



IBM Software Group

WebSphere® Business Monitor V6

Triggers in the Business Measures Editor



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This presentation will explain the use of triggers in the Business Measures Editor.

Goals

- Show how to use triggers with the Business Measures Editor

The goal of this presentation is to illustrate the use of triggers.

Agenda

- Explain Triggers
- Trigger sources
- Defining triggers
- Using reusable triggers



The agenda for this presentation includes an explanation of triggers, then some information on trigger sources, followed by defining and using triggers.

Triggers



- Triggers are not measures themselves
- They cause measures to be calculated
- Process Monitoring is based upon events
- A trigger is used to cause a calculation to be made
 - ▶ Trigger defines when that happens
- Metrics, Stopwatches and Counters all use triggers
- For example a trigger defines when to start or stop a counter

Triggers are more related to the technical way in which business measures are calculated. The architecture for WebSphere Business Monitor is based on monitoring **events** that come out of the runtime. As these events are captured by the Monitor, they must be **interpreted** to be able to extract the business relevant measures from them. The measures within the business measures model tell the Monitor **what** data is relevant. But they do not tell the Monitor **when** to extract that data.

Triggers are used to tell the Monitor when to capture measure values. The 'when' is defined by indicating at which point in the running of the process.

As much as possible, triggers are hidden from you by Business Measures Editor. For example, when you create a business item metric using the wizard, you are asked to select which business item you want to extract a metric from. The wizard then automatically creates the necessary trigger that indicates at which point in the process the metric should be calculated.

Triggers



- A trigger can be defined to occur when:
 - ▶ A 'state change' occurs
 - Causes trigger when a state change in the process or an activity occurs
 - Uses inbuilt events to determine state changes – for example process/activity starting, process/activity completing
 - ▶ Inputs or Outputs occur
 - Causes trigger when process or activity receives an input or sends an output
 - ▶ A recurring wait time is reached
 - Causes trigger every specified number of days/hours/minutes
 - ▶ Metric/Counter
 - Causes trigger whenever value of metric or counter is inserted

Triggers can be defined to occur at any of four stages in the process. These are the types of 'when' that you can define.

A trigger that is defined against a Metric or Counter will be activated whenever a value is written to that metric or counter, even if the value is the same as the old value. This is why the slide says 'inserted' rather than updated or changed. So if the new value is no different from the old value, the new value insert still causes the trigger to be activated

Triggers – Conditions



- A trigger can be made conditional
- Use Expression Builder to define condition
- For example 'only trigger when counter value is greater than 50'



An extra condition can be applied to the trigger definition as well using the standard Expression Builder. The condition must return a Boolean value – either true or false.

Expression Builder

Expression Builder

Edit expression value

The built expression must evaluate to "Boolean", to be valid.

Expression Tree:

- Binary expression
 - 'ProcessScenario.Decisions Made' is greater than 50.0

Expression name:

Expression description:

Expression text:

'ProcessScenario.Decisions Made' is greater than 50.0

Expression Composer

First term: Modeling artifact

First term details:

- Country
- OrderPrice
- Decisions Made
- Approvals Made
- Process Instance ID
- Process Elapsed Duration
- Process Working Duration
- Approval Time

Operator: --Select operator--

- is equal to
- is not equal to
- is greater than or equal to**
- is greater than or equal to
- is less than
- is less than or equal to

Second term: Number

Second term details:

Number value: 50

Apply

OK Cancel

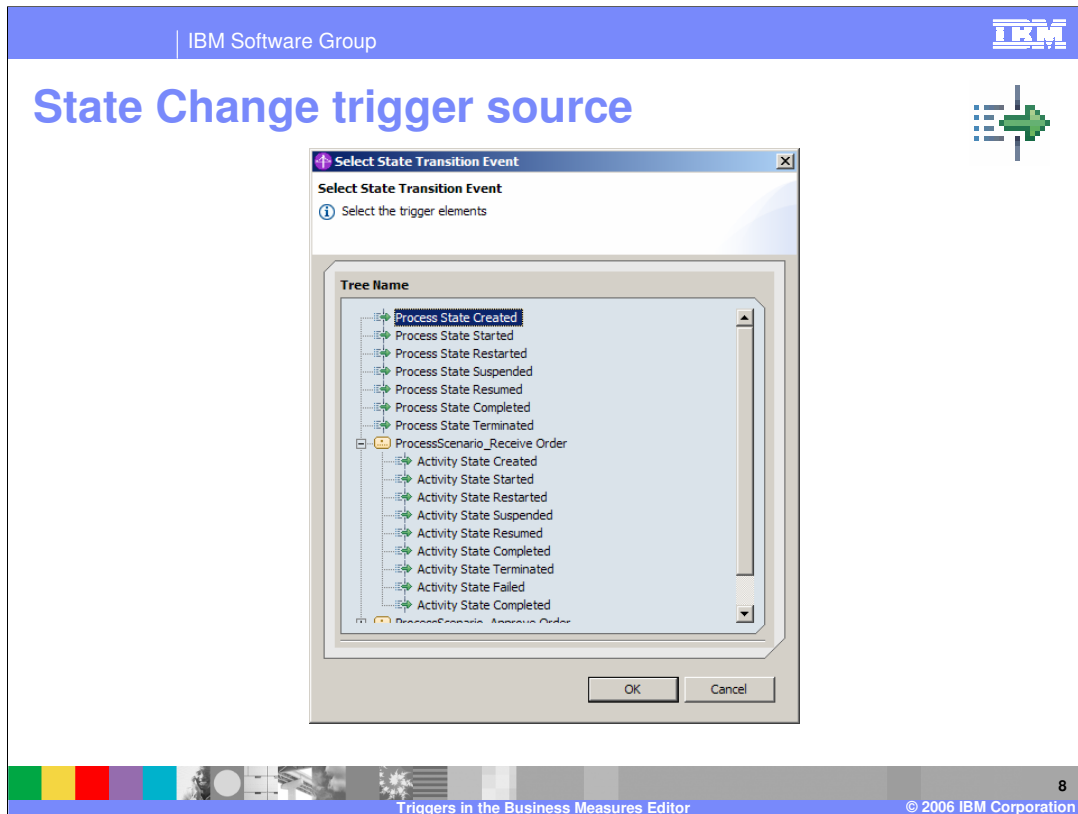
Triggers in the Business Measures Editor

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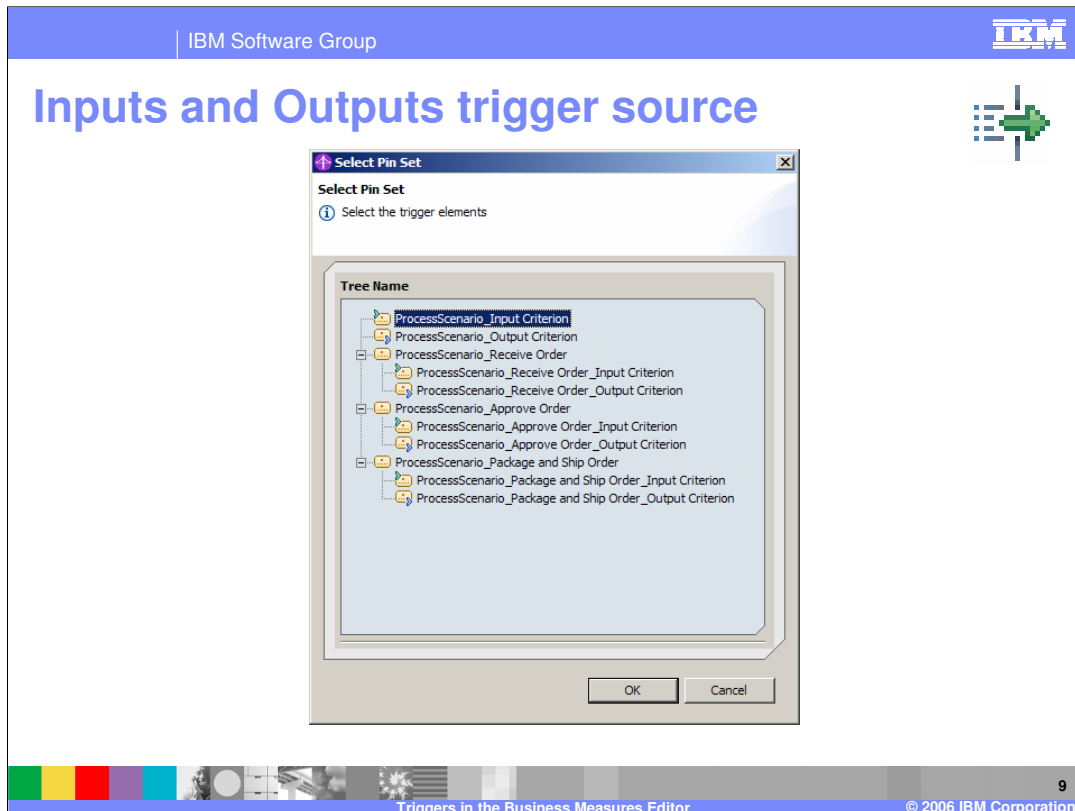
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This slide shows the Expression Builder.

