Copying data from Actual to Planned cube in a Multi Provider using Copy function in BI Integrated Planning

Applies to:
SAP BI 7.0. For more information, visit the EDW homepage.

Summary
This article describes the steps required to copy data from actual to planned cube in a Multi Provider using Copy function. It also describes the steps to create MultiProvider, Aggregation level, Filter, Planning Function, Planning Sequence and input enabled query.

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Integrated Planning – An Introduction

BI Integrated Planning provides business experts with an infrastructure for realizing and operating planning scenarios or other applications. Planning is an integral part of management cycle. Planning supports decision making. The master data and transaction data for BI Integrated Planning is stored in the Enterprise Data Warehouse.

Modeling Scenarios

Actual and Plan data in one Info Cube

Actual and plan data can be saved in a Real-Time Info Cube. A model of this type allows analyzing and entering plan data for one Info Provider using one query. Planning functions can also be used. This scenario has the following disadvantages:-

- A large amount of data is contained in one Info Cube.
- Actual and plan data cannot be loaded in parallel.

Actual and Plan data in different Info Cubes

It is useful to have the actual data in an Info Cube and the plan data in a separate real-time Info Cube. The advantages are:-

- The Info Cubes contain less data.
- If the real-time Info Cube only contains plan data, it is not necessary to switch manually to the data load mode.
Step by Step Procedure

Creating a Real Time Info Cube

Real-time Info Cubes differ from Standard Info Cubes in their ability to support parallel write accesses. Standard Info Cubes are technically optimized for read accesses to the detriment of write accesses. The data is simultaneously written into the Info Cube by multiple users. Standard Info Cubes are not suitable for this.

Right click on the Info Area and select ‘Create Info Cube’.

Display InfoCube

Give name and description for the Info Cube. In this scenario planned cube is created by copying an actual cube. The name of the actual cube is ‘IC_MODEL’ and the name of the Real-Time cube is ‘RT_MULTI’. In the column for ‘Copy From’ give the name of the Info Cube from which it is to be copied. Select the radio button ‘Standard Info Cube’ and check the checkbox ‘Real Time’. Click on ‘Create’ button. Real Time Info Cube ‘RT_MULTI’ will be created under the Info Area ‘MODEL_DEMO’.
Creating a Multi Provider

A Multi Provider is a special type of Info Provider that combines data from a number of Info Providers and makes it available for reporting purposes. The Multi Provider itself does not contain any data; its data comes exclusively from the Info Providers that it is based on. In this scenario both actual and planned cubes are included in the Multi Provider.

Right click on the Info Area and select ‘Create Multi Provider’.

Display InfoCube

Give name for Multi Provider and click on ‘Create’ button. 'MP_PLAN' is the name of the Multi Provider.

In the next screen, select the Info Cubes which should be in the Multi Provider. So check the checkbox for ‘RT_MULTI’ and ‘IC_MODEL’.
By default there will be one dimension. Select the dimension and select ‘Properties’.

Change the description of the dimension to ‘Customer’.

Right click on ‘Dimensions’ and select ‘Create New Dimensions’.
Give the description as ‘Model’.

Drag and drop Info Objects from the ‘Involved Info Providers’ pane to the right side pane of Multi Provider. 0Calday and 0Calyear should be dragged to the dimension ‘Time’. Drag key figures to the dimension ‘KeyFigures’. Drag customer to the dimension ‘Customer’ and product to the dimension ‘Model’.

Righ click on any characteristic and select the option ‘Identify (Assign)’. 
Copying data from Actual to Planned cube in a Multi Provider using Copy function in BI Integrated Planning

Check both checkboxes for the Info Provider.

