



Pentaho Cube Designer User Guide

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Overview

This document describes the Pentaho cube designer. The cube designer helps create Mondrian cube schema using a graphical user interface and publish the cube schema to Pentaho solution engine.

Software requirements

- JRE 1.5 and above
- Oracle / MySQL / Microsoft SQL Server / Hibernate or any JDBC compliant database
- Mondrian server/Pentaho server
- Windows / Linux (Redhat/Suse) / Mac OSX (PPC/Carbon)

The Cube wizard supports any JDBC compliant database. The JDBC drivers for Oracle, MySQL, Microsoft SQL Server & Hibernate databases are included in the s/w distribution. If the need is to access any other JDBC compliant database, the necessary JDBC driver must be copied into "CubeDesigner/lib/jdbc" folder.

Pentaho cube designer is distributed as stand-alone application.

Mondrian supported schemas

The following cube schema types are supported using Cube designer:

- Single table schema (both measures and dimensions are from a single table)
- Star schema (single fact table and multiple dimension tables)
- Snow flake schema (single fact table and hierarchical dimension tables)

Limitations/Not supported features

Following are the limitations/not supported features in Cube Wizard:

Mondrian features not supported

- Shared Dimensions
- Aggregation
- Calculated Members
- Inline Tables
- Multiple cubes within the same schema file

Query Designer panel limitations (Map Tables)

The query designer panel works best when automatic joins are used (joins automatically created due to presence of Primary Key/Foreign Key relationships)

In the event Primary Key/Foreign Key relationships are not present, Manual joins can be created in the Query designer panel. When manual joins are created, following are the rules to be followed:

For star schema:

- Fact table always needs to be on the left side of the display
- Dimension tables always needs to be on the right side of the display

For snow flake schema:

- Fact table always needs to be on the left side of the display
- Dimension tables always needs to be on the right side of the display
- The highest level dimension table must start first and then the lowest levels to the right side (Example: Fact -> Year -> Quarter -> Month -> Day)

Flow

The following are the steps and screen shots of cube designer:

Application distribution

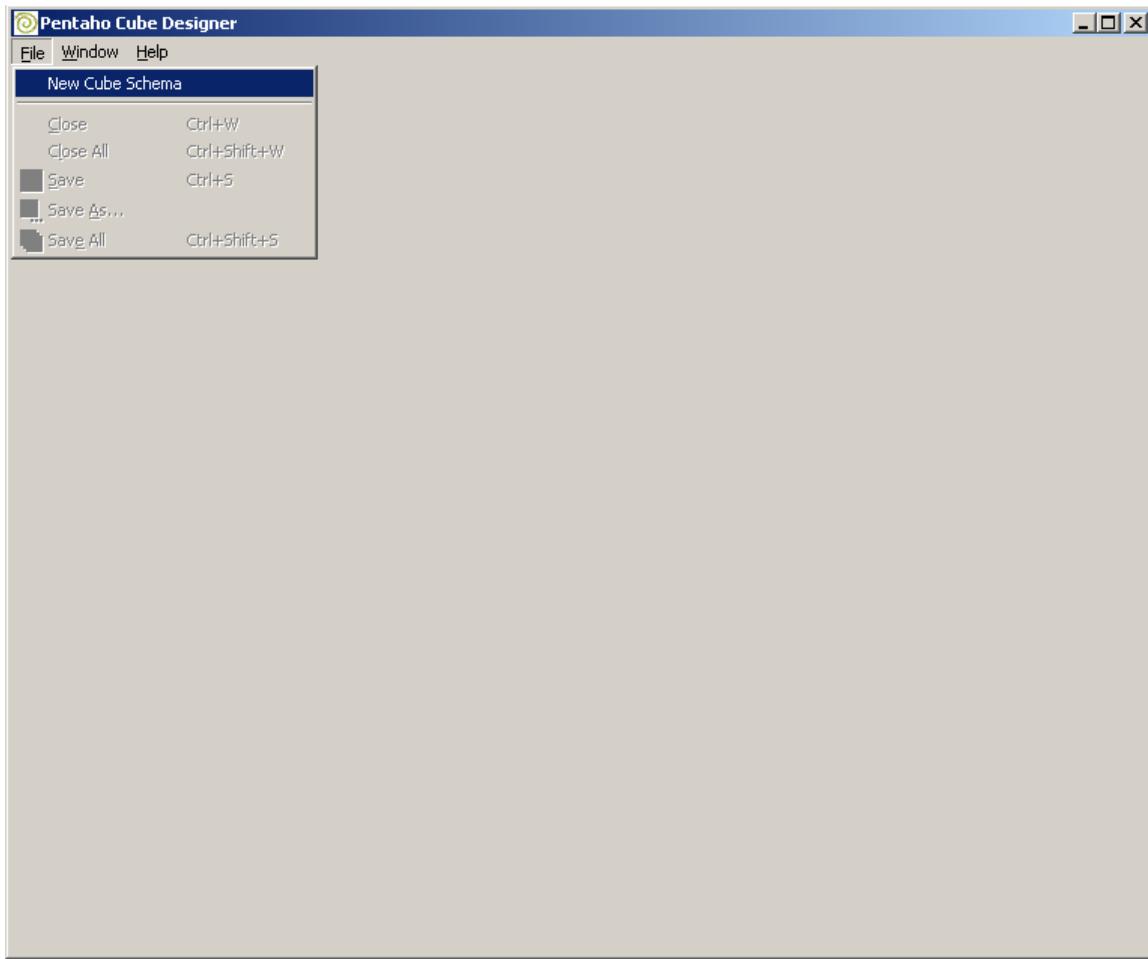
Below is the directory structure for Windows distribution. The “lib/jdbc” folder contains the JDBC drivers.

