‘Call Home Configuration Guide

Cisco IOS Release 12.2(58)SE
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Contents

Introduction

This configuration guide describes how to configure the Call Home feature in Cisco IOS Release 12.2(58)SE and later releases that support the Call Home feature.

Note For complete syntax and usage information for the commands used in this chapter, see the Cisco IOS Master Command List, Release 12.2SX:

http://www.cisco.com/en/US/docs/ios/mcl/122sxmcl/12_2sx_mcl_book.html

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Understanding Call Home

Call Home provides e-mail-based and web-based notification of critical system events. Multiple message formats are available for compatibility with pager services, standard e-mail, or XML-based automated parsing applications. Common uses can include direct paging of a network support engineer, e-mail notification to a network operations center, and XML delivery to a support website.

The Call Home feature delivers alert messages containing information on configuration, diagnostics, environmental conditions, inventory, and syslog events.

The Call Home feature delivers alerts to multiple recipients, referred to as *Call Home destination profiles*, each with configurable message formats and content categories.

You can use multiple message delivery and format options to integrate specific support requirements. If you configure multiple destination profiles and one fails, the system tries every configured profile before sending a failure message.

The Call Home feature provides these functions:

- Multiple message-format options:
  - Short text—Suitable for pagers or printed reports.
  - Plain text—Full formatted message information suitable for human reading.
  - XML—Machine readable format using Extensible Markup Language (XML) and Adaptive Markup Language (AML) document type definitions (DTDs).
- Multiple concurrent message destinations.
- Multiple message categories including configuration, diagnostics, environmental conditions, inventory, and syslog events.
- Message filtering by severity and pattern matching.
- Message transmission scheduling.
- Continuous device health monitoring and real-time diagnostics alerts.
- Secure message transport directly from your device or through a downloadable transport gateway aggregation point. Use a transport gateway aggregation point to support multiple devices or devices not connected directly to the Internet.
- Web-based access to Call Home messages and recommendations, inventory, and configuration information for all Call Home devices, including associated field notices, security advisories and end-of-life information.

Default Settings

Table 1-1 Default Call Home Settings

Parameters	Default
Call Home feature status	Disabled
User-defined profile status	Active
Transport method	e-mail
Message format type	XML
Destination message size for a message sent in long text, short text, or XML format	3,145,728

Table 1-1 Default Call Home Settings (continued)

Parameters	Default
Alert group status	Enabled
Call Home message severity threshold	0 (debugging)
Messages per minute rate limit	20

Configuring Call Home

Configuration Overview

Before you configure Call Home:

- Get the customer e-mail, phone, and street address for the Call Home contact for configuration in the destination profile. This information identifies the source of messages sent to the Cisco server.
- If using e-mail message delivery, identify the name or IPv4 address of a primary Simple Mail Transfer Protocol (SMTP) server and any backup servers.
- Verify IP connectivity from the switch to the e-mail server or the destination HTTP server.
- If servers are specified by name, the switch must have IP connectivity to a domain name server.
- For switch stacks, configure Call Home policies only on the master switch. Events are published on the master switch, and the stack master sends Call Home messages.

Configuring Customer Contact Information

- E-mail address (required)
- Phone number (optional)
- Street address (optional)
- Contract ID (optional)
- Customer ID (optional)
- Site ID (optional)

Beginning in privileged EXEC mode, follow these steps to configure the customer contact information:

	Command	Purpose
Step 1	**configure terminal**	Enter global configuration mode.
Step 2	**call-home**	Enter Call Home configuration mode.
Step 3	**contact-email-addr** *email-address*	Configure the customer's e-mail address. Enter up to 200 characters in e-mail address format with no spaces.
Step 4	**phone-number** +*phone-number*	(Optional) Configure the customer's phone number. **Note** The number must begin with a plus (**+**) prefix, and may contain only dashes (-) and numbers. Enter up to 16 characters. If you include spaces, you must enclose your entry in quotes (" ").
Step 5	**street-address** *street-address*	(Optional) Configure the customer's street address to which RMA equipment can be shipped. Enter up to 200 characters. If you include spaces, you must enclose your entry in quotes (" ").
Step 6	**customer-id** *text*	(Optional) Assign a customer ID. Enter up to 64 characters. If you include spaces, you must enclose your entry in quotes (" ").
Step 7	**site-id** *text*	(Optional) Assign a customer site ID. Enter up to 200 characters. If you include spaces, you must enclose your entry in quotes (" ").
Step 8	**contract-id** *text*	(Optional) Configure the customer's contract ID for the switch. Enter up to 64 characters. If you include spaces, you must enclose your entry in quotes (" ").
Step 9	**exit**	Return to global configuration mode.

This example shows how to configure contact information:

```
Switch# configure terminal
Switch(config)# call-home
Switch(cfg-call-home)# contact-email-addr username@example.com
Switch(cfg-call-home)# phone-number +1-800-555-4567
Switch(cfg-call-home)# street-address "1234 Picaboo Street, Any city, Any state, 12345"
Switch(cfg-call-home)# customer-id Customer1234
Switch(cfg-call-home)# site-id Site1ManhattanNY
Switch(cfg-call-home)# contract-id Company1234
Switch(cfg-call-home)# exit
```

Configuring VRF for Use With Call Home

Note The virtual routing and forwarding (VRF) feature is supported only on the Catalyst 3750, 3560, and 3750e switches running the IP Services and higher Cisco IOS images.

If an interface configured on the specified VRF can connect to the mail server, the Call Home feature uses it to send e-mail messages. If no appropriate interface is configured on the specified VRF, or if the corresponding VRF table does not exist on the switch, no messages are sent.

Beginning in privileged EXEC mode, follow these steps to use a VRF interface for Call Home e-mail or for HTTP messages:

	Command or Action	Purpose
Step 1	**configure terminal**	Enter configuration mode.
Step 1	**interface** *type*	Select an interface to configure.
Step 2	**ip address** *ip_address mask*	Assign an IP address and subnet mask to the interface.
Step 3	**vrf forwarding** *call_home_vrf_name*	Associate the *call_home_vrf_name* VRF with the interface.
Step 4	**exit**	Return to global configuration mode.

This example shows how to configure Call Home to use a VRF interface:

```
Switch# configure terminal
Switch(config)# interface gigabitethernet 1/1
Switch(config-if)# ip address 10.10.10.10 0.0.0.0
Switch(config-if)# vrf forwarding call_home_vrf
Switch(config-if)# exit
```

Configuring Destination Profiles

Destination Profile Overview

A destination profile contains the required delivery information for an alert notification. At least one destination profile is required. You can configure multiple destination profiles of one or more types.

To use the Call Home feature, you need to both enable Call Home and configure a profile. You must configure required fields in the profiles. If a required field is not configured, that profile cannot initiate notification messages.

You can use the predefined destination profile or define a custom profile. If you define a new destination profile, you must assign a profile name.

You can configure these attributes for a destination profile:

- Profile name—A string that uniquely identifies each user-defined destination profile. The profile name is limited to 31 characters and is not case sensitive. You cannot use *all* as a profile name.
- Transport method—The transport mechanism, either e-mail or HTTP to deliver alerts.
  - For user-defined destination profiles, e-mail is the default, and you can enable either or both transport mechanisms. If you disable both methods, e-mail is enabled.
- Destination address—The e-mail or HTTP address to which the alert should be sent.

- Message formatting—The message format used for the alert.
  - For user-defined destination profiles, the options are long-text, short-text, or XML. The default is XML.
- Message size—The maximum message size. The valid range is 50 to 3,145,728 bytes, and the default is 3,145,728 bytes.

