



IBM Software Group

# WebSphere® Business Monitor V6.1

## Overview



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Updated January 24, 2008

This presentation covers the new features of WebSphere Business Monitor Version 6.1 and the changes from the previous version.

## Agenda

- Overview
- What's new
- Target environment
- Migration

This is the agenda for this presentation.

First, an overview is provided for WebSphere Business Monitor V6.1. Then you will see the new features of the product and how it differs from previous versions. You will look at the target software and hardware environment for installing WebSphere Business Monitor. And you will review migration from previous versions of the product.

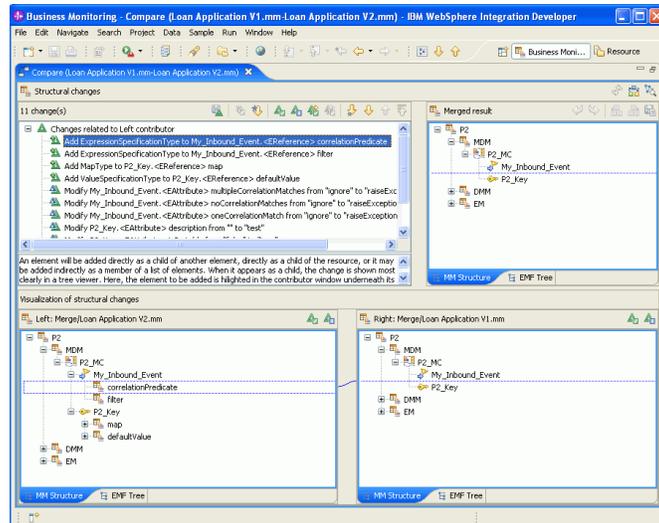
## What's new in version 6.1?

- Monitor model merge
- Process synchronization with monitor model
- XSD event definitions
- User defined functions
- Monitor model editor support for visual model
- Web dashboard
- Simplified deployments
- Simplified database
- Creating key performance indicators (KPIs) at runtime
- Installation and scalability improvements
- Support for Linux®, HP-UX, Vista, Derby, Oracle, z/OS® DB2®
- WebSphere MQ Workflow emitter

Monitor V6.1 contains many new features, including model merge functions, user defined functions, GUI support for visual models, and a new Web dashboard which removes the Portal Server requirement. The deployment of models has been dramatically simplified, and the database and data movement services have been simplified. Now you can configure KPIs at runtime in addition to defining them in the model. There are also improvements in installation and scalability, plus there is new support for Linux, HP UX, Vista, Derby databases, Oracle databases and z/OS DB2 databases.

## Monitor model merge

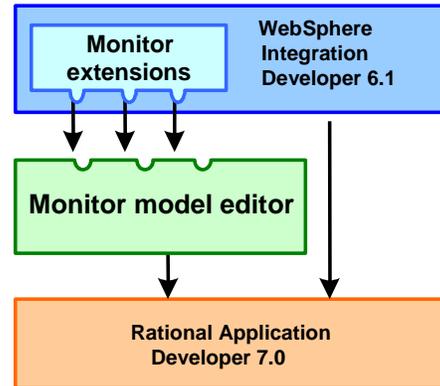
- A new feature in Monitor Toolkit to compare/merge monitor models
- Allows merging models from Modeler and processes
- Allows merging of changes into the model
- Changes can be accepted individually or rejected



A new feature in the Monitor toolkit allows you to compare models and merge models. The merge makes it easy to review individual differences in the models and then choose to accept them or reject them individually. So now, you can easily take the KPI model from Modeler and merge that into the model which was auto-generated from the process.

## Monitor toolkit prerequisites

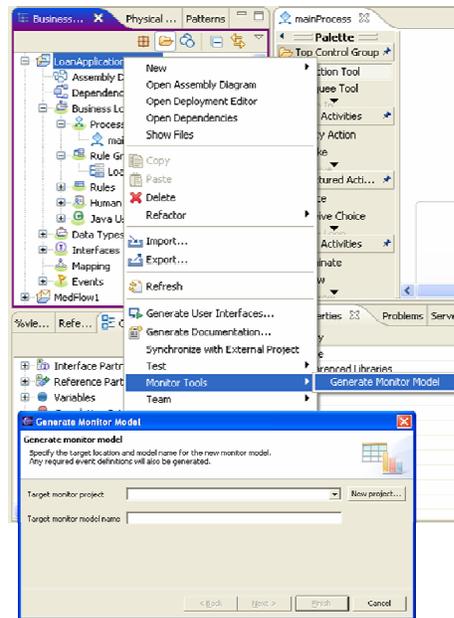
- In 6.1, you can choose to install on top of Rational® Application Developer 7 or WebSphere Integration Developer 6.1.
- If WebSphere Integration Developer is being used, the Monitor Toolkit provides tight integration, including template based generation, refactoring and synchronization.