In the same way assign all characteristics and keyfigures to both Info Cubes and activate the Multi Provider.
### Data Warehousing Workbench: Modeling

<table>
<thead>
<tr>
<th>InfoProvider</th>
<th>Tech Name</th>
<th>M</th>
<th>Execute Function</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Multiprovider for Integrated Planning</strong></td>
<td>MP_PLAN</td>
<td></td>
<td>Change</td>
</tr>
<tr>
<td>DS_MODEL</td>
<td>DS_MODEL</td>
<td>Manage</td>
<td></td>
</tr>
<tr>
<td>DS_MOD_N</td>
<td>DS_MOD_N</td>
<td>Manage</td>
<td></td>
</tr>
</tbody>
</table>

Copying data from Actual to Planned cube in a Multi Provider using Copy function in BI Integrated Planning.
Steps in Planning Modeler

Go to tcode RSPLAN. Click on the button ‘Start Modeler’ to start the Planning Modeler. The Planning Modeler is a Web-based modeling environment for all tasks related to planning. The master data and transaction data for BI Integrated Planning is stored in Enterprise DataWarehouse.

BI Integrated Planning

In the Planning Modeler, go to the tab ‘Info Provider’. Give the name of the Multi Provider and click on either ‘Start’ button or press ‘Enter’ key.

Info Provider tab in Planning Modeler

In the Planning Modeler, go to the tab ‘Info Provider’. Give the name of the Multi Provider and click on either ‘Start’ button or press ‘Enter’ key.

The Info Objects of the Multi Provider will be listed in the lower part of the screen.
Creating Aggregation Levels

Click on the tab ‘Aggregation Levels’ and click ‘Create’ button. If there are already any Aggregation levels created for the Multi Provider then it will be listed as shown in the figure below.

Give a technical name and description for the Aggregation Level and click on ‘Transfer’ button. In this scenario the technical name is ‘ALVL_MP1’.
All Info Objects of the Multi Provider will be listed. Select the Info Objects that should be included in the Multi Provider by checking the checkbox in the ‘Used’ column. In this scenario all Info Objects are selected except ‘Calendar day’. Check the Aggregation level by clicking on the ‘Check’ button. Save and activate the Aggregation level.

Creating Filter

A Filter is an object that describes multidimensional segment of data from a dataset. Filters are used in reporting, analysis and planning to restrict data to a certain business area, certain product group or certain time periods. It ensures that users or user groups only have access to data that is relevant to them. In BI Integrated Planning Filters select the data upon which Planning Function operates.

Select ‘Filter’ tab and click on ‘Create’ button.

Give a technical name and description for the Filter and click on ‘Transfer’ button.
Select ‘Filter’ tab of the screen and select a characteristic to restrict the dataset which is shown in the below figure. Click on ‘Add’ button.

The selected characteristic will be added as a row and click on the input help button to select the value for the characteristic ‘Customer’. In this scenario the customer name given is ‘NO’. That means Planning Function will operate on customers with name as ‘NO’. In the Info Cube ‘IC_MODEL’ there are three records with the customer name as ‘NO’. The data in the actual cube is shown below. Check the Filter by clicking on the ‘CHECK’ button and save the Filter if there are no inconsistencies.

"IC_MODEL", List output

<table>
<thead>
<tr>
<th>PRD_NAME</th>
<th>Customer</th>
<th>Calendar day</th>
<th>LOCALYEAR</th>
<th>Currency</th>
<th>0UNIT</th>
<th>price</th>
<th>quantity</th>
<th>revenue</th>
</tr>
</thead>
<tbody>
<tr>
<td>SANTR</td>
<td>C1</td>
<td>06.07.2007</td>
<td>2007</td>
<td>INR</td>
<td>EA</td>
<td>300.00</td>
<td>2</td>
<td>600.00</td>
</tr>
<tr>
<td>SANTR</td>
<td>NO</td>
<td>06.07.2007</td>
<td>2007</td>
<td>INR</td>
<td>EA</td>
<td>300.00</td>
<td>2</td>
<td>600.00</td>
</tr>
<tr>
<td>MARUTHI</td>
<td>C8</td>
<td>05.07.2007</td>
<td>2007</td>
<td>INR</td>
<td>EA</td>
<td>900.00</td>
<td>6</td>
<td>1800.00</td>
</tr>
<tr>
<td>MARUTHI</td>
<td>NO</td>
<td>05.07.2007</td>
<td>2007</td>
<td>INR</td>
<td>EA</td>
<td>300.00</td>
<td>2</td>
<td>600.00</td>
</tr>
<tr>
<td>800C</td>
<td>C9</td>
<td>05.07.2007</td>
<td>2007</td>
<td>INR</td>
<td>EA</td>
<td>300.00</td>
<td>2</td>
<td>600.00</td>
</tr>
<tr>
<td>800C</td>
<td>NO</td>
<td>05.07.2007</td>
<td>2007</td>
<td>INR</td>
<td>EA</td>
<td>300.00</td>
<td>2</td>
<td>600.00</td>
</tr>
</tbody>
</table>
Creating Planning Function

Planning functions are used within BI Integrated Planning for system-supported editing and generation of data.

