

Applies To:

SAP Netweaver 2004s

Internet Graphics Server 7.0

Summary

The purpose of this document is to show you how to create business graphics in Web Dynpro for ABAP and to supply code samples to realize this.

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Introduction

The Business Graphics UI element are used in web dynpro to represent data in the graphical format like a graph such as vertical bar charts or pie charts, and even more complex chart types such as portfolio and Gantt can also be displayed. One of the pre-requisites for working with the Business Graphics in Web Dynpro for ABAP is, you need to have IGS (Internet Graphics Server) installed in your system landscape. The

Application Server renders the generated data (XML) from the application thru the IGS via RFC connection named "IGS_RFC_DEST".

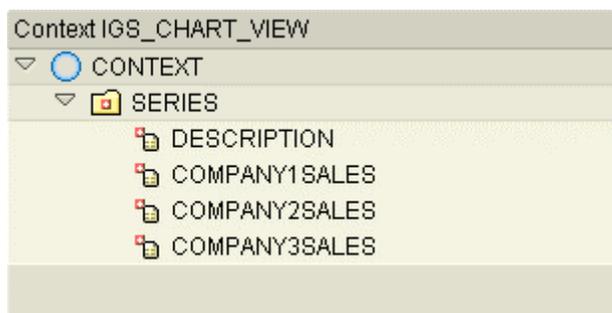
Web Dynpro Component

Now we will move our focus to how business graphics in web dynpro for ABAP are created, you need to first create a web dynpro application component named (eg. named "YIGS_DEMO" in SE80).

Web Dynpro Component	YIGS_DEMO	Active	
Description	TEST		
Assistance Class			
Created By	BVPILLAI	Created On	27.02.2006
Last Changed By	BVPILLAI	Changed On	27.02.2006
Package	\$TMP	AccessibilityChecks Active	<input checked="" type="checkbox"/>

View

Next step is to create a view named "IGS_CHART_VIEW". After creating the view, switch to the "Context" tab to create the context node and the attribute. Now create a node with the name "SERIES" with cardinality 0..n and leave the supply function for the time being and once we created the supply function method, we can bind it later for the node.



Create the following attributes underneath the node "SERIES"

