Using IBM Cognos Series 7 and IBM Cognos Business Intelligence in the Same Environment
Product Information
This document applies to IBM Cognos Business Intelligence Version 10.2.1 and may also apply to subsequent releases.

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Introduction

IBM® Cognos® Series 7 is a popular product that is used by many thousands of organizations. IBM Cognos Series 7 will be supported for as long as there is sufficient customer demand to justify ongoing development and support. However, the many advantages of IBM Cognos Business Intelligence, the next generation solution, create a growing demand for organizations to move to that solution.

This document is intended for use when you want to use both IBM Cognos Series 7 and IBM Cognos BI in the same environment. It provides a best practices approach for interoperability between the two environments, allowing you to leverage your IBM Cognos Series 7 investment while creating new content in IBM Cognos BI. We recommend this mixed environment as the first step in the migration from IBM Cognos Series 7 to IBM Cognos BI.

The document applies to IBM Cognos Series 7 version 7.4 and IBM Cognos 8 version 8.4 and any later versions of each product.

Note: The term “migration tools” is used throughout this book. Migration tools refers to a number of tools and support options available to assist with the migration of content from IBM Cognos Series 7 to IBM Cognos BI. As announced in IBM Cognos BI 10.1.1, some migration tools are deprecated in IBM Cognos BI 10.2.0. Depending on the type of IBM Cognos Series 7 content you want to migrate, you may have to migrate the content to an earlier release of IBM Cognos BI before upgrading to IBM Cognos BI 10.2.0.

For information about upgrading from IBM Cognos ReportNet or earlier versions of IBM Cognos BI to IBM Cognos BI, see the IBM Cognos BI Installation and Configuration Guide. For information about how to migrate IBM Cognos Series 7 PowerPlay applications to IBM Cognos PowerPlay, see the IBM Cognos PowerPlay Migration and Administration Guide. For information about how to migrate other metadata and applications from IBM Cognos Series 7 to IBM Cognos BI, see the IBM Cognos BI Migration Assistant User Guide available in IBM Cognos BI 10.1.1.

Audience

To use this document effectively, you should be familiar with IBM Cognos Series 7 and IBM Cognos BI products, your information technology infrastructure, and the business needs of the people in your organization. We assume that you have completed a successful installation and configuration of your IBM Cognos Series 7 and IBM Cognos BI products.

This document is for Project Planners, Managers, Business Intelligence Architects, or Administrators who are responsible for planning, assessing, and implementing a strategy for their organization to use both IBM Cognos Series 7 and IBM Cognos BI in the same environment.

This document contains interoperability information that appears in other IBM Cognos Series 7 and IBM Cognos BI documents. The information is collected into a single document to make it easier for you to understand and implement an environment in which IBM Cognos Series 7 and IBM Cognos BI interoperate.
Finding information

To find IBM Cognos product documentation on the web, including all translated documentation, access one of the IBM Cognos Information Centers (http://pic.dhe.ibm.com/infocenter/cogic/v1r0m0/index.jsp). Release Notes are published directly to Information Centers, and include links to the latest technotes and APARs.

You can also read PDF versions of the product release notes and installation guides directly from IBM Cognos product disks.

Accessibility Features

Accessibility features help users who have a physical disability, such as restricted mobility or limited vision, to use information technology products. Because the IBM Cognos Administration component supports a wide range of IBM Cognos components, the availability of accessibility features varies by component within IBM Cognos Administration.

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.

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Chapter 1. The Role of Interoperability in the Migration Strategy

This section describes migration recommendations intended for customers who are moving from IBM Cognos Series 7 to IBM Cognos Business Intelligence. Interoperability, the use of both IBM Cognos Series 7 and IBM Cognos BI in the same environment, is part of the recommended migration strategy. Interoperability enables you to slowly introduce parts of IBM Cognos BI to users. When migrating, most companies find that interoperability makes sense as an intermediate step.

For IBM Cognos PowerPlay® applications, the preferred migration strategy is to move from IBM Cognos Series 7 PowerPlay to IBM Cognos BI PowerPlay instead of configuring for interoperability. This option provides the lowest risk and lowest cost of migration. Minimal retraining is required to assist users moving from Upfront or the IBM Cognos PowerPlay Web Table of Contents to the IBM Cognos BI portal, IBM Cognos Connection. Many PowerPlay application properties from PowerPlay Enterprise Server are the same in IBM Cognos BI PowerPlay. Server management, load-balancing, failover, performance tuning, and monitoring are administered using IBM Cognos Administration and your reports are stored in a central database, the IBM Cognos BI content store. IBM Cognos BI PowerPlay includes a Migration Assistant to help you migrate your PowerPlay content from IBM Cognos Series 7 Upfront or PowerPlay Enterprise Server, or IBM Cognos Series 7 content previously published to IBM Cognos Connection. For more information, see the IBM Cognos PowerPlay Migration and Administration Guide.

The recommended migration approach involves the following:

• Build new applications in IBM Cognos BI.
  The best way to learn and understand a new product is by gaining practical experience. This step involved freezing application development in IBM Cognos Series 7 products and creating new applications in IBM Cognos BI. Creating new applications in IBM Cognos BI allows you to learn about the features and benefits of IBM Cognos BI and to determine which migration approach to use for your existing applications.

• Migrate active PowerPlay applications and users to IBM Cognos PowerPlay.
  Unless a PowerPlay application is no longer actively maintained, or is based on cubes other than PowerCubes, you can migrate PowerPlay applications directly to IBM Cognos Transformer and IBM Cognos PowerPlay.

• Maintain existing IBM Cognos Series 7 applications "as is".
  If existing applications are working well, leave them in IBM Cognos Series 7 until you have a business requirement to migrate.

• Set up interoperability between IBM Cognos Series 7 applications (other than PowerPlay) and IBM Cognos BI.
  This enables you to slowly introduce parts of IBM Cognos BI to users. When migrating, most companies find that interoperability makes sense as an intermediate step.

• Gradually migrate other IBM Cognos Series 7 applications and users to IBM Cognos BI.
  As the business need arises, migrate other IBM Cognos Series 7 applications to IBM Cognos BI using lift and shift, compress and optimize, or a combination of both.
Running both products ensures that you have the applications and features you require in IBM Cognos Series 7, as well as new applications that take advantage of the expanded IBM Cognos BI functionality. By gradually introducing users and moving key business applications to the new architecture, you minimize the risk and disruption to your business.

However, there is more overhead, including administration, maintenance, and hardware associated with having two, fully functional BI environments. It also may take longer to completely replace all currently deployed IBM Cognos Series 7 applications with IBM Cognos BI applications.

The following diagram shows the recommended approach to migration. It shows that applications that are migrated to IBM Cognos BI run natively in IBM Cognos BI, and are no longer used in IBM Cognos Series 7. When you set up interoperability, the applications can use both IBM Cognos Series 7 and IBM Cognos BI, but are still IBM Cognos Series 7 applications.
Chapter 2. Set up Interoperability Between IBM Cognos Series 7 and IBM Cognos BI

Set up interoperability before and during migration to provide continuity to your user communities and your business processes, exchange and re-use information, and extend the value of your existing IBM Cognos Series 7 applications.

For example, the procurement department of GO Americas has IBM Cognos Business Intelligence and IBM Cognos Series 7 PowerPlay Web. They are looking for ways to extend IBM Cognos Series 7 PowerPlay applications, quickly and easily.

We recommend that the department start by setting up interoperability between IBM Cognos Series 7 and IBM Cognos BI. This enables them to start realizing the benefits of IBM Cognos BI without migrating.

Some interoperability options include:
• configuring IBM Cognos Series 7 and IBM Cognos BI to use the same namespace and single signon
• using IBM Cognos Connection as the portal for IBM Cognos Series 7 content
• publishing IBM Cognos Series 7 PowerPlay reports and cubes to IBM Cognos Connection
• running IBM Cognos Series 7 PowerPlay reports in IBM Cognos Connection
• enabling drill-through between IBM Cognos Series 7 PowerPlay and IBM Cognos BI reports

Configuring IBM Cognos to Use IBM Cognos Series 7 Namespace

You can configure IBM Cognos components to use an IBM Cognos Series 7 namespace as the authentication provider. Users will be authenticated based on the authentication and signon configuration of the IBM Cognos Series 7 namespace.

An IBM Cognos Series 7 namespace is required if you want to use IBM Cognos Series 7 PowerCubes and Transformer models in IBM Cognos Business Intelligence. You must configure the namespace before you load the Transformer models.

Note: You cannot use an IBM Cognos Series 7 Local Authentication Export (LAE) file for authentication with IBM Cognos components.

You can configure IBM Cognos components to use multiple IBM Cognos Series 7 authentication providers. All IBM Cognos Series 7 namespaces must use the same primary IBM Cognos Series 7 Ticket Server. Otherwise, you may receive errors or be prompted for authentication more than once. To maintain performance, also ensure that the ticket server is running.

If you change the configuration information stored in the directory server used for IBM Cognos Series 7, you must restart the IBM Cognos service before the changes take effect in the IBM Cognos installation.

A user must be in at least one Access Manager user class to log on to IBM Cognos components.
Procedure
1. Configure a Series 7 namespace
2. Enable secure communication to the directory server used by the IBM Cognos Series 7 namespace, if required
3. Enable single signon between IBM Cognos Series 7 and IBM Cognos

Configure an IBM Cognos Series 7 Namespace
You can configure IBM Cognos to use one or more IBM Cognos Series 7 namespaces for authentication.

Procedure
1. In every location where you installed Content Manager, open IBM Cognos Configuration.
2. In the Explorer window, under Security, right-click Authentication, and then click New resource > Namespace.
3. In the Name box, type a name for your authentication namespace.
4. In the Type list, click the appropriate namespace and then click OK.
   The new authentication provider resource appears in the Explorer window, under the Authentication component.
5. In the Properties window, for the Namespace ID property, specify a unique identifier for the namespace.
6. Specify the values for all other required properties to ensure that IBM Cognos components can locate and use your existing authentication provider.
   If your IBM Cognos Series 7 namespace version is 16.0, ensure that the Data encoding property is set to UTF-8. In addition, the locations where Content Manager is installed must use the same locale as the data in the IBM Cognos Series 7 namespace.
   The host value can be a server name or an IP address. If you are publishing from PowerPlay Enterprise Server to IBM Cognos BI, you must use the same value format used in IBM Cognos Series 7 Configuration Manager for the location of the directory server. For example, if the server name is used in IBM Cognos Series 7 Configuration Manager, you must also use the server name in IBM Cognos Configuration for IBM Cognos BI.
7. If your namespace environment includes version 15.2 of the IBM Cognos Series 7 namespace, you must disable the Series7NamespacesAreUnicode setting.
   • In the Properties window, in the Advanced Properties value, click the edit icon.
   • In the Value - Advanced properties window, click Add.
   • In the Name box, type Series7NamespacesAreUnicode.
   • In the Value box, type False, and then click OK.
8. In the Properties window, under Cookie settings, ensure that the Path, Domain, and Secure flag enabled properties match the settings configured for IBM Cognos Series 7.
9. From the File menu, click Save.
10. Test the connection to a new namespace. In the Explorer window, under Authentication, right-click the new authentication resource and click Test.
Enabling Secure Communication to the Directory Server Used by the IBM Cognos Series 7 Namespace

If you are using an SSL connection to the Directory Server used by the IBM Cognos Series 7 namespace, you must copy the certificate from the Directory Server to each Content Manager location.

For more information, see the IBM Cognos Access Manager Administrator Guide and the documentation for your Directory Server.

Enabling Single Signon Between IBM Cognos Series 7 and IBM Cognos

If your IBM Cognos Series 7 namespace has been configured for integration with your external authentication mechanisms for single signon, the IBM Cognos Series 7 provider will automatically use this configuration.

By configuring single signon, you are not prompted to reenter authentication information when accessing IBM Cognos content that is secured by the IBM Cognos Series 7 namespace.

Procedure

1. Ensure that you configured IBM Cognos components to use an IBM Cognos Series 7 namespace as an authentication provider.
2. For IBM Cognos Series 7, start Configuration Manager.
3. Click Open the current configuration.
5. In the Properties window, ensure that the Path, Domain, and Secure Flag Enabled properties match the settings configured for IBM Cognos BI.
6. Save and close Configuration Manager.
7. If the IBM Cognos Series 7 namespace uses the Trusted Signon plug-in for single signon, you must now define the SaferAPIGetTrustedSignonWithEnv function.

