



Cisco UCS Management Pack User Guide, Release 2.x for VMware vRealize Operations Manager

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CHAPTER 1

Overview

This chapter includes the following sections:

- [About the Cisco UCS Management Pack for VMware vRealize Operations Manager, on page 1](#)
- [System Requirements, on page 1](#)

About the Cisco UCS Management Pack for VMware vRealize Operations Manager

Cisco UCS Management Pack for the vRealize Operations Manager contains UCS Manager adapter. The adapter enables the capabilities to monitor the UCS domains on the Operations Manager web UI. The adapter uses the XML API of Cisco UCS Manager to collect the data from the UCS domains. This data is used for monitoring the health and faults of the various resources in the UCS domain. This pack also establishes the relation between physical and virtual infrastructure.

System Requirements

The following is the support matrix for Cisco UCS Management Pack for the vRealize Operations Manager:

Cisco UCS Management Pack Version	Supported VMware vRealize Operations Manager Version	Supported UCS Manager Version
2.0(6)	8.3, 8.4, 8.5, 8.6 and 8.10	3.1, 3.2, 4.0, 4.1 and 4.2
2.0(5)	8.0 and 8.1	3.1, 3.2, 4.0 and 4.1
2.0(4)	6.6.1, 6.7, 7.0, and 7.5	3.1, 3.2 and 4.0
2.0(3)	6.3, 6.4, 6.5, 6.6, 6.7, 7.0, and 7.5	2.1, 2.2, 3.1, 3.2, and 4.0
2.0(2)	6.0, 6.1, 6.2, 6.3, and 6.4	2.1, 2.2, 3.0, and 3.1
2.0(1)	6.0 and 6.1	2.1, 2.2, 3.0, and 3.1



Note Cisco UCS Management Pack is not supported with vRealize Operations Manager Cloud.



Note Cisco UCSM Management Pack Version 2.0(6) is compatible with vROps 8.0 to 8.2 in non-FIPS mode but it is not certified by VMware. This management pack is certified by VMware for vROps 8.3 to 8.10 (FIPS and non-FIPS mode).



Note Collection issue found in Cisco UCSM Management Pack Version 2.0(5) is resolved in the Version 2.0(6).



Note Deprecated credentials have been removed in 2.0(6). If you added UCSM instances using deprecated credentials, then you have to add the credentials again for the UCSM instances.



Note The vROps 8.0 version might work with Cisco UCS Management Pack 2.0.4 after vROps upgrade. However, it is recommended to upgrade to Cisco UCS Management Pack 2.0.5, as the 2.0.4 version is not certified with vROps 8.0 and above.



Note Running the UCS Management pack v2.0(3) for vROps with Cisco UCS Manager Release 3.0 will display a collection status error. If you are on Cisco UCS Manager Release 3.0, upgrade to Cisco UCS Manager Release 3.1 or later releases to avoid this issue.



Note If **Only TLS 1.2** option is enabled in Cisco UCS Manager, then use Cisco UCS Management Pack 2.0(3) or higher to manage your servers.



Note Ensure that the vRealize Operations Manager configuration is as per the sizing guidelines. For more information on the sizing guidelines, see <https://kb.vmware.com/s/article/2093783>.



CHAPTER 2

Installing the Cisco UCS Manager Adapter

This chapter includes the following section:

- [Installing the Cisco UCS Management Pack](#) , on page 3
- [Uninstalling the Cisco UCS Management Pack](#), on page 4

Installing the Cisco UCS Management Pack

Before you begin

- Download the *.pak* file from Cisco.com and save the file in your local system.

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- Step 1** Log in to the vRealize Operation Manager using *https://UI_vROps_IP*.
- Step 2** For the release version vROps 8.6 and later, navigate to **Data Sources > Integrations > Repository**.
- Note** For the release version vROps 8.5 and earlier, navigate to **Administration > Solutions > Repository**.
- Step 3** On the **Repository** page, click **ADD/UPGRADE**.
The **Add Solution** page appears.
- Step 4** Click **Browse**, and navigate to the folder in which UCS management pack *.pak* file is saved.
- Step 5** Click **Upload**.
Monitor the progress of the upload.
- Step 6** Click **Next**.
EULA agreement page appears.
- Step 7** Review the agreement and select **I accept the terms of this agreement**, and click **Next**.
- Step 8** Click **Finish**.
After the installation is complete, the installed adapter appears as **Cisco UCS** in the **Solutions > Repository**.

- Important** If you are upgrading from 2.0(1) or 2.0(2) to higher versions, we recommend that you do the following:
- During installation, check the Reset Default Content check box for overwriting the alert definitions
 - Restart the vRealize Operations Manager after the installation
 - Reconfigure all the adapter instances
-

Uninstalling the Cisco UCS Management Pack

Once the Cisco UCS Management Pack is installed, you cannot uninstall it from the vRealize Operations Manager system. However, you can delete all the adapter instances to stop the data being collected in vRealize Operations Manager. To delete the adapter instance, follow these steps:

Step 1 Access the vRealize Operations Manager window.

Step 2 For the release version vROps 8.6 and later, navigate to **Data Sources > Integrations > Repository**.

Note For the release version vROps 8.5 and earlier, navigate to **Administration > Solutions > Repository**.

Step 3 In the **Repository** page, click **UNINSTALL** for **Cisco UCS**.

Step 4 Select **I understand the risk and agree**, and click **OK**.