To start the application on windows, run “CubeDesigner.exe”. To start the application on Linux, run “CubeDesigner”. To start the application on Mac OS, run “CubeDesigner.app”

Name	Size	Type	Date Modified	Attributes
configuration		File Folder	9/25/2006 11:24 AM	
lib		File Folder	9/15/2006 3:59 PM	
plugins		File Folder	9/25/2006 11:24 AM	
.eclipseproduct	1 KB	ECLIPSEPRODUCT File	9/25/2006 11:24 AM	A
CubeDesigner.exe	176 KB	Application	9/25/2006 11:24 AM	A
CubeDesigner.ini	1 KB	Configuration Settings	9/25/2006 11:24 AM	A
readme.txt	1 KB	Text Document	9/25/2006 2:13 PM	A
startup.jar	33 KB	Executable Jar File	9/25/2006 11:24 AM	A

Launch screen

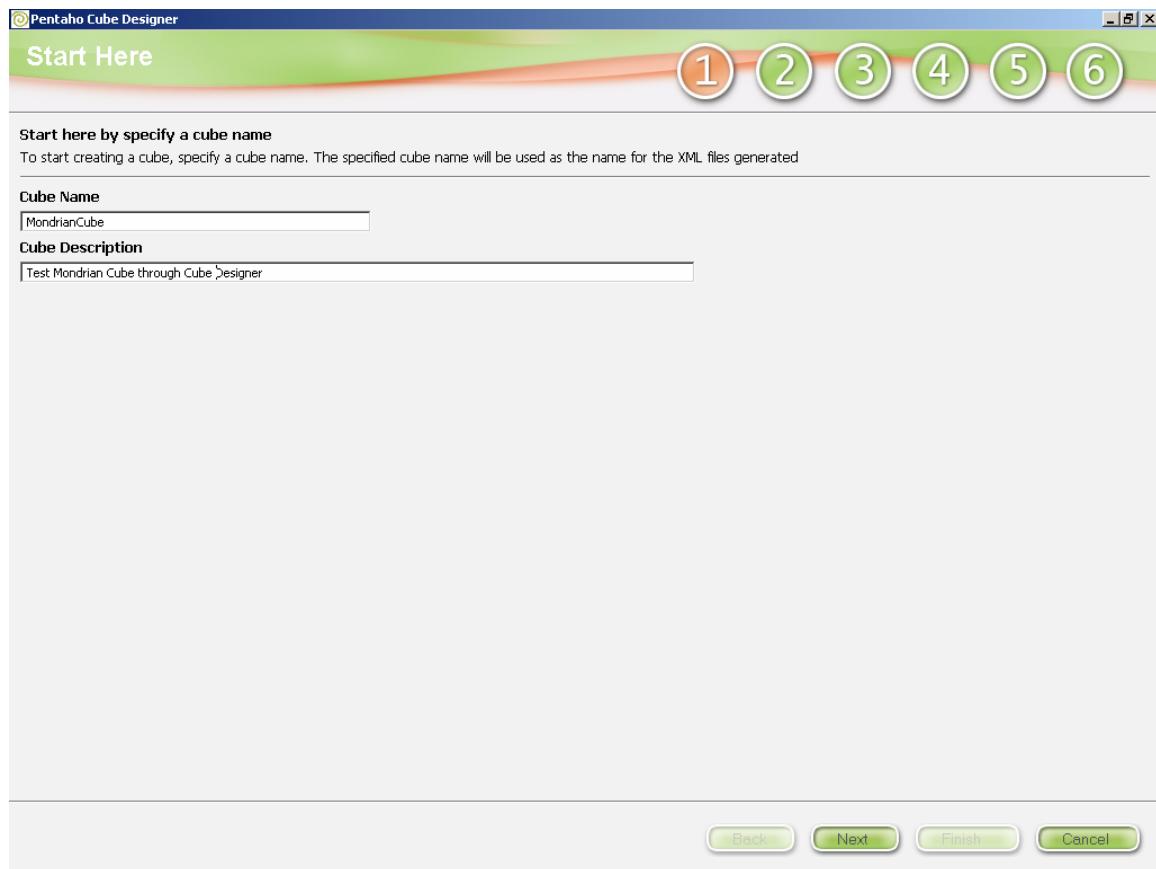
When user launches Cube designer, the below initial screen is displayed. Click the File->“New Cube Schema” menu item to start creating the cube schema.



