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Introduction

With IBM® Cognos® Business Viewpoint Client, you can nominate dimensions from IBM Cognos Planning - Analyst, IBM Cognos Planning - Contributor Administration Console, IBM Cognos TM1®, IBM Cognos Controller, IBM Cognos Transformer, relational data sources, IBM InfoSphere™ Master Data Management Server, and CSV files into IBM Cognos Business Viewpoint Studio.

You can also subscribe to dimensions that are in Business Viewpoint Studio. For example, you nominate a Products dimension from one D-List of Analyst to Business Viewpoint Studio. You make changes to the Products dimension in Business Viewpoint Studio, and then subscribe to the Products dimension from a different Analyst D-List.

When you subscribe to a dimension from an IBM Cognos tool, like Analyst, a copy of the dimension from Business Viewpoint Studio is moved to Analyst. If the dimension is modified in either of these locations, the data will no longer be synchronized. To ensure that you have the same data in both places, you can run an update.

This document includes the procedures, examples, notes, tips, and other background information to help you manage your dimensions.

Audience

This document is intended to help business users such as analysts and managers use Business Viewpoint Client.

Finding information

To find IBM® Cognos® product documentation on the Web, including all translated documentation, access one of the IBM Cognos Information Centers at http://publib.boulder.ibm.com/infocenter/cogic/v1r0m0/index.jsp. Updates to Release Notes are published directly to Information Centers.

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

Accessibility features

This product does not currently support accessibility features that help users with a physical disability, such as restricted mobility or limited vision, to use this product.

Forward-looking statements

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

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

Reviewing the Release Notes before you use Business Viewpoint Client

Before you use Business Viewpoint Client, it is important to be aware of all issues that may affect you. There may be late-breaking issues that were not known when this guide was created.

Review the Release Notes before you use Business Viewpoint Client. The Release Notes contain late-breaking information about known issues as well as documentation updates and deprecation notices.
Chapter 1: What’s new?

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

To locate the most current product documentation, go to the IBM® Cognos® Business Intelligence and Performance Management Information Center at http://publib.boulder.ibm.com/infocenter/cogic/v1r0m0/index.jsp and then click the link for either Business Intelligence or Financial Performance Management. In the Search box, type business viewpoint.

Changed features in 10.1.0

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

Enhancement to all adapters

In all adapters, you can name subscriptions. There is a column for the subscription names that makes it easier to find a subscription.

Enhancements to the relational data source adapter

In addition to improving the user interface for nominations and subscriptions, the following enhancements have been made to the relational data source adapter:

- You can import data into existing lists or hierarchies in IBM® Cognos® Business Viewpoint Studio.

- Database schemas and tables are displayed in folders.

- The relational adapter will determine if a join is necessary to correctly retrieve the data and allow you to specify how tables are joined if data from more than one table is mapped into the same Business Viewpoint object, such as a list or level.

- You can define which column is the key in the table when creating a subscription.

- If the database connection becomes out-of-date, such as a changed password to the database, you are prompted to re-enter the connection information and then update the subscription with the new information.

- You can use the Specify Primary Key Settings page to select the primary key generation type for the table that you are nominating to the Studio. You can also nominate and subscribe without defining a primary key.

- You can more easily connect to the database by using separate fields to enter the user, password, server name, port number, and database name. There is now a Test button for you to test the connection information you enter.
You can subscribe hierarchies to database tables.

For more information, see "Using relational data sources with Business Viewpoint Client" (p. 49).

Enhancements to the TM1 adapter

The following enhancements have been made to the IBM Cognos® TM1® adapter:

- You can now nominate a TM1 subset into IBM Cognos Business Viewpoint.
- You can create a subscription with multiple dynamic hierarchies to create one TM1 dimension.
- If a TM1 dimension has a weight attribute, it is carried forward to the Business Viewpoint master repository when nominating or subscribing to a static or dynamic hierarchy. Weight determines the contribution of an element to its consolidation in TM1.

For more information, see "Using IBM Cognos TM1 with Business Viewpoint Client" (p. 25).

What’s new in Business Viewpoint 8.4.1

Listed below are new features since the last release of IBM Cognos® Business Viewpoint. Links to directly-related topics are included.

New features in 8.4.1

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

- You can subscribe to and update data between IBM Cognos® 8 Business Viewpoint Studio and relational data sources by using the new relational adapter. For more information, see "Using relational data sources with Business Viewpoint Client" (p. 49).
- You can subscribe to and update data between Business Viewpoint Studio and IBM InfoSphere™ Master Data Management Server data sources by using the new IBM InfoSphere Master Data Management Server adapter. For more information, see "Using IBM InfoSphere Master Data Management Server with Business Viewpoint Client" (p. 65).

Changed features in 8.4.1

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

- You can now update or delete multiple subscriptions at a time.
- For the IBM Cognos® 8 Planning - Contributor Administration Console and IBM Cognos TM1® Architect, you can now map a business key to each property when subscribing. For more information, see "Subscribing" (p. 21) for Contributor, and "Subscribing" (p. 27) for TM1.
- You can now subscribe to an IBM Cognos Business Viewpoint Studio list as an e.List. For more information, see "Subscribing" (p. 21).
- You can now nominate IBM Cognos TM1 subsets to Business Viewpoint. For more information, see "Nominating data" (p. 25).
In the IBM Cognos TM1 adapter, you can now subscribe to a dynamic hierarchy that is based on cross-reference lists. For more information, see "Subscribing" (p. 27).

You can now map the Category Code and Source Value properties for the members in each level in Transformer to one or more surrogate key and member attribute business keys. You can also assign a priority to the selection. For more information, see "Subscribing" (p. 45).

In the Transformer adapter, you can now update a component that is linked to multiple parents in Business Viewpoint. For more information, see "Updating data" (p. 46).
Chapter 1: What's new?
Chapter 2: Getting started

With IBM® Cognos® Business Viewpoint Client, you can nominate, or migrate, master dimensional data from external IBM Cognos applications, relational datasources, IBM InfoSphere™ Master Data Management Server, or CSV files into a IBM Cognos Business Viewpoint Studio master repository. You then subscribe to Business Viewpoint Studio master dimensional data from your external IBM Cognos tools, relational datasources, IBM InfoSphere Master Data Management Server, or CSV files, and update the data to ensure it is synchronized between the two sources. From within Business Viewpoint Client, you can also open the Business Viewpoint Studio.

Working with master dimensions in different sources via Business Viewpoint Client involves the following:

- Planning your tasks.
- Understanding roles in Business Viewpoint Client.

Then you are ready to log in to Business Viewpoint Client to nominate, subscribe, and update master dimensions between Business Viewpoint Studio and external IBM Cognos tools, relational datasources, IBM InfoSphere Master Data Management Server, or CSV files.

Planning your tasks

Before you begin working with IBM® Cognos® Business Viewpoint Client, there are a number of tasks that you must complete first.

Know the following:

- Identify what data you want to manage.
- Identify where the data is located.
- Identify if the data that you will be nominating or subscribing to will be refreshed and how often.

For example, Chart of Accounts is updated monthly in IBM Cognos Planning so you update it when subscribing in Business Viewpoint Client so the data is synchronized between IBM Cognos Business Viewpoint Studio and IBM Cognos Planning - Analyst or IBM Cognos Planning - Contributor.

A dimension that is updated regularly has the following considerations:

- Will the data be managed completely in Business Viewpoint Studio?
- What changes must you make in the external system to avoid making the same changes each time you update the dimension from the source?
- If important values change for master dimensions in your external tool, you need to synchronize Business Viewpoint Studio and Business Viewpoint Client by running an update in Business Viewpoint Client.
Identify the stakeholders and their roles.

**Understanding roles in Business Viewpoint Client**

You have different roles when working in IBM Cognos Business Viewpoint Client.

A version can be public or private. The access to public or private versions, as well as the tasks that you can perform in Business Viewpoint Client depend on your assigned role.

- **Administrator**
  The administrator can nominate, subscribe to public and private versions, update to Business Viewpoint Studio, and update the component.

- **Modeler**
  The modeler can nominate, subscribe to public and private versions, update to Business Viewpoint Studio, and update the component.

- **Reviewer**
  The reviewer cannot nominate, subscribe, update to Business Viewpoint Studio, or update the component.

- **Nominator**
  The nominator can nominate and update to Business Viewpoint Studio. The nominator cannot subscribe or update the component.

- **Consumer**
  The consumer can subscribe to public versions, and update the component. The consumer cannot nominate or update to Business Viewpoint Studio.

Nominating data is migrating master dimensions from IBM Cognos - Analyst, IBM Cognos Contributor Administration Console, IBM Cognos TM1®, IBM Cognos Transformer, and IBM Cognos Controller, relational datasources, IBM InfoSphere™ Master Data Management Server, or from CSV files to the master dimension repository in IBM Cognos Business Viewpoint Studio.

Subscribing is creating a link between master dimensions that exist in Business Viewpoint Studio and external IBM Cognos tools, relational datasources, IBM InfoSphere Master Data Management Server, or CSV files, which allow you to track changes between two copies of the master data.

Updating is done when subscribing to ensure the two copies of master dimensions are the same between Business Viewpoint Studio and the external IBM Cognos tool, relational datasource, IBM InfoSphere Master Data Management Server, or CSV files.

So for example, you experiment with different ways to model a dimension, saving these as private versions. When you are ready to publish a version, you then create a public version. If you are defined as having a Consumer role in Business Viewpoint Studio, then you can only see the public versions and subscribe to that data in Business Viewpoint Client, you cannot nominate the data. To nominate the data, you must be defined as either both a Consumer and Nominator, or a Modeler or Administrator role.
Chapter 3: Using IBM Cognos Planning - Analyst with Business Viewpoint Client

You can use the IBM® Cognos® Business Viewpoint Client to nominate data, subscribe to data, and update data between the IBM Cognos Business Viewpoint Studio and IBM Cognos Planning - Analyst.

Launching Business Viewpoint Client from Analyst

You can start IBM® Cognos® Business Viewpoint Client from IBM Cognos - Analyst.

**Note:** Ensure that the Business Viewpoint Client is configured for Analyst. See the IBM® Cognos® Business Viewpoint Client *Installation and Configuration Guide*.

**Steps**

1. Start Analyst and log in.
2. Click the Start Business Viewpoint Client icon on the toolbar to launch Business Viewpoint Client.
3. Log in to Business Viewpoint Client.

Nominating data

Nominate the data that you want to migrate to the IBM® Cognos® Business Viewpoint Studio master repository.

When you nominate data to Business Viewpoint, you can create a new subscription to allow later updates to and from Business Viewpoint Studio.

**Note:** If Business Viewpoint Studio defines your access rights as a consumer role, you can only subscribe to data in Business Viewpoint Client, you cannot nominate data. To nominate data, you must have both a consumer and a nominator, or a modeler role.

**Steps**

1. From Business Viewpoint Client, click Nominate Data.
2. From the Select data page, choose a library that contains the D-List that you want to nominate to Business Viewpoint. Click Next.
3. From the Select Nomination Options page, you define the type of object to create during nomination. You can also consolidate data into existing Business Viewpoint lists or hierarchies. You can also choose to update the data at a later time in a subscription. Choose the action you want:
<table>
<thead>
<tr>
<th>Goal</th>
<th>Action</th>
</tr>
</thead>
<tbody>
<tr>
<td>Create a dimension in Business Viewpoint Studio</td>
<td>Select <strong>Create a new dimension</strong>. Type a dimension name or use the default name (D-List name). Choose either a new hierarchy or a list from the box. Type a name for the hierarchy or list, or use the default name.</td>
</tr>
<tr>
<td>Add the Analyst data to an existing dimension in Business Viewpoint Studio</td>
<td>Select <strong>Add to an existing dimension</strong>, then under <strong>Master Dimension</strong>, create a hierarchy or list in an existing dimension, or select an existing hierarchy or list and consolidate your D-List data into that hierarchy or list.</td>
</tr>
<tr>
<td>Lets you update the Analyst data that you are nominating now at a future time with a subscription.</td>
<td>Select the <strong>Update the data at a later time</strong> check box, and type a name for the subscription.</td>
</tr>
</tbody>
</table>

4. Click **Finish**.

**Subscribing**

To get a copy of an entry in the IBM® Cognos® Business Viewpoint Studio master repository for use in IBM Cognos - Analyst, create a link between the two sources using a subscription. This tracks changes between the master dimensions in Business Viewpoint Studio and the copy in Analyst.

Using the subscription wizard, select the version containing the desired dimension, and the specific data (list, set, or hierarchy) in that dimension to use in Analyst.

You can choose to use an alternate name or a translation of the member name by using an alias instead of the values in the Name attribute. For example, an alias is defined in Business Viewpoint Studio to include a different name or to use French instead of English. When you subscribe to that item in IBM Cognos Business Viewpoint Client, you can choose the French alias for the item.

**Note:** You can create individual subscriptions for as many entries as you require.

**Steps**

1. From Business Viewpoint Client, click **Subscribe**.

2. From the **Select Data** page, choose a dimension, select a version, then choose the object in the dimension in Business Viewpoint Studio to which you want to subscribe, and click **Next**.

   **Note:** The default is the latest version.

3. In the **Select location** page, choose where you want to save the dimension in Analyst, and click **Finish** to create the subscription.
Updating data

When you subscribe to a master dimension from IBM Cognos® Analyst, a copy of the master dimension from IBM Cognos Business Viewpoint Studio is moved to Analyst. If the master dimension is modified in either of these locations, the data will no longer be synchronized. Run an update to ensure that you have the same data in both places.

You can update or delete multiple subscription at a time. You can update the master dimensions or a component and specific version.

When you update a component, any data that has changed in Business Viewpoint Studio is also changed in Analyst. You must also select a version before you can update a subscription. The latest version is the default option, but you can choose any version.

When you update Business Viewpoint Studio, any changes to the data in Analyst will also be made in the Business Viewpoint repository.

Updating a subscription

You can update a specific subscription, or multiple subscriptions at once. This option is only available when you already created a subscription or subscriptions. When you update a subscription, you can update the component, such as a dimension in Analyst or update the master dimension in Business Viewpoint Studio.

Steps

1. Right-click an existing subscription, or click the check boxes for a subscription or multiple subscriptions, and click one of the following options:
   - Update component
   - Update Business Viewpoint Studio
   - Delete

   You must create a version before you can update a component. You must have an administrator, modeler, or nominator role to create versions.

2. If members have been deleted in Business Viewpoint Studio or added in the external target, you can select the **Delete all members in the target entry that are no longer in Business Viewpoint Studio** check box to remove the members in the target entry, such as a D-List.

   If you click Delete, the subscription is deleted but the data is not deleted. You cannot update or synchronize the dimension.

   **Note:** Removing dimension items may result in orphaned fact data.

3. Click OK.
Example - Using an Analyst dimension in TM1

You have a products D-List in IBM® Cognos® Planning - Analyst that you want to use in IBM Cognos TM1®. You want to change this dimension in Analyst, TM1, or IBM Cognos Business Viewpoint Studio and have the changes reflected in the other products that are subscribed to it.

The example uses a sample database called GreatOutdoors that is included with Business Viewpoint. The D-List is called "2 Products".

