

# Step by Step Guide to Learn Integrated Planning



## Applies to:

BI Integrated Planning in SAP BI. For more information, visit the [Business Intelligence homepage](#).

## Summary

The Document guides to learn Integrated Planning in a step by step manner. It includes steps to create Real-Time Info Cube; Planning Functions like Copy Data, Planning Sequence in a Planning Modeler; Input Ready Query in BEx; Button Group to perform operations like Display/Change Mode, Execute Planning Sequence and Drop Down Box in WAD.

**Author:** Nasarat Anjum

**Company:** Infosys

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## Author Bio

Anjum is working at Infosys as a SAP BW developer for the past 3 years. She has SAP BW Skills along with SAP ABAP Knowledge.

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## Overview of Integrated Planning:

There are various new terms in Integrated Planning which we should be aware of before actually creating Planning Model.

Let us take a quick overview of the terminology used in Integrated Planning.

- Characteristic Relationship
- Data Slicing
- Aggregation Level
- Filter
- Planning Function
- Planning Sequence
- Input Ready Query

In the planning modeler, you have the following objects to edit in the planning model:

- [Aggregation levels](#)

To determine the level on which data can be entered or changed (manually through user input or automatically by a planning function), you define an InfoProvider of type aggregation level. An aggregation level consists of a subset of the characteristics and key figures of a MultiProvider or real-time Info Cube. Real-time Info Cubes are used to store data.

- [Characteristic relationships](#)

You use characteristic relationships to model semantic relationships between characteristics (such as product group and product). In this way you check, for example, whether a particular combination of characteristics can be generated (if this combination is permitted) or whether a cell is input ready. Characteristic relationships are created for an Info Cube.

- [Data slices](#)

You use data slices to protect whole areas of data globally against changes (for example, current values or historic values).

- [Planning functions](#)

Planning functions allow system-based processing or generation of data. The BW-BPS function types are provided as standard. Functions can be executed immediately (using the pushbutton) or in the background as a planning sequence. You can also define your own function types.

- [Planning sequences](#)

A planning sequence is a sequence of planning functions and manual input templates that are executed sequentially. You can also schedule planning sequences to be processed in the background as a step in a process chain.

- [Filters](#)

A filter describes a section of a dataset which is processed, for example, in a query or a planning function. (For example, calendar year 2004 – 2005, customer group XY).

- [Variables](#)

Variables can be used in various places; in the filter for selecting characteristic values that can be parameterized, to parameterize planning functions or planning sequences.

As we are now familiar with the integrated planning terminology we will now start creating Real-Time Info Cube as this will form the basis for creating Planning models.

### Steps to Create a Real Time Enabled Info Cube:

1. Create an Info Cube with Technical Name **YNS\_IC01** & Description "Test IC – IP".
2. Check the option highlighted in red to enable it as Real Time Info Cube.

3. The structure of the Info Cube should be as follows:

<b>Data Package</b>	<b>YNS_IC01P</b>
Change Run ID	0CHNGID
Record type	0RECORDTP
Request ID	0REQUID
<b>Time</b>	<b>YNS_IC01T</b>
Calendar Year/Month	0CALMONTH
Calendar Year	0CALYEAR
Calendar Year/Quarter	0CALQUARTER
<b>Unit</b>	<b>YNS_IC01U</b>
Currency key	0CURRENCY
<b>Customer</b>	<b>YNS_IC011</b>
Customer	Y26CUST
<b>Product</b>	<b>YNS_IC012</b>
Product	Y26PROD
<b>Geography</b>	<b>YNS_IC013</b>
Country	Y26CNTRY
Region	Y26REGION
<b>Key Figures</b>	
Quantity	Y26QTY
Amount - 01	YAMOUNT01



Display InfoProvider Test IC - Resource Planning				
InfoObjects				
Characteristic Relationships				
Data Slices				
Settings				
Dimensions				
Dimension	Characteristic	With master data	With texts	With hierarchies
Customer	Customer	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Geography	Country	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Geography	Region	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Product	Product	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Time	Calendar Year/Month	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Time	Calendar Year/Quarter	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Time	Calendar Year	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Unit	Currency key	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>

4. There are options to create Characteristic relationships on the data in Info Cube. Here you define Valid / Invalid combinations of data in the Info Cube. By doing this you can make sure invalid combinations of data is not loaded to Info Cube.