In version 6.1, you can choose to install on top of Rational Application Developer 7 or WebSphere Integration Developer 6.1. If WebSphere Integration Developer is being used, the Monitor Toolkit provides tight integration, including template based generation, refactoring and synchronization. The Rational Application Developer option is a benefit for customers who do not otherwise require WebSphere Integration Developer, since Rational Application Developer has a smaller footprint than WebSphere Integration Developer.

## Generate monitor model from module

- Generate Monitor Model Wizard on the application level (SCA module)
- Multiple modules can be monitored in a single model
- New support for events from business rules, business state machines
  - ▶ In addition to support for events from BPEL, human tasks, SCA modules, mediation flows



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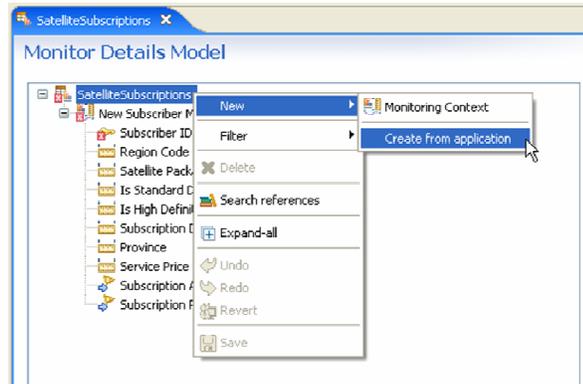
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In version 6.0.2 you generated the monitor model from the human task component, BPEL component, assembly diagram or mediation flow. Now in version 6.1 you generate the model at the module level, and then in the wizard you can specify which components in the module that you want to monitor. You could also generate monitor models from different modules and then merge them into a single monitor model.

New in version 6.1 is the ability to support monitoring of events from business rules and business state machines. This support is in addition to the support for monitoring BPEL, human tasks, SCA and mediation flows.

## Add monitoring elements after model generation

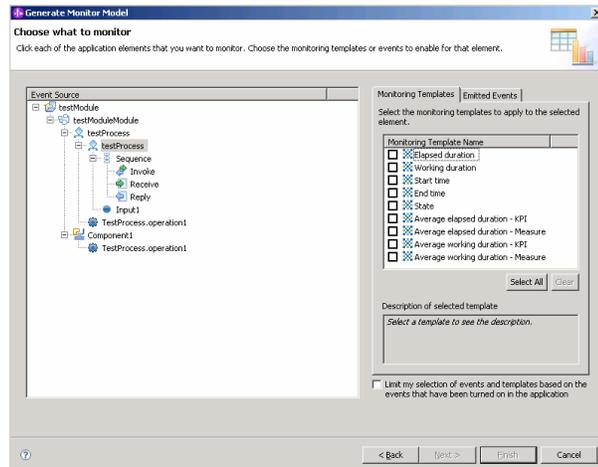
- Flexibility to add monitoring elements for additional parts of an application after the initial monitor model generation



In some cases, the need to monitor a particular aspect of an application may not have been originally known, or you may have forgotten to monitor some desirable application elements. Now, you can select an existing monitor model and then add monitoring elements after the fact.

## Create a monitor model using a template

- For any selected object in the diagram, the available templates and set of emitted events are displayed
- Choosing a template will create the appropriate monitoring constructs in the generated model.
- Templates supported
  - ▶ Elapsed duration
  - ▶ Working duration
  - ▶ State
  - ▶ Start time
  - ▶ End time
  - ▶ Assigned user

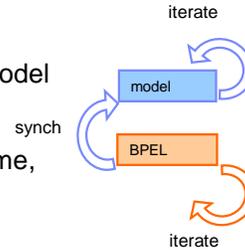


When you are generating a monitor model from a process module, you are given the option to select the component that you want to monitor. For each component, you can choose from predefined templates and then the monitor model elements which are necessary to support them are automatically generated for you.

You can select templates for elapsed duration, working duration, state, start time, end time and assigned user. For elapsed duration and working duration, you can also select templates that generate the corresponding measures or KPIs.

## Monitor model synchronization

- You can easily synchronize changes from the event sources (such as a BPEL process) with the corresponding monitor model
- Many changes will be applied through live refactoring
  - Examples: module name, component name, interface name, operation name, business object name.



The screenshot shows a project tree on the left with 'testMonitorModel.nm' selected. A context menu is open, highlighting 'Synchronize with Application...'. An arrow points from this menu item to a table titled 'Application change'.

Application change	Affected monitor elements	Resulting action
<b>Elements added</b>		
LoanApplicationModule		
LoanApplicationModuleAssemblyDiagram		
Component1	LoanApplicationModuleAssem...	Update event source
<b>Elements removed</b>		
LoanApplicationModule		
LoanApplicationModuleAssemblyDiagram		
mainProcess		
LoanProcess		
Sequence		
Receive	Receive	Update event source
<b>Elements changed</b>		
LoanApplicationModule		
LoanApplicationModuleAssemblyDiagram		
mainProcess		
LoanProcess		
LoanProcessENTRY	LoanProcess	Update event descriptor

A new synchronization option is available so that you can easily synchronize changes from the event sources such as a BPEL process with the corresponding monitor model. This is useful because a developer may make changes to the process module after the monitor model has already been created. In the previous release you need to manually update the monitor model with the changes, but now you can do this automatically. Some changes will not require synchronization because they are applied through live refactoring.

