



Cisco UCS Manager System Monitoring Guide Using the CLI, Release 4.1

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Preface

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- [Conventions, on page xi](#)
- [Related Cisco UCS Documentation, on page xiii](#)
- [Documentation Feedback, on page xiii](#)

Audience

This guide is intended primarily for data center administrators with responsibilities and expertise in one or more of the following:

- Server administration
- Storage administration
- Network administration
- Network security

Conventions

Text Type	Indication
GUI elements	GUI elements such as tab titles, area names, and field labels appear in this font . Main titles such as window, dialog box, and wizard titles appear in this font .
Document titles	Document titles appear in <i>this font</i> .
TUI elements	In a Text-based User Interface, text the system displays appears in <i>this font</i> .
System output	Terminal sessions and information that the system displays appear in <i>this font</i> .
CLI commands	CLI command keywords appear in this font . Variables in a CLI command appear in <i>this font</i> .
[]	Elements in square brackets are optional.

Text Type	Indication
{x y z}	Required alternative keywords are grouped in braces and separated by vertical bars.
[x y z]	Optional alternative keywords are grouped in brackets and separated by vertical bars.
string	A nonquoted set of characters. Do not use quotation marks around the string or the string will include the quotation marks.
< >	Nonprinting characters such as passwords are in angle brackets.
[]	Default responses to system prompts are in square brackets.
!, #	An exclamation point (!) or a pound sign (#) at the beginning of a line of code indicates a comment line.



Note Means *reader take note*. Notes contain helpful suggestions or references to material not covered in the document.



Tip Means *the following information will help you solve a problem*. The tips information might not be troubleshooting or even an action, but could be useful information, similar to a Timesaver.



Timesaver Means *the described action saves time*. You can save time by performing the action described in the paragraph.



Caution Means *reader be careful*. In this situation, you might perform an action that could result in equipment damage or loss of data.



Warning IMPORTANT SAFETY INSTRUCTIONS

This warning symbol means danger. You are in a situation that could cause bodily injury. Before you work on any equipment, be aware of the hazards involved with electrical circuitry and be familiar with standard practices for preventing accidents. Use the statement number provided at the end of each warning to locate its translation in the translated safety warnings that accompanied this device.

SAVE THESE INSTRUCTIONS

Related Cisco UCS Documentation

Documentation Roadmaps

For a complete list of all B-Series documentation, see the *Cisco UCS B-Series Servers Documentation Roadmap* available at the following URL: https://www.cisco.com/c/en/us/td/docs/unified_computing/ucs/overview/guide/UCS_roadmap.html

For a complete list of all C-Series documentation, see the *Cisco UCS C-Series Servers Documentation Roadmap* available at the following URL: https://www.cisco.com/c/en/us/td/docs/unified_computing/ucs/overview/guide/ucs_rack_roadmap.html.

For information on supported firmware versions and supported UCS Manager versions for the rack servers that are integrated with the UCS Manager for management, refer to [Release Bundle Contents for Cisco UCS Software](#).

Documentation Feedback

To provide technical feedback on this document, or to report an error or omission, please send your comments to ucs-docfeedback@external.cisco.com. We appreciate your feedback.



CHAPTER 1

New and Changed Information for This Release

- [New and Changed Information for This Release, on page 1](#)

New and Changed Information for This Release

The following table provides an overview of the significant changes to this guide for this current release. The table does not provide an exhaustive list of all changes made to this guide or of all new features in this release.

Table 1: New Features and Changed Behavior in Cisco UCS Manager, Release 4.1(1)

Feature	Description	Where Documented
NetFlow	Cisco UCS Manager support for NetFlow on Cisco 64108 Fabric Interconnects	NetFlow Monitoring, on page 133
Traffic Monitoring	Cisco UCS Manager guidelines for Traffic Monitoring on Cisco 64108 Fabric Interconnects	Traffic Monitoring, on page 143



CHAPTER 2

System Monitoring Overview

- [System Monitoring Overview, on page 3](#)
- [The Cisco UCS Manager Core and Fault Generation, on page 4](#)
- [Cisco UCS Manager User CLI Documentation, on page 6](#)

System Monitoring Overview

This guide describes how to configure and use system monitoring to manage a Cisco UCS Manager environment.

Cisco UCS Manager can detect system faults: critical, major, minor, and warnings. We recommend that:

- You monitor all faults of either critical or major severity status, as immediate action is not required for minor faults and warnings.
- You monitor faults that are not of type Finite State Machine (FSM), as FSM faults will transition over time and resolve.

This guide covers the following information:

- System Log
 - System logs including faults, failures, and alarm thresholds (Syslog)
 - The three types of Syslogs: Fault, Event, and Audit logs
 - The Global Fault Policy and settings that control Syslogs
- System Event Log
 - System hardware events for servers and chassis components and their internal components (System Event Log [SEL] logs)
 - The SEL policy that controls SEL logs
- Simple Network Management Protocol
 - SNMP for monitoring devices from a central network management station and the host and user settings
 - Fault suppression policies for SNMP traps, Call Home notifications, and specific devices

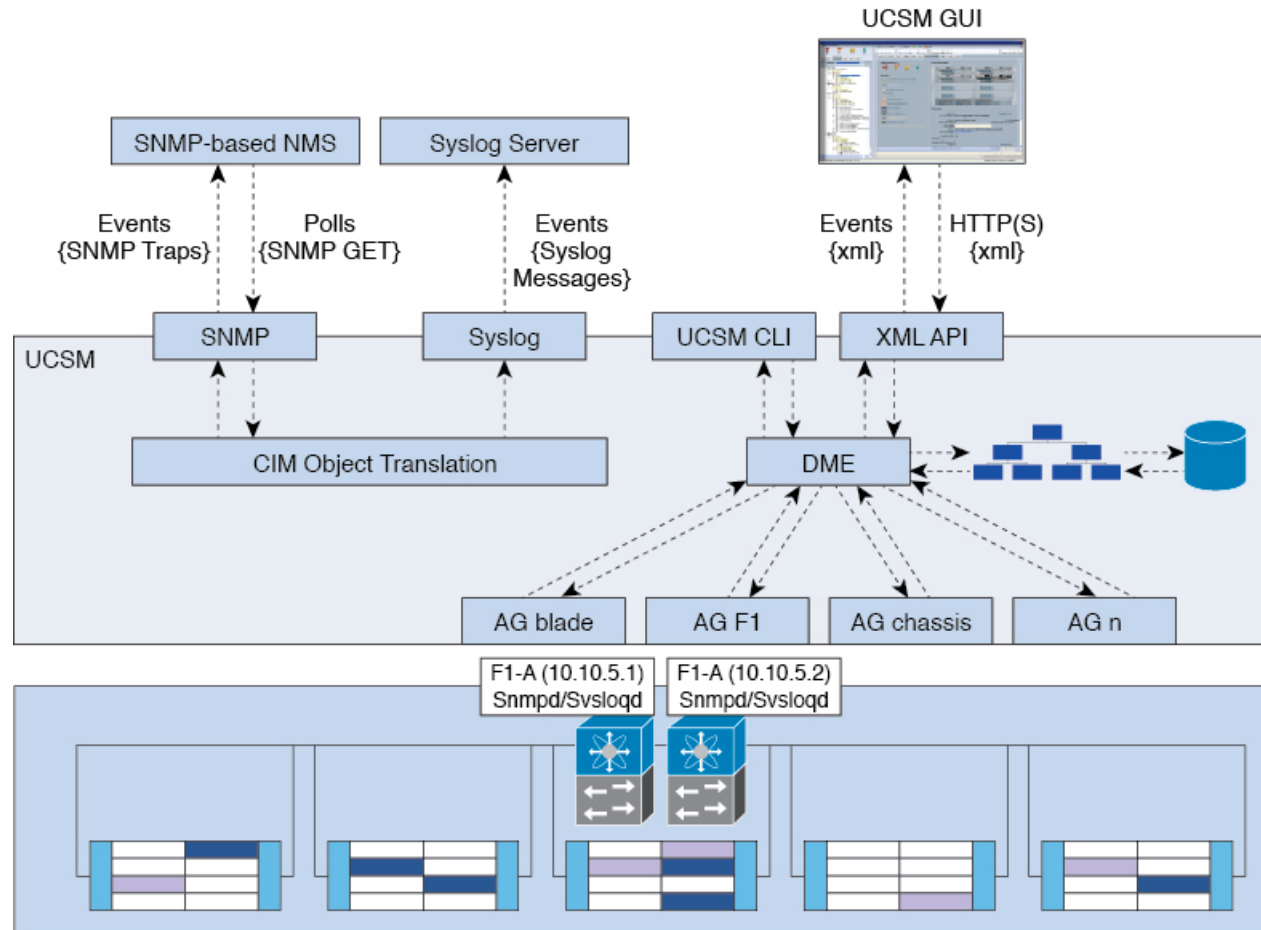
- Core File Exporter and logs, such as Syslog, Audit Log, and the System Event Log
- Statistics Collection and Threshold Policies for adapters, chassis, host, ports, and servers
- Call Home and Smart Call Home Cisco embedded device support
- Hardware monitoring using the Cisco UCS Manager user interface
- Traffic Monitoring sessions for analysis by a network analyzer
- Cisco Netflow Monitor for IP network traffic accounting, usage-based network billing, network planning, security, Denial of Service monitoring capabilities, and network monitoring

The Cisco UCS Manager Core and Fault Generation

The Cisco UCS Manager core is made up of three elements, which are the Data Management Engine, Application Gateway, and user accessible northbound interface. The northbound interface comprises of SNMP, Syslog, XML API, and UCSM CLI.

You can monitor the Cisco UCS Manager servers through XML API, SNMP, and Syslog. Both SNMP and Syslog are interfaces used only used for monitoring as they are read-only, so no configuration changes are allowed from these interfaces. Alternatively, the XML API is a monitoring interface that is read-write, which allows you to monitor Cisco UCS Manager, and change the configuration if needed.

Figure 1: Cisco UCS Manager Core and Monitoring Interfaces



Data Management Engine (DME)

The DME is the center of the Cisco UCS Manager system, which maintains:

- The Cisco UCS XML database which houses the inventory database of all physical elements (blade and rack mount servers, chassis, modules, and fabric interconnects).
- The logical configuration data for profiles, policies, pools, vNIC, and vHBA templates.
- The various networking-related configuration details like VLANs, VSANs, port channels, network uplinks, and server downlinks.

The DME monitors:

- The current health and state of all components of all physical and logical elements in a Cisco UCS domain.
- The transition information of all Finite State Machine (FSM) tasks occurring.

Only the current information of inventory, health, and configuration data of the managed endpoints are stored in the Cisco UCS XML database resulting in near real time. By default the DME does not store a historical log of faults that have occurred on a Cisco UCS domain. As fault conditions are raised on the endpoints, the

DME creates faults in the Cisco UCS XML database. As those faults are mitigated, the DME clears and removes the faults from the Cisco UCS XML database.

Application Gateway (AG)

Application Gateways are software agents that communicate directly with the endpoints to relay the health and state of the endpoints to the DME. AG-managed endpoints include servers, chassis, modules, fabric extenders, fabric interconnects, and NX-OS. The AGs actively monitor the server through the IPMI and SEL logs using the Cisco Integrated Management Controller (CIMC). They provide the DME with the health, state, configuration, and potential fault conditions of a device. The AGs manage configuration changes from the current state to the desired state during FSM transitions when changes are made to the Cisco UCS XML database.

The module AG and chassis AG communicate with the Chassis Management Controller (CMC) to get information about the health, state, configuration, and fault conditions observed by the CMC. The fabric interconnect NX-OS AG communicates directly with NX-OS to get information about the health, state, configuration, statistics, and fault conditions observed by NX-OS on the fabric interconnects. All AGs provide the inventory details to the DME about the endpoints during the various discovery processes. The AGs perform the state changes necessary to configure an endpoint during FSM-triggered transitions, monitor the health and state of the endpoints, and notify the DME of any faults.

Northbound Interfaces

The northbound interfaces include SNMP, Syslog, CLI, and XML API. The XML API present in the Apache webserver layer sends login, logout, query, and configuration requests using HTTP or HTTPS. SNMP and Syslog are both consumers of data from the DME.

SNMP informs and traps are translated directly from the fault information stored in the Cisco UCS XML database. SNMP GET requests are sent through the same object translation engine in reverse, where the DME receives a request from the object translation engine. The data is translated from the XML database to an SNMP response.

Syslog messages use the same object translation engine as SNMP, where the source of the data (faults, events, audit logs) is translated from XML into a Cisco UCS Manager-formatted Syslog message.

Cisco UCS Manager User CLI Documentation

Cisco UCS Manager offers you a set of smaller, use-case based documentation described in the following table:

Guide	Description
Cisco UCS Manager Getting Started Guide	Discusses Cisco UCS architecture and Day 0 operations, including Cisco UCS Manager initial configuration, and configuration best practices.
Cisco UCS Manager Administration Guide	Discusses password management, role-based access configuration, remote authentication, communication services, CIMC session management, organizations, backup and restore, scheduling options, BIOS tokens and deferred deployments.

Guide	Description
Cisco UCS Manager Infrastructure Management Guide	Discusses physical and virtual infrastructure components used and managed by Cisco UCS Manager.
Cisco UCS Manager Firmware Management Guide	Discusses downloading and managing firmware, upgrading through Auto Install, upgrading through service profiles, directly upgrading at endpoints using firmware auto sync, managing the capability catalog, deployment scenarios, and troubleshooting.
Cisco UCS Manager Server Management Guide	Discusses the new licenses, registering Cisco UCS domains with Cisco UCS Central, power capping, server boot, server profiles and server-related policies.
Cisco UCS Manager Storage Management Guide	Discusses all aspects of storage management such as SAN and VSAN in Cisco UCS Manager.
Cisco UCS Manager Network Management Guide	Discusses all aspects of network management such as LAN and VLAN connectivity in Cisco UCS Manager.
Cisco UCS Manager System Monitoring Guide	Discusses all aspects of system and health monitoring including system statistics in Cisco UCS Manager.
Cisco UCS S3260 Server Integration with Cisco UCS Manager	Discusses all aspects of management of UCS S-Series servers that are managed through Cisco UCS Manager.



CHAPTER 3

Syslog

- [Syslog, on page 9](#)
- [Enabling Syslog Messages to Store In a Local File, on page 10](#)

Syslog

Cisco UCS Manager generates system log, or syslog messages to record the following incidents that take place in the Cisco UCS Manager system:

- Routine system operations
- Failures and errors
- Critical and emergency conditions

There are three kinds of syslog entries: Fault, Event, and Audit.

Each syslog message identifies the Cisco UCS Manager process that generated the message and provides a brief description of the operation or error that occurred. The syslog is useful both in routine troubleshooting, incident handling, and management.

Cisco UCS Manager collects and logs syslog messages internally. You can send them to external syslog servers running a syslog daemon. Logging to a central syslog server helps in aggregation of logs and alerts. Some syslog messages to monitor include, DIMM problems, equipment failures, thermal problems, voltage problems, power problems, high availability (HA) cluster problems, and link failures.



Note The FSM faults, threshold faults, and unresolved policy events are not sent to syslog server. However, SNMP traps are generated for the threshold fault events.

Syslog messages contain an event code and fault code. To monitor syslog messages, you can define syslog message filters. These filters can parse the syslog messages based on the criteria you choose. You can use the following criteria to define a filter:

- By event or fault codes: Define a filter with a parsing rule to include only the specific codes that you intend to monitor. Messages that do not match these criteria are discarded.

- By severity level: Define a filter with a parsing rule to monitor syslog messages with specific severity levels. You can set syslog severity levels individually for OS functions, to facilitate logging and display of messages ranging from brief summaries to detailed information for debugging.

Cisco devices can send their log messages to a Unix-style syslog service. A syslog service simply accepts messages, then stores them in files or prints them according to a simple configuration file. This form of logging is the best available for Cisco devices because it can provide protected long-term storage of logs.

Enabling Syslog Messages to Store In a Local File

Procedure

	Command or Action	Purpose
Step 1	UCS-A# scope monitoring	Enters monitoring mode.
Step 2	UCS-A /monitoring # { enable disable } syslog console	Enables or disables the sending of syslogs to the console.
Step 3	(Optional) UCS-A /monitoring # set syslog console level { emergencies alerts critical }	Select the lowest message level that you want displayed. If syslogs are enabled, the system displays that level and above on the console. The level options are listed in order of decreasing urgency. The default level is Critical.
Step 4	UCS-A /monitoring # { enable disable } syslog monitor	Enables or disables the monitoring of syslog information by the operating system.
Step 5	(Optional) UCS-A /monitoring # set syslog monitor level { emergencies alerts critical errors warnings notifications information debugging }	Select the lowest message level that you want displayed. If the monitor state is enabled, the system displays that level and above. The level options are listed in order of decreasing urgency. The default level is Critical. Note Messages at levels below Critical are displayed on the terminal monitor only if you have entered the terminal monitor command.
Step 6	UCS-A /monitoring # { enable disable } syslog file	Enables or disables the writing of syslog information to a syslog file.
Step 7	UCS-A /monitoring # set syslog file name <i>filename</i>	The name of the file in which the messages are logged. Up to 16 characters are allowed in the file name.
Step 8	(Optional) UCS-A /monitoring # set syslog file level { emergencies alerts critical	Select the lowest message level that you want stored to a file. If the file state is enabled, the system stores that level and above in the syslog

	Command or Action	Purpose
	errors warnings notifications information debugging}	file. The level options are listed in order of decreasing urgency. The default level is Critical.
Step 9	(Optional) UCS-A /monitoring # set syslog file size <i>filesize</i>	The maximum file size, in bytes, before the system begins to write over the oldest messages with the newest ones. The range is 4096 to 4194304 bytes.
Step 10	UCS-A /monitoring # {enable disable} syslog remote-destination {server-1 server-2 server-3}	Enables or disables the sending of syslog messages to up to three external syslog servers.
Step 11	(Optional) UCS-A /monitoring # set syslog remote-destination {server-1 server-2 server-3} level {emergencies alerts critical errors warnings notifications information debugging}	Select the lowest message level that you want stored to the external log. If the remote-destination is enabled, the system sends that level and above to the external server. The level options are listed in order of decreasing urgency. The default level is Critical.
Step 12	UCS-A /monitoring # set syslog remote-destination {server-1 server-2 server-3} hostname <i>hostname</i>	The hostname or IP address of the specified remote syslog server. Up to 256 characters are allowed in the hostname.
Step 13	(Optional) UCS-A /monitoring # set syslog remote-destination {server-1 server-2 server-3} facility {local0 local1 local2 local3 local4 local5 local6 local7}	The facility level contained in the syslog messages sent to the specified remote syslog server.
Step 14	UCS-A /monitoring # {enable disable} syslog source {audits events faults}	This can be one of the following: <ul style="list-style-type: none"> • audits—Enables or disables the logging of all audit log events. • events—Enables or disables the logging of all system events. • faults—Enables or disables the logging of all system faults.
Step 15	UCS-A /monitoring # commit-buffer	Commits the transaction.

Example

This example shows how to enable the storage of syslog messages in a local file and commits the transaction:

```
UCS-A# scope monitoring
UCS-A /monitoring # disable syslog console
UCS-A /monitoring* # disable syslog monitor
UCS-A /monitoring* # enable syslog file
UCS-A /monitoring* # set syslog file name SysMsgsUCSA
UCS-A /monitoring* # set syslog file level notifications
```

```
UCS-A /monitoring* # set syslog file size 4194304
UCS-A /monitoring* # disable syslog remote-destination server-1
UCS-A /monitoring* # disable syslog remote-destination server-2
UCS-A /monitoring* # disable syslog remote-destination server-3
UCS-A /monitoring* # commit-buffer
UCS-A /monitoring #
```



CHAPTER 4

System Event Log

- [System Event Log, on page 13](#)
- [Viewing the System Event Log for a Server, on page 14](#)
- [Configuring the SEL Policy, on page 15](#)
- [Backing Up the System Event Log for a Server, on page 17](#)
- [Clearing the System Event Log for a Server, on page 18](#)

System Event Log

The System Event Log (SEL) resides on the CIMC in NVRAM. The SEL is used for troubleshooting system health. It records most server-related events, such as instances of over or under voltage, temperature events, fan events, and BIOS events. The types of events supported by SEL include BIOS events, memory unit events, processor events, and motherboard events.

The SEL logs are stored in the CIMC NVRAM, through a SEL log policy. It is best practice to periodically download and clear the SEL logs. The SEL file is approximately 40KB in size, and no further events can be recorded once it is full. It must be cleared before additional events can be recorded.

You can use the SEL policy to back up the SEL to a remote server, and optionally to clear the SEL after a backup operation occurs. Backup operations can be triggered based on specific actions, or they can be set to occur at regular intervals. You can also manually back up or clear the SEL.

The backup file is automatically generated. The filename format is *sel-SystemName-ChassisID-ServerID-ServerSerialNumber-Timestamp*.

For example, *sel-UCS-A-ch01-serv01-QCII12522939-20091121160736*.

Viewing the System Event Log for a Server

Viewing the System Event Log for an Individual Server

Procedure

	Command or Action	Purpose
Step 1	UCS-A# show sel <i>chassis-id / blade-id</i>	Displays the system event log for the specified server.

Example

The following example displays the system event log for blade 3 in chassis 1.

```
UCS-A# show sel 1/3
 1 | 01/01/1970 01:23:27 | System Event 0x83 | Timestamp clock synch | SEL timestamp
clock updated, event is f
irst of pair | Asserted
 2 | 01/01/1970 01:23:28 | Drive slot(Bay) SAS0_LINK_STATUS | Transition to Degraded |
Asserted
 3 | 01/01/1970 01:23:28 | Drive slot(Bay) SAS0_LINK_STATUS | Transition to On Line |
Deasserted
 4 | 01/01/1970 01:23:28 | Platform alert LED_SAS0_FAULT | LED is blinking fast |
Asserted
 5 | 01/01/1970 01:23:28 | Platform alert LED_SAS0_FAULT | LED is on | Deasserted
 6 | 01/01/1970 01:23:28 | Platform alert LED_FPID | LED is on | Asserted
 7 | 01/01/1970 01:23:28 | Platform alert LED_FPID | LED is off | Deasserted
 8 | 01/01/1970 01:23:29 | Entity presence MAIN_POWER | Device Absent | Asserted
 9 | 01/01/1970 01:23:29 | Entity presence MAIN_POWER | Device Present | Deasserted
 a | 01/01/1970 01:23:29 | Platform alert LED_SAS0_FAULT | LED is on | Asserted
 b | 01/01/1970 01:23:29 | Platform alert LED_SAS0_FAULT | LED color is green | Asserted

    c | 01/01/1970 01:23:29 | Platform alert LED_SAS0_FAULT | LED is blinking fast |
Deasserted
    d | 01/01/1970 01:23:29 | Platform alert LED_SAS0_FAULT | LED color is amber | Deasserted

    e | 01/01/1970 00:00:22 | Drive slot(Bay) SAS0_LINK_STATUS | Transition to Degraded |
Asserted
    f | 01/01/1970 00:00:22 | Entity presence MEZZ_PRS | Device Present | Asserted
 10 | 01/01/1970 00:00:22 | Entity presence HDD1_PRS | Device Absent | Asserted
```

Viewing the System Event Log for All of the Servers in a Chassis

Procedure

	Command or Action	Purpose
Step 1	UCS-A# scope server <i>chassis-id / blade-id</i>	Enters chassis server mode for the specified server.
Step 2	UCS-A /chassis/server # show sel	Displays the system event log.

Example

The following example displays the system event log from chassis server mode for blade 3 in chassis 1.

```
UCS-A# scope server 1/3
UCS-A /chassis/server # show sel
 1 | 01/01/1970 01:23:27 | System Event 0x83 | Timestamp clock synch | SEL timestamp
clock updated, event is f
first of pair | Asserted
 2 | 01/01/1970 01:23:28 | Drive slot(Bay) SAS0_LINK_STATUS | Transition to Degraded |
Asserted
 3 | 01/01/1970 01:23:28 | Drive slot(Bay) SAS0_LINK_STATUS | Transition to On Line |
Deasserted
 4 | 01/01/1970 01:23:28 | Platform alert LED_SAS0_FAULT | LED is blinking fast |
Asserted
 5 | 01/01/1970 01:23:28 | Platform alert LED_SAS0_FAULT | LED is on | Deasserted
 6 | 01/01/1970 01:23:28 | Platform alert LED_FPID | LED is on | Asserted
 7 | 01/01/1970 01:23:28 | Platform alert LED_FPID | LED is off | Deasserted
 8 | 01/01/1970 01:23:29 | Entity presence MAIN_POWER | Device Absent | Asserted
 9 | 01/01/1970 01:23:29 | Entity presence MAIN_POWER | Device Present | Deasserted
 a | 01/01/1970 01:23:29 | Platform alert LED_SAS0_FAULT | LED is on | Asserted
 b | 01/01/1970 01:23:29 | Platform alert LED_SAS0_FAULT | LED color is green | Asserted

 c | 01/01/1970 01:23:29 | Platform alert LED_SAS0_FAULT | LED is blinking fast |
Deasserted
 d | 01/01/1970 01:23:29 | Platform alert LED_SAS0_FAULT | LED color is amber | Deasserted

 e | 01/01/1970 00:00:22 | Drive slot(Bay) SAS0_LINK_STATUS | Transition to Degraded |
Asserted
 f | 01/01/1970 00:00:22 | Entity presence MEZZ_PRS | Device Present | Asserted
10 | 01/01/1970 00:00:22 | Entity presence HDD1_PRS | Device Absent | Asserted
```

Configuring the SEL Policy

Procedure

	Command or Action	Purpose
Step 1	UCS-A# scope org <i>org-name</i>	Enters organization mode for the specified organization. To enter the root organization mode, type / as the <i>org-name</i> .
Step 2	UCS-A /org # scope ep-log-policy sel	Enters organization endpoint log policy mode and scopes the SEL policy.
Step 3	(Optional) UCS-A /org/ep-log-policy # set description <i>description</i>	Provides a description for the policy. Note If your description includes spaces, special characters, or punctuation, begin and end your description with quotation marks. The quotation marks will not appear in the description field of any show command output.

	Command or Action	Purpose
Step 4	UCS-A /org/ep-log-policy # set backup action [log-full] [on-change-of-association] [on-clear] [timer] [none]	Specifies an action or actions that will trigger a backup operation.
Step 5	UCS-A /org/ep-log-policy # set backup clear-on-backup {no yes}	Specifies whether to clear the system event log after a backup operation occurs.
Step 6	UCS-A /org/ep-log-policy # set backup destination <i>URL</i>	<p>Specifies the protocol, user, password, remote hostname, and remote path for the backup operation. Depending on the protocol used, specify the URL using one of the following syntaxes:</p> <ul style="list-style-type: none"> • ftp:// <i>username@hostname / path</i> • scp:// <i>username @ hostname / path</i> • sftp:// <i>username @ hostname / path</i> • tftp:// <i>hostname : port-num / path</i> <p>Note You can also specify the backup destination by using the set backup hostname, set backup password, set backup protocol, set backup remote-path, set backup user commands, or by using the set backup destination command. Use either method to specify the backup destination.</p>
Step 7	UCS-A /org/ep-log-policy # set backup format {ascii binary}	Specifies the format for the backup file.
Step 8	UCS-A /org/ep-log-policy # set backup hostname {hostname ip-addr}	Specifies the hostname or IP address of the remote server.
Step 9	UCS-A /org/ep-log-policy # set backup interval {1-hour 2-hours 4-hours 8-hours 24-hours never}	Specifies the time interval for the automatic backup operation. Specifying the never keyword means that automatic backups will not be made.
Step 10	UCS-A /org/ep-log-policy # set backup password <i>password</i>	Specifies the password for the username. This step does not apply if the TFTP protocol is used.
Step 11	UCS-A /org/ep-log-policy # set backup protocol {ftp scp sftp tftp}	Specifies the protocol to use when communicating with the remote server.
Step 12	UCS-A /org/ep-log-policy # set backup remote-path <i>path</i>	Specifies the path on the remote server where the backup file is to be saved.

	Command or Action	Purpose
Step 13	UCS-A /org/ep-log-policy # set backup user <i>username</i>	Specifies the username the system should use to log in to the remote server. This step does not apply if the TFTP protocol is used.
Step 14	UCS-A /org/ep-log-policy # commit-buffer	Commits the transaction.

Example

The following example configures the SEL policy to back up the system event log (in ASCII format) every 24 hours or when the log is full, clears the system event log after a backup operation occurs, and commits the transaction:

```
UCS-A# scope org /
UCS-A /org # scope ep-log-policy sel
UCS-A /org/ep-log-policy # set backup destination scp://user@192.168.1.10/logs
Password:
UCS-A /org/ep-log-policy* # set backup action log-full
UCS-A /org/ep-log-policy* # set backup clear-on-backup yes
UCS-A /org/ep-log-policy* # set backup format ascii
UCS-A /org/ep-log-policy* # set backup interval 24-hours
UCS-A /org/ep-log-policy* # commit-buffer
UCS-A /org/ep-log-policy #
```

Backing Up the System Event Log for a Server

Backing Up the System Event Log for an Individual Server

Before you begin

Configure the system event log policy. The manual backup operation uses the remote destination configured in the system event log policy.

Procedure

	Command or Action	Purpose
Step 1	UCS-A /chassis/server # backup sel <i>chassis-id</i> / <i>blade-id</i>	Backs up the system event log.
Step 2	UCS-A# commit-buffer	Commits the transaction.

Example

The following example backs up the system event log for blade 3 in chassis 1 and commits the transaction.

```
UCS-A# backup sel 1/3
UCS-A* # commit-buffer
UCS-A#
```

Backing Up the System Event Log for All of the Servers in a Chassis

Before you begin

Configure the system event log policy. The manual backup operation uses the remote destination configured in the system event log policy.

Procedure

	Command or Action	Purpose
Step 1	UCS-A# scope server <i>chassis-id / blade-id</i>	Enters chassis server mode for the specified server.
Step 2	UCS-A /chassis/server # backup sel	Backs up the system event log.
Step 3	UCS-A /chassis/server # commit-buffer	Commits the transaction.

Example

The following example backs up the system event log from chassis server mode for blade 3 in chassis 1 and commits the transaction.

```
UCS-A# scope server 1/3
UCS-A /chassis/server # backup sel
UCS-A /chassis/server* # commit-buffer
UCS-A /chassis/server #
```

Clearing the System Event Log for a Server

Clearing the System Event Log for an Individual Server

Procedure

	Command or Action	Purpose
Step 1	UCS-A# clear sel <i>chassis-id / blade-id</i>	Clears the system event log.
Step 2	UCS-A# commit-buffer	Commits the transaction.

Example

The following example clears the system event log for blade 3 in chassis 1 and commits the transaction:


```
UCS-A# clear sel 1/3
UCS-A* # commit-buffer
UCS-A#
```

Clearing the System Event Log for All of the Servers in a Chassis

Procedure

	Command or Action	Purpose
Step 1	UCS-A# scope server <i>chassis-id / blade-id</i>	Enters chassis server mode for the specified server.
Step 2	UCS-A /chassis/server # clear sel	Clears the system event log.
Step 3	UCS-A /chassis/server # commit-buffer	Commits the transaction.

Example

The following example clears the system event log from chassis server mode for blade 3 in chassis 1 and commits the transaction:

```
UCS-A# scope server 1/3
UCS-A /chassis/server # clear sel
UCS-A /chassis/server* # commit-buffer
UCS-A /chassis/server #
```




CHAPTER 5

Audit Logs

- [Audit Logs, on page 21](#)
- [Viewing Audit Logs, on page 21](#)

Audit Logs

Audit Logs record system events that occurred, where they occurred, and which users initiated them.