5. Data Slicing is used to lock a set of data against any changes during planning.

6. You also have an option to set the Key Date on which the planning has to be taken place. Here you have various options to set the Key date to some fixed date or through any variable value.

Now you have defined the Info Provider on which your planning model will be based on. The second tab is *Aggregation Levels*.

### Aggregation Levels Tab

InfoProvider	Aggregation Levels	Filter	Planning Functions	Planning Sequences
<b>Aggregation Level Selection</b>				
Find: Technical name of InfoProvider		YNS_IC01		Start
Create	Copy	Delete	Change	Check
Save	Activate	Version		
Technical name of aggregation level	Technical name of InfoProvider	Description of aggregation level	Active	

Create an Aggregation Level by clicking on **Create**.

1. Enter a Technical Name & Description for the Aggregation level and click on **Transfer** Button.

Create Aggregation Level			
Technical Name: *	YNS_PDT	Description:	Product Aggregation Level
InfoProvider Selection			
Find: InfoProvider technical name		YNS_IC01	
		Start	
InfoProvider description	InfoProvider type	Last changed by	Date
Test IC - IP	Real-time InfoCube	NS4185	2/2/2010
Transfer Cancel			

In the above figure Technical Name: **YNS\_PDT**; Description: *Product Aggregation Level*

2. Select the characteristics on which want to plan data from the list of Characteristics seen in the lower part of screen.

**Note:** All the characteristics checked here should be mandatorily used in the Planning Query which you will be creating later.

In this example we have selected

- Calendar Year/Month
- Quantity

- Country
  - Customer
  - Product.
3. Now **Check, Save** and **Activate** the Aggregation Level.  
After defining the Aggregation Level, you must specify the Filter value.

## Filter Tab

1. Enter the Technical Name and description of the Filter in the window and click on **Transfer**.

Description of aggregation level	Active	InfoProvider description	Last changed by
Product Aggregation Level	<input checked="" type="checkbox"/>	Test IC - IP	NS4185

In the above figure Technical Name: **YNS\_FLT**; Description: *Filter on Country*

2. In the lower part of screen you will see a drop down box to select the characteristic on which you want to create a filter.

Here we will select the *Country* and click on **Add** button.

Characteristic Description	Characteristic Restrictions (Text)	Input Help
Country		

3. On doing so you will see a new row added. Click on the **Input Help** button and select the country **INDIA**. We are going to plan data corresponding to INDIA only.

Input help for characteristic 'Country [Y26CNTRY]'

Selection  View  Display

**List of Values**

Filter on Settings

Country Key
#
AUS
INDIA
KEN

**Chosen Selections**

Selections
INDIA

4. Now **Check** the filter and **Save** it by using the buttons present in the upper part of screen.

### Planning Functions Tab

InfoProvider | Aggregation Levels | Filter | **Planning Functions** | Planning Sequences

**Planning Function Selection**

Find:

Planning function description	Type	Aggregation level description

1. Create the Planning Function by clicking on the **Create** button on this screen.

**Create Planning Function**

Type:

Technical Name: \*  Description:

**Aggregation Level Selection**

Find:

Description of aggregation level	Active	InfoProvider description	Last changed by
Product Aggregation Level	<input checked="" type="checkbox"/>	Test IC - IP	NS4185

Here we have to select the Type of planning Function by the selecting one of the options present in the drop down menu present at the top of the pop up window.

In the above figure Technical Name: **YNS\_COPY**, Description: Copy 2009 Data to 2010.

2. Here you need to select the characteristics which are to be changed on execution of planning function.



**Change Planning function Copy 2009 Data to 2010 - Characteristic usage**

[To Parameters](#) | [To Characteristic Usage](#)

- Which characteristic values do you want to copy to which characteristic values? (For example, from year 2004 to year 2005)   
 - Select the related characteristics as to be changed. (In this example, the characteristic year)  
 - If you want to work with conditions, select the characteristics for which you want to create conditions

**Characteristic**

[Select all](#) | [Select no characteristics](#)

Characteristic	changed
Calendar Year/Month	<input checked="" type="checkbox"/>
Calendar Year/Quarter	<input checked="" type="checkbox"/>
Calendar Year	<input checked="" type="checkbox"/>
Country	<input type="checkbox"/>
Customer	<input type="checkbox"/>
Product	<input type="checkbox"/>

We will select Calendar Year/Month, Calendar Year/Quarter & Calendar Year in the above screen because we will modify CALMONTH 12/2009 to 01/2010.

