IBM Cognos Analysis for Microsoft Excel
Version 10.2.2

User Guide
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Introduction

IBM® Cognos® Analysis for Microsoft Excel is a Microsoft Excel-based tool that professional report authors use to build sophisticated, multiple-sheet, multiple-query reports against multiple databases.

Audience

This guide assumes that you are familiar with IBM Cognos products, such as IBM Cognos Business Intelligence, IBM Cognos for Microsoft Office, and IBM Cognos TM1®. You should also be familiar with Microsoft Office applications, such as Microsoft Excel.

Finding information

To find product documentation on the web, including all translated documentation, access IBM Knowledge Center (http://www.ibm.com/support/knowledgecenter).

Accessibility features

Accessibility features help users who have a physical disability, such as restricted mobility or limited vision, to use information technology products. IBM Cognos Analysis for Microsoft Excel has accessibility features. For information on these features, see the accessibility section in this document. For more information about the accessibility features in IBM Cognos Analysis for Microsoft Excel, see Appendix B, “Accessibility features,” on page 149.

IBM Cognos HTML documentation has accessibility features. PDF documents are supplemental and, as such, include no added accessibility features.

Forward-looking statements

This documentation describes the current functionality of the product. References to items that are not currently available may be included. No implication of any future availability should be inferred. Any such references are not a commitment, promise, or legal obligation to deliver any material, code, or functionality. The development, release, and timing of features or functionality remain at the sole discretion of IBM.

Samples disclaimer

The Sample Outdoors Company, Great Outdoors Company, GO Sales, any variation of the Sample Outdoors or Great Outdoors names, and Planning Sample depict fictitious business operations with sample data used to develop sample applications for IBM and IBM customers. These fictitious records include sample data for sales transactions, product distribution, finance, and human resources. Any resemblance to actual names, addresses, contact numbers, or transaction values is coincidental. Other sample files may contain fictional data manually or machine generated, factual data compiled from academic or public sources, or data used with permission of the copyright holder, for use as sample data to develop sample applications. Product names referenced may be the trademarks of their respective owners. Unauthorized duplication is prohibited.
Chapter 1. What's new?

This section contains a list of new and changed features for this release. It also contains a cumulative list of similar information for previous releases. It will help you plan your upgrade and application deployment strategies and the training requirements for your users.

For information about upgrading, see the IBM Cognos Analysis for Microsoft Excel Installation Guide.

New features in version 10.2.2

IBM Cognos Analysis for Microsoft Excel 10.2.2 has feature enhancements in several key areas.

Expandable flex views

You can now add a row or column to a flex view by typing the name of a member in a cell next to the last row header or column header.

For more information about expanding a flex view, see “Replacing or adding members in a flex view” on page 66.

Sorting and filtering

IBM Cognos Analysis for Excel now includes options for sorting rows by row names or column values. You can also filter by column values to show top or bottom results.

For more information about the new sorting options, see “Sort rows by values or names” on page 45 and “Show top or bottom results” on page 45.

Additional options for working with explorations and sets

New options, such as Clear All and Keep, make it easier to select the members you want in a report. These new options are available from the context-menu in an exploration and in the set editor.

Performance improvements for cell-based report

You can use cell-based reports for some IBM Cognos Business Intelligence data source. Performance improvements reduce the amount of time required to refresh the formulas in a cell-based report.

Access to TurboIntegrator processes

IBM Cognos TM1 TurboIntegrator processes are now available from the source tree when you connect to an IBM Cognos TM1 data source. You can edit and run TurboIntegrator processes from the source tree. You can also monitor and cancel running TurboIntegrator processes.

For more information, see “Cognos TM1 TurboIntegrator processes” on page 83.
Preview changes before committing the changes to the TM1 server

You can now preview information about the changes you made to an exploration or flex view before you commit the changes to the TM1 server. The preview option is available after you select **Commit Changed Values** from an exploration or flex view.

Use TM1 Worksheet functions to access TM1 data

The ability to use TM1 Worksheet functions helps to leverage work done in TM1 tools and take advantage of IBM Cognos Analysis for Microsoft Excel features. For example, you can now open a slice created in TM1 Perspectives and use the TM1 Worksheet functions to access TM1 data with improved wide area network performance.

For more information, see "Cognos TM1 Worksheet functions in IBM Cognos Analysis for Microsoft Excel" on page 83.

Localization is inherited from TM1 server settings

If your administrator has enable localization of names on your TM1 server, then cubes, dimensions, elements, and attributes will display in your local language as determined by your Windows locale setting. If localization is not enabled, object names appear as they were originally created on the TM1 server.

New features in version 10.2.0

New features since the last release are listed. Links to directly-related topics are included, where applicable.

IBM Cognos Analysis for Microsoft Excel 10.2.0 has feature enhancements in several key areas:

- **IBM Cognos Analysis for Microsoft Excel is now integrated with IBM Cognos TM1 data sources.**
  Use IBM Cognos Analysis for Microsoft Excel with IBM Cognos TM1 data sources to enter and write back values to TM1 cubes. For more information, see Chapter 6, "Flex views for complex Cognos TM1 reports," on page 65 and Chapter 7, "Contributions to a plan on a Cognos TM1 server," on page 69.
  For more information about interoperability considerations to access Cognos TM1 systems from IBM Cognos Analysis for Microsoft Excel, see the Cognos TM1 Installation and Configuration Guide. For more information about Cognos TM1 Perspectives, the Cognos TM1 addin for Microsoft Excel, see the Cognos TM1 User Guide. Cognos TM1 documentation is available in the IBM Cognos TM1 Information Center (http://pic.dhe.ibm.com/infocenter/ctm1/v10r2m0/index.jsp).

- **You can update server information for existing reports and formulas in an IBM Cognos enabled Excel workbook, PowerPoint presentation, or Word document.**
  Use the API method, UpdateServerUrl, or the user interface in the Update System dialog box to update server information. You can change one server, such as a test server to another server, such as a production server. For information on the UpdateServerUrl, see "UpdateServerUrl" on page 118. For information on the **Update System** dialog, see "Update server URLs" on page 16.
• You can use asymmetrical nesting for greater control of report layout. For example, you can nest an actual category under previous years and nest only the forecast category under the current year, because no actual is available.

• Additional language support
  The following additional languages are available for IBM Cognos Office products: Croatian, Danish, Kazakh, Slovenian, and Thai.

**Changed features in version 10.2.0**

Changes to features since the last release are listed. Links to directly-related topics are included.

• IBM Cognos Office products, such as IBM Cognos Analysis for Microsoft Excel and IBM Cognos BI for Microsoft Office now require the use of Microsoft .NET Framework 4.

  This updated conformance has implications for upgrading systems. If you are a current user of an IBM Cognos Office product and installed only Microsoft .NET Framework 2, you must also install .NET Framework 4. You must install the updated .NET Framework before installing IBM Cognos Office products. Microsoft .NET Framework versions can work along side each other. You do not need to uninstall previous versions.

• Additional accessibility features help users who have a physical disability, such as restricted mobility or limited vision.

• Create a new exploration has been changed to **Create a new crosstab**.

**New features in version 10.1.1**

New features since the last release are listed. Links to directly-related topics are included.

IBM Cognos Analysis for Microsoft Excel 10.1.1 is an update on the original 10.1 release with feature enhancements in several key areas:

• Metadata Prompt Support

  IBM Cognos Analysis for Microsoft Excel 10.1.1 supports data sources including Analytic Applications DMR sources and SAP BW that provide a metadata prompt when accessing data items. You can provide prompt values interactively while building explorations in Microsoft Excel. For more information, see **“Prompted metadata in packages used for Cognos Analysis for Microsoft Excel reports” on page 23**.

• 64-bit Microsoft Office 2010 Support

  With this release, IBM Cognos Analysis for Microsoft Excel supports the 64-bit version of Microsoft Excel included in Microsoft Office 2010. To review an up-to-date list of environments supported by IBM Cognos products, including operating systems, patches, browsers, Web servers, directory servers, database servers, and application servers, visit the IBM Cognos Customer Center at **http://www.ibm.com/software/data/cognos/customercenter** (opens in new window).

• Flexible Refresh

  IBM Cognos Analysis for Microsoft Excel 10.1.1 enables you to refresh individual workbooks, worksheets or just a range of formula cells. For more information, see **“Refreshing data in IBM Cognos Analysis for Microsoft Excel workbooks” on page 51**.

• Advanced Filter Options Column Based Filters
In IBM Cognos Analysis for Microsoft Excel 10.1.1 you can filter results based on a comparison between two columns. For example, if you have an Actual and a Forecast column, you can filter the results to show only rows where the Actual is less than the Forecast. For more information, see "Custom filters" on page 34.

- Pre/Post Aggregation Filters
  You can create filters that are either applied before aggregation or applied to the aggregate result. Multiple pre and post filters can be applied to the same query. For more information, see "Creating custom filters" on page 36.

- Date Range Filters
  You can filter for date results that fall within a certain number of days of the current date, for example the last 30 days. For more information, see "Custom filters" on page 34.

- IN Filters
  You can filter results to include the items that match a list. For more information, see "Custom filters" on page 34.

- Processing improvements
  Performance has been improved by decreasing the time it takes to refresh formulas. Cells with errors caused during refresh are flagged while still permitting other cells with formulas to be updated more quickly.

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**New features in version 10.1.0**

New features since the last release are listed. Links to directly-related topics are included.

- Calculations are now supported for explorations and lists. This enables you to create and maintain reports using advanced functions in an easy-to-use environment with drop zones. For more information, see "Creating a calculation" on page 40.

- The application and documentation comply with standards of access for people with different physical abilities. For more information, see Appendix B, "Accessibility features," on page 149.

- For cell-based analysis, you can limit the number of cells retrieved during a query. You can also limit the processing time. By limiting the number of cells you retrieve, you can increase report performance, especially for large worksheets. For more information, see "Set options for exploration sheets" on page 18.

- You can now publish explorations directly to IBM Cognos Connection. You can save a crosstab as a Web report, which enables Microsoft Excel users to author reports in Excel and distribute them as secured Web reports without the additional step of using a studio package, such as Analysis Studio. For more information, see "Publishing an exploration to IBM Cognos Connection" on page 55.

- Additional custom styles are available for formatting cells. You can gain access to new IBM Cognos Analysis styles, such as Calculated Row Name - IBM Cognos or Measure Summary - IBM Cognos through the Microsoft Excel function by clicking Style from the Format menu. The IBM Cognos styles are listed along with default Excel styles. You can modify attributes, such as font and alignment, and then save the changes to a template for re-use.

- Add user-defined rows and columns in the middle of explorations and lists to add calculations. You can create Microsoft Excel calculations for the entire row, column, or block. For more information, see "Insert blank or user-defined columns or rows in a list" on page 46.
Add blank rows and columns in the middle of explorations or lists to enhance readability. For more information, see "Insert blank or user-defined columns or rows in a list" on page 46.

Enhanced search capabilities enable you to search metadata by level inside the source tree. For more information, see "Searching for items in the source tree" on page 30.

After items have been placed in the cells of a worksheet, you can rename column and row headings and reorder items. For more information, see "Rename a column or row" on page 44.

You can set the starting cell for a list or crosstab. For more information, see "Set list options for a worksheet" on page 47 and "Set crosstab options" on page 47.

When working with lists and explorations, there are multiple grouping options. For more information, see "Set list options for a worksheet" on page 47. You can leave cells ungrouped when you need to use Excel lookup functions or you can group cells to provide for greater readability. For more information, see "Set options for exploration sheets" on page 18.

A new feature in cell-based analysis enables you to resolve COGVAL and COGNAME errors. For more information, see "Troubleshooting cell-based analysis" on page 58.

In addition to running reports in IBM Cognos Report Studio and IBM Cognos Analysis Studio, you can run reports using IBM Cognos Cognos Workspace Advanced. For more information, see "Run an exploration in Report Studio, Analysis Studio, or Cognos Workspace Advanced" on page 55.

### Changed features in version 10.1.0

Listed are changes to features since the last release. Links to directly-related topics are included.

- User comments, report titles and values typed outside the exploration area are retained in the worksheet, even after data is refreshed.
- Enhanced support of row and cell formatting.
- When running a crosstab in Report Studio, the context filter is now included.
- You can choose a custom logging level based on the severity of the event. For more information, see "Enable logging as a diagnostic tool" on page 14.
- To speed processing time, the zero-suppression feature uses server-side zero-suppression for IBM Cognos Business Intelligence servers that are configured with that feature. For more information, see "Suppressing empty cells in a crosstab or list exploration" on page 39.
- To speed processing time and avoid server delays, IBM Cognos Analysis for Microsoft Excel groups and compresses the data it receives from its queries to the BI data server. For more information, see "Chunking" on page 21 and "Controlling data compression" on page 20.
- A Clear Cache on save check box was added to the Options dialog box to reduce the size of workbooks, which is achieved by clearing saved metadata and data related to formulas each time the workbook is saved. For more information, see "Clearing the cache" on page 16.
- Filter queries have changed to conform to the Cognos BI query server best practices and to be more consistent with queries created by Report Studio and Business Insight Advanced. In version 10.2.0, IBM Cognos Business Insight Advanced is known as IBM Cognos Workspace Advanced. Reports more clearly distinguish between relational and dimensional query styles. Lists support detail filters and do not support set-based queries. Explorations use dimensional
queries and do not support detail filters. For most reports there will be no change in results, but there are some circumstances where results will change, for example, if you had previously used a set-based query for a list report, you must update the filter to make use of the detail filter. For more information, see "Creating custom filters" on page 36.
Chapter 2. Cognos Analysis for Microsoft Excel

IBM Cognos Analysis for Microsoft Excel is a Microsoft Excel-based tool that professional report authors use to build reports using data sources from IBM Cognos Business Intelligence or IBM Cognos TM1.

Use the interactive drag-and-drop environment in Cognos Analysis for Microsoft Excel to explore and analyze data to find answers to business questions.

Using Cognos Analysis for Microsoft Excel, you can perform the following tasks:
• Find and focus on items that are important to your business.
• Understand trends and anomalies.
• Compare data, such as details to summaries, or actual results to budgeted results.
• Assess performance by focusing on the best or worst results.
• Share your findings with others.

Cognos Analysis for Microsoft Excel is the component of IBM Cognos that you can use for multidimensional analysis and exploration of large data sources within the familiar Excel environment.

You can also open your custom reports in IBM Cognos Report Studio or explorations in IBM Cognos Analysis Studio to help you validate or understand the results of your report.

IBM Cognos Office

IBM Cognos Office includes both IBM Cognos Analysis for Microsoft Excel and IBM Cognos for Microsoft Office.

IBM Cognos Office provides the framework that leverages the business intelligence architecture, including security, metadata, and content storage. This infrastructure helps you manage your Microsoft Office documents and monitor the financial performance of your organization.

Use the applications of IBM Cognos Office to create, view, and consume reports, analyses, and other business intelligence content using familiar Microsoft Office applications, such as Excel, PowerPoint, and Word.

The following table highlights the IBM Cognos Office integration of applications such as IBM Cognos for Microsoft Office and IBM Cognos Analysis for Microsoft Excel.
Table 1. IBM Cognos Office integration options

<table>
<thead>
<tr>
<th>Applications</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>IBM Cognos for Microsoft Office</td>
<td>Importing IBM Cognos Business Intelligence report content, including data, metadata, headers, footers, and charts, into a familiar Microsoft Office application. IBM Cognos for Microsoft Office uses the functionality in the Microsoft Office application to work with pre-authored reports or create new reports in the Business Intelligence studios. It is especially useful for creating briefing books and presentations. Sales managers or project managers may use this application to retrieve and report on that information.</td>
</tr>
<tr>
<td>IBM Cognos Analysis for Microsoft Excel</td>
<td>Building sophisticated multiple-sheet, multiple-query reports in Excel using different kinds of data sources from IBM Cognos Business Intelligence or IBM Cognos TM1. Data modelers, business analysts, and financial analysts who analyze enterprise data may use this application to identify trends, opportunities, problems, or project characteristics.</td>
</tr>
</tbody>
</table>

The Cognos Analysis for Microsoft Excel user interface

The IBM Cognos Analysis for Microsoft Excel user interface includes the IBM Cognos Analysis pane, which contains a source tree and several commands, an exploration bar, an overview area, a work area, and a toolbar or ribbon to help you create reports.
IBM Cognos toolbar

IBM Cognos Office adds a custom toolbar to each of the supported Microsoft Office applications. When you click the IBM Cognos button on the toolbar, the IBM Cognos Office commands become available as buttons on the toolbar or ribbon of your Microsoft Office application.

IBM Cognos Analysis pane

The IBM Cognos Analysis pane contains the source tree that lists hierarchical data. You add objects to a report by dragging them to the work area. The pane also contains controls for opening packages, searching metadata, adding lists and crosstab explorations, and accessing the online help.

The source tree

The source tree is for the package that you selected. For packages based on DMR and OLAP data sources, it presents a dimensional view of your data and the tree is organized into dimensions, hierarchies, levels, and measures. For packages based on relational data sources, it presents query subjects organized into lists of data items. TM1 packages are based on OLAP data sources.

The names of the levels and members in a dimension come from the model. It is the responsibility of the modeler to provide meaningful names that you can use when authoring your report.

The exploration bar
Use the controls on the exploration bar to work with different areas of an exploration report or open the report in either IBM Cognos Report Studio, IBM Cognos Workspace Advanced, or IBM Cognos Analysis Studio.

- The overview area
  The overview area is shown only if you are viewing a worksheet with a crosstab or a list. You can use the overview area as a convenient place to quickly explore and change the contents of the Excel worksheet.
  The overview area shows any applied filters. In a crosstab, you can rearrange rows and columns, drill up or down, and provide context for the worksheet. In a list, you can rearrange columns.
  You can select a set in either the Excel workspace or in the overview area.
  Each box in the **Rows** and **Columns** areas represents one or more sets in the crosstab. You can use the objects to drill up or down. The context that you specify in the **Context** box is used to filter the values. The crosstab shows the results only for the selected item.
  The overview area caches the state of the last crosstab or list that you created. This means that when you open a saved workbook, the overview area does not reflect the context of the saved crosstab or list. To synchronize the overview area with the active crosstab or list, you must clear the cache of the overview area.
  You can do this by either closing the workbook and opening a new worksheet or restarting Microsoft Excel.

- The work area
  The work area, which appears when creating crosstabs or lists, is a Microsoft Excel workspace where you place data items for the crosstab or list reports that you design. After placing items in the Rows, Columns, Measure, and, optionally, Context of the crosstab, or Columns of the list, the data appears in the cells of the worksheet. The crosstab version of the work area is pictured here.
  You can change, limit, or expand the items that you see in the crosstab, using techniques such as filtering and drilling, to quickly focus on the most significant items on your worksheet.
  You can also drag and drop DMR and OLAP items directly into the cells of a worksheet. This is referred to as cell-based analysis or cell-based mode.
  When using the exploration method, there are distinct drop zones where you can insert a new data item. The drop zones that you choose define the relationship between the data item and the column. When using the list mode, there is a single column drop zone where you can insert and nest data items.

**Related tasks:**

"Nest items" on page 43

You can nest items by dragging one item next to another item in the drop zone.

**Getting started with Cognos Office**

To use IBM Cognos Office with the Microsoft Office applications, you must customize your IBM Cognos Office environment. Regardless of the IBM Cognos Office application that you are using, you can perform the following common tasks from the IBM Cognos Office interface or the IBM Cognos Connection portal:

- **Show or hide IBM Cognos Office**, see "Starting IBM Cognos Office" on page 11.
- **Set preferences for IBM Cognos Office**, see "Customize IBM Cognos Office" on page 12.
- **Set preferences for IBM Cognos Analysis for Microsoft Excel**, see "Customizing Cognos Analysis for Microsoft Excel" on page 17.
Starting IBM Cognos Office

When you first open one of the supported Microsoft Office applications, an IBM Cognos Office toolbar appears. To view the commands and icons that you need to work in the IBM Cognos Office environment, you must make the IBM Cognos pane and the IBM Cognos Office toolbar available.

After starting IBM Cognos Office, you may decide to resume work on non-IBM Cognos Office workbooks or documents, and want to show only the commands and buttons that you use. You can hide the IBM Cognos toolbar or the IBM Cognos action pane in your work area.

Procedure

1. On the IBM Cognos Office toolbar, click the IBMcognos icon.

   If the IBMcognos icon is disabled or does not appear on the toolbar, see “Common errors” on page 129.

2. To hide the IBMcognos tab in Microsoft Office 2010:
   a. Click File, Options, and then Customize Ribbon.
   b. Under Customize the Ribbon, clear the IBMcognos checkbox.

3. To hide the IBMcognos tab in earlier versions of Microsoft Office:
   a. From the Tools menu, click Customize.
   b. On the Toolbars tab, choose whether to show or hide the IBM Cognos pane or the IBM Cognos toolbar:
      - To show or hide the IBM Cognos pane, select or clear the IBMcognos check box.
      - To show or hide the IBM Cognos toolbar, select or clear the IBMcognos for Microsoft Office check box.

Results

The IBM Cognos pane appears in the application work area, and buttons are made available from the IBM Cognos toolbar. You can now set your preferences for IBM Cognos Office and installed applications.
Customize IBM Cognos Office

You can customize the IBM Cognos Office environment so that it meets your reporting and analysis needs.

You can specify the following preferences for IBM Cognos Office:

1. the application, such as IBM Cognos for Microsoft Office or IBM Cognos Analysis for Microsoft Excel, to start up when you first open IBM Cognos Office, see “Customizing how IBM Cognos Office starts.”
2. the datasource connection to the database, see “Logging on to an IBM Cognos server” on page 15.
3. the location of IBM Cognos BI gateways, see “Configure connections to IBM Cognos systems.”
4. whether to enable single signon for authentication, see “Set up user authentication” on page 14.
5. whether to enable forms-based authentication, see “Set up user authentication” on page 14.
6. whether to enable logging and at what level of detail, see “Enable logging as a diagnostic tool” on page 14.

Each time that you start the IBM Cognos Office application, these settings apply to your session.

Customizing how IBM Cognos Office starts

When you first start IBM Cognos Office, you can choose to show either the IBM Cognos pane or a specific application. If you choose the IBM Cognos pane, it shows all the installed IBM Cognos for Office applications that you can use. You can move the pane or undock it. Click the application icon that best meets your needs.

After specifying your preference, IBM Cognos opens in the chosen mode in subsequent sessions.

Procedure

1. On the IBM Cognos toolbar, click the Options icon.
2. In the navigation pane, click IBM Cognos.
3. Choose whether to show the IBM Cognos Welcome pane in your work area or start a specific application, such as IBM Cognos for Microsoft Office or IBM Cognos Analysis for Microsoft Excel:
   - To show the IBM Cognos Welcome pane each time that you start IBM Cognos Office, under Start Application, select the Show IBM Cognos welcome page check box.
   - You can change this option later by clearing the Show this page in the future check box on the IBM Cognos pane.
   - To start a specific application when opening IBM Cognos Office, from the Startup application list, click the application that you want.
4. Click OK.

Configure connections to IBM Cognos systems

To access content, you must configure connections to IBM Cognos systems. Contact your administrator to obtain the URLs required to create connections.
A connection to an IBM Cognos BI system provides access to relational, OLAP, and dimensionally-modeled relational (DMR) data sources. Also, with a connection to an IBM Cognos BI system, you can open a report from IBM Cognos Connection and publish a Microsoft Office document to IBM Cognos Connection.

A connection to an IBM Cognos TM1 system provides access to IBM Cognos TM1 cubes, and the ability to open a package or plan from Cognos TM1.

**Before you begin**

You must contact your administrator for the URLs required to connect to IBM Cognos systems. Each URL is unique based on system configuration. For example, IBM Cognos BI systems can use different types of gateways. A Cognos TM1 system might use a non-default port number.

- An example URL for an IBM Cognos BI system is:  
  `http://server_name/ibmcognos/cgi-bin/cognos.cgi`
- An example URL for a Cognos TM1 system is:  
  `http://server_name:port_number`

`server_name` is either the IP address of the computer or the computer name.

`port_number` is the port set by the administrator for application server on the Cognos TM1 system. The default port is 9510.

**Procedure**

1. On the IBM Cognos toolbar, click the **Options** icon.
2. In the navigation pane, click **IBM Cognos**.
3. Create a new connection or edit an existing connection.
   - To create a new connection, click **Add**.
   - To modify an existing connection, select the connection and then click **Edit**.
4. In the **Datasource Type** box, click **IBM Cognos BI** or **IBM Cognos TM1**.
5. In the **System URL** box, type the URL provided by your administrator that identifies the location of the IBM Cognos system.
   Do not use localhost to refer to the local computer that the IBM Cognos BI gateway is running on. By using localhost, the information sent to the server is routed back to the local computer. As a result, requests to the report server will fail when importing prompted reports.
6. In the **Friendly Name** box, type a name.
7. Click **Test Connection**.
   - If the connection fails, contact your administrator to verify the connection information. See the troubleshooting section for solutions to common configuration issues.
8. Click **Save**.
9. If you modified an existing connection, you must change the server and package information for each workbook. For more information, see "Update server URLs" on page 16.

**Results**

The connection appears in the **IBM Cognos Systems** list.
In IBM Cognos Analysis for Microsoft Excel, the friendly name appears in the IBM Cognos pane as the root node in the tree hierarchy.

After you configure connections to the IBM Cognos BI systems, you can enable single signon for integration between IBM Cognos Office and IBM Cognos client applications, such as IBM Cognos Planning or IBM Cognos Controller, or between IBM Cognos Office applications. You can also enable forms-based authentication.

**Set up user authentication**
Your administrator has already configured an authentication provider for IBM Cognos components. To enable security between IBM Cognos Office and IBM Cognos client applications, you can enable single signon. Single signon ensures that users who are logged on to one IBM Cognos client application, such IBM Cognos Planning or IBM Cognos Controller, are not prompted for authentication when they run another IBM Cognos client application, such as IBM Cognos Analysis for Microsoft Excel.

For single signon to work properly, it must also be established on the IBM Cognos BI or TM1 servers. The IBM Cognos BI administrator must set a parameter in IBM Cognos Configuration that specifies that a client application can share session information with another client on the same computer. Users can then access reports without subsequent signons because the system automatically identifies users and provides security information.

If your company uses other Web-based access management software, such as SiteMinder, to provide single signon in your security infrastructure, you must enable forms-based authentication. The forms-based authentication service allows users to enter their credentials, such as the user name and password, through a form on a Web page. If the credentials are valid, users are logged on to the site. The credentials persist until the user explicitly logs off.

**Procedure**

1. On the IBM Cognos Office toolbar, click the Options button.
2. In the navigation pane, click IBM Cognos.
3. Under IBM Cognos Systems, choose whether to use single signon or forms-based authentication:
   - To enable single signon, select the Enable single signon check box.
     After logging on for the first time, each time that a secure report is accessed, no signon is required because the system automatically provides the security information.
   - To enable forms-based authentication, select the Enable forms based authentication check box.

**Enable logging as a diagnostic tool**
A log file is an important diagnostic tool for investigating the behavior of IBM Cognos Office. It can help you troubleshoot problems by recording the activities that take place when you work with IBM Cognos Office. These activities include information about the environment, exceptions, and entry and exit functions.

You can specify whether information about IBM Cognos Office is logged and at what level of detail. By default, log activities are saved to the `user_root_directory`.

Enable logging if you are attempting to troubleshoot unexpected behavior. In this situation, the support staff will want a copy of the entries in the log file.
Writing to log files may result in performance degradation.

**Procedure**

1. On the IBM Cognos toolbar, click the **Options** button.
2. In the navigation pane, click **IBM Cognos**.
3. Under **Logging**, select the **Log Level**.
   - To turn logging off completely, click **None**.
   - To record only critical issues and events in the log, click **Critical**.
   - To record errors as well as critical issues and events, click **Error**.
   - To record warnings as well as errors and critical issues and events, click **Warning**.
   - To record information as well as warnings, errors and critical issues and events, click **Information**.
   - To record all events and issues, even routine items, click **All**.
4. Click **OK**.

On Microsoft Windows XP, the log file is created in `drive\user directory path\user name\Local Settings\Application Data\Cognos\Office Connection\Logs`. On Microsoft Windows 7, the log file is created in `drive:username\AppData\Local\Cognos\Office Connection\Logs`. The naming format for log files is `ymmd_hhmmss.txt`.

**Results**

The next time that you start IBM Cognos Office, activities and information about the environment are logged in the file. From the Options dialog box, click the **View Logs** button to open the folder that contains the log files.

**Logging on to an IBM Cognos server**

IBM Cognos supports authenticated and anonymous user access. To use IBM Cognos Office as an authenticated user, you must log on to the IBM Cognos system that contains the data source or package for the reports that you want to import.

You can be logged on to multiple data source servers at one time.

You can also automate this task by using the Logon method. For more information, see "Logon" on page 114.

**Procedure**

1. On the IBM Cognos toolbar, click the **Logon** icon, and select the server that contains the data source or package for the desired reports.
2. If there is more than one namespace, in the **Namespace** box, click the desired namespace and click **OK**.
3. Type your **User ID** and **Password**, and click **OK**.
4. Repeat steps 1 to 3 for each additional server.

**Results**

After logging on and showing the IBM Cognos pane, you can use IBM Cognos Office.
Clearing the cache

For each workbook that you open or create during or after logging on to IBM Cognos Office or its components, a cache worksheet is created. This worksheet holds information about the data that needs to be rendered. You can clear the cache of packages used in workbooks that use IBM Cognos Analysis for Microsoft Excel. Clearing the package cache reduces the size of the workbooks by deleting unused data and metadata associated with formulas. The Clear Cache button works for all the data sources and packages defined in IBM Cognos Analysis for Microsoft Excel. After you clear the cache, you must save workbooks to see a reduction in file size.

Clear the cache when workbook size matters, when security is paramount, or when it is not necessary to store report results for faster processing times. If the size of your workbook is too large due to extensive data, the clear cache function reduces the size of the workbook. However, there is a trade-off: the processing time for populating the workbook with data increases because the data must be retrieved from the IBM Cognos BI data server instead of relying on the data that is saved in the cache.

Alternatively, you can specify to clear the local cache of retrieved data each time that you save the workbook or save the workbook with a new file name. You can do this by selecting the Clear Cache on save check box.

Procedure

1. Start IBM Cognos Analysis for Microsoft Excel.
2. Open a workbook.
3. From the IBM Cognos toolbar, click Options.
4. Under Cache Management, choose how you want to clear cache:
   - To clear the local cache for the active workbook, click Clear Cache.
     The cache is cleared and the size of the workbook is reduced. You can now open and save additional workbooks. To avoid creating a cache worksheet for non-IBM Cognos workbooks, you must exit Microsoft Excel.
   - To clear the local cache each time you save a workbook, or save a workbook with a new file name, select the Clear Cache on save check box.
     Data displayed on the workbook is cleared only when using the Clear All Data button from the IBM Cognos toolbar.
5. Click OK, and then save the workbook.

Results

You can also automate the process for clearing the cache. For more information, see “ClearCache” on page 118.

Update server URLs

Update the IBM Cognos server information for existing reports and formulas in an IBM Cognos enabled Excel workbook, PowerPoint presentation, or Word document.

About this task

When running this command, the name of the package remains the same. You can use this command to change only one server, such as a test server to another
server, such as a production server. You choose the URLs from the list of servers that you enter in the IBM Cognos Systems section of the Options window.

**Procedure**

1. Open the Excel workbooks, PowerPoint presentations, and Word documents you want to update.
2. From the IBM Cognos toolbar, click the Options icon. The Options window appears.
3. In the navigation pane, click IBM Cognos.
4. Click the Update System Utility button. The Update System dialog box appears.
5. From the Old System list, select the server or system you want to update.
6. From the New System list, select the URL for the replacement server or system and click OK. If the replacement system that you want does not appear, click Add a new system. The Edit/Add System dialog box appears. Enter the information for the new system and click Save.

**Results**

The open IBM Cognos enabled files are searched and the server information is updated.

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**Customizing Cognos Analysis for Microsoft Excel**

You can set options that apply to IBM Cognos Analysis for Microsoft Excel or specifically to your explorations.

- **Options for the application** "Setting options for IBM Cognos Analysis for Microsoft Excel" apply to workbooks created in IBM Cognos Analysis for Microsoft Excel that may include explorations, analyses, and consumed reports from IBM Cognos data sources. The data structures are retrieved from the packages in the content store.

- **Options for explorations** "Set options for exploration sheets" on page 18 apply to worksheets that contain explorations. You can use these options to quickly change how you view performance indicators, such as revenue or production costs. OLAP exploration refers to the term slicing and dicing to describe the ease with which you can change context and view details.

**Setting options for IBM Cognos Analysis for Microsoft Excel**

You can change default settings to improve performance.

For example, if you usually work with the same package, you can automatically load the most recently used package when you start IBM Cognos Analysis for Microsoft Excel.

When working with dimensionally modeled relational data, you can use member functions to manipulate members by getting the child members for the parent member. You can limit the number of members shown in the source tree.

**Procedure**

1. On the IBM Cognos Office toolbar, click the Options button.
2. In the navigation pane, click IBM Cognos Analysis.
3. If you want to load the most recent system and package each time that you start your IBM Cognos Analysis for Microsoft Excel session, under Application Settings, select the Load most recently used system and package check box. This is most useful when you use the data source regularly and you want an easy way to access it so that you can quickly begin or resume work. If the most recently used package is inaccessible or missing, no source tree is shown. You must select another package to replace the missing one.

4. If you want to limit the number of members shown in the source tree and the search result dialog box, under Application Settings, in the Member display count limit box, type the maximum number of members that can appear in the source tree before showing the Search option.

The number of members is reflected in each box in the Rows, Columns, and Context areas of your exploration and the results of a search. This setting applies to dimensionally modeled data. It does not apply to relational packages. This setting also limits the number of items that you can select and place in any of the drop zones, even from the result of a search.

5. Click OK.

Set options for exploration sheets

In IBM Cognos Analysis for Microsoft Excel, each exploration that you create is assigned to a single worksheet. You can select a different server and package for each exploration. The packages that you use to create the reports are based on models that are created in the modeling tool, Framework Manager.

To identify the source of data for each worksheet, choose to show the server name and package from which the data is retrieved. When this preference is set, the server name and package are shown in the first two rows of an exploration sheet. Similarly, when you open a package from an IBM Cognos BI system, the Information dimension includes objects, such as System Name and Package Name, that you can drag into the worksheet in a cell-based analysis.

Rows directly after the source information show filtering using context from the Rows, Columns, and Context areas of the exploration.

You can also improve the performance of your session by limiting the rows that are rendered in a Microsoft Excel exploration.

Procedure

1. On the IBM Cognos Office toolbar, click the Options button.
2. In the navigation pane, click IBM Cognos Analysis.
3. If you want to show the server and package information, under Crosstab or List Settings, click the Show system and package information in crosstab and list sheet check box.