## XSD event definitions

- Uses XSDs to describe event business data
- Retain compatibility with 6.0.2-style common base event definitions
- Continue to use common base event for event envelope format at runtime.
- XSD event definitions are shown alongside common base event in the 'Event Definitions' group on the Project Explorer
  - 
- Double-clicking on an XSD file will open the default XSD editor
  - ▶ The default editor in WebSphere Integration Developer is the BO editor
  - ▶ The default editor in a Rational Application Developer environment is the XSD editor

### ▼ Event Type Details (Read only, managed by application)

Specify the event type or the XML schemas that together describe the structure of this inbound event. You can specify an extension name, event parts, or both.

Extension name:

Event parts:

ID	Name	Type	Path
BaseData	BaseData	wbi:Event	cbe:CommonBaseEv
BPELData	BPELData	bpc:BPC.BFM.ACTIVITY.M...	cbe:CommonBaseEv
Input	Input	bo:Order	cbe:CommonBaseEv

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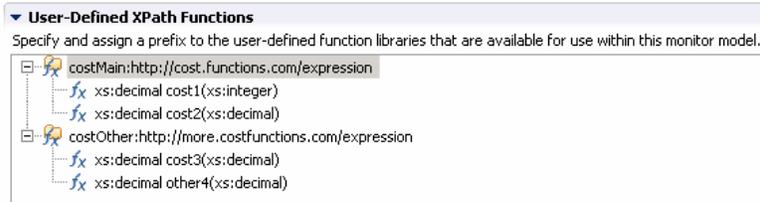
A new event definition is used to define the business payload in events destined for Monitor. The new events use schema definitions to describe the layout of the payload, however the event itself is still using the common base event event envelope as a wrapper for the event. At runtime, XML is used to represent the business object based on the XSD for the business object.

In the monitor model editor you will see both types of definitions listed, the older style common base events along with the new style XSD events. The default editor in WebSphere Integration Developer is the business object editor, but in Rational Application Developer the default editor is the XSD editor.

In the screen capture you can see the event type details for an inbound event which is based on an XSD style event definition. There are three event parts, including base event data, BPEL data, and the payload. Each part has its own schema definition.

## User defined functions

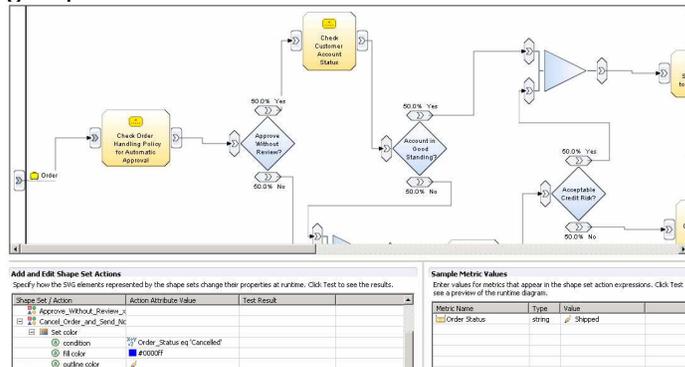
- Access external data
- Specialized calculations
- Can be used in metric maps, triggers, correlation, filters including metrics and key performance indicators
- Can be used in XPath 2.0 expressions
- User defined functions are implemented in Java



New in version 6.1 is the ability to create user defined functions in Java. These can be used to access external data or to do specialized calculations. They can be referenced anywhere you specify an expression, such as metric maps, triggers, correlation and filters. This also includes support for referencing user defined functions in KPI expressions. Expression support is based on XPath 2.0.

## Monitor model editor enhancements

- Graphical support for creating, editing and testing a visual model within the monitor model editor
- Simplification of dimensional, KPI tabs
- Dynamic validation
- Event groups



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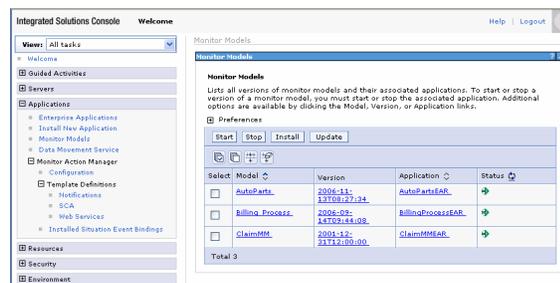
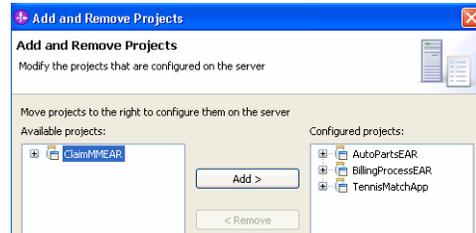
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There are many enhancements to the Monitor model editor. There is graphical support for creating, maintaining and testing a visual model. Representation of the fact table and fact attributes are removed from the data mart model, so measures now refer directly to the metrics they aggregate. There is dynamic validation so that you do not have to save your changes to see validation results. Event groups are a new feature that allow you to create containers for inbound event definitions that are related in some way. This can simplify the organizational structure of your model.