3. Now click on the **To Parameters** button to navigate to another window where you have to select the list of impacted Key Figures.

**Change Planning function Copy 2009 Data to 2010 - Parameter**

[To Parameters](#) | [To Characteristic Usage](#)

**Selection of key figures to be copied**

Select All Key Figures

[Select all](#) | [Delete selection](#) | Filter on Settings

Changed	Key figure text
<input checked="" type="checkbox"/>	Quantity

**From-values and to-values for copying**

[Create row](#) | [Copy row](#) | [Delete](#) | [Create to-value](#) | [Copy to-value](#) | [Upward](#) | [Downward](#) | [Direct Entry](#) | Filter on Settings

From	From Change	To	To Change

Since there is only one key figure in our aggregation level, we select only that Key figure i.e. Quantity.

4. Now we need to specify the 'From' and 'To' values for the Planning Function. Click on the **Create Row**. This will add a new row in the table below.

5. Click on the **From Change** Button to specify the source value which is to be changed.

You will be able to see a pop-up to specify these values on clicking the **From Change** which is showed below:

**Change characteristic selections**

Display:

Filter on Settings

Characteristic description	Characteristic Restrictions (Text)	Input Help	Delete
Calendar Year		<input type="checkbox"/>	<a href="#">Delete</a>
Calendar Year/Month		<input type="checkbox"/>	<a href="#">Delete</a>
Calendar Year/Quarter		<input type="checkbox"/>	<a href="#">Delete</a>

[OK](#) | [Cancel](#)

Here we add 2009 as Calendar Year

Input help for characteristic 'Calendar Year [0CALYEAR]'

Selection  View  Display

List of Values				
Filter on Settings				
Calendar Year Key	Number of Days Key	Valid to Key	Valid from Key	
#	0	#	#	
2000	366	12/31/2000	01/01/2000	
2001	365	12/31/2001	01/01/2001	
2002	365	12/31/2002	01/01/2002	
2003	365	12/31/2003	01/01/2003	
2004	366	12/31/2004	01/01/2004	

Chosen Selections	
Save Favorites	
Selections	
<input type="checkbox"/>	2009
<input type="checkbox"/>	
<input type="checkbox"/>	
<input type="checkbox"/>	
<input type="checkbox"/>	

Below is the screen which shows the 'From' values.

Change characteristic selections

Display:

Filter on Settings				
Characteristic description	Characteristic Restrictions (Text)	Input Help	Delete	
Calendar Year		<input type="checkbox"/>	<input type="button" value="Delete"/>	
Calendar Year/Month	December 2009	<input type="checkbox"/>	<input type="button" value="Delete"/>	
Calendar Year/Quarter		<input type="checkbox"/>	<input type="button" value="Delete"/>	

6. Similarly we have to specify the **To Change** values. These are the values which will be generated once you execute the planning function.

Change characteristic selections

Display:

Filter on Settings				
Characteristic description	Characteristic Restrictions (Text)	Input Help	Delete	
Calendar Year		<input type="checkbox"/>	<input type="button" value="Delete"/>	
Calendar Year/Month	January 2010	<input type="checkbox"/>	<input type="button" value="Delete"/>	
Calendar Year/Quarter		<input type="checkbox"/>	<input type="button" value="Delete"/>	

7. Once the From Change & To Change values are specified, **Check & Save** the Planning Function by hitting the buttons present in the upper part of screen.

## Planning Sequence Tab

InfoProvider | Aggregation Levels | Filter | Planning Functions | **Planning Sequences**

**Planning Sequence Selection**

Find: Planning sequence [Start]

Create Copy Delete Change Save Execute

Planning sequence description	Last changed by

1. Enter the Technical Name of the Planning Sequence and click on the **Start** Button.

**Create Planning Sequence**

Technical Name: \* YNS\_PDTSQ Description: Planning Sequence to Copy Product Data

Transfer Cancel

Here Technical Name: **YNS\_PDTSQ**; Description: *Planning Sequence to Copy Product Data*

2. Now in the lower part of the screen you will have buttons to add steps to the planning sequence.

Click on the **Add Step for Planning Function**.