Moving data from Analyst to Business Viewpoint

1. Start Analyst and open the "great outdoors analyst" library.
   
   The D-List that we will use in this example is 2 Products. Take a look at 2 Products, noting that CAMPING EQUIPMENT is a calculation, a total of all lower-level products.

   Each application that you can use with Business Viewpoint has its own adapter.

2. To start Business Viewpoint Client with the Analyst adapter, click Start Business Viewpoint Client and log in with your Business Viewpoint Client user name and password.

   Each folder that you see is a library. Each library contains one or more D-Lists.

3. To nominate the 2 Products D-List into Business Viewpoint Studio, do the following:

   ● Click Nominate Data.
   
   ● From the Select data page, choose the great outdoors analyst library, click 2 Products, and then click Next. From the Select Nomination Options page, select Create a new dimension.

   ● Type a new name for the dimension, Great Outdoors.

   ● Type a new name for the hierarchy, GO Products.

   ● Click Finish.

4. Exit from Analyst and Business Viewpoint Client.

Enhancing the Analyst dimension in Business Viewpoint Studio

1. Navigate to Business Viewpoint Studio and log in with your Business Viewpoint Studio user name and password.

2. Expand the Great Outdoors dimension and select the GO Products hierarchy that you nominated.

   There are many ways to enhance the dimension and these are explained in the Business Viewpoint Studio User Guide. For this example, we will add a member and move a member.

3. Under Personal Accessories, add the members, Cameras and Field Guides.


5. Create a public version of the dimension.

**Updating Business Viewpoint Client**

1. Either restart IBM Cognos Business Viewpoint Client with the Analyst adapter, or if it is already started, then refresh it.
   - To update the 2 Products D-List, ensure that it is not open.
   - The yellow flag indicates that changes have been made to the subscription for GO Products in Business Viewpoint Studio.

2. Right-click the GO Products subscription, click **Update component**, click **Next**, and select the latest version.

3. Click **Next** and click **Finish**.
   - Note that the subscription has a blue check mark indicating that Analyst and Business Viewpoint Studio are synchronized.

4. Exit from Business Viewpoint Client.
   - If you start Analyst and explore the D-List, you will see that Cameras and Field Guides were added and that Tents were copied to Mountaineering Equipment. Before you continue with this example, exit from Analyst.

**Subscribing to GO Products from TM1**

1. Because there is a different adapter for each application, you must start TM1 Architect and then start the Business Viewpoint Client application by double-clicking the Business Viewpoint Client link from the Application folder.
   - Log in with your Business Viewpoint Client user name and password.

2. From Business Viewpoint Client, click **Subscribe**.

3. From the **Select data** page, expand the Great Outdoors dimension.
   - You see a list of versions for the dimension. Each version displays the hierarchies and lists in that dimension.

4. Expand the latest version, select the GO Products hierarchy, and click **Next**.

5. From the **Key mapping type selection** page, click **Next** to accept the basic options for this example.

6. In this example, do not select any attributes. Click **Next**.
   - When using your own data, you can optionally select only a few attributes to move to TM1.

7. From the **Select security** page, click **Next** to accept the default settings.
   - In this example, do not move the security model.

8. From the **Select location** page, you will see in what dimension your data will be added, as well as the TM1 server.
9. Click **Finish**.

10. Return to TM1 Architect, select **View**, and click **Refresh**.

    You can change GO Products in TM1 and then update the subscription in Business Viewpoint Client by right-clicking the subscription and clicking **Update Business Viewpoint Studio**.
Chapter 4: Using IBM Cognos Planning - Contributor with Business Viewpoint Client

You can use the IBM® Cognos® Business Viewpoint Client to nominate data, subscribe to data, and update data between the IBM Cognos Business Viewpoint Studio and the IBM Cognos Planning - Contributor Administration Console.

Configuring Contributor Administration Console to launch Business Viewpoint Client

You must configure the IBM® Cognos® Contributor Administration Console to enable integration with IBM Cognos Business Viewpoint Client.

Note: Ensure that you have configured the Business Viewpoint Contributor adapter before you configure the Contributor Administration Console to launch Business Viewpoint Client. For more information, see the IBM® Cognos® Business Viewpoint Client Installation and Configuration Guide.

Launching Business Viewpoint Client from Contributor Administration Console

You can start IBM® Cognos® Business Viewpoint Client from the IBM Cognos Contributor Administration Console.

Note: Ensure that the Business Viewpoint Client is configured for the Contributor Administration Console. See the IBM Cognos Business Viewpoint Client Installation and Configuration Guide.

Steps

1. Start the Contributor Administration Console and log in.

2. Click Tools, and then select Business Viewpoint Client.

   Note: Business Viewpoint Client is the default menu name. You can change the name by editing the string in the XML file.

3. Log in to Business Viewpoint Client.

Nominating data

Nominate the data that you want to migrate to the IBM® Cognos® Business Viewpoint Studio master repository.

When you nominate data to Business Viewpoint, you can create a new subscription to allow later updates to and from Business Viewpoint Studio. Subscribing makes a link between an e.List in the
IBM Cognos Contributor Administration Console and the master e.List data in Business Viewpoint Studio. An e.List is a hierarchical dimension which typically reflects the structure of the organization (for example, cost centers and profit centers). The e.List is the basis for the structure of a Contributor application. When you nominate, you work with the development application in Contributor only, not the production application.

When you nominate a Contributor dimension, you can also choose to move over e.Lists, any rights, and access tables in that dimension.

**Note:** If Business Viewpoint Studio defines your access rights as a consumer role, you can only subscribe to data in Business Viewpoint Client, you cannot nominate data. To nominate data, you must have both a consumer and a nominator, or a modeler role.

**Steps**

1. From Business Viewpoint Client, click **Nominate Data**.
2. From the **Select data** page, choose a data store that contains the dimension that you want to nominate to Business Viewpoint.
3. Expand the dimension and select either e.List, Rights, or any access tables that you also want to move to Business Viewpoint Studio. Click **Next**.
4. From the **Select Nomination Options** page, you define which type of object to create during nomination. You can also consolidate data into existing Business Viewpoint lists or hierarchies. You can also choose to update the data at a later time in a subscription.

Choose the action you want:

<table>
<thead>
<tr>
<th>Goal</th>
<th>Action</th>
</tr>
</thead>
<tbody>
<tr>
<td>Create a dimension in Business Viewpoint Studio</td>
<td>Select <strong>Create a new dimension</strong>. Type a dimension name or use the default name (e.List name). Choose either a new hierarchy or a list from the box. Type a name for the hierarchy or list, or use the default name.</td>
</tr>
<tr>
<td>Add the Contributor data to an existing dimension in Business Viewpoint Studio</td>
<td>Select <strong>Add to an existing dimension</strong> then from the <strong>Master Dimension</strong> page, create a hierarchy or list for an existing e.List, or select an existing hierarchy or list and consolidate your e.List data into that hierarchy or list.</td>
</tr>
<tr>
<td>Lets you update the Contributor data that you are nominating now at a future time with a subscription.</td>
<td>Select the <strong>Update the data at a later time</strong> check box, and type a name for the subscription.</td>
</tr>
</tbody>
</table>

5. Click **Finish** to nominate the dimension.
**Subscribing**

To get a copy of an e.List in the IBM® Cognos® Business Viewpoint Studio master repository for use in the IBM Cognos Contributor Administration Console, create a link between the two sources using a subscription. This tracks changes between the master dimensions in Business Viewpoint Studio and the copy in the Contributor Administration Console.

Using the subscription wizard, select the version containing the desired dimension, and the specific data (list, set, or a hierarchy) in that e.List to use in the Contributor Administration Console.

**Note:** When you subscribe to a Business Viewpoint Studio list, you can choose a Business Viewpoint Studio e.List as the target, and you can create individual subscriptions for as many e.Lists as you require.

You can choose to use an alternate name or a translation of the member name by using an alias instead of the values in the Name attribute. For example, an alias is defined in Business Viewpoint Studio to include a different name or to use French instead of English. When you subscribe to that item in IBM Cognos Business Viewpoint Client, you can choose the French alias for the item.

Optionally, you can include the security model for the items for which you are subscribing, which lets you create or update the Contributor security to reflect the security model in Business Viewpoint Studio.

**Note:** When you subscribe, you are working with the development application only, not the production application in Contributor.

**Steps**

1. From Business Viewpoint Client, click **Subscribe**.

2. From the **Select Data** page, choose a dimension, select a version, then choose the hierarchy, list, or set in the dimension in Business Viewpoint Studio to which you want to subscribe, and click **Next**.

   **Note:** The default is the latest version.

3. In the **Key mapping type selection** page, you select the type of business key mapping to use for each item.

   Choose the action you want:

<table>
<thead>
<tr>
<th>Goal</th>
<th>Purpose</th>
<th>Action</th>
</tr>
</thead>
<tbody>
<tr>
<td>Basic</td>
<td>To use the name property as a key.</td>
<td>Select the <strong>Perform Key Validation</strong> check box to validate the business keys that you select. If any members in the subscription are missing values for the business keys that you select, then you can either go back to reselect business keys, or proceed and have the subscription use the master key for any missing values. Click Next.</td>
</tr>
</tbody>
</table>
**Action**

<table>
<thead>
<tr>
<th>Goal</th>
<th>Purpose</th>
<th>Action</th>
</tr>
</thead>
<tbody>
<tr>
<td>Advanced</td>
<td>To map a business key to each property.</td>
<td>Select the <strong>Perform Key Validation</strong> check box to validate the business keys that you select. If any members in the subscription are missing values for the business keys that you select, then you can either go back to reselect business keys, or proceed and have the subscription use the master key for any missing values. For each property, select a business key, then click <strong>Next</strong>. Click the check box next to each item that you want Business Viewpoint to use as the business key. Business Viewpoint Client will search each item for a business key and use the first one it finds.</td>
</tr>
</tbody>
</table>

4. Click **Next**.

5. From the **Select attributes** page, select the attributes that you want to move. You can select individual attributes, or you can choose to move them all. Click **Next**.

6. In the **Select security** page, select the **Move the security model for this item** check box if you want to include the security model of the Contributor e.List for which you are subscribing. Click **Next**.

7. In the **Select location** page, choose where you want to save the dimension in Contributor.

8. Expand the application folder and select whether you want to push the e.List or Rights into Contributor, and click **Finish** to create the subscription.

**Updating data**

When you subscribe to a master dimension (e.List) from IBM® Cognos® Contributor, a copy of the master dimension from IBM Cognos Business Viewpoint Studio is moved to Contributor. If the master dimension is modified in either of these locations, the data will no longer be synchronized. Run an update to ensure that you have the same data in both places.

You can update or delete multiple subscription at a time. You can update the master dimensions or a component and specific version.

When you update a component, any data that has changed in Business Viewpoint Studio is also changed in Contributor. You must also select a version before you can update a subscription. The latest version is the default option, but you can choose any version.

When you update Business Viewpoint Studio, any changes to the data in Contributor will also be made in the Business Viewpoint repository.
### Updating a subscription

You can update a specific subscription, or multiple subscriptions at once. This option is only available when you already created a subscription or subscriptions. When you update a subscription, you can update the component such as data in Contributor or update the master dimension in Business Viewpoint Studio.

#### Steps

1. Right-click an existing subscription, or click the check boxes for a subscription or multiple subscriptions, and click one of the following options:
   - Update component
   - Update Business Viewpoint Studio
   - Delete

   You must create a version before you can update a component. You must have an administrator, modeler, or nominator role to create versions.

2. If members have been deleted in Business Viewpoint Studio or added in the external target, you can select the **Delete all members in the target entry that are no longer in Business Viewpoint Studio** check box to remove the members in the target entry, such as a e.List.

   If you click **Delete**, the subscription is deleted but the data is not deleted. You cannot update or synchronize the dimension.

   **Note:** Removing dimension items may result in orphaned fact data.

3. Click **OK**.
Chapter 5: Using IBM Cognos TM1 with Business Viewpoint Client

You can use the IBM® Cognos® Business Viewpoint Client to nominate data, subscribe to data, and update data between the IBM Cognos Business Viewpoint Studio and the IBM Cognos TM1® application.

Launching Business Viewpoint Client from IBM Cognos TM1 Architect

You can start IBM® Cognos® Business Viewpoint Client from IBM Cognos TM1® Architect.

Note: Ensure that the Business Viewpoint Client is configured for TM1. See the IBM® Cognos® Business Viewpoint Client Installation and Configuration Guide.

Steps
1. Start TM1 Architect and log in.
2. Expand the tree to the Business Viewpoint Client application.
3. Double-click the ViewpointClient_<TM1 adapter name>.cmd file.
4. Log on to Business Viewpoint Client.

Nominating data

Nominate the data that you want to migrate from IBM® Cognos®TM1® to the IBM Cognos Business Viewpoint Studio master repository.

If a TM1 dimension has a weight attribute, it is carried forward to the Business Viewpoint master repository when nominating to a static or dynamic hierarchy. In Business Viewpoint Studio, the TM1 weight attribute is added as an attribute in a relationship table that you can modify. The relationship table should have parent-child and Tm1ElementWeight lookups. When you subscribe back to TM1, the modified weight attribute moves back to TM1. Weight determines what the contribution of an element is to its consolidation in TM1.

Note: The weight attribute can vary depending on the parent in TM1.

When you nominate data to Business Viewpoint, you can create a new subscription to allow later updates to and from Business Viewpoint Studio.

If the TM1 dimension has subsets, you can also nominate a TM1 subset to Business Viewpoint instead of the entire TM1 dimension.

If you nominate a TM1 subset to Business Viewpoint, then you cannot update the TM1 subset back to TM1.
Note: If Business Viewpoint Studio defines your access rights as a consumer role, you can only subscribe to data in Business Viewpoint Client, you cannot nominate data. To nominate data, you must have both a consumer and a nominator, or a modeler role.

**Steps**

1. From Business Viewpoint Client, click **Nominate Data**.

2. From the **Select data** page, choose a library that contains the TM1 dimensions that you want to nominate to Business Viewpoint. If the TM1 dimension has subsets, you can nominate a subset instead of the entire TM1 dimension by expanding the **Subsets** folder and selecting a subset to nominate. Click **Next**.

3. TM1 dimensions can define any number of alias columns for a member name. If you have alias columns defined, then from the **Select Alias** page, select which alias columns to use as the member name in Business Viewpoint Studio and then click **Next**.

4. From the **Select Nomination Options** page, choose the action that you want:

<table>
<thead>
<tr>
<th>Goal</th>
<th>Action</th>
</tr>
</thead>
<tbody>
<tr>
<td>Create a dimension in Business Viewpoint Studio</td>
<td>Click <strong>Create a new dimension</strong>. Type a dimension name or use the default name. Click either <strong>New Hierarchy</strong> or <strong>New List</strong> from the box. If you nominate as a <strong>New Hierarchy</strong>, then type a name for the hierarchy, or use the default name and skip to step 6. If you nominate as a <strong>New List</strong>, click the <strong>Update the data at a later time</strong> check box, and type a subscription name (or use the default name), and then click <strong>Next</strong>. From the <strong>List nomination types</strong> box, select one of the following, and then skip to step 7:</td>
</tr>
<tr>
<td>– Create a member list, a relationship table, and a parent-child dynamic hierarchy</td>
<td>This is the default option, used to manage TM1 weights in Business Viewpoint Studio.</td>
</tr>
<tr>
<td>– Create one or more lists</td>
<td>Choose this option to create level-based dynamic hierarchies.</td>
</tr>
</tbody>
</table>
Add the TM1 data to an existing dimension in Business Viewpoint Studio

Click **Add to an existing dimension**, then under **Master Dimension**, select the dimension to which you want to add the list or hierarchy.