A Planning Function specifies the ways in which the transaction data for an Aggregation level can be changed. The following are determined for this purpose:

- The name of the Aggregation level
- The type of Planning Function
- How characteristics are used
- The parameter values

The Planning Function type determines the way in which data is changed by a Planning Function. With characteristic usage, the characteristics of the Aggregation level are divided into Characteristics to Be Changed and Block Characteristics (that is characteristics that are not used). In this way, you specify the characteristic values that are changed when the Planning Function processes a data record. Block characteristics remain constant. Parameter set is used to specify the detailed information. With most planning functions, all transaction data is processed with the same set of parameters. In this case, a block characteristic was not selected as a condition characteristic; only one parameter set has to be entered.

Go to the ‘Planning Functions’ tab and click on ‘Create’ button.

Select ‘Copy’ as the Planning Function type. Give a technical name and description for the Planning Function. Click on ‘Transfer’ button.
In the lower part of the screen all Info Objects will be displayed. By default the ‘To Characteristic Usage’ tab will be selected. Select the Info Objects that should be changed by checking the checkbox in the column ‘changed’ as shown in the figure below. In this scenario data from actual cube is going to be copied to a planned cube. Calyear and Info Provider are the two characteristics which are going to be changed. All other Info Objects will be copied to the planned cube without any changes.

Select the tab ‘To Parameters’ to select the keyfigures that should be copied and the values which are going to be changed for the characteristics. In this scenario all keyfigures are selected. Click on the ‘Create row’ button. The characteristics that were selected as ‘Changed’ in the above figure (checked in the ‘To Characteristic Usage’ tab) will be present in the row created. Click on the ‘From Change’ and ‘To Change’ button to specify the values that should be changed. In this scenario Calyear should be changed from 2007 to 2011 and Info Provider should be changed from actual cube to planned cube. So here from value of calyear is 2007 and Info Cube is ‘IC_MODEL’ (actual cube). To value of calyear is 2011 and Info Cube is ‘RT_MULTI’ (planned cube). Click on ‘Check’ button to check inconsistencies and save the Planning Function.
Copying data from Actual to Planned cube in a Multi Provider using Copy function in BI Integrated Planning
Creating Planning Sequence

Planning Sequences are used within BI Integrated Planning to group Planning Functions. They allow saving groups of Planning Functions in a sorted sequence and executing them sequentially. Planning Sequences can be edited, saved and tested in the planning modeler. They can be included in a process chain as a step. They can also be linked to variants for variable values.

Click on ‘Planning Sequences’ tab and click on ‘Create’ button.

Give a technical name and description for the Planning Sequence and click on ‘Transfer’ button.

Click on the button ‘Add step for planning function’. By default aggregation level will be selected in its drop down box. If it is not there then select using the input help button. Select appropriate Filter and Planning function from the drop down box and save the Planning Sequence.
Click on ‘Execute’ button. If records have been changed then message will appear like in the figure given below. According to this scenario Planning Function acts on 3 records in actual cube. The reason is Filter is created for Customer with the name ‘NO’. There are three records in Actual cube with customer name as ‘NO’. So message appeared like ‘3 records read, 3 generated, 0 changed, 0 deleted’. 

The data will be saved to the buffer. It is not saved to the planned cube. To save data from buffer to planned cube click on the button ‘Save Plan Data’.