Here you have to select the Filter and Planning Function for your planning sequence.

Change Planning sequence Planning Sequence to Copy Product Data [YNS\_PDTSQ] - Steps

Add step for planning function Add step for input template Delete Up Down Execute Execution with trace Filter on Settings

Type	Description
Planning function	Aggregation level Product Aggregation Level [YNS_PDT], Filter Filter on Country [YNS_FLT], Planning function Copy 2009 Data to 2010 [YNS_COPY]

Aggregation Level: Product Aggregation Level (YNS\_PDT) Display Filter: Filter on Country [YNS\_FLT] Display Planning Function: Copy 2009 Data to 2010 [YNS\_COPY] Display

Once you select the Filter & Planning Function save the Planning Sequence by clicking on the **Save** button in the upper part of screen.

You are now ready to execute the planning function and test its functionality.

For Executing the planning Function you have an **Execute** Button in the upper part of screen.

Sequence Planning Sequence to Copy Product Data ( YNS\_PDTSQ ) executed without errors

Planning function Copy 2009 Data to 2010 ( YNS\_COPY ) executed without errors

4 records read, 4 generated, 0 changed, 0 deleted

InfoProvider | Aggregation Levels | Filter | Planning Functions | **Planning Sequences**

**Planning Sequence Selection**

Find: Planning sequence [ yns\_pdtsq ] [Start]

Create Copy Delete Change Save **Execute**

Planning sequence description	Last changed by
Planning Sequence to Copy Product Data	NS4185

Once you notice that the records are generated in the messages above, you have to save the plan data by using the option **Save Plan Data** Button present in the lower part of screen.