Viewing Audit Logs

Procedure

	Command or Action	Purpose
Step 1	UCS-A# scope security	Enters security mode.
Step 2	UCS-A /security # show audit-logs	Displays the audit logs. Note Use the <i>id</i> option to view a specific audit-log. Use the detail option to view more detailed information in the audit log output.

Example

The following example displays the audit logs:

```
UCS-A# scope security
UCS-A /security # show audit-logs
```

```
Audit trail logs:
  Creation Time      User      ID      Action      Description
-----
2015-12-24T12:34:02.980
                        internal  6572175 Creation      Web A: local user admin logged
i
```

```

2015-12-22T11:26:33.547
    admin 6512814 Creation Server port A/1/21 created
2015-12-22T11:26:33.547
    admin 6512816 Deletion Server Port Channel A/1025
delet
2015-12-22T11:26:33.536
    admin 6512791 Modification Acknowledged chassis 1.
2015-12-22T11:25:44.755
    admin 6512767 Modification chassis discovery policy
modifie
2015-12-22T11:25:01.447
    admin 6512763 Deletion Server Member Port A/1/23
remove
2015-12-22T11:04:22.031
    admin 6511644 Deletion Server port A/1/21 deleted
2015-12-22T11:04:22.030
    admin 6511638 Creation Server Port Channel A/1025
creat
2015-12-22T11:04:22.030
UCS-A /security #

```



CHAPTER 6

Log File Exporter

- [Log File Exporter, on page 23](#)
- [Exporting Log Files to a Remote Server, on page 23](#)

Log File Exporter

Cisco UCS Manager generates log files for each executable. The log files can be up to 20 MB in size, and up to five backups can be stored on the server. The log file exporter allows you to export the log files to a remote server before they are deleted. The log file names contain the following information:

- The name of the process
- Timestamp
- The name and ID of the fabric interconnect



Note If you do not enable log exporting, the oldest log files are deleted whenever the maximum backup file limit is reached.

Guidelines and Limitations

- We recommend that you use tftp or password-less scp or sftp for log export. When standard scp or sftp is used, the user password is stored in the configuration file in encrypted format.
- On a HA setup, the log files from each side are exported separately. If one side fails to export logs, the other side does not compensate.

Exporting Log Files to a Remote Server

Procedure

	Command or Action	Purpose
Step 1	UCS-A# scope monitoring	Enters monitoring mode.

	Command or Action	Purpose
Step 2	UCS-A /monitoring # scope sysdebug	Enters monitoring system debug mode.
Step 3	UCS-A /monitoring/sysdebug # scope log-export-policy	Enters log file export mode.
Step 4	UCS-A /monitoring/sysdebug/log-export-policy # set admin-state {disabled enabled}	Whether log file exporting is enabled.
Step 5	(Optional) UCS-A /monitoring/sysdebug/log-export-policy # set desc description	Provides a description for the log export policy
Step 6	UCS-A /monitoring/sysdebug/log-export-policy # set hostname hostname	Specifies the hostname of the remote server.
Step 7	UCS-A /monitoring/sysdebug/log-export-policy # set passwd	After you press Enter, you are prompted to enter the password. Specifies the password for the remote server username. This step does not apply if the TFTP protocol is used.
Step 8	UCS-A /monitoring/sysdebug/log-export-policy # set passwordless-ssh {no yes}	Enables SSH login without a password.
Step 9	UCS-A /monitoring/sysdebug/log-export-policy # set proto {scp ftp sftp tftp}	Specifies the protocol to use when communicating with the remote server.
Step 10	UCS-A /monitoring/sysdebug/log-export-policy # set path path	Specifies the path on the remote server where the log file is to be saved.
Step 11	UCS-A /monitoring/sysdebug/log-export-policy # set user username	Specifies the username the system should use to log in to the remote server. This step does not apply if the TFTP protocol is used.
Step 12	UCS-A /monitoring/sysdebug/log-export-policy # commit-buffer	Commits the transaction.

Example

The following example shows how to enable the log file exporter, specify the remote server hostname, set the protocol to scp, enable passwordless login, and commit the transaction.

```
UCS-A# scope monitoring
UCS-A /monitoring # scope sysdebug
UCS-A /monitoring/sysdebug # scope log-export-policy
UCS-A /monitoring/sysdebug/log-export-policy # set admin-state enable
UCS-A /monitoring/sysdebug/log-export-policy* # set hostname 10.10.1.1
```

```
UCS-A /monitoring/sysdebug/log-export-policy* # set path /
UCS-A /monitoring/sysdebug/log-export-policy* # set user testuser
UCS-A /monitoring/sysdebug/log-export-policy* # set proto scp
UCS-A /monitoring/sysdebug/log-export-policy* # set passwd
password:
UCS-A /monitoring/sysdebug/log-export-policy* # set passwordless-ssh yes
UCS-A /monitoring/sysdebug/log-export-policy* # commit-buffer
UCS-A /monitoring/sysdebug/log-export-policy #
```




CHAPTER 7

Core File Exporter

- [Core File Exporter, on page 27](#)
- [Configuring the Core File Exporter, on page 27](#)
- [Disabling the Core File Exporter, on page 28](#)

Core File Exporter

Critical failures in the Cisco UCS components, such as a fabric interconnect or an I/O module, can cause the system to create a core dump file. Cisco UCS Manager uses the Core File Exporter to immediately export the core dump files to a specified location on the network through TFTP. This functionality allows you to export the tar file with the contents of the core dump file. The Core File Exporter provides system monitoring and automatic export of core dump files that need to be included in TAC cases.

Configuring the Core File Exporter

Procedure

	Command or Action	Purpose
Step 1	UCS-A# scope monitoring	Enters monitoring mode.
Step 2	UCS-A /monitoring # scope sysdebug	Enters monitoring system debug mode.
Step 3	UCS-A /monitoring/sysdebug # enable core-export-target	Enables the core file exporter. When the core file exporter is enabled and an error causes the server to perform a core dump, the system exports the core file via TFTP to the specified remote server.
Step 4	UCS-A /monitoring/sysdebug # set core-export-target path path	Specifies the path to use when exporting the core file to the remote server.
Step 5	UCS-A /monitoring/sysdebug # set core-export-target port port-num	Specifies the port number to use when exporting the core file via TFTP. The range of valid values is 1 to 65,535.

	Command or Action	Purpose
Step 6	UCS-A /monitoring/sysdebug # set core-export-target server-description <i>description</i>	Provides a description for the remote server used to store the core file.
Step 7	UCS-A /monitoring/sysdebug # set core-export-target server-name <i>hostname</i>	Specifies the hostname of the remote server to connect with via TFTP.
Step 8	UCS-A /monitoring/sysdebug # commit-buffer	Commits the transaction.

Example

The following example enables the core file exporter, specifies the path and port to use when sending the core file, specifies the remote server hostname, provides a description for the remote server, and commits the transaction.

```
UCS-A# scope monitoring
UCS-A /monitoring # scope sysdebug
UCS-A /monitoring/sysdebug # enable core-export-target
UCS-A /monitoring/sysdebug* # set core-export-target path /root/CoreFiles/core
UCS-A /monitoring/sysdebug* # set core-export-target port 45000
UCS-A /monitoring/sysdebug* # set core-export-target server-description CoreFile102.168.10.10
UCS-A /monitoring/sysdebug* # set core-export-target server-name 192.168.10.10
UCS-A /monitoring/sysdebug* # commit-buffer
UCS-A /monitoring/sysdebug #
```

Disabling the Core File Exporter

Procedure

	Command or Action	Purpose
Step 1	UCS-A# scope monitoring	Enters monitoring mode.
Step 2	UCS-A /monitoring # scope sysdebug	Enters monitoring system debug mode.
Step 3	UCS-A /monitoring/sysdebug # disable core-export-target	Disables the core file exporter. When the core file exporter is disabled core files are not automatically exported.
Step 4	UCS-A /monitoring/sysdebug # commit-buffer	Commits the transaction.

Example

The following example disables the core file exporter and commits the transaction.

```
UCS-A# scope monitoring
UCS-A /monitoring # scope sysdebug
UCS-A /monitoring/sysdebug # disable core-export-target
UCS-A /monitoring/sysdebug* # commit-buffer
UCS-A /monitoring/sysdebug #
```



CHAPTER 8

Fault Collection and Suppression

- [Global Fault Policy, on page 29](#)
- [Fault Suppression, on page 30](#)

Global Fault Policy

The global fault policy controls the lifecycle of a fault in a Cisco UCS domain, including when faults are cleared, the flapping interval (the length of time between the fault being raised and the condition being cleared), and the retention interval (the length of time a fault is retained in the system).

A fault in Cisco UCS has the following lifecycle:

1. A condition occurs in the system and Cisco UCS Manager raises a fault. This is the active state.
2. When the fault is alleviated, it enters a flapping or soaking interval that is designed to prevent flapping. Flapping occurs when a fault is raised and cleared several times in rapid succession. During the flapping interval, the fault retains its severity for the length of time specified in the global fault policy.
3. If the condition reoccurs during the flapping interval, the fault returns to the active state. If the condition does not reoccur during the flapping interval, the fault is cleared.
4. The cleared fault enters the retention interval. This interval ensures that the fault reaches the attention of an administrator even if the condition that caused the fault has been alleviated and the fault has not been deleted prematurely. The retention interval retains the cleared fault for the length of time specified in the global fault policy.
5. If the condition reoccurs during the retention interval, the fault returns to the active state. If the condition does not reoccur, the fault is deleted.

Configuring the Fault Collection Policy

Procedure

	Command or Action	Purpose
Step 1	UCS-A# scope monitoring	Enters monitoring mode.
Step 2	UCS-A /monitoring # scope fault policy	Enters monitoring fault policy mode.

	Command or Action	Purpose
Step 3	UCS-A /monitoring/fault-policy # set clear-action {delete retain}	Specifies whether to retain or delete all cleared messages. If the retain option is specified, then the length of time that the messages are retained is determined by the set retention-interval command.
Step 4	UCS-A /monitoring/fault-policy # set flap-interval seconds	Specifies the time interval (in seconds) the system waits before changing a fault state. Flapping occurs when a fault is raised and cleared several times in rapid succession. To prevent this, the system does not allow a fault to change state until the flapping interval has elapsed after the last state change. If the fault is raised again during the flapping interval, it returns to the active state, otherwise, the fault is cleared.
Step 5	UCS-A /monitoring/fault-policy # set retention-interval {days hours minutes seconds forever}	Specifies the time interval the system retains all cleared fault messages before deleting them. The system can retain cleared fault messages forever, or for the specified number of days, hours, minutes, and seconds.
Step 6	UCS-A /monitoring/fault-policy # commit-buffer	Commits the transaction.

Example

This example configures the fault collection policy to retain cleared fault messages for 30 days, sets the flapping interval to 10 seconds, and commits the transaction.

```
UCS-A# scope monitoring
UCS-A /monitoring # scope fault policy
UCS-A /monitoring/fault-policy # set clear-action retain
UCS-A /monitoring/fault-policy* # set flap-interval 10
UCS-A /monitoring/fault-policy* # set retention-interval 30 0 0 0
UCS-A /monitoring/fault-policy* # commit-buffer
UCS-A /monitoring/fault-policy #
```

Fault Suppression

Fault suppression allows you to suppress SNMP trap and Call Home notifications during a planned maintenance time. You can create a fault suppression task to prevent notifications from being sent whenever a transient fault is raised or cleared.

Faults remain suppressed until the time duration has expired, or the fault suppression tasks have been manually stopped by you. After the fault suppression has ended, Cisco UCS Manager will send notifications for any outstanding suppressed faults that have not been cleared.

You can configure fault suppression using the following methods.

Fixed Time Intervals or Schedules

You can use the following to specify the maintenance window during which you want to suppress faults:

- Fixed time intervals allow you to create a start time and a duration when fault suppression is active. Fixed time intervals cannot be reused.
- Schedules are used for one time occurrences or recurring time periods. They can be saved and reused.

Suppression Policies

These policies define which causes and types of faults you want to suppress. Only one policy can be assigned to a task. The following policies are defined by Cisco UCS Manager:

- **default-chassis-all-maint**—Suppresses faults for the chassis and all components installed into the chassis, including all servers, power supplies, fan modules, and IOMs.

This policy applies only to chassis.

- **default-chassis-phys-maint**—Suppresses faults for the chassis, all fan modules, and power supplies installed into the chassis.

This policy applies only to chassis.

- **default-fex-all-maint**—Suppresses faults for the FEX, all power supplies, fan modules, and IOMs in the FEX.

This policy applies only to FEXes.

- **default-fex-phys-maint**—Suppresses faults for the FEX, all fan modules and power supplies in the FEX.

This policy applies only to FEXes.

- **default-server-maint**—Suppresses faults for servers.

This policy applies to chassis, organizations, and service profiles.



Note When applied to a chassis, only servers are affected.



Note Cisco UCS Manager does not suppress SNMP MIB-2 faults generated by NX-OS network operating system designed to support high performance, high reliability server access switches used in the data center. These SNMP MIB-2 faults have no association with this fault suppression policy.

- **default-iom-maint**—Suppresses faults for IOMs in a chassis or FEX.

This policy applies only to chassis, FEXes, and IOMs.

Suppression Tasks

You can use these tasks to connect the schedule or fixed time interval and the suppression policy to a component.



Note After you create a suppression task, you can edit the fixed time interval or schedule of the task in both the Cisco UCS Manager GUI and Cisco UCS Manager CLI. However, you can only change between using a fixed time interval and using a schedule in the Cisco UCS Manager CLI.

Configuring Fault Suppression for a Chassis

Configuring Fault Suppression Tasks for a Chassis Using a Fixed Time Interval

Procedure

	Command or Action	Purpose
Step 1	UCS-A# scope chassis <i>chassis-num</i>	Enters chassis mode for the specified chassis.
Step 2	UCS-A/chassis # create fault-suppress-task <i>name</i>	Creates a fault-suppress-task on the chassis, and enters fault-suppress-task mode. This name can be between 1 and 16 alphanumeric characters. You cannot use spaces or any special characters other than - (hyphen), _ (underscore), : (colon), and . (period), and you cannot change this name after the object is saved.
Step 3	UCS-A/chassis/fault-suppress-task # set fault-suppress-policy <i>policy-name</i>	Specifies the fault suppression policy that you want to apply. This can be one of the following: <ul style="list-style-type: none"> • default-chassis-all-maint—Suppresses faults for the chassis and all components installed into the chassis, including all servers, power supplies, fan modules, and IOMs. • default-chassis-phys-maint—Suppresses faults for the chassis, all fan modules, and power supplies installed into the chassis. • default-server-maint—Suppresses faults for servers. <p>Note When applied to a chassis, only servers are affected.</p> <ul style="list-style-type: none"> • default-iom-maint—Suppresses faults for IOMs in a chassis or FEX.
Step 4	UCS-A/chassis/fault-suppress-task # create local-schedule	Creates a local schedule and enters local-schedule mode.

	Command or Action	Purpose
Step 5	UCS-A/chassis/fault-suppress-task/local-schedule # create occurrence single-one-time	Creates a one-time occurrence, and enters single-one-time mode.
Step 6	UCS-A/chassis/fault-suppress-task/local-schedule/single-one-time # set date <i>month day-of-month year hour minute seconds</i>	Specifies the date and time that this occurrence should run.
Step 7	UCS-A/chassis/fault-suppress-task/local-schedule/single-one-time # set max-duration { none <i>num-of-days num-of-hours num-of-minutes num-of-seconds</i> }	Specifies the maximum length of time that this task can run. To run the task until it is manually stopped, enter none or omit this step.
Step 8	UCS-A/chassis/fault-suppress-task/local-schedule/single-one-time # commit-buffer	Commits the transaction to the system configuration.

Example

The following example shows how to create a fault suppression task called task2 for the chassis, apply the default-chassis-all-maint policy to the task, set the start date to January 1, 2013 at 11:00, and commit the transaction:

```
UCS-A# scope chassis 1
UCS-A/chassis # create fault-suppress-task task2
UCS-A/chassis/fault-suppress-task* # set fault-suppress-policy default-chassis-all-maint
UCS-A/chassis/fault-suppress-task* # create local-schedule
UCS-A/chassis/fault-suppress-task/local-schedule* # create occurrence single-one-time
UCS-A/chassis/fault-suppress-task/local-schedule* # set date jan 1 2013 11 00 00
UCS-A/chassis/fault-suppress-task/local-schedule* # commit-buffer
```

Configuring Fault Suppression Tasks for a Chassis Using a Schedule

Procedure

	Command or Action	Purpose
Step 1	UCS-A# scope chassis <i>chassis-num</i>	Enters chassis mode for the specified chassis.
Step 2	UCS-A/chassis # create fault-suppress-task <i>name</i>	Creates a fault-suppress-task on the chassis, and enters the fault-suppress-task mode. This name can be between 1 and 16 alphanumeric characters. You cannot use spaces or any special characters other than - (hyphen), _ (underscore), : (colon), and . (period), and you cannot change this name after the object is saved.
Step 3	UCS-A/chassis/fault-suppress-task # set schedule <i>name</i>	Specifies the schedule that you want to use.

	Command or Action	Purpose
		Note The schedule must exist before you can use it in a fault suppression task. For more information about creating schedules, see Creating a Schedule , on page 52.
Step 4	UCS-A/chassis/fault-suppress-task # set fault-suppress-policy <i>policy-name</i>	<p>Selects the fault suppression policy you want to apply. This can be one of the following:</p> <ul style="list-style-type: none"> • default-chassis-all-maint—Suppresses faults for the chassis and all components installed into the chassis, including all servers, power supplies, fan modules, and IOMs. • default-chassis-phys-maint—Suppresses faults for the chassis, all fan modules, and power supplies installed into the chassis. • default-server-maint—Suppresses faults for servers. <p>Note When applied to a chassis, only servers are affected.</p> <ul style="list-style-type: none"> • default-iom-maint—Suppresses faults for IOMs in a chassis or FEX.
Step 5	UCS-A/chassis/fault-suppress-task # commit-buffer	Commits the transaction to the system configuration.

Example

The following example shows how to create a fault suppression task called task1 for the chassis, apply the scheduler called weekly_maint and the default-chassis-all-maint policy to the task, and commit the transaction:

```
UCS-A# scope chassis 2
UCS-A/chassis # create fault-suppress-task task1
UCS-A/chassis/fault-suppress-task* # set schedule weekly_maint
UCS-A/chassis/fault-suppress-task* # set fault-suppress-policy default-chassis-all-maint
UCS-A/chassis/fault-suppress-task* # commit-buffer
```


Modifying Fault Suppression Tasks for a Chassis

Procedure

	Command or Action	Purpose
Step 1	UCS-A# scope chassis <i>chassis-num</i>	Enters chassis mode for the specified chassis.
Step 2	UCS-A/chassis # scope fault-suppress-task <i>name</i>	Enters fault-suppress-task mode.
Step 3	UCS-A/chassis/fault-suppress-task # set fault-suppress-policy <i>policy-name</i>	<p>Modifies the fault suppression policy. This can be one of the following:</p> <ul style="list-style-type: none"> • default-chassis-all-maint—Suppresses faults for the chassis and all components installed into the chassis, including all servers, power supplies, fan modules, and IOMs. • default-chassis-phys-maint—Suppresses faults for the chassis, all fan modules, and power supplies installed into the chassis. • default-server-maint—Suppresses faults for servers. • default-iom-maint—Suppresses faults for IOMs in a chassis or FEX. <p>Note To apply a different schedule to the fault suppression task, go to Step 4. To change the fixed time interval of the fault suppression task, go to Step 5.</p>
Step 4	UCS-A/chassis/fault-suppress-task # set schedule <i>name</i>	<p>Applies the schedule you want to use.</p> <p>Note If you change from a fixed time interval to a schedule, the fixed time interval is deleted when you commit.</p> <p>If you change from a schedule to a fixed time interval, the reference to the schedule is cleared when you commit.</p>
Step 5	UCS-A/chassis/fault-suppress-task # scope local-schedule	Enters local-schedule mode.
Step 6	UCS-A/chassis/fault-suppress-task/local-schedule # scope occurrence single-one-time	Enters single-one-time mode.

	Command or Action	Purpose
Step 7	UCS-A/chassis/fault-suppress-task/local-schedule/single-one-time # set date <i>month day-of-month year hour minute seconds</i>	Specifies the date and time that this occurrence should run.
Step 8	UCS-A/chassis/fault-suppress-task/local-schedule/single-one-time # set max-duration { <i>none</i> <i>num-of-days num-of-hours num-of-minutes num-of-seconds</i> }	Specifies the maximum length of time that this task can run. To run the task until it is manually stopped, enter none or omit this step.
Step 9	UCS-A/chassis/fault-suppress-task/local-schedule/single-one-time # commit-buffer	Commits the transaction to the system configuration.

Example

The following example shows how to change the date and the fault suppression policy of the fault suppression task called task2:

```
UCS-A# scope chassis 1
UCS-A/chassis # scope fault-suppress-task task2
UCS-A/chassis/fault-suppress-task # set fault-suppress-policy default-server-maint
UCS-A/chassis/fault-suppress-task* # scope local-schedule
UCS-A/chassis/fault-suppress-task/local-schedule* # scope occurrence single-one-time
UCS-A/chassis/fault-suppress-task/local-schedule/single-one-time* # set date dec 31 2013
11 00 00
UCS-A/chassis/fault-suppress-task/local-schedule/single-one-time* # commit-buffer
```

The following example shows how to apply a different schedule to the fault suppression task called task1:

```
UCS-A# scope chassis 1
UCS-A/chassis # scope fault-suppress-task task1
UCS-A/chassis/fault-suppress-task # set schedule monthly-maint
UCS-A/chassis/fault-suppress-task* # commit-buffer
```

Viewing Suppressed Faults and Fault Suppression Tasks for a Chassis

Procedure

	Command or Action	Purpose
Step 1	UCS-A# scope chassis <i>chassis-num</i>	Enters chassis mode for the specified chassis.
Step 2	UCS-A/chassis # show fault suppressed	Displays the suppressed faults for the chassis. Note Only faults owned by the selected component are displayed.
Step 3	UCS-A/chassis # scope fault-suppress-task <i>name</i>	Enters fault-suppress-task mode.
Step 4	UCS-A/chassis/fault-suppress-task # show detail expand	Displays the schedule or fixed time interval for the task.

Example

The following example shows how to display the suppressed faults for a chassis:

```
UCS-A# scope chassis 1
UCS-A/chassis # show fault suppressed
Fault Suppress Task:

Name                Status                Global Schedule Suppress Policy Name
-----
task1               Active                test_schedule1   Default Chassis Phys Maint

UCS-A/chassis #
```

The following example shows how to display the fault suppression task called task1:

```
UCS-A# scope chassis 1
UCS-A/chassis # scope fault-suppress-task task1
UCS-A/chassis/fault-suppress-task # show detail expand
Fault Suppress Task:
  Name: task1
  Status: Active
  Global Schedule: test_schedule1
  Suppress Policy Name: Default Chassis Phys Maint

UCS-A/chassis/fault-suppress-task #
```

Deleting Fault Suppression Tasks for a Chassis

Procedure

	Command or Action	Purpose
Step 1	UCS-A# scope chassis <i>chassis-num</i>	Enters chassis mode for the specified chassis.
Step 2	UCS-A/chassis # delete fault-suppress-task <i>name</i>	Deletes the specified fault suppression task.
Step 3	UCS-A/chassis # commit-buffer	Commits the transaction to the system configuration.

Example

The following example shows how to delete the fault suppression task called task1:

```
UCS-A# scope chassis 1
UCS-A/chassis # delete fault-suppress-task task1
UCS-A/chassis* # commit-buffer
```

Configuring Fault Suppression for an I/O Module

Configuring Fault Suppression Tasks for an IOM Using a Fixed Time Interval

The **default-iom-maint** suppression policy is selected by default.

Procedure

	Command or Action	Purpose
Step 1	UCS-A# scope [chassis <i>chassis-num</i> fex <i>fex-num</i>]	Enters chassis mode for the specified chassis or FEX.
Step 2	UCS-A /chassis fex # scope iom <i>iom-id</i>	Enters chassis I/O module mode for the selected I/O module.
Step 3	UCS-A/chassis fex/iom # create fault-suppress-task <i>name</i>	Creates a fault-suppress-task on the IOM, and enters the fault-suppress-task mode. This name can be between 1 and 16 alphanumeric characters. You cannot use spaces or any special characters other than - (hyphen), _ (underscore), : (colon), and . (period), and you cannot change this name after the object is saved.
Step 4	UCS-A/chassis fex/iom/fault-suppress-task # create local-schedule	Creates a local schedule and enters local-schedule mode.
Step 5	UCS-A/chassis fex/iom/fault-suppress-task/local-schedule # create occurrence single-one-time	Creates a one-time occurrence, and enters single-one-time mode.
Step 6	UCS-A/chassis fex/iom/fault-suppress-task/local-schedule/single-one-time # set date <i>month day-of-month year hour minute seconds</i>	Specifies the date and time that this occurrence should run.
Step 7	UCS-A/chassis fex/iom/fault-suppress-task/local-schedule/single-one-time # set max-duration { none <i>num-of-days num-of-hours num-of-minutes num-of-seconds</i> }	Specifies the maximum length of time that this task can run. To run the task until it is manually stopped, enter none or omit this step.
Step 8	UCS-A/chassis fex/iom/fault-suppress-task/local-schedule/single-one-time # commit-buffer	Commits the transaction to the system configuration.

Example

The following example shows how to create a fault suppression task called task2 for the IOM on a chassis, set the start date to January 1, 2013 at 11:00, and commit the transaction:

```
UCS-A# scope chassis 1
UCS-A/chassis # scope iom a
UCS-A/chassis/iom # create fault-suppress-task task2
UCS-A/chassis/iom/fault-suppress-task* # create local-schedule
UCS-A/chassis/iom/fault-suppress-task/local-schedule* # create occurrence single-one-time
UCS-A/chassis/iom/fault-suppress-task/local-schedule/single-one-time* # set date jan 1 2013
```

```
11 00 00
UCS-A/chassis/iom/fault-suppress-task/local-schedule/single-one-time* # commit-buffer
```

The following example shows how to create a fault suppression task called task2 for the IOM on a FEX, set the start date to January 1, 2013 at 11:00, and commit the transaction:

```
UCS-A# scope fex 1
UCS-A/fex # scope iom a
UCS-A/fex/iom # create fault-suppress-task task2
UCS-A/fex/iom/fault-suppress-task* # create local-schedule
UCS-A/fex/iom/fault-suppress-task/local-schedule* # create occurrence single-one-time
UCS-A/fex/iom/fault-suppress-task/local-schedule/single-one-time* # set date jan 1 2013 11
00 00
UCS-A/fex/iom/fault-suppress-task/local-schedule/single-one-time* # commit-buffer
```

Configuring Fault Suppression Tasks for an IOM Using a Schedule

The **default-iom-maint** suppression policy is selected by default.

Procedure

	Command or Action	Purpose
Step 1	UCS-A# scope [chassis <i>chassis-num</i> fex <i>fex-num</i>]	Enters chassis mode for the specified chassis or FEX.
Step 2	UCS-A /chassis fex # scope iom <i>iom-id</i>	Enters chassis I/O module mode for the selected I/O module.
Step 3	UCS-A/chassis fex/iom # create fault-suppress-task <i>name</i>	Creates a fault-suppress-task on the IOM, and enters the fault-suppress-task mode. This name can be between 1 and 16 alphanumeric characters. You cannot use spaces or any special characters other than - (hyphen), _ (underscore), : (colon), and . (period), and you cannot change this name after the object is saved.
Step 4	UCS-A/chassis fex/iom/fault-suppress-task # set schedule <i>name</i>	Specifies the schedule that you want to use. Note The schedule must exist before you can use it in a fault suppression task. For more information about creating schedules, see Creating a Schedule, on page 52 .
Step 5	UCS-A/chassis fex/iom/fault-suppress-task # commit-buffer	Commits the transaction to the system configuration.

Example

The following example shows how to create a fault suppression task called task1 for the IOM on a chassis, apply the scheduler called weekly_maint to the task, and commit the transaction:

```
UCS-A# scope chassis 1
UCS-A/chassis # scope iom a
UCS-A/chassis/iom # create fault-suppress-task task1
UCS-A/chassis/iom/fault-suppress-task* # set schedule weekly_maint
UCS-A/chassis/iom/fault-suppress-task* # commit-buffer
```

The following example shows how to create a fault suppression task called task1 for the IOM on a FEX, apply the scheduler called weekly_maint to the task, and commit the transaction:

```
UCS-A# scope fex 1
UCS-A/fex # scope iom a
UCS-A/fex/iom # create fault-suppress-task task1
UCS-A/fex/iom/fault-suppress-task* # set schedule weekly_maint
UCS-A/fex/iom/fault-suppress-task* # commit-buffer
```

Modifying Fault Suppression Tasks for an IOM

Procedure

	Command or Action	Purpose
Step 1	UCS-A# scope [chassis <i>chassis-num</i> fex <i>fex-num</i>]	Enters chassis mode for the specified chassis or FEX.
Step 2	UCS-A /chassis fex # scope iom <i>iom-id</i>	Enters chassis I/O module mode for the selected I/O module.
Step 3	UCS-A/chassis fex/iom # scope fault-suppress-task <i>name</i>	Enters fault-suppress-task mode. Note To apply a different schedule to the fault suppression task, go to Step 4. To change the fixed time interval of the fault suppression task, go to Step 5.
Step 4	UCS-A/chassis fex/iom/fault-suppress-task # set schedule <i>name</i>	Applies a different schedule. Note If you change from a fixed time interval to a schedule, the fixed time interval is deleted when you commit. If you change from a schedule to a fixed time interval, the reference to the schedule is cleared when you commit.
Step 5	UCS-A/chassis fex/iom/fault-suppress-task # scope local-schedule	Enters local-schedule mode.

	Command or Action	Purpose
Step 6	UCS-A/chassis fex/iom/fault-suppress-task/local-schedule # scope occurrence single-one-time	Enters single-one-time mode.
Step 7	UCS-A/chassis fex/iom/fault-suppress-task/local-schedule/single-one-time # set date <i>month day-of-month year hour minute seconds</i>	Specifies the date and time that this occurrence should run.
Step 8	UCS-A/chassis fex/iom/fault-suppress-task/local-schedule/single-one-time # set max-duration { <i>none num-of-days num-of-hours num-of-minutes num-of-seconds</i> }	Specifies the maximum length of time that this task can run. To run the task until it is manually stopped, enter none or omit this step.
Step 9	UCS-A/chassis fex/iom/fault-suppress-task/local-schedule/single-one-time # commit-buffer	Commits the transaction to the system configuration.

Example

The following example shows how to change the date and the fault suppression policy of the fault suppression task called task2 for an IOM on a chassis:

```
UCS-A# scope chassis 1
UCS-A/chassis # scope iom a
UCS-A/chassis/iom # scope fault-suppress-task task2
UCS-A/chassis/iom/fault-suppress-task # scope local-schedule
UCS-A/chassis/iom/fault-suppress-task/local-schedule # scope occurrence single-one-time
UCS-A/chassis/iom/fault-suppress-task/local-schedule/single-one-time # set date dec 31 2013
11 00 00
UCS-A/chassis/iom/fault-suppress-task/local-schedule/single-one-time* # commit-buffer
```

The following example shows how to apply a different schedule to the fault suppression task called task1 for an IOM on a FEX:

```
UCS-A# scope fex 3
UCS-A/fex # scope iom a
UCS-A/fex/iom # scope fault-suppress-task task1
UCS-A/fex/iom/fault-suppress-task # set schedule monthly-maint
UCS-A/fex/iom/fault-suppress-task* # commit-buffer
```

Viewing Suppressed Faults and Fault Suppression Tasks for an IOM

Procedure

	Command or Action	Purpose
Step 1	UCS-A# scope [<i>chassis chassis-num fex fex-num</i>]	Enters chassis mode for the specified chassis or FEX.
Step 2	UCS-A /chassis fex # scope iom <i>iom-id</i>	Enters chassis I/O module mode for the selected I/O module.
Step 3	UCS-A/chassis fex/iom # show fault suppressed	Displays the suppressed faults for the IOM. Note Only faults owned by the selected component are displayed.

