CHAPTER 25

Troubleshooting Call Home

This chapter describes how to troubleshoot the Call Home feature in the Cisco MDS 9000 Family. It includes the following sections:

- Overview, page 25-1
- Initial Troubleshooting Checklist, page 25-3
- Call Home Issues, page 25-4

Overview

The Call Home functionality is available directly through the Cisco MDS 9000 Family. It provides 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 using the predefined profiles.

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

For those who have service contracts directly with Cisco Systems, automatic case generation with the Technical Assistance Center is possible by registering with the AutoNotify service. AutoNotify provides fast time to resolution of system problems by providing a direct notification path to Cisco customer support.

The AutoNotify feature requires you to configure several Call Home parameters including certain contact information, e-mail server, and an XML destination profile as specified in the Service Activation document found on the Cisco.com website at:

http://www.cisco.com/en/US/partner/products/hw/ps4159/ps4358/products_configuration_example09186a0080108e72.shtml.

Note A cisco.com password is required for this website.

Destination Profiles

A destination profile contains the required delivery information for an alert notification. Destination profiles are typically configured by the network administrator. At least one destination profile is required. You can configure multiple destination profiles of one or more types.

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You can use one of the predefined destination profiles or define a desired profile. If you define a new profile, you must assign a profile name.

Alert Groups

An alert group is a predefined subset of Call Home alerts supported in all switches in the Cisco MDS 9000 Family. Different types of Call Home alerts are grouped into different alert groups depending on their type. You can associate one or more alert groups to each profile as required by your network.

The alert group feature allows you to select the set of Call Home alerts to be received by a destination profile (either predefined or user-defined).

You can associate a destination profile with multiple alert groups.

Note A Call Home alert is sent to e-mail destinations in a destination profile only if that Call Home alert belongs to one of the alert groups associated with that destination profile.

Customized Alert Group Messages

The predefined Call Home alert groups generate notification messages when certain events occur on the switch. You can customize predefined alert groups to execute additional valid **show** commands when specific events occur. The output from these additional **show** commands is included in the notification message along with that of the predefined **show** commands.

Note You can assign a maximum of five user-defined **show** commands to an alert group. Only **show** commands can be assigned to an alert group.

Note Customized show commands are supported for full text and XML alert groups only. Short text alert groups (short-txt-destination) do not support customized **show** commands because they only allow 128 bytes of text.

Call Home Message Level Feature

The Call Home message level feature allows you to filter messages based on their level of urgency. Each destination profile (predefined and user-defined) is associated with a Call Home message level threshold. Any message with a value lower that the urgency threshold is not sent. The urgency level ranges from 0 (lowest level of urgency) to 9 (highest level of urgency), and the default is 0 (all messages are sent). Table 25-1 shows the Call Home message level and how it relates to syslog message levels.

Note 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.*

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Table 25-1 Severity and Syslog Level Mapping

Call Home Level	Keyword Used	Syslog Level	Description
Catastrophic (9)	**Catastrophic**	N/A	Network wide catastrophic failure.
Disaster (8)	**Disaster**	N/A	Significant network impact.
Fatal (7)	**Fatal**	Emergency (0)	System is unusable.
Critical (6)	**Critical**	Alert (1)	Critical conditions, immediate attention needed.
Major (5)	**Major**	Critical (2)	Major conditions.
Minor (4)	**Minor**	Error (3)	Minor conditions.
Warning (3)	**Warning**	Warning (4)	Warning conditions.
Notify (2)	**Notification**	Notice (5)	Basic notification and informational messages. Possibly independently insignificant.
Normal (1)	**Normal**	Information (6)	Normal event signifying return to normal state.
Debug (0)	**Debugging**	Debug (7)	Debugging messages.

Initial Troubleshooting Checklist

Begin troubleshooting Call Home issues by checking the following issues first:

Checklist	Check off
Verify that you have configured the contact name, phone, and street address on the switch.	❑
Verify that the switch has IP connectivity to your e-mail server.	❑
If Cisco AutoNotify is used, verify that you have an active service contract that covers the device being configured.	❑
Verify that you have configured at least one destination profile on the switch.	❑

Common Troubleshooting Tools in Fabric Manager

Choose **Switches > Events > Call Home** to verify the Call Home configuration.

Common Troubleshooting Tools in Device Manager

You can test the Call Home alert messages. Choose **Admin > Events > Call Home > Alerts > Test**.