You can choose to consolidate your data into an existing hierarchy or list (if your dimension contains one), or you can choose to create a new hierarchy or list in which to consolidate your data.

If you nominate as a **New List**, click the **Update the data at a later time** check box, and type a subscription name (or use the default name), and then click **Next**. From the **List nomination types** box, select one of the following, and then skip to step 7:

- **Create a member list, a relationship table, and a parent-child dynamic hierarchy**
  This is the default option, used to manage TM1 weights in Business Viewpoint Studio.

- **Create one or more lists**
  Choose this option to create level-based dynamic hierarchies.

5. Select the **Update the data at a later time** check box and type a subscription name to subscribe to the dimension that you are nominating. This lets you update the data that you are nominating now at a future time with a subscription. If you do not create a subscription, you cannot update and use your nominated data.

  **Note:** A default subscription name is automatically generated, which you can change.

6. Click **Finish**.

### Subscribing

To get a copy of an entry in the IBM® Cognos® Business Viewpoint Studio master repository for use in IBM Cognos TM1®, create a link between the two sources using a subscription. This tracks changes between the master dimensions in Business Viewpoint Studio and the copy in TM1.

Using the subscription wizard, select the version containing the desired dimension, and the specific data (list, set, or a hierarchy) in that dimension to use in TM1. If you select a TM1 dimension and one or more of its attributes, it will create a single data structure in TM1.

You can select two or more Business Viewpoint dynamic hierarchies and roll them up to a new TM1 dimension with a consolidated hierarchy. If these multiple hierarchies contain the same element with the same context, then a roll-up is created, otherwise duplicate handling will take place.
Note: You can also subscribe to a dynamic hierarchy that is based on cross-reference lists.

You can use an alternate name or a translation of the member name by using an alias instead of the values in the Name attribute. For example, an alias is defined in Business Viewpoint Studio to include a different name or to use French instead of English. When you subscribe to that item in IBM Cognos Business Viewpoint Client, you can choose the French alias for the item.

You can create individual subscriptions for as many entries as you require.

Optionally, you can include the security model for the items for which you are subscribing, which lets you create or update the TM1 security dimensions to reflect the security model in Business Viewpoint Studio.

Steps
1. From Business Viewpoint Client, click Subscribe.

2. From the Select Data page, choose the dimension and select a version, then choose the object in the dimension in Business Viewpoint Studio to which you want to subscribe.
   
   **Note:** The default is the latest version.

3. From the Key mapping type selection page, choose the type of business key mapping to use for each item.

Choose the action you want.

<table>
<thead>
<tr>
<th>Goal</th>
<th>Purpose</th>
<th>Action</th>
</tr>
</thead>
<tbody>
<tr>
<td>Basic</td>
<td>To use the name property or alias as a key.</td>
<td>Select the <strong>Perform Key Validation</strong> check box to validate the business keys that you select. If any members in the subscription are missing values for the business keys that you select, then you can either go back to reselect business keys, or proceed and have the subscription use the master key for any missing values.</td>
</tr>
</tbody>
</table>

Click Next.
### Updating data

When you subscribe to a master dimension from IBM® Cognos® TM1®, a copy of the master dimension from IBM Cognos Business Viewpoint Studio moves to TM1. If the master dimension is modified in either of these locations, the data will no longer be synchronized. Run an update to ensure that you have the same data in both places.

You can update or delete multiple subscriptions at a time. You can update the master dimensions or a component and specific version.
When you update a component, any data that has changed in Business Viewpoint Studio is also changed in TM1, including the weight attribute. You must also select a version before you can update a subscription. The latest version is the default option, but you can choose any version. When you update Business Viewpoint Studio, any changes to the data in TM1 is also made in the Business Viewpoint repository.

**Updating a subscription**

You can update a specific subscription, or multiple subscriptions at once. This option is only available when you already created a subscription or subscriptions. When you update a subscription, you can update the component - such as a dimension in TM1, or update the master dimension in Business Viewpoint Studio.

**Steps**

1. Right-click an existing subscription, or click the check boxes for a subscription or multiple subscriptions, and click one of the following options:
   - Update component
   - Update Business Viewpoint Studio
   - Delete

   **Note:** You must create a version before you can update a component. You must have an administrator, modeler, or nominator role to create versions.

2. If members are deleted in Business Viewpoint Studio or added in the external target, you can select the **Delete all members in the target entry that are no longer in Business Viewpoint Studio** check box to remove the members in the target entry, such as a TM1 dimension.

   **Note:** Removing dimension items may result in orphaned fact data.

3. If you click **Delete**, the subscription is deleted but the data is not deleted. You cannot update or synchronize the dimension, and click **OK**.

**Example - Using an Analyst dimension in TM1**

You have a products D-List in IBM® Cognos® Planning - Analyst that you want to use in IBM Cognos TM1®. You want to change this dimension in Analyst, TM1, or IBM Cognos Business Viewpoint Studio and have the changes reflected in the other products that are subscribed to it. The example uses a sample database called GreatOutdoors that is included with Business Viewpoint. The D-List is called "2 Products".

**Moving data from Analyst to Business Viewpoint**

1. Start Analyst and open the "great outdoors analyst" library.
   
The D-List that we will use in this example is 2 Products. Take a look at 2 Products, noting that CAMPING EQUIPMENT is a calculation, a total of all lower-level products.

   Each application that you can use with Business Viewpoint has its own adapter.
2. To start Business Viewpoint Client with the Analyst adapter, click **Start Business Viewpoint Client** and log in with your Business Viewpoint Client user name and password. Each folder that you see is a library. Each library contains one or more D-Lists.

3. To nominate the 2 Products D-List into Business Viewpoint Studio, do the following:
   - Click **Nominate Data**.
   - From the **Select data** page, choose the great outdoors analyst library, click 2 Products, and then click **Next**. From the **Select Nomination Options** page, select **Create a new dimension**.
   - Type a new name for the dimension, **Great Outdoors**.
   - Type a new name for the hierarchy, **GO Products**.
   - Click **Finish**.

4. Exit from Analyst and Business Viewpoint Client.

**Enhancing the Analyst dimension in Business Viewpoint Studio**

1. Navigate to Business Viewpoint Studio and log in with your Business Viewpoint Studio user name and password.

2. Expand the Great Outdoors dimension and select the GO Products hierarchy that you nominated. There are many ways to enhance the dimension and these are explained in the Business Viewpoint Studio User Guide. For this example, we will add a member and move a member.

3. Under Personal Accessories, add the members, **Cameras** and **Field Guides**.


5. Create a public version of the dimension.


**Updating Business Viewpoint Client**

1. Either restart IBM Cognos Business Viewpoint Client with the Analyst adapter, or if it is already started, then refresh it. To update the 2 Products D-List, ensure that it is not open. The yellow flag indicates that changes have been made to the subscription for GO Products in Business Viewpoint Studio.

2. Right-click the GO Products subscription, click **Update component**, click **Next**, and select the latest version.

3. Click **Next** and click **Finish**. Note that the subscription has a blue check mark indicating that Analyst and Business Viewpoint Studio are synchronized.

4. Exit from Business Viewpoint Client.
If you start Analyst and explore the D-List, you will see that Cameras and Field Guides were added and that Tents were copied to Mountaineering Equipment. Before you continue with this example, exit from Analyst.

**Subscribing to GO Products from TM1**

1. Because there is a different adapter for each application, you must start TM1 Architect and then start the Business Viewpoint Client application by double-clicking the Business Viewpoint Client link from the Application folder. Log in with your Business Viewpoint Client user name and password.
2. From Business Viewpoint Client, click **Subscribe**.
3. From the **Select data** page, expand the Great Outdoors dimension. You see a list of versions for the dimension. Each version displays the hierarchies and lists in that dimension.
4. Expand the latest version, select the GO Products hierarchy, and click **Next**.
5. From the **Key mapping type selection** page, click **Next** to accept the basic options for this example.
6. In this example, do not select any attributes. Click **Next**. When using your own data, you can optionally select only a few attributes to move to TM1.
7. From the **Select security** page, click **Next** to accept the default settings. In this example, do not move the security model.
8. From the **Select location** page, you will see in what dimension your data will be added, as well as the TM1 server.
9. Click **Finish**.
10. Return to TM1 Architect, select **View**, and click **Refresh**. You can change GO Products in TM1 and then update the subscription in Business Viewpoint Client by right-clicking the subscription and clicking **Update Business Viewpoint Studio**.

**Example - Moving dimension data between TM1 and Business Viewpoint**

This example shows you how to move dimension data between IBM® Cognos® TM1® and IBM Cognos Business Viewpoint Studio with IBM Cognos Business Viewpoint Client. Before you follow the example, familiarize yourself with the topics on nominating, subscribing, and updating in "Using IBM Cognos TM1 with Business Viewpoint Client" (p. 25).

In the example, you will nominate a dimension in a TM1 source to a new dimension in Business Viewpoint and create a subscription which makes a link between the two dimensions. In Business Viewpoint Studio, you will:
Make changes to the dimension and update the source dimension in TM1 with these changes.

Then you will update the data in TM1 and update Business Viewpoint Studio.

Finally, you will create a new subscription that collects data from a dimension version in Business Viewpoint into a brand new dimension in TM1.

You will nominate data both as a parent/child list and as a multiple list. A parent/child list is useful if you want to create dynamic hierarchies in Business Viewpoint Studio. A multiple list will display different lists for all the levels in the hierarchy in Business Viewpoint Studio.

The example uses a sample database called GreatOutdoors that is included with Business Viewpoint.

**Steps to nominate dimension data as a parent/child list and dynamic hierarchy**

1. Start TM1 Architect and log in.
2. Expand the tree to the Business Viewpoint Client application.
3. Double-click the `ViewpointClient_<TM1 adapter name>.cmd` file.
4. Log on to Business Viewpoint Client.
5. Click Nominate Data.
6. From the Select data page, you see the contents of the GreatOutdoors database sample. In this example, you will work with the Products dimension.
7. Expand the database, select Products and click Next.
8. From the Select Alias page, click Next, as you will not use an alias name in this example.
9. From the Select Nomination Options page, define the details of the nomination by doing the following:
   - Select Create a new dimension and type a name for the new dimension, for example Tutorial Dimension. This will copy the content of the Products dimension in TM1 to a new dimension with this name in Business Viewpoint Studio.
   - Select New List. With this option, you can choose between creating lists with a default dynamic hierarchy in Business Viewpoint, or separate lists for all the levels in the hierarchy. Leave the name of the list as the default, Products.
   - Select Update the data at a later time, and type the subscription name Tutorial Subscription, and then click Next. This will create a subscription that links the data between TM1 and Business Viewpoint so that you can update it at a later time.
10. From the List nomination types page, select Create a member list, a relationship table, and a parent-child dynamic hierarchy, and then click Finish.

The Tutorial Subscription is now available in the subscription list in Business Viewpoint Client.
In the next part of the example, you will modify the dimension data in Business Viewpoint Studio.

**Steps to modify dimension data in Business Viewpoint**

1. In Business Viewpoint Client, click **Open Business Viewpoint Studio** and log on to the application. Expand **Dimensions**. **Tutorial Dimension** display in the dimension list.
   
   You want to make some changes to your dimension: you want to create a new member, move a member from one parent to another, and finally rename a member.

2. Expand **Tutorial Dimension** and notice the three objects: **Lists**, **Relationship Tables**, and **Hierarchies**.
   - In **Lists**, all members display, regardless of level, and with the attributes from the source dimension in TM1.
   - In **Relationship Tables**, the relationships between each child and parent member in the dimension display.
   - In **Hierarchies**, a default dynamic hierarchy has been created, based on the relationship tables.
   - In **Sets**, you can create a filter that you can reuse.

3. To create a new member, click **Tutorial Dimension List** and do the following:
   - Double-click the first cell of the last row and type a name for a new member, for example **Rubber boots**.
   - Type **Rubber boots** in the remaining alias and attribute cells in the row.

4. To assign the new member to a parent, click **Tutorial Dimension Relationship Table**.
   - Double-click the first cell of the last row, and find and select **Rubber boots**.
   - In the **Parent** column, find and select **CAMPING EQUIPMENT**.
   - You need to attribute a weight to the new member, so in the **Weight** column, type **1**.

5. To move the **Cooking Gear** member to another parent, double-click the **Parent** cell right next to **Cooking Gear**, and find and select **MOUNTAINEERING EQUIPMENT**.

6. To rename a member, click **Tutorial Dimension List**, then double-click **Lanterns** and type **Torches**.

7. To make it possible to update the source dimension in TM1 with these changes, do the following:
   - In Business Viewpoint Studio, right-click **Tutorial Dimension**, click **Version Management** > **Create New Version**.
   - By default, the name of the new version is a time-stamp. Click **OK**. Disregard any warnings about members that are not approved.
In the next part of the example, you will modify your dimension in TM1 and then update it back to Business Viewpoint.

**Steps to modify dimension data in TM1 and update it back to Business Viewpoint**

1. Go to Business Viewpoint Client and click **Refresh**. A flag symbol in front of **Tutorial Subscription** shows that new versions exist.

2. Ensure that **Tutorial Subscription** is selected, click **Update data**, and select **Update component**.
   - From the **Delete option** page, click **Next** because you have not deleted anything from the dimension.
   - From the **Version Selection** page, select the version that you just created, and click **Finish**.
   The result of the update displays with the message **Successful update**.

3. Click **Close**.

4. To view the updates in TM1 and update Business Viewpoint Studio with additional changes, start TM1 Architect.

5. Expand the TM1 server and log on to **greatoutdoors**.

6. Expand **Dimensions**.

7. Right-click **Products** and select **Edit Dimension Structure**.
   Notice the changes that you made in Business Viewpoint Studio:
   - the new member **Rubber boots** displays under **CAMPING EQUIPMENT**,
   - **Cooking Gear** has moved to **MOUNTAINEERING EQUIPMENT**,
   - **Lanterns** have been changed to **Torches**.

8. In TM1, add another child element to **Cooking Gear** in **MOUNTAINEERING EQUIPMENT** by doing the following:
   - In the **Dimension Editor** in TM1 Architect, right-click **Cooking Gear** and select **Insert Child**.
   - In **Insert Element Name**, type a member name, for example **Kettles**. Click **Add** and then click **OK**.
   - Click **OK** to close the **Dimension Editor**, and **Yes** in the **Save changes to dimension** dialog box.

9. To copy the modified dimension from TM1 to Business Viewpoint, go to Business Viewpoint Client and click **Refresh**.

10. Ensure that **Tutorial Subscription** is selected, click **Update data**, select **Update Business Viewpoint Studio**, and click **Finish**.

11. From the **Show Results** page, click **Close**.
12. Go to Business Viewpoint Studio and click Refresh. In the list, make sure that the new product Kettles displays in the Tutorial Dimension.