Configuring a Destination Profile to Send E-mail Messages

- Configuring Call Home to Use VRF for E-mail Messages, page 6 (optional)
- Configuring the Mail Server, page 7 (required)
- Configuring a Destination Profile for E-mail, page 7 (required)
- Configuring Other E-mail Options, page 8 (optional)

Configuring Call Home to Use VRF for E-mail Messages

Beginning in privileged EXEC mode, follow these steps to configure Call Home to use a VRF instance for Call Home e-mail messages:

	Command or Action	Purpose
Step 1	**configure terminal**	Enter configuration mode.
Step 2	**call-home**	Enter Call Home configuration submode.
Step 3	**vrf** *call_home_vrf_name*	Specify the VRF instance to use for Call Home e-mail messages. If a VRF is not specified, the default routing table is used. **Note** Cisco IOS Releases 12.2(58)SE and later support VRF configuration for Call Home e-mail messages.
Step 4	**exit**	Return to global configuration mode.

This example shows how to configure Call Home to use a VRF interface:

```
Switch# configure terminal
Switch(config)# call-home
Switch(cfg-call-home)# vrf call_home_vrf
Switch(cfg-call-home)# exit
```

Configuring the Mail Server

Beginning in privileged EXEC mode, follow these steps to use the e-mail message transport:

	Command or Action	Purpose
Step 1	**configure terminal**	Enter global configuration mode.
Step 2	**call-home**	Enter call home configuration mode.
Step 3	**mail-server** {*ipv4-address* | *name*} **priority** *number*	Specify an e-mail server and its relative priority among configured e-mail servers, where: • *ipv4-address*—Specify the IPv4 address of the mail server. • *name*—Specify the mail-server fully qualified domain name (FQDN) of 64 characters or less. • *number*—Assign a number between 1 (highest priority) and 100 (lowest priority). Higher priority servers (lower priority numbers) are tried first. You can repeat this step to configure a total of five e-mail servers.

This example shows how to configure a primary mail server (*smtp.example.com*) and a secondary mail server that is at IP address 192.168.0.1:

```
Switch# configure terminal
Switch(config)# call-home
Switch(cfg-call-home)# mail-server smtp.example.com priority 1
Switch(cfg-call-home)# mail-server 192.168.0.1 priority 2
Switch(cfg-call-home)# exit
```

Configuring a Destination Profile for E-mail

Beginning in privileged EXEC mode, follow these steps to configure a destination profile for e-mail transport:

	Command or Action	Purpose
Step 1	**configure terminal**	Enter global configuration mode.
Step 2	**call-home**	Enter call home configuration mode.
Step 3	**profile** *name*	Configure the specified destination profile. If the specified destination profile does not exist, it is created.
Step 4	**destination transport-method email**	Configure the message transport method. The default is e-mail.
Step 5	**destination address email** *email_address*	Configure the destination e-mail address for Call Home messages.
Step 6	**destination preferred-msg-format** {**long-text** | **short-text** | **xml**}	(Optional) Configure a message format. The default is XML.
Step 7	**destination message-size** *bytes*	(Optional) Configure a maximum destination message size (from 50 to 3145728 bytes) for the destination profile. The default is 3145728 bytes.

	Command or Action	Purpose
Step 8	**active**	(Optional) Enable the destination profile. By default, a user-defined profile is enabled when it is created.
Step 9	**exit**	Exit call home destination profile configuration mode, and return to call home configuration mode.
Step 10	**end**	Return to privileged EXEC mode.

Configuring Other E-mail Options

Beginning in privileged EXEC mode, follow these steps to configure other e-mail options:

	Command or Action	Purpose
Step 1	**configure terminal**	Enter global configuration mode.
Step 2	**call-home**	Enter call home configuration mode.

	Command or Action	Purpose
Step 3	**sender from** *email-address*	(Optional) Assign the e-mail address that appears in the *from* field in Call Home e-mail messages. If you do not specify an address, the contact e-mail address is used.
Step 4	**sender reply-to** *email-address*	(Optional) Assign the e-mail address that appears in the reply-to field in Call Home e-mail messages.
Step 5	**source-ip-address** *ip_address*	(Optional) Assign the source IP address to use for Call Home e-mail messages. **Note** You must specify a valid IP address that is already configured on an interface.
Step 6	**source-interface** {**async** | **auto-template** | **BVI** | **CTunnel** | **dialer** | **fastEthernet** | **filter** | **filtergroup** | **gigabitEthernet** | **group-async** | **groupVI** | **lex** | **loopback** | **port-channel** | **portgroup** | **pos-channel** | **tunnel** | **vif** | **virtual-template** | **virtual-TokenRing** | **vlan** | **fcpa**}	(Optional) Configure the name of the source interface to use for Call Home email messages. Valid names are: • **async**—async interface • **auto-template**—auto-template interface • **BVI**— bridge-group virtual interface • **CTunnel**—CTunnel interface • **dialer**—dialer interface • **fastEthernet**—FastEthernet IEEE 802.3 • **filter**—filter interface • **filtergroup**—filter Group interface • **gigabitEthernet**—GigabitEthernet IEEE 802.3z • **group-async**—async group interface • **groupVI**—group virtual interface • **lex**—LAN Extender (lex) interface • **loopback**—Loopback interface • **port-channel**—Ethernet Channel of interfaces • **portgroup**—Portgroup interface • **pos-channel**—packet-over-SONET/SDH (POS) Channel of interfaces • **tunnel** —Tunnel interface • **vif**—pragmatic general multicast (PGM) Multicast Host interface • **virtual-template**—virtual template interface • **virtual-TokenRing**—virtual TokenRing • **vlan**—Catalyst VLANs • **fcpa**—Fiber Channel **Note** The specified source interface must be configured with a valid IP address and be able to ping the mail server.

Note You can configure either a source IP address or a source interface, but not both.

This example shows how to configure the e-mail options with a source IP address:

```
Switch(cfg-call-home)# sender from username@example.com
Switch(cfg-call-home)# sender reply-to username@example.com
Switch(cfg-call-home)# source-ip-address 10.10.10.10
```

This example shows how to configure the e-mail options with a source interface:

```
Switch(cfg-call-home)# sender from username@example.com
Switch(cfg-call-home)# sender reply-to username@example.com
Switch(cfg-call-home)# source-interface fastEthernet 0/1
```

Configuring a Destination Profile to Send HTTP Messages

Configuring the HTTP Source Interface

Beginning in privileged EXEC mode, follow these steps to configure an HTTP client source interface:

	Command or Action	Purpose
Step 1	**configure terminal**	Enter global configuration mode.
Step 2	**ip http client source-interface** *type number*	Configure the source interface for the HTTP client. If the interface is associated with a VRF instance, the HTTP messages use the VRF instance.

Configuring a Destination Profile for HTTP

Beginning in privileged EXEC mode, follow these steps to configure a destination profile for HTTP transport:

	Command or Action	Purpose
Step 1	**configure terminal**	Enter global configuration mode.
Step 2	**call-home**	Enter call home configuration mode.
Step 3	**profile** *name*	Configure the specified destination profile. If the specified destination profile does not exist, it is created.
Step 4	**destination transport-method http**	Enable the HTTP message transport method.
Step 5	**destination address http** *url*	Configure the destination URL for Call Home messages. **Note** When entering a destination URL, include either **http://** or **https://**, depending on whether the server is a secure server. HTTPS support is available only in cryptographic Cisco IOS images. If the destination is a secure server, you must also configure a trustpoint certificate authority.

