub-alerter can highlight low results in red. You can include a maximum of eight sub-alerters in an alerter.

To add, edit, duplicate, prioritize or activate alerters

1. To display the "Alerters" dialog box, click **Alerters** on the Reporting toolbar (you can also select**Reporting** > **Alerters** in Web Intelligence Rich Client.)
2. To add an alerter, click **New** then build the alerter using the Alerter Editor.
3. To edit an alerter, select the alerter from the list, click **Edit** then use the Alerter Editor to edit the alerter.
4. To duplicate an alerter, select the alerter from the list then click **Duplicate**.
5. To remove an alerter, select the alerter from the list than click **Remove**.
6. To activate or deactivate an alerter, select the alerter from the list then check or uncheck the alerter.
7. To prioritize an alerter, select the alerter from the list then use the up or down arrow buttons to change the priority of the alerter in the list.

To build an alerter

1. Type the alerter name in the **Alerter name** box in the Alerter Editor.

2. Type the alerter description in the **Description** box.
3. Define the conditions that trigger the alerter as described in the following four steps.
4. Select the cell or object whose value triggers the alerter in the **Filtered object or cell** box.

   If the cell on which you want to create an alerter contains date or numeric type data (for example, a date or a calculation) you need to select an object or variable instead of **Cell contents**. This is because Web Intelligence considers any value you type into the **Value** text box as a character string.

   - To trigger the alerter using the data in whichever cell is currently selected, click **...**, then select **Cell contents** from the menu.
   - To trigger the alerter using the value of an object or variable, click **...**, select **Select Object or Variable** on the menu, then select the object or variable in the "Objects and Variables" dialog box.
5. Select the operator from the **Operator** list.
6. Enter the value that triggers the alerter in the **Value** box.
   - To enter a value directly, type it in the box.
   - To select a value from the list of values of the object you chose in the **Filtered object or cell box**, click **...** to the right of the **Value** box, click **Select Value** on the menu, then select the value in the "List of Values" dialog box.
   - To select another object or variable as the value, click ... to the right of the **Value** box, click **Select Object or Variable** on the menu, then select the object or variable in the "Objects and Variables" dialog box.
   - To clear the **Value** box, click **...** to the right of the box, the select **Empty** on the menu.
7. To add an additional condition that triggers the alerter, click **+** below the existing conditions, then then choose the filtered cell or object, operator and value as described above.
8. To remove a condition, click **-** next to the condition.
9. To trigger the alerter using a formula instead of conditions as described above, click **Formula**, then type the formula in the box that appears or click **Fx** to build the formula using the Formula Editor.
   - Do not include quote marks before or after the text. For example, if you want the alerter to display OVERDUE, then type: OVERDUE.

- The formula must return True or False. True triggers the alerter; False does not. For example, if the formula is `RowIndex()=3`, the alerter formatting appears on the fourth row of the table.

10. To add an additional condition or set of conditions to the alerter, click **Add Sub-Alerter**, then define the conditions or build a formula as described above.
11. To remove a sub-alerter, click **Remove Sub-Alerter**.
12. To set the format that appears when the alerter is triggered, click **Format** then use the **Alerter Display** dialog box to set the format.

To set the format of an alerter

1. Click **Format** in the Alerter Editor.

   The "Alerter Display" dialog box appears.
2. Type the alerter text or the formula that the alerter uses to generate its output in the **Display** box.

   You can also build a formula by clicking **Fx** and using the Formula Editor.
3. Define the text format (font, font style color and alignment) in the **Text** area.
4. Define the color and image of the alerter background in the **Background** area.
5. Define the alerter border in the **Border** area.
6. Click **OK** to return to the Alerter Editor.

Using formulas to create advanced alerters

You can build advanced alerters using the Web Intelligence formula language rather than using the **Filtered object or cell**, **Operator** and **Operand** choices offered by default.

You can create alerters that display text, formulas, or hyperlinks in the report cells, where results meet the condition(s) defined in the alerter.

This enables you to display messages in cells, such as “UNPAID,□? or to display formulas that change the results (for example, to display a text you specify and the result of the object in the same cell), or to include links to

other web pages that can be consulted easily whenever results meet the business condition(s) set in the alerter.

Example: Highlighting three ranges of quarterly sales revenue results calculated as percentages of the average sales revenue

In this example, you build three alerters to color-code sales revenues, depending on their relationship to the average sales revenue. The table includes results for three years, and this is the average to which you want to compare each sales revenue result calculated per quarter per product line.

Using the Formula option in the Alerter Editor, you build the following alerter, which contains three sub-alerters.

Each sub-alerter has a single condition. Web Intelligence combines the sub-alerters with the Or operator, as follows:

```
[Sales revenue] < ((Average([Sales revenue]) In Block)
 * 0.8)
```

Or

```
=[Sales revenue] < ((Average([Sales revenue]) In Block)
 * 1.2)
```

Or

```
=[Sales revenue] > ((Average([Sales revenue]) In Block)
 * 1.2)
```

The formula you specify for each sub-alerter is calculated as follows:

- The first sub-alerter will be activated on sales revenue results that are < 0.8 (this means, less than 80%) of the average.
- The second sub-alerter will be activated on sales revenue results that are < 1.2 (this means, less than 120%) of the average.
- The third sub-alerter will be activated on sales revenue results that are > 1.2 (this means, greater than 120%) of the average.

You then use the formula pane in the Alerter Display dialog box, to specify the conditional formatting you want displayed on the report cells. Here, you specify an appropriate text string and format you want displayed, when the results in a table cell meet the condition for one of the sub-alerters. You specify the following:

- Report cells containing sales revenue results that are less than 80% of the average revenue display the character string in red.
- Report cells containing sales revenue results that are less then 20% above the average revenue display in blue. Note that this alerter covers values also covered by the first alerter. For example, if the average is 100, then 79 is both > 80% below the average and < 20% above the average. In this case, the first alerter takes precedence.
- Report cells containing sales revenue results that are greater than 20% above the average revenue display in green.

This formatting enables you to see at a glance which product lines are generating above or below the total average sales revenue.

Tracking changes in data

chapter 25

Tracking changes in your data

To make informed and effective business intelligence decisions, you need to understand how the data on which you base those decisions changes over time. Web Intelligence allows you to track and display data changes to help you focus your analysis on key areas and avoid wasting time exploring irrelevant data.

When you track data changes, you select a particular data refresh as a reference point. This data is known as the reference data. When you display the data changes, Web Intelligence places your current data in context by showing how it relates to the reference data.

Here are some examples of the usefulness of data tracking:

- If an outlet no longer appears in a list of the top outlets by sales, Web Intelligence displays the outlet as deleted from the list. You can use this information to investigate why the outlet is no longer a top performer.
- If sales have decreased in a region, data tracking displays the decrease. You can then drill down into the data for the region to understand why revenue is falling.

  In both these cases, data tracking makes the current data more meaningful by placing it in context with old data. Without this context it is much more difficult to identify trends.

Types of data change

Web Intelligence allows you to track the following types of data change:

- added data
- removed data
- modified data
- increased data
- decreased data

You configure the display of these changes through the Web Intelligence interface or the Web Intelligence formula language. The formula language provides advanced users with additional power and flexibility in displaying and formatting changed data.

Data tracking modes

Automatic data tracking mode

In automatic data tracking mode, Web Intelligence always compares the current data with the data before the last refresh. To do this, Web Intelligence sets the current data as the reference data just before each refresh. The reference data is always one refresh behind the current data.

Automatic data tracking is appropriate for scheduled documents when you want to compare the current data with the data before the last refresh.

Manual data tracking mode

In manual data tracking mode, you select the reference data. Web Intelligence continues to use this data as a reference point until you update the reference point.

To activate data tracking

1. Click **Track** on the main toolbar to display the "Activate Data Tracking" dialog box.
2. Select options in the dialog box.

Option	Description
Auto-update the reference data with each data refresh	The current data becomes the reference data after each data refresh. The report always shows the difference between the most recent data and the data before the last refresh.
Use the current data as reference data	The current data becomes the fixed reference data and remains the reference data after further data refreshes. The report always shows the difference between the most recent data and this fixed reference data.

3. Click "Refresh Now" to refresh the data when the dialog box closes.

4. Click **OK**

To change the reference data

1. Click **Data Tracking Options** on the main toolbar, or click the **Auto-update/Fixed Data** hyperlink in the status bar to display the "Data Tracking Options" dialog box.
2. Select the **Reference Data** tab.
3. Select options.