In the next part of the example, you will make one more change to the dimension in Business Viewpoint Studio and then create a new subscription that collects data from a version in Business Viewpoint Studio into a new dimension in TM1.

Steps to move dimension data from Business Viewpoint to a new dimension in TM1

1. In Business Viewpoint Studio, add a new member to the list, for example Pans. Do not forget to add a name in all the Alias cells in the table.

2. In the Relationship Table, find and select the new member, and assign it to parent Cooking Gear.

3. To create a new version that includes this change, do the following:
   - In Create Version, click OK.
   - By default, the name of the new version is a time-stamp. Click OK. Disregard any warnings about members that are not approved.

4. To create a subscription that copies the modified dimension into a new dimension in TM1, go to Business Viewpoint Client and click Subscribe.

5. From the Select data page, expand the Tutorial Dimension and the new version. Select the Tutorial Dimension List and click Next.

6. From the Key mapping type selection page, select Basic: use the name property or an alias, if available and click Next.

7. From the Alias selection page, select Name and click Next.

8. From the Select attributes page, select Description and click Next.

9. From the Select security page, ensure that Move the security model for this item is not selected and click Next.

10. From the Select location page, type a name for your new dimension, for example, Tutorial Dimension 2, and type a name for the new subscription, for example, Tutorial Subscription 2. Then click Finish.

11. Go to TM1 Architect, click Refresh Available Server and notice that your new Tutorial Dimension 2 is available in the greatoutdoors database.

You have now successfully moved existing data from Business Viewpoint to a new dimension in TM1 and created a subscription that links the source and target data. In the last part of the example,
you will nominate data to Business Viewpoint using the second nomination alternative - as multiple lists.

**Steps to nominate dimension data as multiple lists from TM1 to Business Viewpoint**

1. Go to Business Viewpoint Client and click **Nominate Data**.

2. From the **Select data** page, select **Products** and click **Next**.

3. From the **Select Alias** page, click **Next**, as you will not use an alias name in this example.

4. From the **Select Nomination Options** page, do the following:
   - Select **Create a new dimension** and type a name for the new dimension, for example **Tutorial Multiple List Dimension**.
   - Select **New List**.
   - Select **Update the data at a later time**, and type a subscription name, for example **Tutorial Multiple List Subscription**, and click **Next**.

5. From the **Select the type of list nomination** page, select **Create one or more lists**, and click **Finish**. The **Tutorial Multiple List Subscription** is now available in the subscription list in Business Viewpoint Client.

6. Go to Business Viewpoint Studio, and click **Refresh**.

   Notice your new **Tutorial Multiple List Dimension** in **Dimensions**.

   Expand **Lists**, and notice that a separate list for every level in the **Products** hierarchy exists. These lists include cross-references to other levels, and can be used as the base for creating, for example, new dynamic hierarchies.
Chapter 6: Using IBM Cognos Controller with Business Viewpoint Client

You can use the IBM® Cognos® Business Viewpoint Client to nominate data, subscribe to data, and update data between the IBM Cognos Business Viewpoint Studio and IBM Cognos Controller.

Nominating data

Nominate the data that you wish to migrate to the IBM® Cognos® Business Viewpoint Studio master repository.

When you nominate data to Business Viewpoint, you can create a new subscription to allow later updates to and from Business Viewpoint Studio.

Note: If Business Viewpoint Studio defines your access rights as a consumer role, you can only subscribe to data in Business Viewpoint Client, you cannot nominate data. To nominate data, you must have both a consumer and a nominator, or a modeler role.

Steps

1. From Business Viewpoint Client, click Nominate Data.

2. From the Select data page, choose a library that contains the Controller schemas that you want to nominate to Business Viewpoint, for example:
   - AccountStructure
   - CompanyStructure
   - ExtendedDimension 1 - 4
   - CurrencyConversionRates
   - Country Codes
   - Currency Codes

   Note: Country Codes and Currency Codes are for group and active language informational purposes only, you cannot subscribe them.

   Click Next.

3. From the Select Nomination Options page, you define the type of object to create during nomination. You can also consolidate data into existing Business Viewpoint lists or hierarchies.

   You can also choose to update the data at a later time in a subscription.

   Choose the action you want:
Create a dimension in Business Viewpoint Studio

<table>
<thead>
<tr>
<th>Goal</th>
<th>Action</th>
</tr>
</thead>
<tbody>
<tr>
<td>Select a new dimension.</td>
<td>Type a dimension name or use the default name (Controller dimension name).</td>
</tr>
<tr>
<td>Choose either a new hierarchy or a list from the box. Type a name for the hierarchy or list, or use the default name.</td>
<td></td>
</tr>
<tr>
<td>Add the Controller data to an existing dimension in Business Viewpoint Studio</td>
<td>Select Add to an existing dimension, then under Master Dimension, create a hierarchy or list in an existing dimension, or select an existing hierarchy or list and consolidate your csv data into that hierarchy or list.</td>
</tr>
<tr>
<td>Lets you update the Controller data that you are nominating now at a future time with a subscription.</td>
<td>Select the Update the data at a later time check box, and type a name for the subscription.</td>
</tr>
</tbody>
</table>

4. Click Finish.

**Subscribing**

To get a copy of an entry in the IBM® Cognos® Business Viewpoint Studio master repository for use in IBM Cognos Controller, create a link between the two sources using a subscription. This tracks changes between the master dimensions in Business Viewpoint Studio and the copy in Controller.

Using the subscription wizard, select the version containing the desired dimension, and the specific data (list, hierarchy, and set) in that dimension to use in Controller.

You can choose to use an alternate name or a translation of the member name by using an alias instead of the values in the Name attribute. For example, an alias is defined in Business Viewpoint Studio to include a different name or to use French instead of English. When you subscribe to that item in IBM Cognos Business Viewpoint Client, you can choose the French alias for the item.

**Note:** You can create individual subscriptions for as many entries as you require.

**Steps**

1. From Business Viewpoint Client, click Subscribe.

2. From the Select Data page, choose the dimension, select a version, then select the object in Business Viewpoint Studio to which you want to subscribe, and click Next.

   **Note:** The default is the latest version.
3. In the **Select location** page, choose a schema in Controller and the type of data that you want to subscribe, and then where to save the Business Viewpoint Studio data that you specified, and click **Finish** to create the subscription.

### Updating data

When you subscribe to master dimensions from IBM Cognos® Controller, a copy of the master dimensions from IBM Cognos Business Viewpoint Studio is moved to Controller. If the master dimension is modified in either of these locations, the data will no longer be synchronized. Run an update to ensure that you have the same data in both places.

You can update or delete multiple subscription at a time. You can update the master dimensions or a component with a specific version.

When you update a component, any data that has changed in Business Viewpoint Studio is also changed in Controller. You must also select a version before you can update a subscription. The latest version is the default option, but you can choose any version.

When you update Business Viewpoint Studio, any changes to the data in Controller will also be made in the Business Viewpoint repository.

### Updating a subscription

You can update a specific subscription, or multiple subscriptions at once. This option is only available when you already created a subscription or subscriptions. When you update a subscription, you can update the component, such as data in Controller, or update the master dimension in Business Viewpoint Studio.

**Steps**

1. Right-click an existing subscription, or click the check boxes for a subscription or multiple subscriptions, and click one of the following options:
   - **Update component**
   - **Update Business Viewpoint Studio**
   - **Delete**

   You must create a version before you can update a component. You must have an administrator, modeler, or nominator role to create versions.

2. If members have been deleted in Business Viewpoint Studio or added in the external target, you can select the **Delete all members in the target entry that are no longer in Business Viewpoint Studio** check box to remove the members in the target entry, such as a Controller dimension.

   If you click **Delete**, the subscription is deleted but the data is not deleted. You cannot update or synchronize the dimension.

   **Note:** Removing dimension items may result in orphaned fact data.

3. Click **OK**.
Chapter 7: Using IBM Cognos Transformer with Business Viewpoint Client

You can use the IBM® Cognos® Business Viewpoint Client to subscribe to and update data between the IBM Cognos Business Viewpoint Studio and IBM Cognos Transformer.

Launching Business Viewpoint Client from Transformer

You can start IBM® Cognos® Business Viewpoint Client from IBM Cognos Transformer.

Note: Ensure that the Business Viewpoint Client is configured for Transformer. See the IBM® Cognos® Business Viewpoint Client Installation and Configuration Guide.

Steps
1. Start Transformer and open your model.
2. Click the Business Viewpoint Client icon on the toolbar, or click Tools > Business Viewpoint Client. You can also start Business Viewpoint Client by double-clicking the generated cmd file found in install location/bin.
3. Log in to Business Viewpoint Client.

Mapping Business Viewpoint external permissions to Transformer

IBM® Cognos® Business Viewpoint and IBM Cognos Transformer integration supports a simple mapping of Business Viewpoint external permissions to the Transformer model. An external permission is a user, group, or role defined in Content Manager. Business Viewpoint defines Read, Write and Propagate external permission flags on Business Viewpoint objects. When the external permissions for a Business Viewpoint object are set with Read, Write, and Propagate flags, then a custom view in Transformer is created.

<table>
<thead>
<tr>
<th>External Permission Settings</th>
<th>The Custom View in Transformer</th>
</tr>
</thead>
<tbody>
<tr>
<td>Read = False, Write = False, Propagate = True</td>
<td>Defines the member as Exclude for a dimension or category.</td>
</tr>
<tr>
<td>Read = False, Write = False, Propagate = False</td>
<td>Sets the category as Apex of the view.</td>
</tr>
<tr>
<td>Read = True, Write = True, Propagate = True</td>
<td>Sets the object (dimension or category) as accessible to the security object.</td>
</tr>
</tbody>
</table>
When you subscribe to a Business Viewpoint dimension in Transformer with **Move the Security Model for this Item** selected, then a parent custom view called Business Viewpoint Studio is created. A child view for each external permissions object in Business Viewpoint Studio is also created with **Apex** or **Exclude** defined on members as described above.

Each security object that has been added to a member or dimension also causes a custom view to be created in Transformer. The custom view will have one security object attached, which is the object added in Business Viewpoint Studio.

When a security object is added to a member in a dimension, all the other members are set as accessible by default. This is also true if the security object is added to the dimension and the flags set so that the dimension is accessible.

You must add the user, group, or role security object to a member or dimension so that it will be imported into the Transformer model. Once imported, it can be assigned to a cube that is then accessible by the user.

The parent Business Viewpoint Studio custom view is specially flagged so that if it is attached to a PowerCube, then all of its child custom views are automatically attached to the PowerCube. You do not need to assign individual custom views under the Business Viewpoint Studio parent to PowerCubes.

**Nominating data**

Nominate the data that you want to migrate to the IBM® Cognos® Business Viewpoint Studio master repository.

When you nominate data to Business Viewpoint, you can create a new subscription to allow later updates to and from Business Viewpoint Studio.

You can only nominate a Transformer dimension from the IBM Cognos Business Viewpoint Client.

**Note:** If Business Viewpoint Studio defines your access rights as a consumer role, you can only subscribe to data in Business Viewpoint Client, you cannot nominate data. To nominate data, you must have both a consumer and a nominator, or a modeler role.

**Steps**

1. In Transformer, open the model from which you want to nominate a dimension. You must have the model open in Transformer before you can nominate a dimension in Business Viewpoint Client.
   
   **Note:** Ensure only one instance of Transformer is running when you use Business Viewpoint Client.

2. From Business Viewpoint Client, click **Nominate Data**.

3. From the **Select data** page select the dimension from your open model that you want to nominate to Business Viewpoint. Click **Next**.

4. From the **Select Nomination Options** page, you dimension to create during nomination. You can also consolidate data into existing Business Viewpoint hierarchies.
   
   You can also choose to update the data at a later time in a subscription.
Choose the action you want.

<table>
<thead>
<tr>
<th>Goal</th>
<th>Action</th>
</tr>
</thead>
<tbody>
<tr>
<td>Create a dimension in Business Viewpoint Studio</td>
<td>Select <strong>Create a new dimension</strong>. Type a dimension name or use the default Transformer dimension name.</td>
</tr>
<tr>
<td>Add the Transformer model dimension to an existing dimension in Business Viewpoint Studio</td>
<td>Select <strong>Add to existing dimension</strong>, then under <strong>Master Dimension</strong>, create a hierarchy in an existing dimension, or select an existing hierarchy and consolidate your Transformer dimension into that hierarchy.</td>
</tr>
<tr>
<td>Lets you update the Transformer data that you are nominating now at a future time with a subscription.</td>
<td>Select the <strong>Update the data at a later time</strong> check box, and type a name for the subscription.</td>
</tr>
</tbody>
</table>

5. Click **Finish**.

**Subscribing**

To get a copy of an entry in the IBM® Cognos® Business Viewpoint Studio master repository for use in IBM Cognos Transformer, create a link between the two sources using a subscription. This tracks changes between the master dimensions in Business Viewpoint Studio and the copy in Transformer.

Using the subscription wizard, select the dimension and then the desired version, and the specific data (hierarchy and set) in that dimension to use in Transformer.

You can choose to use an alternate name or a translation of the member name by using an alias instead of the values in the Name attribute. For example, an alias is defined in Business Viewpoint Studio to include a different name or to use French instead of English. When you subscribe to that item in IBM Cognos Business Viewpoint Client, you can choose the French alias for the item.

**Note:** You can create individual subscriptions for as many entries as you require.

**Steps**

1. Open the model in Transformer that is the target of your subscription.
   
   **Note:** You cannot select the model file in Business Viewpoint Client. You must open the model in Transformer before you create your subscription. If you are subscribing the dimension into a new model, ensure that you first save the model in Transformer.

2. From Business Viewpoint Client, click **Subscribe**.

3. From the **Select Data** page, choose the dimension, select a version, then choose the object in the dimension in Business Viewpoint Studio to which you want to subscribe.
4. From the **Keys mapping** subscribe page, you must select a Business Viewpoint Studio key to map to the **Category code** and **Source value** Transformer properties. Click the **Business Viewpoint Studio Keys** drop-down list to choose a specific Business Viewpoint Studio key for each property.

   **Note:** You must map each key to a property.

5. If you have an alias defined, from the **Alias selection** page, select the alias and click **Next**.

6. From the **Select Security** page, choose whether you want the security objects to be imported from Business Viewpoint Studio.

7. Click **Next**.

8. In the **Select location** page, you will see where your subscribed dimension will be saved in the Transformer model that is open, and you can type a name for the dimension. You can also type a name for the subscription. Click **Finish** to create the subscription.

---

**Updating data**

When you subscribe to a master dimension from IBM® Cognos® Transformer, a copy of the master dimension from IBM Cognos Business Viewpoint Studio is moved to Transformer. If the master dimension is modified in either of these locations, the data will no longer be synchronized. Run an update to ensure that you have the same data in both places.

You can update or delete multiple subscriptions at a time. You can update the master dimensions or a component and specific version.

When you update a component, any data that has changed in Business Viewpoint Studio is also changed in Transformer. You must also select a version before you can update a subscription. The latest version is the default option, but you can choose any version. You can update a component that is linked to multiple parents in Business Viewpoint.

If you selected to import security, then the custom views created during import from Business Viewpoint Studio will be updated and current security will be applied.