The first row of the worksheet shows the server name, which is the URI location of the IBM Cognos gateway. The second row shows the package name (the fully qualified location) in the content store. The Row, Columns, and Context rows show the dimension or level hierarchy that contains the items used for filtering.

4. If you manually want to set the starting cell location for a crosstab or list, under Crosstab or List Settings, click the Assign crosstab or list starting cell check box.
By default the starting cell is A1 in the worksheet. If you set this option, when you create a crosstab or list, the application prompts you to click a cell in the worksheet or enter a cell location.

5. If you want to preserve Microsoft Excel formulas when committing data to a Cognos TM1 server, click the **Preserve user formulas** check box. Otherwise, cell formulas are replaced by the data values submitted.

6. If you want to suppress the confirmation message when you refresh data, click the **Hide refresh confirmation for each worksheet and workbook** check box.

7. If you want to suppress the confirmation message when you commit data, click the **Hide commit confirmation** check box.

8. If you want to restrict the number of rows in the current crosstab exploration, under **Crosstab or List Settings**, in the **Data display row limit** box, type the number of rows that can be shown. By reducing the number of records rendered in a crosstab, you can reduce the time required to retrieve the metadata. This setting does not apply under the following conditions:
   • When creating list explorations
   • When in cell-based analysis
   • When **Preview with No Data** option is selected

9. To control the number of items appearing in explorations when expanding or drilling the metadata, under **Crosstab or List Settings**, set the **Expand member limit** option.

   This setting controls only the number of items that are being dragged from the source tree. It is in effect only when **Insert Member With Children** is set on the IBM Cognos toolbar. It does not apply to cell-based analysis or IBM Cognos TM1 packages.

   For more information, see “Setting limits on expanding items” on page 21.

10. To control how labels appear in nested cells, set the **Grouping option**.

    **Note:** The **Grouping option** controls how the Group / Ungroup feature works. For crosstab explorations, this option is the automatic setting for presentation of metadata in nested rows and columns. For lists, this option determines how the Group / Ungroup menu items and buttons work. These settings affect the entire workbook.

    Choose whether to **Merge Cells**, **Repeat Labels**, or **Label Top Cell**.
    • To merge metadata into cells that span nested items and allow for full grouping, click **Merge Cells**.
    • To repeat metadata in individual cells that span nested items, click **Repeat Labels**.

    Use this option when you want to use other Excel functions on the data.
    • To limit cell metadata and merging to minimize labels, click **Label Top Cell**.

11. To show the members of a report data item by double-clicking a cell, under **Formula Settings**, select the **Expand with double click** check box.

    The setting is applied only if you are doing cell-based analyses. If you are doing a cell-based analysis and no metadata is available on rows or columns, double-clicking a cell places the contents in edit mode.

12. To limit the number of cells that are returned when you add data items to a cell-based analysis, type a number in the **Data object cell limit** box.
The default is 250. You must decide what is optimal for your system, based on
the processor speed, cache, and RAM or VRAM. Lowering the number gives
you a faster processing time when you are retrieving large amounts of data.

13. To set the time limit for retrieving data and populating cells during cell-based
analysis, type the limit in the **Processing time limit (milliseconds)** box.
The default is 1,000 milliseconds. For large requests, the processing time limit
must be increased. For example, to increase the value to 100 seconds, type
100000 in the **Processing time limit (milliseconds)** box.

14. Click **OK**.

15. If you have a workbook open and you want your changes to take effect, on
the IBM Cognos Office toolbar, click the **Refresh All Data** button.

**Using application settings to optimize your system performance**

You can optimize system performance by using applications settings.

Use the settings on the **Options** dialog box to set the **Member display count limit**, the **Data object cell limit**, and the **Processing time limit**. By modifying these values you can increase the efficiency of data retrieval.

The **Member display count limit** defaults to 50. It limits the number of items that appear in the source tree and in search results. In some cases, this may be too large and should be decreased. Although the overall data retrieval time may not be affected by lowering this value, the time to populate the initial group of items decreases. Setting this value to zero (0) turns this feature off. Because of the way this feature works with the **Data object cell limit**, in cases of complex data requests represented in a workbook with nested rows and columns, you may need to turn this feature off to view complete data in the workbook. You must determine what an appropriate value for your environment is.

**System optimization with large data sets**

For list reports based on IBM Cognos Business Intelligence packages, IBM Cognos Analysis for Microsoft Excel can retrieve large data sets in CSV format. This enables IBM Cognos Analysis for Microsoft Excel to retrieve these data sets much faster than the standard fully formatted XML results. The CSV request format removes data formatting from the model.

For more information about setting the request format, see “Set list options for a worksheet” on page 47.

**Controlling data compression**

Automatic data compression is one way that IBM Cognos Analysis for Microsoft Excel decreases processing time for large data transfers from the BI server. Data compression should be turned on under normal circumstances. Although compression is turned on by default, it can be turned off by setting the UseGzipCompression property to false in the CommManagerSettings.xml file, which, by default, is located in the Office Connection directory, such as
C: \Documents and Settings\user name\Local Settings\Application
Data\Cognos\Office Connection or C:\Users\user name\AppData\Local\Cognos\Office Connection.

Turn compression off if you need to run tests or perform troubleshooting.
To turn gzip compression on set the following attribute:

<setting name="UseGzipCompression">True</setting>

**GZip and CSV formats automatically activated for lists**

GZip compression is turned on automatically when you change from RawXML format to CSV formats for lists. The global property is not changed, which means that if you turned compression off, that setting is retained for other types of data transfers.

For example, if you have compression turned off and you were to create a new exploration after making a CSV list request then your exploration data would still be uncompressed.

**Chunking**

Chunking enables IBM Cognos Analysis for Microsoft Excel to query for large IBM Cognos BI data sets in chunks or subsets of rows. We recommend that chunking be turned on and that the row setting be set initially to 2000. If server out of memory errors still occur, set the chunk size smaller.

Chunk size is set in the CognosOfficeReportingSettings.xml file, which, by default, is located in the following directory:

- on Window XP, C:\Documents and Settings\user name\Local Settings\Application Data\Cognos\Office Connection
- on Windows 7, C:\Users\user name\AppData\Local\Cognos\Office Connection

To turn on chunking, set the following attribute:

<setting name="ChunkSize">2000</setting>

**Setting limits on expanding items**

The Expand member limit setting in the Options dialog box controls how much data to retrieve from the source tree. It is complementary to other limits, such as chunk size and GZip compression.

Specifically, the **Expand member limit** setting applies to a member that is being dragged and dropped onto a report. This setting takes effect only when **Insert Member With Children** is set and controls only the number of items that are being dragged from the source tree.

For example, if **Expand member limit** is set to 200 (200 is the default value) and you drag Products that contains five items, then all five items appear on the report. If you drag a node item with 400 items, then only 200 of its 400 sub-items appear on the report. You can also observe interaction with the **Data display row limit**, which controls how many items to display in the rows and columns of the worksheet. If the data row limit is set to 3, and **Expand member limit** is set to 200, only 3 items appear on the report. You must click **More** or **All** to see the additional items controlled by this setting.

**Note:** The **Expand member limit** setting applies only to cubes and DMR packages and does not apply to relational packages.
Working with dimensionally modeled relational and OLAP data

For IBM Cognos Analysis for Microsoft Excel, data items are organized hierarchically. Dimensional data sources include OLAP data sources and dimensionally modeled relational (DMR) data sources. The source tree provides a hierarchical-based view of the data.

Note: The names of levels and members in a dimension come from the model. It is the responsibility of the modeler to provide meaningful names.

1. Package
   Packages are subsets of a model, containing items that you can insert in a report.

2. Dimension
   Dimensions are broad groupings of descriptive data about a major aspect of a business, such as products, dates, or markets. The Information dimension includes additional objects, such as System Name and Package Name that you can also drag and drop into the worksheet.

3. Level hierarchy
   Level hierarchies are more specific groupings within a dimension. For example, for the Years dimension, data can be organized into smaller groups, such as Years, Current Month, and All Dates.

4. Members folder
   Members folders contain the available members for a hierarchy or level. For example, the Members folder for the Years level hierarchy contains everything found in the Year, Quarter, and Month levels.

5. Level
   Levels are positions within the dimensional hierarchy that contain information at the same order of detail and have attributes in common. Multiple levels can exist within a level hierarchy, beginning with a root level. For example, the Years level hierarchy has the following related levels.

Table 2. Example of related levels for the Years level hierarchy

<table>
<thead>
<tr>
<th>Level</th>
<th>Level name</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Root</td>
<td>Years</td>
<td>The root level.</td>
</tr>
<tr>
<td>First</td>
<td>Year</td>
<td>Years in the Years root level. For example, 2004, 2005, and 2006.</td>
</tr>
<tr>
<td>Second</td>
<td>Quarter</td>
<td>Quarters for each year in the Year level. For example, 2004 Q1, 2004 Q2, and 2004 Q3.</td>
</tr>
<tr>
<td>Third</td>
<td>Month</td>
<td>Months for each quarter in the Quarter level. For example, Jan, Feb, and Mar.</td>
</tr>
</tbody>
</table>

Note: The Measures dimension, which is not shown in the table, contains the measures available in the data source.
Prompted metadata in packages used for Cognos Analysis for Microsoft Excel reports

Prompts help you find the information you need. It is a way for you to define the scope and limit large amounts of data. You can change the behavior of prompts in IBM Cognos Analysis for Microsoft Excel by modifying the definition of dimensions or query subjects in the model or other data source.

Cognos Analysis for Microsoft Excel uses prompts that are saved in the model or other data source. Prompting is useful for query items, such as ProductTypeCode, whose values are not shown in a report but can be used for filtering data. For these variables, use IBM Cognos Framework Manager to define type-in prompts. The Prompt Info properties in Framework Manager give you the ability to control default filtering and prompting. The properties are used by Cognos Analysis for Microsoft Excel to create a filter expression and set the use and display items in a prompt and prompt query.

If you expand an item in the source tree that contains a prompt, input for that item is requested before the item can be added to the work area. Depending on the type of prompt, you must give the response, or, if it is a prompt with a default, accept the default, before dragging the item into the crosstab, list, or cells of the workbook. The prompt values persist in the report and are saved as part of the query for future use.

Understanding the differences between crosstab, list, and cell-based analysis

Using IBM Cognos Analysis for Microsoft Excel, you can work in three different ways: crosstab exploration, list reports, or cell-based analysis. When you create a crosstab, you use drop zones to add objects from the source tree to the rows, columns, measures, and context area of an IBM Cognos Office workbook. When you create a list, you use a single drop zone, columns, to create a list of items. You can add additional columns to populate the list with additional information. In a list, each column shows all the values for a data item in the database. When you use cell-based analysis, you drag and drop objects directly onto the cells of a workbook. You can move between the methods. Each of these methods has its own benefits and limitations.

Crosstab exploration

Some of the strengths associated with crosstab exploration include its drag and drop capabilities and visual cues that it provides through the use of drop zones in the overview area. When using IBM Cognos Analysis for Microsoft Excel in exploration mode, you can launch explorations in IBM Cognos Analysis Studio and IBM Cognos Report Studio. Exploration mode provides its own formatting based on the underlying data. You can create a cell-based analysis from a crosstab.

For more information on exploration, see Chapter 3, “Exploring data,” on page 25.

List reports

Some of the strengths associated with lists include its drag and drop capabilities and visual cues that it provides through the use of a drop zone in the overview area. You can very easily and quickly view all the items in the tables of your database. When using IBM Cognos Analysis for Microsoft Excel in list mode, you can launch list reports in IBM Cognos Report Studio.
Cell-based analysis

Some of the strengths associated with cell-based analysis include the ability to use multiple packages in the same worksheet, the ability to move cells, rows, and columns, and add Excel calculations, charts, and formatting. Using cell-based analysis enables you to move beyond simple crosstab layouts. From a single cell it is easy to create a detailed exploration.

For more information on cell-based analysis, see “Use cell-based reports” on page 57.

Recommendations for when to use crosstab, list, or cell-based analysis

This section outlines some of the recommended practices for working with data using IBM Cognos Analysis for Microsoft Excel.

Because this environment is entirely within Microsoft Excel, there are special considerations when rendering IBM Cognos data into the cells of a worksheet. Each method (crosstab, list, or cell-based analysis) has its own set of design guidelines.

Crosstabs

The following are some design considerations for creating your crosstab report. Use a crosstab

• to find answers to simple questions that can be found in your data source, such as the revenue for Tents in the Americas for 2006
• to build interactive crosstabs that you or another user can drill up and down in
• when you are not concerned with formatting
• to build a data set that you will convert and use in a more complex cell-based analysis

Lists

The following are some design considerations for creating your list. Use a list

• to create a comprehensive group of items in a query subject or table of the database
• to enumerate the members of an OLAP dimension

Cell-based analysis

The following are some considerations for creating a cell-based analysis. Use cell-based analysis

• to add data and calculations that are not in the original data source
• to work with data from multiple data sources, packages, and servers
• to create layouts with complex layouts, rather than a simple crosstab
• when formatting is important
• when you are presenting a final view that does not require interactive exploration
Chapter 3. Exploring data

Create explorations to help you make more effective business decisions by exploring significant company data.

Data sources can be IBM Cognos Business Intelligence sources, or IBM Cognos TM1 cubes.

Use crosstab explorations to quickly change how you view performance measures, such as revenue or budgeted production costs.

OLAP (online analytical processing) exploration uses the term slicing and dicing to describe the ease with which you can change context and view details. For example, you look at revenue for the years 2006 to 2008 by sales region. You notice a dip in the revenue for 2007. By clicking 2007, you can drill down to show revenue results by quarter for 2007. You can easily change the view from quarters for 2007 to sales personnel by replacing quarters with sales personnel.

You can compare and manipulate data so that you can better understand relationships between data and the relative importance of individual data items. Whether you want to assess revenue growth or to identify top performers, IBM Cognos Analysis for Microsoft Excel provides the filtering and sorting support you need for exploration and write back.

To extend the example of reviewing revenue by sales region and sales personnel, you can add sales targets and then calculate the percentage difference between the sales target and actual revenue for each salesperson. The result indicates who achieved their sales quota as well as who is eligible for a bonus.

For an example about creating a basic crosstab exploration, see “Example - evaluate revenue from specific order methods” on page 93.

If you are already comfortable with exploration fundamentals, you may want to refine your crosstab by using tasks such as manipulating the rows and columns, filtering data, and sharing the results.

For more information, see “Swap rows and columns in a crosstab” on page 46 and “Filter values using context” on page 38.

Use list explorations to show detailed information from your database, such as customer lists or product lists. Data sources can be relational, OLAP, dimensionally modeled relational (DMR), or IBM Cognos TM1 cubes.

A list exploration is a report that shows data in rows and columns. Each column shows all the values for a data item in the database or a calculation based on data items in the database. You can create a list to look up the value of an item from the database. It can then supply the value to another worksheet where it can be used for setting a parameter. For more information, see the section on use cases and examples.
Creating a crosstab or list exploration

To explore data using IBM Cognos Analysis for Microsoft Excel, select a package and choose items from that package to place in the rows and columns of the Excel worksheet.

Before you begin

Before you can create a crosstab or list exploration, the administrator must create a package and publish it to a location to which you have access.

For example, for an IBM Cognos TM1 cube, the administrator must create a package in an IBM Cognos TM1 cube authoring tool, such as IBM Cognos TM1 Architect or IBM Cognos TM1 Performance Modeler. An administrator must configure your access privileges using IBM Cognos TM1 Architect.

For an IBM Cognos BI system, the administrator must have created a package in Framework Manager and published it to a location in the IBM Cognos Connection portal to which you have access. For full access to IBM Cognos Analysis, you should be a member of the Express® Authors or Report Administrators role in IBM Cognos BI. An administrator must configure these privileges using IBM Cognos Administration.

Procedure

1. Specify the package.
2. Add data items to rows and columns.

   Note: If you are creating a crosstab from an IBM Cognos BI system, you must add a measure.

   Tip: If you are working with an IBM Cognos TM1 cube, you can select views, which contain previously saved crosstab items for row, column, and title axes.

3. Optionally, nest and filter data. For more information, see “Nest rows or columns” on page 43 and “Creating custom filters” on page 36.

Results

To format cells in your crosstab or list exploration, you can use the IBM Cognos custom styles, such as Measure - IBM Cognos or Calculated Column - IBM Cognos, in addition to the pre-built Microsoft Excel styles.

You can access the IBM Cognos styles from the Excel Style command on the Format menu. In Microsoft Excel 2007 and 2010, access the IBM Cognos styles from the Cell Styles icon in the Styles section on the Home tab ribbon. The IBM Cognos styles are listed along with the pre-built Excel styles. You can modify attributes, such as font and alignment, and then save the changes to a template for re-use.

In Microsoft Excel 2003, 2007 and 2010, a background color that is set using the Format Cells command overrides the background color that is set for the cell styles.

To preserve formatting you applied to the exploration, from the Crosstab or List toolbar select Run with Excel formats. If you select Run with Server formats or Preview with No Data all custom formatting is removed.
Specifying the package for your crosstab or list exploration

Specify the package that will provide items for the exploration sheet. To select a package and view data, you must have security rights to that package.

The packages that you use to generate your exploration are based on models that are created in the modeling tool, such as Framework Manager or IBM Cognos TM1 Architect. A model is a set of related objects, such as query subjects, dimensions, filters, and calculations.

The packages that you use to generate your list can be either relational or dimensionally modeled data sources. Dimensionally modeled data sources can be rendered using either lists or explorations.

Before you begin

The package must be previously created and published to the IBM Cognos portal. For more information, see the Framework Manager User Guide or the IBM Cognos TM1 Operation Guide.

Procedure

1. Start Microsoft Excel
2. On the IBM Cognos toolbar, click the IBM Cognos button.
3. In the IBM Cognos pane, click the IBM Cognos Analysis button.
4. In the IBM Cognos Analysis pane, click Open Package.

   **Note:** The Select Package dialog box appears.
5. If more than one system has been configured, click System and select a data source.
6. If more than one package exists, click the one you want to use and then click OK.

Results

Objects from the selected package, such as data items appear in the source tree.

**Tip:** If the package that a report is using has changed, load it to ensure that you are working with the latest version. In the Select Package dialog box, in the System box click a server, and then click Load Packages. To change a server and package, in the information area of the worksheet, double-click the server name and click the server and package from the Select Package dialog box.

Adding objects to rows and columns

Select the data items that you want to appear in the crosstab or list exploration. When selecting multiple items, the selected items are placed in the exploration sheet in the order that you click them. To avoid rearranging items after you drag and drop them into the crosstab, click the items in the desired order of placement. To add an item to a multiple set, hold down the Ctrl key while dragging the item. This appends the new item to the items already in the crosstab exploration.

You may frequently use items from different query subjects or dimensions in the same reports. Ask your modeler to organize these items into a folder or model query subject and then to republish the relevant package. For example, if you use
the product code item in sales reports, the modeler can create a folder that contains
the product code item and the sales items you need.

IBM Cognos TM1 uses predefined crosstabs, called views, that you can select, if
you have them set up already. For TM1 data items there is a default measure.

**Procedure**

1. In the IBM Cognos Analysis pane, click **Create a new crosstab** or **Create a new
   list**.
2. If the **Select Start Location** dialog box appears, type a cell address, such as
   `$LS20` and click **OK**. You can also click a cell to populate the **Start Address**. For
   example, you can change the start location to accommodate graphs or other
   user-inserted elements.
3. In the source tree, in the IBM Cognos Analysis pane, drag each data item to the
   location in the work area where you want it to appear.
   You can drag objects to the Rows or Columns drop zone, which is located in
   the header area of the worksheet. Use the Context area, when it is available, to
   further refine or filter your report.

   **Note:**
   - To drag more than one item, you can use Shift+click or Ctrl+click to select
     multiple items.
   - To add an item to items that are already on Columns, hold down the Ctrl
     key and drop the item onto the existing items.
4. Save your workbook.

**Results**

Selected items appear in the rows and columns of the report.

After you edit your workbook, you can publish it to IBM Cognos Connection.

**Selecting measures**

Each crosstab exploration based on DMR or OLAP packages must contain at least
one measure. Only one measure can be dragged to the measure drop zone. If you
select more than one measure by placing a measure in a row or column, the
measure that is in the measure drop zone becomes the default measure. For an
IBM Cognos TM1 system, there is a default measure and you cannot select one.

**Tip:** To drag more than one measure to a row or column, you can use Shift+click
or Ctrl+click.

Sometimes, when you add measures to columns or rows, you may notice that
other items get re-ordered. This is a query framework behavior. Unlike an OLAP
data source, DMR data is not returned in a specified order. If a specified order is
required, you must edit the specifications in Framework Manager.

**Procedure**

1. In the source tree, select and drag a measure to the measure drop zone.
   Unlike the **Rows** or **Columns** drop zone, the **Measure** drop zone is available
   only on the grid and not in the header area. The selected measure appears.
2. Save your workbook.
Results

After you save your workbook, you can publish it to IBM Cognos Connection.

Removing measures from a crosstab exploration

To remove measures from a crosstab you must have an active worksheet. After removing a measure from the measure drop zone, you are able to add back a measure. In addition to the measure drop zone, which can only contain a single measure, you can add multiple measures to other drop zones.

To replace a measure, you can drag a new measure to any of the drop zones where the measure has been placed. This includes the measure drop zone.

Procedure

To remove a measure from a crosstab, you can alternatively

- use the toolbar. On the exploration bar, Ctrl+click the Reset to Blank Crosstab button.
- use the context menu. Right-click the cell that displays the measure name, click IBM Cognos Analysis, and then click Delete.

Results

The measures are removed from the measure drop zone in the crosstab. You can now add one or more measures to the crosstab.

Inserting a hierarchy in a crosstab

You can use a dynamic expression to insert a hierarchy in a crosstab based on the structure of the metadata tree.

You do this by selecting an insert member option that creates a dynamic expression, such as the Insert Member With Children option, and then dragging a node item to either the rows or columns drop zone.

For data based on IBM Cognos TM1 cubes, there are several options for inserting a hierarchy using a dynamic expression. The Insert Member With Children option gives you the ability to include a node item with one level of its component items. The additional insert options include:

- Insert Member With Descendants, which inserts an item and all levels of its component items
- Insert Member With Inputs, which inserts an item and its input or leaf items
- Insert Member With Ancestors, which inserts an item along with all its related components

Alternate hierarchies of the same dimension can only be stacked in the same crosstab. They cannot be nested or used on opposite axes. Alternate hierarchies of the same dimension, for example, Retailers by Geography and Retailers by Type, do not produce logical results when combined on the same crosstab as nested items or on opposite dimensions. To combine two alternate views of the same hierarchy, you must model them as separate dimensions. If they are available as separate dimensions, they can be combined on the same crosstab. For example, it
would be possible to place **Retailers by Type** on rows with **Retailers by Geography** on columns, and **Retailers by Type** on rows with **Retailers by Geography** nested on rows.

**Procedure**

1. On the exploration bar, click **Insert Member With Children**.
2. In the source tree, drag the hierarchy that you want to insert to the **Rows** or **Columns** drop zone.

**Results**

**Note:** If by using one of the multiple selection techniques, you dragged an item and one of its children to Rows or Columns, you may notice that it appears twice. If this was accidental, you can delete the repeated item. To remove an item, in the work area, right-click the item and then click **Delete**.

The items appear in the crosstab in their expanded format.

**Find the items that you need**

The source tree for the package that you select might contain large amounts of data. To find the items that you need in the source tree, you can

- expand a dimension to see successive levels and details
- specify a greater or lesser number of items to show in the source tree
- search for more items

By default, the source tree shows 50 items for any one dimension at a time. You can change this value to increase or decrease the number of items displayed. Depending on the size of the data source, you might want to set a smaller value to improve performance.

If there are more than the specified number of items in the dimension, a search icon appears. If you click this icon, you can enter your search criteria to find the items that interest you.

**Searching for items in the source tree**

By default, the maximum number of items shown in any single dimension in the source tree is 50. You can set a lower value to improve performance.

Searching is limited to the immediate details of the selected item. In DMR packages, you can only search one level down. For example, if searching for Star Dome Tent, you must select Tents and not Products to perform your search.

In addition to searching by name, in IBM Cognos TM1 data sources you can search on attributes. Searching is performed across the entire selected dimension.

In packages based on a cube, you can search in all descendants.

**Procedure**

1. In the source tree, click a dimension, hierarchy, or level, and click **Search metadata**.
2. In the **Words** box, type the words or characters for which you want to search.
3. In the **Options** box, click the search parameter you want to use.
4. If you want to perform a case-insensitive search, select the **Case insensitive** check box.
   If the database does not support this feature, it may be disabled.
5. In the **Search In** box, click the level in which you want to search.
6. Click **Search**.
7. After you finish your search, click **Close**.

**Results**

The search items appear in the **Results** box. You can drag and drop items directly from the **Results** box to the work area. If you do not see the results box, you may need to resize the dialog box so that all the fields are visible.

**Tip:** To make it easier to find items, you can specify the number of items to show in the source tree for the current session. For more information, see [“Setting options for IBM Cognos Analysis for Microsoft Excel” on page 17](#).

### Insert items

You insert items from the source tree as rows and columns in a crosstab to create sets for exploration. A set is a collection of like data. For example, you can have a set of data named years that includes quarters as details.

You can control how items are inserted by setting the insert option on the exploration bar. For an IBM Cognos BI data source, you can use the following insert options.

- **Insert Single Member**, which inserts the selected member.
- **Insert Member With Children**, which inserts the selected member and its components to one level as a static set.
- **Insert Member With Dynamic Children**, which inserts the selected member and its components to one level as a dynamic set.

For an IBM Cognos TM1 data source, you can use the following insert options.

- **Insert Single Member**, which inserts the selected member.
- **Insert Member With Children**, which inserts the selected member and its components to one level as a dynamic set.
- **Insert Member With Descendants**, which inserts an item and all levels of its component items as a dynamic set.
- **Insert Member With Inputs**, which inserts an item and its input or leaf items as a dynamic set.
- **Insert Member With Ancestors**, which inserts an item along with all its related components as a dynamic set.

In addition to items from the source tree, you can insert items retrieved in a search.

**Note:** The default measure specifies the measure to use for a crosstab if the measure is not set by one of the existing axes. For example, you create a crosstab with **Products** in the rows and **Quantity Sold** in the columns. You add **Revenue** to the **Measure** drop zone to make it the default measure, but the values in the rows do not change because they refer to the measure **Quantity Sold** in the column axis. However, if you replace the measure **Quantity Sold** with the non-measure **Order**
Method, the values now refer to Revenue as the default measure. When working with an IBM Cognos TM1 cube, there is a default measure that is used as part of the cube.

You can also simultaneously insert all the items of a level Insert and display all the items of a level” on page 33, insert some items from a level, or insert items from different levels of the same dimension “Inserting items into a crosstab report from multiple levels of a dimension.”

Procedure
1. Select the insert option you want to use.
2. In the source tree, select the items that you want to insert.
3. Drag the items to the desired location in the crosstab.
   - To add an item to items that already exist in the crosstab, hold down the Ctrl key when dropping items into the drop zones.
   - A highlighted bar indicates where you can drop the item.

Note: Sometimes, when you add measures to columns or rows, you may notice that other items get re-ordered. This is a query framework behavior. Unlike an OLAP data source, DMR data is not returned in a specified order. If a specified order is required, you must edit the specifications in Framework Manager.
   - A detail-based set appears in the crosstab.
   - You can insert items as a selection-based set by pressing Shift+click or Ctrl+click to select multiple items in a dimension and then dragging them to the crosstab. When selecting multiple items, the selected items are placed in the crosstab in the order that you click them. To avoid rearranging items after you drag and drop them into the crosstab, click the items in the desired order of placement.

Results

If you use either the insert member with children, descendents, ancestors, or inputs option with an IBM Cognos TM1 data source, you can reorder the items in a set. However, to save the view and preserve the reordered set, you must convert the dynamic subset to a static subset.

Inserting items into a crosstab report from multiple levels of a dimension

For a mixed comparison, use selection-based sets to position items adjacent to each other in the crosstab report.

For example, you can select items from a single dimension in the source tree. You can select both contiguous and noncontiguous items from different levels.

After you select items, you can drag the items to the crosstab.

For groups of items that you use frequently, you can create a custom set or subset to make selection of them easier. For more information on custom sets, see “Creating a custom set by using items in a drop zone” on page 41. For more information on subsets, see “Creating a subset by using items in an exploration” on page 82.
**Procedure**

1. In the source tree, expand the dimension to locate the items that you want to insert.
2. Press Shift+click or Ctrl+click to select multiple items in a dimension and then drag them to the crosstab.

   **Tip:** When selecting multiple items, the selected items are placed in the crosstab in the order that you click them. To avoid rearranging items after you drag and drop them into the crosstab, click the items in the desired order of placement.

**Results**

A selection-based set appears in the crosstab.

**Insert and display all the items of a level**

You can simultaneously insert all the items of a level. Levels define the way data is grouped in dimensions.

For example, a geographical dimension in a source tree might contain levels for region, country or region, and city. You can click a single region and instantly insert every country or region that belongs to that region into the crosstab. By expanding the region item, you can display all of the countries or regions within that region. Use this technique to insert members of a single node item.

You can also choose to display all of the countries or regions across regions by inserting a special Level item. Use this technique to insert members at the same level from multiple node items.

**Procedure**

1. In the source tree, click a single item that contains the detail that you want in the crosstab.
2. Optionally, insert members from a single node item.
   - Drag the item to the drop zone in the overview area, such as the Rows drop zone.
   - Expand the item.

   **Tip:** To expand or collapse items, right-click the item, click IBM Cognos Analysis, and then click Expand / Collapse or Expand Level / Collapse Level. Expand Level expands items from the highest level member.
3. Optionally, insert members at the same level from multiple node items
   - In the source tree, click a single item that contains the detail that you want in the crosstab.
   - From the command area, drag the Level item to the drop zone or work area.

**Drill Down and Drill Up**

You can drill down and drill up to change the focus of your analysis by moving between levels of information.

Drill down to see more detail. For example, you can drill down to the lowest-level item to examine the impact of a single aspect of your business.
Drill up to compare results. For example, you can examine revenue for a single product and then drill up to see revenue for the entire product line for comparison.

**Note:** When you drill back up after drilling down, you may lose filters that are applied. For example, you may create a filter to include the data for sales regions of the USA and Canada. You drill down on Florida. When you drill up again, the analysis no longer includes Canada in its scope.

**Procedure**

1. To drill down or up in a single row or column, pause the pointer over the label text until the icon with the plus sign and caret appears and the text is underlined, and then click.

   **Tip:** The direction of the caret indicates whether you are drilling up or drilling down.

2. To drill down or up in both a row and column simultaneously, click the value at the intersection of the row and the column, and then click again.

**Limit the items in your exploration**

You can limit the items in an exploration using a variety of techniques.

For both IBM Cognos BI and IBM Cognos TM1 data sources, you can use the following options to limit the items in an exploration.

- Use zero-suppression to hide rows or columns that contain only missing values.
- From either rows or columns, select the items you want to show in the exploration and then use the Keep option. The Keep option is available from the context-menu in an exploration and in the subset editor.

For IBM Cognos BI data sources, you can create custom filters to show only the data you require in an exploration.

**Custom filters**

For IBM Cognos BI data sources, you can filter data so that only the data you require appears in the analysis. Add a filter expression to focus a report and minimize processing time by excluding unwanted data. For example, you can filter data to show customers who placed purchase orders that were valued at over one thousand dollars during the past year. When you run the report, you see only the filtered data. Depending on your data, you can specify a filter by using measures, attributes, fields, and calculations and using comparison and logical operators to compare them with a constant, a measure, an attribute, a field, or a cell reference, including a date.

When you define a filter rule by using a label or an attribute, the text is case sensitive. These detail filters, which are applied to the data source, are boolean expressions used to exclude items based on values.
Use cell references

Cell references can be used anywhere a constant could be used. Cells are read at the time the query is initiated. You can use a text box for typing values or you can use cell ranges, such as J7, $K$9 for cells or H3:H20, $J$5:$M$15 for ranges. Cells can be on another sheet, for example, Sheet2!:B4, Sheet3!D2R2, or even a named range, such as Sheet1!RangeName. Blank cells are ignored and invalid numeric values are converted to zero (0). You can create crosstabs and lists on one worksheet to be used as part of a filter expression in another exploration sheet. A cell reference used in a numeric or date comparison that does contain a valid value will result in the use of 0 and the current date respectively.

Match data types

If you create a filter for a particular data type, such as a numeric data type, but enter criteria for another data type, such as a string, you receive an error. In general, you must enter values that are consistent with the data type of the item for which you are creating criteria. For example, if you create a filter for a monetary amount, which is numeric, but enter a string value, such as “Yen” you receive the following error:

Error 901: QE-DEF-0260 Parsing error before or near position: position of: "filter(MUN)"

The following operators are an exception to the data type rule: IS NULL, IS NOT NULL, LAST N DAYS, and IS IN. In the case of these operators, the target, or second, argument is not a type match with the field, or first argument. In the first two, IS NULL and IS NOT NULL, there are no target arguments. None of these operators can use a database reference as a target argument.

OLAP and DMR data sources

For OLAP and DMR data sources in a list report, criteria are limited to the items that you add to the list itself. To enhance filter capabilities, use lists for relational data sources and explorations (crosstabs) for dimensional sources. Be cautious when mixing context dimensions with filters because they may not yield the result you expect.

In nested explorations using OLAP or DMR data sources, you must apply the filter to the dimension on rows or columns that defined the measure value in the crosstab. For example, you might have a crosstab with products and order method on rows, years on columns and quantity sold on measures. Because order method is the inside edge of the nested rows (it appears after products in the Rows drop zone), you must create the filter using order method.

Focus relational data

You can limit the data in your report with filters or query parameters. The method you choose should depend on the capabilities of the data source, the performance requirements, the persistence of the dataset, and how complex you want the report to be. In IBM Cognos Analysis for Microsoft Excel, you must use detail filters for list reports in the relational reporting style. These filters remove rows and columns from your reports.
Before aggregation

For relational data sources, you may also have the option of applying filters before aggregation. Select the Before aggregation check box if the field is a measure, however this check box is disabled for non-measures or if the condition is at or below a logical OR operator. In that case, the default is enforced where non-measures are automatically before aggregation and all others are after aggregation.

Combine filters

You can combine filters to create custom AND and OR conditions. When you filter your data based on a number of criteria, there may be filter rules that are optional and filter rules that are required. You use AND to group rules that are mandatory. You use OR to group filter rules that are optional. For example, customers filtered by Revenue > 1000000 AND Discount >.15 gives different results from Customers filtered by Revenue > 1000000 OR Discount > .15. A more complex scenario might require combining both mandatory and optional filter rules.

