WebSphere® Business Monitor V6

Dashboards Overview

This presentation will provide an overview of the Dashboard Client feature of WebSphere Business Monitor V6.

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Goals

- Explain the concept of Dashboards and the Dashboard Client

- Cover the Portal administration for creating Dashboards

The goal of this presentation is to begin by providing a conceptual definition of Dashboards, then discuss how the Dashboard Client component of WebSphere Business Monitor implements that concept. Next, details of how the Dashboard Client is built upon WebSphere Portal will be discussed, followed by a look at the Portal administration basics required to administer the Dashboard Client.

Agenda

- Dashboards overview

- Dashboard Client overview

- WebSphere Portal administration
  - Working with pages, portlets, building dashboards, security

The agenda is to first provide a definition of Dashboards and the features they provide, followed by a description of how the Dashboard Client is implemented and an explanation of how to perform basic administrative tasks, such as creating pages and portlets to build dashboards.

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Section

Dashboards Overview

4

This section will cover Dashboard views.

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What are Dashboards?

- Dashboards are software components that present role-based, context-sensitive information to monitor and manage business operations and systems

- Serve a wide audience, essentially all line-of-business and systems management users in addition to business executives.

- Include financial and significant operational information (for example business process status).

- Operate in a real-time environment to detect and isolate (monitor) any business situation and allow you to analyze, plan, and take or manage appropriate actions.

Shown here is a conceptual description of Dashboards along with the goals they are intended to accomplish.

A definition of some of the terminology is provided here:

Role-based: Different user roles need access to different information

Context-sensitive: The data should be tailored for the occasion.

Monitor and Manage: In addition to reading data, you might want to have some actions performed based on that data.

The audience for dashboards is broad. Specifically, this presentation will focus on **business** dashboards, which are targeted at executives, management and analysts, and perhaps systems management users, although they will likely rely more on IT-centric dashboards.

WebSphere Business Monitor Dashboards

- Offer significant business value in monitoring and managing business performance, allowing executives to retrieve information quickly and efficiently.

- Personalization of the analysis and display of business performance reports.

- Compress information and focus on the business objectives and the key performance indicators.

- Graphical display of business critical information and use visual cues such as color to improve the probability of timely problem determination and the speed of decision making.

Shown here are the goals of the WebSphere implementation of Dashboards. Users such as executives can retrieve information quickly and efficiently and are able to personalize that data based on their specific role. Information can be summarized and compressed so that high level business objectives can be tracked through the use of key performance indicators. It is not necessary to collate and interpret vast amounts of data to achieve this because the product will provide this summarized information. The WebSphere Business Monitor dashboards also provide a graphical display of data through gauges, charts of all types and assorted other views.

WebSphere Business Monitor Dashboards

- Visualize performance data such as KPIs and metrics

- Summarize data in reports and graphs.

- Analyze and investigate business situations using drill down capabilities

- Provide business insights that enable human users to initiate actions to adapt solutions

- Support actions and alerts

Key performance indicators (KPI) and measures should be easily visualized in order to allow you to quickly understand performance. Data can be summarized into reports and graphs that can then be interacted with through capabilities such as drill down. The dashboards provide insights into the business so that human users can take action based on proven observations rather than blind predictions prone to misinterpretation.

Monitor V6 Dashboards Implementation

- WebSphere Business Monitor Version 6.0 provides a set of 'dashboard views' that when grouped together construct a Dashboard

- The Dashboard Client operates on top of the IBM® WebSphere Portal Server environment

- Each 'dashboard view' is implemented as a portlet (portlets are application components running within a portal server)

- To construct a Dashboard, a portal page needs to be created and a set of portlets need to be laid out in the portal page.