Specify a cube name (Step 1 of 6)

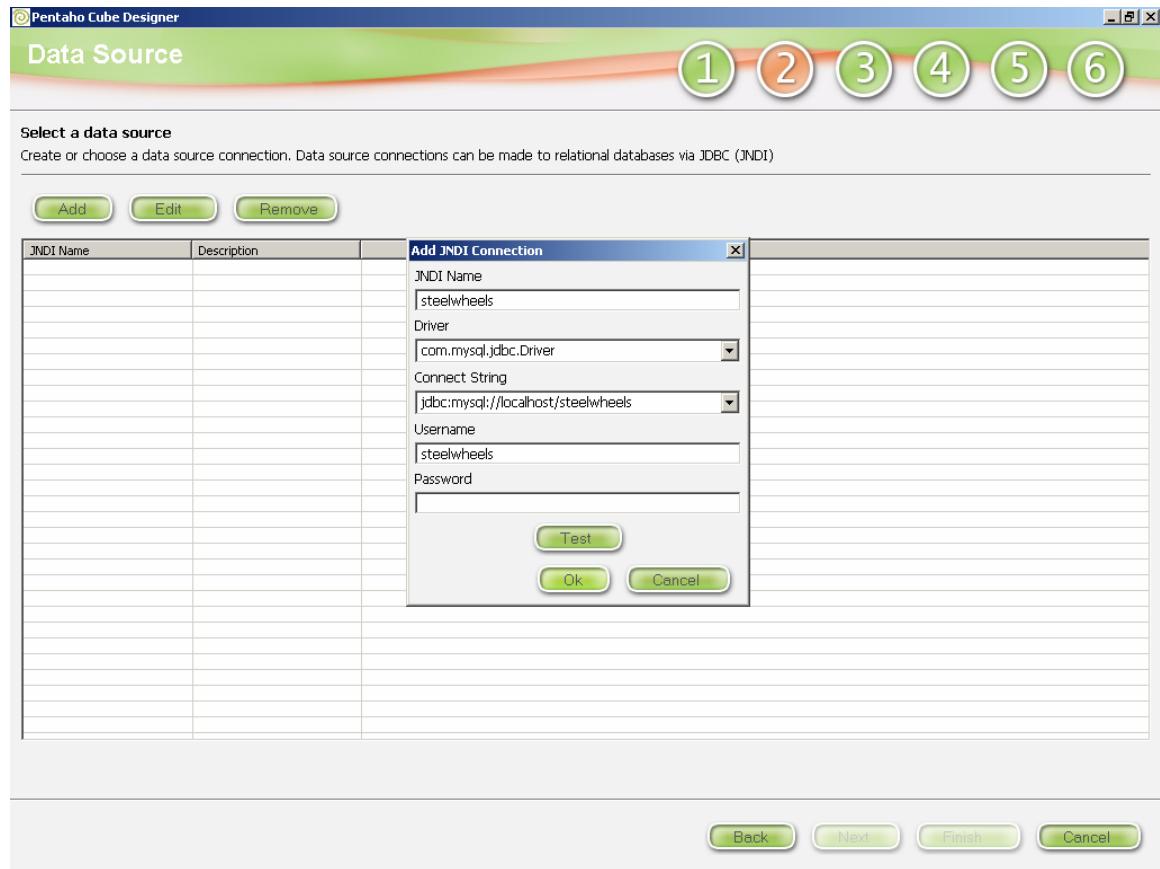
Specify a name for the cube. The same name will be used for both Mondrian schema name and cube name.

Once done click "Next" button.

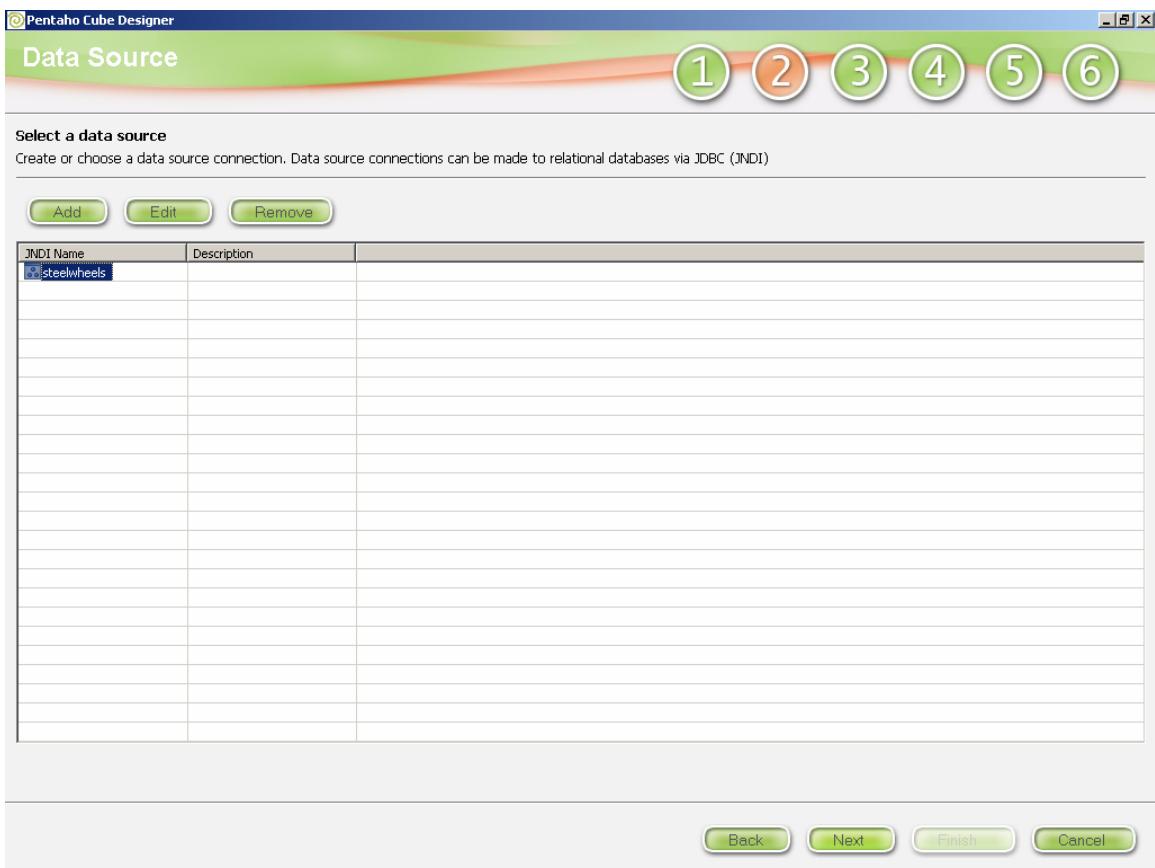


Create new or select an existing data source (Step 2 of 6)

Using this screen, you can create a data source connection.



