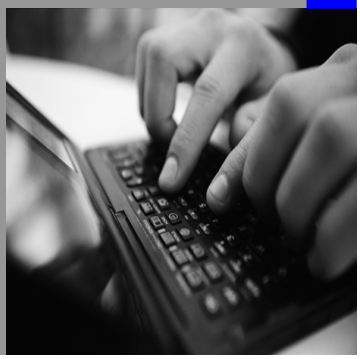

How-to Guide
SAP NetWeaver 7.0 (2004s)

How To... Use Work-packages to Control Locking in BI Integrated Planning

Version 1.00 – December 2007

Applicable Releases:
SAP NetWeaver 7.0
Business Information Management
Business Planning and Analytical Services

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1 (Business) Scenario

In planning projects we typically have the situation that each user is responsible for a certain work-package. These work-packages usually also depend on the planning application. The work packages of two different users might be disjoint or they can overlap. In this case locking conflicts may arise. This how to paper shows how work-packages can be modeled efficiently and how locking issues can be avoided.

2 Introduction

It is a common task in each planning project to identify and specify the set of data each user should work with. We call this set of data a work-package. An obvious way to define a work-package is to maintain reporting authorizations in BI system. This defines an ‘upper bound’ of what data the user can use in his or her daily work. But is this enough? Unfortunately this is not always the case…

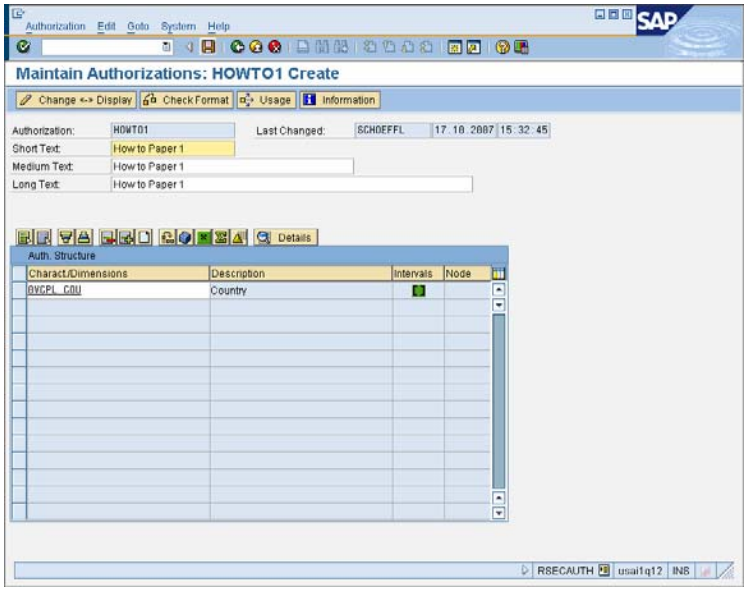
In this how to paper we will concentrate at two different aspects of the problem. We will shed light on how we can cleverly define our work-packages and we will give a solution how we can avoid locking issues.

3 The Step By Step Solution

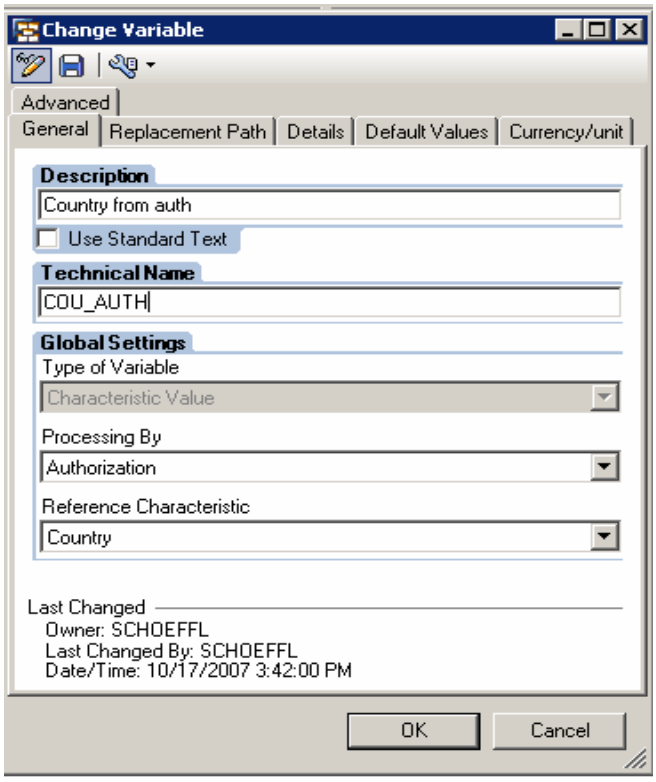
We will start with the most direct approach. We will use the reporting authorizations to define our work-packages. We will create a web application where the user can select values from his work-package.

