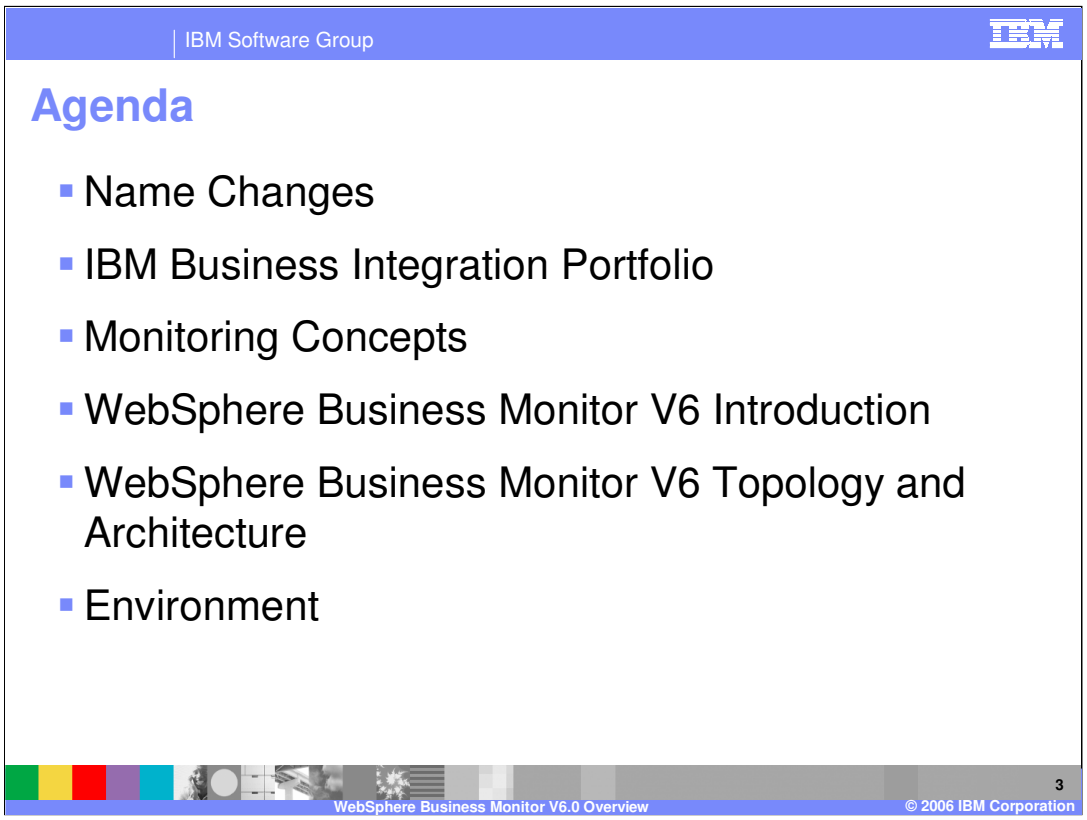
This presentation will provide an overview of WebSphere Business Monitor version 6.0.

Goals

- Introduce WebSphere Business Monitor V6.0 features
- Review the position of Monitor in the IBM Business Integration portfolio
- Identify target platforms and migration expectations

New features of WebSphere Business Monitor Version 6.0 will be highlighted and a description of how WebSphere Business Monitor V6 fits into the IBM Business Integration portfolio provided. Target environment and migration from current environments to the new Version 6 will also be discussed.



The agenda is as follows:

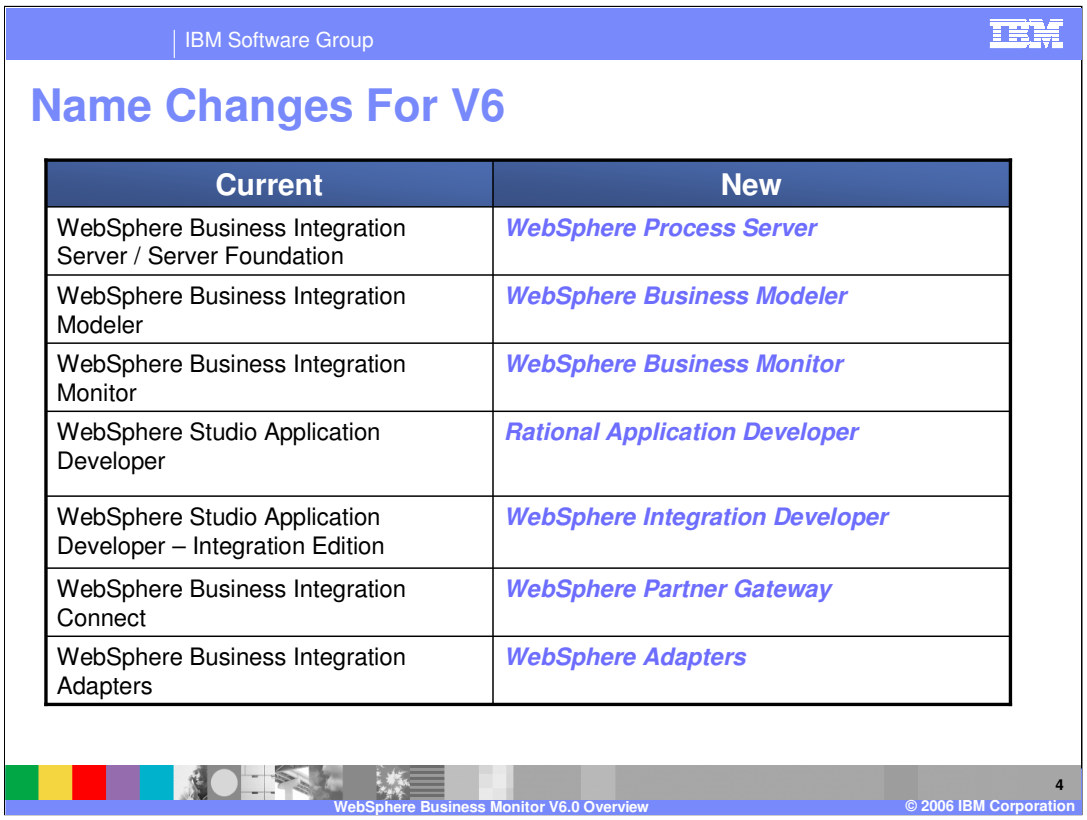
•Look at the new names for products in the Business Integration portfolio.

•Examine how WebSphere Business Monitor Version 6 fits into the portfolio.

•Discuss the need for monitoring and review the major features of Monitor V6.

•Review the topology of WebSphere Business Monitor in your server environment.

•Look at the target software and hardware environment for installing WebSphere Business Monitor.

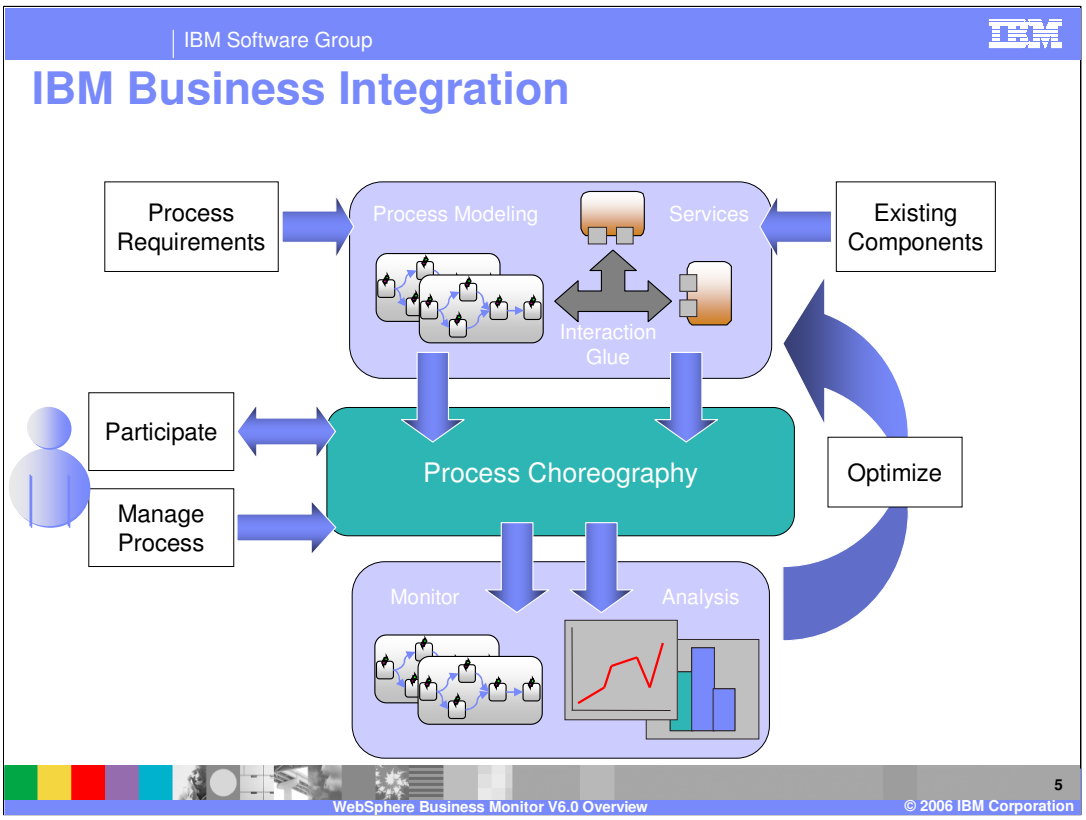


There are new simplified names for the products in the Version 6 suite of Business Integration Products. In the first column are the current names and in the second column are the new product names for Version 6. Key changes include the following:

•WebSphere Business Integration Server Foundation is now called WebSphere Process Server

•WebSphere Business Integration Modeler and WebSphere Business Integration Monitor have become WebSphere Business Modeler and WebSphere Business Monitor.

•WebSphere Studio Application Developer Integration Edition is now WebSphere Integration Developer.