To check the results go to tcode RSA1 and select the planned cube. Right click on the cube and select ‘Manage’ to view the contents of the cube.
Copying data from Actual to Planned cube in a Multi Provider using Copy function in BI Integrated Planning

The screenshot of the planned cube is shown in figure below. 'Customer' column contains only customers with the name 'NO' and '0Calyear' contains year as '2011' which we have specified in the 'To Parameters' in the tab 'Planning Function'. The data from actual cube has been copied to a planned cube successfully based on the Filter and the parameters values specified in the Planning Function.

"RT_MULTI", List output

<table>
<thead>
<tr>
<th>PRD_NAME</th>
<th>Customer</th>
<th>UCALDAY</th>
<th>UCALYEAR</th>
<th>Currency</th>
<th>CUNIT</th>
<th>price</th>
<th>quantity</th>
<th>revenue</th>
</tr>
</thead>
<tbody>
<tr>
<td>800C</td>
<td>NO</td>
<td>2011</td>
<td>0Calyear</td>
<td>NR</td>
<td>EA</td>
<td>300,00</td>
<td>2</td>
<td>600,00</td>
</tr>
<tr>
<td>MARUTHI</td>
<td>NO</td>
<td>2011</td>
<td></td>
<td>NR</td>
<td>EA</td>
<td>300,00</td>
<td>2</td>
<td>600,00</td>
</tr>
<tr>
<td>SANTR</td>
<td>NO</td>
<td>2011</td>
<td></td>
<td>NR</td>
<td>EA</td>
<td>300,00</td>
<td>2</td>
<td>600,00</td>
</tr>
</tbody>
</table>

When you enter planning data, the data is written to a data request of the real-time Info Cube. As soon as the number of records in a data request exceeds a threshold value, the request is closed and a rollup is carried out for this request in defined aggregates (asynchronously). To manually close the request right click on the planned cube and select 'Change Real-Time Load Behavior'. By default, Real-Time Cube Can Be Planned; Data Loading Not Permitted is selected. Switch this setting to Real-Time Cube Can Be Loaded with Data; Planning Not Permitted.
The request will be closed when data loading mode is selected.
Creating Input enabled query to change KeyFigure values

In the Planning modeler click on the button ‘Add step for input template’.

A new row will be created for the input template. Select the appropriate filter for the input template and save it.

Click on ‘Execute’ button. The records for the planned cube will be displayed in edit mode. In this scenario quantity has been changed to 5 and revenue has been changed to 1500. Click on the button ‘Save Plan Data’ to save the changes to the planned cube.
In the planned cube a new record will be inserted with the delta values. The below figure shows the changes that have been made to the planned cube. Since price is not changed it is zero. Quantity was changed to 5 and revenue was changed to 1500. So the delta values are changed as a new row with quantity = 3 and revenue = 900.

"RT_MULTI", List output

<table>
<thead>
<tr>
<th>PRD_NAME</th>
<th>Customer</th>
<th>OCHANID</th>
<th>RequestID</th>
<th>QCALCDA</th>
<th>OCALYEAR</th>
<th>Currency</th>
<th>QUNIT</th>
<th>price</th>
<th>quantity</th>
<th>revenue</th>
</tr>
</thead>
<tbody>
<tr>
<td>MARUTH</td>
<td>NO</td>
<td>APO_R0962Y142SCUU694RRVX168LDNM0450</td>
<td>2011</td>
<td>INR</td>
<td>0.00</td>
<td>1</td>
<td>900.00</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>000C</td>
<td>NO</td>
<td>APO_R0962Y142SCUU694RRVX168LDNM0450</td>
<td>2011</td>
<td>INR</td>
<td>300.00</td>
<td>3</td>
<td>600.00</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>MARUTH</td>
<td>NO</td>
<td>APO_R0962Y142SCUU694RRVX168LDNM0450</td>
<td>2011</td>
<td>INR</td>
<td>300.00</td>
<td>3</td>
<td>600.00</td>
<td></td>
<td></td>
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</tr>
<tr>
<td>SANTR</td>
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<td>APO_R0962Y142SCUU694RRVX168LDNM0450</td>
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<td>INR</td>
<td>300.00</td>
<td>3</td>
<td>600.00</td>
<td></td>
<td></td>
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</tr>
</tbody>
</table>
Related Content

- Planning Function
- Multi Providers
- Aggregation Level
- Copy Function Issue

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