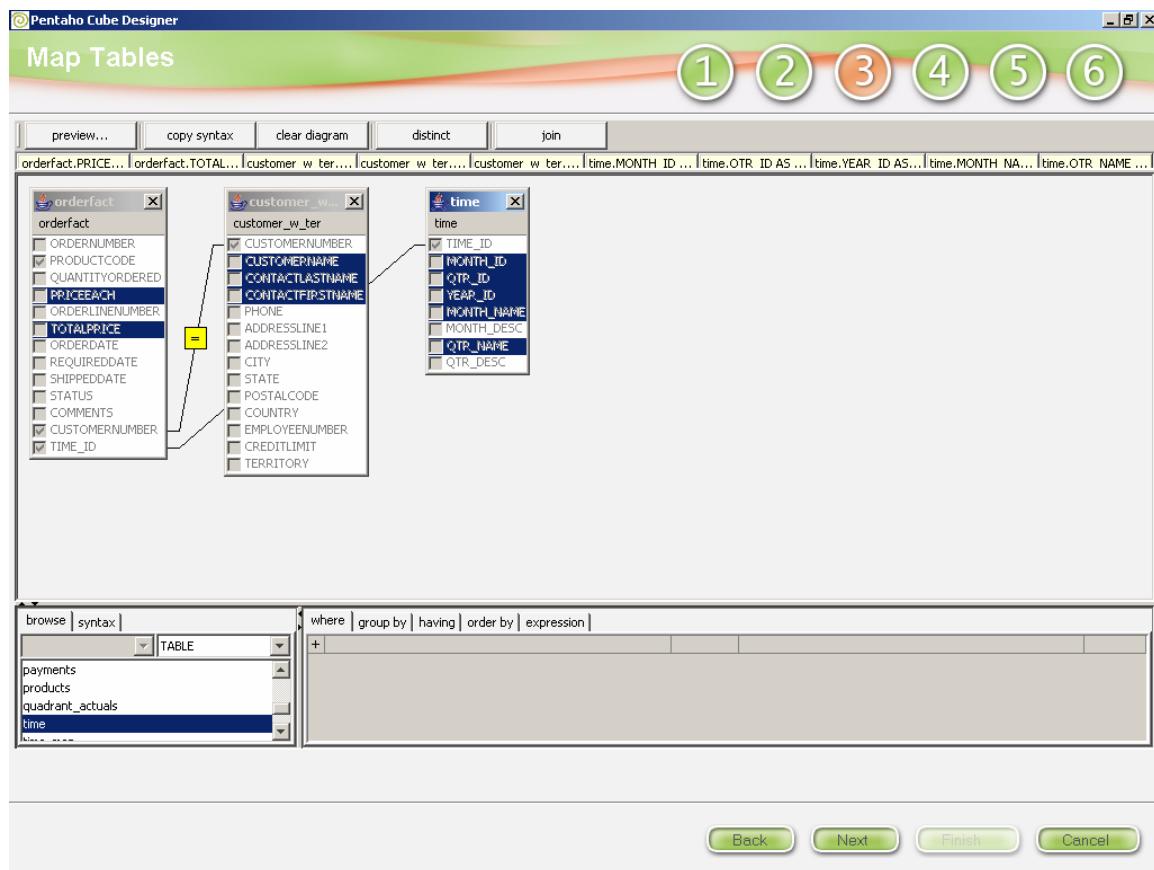
Select the data source and click “Next” button.



Map Tables (Step 3 of 6)

Using the Query Designer panel, you can select the tables and create the necessary schema including Star schema or Snowflake schema.