3.1 Defining Work-Packages by Authorizations

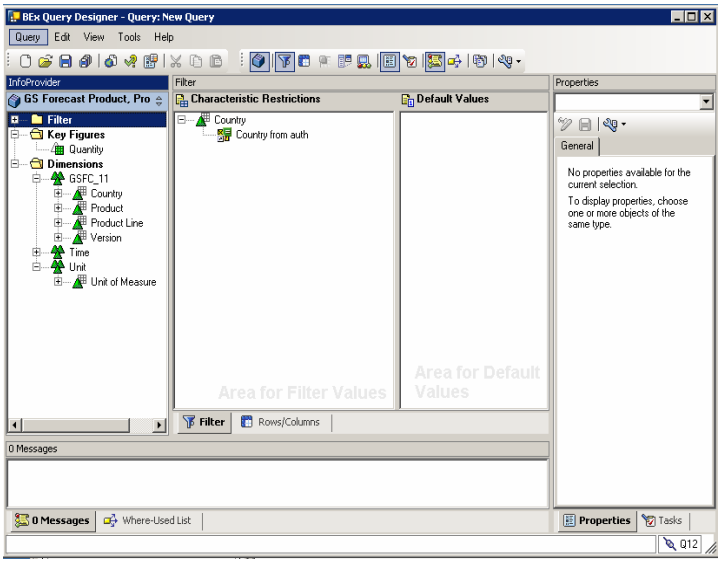
1. Use the transaction RSECADMIN to create authorizations and assign the authorizations to the specified user. In our example we grant the user display and change authorizations for the countries Germany, France and Italy. Please have a look at the documentation if you need further details on this step.



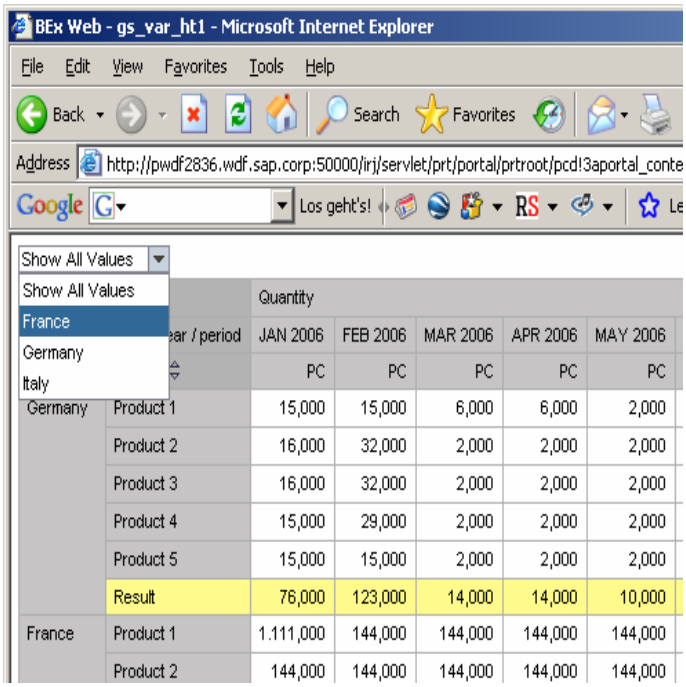
2. Create a variable with replacement type authorization either in the query designer of the planning modeler. Upon execution the variable will be filled with the authorized values – in our case Germany, France, and Italy.



3. Create a query the end user should use to enter or change his plan data. Use the variable we have just created in the fixed filter of the query.



4. Create Web Template or Workbook that contains a Data Provider (and an Analysis Item) using the query created above. Now create a drop down box that is filled from that Data Provider and also restricts it. Use the country as characteristic. The end user can now select the current country from all countries he is allowed to access. As by default the variable is not restricted the Web Application will show all allowed values upon start. If you want allow the user to restrict the data before entering the application switch on the variable screen in the settings of the Web Application. The value help for the variable will still be restricted by the authorizations.



3.2 Defining more Flexible Work-packages in a Web Application

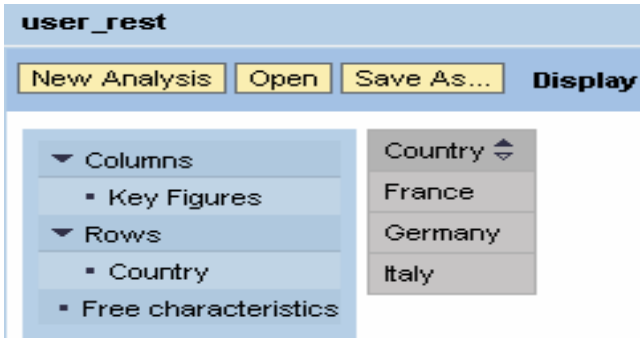
The above solution allows the end user to select each country he is allowed to access according to the authorizations. Unfortunately the system cannot decide whether a variable is used for planning purposes or for reporting purposes and so the variable will contain all values regardless whether the user has ‘display’ or ‘change’ authorization. If a user has different values with display authorization than with change authorization then he cannot see from the drop down box which values he can use for his planning. The only way is to go through the list and see for which values the data is input enabled.
A similar situation has occur if a user has the authorization to use a certain value but is working with different planning applications where he should use a certain value in one application but not in the other.

The second problem arises if we look at a situation which involves several users. Let us recall how locks in plan queries work. Even if a plan query only shows data that is contained in the default filter (which can be changed upon execution) the locks are defined by the fixed filter. All data contained in the fixed filter will be locked. These locks can be released if the query is restarted or the user saves the changed data in a planning application.