Option	Description
Auto-update the reference data with each data refresh	The current data becomes the reference data after each data refresh. The report always shows the difference between the most recent data and the data before the last refresh.
Use fixed reference data from	The data you select becomes the fixed reference data and remains the reference data after further data refreshes. The report always shows the difference between the most recent data and this fixed reference data.

Displaying changed data

To display or hide changed data

- Click **Hide Changes/Show Changes** (the button tooltip text varies depending on whether changed data is currently visible) to the right of **Track** on the main menu.

Configuring the appearance of changed data

You can configure the appearance (font style, size and color) of changed data in your document. You can seperately configure the appearance of the following changes:

- Inserted, deleted and changed dimension and detail values

- Increased or decreased measure values

Measure values can also adopt the formatting of inserted or deleted dimension values. For example, if a dimension value disappears from a list of values in a block, and the block also shows a measure value for the dimension, both the dimension and measure values appear as deleted data.

Your Business Objects administrator defines the default appearance of changed data in the Central Management Server. When you configure the appearance of changed data in Web Intelligence, you override the CMS defaults.

To configure the appearance of changed data

1. Click **Data Tracking Options** on the main toolbar to display the "Data Tracking Options" dialog box.
2. Select the **Format** tab.
3. Select each type of changed data you wish to display and click "Format" to specify how you want the changes to appear.

How changed data is displayed in blocks

Example: Changed data in a simple block

This example uses a document with a block showing [Country], [Year] and [Revenue]. The original data was as follows:

Country	Year	Revenue
France	2003	1000
France	2004	2000
Japan	2002	1000
Poland	2002	1200

After a refresh, the data is as follows:

Country	Year	Revenue
France	2004	3000
Japan	2003	900
Poland	2002	800
UK	2004	900

When data tracking is activated and data changes displayed, the block appears as follows:

Country	Year	Revenue	Formatting
France	2003	1000	[deleted data formatting on all cells]
France	2004	3000	[increased data formatting on Revenue cell]
Japan	2002	1000	[deleted data formatting on all cells]
Japan	2003	900	[inserted data formatting on all cells]
Poland	2002	800	[decreased data formatting on Revenue cell]
UK	2004	900	[inserted data formatting on all cells]

- The rows showing revenue for France in 2003 and Japan in 2002 represent data that no longers exist after the refresh.
- The revenue for France in 2004 has increased.
- The revenue for Poland in 2002 has decreased.

- The rows showing revenue for Japan in 2003 and the UK in 2004 appeared after the refresh.

How changed data is displayed in reports with merged dimensions

Web Intelligence displays a dimension as changed only if all the dimensions that participate in the merge are changed.

Example: Changed data and merged dimensions

In this example, Country is a merged dimension containing the Country dimensions from two data providers. Before data refresh, the data is as follows:

Country (DP1)	Revenue (DP1)	Country (DP2)	Sales (DP2)
US	10000	US	5000
France	4000		
UK	5000	UK	3000
Germany	1000	Germany	1000

After a data refresh, the data becomes:

Country (DP1)	Revenue (DP1)	Country (DP2)	Sales (DP2)
US	10000	US	4000
France	4000	France	3000
UK	6000	UK	4000
Poland	2000		

When displayed in a block with the merged Country dimension and data changes displayed, the data appears as follows:

Country	Revenue	Sales	Formatting
US	10000	4000	[decreased data formatting on Sales cell]
France	4000	3000	[inserted data formatting on Revenue cell]
UK	6000	4000	[increased data formatting on Revenue and Sales cells]
Germany	1000	1000	[deleted data formatting on all cells]
Poland	2000		[inserted data formatting on Country and Revenue cells]

In the France row, France does not appear as inserted because a France row was not inserted in both data providers. Revenue appears as inserted because it is a new measure value after the data refresh.

In the Poland row, Poland appears as inserted because it is a new dimension value after the data refresh.

How changed data is displayed in sections

Example: Changed data in a report with sections

In this example you have a document with a block showing [Country], [Year] and [Revenue]. The original data was as follows:

Country	Year	Revenue
France	2003	1000
France	2004	2000
Japan	2002	1000
Poland	2002	1200
US	2003	
US	2004	

After a refresh, the data is as follows:

Country	Year	Revenue
France	2004	3000
Japan	2003	900
Poland	2002	800
UK	2004	900

If you create a section on [Country] and display data changes, the report appears as follows:

France [no formatting]

Year	Revenue	Formatting
2003	1000	[deleted data formatting on all cells]

Year	Revenue	Formatting
2004	3000	[increased data formatting on Revenue cell]

Japan [no formatting]

Year	Revenue	Formatting
2002	1000	[deleted data formatting on all cells]
2003	900	[inserted data formatting on all cells]

Poland [no formatting]

Year	Revenue	Formatting
2002	800	[decreased data format-ting on Revenue cell]

UK [inserted data formatting]

Year	Revenue	Formatting
2004	900	[inserted data formatting on all cells]

Web Intelligence displays the data in the section header in either of two ways, depending on the changes in the data in the section:

- If all the rows in the block in the section have changed in the same way, the section header is displayed with the same formatting as the rows.

- If the rows have changed in different ways, or only some rows have changed, the section header retains its default format.

How changed data is displayed in blocks with breaks

When a block contains a break and the **Center value across break** block property is set, Web Intelligence displays the centered value according rules similar to those for section headers.

- If all the rows in the break have changed in the same way, the centered value is displayed with the same formatting as the rows.
- If the rows have changed in different ways, or only some rows have changed, the centered value retains the default formatting.

How changed data is displayed in charts

When the data in a chart has changed, Web Intelligence displays a changed data icon above the chart. When you click the icon, Web Intelligence changes the chart to a table to allow you to see the details of the changes.

Data tracking limitations

If the data provider behind a document is changed, or if the document data is cleared, Web Intelligence no longer displays changed data. If the data provider is changed, the current version of the document is no longer compatible with the reference version. If the data is cleared, the old data no longer exists for comparison.

As a result, the following actions are incompatible with data tracking:

- Drill out of scope
- Query drill
- Deleting a query
- Any modification (including modifications to security rights) that changes the SQL generated by a data provider
- Purging the document

When you perform any of these actions, Web Intelligence clears the data history of the document. It does so because these actions are incompatible

with the display of changed data. For example, if you modify a query, the data in the document changes because of the modification. Any comparison between this data and old data generated from a different query is misleading.

Data tracking and drill

When you use query drill or drill out of scope, Web Intelligence clears the data history because these actions change the data provider. This should not affect you because, when you start to drill, you have already identified the data that requires further analysis. Data tracking has served its purpose and you can now continue with your data analysis.

Data tracking and Refresh on Open

When a document is set to refresh its data on opening (when the Refresh on open document property is selected), data tracking does not display the difference between the data prior to the refresh and the data after the refresh. Web Intelligence treats the data after the refresh as new data because the refresh purges the document.

Using the Web Intelligence formula language to track changed data

When you use the Web Intelligence interface to configure the display of changed data, Web Intelligence builds special behind-the-scenes alerters to display the changes. These special alerters do not appear in the list of standard alerters.

The Web Intelligence formula language allows you to build your own custom alerters for formatting data changes. You can also use the formula language to include special calculations based on data changes. For example, you can include a calculation to show the difference between the previous value and the current value of a measure.

The RefValue function

The Web Intelligence formula language provides access to changed data throught the `RefValue` function. This function gives the value of the reference data for a measure. If there is no reference data, the function returns null.

For example, if the [Revenue] measure currently has the value 1000, and its reference value is 900, the formula `RefValue([Revenue])` returns 900.

The RefValueDate function

The `RefValueDate` function returns the date of the reference data used for data tracking.

Building formulas using the RefValue function

You can use the RefValue function to build formulas that give information about the current data in relation to the reference data.

Example: Finding the difference between the reference value and the current value

The following formula returns the difference between the reference value and the current value of the [Revenue] measure:

```
=If(Not(IsNull([Revenue])) Or Not (IsNull(RefValue([Rev
enue]))); [Revenue]-RefValue([Revenue]))
```

The following table shows data before a data refresh:

Customer	Revenue
Johnson	2000
Smith	3000

Customer	Revenue
Wilson	3500

After refresh, the data changes as follows:

Customer	Revenue
Johnson	3000
Smith	2500

Placed in a third column, the formula returns the following figures:

Customer	Revenue	Difference
Johnson	3000	1000
Smith	2500	-500
Wilson	3500	

Changed data and the calculation context

When data tracking is activated, Web Intelligence displays data as changed only when the calculation context remains the same.