Filters and calculations

Filters cannot use calculations that reference the set being filtered because this creates a circular reference. Depending on how ranking functions (such as rank or quartile) or percentage functions (such as percent of total) are customized, they may not be available when defining a filter.

IS IN operator

Based on the SQL IN operator, the IS IN operator reduces the need for multiple OR clauses. Use the IS IN operator for numeric and text fields. For numeric fields it would normally be non-measures, such as Year. You can use a text box for typing values or you can use cell ranges, such as J7, $K$9 for cells or H3:H20, $J$5:$M$15 for ranges. Cells can be on another sheet, for example, Sheet2!:B4, Sheet3!D2R2, or even a named range, such as Sheet1!RangeName. Blank cells are ignored and invalid numeric values are converted to zero (0). You can create crosstab and lists on one worksheet to be used as part of a filter expression in another exploration sheet. For more information, see the topics on use cases.

Promote filters to a studio

When you promote a crosstab or a list to a studio, such as Report Studio or Analysis Studio, the custom filter that used a dimensional data source is recognized as a set expression. Set expressions are calculated sets of members. For example, children ([2004]) is a set expression that displays the child members of 2004. To edit the custom filter in a studio, you must edit it as a set expression using the Query Calculation editor. For more information about set expressions, see the user guide for the studio.

Creating custom filters

In IBM Cognos Analysis for Microsoft Excel you can filter data so that only the data you require appears in the analysis. Specifically, you can add a filter expression using measures, attributes, fields, and calculations and using comparison and logical operators to compare them with a constant, a measure, an attribute, a field, or a cell reference, including a date.
If you are working with a dimensional data source, you can also use context filters. For more information, see “Filter values using context” on page 38.

**Procedure**

1. In the drop zone, click the drop-down box of the item you want to filter, click **Filter**, and then click **Edit/Add Filter**.
   
   The **Filter** window appears. Based on your selection you are able to select or enter items for **Item**, **Operator**, or **Value**. Criteria for filters are not limited to the items shown on the report.

2. Edit the filter expression and click **OK**.

3. After you have created all the criteria for the custom filter, click **OK**.

**Results**

After closing the filter window, all cells used in references are selected. This is useful if you want to format these cells to indicate their importance. The filter is applied to the applicable item. If you are working with the **Preview with No Data** option selected, the effects of the filter show when you run the data. The filter tag is displayed next to the item. In the drop-down box, on the **Filter** menu, **Custom filter applied** is selected.

**Tip:** To delete a filter, click the drop-down box of the filtered item, click **Filter**, and then click **No filter applied**.

**Adding a filter line:**

In the **Filter** window, add filter lines to create criteria for your filter. Each line represents a unique criterion or filter expression.

**Before you begin**

You must create your filter and be in the **Filter** window to add a filter line.

**Procedure**

To add a criterion to the filter, complete the following steps.

1. Click the **Add a Filter Line** icon. The **Edit Filter** window appears.

2. Edit the expression. Click a data item, then click a boolean operator, and then enter a constant or enter the cell reference that contains the value you want to use in this expression.

3. Click **OK**.

**Applying filter criteria before aggregation:**

If you use a relational data source, to apply the filter criteria before items are summed, you can select the **Before Aggregation** check box in the **Edit Filter** window.

**Before you begin**

You must create or edit a filter line from a relational data source.
Procedure
1. From the Filter window, click the filter line, or if you are creating a new filter, click the Add a Filter Line icon.
2. Select the Before aggregation check box.
3. Click OK.

Grouping filter criteria:
To combine filter criteria, group the filter lines. This enables you to create complex filter expressions that rely on multiple data items and values. You can use complex criteria to display ranges of items based on minimum and maximum values that you set in the Filter editor or in the cells of the Microsoft Excel worksheet.

Procedure
To group filter criteria, complete the following steps.
1. Ctrl+click the items you want to group.
2. Click the Group Selected Filter Lines icon.

Deleting filter criteria:
To remove criteria from your filter, you must delete the filter line or group that has that expression in the Filter window. If more than one criterion has been grouped, you can delete the entire group.

Procedure
To delete a criterion, complete the following steps.
1. To open the Filter window, from the toolbar or drop zone, click the Filter icon and then click Edit/Add Filter. The Filter window appears.
2. Click the line or group you want to remove.
3. Click the Delete Selected Filter Line icon. This deletes the highlighted line or group.

Ungrouping filter criteria:
Ungroup filter criteria if you want to change the order of the criteria, change the boolean operators, or if you want to delete specific lines from a complex filter.

Procedure
To ungroup criteria, complete the following steps.
1. To open the Filter window, from the toolbar or drop zone, click the Filter icon and then click Edit/Add Filter. The Filter window appears.
2. Click the grouped items. To select multiple items, ctrl-click each item.
3. Click the Remove the Group Containing Selected Filter Lines icon.

Filter values using context
You can use one or more items to quickly focus your exploration on a particular view of the data. This technique is known as filtering using context.
For example, you have a crosstab showing products in the rows and revenue for different quarters in the columns. To change the context to Asia, you drag Asia from the source tree to the **Context** section of the overview area. The crosstab then shows only the values for Asia.

Changing context changes the values that appear. It does not limit or change the items in the rows or columns.

You can filter using multiple values in the context area, however, multiple filters are lost when you convert the exploration to formulas and start to use cell-based methods. Some context filters cannot be converted to formulas, such as multiple filters from the same dimension and filters from dimensions that are already displayed in the exploration.

**Procedure**

1. In the source tree, select or search for one or more items to filter on.
2. Drag the item that you want to filter on into the **Context** section of the overview area.
   
   A drop-down list box appears under **Context**.
3. Click the item that you want.
   
   The crosstab shows the results only for the selected item.

   **Tip:** To change context, select a new item from the drop-down list under **Context**.
4. If you want to use a custom set as a filter, drag the custom set from the **Source Tree** to the **Context** section of the overview area.

**Suppressing empty cells in a crosstab or list exploration**

Sparse data may result in exploration sheets showing empty cells. For example, a crosstab exploration that matches employees with products, results in many rows of empty values for the revenue measure if the employee does not sell those products. To remove sparse data in an exploration sheet, you can suppress empty cells that contain a null or zero value.

Totals-based suppression removes rows or columns where the total results in a null or zero value throughout the exploration sheet. You cannot remove sparse data from individual rows or columns.

**Procedure**

1. On the exploration bar, click the **Apply Zero Suppression** icon.
2. Choose where to apply the suppression:
   
   - **Apply to Rows Only**, which is the only option that is valid for a list exploration
   - **Apply to Columns Only**
   - **Apply to Rows and Columns**

**Results**

Suppressed items are hidden and the Zero Suppression icon is visible in the Rows or Columns drop zone in the Overview Area.
Remember: To remove suppression, repeat step 1 and click No Suppression or click the zero suppression icon in the Rows or Columns drop zone.

Creating a calculation

Insert a calculation to make your crosstab or list exploration more meaningful by deriving additional information from the data source. For example, you create an invoice, and you want to see the total sales amount for each product ordered. Create a calculated column that multiplies the product price by the quantity ordered.

In addition to simple arithmetic calculations, you can perform the following calculations.

%Of  Calculates the value of a selected item as a percentage of another item, for example, fourth quarter as a percentage of the whole year or actual as a percentage of target.

%Change  Calculates the change in value of a selected item as a percentage, for example, growth from year to year or variance from target.

%Of Base  This calculation is only available if you select two members from different hierarchies, each from a different edge, for example, each region's contribution (on rows) to a yearly total (on columns).

%Of Parent  Calculates the value of a selected item as a percentage of its parent item, for example, January as a percentage of the whole year.

After you insert a calculation into a crosstab, the rows or columns are separated into two distinct blocks of items before or after the inserted row or column. If you want to use the Expand level / Collapse level feature, you must do so for each block separately.

When calculations in the rows and columns of a crosstab or columns of a list intersect, calculations are performed in the following order:

- addition or subtraction
- multiplication or division

For a crosstab, if both calculations have the same precedence, for example, if they are both business functions, then the row calculation takes precedence.

Procedure

1. Select the items in the columns or rows that you want to calculate.

2. Click the insert calculation icon and select the calculation that you want to perform.

   Remember: Calculations that are not applicable to the items you selected are greyed out.
**Results**

The calculated item appears in the worksheet. You can rename the calculated column or row. For more information, see "Rename a column or row" on page 44. You can also move the calculated column or row. For more information, see "Reorder columns or rows" on page 44.

**Note:** To delete a calculation, right-click the calculated row or column, click IBM Cognos Analysis, and then click **Delete**.

**Tip:** While working with calculations, to revert to a previous state, on the exploration bar, click **Back**.

---

**Custom sets**

When you work with IBM Cognos BI data sources, use custom sets to select, group, order, and save members from a single hierarchical or node item in the source tree.

When you use IBM Cognos TM1 data sources you must use the subset editor. For more information about subsets, see "Subsets" on page 81.

If you select the members of a node item, the custom set retains only the members that you selected at the time the set was created. You must update the custom set as members change in the node item.

You can save custom sets. You can specify a name and description for a custom set of data that you may want to reuse later. Multiple custom sets may be available in a single saved exploration.

Custom sets can be used in a crosstab using dimensionally modeled relational packages or OLAP data sources. They are not available for relational packages. Levels cannot be saved as a custom set.

After exporting or importing a deployment in Cognos Connection, you may need to update the storeID to see your custom sets. This may happen when you change or upgrade the servers that deliver packages to IBM Cognos Analysis for Microsoft Excel. For information on updating storeIDs, see the IBM Cognos Analysis for Microsoft Excel Tech Notes on the IBM Cognos support site.

**Creating a custom set by using items in a drop zone**

You can specify a name and description for a custom set of data that you may want to reuse later. You can create a custom set using items in a drop zone. Multiple custom sets may be available in a single saved exploration sheet.

You can save custom sets. IBM Cognos Analysis for Microsoft Excel creates a folder in your personal folder, My Folders, in the IBM Cognos Business Intelligence portal with the same name as the package and saves the custom set information in that folder. The custom set information is not shared among different users, even when they are using the same package. You only have access to your own custom sets.

Custom sets can be used in a crosstab using dimensionally modeled relational packages or OLAP data sources. They are not available for relational packages. Levels cannot be saved as a custom set.
**Procedure**

1. When creating a new exploration sheet, select items from a dimension or node in the source tree.

   **Note:** Order of selection is the order in which the items appear in the drop zone and in the custom set.

2. Drag the items to a drop zone.
   - For a crosstab, the drop zones are **Columns**, **Rows**, or **Context**. For a list, the drop zone is **Columns**.

3. From the drop zone, click the item drop-down box and then click **Edit Set**.
   - The **Selection** window appears.
   - To edit custom sets use the dialog box to move items to or from the Available Members pane to the Custom Set pane. To limit items in the Available Members pane click **Filter Tree**, type a string in the box and click the Filter icon. To reorder items in the Custom Set pane, right-click an item to access move options.

4. To save the custom set, click the **Save** or **Save as** icon. The **Save** window appears.

5. In the **Name** box, type a name for the custom set and click **Save**.

**Results**

The custom set is saved and appears in the source tree in the **Custom Sets** node item. It is saved as part of a user’s own workspace and is not available to other users.

**Creating a custom set using items in the source tree**

You can specify a name and description for a custom set of data that you may want to reuse later. You can create a custom set using items in the source tree. Multiple custom sets may be available in a single saved exploration.

You can save custom sets. IBM Cognos Analysis for Microsoft Excel creates a folder in your personal folder, My Folders, in the IBM Cognos Business Intelligence portal with the same name as the package and saves the custom set information in that folder. The custom set information is not shared among different users, even when they are using the same package. You only have access to your own custom sets.

Custom sets can be used in a crosstab using dimensionally modeled relational packages or OLAP data sources. They are not available for relational packages. Levels cannot be saved as a custom set.

**Procedure**

1. When creating a new crosstab or list, Ctrl+click items from a dimension or node in the source tree.

   **Note:** Order of selection is the order that the items appear in the drop zone and in the custom set.

2. Right-click a selected item and then click **New Set**.
   - The **Selection** dialog box appears.
   - To edit custom sets use the dialog box to move items to or from the Available Members pane to the Custom Set pane. To limit items in the Available
Members pane click Filter Tree, type a string in the box and click the Filter icon. To reorder items in the Custom Set pane, right-click an item to access move options.

3. To save the custom set, click the Save or Save as icon. The Save window appears.

4. In the Name box, type a name for the custom set and click Save.

Results

The custom set is saved and appears in the source tree in the Custom Sets node item. It is saved as part of a user's own workspace and is not available to other users.

Nest rows or columns

You can nest items in a crosstab to compare information by using more than one item in a column or row. For example, a crosstab shows the sales by product line for the past fiscal year. You can add an item to further break down the sales by order method.

In the overview area, you can drag the boxes that represent the nested items to quickly change the nesting order.

If you nest a row or column, the context menu for Expand, Drill, and Explore does not appear for the outer item when you convert to formulas and use cell-based methods.

Procedure

1. In the source tree, click the item that you want to insert.

   Tip: When selecting multiple items, the selected items are placed in the crosstab in the order that you click them. To avoid rearranging items after you drag and drop them into the crosstab, click the items in the desired order of placement.

2. Drag the item to the location that you want in the rows or columns.

   A highlight bar indicates where you can drop the item.

Nest items

You can nest items by dragging one item next to another item in the drop zone.

Procedure

1. Drag the first item to the drop zone.

2. Drag the second item next to the first item in the drop zone.

3. If you are creating a list, to merge cells with the same data, click an item in the column you want to group, and then from the List toolbar click the Group button.

Results

Nested items appear next to each other with nested items replicated for each of the preceding items.

Related concepts:
The IBM Cognos Analysis for Microsoft Excel user interface includes the IBM Cognos Analysis pane, which contains a source tree and several commands, an exploration bar, an overview area, a work area, and a toolbar or ribbon to help you create reports.

**Rename a column or row**

You can rename columns or rows, including calculated columns or rows. The item in the underlying database does not change, however, for presentation purposes you can change the name of the column or row heading of a crosstab or list.

For relational data sources, only measures and summary items can be renamed.

**Procedure**

1. Right-click the item you want to rename, click **IBM Cognos Analysis**, and then click **Reorder / Rename**. For IBM Cognos BI data sources, the **Reorder / Rename** window appears. For IBM Cognos TM1 data sources, the subset editor window appears.
2. In the list, if it is not already highlighted, click the item that you want to rename.
3. Click the highlighted item again so that the name is able to be edited, type the new name, and then press **Enter**.
4. Click **OK**.

**Results**

The displayed name of the row or column heading is changed.

**Note:** To reset all renamed items, click **Reset Captions**. This option is available in the **Reorder / Rename** window.

**Reorder columns or rows**

You can move columns or rows, including calculated columns or rows.

For relational data sources, only measures and summary items can be reordered.

If you used either the insert member with children, descendents, ancestors, or inputs option with an IBM Cognos TM1 data source, you can reorder the items in a set. However, to save the view and preserve the reordered set, you must convert the dynamic subset to a static subset.

**Procedure**

1. Right-click the row or column heading and then click **IBM Cognos Analysis** > **Reorder / Rename**.
2. Change the order of the items and then click **OK**.

**Results**

The row or column is moved in relation to the other rows or columns in the worksheet.
Sort rows by values or names

Sorting rows by values or names makes it easier for you to organize and analyze your data.

Sort options differ depending on the type of data source and the type of exploration. For example, in crosstab that uses an IBM Cognos BI multidimensional data source, you can sort rows by row name. Sort by row name is not available with an IBM Cognos TM1 data source.

Procedure

1. Select a sort option.
   a. To sort rows based on the values in a column, right-click the column header cell then click IBM Cognos Analysis > Sort by value.
   b. In a crosstab that uses an IBM Cognos BI data source, to sort rows by row name, right-click a row header cell then click IBM Cognos Analysis > Sort by name. You can sort rows by name using the context-menu from a row or column box in the overview area.

2. Select a sort option.

Results

In the overview area, a symbol appears in the rows or columns box to indicate a sort is applied. To remove a sort, right-click the header cell then click IBM Cognos Analysis > Sort > Remove.

Show top or bottom results

In a crosstab that uses an IBM Cognos TM1 data source, you can apply a filter to values to display only the top or bottom results.

You can apply a top or bottom filter in the following ways.

- Show only the top results to quickly determine the highest values in your data. For example, you want to know which sales representative contributed the greatest amount to yearly sales, so you apply a top percent filter.
- Show only the bottom results to quickly determine the lowest values in your data. For example, you want to know which employees spent the fewest dollars on travel, so you apply a bottom rows filter.

Top and bottom filters are not available when you use an IBM Cognos BI data source.

Procedure

1. Right-click a column header cell then click IBM Cognos Analysis > Sort by values > Top/Bottom.

2. Select a sort option and enter a value.
   - For Top rows and Bottom rows, the value represents the number of rows to display.
   - For Top percent and Bottom percent, the value represents a percentage of the sum of all values. For example, you can type 10 to display the customers who contribute to the top 10% of revenue.
For **Sum of top rows** and **Sum of bottom rows**, the value represents the sum of the results you want to display. For example, you can type 10000000 to display the customers who contribute to the first 10 million dollars of revenue.

**Results**

In the overview area, a symbol appears in the columns box to indicate a top or bottom filter is applied. To remove the filter, right-click the header cell then click **IBM Cognos Analysis > Sort by values > Remove.**

---

**Insert blank or user-defined columns or rows in a list**

Insert a blank column or row into a crosstab or list to create white space or add cell-based calculations. You can insert any Microsoft Excel calculation, such as AVG, MIN, or MAX and you can reference cells both inside and outside the exploration.

Depending on the type of report, such as a crosstab or list and the type of data, such as relational or asymmetric you experience very different results. We recommend that you experiment with different approaches to see what makes sense in your environment.

After you insert a row or column into a crosstab, the rows or columns are separated into two distinct blocks of items before and after the inserted row or column. If you want to use the **Expand level / Collapse level** feature, you must do so for each block separately.

**Procedure**

1. Click a column or row in the active exploration where you want to insert a column or row.
   Choose a start location that enables you to add titles or charts to the exploration. If the exploration data expands, make sure that it does not overwrite items.

2. Click the insert column or row button.
   A blank column or row appears next to or under the selected column or row.

3. To add a cell-based calculation to the inserted column, row or block, create the calculation in the first cell that applies to the inserted column.
   You must create the formula for the calculation in the cell closest to cell 1A (the upper left most cell) of the inserted group.

4. After you have created the calculation for a single cell, from the toolbar, click **Run with All Data**

   **Results**

   The calculation is propagated to all the inserted cells.

---

**Swap rows and columns in a crosstab**

You can swap rows and columns for a different view of your data. For example, the rows contain quarters of the fiscal year and the columns contain products. To track trends over time more easily, you can swap them so that the rows contain products and the columns contain quarters.
**Procedure**

Click the swap rows and columns button ![swap](image) on the toolbar.

**Tip:** You can also use the overview area to swap individual items on rows and columns by dragging the items from one area to the other.

---

**Set crosstab options**

You can set options for a crosstab that are specific to a worksheet. By updating the row and column settings, you can change the starting location of your crosstab in the cells of the worksheet. For example, to accommodate graphs or other user-inserted cells in a worksheet, you can shift the crosstab.

In addition to changing settings, the Custom sheet properties dialog box enables you to view information about the worksheet including the sheet type, server and package information and the date the worksheet was created.

**Procedure**

1. On the exploration bar, click the **Crosstab** button ![crosstab](image).
   
   The **Custom sheet properties** dialog box appears.

2. To change the starting location of your crosstab, type a new row number in the **Row start** box and a new column number in the **Column start** box.

3. To control how labels appear in nested cells, set the **Grouping option**.

   **Note:** The **Grouping option** controls how the Group / Ungroup feature works. For crosstab explorations, this is the automatic setting for presentation of metadata in nested rows and columns. These settings override the settings on the **Options** dialog box and affect only the current worksheet. You can leave cells ungrouped when you need to use Excel lookup functions or you can group cells to provide for greater readability.

   Choose whether to **Merge Cells**, **Repeat Labels**, or **Label Top Cell**.

   - To merge metadata into cells that span nested items and allow for full grouping, click **Merge Cells**.
     
   - To repeat metadata in individual cells that span nested items, click **Repeat Labels**.
     
     Use this option when you want to use other Microsoft Excel functions on the data.

   - To limit cell metadata and merging to minimize labels, click **Label Top Cell**.
   - To turn grouping off, click **None**.

4. After you are done setting options, click **OK**.

---

**Set list options for a worksheet**

You can set options for a list that are specific to a worksheet. By updating the row and column settings, you can change the starting location of your list in the cells of the worksheet. For example, to accommodate graphs or other user-inserted cells in a worksheet, you can shift the list.
Depending on your data source, you can also change the request format of the worksheet from Formatted Values (raw XML) to Unformatted Values (CSV). Do this when you need to decrease processing time. The number formatting assigned in the model is stripped from the data.

In addition to changing settings, the Custom sheet properties dialog box enables you to view information about the worksheet including the sheet type, server and package information and the date the worksheet was created.

**Procedure**

1. On the exploration bar, click the List button  
   The Custom sheet properties dialog box appears.
2. To change the starting location of your list, type a new row number in the Row start box and a new column number in the Column start box.
3. Choose whether to process data in either CSV or raw XML formats.
   - To choose CSV format for faster processing of large data sets, in the Request format drop-down box, click Unformatted Values.
   - To choose raw XML format, in the Request format drop-down box, click Formatted Values.
4. To control how labels appear in nested cells, set the Grouping option.
   **Note:** The Grouping option controls how the Group / Ungroup feature works. For lists, this determines how the Group / Ungroup menu items and buttons work. These settings override the settings on the Options dialog box and affect only the current worksheet. You can leave cells ungrouped when you need to use Excel lookup functions or you can group cells to provide for greater readability.
   Choose whether to Merge Cells, Repeat Labels, or Label Top Cell.
   - To merge metadata into cells that span nested items and allow for full grouping, click Merge Cells.
   - To repeat metadata in individual cells that span nested items, click Repeat Labels.
     Use this option when you want to use other Microsoft Excel functions on the data.
   - To limit cell metadata and merging to minimize labels, click Label Top Cell.
   - To turn grouping off, click None.
5. After you are done setting options, click OK.

**Best practices for working with crosstabs**

IBM Cognos Analysis for Microsoft Excel crosstab exploration sheets provide many automatic features so that you can focus on your main purpose, which is to analyze and explore your company data.

Any charts, cells, or cell-formatting that you introduce onto the crosstab exploration sheet may be overwritten when refreshed data changes size or the content of the exploration changes. You may want to create headings and charts where expanding data in the cells of the worksheet does not overwrite items.
In general, use explorations (crosstabs) for dimensional data sources. For more information, see “Working with items in a crosstab” on page 89.

If you are pulling large quantities of data while you are working on the layout of your worksheet, you may find that there is a delay. Two techniques help you to eliminate or at least mitigate performance delays. We recommend that you select Preview with No Data, and refresh data after you have finished designing your worksheet. If you work with dimensional data, in a crosstab, you should select a measure first. This limits the amount of data and will give you much faster results. Another technique to use if you are designing either crosstabs or lists is to lower the maximum number of rows or columns to pull into a worksheet. When you finish the layout, you can set the row or column number higher or double-click More or All to see the remaining rows or columns of data.

Best practices for working with lists

IBM Cognos Analysis for Microsoft Excel in list mode provides many automatic features so that you can focus on your main purpose, which is to analyze and explore your company data.

Any charts, cells, or cell-formatting that you introduce onto the exploration sheet are moved when refreshed data takes more columns or rows than before (to the limit of Microsoft Excel).

In general, use lists for relational data sources. For more information, see “Working with items in a list” on page 94.

For optimal performance, do not add charts, cells such as calculations, or cell formatting when using exploration sheets.
Chapter 4. Sharing your analysis

Share your analysis to give colleagues an opportunity to view important information or contribute their own pieces of data.

Several options exist for storing and distributing IBM Cognos Analysis for Microsoft Excel-enabled workbooks.

Work with Microsoft Office documents

You can make changes to your reports or explorations by retrieving data and overriding any previous changes, removing data, or converting dynamic data to static data to prevent future updates from the IBM Cognos Business Intelligence or IBM Cognos TM1 servers.

You can perform the following actions on reports, explorations, or analyses:
- refresh data
- clear cells of contents
- convert dynamic data to static data

When you work with data from the IBM Cognos TM1 server, you are also able to write back data to the TM1 data cube.

Refreshing data in IBM Cognos Analysis for Microsoft Excel workbooks

If the package or source data that a report is using changes, you can refresh it to ensure that you are working with the latest version.

Procedure

You can refresh your entire workbook, a worksheet, or just the formula cells:
- To update the entire workbook, on the IBM Cognos toolbar, click Refresh All Data.
  All worksheets, including crosstabs, lists, and cell-based formulas are updated with the most recent data.
- To refresh only the current worksheet, right-click any cell on the worksheet, click IBM Cognos Analysis, click Refresh, and then click Refresh Worksheet.
- To refresh only formula cells, right-click a cell or range of cells, click IBM Cognos Analysis, click Refresh, and then click Refresh Selected Formula Cells.

Clear cells of content

You can clear data from the cells in an exploration, cell-based analysis, or flex view.

The cleared cells remain as blank cells on the worksheet. Formats, such as number formats, conditional formats, and borders are retained.

You may want to clear cells before saving a report so that
- report consumers are required to refresh data to obtain the latest changes from the data source
• report consumers are authenticated before they are able to view report content

**Tip:** On the IBM Cognos toolbar, click the **Clear All Data** button.

You can also automate this task by using the `ClearAllData` method. For more information, see “ClearAllData” on page 114.

Clearing the contents does not break the link to the data sources. Because of the way newer versions of Microsoft Excel, such as Excel 2007 or Excel 2010 open workbooks created in Excel 2003, some values are visible in a published and cleared Excel 2003 workbook when it is opened in Excel 2007 or 2010. In Excel 2003, you open a cleared workbook and it remains cleared until you manually refresh the data. In Excel 2007 or 2010, you open a cleared workbook that was created in Excel 2003 and it triggers a refresh of the data. Opening the workbook in a newer version of Microsoft Excel triggers recalculation, which includes refresh of the IBM Cognos data. Data is authenticated with the credentials of the user that opens the workbook.

You can refresh your content with current data from the content store and then continue with your crosstab, list, or analysis.

For information about reports or content cleared in IBM Cognos for Microsoft Office, see the **IBM Cognos for Microsoft Office User Guide**.

**Convert dynamic data to static data**

If you modify a report, an analysis, or a crosstab that you do not want to update with changes from the content store, you can convert the dynamic data items to static by disconnecting from the data source.

**Tip:** On the IBM Cognos toolbar, click the **Convert to Static** button.

When you convert dynamic data to static data in Excel, any query-related information, such as calculations and filters, is removed from the Microsoft Office document but the data values are preserved.

**Publishing an exploration sheet to IBM Cognos Connection**

Publish your IBM Cognos Analysis for Microsoft Excel-enabled workbooks to IBM Cognos Connection to share them with other users in a secure and centrally managed way. Users can refresh the data based on their user authentication privileges in IBM Cognos Business Intelligence.

You can also automate this task by using the `Publish` method. For more information, see “Publish” on page 116.

If IBM Cognos BI users do not have IBM Cognos for Microsoft Excel installed, they can view the document and its contents, but they cannot refresh the data or update the contents.

**Before you begin**

The exploration sheet is saved to a temporary file before it is published.
**Procedure**

1. Open the exploration sheet.
2. Choose whether you want to save your document with recent data:
   - To save the document with the most up-to-date data, on the IBM Cognos toolbar, click the **Refresh All Data** icon.
   - To save the document as a template without data, on the IBM Cognos toolbar, click the **Clear All Data** icon.
3. On the IBM Cognos toolbar, click the **Publish** icon.
4. If prompted, click your namespace and type your user name and password.
5. In the **Look in** box, click the IBM Cognos BI server where you want to publish the document.
6. Choose the type of folder in which you want to save the document:
   - To save the document in public folders, click **Public Folders**.
   - To save the document to your content, click **My Folders**.
7. In the **Name** box, type the name of your document.
8. If you want, in the **Description** box, type a description for the document.
9. Click **Publish**.

**Results**

The active exploration sheet is published to IBM Cognos Connection.

**Open, save, and download Microsoft Excel workbooks**

You may have existing workbooks that you want to update with IBM Cognos Business Intelligence or TM1 content. Your business situation may have changed and you now want to apply various business scenarios. To refresh your data or make enhancements, you can download published Microsoft Excel workbooks or open local workbooks. You can then use the Microsoft Excel to make changes.

Settings for custom properties that were specified in earlier versions of IBM Cognos Analysis for Microsoft Excel workbooks become the new settings in the **Options** dialog box. For example, when an earlier version of an IBM Cognos Analysis for Microsoft Excel-enabled document is opened, the address for the IBM Cognos BI or TM1 gateway appears in the list of addresses under **IBM Cognos Systems**, if one was not already defined in custom properties.

**Opening and saving a report locally from IBM Cognos Connection**

You can store the reports that you create or modify on the IBM Cognos BI server. You can also open and save those reports on your computer. This is useful if you want to send a report to a report author who is working in a different environment, or you want to save the report to a source code controlled directory on a local network or drive.

Folders in IBM Cognos Connection are logically labeled and organized to help you locate reports. Entries in **Public Folders** are of interest to and can be viewed by many users. Entries in **My Folders** are accessible by you only when you are logged on.
If you are working from IBM Cognos Connection, you can also download a Microsoft document and open it in the application that was used to create it.

**Before you begin**

You must have write access to a folder to create entries.

**Procedure**

1. On the IBM Cognos toolbar, click the Open button.
2. In the Look in box, select the IBM Cognos BI server that contains the report that you want.
3. Choose the type of folder in which the report is saved:
   - To view content in public folders, click Public Folders.
   - To view only your content, click My Folders.
4. Click the report that you want, and click Open.

**Results**

The report appears in your workbook, slide, or document. You can make changes and manipulate data, and publish it to IBM Cognos Connection for sharing.

**Downloading a workbook from IBM Cognos Connection**

You can download a Microsoft Excel workbook from IBM Cognos Connection if it was published in one of the IBM Cognos applications, such as IBM Cognos Analysis for Microsoft Excel.

You can download documents created in Excel, PowerPoint, and Word. The default action for any Microsoft Office document is to download it.

For more information, see the IBM Cognos BI Administration and Security Guide.

**Before you begin**

You must have read and traverse permissions to access Microsoft Office documents in IBM Cognos Connection.

**Procedure**

1. In IBM Cognos Connection, locate the workbook that you want to open.
2. Click more on the actions toolbar next to the document that you want to download.
   - The IBM Cognos Connection Actions page opens.
3. For a Microsoft Office workbook, click the View most recent document in Excel icon.
   - The File Download window appears.
4. Click Save and follow the prompts that appear.
   - You must save the workbook before using it with IBM Cognos Analysis for Microsoft Excel. When you open the workbook, it opens in the application that was used to create it.
Results
You can now perform the same actions that you would perform for any workbook.

Run an exploration in Report Studio, Analysis Studio, or Cognos Workspace Advanced

Run your crosstab exploration in Report Studio, Analysis Studio, or Cognos Workspace Advanced to create sophisticated reports and detailed analyses.

Both lists and crosstabs are available for viewing in Report Studio or Cognos Workspace Advanced. Only crosstabs are available for viewing in Analysis Studio.

If the crosstab or list contains custom filters that were defined in IBM Cognos for Microsoft Excel by using a dimensional data source, those filters are recognized as set expressions when opened in Report Studio or Analysis Studio. If you need to edit the filters in a studio, you must edit them as set expressions. This is accomplished using the expression editor in the appropriate studio. For more information about set expressions, see the specific user guide for the studio.

Before you begin
Your system administrator must first give you the capability to run reports in Report Studio, Analysis Studio, or Cognos Workspace Advanced.

Procedure
1. Create and save your exploration sheet.
2. Choose whether to run the report in Report Studio, Analysis Studio, or Cognos Workspace Advanced.
   • To view your exploration sheet in Report Studio, on the exploration bar, click Open Report in Report Studio.
     The exploration sheet appears in Report Studio.
   • To view your exploration sheet in Analysis Studio, on the exploration bar, click Open Report in Analysis Studio.
     The exploration sheet, including context filters, appears in Analysis Studio.
   • To view your exploration sheet in Cognos Workspace Advanced, on the exploration bar, click Open Report in Cognos Workspace Advanced.
     The exploration sheet, including context filters, appears in Cognos Workspace Advanced.

Results
The exploration sheet appears in the selected application.

Publishing an exploration to IBM Cognos Connection
Publish your crosstab or list exploration to IBM Cognos Connection to make it available to other users.

Only the exploration in the currently active worksheet is published to IBM Cognos Connection.
Before you begin

Your system administrator must first give you the capability to publish reports to IBM Cognos Connection.

Procedure

1. Create and save your exploration sheet.
2. On the exploration bar, click Publish to Cognos Connection.
   - The Publish dialog box appears.
3. In the Name box, type a name.
   - The default is the name of the saved workbook.
4. In Description box, type a description for this report and click Publish.

Results

The exploration is saved to IBM Cognos Connection.
Chapter 5. Using cell-based report formatting

To take full advantage of the features that Microsoft Excel offers when you work with IBM Cognos Business Intelligence data, you can convert an exploration sheet to a cell-based analysis or drag items directly to the cells of a worksheet.

Use cell-based reports

When you use the cells of the worksheet to create a new analysis, you drag labels and items to adjoining cells, either in rows or columns to create a crosstab. Like exploration, the intersecting cells are used for measures, which will be populated with the actual data.

**Note:** Cell-based analysis is available for dimensionally modeled relational (DMR) and OLAP data sources only. It does not work with relational data sources and cannot be generated from a list even when using DMR or OLAP packages. Cell-based analysis is not available for IBM Cognos TM1 data.

You can also convert a crosstab to a cell-based analysis. You can create a crosstab by using the exploration toolbar and the drop zones and then convert it to formulas. For an example using both methods, see “Example - evaluate revenue from specific order methods” on page 93.

Cell-based reporting

With IBM Cognos BI packages, when you drag items from the source tree directly to the cells of a worksheet you create a COGNAME or COGVAL formula. The formula references the item in the database. Because IBM Cognos Analysis for Microsoft Excel uses COGNAME and COGVAL as part of its internal processing, do not use either of these strings to name any part of a worksheet or in any part of a cell formula.

**COGNAME formulas**

COGNAME formulas are used to supply the server, package, and member names to the cells of a worksheet. The COGNAME formula takes three objects: server, package, and member unique name (MUN).

Depending on your server version and type of cube, in addition to the system and package, you may have other information, such as the date of the last cube update available to you.