## Deployment enhancements

- Monitor model deployment automatically creates tables, installs and starts the EAR.
- No server reboot is required
- Significantly improves the iterative development experience.
- For production style deployments, you can optionally perform steps manually for a more controlled step-by-step procedure.



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There is a dramatic improvement in the deployment experience. With a single click, the model is deployed, the monitor tables are created and the application is started. A server reboot is no longer mandatory. This makes the iterative development cycle much more usable. However, in a production environment, you can still have full control over the deployment, and actually run it in a step by step fashion.

## Integrated test client

- Create/emit events using the integrated test client
- You can create scripts containing the events that you create

**Integrated test client**

**Monitor model events**

Using the selected monitor model, you can create an instance of any event definition included in the model. Add the event instance to the test script on the right hand side by clicking the plus icon.

Monitor model: ClipsAndTasks  
 Monitor context: ClipsAndTasks\_MC  
 Event definition: Activity\_Event

**Common base event data**

Extension name: ActivityEvent

▶ Predefined data  
 ▶ Property data element  
 ▶ Extended data element

Name	Type	Value
ActivityEventData	noValue	
OrderBOData	noValue	
orderNumber	string	

**Event details**

▶ Event part details

**Test script**

You can either create a new test script or load an existing one. To add new items into the script, use the editor on the left hand side.

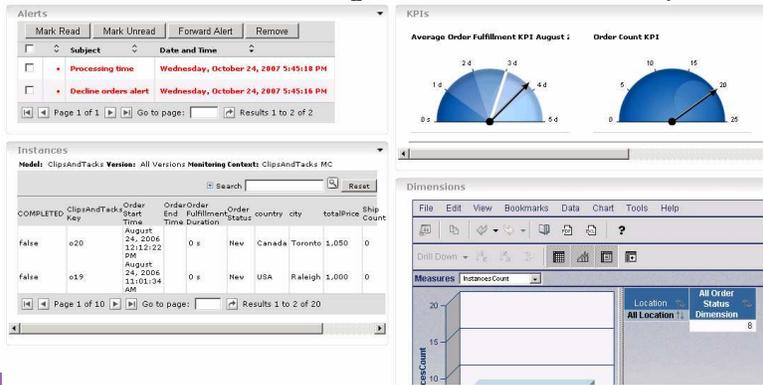
Script filename: untitled\*

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There is an integrated test client which can be beneficial in the development environment. In the project explorer, you can launch the test client, then you can specify the event definitions that you want to work with. For each event definition, you can supply values for each field in the event, then you can save a script that stores the events along with the data values and the ordering of the events. So you can easily create a test sequence of events, save them and re-run them at a later time.

## Web dashboard

- The dashboard is web-based using Web 2.0 technology, Dojo, AJAX
- The dashboard displayed within the toolkit (similar to the administrative console), or can be displayed in a browser
- Can be used as a production dashboard
- All views are available including the dimensions and reports views



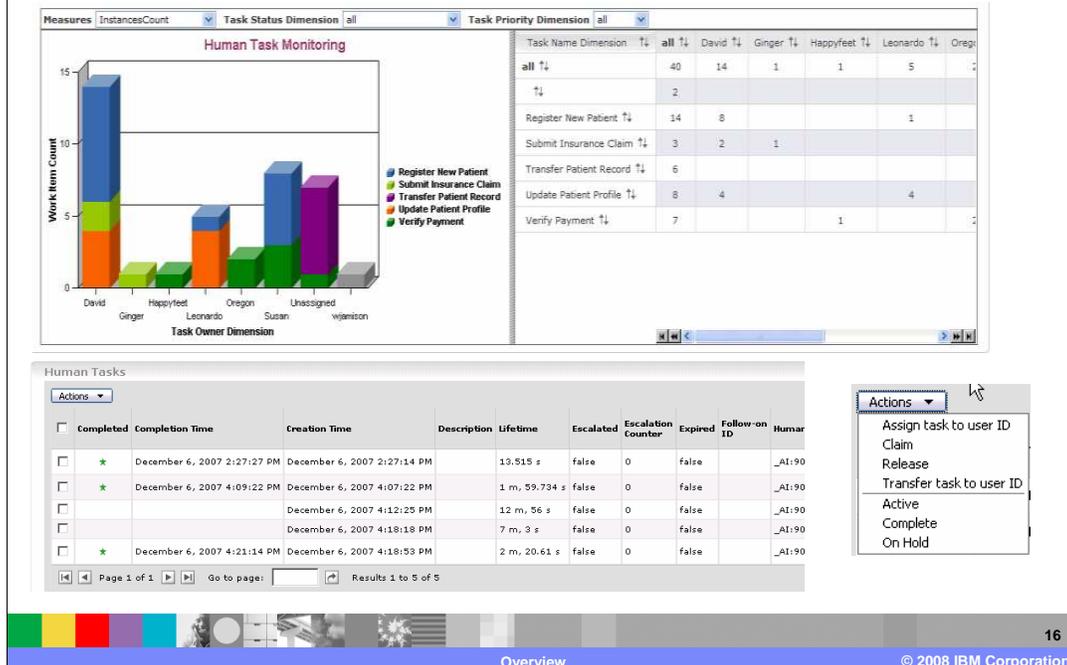
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A new Web dashboard is available which is based on Web 2.0 technology including use of the Dojo toolkit in an AJAX environment. This provides a rich user experience and each view can be refreshed asynchronously without reloading the whole page. In the development toolkit you can have access to the Web dashboard using the internal browser or an external browser. The Web dashboard is a fully scalable solution and so can also be used in a production environment, and it offers a lightweight alternative to the Portal dashboard.