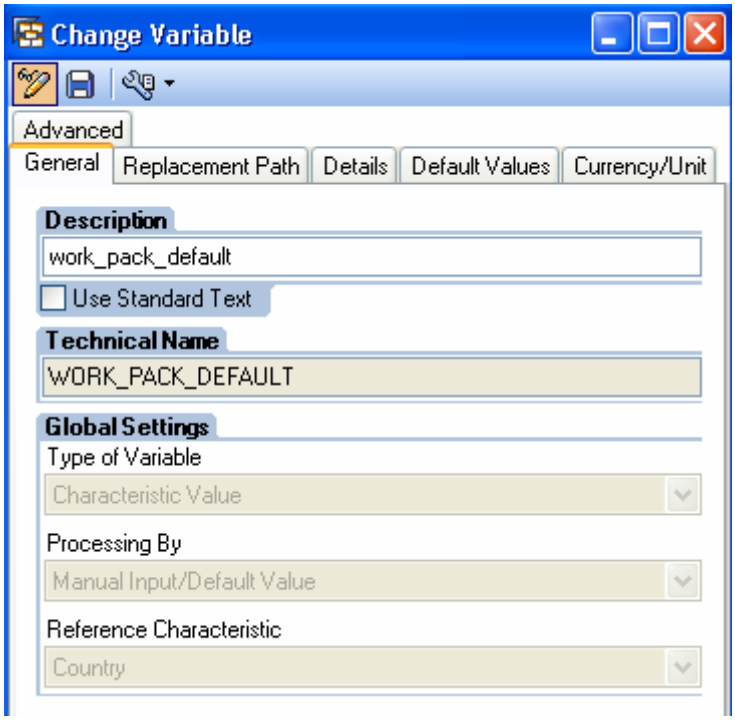
Now let us assume that in the system there are two users which have the country ‘France’ in their work-package and that we have realized a solution as described above. User1 enters the system and chooses ‘Germany’ in the drop down box. As ‘France’ is also contained in the fixed filter of the query the data for France is also locked. If now user2 wants to enter (no matter which country he wants to choose) his data will be locked as ‘France’ is also contained in his fixed filter.

We will now create a solution where each user has a specific work-package. When changing the selection only the selected values (and the ones already changed) should be locked. First we will show how the solution is built in a Web Application.

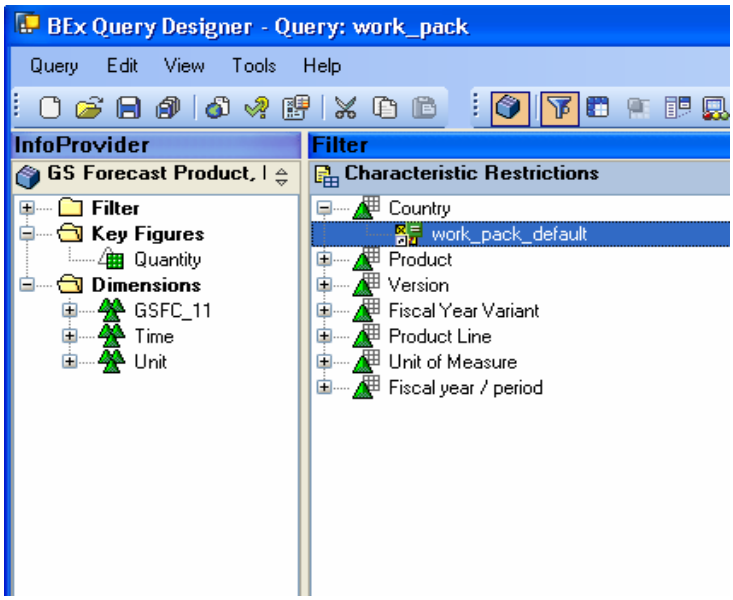
1. Create a Data Store Object (or InfoCube) that contains a characteristic that can hold the user name. Add the characteristic(s) you want to use for restricting the work-packages (in our case the country).
2. Now create a query (USER_REST) that in the fixed filter uses an Exit variable that is replaced by the system user. The result of the query is a list of values the user is allowed to work with.



3. Create a variable (WORK_PACK_DEFAULT) that is processed by 'Manual Input/Default Value'. Leave the default value of this variable empty.

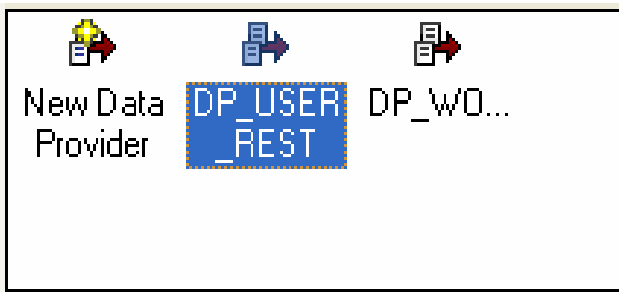


4. Create an input enabled query (WORK_PACK) that shows the data the user should work with. In the fixed filter use the variable WORK_PACK_DEFAULT.