The syntax for the COGNAME formula is as follows:

```
=COGNAME("server", "package", "MUN")
```

The arguments in the formula are described as follows.

- **server** The server object can reference a cell, such as B4, use a named range, or use a literal value with the full path to a gateway, such as http://sampleserver/ibmcognos/cgi-bin/cognos.cgi. It can also reference a COGNAME formula that contains the server information.
**package**

The package object is derived from the package search path, which you can find in IBM Cognos Connection. Because this argument is a literal string, you can embed this information. Or, you can put this information in a cell and reference that cell in the argument. This enables you to switch over from a test system to a production system or to change your package easily. It can also reference a COGNAME formula that contains the package information you want to use.

**member unique name**

The member unique name supplies information about a particular name you want to display in your workbook, such as Years. You can obtain this information from IBM Cognos Report Studio by right-clicking an object and recording the string, which includes schema.

The following is a sample COGNAME formula from the IBM Cognos sample database

```plaintext
=COGNAME("http://sampleserver/ibmcognos/cgi-bin/cognos.cgi",
"/content/package[@name='Great Outdoors Company']",
"[great_outdoors_company].[Years].[Years].[Years]-
>:[PC].[@MEMBER].[Years]")
```

**COGVAL formulas**

COGVAL formulas are used to supply data to the cells of a worksheet. The COGVAL formula takes three objects: server, package, and member unique names of members or measures (MUNs(X)).

The syntax for the COGVAL formula is as follows:

```plaintext
=COGVAL("server", "package", MUN1,MUN2,MUN3,MUNx)
```

The arguments in the COGVAL formula are the same as in the COGNAME formulas.

The following is a sample COGVAL formula from the IBM Cognos sample database

```plaintext
=COGVAL("http://sampleserver/ibmcognos/cgi-bin/cognos.cgi",
"/content/package[@name='Great Outdoors Company']", $A2, C$1, $A$1 )
```

In this example, the cell references supply Products, Revenue, and 2004.

The COGVAL formula does not allow members from the same dimension to be supplied more than once.

**Troubleshooting cell-based analysis**

A problem with cell-based reports occurs when you have one or more COGVALs or COGNAMEs that do not return a result (usually because of a bad reference to a COGNAME with a MUN that does not exist). This can cause not only the incorrect item to fail, but also items that were retrieved in the same batch.

When working in cell-based analysis to resolve COGVAL and COGNAME errors, from the IBM Cognos toolbar, click **Refresh All Data**. The MUN that is causing any errors becomes a text cell and any cells that use that MUN in a calculation
display #ERROR. Use the Microsoft Excel trace feature to locate the bad MUN. Then you can correct the MUN by dragging a new item from the source tree to the cell.

**Convert a crosstab to a cell-based analysis**

Convert your crosstab exploration sheet to a cell-based version when you want to manipulate individual cells or place columns or rows in between the imported data. When you convert your exploration sheet, you have the option of converting data on the current worksheet, copying and moving the data to a new worksheet, or specifying the location for the converted data.

You can also create a crosstab completely from scratch using the cell-based method.

You cannot convert data from relational sources to a cell-based analysis.

Text values in formulas are limited to 255 characters. To create text values longer than 255 characters in a formula, use the CONCATENATE function or the concatenation operator (&).

It is also possible to convert your cell-based analysis to a crosstab. Depending on how your columns and rows are set up and how many items are in each, you may notice that certain objects are added to the context drop zone instead of being placed in a row or column.

If the default measure is also on columns, you cannot convert a crosstab to formulas. You must first remove the default measure. For more information, see "Removing measures from a crosstab exploration" on page 29.

**Procedure**

1. Open the workbook with the exploration sheet you want to convert.
2. Click the specific worksheet with the exploration you want to convert.
3. Choose where to place the converted data:
   - To convert the current exploration sheet to formulas and place the result on the current worksheet, from the exploration bar, click the **Convert to formulas on this sheet** button.
   - To convert the current exploration sheet to formulas and place the result on a new worksheet, from the exploration bar, click the **Convert to formulas on a new sheet** button. By placing the results on a new worksheet, you preserve the original exploration sheet used to create the analysis and can use it again to change parameters for another analysis.
   - To convert the current exploration sheet to formulas and specify the location, which is a cell in an existing spreadsheet, from the exploration bar, click the **Convert to formulas at a specified location** button.

**Results**

The exploration bar and drop zones disappear. The formatting remains the same, but the cells of the crosstab or list contain cogval formulas, which link the individual cells to data items in the database.
You can continue to modify the worksheet by editing formulas and applying formatting. By default, data is updated when you edit a formula. To edit formulas without data updates, right-click the worksheet and select **IBM Cognos Analysis > Pause formula resolution**. Placeholder symbols (~ ~) appear in data cells when **Pause formula resolution** is selected. When you are ready to show data, right-click the worksheet and select **IBM Cognos Analysis > Run formula resolution**.

**Creating a cell-based analysis without using exploration**

You can create a crosstab without using the exploration work area as a guide. This advanced technique is referred to as cell-based mode. In cell-based mode you drag metadata from the source tree to the cells of the worksheet.

Because there are no drop zones, you must drag objects in such a way that they appear horizontally or vertically to form the rows and columns of the worksheet. In general you must start by building the rows and columns by dragging and dropping headings and then individual or groups of items along the vertical (for example, in the diagram, cells numbered 1.1, 1.2, 1.3, and 1.4) or horizontal (in the diagram, cells numbered 2.1 and 2.2) axis. After you have created this framework, you can drag a measure to the intersecting cell where the row heading and column heading meet (in the diagram, the cell numbered 3).

![Figure 2. Drop zones for cell-based analysis](image)

You can continue to modify the worksheet by editing formulas and applying formatting. By default, data is updated when you edit a formula. To edit formulas without data updates, right-click the worksheet and select **IBM Cognos Analysis > Pause formula resolution**. Placeholder symbols (~ ~) appear in data cells when **Pause formula resolution** is selected. When you are ready to show data, right-click the worksheet and select **IBM Cognos Analysis > Run formula resolution**.

Some of the techniques that you need to remember when working in cell-based mode include the following:

- Leaving blank rows or columns when you create a cell-based analysis disconnects one part of the exploration from another. This leaves cells without data. Only insert a blank row or column after you have created your analysis and initially populated the cells with data. You are then able to insert a single blank row or column for calculations or formatting purposes. Inserting more than one blank row or column disconnects cells when expanding items.

- To change the orientation of items, from vertical to horizontal, while dragging the items, hold down the Ctrl button while dropping items into cells.
Before you can create a cell-based analysis, the administrator must have created a package in IBM Cognos Framework Manager and published it to a location in the IBM Cognos Connection portal to which you have access. For full access to IBM Cognos Analysis for Microsoft Excel, you should be a member of the Express Authors or Report Administrators role in IBM Cognos Business Intelligence. An administrator must configure these privileges using IBM Cognos Administration.

For more information on using cell-based mode, see “Example - using cell-based analysis to create a crosstab of an order method revenue.”

Example - using cell-based analysis to create a crosstab of an order method revenue
You are a business analyst at the Sample Outdoors Company, which sells sporting equipment. You are asked to analyze the consequences of discontinuing the fax and mail order methods, which are expensive to process.

First you get the items you need and insert them into a crosstab for further exploration.

Before you can try this example, you must set up the sample packages that come with IBM Cognos BI. For more information, see the IBM Cognos BI Administration and Security Guide.

Procedure
1. Start Microsoft Excel.
2. On the IBM Cognos toolbar, click the IBM Cognos button.
3. In the IBM Cognos pane, click IBM Cognos Analysis.
   IBM Cognos Analysis for Microsoft Excel opens.
4. In the IBM Cognos Analysis pane, click Open Package.
5. Select the Great Outdoors Company package and click OK.
   Data from the Great Outdoors Company package appears in the source tree.
6. Expand the Retailer level.
7. From the list of retailers, click Department Store and then Shift+click Warehouse Store.
8. In a new worksheet, drag the highlighted items to cell D5.
   While dragging the items hold down the Ctrl key to reorient the list of items horizontally.
10. Right-click cell C6, click IBM Cognos Analysis, Expand, Expand up.
    The Order Method total item shifts down to cell C13. The cells before Order Method populate with the components that make up Order Method in the hierarchy.
11. Drag Revenue from the Measures folder to cell C5.
    The worksheet is populated with the revenue data.
12. Apply Excel formats to the cells to reflect column and row headings, total fields, and revenue numbers.
13. Click the Save button on the Microsoft Excel toolbar.
14. In the Name box, type Order Methods Revenue
15. Save the workbook.
Expand items

Expand items to add component members to the cell-based analysis from hierarchical items that have been placed in the cells of the worksheet.

For an example of using this feature, see “Example - using cell-based analysis to create a crosstab of an order method revenue” on page 61.

Procedure

1. Right-click the heading cell that contains the item you want to expand, from the menu click IBM Cognos Analysis, and then click Expand.
2. Choose whether to expand before or after.
   - To expand items before a row, which puts the node item after the expanded items, click Expand Up.
   - To expand items after a row, which puts the node item before the expanded items, click Expand Down.
   - To expand items before a column, which puts the node item after the expanded items, click Expand Left.
   - To expand items after a column, which puts the node item before the expanded items, click Expand Right.

Results

Expanded items appear in the rows or columns of the worksheet. Cells are automatically shifted to accommodate the component values.

Drill items

Use the drill down feature to analyze details in a separate drill window.

Procedure

Right-click a data cell, from the menu click IBM Cognos Analysis, and then click Drill Down.
The result of the drill appears in a separate drill down window.
Tip: To add the drill results to a new worksheet, right-click a data cell, from the menu click IBM Cognos Analysis, and then click Explore.

Displaying the source package

When working in cell-based mode, if you use more than one package to create a workbook, you must synchronize the source tree when moving from cells of one package to another. Synchronizing the source tree enables you to see accurately the dimensional data used to populate the cells.

Procedure

Right-click a cell containing a COGNAME or COGVAL, click IBM Cognos Analysis, and then click Display Package.

Results

The source tree is updated to the package that was used to create the selected data item.
Changing the server and package

Update the server and package designation in a workbook to switch from a test to a production environment or to access information from a different set of financial data, such as a submission. You can update information in cell references and in embedded text.

Procedure
1. From the worksheet you want to update, open the new server and package.
2. From the Information folder, drag the updated server and package metadata to the server or package cell.
3. Optionally, use the Microsoft Excel search and replace function to update embedded references in the text of cell formulas.

Best practices for working with Microsoft Excel features in cell-based analysis

The main benefit of working in IBM Cognos Analysis for Microsoft Excel in cell-based mode is that the features of Microsoft Excel become more readily available to you during your analysis. You are able to use features, such as formatting, sorting, and creating formulas using individual cells. This section describes some of the ways that IBM Cognos Analysis for Microsoft Excel interacts with frequently-used Microsoft Excel features and functions.

Creating a chart

Charts update with new data as long as the data is after the current first cell and before the current last cell.

Cutting and pasting

Copy and paste from the cell, so that other cells that refer to it are updated to point to the new location.

Copying

To copy the exact formula without changing its cell references, copy from the formula bar, not the cell.

Creating formulas

Consider labeling measure and dimension cells so that you can refer to them by name rather than cell location.

If you are building a multisheet report with shared filters, such as date, consider creating a single page with the filters and referring to those shared filters from each sheet.
Chapter 6. Flex views for complex Cognos TM1 reports

You use flex views to work with an IBM Cognos TM1 data in Microsoft Excel in a more dynamic way.

You can combine data from multiple crosstabs, or multiple crosstab cubes, in a flex view and then enhance the data by using Microsoft Excel formulas, formats, and cell references.

**Flex views**

You can create a flex view from an exploration or by dragging explorations, views, or other flex views from the source tree to a worksheet.

After you create a flex view, you can change or add members, format the cells, and create charts from the data. For example, you can change members and data using options such as typing the name of different member in a cell.

You can combine multiple flex views on the same worksheet. Each flex view can be based on a different data source. You can provide unique perspectives by creating calculations that reference multiple flex views. Another useful option for multiple flex views on the same worksheet is to use cell references to apply the same filter to more than one flex view. For example, you create three flex views on a worksheet to show different views of financial performance by region. The region name appears in cell B4 in the context region on the first flex view. In the second and third flex views, you change the region name cell to a cell reference cell B4. After you create the cell references, you update the first worksheet to show data for a different region, either by dragging a different region to cell B4 or by typing a region name in cell B4. When you refresh the data, all flex views show data for the new region.

Subsets are a useful tool for building explorations and flex views with Cognos TM1 data. For more information about creating subsets, including dynamic subsets that can automatically reflect changes in a dimension, see “Subsets” on page 81.

**Flex view regions**

Each flex view includes four regions: rows, columns, context, and data. Each region is a named range in Microsoft Excel. For example, the defined name for the rows region of the first flex view you add to a worksheet is tm1\_0\_R. You can use the names when you use Microsoft Excel features such as creating formulas.

To highlight a region on the worksheet, from the IBM Cognos Analysis pane, right-click a flex view in the Current flex views folder and select a region from Show Regions list.

**Creating a flex view from an exploration sheet**

Create a flex view from your IBM Cognos TM1 exploration sheet when you finish your analysis and want to present data by using more advanced cell-based features from Microsoft Excel.
When you convert exploration sheets to flex views the application places the system information, rows, and columns in named ranges.

If you have views, explorations, or other flex views available in the IBM Cognos action pane, you can drag these to a worksheet to create a flex view. For more information, see “Creating a flex view from the source tree.”

**Procedure**

1. Open or create an exploration.
2. Click **Convert to flex view on a New Sheet**.

**Results**

The exploration sheet is converted to a flex view in a new worksheet. The flex view is listed in the IBM Cognos pane in the **Current flex views** folder.

**Creating a flex view from the source tree**

You can drag a view, exploration, or a flex view from the source tree to a worksheet to create a new flex view.

A worksheet can contain more than one flex view.

You can also create a flex view from an exploration. For more information, see “Creating a flex view from an exploration sheet” on page 65.

**Procedure**

1. From the source tree, open the **Views, Current Explorations**, or **Current flex views** folder.
2. Select the item you want to use as a flex view and drag it to a worksheet.

**Replacing or adding members in a flex view**

IBM Cognos Analysis for Microsoft Excel includes several options for replacing or adding members in a flex view.

**About this task**

To replace or add a member in a flex view, use one of the following options.

- To replace a member, drag an item from the source tree to a cell in the rows region, columns region, or context region. You can replace a member with a member from the same dimension or a different dimension.
  
  For example, the context area shows the flex view if filtered on Price. You drag a different account, Units, to the Price cell to change the context.

- To change or add members from the same dimension, select a cell in the rows region, columns region, or context region and from the context menu, select **IBM Cognos Analysis > Replace Members**.
  
  For example, the flex view shows data for the Europe region. You can use **Replace Members** to add the Americas region. Europe and Americas are both part of the World dimension.

- To replace a member in the rows region, columns region, or context region, type the name of a different member in the cell. You must type the name as it appears in the source tree. You can replace a member with a member from the same dimension or a different dimension.
For example, the flex view includes a column for the S Series 2.5L Sedan model. To show data for a different model, you type S Series 3.0L Sedan in the column heading.

- To add a row or column to a flex view, type a member name in the cell next to the last heading cell in the rows or columns. You can add a member from the same dimension or a different dimension.
  
  For example, a flex view includes columns for the years 2011 and 2012. In the cell next to the 2012 column heading, type 2013 to add data for the additional year.

After you change or add a member in a flex view, you have to refresh the flex view to update the data. The flex view toolbar includes a refresh button. Another option is to enable type-in refresh. When type-in refresh is enabled, after you modify the flex view, press Enter to refresh the data. From the context menu, select **IBM Cognos Analysis > Use Type-in Refresh**.

**Procedure**

1. Replace or add a member in the flex view.
2. Click the **Refresh** button or, if **Use Type-in Refresh** is enabled, press Enter.
Chapter 7. Contributions to a plan on a Cognos TM1 server

When your IBM Cognos TM1 server administrator distributes an enterprise-wide plan, you can use IBM Cognos Analysis for Microsoft Excel to create an exploration to review, analyze, and update the portion of the plan that was assigned to you.

Use Cognos Analysis for Microsoft Excel with Cognos TM1 data sources to complete the following tasks:

- Create and modify a crosstab using a dimension based hierarchical tree to select members
- Create a crosstab by dragging and dropping a full Cognos TM1 View into Excel
- Define subsets
- Enter and write back values to Cognos TM1 cubes
- Drill, pivot, select, and filter data
- Build charts from cube data
- View and edit data in formatted Excel reports

IBM Cognos Analysis for Microsoft Excel enables you to use Microsoft Excel features with Cognos TM1 data. For example, you can use Excel formatting to enhance your crosstab reports. Additional capabilities enable you to determine cell status based on the color of the cell.

Edit data in an exploration sheet

In an exploration sheet, you can edit values directly in the leaf cells and use data spreading to distribute numeric values.

Editing data in exploration sheet cells

You can edit data in the leaf cells of an exploration sheet, if you have Write access to those cells. The IBM Cognos Analysis for Microsoft Excel interface identifies the cells that are writable by using a special cell format that is customizable.

Procedure

1. To edit a value in a cell, click the cell and type the new value.
2. After entering a new number, press Enter or click another cell.
   The new number displays in bold and blue, which indicates that there is a new value in this cell. You must submit the data changes to the IBM Cognos TM1 server for the change that you made to persist.
3. To save the changes to the Cognos TM1 server, click Commit Changed Values.
   ✓ After you click Commit Changed Values, you have the option to preview information about the changes that will be saved to the TM1 server. You cannot undo changes after saving to the Cognos TM1 server.

Results

After submitting the changes, the exploration sheet displays the updated values in a normal font, indicating that you saved the changes.
Data spreading methods

IBM Cognos Analysis for Microsoft Excel provides a variety of data spreading methods that you can use to distribute numeric data to cells in an exploration. For example, you can use data spreading to evenly distribute a value across a range of cells or to increment all values in a range of cells by a desired percentage.

**Proportional**

The proportional spread method distributes a specified value among cells proportional to existing cell values.

For example, consider a view in which the values for Argentina in the months January, February, and March are 10, 30, and 60, respectively.

The sum of these values is 100, with the value in January accounting for 10% of the sum, the value in February accounting for 30%, and the value in March accounting for 60%.

When you proportionally spread the value 300 across these cells and select the Replace update action, the result is as follows.

- January contains the value 30, which is 10% of 300
- February contains the value 90, which is 30% of 300
- March contains the value 180, which is 60% of 300

These values are proportionally equivalent to the cube values that existed before you apply data spreading.

**Repeat**

The repeat method repeats a specified value across cells in a view.

The value you entered repeats across the range of cells that you selected. When you apply the repeat spreading method to a single consolidated cell, the value being spread is distributed proportionally to all leaves of the consolidated cell.

**Repeat Across Leaves**

The repeat leaves method copies a specified value to the leaves of a consolidation. When you apply this method, you can copy the value to all leaves of the consolidation or only to those leaves that already contain non-zero values.

For example, assume that there are several leaves of Year, Argentina with values.

If you use the repeat leaves method to copy the value 400 to the leaves of Year, Argentina currently populated with non-zero values, the value 400 is copied to all leaves that contained non-zero values.

If you initiate the repeat leaves method from a cell identified by more than one consolidated element, the specified value is copied to all leaves associated with the cell.
<table>
<thead>
<tr>
<th>Option</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Populated Leaf Cells</td>
<td>The specified value is copied only to leaf cells currently containing non-zero values.</td>
</tr>
<tr>
<td>All Leaf Cells</td>
<td>The specified value is copied to all leaf cells regardless of current values.</td>
</tr>
</tbody>
</table>

**Straight**

The straight line method populates cube cells by linear interpolation between two specified endpoints. It requires both a start value and an end value.

For example, with the start value of 100 and the end value of 200, the option populates the intervening cells with values at equal intervals between the two endpoints.

You can apply straight line spreading only across single rows or columns, not across rectangular ranges.

**Percent change**

The percent change method multiplies the current cell values by a specified percentage. The product of that multiplication can then replace, be added to, or be subtracted from the existing cell values.

When you apply the percent change method and specify a % Change value of 10, the system multiplies each cell value by 10% (or .10). If you select the Add update action, the product of multiplication is added to the existing cell values. The result is that each cell value is increased by 10%. The percentage change is applied across the range of cells that you selected.

**Equal**

The equal spread method distributes a specified value equally across the cells in a view.

For example, consider a view where a range of 12 cells is selected.

When you equally spread the value 60 to these cells and select the Add update action, the value is equally spread across the range and added to the existing cell values. The result is that each cell value is increased by 5 (60/12=5).

The value you entered spreads equally across the range of cells that you selected. When you apply the equal spread method to a single consolidated cell, the value being spread is distributed proportionally to all leaves of the consolidated cell.

**Equal Across Leaves**

The equal spread leaves method distributes a specified value equally across all leaves of a consolidated cell. When you apply this method, you can choose to distribute the value to all leaves of the consolidation or only to those leaves that already contain non-zero values.
If you initiate the equal spread leaves method from a cell identified by more than one consolidated element, the specified value is distributed to all leaves associated with the cell.

Table 4. Options for the equal spread leaves method

<table>
<thead>
<tr>
<th>Value</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Populated Leaf Cells</td>
<td>The specified value is copied only to leaf cells currently containing non-zero values.</td>
</tr>
<tr>
<td>All Leaf Cells</td>
<td>The specified value is copied to all leaf cells regardless of current values.</td>
</tr>
</tbody>
</table>

**Growth %**

The growth % method accepts an initial value and a growth percentage. By using the initial value as a starting point, this method sequentially increments all values in a range by the specified growth percentage.

You can apply growth % spreading across single rows or columns, not across rectangular ranges.

**Clear**

The clear method clears values from cells in a view. You can apply this method to either leaf cells or consolidated cells. When you apply the clear method to a consolidated cell, all leaves of the consolidation are set to zero.

**Using data spreading in an exploration sheet**

You can use data spreading to enter or edit numeric data in an exploration sheet by using a predefined distribution method, called a data spread method. For example, you can evenly distribute a value across a range of cells or increment all values in a range of cells by a percentage.

**Procedure**

1. Select a cell or range from which you want to initiate data spreading. You can initiate spreading from a single cell or a single linear range of cells. You cannot initiate spreading from a non-contiguous range of cells, nor can you spread data across multiple individually selected cells or ranges in a worksheet.
2. To select a data spreading method, right-click the cell or range, click IBM Cognos Analysis > Spread, and then select a data spread method.
3. Specify the required values.
4. Select an update action.

**Excluding cells from data spreading**

You can apply a hold to a cell, or a range of cells, to exclude values from data spreading operations.

You can apply a hold to consolidation cells and leaf cells.

When a consolidation hold is applied, you can initiate data spreading from a single leaf cell. Based on the data spreading value you apply to the selected leaf cell, the remaining leaf values are updated so that the consolidation value remains unchanged.
For example, you apply a hold on the consolidated cell at the intersection of Series 1.8L Sedan and 1 Quarter. This consolidation hold keeps the value in the cell constant at 1,000.

<table>
<thead>
<tr>
<th>1 Quarter</th>
<th>Jan</th>
<th>Feb</th>
<th>Mar</th>
</tr>
</thead>
<tbody>
<tr>
<td>S Series 1.8L Sedan</td>
<td>1000</td>
<td>200</td>
<td>300</td>
</tr>
<tr>
<td>S Series 2.0L Sedan</td>
<td>6,000</td>
<td>1,000</td>
<td>2,000</td>
</tr>
<tr>
<td>S Series 2.5L Sedan</td>
<td>4,520</td>
<td>1,510</td>
<td>1,420</td>
</tr>
</tbody>
</table>

Figure 3. Example hold applied to a consolidation cell

If you initiate proportional data spreading from the cell at the intersection of Series 1.8L Sedan and Mar and specify a value of 700, the Jan and Feb leaf values are changed proportional to their existing values. Jan has a value of 120 and Feb has a value of 180. The consolidation of the leaves remains 1,000.

<table>
<thead>
<tr>
<th>1 Quarter</th>
<th>Jan</th>
<th>Feb</th>
<th>Mar</th>
</tr>
</thead>
<tbody>
<tr>
<td>S Series 1.8L Sedan</td>
<td>1000</td>
<td>120</td>
<td>180</td>
</tr>
<tr>
<td>S Series 2.0L Sedan</td>
<td>6,000</td>
<td>1,000</td>
<td>2,000</td>
</tr>
<tr>
<td>S Series 2.5L Sedan</td>
<td>4,520</td>
<td>1,510</td>
<td>1,420</td>
</tr>
</tbody>
</table>

Figure 4. View of unchanged consolidation value

You can apply a hold to both the consolidated cell and one or more leaf cells. Using the original values in the example, you apply a hold to the consolidated cell and a single leaf cell, Jan. When you change Mar from 500 to 700, proportional spreading affects only the Feb cell. The value for Feb changes to 100. The consolidation of the leaves remains 1,000.

**Procedure**

Right-click a cell and click **IBM Cognos Analysis > Set Hold**. To apply a hold to a range of cells, you must set a hold for each cell in the range separately.

**Results**

The formatting of the cell changes to show a hold is applied. To change the formatting, modify the Hold Values - IBM Cognos style.

To remove a hold, select a cell with a hold applied and click **IBM Cognos Analysis > Remove Hold**.

**Data spreading and hold syntax**

You can apply most data spreading and hold methods using a syntax that you enter directly in cells.

You must use the user interface to apply the repeat leaves and equal spread leaves methods. You must use the user interface to spread across a selected range of cells.

Each data spreading syntax expression consists of a method code, a data action (optional), and method parameters.

For example: s+100
The method code is s, the data action is +, and the method parameter is 100.

The method code is a one- or two-character code for a data spreading method. For example, S is the method code for the equal spread method. For more information, see "Data spreading and hold syntax reference table."

The data action indicates whether spread values will replace, be added to, or be subtracted from the existing cell values.

**Replace**
If you do not specify an action, the existing cell values are replaced with the spread values.

**Add**
Plus sign (+) adds spread values to the existing cell values

**Subtract**
Tilde (~) subtracts spread values from the existing cell values.

The method parameters supply all parameters required to execute a given spreading method. Most methods require only a parameter indicating the value to be spread. The required method parameters for each spreading method are listed in "Data spreading and hold syntax reference table."

**Data spreading and hold syntax reference table**
The following table describes the data spreading and hold methods that you can apply with the syntax.

<table>
<thead>
<tr>
<th>Method</th>
<th>Code</th>
<th>Required Method Parameters</th>
<th>Data Action (Optional) *</th>
<th>Example</th>
</tr>
</thead>
</table>
| Proportional Spread | P    | Value to be spread         | +, ~                     | P<>100
Proportionally spreads the value 100 to all leaf cells, and replaces the existing cell values. |
| Equal Spread  | S    | Value to be spread         | +, ~                     | S+200
Equally spreads the value 200 to all leaf cells, and adds the product of spreading to the existing cell values. |
| Repeat        | R    | Value to be spread         | +, ~                     | R-50
Subtracts the value 50 from all leaf cells. |
Table 5. Data spreading and hold syntax (continued)

<table>
<thead>
<tr>
<th>Method</th>
<th>Code</th>
<th>Required Method Parameters</th>
<th>Data Action (Optional) *</th>
<th>Example</th>
</tr>
</thead>
</table>
| Percent Change    | P%   | Percentage                 | +, ~                     | P%+10
Applies a percent change of 10% to all leaf values, adds the product to the existing cell values, and increments all leaves by 10%. |
| Straight Line     | SL   | Start Value and End Value  | +, ~                     | SL100:200
Replaces all leaf values, with a start value of 100 and an end value of 200. |
| Growth %          | GR   | Start Value and Growth Percentage | +, ~                  | GR300:25
Applies a 25% growth percentage to the starting value of 300 and replaces all leaf values below the point of insertion. |
| Clear             | C    | N/A                        | N/A                      | C
Clears values from all cells. |
| Leaf Hold         | H    | N/A                        | N/A                      | H
Holds all leaf cells. |
| Release Leaf Hold | RH   | N/A                        | N/A                      | RH
Releases all leaf holds. |
| Consolidation Hold| HC   | N/A                        | N/A                      | HC
Holds all consolidated cells. |
| Release Consolidation Hold | RC | N/A                        | N/A                      | RC
Releases all holds of consolidated cells. |
| Release All Hold  | RA   | N/A                        | N/A                      | RA
Releases all holds on the cells. |
* The default data action is Replace. The spreading syntax uses a tilde (~) to denote the Subtract data action, and a plus sign (+) to denote the Add data action.

**Adding and viewing comments in cells**

Use comments to indicate the significance of the cell value. For example, state why the variance between forecast revenue and actual revenue for a product is high. You can view all comments that were added to a cell. Use the Annotations window to create, view, update, or delete comments.

Hover over a cell with an annotation to see the comment, the user who entered the comment, and a time stamp.

**Before you begin**

Comments must be enabled in your Microsoft Excel advanced options.

**Procedure**

1. To work with annotations, right-click a cell, click IBM Cognos Analysis, and then click Annotations.
2. Use the Annotations window to add, view, update, or delete comments.

**Writeback mode and sandboxes**

IBM Cognos Analysis for Microsoft Excel offers different ways to work with IBM Cognos TM1 data changes.

The Writeback mode in combination with the Sandbox determines how changes to the server data are managed. Options allow the administrator to mix and match a variety of capabilities so that every installation and every user group can work in the way that is best for them.

**Writeback Mode**

In IBM Cognos Analysis for Microsoft Excel you can hold changes in a private area so that you can decide when to write the data changes back to the server and make your changes available to others. This private area is called a sandbox. When you commit the data changes that were in your private area to the base data, the changed values are written to the server.

If you prefer to work directly with the base data without a private workspace, you can choose a direct writeback method. Another option your administrator can offer is the ability to name and store data changes in a named sandbox.

When you work in a sandbox IBM Cognos Analysis for Microsoft Excel uses a change in cell coloring to remind you when your data is not yet merged with the base. Once you **commit the sandbox**, the cell color is restored to black. For more information, see [Understanding cell coloring for changed data values](#).

Your Administrator assigns the capabilities for each usergroup using the administration tools in IBM Cognos TM1. Since you could be a member of more than one group, your workspace options can be different depending on your login, the client you use, and the combination of settings. Only Administrators have access to the Capability Assignments.
Ask your administrator for details about how your system is designed to operate. See Understanding different toolbar options to learn how to determine your writeback mode and sandbox setting using the toolbar. See the IBM Cognos TM1 Xcelerator Operation Guide for details about Capability Assignments.

**Writeback mode settings**

The Writeback Mode Capability determines how data is written back to the server. Writeback mode is determined by whether a user has the Personal Workspace capability on or off.

To have the sandbox capability in IBM Cognos Analysis for Microsoft Excel, an administrator must assign you rights in IBM Cognos TM1.

<table>
<thead>
<tr>
<th>Table 6. Personal workspace mode capabilities</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Description</strong></td>
</tr>
<tr>
<td>Changes are made directly to the base.</td>
</tr>
<tr>
<td>Changes are held in a temporary area and are manually written to the base using the Commit button or option. Cell coloring changes when data is changed but not yet committed.</td>
</tr>
</tbody>
</table>

The Sandbox Capability determines if you can name sandboxes or if you have one default sandbox:

<table>
<thead>
<tr>
<th>Table 7. Sandbox mode capabilities</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Description</strong></td>
</tr>
<tr>
<td>You can name the sandbox and manage multiple sandboxes.</td>
</tr>
<tr>
<td>Only one default sandbox is available.</td>
</tr>
</tbody>
</table>

The combination of these settings determines how your data changes are stored and processed.

For example, your usergroup may offer direct writeback with named sandboxes. This is the default work design used by TM1 Xcelerator. It means that you do not have a Personal Workspace (instead you have direct writeback to the server), but you also have the option of naming a set of changes and manually submitting them. With this setting, when you first open a view, you are in the base and any changes you make are written directly to the base. But, if you decide to save your changes in a named sandbox, you can use the Commit button when you are ready to manually send those changes to update the base.

Consider the case where you usually want to send the data directly to the server. Then you have a set of changes that you want to gather in a group before you update the server. You can use the Create Sandbox options to save the current data changes in a private sandbox called Best Case. When you are in the Best Case sandbox, you use the Commit button to send the changes to the base and make the changes available to others. After Best Case is committed, those changes merge with the base so that others can see the changes and you are now in the newly updated base. If you are working in a sandbox, it is important to remember that you must manually commit the sandbox for others to see your changes. Be sure that you are ready to make those changes public and that those changes should be merged into the base.
If you move back to the base, you are back to using direct writeback. This setting offers flexibility. Users with this setting need to remember when they are updating the base and when the **Commit** button is needed to make changes available to others.

Your administrator may decide that you would like the flexibility to work in a Personal Workspace writeback mode, but you do not want the complexity of creating named sandboxes. In this case, your Administrator can grant you the Personal Workspace writeback mode but deny the Sandbox capability.

### Toolbar options

You can determine how your usergroup is designed to operate based on the options presented on the toolbar. For example, if you have been granted Sandbox capability, you have access to the Create and Delete Sandbox options. When you do not see a sandbox list, work with data in Microsoft Excel and then commit changes directly to the IBM Cognos TM1 database.

### Direct writeback and named sandboxes

By default, IBM Cognos TM1 is set to use a direct writeback with named sandboxes. Your Administrator might have set your work options to something different.

**Table 8. Personal workspace mode and sandbox options**

<table>
<thead>
<tr>
<th>You want to</th>
<th>Personal Workspace Mode</th>
<th>Sandbox</th>
</tr>
</thead>
<tbody>
<tr>
<td>Have data changes update the server immediately. Occasionally, you want to save a set of changes and name them before committing them to the server.</td>
<td>Off</td>
<td>On</td>
</tr>
</tbody>
</table>

When you have direct writeback and named sandboxes the toolbar starts out with the **Commit Changed Values** and **Discard Changed Values**, and the **New Sandbox** icons available, and the sandbox list area displays [Base].

The **New Sandbox** icon indicates that you can create and delete sandboxes. Until you create a sandbox, you are operating in the base.

### Direct writeback without sandboxes

In this mode you do not have access to named sandboxes. You work with data in Microsoft Excel and then click the **Commit Changed Values** icon to commit changes directly to the IBM Cognos TM1 database.

To use direct writeback across the entire installation, you can use the DisableSandboxing=T setting in the server configuration file. When sandbox mode is disabled across the server with this configuration setting, the Capability Assignments are ignored.

The toolbar in this case does not have any of the sandbox icons, such as **New Sandbox** or **Merge Sandbox with**. You have no access to any kind of sandbox.