## Monitor human tasks – inline and stand-alone



Introduced in the WebSphere Business Monitor V6.0.2 support pack, the Monitor Human Tasks view was provided with an extended set of examples that show the activities related to the human task within a business process. However it worked in 6.0.2 only with inline human tasks, not stand-alone human tasks. For 6.1 the human tasks view can be used for stand-alone or inline human tasks. The new Human Tasks view can be used in combination with the Reports view or Dimensions view.

At the top you see a screen capture of the Dimensions view showing the aggregated information for tasks and users. So you can easily see the total tasks assigned to each user. At the bottom left you see a screen capture of the Human Tasks view which shows instance information for each human task. At the bottom right you see the Actions menu that can be used on the Human Tasks view to perform business process actions on the human task instances.

## Alerts subscription

- Monitor 6.1 adds the ability for business users to subscribe to alerts of interest without involving IT.
- You can select various methods of notification.
- Subscription list filtered based on what you are authorized to view.

Alert Name	Description	Category	Create Date	Dashboard Alert	Cell Phone	Email	Pager
AlertLate			Mon 2007-10-22 18:55:44.671	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Declined orders			Mon 2007-10-22 18:54:41.796	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Page 1 of 1    Go to page:    Results 1 to 2 of 2

Apply

The new Alerts subscription view enables you to subscribe and unsubscribe to different alerts defined in the model. You can also choose the type of notification channel associated with each alert, either dashboard alert, cell phone, e-mail or pager. The alerts subscription list can be filtered based on what you are authorized to view.

## Working with key performance indicators (KPIs)

- You can update/create KPIs at runtime using KPI Manager
- KPIs can be based on an expression consisting of calculations referencing other KPIs
- Removal of 100 day limit in time periods
- New time periods for quarter, hour, minute in addition to year, month, day
- Aggregation across specified versions

The screenshot shows the KPI Manager interface. At the top, there are tabs for 'KPI Manager', 'Export Values', and 'Alert Subscription'. Below the tabs, there are dropdown menus for 'Actions', 'Model: ClipsAndTasks', and 'Version: Latest'. A table lists several KPIs with columns for 'KPI Name', 'Created', 'Owner', 'Type', and 'Access'. The 'Total Price KPI' is highlighted, and its properties are shown in a sidebar on the right. The 'KPI Properties' sidebar has tabs for 'Name', 'Definition', 'Range', 'Other', and 'Preview'. The 'Definition' tab is active, showing 'Operator: Sum' and 'Metric: totalPrice'. The 'Time reference' is set to 'None'. There is also a 'Data filter' section with an 'Add' button.

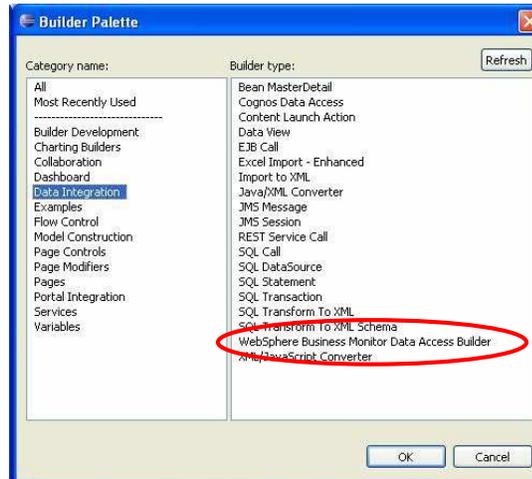
KPI Name	Created	Owner	Type	Access
<a href="#">Average Order Fulfillment KPI August 2006</a>	Modeled	-		
<a href="#">Average Order Price KPI (Dollars)</a>	Modeled	-		
<a href="#">Declined Order KPI</a>	Modeled	-		
<a href="#">Order Count KPI</a>	Modeled	-		
<a href="#">Percent of Orders Approved KPI</a>	Modeled	-		
<a href="#">Ship Count KPI</a>	Modeled	-		
<a href="#">Total Price KPI</a>	Dashboard	admin		

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In version 6.1 you can define a new KPI in the dashboard without going back to the Monitor toolkit to define the KPI, thus eliminating redeploying the monitor model. You can create expressions for a KPI that consists of calculations and these expressions can also reference other KPIs. The 100 day limit in time periods has been eliminated. New time periods for quarter, hour and minute are now available. Also, when you define the KPI, you can specify which monitor model versions to aggregate across.

