Monitoring Cisco UCS Domains with Operations Manager

This chapter includes the following sections:

About the Monitoring Pane in Operations Manager

After you install and configure the Cisco UCS Management Pack, you can use the Monitoring pane of the operations manager to display a summary and components of a monitored Cisco UCS domain. The Cisco Unified Computing System folder and views in the Monitoring pane provide a complete view of the health of the Cisco UCS domains.

Accessing the Cisco UCS folder in the Monitoring Pane

Step 1 In the left pane of the Operations Manager application, click the **Monitoring** tab.

Step 2 Expand the **Cisco Unified Computing System** folder.

About the Cisco UCS Folder

The Cisco Unified Computing System folder displays active alert, state view and state summary for all discovered Cisco UCS domains and hardware components. The folder also provides additional views of components, which show monitoring data collected from Cisco UCS domains.

This folder contains the following sub-folders and views that display global aspects of all the monitored Cisco UCS domains:

Management Pack Events

This view shows any alert related to execution of monitoring scripts in Operations Manager, some of the common errors are listed in the table below:

Table 8-1   *Common Errors*

Serial No.	Error Code	Error Description	What to Check
1	19900	Service Connection Error	Verify the Service Machine entry in the **Add Monitoring** Wizard
2	19900	Service not found or not running.	Check if the Management Service is up and running on the Service Machine.
3	19900	Connection to the Cisco UCS Management Service failed.	Verify the account is associated to the profile and the account is authorized to make a connection to the UCS Domain.

Cisco UCS Management Service Folder

This folder contains following views related to Cisco UCS Management Service.

- Alert View—Displays alerts related to service
- Performance View—Contains counters related to performance
- State View—Displays the health state of the service

Start Service

If the Management Service used to monitor Cisco UCS Domain is stopped, an alert gets generated in the **Alert** View. Use the Start Service task to remotely start the Management Service from the Operations Manager Console.

Stop Service

If the Management Service is no longer used to monitor Cisco UCS Domain, then the Management Service could be stopped from Operations Manager Console.

Complete the following steps to start or stop the Management Service:

Step 1   In the Operations Manager application, click the **Go** tab in the menu bar.

Step 2   Choose **Monitoring** from the drop-down menu.

Step 3   Expand the Cisco Unified Computing System folder to display the folders and views.

Step 4 Expand **Cisco UCS Management Service** and go to **State** View.

Step 5 Select the Management Service, and from the **Tasks** pane, click **Start Service** or **Stop Service**.

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Note It is crucial for the Cisco UCS domain monitoring added in the Operations Manager, that the Cisco UCS Management Service be in a healthy state. Make sure to capture alerts early in the Alert View and resolve them.

Cisco UCS Instance Folder

The Cisco UCS Instance folder contains a sub-folder for each Cisco UCS domain monitored by Operations Manager. Each Cisco UCS domain folder contains the following sub-folders that display alerts and information about the health and components of the domain:

- Diagram View —Displays a graphical view of a set of Cisco UCS managed objects and shows how they relate to each other.

- <UCS Name> Alert View—Displays active alerts from monitored components in the Cisco UCS domain. This Alert view also displays the alerts from objects which are not directly monitored by the management pack. However, these are visible only if the Miscellaneous Alert Rules are enabled. For more information on these rules, see Rules for Miscellaneous Alerts, page 7-6

- <UCS Name> State View— Display health status and other inventory information about Cisco UCS domain.

- State Summary View—Provides alert view and state view in a single panel, also known as the dashboard view. This view summarizes all related information about the Cisco UCS domain.

- Hardware Inventory Folder —Different views and sub-folders under the hardware inventory folder provide a detailed insight on health state, inventory and fault information about various hardware components present in the UCS Domain.

- Logical Inventory Folder — Different views and sub-folders under the logical inventory folder provide a very detailed insight on health state and inventory information about various logical components present in the UCS Domain.

Cisco UCS Instance Tasks

The Cisco UCS Management Pack provides capability to launch following tasks on each UCS Domain Instance being monitored by Operations Manager. These tasks are available under **Tasks > Cisco UCS Instance Tasks** when a UCS Domain is selected from <UCS Name> State View in the Cisco UCS Instance Folder.