	Command or Action	Purpose
Step 4	UCS-A/chassis fex/iom # scope fault-suppress-task name	Enters fault-suppress-task mode.
Step 5	UCS-A/chassis fex/iom/fault-suppress-task # show detail expand	Displays the schedule or fixed time interval for the task.

Example

The following example shows how to display the suppressed faults for an IOM on a chassis:

```
UCS-A# scope chassis 1
UCS-A/chassis # scope iom a
UCS-A/chassis/iom # show fault suppressed
Fault Suppress Task:

Name                Status                Global Schedule Suppress Policy Name
-----
task1               Active                test_schedule1    Default Iom Maint

UCS-A/chassis/iom #
```

The following example shows how to display the fault suppression task called task1 for an IOM on a chassis:

```
UCS-A# scope chassis 1
UCS-A/chassis # scope iom a
UCS-A/chassis/iom # scope fault-suppress-task task1
UCS-A/chassis/iom/fault-suppress-task # show detail expand
Fault Suppress Task:
  Name: task1
  Status: Active
  Global Schedule: test_schedule1
  Suppress Policy Name: Default Iom Maint

UCS-A/chassis/iom/fault-suppress-task #
```

The following example shows how to display the fault suppression task called task1 for an IOM on a FEX:

```
UCS-A# scope fex 3
UCS-A/fex # scope iom a
UCS-A/fex/iom # scope fault-suppress-task task1
UCS-A/fex/iom/fault-suppress-task # show detail expand
Fault Suppress Task:
  Name: task1
  Status: Active
  Global Schedule: test_schedule1
  Suppress Policy Name: Default Iom Maint

UCS-A/chassis/iom/fault-suppress-task #
```


Deleting Fault Suppression Tasks for an IOM

Procedure

	Command or Action	Purpose
Step 1	UCS-A# scope [chassis <i>chassis-num</i> fex <i>fex-num</i>]	Enters chassis mode for the specified chassis or FEX.
Step 2	UCS-A /chassis fex # scope iom <i>iom-id</i>	Enters chassis I/O module mode for the selected I/O module.
Step 3	UCS-A/chassis fex/iom # delete fault-suppress-task <i>name</i>	Deletes the specified fault suppression task.
Step 4	UCS-A/chassis fex/iom # commit-buffer	Commits the transaction to the system configuration.

Example

The following example shows how to delete the fault suppression task called task1 for an IOM on a chassis:

```
UCS-A# scope chassis 1
UCS-A/chassis # scope iom a
UCS-A/chassis/iom # delete fault-suppress-task task1
UCS-A/chassis/iom* # commit-buffer
```

The following example shows how to delete the fault suppression task called task1 for an IOM on a FEX:

```
UCS-A# scope fex 3
UCS-A/fex # scope iom a
UCS-A/fex/iom # delete fault-suppress-task task1
UCS-A/fex/iom* # commit-buffer
```

Configuring Fault Suppression for a FEX

Configuring Fault Suppression Tasks for a FEX Using a Fixed Time Interval

Procedure

	Command or Action	Purpose
Step 1	UCS-A# scope fex <i>fex-num</i>	Enters fex mode for the specified FEX.
Step 2	UCS-A/fex # create fault-suppress-task <i>name</i>	Creates a fault-suppress-task on the fex, and enters the fault-suppress-task mode. This name can be between 1 and 16 alphanumeric characters. You cannot use spaces or any special characters other than - (hyphen),

	Command or Action	Purpose
		_ (underscore), : (colon), and . (period), and you cannot change this name after the object is saved.
Step 3	UCS-A/fex/fault-suppress-task # set fault-suppress-policy <i>policy-name</i>	Specifies the fault suppression policy you want to apply. This can be one of the following: <ul style="list-style-type: none"> • default-fex-all-maint—Suppresses faults for the FEX, all power supplies, fan modules, and IOMs in the FEX. • default-fex-phys-maint—Suppresses faults for the FEX, all fan modules and power supplies in the FEX. • default-iom-maint—Suppresses faults for IOMs in a chassis or FEX.
Step 4	UCS-A/fex/fault-suppress-task # create local-schedule	Creates a local schedule and enters local-schedule mode.
Step 5	UCS-A/fex/fault-suppress-task/local-schedule # create occurrence single-one-time	Creates a one-time occurrence, and enters single-one-time mode.
Step 6	UCS-A/fex/fault-suppress-task/local-schedule/single-one-time # set date <i>month day-of-month year hour minute seconds</i>	Specifies the date and time that this occurrence should run.
Step 7	UCS-A/fex/fault-suppress-task/local-schedule/single-one-time # set max-duration { none <i>num-of-days num-of-hours num-of-minutes num-of-seconds</i> }	Specifies the maximum length of time that this task can run. To run the task until it is manually stopped, enter none or omit this step.
Step 8	UCS-A/fex/fault-suppress-task/local-schedule/single-one-time # commit-buffer	Commits the transaction to the system configuration.

Example

The following example shows how to create a fault suppression task called task2 for the FEX, apply the default-fex-all-maint policy to the task, set the start date to January 1, 2013 at 11:00, and commit the transaction:

```
UCS-A# scope fex 1
UCS-A/fex # create fault-suppress-task task2
UCS-A/fex/fault-suppress-task* # set fault-suppress-policy default-fex-all-maint
UCS-A/fex/fault-suppress-task* # create local-schedule
UCS-A/fex/fault-suppress-task/local-schedule* # create occurrence single-one-time
UCS-A/fex/fault-suppress-task/local-schedule/single-one-time* # set date jan 1 2013 11 00 00
UCS-A/fex/fault-suppress-task/local-schedule/single-one-time* # commit-buffer
```

Configuring Fault Suppression Tasks for a FEX Using a Schedule

Procedure

	Command or Action	Purpose
Step 1	UCS-A# scope fex <i>fex-num</i>	Enters fex mode for the specified FEX.
Step 2	UCS-A/fex # create fault-suppress-task <i>name</i>	Creates a fault-suppress-task on the fex, and enters the fault-suppress-task mode. This name can be between 1 and 16 alphanumeric characters. You cannot use spaces or any special characters other than - (hyphen), _ (underscore), : (colon), and . (period), and you cannot change this name after the object is saved.
Step 3	UCS-A/fex/fault-suppress-task # set schedule <i>name</i>	Specifies the schedule that you want to use. Note The schedule must exist before you can use it in a fault suppression task. For more information about creating schedules, see Creating a Schedule , on page 52.
Step 4	UCS-A/fex/fault-suppress-task # set fault-suppress-policy <i>policy-name</i>	Specifies the fault suppression policy that you want to apply. This can be one of the following: <ul style="list-style-type: none"> • default-fex-all-maint—Suppresses faults for the FEX, all power supplies, fan modules, and IOMs in the FEX. • default-fex-phys-maint—Suppresses faults for the FEX, all fan modules and power supplies in the FEX. • default-iom-maint—Suppresses faults for IOMs in a chassis or FEX.
Step 5	UCS-A/fex/fault-suppress-task # commit-buffer	Commits the transaction to the system configuration.

Example

The following example shows how to create a fault suppression task called task1 for the FEX, apply the scheduler called weekly_maint and the default-fex-all-maint policy to the task, and commit the transaction:

```
UCS-A# scope fex 1
UCS-A/fex # create fault-suppress-task task1
UCS-A/fex/fault-suppress-task* # set schedule weekly_maint
```

```
UCS-A/fex/fault-suppress-task* # set fault-suppress-policy default-fex-all-maint
UCS-A/fex/fault-suppress-task* # commit-buffer
```

Modifying Fault Suppression Tasks for a FEX

Procedure

	Command or Action	Purpose
Step 1	UCS-A# scope fex <i>fex-num</i>	Enters fex mode for the specified FEX.
Step 2	UCS-A/fex # scope fault-suppress-task <i>name</i>	Enters fault-suppress-task mode.
Step 3	UCS-A/fex/fault-suppress-task # set fault-suppress-policy <i>policy-name</i>	<p>Modifies the fault suppression policy. This can be one of the following:</p> <ul style="list-style-type: none"> • default-fex-all-maint—Suppresses faults for the FEX, all power supplies, fan modules, and IOMs in the FEX. • default-fex-phys-maint—Suppresses faults for the FEX, all fan modules and power supplies in the FEX. • default-iom-maint—Suppresses faults for IOMs in a chassis or FEX. <p>Note To apply a different schedule to the fault suppression task, go to Step 4. To change the fixed time interval of the fault suppression task, go to Step 5.</p>
Step 4	UCS-A/fex/fault-suppress-task # set schedule <i>name</i>	<p>Applies a different schedule.</p> <p>Note If you change from a fixed time interval to a schedule, the fixed time interval is deleted when you commit.</p> <p>If you change from a schedule to a fixed time interval, the reference to the schedule is cleared when you commit.</p>
Step 5	UCS-A/fex/fault-suppress-task # scope local-schedule	Enters local-schedule mode.
Step 6	UCS-A/fex/fault-suppress-task/local-schedule # scope occurrence single-one-time	Enters single-one-time mode.
Step 7	UCS-A/fex/fault-suppress-task/local-schedule/single-one-time # set date <i>month day-of-month year hour minute seconds</i>	Specifies the date and time that this occurrence should run.

	Command or Action	Purpose
Step 8	UCS-A/fex/fault-suppress-task/local-schedule/single-one-time # set max-duration {none num-of-days num-of-hours num-of-minutes num-of-seconds}	Specifies the maximum length of time that this task can run. To run the task until it is manually stopped, enter none or omit this step.
Step 9	UCS-A/fex/fault-suppress-task/local-schedule/single-one-time # commit-buffer	Commits the transaction to the system configuration.

Example

The following example shows how to change the date and the fault suppression policy of the fault suppression task called task2:

```
UCS-A# scope fex 1
UCS-A/fex # scope fault-suppress-task task2
UCS-A/fex/fault-suppress-task # set fault-suppress-policy default-iom-maint
UCS-A/fex/fault-suppress-task* # scope local-schedule
UCS-A/fex/fault-suppress-task/local-schedule* # scope occurrence single-one-time
UCS-A/fex/fault-suppress-task/local-schedule/single-one-time* # set date dec 31 2013 11 00
00
UCS-A/fex/fault-suppress-task/local-schedule/single-one-time* # commit-buffer
```

The following example shows how to apply a different schedule to the fault suppression task called task1:

```
UCS-A# scope fex 1
UCS-A/fex # scope fault-suppress-task task1
UCS-A/fex/fault-suppress-task # set schedule monthly-maint
UCS-A/fex/fault-suppress-task* # commit-buffer
```

Viewing Suppressed Faults and Fault Suppression Tasks for a FEX

Procedure

	Command or Action	Purpose
Step 1	UCS-A# scope fex fex-num	Enters fex mode for the specified FEX.
Step 2	UCS-A/fex # show fault suppressed	Displays the suppressed faults for the FEX. Note Only faults owned by the selected component are displayed.
Step 3	UCS-A/fex # scope fault-suppress-task name	Enters fault-suppress-task mode.
Step 4	UCS-A/fex/fault-suppress-task # show detail expand	Displays the schedule or fixed time interval for the task.

Example

The following example shows how to display the suppressed faults for a FEX:

```

UCS-A# scope fex 1
UCS-A/fex # show fault suppressed
Fault Suppress Task:

Name                Status                Global Schedule Suppress Policy Name
-----
task1               Active                test_schedule1   Default FEX Phys Maint

UCS-A/fex #

```

The following example shows how to display the fault suppression task called task1:

```

UCS-A# scope fex 1
UCS-A/fex # scope fault-suppress-task task1
UCS-A/fex/fault-suppress-task # show detail expand
Fault Suppress Task:
  Name: task1
  Status: Active
  Global Schedule: test_schedule1
  Suppress Policy Name: Default FEX Phys Maint

UCS-A/fex/fault-suppress-task #

```

Deleting Fault Suppression Tasks for a FEX

Procedure

	Command or Action	Purpose
Step 1	UCS-A# scope fex <i>fex-num</i>	Enters fex mode for the specified FEX.
Step 2	UCS-A/fex # delete fault-suppress-task <i>name</i>	Deletes the specified fault suppression task.
Step 3	UCS-A/fex # commit-buffer	Commits the transaction to the system configuration.

Example

The following example shows how to delete the fault suppression task called task1:

```

UCS-A# scope fex 1
UCS-A/fex # delete fault-suppress-task task1
UCS-A/fex* # commit-buffer

```

Configuring Fault Suppression for a Server

Configuring Fault Suppression Tasks for a Server Using a Fixed Time Interval

The **default-server-maint** suppression policy is selected by default.

Procedure

	Command or Action	Purpose
Step 1	UCS-A# scope server [<i>chassis-num/server-num</i> <i>dynamic-uuid</i>]	Enters server mode for the specified server.
Step 2	UCS-A/server # create fault-suppress-task <i>name</i>	Creates a fault-suppress-task on the server, and enters the fault-suppress-task mode. This name can be between 1 and 16 alphanumeric characters. You cannot use spaces or any special characters other than - (hyphen), _ (underscore), : (colon), and . (period), and you cannot change this name after the object is saved.
Step 3	UCS-A/server/fault-suppress-task # create local-schedule	Creates a local schedule and enters local-schedule mode.
Step 4	UCS-A/server/fault-suppress-task/local-schedule # create occurrence single-one-time	Creates a one-time occurrence, and enters single-one-time mode.
Step 5	UCS-A/server/fault-suppress-task/local-schedule/single-one-time # set date <i>month day-of-month year hour minute seconds</i>	Specifies the date and time that this occurrence should run.
Step 6	UCS-A/server/fault-suppress-task/local-schedule/single-one-time # set max-duration { <i>none</i> <i>num-of-days num-of-hours num-of-minutes num-of-seconds</i> }	Specifies the maximum length of time that this task can run. To run the task until it is manually stopped, enter none or omit this step.
Step 7	UCS-A/server/fault-suppress-task/local-schedule/single-one-time # commit-buffer	Commits the transaction to the system configuration.

Example

The following example shows how to create a fault suppression task called task2 for the server, set the start date to January 1, 2013 at 11:00, and commit the transaction:

```
UCS-A# scope server 1/1
UCS-A/server # create fault-suppress-task task2
UCS-A/server/fault-suppress-task* # create local-schedule
UCS-A/server/fault-suppress-task/local-schedule* # create occurrence single-one-time
UCS-A/server/fault-suppress-task/local-schedule/single-one-time* # set date jan 1 2013 11
00 00
UCS-A/server/fault-suppress-task/local-schedule/single-one-time* # commit-buffer
```

Configuring Fault Suppression Tasks for a Server using a Schedule

The **default-server-maint** suppression policy is selected by default.

Procedure

	Command or Action	Purpose
Step 1	UCS-A# scope server [<i>chassis-num/server-num</i> <i>dynamic-uuid</i>]	Enters server mode for the specified server.
Step 2	UCS-A/server # create fault-suppress-task <i>name</i>	Creates a fault-suppress-task on the server, and enters the fault-suppress-task mode. This name can be between 1 and 16 alphanumeric characters. You cannot use spaces or any special characters other than - (hyphen), _ (underscore), : (colon), and . (period), and you cannot change this name after the object is saved.
Step 3	UCS-A/server/fault-suppress-task # set schedule <i>name</i>	Specifies the schedule that you want to use. Note The schedule must exist before you can use it in a fault suppression task. For more information about creating schedules, see Creating a Schedule, on page 52 .
Step 4	UCS-A/server/fault-suppress-task # commit-buffer	Commits the transaction to the system configuration.

Example

The following example shows how to create a fault suppression task called task1 for the server, apply the scheduler called weekly_maint to the task, and commit the transaction:

```
UCS-A# scope server 1/1
UCS-A/server # create fault-suppress-task task1
UCS-A/server/fault-suppress-task* # set schedule weekly_maint
UCS-A/server/fault-suppress-task* # commit-buffer
```

Modifying Fault Suppression Tasks for a Server**Procedure**

	Command or Action	Purpose
Step 1	UCS-A# scope server [<i>chassis-num/server-num</i> <i>dynamic-uuid</i>]	Enters server mode for the specified server.
Step 2	UCS-A/server # scope fault-suppress-task <i>name</i>	Enters fault-suppress-task mode.

	Command or Action	Purpose
		Note To apply a different schedule to the fault suppression task, go to Step 3. To change the fixed time interval of the fault suppression task, go to Step 4.
Step 3	UCS-A/server/fault-suppress-task # set schedule <i>name</i>	Applies a different schedule. Note If you change from a fixed time interval to a schedule, the fixed time interval is deleted when you commit. If you change from a schedule to a fixed time interval, the reference to the schedule is cleared when you commit.
Step 4	UCS-A/server/fault-suppress-task # scope local-schedule	Enters local-schedule mode.
Step 5	UCS-A/server/fault-suppress-task/local-schedule # scope occurrence single-one-time	Enters single-one-time mode.
Step 6	UCS-A/server/fault-suppress-task/local-schedule/single-one-time # set date <i>month day-of-month year hour minute seconds</i>	Specifies the date and time that this occurrence should run.
Step 7	UCS-A/server/fault-suppress-task/local-schedule/single-one-time # set max-duration { <i>none</i> <i>num-of-days num-of-hours num-of-minutes num-of-seconds</i> }	Specifies the maximum length of time that this task can run. To run the task until it is manually stopped, enter none or omit this step.
Step 8	UCS-A/server/fault-suppress-task/local-schedule/single-one-time # commit-buffer	Commits the transaction to the system configuration.

Example

The following example shows how to change the date and the fault suppression policy of the fault suppression task called task2:

```
UCS-A# scope server 1/1
UCS-A/server # scope fault-suppress-task task2
UCS-A/server/fault-suppress-task # scope local-schedule
UCS-A/server/fault-suppress-task/local-schedule # scope occurrence single-one-time
UCS-A/server/fault-suppress-task/local-schedule/single-one-time # set date dec 31 2013 11 00 00
UCS-A/server/fault-suppress-task/local-schedule/single-one-time* # commit-buffer
```

The following example shows how to apply a different schedule to the fault suppression task called task1:

```
UCS-A# scope server 1/1
UCS-A/server # scope fault-suppress-task task1
```

```
UCS-A/server/fault-suppress-task # set schedule monthly-maint
UCS-A/server/fault-suppress-task* # commit-buffer
```

Creating a Schedule

Procedure

	Command or Action	Purpose
Step 1	UCS-A# scope system	Enters system mode.
Step 2	UCS-A /system # create scheduler <i>sched-name</i>	Creates a scheduler and enters scheduler mode.
Step 3	UCS-A /system/scheduler # commit-buffer	Commits the transaction to the system configuration.

Example

The following example creates a scheduler called maintenancesched and commits the transaction:

```
UCS-A# scope system
UCS-A /system # create scheduler maintenancesched
UCS-A /system/scheduler* # commit-buffer
UCS-A /system/scheduler #
```

What to do next

Create a one time occurrence or recurring occurrence for the schedule.

Viewing Suppressed Faults and Fault Suppression Tasks for a Server

Procedure

	Command or Action	Purpose
Step 1	UCS-A# scope server [<i>chassis-num/server-num</i> <i>dynamic-uuid</i>]	Enters server mode for the specified server.
Step 2	UCS-A/server # show fault suppressed	Displays the suppressed faults for the server. Note Only faults owned by the selected component are displayed.
Step 3	UCS-A/server # scope fault-suppress-task <i>name</i>	Enters fault-suppress-task mode.
Step 4	UCS-A/server/fault-suppress-task # show detail expand	Displays the schedule or fixed time interval for the task.

Example

The following example shows how to display the suppressed faults for a server:

```
UCS-A# scope server 1/1
UCS-A/server # show fault suppressed
Fault Suppress Task:

Name                Status                Global Schedule Suppress Policy Name
-----
task1               Active                test_schedule1   Default Server Maint

UCS-A/server #
```

The following example shows how to display the fault suppression task called task1:

```
UCS-A# scope server 1/1
UCS-A/server # scope fault-suppress-task task1
UCS-A/server/fault-suppress-task # show detail expand
Fault Suppress Task:
  Name: task1
  Status: Active
  Global Schedule: test_schedule1
  Suppress Policy Name: Default Server Maint

UCS-A/server/fault-suppress-task #
```

Deleting Fault Suppression Tasks for a Server

Procedure

	Command or Action	Purpose
Step 1	UCS-A# scope server [<i>chassis-num/server-num</i> <i>dynamic-uuid</i>]	Enters server mode for the specified server.
Step 2	UCS-A/server # delete fault-suppress-task <i>name</i>	Deletes the specified fault suppression task.
Step 3	UCS-A/server # commit-buffer	Commits the transaction to the system configuration.

Example

The following example shows how to delete the fault suppression task called task1:

```
UCS-A# scope server 1/1
UCS-A/server # delete fault-suppress-task task1
UCS-A/server* # commit-buffer
```

Configuring Fault Suppression for a Service Profile

Configuring Fault Suppression Tasks for a Service Profile Using a Fixed Time Interval

The **default-server-maint** suppression policy is selected by default.

Procedure

	Command or Action	Purpose
Step 1	UCS-A# scope org <i>org-name</i>	Enters the organization mode for the specified organization. To enter the root organization mode, enter / as the <i>org-name</i> .
Step 2	UCS-A /org # scope service-profile <i>profile-name</i>	Enters service profile organization mode for the service profile.
Step 3	UCS-A /org/service-profile # create fault-suppress-task <i>name</i>	Creates a fault-suppress-task on the chassis, and enters the fault-suppress-task mode. This name can be between 1 and 16 alphanumeric characters. You cannot use spaces or any special characters other than - (hyphen), _ (underscore), : (colon), and . (period), and you cannot change this name after the object is saved.
Step 4	UCS-A/org/service-profile/fault-suppress-task # create local-schedule	Creates a local schedule and enters local-schedule mode.
Step 5	UCS-A/org/service-profile/fault-suppress-task/local-schedule # create occurrence single-one-time	Creates a one-time occurrence, and enters single-one-time mode.
Step 6	UCS-A/org/service-profile/fault-suppress-task/local-schedule/single-one-time # set date <i>month day-of-month year hour minute seconds</i>	Specifies the date and time that this occurrence should run.
Step 7	UCS-A/org/service-profile/fault-suppress-task/local-schedule/single-one-time # set max-duration { none <i>num-of-days num-of-hours num-of-minutes num-of-seconds</i> }	Specifies the maximum length of time that this task can run. To run the task until it is manually stopped, enter none or omit this step.
Step 8	UCS-A/org/service-profile/fault-suppress-task/local-schedule/single-one-time # commit-buffer	Commits the transaction to the system configuration.

Example

The following example shows how to create a fault suppression task called task2 under the accounting service profile, set the start date to January 1, 2013 at 11:00, and commit the transaction:

```
UCS-A# scope org /
UCS-A/org # scope service-profile accounting
UCS-A/org/service-profile # create fault-suppress-task task2
UCS-A/org/service-profile/fault-suppress-task* # create local-schedule
UCS-A/org/service-profile/fault-suppress-task/local-schedule* # create occurrence
```

```

single-one-time
UCS-A/org/service-profile/fault-suppress-task/local-schedule/single-one-time* # set date
jan 1 2013 11 00 00
UCS-A/org/service-profile/fault-suppress-task/local-schedule/single-one-time* # commit-buffer

```

Configuring Fault Suppression Tasks for a Service Profile Using a Schedule

The **default-server-maint** suppression policy is selected by default.

Procedure

	Command or Action	Purpose
Step 1	UCS-A# scope org <i>org-name</i>	Enters the organization mode for the specified organization. To enter the root organization mode, enter / as the <i>org-name</i> .
Step 2	UCS-A /org # scope service-profile <i>profile-name</i>	Enters service profile organization mode for the service profile.
Step 3	UCS-A /org/service-profile # create fault-suppress-task <i>name</i>	Creates a fault-suppress-task on the chassis, and enters the fault-suppress-task mode. This name can be between 1 and 16 alphanumeric characters. You cannot use spaces or any special characters other than - (hyphen), _ (underscore), : (colon), and . (period), and you cannot change this name after the object is saved.
Step 4	UCS-A/org/service-profile/fault-suppress-task # set schedule <i>name</i>	Specifies the schedule that you want to use. Note The schedule must exist before you can use it in a fault suppression task. For more information about creating schedules, see Creating a Schedule, on page 52 .
Step 5	UCS-A/org/service-profile/fault-suppress-task # commit-buffer	Commits the transaction to the system configuration.

Example

The following example shows how to create a fault suppression task called task1 under the accounting service profile, apply the scheduler called weekly_maint to the task, and commit the transaction:

```

UCS-A# scope org /
UCS-A/org # scope service-profile accounting
UCS-A/org/service-profile # create fault-suppress-task task1
UCS-A/org/service-profile/fault-suppress-task* # set schedule weekly_maint
UCS-A/org/service-profile/fault-suppress-task* # commit-buffer

```

Modifying Fault Suppression Tasks for a Service Profile

Procedure

	Command or Action	Purpose
Step 1	UCS-A# scope org <i>org-name</i>	Enters the organization mode for the specified organization. To enter the root organization mode, enter / as the <i>org-name</i> .
Step 2	UCS-A /org # scope service-profile <i>profile-name</i>	Enters service profile organization mode for the service profile.
Step 3	UCS-A/org/service-profile # scope fault-suppress-task <i>name</i>	Enters fault-suppress-task mode. Note To apply a different schedule to the fault suppression task, go to Step 4. To change the fixed time interval of the fault suppression task, go to Step 5.
Step 4	UCS-A/org/service-profile/fault-suppress-task # set schedule <i>name</i>	Applies a different schedule. Note If you change from a fixed time interval to a schedule, the fixed time interval is deleted when you commit. If you change from a schedule to a fixed time interval, the reference to the schedule is cleared when you commit.
Step 5	UCS-A/org/service-profile/fault-suppress-task # scope local-schedule	Enters local-schedule mode.
Step 6	UCS-A/org/service-profile/fault-suppress-task/local-schedule # scope occurrence single-one-time	Enters single-one-time mode.
Step 7	UCS-A/org/service-profile/fault-suppress-task/local-schedule/single-one-time # set date <i>month day-of-month year hour minute seconds</i>	Specifies the date and time that this occurrence should run.
Step 8	UCS-A/org/service-profile/fault-suppress-task/local-schedule/single-one-time # set max-duration { none <i>num-of-days num-of-hours num-of-minutes num-of-seconds</i> }	Specifies the maximum length of time that this task can run. To run the task until it is manually stopped, enter none or omit this step.
Step 9	UCS-A/org/service-profile/fault-suppress-task/local-schedule/single-one-time # commit-buffer	Commits the transaction to the system configuration.

Example

The following example shows how to change the date and the fault suppression policy of the fault suppression task called task2:

```
UCS-A# scope org /
UCS-A/org # scope service-profile accounting
UCS-A/org/service-profile # scope fault-suppress-task task2
UCS-A/org/service-profile/fault-suppress-task # scope local-schedule
UCS-A/org/service-profile/fault-suppress-task/local-schedule # scope occurrence
single-one-time
UCS-A/org/service-profile/fault-suppress-task/local-schedule/single-one-time # set date dec
31 2013 11 00 00
UCS-A/org/service-profile/fault-suppress-task/local-schedule/single-one-time* # commit-buffer
```

The following example shows how to apply a different schedule to the fault suppression task called task1:

```
UCS-A# scope org /
UCS-A/org # scope service-profile accounting
UCS-A/org/service-profile # scope fault-suppress-task task1
UCS-A/org/service-profile/fault-suppress-task # set schedule monthly-maint
UCS-A/org/service-profile/fault-suppress-task* # commit-buffer
```

Viewing Suppressed Faults and Fault Suppression Tasks for a Service Profile

Procedure

	Command or Action	Purpose
Step 1	UCS-A# scope org <i>org-name</i>	Enters the organization mode for the specified organization. To enter the root organization mode, enter / as the <i>org-name</i> .
Step 2	UCS-A /org # scope service-profile <i>profile-name</i>	Enters service profile organization mode for the service profile.
Step 3	UCS-A/org/service-profile # show fault suppressed	Displays the suppressed faults for the server. Note Only faults owned by the selected component are displayed.
Step 4	UCS-A/org/service-profile # scope fault-suppress-task <i>name</i>	Enters fault-suppress-task mode.
Step 5	UCS-A/org/service-profile/fault-suppress-task # show detail expand	Displays the schedule or fixed time interval for the task.

Example

The following example shows how to display the suppressed faults for a service profile:

```
UCS-A# scope org /
UCS-A/org # scope service-profile accounting
```

```
UCS-A/org/service-profile # show fault suppressed
UCS-A/org/service-profile #
Fault Suppress Task:

Name                Status                Global Schedule Suppress Policy Name
-----
task1               Active                test_schedule1   Default Server Maint

UCS-A/org/service-profile #
```

The following example shows how to display the fault suppression task called task1:

```
UCS-A# scope org /
UCS-A/org # scope service-profile accounting
UCS-A/org/service-profile # scope fault-suppress-task task1
UCS-A/org/service-profile/fault-suppress-task # show detail expand
Fault Suppress Task:
  Name: task1
  Status: Active
  Global Schedule: test_schedule1
  Suppress Policy Name: Default Server Maint

UCS-A/org/service-profile/fault-suppress-task #
```

Deleting Fault Suppression Tasks for a Service Profile

Procedure

	Command or Action	Purpose
Step 1	UCS-A# scope org <i>org-name</i>	Enters the organization mode for the specified organization. To enter the root organization mode, enter / as the <i>org-name</i> .
Step 2	UCS-A /org # scope service-profile <i>profile-name</i>	Enters service profile organization mode for the service profile.
Step 3	UCS-A/org/service-profile # delete fault-suppress-task <i>name</i>	Deletes the specified fault suppression task.
Step 4	UCS-A/org/service-profile # commit-buffer	Commits the transaction to the system configuration.

Example

The following example shows how to delete the fault suppression task called task1:

```
UCS-A# scope org /
UCS-A/org # scope service-profile accounting
UCS-A/org/service-profile # delete fault-suppress-task task1
UCS-A/org/service-profile* # commit-buffer
```


Configuring Fault Suppression for an Organization

Configuring Fault Suppression Tasks for an Organization Using a Fixed Time Interval

The **default-server-maint** suppression policy is selected by default.

Procedure

	Command or Action	Purpose
Step 1	UCS-A# scope org <i>org-name</i>	Enters the organization mode for the specified organization. To enter the root organization mode, enter / as the <i>org-name</i> .
Step 2	UCS-A/org # create fault-suppress-task <i>name</i>	Creates a fault-suppress-task for the organization, and enters fault-suppress-task mode. This name can be between 1 and 16 alphanumeric characters. You cannot use spaces or any special characters other than - (hyphen), _ (underscore), : (colon), and . (period), and you cannot change this name after the object is saved.
Step 3	UCS-A/org/fault-suppress-task # create local-schedule	Creates a local schedule and enters local-schedule mode.
Step 4	UCS-A/org/fault-suppress-task/local-schedule # create occurrence single-one-time	Creates a one-time occurrence, and enters single-one-time mode.
Step 5	UCS-A/org/fault-suppress-task/local-schedule/single-one-time # set date <i>month day-of-month year hour minute seconds</i>	Specifies the date and time that this occurrence should run.
Step 6	UCS-A/org/fault-suppress-task/local-schedule/single-one-time # set max-duration { <i>none</i> <i>num-of-days num-of-hours num-of-minutes num-of-seconds</i> }	Specifies the maximum length of time that this task can run. To run the task until it is manually stopped, enter none or omit this step.
Step 7	UCS-A/org/fault-suppress-task/local-schedule/single-one-time # commit-buffer	Commits the transaction to the system configuration.