CHAPTER 3

Management Pack Configuration

This chapter includes the following sections:

- [Creating and Editing Cisco UCS Manager Adapter Instances](#) , on page 5
- [Deleting the Cisco UCS Manager Adapter Instance](#), on page 7

Creating and Editing Cisco UCS Manager Adapter Instances

To edit an existing or recently configured Cisco UCS Manager Adapter instance, perform the following steps:

1. For the release version vROps 8.6 and later, go to **Data Sources > Integrations > Accounts**.
For the release version vROps 8.5 and earlier, go to **Administration > Solutions > Other Accounts**.
2. Click on the **options** icon for an adapter instance and click **Edit**.

Before you begin

- Create vCenter adapter instance to establish relationship between the ESXi host and the server.
- You must have the Cisco UCS Manager user account with minimum read-only access.

Step 1 Access the **Operations Manager** web UI.

Step 2 For the release version vROps 8.6 and later, navigate to **Data Sources > Integrations > Accounts**.

Note For the release version vROps 8.5 and earlier, navigate to **Administration > Solutions > Other Accounts**

Step 3 Click the **ADD ACCOUNT** button.

Step 4 Select **UCS Manager Adapter** in **Account Types** page.

The **New Account** page is displayed.

Step 5 Enter the following details in the **New Account** page.

Step 6 In the **Cloud Account Information** area, enter the following details:

Name	Description
Name	Name of the UCS Manager adapter instance.
Description	A descriptive name for the UCS Manager adapter instance.

Step 7 In the **Connect Information** area, enter the following details:

Name	Description
UCS Domain IP/Host Name	The hostname or IP address of the specified UCS domain.
Credential drop-down list	Lists the available UCS Manager credential kinds. Click the Add icon to add new UCSM credential kinds, and the Edit icon to edit the existing UCS Manager credential kinds.
Collectors / Groups drop-down list	Lists the available collectors or the collector groups.

Step 8 To add a new UCS Manager credential, click the **Add** icon next to the **Credential** drop-down list.

Note We recommend that you choose a non-deprecated option from the **Credential** drop-down list.

- a) In the **Manage Credential** window, from the **Credential Kind** drop-down list, select **UCS Credentials**, and enter the following details:

Name	Description
Credential Name	Name for the credential kind.
UCS Username	UCS Manager username. Note For LDAP authentication, enter the username in <i>ucs-<domain>/username</i> format.
UCS Password	UCS Manager password.

- b) When you select **UCS Credentials with Proxy**, the following extra fields are populated:

Name	Description
Proxy Server IP	IP or hostname of the proxy server.
Proxy Server Port	Port number to be used for the proxy server.
Proxy Server Username	Username of the proxy server if authentication is enabled.
Proxy Server Password	Password of the proxy server if authentication is enabled.

Step 9 Click **OK** to save the credentials.

Step 10 (Optional) In the **Advanced Settings** area complete the following:

Name	Description
Secure Connection drop-down list	Enables secure connection. This can be one of the following: <ul style="list-style-type: none"> • True • False
Port	Port number to connect to.
Auto Discover New Resource	Whether to discover new resources and collect the metrics automatically. By default, this option is set to True .

Step 11 Click **Validate Connection** to verify the connectivity to UCS Manager.

Step 12 If you are using 2.0(3) and higher version, you are prompted to review and accept the certificate. Click **OK**.

Step 13 Click **Save Settings**.

Once instantiated, the collection status for the adapter and the monitored resources appear on the environment overview page. To view the objects and the collection status, navigate to **Administration > Inventory**.

Deleting the Cisco UCS Manager Adapter Instance

Step 1 Access the **Operations Manager** web UI.

Step 2 For the release version vROps 8.6 and later, navigate to **Data Sources > Integrations > Accounts**.

Note For the release version vROps 8.5 and earlier, navigate to **Administration > Solutions > Other Accounts**.

Step 3 For the release version vROps 8.6 and later, in the **Accounts** page, click on the **options** icon for an adapter instance.

Note For the release version vROps 8.5 and earlier, in the **Accounts** page, click on the **options** icon for an adapter instance.

Step 4 Click **DELETE**.



CHAPTER 4

Using the Cisco UCS Manager Adapter

This chapter includes the following sections:

- [Discovering the Resources Manually, on page 9](#)
- [Data Collection, on page 10](#)
- [UCS Manager Alerts in Operations Manager, on page 27](#)
- [Using the Cisco UCS Manager Adapter, on page 27](#)

Discovering the Resources Manually

From the Cisco UCS Management Pack, Release 2.0(3), you can manually discover the objects and select the resource kinds or the resources to be discovered and for which metrics must be collected.



Note The following limitations occurs while collecting the metrics manually:

- Metrics for port channels, such as the UCS FI Eth port channel, UCS FI FC port channel, and UCS FI FCoE port channel are collected when UCS FIs are selected for collection
- Metrics for UCS service profiles are collected when UCS servers are selected for collection
- Inventory is established when the immediate parent of an object is selected for collection

Before you begin

Select the **Auto Discover New Resource** value as **False**. For instructions on how to configure an adapter instance of the UCS Manager adapter, see [Creating and Editing Cisco UCS Manager Adapter Instances](#).

Step 1 Access the **Operations Manager** web UI.

Step 2 For the release version vOps 8.6 and later, navigate to **Environment > Inventory**.

Note For the release version vOps 8.5 and earlier, navigate to **Administration > Inventory**.

Step 3 From **Inventory**, expand **Adapter Instances > UCS Manager Adapter**.

Step 4 From the list, select the adapter instance for which resources must be discovered.

Step 5 Click the **Discover Objects** icon.

Discover Objects page appears.

Step 6 Review and complete the following:

Name	Descriptions
Collector	Lists the available collector or the collector groups.
Adapter Type	Lists the available adapter types.
Adapter Instance	Lists the available adapter instances.
Discovery Info	Select UCSM Resource Discovery .
Only New Objects	Whether to discover new objects or discover and list all the objects.