Dashboards are typically built from multiple pieces of information displayed in one or more pages or panels. WebSphere Business Monitor Version 6.0 achieves this by combining components called **dashboard views** onto pages. Each dashboard view displays data in a specific format and when these views are combined, they comprise overall dashboards.
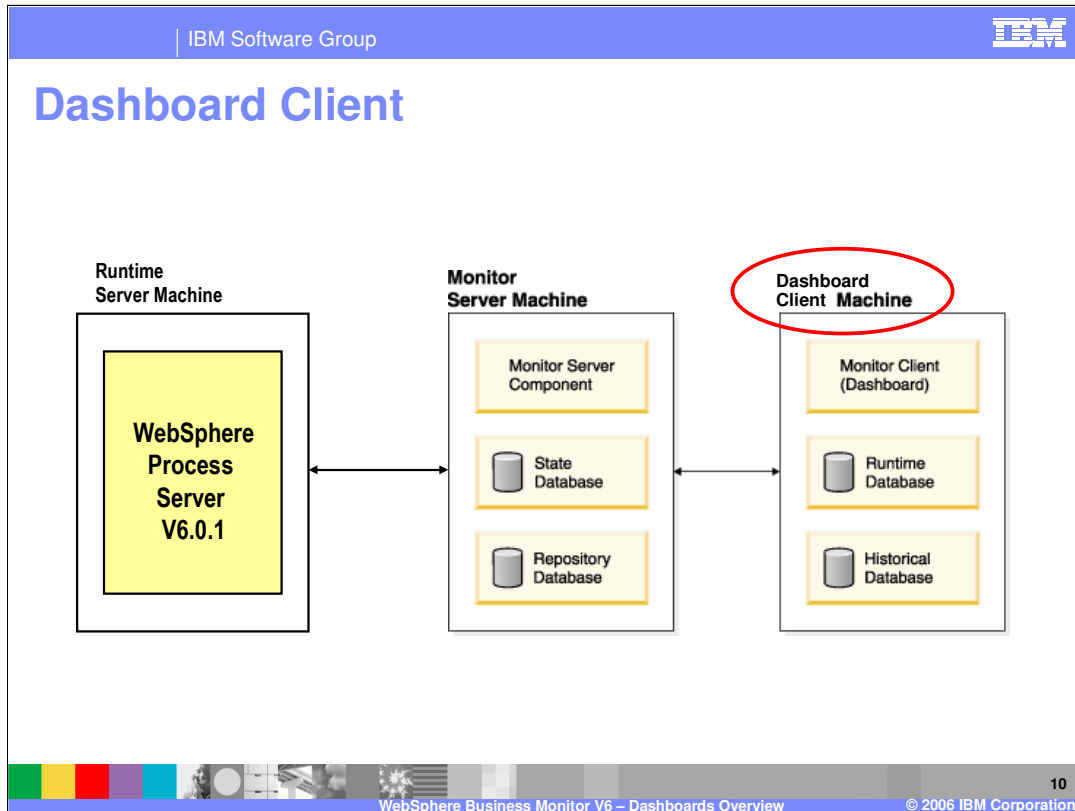
Dashboard Client is a WebSphere Portal based runtime and dashboard views are implemented as individual **portlets,** which are visual application components that can be combined together to make portal **pages**. A Dashboard consists of one or more pages, each containing a set of portlets laid out on the page.

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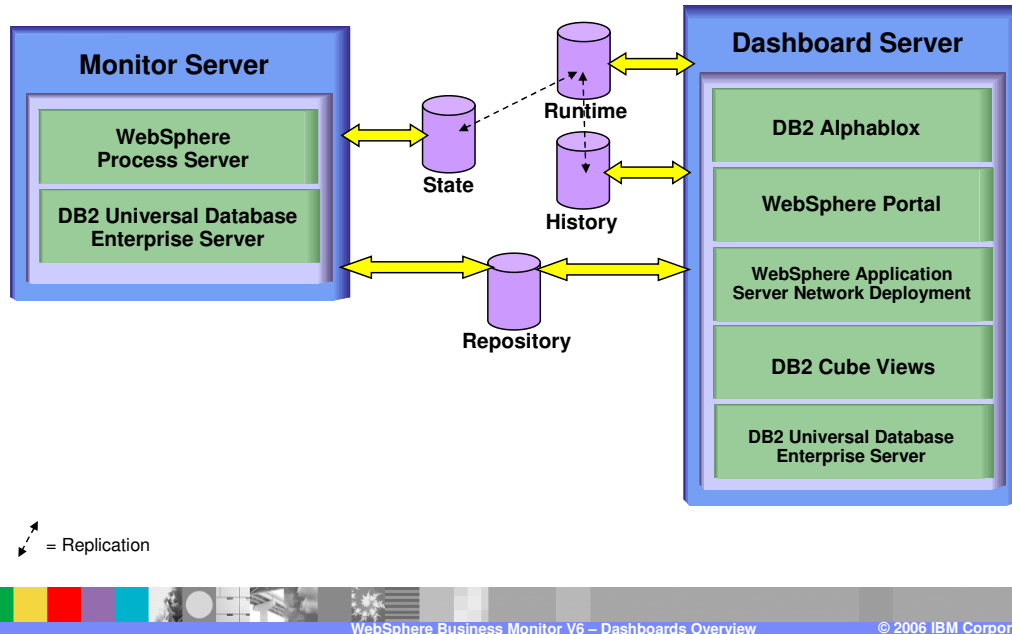
**WebSphere Business Monitor V6
Dashboard Client Overview**

This section will cover some high level concepts, and provide a view of the Dashboard Client from a technical point of view.