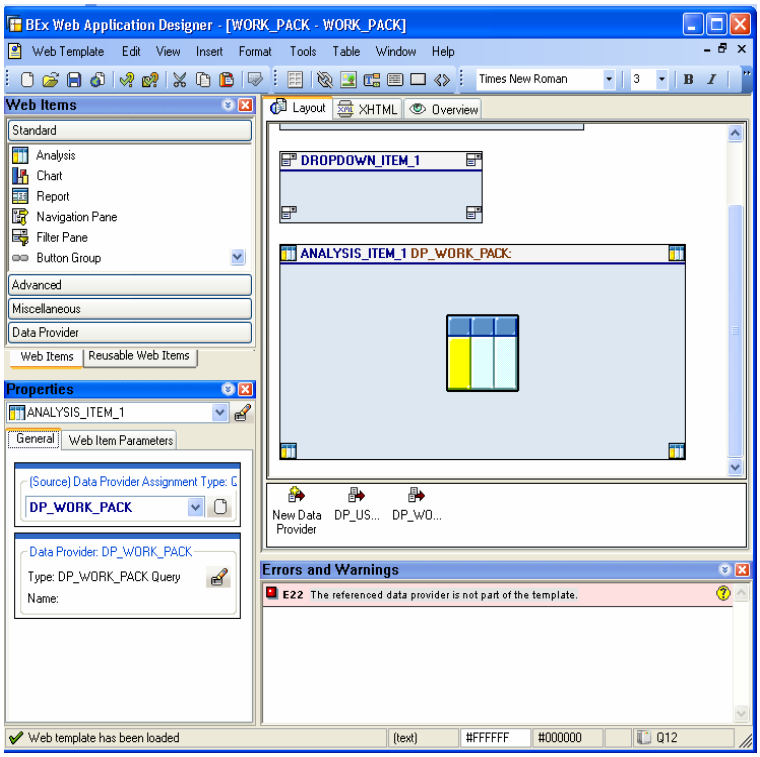
5. Go to the Web Application Designer and create a new Web Application (WORK_PACK).

6. Create two DataProviders: DP_USER_REST using the query USER_REST and DP_WORK_PACK no query (yet). Thus the Data Provider does not read any data upon start and we do not lock any data.

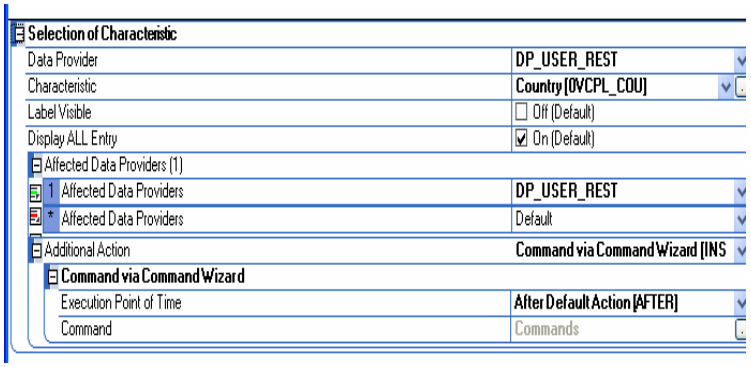


7. Create a drop down box that is filled from DP_USER_REST and works on the characteristic country. This drop down box will now show the user dependent list of countries.

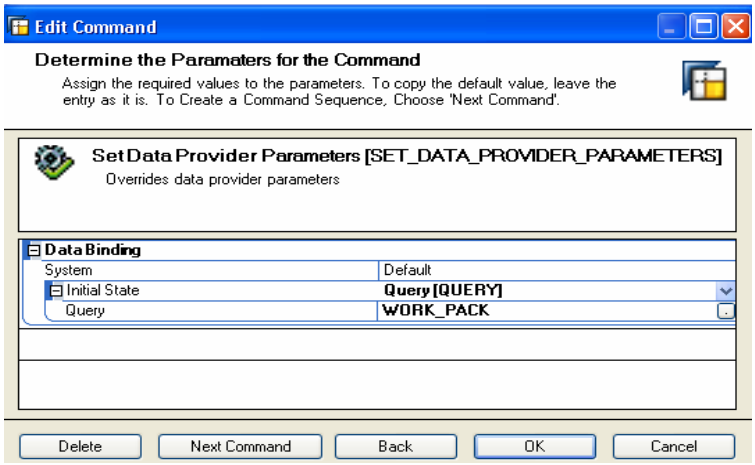
8. Create an Analysis Item in your Web Application. As Data Provider choose DP_WORK_PACK. As this Data Provider is empty the analysis item will not be visible when starting the application.



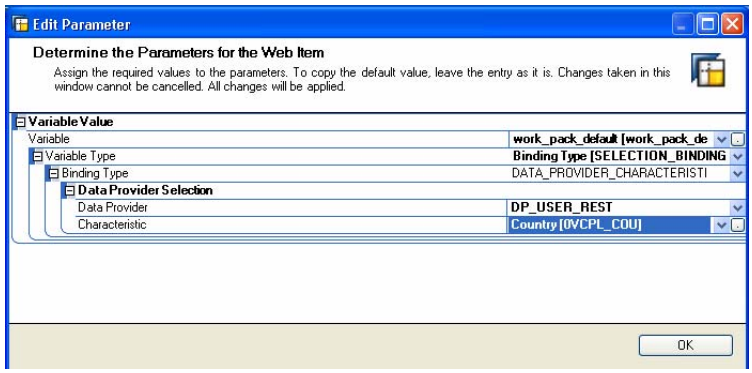
9. If you now execute the Web Application you will only see the drop down box. As the DataProvider should shown the data from the query WORK_PACK after selecting one value in the drop down box we open the properties of the drop down box again and insert a command sequence ‘After Default Action’.