When you update Business Viewpoint Studio, any changes to the data in Transformer will also be made in the Business Viewpoint repository.

**Note:** You are not required to have the Transformer model open when you update.

To update existing subscriptions, right-click a subscription and choose to **Update component** or **Update Business Viewpoint Studio**.

---

**Updating a subscription**

You can update a specific subscription, or multiple subscriptions at once. This option is only available when you already created a subscription or subscriptions. When you update a subscription,
you can update the component, such as a dimension, in Transformer, or update the master dimension in Business Viewpoint Studio.

**Steps**

1. Right-click an existing subscription, or click the check boxes for a subscription or multiple subscriptions, and click one of the following options:
   - Update component
   - Update Business Viewpoint Studio
   - Delete

   You must create a version before you can update a component. You must have an administrator, modeler, or nominator role to create versions.

2. If members have been deleted in Business Viewpoint Studio or added in the external target, you can select the **Delete all members in the target entry that are no longer in Business Viewpoint Studio** check box to remove the members in the target entry, such as a Transformer dimension.

   If you click **Delete**, the subscription is deleted but the data is not deleted. You cannot update or synchronize the dimension.

   **Note:** Removing dimension items may result in orphaned fact data.

3. Click **OK**.

**Automatically updating for Transformer**

When you create a new model in IBM Cognos Transformer, you can automatically update dimensions in your Transformer model before a PowerCube is built. You are then notified in the Transformer log file when dimensions are updated.

**Steps**

1. From the File menu, click **Model Properties**, then click the **Business Viewpoint** tab.

2. Select how you want your dimensions updated before a PowerCube build is done.
   - Select **None** to perform your updates manually.
   - Select **Notify if updated** to be notified when a dimension has been updated, then choose to either update the dimension or leave it as is.
   - Select **Always update** to have a dimension automatically update when it changes.

**Using Transformer command line options**

Transformer uses the `-z` command line option to specify IBM® Cognos® Business Viewpoint Client integration options.

**Note:** Specify only a single option after `-z`.

The options are
username=<username> (Specifies the Business Viewpoint Client username)
password=<password> (Specifies the Business Viewpoint Client password)
avto=[none|notify|always] (Overrides the model setting for dimension update before a PowerCube build)

**Example**
This UNIX® example builds PowerCubes in a IBM Cognos Transformer model that has Business Viewpoint dimension update enabled.

```
./cogtr.exe -z username=myUsername -z password=myPassword -c -mModel.mdl
```
Chapter 8: Using relational data sources with Business Viewpoint Client

You can use the IBM® Cognos® Business Viewpoint Client to nominate to and update data between the IBM Cognos Business Viewpoint Studio and relational data sources, including native ODBC data sources, Oracle, Microsoft® SQL Server, or IBM® DB2®.

The data that you nominate, subscribe to, and update will depend on your external database permissions, not Business Viewpoint permissions. Ensure that you have the proper external permissions to the database before working with Business Viewpoint.

If you are creating a new subscription, ensure that there is a table with the necessary columns and datatypes, and that you have the proper permissions to access it.

Connecting to a relational data source

Use the IBM® Cognos® Business Viewpoint Client relational adapter to connect to a relational data source.

Steps
1. From the Start menu, click IBM Cognos Business Viewpoint Client, and then click Business Viewpoint Client Relational Adapter.
2. From the Business Viewpoint Client main screen, click Subscribe or Nominate Data.
3. From the Specify Relational Data Source page, select a data source from the Data Source Type box.
4. If you choose ODBC, then from the Datasource box, select the ODBC data source to which you want to connect; otherwise, in the User box, type the user name.
   Note: If the ODBC data source is not available from the list of ODBC data sources, you can create a new ODBC data source name (DSN).
5. In the Password box, type the password.
6. You must also enter the connection information for your relational data source other than ODBC.
   • In the Server Name box, type the name of the server to which you want to connect.
   • In the Port Number box, type the port number.
   • In the Database Name box, type the name of the database where your relational data is located.
   • Click Test Connection to verify that the information is correct, and that your connection is valid.
7. Click Next.

Note: If you are using the JDBC-ODBC bridge to access data that contains accented characters, such as cedilla, circumflex, or umlaut, use a native JDBC driver such as Oracle, IBM® DB2, or Microsoft® SQL Server.

**Using ODBC data sources with the Business Viewpoint Client**

To use ODBC data sources with Business Viewpoint Client, you must assign a user name and password to all ODBC sources that you want to use with Business Viewpoint. Do this when you create the data source. For information about creating ODBC data sources and specifying the user name and password, see the documentation for your data source.

**Nominating data**

Nominate the data that you want to migrate to the IBM® Cognos® Business Viewpoint Studio master repository.

You can nominate data by selecting from a list of tables or views, or by entering a Microsoft® SQL99 standard SQL query. When you nominate, you either create a dimension in Business Viewpoint with hierarchies and lists, or consolidate tables and views into existing Business Viewpoint hierarchies or lists.

When you nominate data to Business Viewpoint, you can create a new subscription to allow later updates to and from Business Viewpoint Studio. By subscribing to the data that you just nominated, you can keep the data synchronized between the two sources.

Note: If Business Viewpoint Studio defines you as having a consumer role, you can only subscribe to data in Business Viewpoint Client, you cannot nominate data. To nominate data, you must have both a consumer and a nominator, or a modeler role.

**Steps to nominate dimensions or tables, or free-form SQL queries**

1. From Business Viewpoint Client, click Nominate Data.

2. Connect to a relational data source.

3. From the Select nomination method page, click Select from a list of objects, or Enter SQL queries. If you are nominating tables, then expand the database and select the tables that you want to nominate to Business Viewpoint Studio. Choose one of the following:
   
   - Expand the Tables folder and select the check boxes for the tables to nominate.
   
   - Expand the Views folder and select the views to nominate. Views are tables that have been previously joined together.

   If you are nominating SQL queries, then enter the free-form SQL queries. If you enter multiple queries, then separate them with a semi-colon ";". You can also click Test SQL query to verify the SQL is correct.

   Click Next.
4. From the **Select Nomination Options** page, you define the type of object to create during nomination. You can create a dimension with a static hierarchy with levels, or a dimension with lists or dynamic hierarchies.

You can nominate a table into single or multiple lists. If you nominate into multiple lists, then a dynamic hierarchy with levels, along with a relationship table, are generated from the lists in Business Viewpoint by default.

When nominating, you can also consolidate data from database tables into existing Business Viewpoint lists or hierarchies.

You can also choose to update the data at a later time using a subscription.

Choose the action you want:

<table>
<thead>
<tr>
<th>Goal</th>
<th>Action</th>
</tr>
</thead>
<tbody>
<tr>
<td>Create a static hierarchy in a new dimension.</td>
<td>Click <strong>Create a new dimension</strong> and then select <strong>Hierarchy</strong> from the box.</td>
</tr>
<tr>
<td>Create a list or dynamic hierarchy.</td>
<td>Click <strong>Create a new dimension</strong> and then select <strong>List/Dynamic Hierarchy</strong> from the box.</td>
</tr>
<tr>
<td>Add data to lists or hierarchies (consolidation) that are in an existing dimension.</td>
<td>Click <strong>Add to an existing dimension</strong>, then under <strong>Master Dimension</strong>, select the dimension to which you want to add the list or hierarchy.</td>
</tr>
<tr>
<td>Lets you update the data that you are nominating now at a future time with a subscription.</td>
<td>Select the <strong>Update the data at a later time</strong> check box, and type a name for the subscription. The name of the table with which you are working is the default subscription name. The subscription name must be unique.</td>
</tr>
</tbody>
</table>

5. Define how you want to map your source items.

From the **Define the mapping** page, rename the dimension under **Dimension Data**, then from the **Source** box, expand a table, select a column, and click **Add**.

You can also click **New List** to create a list in the dimension, or click **Remove** to remove an attribute or list from the dimension.

The item is added to the dimension in the **Dimension Data** box as the name of the list, and to the **Attributes** box as the **Name** attribute. You can change the item used as the **Name** attribute without affecting the **Dimension Data** box.

You can rename the **New Dimension** to whatever dimension name you require.

6. If you want to use a different type of key, click the button next to the attribute and select one of the following types:
7. To mark an attribute as the key identifier, click the \[ \text{ } \] button next to the attribute and click **Identifier**. A yellow key symbol displays next to the attribute. You can:
   - Specify single key identifiers.
   - Specify the table primary key as the identifier and an alternate attribute as a source key. If you specify the same attribute as both the primary and source keys, then the source key is treated as the identifier, and the specified identifier is ignored.
   - If the table has no primary key, you can specify a combination of columns as the source key. If the table does not have a primary key, then the source key is used as both the primary key and the Business Viewpoint identifier.
   - For slowly changing dimension type two, the source key compares rows to determine whether the new row version is required. The primary key is used for new rows.
   - If a table has multiple columns primary keys, you can map all keys as a source key.  
     **Note:** The Name attribute cannot be defined as a source key, only as an identifier.

8. You can change the attribute type by clicking the \[ \text{ } \] button to the left of the name and selecting one of the following attribute types:

<table>
<thead>
<tr>
<th>Attribute Type</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Alias</td>
<td>Adds data that you can use as an alternate name for an object, such as a name in another language.</td>
</tr>
</tbody>
</table>
| Text          | Displays data as text even when numbers are entered.  
**Caution:** Business Viewpoint Client converts the data type from the database to Business Viewpoint Studio, and performs the proper data type mapping automatically. Change this attribute type only if necessary. |
<table>
<thead>
<tr>
<th>Attribute Type</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Integer</td>
<td>Displays data as an integer.</td>
</tr>
<tr>
<td></td>
<td><strong>Caution:</strong> Business Viewpoint Client converts the data type from the database to Business Viewpoint Studio, and performs the proper data type mapping automatically. Change this attribute type only if necessary.</td>
</tr>
<tr>
<td>Decimal</td>
<td>Displays data as a number that has decimals.</td>
</tr>
<tr>
<td></td>
<td><strong>Caution:</strong> Business Viewpoint Client converts the data type from the database to Business Viewpoint Studio, and performs the proper data type mapping automatically. Change this attribute type only if necessary.</td>
</tr>
<tr>
<td>Date</td>
<td>Displays data as dates.</td>
</tr>
<tr>
<td></td>
<td><strong>Caution:</strong> Business Viewpoint Client converts the data type from the database to Business Viewpoint Studio, and performs the proper data type mapping automatically. Change this attribute type only if necessary.</td>
</tr>
<tr>
<td>Picklist</td>
<td>Adds a list of values that display in a drop-down list, and specifies that a picklist attribute can contain only one value.</td>
</tr>
<tr>
<td>Multi-select Picklist</td>
<td>Adds a list of values that display in a drop-down list, and specifies that a picklist attribute can contain multiple values.</td>
</tr>
<tr>
<td>Lookup</td>
<td>Adds a drop-down list that looks up values from a list.</td>
</tr>
<tr>
<td></td>
<td>Select the lookup relationships that you want created in Business Viewpoint.</td>
</tr>
<tr>
<td></td>
<td>To set an attribute as Lookup and define the lookup relationship, from the <strong>Define the mapping</strong> page, select the attribute, click the button to the left of the attribute, and click <strong>Lookup</strong>. From the <strong>Select Data</strong> page, select the attribute identifier to which you want to look up, and click <strong>OK</strong>. The lookup relationship between the two attributes is shown under the attribute in the <strong>Define the mapping</strong> page.</td>
</tr>
<tr>
<td></td>
<td>After you define the Lookup attribute, you can edit the definition by right-clicking the lookup attribute and clicking <strong>Edit Lookup Source</strong>.</td>
</tr>
</tbody>
</table>

9. Click **Next**.
10. If you are working with static hierarchies or mapping multiple database tables to one hierarchy or list, mapping multiple database tables to multiple lists, or if you have a combination of tables that are previously joined and tables that are currently not joined, then Business Viewpoint Client determines if a join is necessary and you must specify how they are related. From the Specify Table Relationship page, select a table and column from the drop-down list, choose the type of operator, for example =, >, <, like, not like, and then choose the table and column to which it joins. Perform this step for each table and column that you need to join. Click Preview Data to see the data that is retrieved based on the relationship list. Click Add a row to join more tables. Click Removed Selected to delete any joins that have the check box selected. Click Preview Data to see the data that is being retrieved based on the relationships that you just specified. Under Generated SQL Statement, you can see the SQL that is written based on the table relationships that you create. Click Next.

11. From the Specify Primary Key Settings page, select a primary key generation type for the table that you are nominating to Business Viewpoint Studio. You can nominate without defining a primary key, but an identifier is required even if the table has no primary key defined. You can also optionally choose to work with slowly changing dimensions. From the Primary Key box, select one of the following key types:

   - **Database Generated** - the database will generate the key automatically.
   - **Increment Maximum Key** - Business Viewpoint Client selects the maximum key value and increments it by one for each new row. This applies to numeric primary keys only.
   - **Manually Entered** - the key is added manually in Business Viewpoint Studio. There is no need for key management.
   - **SQL Expression** - you can enter a valid SQL statement that will generate a unique key. The view must have a column that contains a unique row identifier value.

12. If you want your table to work with slowly changing dimensions, click Edit for the table that you want to set a slowly changing dimension type. From the Slowly Changing Dimension Editor page, select one of the following slowly changing dimension types from the box:

<table>
<thead>
<tr>
<th>Dimension Type</th>
<th>Action</th>
</tr>
</thead>
<tbody>
<tr>
<td>Slowly Changing Dimension Type One</td>
<td>Use to overwrite old data.</td>
</tr>
<tr>
<td></td>
<td>Type one does not track historical data and is commonly used when correcting data errors like misspellings.</td>
</tr>
</tbody>
</table>
### Dimension Type

<table>
<thead>
<tr>
<th>Dimension Type</th>
<th>Action</th>
</tr>
</thead>
<tbody>
<tr>
<td>Slowly Changing Dimension Type Two</td>
<td>Use to create multiple records in the dimensional tables with separate keys. A new record is inserted with every change made. Type two tracks historical data.</td>
</tr>
<tr>
<td>Slowly Changing Dimension Type Three</td>
<td>Type three has limited historical data preservation based on the number of columns designated for storing historical data.</td>
</tr>
<tr>
<td>Slowly Changing Dimension Hybrid</td>
<td>Use to combine types one, two, and three.</td>
</tr>
</tbody>
</table>

13. If you selected Slowly Changing Dimension Types Two, Three, or Hybrid, do the following:

- Select the table columns (fields) that you want involved in the changing state of the dimension.
- Map the **End Date** and **Start Date** for slowly changing dimension Type Two. Map the effective date for slowly changing dimension Type Three. Start and end dates allow for proper versioning of the dimension.
- Click **OK**.

14. Click **Finish**.

### Subscribing

To get a copy of an entry in the IBM® Cognos® Business Viewpoint Studio master repository for use with relational databases, create a link between the two sources using a subscription. This tracks changes between the master dimensions in Business Viewpoint and the copy in the relational database on your system.

If you are creating a new subscription, ensure that there is a table with the necessary columns and datatypes and that you have the proper permissions to access it.