Shown here are some typical integration challenges:

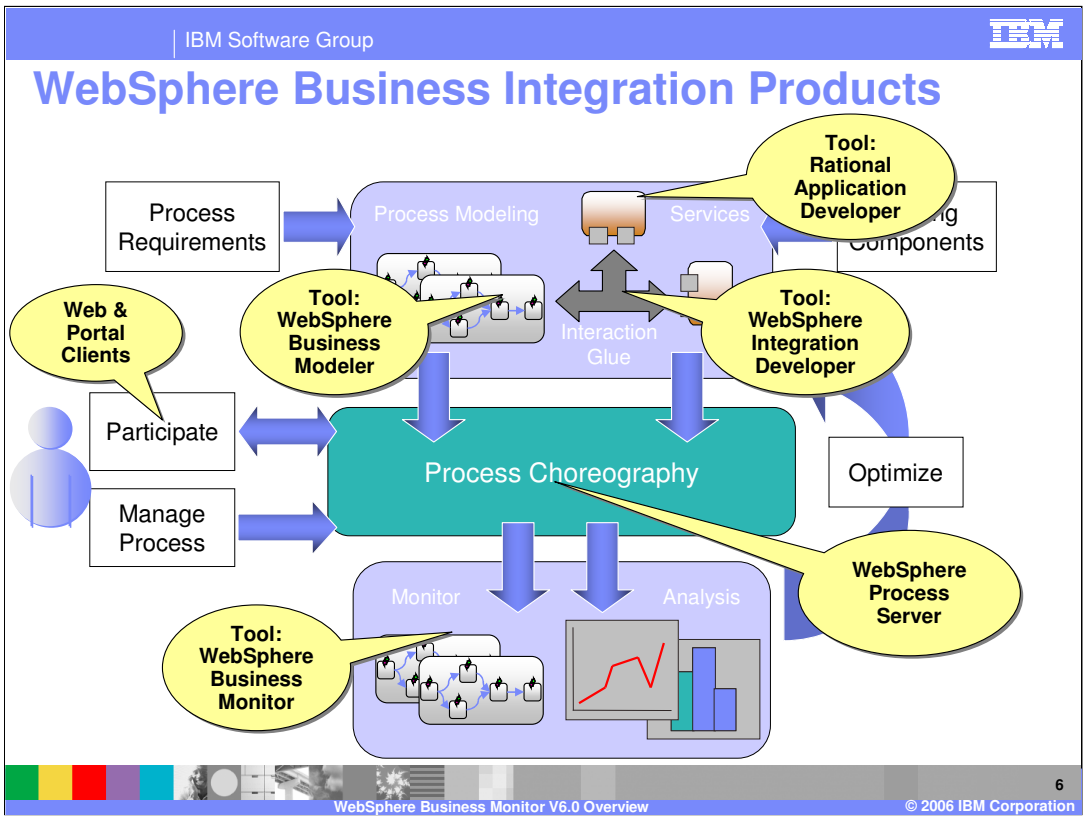
- Inability to streamline business processes, meet regulations, lower cost
- Need to integrate people and applications in the business process
- Unable to monitor, control and continuously improve business operations

Listed here are some of the capabilities provided by IBM business integration tools:

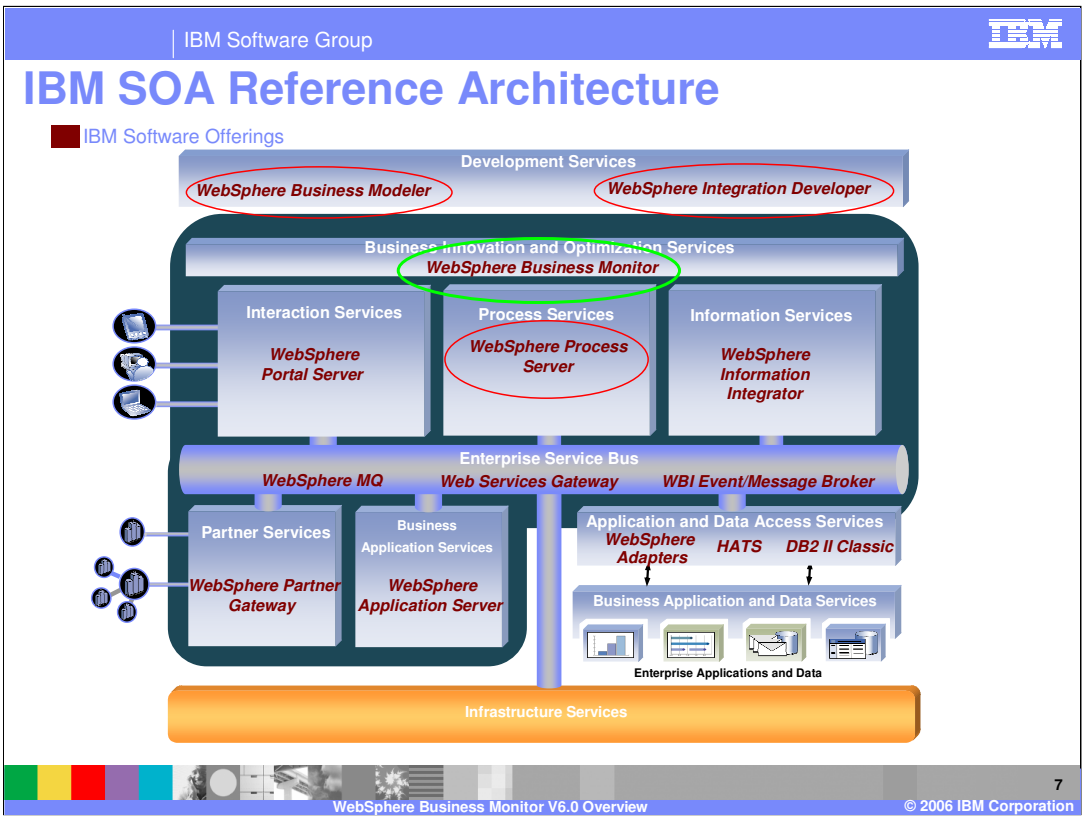
- Model, simulate and optimize business processes
- Choreograph process activities across the organization
- Monitor and manage process performance

IBM business integration tools allow you to:

- Describe a process, then model the process graphically
- Simulate the operations for a month
- Make changes to the model
- Pull the services needed from a palette into the process map, then drag and drop relationships between data, people, systems and services, and then identify and mark measurement points
- Customize the solution with deployment options
- Test your process and make sure that it runs
- Collect, analyze and compare operational performance against the simulation



The IBM suite of integration software products, including WebSphere Business Modeler, Rational Application Developer, WebSphere Integration Developer, WebSphere Process Server, and WebSphere Business Monitor can make this level of integration a reality.



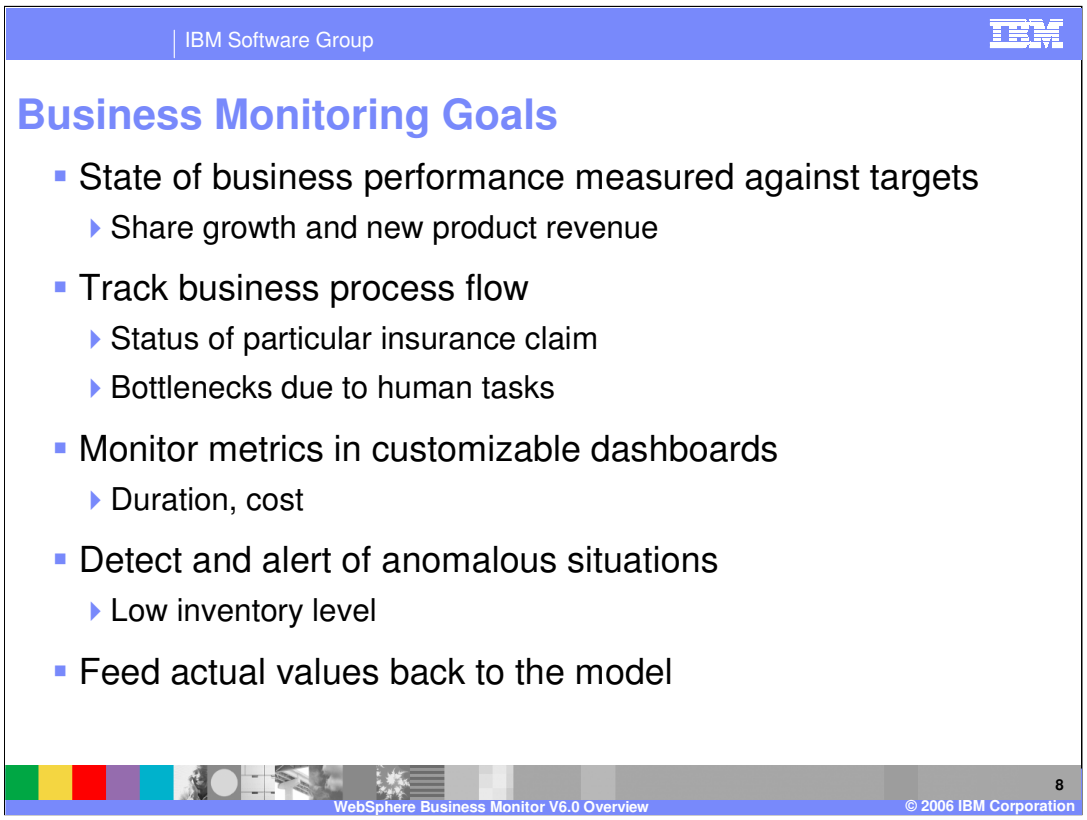
IBM has the products, offerings, and technologies to make the IBM Service Oriented Architecture a reality today.

WebSphere Business Modeler: allows anyone in the organization, whether it be a business analyst or I/T specialist, to capture a business process and clearly define and document the process. Both the current (as-is) and the future (to-be) process can be modeled and compared using the simulation and analysis capabilities of WebSphere Business Modeler. Comparing these processes will identify ROI opportunities in the business by changing the process as modeled.

WebSphere Integration Developer: The WebSphere Studio family provides an open extensible Universal Tooling Platform that enables tool integration between vendors as well as providing an extensive set of best-of-breed integrated tools and utilities for application development. WebSphere Integration Developer is built on top of Rational Application Developer, which is based on the Eclipse framework and provides a development environment for building integrated applications based on service oriented architecture, and it is the authoring tool for deploying applications to WebSphere Process Server. This is the follow-on product to WebSphere Studio Application Developer-Integration Edition and a replacement product for MQWF build time tools and ICS authoring tools.

WebSphere Business Monitor: provides dashboard and alert notification services that interact with the integrated event-based monitoring using messaging services to provide heads-up display for Business Performance Management (BPM). WebSphere Business Monitor provides direct interaction with the Common Event Infrastructure. Business Activity Monitoring enables you to track business events across the enterprise and the value chain, enabling real-time metrics from processes in motion, and alerts to provide notification on service levels and exception conditions. Additionally, the dashboard components will be enabled to integrate with additional portlets to provide customized views specific by role. WebSphere Business Monitor also surfaces operational capabilities including stopping, starting, or redirecting processes and it can be used with other IT Monitoring solutions such as Tivoli Monitoring for Business Integration.

WebSphere Process Server: V6 is the new cornerstone of the IBM business process automation and integration solution. WebSphere Process Server V6 is the first to offer robust process automation, advanced human workflow, business rules, EAI and B2B capabilities all on a common, native SOA platform with native JMS support. This platform leverages many years of IBM domain expertise and customer experience to offer best of breed support for integration development while at the same time offering unparalleled ease of use. Building on open standards, it provides business flexibility on a highly scalable, reliable platform provided by the award winning WebSphere Application Server.



This slide states some of the goals of a business monitoring solution.

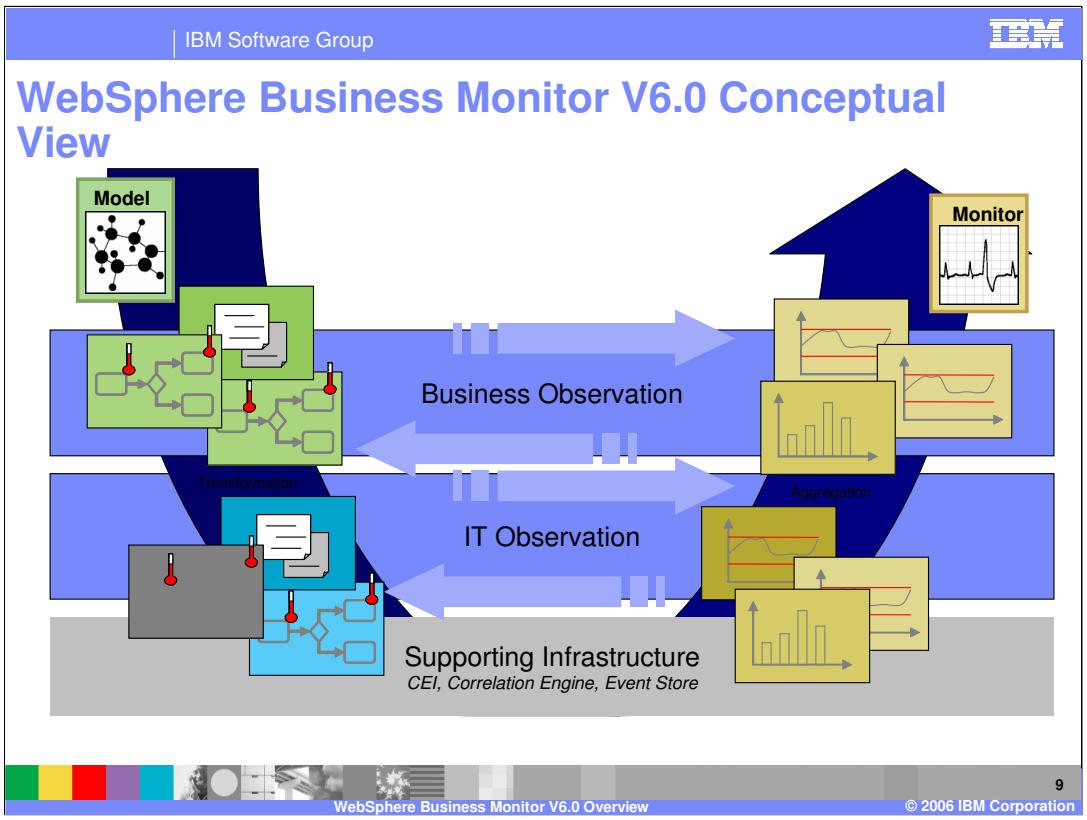
Business executives want the ability to easily and quickly verify business measurements against goals. This can be accomplished easily using the KPI views in the dashboard feature of WebSphere Business Monitor V6.