Example

The following example shows how to create a fault suppression task called task2 under the Root organization, set the start date to January 1, 2013 at 11:00, and commit the transaction:

```
UCS-A# scope org /
UCS-A/org # create fault-suppress-task task2
UCS-A/org/fault-suppress-task* # create local-schedule
UCS-A/org/fault-suppress-task/local-schedule* # create occurrence single-one-time
UCS-A/org/fault-suppress-task/local-schedule/single-one-time* # set date jan 1 2013 11 00 00
UCS-A/org/fault-suppress-task/local-schedule/single-one-time* # commit-buffer
```

Configuring Fault Suppression Tasks for an Organization Using a Schedule

The **default-server-maint** suppression policy is selected by default.

Procedure

	Command or Action	Purpose
Step 1	UCS-A# scope org <i>org-name</i>	Enters the organization mode for the specified organization. To enter the root organization mode, enter / as the <i>org-name</i> .
Step 2	UCS-A/org # create fault-suppress-task <i>name</i>	Creates a fault-suppress-task for the organization, and enters the fault-suppress-task mode. This name can be between 1 and 16 alphanumeric characters. You cannot use spaces or any special characters other than - (hyphen), _ (underscore), : (colon), and . (period), and you cannot change this name after the object is saved.
Step 3	UCS-A/org/fault-suppress-task # set schedule <i>name</i>	Specifies the schedule that you want to use. Note The schedule must exist before you can use it in a fault suppression task. For more information about creating schedules, see Creating a Schedule, on page 52 .
Step 4	UCS-A/org/fault-suppress-task # commit-buffer	Commits the transaction to the system configuration.

Example

The following example shows how to create a fault suppression task called task1 under the Root organization, apply the scheduler called weekly_maint to the task, and commit the transaction:

```
UCS-A# scope org /
UCS-A/org # create fault-suppress-task task1
UCS-A/org/fault-suppress-task* # set schedule weekly_maint
UCS-A/org/fault-suppress-task* # commit-buffer
```

Modifying Fault Suppression Tasks for an Organization

Procedure

	Command or Action	Purpose
Step 1	UCS-A# scope org <i>org-name</i>	Enters the organization mode for the specified organization. To enter the root organization mode, enter / as the <i>org-name</i> .
Step 2	UCS-A/org # scope fault-suppress-task <i>name</i>	Enters fault-suppress-task mode. Note To apply a different schedule to the fault suppression task, go to Step 3. To change the fixed time interval of the fault suppression task, go to Step 4.
Step 3	UCS-A/org/fault-suppress-task # set schedule <i>name</i>	Applies a different schedule. Note If you change from a fixed time interval to a schedule, the fixed time interval is deleted when you commit. If you change from a schedule to a fixed time interval, the reference to the schedule is cleared when you commit.
Step 4	UCS-A/org/fault-suppress-task # scope local-schedule	Enters local-schedule mode.
Step 5	UCS-A/org/fault-suppress-task/local-schedule # scope occurrence single-one-time	Enters single-one-time mode.
Step 6	UCS-A/org/fault-suppress-task/local-schedule/single-one-time # set date <i>month day-of-month year hour minute seconds</i>	Specifies the date and time that this occurrence should run.
Step 7	UCS-A/org/fault-suppress-task/local-schedule/single-one-time # set max-duration { none <i>num-of-days num-of-hours num-of-minutes num-of-seconds</i> }	Specifies the maximum length of time that this task can run. To run the task until it is manually stopped, enter none or omit this step.
Step 8	UCS-A/org/fault-suppress-task/local-schedule/single-one-time # commit-buffer	Commits the transaction to the system configuration.

Example

The following example shows how to change the date and the fault suppression policy of the fault suppression task called task2:

```
UCS-A# scope org /
UCS-A/org # scope fault-suppress-task task2
```

```
UCS-A/org/fault-suppress-task* # scope local-schedule
UCS-A/org/fault-suppress-task/local-schedule # scope occurrence single-one-time
UCS-A/org/fault-suppress-task/local-schedule/single-one-time # set date dec 31 2013 11 00
00
UCS-A/org/fault-suppress-task/local-schedule/single-one-time* # commit-buffer
```

The following example shows how to apply a different schedule to the fault suppression task called task1:

```
UCS-A# scope org
UCS-A/org # scope fault-suppress-task task1
UCS-A/org/fault-suppress-task # set schedule monthly-maint
UCS-A/org/fault-suppress-task* # commit-buffer
```

Viewing Suppressed Faults and Fault Suppression Tasks for an Organization

Procedure

	Command or Action	Purpose
Step 1	UCS-A# scope org <i>org-name</i>	Enters the organization mode for the specified organization. To enter the root organization mode, enter / as the <i>org-name</i> .
Step 2	UCS-A/org # show fault suppressed	Displays the suppressed faults for the organization Note Only faults owned by the selected component are displayed.
Step 3	UCS-A/org # scope fault-suppress-task <i>name</i>	Enters fault-suppress-task mode.
Step 4	UCS-A/org/fault-suppress-task # show detail expand	Displays the schedule or fixed time interval for the task.

Example

The following example shows how to display the suppressed faults for an organization:

```
UCS-A# scope org Finance
UCS-A/org # show fault suppressed
UCS-A/org #
Fault Suppress Task:
```

Name	Status	Global Schedule	Suppress Policy Name
task1	Active	test_schedule1	Default Server Maint

```
UCS-A/org #
```

The following example shows how to display the fault suppression task called task1:

```
UCS-A# scope org Finance
UCS-A/org # scope fault-suppress-task task1
UCS-A/org/fault-suppress-task # show detail expand
```

```
Fault Suppress Task:
  Name: task1
  Status: Active
  Global Schedule: test_schedule1
  Suppress Policy Name: Default Server Maint

UCS-A/org/fault-suppress-task #
```

Deleting Fault Suppression Tasks for an Organization

Procedure

	Command or Action	Purpose
Step 1	UCS-A# scope org <i>org-name</i>	Enters the organization mode for the specified organization. To enter the root organization mode, enter / as the <i>org-name</i> .
Step 2	UCS-A/org # delete fault-suppress-task <i>name</i>	Deletes the specified fault suppression task.
Step 3	UCS-A/org # commit-buffer	Commits the transaction to the system configuration.

Example

The following example shows how to delete the fault suppression task called task1:

```
UCS-A# scope org /
UCS-A/org # delete fault-suppress-task task1
UCS-A/org* # commit-buffer
```




CHAPTER 9

SNMP Configuration

- [SNMP Overview, on page 65](#)
- [SNMP Functional Overview, on page 65](#)
- [SNMP Notifications, on page 66](#)
- [SNMP Security Levels and Privileges, on page 66](#)
- [Supported Combinations of SNMP Security Models and Levels, on page 67](#)
- [SNMPv3 Security Features, on page 67](#)
- [SNMP Support, on page 67](#)
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SNMP Overview

The Simple Network Management Protocol (SNMP) is an application-layer protocol that provides a message format for communication between SNMP managers and agents. SNMP provides a standardized framework and a common language for monitoring and managing devices in a network.

SNMP Functional Overview

The SNMP framework consists of three parts:

- An SNMP manager—The system used to control and monitor the activities of network devices using SNMP.
- An SNMP agent—The software component within Cisco UCS, the managed device that maintains the data for Cisco UCS, and reports the data as needed to the SNMP manager. Cisco UCS includes the agent and a collection of MIBs. To enable the SNMP agent and create the relationship between the manager and agent, enable and configure SNMP in Cisco UCS Manager.
- A managed information base (MIB)—The collection of managed objects on the SNMP agent. Cisco UCS release 1.4(1) and higher supports a larger number of MIBs than earlier releases.

Cisco UCS supports SNMPv1, SNMPv2c and SNMPv3. Both SNMPv1 and SNMPv2c use a community-based form of security. SNMP is defined in the following:

- RFC 3410 (<http://tools.ietf.org/html/rfc3410>)
- RFC 3411 (<http://tools.ietf.org/html/rfc3411>)

- RFC 3412 (<http://tools.ietf.org/html/rfc3412>)
- RFC 3413 (<http://tools.ietf.org/html/rfc3413>)
- RFC 3414 (<http://tools.ietf.org/html/rfc3414>)
- RFC 3415 (<http://tools.ietf.org/html/rfc3415>)
- RFC 3416 (<http://tools.ietf.org/html/rfc3416>)
- RFC 3417 (<http://tools.ietf.org/html/rfc3417>)
- RFC 3418 (<http://tools.ietf.org/html/rfc3418>)
- RFC 3584 (<http://tools.ietf.org/html/rfc3584>)

SNMP Notifications

A key feature of SNMP is the ability to generate notifications from an SNMP agent. These notifications do not require that requests be sent from the SNMP manager. Notifications can indicate improper user authentication, restarts, the closing of a connection, loss of connection to a neighbor router, or other significant events.

Cisco UCS Manager generates SNMP notifications as either traps or informs. Traps are less reliable than informs because the SNMP manager does not send any acknowledgment when it receives a trap, and Cisco UCS Manager cannot determine if the trap was received. An SNMP manager that receives an inform request acknowledges the message with an SNMP response Protocol Data Unit (PDU). If the Cisco UCS Manager does not receive the PDU, it can send the inform request again.

SNMP Security Levels and Privileges

SNMPv1, SNMPv2c, and SNMPv3 each represent a different security model. The security model combines with the selected security level to determine the security mechanism applied when the SNMP message is processed.

The security level determines the privileges required to view the message associated with an SNMP trap. The privilege level determines whether the message requires protection from disclosure or whether the message is authenticated. The supported security level depends on which security model is implemented. SNMP security levels support one or more of the following privileges:

- noAuthNoPriv—No authentication or encryption
- authNoPriv—Authentication but no encryption
- authPriv—Authentication and encryption

SNMPv3 provides for both security models and security levels. A security model is an authentication strategy that is set up for a user and the role in which the user resides. A security level is the permitted level of security within a security model. A combination of a security model and a security level determines which security mechanism is employed when handling an SNMP packet.

Supported Combinations of SNMP Security Models and Levels

The following table identifies the combinations of security models and levels.

Table 2: SNMP Security Models and Levels

Model	Level	Authentication	Encryption	What Happens
v1	noAuthNoPriv	Community string	No	Uses a community string match for authentication.
v2c	noAuthNoPriv	Community string	No	Uses a community string match for authentication.
v3	noAuthNoPriv	Username	No	Uses a username match for authentication.
v3	authNoPriv	HMAC-MD5 or HMAC-SHA	No	Provides authentication based on the Hash-Based Message Authentication Code (HMAC) Message Digest 5 (MD5) algorithm or the HMAC Secure Hash Algorithm (SHA).
v3	authPriv	HMAC-MD5 or HMAC-SHA	DES	Provides authentication based on the HMAC-MD5 or HMAC-SHA algorithms. Provides Data Encryption Standard (DES) 56-bit encryption in addition to authentication based on the Cipher Block Chaining (CBC) DES (DES-56) standard.

SNMPv3 Security Features

SNMPv3 provides secure access to devices through a combination of authenticating and encrypting frames over the network. SNMPv3 authorizes only configured users to perform management operations and encrypts SNMP messages. The SNMPv3 User-Based Security Model (USM) refers to SNMP message-level security and offers the following services:

- Message integrity—Ensures that messages are not altered or destroyed in an unauthorized manner, and that data sequences are not altered beyond what can occur non-maliciously.
- Message origin authentication—Ensures that the identity of a message originator is verifiable.
- Message confidentiality and encryption—Ensures that information is not made available or disclosed to unauthorized individuals, entities, or processes.

SNMP Support

Cisco UCS provides the following support for SNMP:

Support for MIBs

Cisco UCS supports read-only access to MIBs.

For information about the specific MIBs available for Cisco UCS and where you can obtain them, see the http://www.cisco.com/en/US/docs/unified_computing/ucs/sw/mib/b-series/b_UCS_MIBRef.html for B-series servers, and http://www.cisco.com/en/US/docs/unified_computing/ucs/sw/mib/c-series/b_UCS_Standalone_C-Series_MIBRef.html C-series servers.

Authentication Protocols for SNMPv3 Users

Cisco UCS supports the following authentication protocols for SNMPv3 users:

- HMAC-MD5-96 (MD5)
- HMAC-SHA-96 (SHA)

AES Privacy Protocol for SNMPv3 Users

Cisco UCS uses Advanced Encryption Standard (AES) as one of the privacy protocols for SNMPv3 message encryption and conforms with RFC 3826.

The privacy password, or `priv` option, offers a choice of DES or 128-bit AES encryption for SNMP security encryption. If you enable AES-128 configuration and include a privacy password for an SNMPv3 user, Cisco UCS Manager uses the privacy password to generate a 128-bit AES key. The AES privacy password can have a minimum of eight characters. If the passphrases are specified in clear text, you can specify a maximum of 64 characters.

Configuring SNMP

Enabling SNMP and Configuring SNMP Properties

SNMP messages from a Cisco UCS domain display the fabric interconnect name rather than the system name.

Procedure

	Command or Action	Purpose
Step 1	UCS-A# scope monitoring	Enters monitoring mode.
Step 2	UCS-A /monitoring # enable snmp	Enables SNMP.
Step 3	UCS-A /monitoring # set snmp community	Enters snmp community mode.
Step 4	UCS-A /monitoring # Enter a snmp community: <i>community-name</i>	Specifies SNMP community. Use the community name as a password. The community name can be any alphanumeric string up to 32 characters.
Step 5	UCS-A /monitoring # set snmp syscontact <i>system-contact-name</i>	Specifies the system contact person responsible for the SNMP. The system contact name can be any alphanumeric string up to 255 characters, such as an email address or name and telephone number.

	Command or Action	Purpose
Step 6	UCS-A /monitoring # set snmp syslocation <i>system-location-name</i>	Specifies the location of the host on which the SNMP agent (server) runs. The system location name can be any alphanumeric string up to 512 characters.
Step 7	UCS-A /monitoring # commit-buffer	Commits the transaction to the system configuration.

Example

The following example enables SNMP, configures an SNMP community named `SnmCommSystem2`, configures a system contact named `contactperson`, configures a contact location named `systemlocation`, and commits the transaction:

```
UCS-A# scope monitoring
UCS-A /monitoring # enable snmp
UCS-A /monitoring* # set snmp community
UCS-A /monitoring* # Enter a snmp community: SnmCommSystem2
UCS-A /monitoring* # set snmp syscontact contactperson1
UCS-A /monitoring* # set snmp syslocation systemlocation
UCS-A /monitoring* # commit-buffer
UCS-A /monitoring #
```

What to do next

Create SNMP traps and users.

Creating an SNMP Trap

Procedure

	Command or Action	Purpose
Step 1	UCS-A# scope monitoring	Enters monitoring mode.
Step 2	UCS-A /monitoring # enable snmp	Enables SNMP.
Step 3	UCS-A /monitoring # create snmp-trap <i>{hostname ip-addr ip6-addr}</i>	Creates an SNMP trap host with the specified host name, IPv4 address, or IPv6 address. The host name can be a fully qualified domain name of an IPv4 address.
Step 4	UCS-A /monitoring/snmp-trap # set community <i>community-name</i>	Specifies the SNMP community name to be used for the SNMP trap.
Step 5	UCS-A /monitoring/snmp-trap # set port <i>port-num</i>	Specifies the port to be used for the SNMP trap.
Step 6	UCS-A /monitoring/snmp-trap # set version <i>{v1 v2c v3}</i>	Specifies the SNMP version and model used for the trap.

	Command or Action	Purpose
Step 7	(Optional) UCS-A /monitoring/snmp-trap # set notificationtype {traps informs}	The type of trap to send. If you select v2c or v3 for the version, this can be: <ul style="list-style-type: none"> • traps—SNMP trap notifications • informs—SNMP inform notifications
Step 8	(Optional) UCS-A /monitoring/snmp-trap # set v3 privilege {auth noauth priv}	If you select v3 for the version, the privilege associated with the trap can be <ul style="list-style-type: none"> • auth—Authentication but no encryption • noauth—No authentication or encryption • priv—Authentication and encryption
Step 9	UCS-A /monitoring/snmp-trap # commit-buffer	Commits the transaction to the system configuration.

Example

The following example enables SNMP, creates an SNMP trap using an IPv4 address, specifies that the trap will use the SnmpCommSystem2 community on port 2, sets the version to v3, sets the notification type to traps, sets the v3 privilege to priv, and commits the transaction:

```
UCS-A# scope monitoring
UCS-A /monitoring # enable snmp
UCS-A /monitoring* # create snmp-trap 100.10.111.112
UCS-A /monitoring/snmp-trap* # set community SnmpCommSystem2
UCS-A /monitoring/snmp-trap* # set port 2
UCS-A /monitoring/snmp-trap* # set version v3
UCS-A /monitoring/snmp-trap* # set notificationtype traps
UCS-A /monitoring/snmp-trap* # set v3 privilege priv
UCS-A /monitoring/snmp-trap* # commit-buffer
UCS-A /monitoring/snmp-trap #
```

The following example enables SNMP, creates an SNMP trap using an IPv6 address, specifies that the trap will use the SnmpCommSystem3 community on port 2, sets the version to v3, sets the notification type to traps, sets the v3 privilege to priv, and commits the transaction:

```
UCS-A# scope monitoring
UCS-A /monitoring # enable snmp
UCS-A /monitoring* # create snmp-trap 2001::1
UCS-A /monitoring/snmp-trap* # set community SnmpCommSystem3
UCS-A /monitoring/snmp-trap* # set port 2
UCS-A /monitoring/snmp-trap* # set version v3
UCS-A /monitoring/snmp-trap* # set notificationtype traps
UCS-A /monitoring/snmp-trap* # set v3 privilege priv
UCS-A /monitoring/snmp-trap* # commit-buffer
UCS-A /monitoring/snmp-trap #
```

Deleting an SNMP Trap

Procedure

	Command or Action	Purpose
Step 1	UCS-A# scope monitoring	Enters monitoring mode.
Step 2	UCS-A /monitoring # delete snmp-trap {hostname ip-addr}	Deletes the specified SNMP trap host with the specified hostname or IP address.
Step 3	UCS-A /monitoring # commit-buffer	Commits the transaction to the system configuration.

Example

The following example deletes the SNMP trap at IP address 192.168.100.112 and commits the transaction:

```
UCS-A# scope monitoring
UCS-A /monitoring # delete snmp-trap 192.168.100.112
UCS-A /monitoring* # commit-buffer
UCS-A /monitoring #
```

Generating Test SNMP Traps

You can generate a test SNMP trap without making any software or physical configuration change to the system.

Procedure

	Command or Action	Purpose
Step 1	connect nxos	Connects to the NX-OS operating system software.
Step 2	(nxos)# test pfm snmp test-trap ?	Returns the list of test trap options.
Step 3	(nxos)# test pfm snmp test-trap {fan powersupply temp_sensor}	Generates a test SNMP trap. <ul style="list-style-type: none"> • fan - Generate a test SNMP Trap for fan • powersupply -Generate a test SNMP Trap for Power Supply. • temp_sensor - Generate a test SNMP Trap for Temperature.

What to do next

While you run the NX-OS command, you can open another SSH session to the fabric interconnect and verify that SNMP packets are sent out from the fabric interconnect's management interface.

For complete packet:

```
(nxos)# ethanalyzer local interface mgmt capture-filter "udp port 162" limit-captured-frames
0 detail
```

To capture just packet headers

```
(nxos)# ethanalyzer local interface mgmt capture-filter "udp port 162" limit-captured-frames
0
```

Creating an SNMPv3 User

Procedure

	Command or Action	Purpose
Step 1	UCS-A# scope monitoring	Enters monitoring mode.
Step 2	UCS-A /monitoring # enable snmp	Enables SNMP.
Step 3	UCS-A /monitoring # create snmp-user <i>user-name</i>	Creates the specified SNMPv3 user. An SNMP username cannot be the same as a local username. Choose an SNMP username that does not match a local username.
Step 4	UCS-A /monitoring/snmp-user # set aes-128 {no yes}	Enables or disables the use of AES-128 encryption.
Step 5	UCS-A /monitoring/snmp-user # set auth {md5 sha}	Specifies the use of MD5 or DHA authentication.
Step 6	UCS-A /monitoring/snmp-user # set password	Specifies the user password. After you enter the set password command, you are prompted to enter and confirm the password. Note <ul style="list-style-type: none"> • The <i>Password Strength Check</i> option is supported only for locally authenticated users and is not supported for SNMPv3 users. • For more information on the password guidelines, see the <i>Guidelines for Cisco UCS Passwords</i> section in Cisco UCS Manager Administration Management Guide.
Step 7	UCS-A /monitoring/snmp-user # set priv-password	Specifies the user privacy password. After you enter the set priv-password command, you are prompted to enter and confirm the privacy password.

	Command or Action	Purpose
Step 8	UCS-A /monitoring/snmp-user # commit-buffer	Commits the transaction to the system configuration.

Example

The following example enables SNMP, creates an SNMPv3 user named snmp-user14, disables AES-128 encryption, specifies the use of MD5 authentication, sets the password and privacy password, and commits the transaction:

```
UCS-A# scope monitoring
UCS-A /monitoring # enable snmp
UCS-A /monitoring* # create snmp-user snmp-user14
UCS-A /monitoring/snmp-user* # set aes-128 no
UCS-A /monitoring/snmp-user* # set auth md5
UCS-A /monitoring/snmp-user* # set password
Enter a password:
Confirm the password:
UCS-A /monitoring/snmp-user* # set priv-password
Enter a password:
Confirm the password:
UCS-A /monitoring/snmp-user* # commit-buffer
UCS-A /monitoring/snmp-user #
```

Deleting an SNMPv3 User

Procedure

	Command or Action	Purpose
Step 1	UCS-A# scope monitoring	Enters monitoring mode.
Step 2	UCS-A /monitoring # delete snmp-user <i>user-name</i>	Deletes the specified SNMPv3 user.
Step 3	UCS-A /monitoring # commit-buffer	Commits the transaction to the system configuration.

Example

The following example deletes the SNMPv3 user named snmp-user14 and commits the transaction:

```
UCS-A# scope monitoring
UCS-A /monitoring # delete snmp-user snmp-user14
UCS-A /monitoring* # commit-buffer
UCS-A /monitoring #
```




CHAPTER 10

Statistics Collection Policy Configuration

- [Statistics Collection Policy, on page 75](#)
- [Configuring a Statistics Collection Policy, on page 76](#)

Statistics Collection Policy

A statistics collection policy defines how frequently statistics are collected (collection interval) and how frequently the statistics are reported (reporting interval). Reporting intervals are longer than collection intervals so that multiple statistical data points can be collected during the reporting interval. This provides Cisco UCS Manager with sufficient data to calculate and report minimum, maximum, and average values.

For NIC statistics, Cisco UCS Manager displays the average, minimum, and maximum of the change since the last collection of statistics. If the values are 0, there has been no change since the last collection.

Statistics can be collected and reported for the following five functional areas of the Cisco UCS system:

- Adapter — Statistics related to the adapters
- Chassis — Statistics related to the chassis
- Host — This policy is a placeholder for future support
- Port — Statistics related to the ports, including server ports, uplink Ethernet ports, and uplink Fibre Channel ports
- Server — Statistics related to servers



Note

Cisco UCS Manager has one default statistics collection policy for each of the five functional areas. You cannot create additional statistics collection policies and you cannot delete the existing default policies. You can only modify the default policies.

The values that are displayed for delta counter in Cisco UCS Manager are calculated as the difference between the last two samples in a collection interval. In addition, Cisco UCS Manager displays the average, minimum, and maximum delta values of the samples in the collection interval.

Configuring a Statistics Collection Policy

Procedure

	Command or Action	Purpose
Step 1	UCS-A# scope monitoring	Enters monitoring mode.
Step 2	UCS-A/monitoring # scope stats-collection-policy {adapter chassis host port server}	Enters statistics collection policy mode for the specified policy type.
Step 3	UCS-A /monitoring/stats-collection-policy # set collection-interval {1minute 2minutes 30seconds 5minutes}	Specifies the interval at which statistics are collected from the system.
Step 4	UCS-A /monitoring/stats-collection-policy # set reporting-interval {15minutes 30minutes 60minutes}	Specifies the interval at which collected statistics are reported.
Step 5	UCS-A /monitoring/stats-collection-policy # commit-buffer	Commits the transaction to the system configuration.

Example

The following example creates a statistics collection policy for ports, sets the collection interval to one minute, the reporting interval to 30 minutes, and commits the transaction:

```
UCS-A# scope monitoring
UCS-A /monitoring # scope stats-collection-policy port
UCS-A /monitoring/stats-collection-policy* # set collection-interval 1minute
UCS-A /monitoring/stats-collection-policy* # set reporting-interval 30minutes
UCS-A /monitoring/stats-collection-policy* # commit-buffer
UCS-A /monitoring/stats-collection-policy #
```



CHAPTER 11

Call Home and Smart Call Home Configuration

- [Call Home in UCS Overview, on page 77](#)
- [Call Home Considerations and Guidelines, on page 78](#)
- [Cisco UCS Faults and Call Home Severity Levels, on page 79](#)
- [Cisco Smart Call Home, on page 80](#)
- [Anonymous Reporting, on page 82](#)
- [Configuring Call Home, on page 82](#)
- [Enabling Call Home, on page 85](#)
- [Disabling Call Home, on page 85](#)
- [Configuring System Inventory Messages, on page 86](#)
- [Configuring Call Home Profiles, on page 87](#)
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Call Home in UCS Overview

Call Home provides an email-based notification for critical system policies. A range of message formats are available for compatibility with pager services or XML-based automated parsing applications. You can use this feature to page a network support engineer, email a Network Operations Center, or use Cisco Smart Call Home services to generate a case with the Technical Assistance Center.

The Call Home feature can deliver alert messages containing information about diagnostics and environmental faults and events.

The Call Home feature can deliver alerts to multiple recipients, referred to as Call Home destination profiles. Each profile includes configurable message formats and content categories. A predefined destination profile is provided for sending alerts to the Cisco TAC, but you also can define your own destination profiles.

When you configure Call Home to send messages, Cisco UCS Manager executes the appropriate CLI **show** command and attaches the command output to the message.

Cisco UCS delivers Call Home messages in the following formats:

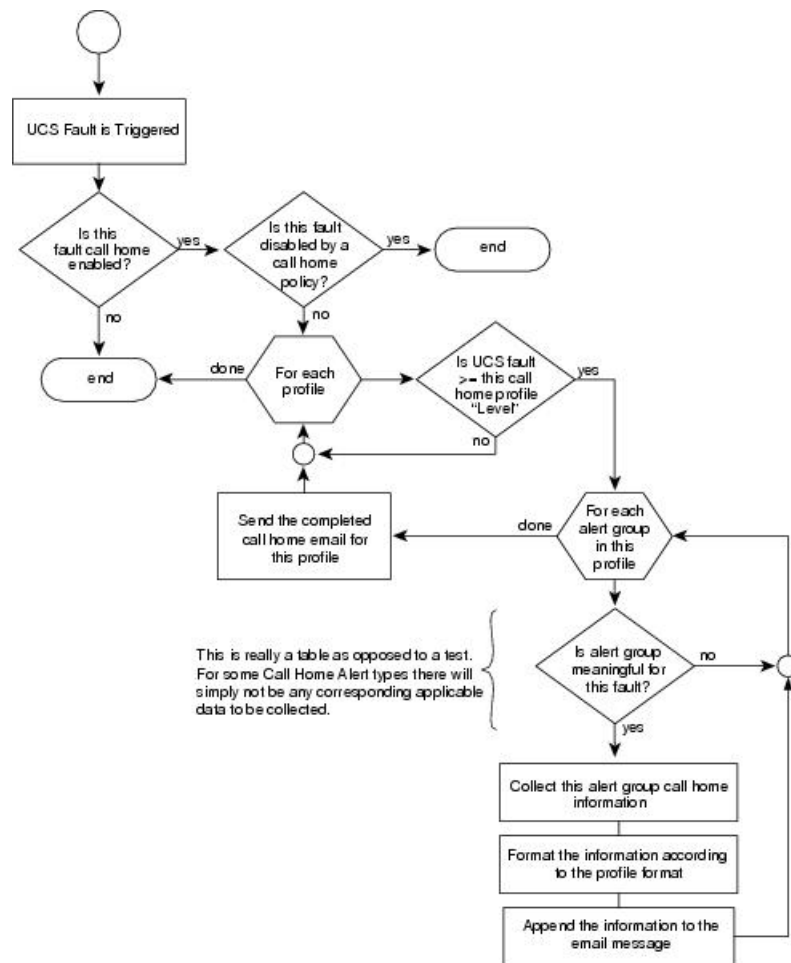
- Short text format which provides a one or two line description of the fault that is suitable for pagers or printed reports.

- Full text format which provides fully formatted message with detailed information that is suitable for human reading.
- XML machine-readable format that uses Extensible Markup Language (XML) and Adaptive Messaging Language (AML) XML Schema Definition (XSD). The AML XSD is published on the [Cisco.com website](http://Cisco.com). The XML format enables communication with the Cisco Systems Technical Assistance Center.

For information about the faults that can trigger Call Home email alerts, see the *Cisco UCS Faults and Error Messages Reference*.

The following figure shows the flow of events after a Cisco UCS fault is triggered in a system with Call Home configured:

Figure 2: Flow of Events after a Fault is Triggered



Call Home Considerations and Guidelines

How you configure Call Home depends on how you intend to use the feature. The information you need to consider before you configure Call Home includes the following:

Destination Profile

You must configure at least one destination profile. The destination profile or profiles that you use depends upon whether the receiving entity is a pager, email, or automated service such as Cisco Smart Call Home.

If the destination profile uses email message delivery, you must specify a Simple Mail Transfer Protocol (SMTP) server when you configure Call Home.

Contact Information

The contact email, phone, and street address information should be configured so that the receiver can determine the origin of messages received from the Cisco UCS domain.

Cisco Smart Call Home sends the registration email to this email address after you send a system inventory to begin the registration process.

If an email address includes special characters, such as # (hash), spaces, or & (ampersand), the email server might not be able to deliver email messages to that address. Cisco recommends that you use email addresses which comply with RFC2821 and RFC2822 and include only 7bit ASCII characters.

IP Connectivity to Email Server or HTTP Server

The fabric interconnect must have IP connectivity to an email server or the destination HTTP server. In a cluster configuration, both fabric interconnects must have IP connectivity. This connectivity ensures that the current, active fabric interconnect can send Call Home email messages. The source of these email messages is always the IP address of a fabric interconnect. The virtual IP address assigned to Cisco UCS Manager in a cluster configuration is never the source of the email.



Note Ensure that you add each fabric interconnect IP in the SMTP server. Call Home email messages cannot be delivered if the fabric interconnect IPs are not configured in the SMTP server.

Smart Call Home

If Cisco Smart Call Home is used, the following are required:

- An active service contract must cover the device being configured.
- The customer ID associated with the Smart Call Home configuration in Cisco UCS must be the CCO (Cisco.com) account name associated with a support contract that includes Smart Call Home.