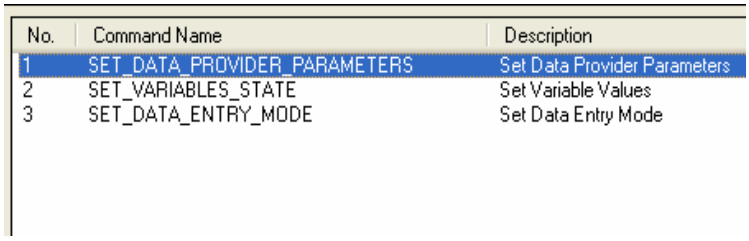
10. Create a list of commands. First use the command ‘Set Data Provider Parameters’ to set the query WORK_PACK.



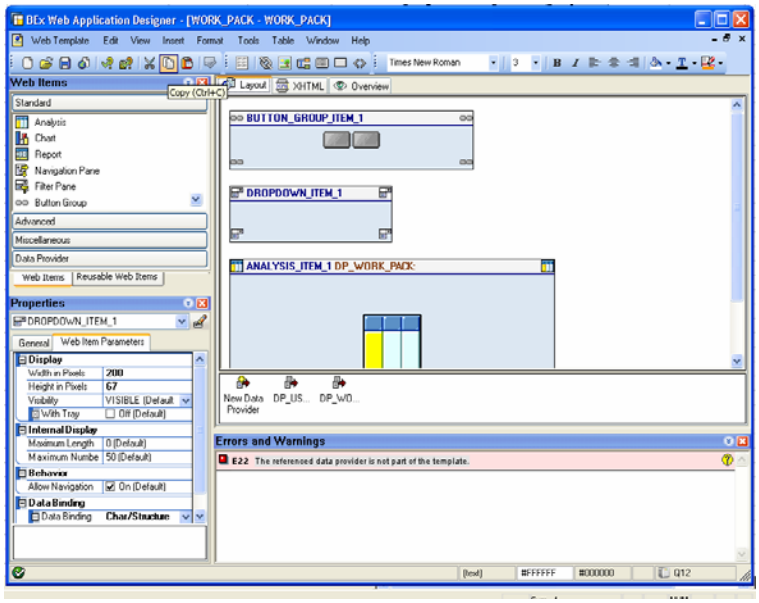
11. The selection in the fixed filter of the query WORK_PACK is not yet restricted. What we want is that is contains the selection from the drop down box. Thus we create a command ‘Set Variable Values’. As variable name we enter ‘WORK_PACK_DEFAULT’. The ‘Binding Type’ is ‘Data Provider Selection’, the source is DP_USER_REST and characteristic country. Note that by setting (and changing) a variable value we make the query restart and thus can release locks.



12. To make sure that the table is input enabled whenever possible (after navigation) create a last command ‘Set Data Entry Mode’ and set the property to ‘Active’.



13. To complete the planning application create a ‘Save’ and ‘Refresh Data’ button.

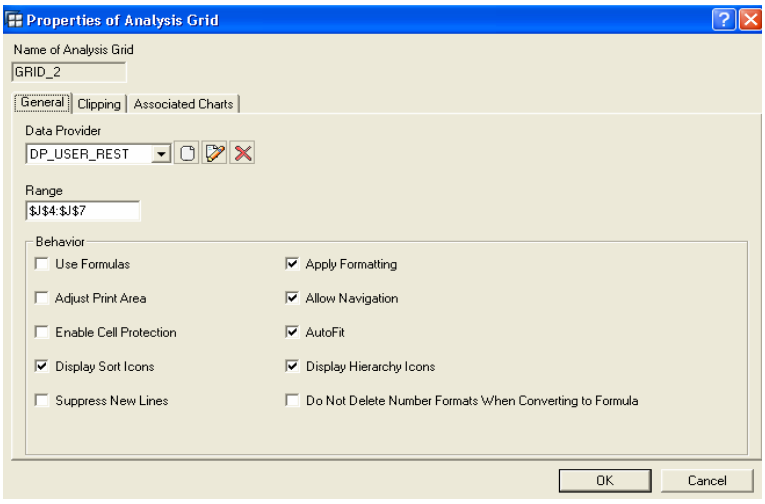


You can execute you planning application. After start choose a country from the drop down box. In the transaction REPLSE you can check the locks set in the system. If you choose the country ‘France’ in the drop down box only data for country ‘France’ will be locked. If you do not change a record and navigate to ‘Germany’ the query will refresh, the locks for ‘France’ are released, and ‘Germany’ is locked. Change some data for ‘Germany’ and navigate to Italy. As the changed records for Germany are still in the delta buffer the lock for ‘Germany’ is not released and now the two countries ‘Germany’ and ‘Italy’ are locked. Once you press save the data is written from the delta buffer into the data base and the lock for ‘Germany’ is released.