Step 7 Click **Ok**.

Data Collection

During each collection cycle the adapter retrieves metric values, events and relationships from the UCS domain.

The UCS Manager adapter collects the following statistics from the UCS domains.

ResourceKind Name: UCS Domain

Metric Supported:

Metric-Key	Description
Availability	Availability of UCS Domain

Property Supported:

Property	Description
UCS Manager Version	Version of UCS Manager

ResourceKind Name: UCS Chassis

Metric Supported:

Metric-Key	Description
Operational State	Operational State of Chassis
Input Power(Watts)	Input Power in watts
Output Power(Watts)	Output Power in watts

Metric-Key	Description
Fan Module Exhaust Temperature (Celsius)	Exhaust Temperature of fan module in celsius
Fan Module Fan Speed (RPM)	Speed of Fan in RPM
PSU Input Voltage (Volts)	Input Voltage in volts
PSU Internal Temperature (Celsius)	Internal Temperature in celsius
PSU Output Current (Amps)	Output Current in amps
PSU Output Power (Watts)	Output Power in watts
PSU Output Voltage (Volts)	Output Voltage in volts

Properties Supported:

Property	Description
Serial	Serial of the UCS chassis
Model	Model of UCS chassis
PSU Serial	Serial of the PSU
PSU Model	Model of the PSU
PSU Firmware Version	Firmware version of the PSU
Fan Module Serial	Serial of the Fan Module
Fan Module Model	Model of the Fan Module
Fan Module Fan Serial	Serial of the Fan
Fan Module Fan Model	Model of the Fan
Storage Enclosure Serial	Serial of the Storage Enclosure
Storage Enclosure Model	Model of the Storage Enclosure
Storage Enclosure Vendor	Vendor of the Storage Enclosure
Storage Enclosure Local Disk Serial	Serial of the Local Disk
Storage Enclosure Local Disk Model	Model of the Local Disk
Storage Enclosure Local Disk Firmware Version	Firmware Version of the Local Disk
Storage Enclosure Local Disk Servers Associated	Servers associated with the Local Disk
Storage Enclosure Local Disk Vendor	Vendor of the Local Disk

Property	Description
User Label	User Label of Chassis

ResourceKind Name: UCS Server

Metric Supported:

Metric-Key	Description
Operational Power	Operational Power of the server
Operational State	Operational State of the server
Blade Server Server Motherboard Memory Array Memory Unit DDR Array Temperature (Celsius)	DDR array temperature in celsius
Blade Server Server Motherboard Power Consumed Power (Watts)	Consumed power in watts
Blade Server Server Motherboard Power Input Current (Amps)	Input current in amps
Blade Server Server Motherboard Power Input Voltage (Volts)	Input voltage in volts
Blade Server Server Motherboard Processor Unit CPU Temperature (Celsius)	CPU temperature in celsius
Blade Server Server Motherboard Processor Unit Input Current (Amps)	Input Current in amps
Blade Server Server Motherboard Temperature-Stats Front Temperature (Celsius)	Front temperature in celsius
Blade Server Server Motherboard Temperature-Stats Rear Temperature (Celsius)	Back temperature in celsius
Rack Unit Server Motherboard Memory Array Memory Unit DDR Array Temperature (Celsius)	DDR array temperature in celsius
Rack Unit Server Motherboard Power-Stats Consumed Power (Watts)	Consumed power in watts
Rack Unit Server Motherboard Power-Stats Input Current (Amps)	Input current in amps
Rack Unit Server Motherboard Power-Stats Input Voltage (Volts)	Input voltage in volts

Metric-Key	Description
Rack Unit Server Motherboard Processor Unit CPU Temperature (Celsius)	CPU temperature in celsius
Rack Unit Server Motherboard Processor Unit Input Current (Amps)	Input Current in amps
Rack Unit Server Motherboard Temp-Stats Front Temperature (Celsius)	Front temperature in celsius
Rack Unit Server Motherboard Temp-Stats Rear Temperature (Celsius)	Back temperature in celsius
Rack Unit Fan Module Fan Speed (RPM)	Speed of Fan in RPM
Rack Unit Fan Module Exhaust Temperature (Celsius)	Exhaust temperature in celsius
Rack Unit PSU Input Voltage (Volts)	Input Voltage in volts
Rack Unit PSU Internal Temperature (Celsius)	Internal Temperature in celsius
Rack Unit PSU Output Current (Amps)	Output Current in amps
Rack Unit PSU Output Power (Watts)	Output Power in watts
Rack Unit PSU Output Voltage (Volts)	Output Voltage in volts

Properties Supported:

Property	Description
Serial	Serial of the UCS Server
Current Operational Power	Operational Power of the Server
Model	Model of the Server
BIOS Version	BIOS Version of the Server
Board Controller Version	Board Controller Version of the Server
CIMC Controller Version	CIMC Controller Version of the Server
Blade Server Adaptor Unit Firmware Version	Firmware Version of the Server Adaptor
Blade Server Adaptor Unit Model	Model of the Server Adaptor
Blade Server Adaptor Unit Serial	Serial of the Server Adaptor
Blade Server Mother Board Storage Controller Firmware Version	Firmware Version of the Storage Controller