Using the subscription wizard, select the dimension, the desired version, and the specific list in that dimension that contains the data to be moved in the relational database.

You can choose to use an alternate name or a translation of the member name by using an alias instead of the values in the Name attribute. For example, an alias is defined in Business Viewpoint to include a different name or to use French instead of English. When you subscribe to that item in Business Viewpoint Client, you can choose the French alias for the item.

**Note:** You can create individual subscriptions for as many entries as you require.

### Steps

1. From the Business Viewpoint Client, click **Subscribe**.
2. From the **Select data** page, choose the dimension, select a version, then choose the list in the dimension in Business Viewpoint Studio to which you want to subscribe. Click **Next**.

3. From the **Select location** page, choose the table or view for where you want to subscribe the Business Viewpoint Client object. Also type a subscription name. The name of the Business Viewpoint Studio list, hierarchy, or set is defined as the default name of the subscription, and click **Next**.

4. From the **Attribute to column mapping** page, map your attributes to the appropriate Business Viewpoint tables by doing the following:
   - From the **Source** box, select an attribute.
   - From the **Target** box, click a corresponding column to which you want to map the attribute.
   - Click **Map**.
   - Repeat for each attribute and column until you have mapped all attributes.
   - Ensure that you map according to data type. For example, do not map a number attribute to a text column.
   - Click the mapped attribute in the Target column and add it to the database key. Click the button next to the attribute, and click **Add to Database Key**.

5. From the **Specify Primary Key Settings** page, select a primary key generation type for the table that you are subscribing from Business Viewpoint Studio. You can subscribe without defining a primary key, but an identifier is required even if the table has no primary key defined. You can also optionally choose to work with slowly changing dimensions.

   From the **Primary Key** box, select one of the following key types:
   - **Database Generated** - the database will generate the key automatically.
   - **Increment Maximum Key** - Business Viewpoint Client selects the maximum key value and increments it by one for each new row. This applies to numeric primary keys only.
   - **Manually Entered** - the key is added manually in Business Viewpoint Studio. There is no need for key management.
   - **SQL Expression** - you can enter a valid SQL statement that will generate a unique key.

   **Note:** The view must have a column that contains a unique row identifier value.

6. If you want your table to work with slowly changing dimensions, click **Edit** for the table that you want to set a slowly changing dimension type. From the **Slowly Changing Dimension Editor** page, select one of the following slowly changing dimension types from the box:

<table>
<thead>
<tr>
<th>Dimension Type</th>
<th>Action</th>
</tr>
</thead>
<tbody>
<tr>
<td>Slowly Changing Dimension Type One</td>
<td>Use to overwrite old data with new data. Type one does not track historical data and is commonly used when correcting data errors like misspellings.</td>
</tr>
</tbody>
</table>
### Dimension Types

<table>
<thead>
<tr>
<th>Dimension Type</th>
<th>Action</th>
</tr>
</thead>
<tbody>
<tr>
<td>Slowly Changing</td>
<td>Use to create multiple records in the dimensional tables with</td>
</tr>
<tr>
<td>Dimension Type Two</td>
<td>separate keys. A new record is inserted with every change made.</td>
</tr>
<tr>
<td></td>
<td>Type two tracks historical data.</td>
</tr>
<tr>
<td>Slowly Changing</td>
<td>Type three has limited historical data preservation based on the</td>
</tr>
<tr>
<td>Dimension Type Three</td>
<td>number of columns designated for storing historical data.</td>
</tr>
<tr>
<td>Slowly Changing</td>
<td>Use to combine types one, two, and three.</td>
</tr>
<tr>
<td>Dimension Hybrid</td>
<td></td>
</tr>
</tbody>
</table>

7. If you selected Slowly Changing Dimension Types Two, Three, or Hybrid, do the following:
   - Select the table columns (fields) that you want involved in the changing state of the dimension.
   - Map the **End Date** and **Start Date** for slowly changing dimension Type Two. Map the effective date for slowly changing dimension Type Three. Start and end dates allow for proper versioning of the dimension.
   - Click **OK**.

8. Click **Finish** to create the subscription.

### Updating data

When you subscribe to a master dimension from IBM® Cognos® Business Viewpoint, a copy of the master dimension from Business Viewpoint Studio is moved to the relational database on your system. If the data is modified in either of these locations, then the master dimension and the table will no longer be synchronized. Run an update to ensure that you have the same data in both places.

You can update or delete multiple subscriptions at a time. You can update the master dimensions or a table from a specific version of a master dimension.

When you update a component, any data that has changed in Business Viewpoint Studio is also changed in the relational database. You must also select a version before you can update a subscription. The latest version is the default option, but you can choose any version.

When you update Business Viewpoint Studio, any changes to the data in the relational database will also be made in the Business Viewpoint repository.

If you nominate a table with Slowly Changing Dimension type two, and make changes in Business Viewpoint Studio and then update component, a new row is inserted in the database, and by default, in the Business Viewpoint Studio object.
Updating a subscription

You can update a specific subscription, or multiple subscriptions at once. This option is only available when you already created a subscription or subscriptions. When you update a subscription, you can update the component - such as a table in a relational database, or update the master dimension in Business Viewpoint Studio.

Steps
1. Right-click an existing subscription, or click the check boxes for a subscription or multiple subscriptions, and click one of the following options:
   - Update component
   - Update Business Viewpoint Studio
   - Delete

   You must create a version in Business Viewpoint Studio before you can update a component. You must have an administrator, modeler, or nominator role to create versions.

2. If members have been deleted in Business Viewpoint Studio or added in the external target, you can select the **Delete all members in the target entry that are no longer in Business Viewpoint Studio** check box to remove the members in the target entry.

   If you click **Delete**, the subscription is deleted but the data is not deleted. You can no longer update or synchronize the dimension with the table.

   **Note:** Removing dimension items may result in orphaned fact data.

3. Click OK.

Example - Moving relational data between Microsoft SQL Server and Business Viewpoint

This example shows you how to move relational data between Microsoft® SQL Server and IBM® Cognos® Business Viewpoint Studio with IBM Cognos Business Viewpoint Client. Before you follow the example, familiarize yourself with the topics on nominating, subscribing, and updating in "Using relational data sources with Business Viewpoint Client" (p. 49).

In the example, you will nominate three relational database tables from Microsoft SQL Server to Business Viewpoint, create a new dimension with a dynamic hierarchy, and create a subscription that makes a link between the relational data in Microsoft SQL Server and Business Viewpoint.

In Business Viewpoint Studio, you will make changes to the dimension and then update the source data in Microsoft SQL Server with these changes. Finally, you will modify the data in Microsoft SQL Server and update that change back to Business Viewpoint.

This example uses a sample called gosales that is included with Business Viewpoint. You will use the following three database tables for this example:

- PRODUCT
Note: You should be very familiar with Microsoft SQL server and relational databases before you complete this example.

Steps to nominate data from relational data source to Business Viewpoint

1. Log on to Business Viewpoint Client and connect to a Microsoft SQL Server data source. For more information, see "Connecting to a relational data source" (p. 49).

2. Click Nominate Data.

3. From the Select nomination method page, click Select from a list of objects and expand the gosales folder, then expand the Tables folder and select the check boxes for the following tables:
   - PRODUCT
   - PRODUCT_LINE
   - PRODUCT_TYPE

   Click Next.

4. From the Select Nomination Options page, do the following:
   - You want to create a dynamic hierarchy, so click Create a new dimension, and select List/Dynamic Hierarchy from the drop-down list.
   - Select the Update the data at a later time check box. This will create a subscription that will link the data between Business Viewpoint and Microsoft SQL Server so you can update it at a later time. Type a name for the subscription, for example, Tutorial Subscription.
   - Click Next.

5. Define how you want to map your source items. You will
   - Rename the dimension under Dimension Data to Tutorial Dimension.
   - In the Source box, expand gosales.PRODUCT_LINE, select PRODUCT_LINE_EN, and click Add to move it to Tutorial Dimension under Dimension Data.
   - In the Source box, select PRODUCT_LINE_CODE and click Map.
   - Mark PRODUCT_LINE_CODE as the key identifier. Click the [(identifier)] button next to PRODUCT_LINE_CODE and click Identifier. A yellow key symbol shows that it is the key identifier.
   - Map the rest of the PRODUCT_LINE tables as Attributes. In the Source box, highlight PRODUCT_LINE_CS through PRODUCT_LINE_TH excepting PRODUCT_LINE_EN which you mapped earlier. Click Map.

6. To map the gosales.PRODUCT_TYPE table, do the following:
In the Source box, expand gosales.PRODUCT_TYPE, select PRODUCT_TYPE_EN, and click Add to move it to Tutorial Dimension under Dimension Data.

In the Source box, select PRODUCT_LINE_CODE and click Map.

Click the button to the left of the PRODUCT_LINE_CODE and select Lookup as the attribute type.

From the Select Data page, select PRODUCT_TYPE_EN as the attribute to which you want it to look up, and click OK. The lookup relationship between the two attributes is shown under the attribute in the Define the mapping page.

In the Source box, select PRODUCT_TYPE_CODE and click Map.

Mark PRODUCT_TYPE_CODE as the key identifier. Click the button next to PRODUCT_TYPE_CODE and then click Identifier. A yellow key symbol displays next to PRODUCT_TYPE_CODE showing that it is the key identifier.

Map the rest of the PRODUCT_TYPE tables as Attributes. In the Source box, highlight PRODUCT_TYPE_CS through PRODUCT_TYPE_TH excepting PRODUCT_TYPE_EN which you mapped earlier. Click Map.

7. To map the final table gosales.PRODUCT, do the following:

In the Source box, expand gosales.PRODUCT and select BASE_PRODUCT_NUMBER, and click Add to move it to Tutorial Dimension under Dimension Data.

In the Source box, select PRODUCT_NUMBER and click Map.

Make this the key identifier. Click the button next to PRODUCT_NUMBER and then click Identifier. A yellow key symbol displays next to PRODUCT_NUMBER showing that it is the key identifier.

In the Source box, select PRODUCT_TYPE_CODE and click Map.

Click the button to the left of the name and select Lookup as the attribute type.

From the Select Data page, select PRODUCT_NUMBER as the attribute to which you want it to look up, and click OK. The lookup relationship between the two attributes is shown under the attribute in the Define the mapping page.

Map the rest of the PRODUCT tables as Attributes. In the Source box, highlight DISCONTINUED_DATE through PRODUCT_SIZE_CODE, excepting PRODUCT_NUMBER which you mapped earlier. Click Map, and then click Next.

8. From the Specify Primary Key Settings page, select a primary key generation type for the table that you are nominating to Business Viewpoint Studio. For this example, select Manually Entered for all three tables. For this example, do not edit the Slowly Changing Dimensions.

9. Click Finish.

You have successfully nominated PRODUCT, PRODUCT_LINE, and PRODUCT_TYPE tables from a relational database to Business Viewpoint using Business Viewpoint Client.
In the next part of the example, you will modify the dimension data in Business Viewpoint Studio. You want to make some changes to your dimension: you want to create a new member, move a member from one parent to another and finally rename a member.

**Steps to modify dimension data in Business Viewpoint**

1. In Business Viewpoint Client, click Open Business Viewpoint Studio and log on to the application. Expand Dimensions. Tutorial Dimension displays in the dimension list.

2. Expand Tutorial Dimension and notice that in Lists, there are the three that you nominated, and each has all of the members, regardless of level, and with the attributes from the source dimension in Microsoft SQL Server.

3. To rename a member, click PRODUCT_TYPE_EN again, and click Safety and type Climbing Safety.

4. To create a new dynamic hierarchy to view the data in a different way, do the following:
   - Right-click Tutorial Dimension and select New Dynamic Hierarchy.
   - From the Specify name and description page, type Tutorial Hierarchy 2, and then click Next.
   - You want this to be a level-based hierarchy, so from the Specify the hierarchy type page, select Level-based hierarchy, and then click Next.
   - Build the levels in your new dynamic hierarchy from the lists that you created in the Tutorial Dimension. From the Create levels from lists page, under Source, click PRODUCT_TYPE_EN and click New Level to make this the first level in the Tutorial Hierarchy 2. Under Source, click PRODUCT_LINE_EN and then click New Level to make this the second level. Finally, under Source, click BASE_PRODUCT_NUMBER and click New Level to make this the last level in the new hierarchy. Click Next.
   - From the Specify relationships page, you can change the relationships between the hierarchy levels, but in this case, you can leave them as default. Click Next.
   - From the Change the root members page, you want to show all members as root members, so click Next.
   - From the Review the summary page, click Next to create the hierarchy.
   - From the Results confirmation page, notice that you created a hierarchy with three levels. Click Finish.

5. You want to see the new member that you added called Backpack, and the member that you renamed to Climbing Safety. Select Tutorial Hierarchy 2, and then click Diagram to view the members of the new hierarchy in diagram view.

   The list is too long to show all at the same time, so click the down arrow next to Tutorial Hierarchy 2 in the diagram view until you see your new and renamed members.

6. To update the source dimension in Microsoft SQL Server with these changes, do the following:
In Business Viewpoint Studio, right-click **Tutorial Dimension**, click **Version Management** > **Create New Version**.

- By default, the name of the new version is a time-stamp. Click **OK**. Disregard any warnings about members that are not approved.

In the next part of the example, you will modify your dimension in Microsoft SQL Server and then update it back to Business Viewpoint.

**Steps to modify data in Microsoft SQL Server and update it back to Business Viewpoint**

1. Go back to Business Viewpoint Client if it is still open, or restart Business Viewpoint Client and click the refresh button to the right of **Update data**. A flag symbol in front of **Tutorial Subscription** shows that new versions exist.

2. Ensure that **Tutorial Subscription** is selected, click **Update data**, and select **Update component**.
   - From the **Delete option** page, click **Next** because you have not deleted anything from the dimension.
   - From the **Version Selection** page, select the version that you just created and click **Finish**.

   From the **Show Results** page, the result of the update displays with the message **Successful update**.

3. Click **Close**.

   Now you want to view the updates in Microsoft SQL Server and make additional changes.

4. Start Microsoft SQL Server and see that **Backpack** was added, and **Safety** was renamed to **Climbing Safety**.

5. Make a change to a member in Microsoft SQL Server, for example in **PRODUCT_TYPE_EN**, change **Lanterns** to **Mini-Lanterns**.

6. To copy the modified data from Microsoft SQL Server to Business Viewpoint, go to Business Viewpoint Client and click the refresh button to the right of **Update data**.

7. Ensure that **Tutorial Subscription** is selected, click **Update data**, select **Update Business Viewpoint** and click **Finish**.

8. From the **Show Results** page, click **Close**.

In the next part of the example, you will go to Business Viewpoint and see the member that you changed from **Lantern** to **Mini-Lanterns**.

**Steps to view modified data from Microsoft SQL Server in Business Viewpoint**

1. Either go back to Business Viewpoint Studio, or restart Business Viewpoint Studio.

2. Click **Refresh**.

3. Select **Tutorial Hierarchy 2**, and then click **Diagram**.
The list is too long to show all at the same time, so click the down arrow next to **Tutorial Hierarchy 2** in the diagram view until you see that **Lanterns** is now **Mini-Lanterns**.