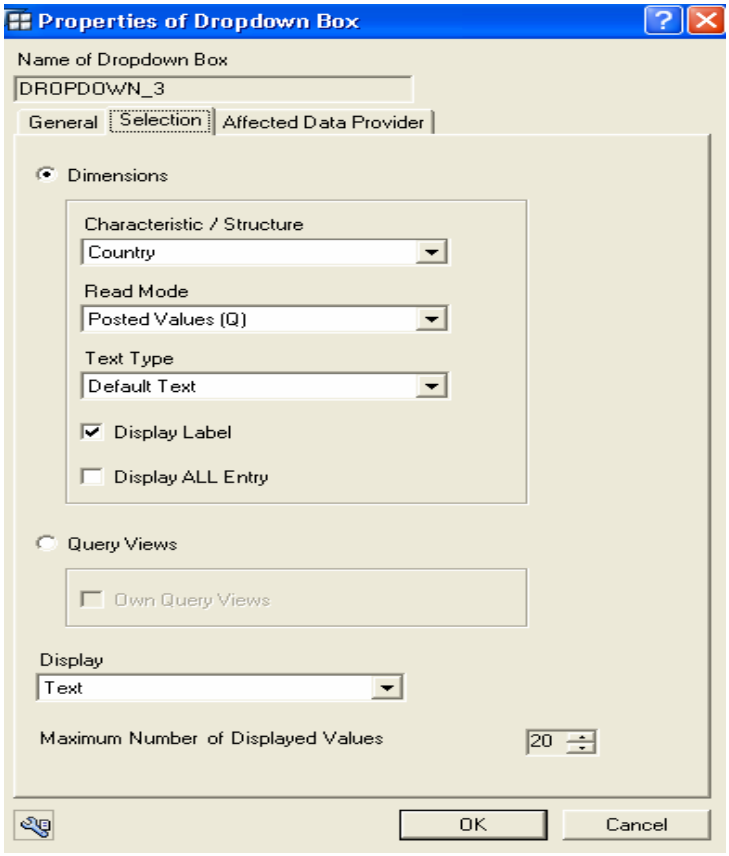
3.3 Defining more Flexible Work-packages in Bex Analyzer

We will build up the same application in the Bex Analyzer now. We will reuse the queries we have created above.

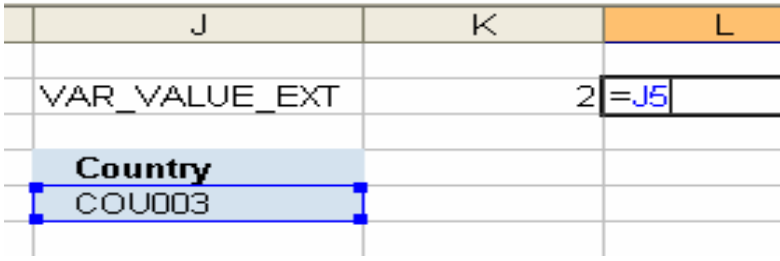
1. Create a Data Provider DP_USER_REST and an Analysis Item for the query USER_REST. Also create a Data Provider and an Analysis Item for the query WORK_PACK.



2. Create a drop down box on DP_USER_REST restricting the country. Make sure the read mode of the drop down box is set to ‘Posted Values’.



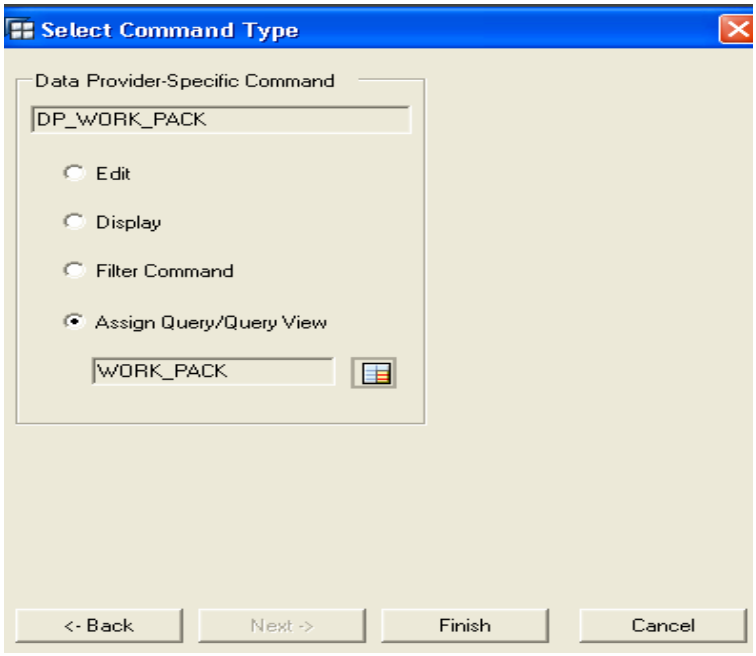
3. As above we have to fill the variable in the query WORK_PACK with the country selected in the drop down box. Unfortunately we do not have the same commands available as in the Web Application Designer.



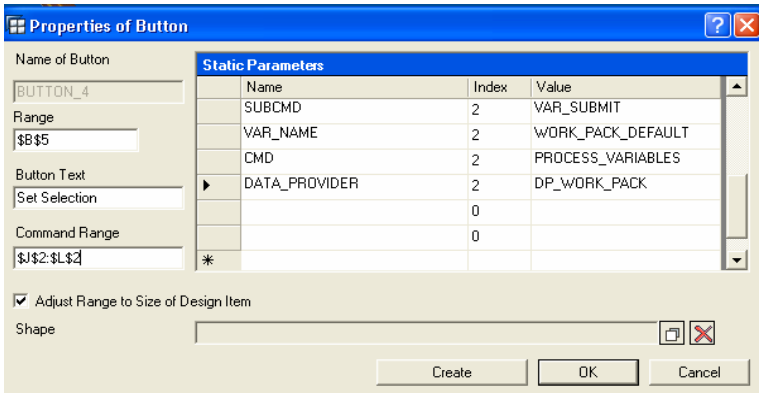
First we have to get the value from the drop down box. We can either use some VBA coding or – more directly – use the result of the Analysis Item for DP_USER_REST. The first line of the Analysis Item contains the selected value. As we need the key of the country but not the text please make sure that the query USER_REST displays the keys. We retrieve the first line of the result by using a cell reference (here: ‘J5’). Enter the triple ‘VAR_VALUE_EXT’, ‘2’, and the cell reference as shown above. These cells will be later used as a command range. As we will use several commands on a button we have to number the commands correctly. Thus it is crucial that the second cell contains a ‘2’.