### Sandboxes

With the sandbox feature you can create your own personal workspace or sandbox where you can enter and store data value changes separate from base data.
A sandbox is not a copy of the base data, but a separate overlay or layer of your own data values on top of the base data. The distinction between base data and sandbox data is important to understand as you make changes to your data.

- Base data is the data that all users can access. Any edits made to base data are written directly back to the database.
- Sandbox data is the data in your own personal work area where you can edit the data values as many times as you want and keep the changed data separate from the base data. Sandboxes are private to each user and cannot be seen by other users. Your data values are viewable to others only when you merge them back with the base data.

Sandboxes are not stored on the client. They consist of a separate and private area of the server. When you make a change to data in the sandbox, it is as if the base model data value is temporarily blocked by the value you entered in the sandbox. To make the base model take on the values in the sandbox, you must merge the sandbox values with the base values. After the sandbox data values are committed, they are merged with the base so that the changed values then update and become the base values.

Sandboxes include the following features:

- Private data changes.
  Sandboxes let you try out different changes to the data before making those changes public to other users and before committing those changes to the base data.

- Cell Coloring.
  Changes to cell values in a sandbox are identified by a change in cell content colors. The cells change color to remind you that the change has not yet been merged to the base data. After data is committed and processing is complete, the cell coloring turns to black again.
  Cell coloring is also applied to any dependent cells, such as consolidated or rule calculated cells, that your edits affect.

- Manual Commit.
  When working in a sandbox, the Merge button becomes available so you can decide when to commit changes to the base. When you commit the data, your changes become available to other users.

- Reset Data.
  In a sandbox, the Reset Data button becomes available and lets you reset the values to the base values.

- Named sandboxes let you create what-if Scenarios.
  Depending on your configuration settings, you can name multiple sandboxes, such as Best Case or Worst Case and then compare the impact of your edits by switching between them.

**Remember:** Your administrator might have disabled sandboxes for your environment or changed the writeback mode for your usergroup.

To work in a sandbox, you must first open a view and then either create a new sandbox or select an existing sandbox. When working in a sandbox, the selected sandbox applies to all the other views in your current user session.

**Data values for leaf and consolidated cells in a sandbox**
The data values for leaf and consolidated cells in a sandbox are calculated.
Leaf cell values in a sandbox are a combination of the values in the base and sandbox cells. The user-entered values in sandbox leaf cells override the values in the base. Any leaf cell that has not been changed in a sandbox still shows the base data.

Consolidated cells in a sandbox contain values that are the sum of the leaf cells displayed in the sandbox.

**Resetting data values in a sandbox**
Resetting a Sandbox clears all the changed data values that you have entered up to that point and resets all the data values back to the current values in the base data.

**Procedure**
1. From the exploration bar, click the Discard Changed Values icon.
2. Click OK.

**Results**
All data values in the sandbox are set to the current values in the base data. Any cell coloring is cleared and set to black.

**Cell coloring for changed data values**
When you enter a new value in a sandbox, a visual indicator is applied to the cell to remind you that the new value is different from the base values. The color of the data changes to blue after you press the Enter key. The background changes to green and the number changes back to black when you commit changes. Any dependent cells, such as consolidated or rule calculated cells, also change in appearance if your edits cause them to be recalculated.

The following table summarizes the default cell coloring that is applied in IBM Cognos Analysis for Microsoft Excel when you enter new data values in a sandbox. These color attributes can be changed.

<table>
<thead>
<tr>
<th>Cell or font color</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Black font and green background to indicate it differs from base.</td>
<td>Committed sandbox data.</td>
</tr>
</tbody>
</table>
| Blue bold font. | Newly input data.
After you type the value and press the Enter key the font turns bold and blue. Other cells that turn blue because of this are formula cells that reference this cell and adopt this change in color as well.
Edited cells, dependent or consolidated calls, recalculated cells |
| White cell background indicates a leaf input cell. Blue cell background indicates a consolidated input cell. Gray cell background indicates a locked cell. | Input values |
Committing changed data from a sandbox to base
You can merge all of the committed data values in your sandbox to the base data. You cannot use the undo command to undo a merge action.

When you have multiple sandboxes and commit one of them to base, the new base values are automatically applied to all the unchanged cells in your other sandboxes. If you entered new data values in any other sandbox, those data values remain and do not show the new values that were committed to the base data.

Procedure
1. From the Sandbox field, click the sandbox whose data you want to merge with the base data.
2. Click Merge Sandbox with Base.

Results
- The changed data values in the current sandbox are saved to the base data.
- The cell coloring for any changed data in the current sandbox is cleared and set to black.
- The new base data values are applied to all the unchanged cells in your other sandboxes.

When you have multiple sandboxes, you can use the menu bar pull-down options to create, delete and select the different sandboxes available to you. Some interfaces offer a Delete Sandbox button.

Subsets
Use subsets to select, group, order, and save lists of elements that identify the data you want to analyze.

Use the subset editor when you work with IBM Cognos TM1 data sources. When you use IBM Cognos BI data sources you use the custom set editor. For more information about custom sets, see “Custom sets” on page 41.

You use the subset editor to define a subset for any dimension to limit the number of elements in a view. You can then save the subset to either a public or a private folder. Public subsets are available to other users. Private subsets are available only to you. When you use a private subset in a report, the only save option for the report is private view.

A dimension can have thousands of members. It is unlikely, however, that any view requires all elements from all dimensions. In most cases, you limit the elements in a view to those elements that are required for a specific analysis of your data. To make it easier to work with complex dimensions, in the subset editor, you can expand and collapse the subset view using the View Set Definition and View Set Contents options.

You can use filters to create dynamic subsets. For example, your company sells golf equipment that includes a product line called Course Pro. You create a subset based on the Golf Equipment dimension using a filter where name contains Course Pro. When a new product is introduced in the Course Pro line the new product is automatically included in reports that use the subset.
Creating a subset by using items in an exploration

You can create a subset from the items in an exploration.

You can save subsets to either a public or private folder.

**Procedure**

1. Create an exploration.
2. From the overview area, right-click an item from rows, columns, or context and then click **Edit Set**.
3. Modify the list of members in the Subset pane. The context menu in the Subset pane provides options for customizing the set, such as changing the order of the members. Toolbar options, such as **Keep** , are another method for customizing the set.
4. Save the subset to a public or private folder.

**Results**

The subset is saved and appears in the source tree in the **Subsets** folder under the related dimension's folder. You can use the subset to create other explorations.

Creating a subset using items in the source tree

You can create a subset using items in the source tree.

**Procedure**

1. From the source tree, right-click a dimension or node and then click **New Set**.
2. Modify the list of members in the Subset pane. The context menu in the Subset pane provides options for customizing the set, such as changing the order of the members. Toolbar options, such as **Keep** , are another method for customizing the set.
3. Save the subset to a public or private folder.

**Results**

The subset is saved and appears in the source tree in the **Subsets** folder under the related dimension's folder. You can use the subset to create other explorations.
Chapter 8. Integrated Cognos TM1 features

To help you leverage work done in TM1 tools, some TM1 features are integrated with IBM Cognos Analysis for Microsoft Excel.

You can work with the following TM1 features.

- TurboIntegrator processes.
- Worksheet functions.

Cognos TM1 TurboIntegrator processes

You can run IBM Cognos TM1 TurboIntegrator processes from IBM Cognos Analysis for Excel.

A TurboIntegrator process contains a script of TurboIntegrator functions and commands to programmatically import data as well as create and modify TM1 objects, such as cubes and dimensions. An IBM Cognos TM1 administrator creates the TurboIntegrator process and saves the process on a IBM Cognos TM1 server. The administrator also assigns security privileges to the TurboIntegrator process. You must have read access privileges to access the TurboIntegrator process from the source tree in IBM Cognos Analysis for Excel. You can not create a TurboIntegrator process from IBM Cognos Analysis for Excel.

You can run, monitor, and cancel TurboIntegrator processes directly from the source tree. You can also change TurboIntegrator process parameters from the source tree. You can use Microsoft Visual Basic for Applications to create a command button to run a Cognos TM1 TurboIntegrator process or other custom process. For more information, see “Running IBM Cognos TM1 TurboIntegrator functions” on page 121.

For more information about TurboIntegrator processes, see the IBM Cognos TM1 TurboIntegrator Guide.

Running TurboIntegrator processes within Cognos Analysis for Excel

You can edit and run TurboIntegrator processes from within IBM Cognos Analysis for Excel. You can also monitor and cancel running processes.

Expand Processes in the source tree to see a list of available processes. Right-click a process and then click Edit Parameters to edit it, or Run Process to run it.

By default, when a process is running, there is no progress indicator. To monitor the execution of running processes, right-click Processes, and then click Active Processes. In the Active Processes window you can monitor process execution, and also cancel running processes.

Cognos TM1 Worksheet functions in IBM Cognos Analysis for Microsoft Excel

The ability to work with TM1 Worksheet functions in IBM Cognos Analysis for Excel provides some TM1 users with an alternative to TM1 Perspectives.
To work with TM1 Worksheet functions in IBM Cognos Analysis for Microsoft Excel, you can use the following options.

- Open a workbook that was created from a slice in TM1 Perspectives.
- Open a workbook that was created using the Slice to Excel export option in TM1 Web Cube Viewer.
- Manually add the TM1 Worksheet functions to a worksheet.

A worksheet can contain only TM1 Worksheet functions, or you can add TM1 Worksheet functions to a worksheet that contains other explorations or flex views.

**Enable the addin required to work with Cognos TM1 Worksheet functions**

You must enable the IBM Cognos Office Reporting TM1 addin to work with TM1 Worksheet functions in IBM Cognos Analysis for Microsoft Excel.

The IBM Cognos Office Reporting TM1 addin is installed in `installation_location\Cognos for Microsoft Office`. The file name is CognosOfficeTM1.xll.

For information about enabling addins, see the Microsoft Excel Help.

**Before you begin**

If installed, disable the IBM Cognos TM1 Perspectives addin. The IBM Cognos TM1 Perspectives addin and the IBM Cognos Office Reporting TM1 addin cannot be active at the same time.

**Using Cognos TM1 Worksheet functions in Cognos Analysis for Microsoft Excel**

IBM Cognos Analysis for Microsoft Excel supports several TM1 Worksheet functions.

Currently, you can use the following TM1 Worksheet functions to access TM1 data from IBM Cognos Analysis for Excel.

- DBR
- DBRA
- DBRW
- SUBNM
- VIEW

If a worksheet function references an object on a remote server, you must prefix the object with the server name and a colon. For example, to refer to the 2k2sales cube on the accounting server, use `accounting:2k2sales`. You must be connected to the server referenced by the function to receive accurate values in your worksheet. If you are not connected to the server, TM1 worksheet functions return *KEY_ERR.

Due to a limitation with Microsoft Excel, worksheet functions can contain no more than 30 arguments. When you construct a cube reference, one argument must be the cube name, which leaves 29 arguments for specifying the cube dimensions.

Some TM1 Worksheet function capabilities are not supported at this time. For example, you cannot access pick lists for dimensions and writeback capability is not available.
Configuration settings for working with TM1 Worksheet functions

If IBM Cognos Analysis for Microsoft does not recognize the TM1 server required by TM1 Worksheet functions, you are prompted to specify the server. The server connection information is saved to the CognosOfficeXLLSettings.xml file. On Windows 7, this configuration file is installed to Users\user_name\AppData\Local\Cognos\Office Connection.

When you create a connection to a TM1 server to support working with TM1 Worksheet functions, the default connection information does not identify a sandbox. To specify a sandbox, you must edit the connection information in the CognosOfficeXLLSettings.xml file to change the default sandbox setting from null to the sandbox name. The following is an example of a connection string showing the default sandbox setting.

```
<userSettings>
  <setting name="ServerMap">{"Servers":[{"Name":"SData","RESTuri":null,"Sandbox":null}]}
</setting>
</userSettings>
```

DBR

DBR retrieves a value from a specified TM1 CXL cube.

In IBM Cognos Analysis for Microsoft Excel, the DBR function is equivalent to the DBRW function. Both functions are optimized to reduce network traffic and improve performance on wide area networks.

When all element arguments (e1, e2, etc.) to the function are leaf elements, the DBR function can also be used to write values to the specified cube, provided that the user has appropriate access privileges to the relevant cube, dimensions, elements, and/or cells. When you enter a value in a cell containing such a DBR function, the value is sent to the server.

Enable writeback capability for the DBR function

Note: For the Early Release program, you must edit the CognosOfficeReportingSettings.xml file to enable writeback. On Windows 7, this configuration file is installed to Users\user_name\AppData\Local\Cognos\Office Connection. To enable writeback, change the AllowFormulaWriteBack setting from false to true.

```
<setting name="AllowFormulaWriteBack">True</setting>
```

Syntax

```
DBR(cube, e1, e2, [...en])
```

The arguments are described in the following list.

cube The name of the cube from which to retrieve the value.

e1,...en Dimension element names that define the intersection of the cube containing the value to be retrieved.

Arguments e1 through en are sequence-sensitive. e1 must be an element from the first dimension of the cube, e2 must be an element from the second dimension, and so on. These arguments can also be the names of aliases for dimension elements.
Numeric element names must be enclosed in double quotation marks. For example "14357".

Example
DBR("92act4d", "California", "3.5 Diskettes", "Net Sales","January")

In this example, 92act4d is the cube name, and the function returns the value at the intersection of California, 3.5 Diskettes, Net Sales, and January.

**DBRA**

DBRA retrieves the value of a specified element attribute.

The value returned can be either a string or numeric value, depending on the attribute type.

The DBRA function can also be used to write element attribute values to the server. When you enter a value, either string or numeric, in a cell containing a DBRA function, the corresponding element attribute is updated on the server.

**Syntax**

```
DBRA(server:dimension, element, attribute)
```

The arguments are described in the following list.

- **server:dimension**: A valid dimension name, prefixed with the appropriate server name and a colon, for example, "SData:Region" references the Region dimension on the SData server.
  
  If the dimension is not prefixed with a server name, the DBRA function will attempt to run against the local server.

- **element**: An element of the dimension.

- **attribute**: The attribute for which you want to retrieve a value. This argument must be a valid attribute of the element.

**Example**

```
DBRA("SData:Model", "L Series 1.8L Sedan", "ManufactureCode")
```

In this example, the function returns the value of the Manufacture Code attribute of the L Series 1.8L Sedan element in the Model dimension on the SData server.

**DBRW**

DBRW retrieves a value from a specified TM1 CXL cube.

In IBM Cognos Analysis for Microsoft Excel, the DBR function is equivalent to the DBRW function. Both functions are optimized to reduce network traffic and improve performance on wide area networks.

**Syntax**

```
DBRW(cube, e1, e2[,...en])
```

The arguments are described in the following list.
cube  The name of the database cube from which to retrieve the value.

e1,...en  
Dimension element names that define the intersection of the cube containing the value to be retrieved.

Arguments e1 through en are sequence-sensitive. e1 must be an element from the first dimension of the cube, e2 must be an element from the second dimension, and so on. These arguments can also be the names of aliases for dimension elements.

Numeric element names must be enclosed in quotation marks.

Example

DBRW("92act4d", "California", "3.5 Diskettes", "NetSales", "January")

In this example, the function returns the value at the intersection of California, 3.5 Diskettes, Net Sales, and January in the 92act4d cube.

**SUBNM**

SUBNM returns the element of a dimension subset.

If you include the optional Alias parameter to this function, the function returns the alias for the selected element.

You can double-click the cell that contains a SUBNM formula and the Subset Editor will open if the package that contains the SUBNM formula dimension is selected.

**Syntax**

SUBNM(Dimension, Subset, IndexOrName, [Alias])

The arguments are described in the following list.

**Dimension**

A valid dimension name.

**Subset**

The name of a subset of the dimension.

**IndexOrName**

An index into the subset or the name of an element in the subset.

If an index, a positive integer less than or equal to the total number of elements in the specified subset. If a name, a string representing the name of an element of the subset.

**Important:** Index is not currently supported. You must provide the name of an element.

**Alias**

The name of an alias that exists for the subset. This is an optional argument. If it is used, the specified alias is applied when the Subset Editor opens and the function returns the alias for the selected element.

**Example**

SUBNM("Region","Top Producers",2)
The Top Producers subset of the Region dimension contains the ordered elements United States, Germany, Great Britain, and Mexico. Because the Index argument points to the second element in the subset, the example returns Germany.

```
SUBNM("Region", "Top Producers", "Germany", "Deutsch")
```

This example returns the Deutsch alias for the Germany element (Deutschland) from the Top Producers subset of the Region dimension.

### VIEW

In IBM Cognos Analysis for Microsoft Excel, a single VIEW function is used to specify the cube and cube element information.

#### Syntax

```
VIEW(cube, e1, e2[,...en])
```

The arguments are described in the following list.

- **cube** The name of the cube from which to retrieve data.
- **e1,...en** Either specific elements in the slice to be used as titles, or the string "!". The string "!" indicates that the corresponding dimension is a row or column in the view. These arguments can also be the names of aliases for dimension elements.

#### Example

```
VIEW("93sales",$B$2,$B$3,$B$4,"!","!")
```
Chapter 9. Examples and use cases

Using IBM Cognos Analysis for Microsoft Excel you can create a crosstab exploration. Use crosstab exploration to show information in a more compact form than in a grouped list. For example, create a crosstab exploration to show total sales by product line generated by each sales representative.

Like list reports, crosstab explorations are reports that show data in rows and columns. However, the values at the intersection points of rows and columns show summarized information rather than detailed information.

Using IBM Cognos Analysis for Microsoft Excel you can also create list reports from relational data sources.

Working with items in a crosstab

You can manipulate the way rows and columns appear in a crosstab for more effective comparison.

You can do this by
- nesting rows or columns ["Nest rows or columns" on page 43]
- swapping rows and columns ["Swap rows and columns in a crosstab" on page 46]
- showing or hiding rows or columns ["Limit the items in your exploration" on page 34]

Exploration is a process in which you explore the relationships between items to help understand your business. The crosstab helps you discover whether the value of one item is associated with that of another.

Comparisons are key elements of nearly every exploration. The following table shows examples of different types of comparisons.

<table>
<thead>
<tr>
<th>Comparison</th>
<th>Example</th>
</tr>
</thead>
<tbody>
<tr>
<td>Simple comparison</td>
<td>Tents versus sleeping bags</td>
</tr>
<tr>
<td>Multiple comparison</td>
<td>Tents versus golf clubs, tees, and golf balls</td>
</tr>
<tr>
<td>Multidimensional comparison</td>
<td>Products versus territories, this year-to-date versus last year-to-date</td>
</tr>
<tr>
<td>Mixed comparison</td>
<td>Tents versus similar camping products, this year versus last year, and the last quarter versus last year</td>
</tr>
<tr>
<td>Summaries of measures at different levels</td>
<td>Tents as a share of camping products, as a share of European sales</td>
</tr>
</tbody>
</table>

Explorations and relational sources

Explorations can be used to transform relational sources into a crosstab that allows dimensional style layout. Filters for relational explorations are, however, detail filters as opposed to dimensional. If dimensional style layout and filtering are
common requirements, we recommend that you create a DMR model for this data source to simplify report creation.

**Explorations and dimensional sources**

We recommend that you use explorations for dimensional sources. Even if the report has a simple layout with no nesting and measures as columns, the query supports precise filtering if created as a crosstab.

**Working with relational crosstabs**

Relational data in crosstabs has limitations and differences from dimensional data. One such instance is replacing measures on columns. Measures derived from relational data are stacked blocks. Replacement of the entire stacked block on the grid is not permitted. You would need to do this on the summary bar. This behavior is consistent with query items that are not measures. You may also notice that expand, collapse and totals do not work with relational data sources.

**Sets**

Sets are the basic building blocks of IBM Cognos Analysis for Microsoft Excel. A set identifies a group of items from a single hierarchy. In IBM Cognos Analysis for Microsoft Excel, you can manipulate the individual sets in the crosstab.

Sets may be
- nested or stacked in the crosstab
- used as filters

The following list describes the different kinds of sets you can use.

**Simple**

A single member and its direct dependents one level down.

**Selection-based set**

A collection of individual items that you have explicitly selected. The items or members may be selected from one or more levels from the same hierarchy and are not aggregated.

**Combination set**

A set consisting of more that one simple or selection-based set.

**Crosstab layouts**

You can choose the most practical layout for your crosstab.

The following layouts are available.

**Basic**

This layout contains one set of rows and one set of columns.
Nested

This layout contains sets nested either along the rows, the columns, or both.

Stacked

This layout contains two or more sets arranged one before another on the rows, next to each other on the columns, or both.

Asymmetric

This layout contains both nested and stacked sets. Many combinations are possible.

To create asymmetrical nesting, nest the required sets. Right-click a parent row or column and from the IBM Cognos Analysis menu, click Convert axis to asymmetric. You can then delete nested members from a parent without deleting the nested member from all parents. For example, you can show an actual category under previous years and show only the forecast category under the current year, because no actual is available.
Create a nested crosstab report in a crosstab

Nest data in a crosstab report to compare information by using more than one data item in a column or row. For example, a report shows the number of sales by product line for the past fiscal year. You decide to add a data item to further break down the number of sales by quarter.

When nesting columns in a crosstab report, there are four distinct drop zones where you can insert a new data item. The drop zone you choose defines the relationship between the data item and the column.

The following relationships are created when you insert a data item as a row:

- Inserting a data item before or after a column creates a parent-child relationship between the data items.

  When you insert a data item before a column, the data item becomes a parent to the row. When you insert a data item after a column, the data item becomes a child of the row.

- Inserting a data item before or after a column creates a union relationship between the data items.

The following relationships are created when you insert a data item as a column:

- Inserting a data item before or after a column creates a union relationship between the data item and the column.

- Inserting a data item before or after a row creates a parent-child relationship between the data items.

When you insert a data item before a column, the data item becomes a parent to the column. When you insert a data item after a column, the data item becomes a child of the column.
For example, you have a crosstab with Product line as rows and Quantity and Revenue as nested rows. For columns, you have Order method with Country or Region as a nested column.

- Product line is a parent to Quantity and Revenue.
- Quantity and Revenue are peers.
- Order method is a parent to Country or Region.

**Procedure**

1. In the source tree, click the data item you want to add to the report.
2. Drag the data item to the location where you want it to appear as a nested column or nested row.
   
   A highlight bar indicates where you can drop the data item.
3. Repeat step 2 to add other nested columns or rows.

   **Tip:** If you add more than one measure to a crosstab to the same axis, you must add them as a set. Ctrl+click the items or, to add a measure to another measure already in the crosstab, press the Ctrl key while dragging the item to the other measure.

**Example - evaluate revenue from specific order methods**

You are a business analyst at the Sample Outdoors Company, which sells sporting equipment. You are asked to analyze the consequences of discontinuing the fax and mail order methods, which are expensive to process.

First you get the items you need and insert them into a crosstab for further exploration.

Before you can try this example, you must have access to the sample packages that come with IBM Cognos Business Intelligence. For more information, see the IBM Cognos BI Administration and Security Guide.

**Procedure**

1. In Microsoft Excel, click the IBM Cognos tab and then click the IBM Cognos button.
2. In the IBM Cognos pane, click IBM Cognos Analysis.
3. To connect to the IBM Cognos BI system to access the sample package, in the IBM Cognos Analysis pane, click Open Package.
4. Select the Sales and Marketing package and click OK.
5. Expand the Order Method folder.
6. Press Ctrl and click Fax and Mail.
7. With Fax and Mail selected, right-click Mail and click New Set.
8. In the Selection on Dimension dialog box, click the save button and save the set using the default name, Order method.
9. In the IBM Cognos pane, click Create a new crosstab.
10. Expand the Custom Sets folder and drag the Order method set to the Rows area in the crosstab.
11. Expand the Measures folder and drag Revenue to the Measure area in the crosstab.
12. Drag Retailers to the Columns area in the crosstab.
13. Expand the **Time** folder and drag **Time** beside the order methods to nest years in the rows.

**Results**

You now have the data required to analyze if revenues for the fax and mail order methods are growing or declining over time.

![Figure 9. Crosstab report](image)

**Working with items in a list**

Use list reports to show detailed information from your database, such as customer lists or product lists.

A list report is a report that shows data in rows and columns. Each column shows all the values for a data item in the database or a calculation based on data items in the database. Lists are useful for very large reports that require minimal filtering.

**Lists and relational sources**

We recommend that you use lists for relational sources.

**Lists and dimensional sources**

We recommend that you avoid using lists with dimensional sources. It is preferable to use explorations with dimensional sources whenever possible, because it will provide much richer filtering capability. However, lists are useful against
dimensional sources if there is no measure in the report. Such a report cannot be created as a crosstab and can only be created as a list.

**Example - create a list report**

In this topic, you will use the GO Data Warehouse model. It contains data about human resources, sales and marketing, and finance, grouped into business areas.

You will learn how to

- create a list report
  The report shows revenue for each product for the last quarter of the current year.
- group items in the list report
  You group data items in a list report to remove duplicate values. For example, you have a report that shows products purchased. For each product, the product type is also shown. You group the Product type column to show only one instance of each product type in the list.

**Procedure**

1. Open the GO Data Warehouse (query) package.
2. Click Create a new list.
3. Expand Sales and Marketing (query), Sales (query) and then drag items to the worksheet to create the report.
   You can also add an item to the report by selecting the item, opening the item’s context menu, and selecting **Add to columns**.
   - Expand Product and drag **Product type** to the drop zone.
   - Expand **Time dimension**, and drag **Quarter** beside **Product type**.
   - Expand **Sales orders**, and drag **Order number** beside **Quarter**.
   - Expand **Product**, and drag **Product name** beside **Order number**.
   - Expand **Sales fact**, and drag **Quantity** beside **Product name**.
   - From **Sales fact**, drag **Unit cost** beside **Quantity**.
4. Create the calculation **Quantity * Unit price**.
5. Rename the calculation to **Revenue**.
6. Group the **Product type** column and then group the **Quarter** column.

**Results**

Your report will look like the following:
Figure 10. List report

If you need more help, see the following:

- Chapter 3, “Exploring data,” on page 25
- Nest rows or columns
Chapter 10. Try it yourself exercises

If you have some experience with IBM Cognos Analysis for Microsoft Excel and want to improve your skills in creating workbooks, this chapter is for you. Each topic gives you some guidelines on how to create each sample worksheet. If you need help, links to more detailed instructions are available. Answers can be found in the sample workbooks.

Before you can try these exercises, the sample packages must be set up on the IBM Cognos Business Intelligence and IBM Cognos TM1 systems. You access the sample workbooks from installation location of the IBM Cognos BI samples. Sample workbooks are available from samples_installation_location\webcontent\samples\datasources\workbooks\performance_management\business_intelligence. Contact your administrator for the location of the samples installation.

Create a crosstab report that uses an indirect filter to update data and charts

When you are working with a time dimension, you can use a cell reference to control a series of reports for a specific year. In this topic, you learn how to create a dynamic report that retrieves year-to-date revenue for each product line.

It should take 15-20 minutes to complete this topic. To view the completed report, download the IndirectFilter.xls sample workbook.

Procedure
1. Begin by using an exploration sheet to create a crosstab report that uses the sample package named Great Outdoor Sales (cube).
2. Add the following data items to the report:
   - Products level (in Products) to the Rows drop zone
   - Revenue, Gross Profit, Quantity sold, Unit cost, and Profit margin% (in Measures) to the Columns drop zone
   - Americas (in Sales Regions) and 2012 (in Years) to the Context drop zone
3. From the exploration bar, click Convert to formulas on a new sheet.
4. From the original crosstab, change the retailer by dropping a different retailer in the Context drop zone and then convert it to formulas on a new sheet. Complete this step for each retailer.
5. Using your knowledge of Microsoft Excel, chart Revenue, Gross profit, and Quantity for each of the newly created worksheets.
6. To create an indirect filter, on a separate worksheet, drag 2012 (in Years) to a cell.
   **Tip:** In an adjacent cell, label the cell with Select the Date Here.
7. For each of the worksheets you created, change the year in the Context cell to reference the filter cell you created in step 1.
   For example, for a worksheet name Filters and cell C3, type =Filters!C3.
8. From the source tree, drag 2013 (in Years) to the cell where you placed 2012. Notice that the cell references are updated throughout the workbook and the charts reflect the 2013 data.
Analyze data in a crosstab

In IBM Cognos Analysis for Microsoft Excel, you can manipulate items in your data interactively so that you can identify and understand the problems and issues in your business.

In this topic, you learn how to create a crosstab and use Excel's Moving Average analysis tool for charting and reviewing the IBM Cognos data to help you spot trends and patterns that may warrant further attention. To use this feature, you must have the Excel Analysis Toolpak installed on your computer.

For this exercise, you are a business analyst for the Sample Outdoors Company. You want to further analyze the historical return levels to predict future demand for the eye wear product line, enabling you to better plan quality controls.

It should take 10 to 15 minutes to complete this topic. To view the completed report, download the MovingAverage.xls sample workbook.

Procedure

1. To create the report, create a new crosstab that uses the Sales and Marketing (cube) package.
2. Insert data in the crosstab:
   - In Measures, drag Returns to the Measure drop zone.
   - In Products, Personal Accessories, drag Eyewear to the Rows drop zone.
   - In Time, drag Time to the Columns drop zone.
   You have now created the report. You must now create an analysis.
3. To create the analysis, from the Tools menu, click Data Analysis.
4. In the Data Analysis dialog box, click Moving Average, and then click OK.
5. In the Input Range box, enter the single row for the Inferno brand eyewear.
6. In the Interval box, enter 2 as the number of data points used to calculate the moving average.
   The smaller the interval, the more the moving average is affected by individual data point fluctuations.
7. In the Output Range box, enter the cell address so that the results start outside the cell range of the crosstab.
8. Select the Chart Output check box to see a graph comparing the actual and forecasted return levels, and then click OK.
9. Set the chart options as follows:
   - Add text to the y-axis to show Returns.
   - Add text to the x-axis to show Years.
   - Change the chart title to indicate that this is a moving average for the Inferno line in eyewear.
   - Ensure that the legend keys are shown to the side of the chart.
   - Add value labels to the chart.
10. Set the value for the Z-axis scale to 25 as the major unit.

Results

The chart now shows your forecasted return levels and identifies each year's ending returns.
Balance sheet reports

In this topic, you will create a Balance Sheet report that shows assets, liabilities, and equity for the Sample Outdoors Company in 2013.

To create this report, you will use a package that was published from MSAS cubes containing financial data. Use the GO Finance Fact cube derived from the GOSALESDW database. This cube contains year-to-date and monthly financial data for all accounts. The data is in actual US dollars submissions for 2010, 2011, 2012, or 2013 (7 months actual data only).

You will use a Microsoft Office accounting template, available for download from the Microsoft Web site, to create the balance sheet. For this exercise, the Balance Sheet with Ratios and Working Capital template is used.

You will also apply cell-based analysis to populate your balance sheet with IBM Cognos data for Current Assets, Other Assets, Current Liabilities, and Other Liabilities. In Excel, you will leverage the power of formatting by applying background color, font styles and characteristics, and cell formatting for a professional presentation of your report.

It should take 20 to 30 minutes to complete this exercise.

Creating the balance sheet

You will create a Balance Sheet report that shows assets, liabilities, and equity for the Sample Outdoors Company in 2013. You must first create the balance sheet.

It should take 20 to 30 minutes to complete this topic. To view the completed report, download the BalanceSheet template.xls sample workbook.

Procedure

1. Download the Balance Sheet with Ratios and Working Capital template from the Microsoft Web site:
2. Clear the content in the template, except for the calculated cells and balance sheet categories, such as Current Assets and Other Liabilities.
3. Insert a line under each balance sheet category.
   The line is used to build the rows and columns necessary for dragging and dropping headings and groups of items along the vertical or horizontal axis.
4. Continue with populating current assets.

Populating current assets

You are creating a Balance Sheet report that shows assets, liabilities, and equity for the Sample Outdoors Company in 2013. You must now populate current assets.

Procedure

1. Open the GOFinanceFact_EN_MSAS2011 package.
2. From the source tree, expand Accounts, Balance sheet (total), Assets (total).
3. Drag Current assets (total) to the cell after the Current assets category.
4. Right-click **Current assets (total)**, click **IBM Cognos Analysis**, **Expand**, **Expand up**.

   The cells before **Current Assets (total)** fill in with the components that make up **Current assets (total)** in the hierarchy.

5. From the source tree, expand **Time**, and then drag **2013** to the column area of the cell-based framework.

6. From the source tree, expand **Measures**, and then drag **Stmt Year** to the measures area where the row heading and column heading adjoin.

7. Convert the dynamic data to static data.

8. Continue with populating other assets.

### Populating other assets

You are creating a Balance Sheet report that shows assets, liabilities, and equity for the Sample Outdoors Company in 2013. You must now populate other assets.

**Procedure**

1. From the Source tree, expand **Accounts**, **Balance sheet (total)**, **Assets (total)**.

2. Drag **Other assets (total)** to the cell after the **Other assets** category.

3. Right-click **Other assets (total)**, click **IBM Cognos Analysis**, **Expand**, **Expand up**.

   The cells before **Other assets (total)** populate with the components that make up **Other assets (total)** in the hierarchy.

4. From the source tree, expand **Time**, and then drag **2013** to the column area within your cell-based framework.

5. From the source tree, expand **Measures**, and then drag **Stmt Year** to the measures area where the row heading and column heading adjoin.

6. Convert the dynamic data to static data.

7. Continue with populating current liabilities.

### Populating current liabilities

You are creating a Balance Sheet report that shows assets, liabilities, and equity for the Sample Outdoors Company in 2013. You must now populate current liabilities.

**Procedure**

1. From the Source tree, expand **Accounts**, **Balance sheet (total)**, **Liabilities & equities (total)**, **Liabilities (total)**.

2. Drag **Current Liabilities (total)** to the cell after the **Current liabilities** category.

3. Right-click **Current liabilities (total)**, click **IBM Cognos Analysis**, **Expand**, **Expand up**.

   The cells before **Current liabilities (total)** populate with the components that make up **Current liabilities (total)** in the hierarchy.

4. From the source tree, expand **Time**, and then drag **2013** to the column area within your cell-based framework.

5. From the source tree, expand **Measures**, and then drag **Stmt Year** to the measures area where the row heading and column heading adjoin.

6. Convert the dynamic data to static data.

7. Continue with populating other liabilities.
Populating other liabilities

You are creating a Balance Sheet report that shows assets, liabilities, and equity for the Sample Outdoors Company in 2013. You must now populate other liabilities.

**Procedure**

1. From the Source tree, expand **Accounts, Balance sheet (total), Liabilities & equities (total), Liabilities (total)**.
2. Drag **Long-term and other liabilities (total)** to the cell after the **Other liabilities** category.
3. Right-click **Long-term and other liabilities (total)**, click **IBM Cognos Analysis, Expand, Expand up**.
   The cells before **Long-term and other liabilities (total)** populate with the components that make up **Long-term and other liabilities (total)** in the hierarchy.
4. From the source tree, expand **Time**, and then drag **2013** to the column area within your cell-based framework.
5. From the source tree, expand **Measures**, and then drag **Stmt Year** to the measure area where the row heading and column heading adjoin.
6. Convert the dynamic data to static data.
7. Continue with cleaning up the balance sheet.