For example, if a measure value changes because you change the calculation context of a block, the new value is not flagged as changed.

Example: Changing the calculation context

In this example you have a block showing [City], [Customer] and [Revenue] as follows:

City	Customer	Revenue
San Francisco	Smith	1000
San Francisco	Jones	2000
Los Angeles	Wilson	3000
Los Angeles	Harris	4000

If you remove [Customer] from the block, Web Intelligence aggregates revenue by city:

City	Customer
San Francisco	3000
Los Angeles	7000

Web Intelligence does not display the revenues as increased because the amount of revenue has not changed. Only the calculation context has changed - revenues are now aggregated by city only, giving higher figures.

If, after a data refresh, Jones' revenue falls to 1000 and Wilson's revenue rises to 4000, the data appears as follows:

City	Customer
San Francisco	2000
Los Angeles	8000

Web Intelligence now displays the data as changed because, independently of the change of calculation context, the total revenue for San Francisco has decreased and the total revenue for Los Angeles has increased.

Linking to other documents

chapter 26

Linking to other documents

Cells in Web Intelligence documents can be defined as hyperlinks. Web Intelligence hyperlinks are similar to the hyperlinks found on the World Wide Web that allow you to open a different web page from the page you are currently viewing.

When you click a cell that contains a hyperlink, Web Intelligence opens the target document specified in the link. The target document can be a Web Intelligence document, a Crystal Reports document, a site on the world wide web, or any resource accessible through a hyperlink.

Hyperlinks can be either static or dynamic. A static hyperlink always links to the same document in the same way. A dynamic hyperlink can link differently depending on the data in the document containing the hyperlink.

You can create different types of hyperlink:

- A cell where the cell text is the hyperlink text.
- A cell with an associated hyperlink.
- A link to another document in the CMS.

Cell text defined as a hyperlink

When you define the text in a cell as a hyperlink, the cell text itself becomes the hyperlink text. For example, if you define a free-standing cell containing the text `http://www.businessobjects.com` as a hyperlink, clicking on the cell takes you to the Business Objects web page.

This method is best suited for static hyperlinks, where the text in the cell always remains the same and links to the same resource in the same way.

Note:
It is possible to make this type of hyperlink dynamic by using the Web Intelligence formula language to change the cell text based on report data.

To define cell text as a hyperlink

1. Type the hyperlink text in the cell.

2. If you are using Web Intelligence Interactive, right-click the cell and select **Hyperlink** > **Read content as hyperlink** from the menu.

   Note:
   You can also right-click the cell and select **Format** > **Cell** from the menu to display the "Format Cells" dialog box, then select **Read content as** and select **Hyperlink** from the list.

3. If you are using the Java Report Panel, click the cell then set the **Display** > **Read cell content as** cell property to **Hyperlink**.

A hyperlink associated with a cell

When you associate a hyperlink with a cell, you define a hyperlink that Web Intelligence uses to link to the source document when the cell is clicked. The cell text itself is not the hyperlink.

This is the recommended method for creating dynamic hyperlinks, for the following reasons:

- It is specially tailored for working with the parameters in dynamic hyperlinks.
- It shields you from the complexity of hyperlink syntax - you define your hyperlink using a graphical interface and Web Intelligence generates and manages the hyperlink behind the scenes.
- It allows you to define hyperlink text that is different from the cell text.

To add a hyperlink to a cell

1. Right-click the cell and select **Hyperlink** > **New** to display the "Create Hyperlink" dialog box.
2. Select **Link to web page** on the left of the dialog box. (Web Intelligence Interactive only.)
3. Type or paste the hyperlink text into the box.
4. Click **Parse** to extract the hyperlink parameters into the **Customize URL parameters** area (which is not visible until you click **Parse**).

Dynamic hyperlinks contain parameters whose values can change. Parameters appear as `name=value` parts at the end of the hyperlink after the question mark. For example, the URL

```
http://salesandproductreport/default.asp?report
name=products
```

contains one parameter, `reportname`, whose value is “products?.

After you click **Parse**, each parameter appears on a separate line with the parameter name on the left and the parameter value on the right. The static part of the hyperlink (the part without the parameters) appears in the **Main** section.

5. To tell Web Intelligence to supply data from formulas or variables as parameter values, click the arrow next to each parameter value and select an option.

Option	Description
Build formula	You build a formula in the Formula Editor to supply the formula output as the parameter value.
Select object	You choose the object from the list in the "Select Object" dialog box to supply its value as the parameter value.

Note:
When you modify a parameter, Web Intelligence modifies the full hyperlink syntax in the box at the top of the screen.

6. To add or remove a parameter, modify the hyperlink syntax, then click **Parse**.

Note:
You cannot add or remove parameters directly in the parameter list in the **Customize URL parameters** area. You must modify the URL syntax directly.

7. Click the arrow next to **Cell content** to change the text displayed in the hyperlink cell and choose one of the options.

Option	Description
Build formula	You build a formula in the Formula Editor to supply the formula output as the cell content.
Select object	You choose the object from the list in the "Select Object" dialog box to supply its value as the cell content.

8. Type the tooltip text in the **Tooltip** box or build a dynamic tooltip by using the **Build formula** or **Select variable** options.

Option	Description
Build formula	You build a formula in the Formula Editor to supply the formula output as the tooltip.
Select object	You choose the object from the list in the "Select Object" dialog box to supply its value as the tooltip.

The tooltip appears when you hover your mouse pointer over the cell containing the hyperlink.

9. Click the arrow next to **Target window** to define how the target URL appears.

Option	Description
Current window	The target URL replaces the Web Intelligence document containing the hyperlink in the current window.
New window	The target URL opens in a new browser window.

A link to another document in the CMS

You link to another document in the CMS using the "Create Hyperlink" dialog box (Web Intelligence Interactive only). When you create the link, Web Intelligence builds a formula using the `OpenDocument` function based on the choices you make in the dialog box.

Note:
You can work with the `OpenDocument` function directly by typing the syntax into a cell.

To link to another document in the CMS

1. Right-click the cell where you want to create the link and select **Hyperlink** > **New** from the menu to display the "Create Hyperlink" dialog box.
2. Select **Link to a document** on the left of the dialog box.
3. Click **Browse** and select the target document in the **Choose Document** dialog box, or type the document ID in the **Document ID** box.
4. Click **Refresh on open** if you want Web Intelligence to refresh the data of the target document when the hyperlink is selected.
5. Click **Link to document instance**, then select an option from the drop down-list , to link to an instance of the selected document.

Option	Description
Most recent	The hyperlink opens the most recent instance. **Note:** You cannot specify parameter values in the hyperlink when you choose this option.
Most recent - current user	The hyperlink opens the most recent instance owned by the current user. **Note:** You cannot specify parameter values in the hyperlink when you choose this option.
Most recent - matching prompt values	The hyperlink opens the most recent instance whose prompt values correspond to the values passed by the hyperlink. This option is useful when you want to link to a large document that contains prompts.

6. Click **Report name** and select the name of the report to link to a specific report.

7. Click **Report part**, then click **Select** and right-click the report part (for example a table), to link to a specific part of a report.
8. If you selected **Report part**, select **Display report part only** open the report part only in the target document, or **Position at report part (full document available)** to focus on the report part but display the whole report in the target document.
9. For each prompt in the **Document prompts** section, select one of the following options from the drop-down list:

Option	Description
Build formula	You use the Formula Editor to build a formula to pass a value to the prompt.
Select object	You select an object whose value is passed to the prompt.
Prompt user at runtime	The user specifies a value for the prompt when they click the hyperlink.
Use document default	You configure the hyperlink to not pass a parameter to the target document, and the target document opens with the default value for the prompt. The default value is either the last value specified for the prompt, or the default specified in the document.

10. Choose **Build Formula** or **Select Variable** from the **Cell content** list to specify the content of the hyperlink cell.

Option	Description
Build Formula	You build a formula in the Formula Editor to supply the formula output as the cell content.
Select Variable	You choose a variable from the list in the "Select an Object" dialog box to supply its value as the cell content.

11. Type the tooltip text in the **Tooltip** box or build a dynamic tooltip by using the **Build formula** or **Select object** options.

Option	Description
Build formula	You build a formula in the Formula Editor to supply the formula output as the tooltip.
Select object	You choose the variable from the list in the "Select an Object" dialog box to supply its value as the tooltip.

The tooltip appears when you hover your mouse pointer over the cell containing the hyperlink.

12. Select **New window** or **Current window** from the **Target window** list to determine how the target document opens.