You have now successfully moved changed data from Microsoft SQL Server to Business Viewpoint. Overall, in this example, you have:

- Nominated data from Microsoft SQL Server to Business Viewpoint via Business Viewpoint Client.
- Renamed an existing member in Business Viewpoint.
- Updated that data back to Microsoft SQL Server.
- Renamed another member in Microsoft SQL Server and updated that changed data back to Business Viewpoint.

Your data is now synchronized between Microsoft SQL Server and Business Viewpoint, providing one version of the truth.
Chapter 9: Using IBM InfoSphere Master Data Management Server with Business Viewpoint Client

You can use the IBM® InfoSphere™ Master Data Management Server adapter to nominate database views from the IBM InfoSphere Master Data Management Server to IBM® Cognos® Business Viewpoint Studio.

The database views are read from an IBM InfoSphere Master Data Management Server staging database and nominated to a target database for Business Viewpoint Studio. You can then synchronize database views from the target database back to the staging database.

**Note:** You must configure the target and staging databases in IBM Cognos Configuration. For more information, see the IBM Cognos Business Viewpoint Client Installation and Configuration Guide.

Nominating data

Start the IBM® InfoSphere™ Master Data Management Server adapter and log in.

Nominate the database views that you want to migrate from the IBM InfoSphere Master Data Management Server staging database to the IBM® Cognos® Business Viewpoint target database.

You can nominate data by selecting from a list of tables or views, or by entering a Microsoft® SQL99 standard SQL query. When you nominate, you either create a dimension in Business Viewpoint with hierarchies and lists, or consolidate tables and views into existing Business Viewpoint hierarchies or lists.

**Note:** If Business Viewpoint Studio defines your access rights as a consumer role, you can only subscribe to data in Business Viewpoint Client, you cannot nominate data. To nominate data, you must have both a consumer and a nominator, or a modeler role.

**Steps**

1. From Business Viewpoint Client, click **Nnominate Data.**

2. From the **Select nomination method** page, click **Select from a list of objects**, or **Enter SQL queries**. If you are nominating tables, then expand the database and select the tables that you want to nominate to Business Viewpoint Studio. Choose one of the following:

   - Expand the **Tables** folder and select the check boxes for the tables to nominate.

   - Expand the **Views** folder and select the views to nominate. Views are tables that have been previously joined together.

If you are nominating SQL queries, then enter the free-form SQL queries. You can also click **Test SQL query** to verify the SQL is correct.

Click **Next**.
3. From the Select Nomination Options page, you define the type of object to create during nomination. You can create a dimension with a static hierarchy with levels, or a dimension with lists or dynamic hierarchies.

You can nominate a table into single or multiple lists. If you nominate into multiple lists, then a dynamic hierarchy with levels, along with a relationship table, are generated from the lists in Business Viewpoint by default.

When nominating, you can also consolidate data from database tables into existing Business Viewpoint lists or hierarchies.

You can also choose to update the data at a later time using a subscription.

Choose the action you want:

<table>
<thead>
<tr>
<th>Goal</th>
<th>Action</th>
</tr>
</thead>
<tbody>
<tr>
<td>Create a static hierarchy in a new dimension.</td>
<td>Click Create a new dimension and then select Hierarchy from the box.</td>
</tr>
<tr>
<td>Create a list or dynamic hierarchy</td>
<td>Click Create a new dimension and then select List/Dynamic Hierarchy from the box.</td>
</tr>
<tr>
<td>Add data to lists or hierarchies (consolidation) that are in an existing dimension.</td>
<td>Click Add to an existing dimension, then under Master Dimension, select the dimension to which you want to add the list or hierarchy.</td>
</tr>
<tr>
<td>Lets you update the data that you are nominating now at a future time with a subscription.</td>
<td>Select the Update the data at a later time check box, and type a name for the subscription. The name of the table with which you are working is the default subscription name.</td>
</tr>
</tbody>
</table>

4. Define how you want to map your source items.

From the Define the mapping page, rename the dimension under Dimension Data, then from the Source box, expand a table, select a column, and click Add.

You can also click New List to create a list in the dimension, or click Remove to remove an attribute or list from the dimension.

The item is added to the dimension in the Dimension Data box as the name of the list, and to the Attributes box as the Name attribute. You can change the item used as the Name attribute without affecting the Dimension Data box.

You can rename the New Dimension to whatever dimension name you require.

5. If you want to use a different type of key, click the button next to the attribute and select one of the following types:
<table>
<thead>
<tr>
<th>Type of key</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Identifier</td>
<td>The identifier is a business attribute that is used as both the Source Key and the Find By Key.</td>
</tr>
<tr>
<td>Find By Key</td>
<td>The attribute is used only as an identifier. Only one item can be the Find By Key.</td>
</tr>
<tr>
<td>Source Key</td>
<td>The attribute is used only as a surrogate key.</td>
</tr>
</tbody>
</table>

6. To mark an attribute as the key identifier, click the button next to the attribute and click **Identifier**. A yellow key symbol displays next to the attribute. You can:

- Specify a single or multiple key identifiers.
- Specify the table primary key as the identifier and an alternate attribute as a source key. If you specify the same attribute as both the primary and source keys, then the source key is treated as the identifier, and the specified identifier is ignored.
- If the table has no primary key, you can specify a combination of columns as the source key. If the table does not have a primary key, then the source key is used as both the primary key and the Business Viewpoint identifier.
- For slowly changing dimension type two, the source key compares rows to determine whether the new row version is required. The primary key is used for new rows.
- If a table has multiple primary keys, you can map all keys as a source key.

**Note:** The Name attribute cannot be defined as a source key, only as an identifier.

7. You can change the attribute type by clicking the button to the left of the name and selecting one of the following attribute types:

<table>
<thead>
<tr>
<th>Attribute Type</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Alias</td>
<td>Adds data that you can use as an alternate name for an object, such as a name in another language.</td>
</tr>
<tr>
<td>Text</td>
<td>Displays data as text even when numbers are entered.</td>
</tr>
</tbody>
</table>

**Caution:** Business Viewpoint Client converts the data type from the database to Business Viewpoint Studio, and performs the proper data type mapping automatically. Change this attribute type only if necessary.
<table>
<thead>
<tr>
<th>Attribute Type</th>
<th>Description</th>
</tr>
</thead>
</table>
| Integer        | Displays data as an integer.  
**Caution:** Business Viewpoint Client converts the data type from the database to Business Viewpoint Studio, and performs the proper data type mapping automatically. Change this attribute type only if necessary. |
| Decimal        | Displays data as a number that has decimals.  
**Caution:** Business Viewpoint Client converts the data type from the database to Business Viewpoint Studio, and performs the proper data type mapping automatically. Change this attribute type only if necessary. |
| Date           | Displays data as dates.  
**Caution:** Business Viewpoint Client converts the data type from the database to Business Viewpoint Studio, and performs the proper data type mapping automatically. Change this attribute type only if necessary. |
| Picklist       | Adds a list of values that display in a drop-down list, and specifies that a picklist attribute can contain only one value. |
| Multi-select Picklist | Adds a list of values that display in a drop-down list, and specifies that a picklist attribute can contain multiple values. |
| Lookup         | Adds a drop-down list that looks up values from a list.  
Select the lookup relationships that you want created in Business Viewpoint.  
To set an attribute as Lookup and define the lookup relationship, from the Define the mapping page, select the attribute, click the Lookup button to the left of the attribute, and click Lookup.  
From the Select Data page, select the attribute identifier to which you want to look up, and click OK. The lookup relationship between the two attributes is shown under the attribute in the Define the mapping page.  
After you define the Lookup attribute, you can edit the definition by right-clicking the lookup attribute and clicking Edit Lookup Source. |

8. If you set an attribute as **Lookup**, then you must define the lookup relationship between lists.  
From the Define relationships between lists page, set the lookup relationships, and click Next.
9. If you are working with static hierarchies or mapping multiple database tables to one hierarchy or list, mapping multiple database tables to multiple lists, or if you have a combination of tables that are previously joined and tables that are currently not joined, then Business Viewpoint Client determines if a join is necessary and you must specify how they are related. From the Specify Table Relationship page, select a table and column from the drop-down list, choose the type of operator, for example =, >, <, like, not like, and then choose the table and column to which it joins. Perform this step for each table and column that you need to join.

Click Preview Data to see the data that is retrieved based on the relationship list.

Click Add a row to join more tables.

Click Removed Selected to delete any joins that have the check box selected.

Click Preview Data to see the data that is being retrieved based on the relationships that you just specified.

Under Generated SQL Statement, you can see the SQL that is written based on the table relationships that you create.

Click Next.

10. From the Specify Primary Key Settings page, select a primary key generation type for the table that you are nominating to Business Viewpoint Studio. You can nominate without defining a primary key, but an identifier is required even if the table has no primary key defined. You can also optionally choose to work with slowly changing dimensions.

From the Primary Key box, select one of the following key types:

- **Database Generated** - the database will generate the key automatically.
- **Increment Maximum Key** - Business Viewpoint Client selects the maximum key value and increments it by one for each new row. This applies to numeric primary keys only.
- **Manually Entered** - the key is added manually in Business Viewpoint Studio. There is no need for key management.
- **SQL Expression** - you can enter a valid SQL statement that will generate a unique key.

The view must have a column that contains a unique row identifier value.

11. If you want your table to work with slowly changing dimensions, click Edit for the table that you want to set a slowly changing dimension type. From the Slowly Changing Dimension Editor page, select one of the following slowly changing dimension types from the box:

<table>
<thead>
<tr>
<th>Dimension Type</th>
<th>Action</th>
</tr>
</thead>
<tbody>
<tr>
<td>Slowly Changing Dimension Type One</td>
<td>Use to overwrite old data. Type one does not track historical data and is commonly used when correcting data errors like misspellings.</td>
</tr>
</tbody>
</table>
### Dimension Type | Action
--- | ---
Slowly Changing Dimension Type Two | Use to create multiple records in the dimensional tables with separate keys. A new record is inserted with every change made. Type two tracks historical data.

Slowly Changing Dimension Type Three | Type three has limited historical data preservation based on the number of columns designated for storing historical data.

Slowly Changing Dimension Hybrid | Use to combine types one, two, and three.

12. If you selected Slowly Changing Dimension Types Two, Three, or Hybrid, do the following:
   - Select the table columns (fields) that you want involved in the changing state of the dimension.
   - Map the **End Date** and **Start Date** for slowly changing dimension Type Two. Map the effective date for slowly changing dimension Type Three. Start and end dates allow for proper versioning of the dimension.
   - Click **OK**.

13. Click **Finish**.

### Synchronizing database views
To synchronize database views from the staging database to IBM® Cognos® Business Viewpoint Studio, you must update the component.

**Note:** You must create a version in Business Viewpoint Studio before you can update a component. You must have an administrator, modeler, or nominator role to create versions.

**Step**
- Right-click an existing database view, and click **Update component**, and click **OK**.

### Updating Business Viewpoint Studio
You can update the IBM® InfoSphere™ Master Data Management Server database views that you nominated to IBM® Cognos® Business Viewpoint Studio.

**Steps**
1. Right-click an existing database view, and click one of the following options:
   - **Update Business Viewpoint Studio**
   - **Delete**
Chapter 9: Using IBM InfoSphere Master Data Management Server with Business Viewpoint Client

2. Click OK.
Chapter 10: Using CSV Files with Business Viewpoint Client

You can use the IBM® Cognos® Business Viewpoint Client to nominate data, subscribe to data, and update data between the IBM Cognos Business Viewpoint Studio and csv files.

You can launch the Business Viewpoint Client for CSV from the command line (p. 77).

Nominating data

Nominate the data that you want to migrate to the IBM® Cognos® Business Viewpoint Studio master repository.

The csv adapter is used to move data into Business Viewpoint Studio from csv files, as well as moving data into csv files from Business Viewpoint Studio. You cannot nominate data from a csv file for which you have not previously subscribed. This is because the subscription process generates an import specification file that is required to nominate data through the csv adapter. If you have a csv file but no import specification file, you must first use the Business Viewpoint Studio Import wizard to move the data into Business Viewpoint Studio. You can then subscribe to the Business Viewpoint object using the csv adapter, which generates a csv file and an import specification that you can use for subsequent nominations.

When you nominate data to Business Viewpoint, you can create a new subscription to allow later updates to and from Business Viewpoint Studio.

Note: If Business Viewpoint Studio defines your access rights as a consumer role, you can only subscribe to data in Business Viewpoint Client, you cannot nominate data. To nominate data, you must have both a consumer and a nominator, or a modeler role.

Steps

1. From Business Viewpoint Client, click Nominate Data.

2. From the Select data page, choose the csv data that you want to nominate to Business Viewpoint. Click Next.

3. From the Select Nomination Options page, you define the type of object to create during nomination. You can also consolidate data into existing Business Viewpoint lists or hierarchies.

   You can also choose to update the data at a later time in a subscription.

   Choose the action you want:
Create a dimension in Business Viewpoint Studio.

<table>
<thead>
<tr>
<th>Goal</th>
<th>Action</th>
</tr>
</thead>
<tbody>
<tr>
<td>Select <strong>Create a new dimension</strong>.</td>
<td>Type a dimension name or use the default name (csv file name).</td>
</tr>
<tr>
<td>Choose either a new hierarchy or a list from the box. Type a name for the hierarchy or list, or use the default name.</td>
<td></td>
</tr>
<tr>
<td>Select <strong>Add to an existing dimension</strong>, then under <strong>Master Dimension</strong>, create a hierarchy or list in an existing dimension, or select an existing hierarchy or list and consolidate your csv data into that hierarchy or list.</td>
<td></td>
</tr>
<tr>
<td>Add the csv data to lists or hierarchies (consolidation) that are in an existing dimension.</td>
<td></td>
</tr>
<tr>
<td>Lets you update the csv data that you are nominating now at a future time with a subscription.</td>
<td>Select the <strong>Update the data at a later time</strong> check box, and type a name for the subscription.</td>
</tr>
</tbody>
</table>

4. Click **Finish**.

**Subscribing**

To get a copy of an entry in the IBM® Cognos® Business Viewpoint Studio master repository for use in a csv file, create a link between the two sources using a subscription. This tracks changes between the master dimensions in Business Viewpoint Studio and the copy in the csv file on your system.

Using the subscription wizard, select the version containing the desired dimension, and the specific data (list, set, or a hierarchy) in that dimension to use in the csv file.

You can choose to use an alternate name or a translation of the member name by using an alias instead of the values in the Name attribute. For example, an alias is defined in Business Viewpoint Studio to include a different name or to use French instead of English. When you subscribe to that item in IBM Cognos Business Viewpoint Client, you can choose the French alias for the item.

**Note:** You can create individual subscriptions for as many entries as you require.

**Steps**

1. Click **Subscribe** from Business Viewpoint Client.

2. From the **Select Data** page, choose a dimension, select a version, then choose the object in Business Viewpoint Studio to which you want to subscribe, and click **Next**.

   **Note:** The default is the latest version.

3. If you have attributes, you can choose the ones that you want to move to csv. Click **Next**.
4. In the **Select location** page, choose where you want to save the dimension, and click **Finish** to create the subscription.