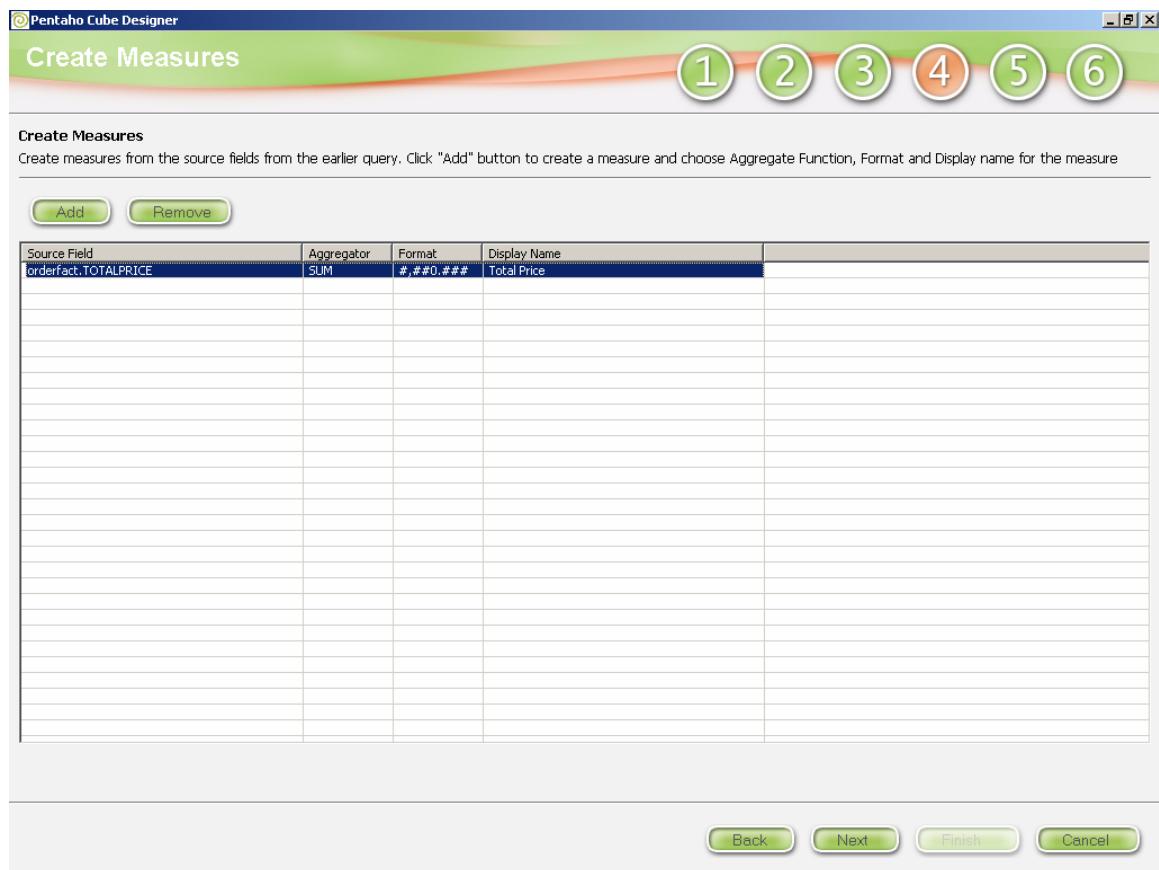
After the schema is created, select the columns for measures and dimensions and click “Next” button.



Create measures and set the attributes (Step 4 of 6)

Create the desired measures in the cube using "Add" button. The values for "Aggregator", "Format" and "Display Name" can be changed as desired.

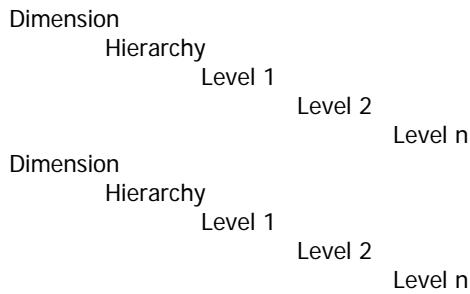
After the measures are selected and attributes are set, click “Next” button.



Create Dimensions (Step 5 of 6)

Create hierarchical dimensions (right panel) using the available source fields (left panel).

The created dimensions are displayed as a tree. Within a dimension tree, the top-most element is the Dimension. The second element is the Hierarchy. The subsequent elements are the dimension levels as shown below.



The bottom panel displays the properties of the selected Dimension, Hierarchy or Levels.

All the elements (Dimensions, Hierarchies & Levels) consist of fixed attributes displayed in the bottom property panel.

A level can also have custom properties. A custom property for a level can be added using the "Add Property" button. After a property is added, select the desired source field from the drop down box for the property (Property Column) and specify a name for the property (Value Column).

To start creating a dimension, select a source field on the left side and click "Add New Dimension" button.

