CHAPTER 45

Configuring Call Home

Call Home provides e-mail-based notification of critical system events. A versatile range of message formats are available for optimal compatibility with pager services, standard e-mail, or XML-based automated parsing applications. Common uses of this feature may include direct paging of a network support engineer, e-mail notification to a Network Operations Center, and utilization of Cisco AutoNotify services for direct case generation with the Technical Assistance Center.

The Call Home feature provides message throttling capabilities. Periodic inventory messages, port syslog messages and RMON alert messages are added to the list of deliverable Call Home messages. If required you can also use the Cisco Fabric Services application to distribute the Call Home configuration to all other switches in the fabric.

This chapter includes the following sections:

Call Home Features

multiple Call Home profiles (also referred to as Call Home destination profiles), each with separate potential destinations. You can define your own destination profiles in addition to predefined profiles.

The Call Home function can even leverage support from Cisco Systems or another support partner. Flexible message delivery and format options make it easy to integrate specific support requirements.

The Call Home feature offers the following advantages:

Fixed set of predefined alerts and trigger events on the switch.

Automatic execution and attachment of relevant command output.

Multiple message format options:

- Short Text—Suitable for pagers or printed reports.
- Plain Text—Full formatted message information suitable for human reading.
- XML—Matching readable format using Extensible Markup Language (XML) and document type definitions (DTDs) named Messaging Markup Language (MML). The MML DTD is published on the Cisco.com website at http://www.cisco.com/. The XML format enables communication with the Cisco Systems Technical Assistance Center.

Multiple concurrent message destinations. You can configure up to 50 e-mail destination addresses for each destination profile.

Multiple message categories including system, environment, switching module hardware, supervisor module, hardware, inventory, syslog, RMON, and test.

Cisco AutoNotify

http://www.cisco.com/univercd/cc/td/doc/product/voice/c_callmg/3_3/service/serv332/ccmsrvs/sssrvact.htm

To configure a Cisco MDS 9000 Family switch to use the AutoNotify service, an XML destination profile must be configured to send messages to Cisco. Specific setup, activation, and e-mail address information is found on the Cisco.com web site at:
http://www.cisco.com/en/US/partner/products/hw/ps4159/ps4358/products_configuration_example09186a0080108e72.shtml

To register, the following items are required:

The SMARTnet contract number covering your Cisco MDS 9000 Family switch.

Your name, company address, your e-mail address, and your Cisco.com ID.

- numbers are DS-C6509 and DS-C9216-K9.

  The serial number of your Cisco MDS 9000 Family switch. This can be obtained by looking at the serial number label on the back of the switch (next to the power supply).

The ContractID, CustomerID, SiteID, and SwitchPriority parameters are not required by the AutoNotify feature. They are only intended to be used as additional information by Cisco customers and service partners.

Use the **show sprom backplane 1** **how license host-id**

Call Home Configuration Process

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Step 1

Step 2

Step 3

Step 4

Step 5

Contact Information

	Command	Purpose
Step 1	`switch#` **`config t`**	
	`snmp-server contact personname@companyname.com`	
	`switch(config)#` **`callhome`** `switch(config-callhome)#`	

	Command	Purpose
Step 4	`switch(config-callhome)#` **`username@company.com`**	Assigns the customer's e-mail address. Up to 128 alphanumeric characters are accepted in e-mail address format. **Note**
Step 5	**`+1-800-123-4567`**	You cannot use spaces. Be sure to use the **+**
Step 6	**`streetaddress 1234 Picaboo Street, Any city, Any state, 12345`**	
Step 7	**`switch-priority 0`**	**Tip**
Step 8	**`Customer1234`**	
Step 9	**`Site1ManhattanNY`**	
Step 10	**`contract-id Company1234`**	

Destination Profiles

Note

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	Command	Purpose
Step 1	`config t`	
Step 2	`callhome`	
Step 3	`destination-profile full-txt-destination email-addr person@place.com`	
	`destination-profile full-txt-destination message-size 1000000`	
	`destination-profile short-txt-destination email-addr person@place.com`	
	`destination-profile short-txt-destination message-size 100000`	

destination-profile XML-destination email-addr findout@.cisco.com	
destination-profile XML-destination message-size 100000	XML-destination

switch#	
switch(config)# switch(config-callhome)#	
switch(config-callhome)#	
switch(config-callhome)#	
switch(config-callhome)#	
switch(config-callhome)#	
switch(config-callhome)#	