4. As we cannot trigger a command upon change of the drop down box we create a button (Set Selection) for executing the commands.

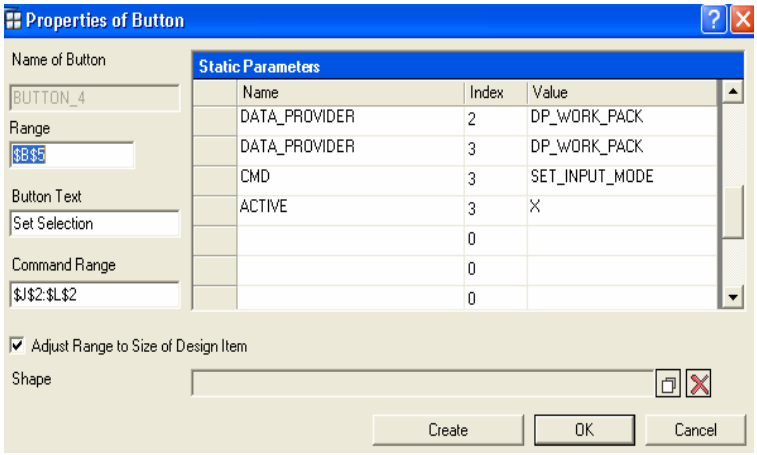
5. By using the wizard create a command setting the query WORK_PACK in the Data Provider DP_WORK_PACK. This is our first command in the command sequence.



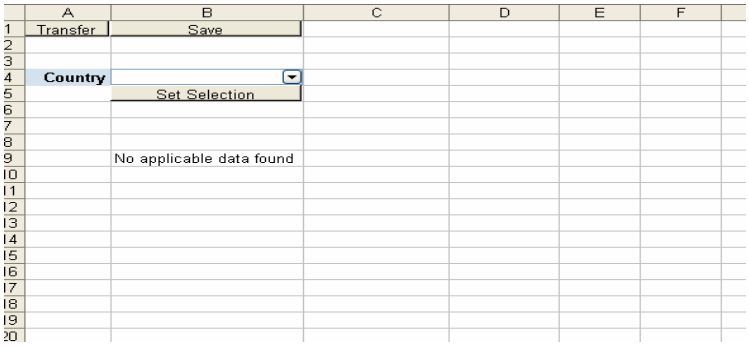
6. Now we create the command for setting the variable (second command). Unfortunately we cannot use the wizard directly. We have to enter the next command directly in the properties screen of the button. Copy the lines from the picture. Make sure you set the index to 2 (indicating that all lines belong to the second command). As we want to fill the variable value dynamically from the table we use the command range created in step 4.



7. New press the create button and create a last (third) command to set the Data Provider DP_WORK_PACK input on (Data Provider Command: ‘Edit’). The command shown on the right side is now inserted.



8. Create a ‘Save’ button and a ‘Transfer Values’ button to finish your application. The user can now select a value in the drop down box. After pressing the button ‘Set Selection’ the selection is transferred to the variable and query WORK_PACK is restricted.



The application is working now correctly. Nevertheless it should be made more user-friendly for example by hiding the table from DP_USER_REST and the command range.