Dashboard Client

**Runtime
Server Machine**

**WebSphere
Process
Server
V6.0.1**

**Monitor
Server Machine**

Monitor Server
Component

State
Database

Repository
Database

**Dashboard
Client Machine**

Monitor Client
(Dashboard)

Runtime
Database

Historical
Database

10

WebSphere Business Monitor V6 – Dashboards Overview   © 2006 IBM Corporation

Shown here are the three systems that comprise a monitoring environment. On the left is the execution engine, which is a WebSphere Process Server executing BPEL processes. In the middle is the Monitor Server, which is responsible for capturing event data from the WebSphere Process Server and converting it into business data based upon a previously defined business measures model. Monitor Server persists this information to databases and that data is then replicated to additional databases that are used by the Dashboard Client.

Dashboard Client provides a view of that data, presenting it in a variety of dashboard views on a portal page for display in a Web browser. The primary focus of this presentation is the Dashboard Client.

Dashboard Server Architecture

Monitor Server

- WebSphere Process Server
- DB2 Universal Database Enterprise Server

State

Runtime

History

Repository

Dashboard Server

- DB2 Alphablox
- WebSphere Portal
- WebSphere Application Server Network Deployment
- DB2 Cube Views
- DB2 Universal Database Enterprise Server

= Replication

Shown here is some further detail behind the Monitor Server and Dashboard Client. The WebSphere Process Server BPEL runtime system is not shown in this diagram. The databases are not attached to any particular system because they can be installed in a variety of places so there is no fixed location for them. Refer to the Installation presentation for further details on this topic. The slide shows the prerequisite components that make up the two servers, represented by the green squares. You can see that Dashboard Client is built upon WebSphere Portal which in turn is built upon WebSphere Application Server Network Deployment. The business data is stored in DB2 using DB2 Cube Views for the advanced multi-dimensional schemas, and DB2® Alphablox for visual representation of that data.

Dashboard Client

- Also known as the Dashboard Server because it is a server side component

- Uses WebSphere Portal as the server runtime

- Uses DB2 Cube Views and DB2 to store data

- Uses DB2 Alphablox and DB2 Cube Views to provide multi-dimensional analytic capability and presentation of data

- Provides pre-built dashboard views to support wide variety of analysis

The Dashboard Client could be more appropriately named the Dashboard Server because it runs on the server side. As previously mentioned, it uses WebSphere Portal as its core runtime and extends this product to provide functionality that is unique to the Dashboard Client. In addition to the prerequisite software, the Dashboard Client adds a set of preconfigured dashboard views to display monitoring information. Each of these individual views is covered in a separate presentation.

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Section

Dashboard Server Administration
WebSphere Portal Overview

Because Dashboard Client is built on top of WebSphere Portal, it utilizes much of the functionality of that product. For example Dashboard Client utilizes the administrative interface provided by WebSphere Portal. This section will cover some of the Portal administration necessary to enable usage of the Dashboard Client.
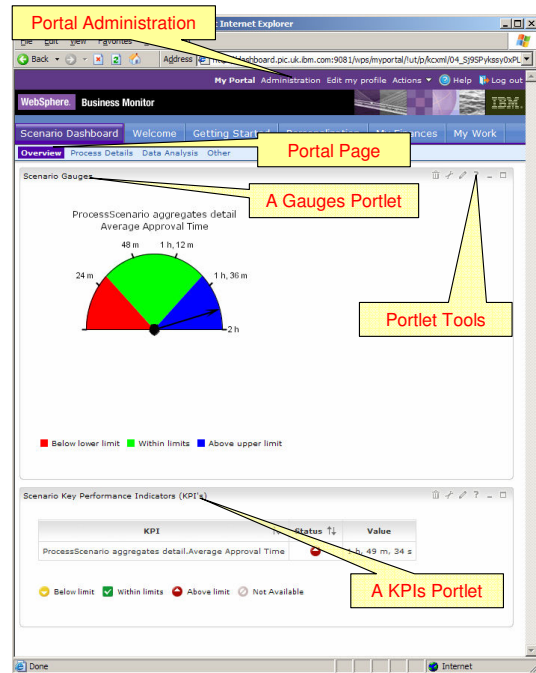
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WebSphere Portal