Results

You can now add IBM Cognos Upfront Series 7 NewsBoxes to your IBM Cognos Connection portal pages.
IBM Cognos Series 7 Namespaces and the IBM Cognos Series 7 Trusted Signon Plug-in

If the IBM Cognos Series 7 namespace uses the Trusted Signon plug-in for single signon, you must define the SaferAPIGetTrustedSignonWithEnv function in your plug-in. Then you must recompile and redeploy the library for single signon to be achieved between IBM Cognos components and your authentication mechanism. The SaferAPIGetTrustedSignonWithEnv function is an updated version of the SaferAPIGetTrustedSignon function. This update is required because IBM Cognos logon is not performed at the Web server as is the case for IBM Cognos Series 7 applications. Therefore, it is not possible for the plug-in to perform a getenv() API call to retrieve Web server environment variables. The plug-in can request that specific environment variables be removed from the Web server using the SaferAPIGetTrustedSignonWithEnv function.

If you are running both IBM Cognos Series 7 and IBM Cognos products using the same plug-in, both the SaferAPIGetTrustedSignonWithEnv and SaferAPIGetTrustedSignon functions are required. For information about the SaferAPIGetTrustedSignon function, see the IBM Cognos Series 7 documentation.

SaferAPIGetTrustedSignonWithEnv Function

For users to be successfully authenticated by Access Manager, OS signons must exist and be enabled in the current namespace.

The memory for the returned trustedSignonName and trustedDomainName is allocated internally in this API. If the function returns SAFER_SUCCESS, Access Manager calls SaferAPIFreeTrustedSignon to free the memory allocated.

The memory for the returned reqEnvVarList is allocated internally in this API. If the function returns SAFER_INFO_REQUIRED, Access Manager calls SaferAPIFreeBuffer() to free the memory allocated.

You must implement both the SaferAPIGetTrustedSignon and SaferAPIFreeBuffer functions to successfully register the library when SaferAPIGetTrustedSignonWithEnv is implemented. The function SaferAPIGetError is required only if you want specific error messages returned from your plug-in.

Syntax

\[ \text{SaferAPIGetTrustedSignonWithEnv}( \text{EnvVar}[] \text{envVar}[], /*[IN]*\]  
\[ \text{char} **\text{reqEnvVarList}, /*[OUT]*\]  

Parameters for the SaferAPIGetTrustedSignonWithEnv Function

Table 1. Parameters and description for the SaferAPIGetTrustedSignonWithEnv Function

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>[in] envVar</td>
<td>An array of environment variable names and values that were retrieved from the Web server. The end of the array is represented by an entry with a null envVarName and a null envVarValue. Note that the first time this API is called, the envVar array contains only the end of array marker.</td>
</tr>
<tr>
<td>[in] reqEnvVarList</td>
<td>A string that contains a comma-separated list of environment variable names that are requested by the Safer implementation. The end of the list must be null-terminated.</td>
</tr>
<tr>
<td>[out] trustedSignonName</td>
<td>A sequence of bytes that identifies the currently authenticated user. This value does not need to be null-terminated. This value is mandatory.</td>
</tr>
<tr>
<td>[out] trustedSignonNameLength</td>
<td>An integer value that indicates the length of the trustedSignonName. This length should exclude the null terminator, if there is one. This value is mandatory.</td>
</tr>
<tr>
<td>[out] trustedDomainName</td>
<td>A sequence of bytes that identifies the domain of the currently authenticated user. You do not need to null-terminate this value. If there is no trustedDomainName, the return is null. This value is optional.</td>
</tr>
<tr>
<td>[out] trustedDomainNameLength</td>
<td>An integer value that indicates the length of the trustedDomainName. This length should exclude the null terminator, if there is one. This value is mandatory and must be set to zero if there is no trustedDomainName.</td>
</tr>
</tbody>
</table>
Table 1. Parameters and description for the SaferAPILoggerTrustedSignonWithEnv Function (continued)

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>[out] userType</td>
<td>A value that indicates the type of user that Access Manager will authenticate. This value is mandatory.</td>
</tr>
<tr>
<td></td>
<td>The following return values are required for Access Manager to successfully authenticate users:</td>
</tr>
<tr>
<td>SAFER_NORMAL_USER</td>
<td>A named user. OS signons must exist and be enabled in the current namespace.</td>
</tr>
<tr>
<td>SAFER_GUEST_USER</td>
<td>A guest user. A guest user account must exist and be enabled in the current namespace.</td>
</tr>
<tr>
<td>SAFER_ANONYMOUS_USER</td>
<td>An anonymous user. An anonymous user account must exist and be enabled in the current namespace.</td>
</tr>
<tr>
<td>[in/out] implementerData</td>
<td>A pointer used to preserve implementation-specific data between invocations. An invocation occurs every time Access Manager calls the trusted signon plug-in. This value is valid only if the trusted signon plug-in was invoked and you set a value for it.</td>
</tr>
</tbody>
</table>

Series 7 Reports in IBM Cognos Connection

If your administrator configures IBM Cognos Business Intelligence to use the IBM Cognos Series 7 namespace, you can see Series 7 entries in IBM Cognos Connection.

When you run a Series 7 report, the report runs in the Series 7 application used to create it.

The contents of the Series 7 NewsIndex appears at the bottom of the page in Public Folders. The contents of your Series 7 personal NewsBox appears at the bottom of the page in My Folders.

Alternatively, PowerPlay 7.3 or later can be configured to use IBM Cognos Connection rather than Upfront as a portal. However, if you are accessing content from other IBM Cognos applications or versions previous to PowerPlay 7.3, the administrator may still depend on the Upfront portal.

When you access Series 7 entries from IBM Cognos Connection, consider the following things:
- If the Series 7 namespace and the IBM Cognos BI namespace are different, you must log on to both. Otherwise, you cannot see content in both areas.
- If you log off when you are in Upfront, you can no longer access Series 7 entries in IBM Cognos Connection. Always log off in IBM Cognos Connection.
- If you belong to several Series 7 user classes, you are unable to select a different user class when you access Upfront through IBM Cognos Connection.
If you use an Upfront theme other than standard70, an error message may appear when you click the **More** link in the **Actions** column. You cannot access Series 7 entries.

If you want to cut, copy, and paste Series 7 entries, use the More link in the **Actions** column, and then use the Upfront toolbar.

If you perform a search in IBM Cognos Connection, the Series 7 entries are not included in the search.

You cannot combine IBM Cognos version 10.1 entries and Series 7 entries in a single folder or NewsBox.

For information about working with Series 7 entries in Upfront, see the IBM Cognos Series 7 Web Portal User Guide.

## Series 7 PowerPlay Reports and Cubes

After Series 7 PowerPlay reports and cubes are published to the IBM Cognos portal, you can use PowerPlay authoring tools to create and edit Series 7 PowerPlay reports.

For more information about PowerPlay authoring tools, see the PowerPlay Web User’s Guide.

You can change the default run options of Series 7 PowerPlay reports and cubes and select multilingual properties.

Series 7 PowerPlay reports and cubes function differently from other reports. The following actions do not apply to Series 7 PowerPlay reports and cubes:

- Viewing the run history and report output versions.
- Specifying how long to keep report outputs and histories.
- Canceling and suspending reports.
- Specifying prompt values for report formats other than PDF.
- Specifying language for the content of reports.
- Running a report as the owner.
- Scheduling reports.
- Distributing reports.

**Related concepts:**

"Multilingual Properties for Series 7 Reports and Cubes" on page 12

In IBM Cognos Connection, you can select the multilingual properties of a Series 7 report or cube.

**Related tasks:**

"Change the Defaults for a Series 7 PowerPlay Report" on page 11

You can change the defaults for Series 7 PowerPlay reports.

## Single Signon

Single signon ensures that users who are logged on to one IBM Cognos application are not prompted for authentication when they run another IBM Cognos application.

You can ensure that your users benefit from single signon by ensuring that both IBM Cognos Business Intelligence and PowerPlay use the same Series 7 namespace as their authentication source. Alternatively, you can ensure that the authentication namespaces used for both IBM Cognos BI and PowerPlay are configured to use an
external single signon mechanism for authentication, such as operating system
signons for Series 7 PowerPlay or LDAP provider with External Identity Mapping
in IBM Cognos BI.

For instructions about setting up Series 7 single signon, see the Access Manager
Administrator Guide.

For instructions about setting up single signon for the IBM Cognos reporting
product, see the Installation and Configuration Guide.

Run or Open a Series 7 PowerPlay Report
You can run Series 7 PowerPlay reports in HTML or PDF format.

When you run Series 7 PowerPlay reports:

- If the HTML icon is visible, the report opens in PowerPlay Web Explorer.
- If the PDF icon is visible, the report runs in the PowerPlay Web Viewer.

PowerPlay administrators can restrict who can open cubes. For information about
publishing Series 7 PowerPlay reports and cubes in IBM Cognos Business
Intelligence, see the PowerPlay Enterprise Server Guide.

Before you begin
If you use secured Series 7 cubes, the namespace against which the cubes are
secured must be configured as an authentication source in IBM Cognos BI. This
namespace need not be the only authentication namespace or the primary logon
for the user. For more information about configuring authentication namespaces,
see the IBM Cognos BI Installation and Configuration Guide.

Before you can run or open Series 7 PowerPlay reports and cubes directly
from IBM Cognos BI, you must have both PowerPlay 7 and IBM Cognos BI
installed and configured. You also must have the following permissions:
- Execute and read permissions to run or open a report or cube.
- Read and traverse permissions to access the folder that contains the report or
cube.
- Read and write permissions to set properties for cubes and reports.

Procedure
In IBM Cognos Connection, click the report that you want.

Results
Depending on the default action for the report, the report runs in either PDF
format (default) or opens with PowerPlay Web Explorer.

If you have the required permissions, you can change the run options for Series 7
PowerPlay reports and cubes. For information about using PowerPlay Web
Explorer and PowerPlay Web Viewer, see the IBM Cognos PowerPlay Web User’s
Guide.
Tip: To run any Series 7 PowerPlay report in PowerPlay Web Explorer, click the open with PowerPlay Explorer button in the actions toolbar.

Related tasks:

"Change the Defaults for a Series 7 PowerPlay Report"

You can change the defaults for Series 7 PowerPlay reports.

Change the Defaults for a Series 7 PowerPlay Report

You can change the defaults for Series 7 PowerPlay reports.

You can select one of the following default actions when a report is run:

- Run the report in PDF format (default).
- Open the report with PowerPlay Web Explorer.

For HTML format reports, you can choose to open the report in design mode (without data). Opening a report in design mode is useful to quickly view the structure of the report.

For PDF format reports, you can choose to be prompted for values that filter the range of data included in a report. For example, you can specify a date range that is a subset of the dates available in the report. If the Series 7 PowerPlay report was created with prompt values, you are prompted to enter values when the report runs.

Procedure

1. In IBM Cognos Connection, click the set properties button on the actions toolbar that corresponds to the report you want to run.
2. Click the PowerPlay report tab.
3. Under Default action, select the default action for when the report is run.
4. For HTML reports, if you want to open the report without data, design mode, select the Open in design mode check box.

   Tip: You can also click the open with PowerPlay Web Explorer in design mode button if it appears in the actions toolbar.

5. For PDF reports, if you want to be prompted for values, select the Prompt for values check box.

   Tip: The Prompt for values check box appears only if prompt values are created for the report. You can also click More next to the report you want and then click the run the report in PDF format and prompt for values button.

Open a Series 7 Cube

You can open Series 7 cubes and work with them in PowerPlay Web Explorer.

For more information about using PowerPlay Web Explorer, see PowerPlay Web User’s Guide.
Procedure

In IBM Cognos Connection, click the cube that you want.

Multilingual Properties for Series 7 Reports and Cubes

In IBM Cognos Connection, you can select the multilingual properties of a Series 7 report or cube.

The name, screen tip, and description uses the language that you select.

The content, data, category labels, and other labels do not change. The language for these items is set by the PowerPlay administrator who creates the report or cube.

Allow User Access to Series 7 Reports from IBM Cognos Connection

If IBM Cognos software is configured properly to use the IBM Cognos Series 7 namespace, you can allow users to access NewsIndexes and NewsBoxes of the Series 7 version of IBM Cognos Upfront from IBM Cognos Connection.

