



Customizing Cisco UCS Management Pack

For each UCS Domain added for monitoring in Operations Manager, a Management Pack Template is created under the **Management Pack Templates** tab in the Cisco Unified Computing System. It is very crucial to understand the components of the Management Pack to perform any customization.

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Object Discoveries

Every component of the Cisco UCS domain comprises an object discovery that the management pack monitors. To view the list of object discoveries in the pack, complete the following steps:

- Step 1** In the Operations Manager application, click the **Go** tab in the menu bar.
- Step 2** Choose **Authoring** from the drop-down menu.
- Step 3** In the **Authoring** column, choose **Authoring > Management Pack templates > Cisco Unified Computing System**.
- Step 4** Choose the template pack. Right click and choose **View Management Pack Objects > Object Discoveries**.



Note

Several discoveries are disabled by default. Override the discoveries to enable them or change other parameters.

Enabling Object Discoveries using PowerShell Cmdlets.

You can enable object discoveries using PowerShell Cmdlets. For more details, see [Retrieving, enabling, or disabling UCS Object Discoveries, page 9-4](#)

Types of Object Discovery

Object discoveries are of two types:

- Interval based
- Event Based

Interval Based Object Discovery

Interval based discoveries execute at a defined interval to fetch the information from the Management Service.

Interval based discovery occurs at only two levels: Cisco UCS Instance Discovery and Organization Discovery.

Cisco UCS Instance (Object Discovery)

This is the top level Object Discovery and the first discovery to run for an UCS Domain. It discovers an instance of Cisco UCS Domain into Operations Manager. This discovery runs to fetch the inventory and monitoring information from Cisco UCS Domain using the Cisco UCS Management Service.

Following are the set of Overrides available for this Object Discovery:

- CacheClass: Defines the managed object for an inventory or monitoring information to be collected from the UCS Domain.
- Discovery Level: Defines the level up to which Organizations and Service Profiles from the UCS Domain should be discovered in the Operations Manager.
- Enabled: Defines the enabled state of the object discovery.
- Interval Seconds: Defines the interval of execution.
- IsAssociated: Defines whether or not the associated or unassociated Service Profiles should be discovered in Operations Manager. The default value is 'True' which means only an associated service profile must be discovered in the Operations Manager.
- Logging Level: Defines if the logging is enabled or disabled for this object discovery.
- Timeout Seconds: Defines the timeout period for the discovery script to execute.



Note

By default the Cisco UCS Instance discovery is programmed to execute every two hours (7200 seconds) to fetch any modifications from the Cisco UCS Domain.

Organization Discovery

Organization Discovery enables discovery of logical components in the UCS Domain. Following are the set of overrides available for object discovery:

- Enabled: Defines the enabled state of the object discovery.
- Interval Seconds: Defines the interval of execution.
- Timeout Seconds: Defines the timeout period for the discovery script to execute.

Event Based Discovery

The Cisco UCS Instance Discovery script executes at a default scheduled interval of 7200 seconds and detects the modification in the UCS Domain inventory. Any modification in UCS components triggers a windows event. This event triggers the Cisco UCS management pack to execute the discovery of modified UCS components.

Event based discovery occurs only when there is any modification in UCS components.

Following are the overrides available for an Event based Object Discovery.

- Enable Logging – Enables event logging for the discovery.
- Enabled – Enables or disables the Object Discovery.
- Timeout Seconds – Defines the timeout period for the discovery script to execute.

Overriding Object Discoveries

Complete the following steps to override the object discoveries:

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- Step 1** On the **Object Discovery** page, choose the object and right-click **Override**.
- Step 2** Choose **Override > Override the Object Discovery > For All Objects of Class**.
- Step 3** In the Override Properties page, do the following:
- a. Check the **Override** check box.
 - b. Modify the override value.
 - c. Click **Apply/OK**.

**Note**

When an object discovery is enabled using override, make sure all its target class discoveries till the top level (Cisco UCS Instance) are also enabled. If not, enable them. When an object discovery is disabled using override, all the class discoveries targeted at this class till the leaf level are also not monitored by the Operations Manager

**Note**

If you enabled an object discovery from the Disabled state, for all such object discoveries, discovery events should be generated using the Generate Discovery Event task from Cisco UCS Instance Tasks. This is used to retrieve old updates from the Management Service when the discovery was turned off.

Overriding Object Discoveries using PowerShell Cmdlets

You can disable or override object discoveries using PowerShell Cmdlets. For more details, see [Retrieving, enabling, or disabling UCS Object Discoveries, page 9-4](#)

Monitors

The Cisco UCS management pack has monitors for each UCS fault, and each monitor is event based two-state monitor. Depending on the number of UCS components on which a fault can occur, there could be multiple monitors per UCS fault.

For example, Fault F0174 can occur on the following UCS components:

```
sys/chassis-[id]/blade-[slotId]/board/cpu-[id]
sys/rack-unit-[id]/board/cpu-[id]
```

Therefore there would be two monitors in the management pack corresponding to these 2 UCS components, and the naming convention is as follows:

- F0174 sys_chassis_id_blade_slotId_board_cpu_id Monitor
- F0174 sys_rack_unit_id_board_cpu_id Monitor


Note

Currently, the Cisco UCS management pack does not support display of informational, clear faults from the Cisco UCS Domain in Operations Manager.


Note

UCSM FSM faults are transient faults and therefore are not supported by this version of management pack. For a complete list of FSM faults not supported in the Management Pack, go to the following URL: http://www.cisco.com/c/en/us/td/docs/unified_computing/ucs/ts/faults/reference/2-0/UCSFaultsErrorsRef_20/UCS_FSMs.html

All monitors of corresponding UCSM faults of type Configuration are disabled by default.