Cisco UCS Faults and Call Home Severity Levels

Because Call Home is present across several Cisco product lines, Call Home has its own standardized severity levels. The following table describes how the underlying Cisco UCS fault levels map to the Call Home severity levels. You need to understand this mapping when you configure the Level setting for Call Home profiles.

Table 3: Mapping of Faults and Call Home Severity Levels

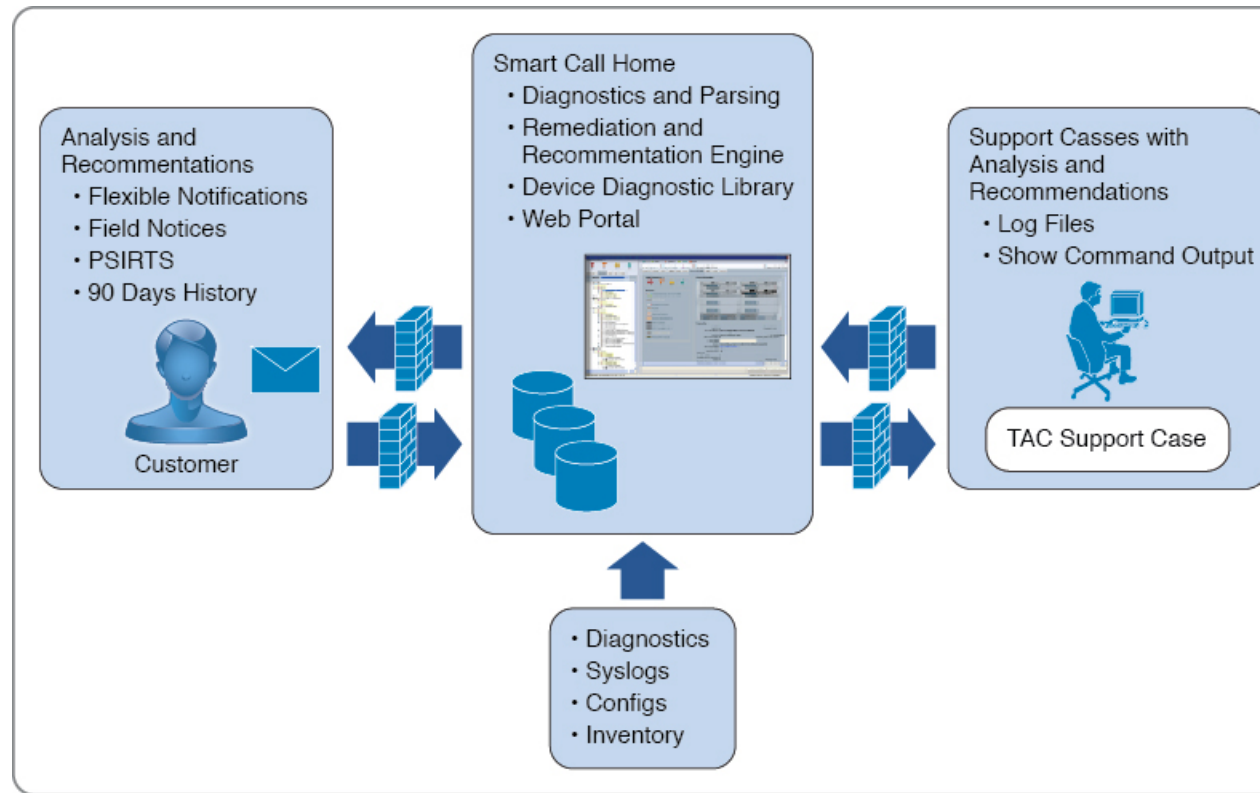
Call Home Severity	Cisco UCS Fault	Call Home Meaning
(9) Catastrophic	N/A	Network-wide catastrophic failure.

Call Home Severity	Cisco UCS Fault	Call Home Meaning
(8) Disaster	N/A	Significant network impact.
(7) Fatal	N/A	System is unusable.
(6) Critical	Critical	Critical conditions, immediate attention needed.
(5) Major	Major	Major conditions.
(4) Minor	Minor	Minor conditions.
(3) Warning	Warning	Warning conditions.
(2) Notification	Info	Basic notifications and informational messages. Possibly independently insignificant.
(1) Normal	Clear	Normal event, signifying a return to normal state.
(0) debug	N/A	Debugging messages.

Cisco Smart Call Home

Cisco Smart Call Home is a web application which leverages the Call Home feature of Cisco UCS. Smart Call Home offers proactive diagnostics and real-time email alerts of critical system events, which results in higher network availability and increased operational efficiency. Smart Call Home is a secure connected service offered by Cisco Unified Computing Support Service and Cisco Unified Computing Mission Critical Support Service for Cisco UCS.

Figure 3: Cisco Smart Call Home Features



Note Using Smart Call Home requires the following:

- A Cisco.com ID associated with a corresponding Cisco Unified Computing Support Service or Cisco Unified Computing Mission Critical Support Service contract for your company.
- Cisco Unified Computing Support Service or Cisco Unified Computing Mission Critical Support Service for the device to be registered.

You can configure and register Cisco UCS Manager to send Smart Call Home email alerts to either the Smart Call Home System or the secure Transport Gateway. Email alerts sent to the secure Transport Gateway are forwarded to the Smart Call Home System using HTTPS.



Note For security reasons, we recommend using the Transport Gateway option. The Transport Gateway can be downloaded from Cisco.com.

To configure Smart Call Home, do the following:

- Enable the Smart Call Home feature.
- Configure the contact information.
- Configure the email information.

- Configure the SMTP server information.
- Configure the default CiscoTAC-1 profile.



Note In order to apply Callhome sendtestAlert functionality at least one of the email destination should be set for profiles other than CiscoTAC-1.

- Send a Smart Call Home inventory message to start the registration process.
- Ensure that the Cisco.com ID you plan to use as the Call Home Customer ID for the Cisco UCS domain has the contract numbers from the registration added to its entitlements. You can update the ID in the **Account Properties** under **Additional Access** in the Profile Manager on Cisco.com.

Anonymous Reporting

After you upgrade to the latest release of Cisco UCS Manager, by default, you are prompted with a dialog box to enable anonymous reporting.

To enable anonymous reporting, you need to enter details about the SMTP server and the data file that is stored on the fabric switch. This report is generated every seven days and is compared with the previous version of the same report. When Cisco UCS Manager identifies changes in the report, the report is sent as an e-mail.

Configuring Call Home

Procedure

	Command or Action	Purpose
Step 1	UCS-A# scope monitoring	Enters monitoring mode.
Step 2	UCS-A /monitoring # scope callhome	Enters monitoring call home mode.
Step 3	UCS-A /monitoring/callhome # enable	Enables Call Home.
Step 4	UCS-A /monitoring/callhome # set contact name	Specifies the name of the main Call Home contact person.
Step 5	UCS-A /monitoring/callhome # set email email-addr	Specifies the email address of the main Call Home contact person.

	Command or Action	Purpose
		Note If an email address includes special characters, such as # (hash), spaces, or & (ampersand), the email server might not be able to deliver email messages to that address. Cisco recommends that you use email addresses which comply with RFC2821 and RFC2822 and include only 7bit ASCII characters.
Step 6	UCS-A /monitoring/callhome # set phone-contact <i>phone-num</i>	Specifies the phone number of the main Call Home contact person. The phone number must be in international format, starting with a + (plus sign) and a country code.
Step 7	UCS-A /monitoring/callhome # set street-address <i>street-addr</i>	Specifies the street address of the main Call Home contact person. Enter up to 255 ASCII characters.
Step 8	UCS-A /monitoring/callhome # set customer-id <i>id-num</i>	Specifies the CCO identification number that includes the contract numbers for the support contract in its entitlements. The number can be up to 255 alphanumeric characters in free format.
Step 9	UCS-A /monitoring/callhome # set contract-id <i>id-num</i>	Specifies the contract identification number from the service agreement. The number can be up to 255 alphanumeric characters in free format.
Step 10	UCS-A /monitoring/callhome # set site-id <i>id-num</i>	Specifies the site identification number from the service agreement. The number can be up to 255 alphanumeric characters in free format.
Step 11	UCS-A /monitoring/callhome # set from-email <i>email-addr</i>	Specifies the email address to use for the From field in Call Home messages.
Step 12	UCS-A /monitoring/callhome # set reply-to-email <i>email-addr</i>	Specifies the email address to use for the Reply To field in Call Home messages.
Step 13	UCS-A /monitoring/callhome # set hostname <i>{hostname ip-addr ip6-addr}</i>	Specifies the hostname, IPv4 or IPv6 address of the SMTP server that Call Home uses to send email messages.
Step 14	UCS-A /monitoring/callhome # set port <i>port-num</i>	Specifies the SMTP server port that Call Home uses to send email messages. Valid port numbers are 1 to 65535.
Step 15	UCS-A /monitoring/callhome # set throttling <i>{off on}</i>	Enables or disables Call Home throttling. When enabled, throttling prevents too many

	Command or Action	Purpose
		Call Home email messages from being sent for the same event. By default, throttling is enabled.
Step 16	UCS-A /monitoring/callhome # set urgency {alerts critical debugging emergencies errors information notifications warnings}	Specifies the urgency level for Call Home email messages. In the context of a large UCS deployment with several pairs of fabric interconnects, the urgency level potentially allows you to attach significance to Call Home messages from one particular Cisco UCS domain versus another. In the context of a small UCS deployment involving only two fabric interconnects, the urgency level holds little meaning.
Step 17	UCS-A /monitoring/callhome # commit-buffer	Commits the transaction to the system configuration.

Example

The following example configures Call Home with and IPv4 hostname and commits the transaction:

```
UCS-A# scope monitoring
UCS-A /monitoring* # scope callhome
UCS-A /monitoring/callhome* # enable
UCS-A /monitoring/callhome* # set contact "Steve Jones"
UCS-A /monitoring/callhome* # set email admin@MyCompany.com
UCS-A /monitoring/callhome* # set phone-contact +1-001-408-555-1234
UCS-A /monitoring/callhome* # set street-address "123 N. Main Street, Anytown, CA, 99885"
UCS-A /monitoring/callhome* # set customer-id 1234567
UCS-A /monitoring/callhome* # set contract-id 99887766
UCS-A /monitoring/callhome* # set site-id 5432112
UCS-A /monitoring/callhome* # set from-email person@MyCompany.com
UCS-A /monitoring/callhome* # set reply-to-email person@MyCompany.com
UCS-A /monitoring/callhome* # set hostname 192.168.100.12
UCS-A /monitoring/callhome* # set port 25
UCS-A /monitoring/callhome* # set throttling on
UCS-A /monitoring/callhome* # set urgency information
UCS-A /monitoring/callhome* # commit-buffer
UCS-A /monitoring/callhome #
```

The following example configures Call Home with and IPv6 hostname and commits the transaction:

```
UCS-A# scope monitoring
UCS-A /monitoring* # scope callhome
UCS-A /monitoring/callhome* # enable
UCS-A /monitoring/callhome* # set contact "Steve Jones"
UCS-A /monitoring/callhome* # set email admin@MyCompany.com
UCS-A /monitoring/callhome* # set phone-contact +1-001-408-555-1234
UCS-A /monitoring/callhome* # set street-address "123 N. Main Street, Anytown, CA, 99885"
UCS-A /monitoring/callhome* # set customer-id 1234567
UCS-A /monitoring/callhome* # set contract-id 99887766
UCS-A /monitoring/callhome* # set site-id 5432112
UCS-A /monitoring/callhome* # set from-email person@MyCompany.com
UCS-A /monitoring/callhome* # set reply-to-email person@MyCompany.com
UCS-A /monitoring/callhome* # set hostname 2001::25
```

```

UCS-A /monitoring/callhome* # set port 25
UCS-A /monitoring/callhome* # set throttling on
UCS-A /monitoring/callhome* # set urgency information
UCS-A /monitoring/callhome* # commit-buffer
UCS-A /monitoring/callhome #

```

Enabling Call Home

Procedure

	Command or Action	Purpose
Step 1	UCS-A# scope monitoring	Enters monitoring mode.
Step 2	UCS-A /monitoring # scope callhome	Enters monitoring call home mode.
Step 3	UCS-A /monitoring/callhome # enable	Enables Call Home.
Step 4	UCS-A /monitoring/callhome # commit-buffer	Commits the transaction to the system configuration.

Example

The following example enables Call Home and commits the transaction:

```

UCS-A# scope monitoring
UCS-A /monitoring # scope callhome
UCS-A /monitoring/callhome # enable
UCS-A /monitoring/callhome* # commit-buffer
UCS-A /monitoring/callhome #

```

Disabling Call Home

Procedure

	Command or Action	Purpose
Step 1	UCS-A# scope monitoring	Enters monitoring mode.
Step 2	UCS-A /monitoring # scope callhome	Enters monitoring call home mode.
Step 3	UCS-A /monitoring/callhome # disable	Enables Call Home.
Step 4	UCS-A /monitoring/callhome # commit-buffer	Commits the transaction to the system configuration.

Example

The following example disables Call Home and commits the transaction:

```
UCS-A# scope monitoring
UCS-A /monitoring # scope callhome
UCS-A /monitoring/callhome # disable
UCS-A /monitoring/callhome* # commit-buffer
UCS-A /monitoring/callhome #
```

Configuring System Inventory Messages

Configuring System Inventory Messages

Procedure

	Command or Action	Purpose
Step 1	UCS-A# scope monitoring	Enters monitoring mode.
Step 2	UCS-A /monitoring # scope callhome	Enters monitoring call home mode.
Step 3	UCS-A /monitoring/callhome # scope inventory	Enters monitoring call home inventory mode.
Step 4	UCS-A /monitoring/callhome/inventory # set send-periodically {off on}	Enables or disables the sending of inventory messages. When the on keyword is specified, inventory messages are automatically sent to the Call Home database.
Step 5	UCS-A /monitoring/callhome/inventory # set interval-days interval-num	Specifies the time interval (in days) at which inventory messages will be sent.
Step 6	UCS-A /monitoring/callhome/inventory # set timeofday-hour hour	Specifies the hour (using 24-hour format) that inventory messages are sent.
Step 7	UCS-A /monitoring/callhome/inventory # set timeofday-minute minute	Specifies the number of minutes after the hour that inventory messages are sent.
Step 8	UCS-A /monitoring/callhome/inventory # commit-buffer	Commits the transaction to the system configuration.

Example

The following example configures Call Home system inventory messages and commits the transaction:

```
UCS-A# scope monitoring
UCS-A /monitoring* # scope callhome
UCS-A /monitoring/callhome* # scope inventory
UCS-A /monitoring/callhome/inventory* # set send-periodically on
UCS-A /monitoring/callhome/inventory* # set interval-days 15
```

```
UCS-A /monitoring/callhome/inventory* # set timeofday-hour 21
UCS-A /monitoring/callhome/inventory* # set timeofday-minute 30
UCS-A /monitoring/callhome/inventory* # commit-buffer
UCS-A /monitoring/callhome/inventory #
```

Sending a System Inventory Message

Use this procedure if you need to manually send a system inventory message outside of the scheduled messages.



Note The system inventory message is sent only to those recipients defined in CiscoTAC-1 profile.

Procedure

	Command or Action	Purpose
Step 1	UCS-A# scope monitoring	Enters monitoring mode.
Step 2	UCS-A /monitoring # scope callhome	Enters monitoring call home mode.
Step 3	UCS-A /monitoring/callhome # scope inventory	Enters monitoring call home inventory mode.
Step 4	UCS-A /monitoring/callhome/inventory # send	Sends the system inventory message to the Call Home database.

Example

The following example sends the system inventory message to the Call Home database:

```
UCS-A# scope monitoring
UCS-A /monitoring # scope callhome
UCS-A /monitoring/callhome # scope inventory
UCS-A /monitoring/callhome/inventory* # send
```

Configuring Call Home Profiles

Call Home Profiles

Call Home profiles determine which alerts are sent to designated recipients. You can configure the profiles to send email alerts for events and faults at a desired severity level and for specific alert groups that represent categories of alerts. You can also use these profiles to specify the format of the alert for a specific set of recipients and alert groups.

Alert groups and Call Home profiles enable you to filter the alerts and ensure that a specific profile only receives certain categories of alerts. For example, a data center may have a hardware team that handles issues with fans and power supplies. This hardware team does not care about server POST failures or licensing

issues. To ensure that the hardware team only receives relevant alerts, create a Call Home profile for the hardware team and check only the "environmental" alert group.

By default, you must configure the Cisco TAC-1 profile. You can also create additional profiles to send email alerts to one or more alert groups, when events occur at the level that you specify and provide the recipients with the appropriate amount of information about those alerts.

For example, you may want to configure two profiles for faults with a major severity:

- A profile that sends an alert to the Supervisor alert group in the short text format. Members of this group receive a one- or two-line description of the fault that they can use to track the issue.
- A profile that sends an alert to the CiscoTAC alert group in the XML format. Members of this group receive a detailed message in the machine-readable format preferred by the Cisco Systems Technical Assistance Center.

Call Home Alert Groups

An alert group is a predefined subset of Call Home alerts. Alert groups allow you to select the set of Call Home alerts that you want to send to a predefined or custom Call Home profile. Cisco UCS Manager sends Call Home alerts to e-mail destinations in a destination profile only under the following conditions:

- If the Call Home alert belongs to one of the alert groups associated with that destination profile.
- If the alert has a Call Home message severity at or above the message severity set in the destination profile.

Each alert that Cisco UCS Manager generates fits into a category represented by an alert group. The following table describes those alert groups:

Alert Group	Description
Cisco TAC	All critical alerts from the other alert groups destined for Smart Call Home.
Diagnostic	Events generated by diagnostics, such as the POST completion on a server.
Environmental	Events related to power, fan, and environment-sensing elements such as temperature alarms. Note A Call Home alert is not generated when fans or PSUs are manually removed from the chassis. This is by design.

Configuring a Call Home Profile

By default, you must configure the Cisco TAC-1 profile. However, you can also create additional profiles to send email alerts to one or more specified groups when events occur at the level that you specify.

Procedure

	Command or Action	Purpose
Step 1	UCS-A# scope monitoring	Enters monitoring mode.

	Command or Action	Purpose
Step 2	UCS-A /monitoring # scope callhome	Enters monitoring call home mode.
Step 3	UCS-A /monitoring/callhome # create profile <i>profile-name</i>	Enters monitoring call home profile mode.
Step 4	UCS-A /monitoring/callhome/profile # set level { critical debug disaster fatal major minor normal notification warning }	Specifies the event level for the profile. Each profile can have its own unique event level. Cisco UCS faults that are greater than or equal to the event level will trigger this profile.
Step 5	UCS-A /monitoring/callhome/profile # set alertgroups <i>group-name</i> <ul style="list-style-type: none"> • ciscotac • diagnostic • environmental • inventory • license • lifecycle • linecard • supervisor • syslogport • system • test 	Specifies one or more groups that are alerted based on the profile. The <i>group-name</i> argument can be one or more of the following keywords entered on the same command line:
Step 6	(Optional) UCS-A /monitoring/callhome/profile # add alertgroups <i>group-names</i>	Adds one or more groups to the existing list of groups that are alerted based on the Call Home profile. Note You must use the add alertgroups command to add more alert groups to the existing alert group list. Using the set alertgroups command will replace any pre-existing alert groups with a new group list.
Step 7	UCS-A /monitoring/callhome/profile # set format { shorttxt xml }	Specifies the formatting method to use for the e-mail messages.
Step 8	UCS-A /monitoring/callhome/profile # set maxsize <i>id-num</i>	Specifies the maximum size (in characters) of the email message.
Step 9	UCS-A /monitoring/callhome/profile # create destination <i>email-addr</i>	Specifies the email address to which Call Home alerts should be sent. This email address receives Callhome Alerts/Faults. Use multiple create destination commands in monitoring call home profile mode to specify multiple email recipients. Use the delete destination

	Command or Action	Purpose
		command in monitoring call home profile mode to delete a specified email recipient.
Step 10	UCS-A /monitoring/callhome/profile/destination # commit-buffer	Commits the transaction to the system configuration.

Example

The following example configures a Call Home profile and commits the transaction:

```
UCS-A# scope monitoring
UCS-A /monitoring* # scope callhome
UCS-A /monitoring/callhome* # create profile TestProfile
UCS-A /monitoring/callhome/profile* # set level normal
UCS-A /monitoring/callhome/profile* # set alertgroups test diagnostic
UCS-A /monitoring/callhome/profile* # set format xml
UCS-A /monitoring/callhome/profile* # set maxsize 100000
UCS-A /monitoring/callhome/profile* # create destination admin@MyCompany.com
UCS-A /monitoring/callhome/profile/destination* # commit-buffer
UCS-A /monitoring/callhome/profile/destination #
```

Deleting a Call Home Profile

Procedure

	Command or Action	Purpose
Step 1	UCS-A# scope monitoring	Enters monitoring mode.
Step 2	UCS-A /monitoring # scope callhome	Enters monitoring call home mode.
Step 3	UCS-A /monitoring/callhome # delete profile <i>profile-name</i>	Deletes the specified profile.
Step 4	UCS-A /monitoring/callhome # commit-buffer	Commits the transaction to the system configuration.

Example

The following example deletes the Call Home profile named TestProfile and commits the transaction:

```
UCS-A# scope monitoring
UCS-A /monitoring # scope callhome
UCS-A /monitoring/callhome # delete profile TestProfile
UCS-A /monitoring/callhome* # commit-buffer
UCS-A /monitoring/callhome #
```


Sending a Test Call Home Alert

Before you begin

Configure Call Home and a Call Home Profile.

Procedure

	Command or Action	Purpose
Step 1	UCS-A# scope monitoring	Enters monitoring mode.
Step 2	UCS-A /monitoring # scope callhome	Enters monitoring call home mode.
Step 3	UCS-A /monitoring/callhome # send-test-alert {[alert-group { diagnostic environmental }] [alert-level { critical debug fatal major minor normal notify warning }] [alert-message-type { conf diag env inventory syslog test }] [alert-message-subtype { delta full goldmajor goldminor goldnormal major minor nosubtype test }] [alert-description <i>description</i>]}	<p>Sends a test Call Home alert. The test Call Home alert must specify all alert-* parameters or Cisco UCS Manager cannot generate the test message. The alert-* parameters include the following:</p> <ul style="list-style-type: none"> • alert-description—Alert description • alert-group—Alert group • alert-level—Event severity level • alert-message-type—Message type • alert-message-subtype—Message subtype <p>When a test Call Home alert is sent, Call Home responds as it would to any other alert and delivers it to the configured destination email addresses.</p>

Example

The following example sends a test Call Home alert to the configured destination email address of the environmental alert group:

```
UCS-A# scope monitoring
UCS-A /monitoring # scope callhome
UCS-A /monitoring/callhome # send-test-alert alert-group diagnostic
alert-level critical alert-message-type test alert-message-subtype major
alert-description "This is a test alert"
```

Configuring Call Home Policies

Call Home Policies

Call Home policies determine whether or not Call Home alerts are sent for a specific type of fault or system event. By default, Call Home is enabled to send alerts for certain types of faults and system events.



Note You can configure Cisco UCS Manager not to process the default faults and system events.

To disable alerts for a type of fault or event, you must first create a Call Home policy for that type and then disable the policy.

Configuring a Call Home Policy



Tip By default, email alerts are sent for all critical system events. However, you can optionally configure Call Home policies to enable or disable sending email alerts for other critical system events.

Procedure

	Command or Action	Purpose
Step 1	UCS-A# scope monitoring	Enters monitoring mode.
Step 2	UCS-A /monitoring # scope callhome	Enters monitoring call home mode.
Step 3	UCS-A /monitoring/callhome # create policy { equipment-inoperable fru-problem identity-unestablishable thermal-problem voltage-problem }	Creates the specified policy and enters monitoring call home policy mode.
Step 4	UCS-A /monitoring/callhome/policy # { disabled enabled }	Disables or enables the sending of email alerts for the specified policy.
Step 5	UCS-A /monitoring/callhome/policy # commit-buffer	Commits the transaction to the system configuration.

Example

The following example creates a Call Home policy that disables the sending of email alerts for system events pertaining to voltage problems and commits the transaction:

```
UCS-A# scope monitoring
UCS-A /monitoring* # scope callhome
UCS-A /monitoring/callhome* # create policy voltage-problem
UCS-A /monitoring/callhome/policy* # disabled
```

```
UCS-A /monitoring/callhome/policy* # commit-buffer
UCS-A /monitoring/callhome/policy #
```

Disabling a Call Home Policy

Procedure

	Command or Action	Purpose
Step 1	UCS-A# scope monitoring	Enters monitoring mode.
Step 2	UCS-A /monitoring # scope callhome	Enters monitoring call home mode.
Step 3	UCS-A /monitoring/callhome # scope policy { equipment-inoperable fru-problem identity-unestablishable thermal-problem voltage-problem }	Enters monitoring call home policy mode for the specified policy.
Step 4	UCS-A /monitoring/callhome/policy # disable	Disables the specified policy.
Step 5	UCS-A /monitoring/callhome/policy # commit-buffer	Commits the transaction to the system configuration.

Example

The following example disables the Call Home policy named voltage-problem and commits the transaction:

```
UCS-A# scope monitoring
UCS-A /monitoring # scope callhome
UCS-A /monitoring/callhome # scope policy voltage-problem
UCS-A /monitoring/callhome/policy # disable
UCS-A /monitoring/callhome/policy* # commit-buffer
UCS-A /monitoring/callhome/policy #
```

Enabling a Call Home Policy

Procedure

	Command or Action	Purpose
Step 1	UCS-A# scope monitoring	Enters monitoring mode.
Step 2	UCS-A /monitoring # scope callhome	Enters monitoring call home mode.
Step 3	UCS-A /monitoring/callhome # scope policy { equipment-inoperable fru-problem identity-unestablishable thermal-problem voltage-problem }	Enters monitoring call home policy mode for the specified policy.
Step 4	UCS-A /monitoring/callhome/policy # enable	Enables the specified policy.

	Command or Action	Purpose
Step 5	UCS-A /monitoring/callhome/policy # commit-buffer	Commits the transaction to the system configuration.

Example

The following example enables the Call Home policy named voltage-problem and commits the transaction:

```
UCS-A# scope monitoring
UCS-A /monitoring # scope callhome
UCS-A /monitoring/callhome # scope policy voltage-problem
UCS-A /monitoring/callhome/policy # enable
UCS-A /monitoring/callhome/policy* # commit-buffer
UCS-A /monitoring/callhome/policy #
```

Deleting a Call Home Policy

Procedure

	Command or Action	Purpose
Step 1	UCS-A# scope monitoring	Enters monitoring mode.
Step 2	UCS-A /monitoring # scope callhome	Enters monitoring call home mode.
Step 3	UCS-A /monitoring/callhome # delete policy {equipment-inoperable fru-problem identity-unestablishable thermal-problem voltage-problem}	Deletes the specified policy
Step 4	UCS-A /monitoring/callhome # commit-buffer	Commits the transaction to the system configuration.

Example

The following example deletes the Call Home policy named voltage-problem and commits the transaction:

```
UCS-A# scope monitoring
UCS-A /monitoring # scope callhome
UCS-A /monitoring/callhome # delete policy voltage-problems
UCS-A /monitoring/callhome* # commit-buffer
UCS-A /monitoring/callhome #
```

Configuring Anonymous Reporting

Enabling Anonymous Reporting

Procedure

	Command or Action	Purpose
Step 1	UCS-A # scope monitoring	Enters monitoring mode.
Step 2	UCS-A/monitoring # scope callhome	Enters monitoring call home mode.
Step 3	(Optional) UCS-A/monitoring/callhome # show anonymous-reporting	Displays if anonymous reporting is enabled or disabled.
Step 4	UCS-A/monitoring/callhome # enable anonymous-reporting	Enables anonymous reporting on Smart Call Home.
Step 5	UCS-A/monitoring/callhome # commit-buffer	Commits the transaction to the system configuration.

Example

The following example shows how to enable anonymous reporting on the Call Home server:

```
UCS-A # scope monitoring
UCS-A/monitoring #scope callhome
UCS-A/monitoring/callhome # show anonymous-reporting
Anonymous Reporting:
  Admin State
  -----
  Off
UCS-A/monitoring/callhome* # enable anonymous-reporting
UCS-A/monitoring/callhome # commit-buffer
UCS-A/monitoring/callhome # show anonymous-reporting
Anonymous Reporting:
  Admin State
  -----
  On
```

Disabling Anonymous Reporting

Procedure

	Command or Action	Purpose
Step 1	UCS-A # scope monitoring	Enters monitoring mode.
Step 2	UCS-A/monitoring # scope callhome	Enters monitoring call home mode.

	Command or Action	Purpose
Step 3	(Optional) UCS-A/monitoring/callhome # show anonymous-reporting	Displays if anonymous reporting is enabled or disabled.
Step 4	UCS-A/monitoring/callhome # disable anonymous-reporting	Disables anonymous reporting on the Smart Call Home server.
Step 5	UCS-A/monitoring/callhome # commit-buffer	Commits the transaction to the system configuration.

Example

The following example shows how to disable anonymous reporting on the Call Home server:

```
UCS-A # scope monitoring
UCS-A/monitoring # scope callhome
UCS-A/monitoring/callhome # show anonymous-reporting
Anonymous Reporting:
  Admin State
  -----
  On
UCS-A/monitoring/callhome* # disable anonymous-reporting
UCS-A/monitoring/callhome # commit-buffer
UCS-A/monitoring/callhome # show anonymous-reporting
Anonymous Reporting:
  Admin State
  -----
  Off
```

Viewing Anonymous Reports

Procedure

	Command or Action	Purpose
Step 1	UCS-A # scope monitoring	Enters monitoring mode.
Step 2	UCS-A/monitoring # scope callhome	Enters monitoring call home mode.
Step 3	UCS-A/monitoring/callhome # scope anonymous-reporting	Enters anonymous reporting mode.
Step 4	UCS-A/monitoring/callhome/anonymous-reporting # show detail	Displays the SMTP server address and server port.
Step 5	UCS-A/monitoring/callhome/anonymous-reporting # show inventory	Displays the anonymous reporting information.
Step 6	UCS-A/monitoring/callhome/anonymous-reporting # show content	Displays the anonymous report sample information.

Example

The following example shows how to display anonymous reports from the Call Home server:

```
UCS-A # scope monitoring
UCS-A/monitoring # scope callhome
UCS-A/monitoring/callhome # scope anonymous-reporting
UCS-A/monitoring/callhome/anonymous-reporting # show detail
UCS-A/monitoring/callhome/anonymous-reporting # show inventory
UCS-A/monitoring/callhome/anonymous-reporting # show content
<anonymousData>
<discreteData
smartCallHomeContract="false"
ethernetMode="EndHost"
fcMode="EndHost"
disjointL2Used="false"
fabricFailoverUsed="false"
numVnicAdaptTempl="3"
numServiceProfiles="7"
updatingSPtemplUsed="false"
initialSPtemplUsed="true"
lanConnPolicyUsed="true"
sanConnPolicyUsed="false"
updatingAdaptTemplUsed="false"
initialAdaptTemplUsed="true"
numMsoftVMnets="10"
numOfVMs="3"
discreteFEX="false"
ucsCentralConnected="false"/>
<bladeUnit
chassisId="1"
slotId="4"
...

```

Configuring Smart Call Home

Configuring Smart Call Home

Procedure

	Command or Action	Purpose
Step 1	UCS-A# scope monitoring	Enters monitoring mode.
Step 2	UCS-A /monitoring # scope callhome	Enters monitoring call home mode.
Step 3	UCS-A /monitoring/callhome # enable	Enables Call Home.
Step 4	UCS-A /monitoring/callhome # set contact <i>name</i>	Cisco Smart Call Home sends the registration email to this email address.
Step 5	UCS-A /monitoring/callhome # set email <i>email-addr</i>	Specifies the email address of the main Call Home contact person.