We recommend that IBM Cognos Connection and Upfront use the same Web server if Upfront is set up to use relative URLs. If IBM Cognos Connection and Upfront use different Web servers, configure Series 7 to use fully qualified URL. This allows users to use the Web browser back button to navigate from Upfront back to IBM Cognos Connection.

For information about configuring Series 7, see IBM Cognos Series 7 Configuration Manager User Guide.

Procedure

1. In IBM Cognos Configuration, configure IBM Cognos to use your IBM Cognos Series 7 namespace. For more information, see the IBM Cognos Business Intelligence Installation and Configuration Guide.
2. In the Properties window, under Cookie Settings, ensure that the Secure Flag Enabled property is set to false.
3. From the File menu, click Save and close IBM Cognos Configuration.
4. Ensure that the ticket server for IBM Cognos Series 7 namespace is running.
5. Ensure that the timeout value of the Series 7 ticket server is set to the same value or to a higher value than the IBM Cognos passport timeout value.
6. On the computer where IBM Cognos software is installed, open the c10_location/templates/ps/system.xml file in an editor.
   Ensure that your editor supports saving files in UTF-8 format.
7. Find and edit (with an XML editor) the series7 parameter as follows:
   <!-- Series 7 Integration parameters -->
   <param name="series7">
      <enabled>true</enabled>
   <!-- character encoding used by series7 -->
   <encoding>series7_character_encoding</encoding>
   <!-- host and port to connect to Upfront server -->
   <host>Upfront_host_name</host>
   <port>Upfront_dispatcher_port_number</port>
   <!-- Upfront gateway location -->
   <gateway>Upfront_gateway_location</gateway>
   <!-- If required, specify the prefix for IBM Cognos -->
back URLs when linking to Series 7 content. (eg. http://ibmcognos_computer)
otherwise relative URL's will be used -->
</param>

To view the character encoding used by Series 7, in Series 7 Configuration
Manager, on the Properties tab, click IBM Cognos Shared, click Locale, and then click the Encoding property.

8. Save the system.xml file in UTF-8 format.

9. Using IBM Cognos Configuration, stop and then restart IBM Cognos Business
   Intelligence.

   For more information about stopping IBM Cognos BI, see the IBM Cognos
   Business Intelligence Installation and Configuration Guide.

Related concepts:
"Series 7 Reports in IBM Cognos Connection” on page 8

If your administrator configures IBM Cognos Business Intelligence to use the IBM
Cognos Series 7 namespace, you can see Series 7 entries in IBM Cognos
Connection.

Specify the Portal to Which IBM Cognos Series 7 Reports are
Published

You can specify that reports published from IBM Cognos PowerPlay Enterprise
Server Administration or PowerPlay Web are saved to one of the following portals:

• Upfront

   Upfront is the Web interface to IBM Cognos enterprise applications and other
   web data. In PowerPlay Web you can save your report as a primary NewsItem
   in an Upfront NewsBox.

   For more information about Upfront, see the IBM Cognos Series 7 Web Portal
   User Guide.

• IBM Cognos Connection

   IBM Cognos Connection is the portal to IBM Cognos Business Intelligence. The
   IBM Cognos Connection portal provides a single access point to all corporate
   data available in IBM Cognos BI.

Note: IBM Cognos BI version 10 values are valid for any PowerPlay Enterprise
Server Administration property that accepts IBM Cognos ReportNet® or IBM
Cognos 8 values.

Procedure

1. In PowerPlay Enterprise Server Administration, select a server.

2. From the Edit menu, click Properties, and then click the Settings tab.

3. If you want to specify Upfront as the portal, in the Default Portal box
   (Publishing), click Upfront.

4. If you want to specify IBM Cognos Connection as the portal, do the following:
   • In the Default Portal box (Publishing), click IBM Cognos ReportNet/IBM
     Cognos 8.
   • In the IBM Cognos ReportNet/IBM Cognos 8 Gateway URI box
     (Publishing), type the IBM Cognos BI external dispatcher URI. For more
     information, see the IBM Cognos ReportNet or IBM Cognos 8 Installation and
     Configuration Guide.
In the **IBM Cognos ReportNet/IBM Cognos 8 Dispatcher URI** box (Publishing), type the IBM Cognos BI dispatcher URI. For more information, see the IBM Cognos BI **Installation and Configuration Guide**.

Specify whether published PowerPlay reports are deleted from the IBM Cognos BI server when they are deleted from the PowerPlay Enterprise Server. To specify that these reports are deleted, in the **Delete related IBM Cognos ReportNet/IBM Cognos 8 objects when deleting local cubes** box (Publishing), click **Enabled**.

5. Click **OK**.

**Move Cube and Report NewsItems from Upfront to IBM Cognos BI**

You can use a command-line tool to move cube and report NewsItems from IBM Cognos Series 7 Upfront to IBM Cognos Business Intelligence. This tool saves time by allowing you to reuse existing Upfront NewsItems instead of republishing or recreating the content for use in IBM Cognos BI.

The tool moves all cube and report NewsItems that you have access to. You cannot specify which items to move. If you want to make only some of the Upfront content available to IBM Cognos BI users, it may be easier to republish or recreate the content.

Before you begin, ensure that IBM Cognos BI is installed, configured, and started.

**Procedure**

1. Configure IBM Cognos PowerPlay Enterprise Server to specify IBM Cognos BI as the portal to which reports are published.
   
   For more information, see the PowerPlay **Enterprise Server Guide**.

2. Ensure that the credentials you use to log on to PowerPlay Enterprise Server have read access to the Upfront NewsItems, and create and update permissions in IBM Cognos BI.

3. Ensure that NewsBoxes and NewsItems at the same level in Upfront use unique names.

4. In a command prompt window on the computer where IBM Cognos Series 7 is installed, go to the **installation_location\bin** directory.

5. Run the command-line tool to move the objects:
   - On Microsoft Windows, the command format is `ppserver -tocrn -un username [-pw password] [-replace]`
   - On UNIX, the command format is `upgrade_tocrn -un username [-pw password] [-replace]`

The following table describes the parameters you use with the `ppserver -tocrn` command. All parameters are case-sensitive.
Table 2. Parameters and description for the ppserver -tocm command

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>-un username</td>
<td>Specifies a user who has read access to the Upfront NewsItems and rights to publish to IBM Cognos BI.</td>
</tr>
<tr>
<td>-pw password</td>
<td>Specifies the user password. If no password is specified, it is assumed that a password is not required.</td>
</tr>
<tr>
<td>-replace</td>
<td>Specifies that existing PowerPlay objects in IBM BI are replaced when a name conflict occurs.</td>
</tr>
</tbody>
</table>

6. When the move process is complete, check the ppmigration.log file to ensure that the process was successful. Correct reported errors.

   The log file is created in `installation_location\cern\bin`

7. Finally, open IBM Cognos Connection and test the content.

   **Note:** If you add or change any PowerPlay NewsItems in Upfront, you can run the tool again to update the IBM Cognos BI content.

**Differences Between IBM Cognos Series 7 and IBM Cognos BI**

Because of differences between the two products, some functionality is not fully transferred during the move process. Wherever possible, IBM Cognos Series 7 features are mapped to similar functionality in IBM Cognos Business Intelligence.

The following information will help you understand the move process, and identify additional work that may be required either before or after you run the command-line tool.

Table 3. Product differences and what to do about them

<table>
<thead>
<tr>
<th>Subject or Feature</th>
<th>IBM Cognos Series 7</th>
<th>IBM Cognos BI</th>
</tr>
</thead>
<tbody>
<tr>
<td>Organization of content in the portal</td>
<td>The root level in Upfront, the NewsIndex, can contain both NewsBoxes and NewsItems. Similar to a folder structure, there may be several levels of NewsBoxes. A PowerPlay cube or report NewsItem can appear in the NewsIndex or a NewsBox.</td>
<td>The root level in IBM Cognos Connection contains only folders. Reports or other types of links cannot appear at the root level. If PowerPlay cube or report NewsItems appear in the Upfront NewsIndex, the move process creates a new folder in IBM Cognos Connection named Additional Upfront NewsItems to contain these items.</td>
</tr>
<tr>
<td>Subject or Feature</td>
<td>IBM Cognos Series 7</td>
<td>IBM Cognos BI</td>
</tr>
<tr>
<td>-------------------</td>
<td>---------------------</td>
<td>---------------</td>
</tr>
</tbody>
</table>
| NewsBox names     | Upfront supports duplicate NewsBox names at the same level. | IBM Cognos Connection does not support duplicate folder names at the same level.  
When moving NewsBoxes from the same level with duplicate names, only one IBM Cognos Connection folder is created.  
To avoid errors, ensure that all NewsBoxes at the same level have unique names.  
If there are no conflicts related to duplicate NewsBox names, the NewsItems are moved to IBM Cognos BI with full functionality. |
| NewsItem names    | Upfront supports duplicate NewsItem names in the same NewsBox. | IBM Cognos Connection does not support duplicate cube, report, or link names in the same folder.  
When moving NewsItems from the same level with duplicate names, only one item is moved. Other items with duplicate names are not moved and are reported as errors in the log file.  
To avoid errors, ensure that all NewsItems at the same level have unique names.  
If there are no conflicts related to duplicate NewsItem names, the cube or report NewsItem is moved to IBM Cognos BI with full functionality. |
Table 3. Product differences and what to do about them (continued)

<table>
<thead>
<tr>
<th>Subject or Feature</th>
<th>IBM Cognos Series 7</th>
<th>IBM Cognos BI</th>
</tr>
</thead>
<tbody>
<tr>
<td>Report links</td>
<td>Upfront supports PowerPlay report link NewsItems.</td>
<td>Report links are not supported in IBM Cognos BI. The source report is moved instead. To avoid errors, ensure that the target of a report link does not create a naming conflict when moving the content. If there are no conflicts related to duplicate NewsBox or NewsItem names, the source report is moved to IBM Cognos BI with full functionality.</td>
</tr>
<tr>
<td>Security</td>
<td>Upfront supports Access Control Lists (ACLs).</td>
<td>The Upfront ACL information is not moved to IBM Cognos BI. By default, access to the moved content is not restricted. You must set permissions on all objects in IBM Cognos Connection.</td>
</tr>
</tbody>
</table>

Publish from IBM Cognos Series 7 to IBM Cognos BI

You can publish cubes and reports from IBM Cognos Series 7 to IBM Cognos Connection to provide IBM Cognos Business Intelligence users with single click access to data in IBM Cognos Series 7 PowerPlay Web. If you publish a folder, all the cubes and reports in the folder are published to an IBM Cognos Connection folder. In order to publish cubes and reports from PowerPlay Enterprise Server Administration to IBM Cognos Connection, Access Manager security must be set.

The IBM Cognos Connection folder to be published to is a folder object property and must be set before attempting to publish. The PowerPlay Enterprise Server must be secured against the same namespace as the IBM Cognos BI server before attempting to publish. Also, the default portal property must be set to IBM Cognos BI. If these properties are not set, then the Publish to Portal option is unavailable.

You cannot publish PowerPlay Portable Report files (.ppx) that have local cube references. PowerPlay Portable Report files are published from PowerPlay client applications and can be added to the PowerPlay Enterprise Server. You can update all .ppx files that have local cube references to have remote cube references instead.

Note: IBM Cognos BI version 10 values are valid for any PowerPlay Enterprise Server Administration property that accepts IBM Cognos ReportNet or IBM Cognos 8 values.
**Procedure**

1. In PowerPlay Enterprise Server Administration, select a cube, report, or folder.
   
   **Note:** Do not publish content in the imported_reports folder.

2. From the **Tools** menu, click **Publish to Portal**.
   
   The cube or report is published to the folder specified in the Cognos ReportNet/Cognos BI folder for cubes or Cognos ReportNet/Cognos BI folder for reports properties. An IBM Cognos BI version 10 folder location is valid for these properties. This setting is made at the folder level.

**Results**

Cubes published from PowerPlay Enterprise Server Administration become linked items in IBM Cognos Connection. References to the published reports are added to the IBM Cognos BI server. The references can be deleted by a IBM Cognos BI administrator, but the objects remain in PowerPlay Enterprise Server Administration.