Business analysts want to track processes in near real-time across the value chain. They might want to track the status of a specific order or identify bottlenecks and possibly reallocate resources. They might also want to have a customized dashboard to display specific metrics for a process such as duration of an activity, or cost associated with a process or activity.

A complete monitoring system should also detect unusual situations and provide alerts and identify the need to take corrective action. For instance, if inventory levels are down, alerts should be fired in the form of email or text messages to the appropriate individuals.

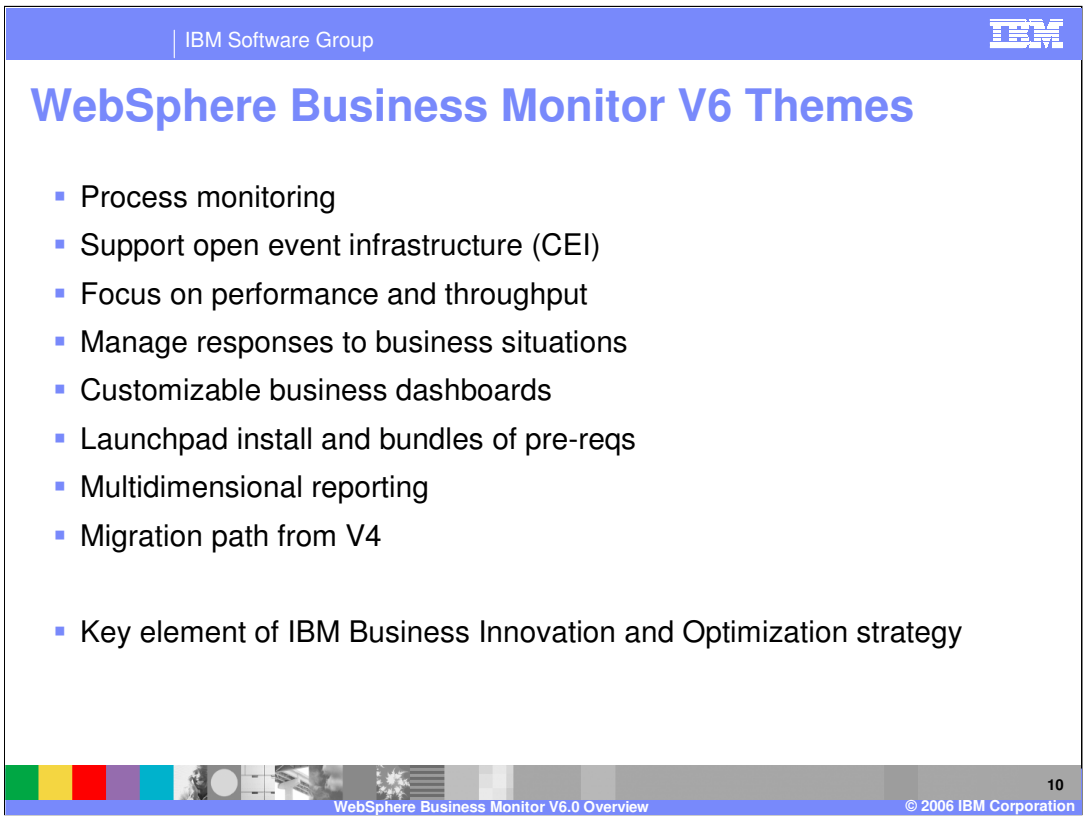
Finally, you need to feed actual values back to your model, so that your simulations can use actual data and become more accurate over time.

- WebSphere Business Monitor calculates the working duration and decision paths
- Administrators export actual values data that contains the working duration and decision percentages from WebSphere Business Monitor
- WebSphere Business Modeler imports data, capturing the process and activity working durations and percentage branching based on actual results



Shown here is the conceptual view of business monitoring in WebSphere Business Monitor V6. You can model your observation "items of interest" at the business level, creating business level models, and then transform these to the IT level processes and artifacts that run on the supporting infrastructure. The artifacts created at Modeling time can be consumed by the business level monitoring to allow monitoring of the business events and situations.

WebSphere Business Monitor can monitor the "business level events", but not down to the IT level. So you can use WebSphere Business Monitor V6 to track bottlenecks in a business process, but in order to track messaging performance bottlenecks, there are other tools that IT personnel can use for tracking the IT level events.



This slide depicts the major features in WebSphere Business Monitor V6.

•Supports process monitoring using WebSphere Process Server.

•Supports the Common Event Infrastructure (CEI). Since this is a standard interface, other runtimes can be added using the CEI SDK.

•Addresses the performance issue by dividing the data warehouse into three distinct pieces to help separate the runtime tracking from the reporting processes.

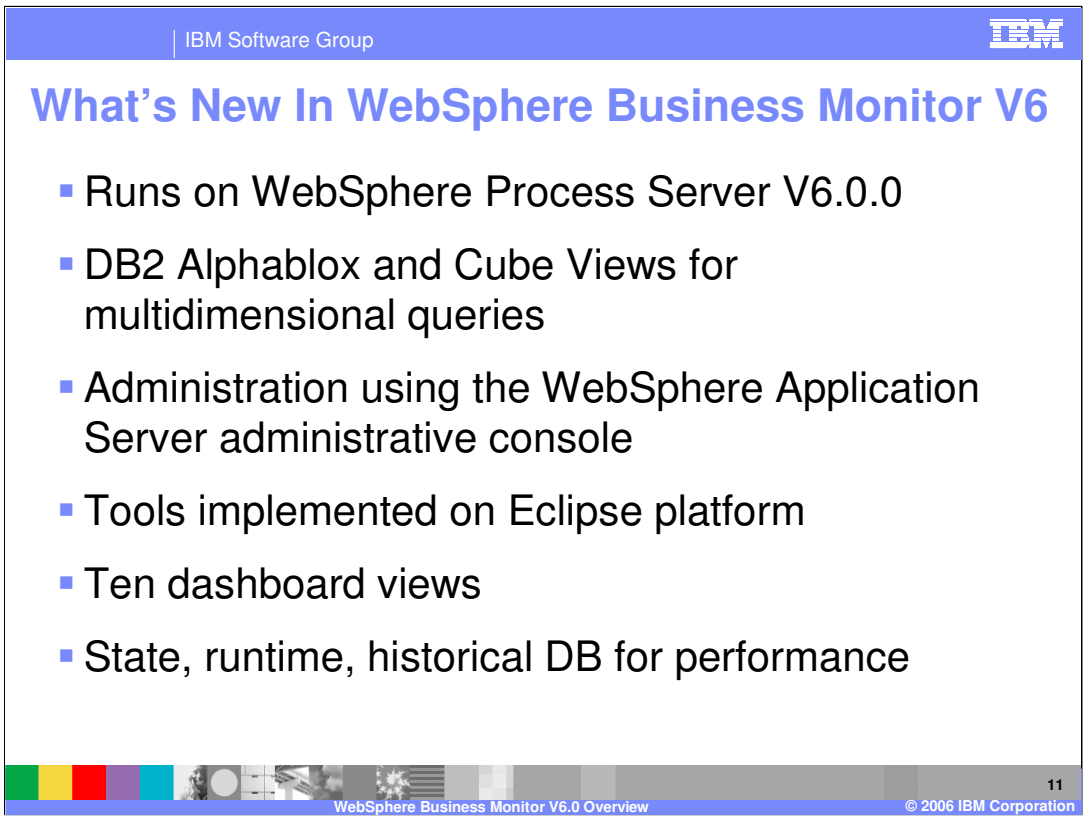
•Manages responses to business situations by making it easy to create notification alerts or a Web service invocation (BPEL Process).

•Provides customizable workplace dashboards allowing the customized display of metrics or key performance indicators. Ten different dashboard views allow you to assemble a dashboard that meets your specific needs.

•Launchpad is used for installation of the product and all prerequisites. It will detect whether the software is installed already and provide you the ability to select the products that you want to install, including WebSphere Process Server, Portal Server, DB2 Alphablox, DB2 ESE, and DB2 Cube Views.

•Provides multi-dimensional reporting in the dashboards using DB2 Cube Views along with Alphablox to enable your data to be displayed any way you want. For example, you could choose to see cost data for a given product for a certain month and reported by geography.

•Tools and support will be provided to migrate from Version 4 models to the Version 6 models.



WebSphere Business Monitor V6 installs on top of WebSphere Process Server V6.0.0, which is included in the install bundle, so now you receive the combined benefits of operating on IBM's strategic J2EE™ application server platform along with the advantages of the Service Oriented Architecture (SOA).

Multidimensional queries allow you to retrieve and display your data in different ways. For example, you might have a business measure such as cost that you want to track, but you can display that information in graph form based on product, time, or location. A dashboard view will be included for multidimensional reporting, called "Multidimensional view".

DB2 Cube Views is an on-line analytical processing (OLAP) tool that provides a multidimensional view consisting of categorical attributes such as Products and Market, and numeric attributes like Sales and Profit. The categorical attributes form dimensions and the numeric attributes form the measures of a multidimensional cube. Dimensions can contain hierarchies that specify aggregation levels. The business measure attributes are aggregated to different levels of detail by applying mathematical functions such as sum, average, and variance to a combination of dimensional attributes.