Common Troubleshooting Commands in the CLI

The following commands may be useful in troubleshooting Call Home issues:

- **show callhome**
- **show callhome user-def-cmds**
- **callhome test**

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Call Home Issues

This section describes troubleshooting Call Home and includes the following topics:

- Not Receiving Call Home Alerts, page 25-4
- Not Receiving Call Home Alerts From All Configured Switches, page 25-6
- Receiving Too Many Call Home Alerts, page 25-8
- Not Receiving Syslog-based Call Home Alerts, page 25-8
- Periodic Inventory Notification Does Not Reflect Current Inventory, page 25-9

Not Receiving Call Home Alerts

Symptom Not receiving Call Home alerts.

Table 25-2 Not Receiving Call Home Alerts

Symptom	Possible Cause	Solution
Not receiving Call Home alerts.	The alert is in an alert group that is not configured for the destination profile.	Add the alert group to the destination profile. See the "Configuring an Alert Group Using Fabric Manager" section on page 25-4 or the "Configuring an Alert Group Using the CLI" section on page 25-5.
	The message level is not set correctly in the destination profile.	Set the message level. See the "Configuring the Message Level for a Destination Profile Using Fabric Manager" section on page 25-5 or the "Configuring the Message Level for a Destination Profile Using the CLI" section on page 25-5.
	No e-mail server is configured.	Configure an e-mail server for Call Home. See the "Configuring an E-mail Server for Call Home Using Fabric Manager" section on page 25-6 or the "Configuring an E-mail Server for Call Home Using the CLI" section on page 25-6.
	Firewall is blocking SMTP messages.	Verify that any firewall in the network path is configured to allow the SMTP server port number you configured. (The default is 25.)

Configuring an Alert Group Using Fabric Manager

To associate an alert group with a destination profile, follow these steps:

Step 1 Choose **Switches** > **Events** > **Call Home** in the Physical Attributes pane then click the **Profiles** tab in the Information pane.

Step 2 Click the **Alert Groups** column in the row for the profile you want to associate.

Step 3 Click an alert group to select it for association.

You see a check next to that alert group. To deselect it and remove the check, click it again.

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Step 4 Click **Apply Changes**.

Configuring an Alert Group Using the CLI

To configure alert groups for a destination profile, follow these steps:

	Command	Purpose
Step 1	`switch# config t`	Enters configuration mode.
Step 2	`switch(config)# callhome` `switch(config-callhome)#`	Enters Call Home configuration submode.
Step 3	`switch(config-callhome)# destination-profile test1 alert-group environmental`	Configures user-defined destination message profile (test1) to receive Call Home notifications for power, fan, and temperature-related events.
	`switch(config-callhome)# destination-profile short-txt-destination alert-group environmental`	Optional. Configures predefined short-text destination message profile to receive Call Home notifications for power, fan, and temperature-related events.

Configuring the Message Level for a Destination Profile Using Fabric Manager

To set the message level for each profile for Call Home, follow these steps:

Step 1 Choose **Switches > Events > Call Home** and click the **Profiles** tab in the Information pane.

Step 2 Set a message level for each switch using the drop-down menu in the MsgLevel column.

Step 3 Click **Apply Changes** to save your changes or click **Undo Changes** to cancel your changes.

Configuring the Message Level for a Destination Profile Using the CLI

To configure message level settings for destination profiles, follow these steps:

	Command	Purpose
Step 1	`switch# config t`	Enters configuration mode.
Step 2	`switch(config)# callhome` `switch(config-callhome)#`	Enters Call Home configuration submode.
Step 3	`switch(config-callhome)# destination-profile test message-level 5`	Optional. Configures the message level urgency as 5 and above for the user-defined profile (test1).
	`switch(config-callhome)# no destination-profile oldtest message-level 7`	Removes a previously configured urgency level and reverts it to the default of 0 (all messages are sent).

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Configuring an E-mail Server for Call Home Using Fabric Manager

To configure general e-mail options and the SMTP server and port, follow these steps:

Step 1 Select a switch in the Fabric pane.

Step 2 Choose **Switches** > **Events** > **Call Home** in the Physical Attributes pane and click the **Email Setup** tab in the Information pane.

Step 3 Select a switch in the Information pane.

Step 4 Enter the general e-mail information.

Step 5 Enter the SMTP server IP address type, IP address or name, and port.

Step 6 Click **Apply Changes** to update the e-mail options.