If you publish a folder to IBM Cognos Connection, only the cubes and reports contained in that folder appear in IBM Cognos Connection. The folder does not appear in IBM Cognos Connection. Folder hierarchies created in PowerPlay Enterprise Server Administration are not maintained when you publish to IBM Cognos Connection.

In a multiple server environment, if a report or a cube is to be published, you must ensure that the report or cube resides in a folder mapped to a shared drive using the **Mount At** option.

To publish to IBM Cognos BI, the same Series 7 namespace must be used by both PowerPlay Enterprise Server and IBM Cognos BI.

**Maintaining Properties When Saving Reports to IBM Cognos BI**

When you publish a report to IBM Cognos Connection, report information is not stored in an imported_reports folder on the PowerPlay Enterprise Server, as it is when a report is published to Upfront. A .ppx file is still created, but is stored instead by Content Manager, the IBM Cognos BI service that manages the storage of reporting applications.

If you publish a report from PowerPlay Enterprise Server Administration, the original report path is saved to IBM Cognos BI. When the published report is run, the properties are determined by the original report’s .cfx file. If the original report is no longer available, it defaults to using the cube’s CFX settings.

If you save a report from PowerPlay Web, the properties are determined by the report settings of the folder that contains the cube used by the published report. If the cube is not in a folder, then the root level report setting is used.

**Maintaining PowerPlay Objects on IBM Cognos BI**

If you are maintaining PowerPlay Objects on an IBM Cognos BI server, you may want to do the following.

- Save objects from PowerPlay Web to IBM Cognos BI that were previously published to Upfront. For information about publishing reports from PowerPlay Web, see the PowerPlay Web **User Guide**.
• Run the CRN REPLACE CUBENAME and CRN REPLACE GATEWAY commands to migrate IBM Cognos BI objects to a different PowerPlay server, or after a PowerPlay server's gateway has changed.

Deploy Updated PowerCubes

After you rebuild or update a PowerCube, you can use various methods to deploy the cube to the production environment.

To deploy an updated IBM Cognos Transformer PowerCube, use the Copy and Activate method in IBM Cognos Transformer (the recommended method), or copy the PowerCube yourself, and use the `pcactivate` command-line utility.

To deploy an updated Series 7 Transformer PowerCube, you must copy the PowerCube first. Then, use the `pcactivate` command-line utility to activate the cube.

For more information, see the section Copy and Activate a Newer Version of a Published PowerCube in the IBM Cognos Business Intelligence Transformer User Guide.

Procedure

1. Copy the Transformer PowerCube to the production environment.
   • The name of the destination directory in the production environment must be the same as the PowerCube name. For example, if the cube is named `production.mdc`, the destination directory must be named `production`.
   • The destination directory must be in the same directory as the PowerCube. For example, if the data source connection specifies that the PowerCube location is `D:\Cubes\production.mdc`, the destination directory, named `production`, must be `D:\Cubes\production`.
   For example, copy the PowerCube to `D:\Cubes\production\production.mdc`.

   2. At the command-line prompt, type the `pcactivate` command using the following syntax:

```
pactivate cube_name.mdc
destination_location destination_location
```

   You can type more than one destination location.

   For example, type

   • `pcactivate TheCube.mdc d:\deploy\cubes`
   • `pcactivate production.mdc D:\Cubes`
   • `pcactivate sales.mdc \server_1\cubes \server_2\cubes`
   • `pcactivate "Production Cube.mdc" "d:\Program Files\cognos\c10\webcontent\cubes"

   Note: If you include a path in the `cube_name` parameter, the path is removed and ignored.

Understanding Drill-through Concepts

Before you set up drill-through access, you must understand the key concepts about drilling through. Knowing these concepts will help you to avoid errors so that report consumers drill through as efficiently as possible.
**Drill-through Paths**

You can create a drill-through path in a source report in IBM Cognos Report Studio, or using Drill-through Definitions in IBM Cognos Connection. A drill-through path is the definition of the path that is taken when moving from one report to another, including how the data values are passed between the reports.

Using **Drill-through Definitions**, you can create a drill-through path from any report in the source package to any target report in any other package in IBM Cognos Connection. This type of drill-through definition is stored in the source package. Users of any report in the package can use the drill-through definition to drill between any combination of IBM Cognos Analysis Studio, IBM Cognos Query Studio, IBM Cognos PowerPlay Studio, or IBM Cognos Viewer reports in any package.

For any target report that contains parameters, you should map the target parameters to the correct metadata in the drill-through path. This ensures that the values from the source report are passed to the correct parameter values, and that the target report is filtered correctly. If you do not map parameters, then the users may be prompted for values when the target report is run.

A report-based drill-through path refers to a path created and stored in a Report Studio source report. This type of drill-through path is also called authored drill through. The path is associated with a specific data column, chart, or cross tab in the source report, and is available only when users select that area of the report. If an authored drill-through definition is available, a hyperlink appears in the source report when it is run.

Report-based drill-through is limited to Report Studio source reports and any target reports. Use this type of drill-through access when you want to pass data item values or parameter results from within a source report to the target report, pass the results of a report expression to a target report, or use URL link as a part of the drill-through definition.

**Selection Contexts**

The selection context represents the structure of the values selected by the user in the source.

In IBM Cognos Analysis Studio, this includes the context area. When a package drill-through definition is used, the selection context is used to give values for mapped parameters (parameterized drill-through) or also to map the appropriate data items and values.

Drill-through links can also be defined to open the target object at a bookmark. The content of this bookmark may also specified by the selection context.

Drill-through access is possible between most combinations of the IBM Cognos Business Intelligence studios. Each studio is optimized for the goals and skills of the audience that uses it, and in some cases for the type of data source it is designed for. Therefore, you may need to consider how the various studios manage the selection context when you drill through between objects created in different studios, and how the data sources are conformed. During testing or debugging, you can see how source values are being mapped in different contexts using the drill-through assistant.
Drilling Through to Different Report Formats

The settings in the drill-through definition determine the format in which users see the report results.

For example, the users may see the reports in IBM Cognos Viewer as an HTML Web page, or the reports may open in IBM Cognos Query Studio, IBM Cognos PowerPlay Studio, or IBM Cognos Analysis Studio. If your users have PowerPlay Studio, then they may also see the default view of a PowerCube.

Reports can be opened as HTML pages, or as PDF, XML, CSV, or Microsoft Excel spreadsheet software formats. When you define a drill-through path, you can choose the output format. This can be useful if the expected use of the target report is something other than online viewing. If the report will be printed, output it as PDF; if it will be exported to Excel for further processing, output it as Excel or CSV, and so on.

If you define a drill-through path to a report that is created in Analysis Studio, PowerPlay Studio, or Query Studio, consumers can open the report in its studio instead of in IBM Cognos Viewer. This can be useful if you expect a consumer to use the drill-through target report as the start of an analysis or query session to find more information.

For example, if an application contains a dashboard style report of high-level data, you can define a drill-through link to Analysis Studio to investigate items of interest. The Analysis Studio view can then be drilled through to a PDF report for printing.

Note: IBM Cognos Report Studio does not display data results.

Drilling Through Between Packages

You can set up drill-through access between packages.

The two packages can be based on different types of data source, but there are some limits. The following table shows the data source mappings that support drill-through access.

Table 4. Data source mappings that support drill-through access

<table>
<thead>
<tr>
<th>Source data source</th>
<th>Target data source</th>
</tr>
</thead>
<tbody>
<tr>
<td>OLAP</td>
<td>OLAP</td>
</tr>
<tr>
<td></td>
<td>Note: OLAP to OLAP drill through is supported only if the data source type is the same, for example, SSAS to SSAS.</td>
</tr>
<tr>
<td>OLAP</td>
<td>Dimensionally modeled relational</td>
</tr>
<tr>
<td>Relational data</td>
<td>Relational data</td>
</tr>
<tr>
<td></td>
<td>Note: For more information, see “Business Keys” on page 24</td>
</tr>
<tr>
<td>Dimensionally modeled relational</td>
<td>Dimensionally modeled relational</td>
</tr>
<tr>
<td>Dimensionally modeled relational</td>
<td>Relational</td>
</tr>
<tr>
<td>Relational</td>
<td>Relational</td>
</tr>
</tbody>
</table>
**Bookmark References**

When you drill through, the values that you pass are usually, but not always, used to filter the report. IBM Cognos Business Intelligence supports bookmarks within saved PDF and HTML reports so that a user can scroll a report to view the relevant part based on a URL parameter.

For example, you have a large inventory report scheduled to run daily or weekly during off hours because of resource considerations. Your users may want to view this report as a target because it contains detailed information, but you want them to view the saved output rather than run this large report. Using this Action option and bookmark settings, users can drill through from another source location based on products to open the saved report to the page that shows the product they want to focus on.

When a bookmark in the source report is used in a drill-through definition, it provides the value for the URL parameter. When report consumers drill through using this definition, they see the relevant section of the target report.

Bookmark references are limited to previously run reports that are output as PDF or HTML and contain bookmark objects.

**Members and Values**

Dimensionally modeled data, whether stored in cubes or stored as dimensionally modeled relational (DMR) data, organizes data into dimensions. These dimensions contain hierarchies. The hierarchies contain levels. And the levels contain members.

An example of a dimension is Locations. A Locations dimension may contain two hierarchies: Locations by Organization Structure and Locations by Geography. Either of these hierarchies may contain levels like Country or Region and City.

Members are the instances in a level. For example, New York and London are members in the City level. A member may have multiple properties, such as Population, Latitude, and Longitude. Internally, a member is identified by a Member Unique Name (MUN). The method by which a MUN is derived depends on the cube vendor.

Relational data models are made up of data subjects, such as Employees, which are made up of data items, such as Name or Extension. These data items have values, such as Peter Smith.

In IBM Cognos Business Intelligence, the methods of drilling through available are:

- Dimensional (member) to Dimensional (member)
- Dimensional (member) to Relational (data item value)
- Relational (data item value) to Relational (data item value)

If the target parameter is a member, the source must be a member. The source and target should usually be from a conformed dimension. However, if the data supports it, you may also choose to define a mapping using different properties of the source metadata item.

If the target parameter is a value, the source can be either a value or a member. If the source is a dimensional member, you must ensure that the level or dimension is mapped to the target data item correctly in the drill-through definition. The business key from which the member is sourced should usually match the
relational target value, which is most often the business key. However, if the data supports it, you may also choose to define a mapping from the caption of the source metadata item.

Related concepts:

- **“Member Unique Names”**
  The member unique name (MUN) is a unique identifier for a member in IBM Cognos reports. It is stored in the report specification when the member is referenced in the report directly.

- **“Conformed Dimensions” on page 24**
  If you work with more than one dimensional data source, you may notice that some dimensions are structured the same, and some are not.

- **“Business Keys” on page 24**
  When drill-through access is defined from a member to a relational value, the business key of the member is passed by default.

**Member Unique Names**

The member unique name (MUN) is a unique identifier for a member in IBM Cognos reports. It is stored in the report specification when the member is referenced in the report directly.

The MUN is used in drill-through between OLAP data sources. The member keys in the MUN for the different OLAP data sources must match.

The MUN is used to find the member in the data source, which is similar to how business keys are used to find records in a table. For example, when you create OLAP dimension Products, you use the Product Line database column as a label for the members in your Product Line level. However, you use the Product Line Code business key from the database table to ensure that all the Product lines are unique in that level. The source value that you used to create the members is used in combination with the data source name, hierarchy, and level information in the member unique name.

If the MUN changes, members that are directly referenced in expressions, filters, or reports are no longer found. Changes to the MUN may be related to other changes. For example, changes to the hierarchy and level structures may change the level unique name, and changes to the business key values may change the member key path. Other factors that can affect the MUN are application changes during the design stage or over time, IBM Cognos PowerCube category codes that are unpredictably unique, the production environment that has more members than the test environment, or removing the member from the data source.

To avoid potential problems, we recommend the following best practices when you build OLAP data sources:

- Use unique codes and keys within a dimension for the member keys.
- Define your OLAP and relational packages using unique conformed values for the source values (business keys) within similar dimensions or data values where drill-through between applications may be required.
- Ensure that the business keys and dimension metadata structure are the same in the production and test environments.
- Do not change the business keys in IBM Cognos Framework Manager in the production environment.
- Resolve the non-unique keys in a dimension in the data source before you build the cube.
Ensure that there are no duplicate source values in all levels of a dimension before you build a PowerCube. We do not recommend using the tilde character (~) in the category codes.