Cleaning up the balance sheet

You have created Balance Sheet report that shows assets, liabilities, and equity for the Sample Outdoors Company in 2013. Finally, you must now clean it up.

**Procedure**

1. Under each balance sheet category, remove the row that contains the labels for the dimensions that were used in the cell-based analysis.
2. Ensure that empty rows are deleted so that the balance sheet maintains its form.
3. After converting the data to static data, the IBM Cognos BI summary items, such as **Other assets (total)** and **Current liabilities (total)**, are static values. Remove these rows so that the balance sheet template formulas calculate the data accurately.
4. In a cell where you would like the heading of the balance sheet, type **Great Outdoor Company Balance Sheet and 2013**.

**Results**

You have used your Excel knowledge to augment IBM Cognos data. If you need more help, see [Creating a Cell-Based Analysis Without Using Exploration](#).

**Explorations using filters**

When working with dimensional data, you can use context filters to quickly focus your report on a particular view of the data. You can also use custom filters to refine your view.

In this topic, you will learn how to

- create context filters by dropping members or sets in the context filter area
create a custom filter by creating an expression that you use to retrieve a specific subset of records

It should take 10-25 minutes to complete this topic. To view the completed report, download the CustomFilter.xls sample workbook.

The exploration contains product lines in the rows, years in the columns, and returns as the measure. The values are filtered to show returns for only Web orders from the Americas. We use a custom filter to narrow the focus of this report to show only those product lines that have generated over 5000 returns in 2013.

Creating context filters
In this topic, you will learn how to create context filters by dropping members or sets in the context filter area.

It should take 15 to 20 minutes to complete this topic. To view the completed report, download the CustomFilter.xls sample workbook.

Procedure
1. Create a new crosstab that uses the Sales and Marketing (cube) package.
2. Insert data in the crosstab:
   a. In Measures, drag Returns to the Measure drop zone.
   b. Drag Products to the Rows drop zone.
   c. In Time, drag Time to the Columns drop zone.
3. Change the label in the Time column to Total.
4. Show all the members in the levels.
5. In Retailers, drag Americas to the Context drop zone.
6. In Order method, drag Web to the Context drop zone.
   You see the returns only for the Web in the Americas territory for all the product brands over a four-year span. The total number of returns is visible in the Total column.
7. Continue with creating custom filters.

Creating custom filters
In this topic, you will learn how to create a custom filter by creating an expression that you use to retrieve a specific subset of records.

Procedure
1. In the Rows drop zone, for Products, click the drop-down menu to select the Filter, Edit/Add filter option.
2. In the Filter window, create an expression that will show only the product lines that generated more than 5000 returns in 2013.

Results
If you need more help, see the following:
- Creating a New Crosstab
- Insert and Display All the Items of a Level
- Filter Values Using Context
- Create a Custom Set
Creating a custom filter from a list exploration

Create filters to limit the number of items that display in your exploration sheet.

You can reference cells from your Microsoft Excel workbook as part of your filter expressions.

By following the steps in this tutorial you learn how to:
• Create filters
• Combine filter lines
• Use cell values as part of your filter

This tutorial uses the sample package GO Sales (query).

Use sample relational data to create a complex list exploration with a calculated column

Create a list exploration with several columns of data and then add a calculated column.

By following the steps in this portion of the tutorial you learn how to:
• Load a specific data package
• Create a complex list exploration
• Add a calculated column to use as part of your analysis

Start IBM Cognos Analysis for Microsoft Excel and open the sample package

To access data, you must start IBM Cognos Analysis for Microsoft Excel and then select a data package. Depending on how your server and data have been set up, you might have to expand several node items to access the sample data set.

Procedure
1. Start IBM Cognos Analysis for Microsoft Excel.
2. From the IBM Cognos pane, click Open and from the System box select the server that has the IBM Cognos BI sample data.
3. From the list of packages, click GO Sales (query) and then click OK.

Create a list exploration with several columns of data from the GO Sales (query) package

As part of your analysis, you must create a list exploration with product data from the sample sales cube.

Procedure
1. To create a list exploration, from the IBM Cognos Analysis pane click Create a new list.
2. Expand the Sales (query) folder.
3. Expand the Product item.
4. To create columns, drag the following items to the exploration: Product name, Introduction date, Unit price, and Unit cost.

Add a calculated column

Create a calculated column to use as part of your analysis.
Procedure
1. Select the Unit price and Unit cost columns.
2. From the exploration bar, click the Insert Calculation icon, and then click Unit price - Unit cost. The calculated column, Unit price - Unit cost, appears after the Unit cost column.

Add values to the worksheet and create filter expressions
You can use values from the Microsoft Excel worksheet or workbook as part of the filter expression.

In the tutorial, these values are static. In your scenarios, they can be calculated values from other IBM Cognos Analysis for Microsoft Excel exploration sheets or the results of Microsoft Excel cell calculations.

Adding values to the Microsoft Excel worksheet to use in filter calculation
Create minimum and maximum values in the cells of the exploration sheet to use in the filter expression.

Procedure
1. Click cell I4 and type Minimum. This cell serves as the label for the minimum value you use in the filter calculation.
2. Click cell I5 and type Maximum. This cell serves as the label for the maximum value you use in the filter calculation.
3. Click cell J4 and type 10. This cell serves as the minimum value you use in the filter calculation.
4. Click cell J5 and type 15. This cell serves as the maximum value you use in the filter calculation.

Creating a filter expression based on minimum and maximum values
Create minimum and maximum values in the cells of the exploration sheet to use in the filter expression.

Procedure
1. From the exploration bar, click Filter and then click Edit/Add filter. The Filter window appears.
2. Click Edit/Add filter. The Edit Filter window appears.
3. Click Enter a cell reference.
4. In the GO Sales (query) pane, click Unit price - Unit cost.
5. In the operator box, click > (Greater Than).
6. In the cell reference box, which appears after the operator, type J4, and then click OK. The Edit Filter window closes.
7. Click the Add a Filter Line icon. The Edit Filter window appears.
8. Click Enter a cell reference.
9. In the GO Sales (query) pane, click Unit price - Unit cost.
10. In the operator box, click < (Less Than).
11. In the cell reference box, which appears after the operator, type J5, and then click OK. The Edit Filter window closes.
12. Click OK.
Results

You observe that the results of the list exploration change because of the filter expressions you create. You limit items in the list exploration because of the minimum and maximum values that you control as static values in the cells of the exploration sheet.

By limiting the data in your exploration, you are better able to focus on key performance indicators. You can add filter expressions to limit data to specific dates by adding filter lines that use the Introduction date.

Create a crosstab using a custom set of members

In this topic, you learn how to create a crosstab that includes a custom set that you design.

You use custom sets to group members for specific reporting requirements. For example, you want to focus the results from sales visits in a set of countries from the Asia Pacific region. You create a custom set that includes the required countries and then add the custom set to a report.

It should take 15 to 20 minutes to complete this topic. To view the completed report, download the CustomSet.xls sample workbook. The sample workbook has formatting applied in Excel and will not exactly match the worksheet you create.

Before you begin

The sample package must be set up on the IBM Cognos Business Intelligence system. You access the sample workbooks from the installation location of the IBM Cognos BI samples. Contact your administrator for the URL required to connect to the IBM Cognos BI system and the location of the sample workbooks.

Procedure

1. Connect to the IBM Cognos Business Intelligence system and open the Sales and Marketing (cube) package. The default location for the sample package is Public Folders>Samples_Office>Cubes.
2. Create a crosstab exploration.
3. Ensure that the Insert Member with Children option is enabled.
4. Add the following data items to the report:
   - Products to the Rows drop zone
   - Time to the Columns drop zone
   - Revenue to the Measures drop zone
5. Expand Order Method, and then drag Sales Visit to the Context area.
6. Create a custom set from the Asia Pacific dimension.
   Select Japan, Korea, China, and Singapore. Right-click a selected member and click New Set. Save the set as East Asia.
7. From Custom Sets folder, drag East Asia to the rows area after Products.
   Note that the exploration reflects only the retailers in East Asia. That means Australia, which was an original member of the Asia Pacific dimension, is not a member of the East Asia custom set.
Results

A custom set is associated with the user that creates the custom set. The next time you open the Sales and Marketing package the custom set will be available for use in other reports. The custom set is not available when a different user opens the package.

To edit a custom set, right-click the custom set and click Edit Set. If you edit a custom set, or if there are changes to the members used in the custom set, the change is not applied to a report when you refresh data. To update a report, delete the original custom set from the report and then add the changed custom set.

If you need more help, see the following topics in the IBM Cognos Analysis for Microsoft Excel User Guide:

- Creating a New Crosstab
- Create a Custom Set

Creating subsets in crosstabs and flex views

Use the subset editor to create dynamic expressions that allow you to refresh reports to show the latest data.

The learning objectives for the entire tutorial:

- Learn the features of the subset editor window
- Learn how to create dynamic expressions
- Learn how to use the subset editor with flex views

This tutorial uses the sample package plan_BudgetPlan.

Creating a crosstab

Create a crosstab as part of your budget analysis. Use crosstab exploration to show information in a more compact form where intersecting rows and columns show summarized information.

The crosstab that you create contains data from the planning sample package that contains budget information. You learn how to create a crosstab from a chart of accounts with net operating income.

Starting IBM Cognos Analysis for Microsoft Excel and loading the sample budget plan

Load the IBM Cognos TM1 budget plan so that you can work with it during the tutorial.

Procedure

1. Start IBM Cognos Analysis for Microsoft Excel.
2. From the IBM Cognos pane, click Open Package and from the System box select the server that has the IBM Cognos TM1 sample data.
3. From the list of packages, click Planning Sample, plan_BudgetPlan, and then click OK.

Creating a budget crosstab

Create a crosstab report from the sample budget plan.
Procedure
1. From the IBM Cognos pane, click Create a new crosstab.
2. From the exploration bar, click Item Type and then click Insert Single Member.
3. Drag the following items to the Context drop zone: FY 2010 Budget, 10110, 105, local, input. To search for these items, right-click each dimension and type the name in the search window.
   a. Click plan_version > plan_version and then drag the FY 2010 Budget item to the Context area.
   b. Click plan_business_unit > plan_business_unit > 10000 > 10100 and then drag the 10110 item to the Context area.
   c. Click plan_department > plan_department > 1000 > 100 and then drag the 105 item to the Context area.
   d. Click plan_exchange_rates > plan_exchange_rates and then drag the local item to the Context area.
   e. Click plan_source > plan_source > budget and then drag the input item to the Context area.
4. Add the 2010 item to the Columns drop zone. Click plan_time > plan_time and then drag the 2010 item to the Columns drop zone.
5. Add the Net Operating Incomes item to the Rows drop zone. Click plan_chart_of_accounts > plan_chart_of_accounts and then drag the Net Operating Incomes item to the Rows drop zone.

Working in the subset editor
After you create a basic crosstab exploration, use the subset editor to create a more complex crosstab by using more advanced features of the subset editor.

To use these features, you must open the subset editor along columns or rows. Select the Edit Set option.

Inserting the 2010 item members dynamically from the subset editor window
The first example is to make 2010 dynamic and bring in its children. To do that, right-click the 2010 item and then select Insert Member with Children.

Procedure
1. From the Columns drop zone, click the drop-down menu that is associated with the 2010 item, and then click Edit Set. The subset editor window opens.
2. In the Selection pane, right-click the 2010 item, click Insert Options, and then click Insert Member With Children.
3. To inspect the dynamic expression that you create, from the subset editor toolbar, click the Show MDX icon. The Edit MDX window opens and you can see that the expression displays: \{TOGGLERELATIONSTATE\{\{plan_time\}.\{2010\}\}, \{\{plan_time\}.\{2010\}\}, RECURSIVE\}
4. To save the MDX expression and close the Edit MDX window, click OK.
5. To save your work in the subset editor and close the subset editor window, click OK.

Replacing the Net Operating Income item with its component items from the subset editor window
Work with the plan_chart_of_accounts dimension on the rows axis. Work with the Net Operating Income item in the subset editor.
Procedure

1. From the **Rows** drop zone, click the drop-down menu that is associated with the **Net Operating Income** item, and then click **Edit Set**. The subset editor window opens.

2. In the **Selection** pane, click the **Net Operating Income** item, and then press the Delete key.

3. In the **Available Members** pane, expand **plan_chart_of_accounts** and then expand **Net Operating Income**. You see the three component items, **Revenue**, **COS**, and **Operating Expense**.

4. From the toolbar, click the **Insert Type** icon, and then click **Insert Single Member**.

5. Select **Revenue**, **COS**, and **Operating Expense**, and then click the add arrow. The selected items display in the **Selection** pane. To select multiple items, press Shift and click the items.

6. To make the COS item dynamic, right-click the COS item, click **Insert Options**, and then click **Insert Member With Children**.

7. To save your work in the subset editor and close the subset editor window, click **OK**. Notice that the item names after the COS item display as account IDs. Use the subset editor again to change the appearance.

8. From the **Rows** drop zone, click the drop-down menu that is associated with the **Net Operating Income** item, click **Set Alias**, and then click **AccountName**. Notice that the item names after the COS item display as account names instead of account IDs.

Creating flex views

Convert the crosstab to a flex view. A flex view is useful when you present data or send workbooks to other team members who do not have IBM Cognos Analysis for Microsoft Excel.

You can work with the subset editor to add items to a flex view.

Converting the crosstab to a flex view

Use the subset editor with flex views to add or remove items on the column or row axis.

You can also use it to create a data validation cell on a context element. While in a flex view, you can add items by typing item names into the cells within the named range or by using the subset editor. To remove items, you can delete columns or rows by using Microsoft Excel commands or by using the subset editor. When you use the subset editor with a flex view, you can interact with it the same way as with exploration sheets. The only exception is that any dynamic elements are converted to static elements after you exit the editor and apply it to a flex view.

Procedure

1. From the exploration lbar, click **Convert to flex view on a New Sheet**.

2. Right-click **Q1-2010**, click **IBM Cognos Analysis**, and then click **Replace Members**. The subset editor window opens.

3. From the toolbar, click the **Filter** icon. The filter controls and filter box display after the toolbar.

4. In the filter box, type Q1 and press the **Enter** key. All the items in the **plan_time** dimension that contain Q1 display.
5. In the Search Results pane, click Q1-2011 and then click the Add icon to add these items to the Selection pane.

6. Click the Insert Type icon and then click Insert Member With Children.

7. Click OK. After Q1-2010, the Q1-2011 component items display.

8. In cell A3, right-click the 10110 item, click IBM Cognos Analysis, and then click Replace Members. The subset editor window opens.

9. From the Available Members pane, expand plan_business_unit and then expand the 10000 item.

10. Select 10100, 10200, 10300, and 10400 and then click the add icon to add these items to the Selection pane.

11. Click OK. Cell A3 is now a selector.
Chapter 11. Automating Cognos Analysis for Microsoft Excel

Using an application programming interface (API), you can automate the refreshing or publishing of content.

You can use the API to create a scheduled batch program to refresh content on a daily, weekly, or monthly basis so that, as your period data changes, the affected files are kept up-to-date.

You can call the API within Microsoft Excel workbooks using VBA or using VBS and a command line interface. For these types of automation to work, you must register one or more macros within the workbook.

When using sample macros and script files as part of your own processing functions, remember that the API is accessible only as user defined functions (UDFs). UDFs are functions created in Visual Basic for Applications (VBA). In this case, however, the UDFs are created within the IBM Cognos solution and are called from VBA.

To help you understand what is possible using this API, several samples are provided. You can use the samples to help you create your own solutions by

• creating VBA macros
• passing parameters, leveraging VBS and the command line interface

In addition to these capabilities, you can schedule scripts, either ones that you create or the samples, to run as a batch process at a set time.

To use automation, you must set your macro security to an appropriate level in your Microsoft application. You can set the macro security level using one of the following options depending on your version of Microsoft Office.

• Change the security level of your Microsoft application to medium or low.
• Change the trusted publishers setting of your Microsoft application so that installed add-ins or templates are trusted.

Setting up the Microsoft application for automation

The quickest way to set up automation is to import the CognosOfficeAutomationExample.bas file into the Microsoft application.

These files contain all the necessary macros, including the CognosOfficeAutomationObject macro. Alternatively, you can create templates that already contain this imported .bas file that supply the code for logging on to IBM Cognos application, refreshing the content of specified workbooks, documents, or presentations, and logging off.

Before you begin

To use the IBM Cognos automation macro files, you must import the CognosOfficeMessageSuppressor.cls file. The .cls file contains the SuppressMessages function that allows you to disable the standard alerts and messages.
Procedure

1. Open a new Office document, workbook, or presentation.
2. From the Tools menu, click Macro, and then click Visual Basic Editor.
3. Do the following based on the Microsoft Office application:
   - For Microsoft Excel and Microsoft PowerPoint, right-click VBAProject and click Import File.
   - For Microsoft Word, right-click Project and click Import File.
   The Import File dialog box appears.
4. Browse to the location where the IBM Cognos Automation macro files are installed.
   The default location is client_installation_directory\Automation.
5. For Microsoft Excel or Microsoft Word click the CognosOfficeAutomationExample.bas file or for Microsoft PowerPoint click the CognosOfficeAutomationPPExample.bas file and import it into the VBA project.
   Do not edit this code module. Do not import both files, which are application specific. This will cause problems for the Open routine.
6. Repeat steps 3 to 5 to import the CognosOfficeMessageSuppressor.cls file.
7. Close the Visual Basic Editor and return to the IBM Cognos application.
8. Save the file as a template, close it, and then reopen the template file.

Results

You can now call the macros contained in the Cognos automation macro files from the VBA code that you write in Excel, Word, or PowerPoint.

Logging automation activities and errors

Use the automation log to track automation activities and troubleshoot problems with automation tools and scripts. The automation log is automatically generated when you run an automation script.

The automation log is returned using a call to the Automation API function TraceLog. For information about the TraceLog function, see "TraceLog" on page 117.

IBM Cognos API functions

After the reference to IBM Cognos automation is established, any macro in VBA can call the functions exposed in the IBM Cognos automation API.

If the Microsoft application is open when a command is executing, the command executes in interactive mode. If the Microsoft application is closed when the command is executing, the command executes in batch mode. Executing in batch mode means that all display alerts are turned off.

The functions that are exposed through the IBM Cognos automation objects are
- HttpLogonCredentials, which authenticates a user to a Web site that requires new authentication credentials.
- Logon, which authenticates users to the IBM Cognos Business Intelligence Web server.
- ClearAllData, which clears all the IBM Cognos Business Intelligence data values in the document, workbook, or presentation.
- RefreshAllData, which refreshes all the current IBM Cognos Business Intelligence data values that are in the document, workbook, or presentation.
- RefreshAllDataAndFormat, which refreshes all the current IBM Cognos Business Intelligence values and formatting styles that are in the document, workbook, or presentation.
- UnlinkAllData, which converts the linked IBM Cognos Business Intelligence data values into static values that are no longer updated when functions such as RefreshAllData are called.
- Publish, which publishes IBM Cognos documents to IBM Cognos Connection.
- LogOff, which logs off all the IBM Cognos Web servers that are currently logged on.
- TraceLog, which returns all the automation activities and errors.
- SuppressMessages, which suppresses the alerts and messages shown during normal operations of IBM Cognos.
- ClearCache, which reduces the size of an IBM Cognos Analysis for Microsoft Excel workbook by deleting metadata and data from the workbook.
- UpdateServerUrl, which updates the IBM Cognos server information for existing reports and formulas.

Because the object is obtained at run time and there is no type library installed on the client's machine, the user cannot use IntelliSense to determine what properties and methods are available on the object.

**HttpLogonCredentials**

The HttpLogonCredentials authenticates a user to a Web site that requires new authentication credentials, such as Basic, Kerberos, and SiteMinder. HttpLogonCredentials takes the URL, user name, and password that are used for authentication on the Web site.

### Syntax

IBM Cognos does not support SiteMinder form-based authentication. You must use the IBM Cognos menu commands and options instead of the API to automate the refreshing and publishing of content.

HttpLogonCredentials (url, user name, password)

<table>
<thead>
<tr>
<th>Argument</th>
<th>Description</th>
<th>Data type</th>
</tr>
</thead>
<tbody>
<tr>
<td>url</td>
<td>The URL for the Web site against which you want to authenticate</td>
<td>String</td>
</tr>
<tr>
<td>user name</td>
<td>The user name for authentication</td>
<td>String</td>
</tr>
<tr>
<td>password</td>
<td>The password for authentication</td>
<td>String</td>
</tr>
</tbody>
</table>

Table 11. Arguments for HttpLogonCredentials
Logon

Logon takes the URL of the IBM Cognos Business Intelligence server and the credential elements required by IBM Cognos to perform a logon: user ID, password, and namespace. The namespace parameter is case-sensitive; therefore, you must match the namespace exactly.

Syntax

IBM Cognos Office stores user credentials only in memory. For this reason, users are responsible for storing their credentials in a secured area and passing them to the logon methods at run time.

If you use the Logon function with incorrect credentials, the system raises a CAMException error, however, no exception is written to the log file indicating a failure. To avoid this situation, remember that strings are case-sensitive and ensure that you use valid IDs, passwords, and namespaces.

Logon does not appear in the macro list in the Microsoft application because the macro receives an argument. Any macro with parameters is by definition private and private macros are not shown in the macro options by default.

Boolean Logon (url, user name, password, namespace)

Parameters

Table 12. Arguments for Logon

<table>
<thead>
<tr>
<th>Argument</th>
<th>Description</th>
<th>Data type</th>
</tr>
</thead>
<tbody>
<tr>
<td>url</td>
<td>The URL for the IBM Cognos Web server to which you want to log on</td>
<td>String</td>
</tr>
<tr>
<td>user name</td>
<td>The user name for authentication</td>
<td>String</td>
</tr>
<tr>
<td>password</td>
<td>The password for authentication</td>
<td>String</td>
</tr>
<tr>
<td>namespace</td>
<td>The specific namespace for authentication</td>
<td>String</td>
</tr>
</tbody>
</table>

Return value

Data type: Boolean

The Boolean value that is true if successful

Example

Here is an example of this syntax:

```vba
Dim bResult As Boolean
bResult = CognosOfficeAutomationObject.Logon
("http://localhost/ibmcognos/cgi-bin/cognos.cgi", "Administrator", "CognosAdmin", "Production")
```

ClearAllData

ClearAllData clears all the IBM Cognos data values in the current document.
Syntax
ClearAllData()

Example
The following syntax is an example:
CognosOfficeAutomationObject.ClearAllData

RefreshAllData
RefreshAllData fetches the most current data values from the IBM Cognos server and updates those values in the current document.

Syntax
The system must be successfully logged on to the IBM Cognos server. Ensure that the Prompt Update Method property on the Manage Data tab in the user interface is set to Use=Display or Do Not Update to complete the operation. Otherwise, the report cannot be refreshed without user intervention and generates errors.
RefreshAllData()

Example
The following is an example of this syntax:
Dim bResult as Boolean
bResult = CognosOfficeAutomationObject.Logon
("http://localhost/ibmcognos/cgi-bin/cognos.cgi",
"Administrator", "CognosAdmin", "Production")
'Refresh the data if we successfully logged on to the IBM Cognos server.
If bResult Then
    CognosOfficeAutomationObject.RefreshAllData
End If

RefreshAllDataAndFormat
RefreshAllDataAndFormat retrieves the most current data values and format from the IBM Cognos server and updates those values and format in the current document.

Syntax
The system must be successfully logged on to the IBM Cognos server. Ensure that the Prompt Update Method property on the Manage Data tab in the user interface is set to Use=Display or Do Not Update to complete the operation. Otherwise, the report cannot be refreshed without user intervention and generates errors.
RefreshAllDataAndFormat()

Example
The following example shows how the RefreshAllDataAndFormat method is used:
Dim bResult as Boolean
bResult = CognosOfficeAutomationObject.Logon
("http://localhost/ibmcognos/cgi-bin/cognos.cgi",
"Administrator", "CognosAdmin", "Production")
Refresh the data and formatting if we successfully logged on to the IBM Cognos server.
If bResult Then
    CognosOfficeAutomationObject.RefreshAllDataAndFormat
End If

**UnlinkAllData**

UnlinkAllData disconnects all the IBM Cognos data values in the current document. The values are no longer updated with subsequent calls to RefreshAllData. The values become static.

**Syntax**

Any IBM Cognos data values that are imported into the current document after UnlinkAllData is called will continue to be linked to the IBM Cognos data source. The values are updated with new server data using the RefreshAllData call.

UnlinkAllData()

**Example**

The following is an example of the syntax:
CognosOfficeAutomationObject.UnlinkAllData

**Publish**

Use Publish to publish content to IBM Cognos Connection.

**Syntax**

The arguments mirror the entry boxes in the dialog box that is used in the user interface.

Publish does not appear in the macro list in the Microsoft application because the macro receives an argument. Any macro with parameters is by definition private and private macros are not shown in the macro options by default.

Publish (URL, document path, server path, name, description, screenTip)

**Parameters**

*Table 13. Parameters for the Publish macro*

<table>
<thead>
<tr>
<th>Argument</th>
<th>Description</th>
<th>Data type</th>
</tr>
</thead>
<tbody>
<tr>
<td>URL</td>
<td>The server to which you are publishing.</td>
<td>String</td>
</tr>
<tr>
<td>document path</td>
<td>The location of the document to be published. It is the local path of the file that you want to publish. The folder path is a search path in IBM Cognos Business Intelligence. For more information, see the IBM Cognos BI Administration Guide. If the path of your folder is not correct when you publish using automation, you are again prompted to log on. This is because IBM Cognos does not distinguish between non-existing folders and folders for which the user does not have permissions. This security feature helps to prevent the discovery of the folder path by trial and error.</td>
<td>String</td>
</tr>
<tr>
<td>server path</td>
<td>The path in the content store where the document is saved.</td>
<td>String</td>
</tr>
</tbody>
</table>
Table 13. Parameters for the Publish macro (continued)

<table>
<thead>
<tr>
<th>Argument</th>
<th>Description</th>
<th>Data type</th>
</tr>
</thead>
<tbody>
<tr>
<td>name</td>
<td>The document name that will appear in IBM Cognos BI.</td>
<td>String</td>
</tr>
<tr>
<td>description</td>
<td>The document description that will appear in IBM Cognos BI.</td>
<td>String</td>
</tr>
<tr>
<td>screenTip</td>
<td>The text that users see when they point to the document in IBM Cognos BI.</td>
<td>String</td>
</tr>
</tbody>
</table>

Example

Following is an example of this syntax:

```
Publish("CAMID(':::Anonymous')/folder[@name='My Folders']","Description of 'My Folders'", ",")
```

Logoff

Logoff logs off all the IBM Cognos servers to which users are currently logged on.

Syntax

```
Logoff ()
```

Example

The following syntax is an example:

```
CognosOfficeAutomationObject.Logoff
```

TraceLog

TraceLog returns all the automation activities and errors.

Syntax

```
String TraceLog()
```

Return value

Data type: String

The value of the logging item as string

Example

The following is an example of the syntax:

```
Dim strTraceLog as String
strTraceLog = CognosOfficeAutomationObject.TraceLog
MsgBox strTraceLog
```

SuppressMessages

SuppressMessages suppresses the standard alerts and messages that are shown during the normal operations of IBM Cognos applications.
**Syntax**
SuppressMessages()

**Example**
The following is an example of the syntax:
Private Sub Class_Initialize()
    CognosOfficeAutomationObject.SuppressMessages True
End Sub
Private Sub Class_Terminate()
    CognosOfficeAutomationObject.SuppressMessages False
End Sub

**ClearCache**
ClearCache reduces the size of an IBM Cognos Analysis for Microsoft Excel workbook by clearing metadata and data from formulas.

**Syntax**
ClearCache()

**Example**
The following is an example of the syntax:
CognosOfficeAutomationObject.ClearCache()

**UpdateServerUrl**
Use UpdateServerUrl to update the IBM Cognos server information for existing reports and formulas.

**Syntax**
The UpdateServerUrl method takes two arguments: the old server URL and the new server URL. These arguments mirror the entry boxes in the Update System dialog box. To gain access to this control from the IBM Cognos toolbar click the Options button, then click the Update System Utility button.

The UpdateServerUrl method replaces the server information for existing reports. When running this command, the name of the package remains the same. You can use this method to change only one server, such as a test server to another server, such as a production server. The URL arguments can be full or partial URLs. If any argument is empty, this command does nothing, however, running this command with empty arguments has the potential to corrupt the report. Server information is stored in both the server property and the serialized report property. Running an empty command could cause these two instances to get out of sync.

Because the UpdateServerUrl method searches and replaces strings, it is possible to use only part of the URL, provided it is a unique substring.

**Note:** The UpdateServerUrl search looks at all data in the workbook and updates data that matches the search string, not just report properties containing the URL string. Therefore, when you use only part or all of the original URL string with the UpdateServerUrl method, you will change all data that matches the search string.
UpdateServerUrl "old server URL string" "new server URL string"

**Parameters**

*Table 14. Parameters for the UpdateServerUrl method*

<table>
<thead>
<tr>
<th>Argument</th>
<th>Description</th>
<th>Data type</th>
</tr>
</thead>
<tbody>
<tr>
<td>old server URL string</td>
<td>Indicates the URL of the source or current system.</td>
<td>String</td>
</tr>
<tr>
<td>new server URL string</td>
<td>Indicates the URL of the target system.</td>
<td>String</td>
</tr>
</tbody>
</table>

**Example**

Following is an example of this syntax using the complete URL:

```plaintext
UpdateServerUrl "http://testserver1/cgi-bin/cognos.cgi"
"http://prodserver1/cgi-bin/cognos.cgi"
```

The sample command can also be rendered more simply by using only the part of the URL that is changing:

```plaintext
UpdateServerUrl "testserver1" "prodserver1"
```

**Example - code for processing within VBA**

The following example demonstrates how to call the Logon method within VBA:

```vbnet
Dim bResult as Boolean
bResult = CognosOfficeAutomationObject.Logon
("http://localhost/ibmcognos/cgi-bin/cognos.cgi","Administrator", "CognosAdmin", "Production")
If bResult Then
    CognosOfficeAutomationObject.ClearAllData()
    CognosOfficeAutomationObject.RefreshAllData()
    CognosOfficeAutomationObject.Logoff()
    Dim sTraceLog as String
    sTraceLog = CognosOfficeAutomationObject.TraceLog
    'Here is where you could write the trace log to file.
    MsgBox sTraceLog
End If
```

**Example - code for processing outside VBA**

You may want to use IBM Cognos Office Automation outside VBA. You cannot call the APIs directly.

You must create wrapper macros in the Microsoft Office document for every API. You can then call these macros from your code. The module CognosOfficeAutomationExample.bas is an example of a wrapper macro that you can call from outside VBA.

The following Visual Basic Script opens Microsoft Office Excel, logs on to IBM Cognos BI, refreshes the content, and logs off.

```vbnet
' Start Excel in batch mode
Set objExcel = CreateObject("Excel.Application")
```
objExcel.Visible = False
objExcel.ScreenUpdating = False
objExcel.DisplayAlerts = False

' Open a workbook that has IBM Cognos data in it.
Set objWorkbook = objExcel.Workbooks.Open("C:\workbook1.xls")

' Call the wrapper macros
objExcel.Run "Logon", "http://localhost/ibmcognos/cgi-bin/cognos.cgi", "Administrator", "", "Production"
objExcel.Run "RefreshAllData"
objExcel.Run "Logoff"
objExcel.Run "WriteTraceLog", "C:\AutomationLog.log"
objWorkbook.Save
objWorkbook.Close
objExcel.Quit

---

Macro files

The macro files for Cognos Office are written in Microsoft Visual Basic for Applications (VBA).

They are installed with IBM Cognos Office in the automation folder. The default location is `installation_directory\Automation`.

The following macro files are installed.

**Table 15. Sample macros**

<table>
<thead>
<tr>
<th>File</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>CognosOfficeAutomationExample.bas</td>
<td>Because it is a BASIC file created using VBA, this file has the extension .bas. It contains the CognosOfficeAutomationObject property that enables IBM Cognos Office automation in the current document. It also contains wrapper functions that call the API exposed by IBM Cognos Office.</td>
</tr>
<tr>
<td>CognosOfficeMessageSuppressor.cls</td>
<td>This file shows how to use the SuppressMessages API function.</td>
</tr>
</tbody>
</table>

---

Script files

The installation includes sample script files that you can use to automate functions.

The samples include script files for scheduling the refresh of documents. Also, there is a script file to update the server URL.

You must modify the script files to meet your particular needs or use them as a reference to create your own programs. For more information, see the comments in the file.
These Visual Basic Scripts (VBS) are provided as sample programs and are located in `installation_directory\Automation`:

- Automate_COLS.vbs
- Automate_COLS_Excel.vbs
- AutomateServerURLSample.vbs

### Running IBM Cognos TM1 TurboIntegrator functions

You can create a command button to replicate the action button functionality from IBM Cognos TM1 Perspectives.

The command button can run a Cognos TM1 TurboIntegrator process or other custom process.

The `installation_location\Automation\COAutomationExample.xls` sample file contains code for a Microsoft Visual Basic for Applications subroutine called `ExecuteFunction` function. `ExecuteFunction` demonstrates how to use the IBM Cognos Analysis for Microsoft Office automation API to execute TurboIntegrator scripts. For information about TurboIntegrator functions, see the [IBM Cognos TM1 Reference Guide](#).

**Before you begin**

You must use Microsoft Excel 2007 or a later version to have the option to create ActiveX command button controls.

**Procedure**

1. In Microsoft Excel, customize the ribbon to show the **Developer** tab.
2. Add an ActiveX command button control to the worksheet. For more information about creating a command button, see the Microsoft web site.
3. Right-click the command button and click **View Code**.
4. Add the required code to the command button.

**Results**

To use the command button, you must be logged into the Cognos TM1 system specified in the `ExecuteFunction` call. You can use an automation function to log into the Cognos TM1 system.
Chapter 12. Troubleshooting

Use this troubleshooting reference information as a resource to help you solve specific problems you may encounter during or after the installation of IBM Cognos Analysis for Microsoft Excel components.

Troubleshooting a problem

Troubleshooting is a systematic approach to solving a problem. The goal of troubleshooting is to determine why something does not work as expected and how to resolve the problem.

The first step in the troubleshooting process is to describe the problem completely. Problem descriptions help you and the IBM technical-support representative know where to start to find the cause of the problem. This step includes asking yourself basic questions:

- What are the symptoms of the problem?
- Where does the problem occur?
- When does the problem occur?
- Under which conditions does the problem occur?
- Can the problem be reproduced?