Property	Description
Blade Server Mother Board Storage Controller Model	Model of the Storage Controller
Blade Server Mother Board Storage Controller Serial	Serial of the Storage Controller
Blade Server Mother Board Storage Controller Vendor	Vendor of the Storage Controller
Blade Server Mother Board Storage Controller Local Disk Firmware Version	Firmware Version of the Local Disk
Blade Server Mother Board Storage Controller Local Disk Model	Model of the Local Disk
Blade Server Mother Board Storage Controller Local Disk Serial	Serial of the Local Disk
Blade Server Mother Board Storage Controller Local Disk Vendor	Vendor of the Local Disk
Rack Unit Adaptor Unit Firmware Version	Firmware Version of the Server Adaptor
Rack Unit Adaptor Unit Model	Model of the Server Adaptor
Rack Unit Adaptor Unit Serial	Serial of the Server Adaptor
Rack Unit Mother Board Storage Controller Firmware Version	Firmware Version of the Storage Controller
Rack Unit Mother Board Storage Controller Model	Model of the Storage Controller
Rack Unit Mother Board Storage Controller Serial	Serial of the Storage Controller
Rack Unit Mother Board Storage Controller Vendor	Vendor of the Storage Controller
Rack Unit Mother Board Storage Controller Local Disk Firmware Version	Firmware Version of the Local Disk
Rack Unit Mother Board Storage Controller Local Disk Model	Model of the Local Disk
Rack Unit Mother Board Storage Controller Local Disk Serial	Serial of the Local Disk
Rack Unit Mother Board Storage Controller Local Disk Vendor	Vendor of the Local Disk
Rack Unit Fan Module Model	Model of the Fan Module

Property	Description
Rack Unit Fan Module Serial	Serial of the Fan Module
Rack Unit Fan Module Fan Model	Model of the Fan
Rack Unit Fan Module Fan Serial	Serial of the Fan
Rack Unit PSU Firmware Version	Firmware Version of the PSU
Rack Unit PSU Model	Model of the PSU
Rack Unit PSU Serial	Serial of the PSU
UUID	Unique Identifier of the Server
Blade Server Storage Enclosure Serial	Serial of the Storage Enclosure
Blade Server Storage Enclosure Model	Model of the Storage Enclosure
Blade Server Storage Enclosure Vendor	Vendor of the Storage Enclosure
Blade Server Storage Enclosure Local Disk Serial	Serial of the Local Disk
Blade Server Storage Enclosure Local Disk Model	Model of the Local Disk
Blade Server Storage Enclosure Local Disk Firmware Version	Firmware Version of the Local Disk
Blade Server Storage Enclosure Local Disk Vendor	Vendor of the Local Disk
User Label	User Label of Chassis
Server Name	Name of the server

ResourceKind Name: UCS Fabric Interconnect

Metrics Supported:

Metric Key	Description
Operational State	Operational State of FI
Load-Average	CPU Load (Average) of Fabric Interconnect
Memory Available-Average	Memory Available (Average) of Fabric Interconnect in MB
Memory Cached- Average	Memory Cached (Average) of Fabric Interconnect in MB
Fan Module Fan Speed (RPM)	Speed of Fan in RPM

Metric Key	Description
Fan Module Exhaust Temperature (Celsius)	Exhaust temperature of Fan in celsius
PSU Current (Amps)	Output Current in amps
PSU Power (Watts)	Output Power in watts
PSU Voltage (Volts)	Output Voltage in volts

Properties Supported:

Property	Description
Serial	Serial of the UCS FI
Model	Model of the UCS FI
Kernel Version	Kernel Version of the UCS FI
Firmware Version	Firmware Version of the UCS FI
PSU Serial	Serial of the PSU
PSU Model	Model of the PSU
PSU Firmware Version	Firmware Version of the PSU
Fan Module Serial	Serial of the Fan Module
Fan Module Model	Model of the Fan Module
Fan Module Fan Serial	Serial of the Fan
Fan Module Fan Model	Model of the Fan

ResourceKind Name: UCS Service Profile**Metric Supported:**

Metric Key	Description
Association State	Association State of Service profile
vNIC Error Counter Rx-Error-Delta (packets/sec)	Delta of Error Packets received per second
vNIC Error Counter Tx-Error-Delta (packets/sec)	Delta of Error Packets transmitted per second
vNIC Error Counter Rx-Error-Total (packets)	Total Error Packets Received
vNIC Error Counter Tx-Error-Total (packets)	Total Error Packets transmitted
vNIC Rx Counter Rx-Delta (Bps)	Delta of Bytes received per second
vNIC Rx Counter Rx-Delta (packets/sec)	Delta of Packets received per second
vNIC Rx Counter Rx-Total (bytes)	Total Bytes received

Metric Key	Description
vNIC Rx Counter Rx-Total (packets)	Total Packets received
vNIC Tx Counter Tx-Delta (Bps)	Delta of Bytes transmitted per second
vNIC Tx Counter Tx-Total (Bps)	Total Bytes transmitted per second
vNIC Tx Counter Tx-Total (packets/sec)	Total Error Packets transmitted per second
vNIC Tx Counter Tx-Delta (packets/sec)	Delta of Packets transmitted per second
vHBA Error Counter Rx-Error-Delta (packets/Sec)	Delta of Error Packets received per second
vHBA Error Counter Tx-Error-Delta (packets/Sec)	Delta of Error Packets transmitted per second
vHBA Error Counter Rx-Error-Total (packets)	Total Error Packets Received
vHBA Error Counter Tx-Error-Total (packets)	Total Error Packets transmitted
vHBA Rx Counter Rx-Delta (Bps)	Delta of Bytes received per second
vHBA Rx Counter Rx-Delta (packets/sec)	Delta of Packets received per second
vHBA Rx Counter Rx-Total (bytes)	Total Bytes received
vHBA Rx Counter Rx-Total (packets)	Total Packets received
vHBA Tx Counter Tx-Delta (Bps)	Delta of Bytes transmitted per second
vHBA Tx Counter Tx-Delta (packets/sec)	Delta of Packets transmitted per second
vHBA Tx Counter Tx-Total (bytes)	Total Bytes transmitted
vHBA Tx Counter Tx-Total (packets)	Total Packets transmitted
iSCSI vNIC Error Counters Rx-Error-Delta (packets/Sec)	Delta of Error Packets received per second
iSCSI vNIC Error Counters Tx-Error-Delta (packets/Sec)	Delta of Error Packets transmitted per second
iSCSI vNIC Error Counters Rx-Error-Total (packets)	Total Error Packets Received
iSCSI vNIC Error Counters Tx-Error-Total (packets)	Total Error Packets transmitted
iSCSI vNIC Rx Counters Rx-Delta (Bps)	Delta of Bytes received per second
iSCSI vNIC Rx Counters Rx-Delta (packets/sec)	Delta of Packets received per second
iSCSI vNIC Rx Counters Rx-Total (bytes)	Total Bytes received
iSCSI vNIC Rx Counters Rx-Total (packets)	Total Packets received