For more information, see the section about uniqueness in the IBM Cognos Series 7 Step-by-Step Transformer.

For information about PowerCubes migrated from IBM Cognos Series 7, see the IBM Cognos PowerPlay Migration and Administration Guide.

**Conformed Dimensions**

If you work with more than one dimensional data source, you may notice that some dimensions are structured the same, and some are not.

The reason that dimensions can be structured differently is that the data sources may serve different purposes.

For example, a Customer dimension appears in a Revenue data store, but not in an Inventory data store. However, the Products dimension and the Time dimension appear in both data stores.

Dimensions that appear in multiple data stores are conformed if their structure is identical for all of the following:

- hierarchy names
- level names
- level order
- internal keys

Drilling through is possible between different dimensional data stores only if the dimensions are conformed, and if the dimension data store is of the same vendor type, such as IBM Cognos PowerCube as the source and the target. For example, in two data stores for Revenue and Inventory that contain Products and Time dimensions, it is possible to define the Products and Time dimensions differently for each data store. However, for drill-through between the Products and Time dimensions to work, their structures must be identical in each data store.

If you are not sure whether your dimensions are conformed, then you should check with the data modeler to ensure that the drilling through will produce meaningful results.

IBM Cognos Business Intelligence does not support conformed dimensions generated by IBM Cognos Framework Manager for SAP BW data sources.

**Dimensionally modeled Relational Data Sources**

Ensure that each level contains a business key that has values that match your PowerCube or other DMR models. Also, you must also ensure that the Root Business Key property is set and uses the business key of the first level in the hierarchy. This helps to ensure that you have a conformed member unique name when attempting to drill through using members from this dimension.

**Business Keys**

When drill-through access is defined from a member to a relational value, the business key of the member is passed by default.
This means that your relational target parameter must be set up using the data item with a matching value, which is most often the business key data item. You can also choose to pass the caption of the source metadata item.

For example, employees are usually uniquely identified by an employee number, not by their name, because their name is not necessarily unique. When you drill through from a dimensional member to a relational data item, the value provided is the business key. Therefore, the parameter in the target report must be defined to accept a business key value. The exact logic used to define the business key value supplied depends on the cube vendor. For IBM Cognos PowerCubes, the business key value is the Source property defined for the level in IBM Cognos Transformer. IBM Cognos Series 7 Transformer PowerCubes pass the source value if the drill-through flag was enabled before the cube was built. Otherwise, the category code is used.

In IBM Cognos Report Studio, you can determine what the member business key is using an expression such as `roleValue('_businessKey', [Camping Equipment])`. This expression is case-sensitive.

SSAS 2005 multipart business keys are not supported in drill-through operations.

**Tip:** When other users run your drill-through report, you may not want them to be prompted for a business key. In Report Studio, you can build a prompt page with a text that is familiar to the users, but filters on the business key. Your IBM Cognos Framework Manager modeler can also set the Display Item Reference option for the Prompt Info property to use the business key when the data item is used in a prompt.

**Scope**

Scope is specific to drill-through definitions created using Drill-through Definitions in IBM Cognos Connection (package drill-through definitions). The scope you set defines when the target report is shown to the users, based on the items they have in the source report.

Usually, you define the scope of a drill-through path to match a parameter that it passes. For example, if a target report contains a list of employees, typically you want to display the report as an available drill-through choice only when a user is viewing employee names in a source report. If employee names are not in the source report and the scope was set on the employee name in the drill-through definition, the employee report does not appear on the list of available drill-through target reports in the Go To page. You can set the scope to a measure or to an item in the report.

In report-based drill-through access, where the drill-through path is associated with a specific report column, the column serves as the scope.

**Mapped Parameters**

Drill-through targets may contain existing parameters or you can add parameters to the target for greater control over the drill-through link.

You usually map all parameters in a drill-through target to items from the source.

When you map source items that are OLAP or DMR members to target parameters, you can select from a set of related member properties to satisfy the requirements of the target parameter. For a dimensional target, a dimensional
source item uses the member unique name by default. For a relational target, a dimensional source item uses the business key by default.

For example, you could change the source member property that is used for a mapping to the member caption instead of the business key to match the parameter in a relational target. For a dimensional target, you could define a parameter that accepts a particular property (such as business key or parent unique name), then pass the appropriate source property to satisfy that target.

**Note:** If you define drill through between non-conformed dimensions, you should test carefully to ensure that the results behave as expected.

If you do not specify parameter mappings, then by default, you will be prompted for any parameters required in the target when you use the drill-through link. To customize this behavior, use the display prompt pages setting.

When the action is set to **Run using dynamic filtering**, then additional filtering is applied if names from the context in the source report match names of items in the target. Use this action as well when there are no parameters defined in the target.

If parameters are not mapped correctly, then you may receive an empty report, the wrong results, or an error message.

The source and target cannot contain identical parameter names when they are from different packages, even if the data structure is conformed. If the source and target are from the same package, there is no restriction.

If you have the necessary permissions, you can use the drill-through assistant to look at what source parameters are passed, and what target parameters are mapped for a given drill-through link.

You can change the dynamic drill-through filter behavior if you want drill-through to generate a filter using the Member Business Key instead of the default Member Caption. For more information, see Changing Drill-Through Filter Behavior in the *IBM Cognos Administration and Security Guide*.

### Drilling Through on Dates Between PowerCubes and Relational Packages

The usual method of drilling through from OLAP to relational packages requires that the target report parameter is set using the business key in the relational data, which does not work well for dates.

OLAP data sources typically view dates as members, such as Quarter 1 2012, while relational data sources view dates as ranges, such as 1/Jan/2012 to 31/March/2012.

A special feature exists for drilling through between PowerCubes and relational packages. Ensure that the target report parameter is set up using `in_range`. The parameter must be of type date-time, and not integer.

An example follows:

```
[gosales_goretailers].[Orders].[Order date] in_range ?Date?
```

Also ensure that the drill-through definition maps the parameter at the dimension level and that the PowerCube date level is not set to suppress blank categories.
Enabling the option to suppress blank categories in the Transformer model before you build the cube may cause the drill-through on dates to be unsuccessful. This happens because there are missing values in the range.

**Set Up Drill-through Access in Packages**

A drill-through definition specifies a target for drill-through access, the conditions under which the target is available (such as the scope), and how to run or open, and filter the target.

In IBM Cognos Connection, a drill-through definition is associated with a source package. The drill-through path defined in the drill-through definition is available to any report based on the source package it is associated with. The target can be based on any target package in IBM Cognos Connection and can be stored anywhere. For example, all reports authored in the GO Data Warehouse (analysis) sample package or in a folder linked to this package can access any drill-through definition created in this package.

**Note:** For reports created in Report Studio, you can define drill-through access in specific reports by setting up the drill-through definition in the report instead of in the package, or restrict drill-through access by changing report settings so that the report is unavailable as a drill-through target. For more information, see the IBM Cognos Report Studio User Guide. Reports created in IBM Cognos Workspace Advanced are not supported as drill-through targets.

You can define drill-through definitions between reports created in the different IBM Cognos Business Intelligence studios, and reports based on different packages and data sources.

The target report must exist before you start creating the drill-through definition in IBM Cognos Connection. Drill-through targets can be reports, analyses, report views, PowerCube packages, and queries.

Drill-through definitions support both dimensional and relational packages, and are available to Analysis Studio, Query Studio, PowerPlay Studio, and IBM Cognos Viewer.

**Procedure**

1. Check the drill-through target:
   - Confirm that the drill-through users have access to the target.
   - Hide the target from direct access if you want.
   - If necessary, check what parameters exist in the target.
     
     When a drill-through definition links objects in different packages, you must consider the data types used in both the source and the target object. Review the structure and values of data that you intend to pass in the drill-through, and ensure that the created parameters are appropriate for your scenario, if you have defined parameters, or that dynamic drill-through will work successfully.

2. In IBM Cognos Connection, in the upper-right corner, click Launch, Drill-through Definitions.

3. Navigate to the top level of the package for which you want to create the drill-through definition.

4. Click the new drill-through definition button on the toolbar.
Tip: If the drill-through definition button does not appear, then confirm that you are at the top level of the package, and not in a folder in the package. Drill-through definitions must be stored at the package level.

5. Type a name for the drill-through definition.

6. If you want, type a description and screen tip, and then click Next.

7. Follow the instructions on the screen:
   - If you want, restrict the scope to a query item or a measure in the source.
     If the target contains parameters, you should set the scope to the parameters that are mapped to the target report
   - Select the target from any package available in IBM Cognos Connection.
     If PowerPlay targets are available, then you must choose whether to set the target as a report or a PowerCube.
   - Click Next.

8. In the Action section, specify how to open the target object when the drill-through link is run and if you chose to run the report, in the Format section, specify the format to run the report in.

   Note: Users may be able to change the Action settings when they use the drill-through link. If you are using bookmarks in the target, then you must select the action View most recent report.

9. In the Parameter values table, specify how to map the source metadata to any parameters that exist in the target report or object.
   For example, if you drill through between OLAP data sources, then members are mapped to each other. If you drill through from an OLAP to a relational data source, then the source value (member) is mapped to the query item name (value).
   Usually, every parameter that exists in the target should be mapped to the source metadata. If not, then the report user may be prompted for any missing values when the drill-through link is used.

10. Click Map to metadata, or click the edit button.
    - In the screen that appears, select the metadata from the source to map to the target parameter.
    - If the source package is dimensional, you can select what property of the source metadata item to use in the mapping. By default, the business key is used for a relational target, and the member unique name is used for a dimensional target.
    - Repeat for each parameter in the list.

11. In the Display prompt pages section, specify when the prompt pages will appear.
    - In the screen that appears, select the metadata from the source to map to the target parameter.
    - If the source package is dimensional, you can select what property of the source metadata item to use in the mapping. By default, the business key is used for a relational target, and the member unique name is used for a dimensional target.
    - Repeat for each parameter in the list.

   You can set this action only when there are parameters in the target report and the target report will be run. If you change the action to View most recent report, for example, for bookmark references, the Display prompt pages.
property is disabled because you will use a previously run report. If you choose to open the report directly in Analysis Studio, then the Display prompt pages property is also disabled.

You specify prompt settings in IBM Cognos Connection (Report Properties, Prompt for Values).

12. Click Finish.
13. Run a report from the source package, and test the drill-through link.

Note: The drill-through definition is associated and stored with the source. Errors related to the target are only generated when you run the drill-through links, not when you save the drill-through definition.

Related concepts:
“Drilling Through to Different Report Formats” on page 21
The settings in the drill-through definition determine the format in which users see the report results.
“Conformed Dimensions” on page 24
If you work with more than one dimensional data source, you may notice that some dimensions are structured the same, and some are not.
“Business Keys” on page 24
When drill-through access is defined from a member to a relational value, the business key of the member is passed by default.
“Scope” on page 25
Scope is specific to drill-through definitions created using Drill-through Definitions in IBM Cognos Connection (package drill-through definitions). The scope you set defines when the target report is shown to the users, based on the items they have in the source report.

Setting Up Parameters for a Drill-Through Report
For greater control over drill-through access, you can define parameters in the target report.

For more information about defining parameters, see the IBM Cognos Report Studio User Guide or the Query Studio User Guide.

Set up parameters for a drill-through report in Report Studio
For greater control over drill-through access, you can define parameters in the target report in Report Studio.

Procedure
1. Open the target report in Report Studio.
2. Ensure that the report is available for drill-through access:
   • From the Data menu, select Drill Behavior.
   • In the Basic tab, select Accept dynamic filters when this report is a drill-through target and then click OK.
3. Create a parameter that will serve as the drill-through column, or that will be used to filter the report. (Data menu, Filters).
   For example, to drill through or filter on Product line, create a parameter that looks like this:
   
   \[[Product line]=?prodline_p?\]

   Tip: Use the operators in or in_range if you want the target report to accept multiple values, or a range of values.
4. In the Usage box, specify what to do when a value for the target parameter is not passed as part of a drill-through:
   • To specify that users must click a value in the source report, click Required.
     If a value for the target parameter is not passed, users are prompted to choose a value.
   • To specify that users do not need to click a value in the source report, click Optional.
     Users are not prompted to choose a value and so the value is unfiltered.
   • To specify not to use the parameter, click Disabled.
     The parameter is not used in the report, and therefore not available for drill-through definitions. For more information about defining report parameters, see the Report Studio User Guide.