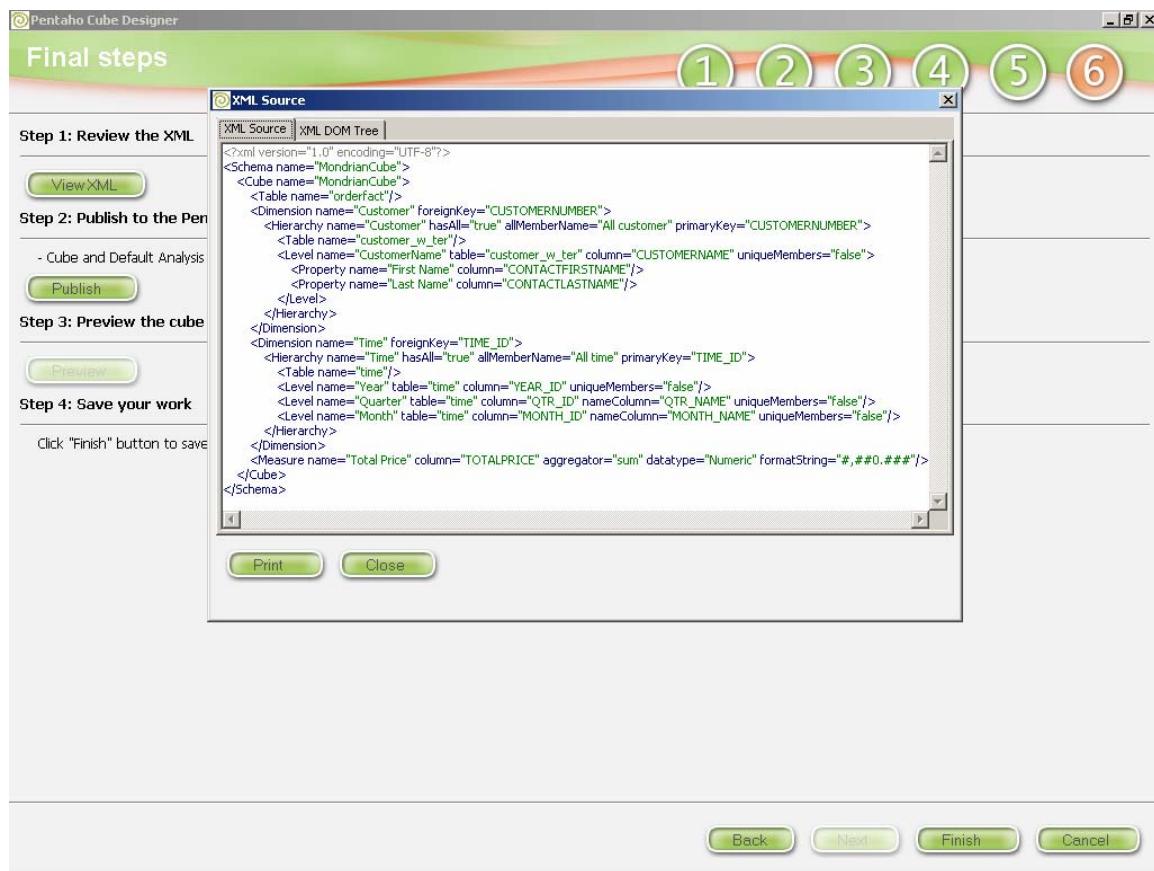
To add levels to a dimension, select a source field on the left side, select the parent level on the right side and click "→" button.

Final Steps (Step 6 of 6)

After all the desired dimensions are created use “Next” button to go to the final page. The last page provides 4 steps to finish.

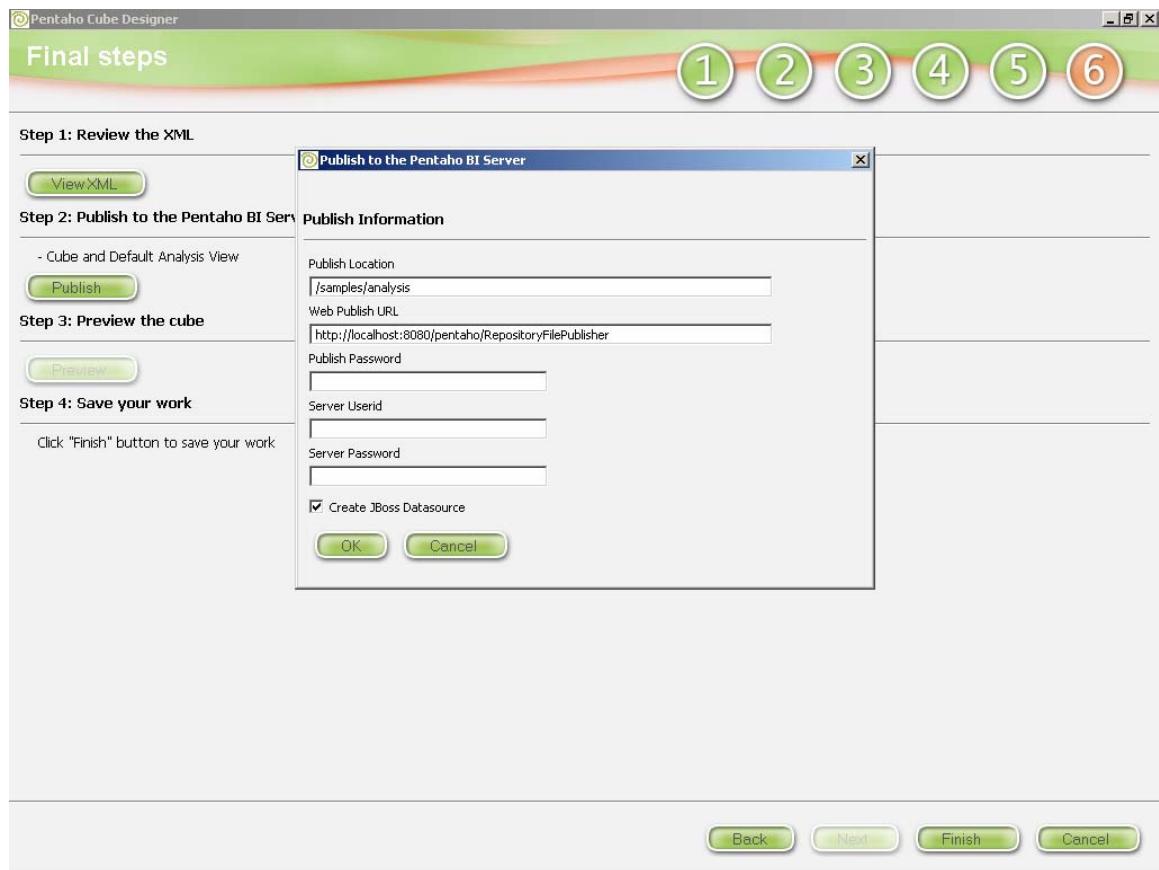
View XML

Click “View XML” button to review the XML specification for Mondrian cube.