	Command or Action	Purpose
Step 6	**destination preferred-msg-format** {**long-text** | **short-text** | **xml**}	(Optional) Configure a preferred message format. The default is XML.
Step 7	**destination message-size** *bytes*	(Optional) Configure a maximum message size for the destination profile.
Step 8	**active**	Enable the destination profile. By default, a profile is enabled when it is created.
Step 9	**exit**	Exit call home destination profile configuration mode, and return to call home configuration mode.
Step 10	**end**	Return to privileged EXEC mode.

This example shows how to configure a destination profile for HTTP transport:

```
Switch# configure terminal
Switch(config)# call-home
Switch(config-call-home)# profile test
Switch(cfg-call-home-profile)# destination transport-method http
Switch(cfg-call-home-profile)# destination address http https://example.url.com
Switch(cfg-call-home-profile)# destination preferred-msg-format xml
Switch(cfg-call-home-profile)# destination message-size 3,145,728
Switch(cfg-call-home-profile)# active
Switch(cfg-call-home-profile)# exit
Switch(cfg-call-home)# end
```

Configuring Call Home Traffic Rate Limiting

Beginning in privileged EXEC mode, follow these steps to configure Call Home traffic rate limiting:

	Command	Purpose
Step 1	**configure terminal**	Enter configuration mode.
Step 2	**call-home**	Enter Call Home configuration submode.
Step 3	**rate-limit** *number*	(Optional) Specify the number of messages sent per minute. The range is from 1 to 60. The default is 20.

This example shows how to configure Call Home traffic rate limiting:

```
Switch# configure terminal
Switch(config)# call-home
Switch(config-call-home)# profile test
Switch(cfg-call-home-profile)# rate-limit 20
```

Destination Profile Management

Activating and Deactivating a Destination Profile

Except for the predefined CiscoTAC-1 profile, all Call Home destination profiles are automatically activated when you create them. If you do not want to use a profile right way, you can deactivate the profile. The CiscoTAC-1 profile is inactive by default and must be activated for use.

Beginning in privileged EXEC mode, follow these steps to activate or deactivate a destination profile:

	Command or Action	Purpose
Step 1	**configure terminal**	Enter global configuration mode.
Step 2	**call-home**	Enter call home configuration mode.
Step 3	**profile** *name*	Configure the specified destination profile. If the specified destination profile does not exist, it is created.
Step 4	**active**	Enable the destination profile. By default, a new profile is enabled when it is created.
Step 5	**no active**	Disable the destination profile.
Step 6	**end**	Exit call home destination profile configuration mode, and return to privileged EXEC mode.

This example shows how to activate a destination profile:

```
Switch# configure terminal
Switch(config)# call-home
Switch(config-call-home)# profile test
Switch(cfg-call-home-profile)# active
Switch(cfg-call-home)# end
```

This example shows how to deactivate a destination profile:

```
Switch# configure terminal
Switch(config)# call-home
Switch(config-call-home)# profile test
Switch(cfg-call-home-profile)# no active
Switch(cfg-call-home)# end
```

Copying a Destination Profile

Beginning in privileged EXEC mode, follow these steps to create a new destination profile by copying an existing profile:

	Command or Action	Purpose
Step 1	**configure terminal**	Enter global configuration mode.
Step 2	**call-home**	Enter call home configuration mode.
Step 3	**copy profile** *source_profile target_profile*	Create a new destination profile with the same configuration settings as the existing destination profile: • *source_profile*—Specify the existing name of the profile. • *target_profile*—Specify a name for the new copy of the profile.

This example shows how to activate a destination profile:

```
Switch# configure terminal
Switch(config)# call-home
Switch(config-call-home)# profile test
Switch(cfg-call-home-profile)# copy profile profile1 profile2
```

Renaming a Destination Profile

Beginning in privileged EXEC mode, follow these steps to change the name of an existing profile:

	Command or Action	Purpose
Step 1	**configure terminal**	Enter global configuration mode.
Step 2	**call-home**	Enter call home configuration mode.
Step 3	**rename profile** *source_profile target_profile*	Rename an existing source file: • *source_profile*—Specify the existing name of the profile. • *target_profile*—Specify a new name for the existing profile.

This example shows how to rename a destination profile:

```
Switch# configure terminal
Switch(config)# call-home
Switch(config-call-home)# profile test
Switch(cfg-call-home-profile)# rename profile profile1 profile2
```

Verifying the Call Home Profile Configuration

To verify the profile configuration, use the **show call-home profile** command. See the "Displaying Call Home Configuration Information" section on page 19 for more information and examples.

Subscribing to Alert Groups

Overview of Alert Group Subscription

An alert group is a predefined subset of Call Home alerts supported on all switches. The alerts are grouped based on their type:

- Configuration
- Diagnostic
- Environment

- Inventory
- Syslog

The trigger events for each alert group are listed in the "Alert Group Trigger Events and Commands" section on page 23, and the contents of the alert group messages are listed in the "Message Contents" section on page 26.

You can specify one or more alert groups to be received by a destination profile.

Note A Call Home alert is sent only to destination profiles that have subscribed to the alert group containing that Call Home alert. The alert group must also be enabled.

Configuring Alert Group Subscription

Beginning in privileged EXEC mode, follow these steps to subscribe a destination profile to an alert group:

	Command	Purpose
Step 1	**configure terminal**	Enter configuration mode.
Step 2	**call-home**	Enter Call Home configuration submode.
Step 3	**alert-group** {**all** | **configuration** | **diagnostic** | **environment** | **inventory** | **syslog**}	Enable the specified alert group. Use the keyword **all** to enable all alert groups. By default, all alert groups are enabled.
Step 4	**profile** *name*	Enter the Call Home destination profile configuration submode for the specified destination profile.
Step 5	**subscribe-to-alert-group configuration** [**periodic** {**daily** *hh:mm* | **monthly** *date hh:mm* | **weekly** *day hh:mm*}]	Subscribe this destination profile to the Configuration alert group. To configure the Configuration alert group for periodic notification, see the "Configuring Periodic Notification" section on page 15.
Step 6	**subscribe-to-alert-group all**	Subscribe to all available alert groups.
Step 7	**subscribe-to-alert-group diagnostic** [**severity** {**catastrophic** | **critical** | **debugging** | **disaster** | **fatal** | **major** | **minor** | **normal** | **notification** | **warning**}]	Subscribe this destination profile to the Diagnostic alert group. To configure the Diagnostic alert group to filter messages based on severity, see the "Configuring Message Severity Threshold" section on page 15.
Step 8	**subscribe-to-alert-group environment** [**severity** {**catastrophic** | **critical** | **debugging** | **disaster** | **fatal** | **major** | **minor** | **normal** | **notification** | **warning**}]	Subscribe this destination profile to the Environment alert group. To configure the Environment alert group to filter messages based on severity, see the "Configuring Message Severity Threshold" section on page 15.
Step 9	**subscribe-to-alert-group inventory** [**periodic** {**daily** *hh:mm* | **monthly** *date hh:mm* | **weekly** *day hh:mm*}]	Subscribe this destination profile to the Inventory alert group. To configure the Inventory alert group for periodic notification, see the "Configuring Periodic Notification" section on page 15.

	Command	Purpose
Step 10	**subscribe-to-alert-group syslog** [**severity** {**catastrophic** | **disaster** | **fatal** | **critical** | **major** | **minor** | **warning** | **notification** | **normal** | **debugging**} [**pattern** *string*]]	Subscribe this destination profile to the Syslog alert group. To configure the Syslog alert group to filter messages based on severity, see the "Configuring Message Severity Threshold" section on page 15. To specify a pattern to be matched in the syslog message, see the "Configuring Syslog Pattern Matching" section on page 16. If the pattern contains spaces, you must enclose it in quotes (" ").
Step 11	**exit**	Exit the Call Home destination profile configuration submode.