Option	Description
New window	The document opens in a new browser window.
Target window	The document opens in the current browser window and replaces the document containing the hyperlink.

Document instances and values passed to prompts

Hyperlinks supply values to prompts in the target document in two ways: by passing values directly to prompts, or by opening a document instance based on passed values.

In the first case, the hyperlink feeds values directly to the prompts in the target document. In the second case, Web Intelligence opens the document instance whose stored prompt values correspond to the values passed by the hyperlink.

It is more efficient to choose a document instance based on passed parameters if the target document is large.

Certain combinations of instance and parameter settings are incompatible or mutually dependent, as described in the following table:

Instance setting	Impact on parameter setting
Most recent	The hyperlink does not pass parameter values. All parameters are set to **Use document default** and cannot be modified.
Most recent - current user	The hyperlink does not pass parameter values. All parameters are set to **Use document default** and cannot be modified.
Most recent - matching prompt values	You must specify at least one parameter value. Without at least one specified value, the hyperlink returns an error when clicked. The error occurs because the hyperlink is designed to retrieve an instance based on parameter values, but no value is provided for comparison against the instance.

Related Topics

- *Linking to large documents*

Linking to large documents

When the target document contains a large amount of data, it is more efficient to link to an instance than to open and retrieve the document with a passed parameter value. You can schedule and pre-retreive multiple instances with different parameter values. This allows the document to be scheduled and pre-retrieved in advance with different parameter values.

When you click the hyperlink, Web Intelligence opens the appropriate pre-retrieved instance rather than using the passed value to open the document and retrieve the data.

Example: Linking to a large sales report

In this example you link to a large sales report that retrieves sales by region. The report has a parameter that allows the user to select the region. There are four regions - North, South, East, and West.

Your source document has a [Region] dimension. You do the following:

- Configure the hyperlink to pass the value of [Region] as a parameter
- Create four instances of the sales report, one for each value of [Region]
- Schedule these instances for pre-retrieval
- Configure the hyperlink to open the latest instance whose parameter value matches the value passed by the hyperlink

Assuming that the document has a [Region] dimension, the settings are as follows:

Link to document instance setting	Latest value match
Most recent - matching prompt values	[Region]

Working with hyperlinks

To link to another document from a hyperlink

To link to another document from a hyperlink, the hyperlink must first have been created.

1. Hover your mouse pointer over the cell to display the tooltip if a tooltip is defined.

   Note:
   If you used the **Hyperlink** dialog box to define the link and the Formula Bar is displayed, the hyperlink syntax generated by Web Intelligence

appears in the Formula Bar. Do not modify this syntax directly - use the **Hyperlink** dialog box if you need to update it.

2. Click the hyperlink to open the target document.

   Depending on how the hyperlink is configured the target document opens in a new browser window, or it replaces the current document in the current browser window.

To edit a hyperlink

1. Right-click the cell containing the hyperlink and select **Hyperlink** > **Edit** from the menu to display the "Hyperlink" dialog box.
2. Edit the hyperlink using the "Hyperlink" dialog box.

To delete a hyperlink

- Right-click the cell containing the hyperlink and select **Hyperlink** > **Delete** from the menu.

Formatting hyperlink colors

You can define the colors that Web Intelligence uses to display hyperlinks that have already been clicked (visited hyperlinks) and hyperlinks that have not been clicked (unvisited hyperlinks).

To set hyperlink colors

1. Right-click a blank area on the report that contains hyperlinks and select **Format Report** on the menu.
2. Click the **General** tab.
3. In the **Hyperlink color** section, click the arrows next to **Visited** and **Unvisited**, then either select a predefined color or click **More colors** to define a custom color.
4. Click **OK**.

   Web Intelligence applies the color settings you selected to the hyperlinks in the report.

URL reporting using openDocument

URL reporting using openDocument provides URL access to multiple document types by passing a URL string to a BusinessObjects Enterprise server. openDocument provides commands to control how reports are generated and displayed.

You can use openDocument in BusinessObjects Enterprise to create cross-system links to and from the following document types:

- .wid: Web Intelligence documents
- .rep: Desktop Intelligence documents
- .rpt: Crystal reports
- .car: OLAP Intelligence reports

Structuring an openDocument URL

The next sections explain how to use the openDocument function, and how to construct the URL.

An openDocument URL is generally structured as follows:

```
http://<servername>:<port>/OpenDocument/opendoc/<platform
Specific>?<parameter1>&<parameter2>&...&<parameterN>
```

The exact syntax of the `<platformSpecific>` parameter depends on your implementation:

- For Java implementations, use `openDocument.jsp` in place of the `<platformSpecific>` parameter.
- For .NET implementations, use `opendocument.aspx` in place of the `<platformSpecific>` parameter.

The URL is constructed using the parameters listed in *openDocument parameter overview*

Joining parameters

Join parameters with the ampersand (&). Do not place spaces around the ampersand. For example: `sType=wid&sDocName=Sales2003`

The ampersand is always required between parameters.

Spaces and special characters in parameter values

Because some browsers cannot interpret spaces, the parameters of the link cannot contain spaces or other special characters that require URL encoding. To avoid the misinterpretation of special characters, you can define a URLEncoded string in the source database to replace the special character with an escape sequence. This will allow the database to ignore the special character and correctly interpret the parameter value. Note that certain RDBMS have functions that allow you to replace one special character with another.

By creating an escape sequence for the plus sign (+), you can instruct the database to interpret the plus sign as a space. In this case, a document title Sales Report for 2003 would be specified in the DocName parameter as: `&sDocName=Sales+Report+for+2003&`

This syntax prevents the database from misinterpreting the spaces in the title.

Trailing spaces in parameter values

Trim trailing spaces at the end of parameter values and prompt names. Do not replace them with a plus sign (+). The viewer may not know whether to interpret the plus sign (+) as part of the prompt name or as a space. For example, if the prompt name displays:

```
Select a City:_
```

(where _ represents a space), enter the following text in the link:

```
lsSSelect+a+City:=Paris
```

where the spaces within the prompt name are replaced with the plus sign, and the trailing space is trimmed off.

For details on prompt parameters of the link, refer to *openDocument parameter overview* .

Capitalization

All of the openDocument parameters are case sensitive.

Link length limit

The encoded URL cannot exceed 2083 total characters.

Parameter values in links to sub-reports

You cannot pass parameter values to a sub-report of a target Crystal report.

Using the IsS parameter with OLAP Intelligence reports

If the target document is an OLAP Intelligence report (.car) you can use the IsS parameter to specify prompts. The parameters are passed in as a URL-encoded string using the unique name of the parameter set up in the OLAP Intelligence report.

Example: Opening a report to a specific page

If `23CAA3C1-8DBB-4CF3-BA%2CB8%2CD7%2CF0%2C68%2CEF%2C9C%2C6F` is the URL-encoded unique name for the page parameter in the OLAP Intelligence report, you would use the following URL to open the OLAP Intelligence report to page 2:

```
http://<servername>:<port>/OpenDocument/<platformSpecif
ic>?sType=car&sIDType=InfoObject&iDocID=440&lsS23CAA3C1-
8DBB-4CF3-BA%2CB8%2CD7%2CF0%2C68%2CEF%2C9C%2C6F=2
```

Example: Opening a cube parameter

If `8401682C-9B1D-4850-8B%2C5E%2CD9%2C1F%2C20%2CF8%2C1%2C62` is the URL-encoded unique name for the cube parameter opening the warehouse cube in the catalogue FoodMart 2000 on MSAS, you would use the following URL to open this cube parameter:

```
http://<servername>:<port>/OpenDocument/<platformSpecif
ic>?sType=car&sIDType=InfoObject&lsS8401682C-9B1D-4850-
```

```
8B%2C5E%2CD9%2C1F%2C20%2CF8%2C1%2C62=CATALOG%3DFood
Mart%202000,CUBE%3Dwarehouse&iDocID=616
```

Using the IsM parameter with OLAP Intelligence reports

If the target document is an OLAP Intelligence report (.car) you can use the IsM parameter to specify prompts. The parameters are passed in as a URL-encoded string using the unique name of the parameter set up in the OLAP Intelligence report.

As was the case for the IsS parameter, IsM parameters are also passed in as a URL-encoded string using the unique name of the parameter set up in the OLAP Intelligence report.