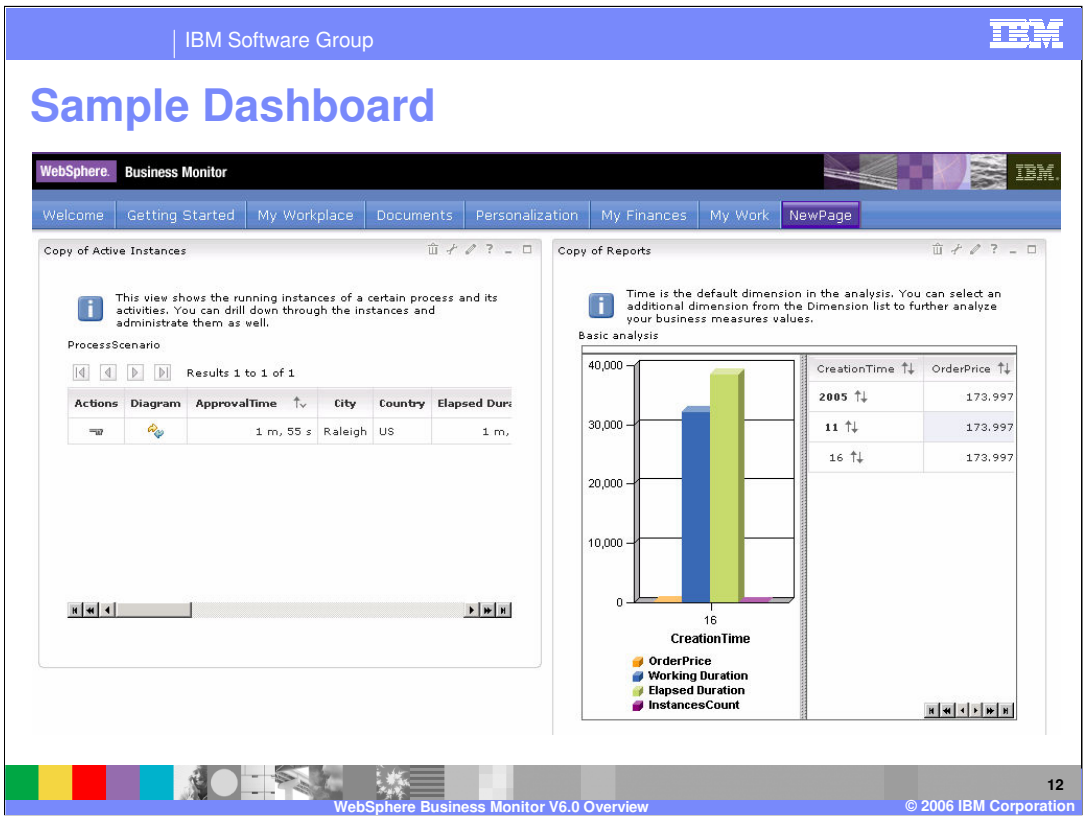
DB2 Alphablox is the User Interface component of OLAP that allows you to access and present real-time enterprise data through a standard Web browser. Blox components are reusable software components that are combined, or *assembled*, on a standard JSP™ page, and result in interactive applications accessed through Web browsers.

The WebSphere Business Monitor administrative functions are provided through an extension to the standard WebSphere Application Server administrative console, so you can easily access all administrative functions in one place using a familiar user interface.

The Business Measures Editor is a subcomponent of WebSphere Business Modeler V6 and both are installed on the Eclipse platform.

There are ten dashboard views that can be wired onto a dashboard to create customized dashboards for individual requirements.

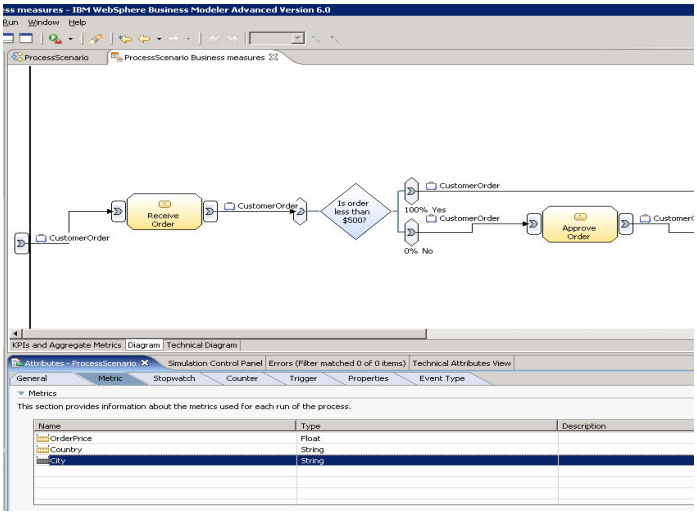
The event processing data store (State Data Store) have been separated from the runtime data store, and the historical data mart. This should provide performance advantages since the reporting functions have been separated from the monitoring functions. Schema Generators will generate replication scripts that can be used by the DBA to replicate data between state, runtime, and historical data stores. The DB2 Replicator is used to provide the replication functionality.



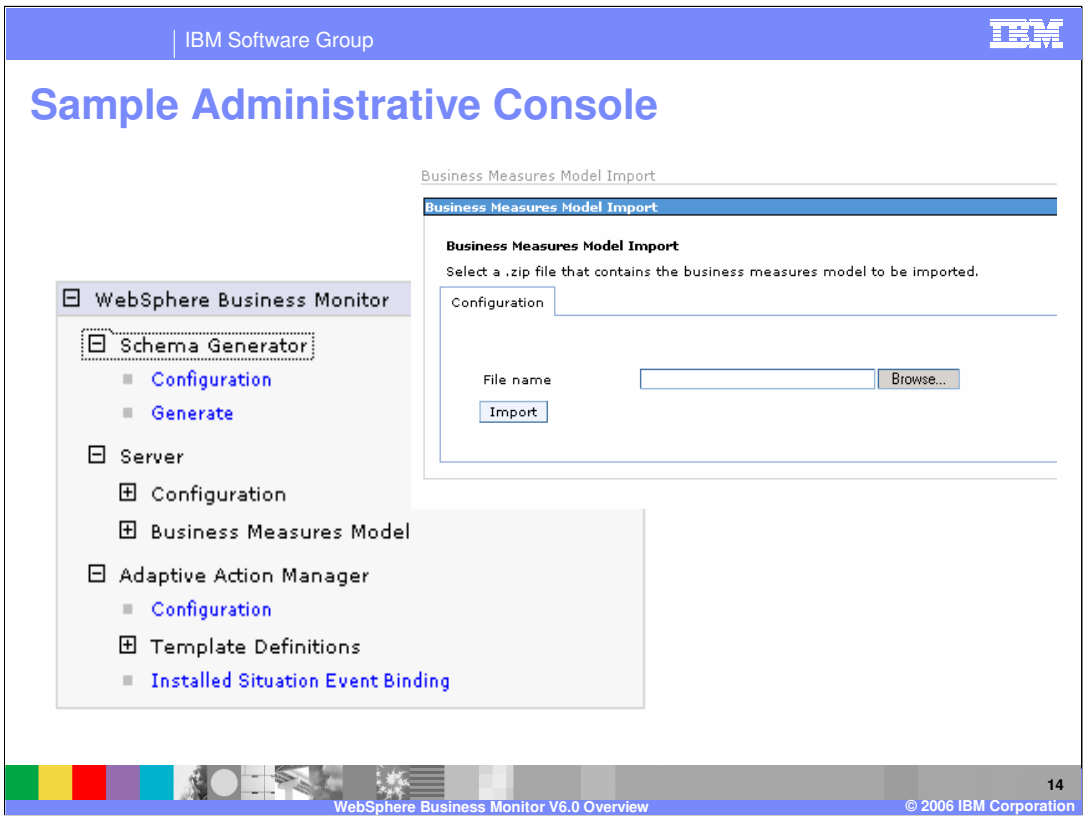
Shown here is a sample Dashboard, which was configured to monitor active process instances and metrics in a graphical report view. The Dashboard can have multiple instances of each of the view types, where each view focuses on a certain set of data.

Sample Business Measures Editor

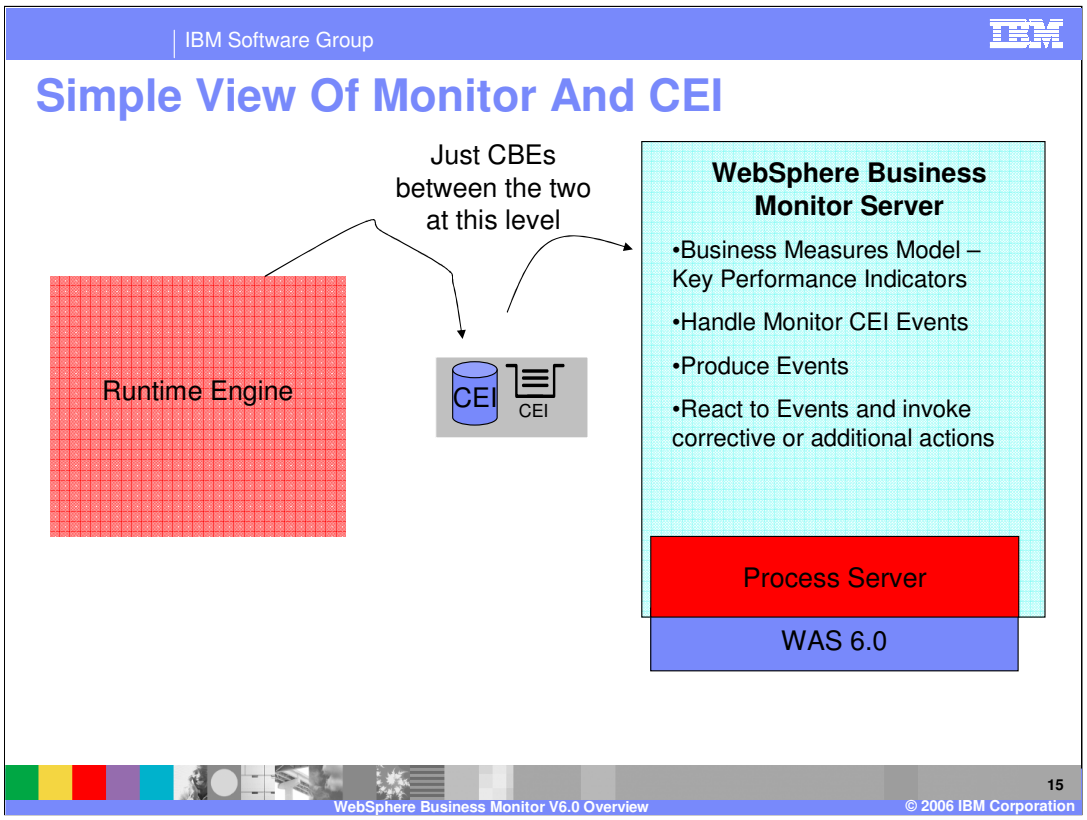
Diagram View : Edit the business measure model using high level modeling constructs



The Business Measures Editor is a subcomponent of the WebSphere Business Modeler V6 product. The Diagram View is similar to the Process Editor in WebSphere Business Modeler and provides the high level view of the process elements along with business measure elements like timers.