Configuring an E-mail Server for Call Home Using the CLI

To configure the SMTP server and port, follow these steps:

	Command	Purpose
Step 1	`switch# config t`	Enters configuration mode.
Step 2	`switch(config)# callhome` `switch(config-callhome)#`	Enters Call Home configuration submode.
Step 3	`switch(config-callhome)# transport email smtp-server 192.168.1.1`	Configures the DNS, IPv4 address, or IPv6 address of the SMTP server to reach the server. The port usage defaults to 25 if no port is specified. **Note** The port number is optional and, if required, may be changed depending on the server location.
	`switch(config-callhome)# transport email smtp-server 192.168.1.1 port 30`	

Not Receiving Call Home Alerts From All Configured Switches

Symptom Not receiving Call Home alerts from all configured switches.

Table 25-3 Not Receiving Call Home Alerts From All Configured Switches

Symptom	Possible Cause	Solution
Not receiving Call Home alerts from all configured switches	CFS distribution used, but local Call Home contact is not configured.	Configure the Call Home contact locally on each switch. See the "Configuring Call Home Contact Information Using Fabric Manager" section on page 25-7 or the "Configuring Call Home Contact Information Using the CLI" section on page 25-7.

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Configuring Call Home Contact Information Using Fabric Manager

To assign the contact information, follow these steps:

Step 1 Choose **Switches > Events > Call Home** in the Physical Attributes pane.

Step 2 Click the **General** tab and then assign contact information. You must enter an e-mail address that identifies the source of Call Home notifications.

Step 3 Click **Apply Changes**.

Configuring Call Home Contact Information Using the CLI

To assign the contact information, follow these steps:

	Command	Purpose
Step 1	`switch# config t`	Enters configuration mode.
Step 2	`switch# snmp-server contact personname@companyname.com`	Configures the SNMP contact name.
Step 3	`switch(config)# callhome` `switch(config-callhome)#`	Enters the Call Home configuration submode.
Step 4	`switch(config-callhome)# email-contact username@company.com`	Assigns the customer's e-mail address. Up to 128 alphanumeric characters are accepted in e-mail address format. **Note** You can use any valid e-mail address. You cannot use spaces.

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Receiving Too Many Call Home Alerts

Symptom Receiving too many Call Home alerts.

Table 25-4 Receiving Too Many Call Home Alerts

Symptom	Possible Cause	Solution
Receiving too many Call Home alerts	Too many alert groups are configured for the destination profile.	Remove unneeded alert groups from the destination profile or separate into independent destination profiles. See the "Configuring an Alert Group Using Fabric Manager" section on page 25-4 or the "Configuring an Alert Group Using the CLI" section on page 25-5.
	The message level is not set correctly in the destination profile.	Reset the message level to allow only the more important messages. See the "Configuring the Message Level for a Destination Profile Using Fabric Manager" section on page 25-5 or the "Configuring the Message Level for a Destination Profile Using the CLI" section on page 25-5.
	Message throttling is disabled.	Enable Call Home message throttling. Choose **Switches > Events > Call Home** in Fabric Manager, click the **General** tab, check the **Duplicate Message Throttle** check box, and then click **Apply Changes**. Or use the **duplicate-message throttle** CLI command.

Not Receiving Syslog-based Call Home Alerts

Symptom Not receiving syslog-based Call Home alerts.

Table 25-5 Not Receiving Syslog-based Call Home Alerts

Symptom	Possible Cause	Solution
Not receiving syslog-based Call Home alerts	The syslog- group-port alert group is not configured for the destination profile.	Add the alert group to the destination profile. See the "Configuring an Alert Group Using Fabric Manager" section on page 25-4 or the "Configuring an Alert Group Using the CLI" section on page 25-5.
	The message level is not set correctly in the destination profile.	Set the message level. See Table 25-1 for the relationship between syslog message levels and Call Home message levels. See the "Configuring the Message Level for a Destination Profile Using Fabric Manager" section on page 25-5 or the "Configuring the Message Level for a Destination Profile Using the CLI" section on page 25-5. Verify the syslog message level configured on the switch. Choose **Switches > Events >Syslog** in Fabric Manager and click the **Severity Level** tab. Or use the **show logging level** CLI command.

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Periodic Inventory Notification Does Not Reflect Current Inventory

Symptom Periodic inventory notification does not reflect the current inventory.

Table 25-6 Periodic Inventory Notification Does Not Reflect Current Inventory

Symptom	Possible Cause	Solution
Periodic inventory notification does not reflect the current inventory	Inventory change occurred after the last system reboot.	The periodic inventory for Call Home is updated when the switch restarts. Initiate a nondisruptive reboot to update inventory notification.

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