Example: Opening a report

```
http://<servername>:<port>/OpenDocument/<platformSpecif
ic>?sType=car&sIDType=InfoObject&lsMADC216EA-D9A5-42B5-
AE%2C21%2C84%2CA9%2CF9%2C6E%2C31%2C7=[%5BCus
tomers%5D.%5BCountry%5D.%26%5BMexico%5D],[%5BCus
tomers%5D.%5BCountry%5D.%26%5BCanada%5D]&iDocID=544
```

This is a memberset parameter opening up a report with Customers > Country > Mexico and Customers > Country > Canada in the view.

openDocument parameter overview

This section provides a brief overview of openDocument and includes a list of available parameters. Details about the available parameters, their specific uses, and relevant examples are also provided.

Note:
The document containing the openDocument link is called the parent document, and it resides on the parent system. The document to which the link points is called the target document, and it resides on the target system.

Table 26-3: Platform Parameters

Parameter	Description
iDocID	Document identifier.
sDocName	Document name.
sIDType	Crystal object type.
sKind	The file type of target Desktop Intelligence document.
sPath	The name of the folder and subfolder containing the target document.
sType	The file type of target document or report.
token	A valid logon token for the current CMS session.

Table 26-4: Input Parameters

Parameter	Description
lsC	Specifies a contextual prompt if there is an ambiguity during SQL generation (Business Objects and Web Intelligence documents only).

Parameter	Description
lsM[NAME]	Specifies multiple values for a prompt, `[NAME]` is the text of the prompt
lsR[NAME]	Specifies a range of values for a prompt, `[NAME]` is the text of the prompt.
lsS[NAME]	Specifies a value for a single prompt. `[NAME]` is the text of the prompt.
sInstance	Indicates which specific instance of the target report to open.
sPartContext	In Crystal Reports, a report part is associated to a data context.
sRefresh	Indicates whether a refresh should be forced when the target document or report is opened.
sReportMode	For Crystal targets only, indicates whether the link should open the full target report or just the report part specified in `sReportPart`.
sReportName	Indicates which report to open if target document is multi-report.
sReportPart	Indicates which specific part of the target report to open.

Table 26-5: Output Parameters

Parameter	Description
NAII	Forces the display of the prompt selection page.
sOutputFormat	Indicates the format in which the target document is opened.
sViewer	Indicates the selected report viewer (CR & CA only).
sWindow	Indicates whether the target report will open in the current browser window or whether a new window will be launched.

openDocument platform parameters

This section details the openDocument platform parameters that are available and gives examples on how to use the commands.

An openDocument URL is generally structured as follows:

```
http://<servername>:<port>/OpenDocument/opendoc/<platform
Specific>?<parameter1>&<parameter2>&...&<parameterN>
```

The exact syntax of the `<platformSpecific>` parameter depends on your implementation:

- For Java implementations, use `openDocument.jsp` in place of the `<platformSpecific>` parameter.
- For .NET implementations, use `opendocument.aspx` in place of the `<platformSpecific>` parameter.

Note:
Variables are denoted with angle brackets. You must substitute the proper value for these variables. For example, you must use the name of your server in place of `<servername>` where it is contained in the code samples below, and you must use your port number in place of `<port>`.

iDocID

Syntax	Description	Mandatory?	Values
`iDocID`	Document identifier.	Yes*	Document identifier (InfoObjectID).

Note:
*One of `sDocName` or `iDocID` is mandatory.

Example:

```
http://<servername>:<port>/OpenDocument/opendoc/<plat
formSpecific>?sType=wid&sDocName=SalesReport&iDocID=2010
```

Note:
To obtain the document ID, navigate to the document within the Central Management Console (CMC). The properties page for the document contains the document ID and the CUID. Use this value for the `iDocID` parameter.

sDocName

Syntax	Description	Mandatory?	Values
`sDocName`	Document name without extension If multiple documents have the same name, specify the correct document with `iDocID`.	Yes*	Document name.

Note:
*One of `sDocName` or `iDocID` is mandatory.

Example:

```
http://<servername>:<port>/OpenDocument/opendoc/<platformSpecific>?sPath=[Sales+Reports]&sDocName=Sales+in+200
```

sIDType

Syntax	Description	Mandatory?	Values
`sIDType`	Central Management Server (CMS) object identifier type.	Yes*	• `CUID` • `GUID` • `RUID` • `ParentID` • `InfoObjectID` (default)

Note:
*Only mandatory if the target is a Crystal report or OLAP Intelligence report (`sType=rpt` or `sType=car`) in an Object Package. Otherwise, use `sPath` and `sDocName`.

Example:

```
http://<servername>:<port>/OpenDocument/opendoc/<plat
formSpecific>?iDocID=2010&sIDType=CUID
```

sKind

Syntax	Description	Mandatory?	Values
`sKind`	The file type of target Desktop Intelligence document.	Yes*	• `FullClient`

Note:
*Only mandatory if the target is a Desktop Intelligence document. Otherwise, use `sType`.

Example:

```
http://<servername>:<port>/OpenDocument/opendoc/<plat
formSpecific>?sKind=FullClient
```

sPath

Syntax	Description	Mandatory?	Values
`sPath`	The name of the folder and subfolder containing the target document.	Yes*	Folder and/or subfolder: `[folder],[subfolder]`

Note:
*Only mandatory if a value is specified for `sDocName` and is not unique.

`sPath` is used only with subfolders of the `Public Folders` folder. If your document is outside of the `Public Folders` folder, for example in the `My Favorites` folder, use the `iDocID` parameter instead of `sPath` and `sDocName`.

Do not add `[Public+Folders]` to the path; start with the name of the first subfolder within `Public Folders`.

```
Public Folders
    folder 1
      folder 1.1
         folder 1.1.1
```

If your document were in folder 1.1.1, you would set `sPath` to: `[folder+1],[folder+1.1],[folder+1.1.1]`.

Example:

```
http://<servername>:<port>/OpenDocument/opendoc/<platformSpecific>?sPath=[Sales+Reports]&sDocName=Sales+in+2005
```

sType

Syntax	Description	Mandatory?	Values
`sType`	The file type of target document or report.	Yes	• `wid` • `rpt` • `car`

Note:
This parameter is ignored for agnostic documents.

Example:

```
http://<servername>:<port>/OpenDocument/opendoc/<plat
formSpecific>?sType=wid
```

token

Syntax	Description	Mandatory?	Values
`token`	A valid logon token for the current CMS session.	No	The logon token for the current CMS session.

Example:

```
http://<servername>:<port>/OpenDocument/opendoc/<plat
formSpecific>?sType=wid&sDocName=Sales+in+2003&token=<lo
gonToken>
```

openDocument input parameters

This section details the openDocument input parameters that are available and gives examples on how to use the commands.

An openDocument URL is generally structured as follows:

```
http://<servername>:<port>/OpenDocument/opendoc/<platform
Specific>?<parameter1>&<parameter2>&...&<parameterN>
```

The exact syntax of the `<platformSpecific>` parameter depends on your implementation:

- For Java implementations, use `openDocument.jsp` in place of the `<platformSpecific>` parameter.
- For .NET implementations, use `opendocument.aspx` in place of the `<platformSpecific>` parameter.

Note:
Variables are denoted with angle brackets. You must substitute the proper value for these variables. For example, you must use the name of your server in place of `<servername>` where it is contained in the code samples below, and you must use your port number in place of `<port>`.

lsC

Syntax	Description	Mandatory?	Values
`lsC`	Specifies a contextual prompt if there is an ambiguity during SQL generation (Business Objects and Web Intelligence documents only). **Note:** Not supported by OLAP Intelligence	No	A prompt value that resolves the ambiguity in the SQL generation.

Example:

```
http://<servername>:<port>/OpenDocument/opendoc/<plat
formSpecific>?sType=wid&sDocName=SalesReport&iDo
cID=2010&lsC=Sales
```

lsM[NAME]

Syntax	Description	Mandatory?	Values
`lsM[NAME]`	Specifies multiple values for a prompt. `[NAME]` is the text of the prompt.	No	• Multiple prompt values, separated by a comma. If the target is a Crystal report, each value must be enclosed in square brackets. If the target is a OLAP Intelligence report, use the MDX WITH clause. • `no_value` (only for optional parameters)

Note:

- You can remove an optional parameter from the prompt by setting it to `no_value` in the openDocument query string. If you leave an optional parameter out of the openDocument query string, a default parameter value will be applied.
- The character `?` is a reserved prompt value for Web Intelligence documents in an openDocument URL. Setting the prompt value to `lsM[NAME]=?` in the URL forces the "Prompts" dialog box to appear for that particular prompt.
- For information on using this parameter with OLAP reports, see *Using the lsM parameter with OLAP Intelligence reports* .