Configuring Periodic Notification

When you subscribe a destination profile to either the Configuration or the Inventory alert group (see the "Configuring Alert Group Subscription" section on page 14), you can receive the alert group messages asynchronously or periodically at a specified time:

- Daily—Specify the time of day to send, using an hour:minute format *hh:mm*, with a 24-hour clock (for example, 14:30).
- Weekly—Specify the day of the week and time of day in the format *day hh:mm*, where the day of the week is spelled out (for example, monday).
- Monthly—Specify the date from 1 to 31, and the time of day in the format *date hh:mm*.

Note Catalyst 2960 switches might not send Call Home Inventory or Configuration messages during the switch boot-up process and when periodic alerts are configured.

Configuring Message Severity Threshold

When you subscribe a destination profile to the Diagnostic, Environment, or Syslog alert group (see the "Configuring Alert Group Subscription" section on page 14), you can set a threshold for sending alert group messages based on levels of severity of a message. Any message with a value lower than the threshold specified in the destination profile is not sent to the destination.

The severity threshold is configured using the keywords in Table 1-2 and ranges from catastrophic (level 9, highest level of urgency) to debugging (level 0, lowest level of urgency). If no severity threshold is configured, the default is debugging (level 0).

Note Call Home severity levels are not the same as system message logging severity levels.

Table 1-2 Severity and Syslog Level Mapping

Level	Keyword	Syslog Level	Description
9	**catastrophic**	–	Catastrophic network failure.
8	**disaster**	–	Significant network impact.
7	**fatal**	Emergency (0)	System is unusable.
6	**critical**	Alert (1)	Critical conditions, immediate attention needed.

Table 1-2 Severity and Syslog Level Mapping (continued)

Level	Keyword	Syslog Level	Description
5	**major**	Critical (2)	Major conditions.
4	**minor**	Error (3)	Minor conditions.
3	**warning**	Warning (4)	Warning conditions.
2	**notification**	Notice (5)	Basic notification and informational messages. Possibly independently insignificant.
1	**normal**	Information (6)	Normal event signifying return to normal state.
0	**debugging**	Debug (7)	Debugging messages.

Configuring Syslog Pattern Matching

When you subscribe a destination profile to the Syslog alert group (see the "Configuring Alert Group Subscription" section on page 14), you can specify a text pattern to be matched within each syslog message. If you configure a pattern, a Syslog alert group message is sent only if it contains the specified pattern and meets the severity threshold. If the pattern contains spaces, you must enclose it in quotes (" ") when configuring it. You can specify up to five patterns for each destination profile.

Enabling Call Home

Beginning in privileged EXEC mode, follow these steps to enable or disable the Call Home feature:

	Command	Purpose
Step 1	**configure terminal**	Enter configuration mode.
Step 2	**service call-home**	Enable the Call Home feature.

Testing Call Home Communications

You can test Call Home communications by manually sending messages. To send a user-defined Call Home test message, use the **call-home test** command. To send a specific alert group message, use the **call-home send** command.

- Manually Sending a Call Home Test Message, page 17
- Manually Sending a Call Home Alert Group Message, page 17
- Sending a Request for an Analysis and Report, page 18
- Sending the Output of a Command, page 18

Manually Sending a Call Home Test Message

Beginning in privileged EXEC mode, follow these steps to manually send a Call Home test message:

Command	Purpose
call-home test [*"test-message"*] **profile** *name*	Send a test message to the specified destination profile. Your test message text is optional but must be enclosed in quotes (“ ”) if it contains spaces. If you do not configure message text, a default message is sent.

Manually Sending a Call Home Alert Group Message

Beginning in privileged EXEC mode, follow these steps to manually trigger a Call Home alert group message:

	Command	Purpose
Step 1	**call-home send alert-group configuration** [**profile** *name*]	Send a configuration alert group message to a specific destination profile or to all subscribed destination profiles.
Step 2	**call-home send alert-group diagnostic** {**module** *number* | *slot/subslot* | *slot/bay_number* | **switch** *x* **module** *number*} [**profile** *name*]	Send a diagnostic alert group message to the specified destination profile or to all subscribed destination profiles. You must specify the module or port whose diagnostic information should be sent. If a virtual switching system (VSS) is used, you must specify the switch and module.
Step 3	**call-home send alert-group inventory** [**profile** *name*]	Send an inventory alert group message to the specified destination profile or to all subscribed destination profiles.

When manually sending Call Home alert group messages, note these guidelines:

- Only configuration, diagnostic, and inventory alert group messages can be sent.
- When you send a configuration, diagnostic, or inventory alert group message to a specific destination profile, the message is sent, regardless of the active status, subscription status, or severity setting of the profile.
- When you send a configuration or inventory alert group message and do not specify a destination profile, a message is sent to all active profiles that have either a normal or periodic subscription to the specified alert group.
- When you send a diagnostic alert group message and do not specify a destination profile, the command produces these results:
  - An active profile that subscribes to diagnostic events with a severity level of less than 4 receives the message whether or not the module or interface had a diagnostic event.
  - An active profile that subscribes to diagnostic events with a severity level of 4 or higher receives the message only if the specified module or interface had a diagnostic event of level 4 or higher. Otherwise, the destination profile receives no diagnostic message.

Sending a Request for an Analysis and Report

Cisco IOS Release 12.2(58)SE and later supports Call Home requests. You can use the **call-home request** command to submit information about your system to Cisco to receive helpful information specific to your system. You can request a variety of reports, including security alerts, known bugs, best practices, and command references.

Beginning in privileged EXEC mode, follow these steps to submit a request for report and analysis information from the Cisco Output Interpreter tool:

	Command	Purpose
Step 1	**call-home request output-analysis** *"show-command"* [**profile** *name*] [**ccoid** *user-id*]	Send the output of the specified **show** command for analysis. The **show** command must be in quotes (“ ”).
Step 2	**call-home request** {**config-sanity** | **bugs-list** | **command-reference** | **product-advisory**} [**profile** *name*] [**ccoid** *user-id*]	Send the output of a predetermined set of commands for analysis. Specify the type of report requested.

When manually sending a Call Home report and analysis request, note these guidelines:

- If you specify a **profile** *name*, the request is sent to the profile. The recipient profile does not need to be enabled for the call-home request. The profile should specify the e-mail address where the transport gateway is configured so that the request message is sent to the Cisco TAC.
- The **ccoid** *user-id* is the registered identifier of the Call Home user. If you specify a *user-id*, the response is sent to the e-mail address of the registered user. If you do not specify a *user-id*, the response is sent to the contact e-mail address of the device.
- Based on the keyword that specifies the type of report, this information is returned:
  - **config-sanity**—Information on best practices for the current running configuration.
  - **bugs-list**—Known bugs in the running version and in the current features.
  - **command-reference**—Reference links to all commands in the running configuration.
  - **product-advisory**—Product Security Incident Response Team (PSIRT) notices, End of Life (EOL) or End of Sales (EOS) notices, or field notices (FN) that can affect devices in your network.

This example shows a request for analysis of a user-specified **show** command:

```
Switch# call-home request output-analysis "show diagnostic result module all" profile TG
```

Sending the Output of a Command

You can use the **call-home send** command to enter a command and to e-mail the command output to Cisco or to a specified e-mail address.

Beginning in privileged EXEC mode, follow these steps to enter a command and e-mail the command output:

Command	Purpose
call-home send *"command"* [**email** *email-addr*] [**tac-service-request** *SR*]	Enter the specified command and e-mail the output.