Metric Key	Description
iSCSI vNIC Tx Counters Tx-Delta (Bps)	Delta of Bytes transmitted per second
iSCSI vNIC Tx Counters Tx-Delta (packets/sec)	Delta of Packets transmitted per second
iSCSI vNIC Tx Counters Tx-Total (bytes)	Total Bytes transmitted
iSCSI vNIC Tx Counters Tx-Total (packets)	Total Packets transmitted

ResourceKind Name: UCS IO Module

Metric Supported:

Metric-Key	Description
Operational State	Operational state of the IO Module
Backplane Port Error Counter Align-Delta(packets/sec)	Align Delta of Error Packets transmitted per second
Backplane Port Error Counter Deferred-Tx-Delta(packets/sec)	Deferred Tx Delta of Error Packets transmitted per second
Backplane Port Error Counter FCS-Delta(packets/sec)	FCS Delta of Error Packets transmitted per second
Backplane Port Error Counter Int-Mac-Rx-Delta(packets/sec)	Int Mac Rx Delta of Error Packets received per second
Backplane Port Error Counter Int-Mac-Tx-Delta(packets/sec)	Int Mac Tx Delta of Error Packets transmitted per second
Backplane Port Error Counter Out Discard-Delta(packets/sec)	Out Discard Delta of Error Packets transmitted per second
Backplane Port Error Counter Rx Error-Delta(packets/sec)	Delta of Error Packets received per second
Backplane Port Error Counter Rx Error-Total(packets)	Total Error Packets received
Backplane Port Error Counter Tx Error-Delta(packets/sec)	Delta of Error Packets transmitted per second
Backplane Port Error Counter Tx Error-Total(packets)	Total Error Packets transmitted
Backplane Port Error Counter Under-Sized-Delta(packets/sec)	Under Sized Delta of Error Packets transmitted per second
Backplane Port Rx Counter Rx-Delta (Bps)	Delta of Bytes received per second

Metric-Key	Description
Backplane Port Rx Counter Rx-Delta (packets/sec)	Delta of Packets received per second
Backplane Port Rx Counter Rx-Total (bytes)	Total Bytes received
Backplane Port Rx Counter Rx-Total (packets)	Total Packets received
Backplane Port Tx Counter Tx-Delta (Bps)	Delta of Bytes transmitted per second
Backplane Port Tx Counter Tx-Delta (packets/sec)	Delta of Packets transmitted per second
Backplane Port Tx Counter Tx-Total (bytes)	Total Bytes transmitted
Backplane Port Tx Counter Tx-Total (packets)	Total Packets transmitted

Properties Supported:

Property	Description
Serial	Serial of the UCS IOM
Model	Model of the IOM
Firmware Version	Firmware Version of the IOM

ResourceKind Name: UCS Fabric Extender**Metric Supported:**

Metric-Key	Description
Operational State	Operational State of Fabric Extender
PSU Current (Amps)	Output Current in amps
PSU Power (Watts)	Output Power in watts
PSU Voltage (Volts)	Output Voltage in volts
Fan Speed (RPM)	Output Fan speed in RPM

Properties Supported:

Property	Description
Serial	Serial of the UCS Fabric Extender
Model	Model of the UCS Fabric Extender

Property	Description
Firmware Version	Firmware Version of the UCS Fabric Extender
PSU Serial	Serial of the PSU
PSU Model	Model of the PSU
PSU Firmware Version	Firmware Version of the PSU
Fan Serial	Serial of the fan
Fan Model	Model of the fan

ResourceKind Name: UCS FI Server Port , UCS FI Uplink Port , UCS FI FcoE Storage Port, UCS FI FcoE Uplink Port and UCS FI Appliance Port

Metric Supported:

Metric-Key	Description
Operational State	Operational State of FI Ports
Error Counter Align-Delta (packets/sec)	Align Delta of Error Packets transmitted per second
Error Counter Deferred-Tx-Delta (packets/sec)	Deferred Tx Delta of Error Packets transmitted per second
Error Counter FCS-Delta (packets/sec)	FCS Delta of Error Packets transmitted per second
Error Counter Int-Mac-Rx-Delta (packets/sec)	Int Mac Rx Delta of Error Packets received per second
Error Counter Int-Mac-Tx-Delta (packets/sec)	Int Mac Tx Delta of Error Packets transmitted per second
Error Counter Out Discard-Delta (packets/sec)	Out Discard Delta of Error Packets transmitted per second
Error Counter Rx Error-Delta (packets/sec)	Delta of Error Packets received per second
Error Counter Rx Error-Total (packets)	Total Error Packets received
Error Counter Tx Error-Delta (packets/sec)	Delta of Error Packets transmitted per second
Error Counter Tx Error-Total (packets)	Total Error packets transmitted
Error Counter Under-Sized-Delta (packets/sec)	Under Sized Delta of Error Packets transmitted per second
Rx Counter Rx-Delta (Bps)	Delta of Bytes received per second
Rx Counter Rx-Delta (packets/sec)	Delta of Packets received per second