Alert Groups

Note

	Command	Purpose
Step 1		
Step 2		
Step 3		
Step 4		
Step 5	`test1 alert-group Cisco-TAC`	
	`destination-profile xml-destination alert-group Cisco-TAC`	
Step 6	`destination-profile test1 alert-group environmental`	
	`destination-profile short-txt-destination alert-group environmental`	

	Command	Purpose
Step 7		
Step 8		
Step 9		
Step 10		

Call Home Message Level Feature

	Command	Purpose
Step 1		
Step 2		
Step 3		

Syslog-based Alerts

"Call Home Message Levels" section on page 45-20). For example, if you select level 5 for the Call Home message level, syslog messages at levels 0, 1, and 2 are included in the Call Home log.

Call Home does not change the syslog message level in the message text. The syslog message texts in the Call Home log appear as they are described in the *Cisco MDS 9000 Family System Messages Guide*

Whenever a syslog message is generated, the Call Home application sends a Call Home message depending on the mapping between the destination profile and the alert group mapping and based on the severity level of the generated syslog message. To receive a syslog-based Call Home alert, you must associate a destination profile with the syslog-group-port alert groups and configure the appropriate message level (see the "Call Home Message Level Feature" section on page 45-8).

To configure the syslog-group-port alert group, follow these steps:

	Command	Purpose
Step 1		
Step 2		
Step 3		
Step 4		

RMON-based Alerts

	Command	Purpose
Step 1		

	Command	Purpose
Step 2		
Step 3		

E-Mail Options

Configuring General E-Mail Options

	Command	Purpose
Step 1		
Step 2		
Step 3		
Step 4		

Configuring SMTP Server and Ports

	Command	Purpose
Step 1		
Step 2		
Step 3	`email smtp-server 192.168.1.1`	
	`email smtp-server 192.168.1.1 port 30 transport`	Note

Periodic Inventory Notification

	Command	Purpose
Step 1		
Step 2		
Step 3		
Step 4		

Duplicate Message Throttle

	Command	Purpose
Step 1		
Step 2		
Step 3		

Call Home Enable Function

	Command	Purpose
Step 1		
Step 2		
Step 3	`callhome enabled successfully` `switch(config-callhome)#`	
	`switch(config-callhome)#` `switch(config-callhome)#`	

Call Home Configuration Distribution

Note

	Command	Purpose
Step 1		Enters configuration mode.
Step 2		Enters Call Home submode.
Step 3		Enables Call Home configuration distribution to all switches in the fabric. Acquires a fabric lock and stores all future configuration changes in the pending database.
		Disables (default) Call Home configuration distribution to all switches in the fabric.

	Command	Purpose
Step 1		Enters configuration mode.
Step 2		Enters Call Home submode.
Step 3		Distributes the configuration changes to all switches in the fabric and releases the lock. Overwrites the effective database with the changes made to the pending database.

	Command	Purpose
Step 1		Enters configuration mode.
Step 2		Enters Call Home submode.
Step 3		Discards the configuration changes in the pending database and releases the fabric lock.

Fabric Lock Override

Tip The changes are only available in the volatile directory and are subject to being discarded if the switch is restarted.

To use administrative privileges and release a locked Call Home session, use the command.

Database Merge Guidelines

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- Verify that two destination profiles do not have the same name (even if they have different configuration information) on the subordinate and dominant switches. If they do contain the same name, the merge operation will fail. You must then modify or delete the conflicting destination profile on the required switch.

Use the command to simulate a message generation.

To test the Call Home function, follow these steps:

`switch#`
`trying to send test callhome message`
`successfully sent test callhome message`	

`switch#`
`trying to send test callhome message`
`successfully sent test callhome message`	

Use the command to display the configured Call Home information (see Examples 45-1 to 45-7).