When sending the command output, note these guidelines:

- You can specify any **run** command, including commands for all modules. You must enclose the command in quotes (“ ”).
- If you specify an e-mail address, the command output is sent to that address. If you do not specify an e-mail address, the output is sent to the Cisco TAC (attach@cisco.com). The e-mail is sent in long text format with any specified service number in the subject line.
- The service number is required only if you do not specify an e-mail address, or if you specify a Cisco TAC e-mail address.

This example shows how to send the output of a command to an e-mail address that you specify:

```
Switch# call-home send "show diagnostic result module all" email support@example.com
```

Displaying Call Home Configuration Information

Beginning in privileged EXEC mode, follow these steps to display the configured Call Home information:

Command	Purpose
show call-home	Display the Call Home configuration in summary.
show call-home detail	Display the Call Home configuration in detail.
show call-home alert-group	Display the available alert groups and their status.
show call-home mail-server status	Check and display the availability of the configured e-mail server.
show call-home profile {**all** | *name*}	Display the configuration of the specified destination profile. Use the keyword **all** to display the configuration of all destination profiles.
show call-home statistics	Display the statistics of Call Home events.

Examples 1-1 to 1-7 show the results when using different options of the **show call-home** command.

Example 1-1 Configured Call Home Information

```
Switch# show call-home
Current call home settings:
    call home feature : enable
    call home message's from address: crdc_3560_test_bed@cisco.com
    call home message's reply-to address: Not yet set up

    vrf for call-home messages: Not yet set up

    contact person's email address: crdc_3560_testbed@cisco.com

    contact person's phone number: +8602124057927
    street address: 966. Yishan Rd. Shanghai, China
    customer ID: Not yet set up
    contract ID: Not yet set up
    site ID: 123456
    source ip address: Not yet set up
    source interface: Not yet set up
    Mail-server[1]: Address: 64.102.124.15 Priority: 10
```

```
    Mail-server[2]: Address: 171.71.177.236 Priority: 20
    Rate-limit: 20 message(s) per minute

Available alert groups:
    Keyword                  State   Description
    ------------------------ ------- --------------------------------
    configuration            Enable  configuration info
    diagnostic               Enable  diagnostic info
    environment              Enable  environmental info
    inventory                Enable  inventory info
    syslog                   Enable  syslog info

Profiles:
    Profile Name: CiscoTAC-1
    Profile Name: prof-1

Switch#
```

Example 1-2 Configured Call Home Information in Detail

```
Switch# show call-home detail
Current call home settings:
    call home feature : enable
    call home message's from address: crdc_3560_test_bed@cisco.com
    call home message's reply-to address: Not yet set up

    vrf for call-home messages: Not yet set up

    contact person's email address: crdc_3560_testbed@cisco.com

    contact person's phone number: +8602124057927
    street address: 966. Yishan Rd. Shanghai, China
    customer ID: Not yet set up
    contract ID: Not yet set up
    site ID: 123456
    source ip address: Not yet set up
    source interface: Not yet set up
    Mail-server[1]: Address: 64.102.124.15 Priority: 10
    Mail-server[2]: Address: 171.71.177.236 Priority: 20
    Rate-limit: 20 message(s) per minute

Available alert groups:
    Keyword                  State   Description
    ------------------------ ------- --------------------------------
    configuration            Enable  configuration info
    diagnostic               Enable  diagnostic info
    environment              Enable  environmental info
    inventory                Enable  inventory info
    syslog                   Enable  syslog info

Profiles:

Profile Name: CiscoTAC-1
    Profile status: ACTIVE
    Preferred Message Format: xml
    Message Size Limit: 3145728 Bytes
    Transport Method: email
    Email address(es): callhome@cisco.com
    HTTP  address(es): https://tools.cisco.com/its/service/oddce/services/DDCEService

    Periodic configuration info message is scheduled every 16 day of the month at 13:10

    Periodic inventory info message is scheduled every 16 day of the month at 12:55

    Alert-group              Severity
    -----------------------  ------------
```

```
    diagnostic                minor
    environment               warning
    inventory                 normal

    Syslog-Pattern            Severity
    ------------------------  ------------
    .*                        major

Profile Name: prof-1
    Profile status: ACTIVE
    Preferred Message Format: xml
    Message Size Limit: 3145728 Bytes
    Transport Method: email
    Email address(es): diazhang@cisco.com
    HTTP  address(es): Not yet set up

    Alert-group               Severity
    ------------------------  ------------
    configuration             normal
    inventory                 normal

    Syslog-Pattern            Severity
    ------------------------  ------------
    .*                        warning
    COUNTERS                  warning

Switch#
```

Example 1-3 Available Call Home Alert Groups

```
Switch# show call-home alert-group
Available alert groups:
    Keyword                   State   Description
    ------------------------ ------- -------------------------------
    configuration             Disable configuration info
    diagnostic                Disable diagnostic info
    environment               Disable environmental info
    inventory                 Enable  inventory info
    syslog                    Disable syslog info

Switch#
```

Example 1-4 E-mail Server Status Information

```
Switch# show call-home mail-server status
Please wait. Checking for mail server status ...

Translating "smtp.example.com"
    Mail-server[1]: Address: smtp.example.com Priority: 1 [Not Available]
    Mail-server[2]: Address: 192.168.0.1 Priority: 2 [Not Available]

Switch#
```

Example 1-5 Information for All Destination Profiles (Predefined and User-Defined)

```
Switch# show call-home profile all

Profile Name: campus-noc
    Profile status: ACTIVE
    Preferred Message Format: long-text
    Message Size Limit: 3145728 Bytes
    Transport Method: email
    Email address(es): noc@example.com
    HTTP  address(es): Not yet set up
```

```
    Alert-group               Severity
    ------------------------  ------------
    inventory                 normal

    Syslog-Pattern            Severity
    ------------------------  ------------
    N/A                       N/A

Profile Name: CiscoTAC-1
    Profile status: ACTIVE
    Preferred Message Format: xml
    Message Size Limit: 3145728 Bytes
    Transport Method: email
    Email address(es): callhome@cisco.com
    HTTP  address(es): https://tools.cisco.com/its/service/oddce/services/DDCEService

    Periodic configuration info message is scheduled every 1 day of the month at 09:27

    Periodic inventory info message is scheduled every 1 day of the month at 09:12

    Alert-group               Severity
    ------------------------  ------------
    diagnostic                minor
    environment               minor

    Syslog-Pattern            Severity
    ------------------------  ------------
    .*                        major

Switch#
```

Example 1-6 Information for a User-Defined Destination Profile

```
Switch# show call-home profile campus-noc

Profile Name: campus-noc
    Profile status: ACTIVE
    Preferred Message Format: long-text
    Message Size Limit: 3145728 Bytes
    Transport Method: email
    Email address(es): noc@example.com
    HTTP  address(es): Not yet set up

    Alert-group               Severity
    ------------------------  ------------
    inventory                 normal

    Syslog-Pattern            Severity
    ------------------------  ------------
    N/A                       N/A

Switch#
```

Example 1-7 Call Home Statistics

```
Switch# show call-home statistics
Message Types    Total                Email                HTTP
-------------   -------------------- -------------------- ------------------
Total Success   6                    6                    0
    Config      4                    4                    0
    Diagnostic  0                    0                    0
    Environment 0                    0                    0
    Inventory   2                    2                    0
    SysLog      0                    0                    0
    Test        0                    0                    0
```

```
    Request      0                   0                   0
    Send-CLI     0                   0                   0

Total In-Queue   0                   0                   0
    Config       0                   0                   0
    Diagnostic   0                   0                   0
    Environment  0                   0                   0
    Inventory    0                   0                   0
    SysLog       0                   0                   0
    Test         0                   0                   0
    Request      0                   0                   0
    Send-CLI     0                   0                   0

Total Failed     10                  10                  0
    Config       9                   9                   0
    Diagnostic   0                   0                   0
    Environment  0                   0                   0
    Inventory    0                   0                   0
    SysLog       1                   1                   0
    Test         0                   0                   0
    Request      0                   0                   0
    Send-CLI     0                   0                   0

Total Ratelimit
      -dropped   0                   0                   0
    Config       0                   0                   0
    Diagnostic   0                   0                   0
    Environment  0                   0                   0
    Inventory    0                   0                   0
    SysLog       0                   0                   0
    Test         0                   0                   0
    Request      0                   0                   0
    Send-CLI     0                   0                   0

Last call-home message sent time: 1993-03-01 01:03:17 GMT+00:00

Switch#
```