	Command or Action	Purpose
		Cisco Smart Call Home sends the registration email to this email address.
Step 6	UCS-A /monitoring/callhome # set phone-contact <i>phone-num</i>	Specifies the phone number of the main Call Home contact person. The phone number must be in international format, starting with a + (plus sign) and a country code.
Step 7	UCS-A /monitoring/callhome # set street-address <i>street-addr</i>	Specifies the street address of the main Call Home contact person.
Step 8	UCS-A /monitoring/callhome # set customer-id <i>id-num</i>	Specifies the CCO identification number that includes the contract numbers for the support contract in its entitlements. The number can be up to 255 alphanumeric characters in free format.
Step 9	UCS-A /monitoring/callhome # set contract-id <i>id-num</i>	Specifies the contract identification number from the service agreement. The number can be up to 255 alphanumeric characters in free format.
Step 10	UCS-A /monitoring/callhome # set site-id <i>id-num</i>	Specifies the site identification number from the service agreement. The number can be up to 255 alphanumeric characters in free format.
Step 11	UCS-A /monitoring/callhome # set from-email <i>email-addr</i>	Specifies the email address to use for the From field in Call Home messages.
Step 12	UCS-A /monitoring/callhome # set reply-to-email <i>email-addr</i>	Specifies the email address to use for the Reply To field in Call Home messages.
Step 13	UCS-A /monitoring/callhome # set hostname { <i>hostname</i> <i>ip-addr</i> }	Specifies the hostname or IP address of the SMTP server that Call Home uses to send email messages.
Step 14	UCS-A /monitoring/callhome # set port <i>port-num</i>	Specifies the SMTP server port that Call Home uses to send email messages. Valid port numbers are 1 to 65535.
Step 15	UCS-A /monitoring/callhome # set throttling { off on }	Enables or disables Call Home throttling. When enabled, throttling prevents too many Call Home email messages from being sent for the same event. By default, throttling is enabled.
Step 16	UCS-A /monitoring/callhome # set urgency { alerts critical debugging emergencies errors information notifications warnings }	Specifies the urgency level for Call Home email messages.

	Command or Action	Purpose
Step 17	UCS-A /monitoring/callhome # commit-buffer	Commits the transaction to the system configuration.

Example

The following example configures Call Home and commits the transaction:

```
UCS-A# scope monitoring
UCS-A /monitoring* # scope callhome
UCS-A /monitoring/callhome* # enable
UCS-A /monitoring/callhome* # set contact "Steve Jones"
UCS-A /monitoring/callhome* # set email admin@MyCompany.com
UCS-A /monitoring/callhome* # set phone-contact +1-001-408-555-1234
UCS-A /monitoring/callhome* # set street-address "123 N. Main Street, Anytown, CA, 99885"
UCS-A /monitoring/callhome* # set customer-id 1234567
UCS-A /monitoring/callhome* # set contract-id 99887766
UCS-A /monitoring/callhome* # set site-id 5432112
UCS-A /monitoring/callhome* # set from-email person@MyCompany.com
UCS-A /monitoring/callhome* # set reply-to-email person@MyCompany.com
UCS-A /monitoring/callhome* # set hostname 192.168.100.12
UCS-A /monitoring/callhome* # set port 25
UCS-A /monitoring/callhome* # set throttling on
UCS-A /monitoring/callhome* # set urgency information
UCS-A /monitoring/callhome* # commit-buffer
UCS-A /monitoring/callhome #
```

What to do next

Continue to ["Configuring the Default Cisco TAC-1 Profile, on page 99"](#) to configure a Call Home profile for use with Smart Call Home.

Configuring the Default Cisco TAC-1 Profile

The following are the default settings for the CiscoTAC-1 profile:



Note In order to apply Callhome sendtestAlert functionality at least one of the Email Destination should be set for profiles other than CiscoTAC-1.

- Level is normal
- Only the CiscoTAC alert group is selected
- Format is xml
- Maximum message size is 5000000

Before you begin

Complete the ["Configuring Smart Call Home, on page 97"](#) section.

Procedure

	Command or Action	Purpose
Step 1	UCS-A /monitoring/callhome # scope profile CiscoTac-1	Enters monitoring call home profile mode for the default Cisco TAC-1 profile.
Step 2	UCS-A /monitoring/callhome/profile # set level normal	Specifies the normal event level for the profile.
Step 3	UCS-A /monitoring/callhome/profile # set alertgroups ciscotac	Specifies the ciscotac alert group for the profile.
Step 4	UCS-A /monitoring/callhome/profile # set format xml	Specifies the e-mail message format to xml .
Step 5	UCS-A /monitoring/callhome/profile # set maxsize 5000000	Specifies the maximum size of 5000000 for email messages.
Step 6	UCS-A /monitoring/callhome/profile # create destination callhome@cisco.com	Specifies the email recipient to callhome@cisco.com .
Step 7	UCS-A /monitoring/callhome/profile/destination # exit	Exits to monitoring call home profile mode.
Step 8	UCS-A /monitoring/callhome/profile # exit	Exits to monitoring call home mode.

Example

The following example configures the default Cisco TAC-1 profile for use with Smart Call Home:

```
UCS-A /monitoring/callhome* # scope profile CiscoTac-1
UCS-A /monitoring/callhome/profile* # set level normal
UCS-A /monitoring/callhome/profile* # set alertgroups ciscotac
UCS-A /monitoring/callhome/profile* # set format xml
UCS-A /monitoring/callhome/profile* # set maxsize 5000000
UCS-A /monitoring/callhome/profile* # create destination callhome@cisco.com
UCS-A /monitoring/callhome/profile/destination* # exit
UCS-A /monitoring/callhome/profile* # exit
UCS-A /monitoring/callhome* #
```

What to do next

Continue to "[Configuring a System Inventory Message for Smart Call Home, on page 100](#)" to configure system inventory messages for use with Smart Call Home.

Configuring a System Inventory Message for Smart Call Home

Before you begin

Complete the "[Configuring the Default Cisco TAC-1 Profile, on page 99](#)" section.

Procedure

	Command or Action	Purpose
Step 1	UCS-A /monitoring/callhome # scope inventory	Enters monitoring call home inventory mode.
Step 2	UCS-A /monitoring/callhome/inventory # set send-periodically {off on}	Enables or disables the sending of inventory messages. When the on keyword is specified, inventory messages are automatically sent to the Call Home database.
Step 3	UCS-A /monitoring/callhome/inventory # set interval-days interval-num	Specifies the the time interval (in days) at which inventory messages will be sent.
Step 4	UCS-A /monitoring/callhome/inventory # set timeofday-hour hour	Specifies the hour (using 24-hour format) that inventory messages are sent.
Step 5	UCS-A /monitoring/callhome/inventory # set timeofday-minute minute	Specifies the number of minutes after the hour that inventory messages are sent.
Step 6	UCS-A /monitoring/callhome/inventory # commit-buffer	Commits the transaction to the system configuration.

Example

The following example configures Call Home system inventory messages and commits the transaction:

```
UCS-A /monitoring/callhome* # scope inventory
UCS-A /monitoring/callhome/inventory* # set send-periodically on
UCS-A /monitoring/callhome/inventory* # set interval-days 15
UCS-A /monitoring/callhome/inventory* # set timeofday-hour 21
UCS-A /monitoring/callhome/inventory* # set timeofday-minute 30
UCS-A /monitoring/callhome/inventory* # commit-buffer
UCS-A /monitoring/callhome/inventory #
```

What to do next

Continue to "[Registering Smart Call Home, on page 101](#)" to send an inventory message that starts the Smart Call Home registration process.

Registering Smart Call Home

Before you begin

Complete the "[Configuring a System Inventory Message for Smart Call Home, on page 100](#)" section.

Procedure

	Command or Action	Purpose
Step 1	UCS-A /monitoring/callhome/inventory # send	<p>Sends the system inventory message to the Smart Call Home database.</p> <p>When Cisco receives the system inventory, a Smart Call Home registration email is sent to the email address that you configured as the email address for the main Smart Call Home contact.</p>

Example

The following example sends the system inventory message to the Smart Call Home database:

```
UCS-A /monitoring/callhome/inventory # send
```

What to do next

When you receive the registration email from Cisco, do the following to complete registration for Smart Call Home:

1. Click the link in the email.
The link opens the [Cisco Smart Call Home portal](#) in your web browser.
2. Log into the Cisco Smart Call Home portal.
3. Follow the steps provided by Cisco Smart Call Home.

After you agree to the terms and conditions, the Cisco Smart Call Home registration for the Cisco UCS domain is complete.



CHAPTER 12

Database Health Monitoring

- [Cisco UCS Manager Database Health Monitoring, on page 103](#)
- [Changing Internal Backup Interval, on page 103](#)
- [Triggering Health Check, on page 104](#)
- [Changing Health Check Interval, on page 104](#)

Cisco UCS Manager Database Health Monitoring

Cisco UCS Manager uses a SQLite database stored on the Fabric Interconnects to persist configuration and inventory. Data corruption on both the Flash and NVRAM storage devices can cause failures and loss of customer configuration data. Cisco UCS Manager provides several proactive health check and recovery mechanisms to improve the integrity of the Cisco UCS Manager database. These mechanisms enable active monitoring of the database health.

- **Periodic Health Check**— A periodic check of database integrity ensures that any corruption is caught and recovered proactively. See [Triggering Health Check, on page 104](#), and [Changing Health Check Interval, on page 104](#).
- **Periodic Backup**— A periodic internal full state backup of the system ensures a smoother route to recovery in the case of any unrecoverable errors. See [Changing Internal Backup Interval, on page 103](#).

Changing Internal Backup Interval

You can change the interval at which the internal backup is done. To disable the backup the value can be set to 0.

Procedure

	Command or Action	Purpose
Step 1	UCS-A# scope system	Enters the system.
Step 2	UCS-A /system# set mgmt-db-check-policy internal-backup-interval <i>days</i>	Specifies the time interval (in days) at which the integrity backup is done.
Step 3	UCS-A /system* # commit-buffer	Commits the transaction.

Example

This example changes the time interval at which the check runs to two days, and commits the transaction.

```
UCS-A# scope system
UCS-A /system # set mgmt-db-check-policy health-check-interval 2
UCS-A /system* # commit-buffer
UCS-A /system #
```

Triggering Health Check

Use the following commands to trigger an immediate full database integrity check.

Procedure

	Command or Action	Purpose
Step 1	UCS-A# scope system	Enters the system.
Step 2	UCS-A /system # start-db-check	Triggers health check.
Step 3	UCS-A /system # commit-buffer	Commits the transaction.

Changing Health Check Interval

You can change the interval at which the integrity check runs. To disable the periodic check entirely set the value for to 0.

Procedure

	Command or Action	Purpose
Step 1	UCS-A# scope system	Enters the system.
Step 2	UCS-A /system# set mgmt-db-check-policy health-check-interval <i>hours</i>	Specifies the time interval (in hours) at which the integrity check runs.
Step 3	UCS-A /system* # commit-buffer	Commits the transaction.

Example

This example changes the time interval at which the check runs to two hours , and commits the transaction.

```
UCS-A# scope system
UCS-A /system # set mgmt-db-check-policy health-check-interval 2
UCS-A /system* # commit-buffer
UCS-A /system #
```



CHAPTER 13

Hardware Monitoring

- [System Monitoring CLI Command Cheat Sheet, on page 105](#)
- [Managing the Chassis, on page 106](#)
- [Managing Blade Servers, on page 107](#)
- [Managing Rack-Mount servers, on page 108](#)
- [Monitoring Fan Modules, on page 110](#)
- [Monitoring Management Interfaces, on page 112](#)
- [Local Storage Monitoring, on page 115](#)
- [Graphics Card Monitoring, on page 127](#)
- [PCI Switch Monitoring, on page 129](#)
- [Managing Transportable Flash Module and Supercapacitor, on page 130](#)
- [TPM Monitoring, on page 131](#)

System Monitoring CLI Command Cheat Sheet

The following table provides a brief summary of Cisco UCS Manager CLI commands you use to monitor managed objects in the system.

Managed Object	Monitoring Command	Description
Hardware		
Chassis	show chassis [adaptor cmc decommissioned detail environment fabric fi-iom firmware fsm inventory psu version]	Displays chassis information.
Fabric Interconnect	show fabric-interconnect [a b] [detail environment firmware fsm inventory mac-aging mode version]	Displays Fabric Interconnect information.
FEX	show fex [detail firmware fsm inventory version]	Displays Fabric Extender information
IOM	show iom [firmware health version]	Displays Fabric Input/Output Module information.

Managed Object	Monitoring Command	Description
Server	show server [actual-boot-order adapter assoc bios boot-order cpu decommissioned environment firmware health identity inventory memory status storage version]	Displays server information .
System	show system [detail firmware version]	Displays system information.
System	scope monitoring [show] [baseline-faults callhome event fault fault-suppress-policy fsm mgmt-if-mon-policy new-faults snmp snmp-trap snmp-user stats-collection-policy stats-threshold-policy syslog]	Displays information about commands in Monitoring mode.
Logs		
Event	show event [<i>event-id</i> detail]	Displays the Event log.
Fault	show fault [<i>fault-id</i> cause detail severity suppressed]	Displays the Fault log.
SEL	show sel [<i>chassis-id/blade-id</i> <i>rack-id</i>]	Displays the System Event Log for the chassis, blade, or rack-mount server.
Syslog	scope monitoring [show] [syslog]	Displays the Syslog.

Managing the Chassis

Turning On the Locator LED for a Chassis

Procedure

	Command or Action	Purpose
Step 1	UCS-A# scope chassis <i>chassis-num</i>	Enters chassis mode for the specified chassis.
Step 2	UCS-A /chassis # enable locator-led	Turns on the chassis locator LED.
Step 3	UCS-A /chassis # commit-buffer	Commits the transaction to the system configuration.

Example

The following example turns on the locator LED for chassis 2 and commits the transaction:

```
UCS-A# scope chassis 2
UCS-A /chassis # enable locator-led
UCS-A /chassis* # commit-buffer
UCS-A /chassis #
```

Turning Off the Locator LED for a Chassis

Procedure

	Command or Action	Purpose
Step 1	UCS-A# scope chassis <i>chassis-num</i>	Enters chassis mode for the specified chassis.
Step 2	UCS-A /chassis # disable locator-led	Turns off the chassis locator LED.
Step 3	UCS-A /chassis # commit-buffer	Commits the transaction to the system configuration.

Example

The following example turns off the locator LED for chassis 2 and commits the transaction:

```
UCS-A# scope chassis 2
UCS-A /chassis # disable locator-led
UCS-A /chassis* # commit-buffer
UCS-A /chassis #
```

Managing Blade Servers

Turning On the Locator LED for a Blade Server

Procedure

	Command or Action	Purpose
Step 1	UCS-A# scope server <i>chassis-num / server-num</i>	Enters chassis server mode for the specified chassis.
Step 2	UCS-A /chassis/server # enable locator-led [multi-master multi-slave]	Turns on the blade server locator LED.
Step 3	UCS-A /chassis/server # commit-buffer	Commits the transaction to the system configuration.

Example

The following example turns on the locator LED for blade server 4 in chassis 2 and commits the transaction:

```
UCS-A# scope server 2/4
UCS-A /chassis/server # enable locator-led
UCS-A /chassis/server* # commit-buffer
UCS-A /chassis/server #
```

Turning Off the Locator LED for a Blade Server

Procedure

	Command or Action	Purpose
Step 1	UCS-A# scope server <i>chassis-num / server-num</i>	Enters chassis mode for the specified chassis.
Step 2	UCS-A /chassis/server # disable locator-led [multi-master multi-slave]	Turns off the blade server locator LED.
Step 3	UCS-A /chassis/server # commit-buffer	Commits the transaction to the system configuration.

Example

The following example turns off the locator LED for blade server 4 in chassis 2 and commits the transaction:

```
UCS-A# scope chassis 2/4
UCS-A /chassis/server # disable locator-led
UCS-A /chassis/server* # commit-buffer
UCS-A /chassis/server #
```

Managing Rack-Mount servers

Turning On the Locator LED for a Rack-Mount Server

Procedure

	Command or Action	Purpose
Step 1	UCS-A# scope server <i>server-num</i>	Enters server mode for the specified rack-mount server.

	Command or Action	Purpose
Step 2	UCS-A /server # enable locator-led	Turns on the rack-mount server locator LED.
Step 3	UCS-A /server # commit-buffer	Commits the transaction to the system configuration.

Example

The following example turns on the locator LED for rack-mount server 2 and commits the transaction:

```
UCS-A# scope server 2
UCS-A /server # enable locator-led
UCS-A /server* # commit-buffer
UCS-A /server #
```

Turning Off the Locator LED for a Rack-Mount Server

Procedure

	Command or Action	Purpose
Step 1	UCS-A# scope server <i>server-num</i>	Enters server mode for the specified rack-mount server.
Step 2	UCS-A /server # disable locator-led	Turns off the rack-mount server locator LED.
Step 3	UCS-A /server # commit-buffer	Commits the transaction to the system configuration.

Example

The following example turns off the locator LED for rack-mount server 2 and commits the transaction:

```
UCS-A# scope server 2
UCS-A /server # disable locator-led
UCS-A /server* # commit-buffer
UCS-A /server #
```

Showing the Status for a Rack-Mount Server

Procedure

	Command or Action	Purpose
Step 1	UCS-A# show server status	Shows the status for all servers in the Cisco UCS domain.

Example

The following example shows the status for all servers in the Cisco UCS domain. The servers numbered 1 and 2 do not have a slot listed in the table because they are rack-mount servers.

Server Slot	Status	Availability	Overall Status	Discovery
1/1	Equipped	Unavailable	Ok	Complete
1/2	Equipped	Unavailable	Ok	Complete
1/3	Equipped	Unavailable	Ok	Complete
1/4	Empty	Unavailable	Ok	Complete
1/5	Equipped	Unavailable	Ok	Complete
1/6	Equipped	Unavailable	Ok	Complete
1/7	Empty	Unavailable	Ok	Complete
1/8	Empty	Unavailable	Ok	Complete
1	Equipped	Unavailable	Ok	Complete
2	Equipped	Unavailable	Ok	Complete

Monitoring Fan Modules

Procedure

	Command or Action	Purpose
Step 1	UCS-A# scope chassis <i>chassis-num</i>	Enters chassis mode for the specified chassis.
Step 2	UCS-A /chassis # show environment fan	Displays the environment status for all fans within the chassis. This includes the following information: <ul style="list-style-type: none"> • Overall status • Operability • Power state • Thermal status • Threshold status • Voltage status
Step 3	UCS-A /chassis # scope fan-module <i>tray-num module-num</i>	Enters fan module chassis mode for the specified fan module. Note Each chassis contains one tray, so the tray number in this command is always 1.
Step 4	UCS-A /chassis/fan-module # show [detail expand]	Displays the environment status for the specified fan module.

Example

The following example displays information about the fan modules in chassis 1:

```
UCS-A# scope chassis 1
UCS-A /chassis # show environment fan
Chassis 1:
  Overall Status: Power Problem
  Operability: Operable
  Power State: Redundancy Failed
  Thermal Status: Upper Non Recoverable

  Tray 1 Module 1:
    Threshold Status: OK
    Overall Status: Operable
    Operability: Operable
    Power State: On
    Thermal Status: OK
    Voltage Status: N/A

    Fan Module Stats:
      Ambient Temp (C): 25.000000

    Fan 1:
      Threshold Status: OK
      Overall Status: Operable
      Operability: Operable
      Power State: On
      Thermal Status: OK
      Voltage Status: N/A

    Fan 2:
      Threshold Status: OK
      Overall Status: Operable
      Operability: Operable
      Power State: On
      Thermal Status: OK
      Voltage Status: N/A

  Tray 1 Module 2:
    Threshold Status: OK
    Overall Status: Operable
    Operability: Operable
    Power State: On
    Thermal Status: OK
    Voltage Status: N/A

    Fan Module Stats:
      Ambient Temp (C): 24.000000

    Fan 1:
      Threshold Status: OK
      Overall Status: Operable
      Operability: Operable
      Power State: On
      Thermal Status: OK
      Voltage Status: N/A

    Fan 2:
      Threshold Status: OK
      Overall Status: Operable
      Operability: Operable
      Power State: On
```

```
Thermal Status: OK  
Voltage Status: N/A
```

The following example displays information about fan module 2 in chassis 1:

```
UCS-A# scope chassis 1  
UCS-A /chassis # scope fan-module 1 2  
UCS-A /chassis/fan-module # show detail  
Fan Module:  
  Tray: 1  
  Module: 2  
  Overall Status: Operable  
  Operability: Operable  
  Threshold Status: OK  
  Power State: On  
  Presence: Equipped  
  Thermal Status: OK  
  Product Name: Fan Module for UCS 5108 Blade Server Chassis  
  PID: N20-FAN5  
  VID: V01  
  Vendor: Cisco Systems Inc  
  Serial (SN): NWG14350B6N  
  HW Revision: 0  
  Mfg Date: 1997-04-01T08:41:00.000
```

Monitoring Management Interfaces

Management Interfaces Monitoring Policy

The management interfaces monitoring policy defines how the mgmt0 Ethernet interface on the fabric interconnect is monitored. If Cisco UCS Manager detects a management interface failure, a failure report is generated. If the configured number of failure reports is reached, the system assumes that the management interface is unavailable and generates a fault. By default, the management interfaces monitoring policy is enabled.

When the management interface of a fabric interconnect which is currently the managing instance fails, Cisco UCS Manager first confirms if the status of the subordinate fabric interconnect is up. In addition, if there are no current failure reports logged against the fabric interconnect, Cisco UCS Manager modifies the managing instance for the endpoints.

If the affected fabric interconnect is currently the primary in a high availability setup, a failover of the management plane is triggered. This failover does not affect the data plane. You can set the following properties related to monitoring the management interface:

- The type of mechanism used to monitor the management interface.
- The interval at which the status of the management interface is monitored.
- The maximum number of monitoring attempts that can fail before the system assumes that the management is unavailable and generates a fault message.

**Important**

When the management interface fails on a fabric interconnect, the managing instance may not change if one of the following occurs:

- A path to the endpoint through the subordinate fabric interconnect does not exist.
- The management interface for the subordinate fabric interconnect has failed.
- The path to the endpoint through the subordinate fabric interconnect has failed.

Configuring the Management Interfaces Monitoring Policy

Procedure

-
- Step 1** Enter monitoring mode.
UCS-A# **scope monitoring**
- Step 2** Enable or disable the management interfaces monitoring policy.
UCS-A /monitoring # **set mgmt-if-mon-policy admin-state** {**enabled** | **disabled**}
- Step 3** Specify the number of seconds that the system should wait between data recordings.
UCS-A /monitoring # **set mgmt-if-mon-policy poll-interval**
Enter an integer between 90 and 300.
- Step 4** Specify the maximum number of monitoring attempts that can fail before the system assumes that the management interface is unavailable and generates a fault message.
UCS-A /monitoring # **set mgmt-if-mon-policy max-fail-reports** *num-mon-attempts*
Enter an integer between 2 and 5.
- Step 5** Specify the monitoring mechanism that you want the system to use.
UCS-A /monitoring # **set mgmt-if-mon-policy monitor-mechanism** {**mii-status** | **ping-arp-targets** | **ping-gateway**}
 - **mii-status** —The system monitors the availability of the Media Independent Interface (MII).
 - **ping-arp-targets** —The system pings designated targets using the Address Resolution Protocol (ARP).
 - **ping-gateway** —The system pings the default gateway address specified for this Cisco UCS domain in the management interface.
- Step 6** If you selected **mii-status** as your monitoring mechanism, configure the following properties:
 a) Specify the number of seconds that the system should wait before requesting another response from the MII if a previous attempt fails.
 UCS-A /monitoring # **set mgmt-if-mon-policy mii-retry-interval** *num-seconds*
 Enter an integer between 3 and 10.

- b) Specify the number of times that the system polls the MII until the system assumes that the interface is unavailable.

UCS-A /monitoring # **set mgmt-if-mon-policy mii-retry-count** *num-retries*

Enter an integer between 1 and 3.

Step 7 If you selected **ping-arp-targets** as your monitoring mechanism, configure the following properties:

- a) Specify the first IPv4 or IPv6 address the system pings.

UCS-A /monitoring # **set mgmt-if-mon-policy** {*arp-target1* | *ndisc-target1*} {*ipv4-addr* | *ipv6-addr*}

Type 0.0.0.0 for an IPv4 address to remove the ARP target or :: for an IPv6 address to remove the N-disc target.

- b) Specify the second IPv4 or IPv6 address the system pings.

UCS-A /monitoring # **set mgmt-if-mon-policy** {*arp-target2* | *ndisc-target2*} {*ipv4-addr* | *ipv6-addr*}

Type 0.0.0.0 for an IPv4 address to remove the ARP target or :: for an IPv6 address to remove the N-disc target.

- c) Specify the third IPv4 or IPv6 address the system pings.

UCS-A /monitoring # **set mgmt-if-mon-policy** {*arp-target3* | *ndisc-target3*} {*ipv4-addr* | *ipv6-addr*}

Type 0.0.0.0 for an IPv4 address to remove the ARP target or :: for an IPv6 address to remove the N-disc target.

Note The ping IPv4 ARP or IPv6 N-disc targets must be in the same subnet or prefix, respectively, as the fabric interconnect.

- d) Specify the number of ARP requests to send to the target IP addresses.

UCS-A /monitoring # **set mgmt-if-mon-policy arp-requests** *num-requests*

Enter an integer between 1 and 5.

- e) Specify the number of seconds to wait for responses from the ARP targets before the system assumes that they are unavailable.

UCS-A /monitoring # **set mgmt-if-mon-policy arp-deadline** *num-seconds*

Enter a number between 5 and 15.

Step 8 If you selected **ping-gateway** as your monitoring mechanism, configure the following properties:

- a) Specify the number of times the system should ping the gateway.

UCS-A /monitoring # **set mgmt-if-mon-policy ping-requests**

Enter an integer between 1 and 5.

- b) Specify the number of seconds to wait for a response from the gateway until the system assumes that the address is unavailable.

UCS-A /monitoring # **set mgmt-if-mon-policy ping-deadline**

Enter an integer between 5 and 15.

Step 9 UCS-A /monitoring # **commit-buffer**

Commits the transaction to the system configuration.

Example

The following example creates a monitoring interface management policy using the Media Independent Interface (MII) monitoring mechanism and commits the transaction:

```
UCS-A# scope monitoring
UCS-A /monitoring # set mgmt-if-mon-policy admin-state enabled
UCS-A /monitoring* # set mgmt-if-mon-policy poll-interval 250
UCS-A /monitoring* # set mgmt-if-mon-policy max-fail-reports 2
UCS-A /monitoring* # set mgmt-if-mon-policy monitor-mechanism set mii-status
UCS-A /monitoring* # set mgmt-if-mon-policy mii-retry-count 3
UCS-A /monitoring* # set mgmt-if-mon-policy mii-retry-interval 7
UCS-A /monitoring* # commit-buffer
UCS-A /monitoring #
```

Local Storage Monitoring

Local storage monitoring in Cisco UCS provides status information on local storage that is physically attached to a blade or rack server. This includes RAID controllers, physical drives and drive groups, virtual drives, RAID controller batteries (Battery Backup Unit), Transportable Flash Modules (TFM), supercapacitors, FlexFlash controllers, and SD cards.

Cisco UCS Manager communicates directly with the LSI MegaRAID controllers and FlexFlash controllers using an out-of-band interface, which enables real-time updates. Some of the information that is displayed includes:

- RAID controller status and rebuild rate.
- The drive state, power state, link speed, operability, and firmware version of physical drives.
- The drive state, operability, strip size, access policies, drive cache, and health of virtual drives.
- The operability of a BBU, whether it is a supercap or battery, and information about the TFM.

LSI storage controllers use a Transportable Flash Module (TFM) powered by a supercapacitor to provide RAID cache protection.

- Information on SD cards and FlexFlash controllers, including RAID health and RAID state, card health, and operability.
- Information on operations that are running on the storage component, such as rebuild, initialization, and relearning.



Note After a CIMC reboot or build upgrades, the status, start time, and end times of operations running on the storage component may not be displayed correctly.

- Detailed fault information for all local storage components.



Note All faults are displayed on the **Faults** tab.

Support for Local Storage Monitoring

The type of monitoring supported depends upon the Cisco UCS server.

Supported Cisco UCS Servers for Local Storage Monitoring

Through Cisco UCS Manager, you can monitor local storage components for the following servers:

- Cisco UCS B200 M5 Server
- Cisco UCS B480 M5 Server
- Cisco UCS B200 M4 blade server
- Cisco UCS B260 M4 blade server
- Cisco UCS B460 M4 blade server
- Cisco UCS B200 M3 blade server
- Cisco UCS B420 M3 blade server
- Cisco UCS B22 M3 blade server

Through Cisco UCS Manager, you can monitor local storage components for the following rack servers:

- Cisco UCS C420 M3 rack server
- Cisco UCS C240 M3 rack server
- Cisco UCS C220 M3 rack server
- Cisco UCS C24 M3 rack server
- Cisco UCS C22 M3 rack server
- Cisco UCS C220 M4 rack server
- Cisco UCS C240 M4 rack server
- Cisco UCS C460 M4 rack server
- Cisco UCS C220 M5 Server
- Cisco UCS C240 M5 Server
- Cisco UCS C480 M5 Server



Note Not all servers support all local storage components. For Cisco UCS rack servers, the onboard SATA RAID 0/1 controller integrated on motherboard is not supported.

Prerequisites for Local Storage Monitoring

These prerequisites must be met for local storage monitoring or legacy disk drive monitoring to provide useful status information:

- The drive must be inserted in the server drive bay.
- The server must be powered on.
- The server must have completed discovery.
- The results of the BIOS POST complete must be TRUE.

Legacy Disk Drive Monitoring



Note The following information is applicable only for B200 M1/M2 and B250 M1/M2 blade servers.

The legacy disk drive monitoring for Cisco UCS provides Cisco UCS Manager with blade-resident disk drive status for supported blade servers in a Cisco UCS domain. Disk drive monitoring provides a unidirectional fault signal from the LSI firmware to Cisco UCS Manager to provide status information.

The following server and firmware components gather, send, and aggregate information about the disk drive status in a server:

- Physical presence sensor—Determines whether the disk drive is inserted in the server drive bay.
- Physical fault sensor—Determines the operability status reported by the LSI storage controller firmware for the disk drive.
- IPMI disk drive fault and presence sensors—Sends the sensor results to Cisco UCS Manager.
- Disk drive fault LED control and associated IPMI sensors—Controls disk drive fault LED states (on/off) and relays the states to Cisco UCS Manager.

Turning On the Local Disk Locator LED

Procedure

- | | |
|---------------|--|
| Step 1 | UCS-A# scope server <i>id</i>
Enters server mode for the specified server. |
| Step 2 | UCS-A/server # scope local-disk <i>id</i>
Enters the RAID controller for the specified local disk. |
| Step 3 | UCS-A /server/local-disk # enable locator-led
Turns on the disk locator LED. |
| Step 4 | UCS-A/server/local-disk* # commit-buffer |

Commits the command to the system configuration.