   Tip: If the parameter is needed in the report for other reasons, then you can also specify not to use it in the drill-through definition (Parameters table, Method, Do not use parameter).

Results

The drill-through definition controls when prompt pages or parameters are displayed.

Set up parameters for a drill-through report in Query Studio

For greater control over drill-through access, you can define parameters in the target report in Query Studio.

Procedure

1. Open the target report in Query Studio.
2. Confirm that the report is available for drill-through access:
   • From the menu, select Run Report, Advanced Options.
   • Select Enable drill through from a package in the report output and then click OK.
3. Create a filter that will serve as the drill-through parameter, or that will be used to filter the report.
   • Select the column that you want to filter on, and click the filter button.
   • Change the settings as needed, and click OK.

Set Up Parameters for a Drill-through Target in Analysis Studio

You can create a drill-through target analysis and add target parameters in the analysis by setting a dimension as the Go To parameter.

When you create a drill-through definition for the analysis, this parameter appears in the target parameter list.

To support drilling down within the dimension and then drilling through, map the dimension in the source metadata to the target dimension. The member or members which are currently in your view are passed to the target analysis as filter values. This applies to any query, report, or analysis used in IBM Cognos Business Intelligence drill-through actions. To support drilling through directly from a particular level, map that level in the source metadata to the target dimension.
You can set multiple parameters in an analysis target. However, you cannot pass members within a selection set in Analysis Studio.

**Procedure**

1. In Analysis Studio, create a cross-tab analysis using the package that was set up for drill-through analysis.
2. If you want, add as a row or column the data item that you want to be the prompt.
3. Move or add the dimension or level that you want to be a target parameter to the **Context** area.

   **Note:** You cannot pass members within a selection set in Analysis Studio.

4. View the list for the item in the **Context** area and click **Use as "Go To" Parameter**.
5. Save this analysis as your target report in IBM Cognos Connection.

   You can now create the drill-through definition under a source package.

**Results**

When you create the drill-through definition and use the cross-tab analysis as a target, the **Go To** parameter item in the analysis appears as a drill-through parameter. You can map to this parameter the same way that you drill through to Report Studio or Query Studio reports.

**Related tasks:**

[“Set Up Drill-through Access in Packages” on page 27](#)

A drill-through definition specifies a target for drill-through access, the conditions under which the target is available (such as the scope), and how to run or open, and filter the target.

---

**Debugging a Drill-through Definition**

IBM Cognos Business Intelligence includes a debugging functionality that you can use to find problems with your drill-through definitions created in IBM Cognos Connection, and to correct any drill-through errors.

It can also help you understand how the drill-through functionality works, especially across different types of data sources. This functionality is also referred to as the drill-through assistant. You can also debug drill-through definitions that were created in a PowerCube and migrated to IBM Cognos BI.

If your target report is not receiving any parameters, check the mapping in your drill-through definition, and ensure that your parameters were created against the correct data type for your drill-through scenario. For example, if you want to create a drill-through definition from an OLAP package to a target report based on a relational package, your target parameters need to be set up to a query item that has the same value as the OLAP business key or the member caption. For more information, see [“Members and Values” on page 22](#).

If your target report is being filtered with the wrong values, check the values that are being mapped from the source to the target.
You must have the necessary permissions to use the drill-through assistant. The information that the drill-through assistant provides is available from the Go To page, when you run the drill-through. The drill-through assistant provides the following information.

**Passed Source Values**

The source values are the values from the selection context that are available for passing to the target report when the user chooses to drill through to the target report or object. For example, if you drill through from a source in Analysis Studio, you see the values at the intersection you selected before the drill-through action, and any values in the context area.

The values in the debug list are the values in the source report that were transformed by any drill-through operation.

- **Display Value**
  
  Shows the value that users see when using this data item or this member. For OLAP members, this is the member caption or label. For example: Telephone is a member from the Order Method dimension.

- **Use Value**
  
  Shows the value that IBM Cognos reports and analyses use when retrieving the data item or the member. For OLAP members, this is the member unique name (MUN). For example: `[great_outdoors_company].Order Method].Order Method].Order Method1]-->:[PC].[@MEMBER].[2]` is the MUN for the Telephone member in the Order Method dimension.

**Target Mapping**

If you chose to use parameters in the target, then the target mapping shows the name of each parameter that was mapped in the drill-through definition, and the values that the source is attempting to pass to that parameter.

- **Parameter Name**
  
  Shows a list of valid target parameters mapped in the drill-through definition to receive information from the query item, level, or hierarchy on which you performed the drill-through action.

  You can see only parameters for which there is a valid mapping and only the names of the parameters. For example, if the target report contains a parameter for Product Type and the drill-through definition maps that target parameter to the source Product Type level metadata, you see this target parameter only if you attempt to drill through on the Product Type level in the source report. Drilling through on the Product Line level does not display this parameter target.

  You must ensure that the target parameters in your drill-through definitions are mapped correctly. Incorrectly mapped parameters can receive information from the wrong source metadata, especially where you have data values that are not unique. If you cannot see any target parameters or the parameters you expected to see in the View Target Mapping list, check the parameter mapping in the drill-through definition.

- **Display Value**
  
  Shows the value that users see when using a data item or member. For OLAP members, this is the member caption or label. For example: Telephone is a member from the Order Method dimension.

- **Use Value**
Shows the transformed value that the drill-through definition uses when passing a data item value or member to the target parameter.

OLAP members passed to relational target parameters obtain the business key from the members MUN and pass only the business key. Using the example of the Telephone member in Order Methods, the business key is 2. If you are unsure of what the business key is for a member, you can write a Report Studio expression such as roleValue('businessKey', [member]). This value is passed to the target parameter.

OLAP members passed to a target parameter based on another OLAP package of the same OLAP type show a transformed MUN. Using the Order Methods example, the MUN is now transformed and the drill-through definition uses the value of [great_outdoors_company].[Order Method].[Order Method].[Order Method]-> [Order Method]. [2]:[PC].[@MEMBER].[2]. The middle portion of [Order Method][2] is where the drill-through definition finds the correct member in the target when the OLAP data sources are different. To see the MUN for a specific member, you can look at the properties of the member in Report Studio and look at the Member Unique Name property.

**Set Up Drill-through Access in a Report**

Use Report Studio to create a source drill-through report to link two reports containing related information. You can then access related or more detailed information in one report by selecting a value or multiple values in the source report. You can also drill through within the same report by creating bookmarks.

**Before you begin**

For more information, see the IBM Cognos Report Studio User Guide.

**Tip:** To use a Report Studio report as a source in a drill-through definition in IBM Cognos Connection, the option **Allow package based drill-through** must be selected (Data menu, Drill Behavior). This option is selected by default.

**Procedure**

1. In Report Studio, open the target report.
2. Create a parameter that will serve as the drill-through column or that will filter the report.
   
   For example, to drill through or filter Product line, create the following parameter:

   `[Product line]=?prodline_p?`

   **Tip:** Use the operators `in`, `or`, `in_range` to enable the target report to accept multiple values or a range of values.

3. In the **Usage** box, specify what to do when a value for the target parameter is not passed as part of a drill through:

   • To specify that users must select a value, click **Required**.
     
     If a value for the target parameter is not passed, users are prompted to choose a value.

   • To specify that users do not need to select a value, click **Optional**.
     
     Users are not prompted to choose a value and so the value is unfiltered.

   • To specify not to use the parameter, click **Disabled**.
     
     The parameter is not used during the drill-through. It will also not be used in the report for any other purposes.
Tip: If the parameter is needed in the report for other reasons, then you can also specify not to use it in the drill-through definition (Parameters table, Method, Do not use parameter).

Results

The drill-through text appears as a blue hyperlink in text items in the non-chart areas of the report. Report consumers can also start the drill-through action by clicking the Go To button or by right-clicking the item and clicking Go To, Related links. If you have the necessary permissions, you can view which parameters were passed from the source and how they are mapped in the target object from the Go To page using the drill-through assistant.

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

Specify the Drill-through Text

You can specify the drill-through text that appears when users can drill through to more than one target.

For example, if users from different regions view the report, you can show text in a different language for each region.

Procedure

1. Right-click the drill-through object and click Drill-Through Definitions.
2. If more than one drill-through definition exists for the object, in the Drill-Through Definitions box, click a drill-through definition.
3. Click the Label tab.
4. To link the label to a condition, in the Condition box, do the following:
   • Click Variable and click an existing variable or create a new one.
   • Click Value and click one of the possible values for the variable.
5. In the Source type box, click the source type to use.
6. If the source type is Text, click the ellipsis (...) button that corresponds to the Text box and type text.
7. If the source type is Data Item Value or Data Item Label, click Data Item and click a data item.
8. If the source type is Report Expression, click the ellipsis (...) button that corresponds to the Report Expression box and define the expression.
9. If the label is linked to a condition, repeat steps 5 to 8 for the remaining possible values.

Results

When users run the source report and click a drill-through link, the Go to page appears. The drill-through text you specified appears for each target. If you did not specify the drill-through text for a target, the drill-through name is used.

Setting Up Drill-through Access from IBM Cognos Series 7 Visualizer

Setting up drill-through access from IBM Cognos Series 7 Visualizer to IBM Cognos Business Intelligence involves setting up the target report.

To set up drill-through access, you must do the following:
• Specify the IBM Cognos BI target and select the filters to add to the target report.
  You must configure drill through to IBM Cognos BI for individual IBM Cognos Visualizer reports. For more information, see the IBM Cognos Visualizer User Guide.
• Create and test the target report.

Related tasks:
“Create and Test the Target for a Series 7 Report”
You can create and test an IBM Cognos Series 7 report target to ensure the drill-through works properly.

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**Setting Up Drill-through Access from PowerPlay Web**

Setting up drill-through access from IBM Cognos Series 7 PowerPlay Web to IBM Cognos Business Intelligence involves setting up target reports.

To set up drill-through access, you must do the following:
• For PowerCubes, specify drill-through targets for IBM Cognos BI reports in the Transformer model.
  For more information, see the Transformer documentation.
• For other cubes, specify drill-through targets for IBM Cognos BI reports in IBM Cognos Series 7 PowerPlay Connect.
  For more information, see the PowerPlay OLAP Server Connection Guide.
• Configure drill-through access in PowerPlay Server Administration.
  In addition to enabling drill-through access to IBM Cognos BI, you must specify the location of the IBM Cognos BI server and the IBM Cognos BI folder that contains the target reports. For more information, see the PowerPlay Enterprise Server Guide.
• Select the filters to add to the target report.
  In PowerPlay Enterprise Server Administration, enable and use IBM Cognos BI Assistance to identify the filter expressions required in the target report. For more information, see the PowerPlay Enterprise Server Guide.
• Create and test the target report.

Related tasks:
“Create and Test the Target for a Series 7 Report”
You can create and test an IBM Cognos Series 7 report target to ensure the drill-through works properly.

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**Create and Test the Target for a Series 7 Report**

You can create and test an IBM Cognos Series 7 report target to ensure the drill-through works properly.

When you create the target report, ensure that the names of the parameters you add are identical to the parameter names listed in the Drill Through Assistant page in IBM Cognos Series 7. However, the metadata item that you use in the target report for that parameter name does not have to be the identical label. The data values between the target parameter and the source value shown in the drill assistant must match. You may also need to change the type of operator in the target parameter from what is recommended in the Drill Through Assistant. For example, if the assistant recommends an = operator but you want to pass a date range, you should change the parameter operator in the target to in_range.
**Before you begin**

The target report must be based on a published package that contains the metadata items that you want to filter on, or contains items that are mapped to those metadata items.

**Procedure**

2. Add the data items and other objects you want.
3. From the Data menu, click Filters.
4. In the Detail Filters tab, click the add button.
5. In the Expression Definition box, create the parameterized filter you want by typing the filter expression.
6. Click OK.
7. In the Usage box, click Optional.
   - If you do not make the filter optional, a prompt page appears when you drill through to the report.
8. Repeat steps 4 to 7 for other parameterized filters you want to add.
9. Save the report.
   - The report name must match what you specified as a target in the PowerCube, other cube, or IBM Cognos Series 7 Visualizer report.
10. Test the drill through in the IBM Cognos Series 7 PowerPlay report or IBM Cognos Visualizer report.
Chapter 3. Take Advantage of IBM Cognos BI Features

When you have established interoperability between IBM Cognos Series 7 and IBM Cognos Business Intelligence for your existing IBM Cognos Series 7 applications, you can go further: build on your investment in IBM Cognos Series 7 by taking advantage of the new features in IBM Cognos BI. In particular, as you have published your cubes to IBM Cognos BI, you can start reporting on them from the IBM Cognos BI studios without any changes to the cubes. You can create managed reports and workspaces against your existing cubes.