DESCRITPION TYPE STRING

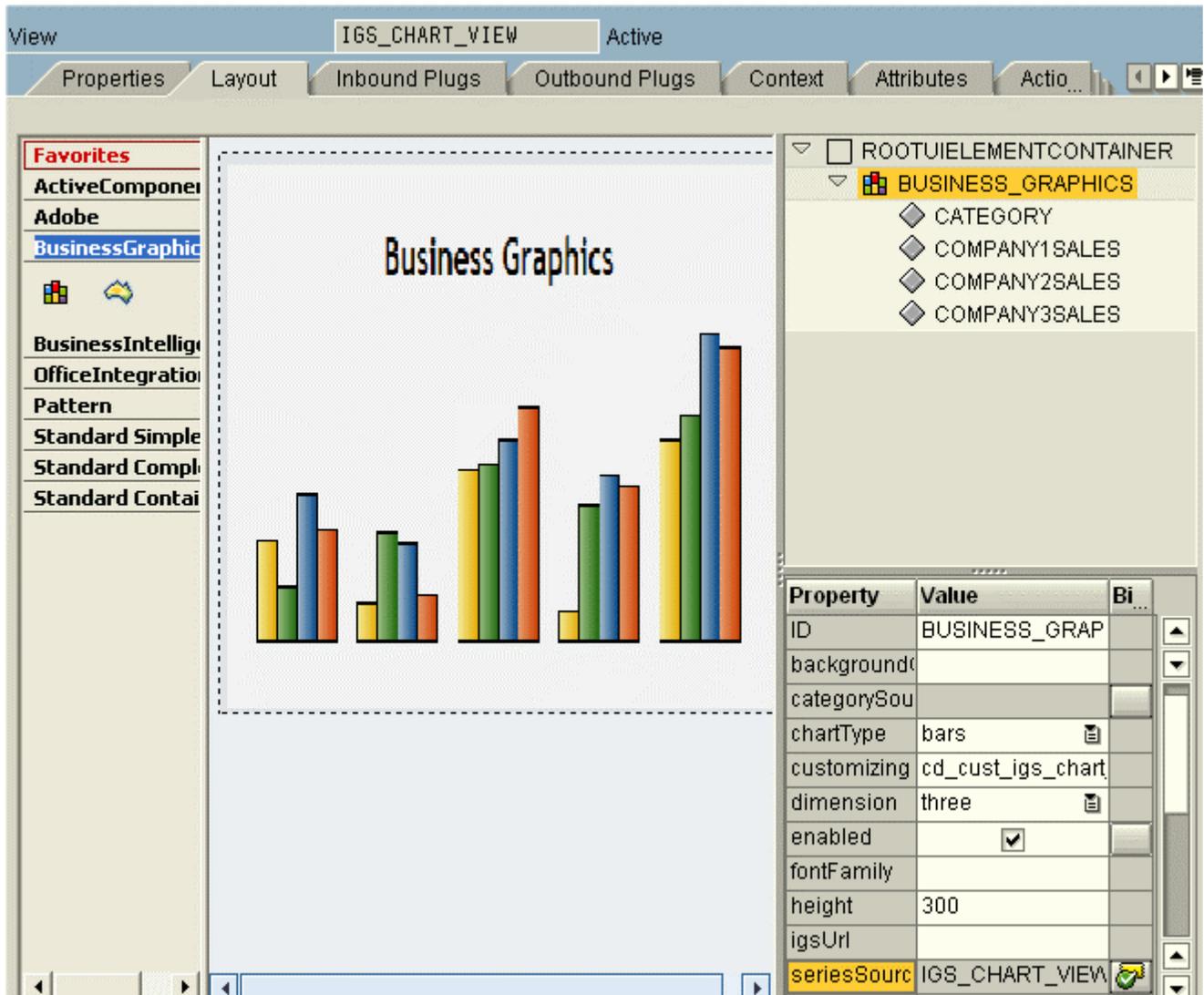
COMPANY1SALES TYPE I

COMPANY2SALES TYPE I

COMPANY3SALES TYPE 1

Switch to the layout tab for embedding the Business Graphics UI element. Drag the BG UI element from the tool to the layout and name it with "Business_Graphics". Bind the property "seriesSource" to the context node "SERIES" and select the chartType from the drop down values (bar, pie, line etc).

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Place the cursor on the BG UI element and from the context menu select an option to insert the category. Set the property as shown below for "CATEGORY"

Property	Value	Binding
Properties (Category)		
ID	CATEGORY	
description	IGS_CHART_VIEW.SERIES.DESCRPTION	
eventID		
tooltip	IGS_CHART_VIEW.SERIES.DESCRPTION	

Next step is to create the series for the 3 company sales data, Place the cursor on the BG UI element and right click the mouse to insert a new series. Let us name the 3 series as:

COMPANY1SALES

COMPANY2SALES

COMPANY3SALES

Set the property for the series like below and bind the value property to the context attribute "COMPANY1SALES"

Property	Value	Binding
Properties (SimpleSeries)		
ID	COMPANY1SALES	
customizingID		
eventID		
label	Company1	
tooltip	Tooltip for company1	
value	IGS_CHART_VIEW.SERIES.COMPANY1SALES	

Repeat the binding for the rest of the series (COMPANY2SALES, COMPANY3SALES).