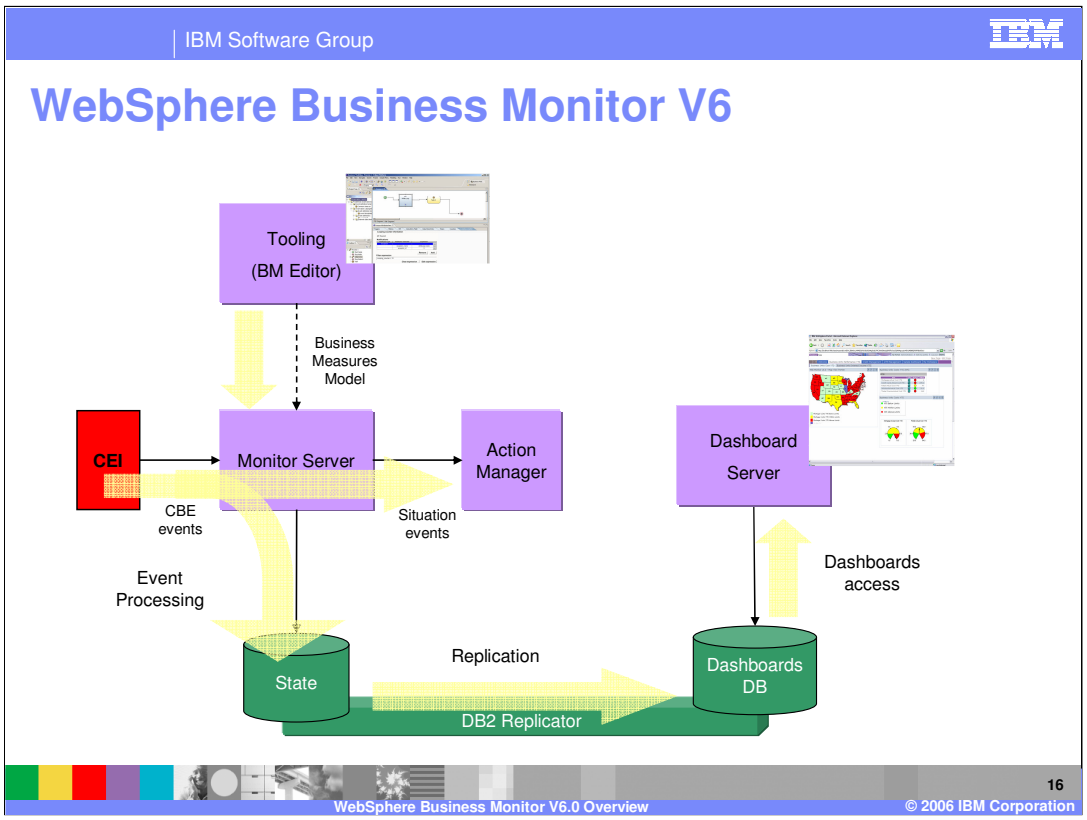


The Monitor Administrative Console is a runtime extension to the WebSphere Administrative Console. Here you can see the navigation tree on the left, which provides the menu of monitor functions in the Administrative Console. On the right is a screenshot showing the business measures model import window.

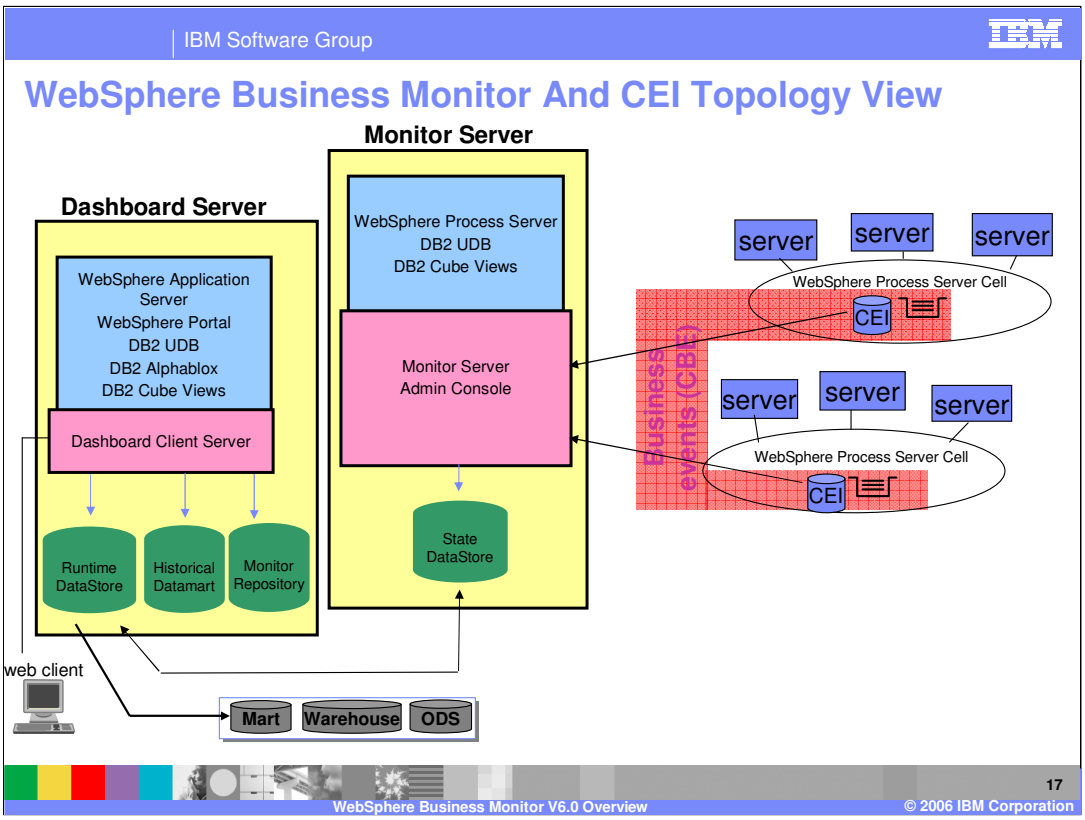


This slide depicts a simple view of WebSphere Business Monitor and its usage of the Common Event Infrastructure (CEI). Essentially, WebSphere Business Monitor V6 runs on WebSphere Process Server V6, which installs on top of WebSphere Application Server V6. The WebSphere Process Server runtime engine runs on another system and events are extracted from the engine and submitted on the event bus as Common Base Events (CBE). WebSphere Business Monitor receives the events and matches them to monitoring context instances and calculates the appropriate metrics and KPI's for display on the dashboard.

The Common Event Infrastructure is a shared component that can operate either inside or outside WebSphere Application Server and provides facilities for the runtime environment to persistently store and retrieve events from many different programming environments. Events are represented using the Common Base Event model, a standard, XML based format that defines the structure of an event. The events are passed using Java Message Service (JMS™).



This slide depicts the major components of WebSphere Business Monitor V6, showing the Business Measures models, which are deployed to Monitor Server, events, which are extracted from the bus, situation events, which are acted on by Action manager, replication in the databases and dashboard display.

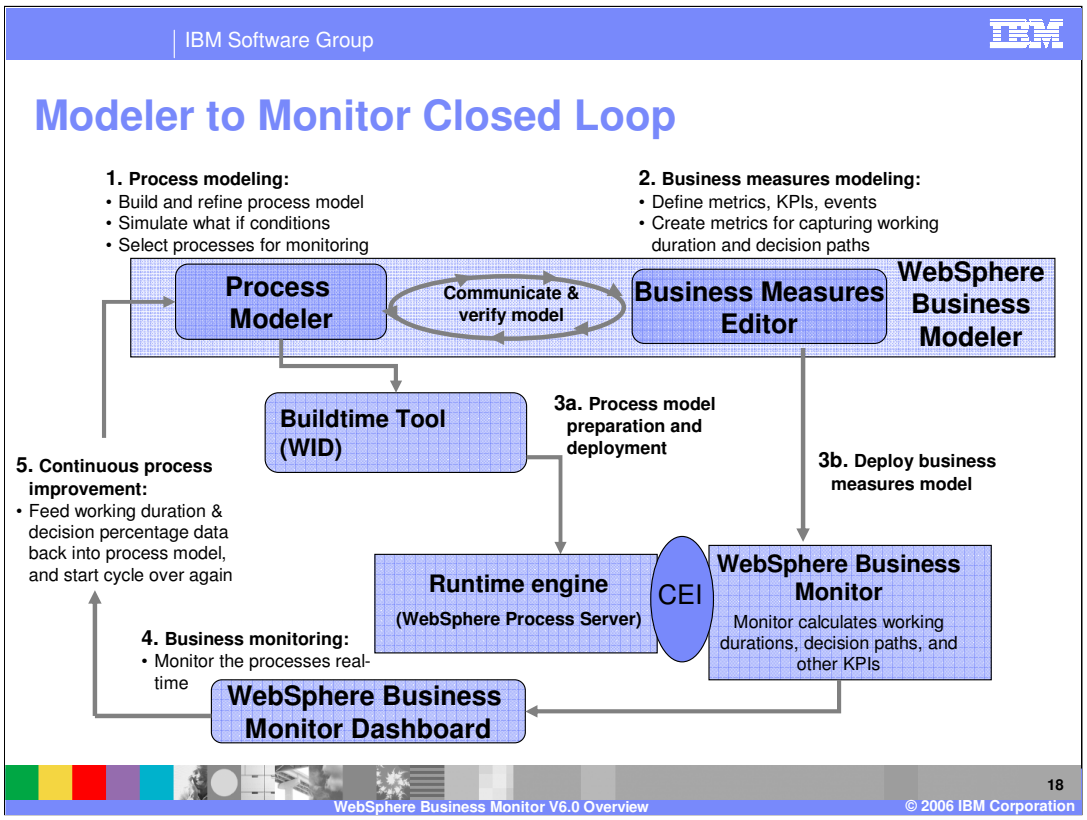


Shown here is a typical topology for Monitor Server and Dashboard Server in the server environment. Monitor Server runs on its own system with the State database. The Dashboard Server runs on a separate system using WebSphere Application Server and Portal Server with databases for the Runtime, Historical and Repository data stores. For performance reasons, the Historical database should be on the Dashboard server because Monitor Server only uses the repository at the time you import a model. However the Dashboard server uses it constantly when configuring and displaying the dashboards.

On the right side of this chart you see Cells of servers running applications in a V6.0 environment, all of which are tied together using the event bus. It is easy to see the value of CEI and the ability to extract events from any application on any server and populate them in the WebSphere Business Monitor V6 data stores.

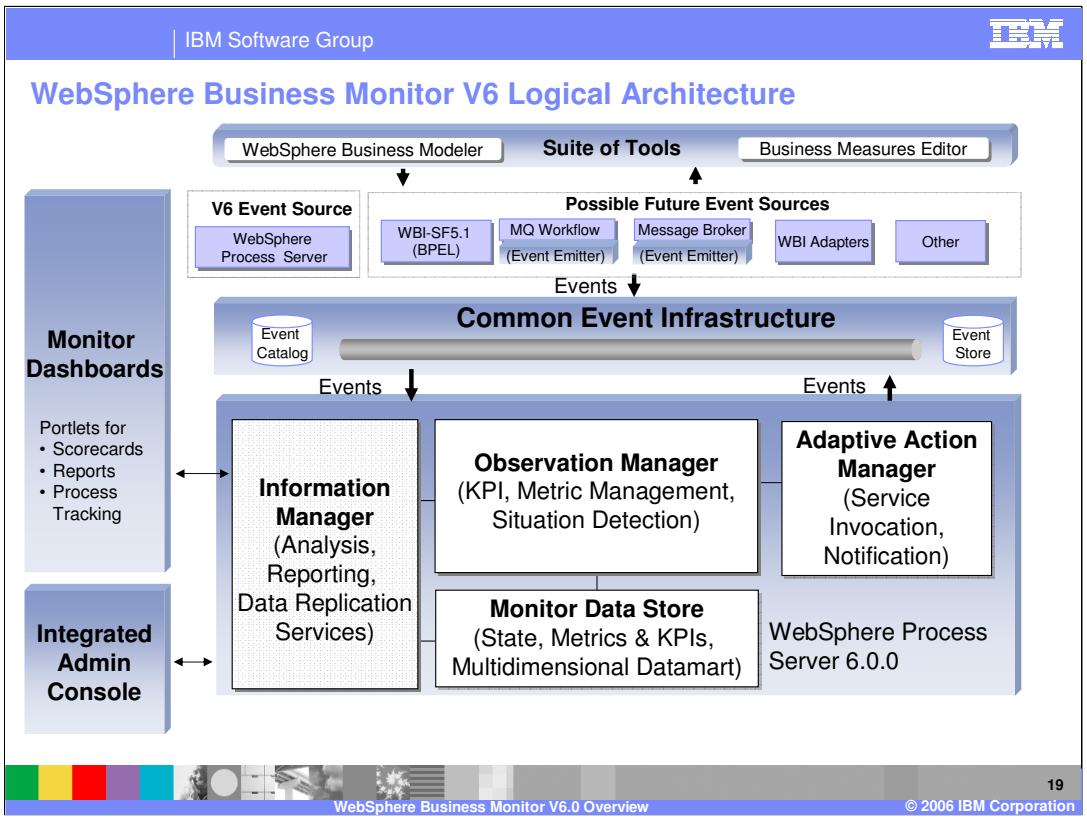
This is a typical topology, but using the WebSphere Business Monitor V6 Launchpad, you can install different configurations. For example, you might want to install all the databases on a separate database server.