Generating Discovery Events

Generating discovery events generates windows events for the selected classes, which results in the corresponding Object discovery to retrieve updates from the Management Service about that particular class object. This feature is used to manually run the Object Discoveries to retrieve updates about the class in Operations Manager.

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Note Generating discovery events is a mandatory task when any disabled object discovery is enabled using object discovery override. This operation retrieve old updates about the class from Management Service and updates them in the Operations Manager.

Complete the following steps to generate discovery events:

Step 1   In the Operations Manager application, click the **Go** tab in the menu bar.

Step 2   Choose **Monitoring** from the drop-down menu.

Step 3   Expand the Cisco Unified Computing System folder to display the folders and views.

Step 4   Select **State Summary** and click **Cisco UCS Domain** from Cisco UCS Instance State View.

Step 5   Click **Cisco UCS Instance Tasks > Generate Discovery Events** from right panel.

Step 6   When the **Generate Discovery Events** task launches, click **Override**.

Step 7   Change the New Value to **True** for one or more classes, to generate discovery events from them.

Step 8   Click **Run**.

> **Note**   Generate Discovery Events is an Agent Task, and executes on the computer where the Management Service is hosted to monitor the UCS Domain. The operation results in the corresponding Object Discovery to run and retrieve the latest updates from the Management Service.

Launch UCS GUI

The default browser is launched and redirected to the selected UCS home page.

> **Note**   In order to launch the UCS GUI, network connectivity should be available between the computer where the Operations Manager Console application is running and the UCS Domain.

Complete the following steps to launch the UCS GUI:

Step 1   In the Operations Manager application, click the **Go** tab in the menu bar.

Step 2   Choose **Monitoring** from the drop-down menu.

Step 3   Expand the Cisco Unified Computing System folder to display the folders and views. Select **State Summary** and click **Cisco UCS Domain** from the Cisco UCS Instance State View.

Step 4   Click **Cisco UCS Instance Tasks > Launch UCS GUI** from the right panel.

Load UCS Fault Data

The Cisco UCS Management Service collects faults from the UCS Domain using event channel subscription and generates windows events. The Cisco UCS Management Pack reads the windows events and displays them in the Operations Console. This activity is automatically handled by Cisco UCS Management Service and Management Pack.

Loading the UCS fault data manually refreshes the event channel subscription and moves the updated faults from UCS Domain into the Operations Console.

Complete the following steps to load the UCS Fault Data:

Step 1   In the Operations Manager application, click the **Go** tab in the menu bar.

Step 2   Choose **Monitoring** from the drop-down menu.

Step 3   Expand the Cisco Unified Computing System folder to display the folders and views. Select State Summary and click **Cisco UCS Domain** from Cisco UCS Instance State View.

Step 4   Click **Cisco UCS Instance Tasks** > **Load UCS Fault Data** from the right panel.

Step 5   Click **Run**.

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Note   Load UCS Fault Data is an Agent task, and executes on the computer where the Management Service is hosted to monitor the UCS Domain

Load UCS Inventory Data

The Cisco UCS Management Pack collects inventory updates from the UCS Domain periodically (the default interval is two hours). Use this task to manually load any updates from UCS Domain.

Complete the following steps to load the UCS Inventory Data:

Step 1   In the Operations Manager application, click the **Go** tab in the menu bar.

Step 2   Choose **Monitoring** from the drop-down menu.

Step 3   Expand the Cisco Unified Computing System folder to display the folders and views. Select State Summary and click **Cisco UCS Domain** from Cisco UCS Instance State View.

Step 4   Click **Cisco UCS Instance Tasks** > **Load UCS Inventory Data** from right hand panel.

Step 5   Click **Override** to override any task parameter. The following overrides are available.

   a.   TimeOut Seconds: Time out period for the task to complete execution.

   b.   Organization Discovery Level: Defines the level up-to which Organizations and Service Profiles from UCS Domain should be discovered in operations Manager.

   c.   Enable Logging: Defines if the logging is enabled/disabled for this object discovery.

   d.   Cache Class: Defines the Managed Object for which inventory or Monitoring information to be collected from UCS Domain.

   e.   Associated Service Profiles: Defines whether the associated or unassociated Service Profiles need to be discovered in Operations Manager. Default value is "True" which means only an associated service profile needs to be discovered in the Operations Manager.