Example 45-1 Displays Configured Call Home Information

```
Callhome Information:
contact person name:who@where
contact person's email:person@place.com
contact person's phone number:310-408-4000
street addr:1234 Picaboo Street, Any city, Any state, 12345
site id:Site1ManhattanNewYork
customer id:Customer1234
contract id:Cisco1234
switch priority:0
```

Example 45-2 Displays Information for All Destination Profiles (Predefined and User-Defined)

```
maximum message size:500000
message format:XML
message-level:0
email addresses configured:
alert groups configured:
cisco_tac

test destination profile information
maximum message size:100000
message format:full-txt
message-level:5
email addresses configured:
cchetty@isco.com

alert groups configured:
test

full-txt destination profile information
maximum message size:500000
message format:full-txt
message-level:0
email addresses configured:

alert groups configured:
all

short-txt destination profile information
maximum message size:4000
message format:short-txt
message-level:0
email addresses configured:

alert groups configured:
all
```

Example 45-3 Displays Information for a User-defined Destination Profile

```
switch#
test destination profile information
maximum message size:100000
message format:full-txt
message-level:5
email addresses configured:
user company
```

Displays the Full-Text Profile

Example 45-5 Displays the Short-Text Profile

Example 45-6 Displays the XML Destination Profile

Example 45-7 Displays E-Mail and SMTP Information

Sample Syslog Alert Notification in Full-txt Format

```
source:MDS9000
Switch Priority:7
Device Id:DS-C9506@C@FG@07120011
Customer Id:basu
Contract Id:123
Site Id:Bangalore
Server Id:DS-C9506@C@FG@07120011
Time of Event:2004-10-08T11:10:44
Message Name:SYSLOG_ALERT
Message Type:Syslog
Severity Level:2
System Name:10.76.100.177
Contact Name:Basavaraj B
Contact Email:bbendige@cisco.com
Contact Phone:+91-80-310-1718
Street Address:#71 , Miller's Road
Event Description:2004 Oct  8 11:10:44 10.76.100.177 %PORT-5-IF_TRUNK_UP: %$VSAN 1%$
Interface fc2/5, vsan 1 is up

syslog_facility:PORT
start chassis information:
Affected Chassis:DS-C9506
Affected Chassis Serial Number:FG@07120011
Affected Chassis Hardware Version:0.104
Affected Chassis Software Version:2.0(1)
Affected Chassis Part No:73-8607-01
end chassis information:
```

Sample Syslog Alert Notification in XML Format


```
X-Mozilla-Status2: 02000000
Return-Path: <tester@cisco.com>
...

<?xml version="1.0" encoding="UTF-8" standalone="no" ?>
<!DOCTYPE mml SYSTEM "mml10.dtd">
<!--
Alert:SYSLOG_ALERT
-->
<mml>
<header>
<time>2004-09-30T06:12:36</time>
<name>SYSLOG_ALERT</name>
<type>Syslog</type>
<level>2</level>
<source>MDS9000</source>
<priority>7</priority>
<deviceId>DS-C9506@C@FOX0712S00H</deviceId>
<custId>911</custId>
<contractId>33445</contractId>
<siteId>91111</siteId>
<serverId>DS-C9506@C@FOX0712S00H</serverId>
</header>
<body>
<msgDesc>2004 Sep 30 06:12:36 switch186 %PORT-5-IF_UP: %$VSAN 2000%$ Interface fc1/10 is
up in mode FL
</msgDesc>
<sysName>switch186</sysName>
<sysContact>USA</sysContact>
<sysContactEmail>billgates@microsoft.com</sysContactEmail>
<sysContactPhoneNumber>+91-080-8888888</sysContactPhoneNumber>
<sysStreetAddress>91</sysStreetAddress>
<chassis>
<name>DS-C9506</name>
<serialNo>FOX0712S00H</serialNo>
<partNo>73-8697-01</partNo>
<hwVersion>0.104</hwVersion>
<swVersion>2.0(1)</swVersion>
</chassis>
<nvp>
<name>syslog_facility</name>
<value>PORT</value>
</nvp>
</body>
</mml>
```