WebSphere Information Integrator could be used to consolidate data from the internal datamart of WebSphere Business Monitor and the other external data sources available in the enterprise environment, and provide a single access point to this integrated view of the data. An Operational Data Store (ODS) is a current view of the data, which contains current or near-current data. The Data Warehouse reflects a more historical view of the business conditions. If there are changes, a new snapshot can be created and put in line with the other snapshots of this business condition. Insertions to the Data Warehouse (including snapshots and events) are usually batched and enter the Data Warehouse only on a pre-defined schedule. IBM DB2 Data Replication and Data Warehousing can be used to integrate many of the data stores in an enterprise into a single data warehouse.



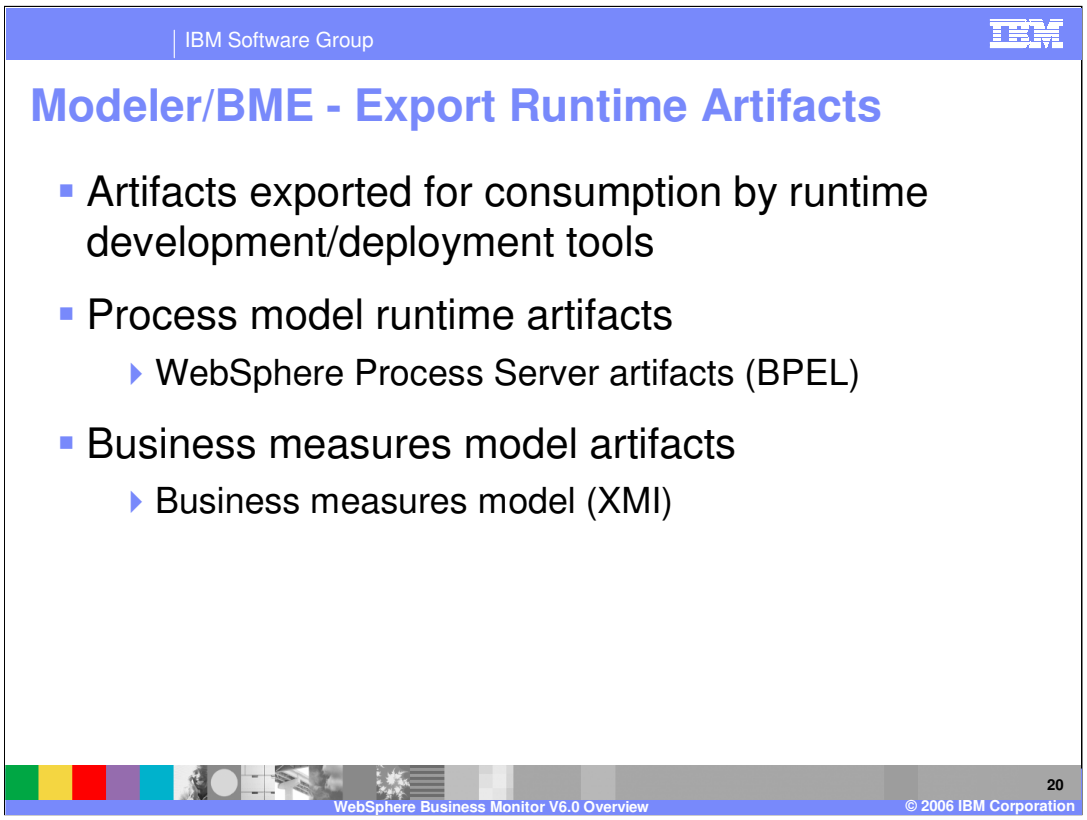
This slide shows the closed loop from WebSphere Business Modeler to WebSphere Business Monitor, back to WebSphere Business Modeler.

1. Build process model using the Process Model Editor in WebSphere Business Modeler. Simulations are performed based on resource allocations and estimated task durations.
2. Define business level metrics and KPIs to be displayed on the Business Dashboards using the Business Measures Editor.
3. Prepare to deploy the process and business measures models.
    a. Export the process model to WebSphere Integration Developer, specify additional runtime specific information, and deploy to Process Server.
    b. Export the business measures model and deploy to WebSphere Business Monitor.
4. The Monitor Server monitors the processes in real-time and stores data in the Monitor databases. The Dashboard Server displays this information in customized Dashboards
5. The closed loop is realized by feeding the actual values back to WebSphere Business Modeler from WebSphere Business Monitor. The Monitor Administrative Console provides a screen for exporting an XML file of the actual values. This includes extracting Working durations for task and process and Decision path percentages, such as how often one decision path is chosen over another from the historical data store.



WebSphere Business Monitor V6.0 allows you to monitor the runtime behavior of business processes through a Web application deployed on WebSphere Process Server v6. The data monitored is issued from a run time engine and is encapsulated in CBE events by means of event emitters and transmitted on a common event bus (the CEI or Common Event Infrastructure). Only events emitted from WebSphere Process Server are supported by WebSphere Business Monitor V6.

WebSphere Business Monitor also maintains its own datastore to handle data required for the monitoring operation, including instances of running monitoring contexts and metrics values. Performance is optimized by dividing the datastore into different databases, each optimized for specific types of DB access operations. A replication service moves state data to the historical datastore, the basis on which data analysis is performed. Analysis of data is made available by introducing DB2 Cube Views and accessing cubes from the AlphaBlox interface, which is the visualization module. Data monitoring is based on a business measures model, which includes different entries that permit correlation of the runtime events with a specific instance in addition to entries that specify situations. The business measures model is obtained from the original business model by editing entries that are essential for monitoring purposes, such as correlation of events, metric calculations, and detecting situations. Editing of the model is done using the Business Measures Editor, while the Action Manager component provides for the detection of situations and appropriate actions.

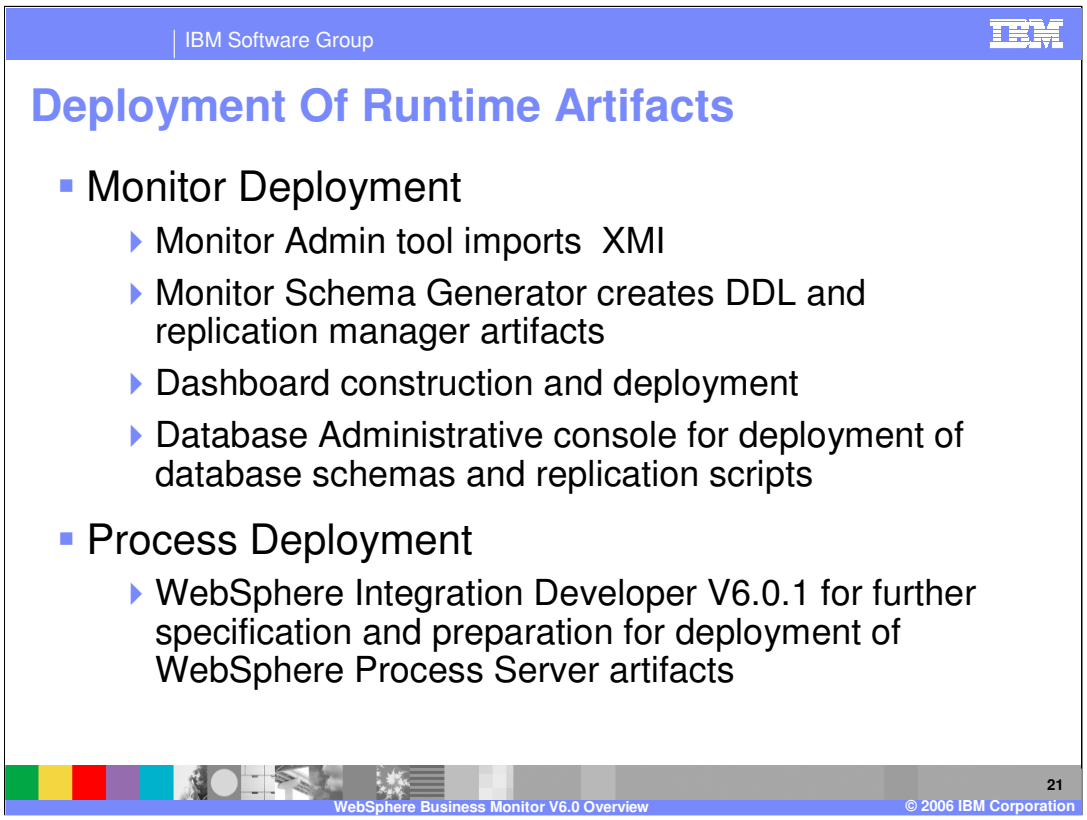


WebSphere Business Modeler and the Business Measures Editor are used to create the process and business measures models.

For WebSphere Process Server, WebSphere Business Modeler generates BPEL for the process which is then imported into WebSphere Integration Developer for specification of implementation details.

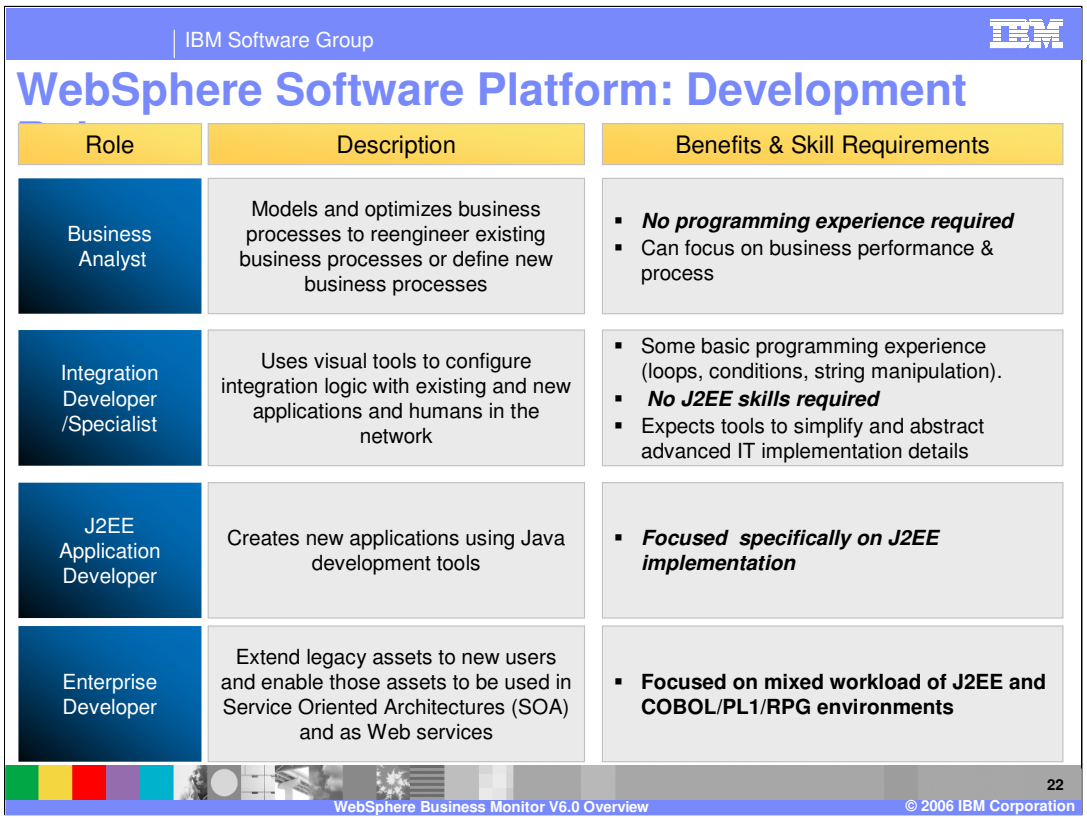
For WebSphere Business Monitor, WebSphere Business Modeler generates an XMI file, which is then imported into the Monitor administrative console.