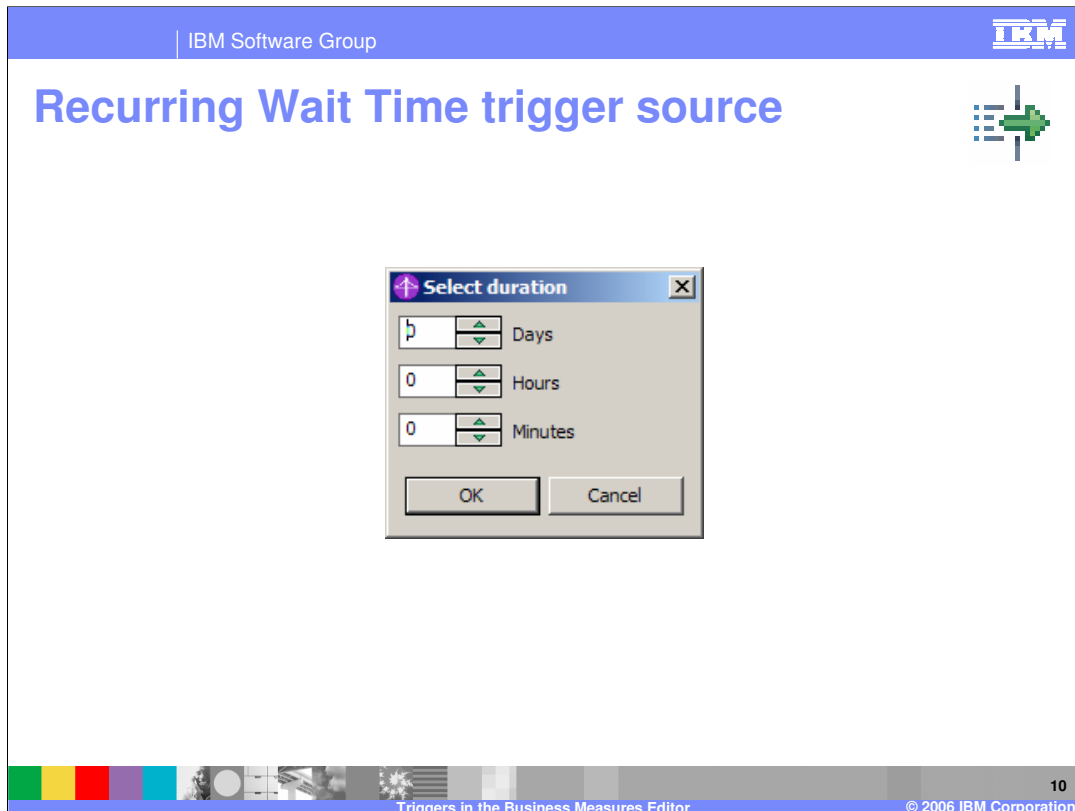
State Change trigger source



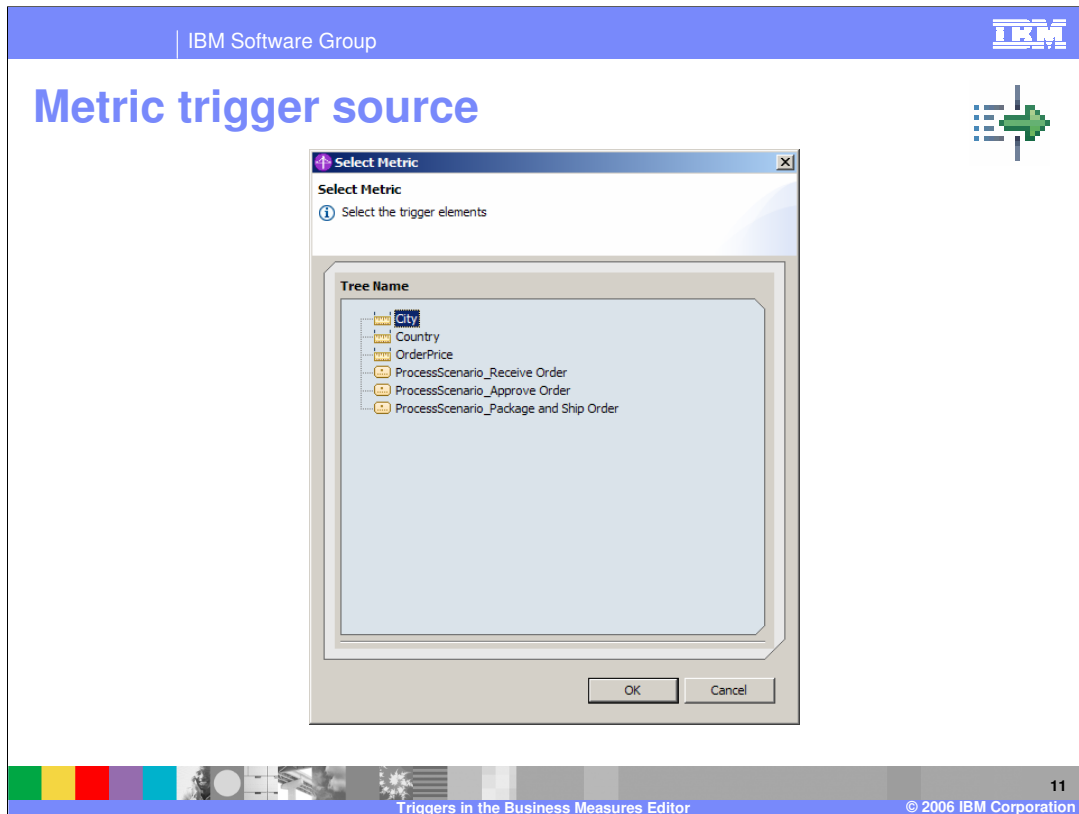
This shows the choices you are given if you select 'state change' for the trigger source. There are many state changes for the process and for its individual activities. They are all built in states and state changes.



If you select an 'Inputs or Outputs' trigger source then this is the selection you are offered – select the input or the output for the process, or for one of it's activities.