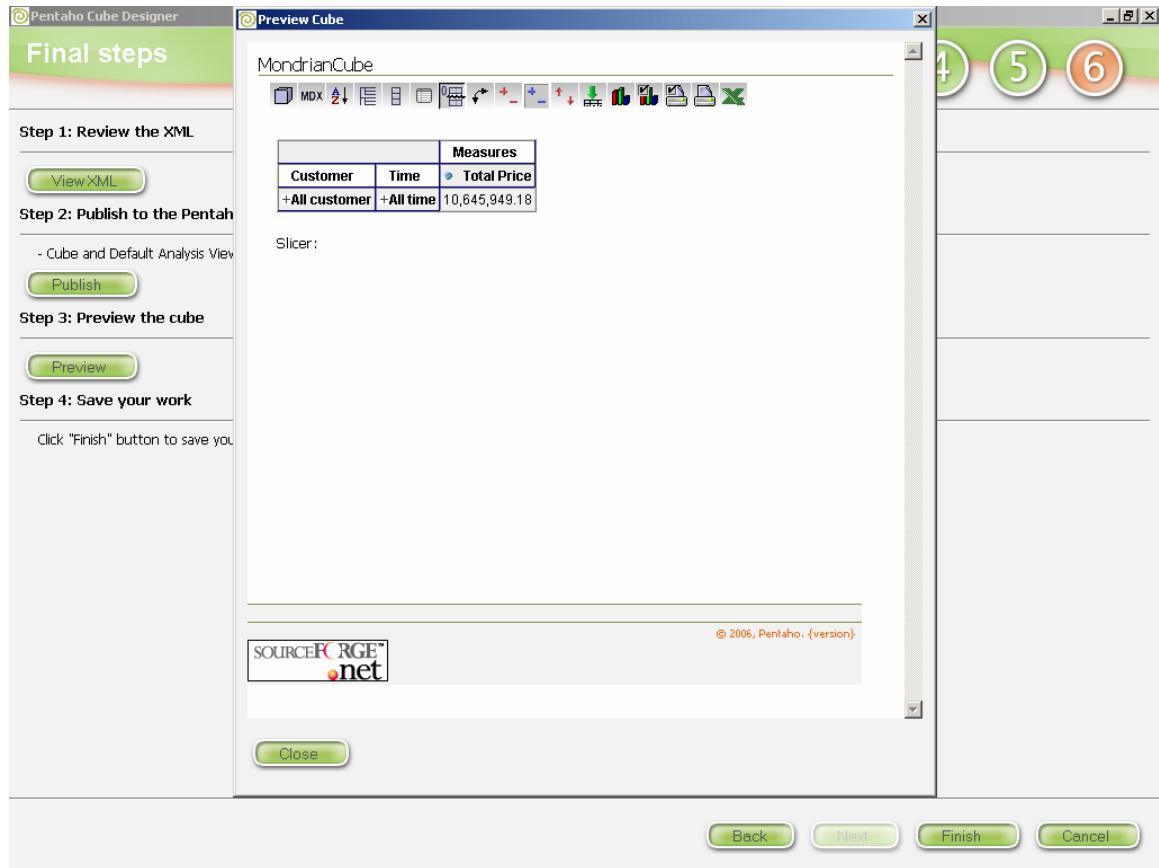
Publish

Click "Publish" button to publish the Mondrian cube specification to Pentaho solution engine. Specify the Publish parameters and click "OK" to complete publishing.



Preview

Click "Preview" button to preview the Mondrian cube that was published to the Pentaho solution engine.