Example

The following example displays how to turn on the local disk Locator LED:

```
UCS-A# scope server 1
UCS-A /server/raid-controller # scope local-disk 2
USA-A /server/raid-controller/local-disk # enable locator-led
USA-A /server/raid-controller/local-disk* # commit-buffer
```

Turning Off the Local Disk Locator LED

Procedure

- Step 1** UCS-A# `scope server id`
Enters server mode for the specified server.
 - Step 2** UCS-A/server # `scope local-disk id`
Enters the RAID controller for the specified local disk.
 - Step 3** UCS-A/server/local-disk # `disable locator-led`
Turns off the disk locator LED.
 - Step 4** UCS-A/server/raid-controller/local-disk* # `commit-buffer`
Commits the command to the system configuration.
-

Example

The following example displays how to disable the local disk Locator LED:

```
UCS-A# server 1
UCS-A /server # scope local-disk 2
USA-A /server/local-disk # disable locator-led
USA-A /server/local-disk* # commit-buffer
```

Viewing the Local Disk Locator LED State

Procedure

- Step 1** UCS-A# `scope server id`

Enters server mode for the specified server.

Step 2 UCS-A/server # **scope local-disk id**

Enters the RAID controller for the specified local disk.

Step 3 UCS-A/server/local-disk # **show locator-led**

Shows the state of the disk locator LED.

Example

The following example shows that the state of the local disk Locator LED is on:

```

USA-A# scope server 1
USA-A /server # scope local-disk 2
USA-A /serverlocal-disk # show locator-led
Locator LED:
  Equipment      Operational State
  -----
  1/SAS-1/2      On

```

Flash Life Wear Level Monitoring

Flash life wear level monitoring enables you to monitor the life span of solid state drives. You can view both the percentage of the flash life remaining, and the flash life status. Wear level monitoring is supported on the Fusion IO mezzanine card with the following Cisco UCS blade servers:

- Cisco UCS B22 M3 blade server
- Cisco UCS B200 M3 blade server
- Cisco UCS B420 M3 blade server
- Cisco UCS B200 M4 blade server
- Cisco UCS B260 M4 blade server
- Cisco UCS B460 M4 blade server



Note Wear level monitoring requires the following:

- Cisco UCS Manager must be at release 2.2(2a) or greater.
- The Fusion IO mezzanine card firmware must be at version 7.1.15 or greater.

Viewing Flash Life Status

Procedure

	Command or Action	Purpose
Step 1	UCS-A# scope server <i>chassis-id / server-id</i>	Enters chassis server mode for the specified server.
Step 2	UCS-A /chassis/server # show raid-controller detail expand	Displays details for the RAID controller.

Example

The following example shows how to display the flash life status for server 3:

```
UCS-A# scope server 1/3
UCS-A /chassis/server # show raid-controller detail expand

RAID Controller:
  ID: 1
  Type: FLASH
  PCI Addr: 131:00.0
  Vendor: Cisco Systems Inc
  Model: UCSC-F-FIO-1205M
  Serial: 1315D2B52
  HW Rev: FLASH
  Raid Support: No
  OOB Interface Supported: No
  Rebuild Rate: N/A
  Controller Status: Unknown

Flash Life:
  Flash Percentage: N/A
  Flash Status: Error(244)

UCS-A /chassis/server #
```

Viewing the Status of Local Storage Components

Procedure

	Command or Action	Purpose
Step 1	UCS-A# scope server <i>chassis-id / server-id</i>	Enters chassis server mode for the specified server.
Step 2	UCS-A /chassis/server # show inventory storage	Displays the local and virtual storage information for the server.

Example

The following example shows how to display the local disk status for server 2:

```
UCS-A# scope server 1/2
UCS-A /chassis/server # show inventory storage
Server 1/2:
  Name:
    User Label:
    Equipped PID: UCSB-B200-M3
    Equipped VID: V01
    Equipped Serial (SN): FCH16207KXG
    Slot Status: Equipped
    Acknowledged Product Name: Cisco UCS B200 M3
    Acknowledged PID: UCSB-B200-M3
    Acknowledged VID: V01
    Acknowledged Serial (SN): FCH16207KXG
    Acknowledged Memory (MB): 98304
    Acknowledged Effective Memory (MB): 98304
    Acknowledged Cores: 12
    Acknowledged Adapters: 1
  Motherboard:
    Product Name: Cisco UCS B200 M3
    PID: UCSB-B200-M3
    VID: V01
    Vendor: Cisco Systems Inc
    Serial (SN): FCH16207KXG
    HW Revision: 0

  RAID Controller 1:
    Type: SAS
    Vendor: LSI Logic    Symbios Logic
    Model: LSI MegaRAID SAS 2004 ROMB
    Serial: LSIROMB-0
    HW Revision: B2
    PCI Addr: 01:00.0
    Raid Support: RAID0, RAID1
    OOB Interface Supported: Yes
    Rebuild Rate: 31
    Controller Status: Optimal

  Local Disk 1:
    Product Name: 146GB 6Gb SAS 10K RPM SFF HDD/hot plug/drive sled mounted
    PID: A03-D146GA2
    VID: V01
    Vendor: SEAGATE
    Model: ST9146803SS
    Vendor Description: Seagate Technology LLC
    Serial: 3SD31S4X
    HW Rev: 0
    Block Size: 512
    Blocks: 285155328
    Operability: Operable
    Oper Qualifier Reason: N/A
    Presence: Equipped
    Size (MB): 139236
    Drive State: Online
    Power State: Active
    Link Speed: 6 Gbps
    Device Type: HDD

  Local Disk 2:
    Product Name: 600G AL12SE SAS Hard Disk Drive
    PID: A03-D600GA2
    VID: V01
    Vendor: TOSHIBA
    Model: MBF2600RC
    Vendor Description: Toshiba Corporation
```

```

Serial: EA00PB109T4A
HW Rev: 0
Block Size: 512
Blocks: 1169920000
Operability: Operable
Oper Qualifier Reason: N/A
Presence: Equipped
Size (MB): 571250
Drive State: Online
Power State: Active
Link Speed: 6 Gbps
Device Type: HDD

```

```

Local Disk Config Definition:
Mode: RAID 1 Mirrored
Description:
Protect Configuration: No

```

```

Virtual Drive 0:
Type: RAID 1 Mirrored
Block Size: 512
Blocks: 285155328
Operability: Operable
Presence: Equipped
Size (MB): 139236
Lifecycle: Allocated
Drive State: Optimal
Strip Size (KB): 64
Access Policy: Read Write
Read Policy: Normal
Configured Write Cache Policy: Write Through
Actual Write Cache Policy: Write Through
IO Policy: Direct
Drive Cache: No Change
Bootable: False

```

```
UCS-A /chassis/server #
```

The following example shows how to display the local disk status for server 2 with PCIe\NVMe Flash Storage:

```
UCS-A# scope server 1/2
```

```
UCS-A /chassis/server # show inventory storage
```

```
Server 1/2:
```

```
Name:
```

```

Acknowledged Serial (SN): FCH1901V0FK
Acknowledged Product Name: Cisco UCS C240 M4S2
Acknowledged PID: UCSC-C240-M4S2
Acknowledged VID: 0
Acknowledged Memory (MB): 16384
Acknowledged Effective Memory (MB): 16384
Acknowledged Cores: 24
Acknowledged Adapters: 4
Motherboard:
  Product Name: Cisco UCS C240 M4S2
  PID: UCSC-C240-M4S2
  VID: V01
  Vendor: Cisco Systems Inc
  Serial (SN): FCH1901V0FK
  HW Revision: 0

Raid Controller 1:
  Type: NVMe
  Vendor: HGST

```



```

Model: HUSPR3280ADP301
Serial: STM0001A74F2
HW Revision:
PCI Addr: 42:00.0
Raid Support: No
OOB Interface Supported: Yes
Rebuild Rate: 0
Controller Status: Optimal

```

```

Local Disk 2:
  Product Name: Cisco UCS 800GB 2.5 in NVMe based PCIeSSD
  PID: UCS-SDHPCIE800GB
  VID:
  Vendor: HGST
  Model: HUSPR3280ADP301
  Vendor Description:
  Serial: 14310CF8E975
  HW Rev: 0
  Block Size: 512
  Blocks: 285155328
  Operability: NA
  Oper Qualifier Reason: N/A
  Presence: Equipped
  Size: 94413
  Drive State: NA
  Power State: NA
  Link Speed: NA
  Device Type: SSD
  Thermal: N/A

```

```
UCS-A /chassis/server #
```

The following example shows how to display the local disk status for Cisco UCS (P3600) 2.5 inches 800 GB NVMe based PCIe SSD:

```

RAID Controller:
  ID: 1
  Type: NVME
  PCI Addr: 69:00.0
  Vendor: Intel
  Model: SSDPE2ME800G4K
  Serial: CVMD6083003D800GGN
  HW Rev:
  Raid Support: No
  OOB Interface Supported: Yes
  Mode: NVME
  Rebuild Rate: 0
  Controller Status: Optimal
  Config State: Not Applied
  Pinned Cache Status: Disabled
  Sub OEM ID: 0
  Supported Strip Sizes: Not Applicable
  Default Strip Size: Unknown
PCI Slot: FrontPCIe5
Product Variant: default
Product Name: Cisco UCS (P3600) 2.5 inches 800 GB NVMe based PCIe SSD
PID: UCS-PCI25-8003
VID:
Part Number:
Storage Controller Admin State: Unspecified
Vendor Id: 0x8086
Subvendor Id: 0x1137
Device Id: 0x953
Subdevice Id: 0x15b

```

Current Task:

Local Disk:

```

ID: 5
Block Size: 512
Physical Block Size: Unknown
Blocks: 1562822656
Size: 763097
Technology:
Operability: N/A
Oper Qualifier Reason: N/A
Presence: Equipped
Connection Protocol: NVME
Product Variant: default
Product Name: Cisco UCS (P3600) 2.5 inches 800 GB NVMe based PCIe SSD
PID: UCS-PCI25-8003
VID:
Vendor: Intel
Model: SSDPE2ME800G4K
Vendor Description:
Serial: CVMD6083003D800GGN
HW Rev: 0
Drive State: Unknown
Power State: Unknown
Link Speed: Unknown
Enclosure Association Type: Unknown
Device Version: N/A
Device Type: SSD
Thermal: N/A
Admin State Type: N/A
Admin Virtual Drive ID: Unspecified
Current Task:

```

The following example shows how to display the status for Cisco UCS (P3600) HHHH 2000 GB NVMe based PCIe SSD:

RAID Controller:

```

ID: 3
Type: NVME
PCI Addr: 01:00.0
Vendor: Intel
Model: SSDPEDME020T401
Serial: CVMD543200AQ2P0EGN
HW Rev:
Raid Support: No
OOB Interface Supported: Yes
Mode: NVME
Rebuild Rate: 0
Controller Status: Optimal
Config State: Not Applied
Pinned Cache Status: Disabled
Sub OEM ID: 0
Supported Strip Sizes: Not Applicable
Default Strip Size: Unknown
PCI Slot: 2
Product Variant: default
Product Name: Cisco UCS (P3600) HHHH 2000 GB NVMe based PCIe SSD
PID: UCSC-F-I20003
VID:
Part Number:
Storage Controller Admin State: Unspecified
Vendor Id: 0x8086
Subvendor Id: 0x1137
Device Id: 0x953

```

```

Subdevice Id: 0x1ac
Current Task:

Embedded Storage:
  Size: 2000000
  Block Size: 512
  Number Of Blocks: 3906250000

```

Viewing the Status of a Disk Drive

Procedure

	Command or Action	Purpose
Step 1	UCS-A# scope chassis <i>chassis-num</i>	Enters chassis mode for the specified chassis.
Step 2	UCS-A /chassis # scope server <i>server-num</i>	Enters server chassis mode.
Step 3	UCS-A /chassis/server # scope raid-controller <i>raid-contr-id</i> { sas sata }	Enters RAID controller server chassis mode.
Step 4	UCS-A /chassis/server/raid-controller # show local-disk [<i>local-disk-id</i> detail expand]	

Example

The following example shows the status of a disk drive:

```

UCS-A# scope chassis 1
UCS-A /chassis # scope server 6
UCS-A /chassis/server # scope raid-controller 1 sas
UCS-A /chassis/server/raid-controller # show local-disk 1

```

```

Local Disk:
  ID: 1
  Block Size: 512
  Blocks: 60545024
  Size (MB): 29563
  Operability: Operable
  Presence: Equipped

```

Viewing RAID Controller Operations

Procedure

	Command or Action	Purpose
Step 1	UCS-A# scope server <i>chassis-id</i> / <i>server-id</i>	Enters chassis server mode for the specified server.
Step 2	UCS-A /chassis/server # show raid-controller operation	Displays the long running operations for the RAID controller.

Example

The following example shows how to display the RAID controller operations for server 3:

```
UCS-A# scope server 1/3
UCS-A /chassis/server # show raid-controller operation

Name: Rebuild
Affected Object: sys/chassis-1/blade-3/board/storage-SAS-1/disk-1
State: In Progress
Progress: 4
Start Time: 2013-11-05T12:02:10.000
End Time: N/A

UCS-A /chassis/server #
```

Viewing RAID Controller Stats

The following procedure shows how to display controller stats for a server with PCIe\NVMe Flash Storage:

Procedure

	Command or Action	Purpose
Step 1	UCS-A# scope server <i>chassis-id / server-id</i>	Enters chassis server mode for the specified server.
Step 2	UCS-A /chassis/server # scope raid-controller <i>raid-contr-id {flash sas sata sd unknown}</i>	Enters RAID controller server chassis mode.
Step 3	UCS-A /chassis/server/raid-controller # show stats	Displays the raid controller stats.

Example

The following example shows how to display the RAID controller stats:

```
UCS-A# scope server 1/3
UCS-A /chassis/server # scope raid-controller
UCS-A /chassis/server/raid-controller # show stats

Nvme Stats:
Time Collected: 2016-06-22T12:37:55.043
Monitored Object: sys/rack-unit-6/board/storage-NVME-1/nvme-stats
Suspect: Yes
Temperature (C): 27.000000
Life Used Percentage: 0
Thresholded: 0

UCS-A /chassis/server/raid-controller #
```

Monitoring RAID Battery Status

This procedure applies only to Cisco UCS servers that support RAID configuration and TFM. If the Battery Backup Unit (BBU) has failed or is predicted to fail, you should replace the unit as soon as possible.

Procedure

	Command or Action	Purpose
Step 1	UCS-A # scope chassis <i>chassis-num</i>	Enters chassis mode for the specified chassis.
Step 2	UCS-A /chassis # scope server <i>server-num</i>	Enters server chassis mode.
Step 3	UCS-A /chassis/server # scope raid-controller <i>raid-contr-id</i> { flash sas sata sd unknown }	Enters RAID controller server chassis mode.
Step 4	UCS-A /chassis/server/raid-controller # show raid-battery expand	Displays the RAID battery status.

Example

This example shows how to view information on the BBU of a server:

```
UCS-A # scope chassis 1
UCS-A /chassis #scope server 3
UCS-A /chassis/server #scope raid-controller 1 sas
UCS-A /chassis/server/raid-controller # show raid-battery expand
RAID Battery:
  Battery Type: Supercap
  Presence: Equipped
  Operability: Operable
  Oper Qualifier Reason:
  Vendor: LSI
  Model: SuperCaP
  Serial: 0
  Capacity Percentage: Full
  Battery Temperature (C): 54.000000

  Transportable Flash Module:
    Presence: Equipped
    Vendor: Cisco Systems Inc
    Model: UCSB-RAID-1GBFM
    Serial: FCH164279W6
```

Graphics Card Monitoring

Graphics Card Server Support

With Cisco UCS Manager, you can view the properties for certain graphics cards and controllers. Graphics cards are supported on the following servers:

- Cisco UCS C460 M4 Rack Server
- Cisco UCS B200M4 Blade Server

- Cisco UCS B200 M5 Server
- Cisco UCS B480 M5 Server
- Cisco UCS C220 M5 Server
- Cisco UCS C240 M5 Server
- Cisco UCS C480 M5 Server



Note Certain NVIDIA Graphics Processing Units (GPU) do not support Error Correcting Code (ECC) and vGPU together. Cisco recommends that you refer to the release notes published by NVIDIA for the respective GPU to know whether it supports ECC and vGPU together.

Viewing Graphics Card Properties

Procedure

	Command or Action	Purpose
Step 1	UCS-A# scope server <i>blade-id</i>	Enters server mode for the specified server.
Step 2	UCS-A /server # show graphics-card detail	Displays information about the graphics card.

Example

The following example shows how to display the graphics card properties on server 1:

```
UCS-A# scope server 1
UCS-A /server # show graphics-card detail

ID: 1
Slot Id: 2
Magma Expander Slot Id:
Is Supported: Yes
Vendor: Cisco Systems Inc
Model: UCSB-GPU-M6
Serial: FHH1924002B
Mode: Graphics
PID: UCSB-GPU-M6
Firmware Version: 84.04.89.00.01|2754.0200.01.02
Vendor Id: 0x10de
Subvendor Id: 0x10de
Device Id: 0x13f3
Subdevice Id: 0x1143

UCS-A /server #
```

Viewing Graphics Controller Properties

Procedure

	Command or Action	Purpose
Step 1	UCS-A# scope server <i>blade-id</i>	Enters server mode for the specified server.
Step 2	UCS-A /server # scope graphics-card <i>card-id</i>	Enters graphics card mode for the specified graphics card.
Step 3	UCS-A /server/graphics-card # show graphics-controller detail	Displays information about the graphics controllers.

Example

The following example shows how to display the graphics controller properties for graphics card 1 on server 1:

```
UCS-A# scope server 1
UCS-A /server # scope graphics-card 1
UCS-A /server/graphics-card # show graphics-controller detail
Graphics Controller:
  ID: 1
  Pci Address: 07:00.0

  ID: 2
  Pci Address: 08:00.0
UCS-A /server/graphics-card #
```

PCI Switch Monitoring

PCI Switch Server Support

With Cisco UCS Manager, you can view the properties for PCI switches. PCI switches are supported on the following servers:

- Cisco UCS C480 M5 ML Server

Viewing PCI Switch Properties

PCI Switch properties are visible only for servers which support PCI switch.

Procedure

	Command or Action	Purpose
Step 1	UCS-A# scope server <i>server-num</i>	Enters server mode for the specified server.
Step 2	UCS-A /server # show pci-switch	Displays information about the PCI switches.

	Command or Action	Purpose
Step 3	UCS-A /server # scope pci-switch <i>pci-switch-number</i>	Enters the PCI switch mode for the specified PCI switch.
Step 4	UCS-A /server # show detail	

Example

The following example shows how to display the PCI switch properties:

```
UCS-A# scope server 1
UCS-A /server # show pci-switch
Pci Switch:
ID Pci Switch name Firmware Version
---
1 PCI-Switch-1 xxxx
2 PCI-Switch-2 xxxxxxxx
3 PCI-Switch-3 xxx
4 PCI-Switch-4 xxxxx
UCS-A /server # scope pci-switch 1
UCS-A /server/pci-switch #show detail

Pci Switch:
ID: 1
Pci Switch name: PCI-Switch-1
No of Adapters: 3
Switch Status: Good
Switch Temperature (C): 45.000000
Switch Product Revision: 0XxB
Firmware Version: xxxx
Vendor Id: xxx
Subvendor Id: xxx
Device Id: xxxx
Subdevice Id: xxxxx
Switch Vendor: xxxxx
Pci Address: xx:00.0
UCS-A /server/pci-switch #
```

Managing Transportable Flash Module and Supercapacitor

LSI storage controllers use a Transportable Flash Module (TFM) powered by a supercapacitor to provide RAID cache protection. With Cisco UCS Manager, you can monitor these components to determine the status of the battery backup unit (BBU). The BBU operability status can be one of the following:

- **Operable**—The BBU is functioning successfully.
- **Inoperable**—The TFM or BBU is missing, or the BBU has failed and needs to be replaced.
- **Degraded**—The BBU is predicted to fail.

TFM and supercap functionality is supported beginning with Cisco UCS Manager Release 2.1(2).

TFM and Supercap Guidelines and Limitations

TFM and Supercap Limitations

- The CIMC sensors for TFM and supercap on the Cisco UCS B420 M3 blade server are not polled by Cisco UCS Manager.
- If the TFM and supercap are not installed on the Cisco UCS B420 M3 blade server, or are installed and then removed from the blade server, no faults are generated.
- If the TFM is not installed on the Cisco UCS B420 M3 blade server, but the supercap is installed, Cisco UCS Manager reports the entire BBU system as absent. You should physically check to see if both the TFM and supercap is present on the blade server.

Supported Cisco UCS Servers for TFM and Supercap

The following Cisco UCS servers support TFM and supercap:

TPM Monitoring

Trusted Platform Module (TPM) is included on all Cisco UCS M3 blade and rack-mount servers. Operating systems can use TPM to enable encryption. For example, Microsoft's BitLocker Drive Encryption uses the TPM on Cisco UCS servers to store encryption keys.

Cisco UCS Manager enables monitoring of TPM, including whether TPM is present, enabled, or activated.

Viewing TPM Properties

Procedure

	Command or Action	Purpose
Step 1	UCS-A# scope server <i>chassis-id / server-id</i>	Enters chassis server mode for the specified server.
Step 2	UCS-A /chassis/server # scope tpm <i>tpm-id</i>	Enters TPM mode for the specified TPM ID.
Step 3	UCS-A /chassis/server/tpm # show	Displays the TPM properties.
Step 4	UCS-A /chassis/server/tpm # show detail	Displays detailed TPM properties.

Example

The following example shows how to display the TPM properties for blade 3 in chassis 1:

```
UCS-A# scope server 1/3
UCS-A /chassis/server # scope tpm 1
UCS-A /chassis/server/tpm # show
```

```
Trusted Platform Module:
  Presence: Equipped
```

```
Enabled Status: Enabled
Active Status: Activated
Ownership: Unowned
UCS-A /chassis/server/tpm # show detail

Trusted Platform Module:
  Enabled Status: Enabled
  Active Status: Activated
  Ownership: Unowned
  Tpm Revision: 1
  Model: UCSX-TPM1-001
  Vendor: Cisco Systems Inc
  Serial: FCH16167DBJ
UCS-A /chassis/server/tpm #
```



CHAPTER 14

Netflow Monitoring

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- [Enabling or Disabling NetFlow Monitoring, on page 135](#)
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- [Associating a Flow Monitor Session to a vNIC, on page 141](#)

NetFlow Monitoring

NetFlow is a standard network protocol for collecting IP traffic data. NetFlow enables you to define a flow in terms of unidirectional IP packets that share certain characteristics. All packets that match the flow definition are collected and exported to one or more external NetFlow Collectors, where they can be further aggregated, analyzed, and used for application-specific processing.

Cisco UCS Manager uses NetFlow-capable adapters (Cisco UCS VIC 1200 series, Cisco UCS VIC 1300 series, Cisco UCS VIC 1400 series) to communicate with the routers and switches that collect and export flow information.



Note

- NetFlow monitoring is not supported on Cisco UCS 6400 series Fabric Interconnects.
 - For Release 3.0(2), NetFlow monitoring is supported for end-host mode only.
-

Network Flows

A flow is a set of unidirectional IP packets that have common properties such as, the source or destination of the traffic, routing information, and protocol used. Flows are collected when they match the definitions in the flow record definition.

Flow Record Definitions

A flow record definition contains information about the properties used to define the flow, which can include both characteristic properties or measured properties. Characteristic properties, also called flow keys, are the properties that define the flow. Cisco UCS Manager supports IPv4, IPv6, and Layer 2 keys. Measured characteristics, also called flow values or non-keys, measurable values such as the number of bytes contained in all packets of the flow, or the total number of packets.

A flow record definition is a specific combination of flow keys and flow values. The two types of flow record definitions are:

- **System-defined**—Default flow record definitions supplied by Cisco UCS Manager.
- **User-defined**—Flow record definitions that you can create yourself.

Flow Exporters, Flow Exporter Profiles, and Flow Collectors

Flow exporters transfer the flows to the flow connector based on the information in a flow exporter profile. The flow exporter profile contains the networking properties used to export NetFlow packets. The networking properties include a VLAN, the source IP address, and the subnet mask for each fabric interconnect.



Note In the Cisco UCS Manager GUI, the networking properties are defined in an exporter interface that is included in the profile. In the Cisco UCS Manager CLI, the properties are defined in the profile.

Flow collectors receive the flows from the flow exporter. Each flow collector contains an IP address, port, external gateway IP, and VLAN that defines where the flows are sent.

Flow Monitors and Flow Monitor Sessions

A flow monitor consists of a flow definition, one or two flow exporters, and a timeout policy. You can use a flow monitor to specify which flow information you want to gather, and where you want to collect it from. Each flow monitor operates in either the egress or ingress direction.

A flow monitor session contains up to four flow monitors: two flow monitors in the ingress direction and two flow monitors in the egress direction. A flow monitor session can also be associated with a vNIC.

NetFlow Limitations

The following limitations apply to NetFlow monitoring:

- NetFlow monitoring is not supported on Cisco UCS 6400 Series Fabric Interconnects.
- NetFlow monitoring is supported on Cisco UCS 1200, 1300, 1400 VIC adapters. However, on the 1200 series VIC adapters, NetFlow is not recommended with FCoE traffic.
- You can have up to 64 flow record definitions, flow exporters, and flow monitors.
- NetFlow is not supported in vNIC template objects.
- PVLANS and local VLANs are not supported for service VLANs.
- All VLANs must be public and must be common to both fabric interconnects.

- VLANs must be defined as an exporter interface before they can be used with a flow collector.
- You cannot use NetFlow with usNIC, Virtual Machine Queue, RoCE, Geneve, or Linux ARFS enabled vNIC.

Enabling or Disabling NetFlow Monitoring

Procedure

	Command or Action	Purpose
Step 1	UCS-A# scope eth-flow-mon	Enters the ethernet flow monitor mode.
Step 2	UCS-A /eth-flow-mon # <i>enable/disable</i>	<p>Enables the Netflow feature and deploys any existing configuration present in Cisco UCS Manager onto NX-OS.</p> <p>Or, disables the Netflow feature and removes any configuration from the NX-OS. Even when you disable NetFlow monitoring, Cisco UCS Manager retains the Netflow configuration and deploys the same configuration when you enable Netflow monitoring.</p> <p>Note Disabling Netflow removes all Netflow related configuration from backend. All the flow sessions, which are in use are removed.</p>
Step 3	UCS-A /eth-flow-mon # commit-buffer	Commits the transaction to the system configuration.

Example

The following example shows how to disable NetFlow monitoring:

```
UCS-A# scope eth-flow-mon
UCS-A /eth-flow-mon # disable
Warning: Disabling Netflow will Remove all Netflow related configuration from backend.
All the flow session which is in use will get cleaned up.
UCS-A /eth-flow-mon* # commit-buffer
UCS-A /eth-flow-mon #
```

Configuring a Flow Record Definition

Procedure

	Command or Action	Purpose
Step 1	UCS-A# scope eth-flow-mon	Enters the ethernet flow monitor mode.
Step 2	UCS-A /eth-flow-mon # enter flow-record <i>flow-record-name</i>	Enters flow record mode for the specified flow record.
Step 3	UCS-A /eth-flow-mon/flow-record # set keytype { ipv4keys ipv6keys l2keys }	Specifies the key type.
Step 4	UCS-A /eth-flow-mon/flow-record # set ipv4keys { dest-port ip-protocol ip-tos ipv4-dest-address ipv4-src-address src-port }	Specifies the attributes for the key type that you selected in Step 3. Note Use this command only if you chose ipv4keys in step 3.
Step 5	UCS-A /eth-flow-mon/flow-record # set ipv6keys { dest-port ip-protocol ipv6-dest-address ipv6-src-address src-port }	Specifies the attributes for the key type that you selected in Step 3. Note Use this command only if you chose ipv6keys in Step 3.
Step 6	UCS-A /eth-flow-mon/flow-record # set l2keys { dest-mac-address ethertype src-mac-address }	Specifies the attributes for the key type that you chose in Step 3. Note Use this command only if you selected l2keys in step 3.
Step 7	UCS-A /eth-flow-mon/flow-record # set nonkeys { counter-bytes-long counter-packets-long sys-uptime-first sys-uptime-last }	Specifies the nonkey attributes.
Step 8	UCS-A /eth-flow-mon/flow-record # commit-buffer	Commits the transaction to the system configuration.

Example

The following example shows how to create a flow record definition with Layer 2 keys and commit the transaction:

```
UCS-A# scope eth-flow-mon
UCS-A /eth-flow-mon # enter flow-record r1
UCS-A /eth-flow-mon/flow-record* # set keytype l2keys
UCS-A /eth-flow-mon/flow-record* #set l2keys dest-mac-address src-mac-address
UCS-A /eth-flow-mon/flow-record* # set nonkeys sys-uptime counter-bytes counter-packets
UCS-A /eth-flow-mon/flow-record* # commit-buffer
UCS-A /eth-flow-mon/flow-record #
```

Configuring an Exporter Profile

Procedure

	Command or Action	Purpose
Step 1	UCS-A# scope eth-flow-mon	Enters the ethernet flow monitor mode.
Step 2	UCS-A /eth-flow-mon # scope flow-profile <i>profile-name</i>	Enters the flow profile mode for the specified profile.
Step 3	UCS-A /eth-flow-mon/flow-profile # show config	Displays the flow profile configuration.
Step 4	UCS-A /eth-flow-mon/flow-profile # enter vlan <i>vlan-name</i>	Specifies the VLAN associated with the exporter profile. PVLANS and local VLAN are not supported. All VLAN must be public and must be common to both fabric interconnects.
Step 5	UCS-A /eth-flow-mon/flow-profile/vlan # enter fabric {a b}	Enters flow profile mode for the specified fabric.
Step 6	UCS-A /eth-flow-mon/flow-profile/vlan/fabric/ # set addr ip-addr subnet ip-addr	Specifies the source IP and subnet mask for the exporter profile on the fabric. Important Make sure the IP address you specify is unique within the Cisco UCS domain. IP address conflicts can occur if you specify an IP address that is already being used by Cisco UCS Manager.
Step 7	UCS-A /eth-flow-mon/flow-profile/vlan/fabric/ # commit-buffer	Commits the transaction to the system configuration.

Example

The following example shows how to configure the default exporter profile, set the source IP and subnet mask for the exporter interface on each fabric, and commit the transaction:

```
UCS-A# scope eth-flow-mon
UCS-A /eth-flow-mon # scope flow-profile default
UCS-A /eth-flow-mon/flow-profile # enter vlan 100
UCS-A /eth-flow-mon/flow-profile/vlan* # enter fabric a
UCS-A /eth-flow-mon/flow-profile/vlan/fabric* # set addr 10.10.10.10 subnet 255.255.255.0
UCS-A /eth-flow-mon/flow-profile/vlan/fabric* # up
UCS-A /eth-flow-mon/flow-profile/vlan* # enter fabric b
UCS-A /eth-flow-mon/flow-profile/vlan/fabric* # set addr 10.10.10.11 subnet 255.255.255.0
UCS-A /eth-flow-mon/flow-profile/vlan/fabric* # commit-buffer
UCS-A /eth-flow-mon/flow-profile/vlan/fabric #
```

Configuring a Netflow Collector

Procedure

	Command or Action	Purpose
Step 1	UCS-A# scope eth-flow-mon	Enters the ethernet flow monitor mode.
Step 2	UCS-A /eth-flow-mon # enter flow-collector <i>flow-collector-name</i>	Enters the flow collector mode for the specified flow collector.
Step 3	UCS-A /eth-flow-mon/flow-collector # set dest-port <i>port_number</i>	Specifies the destination port for the flow collector.
Step 4	UCS-A /eth-flow-mon/flow-collector # set vlan <i>vlan_id</i>	Specifies the VLAN ID for the flow collector.
Step 5	UCS-A /eth-flow-mon/flow-collector # enter ip-if	Enters IPv4 configuration mode.
Step 6	UCS-A /eth-flow-mon/flow-collector/ip-if # set addr <i>ip-address</i>	Specifies the exporter IP address.
Step 7	UCS-A /eth-flow-mon/flow-collector/ip-if # set exporter-gw <i>gw-address</i>	Specifies the exporter gateway address.
Step 8	UCS-A /eth-flow-mon/flow-collector/ip-if # commit-buffer	Commits the transaction to the system configuration.