Metric-Key	Description
Rx Counter Rx-Total (bytes)	Total Bytes received
Rx Counter Rx-Total (packets)	Total Packets received
Rx Counter Rx-Utilization (%)	Inbound Traffic Bandwidth Utilization
Tx Counter Tx-Delta (Bps)	Delta of Bytes transmitted per second
Tx Counter Tx-Delta (packets/sec)	Delta of Packets transmitted per second
Tx Counter Tx-Total (bytes)	Total Bytes transmitted
Tx Counter Tx-Total (packets)	Total Packets transmitted
Tx Counter Tx-Utilization (%)	Outbound Traffic Bandwidth Utilization

Property Supported:

Property	Description
Operational Speed (bps)	Operating Speed of the port

ResourceKind Name: UCS FI FCoE Port Channel**Metric Supported:**

Metric-Key	Description
Operational State	Operational State of FI FCoE Port Channel
Error Counter Rx Error-Delta (packets/sec)	Delta of Error Packets received per second
Error Counter Rx Error-Total (packets)	Total Error Packets received
Error Counter Tx Error-Delta (packets/sec)	Delta of Error Packets transmitted per second
Error Counter Tx Error-Total (packets)	Total Error Packets transmitted
Rx Counter Rx-Delta (Bps)	Delta of Bytes received per second
Rx Counter Rx-Delta (packets/sec)	Delta of Packets received per second
Rx Counter Rx-Total (bytes)	Total Bytes received
Rx Counter Rx-Total (packets)	Total Packets received
Tx Counter Tx-Delta (Bps)	Delta of Bytes transmitted per second
Tx Counter Tx-Delta (packets/sec)	Delta of Packets transmitted per second
Tx Counter Tx-Total (bytes)	Total Bytes transmitted

Metric-Key	Description
Tx Counter Tx-Total (packets)	Total Packets transmitted

ResourceKind Name: UCS FI FC Port Channel

Metric Supported:

Metric-Key	Description
Operational State	Operational State of FI FC Port Channel
Error Counter Rx Error-Delta (packets/sec)	Delta of Error Packets received per second
Error Counter Rx Error-Total (packets)	Total Error Packets received
Error Counter Tx Error-Delta (packets/sec)	Delta of Error Packets transmitted per second
Error Counter Tx Error-Total (packets)	Total Error packets transmitted
Rx Counter Rx-Delta (Bps)	Delta of Bytes received per second
Rx Counter Rx-Delta (packets/sec)	Delta of Packets received per second
Rx Counter Rx-Total (bytes)	Total Bytes received
Rx Counter Rx-Total (packets)	Total Packets received
Rx Counter Rx-Utilization (%)	Inbound Traffic Bandwidth Utilization
Tx Counter Tx-Delta (Bps)	Delta of Bytes transmitted per second
Tx Counter Tx-Delta (packets/sec)	Delta of Packets transmitted per second
Tx Counter Tx-Total (bytes)	Total Bytes transmitted
Tx Counter Tx-Total (packets)	Total Packets transmitted
Tx Counter Tx-Utilization (%)	Outbound Traffic Bandwidth Utilization

Property Supported:

Property	Description
Operational Speed (bps)	Operating Speed of the UCS FI FC Port Channel

ResourceKind Name: UCS FI Eth Port Channel

Metric Supported:

Metric-Key	Description
Operational State	Operational State of FI Eth Port Channel

Metric-Key	Description
Error Counter Align-Delta (packets/sec)	Align Delta of Error Packets transmitted per second
Error Counter Deferred-Tx-Delta (packets/sec)	Deferred Tx Delta of Error Packets transmitted per second
Error Counter FCS-Delta (packets/sec)	FCS Delta of Error Packets transmitted per second
Error Counter Int-Mac-Rx-Delta (packets/sec)	Int Mac Rx Delta of Error Packets received per second
Error Counter Int-Mac-Tx-Delta (packets/sec)	Int Mac Tx Delta of Error Packets transmitted per second
Error Counter Out Discard-Delta (packets/sec)	Out Discard Delta of Error Packets transmitted per second
Error Counter Rx Error-Delta (packets/sec)	Delta of Error Packets received per second
Error Counter Rx Error-Total (packets)	Total Error Packets received
Error Counter Tx Error-Delta (packets/sec)	Delta of Error Packets transmitted per second
Error Counter Tx Error-Total (packets)	Total Error packets transmitted
Error Counter Under-Sized-Delta (packets/sec)	Under Sized Delta of Error Packets transmitted per second
Rx Counter Rx-Delta (Bps)	Delta of Bytes received per second
Rx Counter Rx-Delta (packets/sec)	Delta of Packets received per second
Rx Counter Rx-Total (bytes)	Total Bytes received
Rx Counter Rx-Total (packets)	Total Packets received
Rx Counter Rx-Utilization (%)	Inbound Traffic Bandwidth Utilization
Tx Counter Tx-Delta (Bps)	Delta of Bytes transmitted per second
Tx Counter Tx-Delta (packets/sec)	Delta of Packets transmitted per second
Tx Counter Tx-Total (bytes)	Total Bytes transmitted
Tx Counter Tx-Total (packets)	Total Packets transmitted
Tx Counter Tx-Utilization (%)	Outbound Traffic Bandwidth Utilization