Example:

```
http://<servername>:<port>/OpenDocument/opendoc/<plat
formSpecific>?sType=rpt&sDocName=SalesReport&lsMSe
lect+Cities=[Paris],[London]
```

lsR[NAME]

Syntax	Description	Mandatory?	Values
`lsR[NAME]`	Specifies a range of values for a prompt. `[NAME]` is the text of the prompt. **Note:** Not supported by OLAP Intelligence	No	• A range of values for the prompt, separated by a double period (..). If the target is a Crystal report, the range must be enclosed in square brackets and/or parentheses (use a square bracket next to a value to include it in the range, and parentheses to exclude it). • `no_value` (only for optional parameters)

Note:
You can remove an optional parameter from the prompt by setting it to `no_value` in the openDocument query string. If you leave an optional parameter out of the openDocument query string, a default parameter value will be applied.

Example:

```
http://<servername>:<port>/OpenDocument/opendoc/<plat
formSpecific>?sType=rpt&sDocName=SalesReport&lsRTime+Pe
riod:=[2000..2004)
```

lsS[NAME]

Syntax	Description	Mandatory?	Values
`lsS[NAME]`	Specifies a value for a single prompt. `[NAME]` is the text of the prompt.	No	• A single prompt value. • `no_value` (only for optional parameters)

Note:

- You can remove an optional parameter from the prompt by setting it to `no_value` in the openDocument query string. If you leave an optional parameter out of the openDocument query string, a default parameter value will be applied.
- The character `?` is a reserved prompt value for Web Intelligence documents in an openDocument URL. Setting the prompt value to `lsS[NAME]=?` in the URL forces the "Prompts" dialog box to appear for that particular prompt.
- For information on using this parameter with OLAP reports, see *Using the lsS parameter with OLAP Intelligence reports*.

Example:

```
http://<servername>:<port>/OpenDocument/opendoc/<plat
formSpecific>?sType=wid&sDocName=SalesReport&iDo
cID=2010&lsSSelect+a+City=Paris
```

sInstance

Syntax	Description	Mandatory?	Values
`sInstance`	Indicates which specific instance of the target report to open.	No	• `User` (Link to latest instance owned by current user) • `Last` (Link to latest instance for report) • `Param` (Link to latest instance of report with matching parameter values)

Note:
Use this parameter in combination with `sDocName`.

Example:

```
http://<servername>:<port>/OpenDocument/opendoc/<plat
formSpecific>?sPath=[Sales+Reports]&sDoc
Name=Sales+in+2003&sReportPart=Part1&sInstance=User
```

sPartContext

Syntax	Description	Mandatory?	Values
`sPartContext`	In Crystal Reports, a report part is associated to a data context.	Yes*	Data context of the report part.

Note:
*Only mandatory if a value is specified for `sReportPart`.

Example:

```
http://<servername>:<port>/OpenDocument/opendoc/<plat
formSpecific>?sPath=[Sales+Reports]&sDoc
Name=Sales+in+2005&sReportPart=Part1&sPartContext=0-4-
0
```

Note:
The `sReportPart` and `sPartContext` parameters are supported with the regular DHML viewer (`sViewer=html`). Instead of the first page of the report, the DHTML viewer displays the page and context containing the part with the part highlighted.

sRefresh

Syntax	Description	Mandatory?	Values
`sRefresh`	Indicates whether a refresh should be forced when the target document or report is opened.	No	• `Y` (forces the document's refresh) • `N` (note that the refresh on open feature overrides this value)

Example:

```
http://<servername>:<port>/OpenDocument/opendoc/<plat
formSpecific>?sType=wid&sDocName=SalesReport&iDo
cID=2010&sRefresh=Y
```

sReportMode

Syntax	Description	Mandatory?	Values
`sReportMode`	For Crystal targets only, indicates whether the link should open the full target report or just the report part specified in `sReportPart`.	No	• `Full` • `Part`

Note:
Defaults to `Full` if this parameter is not specified. Only applies if a value is specified for `sReportPart`.

Example:

```
http://<servername>:<port>/OpenDocument/opendoc/<plat
formSpecific>?sPath=[Sales+Reports]&sDoc
Name=Sales+in+2003&sReportPart=Part1&sReportMode=Part
```

sReportName

Syntax	Description	Mandatory?	Values
`sReportName`	Indicates which report to open if target document is multi-report.	No	Report name for Web Intelligence documents, sub-report for Crystal Reports, pages for OLAP Intelligence reports.

Note:
Defaults to the first report if this parameter is not specified.

Example:

```
http://<servername>:<port>/OpenDocument/opendoc/<plat
formSpecific>?sType=wid&sDocName=Sales+in+2003&sReport
Name=First+Report+Tab
```

sReportPart

Syntax	Description	Mandatory?	Values
`sReportPart`	Indicates which specific part of the target report to open.	No	Name of the report part.

Example:

```
http://<servername>:<port>/OpenDocument/opendoc/<plat
formSpecific>?sPath=[Sales+Reports]&sDoc
Name=Sales+in+2003&sReportPart=Part1
```

Note:
The `sReportPart` and `sPartContext` parameters are supported with the regular DHML viewer (`sViewer=html`). Instead of the first page of the report, the DHTML viewer displays the page and context containing the part with the part highlighted.

openDocument output parameters

This section details the openDocument output parameters that are available and gives examples on how to use the commands.

An openDocument URL is generally structured as follows:

```
http://<servername>:<port>/OpenDocument/opendoc/<platform
Specific>?<parameter1>&<parameter2>&...&<parameterN>
```

The exact syntax of the `<platformSpecific>` parameter depends on your implementation:

- For Java implementations, use `openDocument.jsp` in place of the `<platformSpecific>` parameter.
- For .NET implementations, use `opendocument.aspx` in place of the `<platformSpecific>` parameter.

Note:
Variables are denoted with angle brackets. You must substitute the proper value for these variables. For example, you must use the name of your server in place of `<servername>` where it is contained in the code samples below, and you must use your port number in place of `<port>`.

NAII

Syntax	Description	Mandatory?	Values
`NAII`	Forces the display of the prompt selection page. **Note:** Only supported by Web Intelligence documents.	No	• Y (prompt values that are passed with `lsS`, `lsM`, or `lsR` in the URL are applied and not displayed in the "Prompts" dialog box)

Note:

- `NAII=Y` raises the "Prompts" dialog box for any values not specified in the URL. Prompts created with default values are still displayed in the "Prompts" dialog box.
- If all prompt values are specified in the URL, the prompt window does not appear even if `NAII=Y` is specified.

Example:

This example assumes there are two prompts in the Web Intelligence document: `Year` and `Country`. `NAII=Y` forces the "Prompts" dialog box to appear and allows the user to specify a value for the `Country` prompt.

The `Year` prompt is already set to a value of `FY1999` in the URL using the `lsS` parameter and therefore is not prompted for.

```
http://<servername>:<port>/OpenDocument/opendoc/<plat
formSpecific>?sType=wid&sDocName=SalesReport&iDo
cID=2010&lsSYear=FY1999&NAII=Y&sRefresh=Y
```

sOutputFormat

Syntax	Description	Mandatory?	Values
`sOutputFormat`	Indicates the format in which the target document is opened.	No	• `H` (HTML) • `P` (PDF) • `E` (Excel) • `W` (Word)

Note:
Defaults to HTML if this parameter is not specified.

Example:

```
http://<servername>:<port>/OpenDocument/opendoc/<plat
formSpecific>?sPath=[Sales+Reports]&sDoc
Name=Sales+in+2003&sOutputFormat=E
```

sViewer

Syntax	Description	Mandatory?	Values
`sViewer`	Indicates the viewer that is used to view the document.	No	• `html` • `part` (Crystal reports only) • `actx` (Crystal reports only) • `java` (Crystal reports only)

Example:

```
http://<servername>:<port>/OpenDocument/opendoc/<plat
formSpecific>?sPath=[Sales+Reports]&sDoc
Name=Sales+in+2003&sViewer=html
```

Example:

Note:
In order to use parameters in the URL with the ActiveX viewer, `:connect` must be appended to the URL, followed by the parameters.

```
http://<servername>:<port>/OpenDocument/opendoc/<plat
formSpecific>?sPath=[Sales+Reports]&sDoc
Name=Sales+in+2003&sViewer=actx:connect&IsMCountry=[Thai
land],[Norway]
```

---

sWindow

Syntax	Description	Mandatory?	Values
`sWindow`	Indicates whether the target report will open in the current browser window or whether a new window will be launched.	No	• `Same` (current browser window) • `New` (new browser window is launched)

Example:

```
http://<servername>:<port>/OpenDocument/opendoc/<plat
formSpecific>?sType=wid&sDocName=SalesReport&iDo
cID=2010&sWindow=New
```

Contextual report linking

The openDocument feature allows you to create contextual links between Crystal reports, OLAP Intelligence reports and Web Intelligence documents. To do this, you construct a URL using the openDocument syntax and then insert the URL into a Crystal report, OLAP Intelligence report or Web Intelligence document.