## Updating data

When you subscribe to a master dimension from csv, a copy of the master dimension from IBM® Cognos® Business Viewpoint Studio is moved to the csv. If the master dimension is modified in either of these locations, the data will no longer be synchronized. Run an update to ensure that you have the same data in both places.

You can update or delete multiple subscription at a time. You can update the master dimensions or a component and specific version.

When you update a component, any data that has changed in Business Viewpoint Studio is also changed in the csv. You must also select a version before you can update a subscription. The latest version is the default option, but you can choose any version.

When you update Business Viewpoint Studio, any changes to the data in csv will also be made in the Business Viewpoint repository.

## Updating a subscription

You can update a specific subscription, or multiple subscriptions at once. This option is only available when you already created a subscription or subscriptions. When you update a subscription, you can update the component, such as a dimension in csv or update the master dimension in Business Viewpoint Studio.

### Steps

1. Right-click an existing subscription, or click the check boxes for a subscription or multiple subscriptions, and click one of the following options:
   - Update component
   - Update Business Viewpoint Studio
   - Delete

   You must create a version before you can update a component. You must have an administrator, modeler, or nominator role to create versions.

2. If members have been deleted in Business Viewpoint Studio or added in the external target, you can select the **Delete all members in the target entry that are no longer in Business Viewpoint Studio** check box to remove the members in the target entry, such as a e.List.

   If you click **Delete**, the subscription is deleted but the data is not deleted. You cannot update or synchronize the dimension.

   **Note:** Removing dimension items may result in orphaned fact data.

3. Click **OK**.
Chapter 11: Using the command line interface with Business Viewpoint Client

Use the command line interface to perform IBM® Cognos® Business Viewpoint Client tasks if you do not want to use the standard interface.

Before you begin

Use the ViewpointClient.cmd file to launch IBM® Cognos® Business Viewpoint Client in GUI mode. Use the ViewpointClientCLI.cmd to launch the program in command line mode. If you are working in the UNIX® operating system, use the ViewpointClientCLI.sh to launch Business Viewpoint Client in command line mode.

If JAVA_HOME is set in the System Environment Variables and spaces are included, then The ViewpointClient.cmd will not launch Business Viewpoint Client, and the ViewpointClientCLI.cmd file will not launch the Business Viewpoint Client Transformer adapter.

To successfully use JAVA_HOME, you must use double quotation marks. For example:

If you have `if '%JAVA_HOME%' == '' set JAVA_HOME=%JAVA_LOCAL%`, and if JAVA_HOME points to a directory with spaces (For example - C:\Program Files\...), then the above line fails with a syntax error. The solution is to replace the single quotation marks with double quotation marks as follows:

```
if"%JAVA_HOME" == "" set JAVA_HOME=%JAVA_LOCAL%
```

Use a command line argument to choose the location of the log files, which contain any log messages.

When working in command line mode, execution status is returned as a zero for success and non-zero for errors. Some operations will return information back to you allowing you to specify where to save the information, or to display information on a standard out stream.

Note: Result output will be translated to the language you specify.

Using general parameter commands

Use the following parameters to perform general commands.

```
--nogui
```

Required: Yes

Argument: No

Description: It must be the first argument passed to the program to ensure that the GUI window is not launched, and the application is executed on the command line only.
--inputfile
Short version: -f
Required: No
Argument: Yes, the full file path of the file which contains the additional arguments
Description: If specified, the contents of this file is loaded and used as additional arguments passed to the application.
For example, you specify the "--password" parameter in this file which is kept in a secure location, while the remaining parameters are entered directly on the command line.

--username
Short version: -u
Required: Yes
Argument: Yes, the username
Description: This username connects to IBM® Cognos® Business Viewpoint for the duration of this session.
Note: Special character can cause errors if not used correctly. Check your command line interpreter documentation for how to use arguments that contain special characters.

--password
Short version: -p
Required: Yes
Argument: Yes, the password
Description: This password connects to Business Viewpoint for the duration of this session. If you do not wish to enter the password in plain text directly on the command line, you can enter this parameter in a text file and use the "--inputfile" option to load the contents of this file as additional parameters.

--adapterName
Short version: -a
Required: Yes
Argument: Yes, the name of the adapter
Description: Business Viewpoint Client uses this adapter for the duration of the session. Certain parameters place restrictions on the adapter type. For example, you can only use the backup or restore commands with a CSV type adapter.
Note: Adapter names are based on the adapter name defined during configuration.

--command
Short version: -c
Required: Yes
Chapter 11: Using the command line interface with Business Viewpoint Client

Argument: Yes, one of: backup, getSubscriptions, nominate, restore, subscribe, updateALLBVSubscriptionData, updateAllExternalSubscriptionData, updateBVSubscriptionData, updateExternalSubscriptionData, wasDataModifiedInBV

Description: Business Viewpoint Client will execute the command. Only one of the specified values will be accepted. A detailed section is dedicated to each command below, since each command requires its own set of parameters.

--outputfile
Short version: -o
Required: No
Argument: Yes, the full filepath of the output file
Description: If specified, the execution result is printed to this file. Some commands return a complex structure of data and it may be useful to receive the result in a file that you can easily parse. See the sections dedicated to the individual commands to see what this file will contain.

--displayoutput
Short version: -d
Required: No
Argument: No
Description: If this flag is present, the execution result is printed to the standard out stream. This option can be combined with the "--outputfile" option to display the output in both locations. Execution results that are printed to the standard out stream are prefixed with the pipe character [\] to distinguish it from other output.

--externalPrivateData
Short version: None
Required: No
Argument: Yes, the data you want to pass to the adapter
Description: Enter data here if the adapter you are connected to requires extra data beyond the basic parameters to perform a command. The data is passed, unchanged, to the adapter which processes the data.

Using the backup command
Use the backup command to externalize a dimension, from the latest version, to a set of csv files.

--createVersion
Short version: None
Required: No
Argument: No
Description: Use the --createVersion command to create a new version of each dimension before doing the backup. If you do not use this flag, the latest available version of each dimension is used for the backup.

The result output is Operation Successful or Operation Failed followed by a detailed explanation.

Example
--nogui -u username -p password -a CSV -c backup -d Yes -o c:/bvCli.log -s 6563
--createVersion

Using the restore command

Use this command to restore data by populating a dimension from the set of files created by the backup command.

The result output is Operation Successful or Operation Failed followed by a detailed explanation.

Example
--nogui -u username -p password -a CSV -c restore -d Yes -o c:/bvCli.log -s 6563

Using the nominate command

Use the following parameters to nominate data.

--externalParentName
Short version: None
Required: Yes
Argument: Yes, the name of the parent entry in the external component
Description: Specifies the parent of the entry that you wish to nominate. The meaning of this value is specific to the adapter that you are using.

--externalFolderLocation
Short version: None
Required: No
Argument: Yes, the consumer entry external location
Description: Used when nominating from IBM® Cognos® TM1® or IBM Cognos Contributor.

--externalObjectName
Short version: None
Required: Yes
Argument: Yes, the name of the entry in the external component, which is normally the name of the list or hierarchy that you are nominating.

Description: The name of the entry that you wish to nominate.

--createAsType

Short version: None

Required: Yes

Argument: Yes, either List, Hierarchy, or Dimension

Description: Use to specify the type of entry to be created in IBM® Cognos® Business Viewpoint using the nominated data.

--bvDimensionName

Short version: None

Required: Yes

Argument: Yes, the dimension name

Description: Specifies the name of the new dimension to be created in Business Viewpoint.

--bvObjectName

Short version: None

Required: Yes

Argument: Yes, the entry name

Description: This parameter specifies the name of the new entry (such as a list or a hierarchy) to be created in Business Viewpoint.

--createSubscription

Short version: None

Required: No

Argument: No

Description: If this flag is present, a new subscription is created linking the data in the external client and the new entry created in Business Viewpoint.

The result output is Operation Successful or Operation Failed followed by a detailed explanation.

Note: When you interpret result output for successful/true or failed/false, match the initial portion of the result string. You can ignore the text in brackets.

Controller Nominate Example

--nogui -u username -p password -a Controller -c nominate -d Yes -o "c:/bvCli.log" --externalParentName ControllerLIVE --externalObjectName AccountStructure --createAsType List --bvDimensionName Dim1 --bvObjectName ListName --createSubscription Yes -s 6563
Transformer Nominate Example

ViewpointClientCLI.cmd --nogui --displayoutput -a Transformer -u username -p password -c nominate --externalParentName "{"modelFile":"Model.mdl" }" --externalFolderLocation"{"modelFile":"Model.mdl" }" --externalObjectName Products --createAsType Dimension --bvDimensionName Products --bvObjectName Products --createSubscription

Note: You can only nominate new entries into Business Viewpoint using the command line. You cannot consolidate into an existing entry using the command line. Use the Business Viewpoint GUI to consolidate into existing entries.

Using the subscribe command

Use the following parameters to subscribe.

The subscribe command operates against the latest version. If the specified object does not exist in that version, the operation will fail.

Note: If multiple dimensions or entries in IBM® Cognos® Business Viewpoint share the same name, it may not be possible to subscribe to the desired object through the command line. In this situation, use the IBM Cognos Business Viewpoint Client to ensure you subscribe to the correct entry.

--externalParentName
Short version: None
Required: Yes
Argument: Yes, the name of the parent entry in the external component
Description: Specifies the entry that will become a parent of the subscribed entry. The data is placed in the external component under this parent entry.

--externalFolderLocation
Short version: None
Required: No
Argument: Yes, the consumer entry external location
Description: Used when subscribing into TM1 or Contributor.

--externalObjectName
Short version: None
Required: No
Argument: Yes, the name of the entry to be created in the external component
Description: Specifies the name of the entry to be created in the external component.

--subscribeExternalSecurity
Short version: None
Required: No
Arugment: No
Description: If this flag is present, it moves the security model for the item.

--classType
Short version: None
Required: Yes
Argument: Yes, either List, Hierarchy, Dimension, or Set
Description: Specifies the type of entry in Business Viewpoint for which you wish to subscribe.

--bvDimensionName
Short version: None
Required: Yes
Argument: Yes, the dimension name
Description: Specifies the Business Viewpoint dimension where you can find the entry to which you wish to subscribe.

--bvObjectName
Short version: None
Required: Yes
Argument: Yes, the entry name in Business Viewpoint
Description: Specifies the name of the entry in Business Viewpoint for which you wish to subscribe. If multiple entries have the same name, the first entry that is found is used.

--createVersion
Short version: None
Required: No
Argument: No
Description: If this flag is present, a new version of the containing dimension is taken before the subscription is created.
The result output is Operation Successful or Operation Failed followed by a detailed explanation.
Note: When you interpret result output for successful/true or failed/false, match the initial portion of the result string. You can ignore the text in brackets.

Transformer Subscribe Example
ViewpointClientCLI.cmd --nogui --displayoutput -a Transformer -u username -p password -c subscribe --externalParentName "{"modelFile":"Model.mdl" }" --externalFolderLocation "{"modelFile":"Model.mdl" }" --externalObjectName Products --classType Dimension --bvDimensionName Products --bvObjectName Products --createVersion
Using the `updateAllExternalSubscriptionData` command

Use this command to go through all subscriptions for the selected adapter and update all external entries if the data was modified in IBM® Cognos® Business Viewpoint.

There are no specific parameters for this command.

A successful result output returns a list of subscription IDs of all the subscriptions that were updated, with each subscription ID on a new line.

If an error occurs, you will see `Operation Failed` followed by a detailed explanation that is printed.

**Note:** You could see several lines of subscription ID’s that were updated successfully and then an error message on the last line.

`--deleteExternal`

Short version: None

Required: No

Argument: No

Description: If this flag is present, the data that is deleted in Business Viewpoint also is deleted from the external component.

Using the `updateAllBVSubscriptionData` command

Use this command to go through all subscriptions in the selected site for the selected adapter and update all IBM® Cognos® Business Viewpoint entries if the data was modified in the external component.

There are no specific parameters for this command.

A successful result output returns a list of subscription IDs of all the subscriptions that were updated, with each subscription ID on a new line.

If an error occurs, you will see `Operation Failed` followed by a detailed explanation that is printed.

**Note:** You could see several lines of subscription ID’s that were updated successfully and then an error message on the last line.

Using the `getSubscriptions` command

Use this command to generate a list of subscriptions that are in the specified site for the specified adapter, using the filters below. This command is useful if you want to update everything, but would rather do it selectively.

`--externalParentName`

Short version: None

Required: No
Argument: Yes, the name of the parent entry in the external component
Description: Only the subscriptions that exist under this parent entry is returned.

--externalObjectName
Short version: None
Required: No
Argument: Yes, the name of the entry in the external component
Description: Only the subscriptions that you create for this entry in the external component is returned.

--bvDimensionName
Short version: None
Required: No
Argument: Yes, the dimension name
Description: Only the subscriptions that you create from this dimension in IBM® Cognos® Business Viewpoint is returned.

--bvObjectName
Short version: None
Required: No
Argument: Yes, the new entry name
Description: Specifies the name of the new entry (such as a list or a hierarchy) to be created in Business Viewpoint.

A successful result output returns a list of all subscriptions that were found using the specified filters. The following tab-delimited list of fields is returned for each subscription:

- subscription ID
- name of the parent of the entry in the external component
- name of the entry in the external component
- name of the Business Viewpoint dimension where the entry is contained
- name of the Business Viewpoint entry associated with the subscription

Using the wasDataModifiedInBV command
Use this command to determine whether changes have been made to an entry in IBM® Cognos® Business Viewpoint for which a subscription was created.

--subscriptionID
Short version: None
Required: Yes
Argument: Yes, the ID of the subscription to check for changes
Description: The subscription with the given ID is checked to determine whether changes have been made to the data in the latest version in Business Viewpoint since the last update.
The result output is "true" if the changes were made in Business Viewpoint, or "false" if no changes were made or an error occurred.

**Using the updateExternalSubscriptionData command**

Use this command to update an entry in an external IBM® Cognos® component if the data was changed in IBM Cognos Business Viewpoint. You must use the --getSubscriptions command to obtain the subscription ID.

---

**--subscriptionID**
Short version: None
Required: Yes
Argument: Yes, the ID of the subscription to be updated
Description: The subscription with the given ID updates the entry in the external IBM Cognos component if the data was changed in Business Viewpoint.
The result output is Updated if the data was updated with new changes, Unchanged if the data was unchanged in Business Viewpoint and no update was performed, or Operation Failed followed by a detailed description if an error occurred.
Note: The update is processed against the latest version.

---

**--deleteExternal**
Short version: None
Required: No
Argument: No
Description: If this flag is present, the data that is deleted in Business Viewpoint also is deleted from the external component.

---

**Using the updateBVSubscriptionData command**

Use this command to update an entry in Business Viewpoint if the data was changed in an external IBM® Cognos® component. You must use the --getSubscriptions command to obtain the subscription ID.

---

**--subscriptionID**
Short version: None
Required: Yes
Argument: Yes, the ID of the subscription to be updated

Description: The subscription with the given ID updates the entry in the Business Viewpoint if the data was changed in the external IBM Cognos component.

The result output is Operation Successful if the entry was updated in Business Viewpoint, or Operation Failed followed by a detailed description if an error occurs.

Note: An update is always performed, whether the data was changed in the external IBM Cognos component or not.
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