Property Supported:

Property	Description
Operational Speed (bps)	Operating Speed of the UCS FI Eth Port Channel

ResourceKind Name: UCS FI FC Port

Metric Supported:

Metric-Key	Description
Operational State	Operational State of FI FC Port
Error Counter Rx-Error-Delta (packets/Sec)	Delta of Error Packets received per second
Error Counter Tx-Error-Delta (packets/Sec)	Delta of Error Packets transmitted per second
Error Counter Rx-Error-Total (packets)	Total Error Packets Received
Error Counter Tx-Error-Total (packets)	Total Error Packets transmitted
Rx Counter Rx-Delta (Bps)	Delta of Bytes received per second
Rx Counter Rx-Delta (packets/sec)	Delta of Packets received per second
Rx Counter Rx-Total (bytes)	Total Bytes received
Rx Counter Rx-Total (packets)	Total Packets received
Rx Counter Rx-Utilization (%)	Inbound Traffic Bandwidth Utilization
Tx Counter Tx-Delta (Bps)	Delta of Bytes transmitted per second
Tx Counter Tx-Delta (packets/sec)	Delta of Packets transmitted per second
Tx Counter Tx-Total (bytes)	Total Bytes transmitted
Tx Counter Tx-Total (packets)	Total Packets transmitted
Tx Counter Tx-Utilization (%)	Outbound Traffic Bandwidth Utilization

Property Supported:

Property	Description
Operational Speed (bps)	Operating Speed of the UCS FI FC port

ResourceKind Name: UCS FI IO Module

Metric Supported:

Metric-Key	Description
Operational State	Operational state of the UCS FI IO Module
Backplane Port Error Counter Align-Delta(packets/sec)	Align Delta of Error Packets transmitted per second
Backplane Port Error Counter Deferred-Tx-Delta(packets/sec)	Deferred Tx Delta of Error Packets transmitted per second

Metric-Key	Description
Backplane Port Error Counter FCS-Delta (packets/sec)	FCS Delta of Error Packets transmitted per second
Backplane Port Error Counter Int-Mac-Rx-Delta(packets/sec)	Int Mac Rx Delta of Error Packets received per second
Backplane Port Error Counter Int-Mac-Tx-Delta(packets/sec)	Int Mac Tx Delta of Error Packets transmitted per second
Backplane Port Error Counter Out Discard-Delta(packets/sec)	Out Discard Delta of Error Packets transmitted per second
Backplane Port Error Counter Rx Error-Delta(packets/sec)	Delta of Error Packets transmitted per second
Backplane Port Error Counter Rx Error-Total(packets)	Total Error Packets received
Backplane Port Error Counter Tx Error-Delta(packets/sec)	Delta of Error Packets transmitted per second
Backplane Port Error Counter Tx Error-Total(packets)	Total Error packets transmitted
Backplane Port Error Counter Under-Sized-Delta(packets/sec)	Under Sized Delta of Error Packets transmitted per second
Backplane Port Rx Counters Rx-Delta (Bps)	Delta of Bytes received per second
Backplane Port Rx Counters Rx-Delta (packets/sec)	Delta of Packets received per second
Backplane Port Rx Counters Rx-Total (bytes)	Total Bytes received
Backplane Port Rx Counters Rx-Total (packets)	Total Packets received
Backplane Port Tx Counters Tx-Delta (Bps)	Delta of Bytes transmitted per second
Backplane Port Tx Counters Tx-Delta (packets/sec)	Delta of Packets transmitted per second
Backplane Port Tx Counters Tx-Total (bytes)	Total Bytes transmitted
Backplane Port Tx Counters Tx-Total (packets)	Total Packets transmitted

Property Supported:

Property	Description
Serial	Serial of the UCS FI IO Module
Model	Model of the FI IO Module
Firmware Version	Firmware version of the FI IO Module

ResourceKind Name: UCS System IO Controller

Metric Supported:

Metric-Key	Description
Operational State	Operational State of the UCS SIOC
Temperature Cmc Temperature (Celsius)	Cmc temperature in celsius
Temperature Front Temperature (Celsius)	Front temperature in celsius
Temperature Mid Temperature (Celsius)	Mid temperature in celsius
Temperature Rear Temperature (Celsius)	Rear temperature in celsius
Temperature Vic Temperature (Celsius)	Vic temperature in celsius
Shared Adapter Operational State	Operational State of the Shared Adapter
Shared Adapter Fabric Port NI Error Counters Too Short (errors)	Too Short errors in the fabric port
Shared Adapter Fabric Port NI Error Counters Too Long (errors)	Too Long errors in the fabric port
Shared Adapter Fabric Port NI Error Counters In Range (errors)	In Range errors in the fabric port
Shared Adapter Fabric Port NI Error Counters Frame Tx (errors)	Fame Tx errors in the fabric port
Shared Adapter Fabric Port NI Error Counters Crc (errors)	Crc errors in the fabric port

Property Supported:

Property	Description
Serial	Serial of the UCS SIOC
Model	Model of the UCS SIOC
Firmware Version	Firmware version of the UCS SIOC
Shared Adapter Serial	Serial of the Shared Adapter
Shared Adapter Model	Model of the Shared Adapter
Shared Adapter Firmware Version	Firmware version of the Shared Adapter



Note Port delta metrics are calculated based on **Statistics Collection Interval** specified in the **Collection Policies**.