Step 6   Click **Run**.

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Note   Load UCS Inventory Data is a Operations Manager Agent Task and executes on the Service Machine monitoring UCS Domain.

Ping UCS

The Ping UCS task pings to the UCS domain to check the connectivity between the Operations Manager console and the Cisco UCS domain.

Follow the steps outline below to Ping UCS Domain

Step 1   In the Operations Manager application, click the **Go** tab in the menu bar.

Step 2   Choose **Monitoring** from the drop-down menu.

Step 3   Expand the Cisco Unified Computing System folder to display the folders and views. Select State Summary and click **Cisco UCS Domain** from Cisco UCS Instance State View.

Step 4   Click **Cisco UCS Instance Tasks > Ping UCS** from right hand panel.

Ping UCS Continuously (ping -t)

The Ping UCS Continuously task continuously pings to the UCS Domain to check the connectivity between the Operations Manager Console and the Cisco UCS Domain.

Complete the following steps to ping the UCS Domain continuously:

Step 1   In the Operations Manager application, click the **Go** tab in the menu bar.

Step 2   Choose **Monitoring** from the drop-down menu.

Step 3   Expand the Cisco Unified Computing System folder to display the folders and views. Select State Summary and click **Cisco UCS Domain** from Cisco UCS Instance State View.

Step 4   Click **Cisco UCS Instance Tasks > Ping UCS Continuously (ping –t)** from right hand Panel.

Hardware Inventory Folder

The Hardware Inventory folder displays a diagram view of the Cisco UCS hardware in the Cisco UCS domain, such as chassis, blade servers, fabric interconnects, and rack mount servers. Each type of hardware has its own folder with alert view, state view, and state summary for that hardware.

Different views and folders under Hardware Inventory provide an insight to health state, inventory and fault information about various hardware components of UCS Domain.

The following are the views and folders present under the hardware inventory:

- Diagram View: shows the entire hardware component under UCS Domain in a hierarchical fashion. User can click any component and the details view will give additional information about the component. User can also choose to launch the Alert View and Diagram view to see the alerts or component with-in the selected component.
- Chassis
  - Blade
  - Fan Module
  - Fan
  - IO Module
  - Port
  - PSU
- Fabric Interconnect
  - Fan
  - Fan Module
  - PSU
  - Storage Item
  - Switch Card
  - Port

- – SWVlanPortNS
- Rack Mount
- FEX
    - – Fan
    - – IO Module
    - – Power Supply Unit
- Rack Unit
    - – Fan Module
    - – Interface Card
    - – Inventory
    - – PSU

Each of the above folders has three views:

- Alert View: Shows the alerts on all the instance of the component.
- State View: Shows the inventory about all the instances of the component.
- State Summary: Shows the State View and Alert View in a single pane.

Logical Inventory Folder

Different views and folders under Logical Inventory provide an insight to health state, inventory and fault information about various logical components of UCS Domain. Following views and folder are present under logical Inventory:

- Diagram View: Displays the entire logical component under UCS Domain in a hierarchical fashion. You can click any component and the details view provides additional information about the component. You can also choose to launch the Alert View and Diagram view from the right panel to see the alerts or component within the selected component.
- Organization: State View lists all the organizations and sub-organizations available in the UCS Domain. Hierarchy of the organizations can be seen from the Diagram View. Alert View shows all the alerts related to organizations and sub-organizations and the State Summary shows the State View and the Alert View in a single pane.
    - – Firmware Packs and Items

        Firmware Items: Lists the state summary of various firmware items.

        Firmware Packs: Lists the state summary of various firmware Packs.
    - – Pools: Lists the state summary of various Pools like: Mac Pool, Server Pool, UUID Pool etc.
    - – Service Profiles. Alert View and State View shows the alerts and inventory related to the service profiles. State Summary shows the Alert View and State View in a single pane.

Note   By default the management pack discovers three levels of organization and its components (Service Profiles/Pools). To discover more than three levels, override the Discovery level under Cisco UCS Instance Object Discovery.