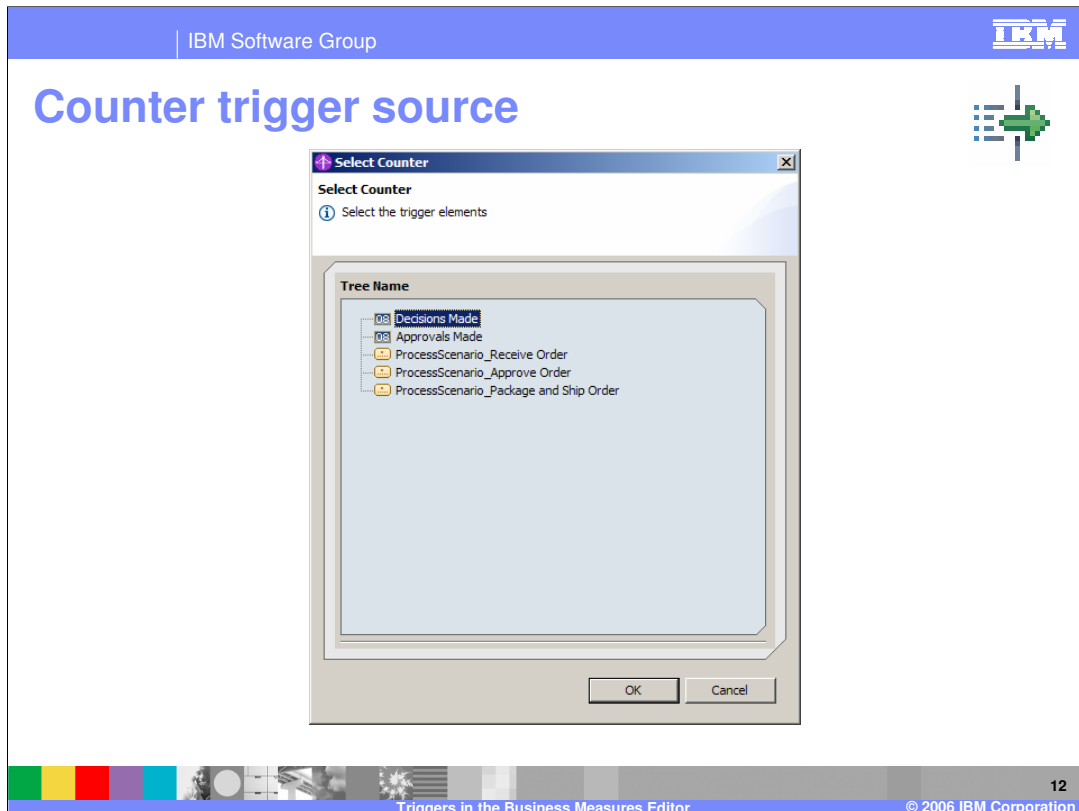
If you select a 'Recurring Wait Time' trigger source, then specify how frequently the trigger occurs in hours, minutes, and days. You cannot use seconds.



If you create a trigger with its trigger source set to Metric then you have to select one of the metrics that already exists.

In this slide you see three metrics and then you also see the tasks within the process. This is because you could have defined a metric against the individual tasks. In the example there are no metrics defined for those tasks, so you cannot select any metric that belongs specifically to them.

The wizard will not allow you to select the tasks in the list – the OK button is unavailable. You must select a metric.



If you create a trigger with its trigger source set to Counter then you have to select one of the counters that already exists.

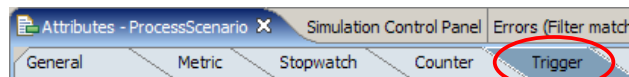
In this slide you see two counters and then you also see the tasks within the process. This is because you could have defined a counter against the individual tasks. In the example there are no counters defined for those tasks, so you cannot select any counter that belongs specifically to them.

The wizard will not allow you to select the tasks in the list - the OK button is unavailable. You must select a counter.

Reusable and local triggers



- A trigger can be defined **locally** within a metric, stopwatch or counter
 - ▶ Quicker to define (done within same panel)
 - ▶ Cannot be reused elsewhere
- A trigger can also be defined **globally** so that it can be **reusable**
 - ▶ Can be used within multiple metrics, stopwatches or counters
 - ▶ Define separately on the Trigger tab of the Attributes view



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Triggers in the Business Measures Editor

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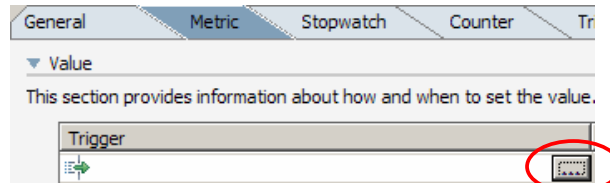
Often you will create a measure and you will define a 'local trigger' to say when that measure is to be calculated (at a state change, an input/output, a recurring wait and so on).