Contextual report linking allows report designers to specify associations for documents residing in either a Crystal Reports environment (unmanaged) or a BusinessObjects Enterprise environment (managed). Once these associations are created, users follow the resulting navigational paths embedded in the linked documents.

This feature enables you to invoke Business Objects and Web Intelligence documents from Crystal Reports and vice versa. This feature relies on functionality that allows the user to do the following:

- Link Web Intelligence or Business Objects documents within the document domain.
- Link report objects in Crystal Reports.

To insert a link into a Crystal report

You can use openDocument to create hyperlinks in Crystal Reports. To create a link to another report or document, use the Hyperlink Tab of the field Format Editor.

1. Open the source report in Crystal Reports.
2. Right-click the field in which you want to insert the openDocument link and select **Format** from the shortcut menu.
3. In the Format Editor, select the **Hyperlink** tab.
4. Select **A website on the Internet**.
5. In the “Hyperlink information? area, leave the **Website Address** field empty and click the **Format Formula Editor** button.
6. Enter the openDocument link in the following format:

   ```
   "http://[openDocument parameters]"+{Article_lookup.Family_name}
   ```

   Where [openDocument parameters] are described in *openDocument parameter overview* , and the {Article_lookup.Family_name} enables the report to pass context-dependent data.

   Note:
   Test your link in a browser window before inserting it into a report or document.

7. Click **Save and Close** to leave the Formula Workshop.
8. Click **OK** in the Formula Editor to save the link.

To create a link to another report or document from an OLAP Intelligence report

You can use openDocument to create hyperlinks in OLAP Intelligence reports.

1. Open the source report in the OLAP Intelligence designer.
2. On the **Tools** menu, select **Action Manager** .
3. Click **New** to create a new action.
4. Enter an action name.
5. Select the area to which the action (the link) will apply.

6. Enter the openDocument link using the parameters and syntax described in this document.

   Tip:
   Test your link in a browser window before inserting it into a report or document.

7. Click **OK** to save the link.
8. Close the Action Manager dialog box.
9. Create an Analysis Button on the source report.
10. Right-click the Analysis Button.
11. In the drop-down menu, select **Properties** and then **Edit** .
12. Select **Launch an action** .
13. Select the action that corresponds to the openDocument link created in steps 3 through 6.
14. Click **OK** .

Creating links in Web Intelligence documents

You can define objects in a universe that allow Web Intelligence and BusinessObjects users to create reports whose returned values include links to other reports and documents.

When these reports are exported to the repository, users can click returned values displayed as hyperlinks to open another related document stored in the document domain of the repository.You create these links using the openDocument function in the definition of an object in Designer.

More information

For full information on creating links in Web Intelligence reports, see the *Building Reports Using the WebIntelligence Java Report Panel* guide.

You enable report linking in a universe by creating an object (the link object) whose returned values are the same as the values used as input to a prompt in an existing report (the target report).

The openDocument function allows the values for the link object to be returned as hyperlinks. When the user clicks the hyperlink, its value is used as the prompt input for the target report.

You can create documents using the link object as you would with any other object. Users can then click the hyperlinks to access more detailed documents related to the link object.

To create a link object, use the openDocument function in the object's Select statement. The Select statement for a link object follows this order:

```
'<a href="http://<servername>:<port>/OpenDocument/<plat
formSpecific>?sDocName=<document name>&sType=<document
type>&iDocID=<document id>&lsS<prompt message>='+object
 SELECT+'">'+object SELECT+'</a>'
```

The concatenation operator (+) applies for Microsoft Access databases. Use the operator appropriate to your target RDBMS.

For more details on the Select statement, creating link objects, and using link objects in InfoView, refer to the *Designer's Guide*.

Working with documents

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To create a Web Intelligence document from InfoView

1. Click **Document List** on the InfoView toolbar.
2. Click **New** > **Web Intelligence Document**
3. Select the universe on which you want to create the document and click **OK**.

   Note:
   If your InfoView Web Intelligence preferences specify a default universe, this step is omitted and the Web Intelligence query editor opens and displays the objects in the default universe.

4. The Web Intelligence query editor specified in the InfoView Web Intelligence preferences opens and displays the objects in the universe you selected.
5. Build and run the query using the query editor.

To open a Web Intelligence document from InfoView

1. Click **Document List** to show the documents available in InfoView.
2. Navigate to the folder containing your document.
3. Select the document and select **Action** > **View** or **Action Modify** depending on whether you want to view or modify the document.

   The document opens in the view format or document editing tool selected in your InfoView Web Intelligence options.

Related Topics

- *Web Intelligence document creation and viewing options*

To delete a Web Intelligence document from InfoView

1. From the InfoView home page, navigate to the folder that contains the document you want to delete.

2. Select the check box next to the name of the document you want to delete.
3. Click **Delete**.

Saving documents

To save a new Web Intelligence document in InfoView

1. With the document open in the Java Report Panel or Web Intelligence HTML, click **Save** on the main toolbar.

   The **Save Document** dialog box opens.
2. Click **Folders** or **Categories** to display the repository by folders or by categories.
3. In the **Name** box, type the name of the document.
4. Click **Advanced** to display additional document options.
5. In the **Description** box, type a meaningful description of the document (optional).
6. In the **Keywords** box, type keywords that you or other users can use to search for the document in the future (optional).
7. Select **Refresh on open** to refresh the document each time it is opened.
8. Select **Permanent Regional Formatting** to preserve the document regional formatting with the document.
9. Click **OK**.

   The document is saved in InfoView.

To save a Web Intelligence document as an Excel spreadsheet

1. With the document open, click **Document** > **Save to my computer as** > **Excel** (in Web Intelligence HTML) or click the arrow next to **Save**, then select **Save to my computer as**, then click **Excel** (in the Java Report Panel).

Note:
You can save the current report to Excel format in Web Intelligence HTML by selecting **Save report to my computer as** > **Excel** from the menu.

The **File Download** dialog box appears.

2. Type a file name or accept the default name displayed.
3. Select **Save this file to disk**, then click **OK**.
4. Select a file location on your computer, then click **Save**.

   Web Intelligence saves a copy of your document in Microsoft Excel format to the location you specified on your computer. Each report within the Web Intelligence document converts to a separate Excel worksheet within the Excel file.

   Some Web Intelligence chart formats do not exist in Excel. These charts are automatically converted to the closest corresponding chart format available in Excel.

   Web Intelligence starts a new Excel worksheet for each 65K rows of exported data.

To save a Web Intelligence document as a PDF file

1. With the document open, click **Document** > **Save to my computer as** > **PDF** (in Web Intelligence HTML), or click the arrow next to **Save**, then select **Save to my computer as**, then select **PDF** (in the Java Report Panel).

   The **File Download** dialog box appears.
2. Type a file name or accept the default name displayed.
3. Select **Save this file to disk**, then click **OK**.
4. Select a file location on your computer, then click **Save**.

   Web Intelligence saves a copy of your document in Adobe Acrobat PDF format to the location you specified on your computer.

To save a Web Intelligence document as a CSV file

1. With the document open, click **Document** on the toolbar above the displayed reports (in Web Intelligence HTML), or click the arrow next to **Save** (in the Java Report Panel).
2. Select **Save to my computer as** > **CSV** to save the document with the default options or **Save to my computer as** > **CSV (with options)** to choose the options.
3. If you chose **CSV (with options)**, choose the text qualifier, column delimiter and character set in the "Save as CSV - Options" dialog box.
4. Select **Set as default values** in the "Save as CSV - Options" dialog box if you want the options you chose in the previous step to be the default options when you save to CSV.
5. Click **OK** to close the "Save as CSV - Options" dialog box.

   The **File Download** dialog box appears.
6. Select **Save this file to disk**, then click **OK**.
7. Type a file name or accept the default name displayed.
8. Select a file location on your computer, then click **Save**.

   Web Intelligence saves a copy of your document in CSV format to the location you specified on your computer.