UCS Manager Alerts in Operations Manager

The Operations Manager generates events based on the type of fault generated by the Cisco UCS Manager. The adapter generates system degradation events for each fault in Cisco UCS Manager. These events are used as symptoms to generate alerts in Operations Manager which can be viewed on the alerts widget on the **UCSM Overview** dashboard. The adapter supports all UCS Manager faults except the threshold faults, faults with info severity, FSM, or configuration type.

To view the details of an alert, double click an alert from the alerts list on the **UCSM Overview** dashboard. The alerts can also be viewed from the **Alerts** tab. You can view the details, such as the reason to generate alert, its impact on the UCS objects, and recommended actions to handle the alert.



Note Although the faults cleared from the UCS Manager move to the inactive state, but they are stored and displayed in the vRealize alert widget. However, you can customize the view to exclude inactive faults from the display.

With the alerts generated for UCS Manager faults, the following alert is also generated:

- Server Power State Change alerts

Server Power State Change Alerts

A server power state change alert is generated when the power state of the UCS server changes from healthy to unhealthy state. For example, when the power state is changed from On to Off state, then an alert is generated. The UCS server is considered as healthy when the power state of the server is either On, Off, or OK. Any other power state is considered as unhealthy state.

Displaying Relationship Between Physical and Virtual Infrastructure

Operations Manager displays the relationship between the UCS server and the ESXi hosts managed by the vCenter.

If you create an adapter instance for the UCS domain containing the blade or rack servers running the ESXi hosts, it automatically correlates the service profiles associated with the blades to the ESXi hosts. Also, it establishes a parent-child relationship between the service profile and the ESXi hosts.

This provides a view of the complete virtual and physical infrastructure in the relationship widget. Also, enables you to analyze the impact of the UCS component health on the virtual infrastructure running on it.

Using the Cisco UCS Manager Adapter

Cisco UCS Management Pack Dashboards

Once you deploy the Cisco UCS Management Pack adapter, the following dashboards are displayed in the vRealize Operations Manager. From these dashboards, you can monitor all the resources discovered by the adapter.

- UCSM Overview

- UCS Health Tree
- UCS Fabric Interconnect Traffic Statistics
- UCS Power and Temperature Summary
- UCS Server Motherboard Statistics



Note For the release version vROps 8.6 and later, to view the dashboards, navigate to **Visualize > Dashboards**.

UCSM Overview

The **UCSM Overview** dashboard comprises the following widgets:

- Registered UCS domain—Displays the list of UCS domains which are configured for monitoring
- UCS Domain Relationship—Displays the resources which are monitored, parent-child relationship, and faults associated with the selected resource
- UCS Alert—Displays the alerts related to all resources or each resource when selected
- Top 10 Blades by Consumed Power (W)—Displays the list of top ten blades depending on its power consumption
- Top 10 Chassis by Consumed Power (W)—Displays the list of top ten chassis depending on its power consumption
- Heatmap—Displays all the UCS objects, colored by health and sized by risk
- Environment Status—Displays collective state of the UCS object

UCS Health Tree

The **UCS Health Tree** dashboard comprises the following widgets:

- Environment Overview—Displays the parent-child view of the selected resource
- Object Relationship—Displays the hierarchical view of the selected resource

UCS Fabric Interconnect Traffic Statistics

The **UCS Fabric Interconnect Traffic Statistics** dashboard comprises the following widgets:

- FI Port Relationship—Displays all FI ports and port channels in a hierarchical view
- Metric Picker—Displays supported metrics for the selected FI port or port channel
- Metric Graph—Displays information related to the selected metric in a graphical view

UCS Power and Temperature Summary

The **UCS Power and Temperature Summary** dashboard comprises the following widgets:

- Health Chart—Displays information related to the UCS server, chassis, fabric extender, and fabric interconnect
- Metric Picker—Displays supported metrics for the selected resource
- Metric Graph—Displays information related to the selected metric in a graphical view
- UCS Alerts—Displays the faults related to all resources or each resource when selected
- Metric Sparklines—Displays the metric key data in sparkline view

UCS Server Motherboard Statistics

The **UCS Server Motherboard Statistics** dashboard comprises the following widgets:

- Health Chart—Displays information related to the UCS server
- Metric Picker—Displays supported metrics for the selected resource
- Metric Graph—Displays information related to selected metric in a graphical view
- UCS Alerts—Displays the faults related to all resources or each resource when selected
- Metric Sparklines—Displays the metric key data in sparkline view



CHAPTER 5

Troubleshooting

This chapter includes the following sections:

- [Enabling the Debug Log Level, on page 31](#)
- [Creating a Support Bundle, on page 31](#)

Enabling the Debug Log Level

- Step 1** Log in to the vRealize Operations Manager web page using https://<vROps_IP>/.
- Step 2** For the release version vROps 8.6 and later, navigate to **Administration > Support Logs**.
- Note** For the release version vROps 8.5 and earlier, navigate to **Administration > Support**.
- Step 3** Click the **Logs** tab, and select **Group by as Log Type**.
- Step 4** Expand **COLLECTOR** and select the node.
- Step 5** Click the **Edit Properties** icon.
- You can change the root logger level from the new window.
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Creating a Support Bundle

- Step 1** Log in to the vRealize Operations Manager web page using https://<vROps_IP>/.
- Step 2** For the release version vROps 8.6 and later, navigate to **Administration > Support Bundles**.
- Note** For the release version vROps 8.5 and earlier, navigate to **Administration > Support**.
- Step 3** Click the **Support Bundles** tab.
- Step 4** For the release version vROps 8.6 and later, click on **ADD** button.
- Note** For the release version vROps 8.5 and earlier, click the **Create Support Bundle** icon.

Step 5 Select the option for the **Full support bundle**, and all the nodes from which data is collected for UCS Manager adapter instances.