The answers to these questions typically lead to a good description of the problem, which can then lead to a resolution of the problem.

What are the symptoms of the problem?

When starting to describe a problem, the most obvious question is “What is the problem?” This question might seem straightforward; however, you can break it down into several focused questions that create a more descriptive picture of the problem. These questions can include:

- Who, or what, is reporting the problem?
- What are the error codes and messages?
- How does the system fail? For example, is the problem a loop, hang, crash, performance degradation, or incorrect result?

Where does the problem occur?

Determining where the problem originates is not always easy, but it is one of the most important steps in resolving a problem. Many layers of technology can exist between the reporting and failing components. Networks, disks, and drivers are only a few of the components to consider when you are investigating problems.

The following questions help you to isolate the problem layer:

- Is the problem specific to one platform or operating system, or is it common across multiple platforms or operating systems?
- Is the current environment and configuration supported?

If one layer reports the problem, the problem does not necessarily originate in that layer. Part of identifying where a problem originates is understanding the
environment in which it exists. Take some time to completely describe the problem environment, including the operating system and version, all corresponding software and versions, and the hardware. Confirm that you are running within an environment that is supported; many problems can be traced back to incompatible levels of software that are not intended to run together or have not been fully tested together.

**When does the problem occur?**

Develop a detailed timeline of events leading up to a failure, especially for cases that are one-time occurrences. You can most easily develop a timeline by working backward: Start at the time an error was reported (as precisely as possible, even down to the millisecond), and work backward through the available logs and information. Typically, you need to look only as far as the first suspicious event that you find in a diagnostic log.

To develop a detailed timeline of events, answer these questions:

- Does the problem happen only at a certain time of day or night?
- How often does the problem happen?
- What sequence of events leads up to the time that the problem is reported?
- Does the problem happen after an environment change, such as an upgrade or an installation of software or hardware?

**Under which conditions does the problem occur?**

Knowing which systems and applications are running at the time that a problem occurs is an important part of troubleshooting. These questions about your environment can help you to identify the cause of the problem:

- Does the problem always occur when the same task is being performed?
- Does a certain sequence of events need to occur for the problem to occur?
- Do any other applications fail at the same time?

Answering these types of questions can help you explain the environment in which the problem occurs and correlate any dependencies. Remember that just because multiple problems might have occurred around the same time, the problems are not necessarily related.

**Can the problem be reproduced?**

Problems that you can reproduce are often easier to solve. However, problems that you can reproduce can have a disadvantage. If the problem as a significant business impact, you do not want it to recur. If possible, re-create the problem in a test or development environment, which typically offers you more flexibility and control during your investigation. Answer the following questions:

- Can the problem be re-created on a test system?
- Are multiple users or applications encountering the same type of problem?
- Can the problem be re-created by running a single command, a set of commands, or a particular application?

“Searching knowledge bases” on page 125

You can often find solutions to problems by searching IBM knowledge bases. You can optimize your results by using available resources, support tools, and search methods.
Searching knowledge bases

You can often find solutions to problems by searching IBM knowledge bases. You can optimize your results by using available resources, support tools, and search methods.

About this task

You can find useful information by searching IBM Knowledge Center, but sometimes you need to look beyond the information center to resolve problems.

Procedure

To search knowledge bases for information that you need, use one or more of the following approaches:

• Find the content that you need by using the IBM Support Portal (IBM Cognos Business Intelligence Support Portal) (opens in new window).
  
  The IBM Support Portal is a unified, centralized view of all technical support tools and information for all IBM systems, software, and services. The IBM Support Portal lets you access the IBM electronic support portfolio from one place. You can tailor the pages to focus on the information and resources that you need for problem prevention and faster problem resolution. Familiarize yourself with the IBM Support Portal by viewing the demo videos (https://www.ibm.com/blogs/SPNA/entry/the_ibm_support_portal_videos) (opens in new window) about this tool. These videos introduce you to the IBM Support Portal, explore troubleshooting and other resources, and demonstrate how you can tailor the page by moving, adding, and deleting portlets.

• Search for content about IBM Cognos by using one of the following additional technical resources:
  
  – IBM Cognos BI APARs (problem reports) (opens in new window)
  – IBM Cognos BI Support website (opens in new window).
  – IBM Cognos forums and communities (opens in new window).

• Search for content by using the IBM masthead search. You can use the IBM masthead search by typing your search string into the Search field on any ibm.com® page.

• Search for content by using any external search engine, such as Google, Yahoo, or Bing. If you use an external search engine, your results are more likely to include information that is beyond the ibm.com domain. However, sometimes you can find useful problem-solving information about IBM products in newsgroups, forums, and blogs that are not on ibm.com.

  Tip: Include “IBM” and the name of the product in your search if you are looking for information about an IBM product.

Getting fixes

A product fix might be available to resolve your problem.

Procedure

To find and install fixes:

1. Determine which fix you need Fix Central (opens in new window) (http://www.ibm.com/support/fixcentral/)
2. Download the fix. Open the download document and follow the link in the “Download package” section.
3. Apply the fix by following the instructions in the “Installation Instructions” section of the download document.
4. Subscribe to receive weekly email notifications about fixes and other IBM Support information.

**Contacting IBM Support**

IBM Support provides access to a variety of IBM resources for help with software questions.

**Before you begin**

After trying to find your answer or solution by using other self-help options such as technotes, you can contact IBM Support. Before contacting IBM Support, your company must have an active IBM maintenance contract, and you must be authorized to submit problems to IBM. You should also have the following information at hand:

- Your customer identification number
- Your service request number, if it is an ongoing service request
- The phone number where you can be reached
- The version of the software you use
- The version of the operating environment you use
- A description of what you were doing when the problem occurred
- The exact wording of any error messages that display
- Any steps you took to attempt to solve the problem

For information about the types of available support, see the Support portfolio topic in the Software Support Handbook (opens in new window).

**Procedure**

Complete the following steps to contact IBM Support with a problem:

1. Define the problem, gather background information, and determine the severity of the problem. For more information, see the Getting IBM support (opens in new window) topic in the Software Support Handbook.
2. Gather diagnostic information.
3. Submit the problem to IBM Support in one of the following ways:
   - Using IBM Support Assistant (ISA): Use this feature to open, update, and view an Electronic Service Request with IBM. Any data that has been collected can be attached to the service request. This expedites the analysis and reduces the time to resolution.
   - Online through the IBM Support Portal (opens in new window): You can open, update, and view all your Service Requests from the Service Request portlet on the Service Request page.
   - By phone: For the phone number to call, see the Directory of worldwide contacts (opens in new window) web page.
Results

If the problem that you submit is for a software defect or for missing or inaccurate documentation, IBM Support creates an Authorized Program Analysis Report (APAR). The APAR describes the problem in detail. Whenever possible, IBM Support provides a workaround that you can implement until the APAR is resolved and a fix is delivered. IBM publishes resolved APARs on the IBM Support Web site daily, so that other users who experience the same problem can benefit from the same resolution.

Exchanging information with IBM

To diagnose or identify a problem, you might need to provide IBM Support with data and information from your system.

In other cases, IBM Support might provide you with tools or utilities to use for problem determination.

Sending information to IBM Support

To reduce the time that it takes to resolve your problem, you can send trace and diagnostic information to IBM Support.

Procedure

To submit diagnostic information to IBM Support:

1. Open a problem management record (PMR). You can use the IBM Support Assistant (opens in new window) or the IBM Service Request tool (opens in new window).
2. Collect the diagnostic data that you need. Diagnostic data helps reduce the time that it takes to resolve your PMR. You can collect the diagnostic data manually or automatically.
3. Compress the files by using the TRSMAIN or AMATERSE program. Download the free utility from the IBM to the IBM Cognos BI system and then install the utility using the TSO RECEIVE command.
4. Transfer the files to IBM. You can use one of the following methods to transfer the files to IBM:
   - The Service Request tool (opens in new window)
   - Standard data upload methods: FTP, HTTP
   - Secure data upload methods: FTPS, SFTP, HTTPS
   - Email
   
   If you are using an IBM Cognos product and you use ServiceLink / IBMLink to submit PMRs, you can send diagnostic data to IBM Support in an email or by using FTP.
   
   All of these data exchange methods are explained on the IBM Support site (opens in new window).

Receiving information from IBM Support

Occasionally an IBM technical-support representative might ask you to download diagnostic tools or other files. You can use FTP to download these files.
Before you begin

Ensure that your IBM technical-support representative provided you with the preferred server to use for downloading the files and the exact directory and file names to access.

Procedure

To download files from IBM Support:
1. Use FTP to connect to the site that your IBM technical-support representative provided and log in as anonymous. Use your email address as the password.
2. Change to the appropriate directory:
   a. Change to the /fromibm directory.
      ```
      cd fromibm
      ```
   b. Change to the directory that your IBM technical-support representative provided.
      ```
      cd nameofdirectory
      ```
3. Enable binary mode for your session.
   ```
   binary
   ```
4. Use the get command to download the file that your IBM technical-support representative specified.
   ```
   get filename.extension
   ```
5. End your FTP session.
   ```
   quit
   ```

Subscribing to Support updates

To stay informed of important information about the IBM products that you use, you can subscribe to updates.

About this task

By subscribing to receive updates, you can receive important technical information and updates for specific Support tools and resources. You can subscribe to updates by using one of two approaches:

RSS feeds and social media subscriptions

The following RSS feeds and social media subscriptions are available for IBM Cognos BI:

- RSS feed for a developerWorks® forum (opens in new window).
- RSS feed for the Support site for IBM Cognos Business Intelligence (opens in new window)

For general information about RSS, including steps for getting started and a list of RSS-enabled IBM web pages, visit the IBM Software Support RSS feeds (opens in new window) site.

My Notifications

With My Notifications, you can subscribe to Support updates for any IBM product. You can specify that you want to receive daily or weekly email announcements. You can specify what type of information you want to receive, such as publications, hints and tips, product flashes (also known as alerts), downloads, and drivers. My Notifications enables you to customize
and categorize the products that you want to be informed about and the delivery methods that best suit your needs.

Procedure

To subscribe to Support updates:

1. Subscribe to the *Product* RSS feeds.
2. To subscribe to My Notifications, begin by going to the [IBM Support Portal](#) (opens in new window) and clicking *My Notifications* in the *Notifications* portlet.
3. If you have already registered for My support, sign in and skip to the next step. If you have not registered, click **Register now**. Complete the registration form using your email address as your IBM ID and click **Submit**.
4. Click **Edit profile**.
5. Click **Add products** and choose a product category; for example, **Software**.
6. In the second list, select a product segment; for example, **Data & Information Management**.
7. In the third list, select a product subsegment, for example, **Databases**.
8. Select the products that you want to receive updates for.
9. Click **Add products**.
10. After selecting all products that are of interest to you, click **Subscribe to email** on the **Edit profile** tab.
11. Select **Please send these documents by weekly email**.
12. Update your email address as needed.
13. In the **Documents list**, select the product category; for example, **Software**.
14. Select the types of documents that you want to receive information for.
15. Click **Update**.

Results

Until you modify your RSS feeds and My Notifications preferences, you receive notifications of updates that you have requested. You can modify your preferences when needed (for example, if you stop using one product and begin using another product).

Common errors

This section lists the most-common errors that you might encounter with IBM Cognos for Microsoft Office.

For a complete listing, which includes numbered error messages and warnings for IBM Cognos Business Intelligence products, refer to the IBM Cognos Business Intelligence *Administration and Security Guide*.

Configuration Issues

These issues are related to configuration and setup.

**Convert to Formulas does not show value**

You can create a crosstab without experiencing an error, but when you convert that exploration sheet to formulas, cells no longer display values properly. In one of the cells that has no value, you click the cell and it shows the COGVAL formula, such as `=COGVAL($CS1, $CS2, $B10, CS8, $B$8)`. Attempting to do this on another
workstation you find that values are displayed correctly. If a user with administrative rights to the workstation attempts to convert to formulas, the values are displayed correctly in the cells of the worksheet.

The user did not use Microsoft Excel before IBM Cognos Analysis for Microsoft Excel was installed and did not get registered properly. There are two ways to resolve this problem. You can give the affected user local administration rights to the workstation or you can run the file `Register Cognos UDF.vbs`, which will add the proper registry entries for the new user.

For the `Register Cognos UDF.vbs` file process to work (both during the installation of the software or when run separately to add a new user) the Microsoft Excel registry entries must have been created by Microsoft Excel itself. You must ensure that the user run Microsoft Excel first, before attempting to add registry entries for IBM Cognos Analysis for Microsoft Excel. You can examine the ntuser.dat that the script writes to check whether the user has been properly added.

**Updating server and package designations to make a server available**

After changing the gateway alias or switching from a test to a production environment you receive the following error message advising you that the server is not available and that the Cognos gateway is unable to connect to the Business Intelligence server.

SERVER_NOT_AVAILABLE: The Cognos gateway is unable to connect to the BI server. The server may be unavailable or the gateway may not be correctly configured.

This is probably caused by a change in the gateway URI.

Update the server and package designation in a workbook to switch from a test to a production environment or to access information from a different set of financial data, such as a submission.

**Procedure**

1. Optionally, you can update information in cell references.
   - From the worksheet you want to update, open the new server and package.
   - From the Information folder, drag the updated server and package metadata to the server or package cell.
2. Optionally, you can update information in embedded text.
   - Use the Microsoft Excel search and replace function to update embedded references in the text of cell formulas.

**The Cognos Office interface fails to initialize in Microsoft Office**

IBM Cognos Office may not initialize when the Microsoft .NET Framework is not installed or the version is not correct. The required Microsoft .NET Framework version is 4.0 or later. Another possible reason for this condition is that the IBM Cognos Office COM add-in is either not installed or not registered.

If you are running the wrong version of Microsoft .NET Framework, uninstall it and then reinstall Microsoft .NET Framework version 4.0 or later.

To install the IBM Cognos Office COM add-in, run the .msi program that is found on the installation CD.
Before you attempt to install Microsoft .NET Programmability Support, you must have installed Microsoft .NET Framework version 4.0 or later.

**Cognos for Microsoft Office Fails to Initialize**

If you use the Microsoft Windows XP operating system and Internet Explorer to browse IBM Cognos Business Intelligence and open a workbook, document, or presentation published by IBM Cognos for Microsoft Office, the document launches in Microsoft Office, but without full functionality.

To configure Internet Explorer to open Microsoft Office files in Microsoft Office instead of in Internet Explorer, you must use the Folder Options tool to update browse options. It is also possible to do this in Windows Registry.

**Procedure**

1. Open **My Computer**.
2. From the **Tools** menu, click **Folder Options**.
3. On the **File Types** tab, under **Registered file types**, click **Microsoft Excel Worksheet**, and then click **Advanced**.
   
   The edit File Type dialog box appears.
4. Clear the **Browse in same window** check box and click **OK**.
5. Complete the same steps for Microsoft Office PowerPoint presentations and Microsoft Office Word documents.

**Microsoft Office does not open a Microsoft Office document published from Cognos Office**

If you observe Microsoft Office trying to open a published document twice when you double-click the workbook, document, or presentation from Microsoft Windows Explorer, the file association is either corrupted or not installed properly.

There are two options to resolve this issue. You can start the Microsoft Office application first, and then open the document using the **Open** command from the **File** menu, or you can reregister the file type.

**Reregistering file types with a Microsoft Office program:**

When you are not able to open a Microsoft Office document even though it is associated with the correct file type, you must reregister the file type with the appropriate Microsoft Office program, such as Excel, Word, or PowerPoint.

**About this task**

In these steps, program.exe is a placeholder for the executable file for the Microsoft Office program that you want to reregister. If you installed Microsoft Office to another location, use the path that is correct for that location.

**Note:** If you are using the command line on version 7 of Microsoft Windows operating system, you must elevate the rights of the command line to perform certain tasks, such as reregistering file types. To open an elevated command prompt, or a command prompt in Administrator mode, right-click the command prompt shortcut, and select **Run as Administrator**.

**Procedure**

1. From the **Start** menu, click **Run**.
2. To disassociate the program version, in the **Open** box, type the following command, and then click **OK**:
```
program.exe/regserver
```

3. To specify the default version, from the **Start** menu, click **Run**.

4. In the **Open** box, type the following command, and then click **OK**:
```
program.exe/regserver
```

**Unable to Open Published Microsoft Office Documents from Cognos Connection**

If the browser does not prompt you to open or save the workbook, document, or presentation, it may mean that the option to prompt before opening was cleared. Reset this option.

You must enable the **File Download** and **Automatic prompting for file downloads** in Internet Explorer.

**Confirming Opening of Documents:**

The procedure to confirm opening of documents is as follows.

**Procedure**

1. Start the **Windows Control Panel**.
2. Double-click **Folder Options**.
3. From the **File Types** tab, in the **Registered file types** list, click **Microsoft Excel Worksheet**, and then click **Advanced**.
4. Ensure that the **Confirm open after download** check box is selected and click **OK**.
5. Repeat steps 3 and 4 for other Microsoft Office documents that are supported in IBM Cognos Office, such as **Microsoft Office Excel Template**, **Microsoft PowerPoint Presentation**, **Microsoft Office PowerPoint Template**, **Microsoft Word Document**, and **Microsoft Office Word Template**.
6. Click **Close**.

**Resetting Internet Security Options:**

The procedure to reset internet security options is as follows.

**Procedure**

1. Start **Internet Explorer**.
2. From the **Tools** menu, click **Internet Options**.
3. From the **Security** tab, click the Web content zone for which you are updating these options, and then click **Custom Level**.
4. Scroll down to the **Downloads** section and click **Enable** for the **File download** and **Automatic prompting for file downloads** options.
5. Click **OK** twice.

**.NET Messages are not in the Installed .NET Framework Language**

When you install a non-English version of .NET Framework in a non-English operating system, you will notice that the error messages, .NET shortcut and .NET Console are in English.
To solve this issue, you must apply the .NET Framework Language Pack for your language.

The subkey numbers relate to the language. For example, English, French, German, and Japanese are listed here: 1033=en-en, 1036=fr-fr, 1031=de-de, and 1041=ja. Refer to the Microsoft Support Site to obtain subkey numbers for other languages.

If you are missing the language pack subkeys, you must install the .NET language pack, which is available from the Microsoft support Web site.

**Workbook Closes Unexpectedly**

If you install the COM add-in and your Microsoft Excel workbook name contains a square bracket, Excel stops responding or closes unexpectedly after opening.

To resolve this problem, rename the workbook so that it does not contain square brackets.

**Reports Unavailable in Cognos Connection Jobs after Using Save As Command in Cognos Report Studio**

After opening a report in IBM Cognos Report Studio and saving a copy using the Save As command, you may find that if the report is included in a job, it is not available in the IBM Cognos Connection portal.

Do not use the Save As command in IBM Cognos Report Studio to save changes when a report is included in a job. Instead, make a copy of the report, make changes to the copy, and then copy the updated report to the IBM Cognos Connection portal. Use this method to overwrite the report in the job without breaking the report links.

**The Content of the Cell-based Report Shows #NAME?**

When building a cell-based report in IBM Cognos Analysis for Microsoft Excel, the content of the cells shows #NAME?

When you drag items from the source tree directly to a cell of a worksheet, you are creating a COGNAME or COGVAL formula that references the item in the database. This functionality is available only when the CognosOfficeUDF.Connect automation add-in is loaded.

If #NAME? appears in the contents of the cell, it means that the add-in was not loaded and the CognosOfficeUDF.Connect check box in the Add-in dialog box (Tools, Add-Ins) is not selected.

To resolve this issue and ensure that the add-in is always properly loaded, you must verify that the value of the OPEN registry key is set to /A "CognosOfficeUDF.Connect". If you use version 7 of Microsoft Windows operating system, you must use Run in XP from the command prompt to reregister file types.

**Procedure**

1. From the Windows Start menu, click Run.
2. In the Open box, type Regedit, and then click OK.
3. In the Registry Editor, go to the Registry branch:
   - HKEY_CURRENT_USER\SOFTWARE\Microsoft\Office\version\Excel\Options
4. In the topic area, right-click the OPEN entry, and then click Modify.
5. In the Value Data box, type
Processing issues

The following issues are related to processing and rendering reports.

**Improve performance for Cognos TM1 data**

If you experience unacceptable performance when you work with Cognos TM1 data, the administrator of the Cognos TM1 system might be able to change cube or system settings to improve performance.

To help the Cognos TM1 administrator evaluate the performance issue, provide the administrator with the details of the data you are using and a description of actions that result in unacceptable performance.

The following are examples of Cognos TM1 settings that affect performance.

**VVM ()CubeProperties**

For each cube, this property determines the amount of RAM reserved on the server for the storage of stargate views. The more memory made available for stargate views, the better performance will be. Sufficient memory must be available for the Cognos TM1 server to load all cubes.

**VMT ()CubeProperties**

If the time required to calculate a cube view surpasses the specified threshold, TM1 attempts to store a stargate view. If there is not enough memory available to store the stargate view, TM1 purges the oldest stargate view that is not currently in use, and continues to purge views in this manner until sufficient memory is made available.

The *IBM Cognos TM1 Operation Guide* includes more information about the CubeProperties and other tuning options.

**Lists that were created using Cognos Analysis for Microsoft Excel Version 8.4 return an error**

Selecting Run with All Data or Refresh All Data on a workbook created in IBM Cognos Analysis for Microsoft Excel Version 8.4 may display an error.

**Procedure**

Use the Excel Clear All feature to remove all data and formatting from cells before clicking Refresh All Data from the IBM Cognos toolbar.

**RSV-SRV-0067 This report contains upgrade errors and cannot run**

Adding a calculation to a workbook created in IBM Cognos Analysis for Microsoft Excel Version 8.4 displays an upgrade warning error.

**Procedure**

Use the Excel Clear All feature to remove all data and formatting from cells before clicking Refresh All Data from the IBM Cognos toolbar.

**DPR-ERR-2079 Firewall Security Rejection**

If you run a report after your session has expired and then try to navigate away from the first page of the report, you encounter an error.
DPR-ERR-2079 Firewall Security Rejection. Your request was rejected by the security firewall. CAF rejection details are available in the log. Please contact your administrator.

When the DPR-ERR-2079 error occurs after an expired session, you must log on again to resolve the problem.

Procedure
1. In the report list, right-click the node item, which appears before other items.
2. Click Log On.
3. Provide your authentication credentials as prompted and click OK.

Item cannot be expanded
Microsoft Excel has reached the maximum number of rows or columns for this worksheet. The number of rows and columns is limited in Microsoft Excel. Expanding the current item is not possible because it would shift rows or columns beyond this worksheet limit. Microsoft Office Excel cannot shift nonblank cells off the worksheet.

Manually move items so that the row or column item can expand without reaching the limit, or move your crosstab, list, or analysis to another worksheet. Or, you can move the data to a new location and try again.

Results have exceeded the Excel row or column limit
Microsoft Excel has reached the maximum number of rows or columns for this worksheet. The number of rows and columns is limited in Microsoft Excel. Items are truncated.

Filter items so that the row or column items can be displayed without reaching the limit. Consider creating additional crosstab or list exploration sheets to spread the data over more than one worksheet. Consider using a new version of Microsoft Excel that has larger limits for rows and columns.

Error: Exception from HRESULT:<location>
In IBM Cognos Analysis for Microsoft Excel if you import a data item where the path to the data item exceeds 256 characters it results in the error: Exception from HRESULT.

You must create package names and unique data identifiers that keep to the 256-character limit inside Microsoft Excel.

Error refreshing exploration saved in earlier version of Microsoft Excel
This workbook may have been created with an older version of Microsoft Excel that has a set maximum number of rows or columns. For example, an earlier version of Microsoft Excel, such as Office XP or Office 2003, columns that go beyond the 256 maximum limit are truncated.

Although you are no longer using that version, the application is working within the limits of the older version of Excel. You may encounter this situation when you are expanding items or when you are refreshing items that have grown in size since the workbook was created.

To correct the problem, you must save the workbook with the .xlsx extension. Opening the workbook that contains the exploration in Office 2007 or 2010 does not convert it to Office 2007 or 2010 format. Saving the workbook with the .xlsx
extension converts the workbook to the Office 2007 or 2010 format that supports columns exceeding the 256 column limit set in earlier versions of Excel.

Security Issues

The following issues are related to security setup.

**Cognos Office Unable to Create Trust Relationship**

If you are using HTTPS to Report Data Service and you receive an error in IBM Cognos Office about being unable to trust the relationship, the Certificate Authority (CA) certificate that was issued by the Web server is not trusted on the client workstation.

To resolve this problem, you must ensure that the Certificate Authority (CA) that issued the Web server certificate is also trusted on the client workstation. If the certificate is not from an authority that is already trusted on the client, such as Verisign, you must install the CA certificate in the trust store on the client.

**Procedure**

1. Retrieve the CA certificate from the issuing authority.
   The file has a .cer extension. This is not the same certificate as the one used by the Web server. It is the certificate for the issuing authority itself.

2. Double-click the .cer file, click **Install Certificate**, and then click **Next**.

3. Click **Place all certificates in the following store**.

4. Click **Browse**, click **Trusted Root Certification Authorities**, and then click **Next**.

5. Click **Finish**.

**Unable to View Reports After Clicking View Report**

IBM Cognos for Microsoft Office is functioning normally, but you cannot use the View Report option to view reports. The client machine, running IBM Cognos for Microsoft Office, cannot connect to the gateway URL as configured in IBM Cognos Business Intelligence. This may be because it is behind a firewall, the hostname/DNS is not known to this client machine, or the client machine has proxy issues.

To resolve the connectivity issues, work with your system administrator.

**Cognos Office Numbered Error Messages**

The following error messages may appear in a dialog box and are recorded in the IBM Cognos Office log.

**COI-ERR-2002 Block type is not valid**

An internal processing error occurred. The block object was not able to be processed.

Contact IBM Cognos Resource Center. Be ready to supply all relevant logs and details related to this error.

**COI-ERR-2003 Unexpected type: stacked block**

An internal processing error occurred. The data object was not of the expected type and could not be processed.

Contact IBM Cognos Resource Center. Be ready to supply all relevant logs and details related to this error.
COI-ERR-2005 This version of Microsoft Office is not supported
IBM Cognos Office supports only specific versions of Microsoft Office applications.

Load the report content into one of the supported applications and environments.

To review an up-to-date list of environments supported by IBM Cognos products, including operating systems, patches, browsers, web servers, directory servers, database servers, and application servers, go to IBM Software Product Compatibility Reports (www.ibm.com/support/docview.wss?uid=swg27041498).

COI-ERR-2006 This Microsoft Office product is not supported
IBM Cognos Office supports only specific Microsoft Office applications, such as Microsoft Office Excel, Microsoft Office Word, and Microsoft Office PowerPoint. You cannot load IBM Cognos Office content to another Microsoft Office application, such as Microsoft Access even when there is an add-in that enables these applications to interoperate.

Load the report content into one of the supported applications and environments.

To review an up-to-date list of environments supported by IBM Cognos products, including operating systems, patches, browsers, web servers, directory servers, database servers, and application servers, go to IBM Software Product Compatibility Reports (www.ibm.com/support/docview.wss?uid=swg27041498).

COI-ERR-2008 Unable to Retrieve from Resources. Tried '{0}'
An internal processing error occurred.

Contact IBM Cognos Resource Center. Be ready to supply all relevant logs and details related to this error.

COI-ERR-2009 Unable to Perform This Operation Because Microsoft Excel is in Edit Mode
Report content cannot be refreshed while one of the cells of the workbook is being edited.

Click outside the active cell to return it to a non-edit mode and try again.

COI-ERR-2010 The name {0} is not valid. A name must not contain both a quote (") character and an apostrophe (') character
When you create a folder, rename a folder, or publish a document, the name can contain an apostrophe or a quote, but not both.

To resolve this problem, rename the folder or document. Exclude the apostrophe or quote character from the name.

COI-ERR-2011 The server did not return the expected response. Check that the gateway is valid.
This error message is displayed if the value entered in the System Gateway URI box of the Options dialog box is not a valid IBM Cognos Business Intelligence server.

To resolve this problem, reenter the System Gateway URI with the gateway address for a valid IBM Cognos BI server.
COI-ERR-2013 Unable to load metadata
You may be unable to load metadata because you do not have security rights to all of the items in the worksheet or because the items were removed or changed on the server.

Ensure that you have security rights to all of the items that you are trying to view. If this does not fix the problem, ensure that the server and package information are correct and that any items that have been removed from the source database are also removed from the worksheet.

COI-ERR-2014 Help file not found
The help file is missing or corrupted.

To fix the problem, re-install your IBM Cognos component, such as IBM Cognos Analysis for Microsoft Excel or IBM Cognos for Microsoft Office.

COI-ERR-2015 There was a problem parsing the MIME encoded server response. Tried to find the boundary [{0}] but found the boundary [{1}] instead
While using GZip compression, an option for compressing data that is retrieved from the server, an error occurred. The codes to decompress the data are missing or unrecognized by IBM Cognos Office.

Turn compression off. Although compression is turned on by default, it can be turned off by setting the UseGZipCompression property to false in the CommManagerSettings.xml file, which, by default, is located in the Office Connection directory, such as C:\Documents and Settings\user name\Local Settings\Application Data\Cognos\Office Connection or C:\Users\user name\AppData\Local\Cognos\Office Connection.

Turn compression off if you need to run tests or perform troubleshooting.

To turn gzip compression off set the following attribute:

<setting name="UseGzipCompression">False</setting>

COI-ERR-2016 Worksheet protected, IBM Cognos styles cannot be populated
If the worksheet is protected, the IBM Cognos styles cannot be applied.

You must unprotect the worksheet for the styles to be applied during a refresh of the data.

Cognos Analysis for Microsoft Excel numbered error messages
The following error messages may appear in a dialog box and are recorded in the IBM Cognos Office log.

COR-ERR-2004 Axis specification is not valid
The workbook specification is not capable of being generated because of an anomaly.

To fix the problem, you may attempt to do any of the following:
• Click Undo.
• Click Clear All Data.
• Close the workbook and open it again.

The workbook should now accept data from the source tree.

**COR-ERR-2007 Error retrieving from resources. Tried '{0}'**
The exploration sheet experienced a bad state.

Contact IBM Cognos Resource Center.

**COR-ERR-2009 Name formula is not valid**
The COGNAME formula did not parse correctly. It may have been altered manually and may have a missing argument.

Check the COGNAME formula in the active cell and ensure that it is in the correct format, or optionally, insert the member from the source tree.

**COR-ERR-2010 Formula is not valid**
If an argument to a COGNAME or COGVAL formula references a cell and that cell does not contain the expected string formula you receive this error.

Check the cell and its dependents. Look for #REF or #VALUE in the cell. The contents of the cell may have accidentally been deleted.

**COR-ERR-2011 Invalid range: Please enter a valid range for crosstab or list**
The range is not valid or is outside of the range of the data type.

To avoid this limitation, limit your data selections.

**COR-ERR-2013 Exploration cannot be converted to formula based because at least one context item contains a selection**
With more than one item in the Context drop zone there is no way for the multiple items to be rendered into the cells of the worksheet.

Remove one dimension from the Context drop zone. You must have one item per dimension to convert to a formula-based analysis.

**COR-ERR-2014 Due to Excel worksheet limitations the results may be truncated**
If the data that you receive back has more than 250 columns or more that 65,500 rows and you are not using Microsoft Excel 2007 or 2010, the result is truncated. You receive this message to make you aware of the truncation.

To avoid this limitation, limit your data selections.

**COR-ERR-2015 The current exploration cannot be rendered at this location on the worksheet**
The exploration cannot write data outside the limits of the current worksheet. Either the exploration is too large for Microsoft Excel or you have designated a starting location too close to the limit.

Try to move your start location. If that fails to fix the problem, try creating a crosstab with fewer rows or columns.

**COR-ERR-2016 Unable to retrieve package <Name>**
After you selected a package using the Open Package dialog box, an error occurred when trying to download the package from the server.
This is an internal error. You must contact Cognos Software Services.

**COR-ERR-2017 The current selection did not return any data**
Your selections in the source tree did not result in any data. The exploration sheet is cleared or returned to the previous state.

To display items in the worksheet, you must select objects from the source tree that intersect on data points.

**COR-ERR-2018 Help file not found**
The help file is missing or corrupted.

To fix the problem, re-install your IBM Cognos Office component, such as IBM Cognos Analysis for Microsoft Excel or IBM Cognos for Microsoft Office. You can also copy the .pdf file from the IBM Cognos Customer Service Center (http://www.ibm.com/support/entry/portal/overview) to the documentation directory.
Appendix A. Sample reports and packages

The IBM Cognos for Microsoft Office products include sample reports and packages that are based on the sample company, The Sample Outdoors Company. After the samples are set up, you can find the samples in Public Folders in IBM Cognos Connection, and in the source tree on the IBM Cognos pane.

The Sample Outdoors Company

The Sample Outdoors Company samples illustrate product features and technical and business best practices.

You can also use them for experimenting with and sharing report design techniques and for troubleshooting. As you use the samples, you can connect to features in the product.

The Sample Outdoors Company, or GO Sales, or any variation of the Sample Outdoors name, is the name of a fictitious business operation whose sample data is used to develop sample applications for IBM and IBM customers. Its fictitious records include sample data for sales transactions, product distribution, finance, and human resources. Any resemblance to actual names, addresses, contact numbers, or transaction values, is coincidental. Unauthorized duplication is prohibited.

Samples outline

The samples consist of the following:
- Two databases that contain all corporate data, and the related sample models for query and analysis
- Sample cubes and the related models
- A metrics data source including associated metrics and a strategy map for the consolidated company, and a model for Metric extracts.
- Reports, queries, query templates, and workspaces

To run interactive reports, scripts are required. To see all the reports included in the samples packages, copy the files from the samples content installation into deployment folder and then import the deployments into the IBM Cognos Business Intelligence product.

Security

Samples are available to all users.

To implement security, see the IBM Cognos Business Intelligence Administration and Security Guide.

The Sample Outdoors Group of Companies

To make designing examples faster, especially financial examples, some general information about The Sample Outdoors Company is useful.

To look for samples that use particular product features, see the individual sample descriptions in this section.
Revenue for The Sample Outdoors Company comes from corporate stores and from franchise operations. The revenues are consolidated from the wholly-owned subsidiaries. There are six distinct organizations, each with its own departments and sales branches. Five of these are regionally-based companies.

The sixth company, GO Accessories:
- Has its own collection of products, differentiated from the other GO companies by brand, name, price, color and size.
- Sells from a single branch to all regions and retailers.
- Functions both as an operating company based in Geneva, and as a part owner of the three GO subsidiaries in Europe.