IBM Cognos BI is a major innovation that offers improvements and new features on an open, service-oriented architecture. It is different from IBM Cognos Series 7 and users must learn to do things, such as designing reports, doing comparative analysis and deploying applications, in IBM Cognos BI. Understanding how IBM Cognos BI is different than IBM Cognos Series 7 helps you choose the correct migration options, set expectations, and design applications that are optimized to run on IBM Cognos BI.

Architecture

The IBM Cognos Series 7 solution contains a set of products. You can use these products individually or in any combination to provide an integrated solution that meets your business intelligence needs.

Each of these products includes both client and server components, from data modeling and authoring tools to server components that can make your IBM Cognos data available across the enterprise. Each IBM Cognos Series 7 product has a different client-server architecture and may use proprietary application servers and storage formats.

For example, as shown in the following diagram, you can maintain distinct applications that share the same Upfront NewsIndex by using multiple server groups. You can have more than one server group per product, each with its own separate data store, but all can use a common portal. You can install server groups on multiple computers, or install multiple instances of a server group on the same computer.
Like IBM Cognos Business Intelligence, IBM Cognos Series 7 Web products use a three-tier architecture, with the graphical user interface, application servers, and data on separate tiers. However, IBM Cognos BI uses a common, service-oriented architecture for all BI capabilities to support the requirements of business processes and users. There is one central relational database to store all application content. For more information, see the IBM Cognos BI Architecture and Deployment Guide.

The following diagram shows a detailed view of an IBM Cognos BI installation in which all services are installed on a single computer. Each service is independent of other services, and receives requests from a dispatcher.
Data access

In IBM Cognos Series 7, the metadata you use is different for each product. You are limited to one database or data source for each model, and the metadata is not stored centrally.

IBM Cognos Business Intelligence provides a common business model and open data access for all users across an organization. Full capabilities are available regardless of where your data is stored, including reporting from OLAP sources and analysis from relational sources. This is a change from data silos that may have existed in the IBM Cognos Series 7 environment where IBM Cognos PowerPlay is limited to OLAP data sources and IBM Cognos Impromptu® is limited to relational data sources.
In IBM Cognos BI, you access data from packages, published from IBM Cognos Framework Manager or IBM Cognos Transformer models, to create reports and ad hoc queries. A package can access more than one data source. When you add security and multilingual capabilities, each package can serve the reporting, ad hoc querying, and analysis needs of a particular group. For example, if your data source contains information from different areas of a business, you might decide to create different packages for Human Resources and Finance. In addition, you can add security so that users see only information that they have been granted access to, based on their group or role.

IBM Cognos BI supports relational, dimensionally modeled relational (DMR), and online analytical processing (OLAP) models.

**Managed reporting**

Managed reporting provides a centralized method of report creation and distribution. Managed reports are created by professional report authors for other users, or consumers.

The reports can be simple or complex and are often scheduled or burst to many users. If you are moving from IBM Cognos PowerPlay, you may choose to move some PowerPlay applications or users to managed reporting instead of exploration.

Reporting is done differently in IBM Cognos Business Intelligence than in IBM Cognos Series 7. In IBM Cognos BI, managed and ad hoc reporting is done in the Web-based studios, and the reports and queries are stored in the content store. In IBM Cognos Series 7, you author reports in IBM Cognos Impromptu or PowerPlay before publishing them to the portal.

IBM Cognos BI enables novice users to run structured ad hoc reports and perform reporting queries. It enables power users and developers to build applications and reporting templates quickly and easily. It enables report authors to reuse reporting objects to apply filters, fields, and styling to ad hoc reports. IBM Cognos BI allows you to change the language of the user interface and report content depending on the user's native language.

**Exploration**

Exploration is qualitative, done by inspection, and usually begins with a partial definition of the search criteria and an unknown amount of data.

As patterns, trends, and exceptions are discovered, the search criteria are refined and the amount of data may change. Usually some effort is required to focus attention on relevant aspects of your data before analysis can begin.

OLAP (online analytical processing) exploration refers to 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 2003 to 2007 by sales region. You notice a dip in the revenue for 2006. By focusing on 2006, you can drill down to show revenue results by quarters for 2006. You can easily change the view from quarters for 2006 to sales personnel by replacing quarters with sales personnel in your analysis.

Business managers who use IBM Cognos Business Intelligence products to perform exploration and only light analysis may prefer the simplicity and usability of IBM Cognos PowerPlay. PowerPlay performs well with smaller amounts of data, while
IBM Cognos Analysis Studio performs well with larger amounts of data, flat dimensions, and when you are doing comparative analysis. PowerPlay and Analysis Studio each deliver a unique user experience.

**Working with Microsoft Office**

The IBM Cognos Business Intelligence for Microsoft Office functionality of IBM Cognos BI allows you to consume and embed existing reports within Microsoft Office documents.

In addition, IBM Cognos Analysis for Microsoft Excel enables Excel-based analysis and reporting by allowing dynamic access to IBM Cognos BI data from within Excel. This functionality is similar to IBM Cognos PowerPlay for Microsoft Excel, but is extended to all dimensional data sources supported by IBM Cognos BI.

**Analysis**

Applying techniques to describe, summarize, and compare data, and draw conclusions is part of data analysis. Business analysts seek to understand how the answer varies when comparing different scenarios, or testing hypotheses.

With analysis, it is possible to see trends and understand anomalies or variances that may not be evident by simply exploring data. Analysis is more quantitative than exploration, using statistics or math to understand relationships and relative importance of data items. You create custom sets to look for common elements between different things.

Business analysts who prepare models to answer questions and test hypotheses usually find the functionality in IBM Cognos Analysis Studio better suited to their goals than IBM Cognos PowerPlay. Analysis Studio can do deep comparative queries and can use dimensionally modeled relational or OLAP data sources.

**Feature differences**

IBM Cognos Business Intelligence provides different features than IBM Cognos Series 7. Some features in IBM Cognos Series 7 are the same in IBM Cognos BI, while other features are different, but functionally equivalent. Occasionally, there is no functional equivalent.

The migration tools work best when there is a direct mapping of functionality between IBM Cognos BI and IBM Cognos Series 7. For example, IBM Cognos PowerPlay Studio maps very closely to IBM Cognos PowerPlay, so migration is smooth. If there is reasonable mapping, the migration tools attempt to map the functionality. For information about mapping IBM Cognos Series 7 objects to IBM Cognos BI objects, see the IBM Cognos BI Migration Assistant User Guide.

If a feature or functionality in IBM Cognos Series 7 that is critical to your application is not currently available in IBM Cognos Business Intelligence, use interoperability between IBM Cognos Series 7 and IBM Cognos BI.

The following table suggests strategies based on whether IBM Cognos Series 7 functionality is the same, different, or not yet available in IBM Cognos BI.
Table 5. Strategies based on functionality

<table>
<thead>
<tr>
<th>Functionality</th>
<th>Default strategy</th>
<th>Other strategy</th>
</tr>
</thead>
<tbody>
<tr>
<td>Same</td>
<td>Lift and Shift</td>
<td>Compress and Optimize to take advantage of new IBM Cognos BI features.</td>
</tr>
<tr>
<td>Different</td>
<td>Compress and Optimize</td>
<td>Lift and Shift and use alternate product features to provide equivalent business functionality.</td>
</tr>
<tr>
<td>Not Available</td>
<td>Interoperate</td>
<td>Compress and Optimize or Lift and Shift.</td>
</tr>
</tbody>
</table>

User experience

In a business organization, the roles and goals of user communities are independent of the products they use to achieve these goals. User communities and their business goals do not change, but the tools they use to achieve their business goals may change.

IBM Cognos Business Intelligence is different from IBM Cognos Series 7 and the user experience for each user community will be different. Some level of retraining, depending on the product, is required to help users learn to do things differently is required for successful user adoption.

When assessing the costs of moving your users to IBM Cognos BI, such as the cost of developing a training plan, for each user community it is important to understand:

- the IBM Cognos Series 7 products they use
- how they use the IBM Cognos Series 7 products
- what capabilities they will use in IBM Cognos BI

Also understand how the current and future needs of your users influence your migration strategy and how the choice you make impacts users. For example, maintaining existing applications in IBM Cognos Series 7 provides continuity. Migrating applications to IBM Cognos BI may cause some disruption, but introduces business benefits. Building new applications in IBM Cognos BI and setting up interoperability between IBM Cognos Series 7 and IBM Cognos BI, or using only IBM Cognos PowerPlay Studio may be useful methods to slowly transition users.

User experience for consumers

Report consumers commonly use a portal to view reports, analyses, queries, and scorecards.

Usually consumers are managers, senior managers, or executives who look at dashboards or summary reports to get a high-level graphical view of company performance indicators.

In IBM Cognos Business Intelligence, consumers use the IBM Cognos BI portal with consumer capabilities and Cognos Viewer to view reports. They can also receive reports by email, schedule a report to run at a specific time, create and manage portal folders and shortcuts, export reports to other formats, set personal
portal preferences for language, time zones, and appearance. They can also consume reports embedded in Microsoft Office documents.

**User experience for business managers**

Business managers use IBM Cognos products to explore information, looking for trends and exceptions. They look at data qualitatively, using their experience to assess trends.

Examples of a business manager include middle managers who want to understand how their product line is performing. They commonly look at revenue or cost trends over a period of time and explore data on their own, or at the request of a superior, to get more information when exceptions occur.

Business managers use many of the same IBM Cognos Series 7 products as consumers in addition to the following:
- IBM Cognos PowerPlay Web Explorer
- PowerPlay for Microsoft Windows
- PowerPlay for Microsoft Excel
- IBM Cognos Impromptu
- IBM Cognos Query

Business managers who use Impromptu and IBM Cognos Query will likely use IBM Cognos Query Studio in IBM Cognos Business Intelligence to create simple reports and to accomplish most of their ad hoc query needs. Those who use PowerPlay for Microsoft Windows and PowerPlay for Microsoft Excel should consider using both IBM Cognos PowerPlay Client and IBM Cognos Analysis for Microsoft Excel to meet their needs. Those who use PowerPlay Web Explorer will likely use IBM Cognos PowerPlay Studio in IBM Cognos BI.

**User experience for analysts**

Business analysts may use pre-defined reports as a starting point to sift through large amounts of data to narrow it down to smaller amounts of data. They investigate different areas of the business to find answers to business questions.

Business analysts usually compare data and test hypotheses by changing variables in a number of scenarios. They usually use some quantitative tools to analyze data.

Usually the business analyst is alerted by a request from another manager or by an email notification to seek an answer to a business question, such as “Who is the top salesperson in each region for a specific product and period?”. Commonly, analysts evaluate an item relative to a set of its peers by ranking or doing other types of comparisons.

For example, you can rank a product line, such as golf equipment, to identify how sales for golf equipment for the salesperson compare to sales in other years.

A business analyst uses many of the same IBM Cognos Series 7 products as consumers in addition to the following:
- IBM Cognos PowerPlay Web Explorer
- PowerPlay for Microsoft Windows in reporter mode
- PowerPlay for Microsoft Excel
- Personal Transformer
- IBM Cognos Impromptu
- IBM Cognos Query

Analysts who use PowerPlay Web Explorer may find that IBM Cognos Analysis Studio in IBM Cognos Business Intelligence will meet their business needs for analyzing and comparing dimensional data. Analysis Studio is different than PowerPlay and requires user training.

Analysts who use Impromptu and IBM Cognos Query will likely use IBM Cognos Query Studio in IBM Cognos BI to create simple reports and to meet most of their ad hoc query needs. Analysts who use Impromptu to define queries for Transformer cubes (.iqd files) can continue to use this functionality in Impromptu or may consider leveraging Query Studio or IBM Cognos Report Studio reports to define the queries. Queries which reference IQD data sources in upgraded Transformer models can be changed to point to a query based on an IBM Cognos BI package or report.