Switch to the "Method" tab for creating the supply function method for the chart data, Create a supply function "SUPPLY_SERIES" with the following code:

Method SUPPLY_SERIES.

```
data:
  lt_series type if_igs_chart_view=>elements_series,
  series    like line of lt_series,
  v_rnd type I.

define random_genrate.
  CALL FUNCTION 'GENERAL_GET_RANDOM_INT'
  EXPORTING
    RANGE          = 90
  IMPORTING
    RANDOM         = v_rnd.
end-of-definition.

series-description      = 'Q1'.
random_genrate.
series-company1sales   = v_rnd.
random_genrate.
series-company2sales   = v_rnd.
random_genrate.
series-company3sales   = v_rnd.
insert series into table lt_series.
```

```
series-description      = 'Q2'.
random_genrate.
series-company1sales    = v_rnd.
random_genrate.
series-company2sales    = v_rnd.
random_genrate.
series-company3sales    = v_rnd.
insert series into table lt_series.

series-description      = 'Q3'.
random_genrate.
series-company1sales    = v_rnd.
random_genrate.
series-company2sales    = v_rnd.
random_genrate.
series-company3sales    = v_rnd.
insert series into table lt_series.

series-description      = 'Q4'.
random_genrate.
series-company1sales    = v_rnd.
random_genrate.
series-company2sales    = v_rnd.
random_genrate.
series-company3sales    = v_rnd.
insert series into table lt_series.

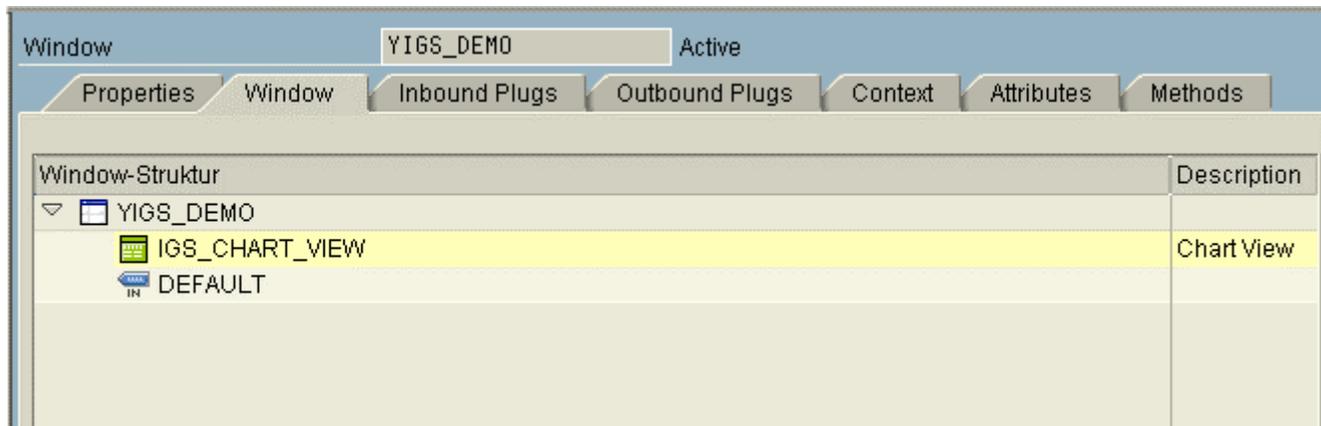
node->bind_elements( lt_series ).
```

endmethod.

Since we do not have any random function in ABAP (like one in JAVA), I have called a function mode "GENERAL_GET_RANDOM_INT " to generate the random number in a macro definition. Note that the series data should be integer, other wise you will get a short dump during execution.