4 Appendix

In this section we include the XHTML for the above example. You can simply copy and paste it into the XHTML view in the Web Application Designer in order to create the web application described above in your system. If you use queries with different names from the ones user in our example you will have to change the names accordingly.

```
<bi:bisp  xmlns="http://www.w3.org/TR/REC-html40" xmlns:bi="http://xml.sap.com/2005/01/bi/wad/bisp"
xmlns:jsp="http://java.sun.com/JSP/Page" >
   <html >
      <head >
         <title >BEx Web Application</title>
         <meta http-equiv="Content-Type" content="text/html; charset=utf-8" />
      </head>
      <body >
         <bi:QUERY_VIEW_DATA_PROVIDER name="DP_USER_REST" >
            <bi:INITIAL_STATE type="CHOICE" value="QUERY" >
               <bi:QUERY value="USER_REST" text="user_rest" />
            </bi:INITIAL_STATE>
         </bi:QUERY_VIEW_DATA_PROVIDER>
         <bi:QUERY_VIEW_DATA_PROVIDER name="DP_WORK_PACK" >
            <bi:INITIAL_STATE type="CHOICE" value="QUERY" >
               <bi:QUERY value="" />
            </bi:INITIAL_STATE>
         </bi:QUERY_VIEW_DATA_PROVIDER>
         <p >
            <bi:BUTTON_GROUP_ITEM name="BUTTON_GROUP_ITEM_1" designheight="70" designwidth="300"
>
               <bi:BUTTON_LIST type="ORDEREDLIST" >
                  <bi:BUTTON type="COMPOSITE" index="1" >
                     <bi:CAPTION value="Refresh Data " />
                     <bi:ACTION type="CHOICE" value="INSTRUCTION" >
                        <bi:INSTRUCTION >
                           <bi:REFRESH_DATA />
                        </bi:INSTRUCTION>
                     </bi:ACTION>
                  </bi:BUTTON>
                  <bi:BUTTON type="COMPOSITE" index="2" >
                     <bi:CAPTION value="Save Data" />
                     <bi:ACTION type="CHOICE" value="INSTRUCTION" >
                        <bi:INSTRUCTION >
                           <bi:SAVE_DATA />
                        </bi:INSTRUCTION>
                     </bi:ACTION>
                  </bi:BUTTON>
               </bi:BUTTON_LIST>
            </bi:BUTTON_GROUP_ITEM>
         </p>
         <p >
            <bi:DROPDOWN_ITEM name="DROPDOWN_ITEM_1" designheight="67" designwidth="200" >
               <bi:WIDTH value="200" />
               <bi:HEIGHT value="67" />
               <bi:DATA_BINDING_TYPE type="CHOICE" value="CHARACTERISTIC_SELECTION" >
                  <bi:CHARACTERISTIC_SELECTION type="COMPOSITE" >
                     <bi:DATA_PROVIDER_REF value="DP_USER_REST" />
                     <bi:CHARACTERISTIC value="0VCPL_COU" text="Country" />
                     <bi:LINKED_DATA_PROVIDER_REF_LIST type="ORDEREDLIST" >
                        <bi:LINKED_DATA_PROVIDER_REF index="1" value="DP_USER_REST" />
                     </bi:LINKED_DATA_PROVIDER_REF_LIST>
                     <bi:ACTION_WITH_DEFAULT type="CHOICE" value="INSTRUCTION_WITH_DEFAULT" >
                        <bi:INSTRUCTION_WITH_DEFAULT type="COMPOSITE" >
                           <bi:EXECUTION_TIME value="AFTER" />
                           <bi:INSTRUCTION >
                              <bi:SET_DATA_PROVIDER_PARAMETERS >
                                 <bi:cmd_data_provider_parameters type="QUERY_VIEW_DATA_PROVIDER" >
                                    <bi:INITIAL_STATE type="CHOICE" value="QUERY" >
```

```
                                    <bi:QUERY value="WORK_PACK" />
                                  </bi:INITIAL_STATE>
                                </bi:cmd_data_provider_parameters>
                                <bi:TARGET_DATA_PROVIDER_REF value="DP_WORK_PACK" />
                              </bi:SET_DATA_PROVIDER_PARAMETERS>
                              <bi:SET_VARIABLES_STATE >
                                <bi:VARIABLE_VALUES type="ORDEREDLIST" >
                                  <bi:VARIABLE_VALUE type="COMPOSITE" index="1" >
                                    <bi:VARIABLE value="WORK_PACK_DEFAULT" text="WORK_PACK_DEFAULT"
/>
                                    <bi:VARIABLE_TYPE type="CHOICE" value="SELECTION_BINDING_TYPE" >
                                      <bi:SELECTION_BINDING_TYPE type="CHOICE"
value="DATA_PROVIDER_CHARACTERISTIC" >
                                        <bi:DATA_PROVIDER_CHARACTERISTIC type="COMPOSITE" >
                                          <bi:DATA_PROVIDER_REF value="DP_USER_REST" />
                                          <bi:CHARACTERISTIC value="0VCPL_COU" text="Country" />
                                        </bi:DATA_PROVIDER_CHARACTERISTIC>
                                      </bi:SELECTION_BINDING_TYPE>
                                    </bi:VARIABLE_TYPE>
                                  </bi:VARIABLE_VALUE>
                                </bi:VARIABLE_VALUES>
                              </bi:SET_VARIABLES_STATE>
                              <bi:SET_DATA_ENTRY_MODE >
                                <bi:TARGET_DATA_PROVIDER_REF_LIST type="ORDEREDLIST" >
                                  <bi:TARGET_DATA_PROVIDER_REF index="1" value="DP_WORK_PACK" />
                                </bi:TARGET_DATA_PROVIDER_REF_LIST>
                              </bi:SET_DATA_ENTRY_MODE>
                            </bi:INSTRUCTION>
                          </bi:INSTRUCTION_WITH_DEFAULT>
                        </bi:ACTION_WITH_DEFAULT>
                      </bi:CHARACTERISTIC_SELECTION>
                    </bi:DATA_BINDING_TYPE>
                  </bi:DROPDOWN_ITEM>
                </p>
                <p >
                  <bi:ANALYSIS_ITEM name="ANALYSIS_ITEM_1" designwidth="400" designheight="200" >
                    <bi:VISIBILITY value="VISIBLE" />
                    <bi:DATA_PROVIDER_REF value="DP_WORK_PACK" />
                  </bi:ANALYSIS_ITEM>
                </p>
                <bi:TEMPLATE_PARAMETERS name="TEMPLATE_PARAMETERS" />
<!-- insert data providers, items and other template content here -->
              </body>
            </html>
</bi:bisp>
```

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