## Custom dashboards

- Use Portlet Factory dashboard user interface builders with Business Monitor data access builder to develop custom dashboard views.
- The data integration builder generates the representational state transfer (REST) service calls to retrieve data
- REST URIs are documented, so you can also create your own Web pages to access monitored data.



In version 6.1 you can create your own custom dashboards. In Portlet Factory, user interface builders are supplied which assist you in creating your own dashboard portlets. The Monitor data integration builder also assists you in accessing Monitor data using the RESTful resources.

An alternative approach would be to develop custom dashboard views that call the published REST Services directly, without using the Portlet Factory builder.

## Configure security

- Access to a monitor model is protected based on the roles the person has on the resource group to which the model belongs
- A WebSphere Application Server administrator can assign a role to a person on a particular resource group
- A WebSphere Application Server administrator can create a new resource group and assign a monitor model to a resource group.
- You can use Virtual Member Manager in WebSphere Application Server 6.1 and therefore configure file system, LDAP, and custom registries

### Models

Select the models to add to or remove from this resource group. To select all, click >>. Available in root Selected

### Roles

Select a role for this resource group, and click either Users or Groups.

Please note that the following requirements must be met in order to assign users or groups to a role

- Administrative Security must be enabled
- Application Security must be enabled
- Federated Repositories must be the selected User Account Repository

Users	Groups
Select	Name
<input checked="" type="radio"/>	Business-Manager
<input type="radio"/>	Personal-KPI-Administrator
<input type="radio"/>	Public-KPI-Administrator
<input type="radio"/>	KPI-Administrator

When configuring security, access to a monitor model is protected based on the roles the person has on the resource group to which the model belongs. An administrator creates the groups and users, then configures resource groups to contain monitor models and associates roles with individual users or groups.

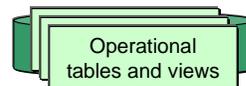
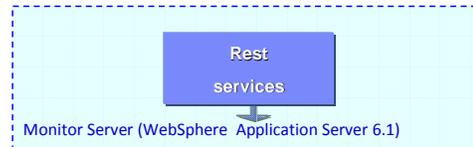
Virtual Member Manager in WebSphere Application Server 6.1 provides the ability to map entries from multiple individual user repositories into a single virtual repository. Each repository may be an entire external repository or, in the case of LDAP, a **subtree** within that repository. To the WebSphere Application Server runtime, there is still only one registry, and thus, all applications in the cell still share this one single registry.

## Dashboards without data movement service (DMS)

- Real-time dashboard reporting based on data in the operational tables
- Ideal for development and small production environments
- Simpler installation and configuration without DMS enabled



Dashboard

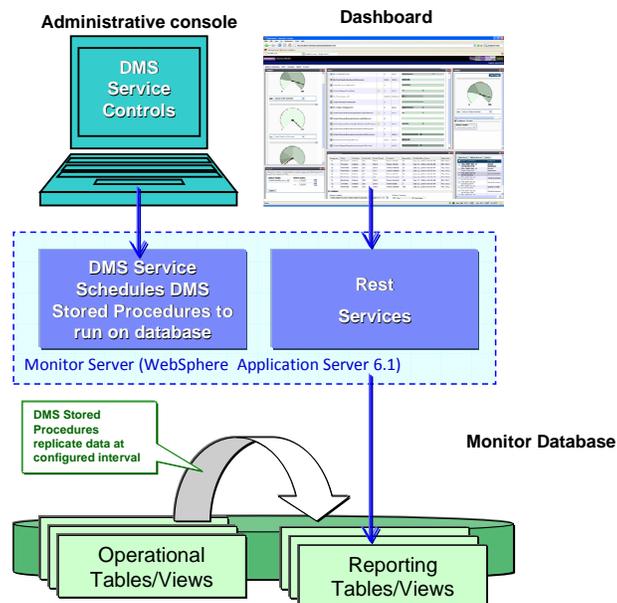


Monitor database

This slide shows how the dashboard can access monitored data from the operational tables using the REST services without using data movement services. This would be an ideal scenario for a development environment or small production environment.

## Dashboards with data movement service

- Dashboard reporting using the reporting tables
- DMS stored procedures used instead of DB2 Replication Manager
- Configurable DMS interval determines replication latency.
- Administration using the administrative console; no command windows.
- DMS may be enabled at any time after model deployment
- MONITOR and DATAMART DBs converged to single DB



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This slide shows how the dashboard can access monitored data using the REST services and using data movement services. Data movement services copies the data from the operational tables to the reporting tables, then the dashboards access the reporting data using the REST services. This would be an ideal scenario for high volume production environment. In version 6.1, the operational tables and reporting tables are now in the same database.