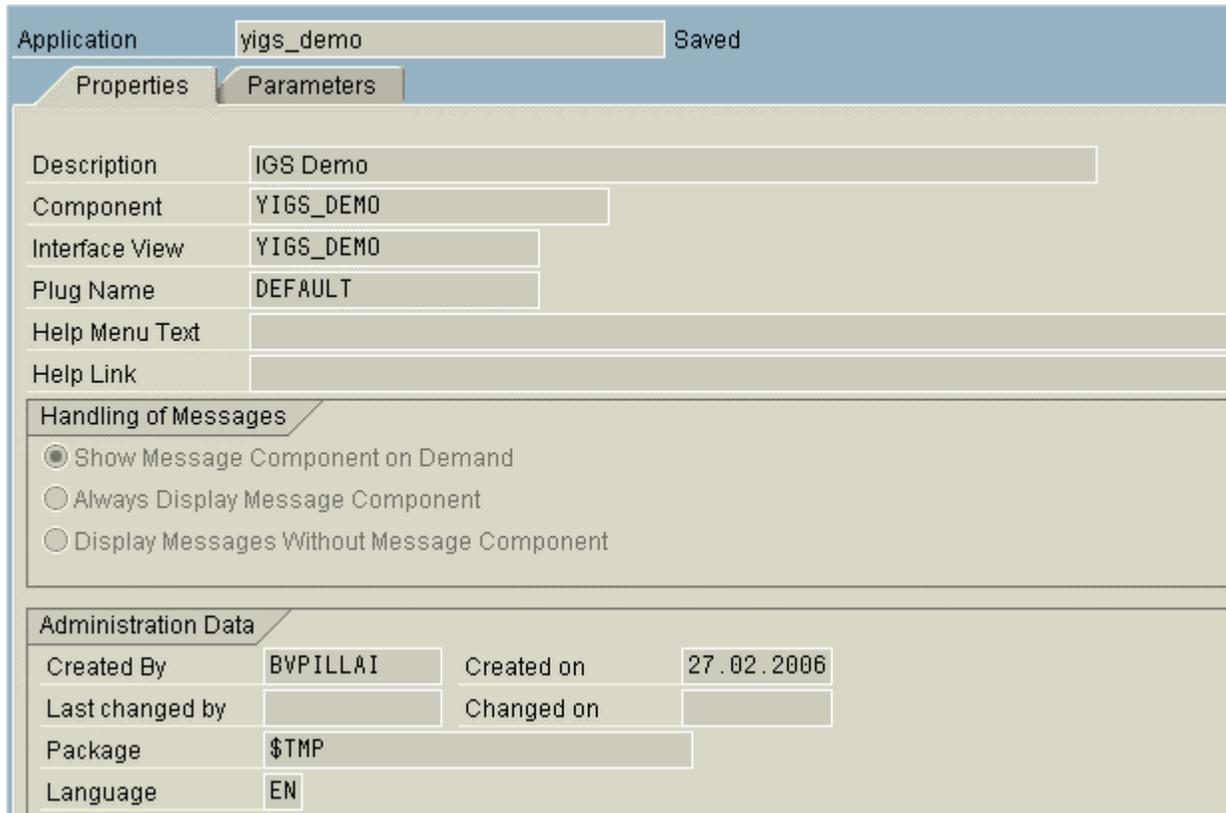
Windows

Next step is to embed the view into your window as shown below.



Web dynpro Application

As the final step, you can right-click on the component name in the SE80 Object Hierarchy and choose Create -> Web Dynpro Application.



The screenshot shows the configuration dialog for a Web Dynpro Application. The application name is 'yigs_demo' and it is marked as 'Saved'. The 'Parameters' tab is active, showing the following fields:

Description	IGS Demo		
Component	YIGS_DEMO		
Interface View	YIGS_DEMO		
Plug Name	DEFAULT		
Help Menu Text			
Help Link			