Alert Group Trigger Events and Commands

Call Home trigger events are grouped into alert groups, with each alert group assigned to execute Cisco IOS commands when an event occurs. The command output is included in the message. These tables list the trigger events included in each alert group, including the severity level of each event and the executed commands for the alert group:

- Call Home Syslog Alert Group Events and Actions, Table 1-3 on page 24
- Call Home Environmental Alert Group Events and Actions, Table 1-4 on page 24
- Call Home Inventory Alert Group Events and Actions, Table 1-5 on page 25
- Call Home Diagnostic Failure Alert Group Events and Actions, Table 1-6 on page 25
- Call Home Test Alert Group Events and Actions, Table 1-7 on page 26
- Call Home Configuration Alert Group Events and Actions, Table 1-8 on page 26

Note Depending on your switch model, the messages you see for events and actions might be similar to, but not exactly matching the wording shown in these tables.

Table 1-3 Call Home Syslog Alert Group Events and Actions

Alert Group Description:	Event logged to syslog		
Executed Commands:	**show inventory**, **show logging**		
Call Home Trigger Event	**Syslog Event**	**Sev**	**Description**
SYSLOG	LOG_EMERG	0	System is unusable.
	LOG_ALERT	1	Action must be taken immediately.
	LOG_CRIT	2	Critical conditions.
	LOG_ERR	3	Error conditions.
	LOG_WARNING	4	Warning conditions.
	LOG_NOTICE	5	Normal but significant condition, such as recovery from failure.
	LOG_INFO	6	Informational.
	LOG_DEBUG	7	Debug-level messages.

Table 1-4 Call Home Environmental Alert Group Events and Actions

Alert Group Description:	Events related to power, fan, and environment sensing elements such as temperature alarms		
Executed Commands:	**show environment**, **show env power**, **show inventory**, **show logging**, **show version**		
Call Home Trigger Event	**Syslog Event**	**Sev**	**Description**
FAN_FAILURE	FanBad	4	Fan has failed.
FAN_RECOVERY	FanGood	4	Failed fan is fixed.
TEMP_FAILURE	TempHigh	2	The chassis temperature exceeds the normal threshold.
TEMP_FAILURE	CriticalTemp	2	The chassis temperature exceeds the critical threshold.
TEMP_FAILURE	ShutdownTemp	2	The high chassis temperature is causing a system shutdown.
TEMP_RECOVER	TempOk	2	The chassis temperature is normal.
POWER_FAILURE	PowerSupplyBad	2	A power supply has failed or been turned off.
POWER_RECOVERY	PowerSupplyGood	2	A failed power supply is fixed.
POWER_FAULTY	PowerSupplyFaulty	4	A power supply is in a faulty state.
POWER_CRITICAL	PowerSupplyCritical	2	A power supply is in a critical state.
POWER_FAILURE	PowerSupplyFanBad	4	A power supply fan has failed.
POWER_RECOVERY	PowerSupplyFanGood	4	A failed power supply fan is fixed.
POWER_FAILURE	InlinePowerSupplyBad	4	An inline power source has failed or been turned off.
POWER_RECOVERY	InlinePowerSupplyGood	4	A failed inline power source is fixed.
POWER_FAILURE	RedundantPowerSupplyFailure	2	The redundant power supply has failed.
POWER_RECOVERY	RedundantPowerSupplyOk	2	The redundant power supply is fixed.

Table 1-5 Call Home Inventory Alert Group Events and Actions

Alert Group Description:	Inventory status is provided whenever a unit is rebooted by removing and replacing the power cable or when modules are inserted or removed. This is not a critical event, and the information is used for status and entitlement. **Note** Catalyst 2960 switches might not send Call Home Inventory or Configuration messages during the switch boot-up process and when periodic alerts are configured.	
Executed Commands:	**show env power**, **show inventory oid**, **show version**	
Call Home Trigger Event	**Syslog Event**	**Description**
INSERTION	Switch	A switch was inserted in a stack.
	PowerSupply	A power supply was inserted.
	Fan	A fan was inserted.
	Module	A replaceable module was inserted. (There is no alert for insertion of an SFP module.)
REMOVAL	Switch	A switch was removed from a stack.
	PowerSupply	A power supply was removed.
	Fan	A fan was removed.
	Module	A replaceable module was removed. (There is no alert for removal of an SFP module.)

Table 1-6 Call Home Diagnostic Failure Alert Group Events and Actions

Alert Group Description:	Events related to standard or intelligent switches	
Executed Commands:	**show buffers**, **show diagnostic result**, **show diagnostic result detail** (for nonstackable switches), **show diagnostic result switch all**, **show diagnostic result switch all detail** (for stackable switches), **show inventory**, **show logging**, **show version**	
Call Home Trigger Event:	ONDEMAND	
Syslog Event	**Sev**	**Description**
DIAG		The switch stack failed the heart beat status test.
		One or more ASICs or ports on the switch failed the send and receive path test.
		The switch failed the test for the content-addressable memory (CAM) mask and value entries and the lookup.
		The stack ring, port ASICs or both failed the communication test.
		The stack port failed the internal loopback test.
		The port ASICs (or their send and receive buffers) failed the internal memory test.

Table 1-7 Call Home Test Alert Group Events and Actions

Alert Group Description:	—	
Executed Commands:	**show inventory**, **show version** (Output from these commands is attached only to XML-formatted messages.)	
Call Home Trigger Event:	—	
Syslog Event	**Sev**	**Description**
TEST	1	User-generated test message.

Table 1-8 Call Home Configuration Alert Group Events and Actions

Alert Group Description:	User generated request for configuration.	
Executed Commands:	**show inventory**, **show running-config all**, **show startup-config**, **show version**	
Call Home Trigger Event:	—	
Syslog Event	**Sev**	**Description**
—	—	—

Message Contents

These tables display the content formats of alert group messages:

- Table 1-9 describes the content fields of a short text message. These messages are for reactive and proactive events, inventory changes, and test messages. Short text messages are not used for configuration or inventory-at-startup messages.
- Table 1-10 describes the content fields that are common to all long text and XML messages. The fields specific to a particular alert group message are after the common fields.
- Table 1-11 describes the content fields for reactive messages (system failures that require a TAC case) and proactive messages (issues that might result in degraded system performance).
- Table 1-12 describes the content fields for an inventory message.

Table 1-9 Format for a Short Text Message

Data Item	Description
Device identification	Configured device name
Date/time stamp	Time stamp of the triggering event
Error isolation message	Text description of the triggering event
Alarm urgency level	Number that indicates the severity of the alarm. The range is from 0 (most severe) to 7 (least severe).