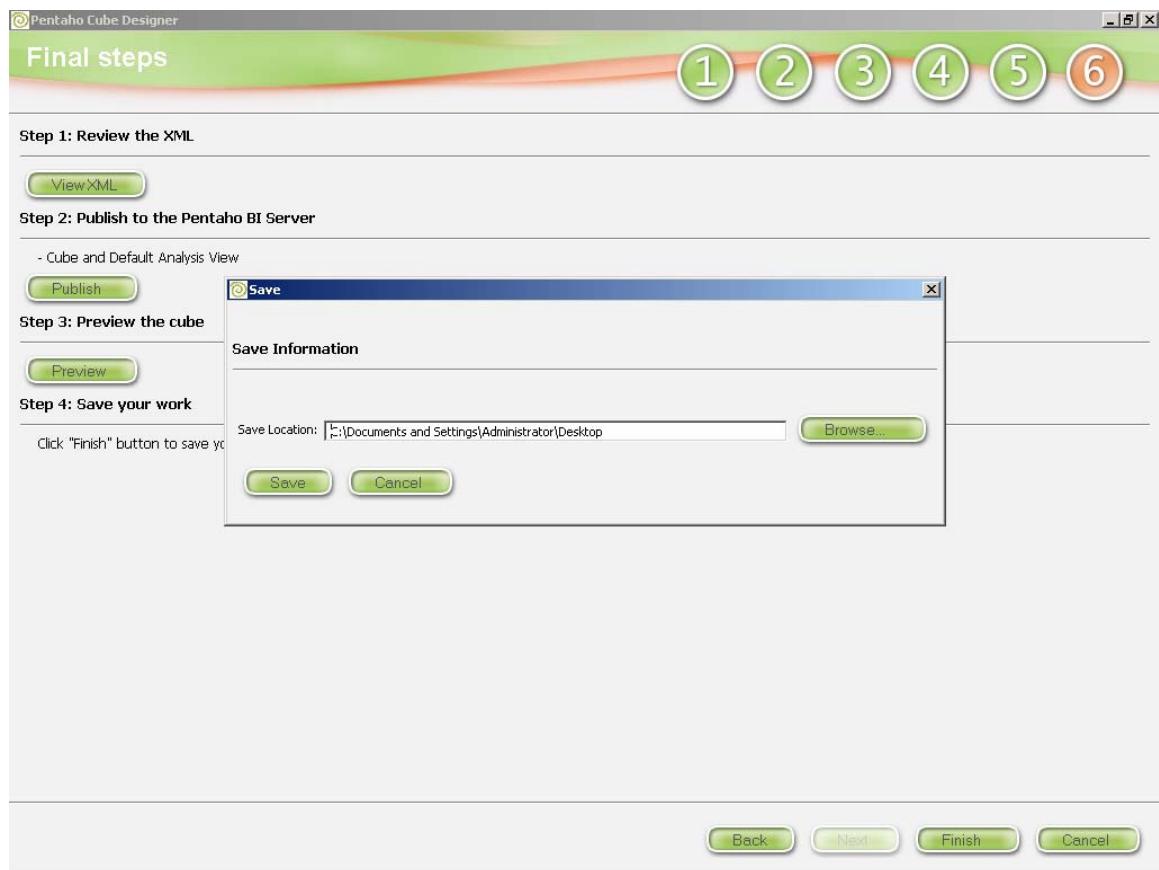


Save

The generated XML can be saved into the desired location. Click the "Finish" button to select the directory location. After specifying the directory location, click "Finish" button.

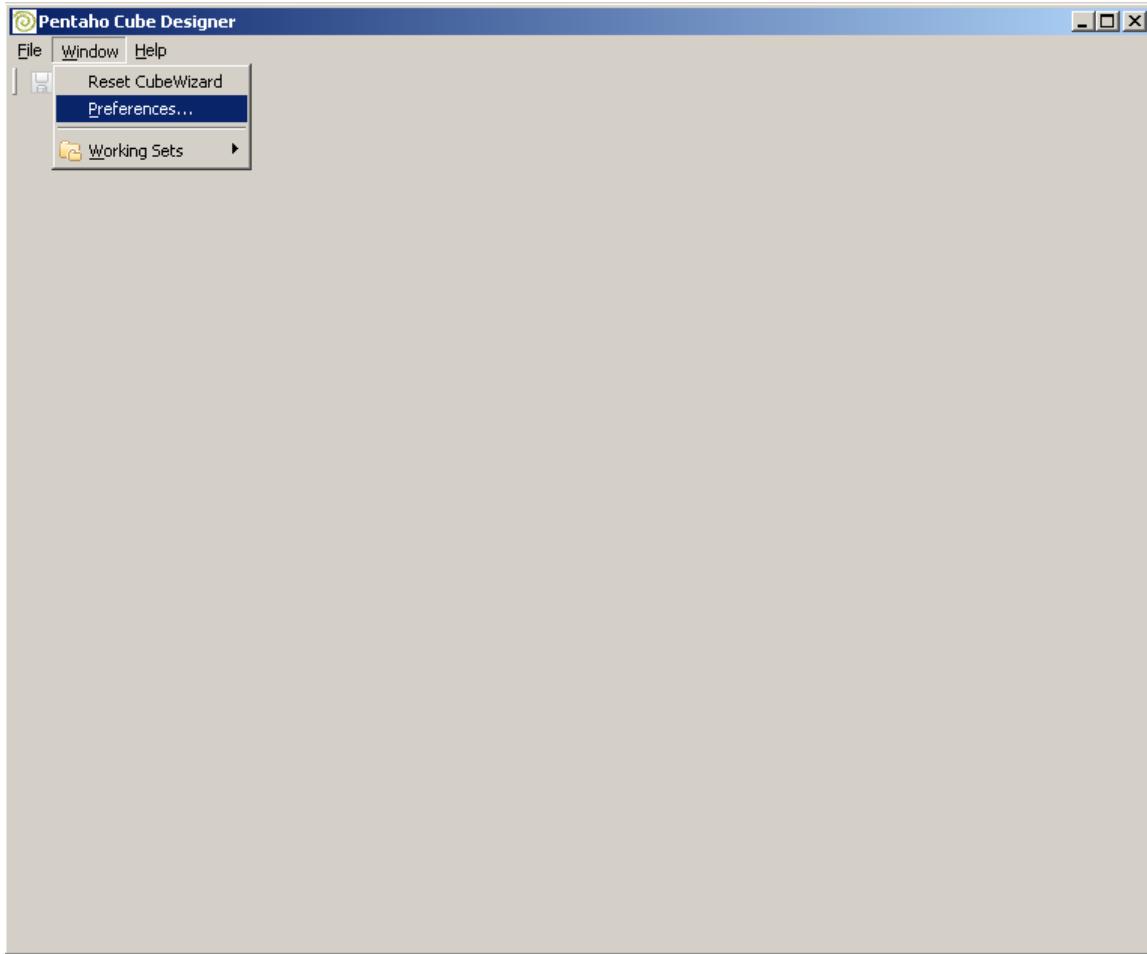
The following files are created:

- Mondrian Cube Schema file
- Pentaho XACTION file
- Pentaho XACTION property file



Preferences

The default preferences for the Cube Designer can be set and managed through the interface. To access the Preferences page, click Window->"Preferences" menu item as below:



The below screen shows the default preferences page:

