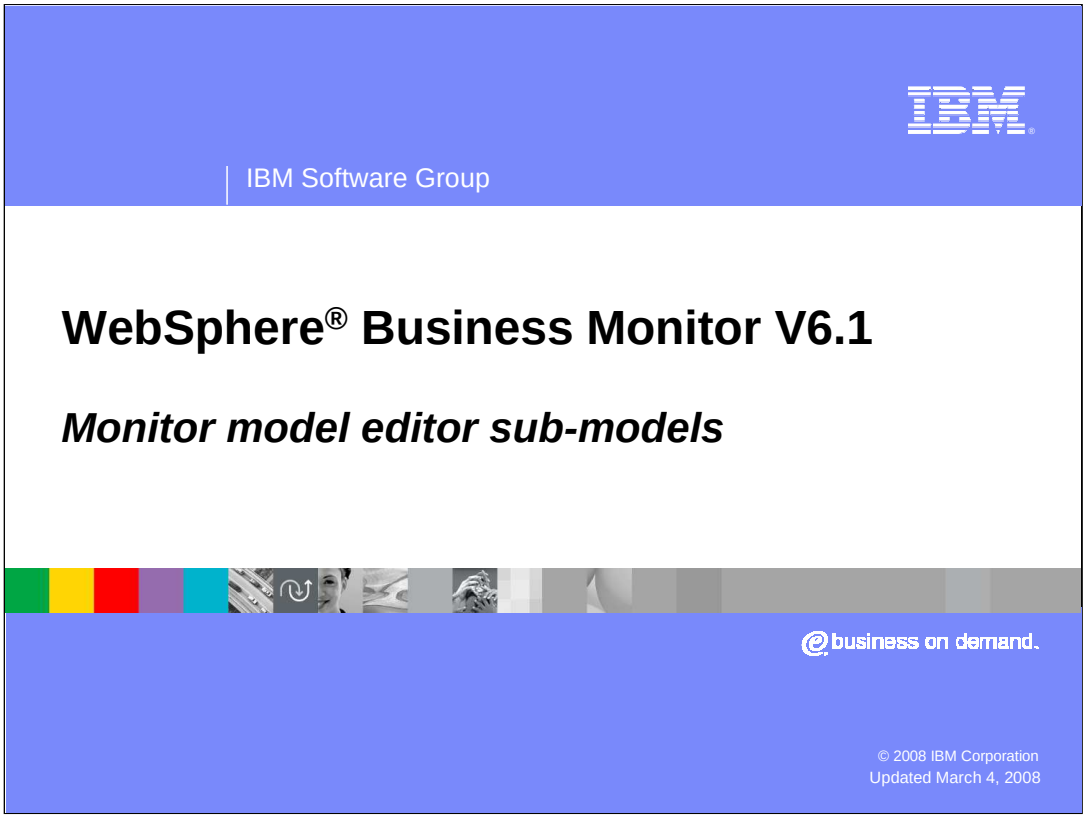
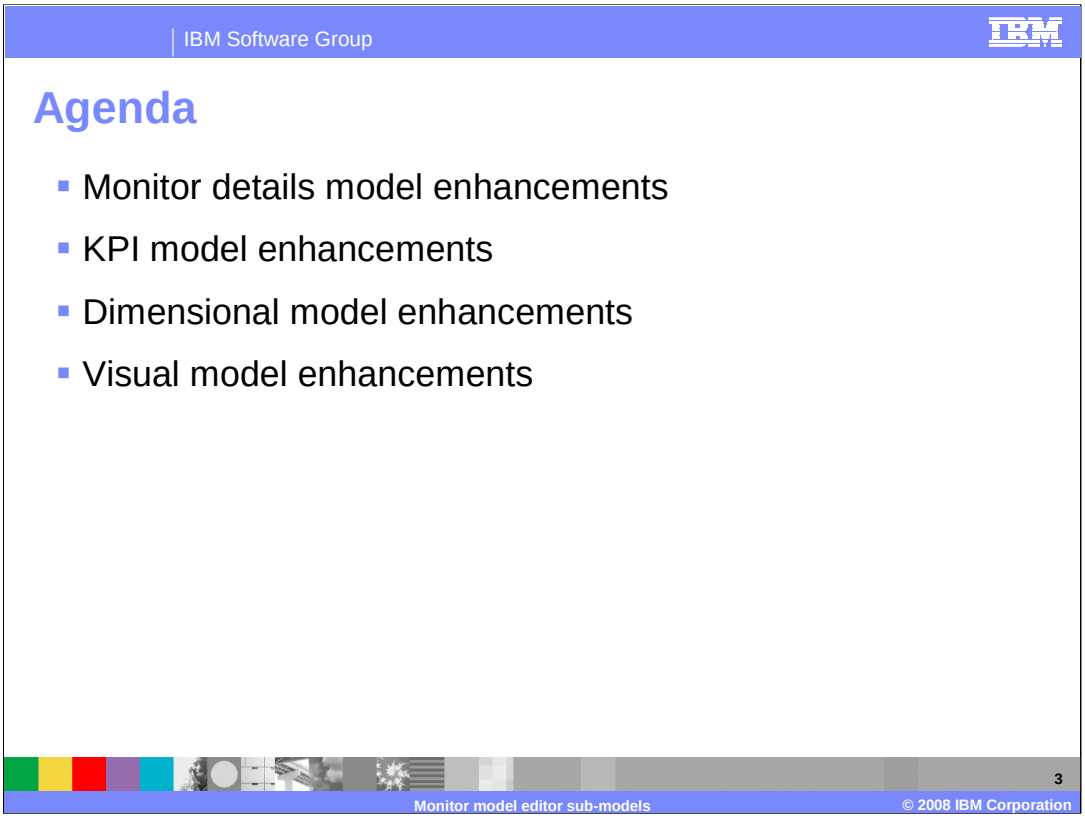


This presentation covers the new features of the submodels in the WebSphere Business Monitor Version 6.1 monitor model editor.

Goals

- Introduce the new features of the WebSphere Business Monitor V6.1 monitor model editor sub-models

The goal of this presentation is to show you the new features in the monitor model editor component of WebSphere Business Monitor Version 6.1. Specifically, you will see the enhancements to the various sub-models of a monitor model.



This is the agenda for the presentation.

You will take a look at the various sub-models of the monitor model and the enhancements that are new to this release. You will see the monitor model details model, the KPI model, the dimensional model and the visual model.

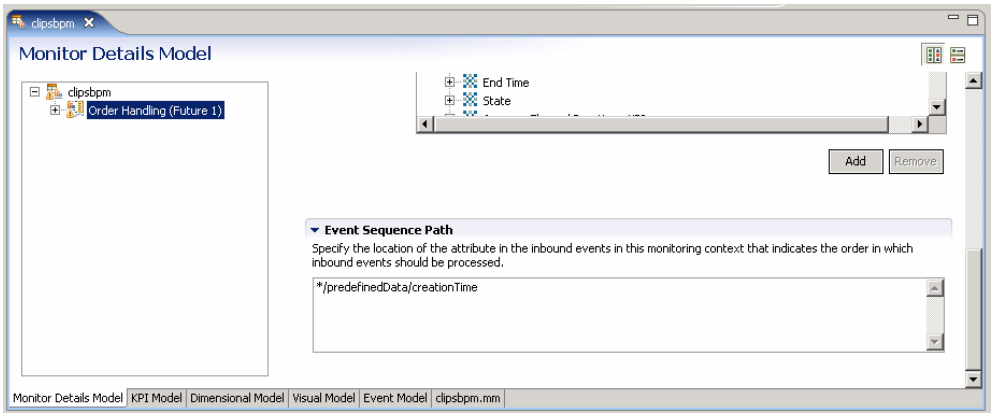
Section

Monitor details model

This section of the presentation reviews the monitor details model and the enhancements for this release.

Support for event sequencing

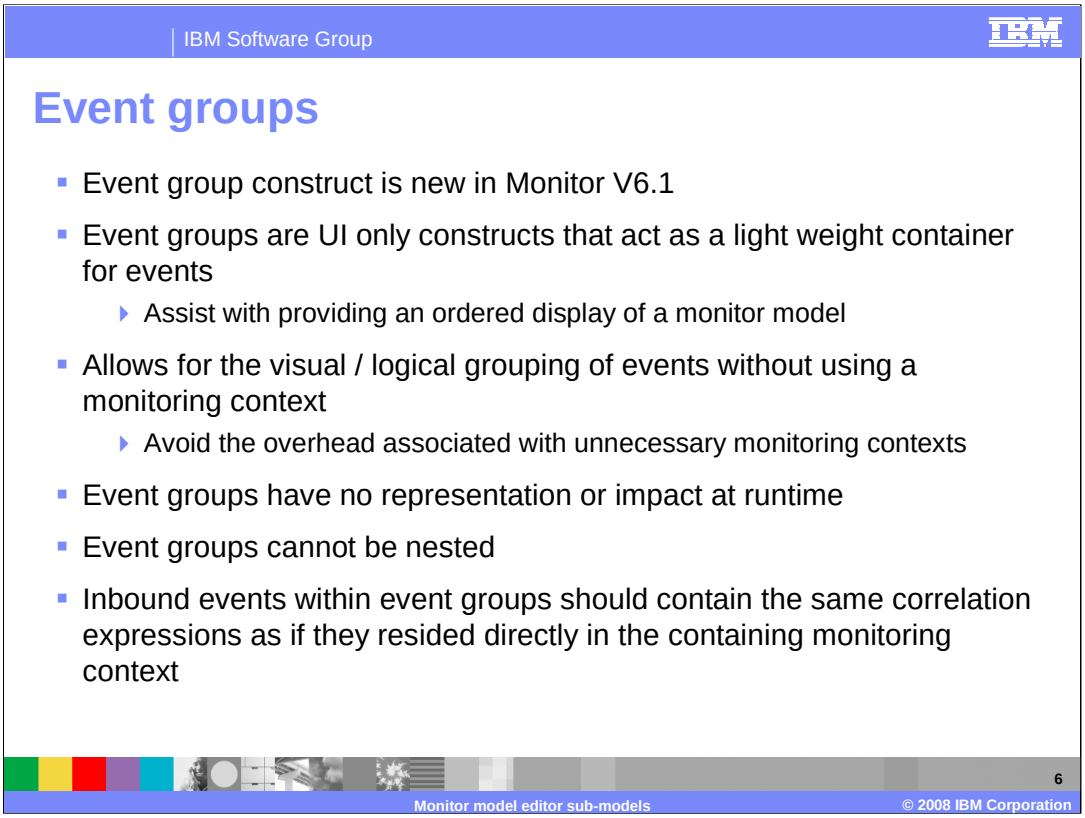
- Optionally specify event sequence path attribute at monitoring context or inbound event level to indicate sequencing order for inbound events
- Path specified at the monitoring context level will apply to all descendent inbound events unless they override this



A new event sequence identifier is used to enable event reordering, so an event stream which is out of sequence can be re-ordered before processing by the monitor model.

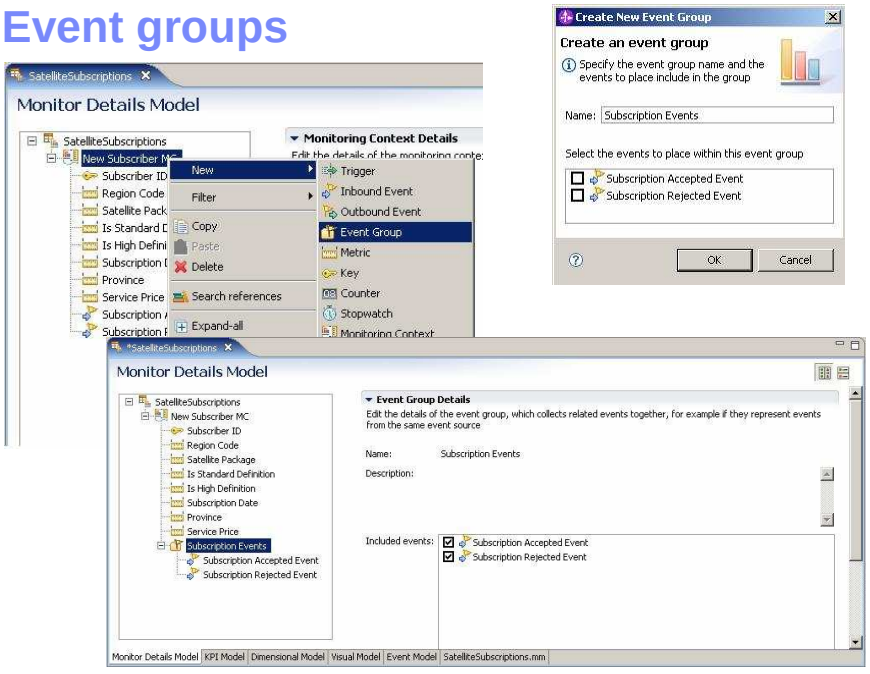
This is an optional field and you can specify it at the monitoring context level or inbound event level to indicate sequencing order for inbound events.

When an event sequence path is specified at the inbound event level, it takes precedence over any event sequence paths specified in parent monitoring contexts.



Event groups are a new construct which is available in this release. They are essentially containers which are used to store your inbound events. This allows you to easily group your events to make your model more visually usable. You can perform this same function by using a monitoring context, but these come with the additional overhead which is required to manage them. Event groups are used only in the toolkit for grouping purposes, so they have no representation at runtime. You cannot nest them. Also, inbound events which are stored in an event group, should be setup with the same correlation information as if they were stored directly in the containing monitoring context.

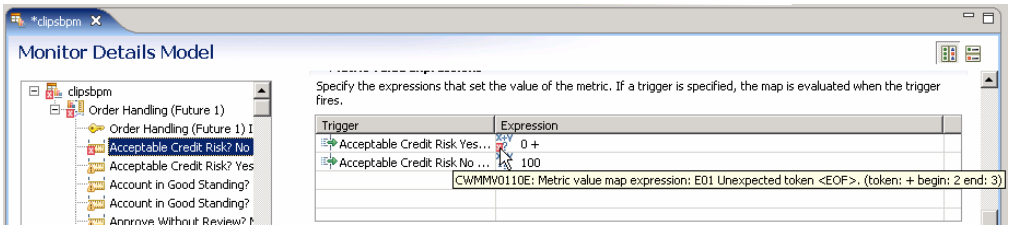
Event groups



Here are some screen captures that show the user interface in the monitor model editor for managing event groups. In the pop-up menu, you can select to create a new event group. When you choose to create a new event group, the event group is created within the parent monitoring context. Then the 'Create New Event Group' dialogue is displayed, allowing you to specify the event group name and select from the events available for inclusion in the event group. All events in the containing monitoring context that are not already included in event groups are listed. The new event group is listed in the monitor model tree. Selecting the event group displays the event group properties and allows additional events to be added.

Model validation

- On the fly model validation
- Validation errors are shown in the monitor model tree and on the widget where the error exists
- Hovering the mouse over the error indicator displays the full text of the validation error
- Errors will only show in the project tree if the model is saved with errors
- Errors detected with dynamic validation are not persisted in the monitor model if the model is closed without saving

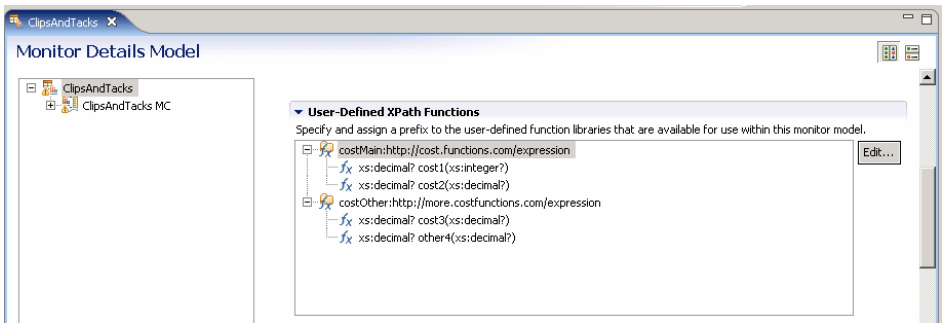


Model validation is now performed on the fly as you make modifications, so you do not have to save the model in order to see any errors that you introduce into the model. In the previous release you need to save the model then check for problems in the problems view. In this release the validation errors are shown in the monitor model tree as you create the errors. A red marker is used on the associated widget in the tree. Hovering the mouse over the error indicator displays the error text. Note that the error will not show in the project tree view on the fly, so to see errors in the project tree view, you will need to save the model.

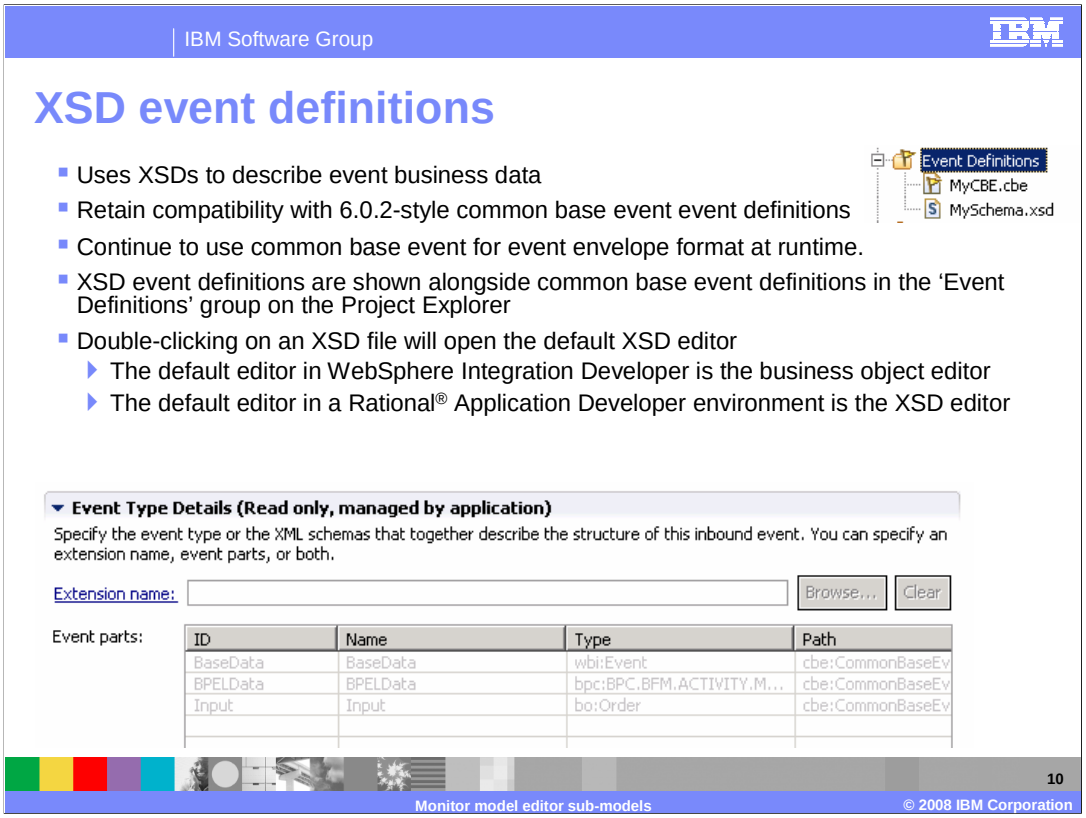
Note that the flag ‘Build Automatically’ in the project menu must be selected to take advantage of these ‘on the fly’ validation features.

GUI support for user defined functions

- User defined functions available in the monitor model are listed in the monitor details model and available throughout the model using content assist



You can now create your own user defined functions in Java to be used anywhere in the model where there is expression support, including in KPI expressions. In this screen capture you can see the user defined function section of the monitor details model, that list the functions which you have created and defined to the monitor model. When you use content assist while editing the expressions, the user defined functions are listed alongside the built-in functions.

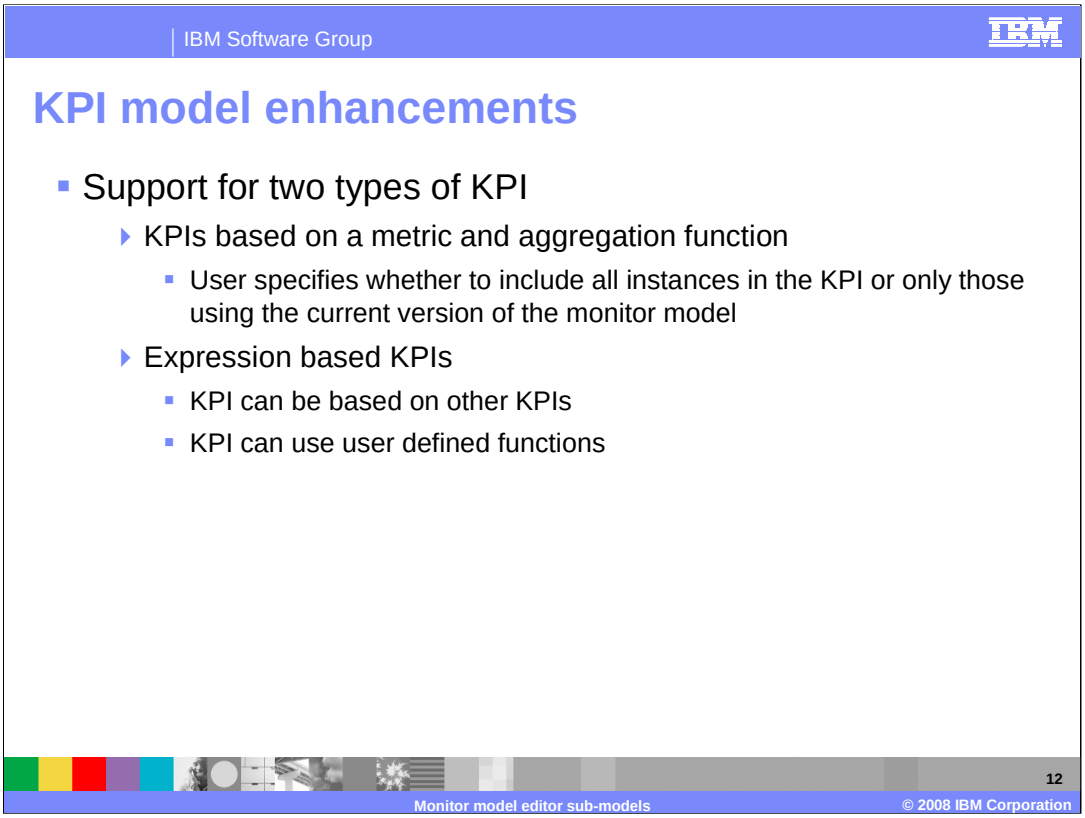


A new event definition is used to define the business payload in events destined for Monitor. The new events use schema definitions to describe the layout of the payload, however the event itself is still using the common base event envelope as a wrapper for the event. At runtime, XML is used to represent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

This section of the presentation reviews the KPI model and the enhancements for this release.

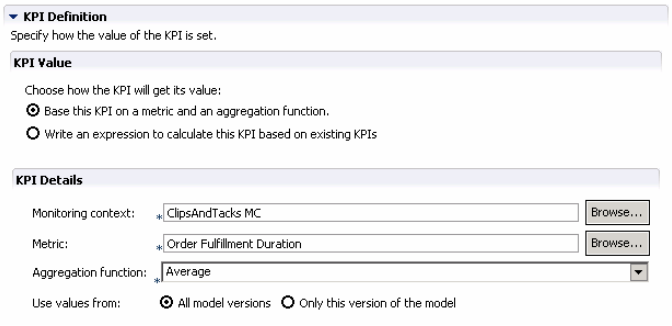


In this release there are now support for two different types of KPI's. You can specify that your KPI is based on a metric and an aggregation function. So for example, you can use a metric such as Order Value, and then a function such as Average. This gives you a KPI which keeps track of the average order values in your process. You can also specify which versions of the monitor model to be used when calculating the value for the KPI

You can also specify that a KPI is based on an expression. This expression can reference other KPI's in the model, and it can also reference any built-in functions or any of your user defined functions.

KPI based on metric and aggregation function

- Choose an existing metric or define a new one
- Validation verifies the aggregation function is supported for the metric type
- Choose which instances to include in calculation (those using the current model version only or all versions)



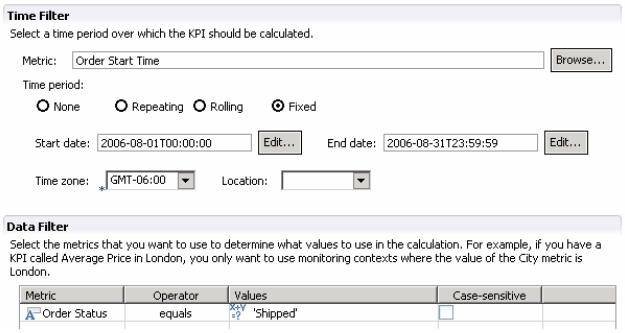
A KPI can be based on a metric and aggregation function. You can choose an existing metric or create a new one. When you select the aggregation function, validation will ensure that the function selected supports the metric type that you have selected.

It is no longer necessary to first define a measure to be used in the KPI, as was the case in version 6.0.2. Available aggregation functions are min, max, sum, count and average.

You can also choose whether to include values collected from all versions of the monitor model in the calculation, or alternatively just values collected with the current version of the monitor model.

KPI based on metric and aggregation function

- Optional filtering by time using metric of type date or dateTime
  - New time zone field
- Optional metric data filtering
  - Permitted metric type and operator combinations listed below



Available operators based on metric type:

STRING	INTEGER / DECIMAL	BOOLEAN	DURATION	TIME
=	=	=	=	=
!=	!=	!=	!=	!=
<	<	IS NULL	<	<
>	>	IS NOT NULL	>	>
<=	<=		<=	<=
>=	>=		>=	>=
IN	IN		IS NULL	IN
NOT IN	NOT IN		IS NOT NULL	NOT IN
IS NULL	IS NULL			IS NULL
IS NOT NULL	IS NOT NULL			IS NOT NULL
LIKE (% and _ wildcards)				
NOT LIKE(% and _ wildcards)				

Optionally you can specify time filtering information. Metrics in the monitoring context that are of type date or dateTime can be selected for time filtering. In version 6.1, new fields have been introduced to specify the time zone and location. This allows the dashboard to display the data in the correct local time zone for the logged in user.

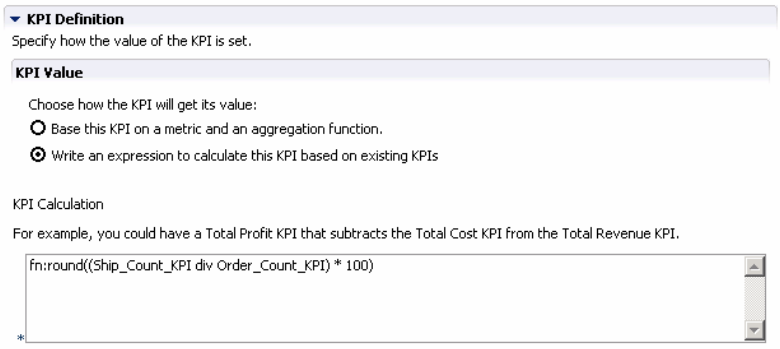
Optionally you can specify metric filter information in the Data Filter section. Metrics, keys, counters or stopwatches can be used for filtering as long as they are of type string, integer, decimal, duration, Boolean, or time. You also specify the operator to use for the data filter condition. On this slide you see the allowable metric type and operator combinations. By comparison, only equality expressions were available in version 6.0.2.

Note that KPIs or any other non constant values cannot be included in this condition. If the expression is a list of values using the 'in' operator, you can use the dialog to enter the list. Alternatively, the values can be entered as a comma separated list, with quotation marks surrounding each value.

In this release, filtering of aggregated KPI's is now done based on metrics. By comparison, dimensions were used for filtering in version 6.0.2.

Expression based KPIs

- Content assist provides access to other KPIs in the KPI context
- Inbound events in the KPI context can also be accessed
- User defined functions are available for use in expression based KPIs
- Expression based KPIs cannot be customized using time or metric filters



KPI's can also be based on expressions. These expressions can be populated using content assist. Content assist provides access to all KPIs and inbound events within the KPI context in which the new KPI is being defined. Any user defined functions available to the monitor model are available for use within the expression and content assist helps with this. Note that time filtering and data filtering is not possible with this type of KPI. In this screen capture, you see an expression which divides the ship count KPI by the order count KPI, multiplies that by 100, then uses the built-in round function.

Section

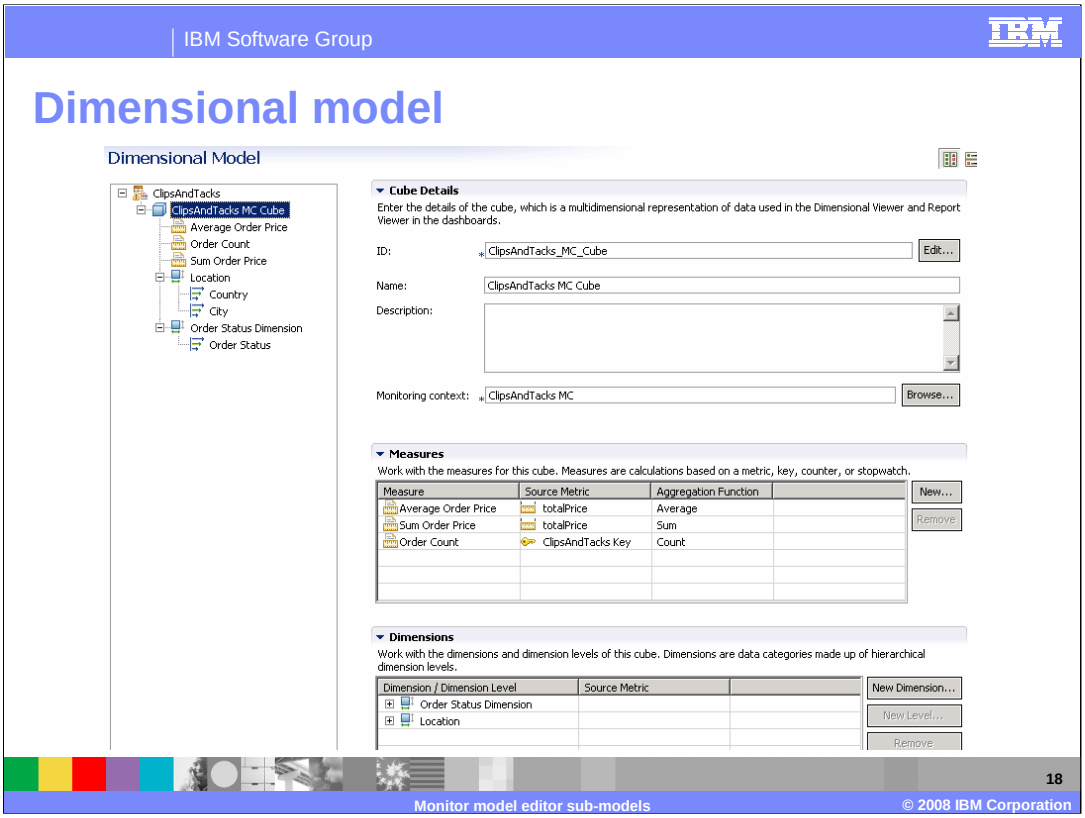
Dimensional model

This section of the presentation reviews the monitor dimensional model and the enhancements for this release.

Dimensional model enhancements

- Monitor V6.0.2 datamart model has been redesigned and renamed as the dimensional model
- Facts no longer used
  - Cube dimensions and measures refer directly to metrics, not facts
- A metric can be referenced by both measures and dimension levels
  - Monitor V6.0.2 only allowed the metric to be used in a measure or a dimension level

In version 6.0.2 the dimensional model was called the datamart model. It has been redesigned and renamed to the dimensional model in this release. Facts have been eliminated, so that dimensions and measures now refer directly to the metrics. In this release a metric can be both a measure and a dimension, but in the previous release this was not allowed. Typically however, measures are quantitative, numerical entities which are aggregated and dimensions are text strings which are used for grouping the quantitative information.

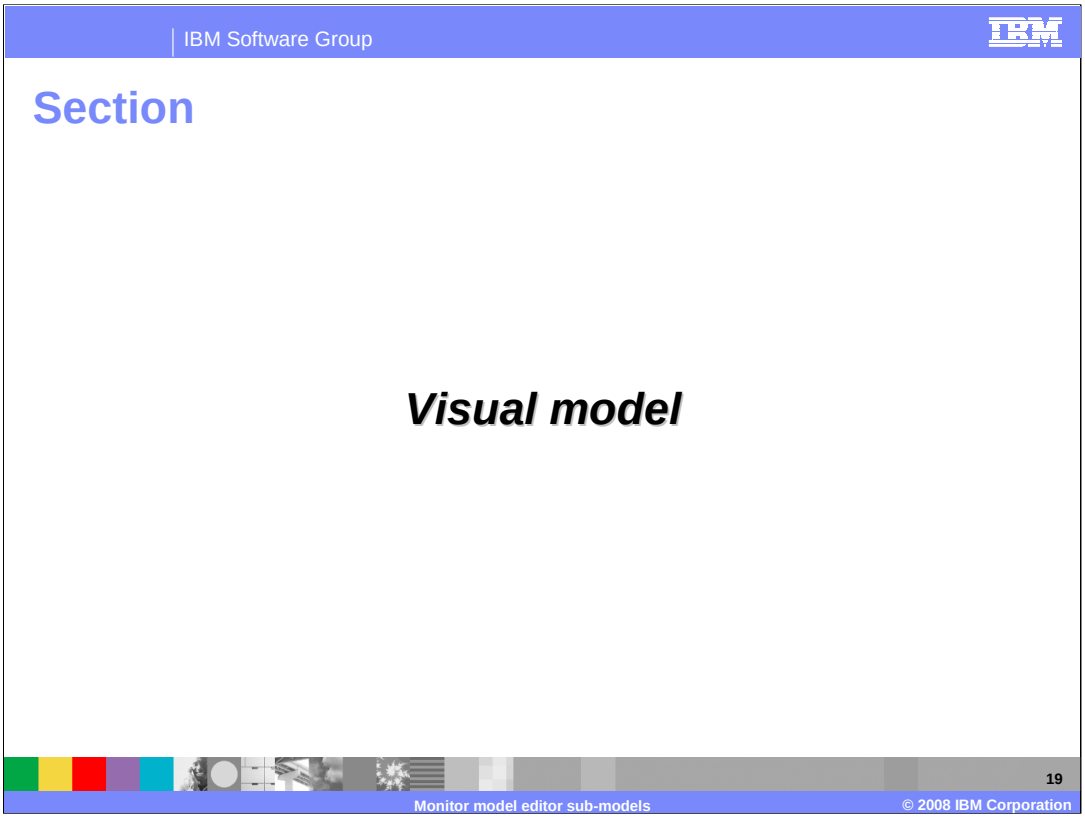


This is a screen capture that shows the dimensional model page of the monitor model in the monitor model editor.

As with Monitor version 6.0.2, when a monitoring context is created, the monitor model editor will automatically create an associated cube. However, it is possible to delete cubes so new cubes can be created from the monitor context pop-up menu. Each cube must be associated with a monitoring context.

Click the ‘add’ button to create a new measure. Base the measure on an existing metric, or choose to create a new metric within the monitoring context. Select a valid aggregation function for the metric type. As with version 6.0.2, optionally specify a tracking key for measures that are required for round trips between Monitor and Modeler.

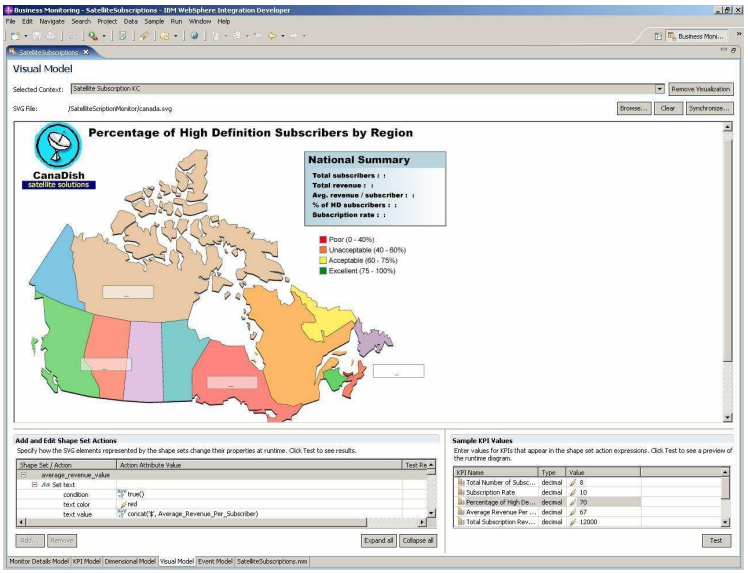
Click the ‘add’ button to add dimensions. Click the ‘new level’ button to create a new dimension level.



This section of the presentation reviews the visual model and the enhancements for this release.

Visual model enhancements

- Visual editor support for associating scalable vector graphic (SVG) diagram actions with specific conditions
- New support to test this customization within the editor using user provided sample test data



Monitor version 6.0.2 visual model support was limited to assigning and displaying SVG files associated with each monitoring context and KPI context. All other aspects of the visual model had to be authored by hand in the monitor model XML page of the editor.

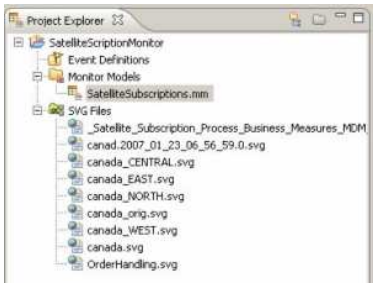
Visual model editor enhancements delivered in Monitor version 6.1 greatly assisted by providing validation before deployment, thus greatly reducing the time required to develop and test an effective visual model. Using the panel in the bottom left of the visual editor, actions can be associated with specific conditions using expression editors to relate shape set actions to specific conditions.

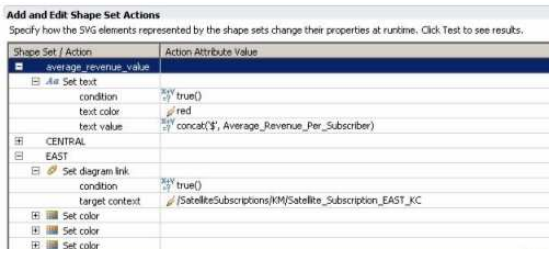
Test data can be provided using the panel on the bottom right. You are prompted to enter test data for all the metrics and KPIs used within the expressions for the selected SVG diagram.

Note that it is not possible to create and edit the SVG file itself within the editor. As with Monitor V6.0.2, you are expected to create and edit the SVG files outside of the editor.

Visual model enhancements

- SVG diagrams now shown in the project tree within an 'SVG Files' group
- SVG files parsed to extract the shape sets for SVG elements with an associated mm:id value
- Clicking a shape in the editor SVG diagram highlights the corresponding shape set in the table below



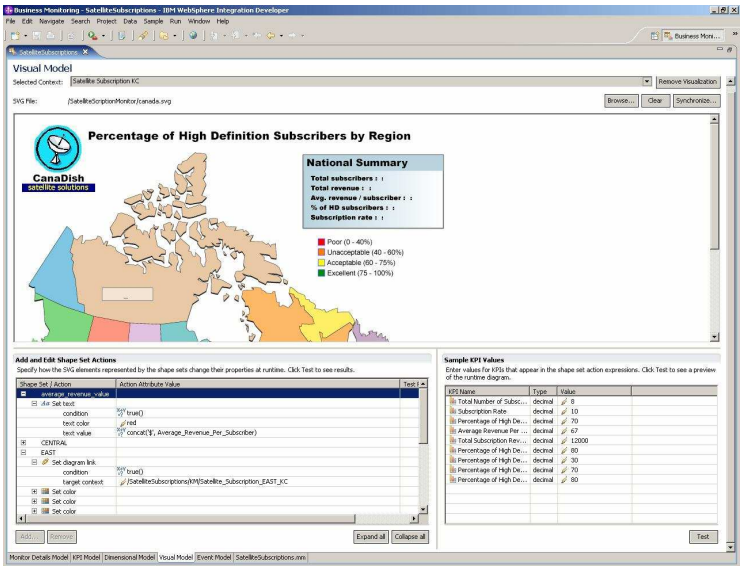


New in Monitor version 6.1, the SVG diagrams associated with the project are listed in the Monitor Project explorer, within an 'SVG files' sub folder. Double clicking one of the SVG files within the project tree will launch the built in browser to display the SVG file. SVG diagrams associated with the project are automatically parsed to extract the shape sets for SVG elements for which an mm:id value has been specified. WebSphere Business Modeler will create SVG files with mm:ids pre-configured for semantically important groups of shapes within the process diagram, including tasks, variables, and links.

There can be several hundred shape set entries in the shape set table, so it can be difficult to find the shape you want to edit by just browsing the table. However, clicking on shapes in the SVG diagram within the visual model editor results in the corresponding shape set being highlighted in the shape sets table below the diagram.

Visual model validation and testing

- Editor to specify the actions associated with certain conditions
- Editor to enter test data for all the metrics and KPIs referenced by expressions in the visual model

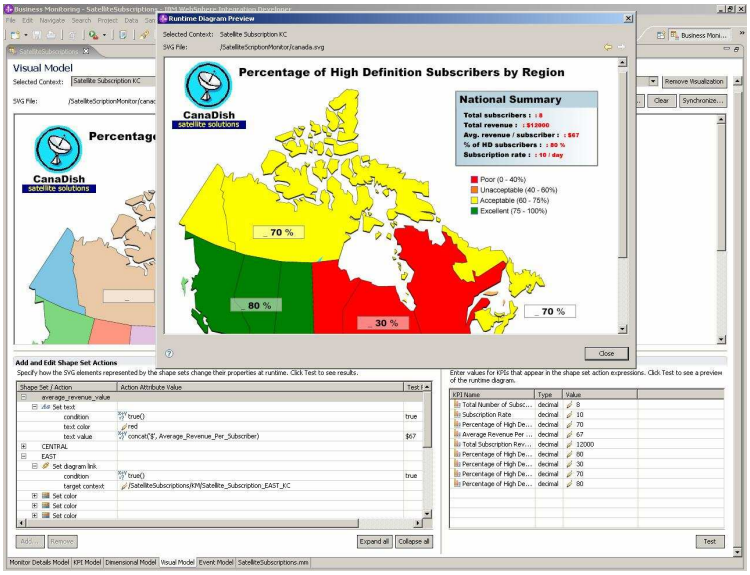


In the table on the bottom left, expression editors are used to specify the actions to be associated with certain conditions. For example, in this case, the average revenue value shape set is populated with red text displaying the value of the KPI 'average revenue per subscriber'.

In the table on the bottom right, every metric or KPI that is referenced in the shape set action expressions are listed. Here you can specify values to be used for testing your visual model, to make sure that your shape set actions are being properly displayed based on your shape set expression logic.

Visual model validation and testing

- Enter test data for all KPIs and metrics used in expressions for determining shape set actions
- Click ‘test’ to evaluate all the expressions with the metric/KPI values provided
- Review visual test output to validate visual model before deployment



The table for sample test data on the bottom right shows all the metrics and KPIs referenced by expressions in the visual model, as specified in the shape set editor on the left.

You enter sample test data for each metric and KPI and then click the ‘test’ button to evaluate the results of the visual model customization using this sample data.

When the ‘test’ button is clicked, a new window appears which displays the ‘formatted’ diagram. The diagram is formatted based on the sample test data, used in conjunction with the shape set actions and associated conditions that have been defined.

Summary

- You have reviewed what's new in the WebSphere Business Monitor V6.1 monitor model editor and the sub-models in the monitor model

In summary, you have seen the enhancements to the sub-models in the monitor model editor component of WebSphere Business Monitor Version 6.1.

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