Table 1-10 Common Fields for All Long Text and XML Messages

Data Item (Plain Text and XML)	Description (Plain Text and XML)	XML Tag (XML Only)
Time stamp	Date and time stamp of event in ISO time notation: *YYYY-MM-DD*T*HH:MM:SS* **Note** The time shown reflects the timezone offset from UTC.	CallHome/EventTime
Message name	Name of message. Specific event names are listed in the "Alert Group Trigger Events and Commands" section on page 23.	(for short text message only)
Message type	Specifically Call Home.	CallHome/Event/Type
Message subtype	Specific type of message: full, delta, or test.	CallHome/Event/SubType
Message group	Specifically reactive or proactive. (The default is reactive.)	(for long text message only)
Severity level	Severity level of message (see Table 1-2 on page 15).	Body/Block/Severity
Source ID	Product type for routing, typically the product family name.	(for long text message only)
Device ID	Unique device identifier (UDI) for the end device that generated the message. This field is empty if the message is nonspecific to a fabric switch. The format is *type*@*Sid*@*serial*. • *type* is the product model number from the backplane SEEPROM. • @ is a separator character. • *Sid* is C, identifying the serial ID as a chassis serial number· • *serial* is the number identified by the Sid field. Example: DS-C9509@C@12345678	CallHome/CustomerData/ContractData/DeviceId
Customer ID	Optional user-configurable field used for contract information or other ID by any support service.	CallHome/CustomerData/ContractData/CustomerId
Contract ID	Optional user-configurable field used for contract information or other ID by any support service.	CallHome/CustomerData/ContractData/ContractId
Site ID	Optional user-configurable field used for Cisco-supplied site ID or other data meaningful to alternate support service.	CallHome/CustomerData/ContractData/SiteId

Table 1-10 Common Fields for All Long Text and XML Messages (continued)

Data Item (Plain Text and XML)	Description (Plain Text and XML)	XML Tag (XML Only)
Server ID	If the message is generated from the fabric switch, this is the unique device identifier (UDI) of the switch. If the message is proxied or originated by a source other than the switch, this field shows the UDI of the source. The format is *type*@*Sid*@*serial*. • *type* is the product model number from the backplane IDPROM. • @ is a separator character. • *Sid* is C, identifying the serial ID as a chassis serial number· • *serial* is the number identified by the Sid field. Example: SSE1120@C@12345678	(For long text message only)
Message description	Short text describing the error.	CallHome/MessageDescription
Device name	Node that experienced the event. This is the hostname of the device.	CallHome/CustomerData/SystemInfo/Name
Contact name	Name of person to contact for issues associated with the node experiencing the event.	CallHome/CustomerData/SystemInfo/Contact
Contact e-mail	E-mail address of person identified as the contact.	CallHome/CustomerData/SystemInfo/ContactEmail
Contact phone number	Phone number of the person identified as the contact.	CallHome/CustomerData/SystemInfo/ContactPhoneNumber
Street address	Optional field containing street address for replacement part shipments.	CallHome/CustomerData/SystemInfo/StreetAddress
Model name	Model name of the switch. This is the specific model as part of a product family name.	CallHome/Device/Cisco_Chassis/Model
Serial number	Chassis serial number.	CallHome/Device/Cisco_Chassis/SerialNumber
Chassis part number	Top assembly number of the chassis.	CallHome/Device/Cisco_Chassis/AdditionalInformation/AD@name="PartNumber"/
System Object ID (used for stackable switches only)	The System ObjectID that uniquely identifies the system.	CallHome/Device/Cisco_Chassis/AdditionalInformation/AD@name="sysObjectID"
SysDesc (used for stackable switches only)	System description for the managed element.	CallHome/Device/Cisco_Chassis/AdditionalInformation/AD@name="sysDescr"

Table 1-10 Common Fields for All Long Text and XML Messages (continued)

Data Item (Plain Text and XML)	Description (Plain Text and XML)	XML Tag (XML Only)
These fields can be repeated if multiple commands are executed for this alert group.		
Command output name	The exact syntax of the issued CLI command	/aml/Attachments/Attachment/Name
Attachment type	The type is "command output"	/aml/Attachments/Attachment@type
MIME type	Text or encoding type.	/aml/attachments/attachment/Data@encoding
Command output text	Output of command automatically executed (see the "Alert Group Trigger Events and Commands" section on page 23)	/aml/attachments/attachment/atdata

Table 1-11 Fields for a Reactive or Proactive Event Message

Data Item (Plain Text and XML)	Description (Plain Text and XML)	XML Tag (XML Only)
Chassis hardware version	Hardware version of chassis	CallHome/Device/Cisco_Chassis/HardwareVersion
Affected FRU name	Name of the affected component generating the message	CallHome/Device/Cisco_Chassis/Cisco_Card/Model
Affected FRU serial number	Serial number of the affected component	CallHome/Device/Cisco_Chassis/Cisco_Card/SerialNumber
Affected FRU part number	Part number of the affected component	CallHome/Device/Cisco_Chassis/Cisco_Card/PartNumber
FRU slot	Slot number of the component generating the event message	CallHome/Device/Cisco_Chassis/Cisco_Card/ LocationWithinContainer
FRU hardware version	Hardware version of the affected component	CallHome/Device/Cisco_Chassis/Cisco_Card/HardwareVersion
FRU software version	Software version running on the affected component	CallHome/Device/Cisco_Chassis/Cisco_Card/SoftwareIdentity/VersionString
Process name	Name of process	/aml/body/process/name
Process ID	Unique process ID	/aml/body/process/id
Process state	State of process (for example, running or stopped)	/aml/body/process/processState
Process exception	Exception or reason code	/aml/body/process/exception

Table 1-12 Fields for an Inventory Event Message

Data Item (Plain Text and XML)	Description (Plain Text and XML)	XML Tag (XML Only)
Chassis hardware version	Hardware version of chassis	CallHome/Device/Cisco_Chassis/HardwareVersion
Affected FRU name	Name of the component generating the message	CallHome/Device/Cisco_Chassis/Cisco_Card/Model
Affected FRU s/n	Serial number of the component	CallHome/Device/Cisco_Chassis/Cisco_Card/SerialNumber
Affected FRU part number	Part number of the component.	CallHome/Device/Cisco_Chassis/Cisco_Card/PartNumber
FRU slot	Slot number of the component that generated the message	CallHome/Device/Cisco_Chassis/Cisco_Card/LocationWithinContainer
FRU hardware version	Hardware version of the component	CallHome/Device/Cisco_Chassis/Cisco_Card/HardwareVersion
FRU software version	Software version running on the component	CallHome/Device/Cisco_Chassis/Cisco_Card/SoftwareIdentity/VersionString