Analysts who use PowerPlay for Microsoft Windows and Personal Transformer can upgrade to IBM Cognos PowerPlay and Transformer 8. Analysts who use Personal Transformer and who have added security to the PowerCubes must publish the PowerCube to IBM Cognos Connection and use it there.

Analysts who use PowerPlay for Microsoft Excel will find that IBM Cognos BI Analysis for Microsoft Excel provides comparable functionality.

**User experience for disconnected users**
Disconnected users are those users who for a portion of their time or working day do not have access to the corporate network. Usually these are mobile workers across the organization.

Disconnected users may include sales people who need customer and pipeline details, operations personnel who need supply chain information, and executives who need constant access to business information.

Disconnected users use the following IBM Cognos Series 7 products:
- IBM Cognos PowerPlay for Microsoft Windows to access local cubes or sub-cubes
- PowerPlay for Microsoft Excel to access local cubes or sub-cubes
- IBM Cognos Impromptu snapshots or hotfiles

IBM Cognos Mobile provides a solution for mobile workers who need to access and interact with BI information on PDAs such as BlackBerrys. IBM Cognos Mobile provides disconnected and offline use. Users can continue to access their reports while they are offline, allowing them to continue working while traveling or when the device is not within connectivity range. PowerPlay for Microsoft Windows users who want local access can continue to use PowerPlay for Microsoft Windows in IBM Cognos Business Intelligence. PowerPlay for Microsoft Excel users can continue to use PowerPlay for Microsoft Excel or can use IBM Cognos Analysis for Microsoft Excel.

However, IBM Cognos BI does not provide direct access to cubes, snapshots, or hotfiles because many businesses want to move toward increased collaboration and controlled access to data.
IBM Cognos BI enables organizations to increase collaboration and efficiency by creating a “single version of the truth” strategy. Decision makers from different departments can spend less time debating the accuracy of one another’s numbers and more time solving business issues.

**User experience for report authors**

In most organizations, there are professional report authors and business authors. Professional authors build sophisticated reports for others. They collect report requirements, create the reports, and deploy them.

Professional authors may use simple or complex formatting, filters, and prompts. Business authors use pre-defined reports to understand the status of the business and may build simple, ad hoc queries to focus on variances and exceptions.

Report authors use the following IBM Cognos Series 7 products:

- IBM Cognos Impromptu in client-server mode or to publish to Impromptu Web Reports
- IBM Cognos PowerPlay for Microsoft Windows in client-server mode to publish to PowerPlay Web Viewer
- PowerPlay Web for testing or to look at PowerPlay for Microsoft Windows reports published to PowerPlay Web Viewer
- PowerPlay Web in Explorer mode to create reports using live data
- NoticeCast Administration to set up business events that happen against operational data
- IBM Cognos Query for creating standardized queries (similar to templates)
- IBM Cognos Visualizer to create complex multi-metric visualizations for presentations and reports based on corporate data

Professional report authors who use Impromptu and Impromptu Web Reports to create reports will use IBM Cognos Report Studio in IBM Cognos Business Intelligence to build sophisticated, multiple-page, multiple-query reports against multiple databases.

Users who author reports in PowerPlay for Microsoft Windows in client-server mode may use PowerPlay 8 BI in client-server mode and use Report Studio.

Business authors who use IBM Cognos Query to create simple reports may use IBM Cognos Query Studio, or IBM Cognos Business Insight Advanced.

Authors who use IBM Cognos Query to create report templates that provide formatting, such as color, font, and style will likely use features in Report Studio to accomplish their goals.

Authors who use IBM Cognos Visualizer to create visualizations that show traffic lights or metrics, will likely use IBM Cognos Metric Studio to create scorecards, and Report Studio to create dashboards.

Authors who set up notifications to detect operational events will find that the administration functions in IBM Cognos Connection include email distribution of reports and scheduling. IBM Cognos Event Studio has functionality that allows you to set up operational events detection and management.
User experience for administrators

Administrators manage the technical deployment of a company's applications, review hardware and software requirements, and may plan the overall system infrastructure, including installation, configuration, and system optimization.

In IBM Cognos Series 7, a number of tools are used to administer objects, users, and servers including:
- IBM Cognos PowerPlay Enterprise Server Administration
- Deployment Manager
- Access Manager
- Configuration Manager
- Visualizer Administration
- NoticeCast Administration
- Upfront Administration
- IBM Cognos Impromptu Web Reports Report Administration
- Impromptu Web Reports Server Administration
- IBM Cognos Query Server Administration
- automation methods, such as application and server automation

The need to administer BI on Microsoft Windows desktops across the organization is eliminated in IBM Cognos Business Intelligence. There is a single administration layer for all capabilities. Administration, including deploying content, managing servers, setting up security, and so on, is centralized in IBM Cognos BI. All administration is done in the portal, as shown in the following table.

Table 6. Administration tools and their uses

<table>
<thead>
<tr>
<th>Administration tool</th>
<th>Use</th>
</tr>
</thead>
<tbody>
<tr>
<td>Directory tool</td>
<td>Create and manage users, groups and roles, data sources, distribution lists and contacts, and printers.</td>
</tr>
<tr>
<td>PowerPlay tool</td>
<td>Administer cube and report properties for PowerPlay 8.</td>
</tr>
<tr>
<td>Portal administration tool</td>
<td>Manage styles, Cognos portlets, and third-party portlets in IBM Cognos Connection.</td>
</tr>
<tr>
<td>Capabilities tool</td>
<td>Control access to secured functions, such as Administration and IBM Cognos Report Studio features, including bursting, user-defined SQL, and migration.</td>
</tr>
<tr>
<td>Server administration tool</td>
<td>View and manage dispatchers, and services, and tune the performance.</td>
</tr>
</tbody>
</table>
Table 6. Administration tools and their uses (continued)

<table>
<thead>
<tr>
<th>Administration tool</th>
<th>Use</th>
</tr>
</thead>
<tbody>
<tr>
<td>Content administration tool</td>
<td>Deploy IBM Cognos BI by exporting from a source environment and then importing to a target environment.</td>
</tr>
<tr>
<td></td>
<td>Perform content store maintenance tasks and migration.</td>
</tr>
<tr>
<td></td>
<td>Migrate PowerPlay 7 content to IBM Cognos PowerPlay</td>
</tr>
</tbody>
</table>

Almost everything the product can do, can be achieved by using the appropriate API, URL interface, or command line utility. For more information, see the IBM Cognos BI Administration and Security Guide.

**User experience for metadata modelers**

Metadata modelers create a business view of data sources to help users, including department heads, directors, analysts, knowledge workers, business leaders, and executives, to better understand an organization's data assets.

In IBM Cognos Series 7, metadata modelers use the following:
- IBM Cognos Impromptu Administrator
- IBM Cognos Transformer
- IBM Cognos Architect

Framework Manager is the modeling tool in IBM Cognos Business Intelligence. Transformer is the modeling tool for designing, building and deploying multidimensional high speed data access caches. You can use PowerCubes from either IBM Cognos Series 7 or Transformer in IBM Cognos BI. You can publish PowerCubes from either Transformer version 8.3 and later, or you can deploy IBM Cognos Series 7 PowerCubes from IBM Cognos Administration.

If you use Impromptu to create Impromptu Query Definitions (.iqd) files for Transformer, you can continue to use this functionality in Impromptu. Using IQDs with Transformer 8.3 can be done, provided the IBM Cognos Series 7 gateway is installed with Transformer on a platform supported by IBM Cognos Series 7.

Another alternative is to change references from the IQD data sources in the model to queries which leverage metadata from IBM Cognos BI reports or packages. Authoring queries in Transformer from IBM Cognos BI reports or packages allows self-sufficiency while taking advantage of the open data access strategy of IBM Cognos BI. Other benefits include support for multi-select statements, local processing, prompts, and in many cases, much faster read performance of the data source.

You can publish PowerCubes in IBM Cognos BI version 8.3 and later from Transformer, IBM Cognos Administration, or Framework Manager. The analyst or Transformer modeler is no longer dependant on Framework Manager for publishing a single PowerCube. The IBM Cognos BI administrator can quickly and easily create a package for IBM Cognos Series 7 PowerCubes when authoring the data sources in IBM Cognos Administration. With the added benefit of publishing
packages into MyFolders or another folder, you can now organize PowerCubes in IBM Cognos Connection rather than publishing multiple cubes into a single package.

If you use Architect, you will use Framework Manager. If you are using Impromptu Administrator with star and snowflake schemas, then you will use Framework Manager to dimensionally model relational data sources. If you use Impromptu Administrator with normalized databases, then you will also use Framework Manager with query subjects.

If you use Impromptu Administrator to create catalogs, you will use Framework Manager. You can either create new models in Framework Manager using best practices modeling techniques (see Guidelines for Metadata Modeling), or start by migrating your Impromptu catalogs to Framework Manager using the migration tools. If you use the migration tools, you should still apply Framework Manager's best practices to your migrated model.

**Example - moving PowerPlay users to IBM Cognos BI**

IBM Cognos Series 7 users explore, report, and analyze data derived from OLAP data sources using IBM Cognos PowerPlay. In IBM Cognos Business Intelligence, PowerPlay users will each have different capabilities depending on what they are doing. The tool they use depends on what they are doing.

IBM Cognos BI has new capabilities that can change the way you approach the solution you offer to your business users.

For example, at GO Company, Melissa, Patrick, Patti, and Sylvio each use PowerPlay because some of the reports they need use data from a PowerCube. Patrick views standard PowerPlay reports published to IBM Cognos Upfront. Melissa writes the standard reports in PowerPlay for Microsoft Windows and then publishes them to Upfront. Patti uses PowerPlay Web Explorer to interactively explore PowerPlay reports. Sylvio uses PowerPlay Web Explorer to analyze data in the reports.

Patrick, Melissa, Patti, and Sylvio will use IBM Cognos BI to do their reporting, exploration, analysis, and viewing. The tool or studio they use depends on their task, not the type of data source the report uses. Patrick will likely have consumer capabilities and use Cognos Viewer and IBM Cognos Connection to view reports and organize his folders. Melissa, who creates standard reports, will probably use IBM Cognos Report Studio. Patti may do some light exploration in PowerPlay Studio. She may also drill up and drill down to view related information. Sylvio will probably do multidimensional analysis and exploration of large data sources in Analysis Studio.

**Expertise assessment**

Assessing and upgrading skills is an important part of the process of moving to IBM Cognos Business Intelligence.

Individuals with IBM Cognos Series 7 experience, such as data modelers and system administrators, will play an important role in the move. These people will be familiar with the IBM Cognos Series 7 application, or parts of the application. If you engage some of these people in the evaluation of IBM Cognos BI, they can help to identify the similarities and differences between IBM Cognos Series 7 and IBM Cognos BI. They will also be able to assess the training requirements for IBM Cognos BI.
Because some of the basic architecture and concepts of IBM Cognos BI are different from IBM Cognos Series 7, additional training will be required for some groups. The most significant differences are in data modeling and system administration. The individuals involved in these areas will require training to ensure the move to IBM Cognos BI is successful. Other groups, such as consumers, or users of IBM Cognos PowerPlay Studio, may not require significant training.

Before you develop a training plan for IBM Cognos BI, answer the following questions:

- Who will determine training requirements for IBM Cognos BI?
  Will people with IBM Cognos Series 7 experience evaluate IBM Cognos BI to determine training requirements? Will you engage IBM Cognos Software Services or consultants for training recommendations?

- How many people require training?
  How many data modelers will work with Framework Manager? How many analysts will work with Transformer? How many business intelligence administrators will be involved in the deployment and administration of your IBM Cognos software?

- How will you deliver IBM Cognos BI training?
  Do you have trainers in your company? Will IBM Cognos Software Services or another contractor deliver the training?
  IBM Cognos Software Services provides a variety of training options including custom user training, e-Learning, and classroom training. Several training aids are included with IBM Cognos BI, such as quick tours, samples, and documentation.

- What types of training will you require?
  Does your IT department have the required skills to deploy and manage IBM Cognos BI? Do users require training for report authoring?
  The information in the IBM Cognos BI Architecture and Planning Guide and the IBM Cognos PowerPlay Administration and Security Guide will help you to understand IBM Cognos BI and identify training requirements.
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