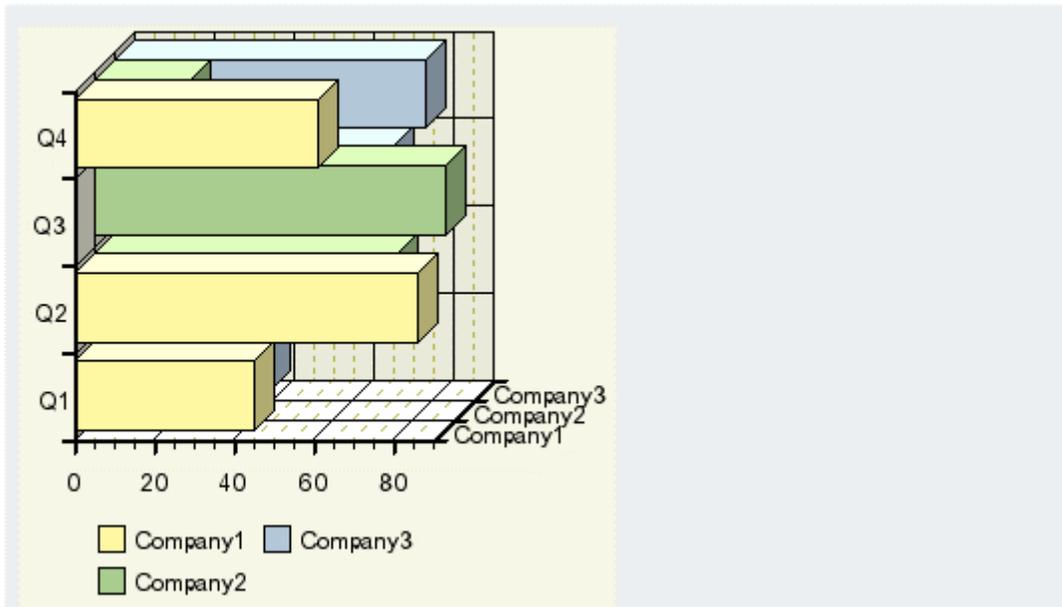
Below the parameters, there is a section for 'Handling of Messages' with three radio button options:

- Show Message Component on Demand
- Always Display Message Component
- Display Messages Without Message Component

At the bottom, there is an 'Administration Data' section with the following fields:

Created By	BVPILLAI	Created on	27.02.2006
Last changed by		Changed on	
Package	\$TMP		
Language	EN		

Now test your web dynpro application



Testing your IGS service

We need to ensure the IGS is running, before creating our web dynpro application. As developer, you might not have access to the SM59 transaction, you can use the IGS installation test program "BW_IGS_CHART_TEST" to test that the IGS is running or not. Also you can check for the RFC destination "IGS_RFC_DEST", with the help of the BASIS administrator. The system will automatically generate the RFC destination (with connection type TCP/IP) with the program ID "IGS.<SID>" (SID is your system ID).

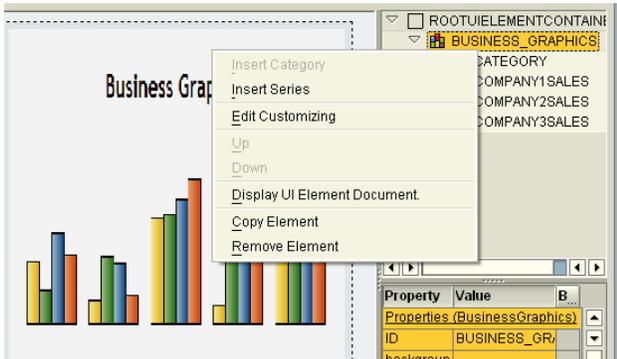
Configuring the IGS.xml file in the Internet Graphics Server

Go to the system, where IGS has been installed and look for the "IGS.xml" file under the "conf" folder and configure the program ID in <LISTENRFC> tag in the xml file and check for the program ID configured in the R/3 system for the RFC destination.