- Dashboard Server runs on top of WebSphere Portal and utilizes Portal for many standard features
  - ▸ Security, Pages, Portlets, Administration …

- WebSphere Portal is covered in the WebSphere Portal Information Center
  - ▸ http://publib.boulder.ibm.com/infocenter/wpdoc/v510/index.jsp

- This presentation covers administration that is specifically related to Dashboards

WebSphere Portal provides Dashboard Client with security and administration functions, including the Portal concepts of pages and portlets. Portlets are individual components, typically designed for a specific purpose, which are combined together to form a page. A complete coverage of WebSphere Portal administration is beyond the scope of this presentation. However, the link to the Information Center shown in this slide, provides more Information concerning this topic. The primary focus of this presentation is the administrative aspects that most directly relate to Dashboard administration.

Pages and Portlets

- WebSphere Portal allows an administrator to define pages and assign portlets to that page

- Administrator defines the pages and lays out portlets

- Administrator can control who can access pages

- Portlets are the implementation of dashboard views

Labels in the screen capture: Portal Administration, Portal Page, A Gauges Portlet, Portlet Tools, A KPIs Portlet

Scenario Gauges — ProcessScenario aggregates detail Average Approval Time

Below lower limit | Within limits | Above upper limit

Scenario Key Performance Indicators (KPI's)

KPI	Status	Value
ProcessScenario aggregates detail.Average Approval Time		h, 49 m, 34 s

Below limit | Within limits | Above limit | Not Available

The screen capture shown here captures the concepts of pages and portlets.

At the very top are the standard Portal links such as Log-in/Log-out, edit profile and administration. The administration link is only available if you have logged in with a userid that has access authority to administration functions. When Monitor installs Portal, it creates a single administrative user called wpsadmin with password wpsadmin. The Portal system can then be configured to use a security registry such as an LDAP directory server.

A little further down in the screen capture on the left, are the links to all the pages that have been defined, organized using a tab system. Clicking on one of these tabs will display a specific page.

Everything below the tabs comprises the page. The example page then contains two portlets, a Gauges portlet that shows a gauge, and a Key Performance Indicators (KPI) portlet.

The Portal administrator defines what pages are available and what portlets are on each page. Portlets are the technical term for the dashboard views with each dashboard view implemented as a portlet.

Dashboards and Dashboard Views

- Dashboard Client provides ten customizable views
  - ▶ Each is a 'portlet' in WebSphere Portal terminology

- Combine these views onto pages to make your own dashboards

Dashboard Terminology	Portal Terminology
Dashboard	1 or more Pages
Views	Portlets

This chart compares the technically precise WebSphere Portal terminology with the higher level terminology sometimes used for the Dashboards. A dashboard view, which is a component that can display some monitoring data, is implemented as a portlet, so these terms are interchangeable. The concept of a dashboard exists as a page, or as a set of pages. The Dashboard Client provides a set of ten customizable dashboard views.

Section

Dashboard Server Administration
Copying View Templates

Dashboard Client provides a set of dashboard views, each capable of displaying specific data in a specific format. For example, one view might display organizational information, such as groups and users, in a tree format, while another displays percentage bars indicating KPI performance, and yet another displays data in the form of a chart.

Views are provided in a non-customized form. For example, the KPI view is capable of showing KPI data, but it is not configured to display any particular KPI. Therefore, the provided views are **templates** that must subsequently be customized to display specific data for a specific process.

It is very important that the templates are preserved and that you only customize copies. When you add more processes in the future, you must be able to start with the templates again to customize them for the new processes because you cannot rely on altering a previously customized view to show data for a new process.

This section will cover copying view templates.