The following diagram illustrates the consolidated corporate structure of the Sample Outdoors Company. The diagram also includes the percentage changes in ownership for GO Central Europe, and the reporting currency and GL (general ledger) prefix for each subsidiary. In year 1, GO Asia Pacific owns 60% of GO Central Europe, and in year 3, its ownership decreases to 50%. In year 1, GO Accessories owns 40% of GO Central Europe, and in year 3 its ownership increases to 50%.

![Diagram of Sample Outdoors Consolidated Corporate Structure]

Each corporation in the Sample Outdoors Company has the same departmental structure and the same general ledger (GL) structure, as shown in the following table. Divisions may not report in the same currencies. For example, the Americas subsidiary reports in US dollars, but the Corporate division local currency reports in Canadian dollars, and the Operations division local currency is pesos.
Table 16. Departmental structure

<table>
<thead>
<tr>
<th>Division (GL)</th>
<th>Department (GL)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Corporate (1700)</td>
<td>Sales (1720)</td>
</tr>
<tr>
<td></td>
<td>Marketing (1750)</td>
</tr>
<tr>
<td></td>
<td>IS&amp;T (1760)</td>
</tr>
<tr>
<td></td>
<td>Human Resources (1730)</td>
</tr>
<tr>
<td></td>
<td>Finance (1740)</td>
</tr>
<tr>
<td></td>
<td>Procurement (1710)</td>
</tr>
<tr>
<td>Operations (1800)</td>
<td>Production and Distribution (1820)</td>
</tr>
<tr>
<td></td>
<td>Customer Service (1820)</td>
</tr>
</tbody>
</table>

Each corporation has a complete chart of accounts. Most of the accounts, such as those under non-personnel expenses, are at the department level, and contain only summary amounts. For example, although each marketing department has expenses, the cost is unspecified at the transaction level where marketing promotions occur.

Employees

The Sample Outdoors data contains a full list of employees in all divisions, departments, and locations.

Data is available for reports about bonuses (Global Bonus report) and sales commissions (Sales Commissions for Central Europe report), training (Employee Training by Year report), and performance reviews and employee satisfaction surveys (Employee Satisfaction 2012). If you use Metric Studio, sample metrics for human resources are also available.

In the GO Data Warehouse (analysis) package, groups of measures and the related dimensions are organized into folders. The employees are organized in hierarchies for region and manager, to make different kinds of aggregation easy to report on. Aggregation has been defined for the Employee Position Summary measures, so that Position count and Planned position count aggregate correctly at each level of time: monthly, quarterly, or yearly. For example, see the Planned Headcount report.

The employees are also listed in a sample LDIF file which could be used for any LDAP IBM product authentication including Tivoli®. This authentication directory is necessary for IBM Cognos Planning samples. No other samples depend on security profiles.

Sales and marketing

Data about sales and marketing is available for all of the companies in the Sample Outdoors group.

GO Accessories has richer details to support analysis examples. For example, see the Revenue vs % Profit Margin by Product Brand analysis, based on the Sales and Marketing cube. Marketing and sales campaigns are tied to the Sample Outdoors regional companies.
Overall, the GO companies have experienced solid growth across most product lines (Sales Growth Year Over Year), in all regions (Revenue by GO Subsidiary 2011), because of factors like an increase in repeat business and new or improved products, such as the high margin sunglasses product line. In the product lines sold by the five regional companies (all but GO Accessories) promotions have had mixed success (Promotion Success by Campaign, Bundle and Quarter). If you use Metric Studio, this can also be seen in the sample metrics.

**Customer surveys**

The data also contains information from customer surveys. For example, the product line that includes bug spray, sun screen, and so on has not been successful (Product Satisfaction - Outdoor Protection 2011) and a source of retailer dissatisfaction may be the level of customer service rather than the returns (Customer Returns and Satisfaction). If you use Metric Studio, this information can also be monitored in metrics.

**Sales outlets**

Revenue from the corporate outlets is available at the transaction level. Revenue from the franchise outlets is available at the consolidated level only (Sales and Marketing cube). Metrics about retailers show that the number of new retail outlets has dropped over the time period covered by this data.

GO Accessories sells worldwide, and sells only accessories. Transaction data for GO Accessories is the primary source for analysis of product by brand, color and size. The other five subsidiaries in the group of companies are regional and sell all product lines for retailers in their region. For example, the report Top 10 Retailers in 2011 uses sparklines and list data to review revenues at the retailer level.

**Sample Outdoors database, models, and packages**

The Sample Outdoors Framework Manager models illustrate modeling techniques and support the samples.

The models are based on the GO data warehouse and the GO sales transactional database and are the basis for the sample reports and queries. Each model contains two packages for publishing analysis (dimensional) and query views of the data.

You must have access to Framework Manager, the modeling tool in IBM Cognos Business Intelligence, to look at the sample models. You may also need to set up the sample databases and connections.

**GO Data Warehouse**

The GO Data Warehouse model, great_outdoors_data_warehouse.cpf, is based on the database GOSALES DW. It contains data about human resources, sales and marketing, and finance, grouped into business areas. In the Database view, the three business areas are grouped into separate namespaces. The Database view contains a fourth namespace (GO Data) for the common information.

The Database view is very similar to the structure of the underlying database. All tables (database query subjects) are unchanged. This enables IBM Cognos BI to retrieve metadata directly from the package in most cases, instead of using a metadata call to the database. The following changes and additions have been made in the Database view:
Joins have been added as necessary.
To allow for aggregation at different levels of granularity, some model query subjects have been created. For example, see the relationships between Time and Sales or Sales fact.
To allow single joins to be made between the lookup tables and each level in a dimension, lookup tables have been copied. For example, see the Products lookup tables.

The Business view contains only model query subjects, with no joins. The following changes and additions have been made in the Business view:
- Calculations were added to the model query subjects. For example, the time dimension contains language calculations.
- Where the database has multiple hierarchies, new dimensions have been created to organize each hierarchy. For example, the employee hierarchies are organized into several categories, such as manager and region.

The GO Sales transactional database

The GO Sales model, great_outdoors_sales.cpf, is based on the GOSALES database, which is structured as a transactional database. It contains principally sales data.

The Database view is very similar to the underlying database structure. The following changes and additions have been made in the Database view:
- To make it possible to join the fact tables to the time dimension, model query subjects and multipart joins have been used.
- Other joins have been added as necessary.

The Business view contains only model query subjects, with no joins. The following changes and additions have been made in the Business view:
- Calculations were added to the model query subjects.
- Model query subjects that were created in the Database view to enable joins on the time dimension have been linked as reference shortcuts.
- Where the database has multiple hierarchies, new dimensions have been created to organize each hierarchy.
- Sales Staff is a subset of the slowly changing Employee dimension. There is no unique Employee key in GO Sales, so a filter retrieves the current record only. This model does not use historical data.

The samples PowerCubes

The following cubes are delivered with the Sample Outdoors samples in English, French, German, Japanese and Chinese:
- sales_and_marketing.mdc
- employee_expenses.mdc
- go_accessories.mdc
- go_americas.mdc
- go_asia_pacific.mdc
- great_outdoors_sales_en.mdc
- great_outdoors_7.mdc
The samples packages

The Sample Outdoors samples include six packages. A brief description of each available package is provided.

Go Data Warehouse (analysis) is a dimensionally modeled view of the GOSALESDW database. This package can be used in all studios, including IBM Cognos Analysis Studio. Using this package you can drill up and down.

Go Sales (analysis) is a dimensionally modeled view of the GOSALES database. This package can be used in all studios, including Analysis Studio. Using this package you can drill up and down.

Go Data Warehouse (query) is a non-dimensional view of the GOSALESDW database. This package can be used in all studios except Analysis Studio, and is useful for reporting when there is no need for drilling up and down.

Go Sales (query) is a non-dimension view of the GOSALES database. This package can be used in all studios except Analysis Studio, and is useful for reporting when there is no need for drilling up and down.

Sales and Marketing (cube) is an OLAP package, based on the sales_and_marketing.mdc cube.

Great Outdoor Sales (cube) is an OLAP package, based on the great_outdoors_sales_en.mdc cube.

Note: The OLAP packages, Great Outdoor Sales (cube) and Sales and Marketing (cube), are not multilingual. The IBM_Cognos_PowerCube.zip archive contains five versions of each package; one in English, French, German, Japanese and Chinese.

Samples in the GO Data Warehouse (analysis) package

The following are some of the reports found in the GO Data Warehouse (analysis) package and GO Office Report Samples.

Employee Satisfaction Workspace

This workspace shows different measures of employee satisfaction, like training, bonuses, and employee survey scores. The bonus list is filtered by country.

Return Quantity by Order Method

This report shows quantity sold, number of returns, and percentage of returns (with those greater than 5% highlighted) by return reason for each product in the Outdoor Protection product line. This report uses the following features:

- filters
- lists
- conditional highlighting
- grouping

Return Quantity by Product Line Chart

This pie chart report shows return quantities of product lines for all subsidiaries.
Revenue Data Workspace

The workspace shows revenue by region, by country and product type (filtered with multiple values check boxes), and by order method.

Samples in the GO Data Warehouse (query) package

The following reports are some of the reports found in the GO Data Warehouse (query) package and GO Office Report Samples.

Baselines

This chart report shows the numeric baselines, mean and percentage, based on prompt values that are used to filter on years.

Bursted Sales Performance Report

This list report shows how to burst a sales performance report to a manager of Northern Europe sales staff. To successfully burst this report, IBM Cognos 10 must be configured to use an email server. This report uses the following features:

- lists
- bursting
- conditional highlighting
- filters
- calculations
- summarizing
- blocks
- custom headers and footers
- sorting
- grouping

Samples in the Sales and Marketing (Cube) package

The following reports are some of the reports found in the Sales and Marketing (Cube) package and GO Office Report Samples.

Revenue by Product Brand

This report shows the revenue and gross profit by product filtered by the product brand. There is always product turnover, so the report conditionally highlights products that are discontinued. This report uses the following features:

- lists
- filters
- prompts
- combination charts
- bar charts
- HTML items
- grouping
- sorting
- axis titles
Samples in the GO Sales (analysis) package

The following reports are some of the reports found in the GO Sales (analysis) package and GO Office Report Samples.

Sales Summary
This report summarizes revenue and gross profit and shows the top sales representatives by revenue and quantity sold. This report uses the following features:
- lists
- filters
- combination charts
- axis titles
- custom headers and footers
- conditions

Samples in the GO Sales (query) package

The following reports are some of the reports found in the GO Sales (query) package and GO Office Report Samples.

Horizontal Pagination
This report shows a very wide crosstab rendered across several horizontal pages. The first crosstab shows the fit-to-page behavior, while the second crosstab shows the horizontal pagination.

This report uses the following features:
- multiple pages
- horizontal pagination
- crosstabs
- custom headers and footers

No Data
Each page of this report presents a different option for dealing with a No Data condition. It also generates invoices of sales for the Order Invoices - Donald Chow, Sales Person report in the GO Sales (query) package.

This report uses the following features:
- crosstabs
- custom headers and footers
- no data
- lists
Appendix B. Accessibility features

IBM Cognos Analysis for Microsoft Excel has accessibility features that help users who have a physical disability, such as restricted mobility or limited vision, to use information technology products successfully.

The following list includes the major accessibility features in IBM Cognos Analysis for Microsoft Excel:

- You can use accelerators and command keys to navigate through IBM Cognos Analysis for Microsoft Excel.
  
  In Microsoft Windows, press the Alt key, then the accelerator to trigger an action; for example, Alt+F shows the File menu. If they are enabled, you can use extended accelerators as well.

- IBM Cognos Analysis for Microsoft Excel uses Microsoft Active Accessibility (MSAA). This means that people with limited vision can use screen-reader software, along with a digital speech synthesizer, to listen to what is displayed on the screen.

- IBM Cognos Analysis for Microsoft Excel supports your system's display settings, such as color scheme, font size, and high-contrast display.

- IBM Cognos Analysis for Microsoft Excel provides text through standard system function calls or through an API (application programming interface) that supports interaction with assistive technology, such as screen-reader software. When an image represents a program element, the information conveyed by the image is also available in text.

IBM Cognos Analysis for Microsoft Excel has other features that you can customize to fit your individual needs:

- “Increase font size for future sessions” on page 154
- “View explorations in Windows high contrast mode” on page 154

Keyboard navigation

You can use keyboard shortcuts to navigate and perform tasks.

If an action you use often does not have a shortcut key, you can record a macro in Microsoft Excel to create one.

This product uses standard Microsoft Windows navigation keys in addition to application-specific keys.

Note: The keyboard shortcuts are based on U.S. standard keyboards. Some of the content in this topic may not be applicable to some languages.

Access and use menus and IBM Cognos toolbar

Keyboard shortcuts allow you to access menus and IBM Cognos toolbar without using a mouse or other pointing device.
**Table 17. IBM Cognos toolbar**

<table>
<thead>
<tr>
<th>Action</th>
<th>Shortcut keys</th>
</tr>
</thead>
<tbody>
<tr>
<td>Start IBM Cognos Analysis for Microsoft Excel or IBM Cognos for Microsoft Office.</td>
<td>ALT, to place focus on the menu bar</td>
</tr>
<tr>
<td></td>
<td>CTRL+TAB, to move to the IBM Cognos button</td>
</tr>
<tr>
<td></td>
<td>ENTER</td>
</tr>
<tr>
<td>When the IBM Cognos toolbar is selected, select the next or previous button or menu on the toolbar.</td>
<td>Office 2007 and Office 2010 users:</td>
</tr>
<tr>
<td></td>
<td>LEFT ARROW or RIGHT ARROW</td>
</tr>
<tr>
<td></td>
<td>Office XP and Office 2003 users:</td>
</tr>
<tr>
<td></td>
<td>TAB or SHIFT+TAB</td>
</tr>
<tr>
<td>When a menu or the IBM Cognos toolbar is active, move to the IBM Cognos Office pane.</td>
<td>Office 2007 and Office 2010 users:</td>
</tr>
<tr>
<td></td>
<td>ALT+B to place focus on the IBM Cognos Office pane</td>
</tr>
<tr>
<td></td>
<td>Office XP and Office 2003 users:</td>
</tr>
<tr>
<td></td>
<td>TAB to place focus on the IBM Cognos Office pane</td>
</tr>
<tr>
<td>Select the first or last command on the menu or submenu.</td>
<td>HOME or END</td>
</tr>
<tr>
<td>Open the selected menu, or perform the action for the selected button or command.</td>
<td>ENTER</td>
</tr>
<tr>
<td>Open the context menu for the selected item or area of focus.</td>
<td>SHIFT+F10</td>
</tr>
<tr>
<td>Close an open context menu.</td>
<td>ESC</td>
</tr>
<tr>
<td>Move to the exploration toolbar.</td>
<td>CTRL+M, M</td>
</tr>
</tbody>
</table>

**Access and use IBM Cognos pane**

Keyboard shortcuts allow you to access the IBM Cognos pane without using a mouse or other pointing device.

**Table 18. IBM Cognos pane**

<table>
<thead>
<tr>
<th>Action</th>
<th>Shortcut keys</th>
</tr>
</thead>
<tbody>
<tr>
<td>When a menu or the IBM Cognos toolbar is active, move to the IBM Cognos pane.</td>
<td>Office 2007 and Office 2010 users:</td>
</tr>
<tr>
<td></td>
<td>ALT+B, to place focus on the IBM Cognos pane</td>
</tr>
<tr>
<td></td>
<td>Office XP and Office 2003 users:</td>
</tr>
<tr>
<td></td>
<td>TAB, to place focus on the IBM Cognos pane</td>
</tr>
</tbody>
</table>
Table 18. IBM Cognos pane (continued)

<table>
<thead>
<tr>
<th>Action</th>
<th>Shortcut keys</th>
</tr>
</thead>
<tbody>
<tr>
<td>When the IBM Cognos Office pane is active, select a component, such as</td>
<td>Office 2007 and Office 2010 users:</td>
</tr>
<tr>
<td>IBM Cognos Analysis for Microsoft Excel or IBM Cognos for Microsoft</td>
<td>CTRL+TAB</td>
</tr>
<tr>
<td>Office</td>
<td>LEFT ARROW or RIGHT ARROW</td>
</tr>
<tr>
<td></td>
<td>Office XP and Office 2003 users:</td>
</tr>
<tr>
<td></td>
<td>TAB or SHIFT+TAB</td>
</tr>
<tr>
<td></td>
<td>LEFT ARROW or RIGHT ARROW</td>
</tr>
<tr>
<td>When the IBM Cognos Office pane is active, select the next or previous</td>
<td>Office 2007 and Office 2010 users:</td>
</tr>
<tr>
<td>option in the pane.</td>
<td>CTRL+TAB</td>
</tr>
<tr>
<td></td>
<td>Office XP and Office 2003 users:</td>
</tr>
<tr>
<td></td>
<td>TAB or SHIFT+TAB</td>
</tr>
<tr>
<td>Place the focus on the metadata tree.</td>
<td>CTRL+M, T</td>
</tr>
<tr>
<td>Place the focus on the overview area.</td>
<td>CTRL+M, U</td>
</tr>
</tbody>
</table>

Use filter window

Keyboard shortcuts allow you to use the Edit Filter window without using a mouse or other pointing device.

Table 19. Edit Filter window

<table>
<thead>
<tr>
<th>Action</th>
<th>Shortcut keys</th>
</tr>
</thead>
<tbody>
<tr>
<td>When the Edit Filter window is active, change the focus on controls by</td>
<td>TAB</td>
</tr>
<tr>
<td>moving between buttons, filter lines and conjunctions, which are the</td>
<td></td>
</tr>
<tr>
<td>AND and OR operators.</td>
<td></td>
</tr>
<tr>
<td>Toggle the expression between AND and OR when a conjunction control is</td>
<td>SPACE KEY</td>
</tr>
<tr>
<td>active.</td>
<td></td>
</tr>
<tr>
<td>When a conjunction control, such as AND and OR operators are active,</td>
<td>LEFT ARROW</td>
</tr>
<tr>
<td>compress the expression.</td>
<td>MINUS KEY (-) on the numeric keypad</td>
</tr>
<tr>
<td>When a conjunction control, such as AND and OR operators are active,</td>
<td>RIGHT ARROW</td>
</tr>
<tr>
<td>expand the expression.</td>
<td>PLUS KEY (+) on the numeric keypad</td>
</tr>
</tbody>
</table>

Use windows

Keyboard shortcuts allow you to access dialog boxes without using a mouse or other pointing device.
<table>
<thead>
<tr>
<th>Action</th>
<th>Shortcut keys</th>
</tr>
</thead>
<tbody>
<tr>
<td>Move to the next option or option group.</td>
<td>TAB</td>
</tr>
<tr>
<td>Move to the previous option or option group.</td>
<td>SHIFT+TAB</td>
</tr>
<tr>
<td>Move between options in an open drop-down list, or between options in a group of options.</td>
<td>Arrow keys</td>
</tr>
<tr>
<td>Perform the action for the selected button, or select or clear the selected check box.</td>
<td>SPACEBAR</td>
</tr>
<tr>
<td>Open the list, if it is closed, and move to that option in the list.</td>
<td>First letter of an option in a drop-down list</td>
</tr>
<tr>
<td>Open the selected drop-down list.</td>
<td>Office 2007 and Office 2010 users: First letter of an option in a drop-down list</td>
</tr>
<tr>
<td></td>
<td>Office XP and Office 2003 users: ALT+DOWN ARROW</td>
</tr>
<tr>
<td>Close the selected drop-down list.</td>
<td>Office 2007 and Office 2010 users: First letter of an option in a drop-down list</td>
</tr>
<tr>
<td></td>
<td>Office XP and Office 2003 users: ALT+UP ARROW</td>
</tr>
<tr>
<td>Expand or collapse a folder.</td>
<td>CTRL+ENTER</td>
</tr>
<tr>
<td>Cancel the command and close the window.</td>
<td>ESC</td>
</tr>
<tr>
<td>Open the Select Package dialog box.</td>
<td>CTRL+M, O</td>
</tr>
<tr>
<td>When the Open dialog box is active, open the selected report locally from IBM Cognos Connection.</td>
<td>ALT+O</td>
</tr>
<tr>
<td>When the Select Package dialog box is open, select a package.</td>
<td>TAB, to place focus on the System box</td>
</tr>
<tr>
<td></td>
<td>ENTER to view the packages</td>
</tr>
<tr>
<td>When the Publish dialog box is active and the appropriate folder is expanded, publish the selected Microsoft Office document to IBM Cognos Connection.</td>
<td>ALT+P</td>
</tr>
<tr>
<td>In IBM Cognos for Microsoft Office, move to a tab page, such as the Browse Content or the Manage Data page, on the IBM Cognos BI pane.</td>
<td>CTRL+TAB</td>
</tr>
</tbody>
</table>
Use tree view

Keyboard shortcuts allow you to access tree view without using a mouse or other pointing device.

*Table 21. Tree view*

<table>
<thead>
<tr>
<th>Action</th>
<th>Shortcut keys</th>
</tr>
</thead>
<tbody>
<tr>
<td>Move to the first selectable node.</td>
<td>DOWN ARROW</td>
</tr>
<tr>
<td>If the node has children and the child node is expanded, move to the first child node.</td>
<td></td>
</tr>
<tr>
<td>Move to the next selectable node.</td>
<td>UP ARROW</td>
</tr>
<tr>
<td>Expand the selected node, or move to the first selectable child node</td>
<td>RIGHT ARROW</td>
</tr>
<tr>
<td>Collapse the selected node, move to the parent node, or move to the first selectable node.</td>
<td>LEFT ARROW</td>
</tr>
<tr>
<td>Move to the first node in a tree control.</td>
<td>HOME</td>
</tr>
<tr>
<td>Move to the last node in a tree control.</td>
<td>END</td>
</tr>
</tbody>
</table>

Use report options

Keyboard shortcuts allow you to perform report actions.

*Table 22. Report options*

<table>
<thead>
<tr>
<th>Action</th>
<th>Shortcut keys</th>
</tr>
</thead>
<tbody>
<tr>
<td>Undo the most recent action in the exploration.</td>
<td>CTRL+M, Z</td>
</tr>
<tr>
<td>Redo the most recent action in the exploration.</td>
<td>CTRL+M, Y</td>
</tr>
<tr>
<td>Edit the annotation for the selected cell.</td>
<td>CTRL+M, A</td>
</tr>
<tr>
<td>Commit the changed value for the selected cell.</td>
<td>CTRL+M, C</td>
</tr>
<tr>
<td>Hold the value in the selected cell, or release a hold on a cell.</td>
<td>CTRL+M, H</td>
</tr>
<tr>
<td>Refresh the current flex view.</td>
<td>CTRL+M, R</td>
</tr>
<tr>
<td>Clear the data from the current flex view.</td>
<td>CTRL+M, L</td>
</tr>
<tr>
<td>Refresh all flex views on the worksheet.</td>
<td>CTRL+M, W</td>
</tr>
<tr>
<td>Show the properties for the current flex view.</td>
<td>CTRL+M, P</td>
</tr>
</tbody>
</table>

Interface information

The following sections describe various ways that you can customize your settings to make IBM Cognos Analysis for Microsoft Excel more accessible.
Increase font size for future sessions

It is best to change the size of your IBM Cognos for Microsoft Office fonts by changing your display fonts in Windows. Changing your Windows display fonts affects all programs on your computer. For more information, refer to Windows Help.

Note: In Microsoft Windows XP, selecting the Large size option in the DPI setting field will not have the desired effect in IBM Cognos for Microsoft Office. The change in font size impacts only specific areas and elements of IBM Cognos for Microsoft Office. This is consistent with how Microsoft Office resizes its fonts in general. For example, only menus, window titles, and standard windows are resized. You must select the Custom setting and then select the percentage to scale to.

View explorations in Windows high contrast mode

Microsoft Windows users with low vision can make IBM Cognos Analysis for Microsoft Excel easier to view by enabling High Contrast Mode. For more information, see the documentation for your operating system.

Vendor software

IBM Cognos Analysis for Microsoft Excel includes certain vendor software that is not covered under the IBM license agreement. IBM makes no representation about the accessibility features of these products. Contact the vendor for the accessibility information about its products.

IBM and accessibility

See the IBM Human Ability and Accessibility Center for more information about the commitment that IBM has to accessibility.

http://www.ibm.com/able
Appendix C. Rebranding Cognos Office Components

This section is intended for clients and partners who need to rebrand, customize, or localize labels, messages, or other strings in IBM Cognos Office products, such as IBM Cognos Analysis for Microsoft Excel, IBM Cognos Office, and IBM Cognos for Microsoft Office versions 8.4 and later.

Resource Files

All the customizable strings for IBM Cognos Office products are in XML-based resource (.resx) files.

The .resx resource file format consists of XML entries that specify objects and strings inside XML tags. One advantage of a .resx file is that when opened with a text editor (such as Notepad or Microsoft Word) it can be written to, parsed, and manipulated. When viewing a .resx file, you can see the binary form of an embedded object, such as a picture when this binary information is a part of the resource manifest. Apart from this binary information, a .resx file is readable and maintainable.

A .resx file contains a standard set of header information that describes the format of the resource entries, and specifies the versioning information for the XML code that parses the data.

These files contain all the strings, labels, captions, and titles for all text in the three IBM Cognos Office components. For each language, there are three files, one for each component. The following table identifies each of the files.

Table 23. IBM Cognos Office resource files

<table>
<thead>
<tr>
<th>Language</th>
<th>IBM Cognos Analysis for Microsoft Excel files (internal name corm)</th>
<th>IBM Cognos for Microsoft Office files (internal name coc)</th>
<th>IBM Cognos Office files (internal name coi)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Language Neutral</td>
<td>cormsgs.resx</td>
<td>cocmsg.resx</td>
<td>coimsgs.resx</td>
</tr>
<tr>
<td>Chinese (simplified)</td>
<td>cormsgs.zh-cn.resx</td>
<td>cocmsg.resx.zh-cn.resx</td>
<td>coimsgs.zh-cn.resx</td>
</tr>
<tr>
<td>Chinese (traditional)</td>
<td>cormsgs.zh-tw.resx</td>
<td>cocmsg.resx.zh-tw.resx</td>
<td>coimsgs.zh-tw.resx</td>
</tr>
<tr>
<td>Croatian</td>
<td>cormsgs.hr.resx</td>
<td>cocmsg.resx.hr.resx</td>
<td>coimsgs.hr.resx</td>
</tr>
<tr>
<td>Czech</td>
<td>cormsgs.cs.resx</td>
<td>cocmsg.resx.cs.resx</td>
<td>coimsgs.cs.resx</td>
</tr>
<tr>
<td>Danish</td>
<td>cormsgs.da.resx</td>
<td>cocmsg.resx.da.resx</td>
<td>coimsgs.da.resx</td>
</tr>
<tr>
<td>Dutch</td>
<td>cormsgs.nl.resx</td>
<td>cocmsg.resx.nl.resx</td>
<td>coimsgs.nl.resx</td>
</tr>
<tr>
<td>English</td>
<td>cormsgs.en.resx</td>
<td>cocmsg.resx.en.resx</td>
<td>coimsgs.en.resx</td>
</tr>
<tr>
<td>Language</td>
<td>IBM Cognos Analysis for Microsoft Excel files (internal name cor)</td>
<td>IBM Cognos for Microsoft Office files (internal name coc)</td>
<td>IBM Cognos Office files (internal name coi)</td>
</tr>
<tr>
<td>----------</td>
<td>-----------------------------------------------------------------</td>
<td>----------------------------------------------------------</td>
<td>------------------------------------------</td>
</tr>
<tr>
<td>Finnish</td>
<td>cormsgs.fi.resx</td>
<td>cocmsgs.fi.resx</td>
<td>coimsgs.fi.resx</td>
</tr>
<tr>
<td>French</td>
<td>cormsgs.fr.resx</td>
<td>cocmsgs.fr.resx</td>
<td>coimsgs.fr.resx</td>
</tr>
<tr>
<td>German</td>
<td>cormsgs.de.resx</td>
<td>cocmsgs.de.resx</td>
<td>coimsgs.de.resx</td>
</tr>
<tr>
<td>Hungarian</td>
<td>cormsgs.hu.resx</td>
<td>cocmsgs.hu.resx</td>
<td>coimsgs.hu.resx</td>
</tr>
<tr>
<td>Italian</td>
<td>cormsgs.it.resx</td>
<td>cocmsgs.it.resx</td>
<td>coimsgs.it.resx</td>
</tr>
<tr>
<td>Japanese</td>
<td>cormsgs.ja.resx</td>
<td>cocmsgs.ja.resx</td>
<td>coimsgs.ja.resx</td>
</tr>
<tr>
<td>Kazakh</td>
<td>cormsgs.kk.resx</td>
<td>cocmsgs.kk.resx</td>
<td>coimsgs.kk.resx</td>
</tr>
<tr>
<td>Korean</td>
<td>cormsgs.ko.resx</td>
<td>cocmsgs.ko.resx</td>
<td>coimsgs.ko.resx</td>
</tr>
<tr>
<td>Norwegian</td>
<td>cormsgs.no.resx</td>
<td>cocmsgs.no.resx</td>
<td>coimsgs.no.resx</td>
</tr>
<tr>
<td>Polish</td>
<td>cormsgs.pl.resx</td>
<td>cocmsgs.pl.resx</td>
<td>coimsgs.pl.resx</td>
</tr>
<tr>
<td>Portuguese</td>
<td>cormsgs.pt.resx</td>
<td>cocmsgs.pt.resx</td>
<td>coimsgs.pt.resx</td>
</tr>
<tr>
<td>Romanian</td>
<td>cormsgs.ro.resx</td>
<td>cocmsgs.ro.resx</td>
<td>coimsgs.ro.resx</td>
</tr>
<tr>
<td>Russian</td>
<td>cormsgs.ru.resx</td>
<td>cocmsgs.ru.resx</td>
<td>coimsgs.ru.resx</td>
</tr>
<tr>
<td>Slovenian</td>
<td>cormsgs.sl.resx</td>
<td>cocmsgs.sl.resx</td>
<td>coimsgs.sl.resx</td>
</tr>
<tr>
<td>Spanish</td>
<td>cormsgs.es.resx</td>
<td>cocmsgs.es.resx</td>
<td>coimsgs.es.resx</td>
</tr>
<tr>
<td>Swedish</td>
<td>cormsgs.sv.resx</td>
<td>cocmsgs.sv.resx</td>
<td>coimsgs.sv.resx</td>
</tr>
<tr>
<td>Thai</td>
<td>cormsgs.th.resx</td>
<td>cocmsgs.th.resx</td>
<td>coimsgs.th.resx</td>
</tr>
<tr>
<td>Turkish</td>
<td>cormsgs.tr.resx</td>
<td>cocmsgs.tr.resx</td>
<td>coimsgs.tr.resx</td>
</tr>
</tbody>
</table>

**Rebranding or Localizing Cognos Office Components**

If you are setting the IBM Cognos component for a multilanguage environment, you must compile both the language-neutral file and the language file for your locale. The program detects the user locale settings in Windows and uses the appropriate language file.
For example, suppose you installed IBM Cognos Analysis for Microsoft Excel and your locale is set to French (France). You must make changes to the language-neutral files: cormsgs.resx and coimsgs.resx, and to the French files: cormsgs.fr.resx and coimsgs.fr.resx.

To customize or localize the component names and text messages, follow these steps:
- Edit the language-neutral resource files, and if necessary, the language resource files for your locale.
- Download and then run the Resource File Generator (Resgen.exe) required for compiling the updated resource files.
- Test your work.

**Edit the Resource (.resx) Files**

For each component, there exists a set of files that support the various languages. The country or region code distinguishes the filenames.

With the exception of the language-neutral set of files (cormsgs.resx, cocmsgs.resx, and coimsgs.resx) that serve as the default files, each file follows the following naming convention:

```componentcodemsgs.languagecode.resx```

You can change strings, not icon or graphic resources.

When changing text strings, consider the string length. The width of fields were created using the existing strings. Significantly increasing string length may result in some strings getting truncated in some of the dialog boxes.

The resource file contains metadata and comments that can help you determine when and where strings are used in the software.

**Important:** To edit XML resource files, use an XML editor. It is important to preserve the Unicode encoding and format, including white space. Simple text editors will likely corrupt the files. A validating XML editor ensures that the contents of the files are well formed and valid. Modify only string information. Do not change other information in the files.

**Procedure**

1. Install the IBM Cognos Office components locally to a workstation.
   This gives you access to the resource files.
2. Locate the resource files.
   If you install locally and accept all the defaults, they are found in the following location:
   ```installation directory:\Program Files\IBM\cognos\Cognos for Microsoft Office\resources```
3. In an XML Editor, open the `componentcodemsgs.languagecode.resx` file.
   Use an editor such as Visual Studio or XMLSpy to change the branding details or to translate strings into another language.
   If you are creating new language files, follow the naming convention by inserting the 2 or 5-character language code into the middle of the file name.
   For example, if you add a Romanian language file for IBM Cognos for Microsoft Office, you would save it as cocmsgs.ro.resx.
4. Save the file.
5. Repeat steps 3 and 4 for each component file associated with the language that
   you want to translate.

Results

The updated resource files are now ready to be compiled.

Compile the Updated Resource Files

Before you can deploy updated files, you must download the Resource File
Generator (Resgen.exe). The Resource File Generator converts .txt files and .resx
(XML-based resource format) files to common language runtime binary .resources
files that you can embed in a runtime binary executable or compile into satellite
assemblies.

The Resource File Generator is a Microsoft .NET Framework Software
Development Kit (SDK) program that generates compiled resource files. The resgen
executable is shipped with the Microsoft .NET SDK and comes with Microsoft
Visual Studio development system. You must choose a version of the Resource File
Generator that is compatible with the version of .NET Framework that is used by
IBM Cognos Office components.

Resgen.exe performs the following conversions:

- Converts .txt files to .resources or .resx files.
- Converts .resources files to text or .resx files.
- Converts .resx files to text or .resources files.

Procedure

1. Download the resgen.exe from the Microsoft .NET developer Web site.
2. After downloading the Resource File Generator, open a command prompt
   window.
3. Find the location where Resgen was downloaded.
   For example, cd C:\Program Files\Microsoft Visual Studio 8\v2.0\Bin
4. To compile the resource files, from the command prompt, type
   Resgen /compile "C:\.resx file location\file name.resx"
   For example, resgen /compile "c:\ProgramFiles\Cognos\Cafe\resources\
cormsgs.resx"
   Resource files are automatically renamed to include the .resource extension in
   their file name.
5. Copy the resulting files to the \Resources files directory.

Test Your Work

To test your work, run IBM Cognos Office using a variety of locales and start each
component (IBM Cognos Office, IBM Cognos for Microsoft Office, and IBM Cognos
Analysis for Microsoft Excel) to ensure that your changes are reflected in each area.

Check the text changes in all the interfaces exposed to your users. Pay particular
attention to generic dialog boxes, which are easy to miss.
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