

# Monitor Types SCOM

## Unit Monitor

Unit monitors, the fundamental monitoring components, monitor specific counters, events, scripts, and services. Unit monitors can be rolled up to either dependency or aggregate rollup monitors. You have the option to set the monitor to generate an alert.

## Aggregate Rollup Monitor

An aggregate rollup monitor reflects the state of unit, dependency rollup, or other aggregate rollup monitors targeted to an object. You typically use an aggregate rollup monitor to group multiple monitors into one monitor and then use that monitor to set the health state and generate an alert.

Each target in Operations Manager 2007 contains the following top-level aggregate rollup monitors that you can use to group monitors of similar type for reporting purposes:

- Availability
- Configuration
- Performance
- Security

## Dependency Rollup Monitor

A dependency rollup monitor rolls up health states from targets linked by either a hosting or a containment relationship. Hosting and containment relationships for a given target are defined in most Management Packs. Like an aggregate rollup monitor, a dependency rollup monitor can be used to group other monitors to set the health state and generate alerts.

For example, consider a Microsoft SQL Server installation consisting of multiple databases. A hierarchy of targets starts with Windows Computer. The Windows Computer object hosts the SQL Server object. The SQL Server object hosts multiple databases. The health status of individual targets (for example, the SQL Server target) is monitored using a combination of aggregate rollup and unit monitors. Without a dependency rollup monitor, you would be unable to roll up the state of the SQL Server target up to the Windows Computer target.

## Self-tuning Threshold Monitors

In Operations Manager 2007, a self-tuning threshold monitor uses a learning process to determine the normal values for a specified performance counter object and sets the threshold

levels based on the learned values. You can use the Create a Unit Monitor Wizard to create a self-tuning threshold monitor.

#### Note

Self-tuning monitors cannot be used with multiple instance performance counters. Any counter that is configured with the **All instances** option selected cannot be learned by Operations Manager 2007.

Self-tuning monitors require a learning period, during which time Operations Manager 2007 automatically establishes a baseline that represents the regular and expected activity of a computer. The established baseline accurately reflects your organization's use of the IT infrastructure by taking into account patterns and variations in usage—for example, increased processor utilization on Monday mornings at 9:00 A.M.

After the initial learning period, Operations Manager 2007 continually logs subsequent activity of the computer and compares it to the baseline. The state of the monitor changes only when the performance counter exceeds the boundaries of the baseline. Using a performance baseline monitor can result in more accurate reporting of counters that vary during a business cycle.

Self-tuning monitors are divided into the following categories:

- **Two-state monitor** Given a baseline, there is an area above the baseline (A), an area below the baseline (B), and the area within the baseline (W). A two-state monitor can be used to define alerts between any two of the three areas, A-W, W-B, or A-B.
- **Three-state monitor** Given a baseline, there is an area above the baseline (A), an area below the baseline (B), and the area within the baseline (W). A healthy state is always defined as being in the area within the baseline. An error state can be defined for either the area above (A) or the area below (B). A warning state is defined for the remaining area that was not defined as error.

## Static Threshold Unit Monitors

In Operations Manager 2007, static threshold unit monitors measure a performance counter object relative to a user-defined static value, at specific intervals. When the value of the performance object being measured exceeds the defined threshold, the state of the monitor changes.

You can use the Create a Unit Monitor Wizard to create a static unit threshold monitor. You can open the wizard by clicking **Create a monitor** in the **Actions** pane of the Authoring area and then selecting **Windows Performance Counter** under **Select the type of monitor to create**.

In Operations Manager 2007, two types of static thresholds are available:

- Single threshold

- Double threshold

### Single Threshold Monitor

A single threshold monitor has one limit. When the performance counter goes either above or below that limit, the state of the monitor changes. The state change can be configured to be success, warning, or error.

An example of what a single threshold monitor does is that it monitors remaining free disk space. For example, suppose you want to monitor free disk space. Using a single threshold monitor, you might set a threshold of 1 GB so that when your free disk space falls below 1 GB, a warning or error state is set.

Operations Manager 2007 includes the following types of threshold unit monitors:

- **Simple threshold** A simple threshold monitor measures the value of a performance object against a fixed limit. If the value of the performance object goes above or below the fixed limit, the state of the monitor changes. On one side of the threshold, the state of the monitor is success; on the other side, the state is either warning or error.
- **Average threshold** An average threshold monitor measures the value of a performance object against a fixed limit. In addition, an average threshold monitor examines  $n$  number of samples and takes the average value of those samples to determine whether the threshold has been exceeded. This type of threshold monitor always examines the most recent  $n$  number of samples.
- **Consecutive samples over threshold** The consecutive-samples-over-threshold monitor is useful when sudden increases in a performance counter generate false alarms. A consecutive-samples-over-threshold monitor changes the state of the monitor only if the performance counter exceeds a threshold for  $n$  number of consecutive samples. With this type of monitor, you can configure the threshold to be greater than, greater than or equal to, less than, or less than or equal to a specified value.
- **Delta threshold** A delta threshold monitor measures the rate of change in  $n$  number of samples. The rate of change can be expressed as an absolute value (for example, a change of 10 GB over the last five samples) or as a percentage (for example, a change of 5 percent over the last five samples).