Sometimes you may want to calculate multiple measures at the same time (same 'when'). In this case you want to reuse the same trigger so you create a 'global trigger'.

Local triggers are defined within the attributes of the measure they are used within. Global triggers are defined separately on the Trigger tab.

Defining a local trigger

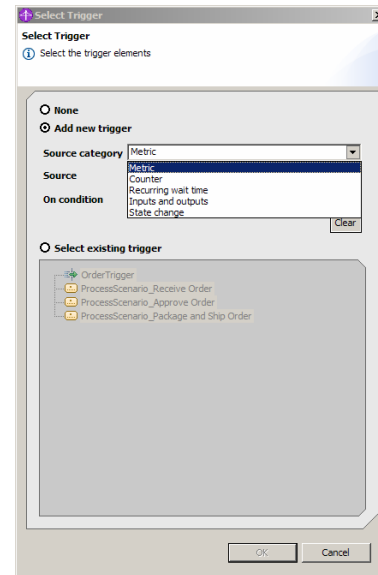
- During the definition of the metric, stopwatch or counter, click the '...' button:



This shows how during the specification of a Metric, you are asked to specify what Trigger. You click the ellipsis (...) button to open up the trigger selection where you will have the opportunity to create a new local trigger.

Defining a local trigger

- Select 'Add new trigger'
- Specify Source category
- Specify Source
- Specify Condition

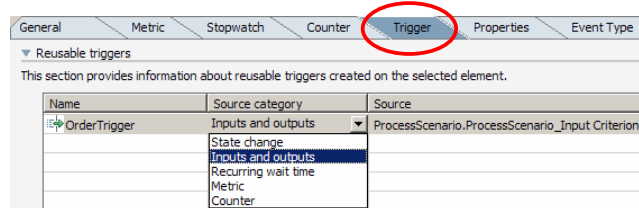


By selecting '**Add new trigger**' you are saying you want a local trigger. Then you simply select the regular choices for a trigger (type, source, condition)

If you choose '**Select existing trigger**' then this forces you to select from the reusable or global triggers.

Defining a reusable trigger

- First define the Trigger on the Trigger tab of the Attributes view

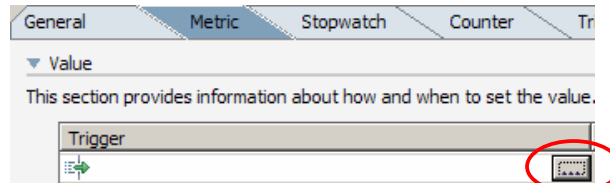


- Specify Source category, Source and Condition

A reusable trigger is defined on the Trigger tab. Again you specify the type, source and condition. The trigger is then available to you later on the individual measure trigger selection.

Using a reusable trigger

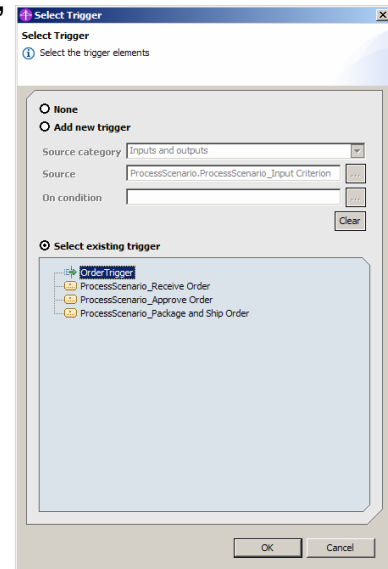
- During the definition of the metric, stopwatch or counter, click the '...' button:



To use a global trigger, wait until you are specifying the measure and then click the ellipsis (...) button to select the trigger.

Using a reusable trigger

- Choose 'Select Existing Trigger'
- Select the reusable trigger



Select your global trigger from the existing triggers list.

Summary

- Explained triggers
- Discussed trigger sources
- Illustrated defining triggers
- Covered using reusable triggers



In summary, this presentation has described the purpose of triggers, where they are configured, and how they can be used.

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