In version 6.1 data movement services uses stored procedures instead of DB2 replication manager, so this opens up Monitor to other databases like Oracle and Derby. Also, the configuration of DMS happens through the administrative console, unlike the previous version which required many elaborate commands to set it up. Also, you can enable DMS anytime after the initial model deployment.

## Installation improvements

- Simplification
  - ▶ WebSphere Application Server 6.1 is the only mandatory prerequisite for 6.1
    - Portal and Alphablox are optional for advanced capability
    - Cube views feature of DB2 Data Warehouse Edition is optional
  - ▶ Derby, DB2, z/OS DB2 or Oracle can be used for database environment
  - ▶ Retain the option to install Monitor server on WebSphere Process Server (Toolkit and Advanced)
  - ▶ Remove requirement of network connectivity for install
- Consistency with other IBM products
  - ▶ Use of common installation engine; support update installer for maintenance
  - ▶ Support standard 6.1 profile creation and augmentation – separate the installation from the profile configuration
  - ▶ Multiple installations of Monitor components allowed on a single machine

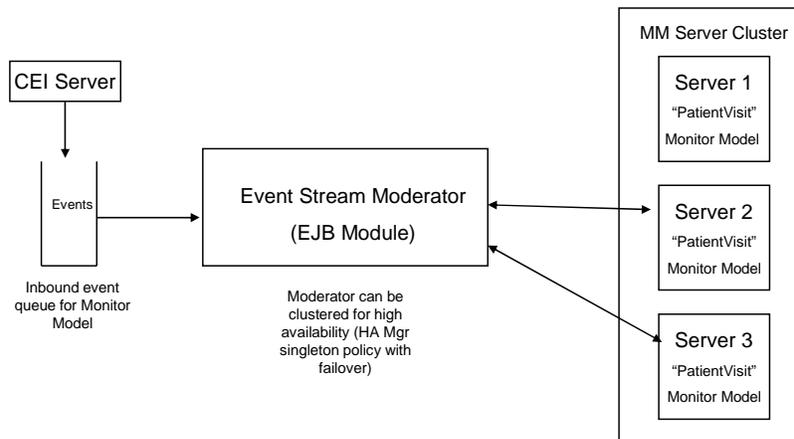


There are several improvements in installation. Now WebSphere Application Server is the only mandatory prerequisite, so Portal, Alphablox and Cube Views can be optionally used depending on your needs. Additional databases are supported, including Derby, z/OS DB2 and Oracle. Monitor installs on WebSphere Process Server in addition to WebSphere Application Server. Now you can also install onto a server which is not attached to a network.

To promote consistency with other IBM products you will notice the use of the common installation engine, update installer and profile management tool. Also, you can now install more than one copy of Monitor components on the same machine.

## Event stream moderator

- Sequencing events that arrive out of order
- Support clustering for scalability – deliver events across target cluster
  - Deliver related events to the appropriate monitor model server in the cluster
- Ensure “bad” events only fault corresponding instance, and not all instances



The event stream moderator is new for version 6.1. It sits between the CEI server and the monitor model application and pre-processes all events that are destined for the particular model version. It facilitates a well formed event stream and orchestrates the flow of these events to the server clusters.

It also provides for clustering capability, event sequencing and forwarding error events to an error queue.

For error events, only the affected monitored instance is faulted, so all other instances continue to run.

## Target environments

- Server
  - ▶ Windows® 2003 Standard or Enterprise, SP 1
  - ▶ Windows XP Professional SP2 (Monitor toolkit only)
  - ▶ Windows Vista® (Monitor toolkit only)
  - ▶ AIX® 5L 5.2, Maintenance level 7 (5200-07)
  - ▶ AIX 5L 5.3, Maintenance level 5 (5300-05)
  - ▶ HP-UX Itanium® 11i
  - ▶ Red Hat Enterprise Linux (RHEL) 5.0 AS, ES, or WS
  - ▶ SUSE Linux Enterprise Server v10
- Database
  - ▶ Derby (Cloudscape® 10.1) – AIX, HP-UX, Linux, Windows
  - ▶ DB2 Enterprise Server Edition 8.2 fp7 or 9.1 - AIX, HP-UX, Linux, Windows
  - ▶ DB2 for z/OS 8.2 fp7 or 9.1
  - ▶ Oracle 10g Standard/Enterprise Release 2 (10.2.0.2) - AIX, HP-UX, Linux, Windows, Sun Solaris

These are the target environments for WebSphere Business Monitor Version 6.1. The Monitor server runs on the listed Windows, AIX, UNIX and Linux platforms. The supported databases include Derby, DB2 for distributed platforms, DB2 for z/OS and Oracle.