Example

The following example shows how to configure a NetFlow collector, set the exporter IP and gateway address, and commit the transaction:

```
UCS-A# scope eth-flow-mon
UCS-A /eth-flow-mon # enter flow-collector c1
UCS-A /eth-flow-mon/flow-collector* # set dest-port 9999
UCS-A /eth-flow-mon/flow-collector* # set vlan vlan100
UCS-A /eth-flow-mon/flow-collector* # enter ip-if
UCS-A /eth-flow-mon/flow-collector/ip-if* # set addr 20.20.20.20
UCS-A /eth-flow-mon/flow-collector/ip-if* # set exporter-gw 10.10.10.1
UCS-A /eth-flow-mon/flow-collector/ip-if* # commit-buffer
UCS-A /eth-flow-mon/flow-collector/ip-if #
```

Configuring a Flow Exporter

Procedure

	Command or Action	Purpose
Step 1	UCS-A# scope eth-flow-mon	Enters the ethernet flow monitor mode.

	Command or Action	Purpose
Step 2	UCS-A /eth-flow-mon # enter flow-exporter <i>flow-exporter-name</i>	Enters the flow exporter mode for the specified flow exporter.
Step 3	UCS-A /eth-flow-mon/flow-exporter # set dscp <i>dscp_number</i>	Specifies the differentiated services code point.
Step 4	UCS-A /eth-flow-mon/flow-exporter # set flow-collector <i>flow-collector_name</i>	Specifies the flow collector.
Step 5	UCS-A /eth-flow-mon/flow-exporter # set exporter-stats-timeout <i>timeout_number</i>	Specifies the timeout period for resending NetFlow flow exporter data.
Step 6	UCS-A /eth-flow-mon/flow-exporter # set interface-table-timeout <i>timeout_number</i>	Specifies the time period for resending the NetFlow flow exporter interface table.
Step 7	UCS-A /eth-flow-mon/flow-exporter # set template-data-timeout <i>timeout_number</i>	Specifies the timeout period for resending NetFlow template data.
Step 8	UCS-A /eth-flow-mon/flow-exporter # commit-buffer	Commits the transaction to the system configuration.

Example

The following example shows how to configure a flow exporter, set the timeout values, and commit the transaction:

```
UCS-A# scope eth-flow-mon
UCS-A /eth-flow-mon # enter flow-exporter ex1
UCS-A /eth-flow-mon/flow-exporter* # set dscp 6
UCS-A /eth-flow-mon/flow-exporter* # set flow-collector c1
UCS-A /eth-flow-mon/flow-exporter* # set exporter-stats-timeout 600
UCS-A /eth-flow-mon/flow-exporter* # set interface-table-timeout 600
UCS-A /eth-flow-mon/flow-exporter* # set template-data-timeout 600
UCS-A /eth-flow-mon/flow-exporter* # commit-buffer
UCS-A /eth-flow-mon/flow-exporter #
```

Configuring a Flow Monitor

Procedure

	Command or Action	Purpose
Step 1	UCS-A# scope eth-flow-mon	Enters the ethernet flow monitor mode.
Step 2	UCS-A /eth-flow-mon # enter flow-monitor <i>flow-monitor-name</i>	Enters the flow monitor mode for the specified flow monitor.
Step 3	UCS-A /eth-flow-mon/flow-monitor # set flow-record <i>flow-record-name</i>	Specifies the flow record.

	Command or Action	Purpose
Step 4	UCS-A /eth-flow-mon/flow-monitor # create flow-exporter <i>flow-exporter-name</i>	Specifies the first flow exporter.
Step 5	UCS-A /eth-flow-mon/flow-monitor # create flow-exporter <i>flow-exporter-name</i>	Specifies the second flow exporter.
Step 6	UCS-A /eth-flow-mon/flow-monitor # commit-buffer	Commits the transaction to the system configuration.

Example

The following example shows how to create a flow monitor and commit the transaction:

```
UCS-A# scope eth-flow-mon
UCS-A /eth-flow-mon # enter flow-monitor m1
UCS-A /eth-flow-mon/flow-monitor* # set flow-record r1
UCS-A /eth-flow-mon/flow-monitor* # create flow-exporter ex1
UCS-A /eth-flow-mon/flow-monitor* # create flow-exporter ex2
UCS-A /eth-flow-mon/flow-monitor* # commit-buffer
UCS-A /eth-flow-mon/flow-monitor #
```

Configuring a Flow Monitor Session

Procedure

	Command or Action	Purpose
Step 1	UCS-A# scope eth-flow-mon	Enters the ethernet flow monitor mode.
Step 2	UCS-A /eth-flow-mon # enter flow-mon-session <i>flow-monitor-session-name</i>	Enters the flow monitor session mode for the specified flow monitor session.
Step 3	UCS-A /eth-flow-mon/flow-mon-session # create flow-monitor <i>flow-monitor-1</i>	Specifies the first flow monitor.
Step 4	UCS-A /eth-flow-mon/flow-mon-session # create flow-monitor <i>flow-monitor-2</i>	Specifies the second flow monitor.
Step 5	UCS-A /eth-flow-mon/flow-mon-session # commit-buffer	Commits the transaction to the system configuration.

Example

The following example shows how to create a flow monitor session with two flow monitors:

```
UCS-A# scope eth-flow-mon
UCS-A /eth-flow-mon # enter flow-mon-session s1
UCS-A /eth-flow-mon/flow-mon-session* # create flow-monitor m1
UCS-A /eth-flow-mon/flow-mon-session* # create flow-monitor m2
UCS-A /eth-flow-mon/flow-mon-session* # commit-buffer
UCS-A /eth-flow-mon/flow-mon-session #
```

Configuring a NetFlow Cache Active and Inactive Timeout

Procedure

	Command or Action	Purpose
Step 1	UCS-A# scope eth-flow-mon	Enters the ethernet flow monitor mode.
Step 2	UCS-A /eth-flow-mon # scope flow-timeout <i>timeout-name</i>	Enters the flow timeout mode for the specified flow timeout.
Step 3	UCS-A /eth-flow-mon/flow-timeout # set cache-timeout-active <i>timeout-value</i>	Specifies the active timeout value. This value can be between 60 and 4092 seconds. The default value is 120 seconds.
Step 4	UCS-A /eth-flow-mon/flow-timeout # set cache-timeout-inactive <i>timeout-value</i>	Specifies the inactive timeout value. This value can be between 15 and 4092 seconds. The default value is 15 seconds.
Step 5	UCS-A /eth-flow-mon/flow-timeout # commit-buffer	Commits the transaction to the system configuration.

Example

The following example shows how to change the NetFlow timeout values and commit the transaction:

```
UCS-A# scope eth-flow-mon
UCS-A /eth-flow-mon # scope flow-timeout default
UCS-A /eth-flow-mon/flow-timeout # set cache-timeout-active 1800
UCS-A /eth-flow-mon/flow-timeout* # set cache-timeout-inactive 20
UCS-A /eth-flow-mon/flow-timeout* # commit-buffer
UCS-A /eth-flow-mon/flow-timeout #
```

Associating a Flow Monitor Session to a vNIC

Procedure

	Command or Action	Purpose
Step 1	UCS-A# scope org <i>org-name</i>	Enters the organization mode for the specified organization. To enter the root organization mode, enter / as the <i>org-name</i> .
Step 2	UCS-A /org # scope service-profile <i>profile-name</i>	Enters the organization service profile mode for the specified service profile.
Step 3	UCS-A /org/service-profile # scope vnic <i>vnic-name</i>	Enters the organization service profile mode for the specified vNIC.

	Command or Action	Purpose
Step 4	UCS-A /org/service-profile/vnic # enter flow-mon-src <i>flow-monitor-session-name</i>	Associates the flow monitor session to the vNIC.
Step 5	UCS-A /org/service-profile/vnic # commit-buffer	Commits the transaction to the system configuration.

Example

The following example shows how to associate the flow monitor session s1 to the vNIC eth5:

```
UCS-A# scope org /
UCS-A /org # scope service-profile sp1
UCS-A /org/service-profile # scope vnic eth5
UCS-A /org/service-profile/vnic # enter flow-mon-src s1
UCS-A /org/service-profile/vnic # commit-buffer
```



CHAPTER 15

Traffic Monitoring

- [Traffic Monitoring, on page 143](#)
- [Guidelines and Recommendations for Traffic Monitoring, on page 145](#)
- [Creating an Ethernet Traffic Monitoring Session, on page 147](#)
- [Creating a Fibre Channel Traffic Monitoring Session, on page 148](#)
- [Adding Traffic Sources to a Monitoring Session, on page 149](#)
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Traffic Monitoring

Traffic monitoring copies traffic from one or more source ports and sends the copied traffic to a dedicated destination port for analysis by a network analyzer. This feature is also known as Switched Port Analyzer (SPAN).

Types of Traffic Monitoring Sessions

There are two types of monitoring sessions:

- Ethernet
- Fibre Channel

The type of destination port determines what kind of monitoring session you need. For an Ethernet traffic monitoring session, the destination port must be an unconfigured physical port. For a Fibre Channel traffic monitoring session, the destination port must be a Fibre Channel uplink port except when you are using , Cisco UCS 6454 Fabric Interconnect, Cisco UCS 6400 Series Fabric Interconnect and 6300 Series Fabric Interconnects.



Note For Cisco UCS 6332, 6332-16UP, 64108, 6454 Fabric Interconnects, you cannot choose Fibre Channel destination ports. The destination port must be an unconfigured physical Ethernet port.

Traffic Monitoring Across Ethernet

An Ethernet traffic monitoring session can monitor any of the following traffic source and destination ports:

Source Ports	Destination Ports
<ul style="list-style-type: none"> • Uplink Ethernet port • Ethernet port channel • VLAN • Service profile vNIC • Service profile vHBA • FCoE port • Port channels • Unified uplink port • VSAN 	Unconfigured Ethernet Port



Note All traffic sources must be located within the same switch as the destination port. A port configured as a destination port cannot also be configured as a source port. A member port of a port channel cannot be configured individually as a source. If the port channel is configured as a source, all member ports are source ports.

A server port can be a source, only if it is a non-virtualized rack server adapter-facing port.

Traffic Monitoring for Cisco UCS 6400 Series Fabric Interconnects

- Cisco UCS 6400 Series Fabric Interconnects do not support a Fibre Channel port as a destination port. Therefore, an Ethernet port is the only option for configuring any traffic monitoring session on this Fabric Interconnect.
- Cisco UCS 6400 Series Fabric Interconnects support monitoring traffic in the transmit direction for more than two sources per Fabric Interconnect.
- You can monitor or use SPAN on port channels sources for traffic in the transmit and receive directions.
- You can configure a port as a destination port for only one monitor session.
- You can monitoring Port-Channel as a source in the transmit direction.
- You cannot monitor vEth as a source in the transmit direction.

Traffic Monitoring for Cisco UCS 6300 Fabric Interconnects

- Cisco UCS 6300 Fabric Interconnect supports port-based mirroring.
- Cisco UCS 6300 Fabric Interconnects support VLAN SPAN only in the receive direction.
- Ethernet SPAN is port based on the Cisco UCS 6300 Fabric Interconnect.

Traffic Monitoring for Cisco UCS 6200 Fabric Interconnects

- Cisco UCS 6200 and 6324 Fabric Interconnects support monitoring traffic in the ‘transmit’ direction for up to two sources per Fabric Interconnect.
- Cisco UCS 6200 SPAN traffic is rate-limited by the SPAN destination port speed. This can be either 1 or 10 Gbps.



Important For 6200 and 6324 Fabric Interconnects: You can monitor or use SPAN on port channels only for ingress traffic.

Traffic Monitoring Across Fibre Channel

You can monitor Fibre Channel traffic using either a Fibre Channel traffic analyzer or an Ethernet traffic analyzer. When Fibre Channel traffic is monitored with an Ethernet traffic monitoring session, at an Ethernet destination port, the destination traffic is FCoE. The Cisco UCS 6300 Fabric Interconnect supports FC SPAN only on the ingress side. A Fibre Channel port on a Cisco UCS 6248 Fabric Interconnect cannot be configured as a source port.

A Fibre Channel traffic monitoring session can monitor any of the following traffic source and destination ports:

Source Ports	Destination Ports
<ul style="list-style-type: none"> • FC Port • FC Port Channel • Uplink Fibre Channel port • SAN port channel • VSAN • Service profile vHBA • Fibre Channel storage port 	<ul style="list-style-type: none"> • Fibre Channel uplink port • Unconfigured Ethernet Port (Cisco UCS 64108, 6454, 6332, and 6332-16UP Fabric Interconnects)

Guidelines and Recommendations for Traffic Monitoring

When configuring or activating traffic monitoring, consider the following guidelines:

Traffic Monitoring Sessions

A traffic monitoring session is disabled by default when created. To begin monitoring traffic, first activate the session. A traffic monitoring session must be unique on any fabric interconnect within the Cisco UCS pod. Create each monitoring session with a unique name and unique VLAN source. To monitor traffic from a server, add all vNICs from the service profile corresponding to the server.



Note No more than 32 VLANs can be added to a SPAN monitoring session.

Maximum Number of Supported Active Traffic Monitoring Sessions Per Fabric-Interconnect

You can create and store up to 16 traffic monitoring sessions, but only four can be active at the same time. For each Cisco UCS 6400 Series Fabric Interconnect and 6300 Fabric Interconnect, you can only monitor up to four traffic directions. The receive and transmit directions each count as one monitoring session, while the bi-direction monitoring session is counted as 2. For example:

- Four active sessions—If each session is configured to monitor traffic in only one direction.
- Two active sessions—If each session is configured to monitor traffic bidirectionally.
- Three active sessions—If one session is unidirectional and the second session is bidirectional.



Note Traffic monitoring can impose a significant load on your system resources. To minimize the load, select sources that carry as little unwanted traffic as possible and disable traffic monitoring when it is not needed.

vNIC

Because a traffic monitoring destination is a single physical port, a traffic monitoring session can monitor only a single fabric. To monitor uninterrupted vNIC traffic across a fabric failover, create two sessions, one per fabric and connect two analyzers. Add the vNIC as the traffic source using the exact same name for both sessions. If you change the port profile of a virtual machine, any associated vNICs being used as source ports are removed from monitoring, and you must reconfigure the monitoring session. If a traffic monitoring session was configured on a dynamic vNIC under a release earlier than Cisco UCS Manager Release 2.0, you must reconfigure the traffic monitoring session after upgrading. Cisco UCS 6200 supports traffic monitoring from a vNIC in the transmit direction. Cisco UCS 6400 Series Fabric Interconnects do not support traffic monitoring traffic from a vNIC in the transmit direction.

vHBA

A vHBA can be a source for either an Ethernet or Fibre Channel monitoring session, but it cannot be a source for both simultaneously. When a vHBA is set as the SPAN source, the SPAN destination only receives VN-Tagged frames. It does not receive direct FC frames. Cisco UCS 6200 supports traffic monitoring from a vHBA in the transmit direction. Cisco UCS 6400 Series Fabric Interconnects do not support traffic monitoring traffic from a vHBA in the transmit direction.

Creating an Ethernet Traffic Monitoring Session



- Note** This procedure describes creating an Ethernet traffic monitoring session. To create a Fibre Channel traffic monitoring session, the following changes are required:
- Enter the **scope fc-traffic-mon** command instead of the **scope eth-traffic-mon** command in Step 1.
 - Enter the **create fc-mon-session** command instead of the **create eth-mon-session** command in Step 3.

Procedure

	Command or Action	Purpose
Step 1	UCS-A# scope eth-traffic-mon	Enters Ethernet traffic monitoring command mode.
Step 2	UCS-A /eth-traffic-mon # scope fabric {a b}	Enters traffic monitoring command mode for the specified fabric.
Step 3	UCS-A /eth-traffic-mon/fabric # create eth-mon-session session-name	Creates a traffic monitoring session with the specified name.
Step 4	UCS-A /eth-traffic-mon/fabric/eth-mon-session # create dest-interface slot-num port-num	Configures the interface at the specified slot and port number to be the destination for the traffic monitoring session. Enters the command mode for the interface.
Step 5	UCS-A /eth-traffic-mon/fabric/eth-mon-session/dest-interface # set speedadmin-speed	Sets the data transfer rate of the port channel to be monitored. This can be: <ul style="list-style-type: none"> • 1gbps—1 Gbps • 10gbps—10 Gbps • 20gbps—20 Gbps • 40gbps—40 Gbps
Step 6	UCS-A /eth-traffic-mon/fabric/eth-mon-session/dest-interface # commit-buffer	Commits the transaction to the system configuration.

Example

The following example creates an Ethernet traffic monitoring session to copy and forward traffic to the destination port at slot 2, port 12, sets the admin speed to 20 Gbps, and commits the transaction:

```
UCS-A# scope eth-traffic-mon
UCS-A /eth-traffic-mon # scope fabric a
```

```

UCS-A /eth-traffic-mon/fabric # create eth-mon-session EthMonitor33
UCS-A /eth-traffic-mon/fabric/eth-mon-session* # create dest-interface 2 12
UCS-A /eth-traffic-mon/fabric/eth-mon-session/dest-interface* # set speed 20gbps
UCS-A /eth-traffic-mon/fabric/eth-mon-session/dest-interface* # commit-buffer
UCS-A /eth-traffic-mon/fabric/eth-mon-session/dest-interface #

```

What to do next

- Add traffic sources to the traffic monitoring session.
- Activate the traffic monitoring session.

Creating a Fibre Channel Traffic Monitoring Session

Procedure

	Command or Action	Purpose
Step 1	UCS-A# scope fc-traffic-mon	Enters Fibre Channel traffic monitoring command mode.
Step 2	UCS-A /fc-traffic-mon # scope fabric {a b}	Enters Fibre Channel traffic monitoring command mode for the specified fabric.
Step 3	UCS-A /fc-traffic-mon/fabric # create fc-mon-session session-name	Creates a Fibre Channel traffic monitoring session with the specified name.
Step 4	UCS-A /fc-traffic-mon/fabric/fc-mon-session # create dest-interface slot-num port-num	Creates and enters the command mode of the destination slot and port for the Fibre Channel traffic monitoring session.
Step 5	UCS-A /fc-traffic-mon/fabric/fc-mon-session/dest-interface # set speedadmin-speed	Sets the data transfer rate of the port channel to be monitored. This can be: <ul style="list-style-type: none"> • 1gbps—1 Gbps • 2gbps—2 Gbps • 4gbps—4 Gbps • 8gbps—8 Gbps • auto—Cisco UCS determines the data transfer rate.
Step 6	UCS-A /fc-traffic-mon/fabric/fc-mon-session/dest-interface # commit-buffer	Commits the transaction to the system configuration.

Example

The following example creates a Fibre channel traffic monitoring session to copy and forward traffic to the destination port at slot 1, port 10, sets the admin speed to 8 Gbps, and commits the transaction:

```
UCS-A# scope fc-traffic-mon
UCS-A /fc-traffic-mon # scope fabric a
UCS-A /fc-traffic-mon/fabric # create fc-mon-session FCMonitor
UCS-A /fc-traffic-mon/fabric/fc-mon-session* # create dest-interface 1 10
UCS-A /fc-traffic-mon/fabric/fc-mon-session/dest-interface* # set speed 8gbps
UCS-A /fc-traffic-mon/fabric/fc-mon-session/dest-interface* # commit-buffer
UCS-A /fc-traffic-mon/fabric/fc-mon-session/dest-interface #
```

What to do next

- Add traffic sources to the traffic monitoring session.
- Activate the traffic monitoring session.

Adding Traffic Sources to a Monitoring Session

Adding an Uplink Source Port to a Monitoring Session



Note This procedure describes adding an Ethernet uplink port as a source for a traffic monitoring session. To add a Fibre Channel uplink port as a source, enter the **scope fc-uplink** command instead of the **scope eth-uplink** command in Step 1.

Before you begin

A traffic monitoring session must be created.

Procedure

	Command or Action	Purpose
Step 1	UCS-A# scope eth-uplink	Enters Ethernet uplink command mode.
Step 2	UCS-A /eth-uplink # scope fabric {a b}	Enters uplink fabric mode for the specified fabric.
Step 3	UCS-A /eth-uplink/fabric # scope interface slot-num port-num	Enters the interface command mode for the specified uplink port.
Step 4	UCS-A /eth-uplink/fabric/interface # create mon-src session-name	Adds the uplink port as a source to the specified monitoring session.

	Command or Action	Purpose
Step 5	(Optional) UCS-A /eth-uplink/fabric/interface/mon-src # set direction {both receive transmit}	Specifies the traffic direction to be monitored. Note If you do not select any direction, the default direction is Rx.
Step 6	UCS-A /eth-uplink/fabric/interface/mon-src # commit-buffer	Commits the transaction to the system configuration.

Example

The following example adds the ingress traffic on Ethernet uplink port 3 on slot 2 of fabric A as a source for a monitoring session and commits the transaction:

```
UCS-A# scope eth-uplink
UCS-A /eth-uplink # scope fabric a
UCS-A /eth-uplink/fabric # scope interface 2 3
UCS-A /eth-uplink/fabric/interface # create mon-src Monitor23
UCS-A /eth-uplink/fabric/interface/mon-src* # set direction receive
UCS-A /eth-uplink/fabric/interface/mon-src* # commit-buffer
UCS-A /eth-uplink/fabric/interface/mon-src #
```

What to do next

You can add additional sources to the traffic monitoring session.

Adding a vNIC or vHBA Source to a Monitoring Session



Note This procedure describes adding a vNIC as a source for a traffic monitoring session. To add a vHBA as a source, enter the **scope vhma** command instead of the **scope vnic** command in Step 2.

Before you begin

A traffic monitoring session must be created.

Procedure

	Command or Action	Purpose
Step 1	Switch-A# scope system	Enters system mode.
Step 2	Switch-A /system # scope vm-mgmt	Enters VM management mode.
Step 3	(Optional) Switch-A /system/vm-mgmt # show virtual-machine	Displays the running virtual machines.
Step 4	Switch-A /system/vm-mgmt # scope virtual-machine uuid	Enters command mode for the virtual machine that contains the dynamic vNIC.

	Command or Action	Purpose
Step 5	(Optional) Switch-A /system/vm-mgmt/virtual-machine # show expand	Displays the virtual machine details, including the vNIC MAC address.
Step 6	Switch-A /system/vm-mgmt/virtual-machine # scope vnic mac-address	Enters the command mode for the vNIC at the specified MAC address.
Step 7	Switch-A /system/vm-mgmt/virtual-machine/vnic # create mon-src session-name	Adds the vNIC as a source to the specified monitoring session.
Step 8	(Optional) Switch-A /system/vm-mgmt/virtual-machine/vnic/mon-src # set direction {both receive transmit}	Specifies the traffic direction to be monitored.
Step 9	Switch-A /system/vm-mgmt/virtual-machine/vnic/mon-src # commit-buffer	Commits the transaction to the system configuration.

Example

The following example adds the ingress traffic on a dynamic vNIC as a source for a monitoring session and commits the transaction:

```
Switch-A# scope system
Switch-A /system # scope vm-mgmt
Switch-A /system/vm-mgmt # show virtual-machine
Virtual Machine:
  UUID: 42327c42-e00c-886f-e3f7-e615906f51e9
  Service Profile: org-root/ls-dsw-bld1-esx
  Server: sys/chassis-1/blade-1
  Status: Online
.
.
.
Switch-A /system/vm-mgmt # scope virtual-machine 42327c42-e00c-886f-e3f7-e615906f51e9
Switch-A /system/vm-mgmt/virtual-machine # show expand
Virtual Machine:
  UUID: 42327c42-e00c-886f-e3f7-e615906f51e9
  Service Profile: org-root/ls-dsw-bld1-esx
  Server: sys/chassis-1/blade-1
  Status: Online

vNIC:
  Name:
  Status: Online
  MAC Address: 00:50:56:B2:00:00

VIF:
  Vif Id: 32772
  Status: Online
  Phys Fabric ID: B
  Virtual Fabric:
Switch-A /system/vm-mgmt/virtual-machine # scope vnic 00:50:56:B2:00:00
Switch-A /system/vm-mgmt/virtual-machine/vnic # create mon-src Monitor23
Switch-A /system/vm-mgmt/virtual-machine/vnic/mon-src* # set direction receive
Switch-A /system/vm-mgmt/virtual-machine/vnic/mon-src* # commit-buffer
```

```
Switch-A /system/vm-mgmt/virtual-machine/vnic/mon-src #
```

What to do next

You can add additional sources to the traffic monitoring session.

Adding a VLAN or VSAN Source to a Monitoring Session



Note This procedure describes adding a VLAN as a source for a traffic monitoring session. To add a VSAN as a source, the following changes are required:

- Enter the **scope fc-uplink** command instead of the **scope eth-uplink** command in Step 1.
- Enter the **create vsan** command instead of the **create vlan** command in Step 3.

Before you begin

A traffic monitoring session must be created.

Procedure

	Command or Action	Purpose
Step 1	UCS-A# scope eth-uplink	Enters Ethernet uplink command mode.
Step 2	UCS-A /eth-uplink # scope fabric {a b}	Enters uplink fabric mode for the specified fabric. Note This step is required when adding a local VLAN as a source. To add a global VLAN as a source, omit this step.
Step 3	UCS-A /eth-uplink/fabric # create vlan <i>vlan-name</i> <i>vlan-id</i>	Creates a named VLAN, specifies the VLAN name and VLAN ID, and enters uplink VLAN mode.
Step 4	UCS-A /eth-uplink/fabric/vlan # create mon-src <i>session-name</i>	Adds the VLAN as a source to the specified monitoring session.
Step 5	UCS-A /eth-uplink/fabric/vlan/mon-src # commit-buffer	Commits the transaction to the system configuration.

Example

The following example adds a local VLAN as a source for an Ethernet monitoring session and commits the transaction:

```

UCS-A# scope eth-uplink
UCS-A /eth-uplink # scope fabric a
UCS-A /eth-uplink/fabric # create vlan vlan23 23
UCS-A /eth-uplink/fabric/vlan # create mon-src Monitor23
UCS-A /eth-uplink/fabric/vlan/mon-src* # commit-buffer
UCS-A /eth-uplink/fabric/vlan/mon-src #

```

What to do next

You can add additional sources to the traffic monitoring session.

Adding a Storage Port Source to a Monitoring Session



Note This procedure describes adding a Fibre Channel storage port as a source for a Fibre Channel traffic monitoring session. To add an FCoE storage port as a source for an Ethernet traffic monitoring session, enter the **create interface fcoe** command instead of the **create interface fc** command in Step 3.

Before you begin

A traffic monitoring session must be created.

Procedure

	Command or Action	Purpose
Step 1	UCS-A# scope fc-storage	Enters Fibre Channel storage port command mode.
Step 2	UCS-A /fc-storage # scope fabric {a b}	Enters Fibre Channel storage port fabric mode for the specified fabric.
Step 3	UCS-A /fc-storage/fabric # create interface fc slot-num port-num	Creates a Fibre Channel storage port interface and enters the interface command mode.
Step 4	UCS-A /fc-storage/fabric/fc # create mon-src session-name	Adds the storage port as a source to the specified monitoring session.
Step 5	UCS-A /fc-storage/fabric/fc/mon-src # commit-buffer	Commits the transaction to the system configuration.

Example

The following example adds a Fibre Channel storage port on port 3 of slot 2 as a source for a Fibre Channel monitoring session and commits the transaction:

```

UCS-A# scope fc-storage
UCS-A /fc-storage # scope fabric a
UCS-A /fc-storage/fabric # create interface fc 2 3
UCS-A /fc-storage/fabric/fc* # create mon-src Monitor23

```

```
UCS-A /fc-storage/fabric/fc/mon-src* # commit-buffer
UCS-A /fc-storage/fabric/fc/mon-src #
```

What to do next

You can add additional sources to the traffic monitoring session.

Activating a Traffic Monitoring Session



Note This procedure describes activating an Ethernet traffic monitoring session. To activate a Fibre Channel traffic monitoring session, the following changes are required:

- Enter the **scope fc-traffic-mon** command instead of the **scope eth-traffic-mon** command in Step 1.
- Enter the **scope fc-mon-session** command instead of the **scope eth-mon-session** command in Step 3.

Before you begin

Configure a traffic monitoring session.

Procedure

	Command or Action	Purpose
Step 1	UCS-A# scope eth-traffic-mon	Enters Ethernet traffic monitoring command mode.
Step 2	UCS-A /eth-traffic-mon # scope fabric {a b}	Enters traffic monitoring command mode for the specified fabric.
Step 3	UCS-A /eth-traffic-mon/fabric # scope eth-mon-session session-name	Enters the command mode of the traffic monitoring session with the specified name.
Step 4	UCS-A /eth-traffic-mon/fabric/eth-mon-session # disable enable	Disables or enables the traffic monitoring session.
Step 5	UCS-A /eth-traffic-mon/fabric/eth-mon-session # commit-buffer	Commits the transaction to the system configuration.

When activated, the traffic monitoring session begins forwarding traffic to the destination when a traffic source is configured.

Example

The following example activates an Ethernet traffic monitoring session and commits the transaction:

```
UCS-A# scope eth-traffic-mon
UCS-A /eth-traffic-mon # scope fabric a
UCS-A /eth-traffic-mon/fabric # scope eth-mon-session Monitor33
```



```

UCS-A /eth-traffic-mon/fabric/eth-mon-session # enable
UCS-A /eth-traffic-mon/fabric/eth-mon-session* # commit-buffer
UCS-A /eth-traffic-mon/fabric/eth-mon-session # show

Ether Traffic Monitoring Session:
  Name          Admin State      Oper State      Oper State Reason
  -----
  Monitor33     Enabled                        Up              Active

UCS-A /eth-traffic-mon/fabric/eth-mon-session #

```

Deleting a Traffic Monitoring Session



- Note** This procedure describes deleting an Ethernet traffic monitoring session. To delete a Fibre Channel traffic monitoring session, the following changes are required:
- Enter the **scope fc-traffic-mon** command instead of the **scope eth-traffic-mon** command in Step 1.
 - Enter the **delete fc-mon-session** command instead of the **delete eth-mon-session** command in Step 3.

Procedure

	Command or Action	Purpose
Step 1	UCS-A# scope eth-traffic-mon	Enters Ethernet traffic monitoring command mode.
Step 2	UCS-A /eth-traffic-mon # scope fabric {a b}	Enters traffic monitoring command mode for the specified fabric.
Step 3	UCS-A /eth-traffic-mon/fabric # delete eth-mon-session session-name	Deletes the traffic monitoring session with the specified name.
Step 4	UCS-A /eth-traffic-mon/fabric # commit-buffer	Commits the transaction to the system configuration.

Example

The following example deletes an Ethernet traffic monitoring session and commits the transaction:

```

UCS-A# scope eth-traffic-mon
UCS-A /eth-traffic-mon # scope fabric a
UCS-A /eth-traffic-mon/fabric # delete eth-mon-session Monitor33
UCS-A /eth-traffic-mon/fabric* # commit-buffer
UCS-A /eth-traffic-mon/fabric #

```

SPAN Restrictions for the Cisco UCS Mini

Consider the following guidelines and restrictions when configuring the SPAN feature on Cisco UCS Mini

- FC port as SPAN destination is not supported.
- VSAN as SPAN source is not supported.
- FC uplink ports as SPAN source is not supported.