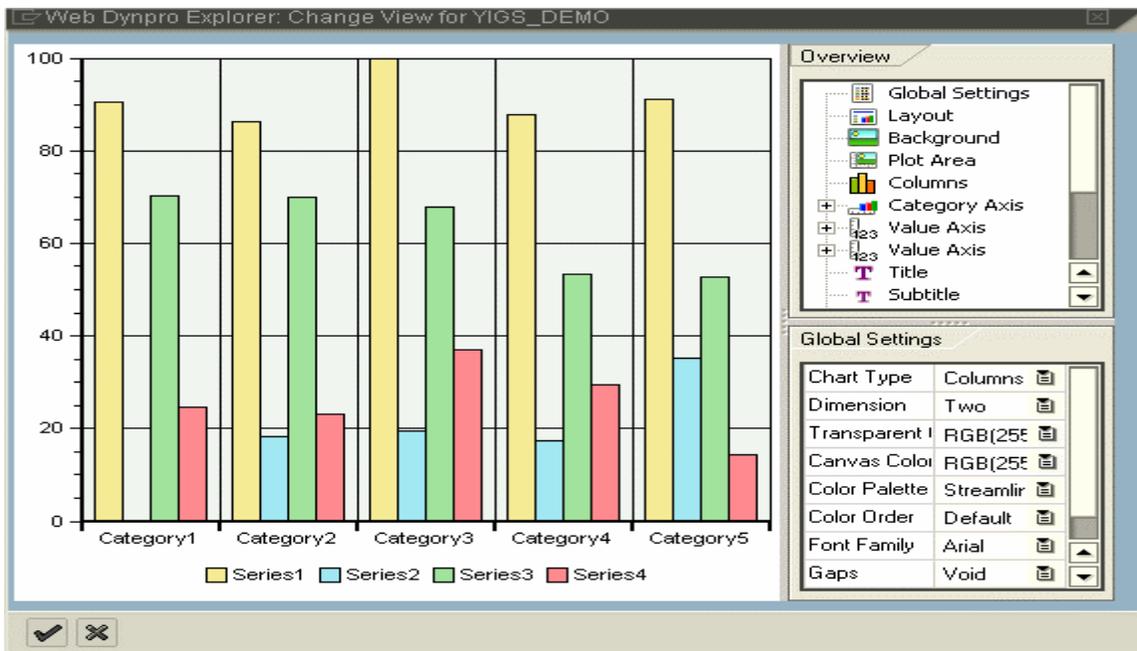
Chart designer

You can customize the business graphics at the design time in view designer using the chart designer as well as the run time by using the interface 'IF_WD_BUSIN_GRAPHICS_MTD_HNDL' method. The chart designer will be called from the view designer by placing the cursor on the BG UI element and then right-click to select option "Edit Customizing"

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System will now call the chart designer to customize the properties of the chart



With the chart designer you change the properties of the chart like chart type, size, layout, color, shading and also creating the tile and change the label for the series. System will automatically generate an xml file as a MIME object with all the customized properties and bind it to the property value "customizing"

A sample generated xml file from the chart designer

```
<?xml version="1.0" encoding="utf-8" ?>
- <SAPChartCustomizing version="1.1">
- <GlobalSettings>
    <Dimension>Two</Dimension>
    <TransparentColor>RGB(255,0,255)</TransparentColor>
    <CanvasColor>RGB(255,0,255)</CanvasColor>
    <ColorPalette>Streamline</ColorPalette>
    <ColorOrder>Default</ColorOrder>
    <Gaps>Void</Gaps>
    <EqualizeValueAxes>>false</EqualizeValueAxes>
- <Defaults>
    <ChartType>Bars</ChartType>
    <FontFamily>Arial</FontFamily>
  </Defaults>
+ <Colors>
  </GlobalSettings>
+ <Layout>
+ <Elements>
+ <Values>
  <Images />
</SAPChartCustomizing>
```

Author Bio



Velu Pillai is working in Intel India Pvt. Ltd as a Senior Application developer. He is currently working on the Enhancement/Switch framework and Web Dynpro for ABAP as part of the Netweaver 2004s exploration. Published an article on "Visual Composer – Creating exchange conversion model using an external web service" in SDN. He is also an active member of ASUG.

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