Copying the Dashboard View templates

- Dashboard Client provides ten customizable views
- These are **templates**
  - ▶ Without customization, they do not display details about any particular model
- **Must copy templates whenever you want to use them**
  - ▶ Subsequently customize the copy for a particular model
- Templates must be preserved so you can copy them again for other models
- Delete customized copies when you undeploy a model
  - ▶ Copies that have been configured for a specific model will fail when that model is undeployed
  - ▶ Customized views cannot be 'un-customized'

18

If you customize the template instead of a copy, you might not be able to undo that customization. In the worst case scenario, you might have to reinstall the dashboard server in order to restore the templates. If you undeploy a model, you should remove the pages and portlets that were configured for that model. Otherwise, they could cause the server to fail to start and you could have to re-install the dashboard client. You cannot remove the customization that you have done for these views.

Copying the Dashboard View templates

- In WebSphere Portal administration, navigate to the Dashboard views templates:

The first step necessary to copy the view templates is to click Administration at the top of the portal administrative console, then Portlet Management > Portlets on the left.

Use the navigator arrows to move through the list of over 100 supplied portlets until you see the dashboard portlets, which are found at the bottom of the list. All the dashboard portlets are shown above, except for **Dimensions** and **Alerts,** which are shown on another page. There are actually 12 supplied views. However, **Welcome** and **Getting Started** cannot show process specific monitoring information. The icons on the right are the portlet tools , which contain the copy function in addition to other capabilities such as configure and delete.

This slide provides a more detailed view of the portlet tools icons. The second icon from the left is the copy icon. Click this for each portlet template you want to copy and customize to show process information.

The administrative console prompts you to provide a new name and description for the copied template.

You must copy all of the view templates that you want to use in your customized dashboards. Each portlet can be configured to show data from one process model, so if you want to show the KPI view for five different process models, you will need five copies of the KPI view.

Section

Dashboard Server Administration
Creating a Dashboard Page

This section will show you how to create a page and add some portlets to it.
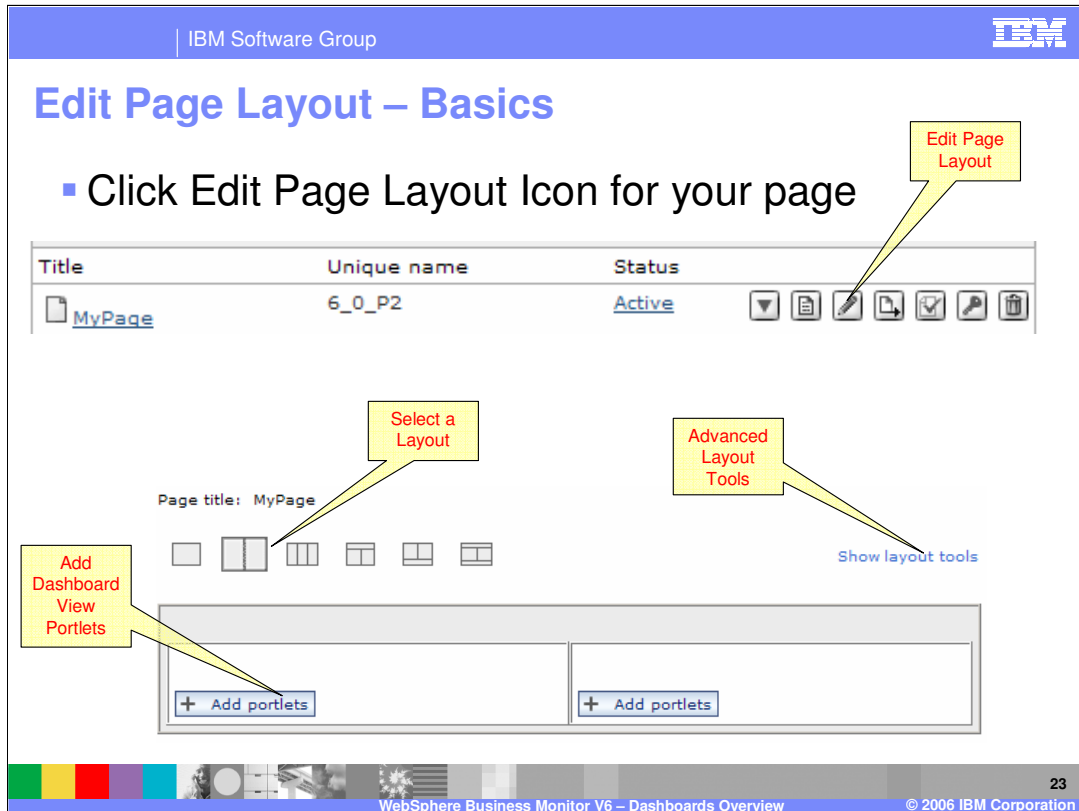
Creating a Dashboard page

- Create a new page
  - Can also choose to use an existing one

WebSphere Business Monitor V6 – Dashboards Overview

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Go to the Portal administration pages and click on Manage Pages under the Portal User Interface section.