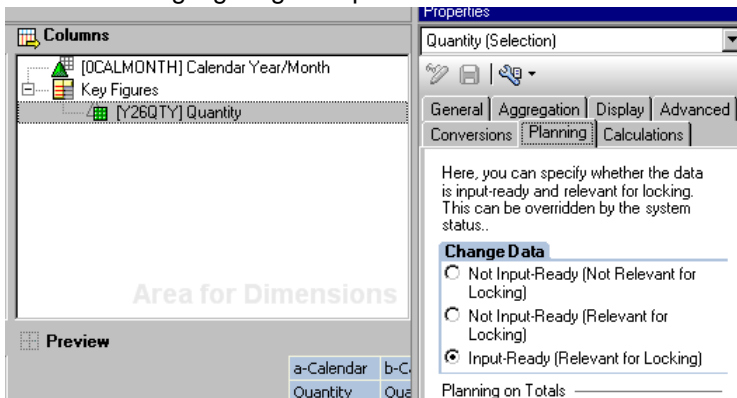


"YNS\_IC01", List output

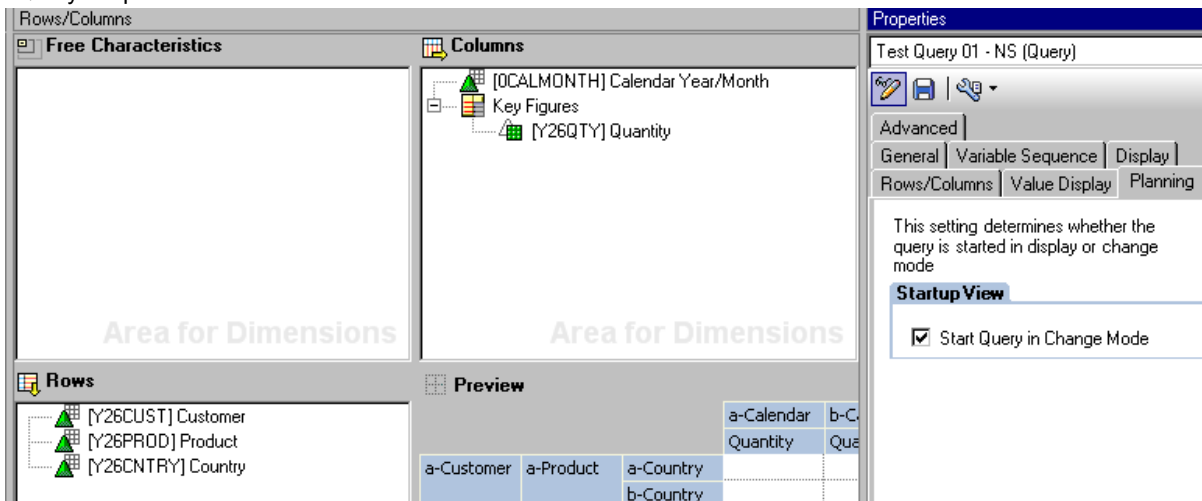
Customer	Quantity	Y26PROD	Country	0CALMON...	QUART...	0CALYEAR	Request ID
000000000000000001	1,500.000	OIL	US	200912	20094	2009	OTPR_4GPF04U21J87787BD8ZP4NDWT
000000000000000001	100.000	OIL	INDIA	200912	20094	2009	
000000000000000001	300.000	FOOD	INDIA	200912	20094	2009	
000000000000000001	200.000	GAS	INDIA	200912	20094	2009	
000000000000000002	400.000	OIL	USA	200912	20094	2009	
000000000000000002	600.000	FOOD	USA	200912	20094	2009	
000000000000000002	500.000	GAS	USA	200912	20094	2009	
000000000000000102	280.000	RICE	INDIA	200912	20094	2009	
000000000000000103	300.000	TEA POWDER	UK	200912	20094	2009	
000000000000000104	100.000	COTTON	AUS	200912	20094	2009	
000000000000000105	358.000	GINGER	SA	200912	20094	2009	
000000000000000106	123.000	GARLIC	NWZ	200912	20094	2009	
000000000000000107	290.000	TURMERIC	KEN	200912	20094	2009	
000000000000000001	100.000	OIL	INDIA	201001	20101	2010	APO_R4G0S01JFVB1Q0X5NLCZ9B94J1
000000000000000001	300.000	FOOD	INDIA	201001	20101	2010	
000000000000000001	200.000	GAS	INDIA	201001	20101	2010	
000000000000000102	280.000	RICE	INDIA	201001	20101	2010	

### Creating a Input Ready Query

Create a query having Customer; Product & Country in rows, Calendar Month & Quantity are in columns. One point to mention is that the Key Figure to be changed must be checked for Input-Ready. Below is the screen shot highlighting the option:



Also the query should be selected for the option to change it during navigation. There is option to select this under "Query Properties".



## "YNS\_IC01", List output

Customer	Y26PROD	Country	Quantity	OCALMON...	...QUART...	OCALYEAR	Request ID
00000000000000000001	OIL	INDIA	100.000	200906	20092	2009	DTPR_4GXV97D36FXDL4HKGES8KYALP
	FOOD	INDIA	300.000	200906	20092	2009	DTPR_4GXV97D36FXDL4HKGES8KYALP
	GAS	INDIA	200.000	200906	20092	2009	DTPR_4GXV97D36FXDL4HKGES8KYALP
00000000000000000002	OIL	USA	400.000	200910	20094	2009	DTPR_4GXV97D36FXDL4HKGES8KYALP
	FOOD	USA	600.000	200910	20094	2009	DTPR_4GXV97D36FXDL4HKGES8KYALP
	GAS	USA	500.000	200910	20094	2009	DTPR_4GXV97D36FXDL4HKGES8KYALP
00000000000000000101	OIL	US	1,500.000	200901	20091	2009	DTPR_4GXV97D36FXDL4HKGES8KYALP
00000000000000000102	RICE	INDIA	280.000	200901	20091	2009	DTPR_4GXV97D36FXDL4HKGES8KYALP
00000000000000000103	TEA POWDER	UK	300.000	200901	20091	2009	DTPR_4GXV97D36FXDL4HKGES8KYALP
00000000000000000104	COTTON	AUS	100.000	200901	20091	2009	DTPR_4GXV97D36FXDL4HKGES8KYALP
00000000000000000105	GINGER	SA	356.000	200901	20091	2009	DTPR_4GXV97D36FXDL4HKGES8KYALP
00000000000000000106	GARLIC	NWZ	123.000	200901	20091	2009	DTPR_4GXV97D36FXDL4HKGES8KYALP
00000000000000000107	TURMERIC	KEN	290.000	200901	20091	2009	DTPR_4GXV97D36FXDL4HKGES8KYALP

## Creating a Web Template

We will see how to create a web template to provide **Drop down** Option on the Calendar Month to customize data view, Multiple **Buttons** to perform various actions like *Switch Display/Change Mode*, *Executing Planning Function*, *Save Back* data to Info Provider.