XML Metadata Interchange (XMI) is defined by the Object Management Group (OMG) and is designed to enable easy interchange of metadata between modeling tools.

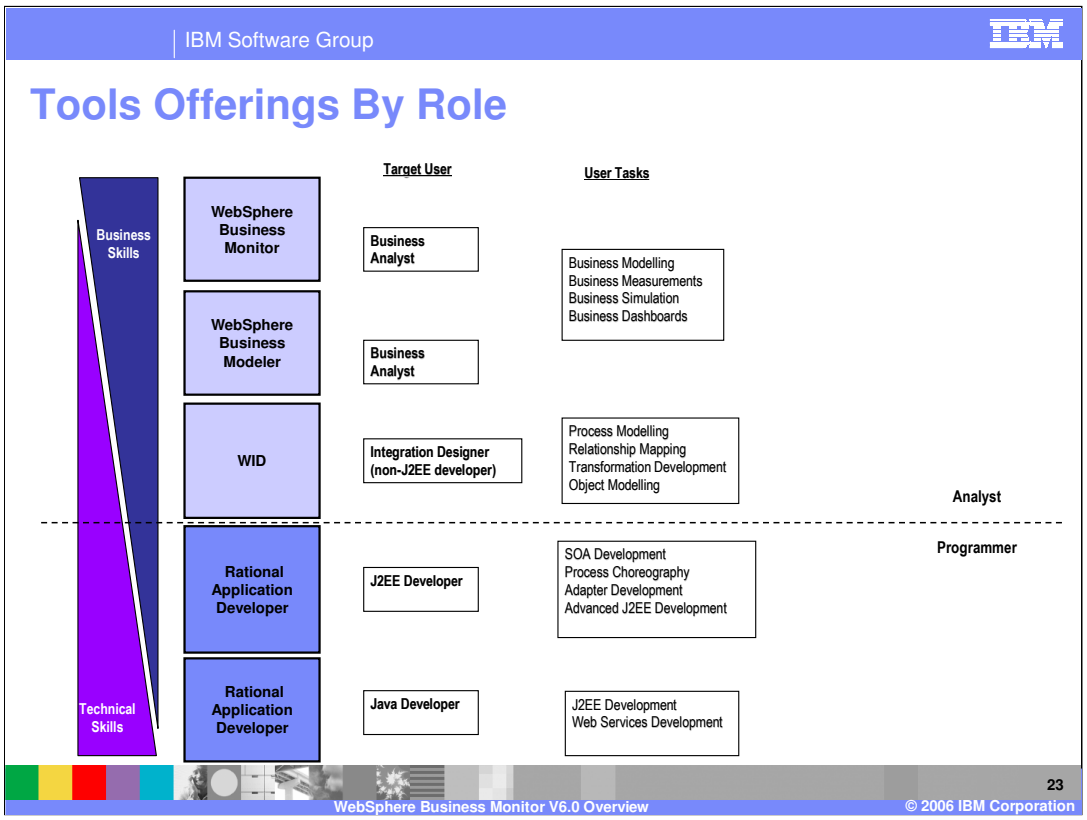


After the models are transformed and exported, the artifacts are deployed. For WebSphere Business Monitor, a zip file contains the monitor artifacts, which are imported using the Monitor administrative console. Portal Server is used for construction and wiring of the dashboards to be used for displaying the monitored data. The DBA takes the replication scripts and DDL which are generated for the business measures model and deploys them into the correct database environment.

For process deployment, the BPEL is imported into WebSphere Integration Developer, where you can specify implementation of the tasks that were defined in WebSphere Business Modeler. An EAR can then be built and deployed to WebSphere Process Server.



This slide depicts the various roles that can be involved in the process of developing applications in the WebSphere Process Integration environment.



This slide positions the various roles played in a services oriented environment and the tools and dashboards that they require. The purpose of this chart is to show a continuum of skills and roles from the primarily business based analyst to the technology based developer. WebSphere Business Modeler and WebSphere Business Monitor are at the top of the chart, on the Business Skills end of the spectrum. The goal is to minimize or eliminate the need for skilled Java programmers to be engaged in the normal business process integration.

Business Analysts do requirements analysis and application flow modeling

Integration Developers develop components designed to achieve connectivity to various applications, data stores, and middleware.

J2EE™ and Java™ Developers use Enterprise JavaBeans™ (EJB™), Servlets, JSPs, and Portlets to create specific business logic representing business tasks.

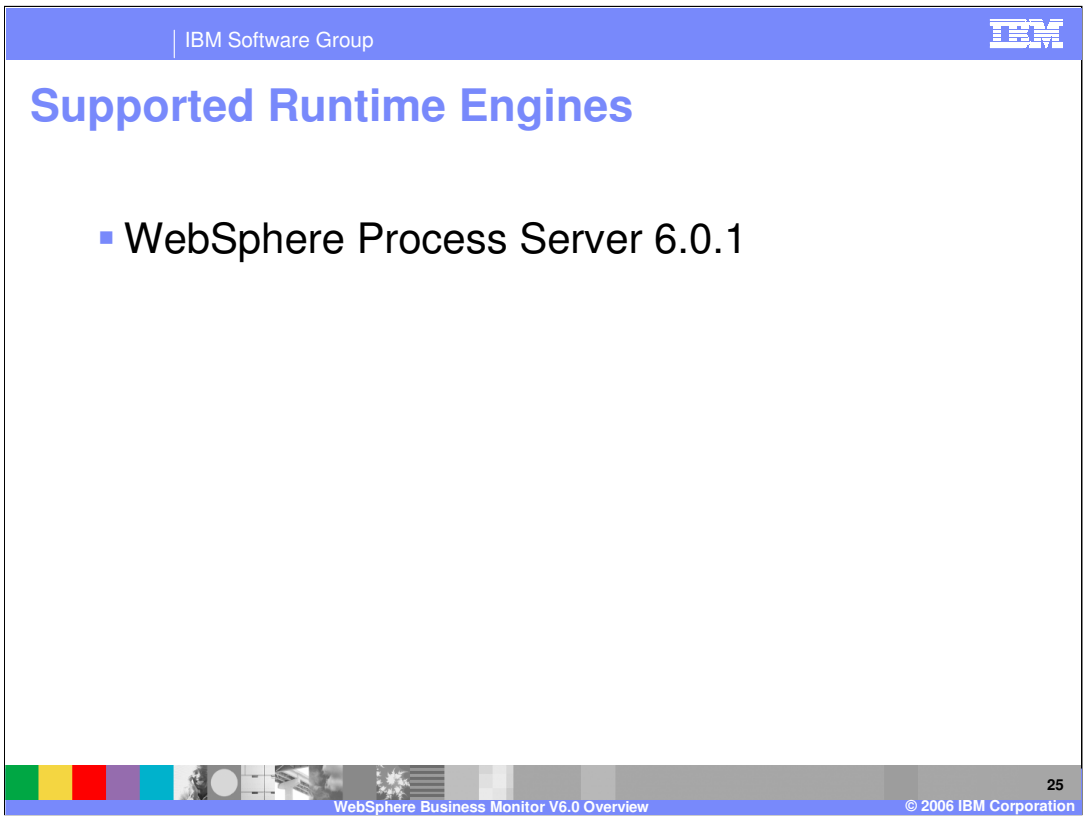
Each role requires a tool view appropriate to their concerns and the artifacts that must be produced by that person. For example, business analysts will require views that are very different and distinct from the views required by the service developer. There are, however, many functions that are common and independent of the specific artifacts being produced, which can be provided through an open tools infrastructure. Common project management, resource and repository management (version control functions), integrated unit testing (local and remote), and common deployment wizards can be provided through a single tooling infrastructure.

The IBM tooling strategy maps to this role-based development model, providing tooling that leverages common functions available through an open tools infrastructure and the appropriate view and user interface functions required by the various development roles spanning business oriented and IT oriented roles. The open tools infrastructure will be provided through the IBM implementation of the Eclipse platform and the various views/role-based functions will be provided through specific plug-ins that leverage that environment.

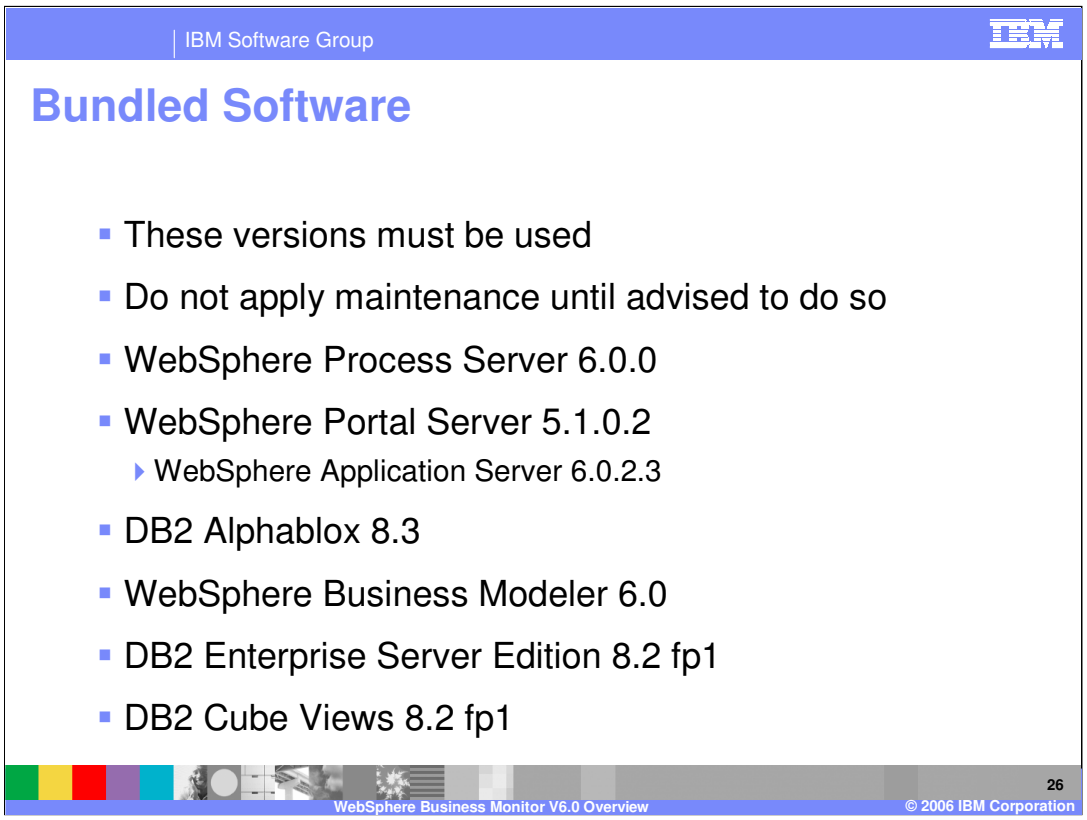
WebSphere Business Monitor V6.0 Target Environments