You will see a list of pages, organized in a nested hierarchy. The pages that will be seen as the top level are found under the node called **My Portal**. Click on **My Portal** to see the list of pages that will be seen in the dashboard. Once you have done this, simply click the New Page button and you will be prompted to enter the page name and click OK to create the page.

Edit Page Layout – Basics

- Click Edit Page Layout Icon for your page

Title	Unique name	Status
MyPage	6_0_P2	Active

After you have created the new page, represented by MyPage in the slide, click on the Edit Page Layout icon (with the pencil on it) to the right of the page name as shown.

A layout page is presented, allowing you to choose one of the predefined layouts for the page and then add the individual portlets (dashboard views) into the layout you choose. Click the Add portlets button to add one or more portlets to the rows or columns on your page. You will be presented with list of portlets where you can select one or more to add. Make sure you add your copies, not the original templates.

You can use the advanced tools to gain further control over the page layout instead of using the pre-defined layouts. To do this, you must first enable the **show layout tools** link by clicking the configure icon (spanner) in the top right of the edit page layout portlet and selecting the option **Show toggle link** for **Show layout tools/hide layout tools.**

Shown here is an example of what you can do with the advanced layout, including adding rows or columns as you like and controlling portlet widths. Be aware that some of the dashboard views might ignore the widths that you define. You can also use the arrows to move portlets horizontally and vertically between rows and columns.
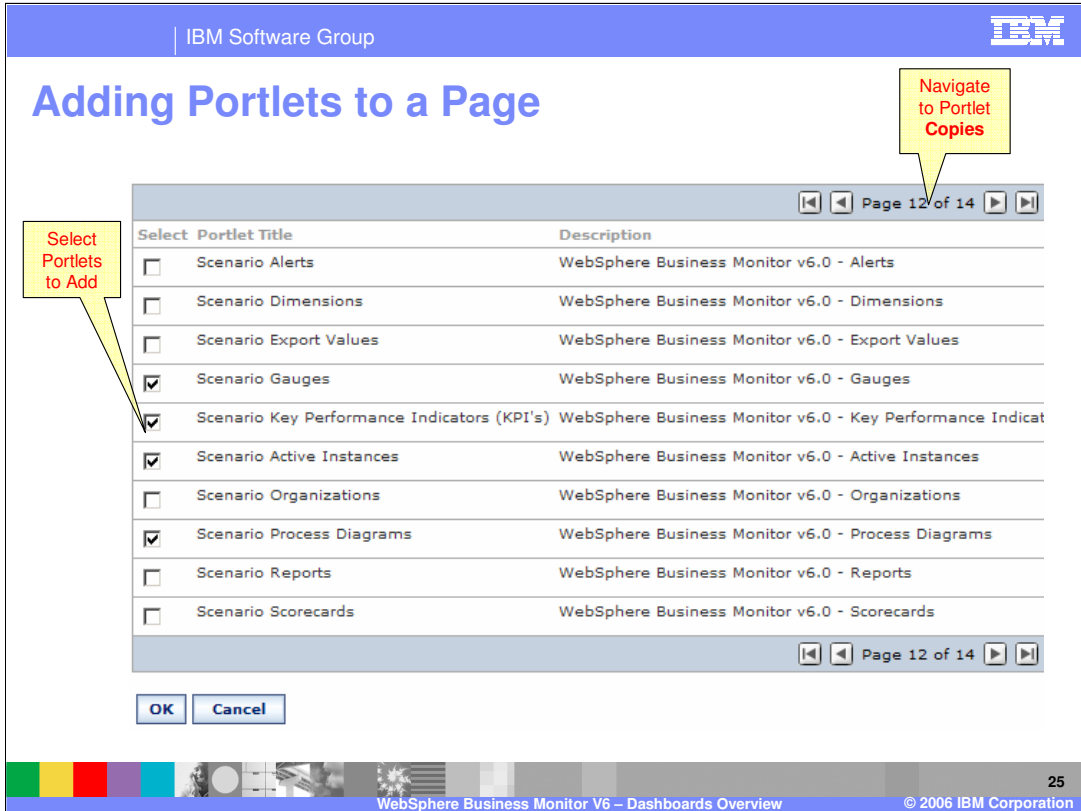
Shown here is an example of the add portlets dialog, showing how easy it is to select your copied templates and add them to your page.

Completed Dashboard Page

Portlet Toolbar

Portlets must now be Configured

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IBM WebSphere Business Monitor - Microsoft Internet Explorer

File   Edit   View   Favorites   Tools   Help

Back ▼   ▼ ✗ ☑ ☆   Address http://dashboard.pic.uk.ibm...m:9081/wps/myportal/!ut/p/kcxml/04_Sj9SPykssy0xPLMnMz0vM0Y_C

My Portal   Administration   Edit my profile   Actions ▼   ? Help   Log out

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...Page   Scenario Dashboard   Welcome   Getting Started   Personalization   My Finances   My Work

New Gauges

This view is not configured yet. Click the Configure icon on the portlet toolbar to start the configuration.

New Key Performance Indicators (KPI's)

This view is not configured yet. Click the Configure icon on the portlet toolbar to start the configuration.

New Active Instances

This view is not configured yet. Click the Configure icon on the portlet toolbar to start the configuration.

New Process Diagrams

This view is not configured yet. Click the Configure icon on the portlet toolbar to start the configuration.

Done   Internet

26

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Once the page is defined, and you have added all the relevant template copies to it in the layout you want, you can view the page by clicking on **My Portal** at the top to navigate away from the administrative screens, after which you can click on your page in the tabs at the top. You will see all the dashboard views you added, but none of them have been configured or customized yet to show information for a specific process model. The standard messages tell you to do this next. Begin by using the portlet toolbars, which contain the **configure** and **edit** icons that will help you customize each view to show your process data.

Section

Dashboard Server Administration
Configuring Dashboard Views

This section will show you how to configure the views. You can see more specific configuration information about each view type in the presentations about each of the dashboard views. This section will provide an overview of the general method for configuring views.

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Configuring Portlets

- On the dashboard page, each portlet has a portlet toolbar

Remove   Configure   Edit   Help   Minimize   Maximize
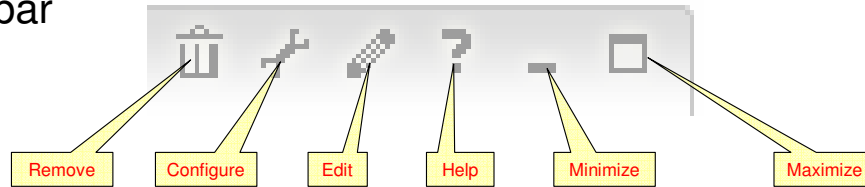
- Remove from page – Administrator Role

- Configure – Administrator Role
  - ▸ Full configuration of the Dashboard View

- Edit – Privileged User Role
  - ▸ Limited configuration of the Dashboard View

The portlet toolbar is in the top right corner of each of the portlets or dashboard views on the page. The tools that are visible will depend on who has logged in to the system. If an administrator logs in, they will see the Remove/Delete and Configure Icons. If a privileged user logs in, they will only see the Edit tool, which allows a limited amount of configuration of the view. Security basics will be covered in more detail later in this presentation. Details about actually configuring or editing the views are explained in separate presentations covering the individual types of dashboard views.

Co-operative Views

- Some of the dashboard views can co-operate with each other using a portal feature 'click-to-action'
  - ▶ Clicking in one portlet causes a change in another portlet
- The following views can co-operate

Source View	Target View	Description
Active Instances view	Process Diagrams view	Clicking an instance's diagram link shows its progress in the Process Diagrams view
Alerts view	Process Diagrams view	Clicking an instance's alert source link shows its progress in the Process Diagrams view
Alerts view	Active Instances view	Clicking an instance's alert source link shows it's business measures in the Active Instances view
Organizations view	Reports view	Clicking a user or organization filters the report view against the selection

Cooperative views are views that can interact with each other and is a very useful feature of the dashboards. You can click something in one type of dashboard view and have it update the display in another type of view. The following four pairs of views can interact:

•You can click an instance in the **Active Instances** view and have the **Process Diagrams** view update to show the specific diagram and state information for the instance you clicked on.