## Drop Down Box

Create a web template YNS\_WT01 and add web item "Drop down Box".

The screenshot shows the configuration for a web item named "DROPDOWN\_ITEM\_1". The "Data Binding" section is highlighted, showing the "Data Binding Type" set to "Char/Structure Membe" and the "Data Binding" set to "DP\_1 (Selection of Characteristic)".

The "Edit Parameter" dialog box is open, showing the parameters for the web item:

Determine the Parameters for the Web Item	
Data Provider	DP_1
Characteristic	Calendar Year/Month [OCALMONT]
Label Visible	<input checked="" type="checkbox"/> On
Display ALL Entry	<input checked="" type="checkbox"/> On (Default)
Affected Data Providers (0)	
Affected Data Providers	Default
Additional Action	INSTRUCTION_WITH_DEFAULT (Def)
Command via Command Wizard	
Execution Point of Time	BEFORE (Default)
Command	Default

**Valuehelp Selector**

**Valuehelp Selector**

Select a value from the Value Help list, enter a manual one, or select the default value.

Default Value  
 Manual Input   
 Listed Value

Key	Value
0CALMONTH	Calendar Year/Month
Y26CUST	Customer
Y26PRDD	Product
Y26CNTRY	Country

Calendar Year/Month: **Show All Values** ▼

Change / Display Mode			Copy 01/2009 to 01/2010	Save Data	
Calendar Year/Month			01/2009	06/2009	10/2009
			Quantity	Quantity	Quantity
Customer	Product	Country	KG	KG	KG
1	FOOD	INDIA		300	
	GAS	INDIA		200	
	OIL	INDIA		100	
2	FOOD	USA			600
	GAS	USA			500

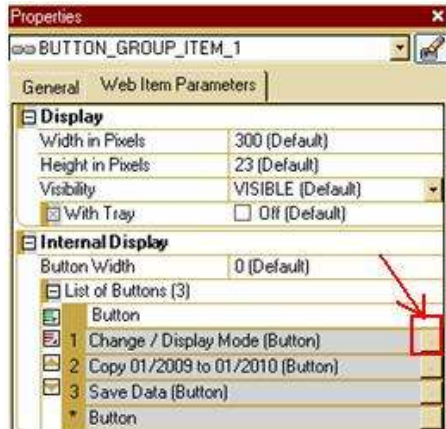
We can select a single month to view only single month's data.

Calendar Year/Month: **06/2009** ▼

Change / Display Mode			Copy 01/2009 to 01/2010	Save Data
Calendar Year/Month			06/2009	
			Quantity	
Customer	Product	Country	KG	
1	FOOD	INDIA	300	
	GAS	INDIA	200	
	OIL	INDIA	100	

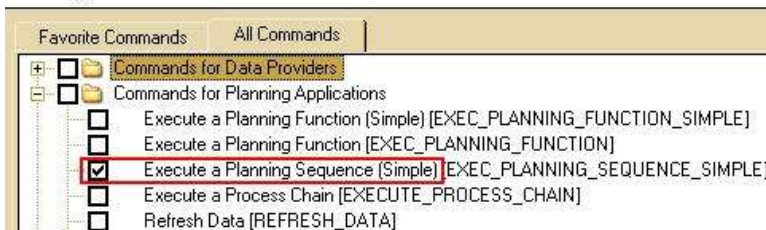
## Multiple Buttons

Drag a Button Group into the right side pane of the Web Template YNS\_WT01. Now click on the properties of this Web Item and create a button by clicking as shown in the below figure:

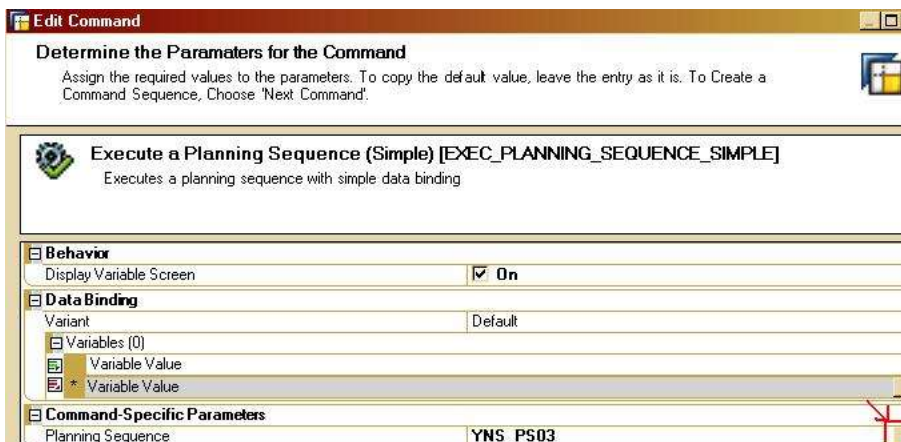


Enter the required parameters in the screen displayed below. You need to enter a caption for the button. The action is given as "Command via Command Wizard". Now click on the Command button, it will lead you to list of Commands.

Here we select a Command to "Execute a Planning Sequence". Below screen shot shows how to assign a command.



Double click this Command; it will lead you to a screen where you can specify which Planning Sequence to be executed.



This Planning Sequence which we created is to Copy Data of 01/2009 to 01/2010. On the output screen when you click this button, the planning sequence will be executed hence writing new data to the Info Cube.  
**Note:** Whenever the Planning Sequence/Planning function is executed the InfoProvider property should be set to the below shown option.



## Switching a Real-Time Data Target

Real-Time Data Target	Test IC - IP(YNS_IC01)
<input type="radio"/> Real-Time Data Target Can Be Loaded With Data; Planning Not Allowed	
<input checked="" type="radio"/> Real-Time Data Target Can Be Planned; Data Loading Not Allowed	

The output of the web template is shown below:

Change / Display Mode		Copy 06/2009 to 01/2010		Save Data	
Calendar Year/Month			01/2009	06/2009	10/2009
			Quantity	Quantity	Quantity
Customer	Product	Country	KG	KG	KG
1	FOOD	INDIA		300	
	GAS	INDIA		200	
	OIL	INDIA		100	
2	FOOD	USA			600
	GAS	USA			500
	OIL	USA			400
101	OIL	US	1,500		
102	RICE	INDIA	280		
103	TEA POWDER	UK	300		
104	COTTON	AUS	100		
105	GINGER	SA	356		
106	GARLIC	NWZ	123		
107	TURMERIC	KEN	290		

Once you click on the “Copy 06/2009 to 01/2010” Button. It will add another column to display the newly created data.

In the below screen shot you can see that a new column is added for 01/2010 data. Since it was a Copy Function to copy data from 06/2009 to 01/2010 all the key figures will be copied to the 01/2010 data.

Change / Display Mode		Copy 06/2009 to 01/2010		Save Data		
Calendar Year/Month			01/2009	06/2009	10/2009	01/2010
			Quantity	Quantity	Quantity	Quantity
Customer	Product	Country	KG	KG	KG	KG
1	FOOD	INDIA		300		300
	GAS	INDIA		200		200
	OIL	INDIA		100		100
2	FOOD	USA			600	
	GAS	USA			500	
	OIL	USA			400	
101	OIL	US	1,500			
102	RICE	INDIA	280			
103	TEA POWDER	UK	300			
104	COTTON	AUS	100			
105	GINGER	SA	356			
106	GARLIC	NWZ	123			
107	TURMERIC	KEN	290			

Remember we just displayed data by executing the Planning Sequence but did not save it. If you want to save data back to the Info Cube then you need to create a separate button to save back the data to the Info Cube.

Similarly we can plan based on our data by using various planning functions available in Planning Modeler.

## Related Contents

[www.help.sap.com](http://www.help.sap.com)

[Integrated Planning](#)

[Planning Functions](#)

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