- Server
  - Windows 2000 Server, Windows 2003 Server
  - AIX® 5.2, 5.3
- WebSphere Business Modeler V6
  - Windows 2000, Windows XP
- Database
  - DB2 8.2 on Win2k, Win2003, Sun Solaris, AIX, Linux®

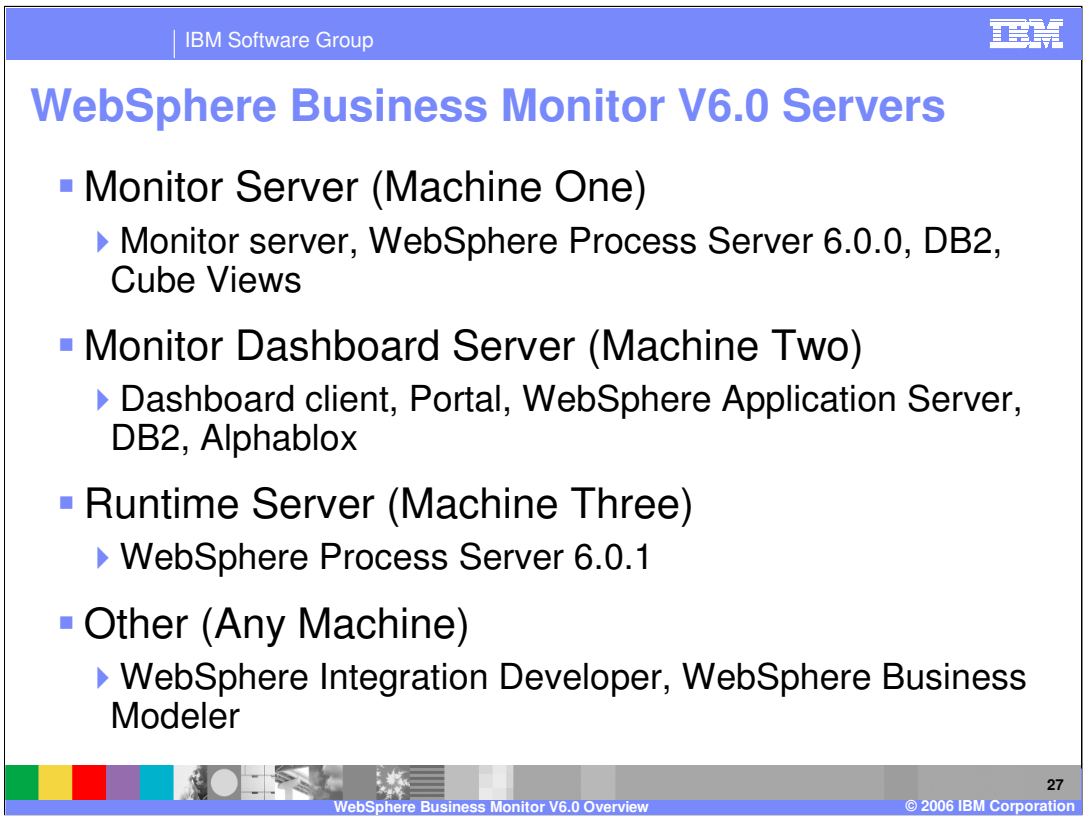
Shown here are the target environments for WebSphere Business Monitor.



This is the target runtime engine for WebSphere Business Monitor V6. WebSphere Business Monitor V6 only supports monitoring applications running on WebSphere Process Server V6.0.1. Although WebSphere Business Monitor V6.0 runs on WebSphere Process Server V6.0.0, monitored applications must run on a separate WebSphere Process Server V6.0.1.



Listed here are the products that are included in the software bundle provided for your installation of WebSphere Business Monitor V6. Monitor Server runs on top of WebSphere Process Server. The Dashboards use Portal Server for configuration and display. WebSphere Portal Server does not run on WebSphere Process Server at this release level, so WebSphere Application Server is used for the Dashboard Server. Alphablox widgets are used to display the multidimensional charts in the Dimensional views on the Portal page. WebSphere Business Modeler contains the Business Measure Editor for specifying your metrics and KPI's. DB2 Enterprise Server Edition contains database support and DB2 Cube Views is used for multidimensional analytics.

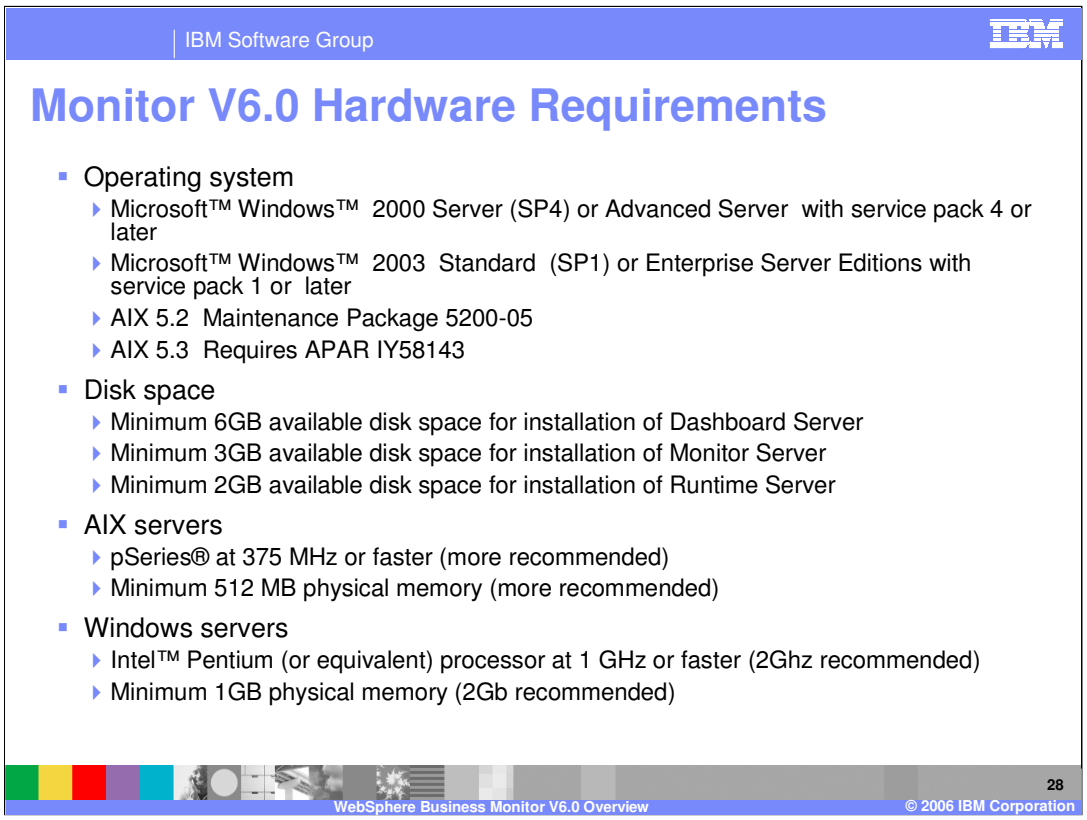


WebSphere Business Monitor v6 components require two systems. The Monitor Server is used to capture the events from the target runtime engine and runs on top of WebSphere Process Server V6.0.0. The Dashboard Server is used to display the process data, but runs on WebSphere Application Server since Portal cannot run on WebSphere Process Server at this time.

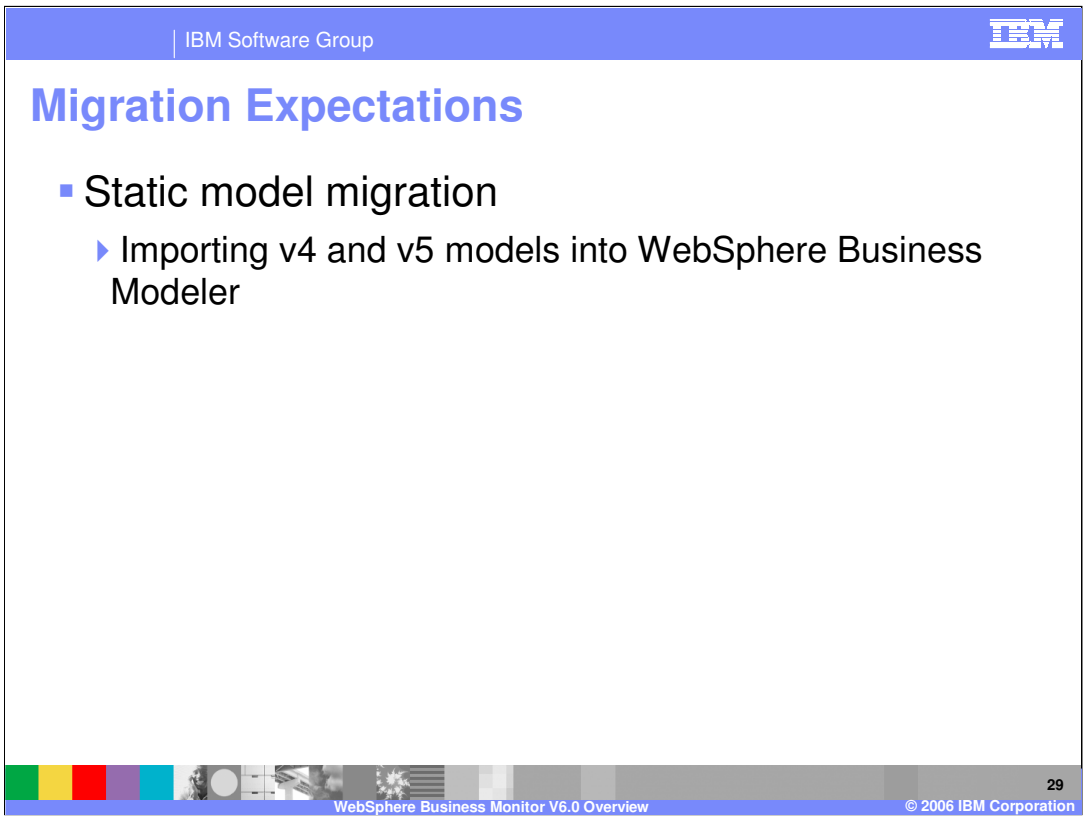
You can install the Monitor databases on a separate server, or split them up on any servers that you choose. Wherever you have loaded the History database, you must also install DB2 Cube Views.

You will need WebSphere Process Server V6.0.1, installed on a third system, for your monitored applications.

You will also need to install WebSphere Integration Developer and WebSphere Business Modeler, which can be installed on one of the servers or on other machines.



Shown here are the operating system and hardware requirements for WebSphere Business Monitor V6. Disk space, processor speed and memory is suggested for all three servers for AIX® and Windows™ servers. Your needs will vary depending on the complexity and number of models that you have deployed.



Static models migration:

The migrated data contains the process models, performance models (business measures), and notification metadata. For version 4, you can import an org file into WebSphere Business Modeler. For version 5, you can import a project zip file, but this will only contain the process model, since business measures modeling was not available in version 5.

References

- With the drivers
  - Readme, Installation guide, WebSphere Business Modeler InfoCenter, WebSphere Business Monitor InfoCenter
- Managing Business Performance
  - http://www-106.ibm.com/developerworks/library/i-bpm.html
- Business Integration Management Redbook
  - http://www.redbooks.ibm.com/abstracts/sg247024.html?Open

Shown here are some additional references.

In summary, this presentation covered new features in WebSphere Business Monitor V6 and explained the positioning of this product in relation to the IBM suite of Process Integration tools.

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