Note

For the list of enabled and disabled monitors and rules in the management pack, see [Monitors and Rules for UCS Faults in the Management Pack](#).

Enabling Monitors using PowerShell Cmdlets

You can enable monitors using PowerShell Cmdlets. For more details, see [Retrieving, enabling or disabling UCS Fault Monitors, page 9-5](#)

Severity Mapping

This section describes the mapping between the severity of faults in the UCS Domain and the alert severity monitors in Operations Manager.

The following table shows the mapping of severity levels between the Cisco UCS Manager and Monitors.

Table 7-1 *Default Severity Mapping*

Severity Level	Cisco UCSM (Severity)	Monitors (Alert Severity)
1	Critical, Major	Critical
2	Minor, Warning	Warning

**Note**

Only monitors with alert severity as Critical are enabled by default. Therefore, only Critical and Major faults from the UCS Domain are shown as Alerts (Critical) in Operations Manager.

Complete the following steps to view the list of Monitors in the Management Pack:

- Step 1** In the Operations Manager application, click the **Go** tab on the menu bar.
- Step 2** Choose **Authoring** from the drop-down menu.
- Step 3** In the Authoring column, choose **Authoring > Management Pack templates > Cisco Unified Computing System**.
- Step 4** Choose the template pack and right-click to choose **View Management Pack Objects > Monitors**.

Overriding the Monitor

Complete the following steps to override the Monitors:

- Step 1** On the **Monitors** page, choose a target and expand it.
- Step 2** Go to Entity **Health > Availability**. A list of monitors corresponding to the target is displayed. Alternatively search the monitor by fault code, and right-click to choose **Monitor**.
- Step 3** Choose **Override > Override the Monitor > For All Objects of Class**.
- Step 4** On the **Override Properties** page, do the following:
 - a. Check the Override check box.
 - b. Modify the Override value.

The following parameters are available to override Monitors:

- Alert On State
- Alert Priority: Defines the priority of the alert generated by this monitor.
- Alert Severity: Defines the severity of the alert generated by this monitor.
- Auto-Resolve Alert: Defines whether or not to auto-resolve the alert generated by this monitor.
- Enabled: Defines the enabled state of the monitor.
- Generate Alert: Defines where or not the monitor should generate an alert.

**Note**

When a Monitor is enabled using override, make sure all its target class discoveries till the top level (Cisco UCS Instance) are also enabled.

Overriding Monitors using PowerShell Cmdlets

You can override or disable monitors using PowerShell Cmdlets. For more details, see [Retrieving, enabling or disabling UCS Fault Monitors, page 9-5](#)

Rules for Miscellaneous Alerts

The management pack has monitors that fetch the faults related to the corresponding components in UCS domain. However, for other components which are not monitored using the Operations Manager monitors, these miscellaneous alert rules fetch the faults and display these on the Operations Console. The following are the three types of rules that can be enabled:

- Generate Critical Miscellaneous Fault Event Rule—This rule captures all the major and critical miscellaneous faults from the UCS domain.
- Generate Warning Miscellaneous Fault Event Rule—This rule captures all the minor and warning miscellaneous faults from the UCS domain.
- Miscellaneous Fault Closure Rule—This rule executes on root management server and closes any critical or warning miscellaneous faults. It runs when a corresponding closure window events are generated.



Note

The miscellaneous alerts rules are disabled by default. For list of UCS faults collected by Critical and Warning Miscellaneous Fault Event Rule, see [Rules for Miscellaneous Alerts, page 7-6](#)

Limitations of Miscellaneous Alerts

- Miscellaneous alerts cannot be acknowledged from the **Operations Manager** console
- Knowledge articles are not available for miscellaneous alerts
- Miscellaneous alerts do not affect the health state of UCS domain

Overriding the Miscellaneous Alerts Rule

Perform the following procedure to enable miscellaneous rules:

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- Step 1** On the menu bar of the Operations Manager Console, click **Go**, and select **Authoring**.
 - Step 2** From the navigation pane, select **Management Pack Templates > Cisco Unified Computing Systems**.
 - Step 3** On the work pane, right-click Cisco UCS instance, and select **View Management Pack Objects > Rules**.
Rules page appears.
 - Step 4** On the **Rules** page, enable the following rules:
 - Generate Critical Miscellaneous Fault Events Rule
 - Generate Warning Miscellaneous Fault Events Rule
 - Step 5** Close the **Rules** page.

- Step 6** From the navigation pane, select **Management Pack Objects > Rules**.
 - Step 7** Enable **Close Miscellaneous Fault Rule**, which belongs to Cisco UCS instance you selected in **Step 3** (instance name is mentioned in brackets in rule name).
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Migrating the Cisco UCS Domain to a Different Management Service

In a deployment where multiple Operations Manager Management Servers and Agent Managed Computers are present, Cisco UCS Management Service could be installed on more than one computer to monitor multiple UCS Domains. This helps in sharing the load of monitoring multiple UCS Domain among different Management Servers and Agent Managed Computers. While doing so, sometimes it may be required to assign the monitoring of UCS Domain from one Cisco UCS Management Service to another Management Service.

Complete the following steps to migrate the UCS Domain to different Cisco UCS Management Service:

- Step 1** In the Operations Manager application, click the **Go** tab on the menu bar.
- Step 2** Choose **Authoring** from the drop-down menu.
- Step 3** Select **Management Pack Templates > Cisco Unified Computing System**.
- Step 4** Right-click one of the UCS instances and select **Properties**.
- Step 5** Select a different machine type and/or service machine from the drop down list.
- Step 6** Click **OK/Apply**.