Automatic saving and recovery

Saving documents automatically

If Web Intelligence is configured for autosave, and if you have the appropriate security rights, Web Intelligence saves your documents automatically in the `My Favorites/~Web Intelligence` folder as you work. Web Intelligence uses the document name prefixed by the document ID and followed by the autosaved document ID to name autosaved documents. (If the document ID is -1, the document was not saved before being autosaved.)

Note:
Web Intelligence Rich Client does not save documents automatically.

Web Intelligence saves documents at a regular interval, which is defined in the CMC. This interval is reset each time you save a document manually, and each time Web Intelligence saves a document automatically. Web Intelligence also deletes the autosaved document when you save a document manually.

In addition to regular autosaving, Web Intelligence saves documents when your Web Intelligence session times out.

Note:
If you lose a Web Intelligence document before you can save it, check the folder immediately for the autosaved version. The `My Favorites/~Web Intelligence` folder is not a permanent storage location for autosaved documents.

For more information on the settings and security rights that impact automatic saving, see the documentation for the Central Management Console.

Related Topics

- *How Web Intelligence manages autosaved documents*
- *Recovering autosaved documents*

Recovering autosaved documents

If your session times out while you are working on a document, Web Intelligence automatically saves the document in the `My Favorites/~Web Intelligence` folder and displays a dialog box explaining that the session has ended.

If you select **Restore** on the dialog box, Web Intelligence launches a new session and re-opens the autosaved document. The next time you save the document manually, Web Intelligence saves it in its original folder.

If you select **Close**, you are redirected to the InfoView home page. The autosaved document is available in the `My Favorites/~Web Intelligence` folder.

In some cases, Web Intelligence cannot link to the autosaved document after a server timeout or connection loss. In this case Web Intelligence does not offer you the option to restore the autosaved document. You must check the `My Favorites/~Web Intelligence` folder immediately for your

autosaved document. Web Intelligence regularly deletes documents from the folder based on the autosave settings.

Related Topics

- *Saving documents automatically*
- *How Web Intelligence manages autosaved documents*

How Web Intelligence manages autosaved documents

Web Intelligence saves documents automatically in the `My Favorites/~Web Intelligence` folder.

Whenever you save a document manually, Web Intelligence also updates the autosaved document with the changes. As a general rule, Web Intelligence handles autosaving transparently and you do not access autosaved documents directly. You need to access them directly when your Web Intelligence session timed out, and Web Intelligence was unable to reopen your autosaved document.

Note:
If you need to access an autosaved document directly, check the `My Favorites/~Web Intelligence` folder immediately. This folder is not a permanent storage location for autosaved documents.

The `My Favorites/~Web Intelligence` folder has a maximum size limit, which is set in the CMC. When the total size of the documents in the folder exceeds this limit, Web Intelligence deletes as many of the oldest documents in the folder as necessary to make way for the latest document.

Web Intelligence also deletes all documents from the folder at a defined interval, which is set in the CMC.

If you navigate away from your Web Intelligence document in your browser without saving the document, the document is lost and Web Intelligence clears the contents of the `My Favorites/~Web Intelligence` folder.

Related Topics

- *Saving documents automatically*
- *Recovering autosaved documents*

Printing Web Intelligence documents

You print Web Intelligence documents report-by-report. You can print one or multiple reports from a single document.

Web Intelligence prints reports from left to right, and then top to bottom. If a report is wider than the width of the paper size defined in the Report Page Layout, Web Intelligence inserts page breaks for the printout.

The paper size and page orientation for printing can be different from the paper size and page orientation set for the reports when you view them in the Java Report Panel or Web Intelligence Rich Client. This enables users using different printers to specify the appropriate layout when they print.

Web Intelligence prints documents directly in the Java Report Panel and Web Intelligence Rich Client. Web Intelligence HTML exports the document to PDF file that you can then print.

To print a document

1. Click the report tab you want to print.
2. Click the **Print this document** button on the Report toolbar.

   The "Print" dialog box appears.
3. Under the **Print Range** option, you specify whether you want to print the entire selected report or just some of the report pages.

   You can specify the paper size of the report or page(s) for the printout. The paper size you set for printing overrides the paper size defined for the report in the Report Properties Page Layout tab.
4. To change the paper size, click the arrow next to the list box below **Paper Size**,and then select a different paper size from the list.
5. Under the **Orientation** options, select the page orientation that suits the report page layout.
6. Under the **Margins** options, select the margin sizes.
7. Under the **Copies** options, select the number of copies to print.
8. Click **OK**.

Editing document properties

The Web Intelligence document properties are divided into groups in the **Document Properties** pane. To expand a group to see the properties it contains, click the down arrow button next to the group name. When you expand a group, the down arrow button changes to an up arrow button. Click this button to contract the group.

You display the Document Properties pane by right-clicking a report outside all report components and selecting **Document Properties** from the menu.

Group	Property	Description
Document Information	Created by	The document creator.
	Last modified by	The last user to modify the document.
	Creation date	The date the document was created.
	Name	The document name.
	Description	The document description.
	Keywords	The document keywords.
	Locale	The document formatting locale.
	Data tracking	Indicates whether data tracking is activated.
Document Options	Refresh on open	Tells Web Intelligence to refresh the document when it is opened.
	Enhanced Viewing	Optimizes the document appearing for on-screen viewing.

	Use query drill	Tells Web Intelligence to drill in query drill mode.
	Permanent regional formatting	Permanently associates the current document locale with the document.
	Enable Query Stripping	Enables Query Stripping at the document level.
Data Synchronization Options	Auto-merge dimensions	Tells Web Intelligence to synchronize data providers by merging dimensions automatically under certain conditions.
	Extend merged dimension values	Tells Web Intelligence to extend dimension values in reports with synchronized data providers.
Report Order		Sets the report order in a document.

To display document properties

- Right-click a report outside all report components and select **Document Properties** from the menu, or click **...** next to the **General** > **Document Properties** property on the **Data** tab.

To purge data from a document

1. Click **Purge Data** on the main toolbar.

   Web Intelligence purges the data from the document.

2. If the document contains multiple queries and you want to purge the data from a specific query, click the arrow at the right of the **Purge Data** button and select **Purge <Query name>** from the menu.

   Web Intelligence purges the data from the query.

More Information

appendix A

Information Resource	Location
SAP BusinessObjects product information	*http://www.sap.com*
SAP Help Portal	Select *http://help.sap.com* > SAP BusinessObjects. You can access the most up-to-date documentation covering all SAP BusinessObjects products and their deployment at the SAP Help Portal. You can download PDF versions or installable HTML libraries. Certain guides are stored on the SAP Service Marketplace and are not available from the SAP Help Portal. These guides are listed on the Help Portal accompanied by a link to the SAP Service Marketplace. Customers with a maintenance agreement have an authorized user ID to access this site. To obtain an ID, contact your customer support representative.
SAP Service Marketplace	*http://service.sap.com/bosap-support* > Documentation • Installation guides: *https://service.sap.com/bosap-inst guides* • Release notes: *http://service.sap.com/releasenotes* The SAP Service Marketplace stores certain installation guides, upgrade and migration guides, deployment guides, release notes and Supported Platforms documents. Customers with a maintenance agreement have an authorized user ID to access this site. Contact your customer support representative to obtain an ID. If you are redirected to the SAP Service Marketplace from the SAP Help Portal, use the menu in the navigation pane on the left to locate the category containing the documentation you want to access.
Developer resources	*https://boc.sdn.sap.com/* *https://www.sdn.sap.com/irj/sdn/businessobjects-sdklibrary*

Information Resource	Location
SAP BusinessObjects articles on the SAP Community Network	*https://www.sdn.sap.com/irj/boc/businessobjects-articles* These articles were formerly known as technical papers.
Notes	*https://service.sap.com/notes* These notes were formerly known as Knowledge Base articles.
Forums on the SAP Community Network	*https://www.sdn.sap.com/irj/scn/forums*
Training	*http://www.sap.com/services/education* From traditional classroom learning to targeted e-learning seminars, we can offer a training package to suit your learning needs and preferred learning style.
Online customer support	*http://service.sap.com/bosap-support* The SAP Support Portal contains information about Customer Support programs and services. It also has links to a wide range of technical information and downloads. Customers with a maintenance agreement have an authorized user ID to access this site. To obtain an ID, contact your customer support representative.
Consulting	*http://www.sap.com/services/bysubject/businessobjectsconsulting* Consultants can accompany you from the initial analysis stage to the delivery of your deployment project. Expertise is available in topics such as relational and multidimensional databases, connectivity, database design tools, and cus tomized embedding technology.

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