Sample RMON Notification in XML Format


```
Return-Path: <tester@cisco.com>
...
<?xml version="1.0" encoding="UTF-8" standalone="no" ?>
<!DOCTYPE mml SYSTEM "mml10.dtd">
<!--
Alert:RMON_ALERT
-->
<mml>
<header>
<time>2004-10-12T04:59:13</time>
<name>RMON_ALERT</name>
```

```
<type>RMON</type>
<level>2</level>
<source>MDS9000</source>
<priority>3</priority>
<deviceId>DS-C9506@C@FOX0712S00H</deviceId>
<custId>0</custId>
<contractId>u</contractId>
<siteId>&amp;</siteId>
<serverId>DS-C9506@C@FOX0712S00H</serverId>
</header>
<body>
<msgDesc>rlaxmina-w2k07</msgDesc>
<sysName>switch186</sysName>
<sysContact>USA</sysContact>
<sysContactEmail>billgates@microsoft.com</sysContactEmail>
<sysContactPhoneNumber>+91-080-000000</sysContactPhoneNumber>
<sysStreetAddress>91</sysStreetAddress>
<chassis>
<name>DS-C9506</name>
<serialNo>FOX0712S00H</serialNo>
<partNo>73-8697-01</partNo>
<hwVersion>0.104</hwVersion>
<swVersion>2.0(1)</swVersion>
</chassis>
<nvp>
<name>ThresholdType</name>
<value>RisingThreshold</value>
</nvp>
<nvp>
<name>ThresholdValue</name>
<value>0</value>
</nvp>
<nvp>
<name>AlarmValue</name>
<value>0</value>
</nvp>
</body>
</mml>
```


Table 45-1 Default Call Home Settings

Parameters	Default

Event Triggers

Event Triggers

Event	Alert Group	Event Name	Description	Call Home Message Level

Event Triggers (continued)

Table 45-3 Event Categories and Executed Commands

Event Category	Description	Executed Commands
		show tech-support **show system redundancy status**
		show module **show environment**
		show tech-support
		show tech-support
		show version
		show version

Call Home Message Levels

Note

Cisco MDS 9000 Family System Messages Guide.

	Keyword Used	Syslog Level	Description
	Catastrophic		
	Disaster		
	Fatal		
	Critical		
	Major		
	Minor		
	Warning		
	Notification		
	Normal		
	Debugging		

Data Item	Description

Reactive Event Message Format

(Plain text and XML)	Description (Plain text and XML)	XML Tag (XML only)
	YYYY-MM-DD HH:MM:SS	
	Format: type@Sid@serial, where Type is the product model number from backplane SEEPROM. @ is a separator character. Sid is “C” identifying serial ID as a chassis serial number· Serial number as identified by the Sid field. Example: “DS-C9509@C@12345678	/mml/ header/deviceId
Customer ID	Optional user-configurable field used for contract info or other ID by any support service.	/mml/ header/customerID
Contract ID	Optional user-configurable field used for contract info or other ID by any support service.	/mml/ header /contractId
Site ID	Optional user-configurable field used for Cisco-supplied site ID or other data meaningful to alternate support service.	/mml/ header/siteId
Server ID	If the message is generated from the fabric switch, it is the unique device identifier (UDI) of the switch. Format: type@Sid@serial, where Type is the product model number from backplane SEEPROM. @ is a separator character. Sid is “C” identifying serial ID as a chassis serial number· Serial number as identified by the Sid field. Example: “DS-C9509@C@12345678	/mml/header/serverId
Message description	Short text describing the error.	/mml/body/msgDesc
Device name	Node that experienced the event. This is the host name of the device.	/mml/body/sysName
Contact name	Name of person to contact for issues associated with the node experiencing the event.	/mml/body/sysContact
Contact e-mail	E-mail address of person identified as contact for this unit.	/mml/body/sysContactEmail

Contact phone number	Phone number of the person identified as the contact for this unit.	/mml/body/sysContactPhone Number
Street address	Optional field containing street address for RMA part shipments associated with this unit.	/mml/body/sysStreetAddress
Model name	Model name of the switch. This is the specific model as part of a product family name.	/mml/body/chassis/name
Serial number	Chassis serial number of the unit.	/mml/body/chassis/serialNo
Chassis part number	Top assembly number of the chassis.	/mml/body/chassis/partNo
Chassis hardware version	Hardware version of chassis.	/mml/body/chassis/hwVersion
Supervisor module software version	Top level software version.	/mml/body/chassis/swVersion
Affected FRU name	Name of the affected FRU generating the event message.	/mml/body/fru/name
Affected FRU serial number	Serial number of affected FRU.	/mml/body/fru/serialNo
Affected FRU part number	Part number of affected FRU.	/mml/body/fru/partNo
FRU slot	Slot number of FRU generating the event message.	/mml/body/fru/slot
FRU hardware version	Hardware version of affected FRU.	/mml/body/fru/hwVersion
FRU software version	Software version(s) running on affected FRU.	/mml/body/fru/swVersion
Command output name	The exact name of the issued command.	/mml/attachments/attachment/ name
Attachment type	Specifically command output.	/mml/attachments/attachment/ type
MIME type	Normally text or plain or encoding type.	/mml/attachments/attachment/ mime
Command output text	Output of command automatically executed (see Table 45-3).	/mml/attachments/attachment/ atdata