## Supported runtimes

- WebSphere Process Server or WebSphere Enterprise Service Bus 6.0.2
- WebSphere Process Server or WebSphere Enterprise Service Bus 6.1
- Any application configured to submit events to a CEI Server
- WebSphere MQ Workflow 3.6 SP6 and common base event converter support pack

These are the target runtime engines for WebSphere Business Monitor version 6.1. Monitor supports monitoring applications that are running on WebSphere Process Server or WebSphere Enterprise Bus, either version 6.0.2 or version 6.1.

Monitor will also work with any application which has been adapted to submit common base events to a CEI Server.

Support for monitoring WebSphere MQ Workflow is also including in this release. You will need the listed service pack and support pack.

## Bundled software

- These versions must be used
- Do not apply maintenance until advised to do so
- WebSphere Application Server Network Deployment 6.1 fp13
- WebSphere Portal Server 6.0.1 fp1
- DB2 Alphablox 9.5 – works with all Monitor supported databases
- DB2 Enterprise Server Edition 9.1 – install outside of Monitor Launchpad
- WebSphere Integration Developer 6.1
- WebSphere Business Modeler 6.1

These are the products that are included in the software bundle that is provided for your installation of WebSphere Business Monitor. Monitor Server runs on top of WebSphere Application Server. The Portal Dashboards use Portal Server for configuration and display. Alphablox widgets are used to display the multidimensional views on the dashboards. DB2 Enterprise Server Edition contains data base support. WebSphere Integration Developer is used for developing processes and editing your monitor models. WebSphere Business Modeler can be used for modeling your business processes and business measures models.

## Monitor V6.1 hardware requirements

- Monitor development toolkit
  - ▶ 2 GHz minimum, 2 GB RAM minimum, 15 GB disk space
- AIX servers
  - ▶ RS/6000® at 450 MHz minimum or Power5
  - ▶ 2 GB RAM minimum, 15 GB disk space
- Windows servers
  - ▶ 2 GHz minimum, 2 GB RAM minimum, 15 GB disk space
- Basic installation (one machine for monitor server, dashboard server, database server)
  - ▶ 2 GHz minimum, 4 GB RAM minimum, 15 GB disk space

These are the hardware requirements for WebSphere Business Monitor version 6.1. Disk space, processor speed and memory are suggested values. Your needs will vary depending on the complexity and number of models that you have deployed.

## Migration from previous versions

- Support migration from Monitor 4.2.4 to Monitor 6.1
  - ▶ Utility to support migration of business measures from Monitor 4.2.4 models to Monitor 6.1 model
  - ▶ Utility to migrate 4.2.4 data to 6.1
  - ▶ Use flow definition language (FDL) with workflow emitter or change to BPEL
- Support migration from Monitor 6.0.2 to Monitor 6.1
  - ▶ Utility to migrate monitor model and monitored data
- Dashboard migration is not provided
- Migration utility supports 4.2.4 and 6.0.2
  - ▶ C:\<MonitorServer>\scripts.wbm\migration
    - monMigrationWizard.bat
  - ▶ See information center for instructions

You can migrate from previous releases to Monitor version 6.1. For migration from version 4.2.4, a utility provides capability to migrate the business measures model and the monitored data. Then you have the choice of using the workflow emitter to capture events from your FDL, or you can rewrite your FDL to work in Process Server. For migration from version 6.0.2, a utility migrates both the monitor model and data. Note that the migration utility does not migrate dashboard metadata, so you will need to re-create your dashboards from scratch. There is a single migration batch file that handles migration from 4.2.4 and 6.0.2. Look for it in the monitor migration scripts folder in the Monitor server. See the information center for instructions on how to use the utility.



## References

- With the drivers
  - ▶ readme.html
  - ▶ Information center Web site  
<http://publib.boulder.ibm.com/infocenter/dmndhelp/v6rxmx/index.jsp>
- Monitor Web site for samples and best practices  
<http://www.ibm.com/software/integration/wbimonitor/library/tutorials.html>
- developerWorks® BPM zone  
<http://www.ibm.com/developerworks/websphere/zones/bpm/>



This chart lists the various help resources that are available. There are readme's, plus help in the Launchpad, Dashboard portlets, the administrative console, and information center. You can also find samples and best practice documentation.

## References

- IBM Education Assistant (V6.0.2)  
<http://publib.boulder.ibm.com/infocenter/ieduasst/v1r1m0/index.jsp>
- IBM Redbooks® (V6.0.2)
  - ▶ WebSphere Business Integration V6.0.2 Performance Tuning,  
<http://www.redbooks.ibm.com/abstracts/redp4304.html?Open>
  - ▶ Business Process Management: Modeling through Monitoring Using WebSphere V6.0.2 Products,  
<http://www.redbooks.ibm.com/redpieces/abstracts/sg247148.html?Open>
- SupportPac™ site  
<http://www.ibm.com/support/docview.wss?rs=802&uid=swg27009734>



This chart lists some additional references. IBM Education assistant has many presentations, labs and demonstrations. The Redbooks show you how to implement some end-to-end business scenarios.

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