•You can click an instance in the **Alerts** view and have the **Process Diagrams** view update to show the specific diagram and state information for the instance you clicked on.

•You can click an instance in the **Alerts** view and have the **Active Instances** view update to show the data values for the specific instance you clicked on.

•You can click a user or organization in the **Organizations** view and have the **Reports** view update to show the data values only from processes that were started by that user or organization.

Portlet wiring for co-operative views

- Click Edit Page Layout Icon for your page

Title	Unique name	Status
MyPage	6_0_P2	Active

- Click the Wires link

Content | Appearance | Locks | Wires

- Select source and target portlets and send instance information from one to the other

Wires for page: **Process Details**

Source portlet	Sending	Target page	Target portlet	Receiving	Wire Type
Scenario Alerts	Instance Information - OUT	Process Details	Scenario Process Diagrams	Instance Information - IN	Public

- Click Add

In order for two views to cooperate as described on the previous slide, you must configure a **wire** between the two views. This is a simple task and you only have to effectively connect the two views. In the Portal administrative console, locate your page again and click **Edit Page Layout** in the same way you did when determining which portlets to add to a page and click the **wires** link/tab at the top of the page to go to the wires view. You must select the source portlet and the target page/portlet and then configure the source to send information out and the target to accept information in and then click Add to complete the configuration.

Section

Dashboard Server Administration Security

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This section will cover Dashboard Server security.

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Security

- Role-based

- Access control for page, portlet within a page and view personalization (edit/configure)

- Standard WebSphere Portal configuration

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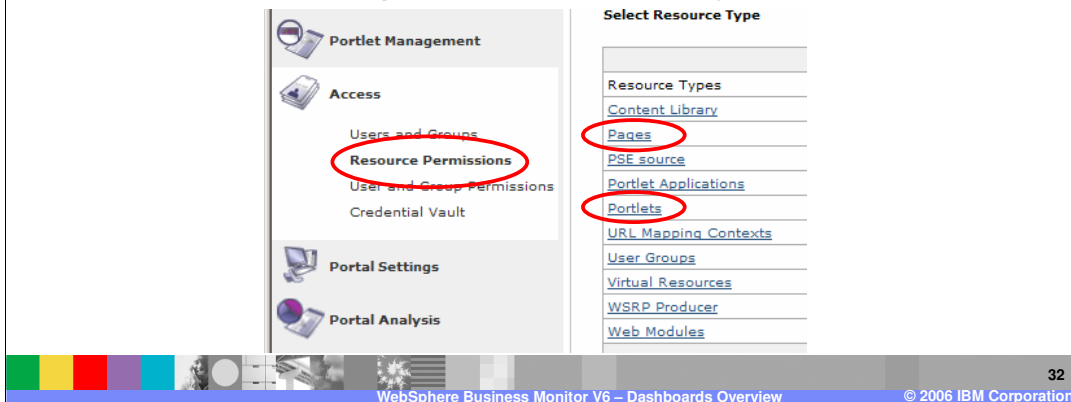
Portal utilizes a role-based security model in which each security action is defined as a role, one of which is the **Configure Dimensions View portlet** role. Users or Groups are added to a role, giving them the ability to perform tasks associated with that role. For instance, users or groups that were added to the example role just mentioned will be able to configure that view. In the Administration view, click on Access and then Resource Permissions. You can see that access control can be applied at the Pages level or the portlets level by clicking on the appropriate choice. You have control over the access to a page or a portlet, and also over who can edit or configure an individual portlet or dashboard view.

Page Access and Portlet Access

- Browse to the page or portlet under Resource Permissions and select Assign Access
- Click Edit for **User** role
- Click Add to add users/groups
- Use search to select users or groups

Configuring access to a resource is quite simple.

1. Find the relevant resource and click the Assign Access icon (a key).
2. Click edit for the role that you want to change and add users or groups as appropriate, using the search function if you like.

Adding a user to the **Priveleged User** role on an individual portlet gives them the authority to edit that view.

Adding a user to the **Administrator** role gives them full configuration access.

Refer to the separate presentations covering the individual dashboard views to find out what each role can do for each type of view.

Summary

- Definition of dashboards and dashboard client

- Dashboard creation and administration using the Portal administrative interface

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In summary, this presentation provided a definition and description of dashboards and covered dashboard creation and administration using the portal administrative interface.

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