Note   By default the management pack discovers only associated service profiles. In order to discover the non-associated service profiles, override the IsAssociated parameter under Cisco UCS Instance Object Discovery.

This folder displays Logical Inventory View of UCS which contains Organization, Service Profiles, Pools, Firmware Packs and Items. It consists of Organizations folder which contains different views for the Organization, that is, Alert View, State View, and State Summary view. It also contains sub folders for Sub-Organizations, Service Profiles, Firmware Packs and Items, and Pools, each containing the different views for respective items. All the sub-organizations have a similar content structure.

UCS HW/Logical Component Tasks

KVM Console Task

The Cisco UCS Management Pack provides capability to launch KVM console from the Operations Console. KVM console launch action is available for following UCS components:

- Blade Server (Hardware Component)
- Rack Unit Server (Hardware Component)
- Service Profile (Logical Component)

Complete the following steps to launch the KVM console:

Step 1   In the Operations Manager application, click the **Go** tab in the menu bar.

Step 2   Choose **Monitoring** from the drop-down menu.

Step 3   Expand the Cisco Unified Computing System folder to display the folders and views.

Step 4   Expand the Cisco UCS Instance(s) folder.

Step 5   Expand <UCS Name> folder of UCS Domain on which KVM Console should be launched. Depending upon KVM Console should be launched on Blade/Rack/Service Profile, follow one of the following steps:

    a. Blade Server: Go to **HW Inventory** > **Chassis** > **Blade** > **Blade State View**. Select the blade server and click **Tasks** > **Blade Tasks** > **Launch KVM**.

    b. Rack Unit Server: Go to **HW Inventory** > **Rack Mount** > **Rack Unit** > **Rack Unit State View**. Select the rack unit server and click **Tasks** > **Rack Unit Tasks** > **Launch KVM**.

    c. Service Profile: Go to **Logical Inventory** > **Organization** > **Service Profiles** > **Service Profile State** View. Select the service profile and click **Tasks** > **Service Profile Tasks** > **Launch KVM**.

Note   The KVM console requires Java Version 1.6 Update (14). To launch the KVM console, you must have valid Cisco UCSM user credentials with administrator or user role privileges, and must be associated with the Cisco UCS Domain Profile.

Caution   The KVM console cannot be launched on a Blade/Rack Unit/Service Profile, if the connection to the UCS Domain is established using a proxy server.

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Caution   The KVM console being a console task cannot be launched on a Blade/Rack Unit/Service Profile, when there is no direct connectivity between Operations Console machine and the Service Machine where the Cisco UCS Management Service is running. This could occur when the Operations Console machine belongs to a different Active Directory Domain than the Service Machine.

Alert Operations

Acknowledge UCS Faults

This operation could be performed on an Operation Manager alert created by the Management Pack due to a fault on UCS Domain. Using this operation, user can acknowledge an UCS Domain fault from the Operations Manager Console itself.

Prerequisites: Required configuration as explained under the Configuring Faults Acknowledgments section must be completed before performing this operation.

Complete the following steps to acknowledge a UCS fault from Operations Manager Console:

Step 1   Select an alert in Operations Manager which belongs to a UCS Domain.

Step 2   Right click on the alert and choose **Set Resolution State**.

Step 3   Click **UCS Acknowledged** (configured resolution state).

View Knowledge Article of Alerts

Knowledge Articles provide more information about an alert generated in Operations Manager. This Management Pack supports knowledge articles for every UCS fault generated as alert in Operations Manager. Knowledge articles will help the user to get additional information about the alert like Fault Cause, Explanations and Resolution steps. Resolution Steps should be followed to resolve the alerts.

Complete the following steps to view the knowledge articles of generated alerts:

Step 1   Select an alert in Operations Manager which belongs to a UCS Domain.

Step 2   Right click on the alert and choose **Properties**.

Step 3   On the properties window, click the **Product Knowledge** tab.

Clearing of Alerts

When a fault or condition is cleared in Cisco UCS Manager, the corresponding alert in operations manager is set to closed state. There is no manual activity required to close an alert in the Operations Manager console.