Time stamp	Date and time stamp of event in ISO time notation: T . The time zone or daylight savings time (DST) offset from UTC has already been added or subtracted. T is the hardcoded limiter for the time.	/mml/header/time
Message name	Name of message. Specifically “Inventory Update” Specific event names are listed in the “Event Triggers” section on page 45-19.	/mml/header/name
Message type	Specifically “Inventory Update”.	/mml/header/type
Message group	Specifically “proactive”.	/mml/header/group
Severity level	Severity level of inventory event is level 2 (seeTable 45-4).	/mml/header/level
Source ID	Product type for routing at Cisco. Specifically “MDS 9000”	/mml/header/source
Device ID	Unique Device Identifier (UDI) for end device generating message. This field should empty if the message is non-specific to a fabric switch. Format: type@Sid@serial, where Type is the product model number from backplane SEEPROM. @ is a separator character. Sid is “C” identifying serial ID as a chassis serial number· Serial: The serial number as identified by the Sid field. Example: “DS-C9509@C@12345678	/mml/ header /deviceId
Customer ID	Optional user-configurable field used for contact info or other ID by any support service.	/mml/ header /customerID
Contract ID	Optional user-configurable field used for contact info or other ID by any support service.	/mml/ header /contractId
Site ID	Optional user-configurable field, can be used for Cisco-supplied site ID or other data meaningful to alternate support service.	/mml/ header /siteId
Server ID	If the message is generated from the fabric switch, it is the Unique device identifier (UDI) of the switch. Format: type@Sid@serial, where Type is the product model number from backplane SEEPROM. @ is a separator character. Sid is “C” identifying serial ID as a chassis serial number· Serial: The serial number as identified by the Sid field. Example: “DS-C9509@C@12345678	/mml/header/serverId
Message description	Short text describing the error.	/mml/body/msgDesc
Device name	Node that experienced the event.	/mml/body/sysName
Contact name	Name of person to contact for issues associated with the node experiencing the event.	/mml/body/sysContact
Contact e-mail	E-mail address of person identified as contact for this unit.	/mml/body/sysContactEmail

Contact phone number	Phone number of the person identified as the contact for this unit.	/mml/body/sysContactPhone Number
Street address	Optional field containing street address for RMA part shipments associated with this unit.	/mml/body/sysStreetAddress
Model name	Model name of the unit. This is the specific model as part of a product family name.	/mml/body/chassis/name
Serial number	Chassis serial number of the unit.	/mml/body/chassis/serialNo
Chassis part number	Top assembly number of the chassis.	/mml/body/chassis/partNo
Chassis hardware version	Hardware version of chassis.	/mml/body/chassis/hwVersion
Supervisor module software version	Top level software version.	/mml/body/chassis/swVersion
FRU name	Name of the affected FRU generating the event message.	/mml/body/fru/name
FRU s/n	Serial number of FRU.	/mml/body/fru/serialNo
FRU part number	Part number of FRU.	/mml/body/fru/partNo
FRU slot	Slot number of FRU.	/mml/body/fru/slot
FRU hardware version	Hardware version of FRU.	/mml/body/fru/hwVersion
FRU software version	Software version(s) running on FRU.	/mml/body/fru/swVersion
Command output name	The exact name of the issued command.	/mml/attachments/attachment /name
Attachment type	Specifically command output.	/mml/attachments/attachment /type
MIME type	Normally text or plain or encoding type.	/mml/attachments/attachment /mime
Command output text	Output of command automatically executed after event categories (see "Event Triggers" section on page 45-19).	/mml/attachments/attachment /atdata

Table 45-8 User-Generated Test Message Format

Table 45-8 User-Generated Test Message Format (continued)