Sample Syslog Alert Notification in Long-Text Format

```
From: crdc_3560_testbed@cisco.com
Sent: Monday, March 01, 1993 9:35 AM
To: Diankun Zhang (diazhang)
Subject: System Notification From Switch - syslog - 1993-03-01 01:34:44 GMT+00:00


TimeStamp : 1993-03-01 01:34 GMT+00:00
Message Name : syslog
Message Type : Call Home
Message Group : reactive
Severity Level : 2
Source ID : Cat2k/3k
Device ID : WS-C3560V2-48PS-CR@C@FDO1335Z1BY
Customer ID :
Contract ID :
Site ID : 123456
Server ID : WS-C3560V2-48PS-CR@C@FDO1335Z1BY
Event Description : *Mar  1 01:34:44.481: %CLEAR-5-COUNTERS: Clear
counter on all interfaces by lab on console
System Name : Switch
Contact Email : crdc_3560_testbed@cisco.com
Contact Phone : +8602124057927
Street Address : 966. Yishan Rd. Shanghai, China
Affected Chassis : WS-C3560V2-48PS-CR
Affected Chassis Serial Number : FDO1335Z1BY
Affected Chassis Part No : 800-33161-01
Supervisor Software Version : 12.2(20110301:143745)103
```

```
Command Output Name : show logging
Attachment Type : command output
MIME Type : text/plain
Command Output Text :
Syslog logging: enabled (0 messages dropped, 0 messages rate-limited, 0
flushes, 0 overruns, xml disabled, filtering disabled)

No Active Message Discriminator.



No Inactive Message Discriminator.


    Console logging: level debugging, 38 messages logged, xml disabled,
                     filtering disabled
    Monitor logging: level debugging, 0 messages logged, xml disabled,
                     filtering disabled
    Buffer logging:  level debugging, 38 messages logged, xml disabled,
                    filtering disabled
    Exception Logging: size (4096 bytes)
    Count and timestamp logging messages: disabled
    File logging: disabled
    Persistent logging: disabled

No active filter modules.

    Trap logging: level informational, 40 message lines logged

Log Buffer (1000000 bytes):

*Mar  1 00:00:51.573: %LINEPROTO-5-UPDOWN: Line protocol on Interface
Vlan1, changed state to downAuth Manager registration failed

*Mar  1 00:00:53.242: %SPANTREE-5-EXTENDED_SYSID: Extended SysId enabled
for type vlan
*Mar  1 00:00:56.723: %LINEPROTO-5-UPDOWN: Line protocol on Interface
FastEthernet0/1, changed state to down
*Mar  1 00:00:57.017: %SYS-5-CONFIG_I: Configured from memory by console
*Mar  1 00:00:58.359: %SYS-5-RESTART: System restarted --
Cisco IOS Software, C3560 Software (C3560-IPSERVICESK9-M), Experimental
Version 12.2(20110301:143745) [diazhang-CSCtj33100_V122_58_0_57_SE 103]
Copyright (c) 1986-2011 by Cisco Systems, Inc.
Compiled Tue 01-Mar-11 21:57 by diazhang
*Mar  1 00:00:58.502: %SSH-5-ENABLED: SSH 1.99 has been enabled
*Mar  1 00:01:00.817: %LINEPROTO-5-UPDOWN: Line protocol on Interface
FastEthernet0/1, changed state to up
*Mar  1 00:01:02.377: %LINK-3-UPDOWN: Interface FastEthernet0/1, changed
state to up
*Mar  1 00:14:03.407: %SYS-5-CONFIG_I: Configured from console by lab on
console
*Mar  1 00:14:11.871: %CALL_HOME-3-SMTP_SEND_FAILED: Unable to send
notification using all SMTP servers (ERR 7, error in connecting to SMTP
server)
*Mar  1 00:15:35.279: %SYS-5-CONFIG_I: Configured from console by lab on
console
*Mar  1 00:15:43.693: %CALL_HOME-3-SMTP_SEND_FAILED: Unable to send
notification using all SMTP servers (ERR 7, error in connecting to SMTP
server)
*Mar  1 00:17:31.537: %SYS-5-CONFIG_I: Configured from console by lab on
console
*Mar  1 00:17:39.976: %CALL_HOME-3-SMTP_SEND_FAILED: Unable to send
notification using all SMTP servers (ERR 7, error in connecting to SMTP
server)
```

```
*Mar  1 00:21:47.146: %SYS-5-CONFIG_I: Configured from console by lab on
console
*Mar  1 00:21:55.543: %CALL_HOME-3-SMTP_SEND_FAILED: Unable to send
notification using all SMTP servers (ERR 7, error in connecting to SMTP
server)
*Mar  1 00:24:27.838: %SYS-5-CONFIG_I: Configured from console by lab on
console
*Mar  1 00:24:36.327: %CALL_HOME-3-SMTP_SEND_FAILED: Unable to send
notification using all SMTP servers (ERR 7, error in connecting to SMTP
server)
*Mar  1 00:25:55.222: %SYS-5-CONFIG_I: Configured from console by lab on
console
*Mar  1 00:33:34.146: %SYS-5-CONFIG_I: Configured from console by lab on
console
*Mar  1 00:33:42.686: %CALL_HOME-3-SMTP_SEND_FAILED: Unable to send
notification using all SMTP servers (ERR 7, error in connecting to SMTP
server)
*Mar  1 00:41:20.578: %SYS-5-CONFIG_I: Configured from console by lab on
console
*Mar  1 00:41:28.983: %CALL_HOME-3-SMTP_SEND_FAILED: Unable to send
notification using all SMTP servers (ERR 7, error in connecting to SMTP
server)
*Mar  1 00:48:33.883: %SYS-5-CONFIG_I: Configured from console by lab on
console
*Mar  1 00:48:52.732: %CLEAR-5-COUNTERS: Clear counter on all interfaces
by lab on console
*Mar  1 00:52:21.290: %SYS-5-CONFIG_I: Configured from console by lab on
console
*Mar  1 00:52:52.185: %CLEAR-5-COUNTERS: Clear counter on all interfaces
by lab on console
*Mar  1 00:55:32.567: %CALL_HOME-3-SMTP_SEND_FAILED: Unable to send
notification using all SMTP servers (ERR 7, error in connecting to SMTP
server)
*Mar  1 00:57:39.562: %CALL_HOME-3-SMTP_SEND_FAILED: Unable to send
notification using all SMTP servers (ERR 7, error in connecting to SMTP
server)
*Mar  1 00:59:08.355: %SYS-5-CONFIG_I: Configured from console by lab on
console
*Mar  1 00:59:13.925: %CLEAR-5-COUNTERS: Clear counter on all interfaces
by lab on console
*Mar  1 01:00:26.881: %CLEAR-5-COUNTERS: Clear counter on all interfaces
by lab on console
*Mar  1 01:02:39.606: %SYS-5-CONFIG_I: Configured from console by lab on
console
*Mar  1 01:02:50.930: %CLEAR-5-COUNTERS: Clear counter on all interfaces
by lab on console
*Mar  1 01:16:27.175: %SYS-5-CONFIG_I: Configured from console by lab on
console
*Mar  1 01:29:37.198: %CLEAR-5-COUNTERS: Clear counter on all interfaces
by lab on console
*Mar  1 01:31:40.301: %SYS-5-CONFIG_I: Configured from console by lab on
console
Switch#
Command Output Name : show inventory
Attachment Type : command output
MIME Type : text/plain
Command Output Text : NAME: "1", DESCR: "WS-C3560V2-48PS"
PID: WS-C3560V2-48PS-CR, VID:      , SN: FDO1335Z1BY

Switch#
```

Sample Syslog Alert Notification in XML Format

```
From: crdc_3560_testbed@cisco.com
Sent: Monday, March 01, 1993 9:30 AM
To: Diankun Zhang (diazhang)
Subject: System Notification From Switch - syslog - 1993-03-01 01:29:37 GMT+00:00


<?xml version="1.0" encoding="UTF-8"?>
<soap-env:Envelope xmlns:soap-env="http://www.w3.org/2003/05/soap-
envelope">
<soap-env:Header>
<aml-session:Session xmlns:aml-
session="http://www.cisco.com/2004/01/aml-session" soap-
env:mustUnderstand="true" soap-env:role="http://www.w3.org/2003/05/soap-
envelope/role/next">
<aml-session:To>http://tools.cisco.com/neddce/services/DDCEService</aml-
session:To>
<aml-session:Path>
<aml-session:Via>http://www.cisco.com/appliance/uri</aml-session:Via>
</aml-session:Path>
<aml-session:From>http://www.cisco.com/appliance/uri</aml-session:From>
<aml-session:MessageId>M22:FDO1335Z1BY:AF3BE582</aml-session:MessageId>
</aml-session:Session>
</soap-env:Header>
<soap-env:Body>
<aml-block:Block xmlns:aml-block="http://www.cisco.com/2004/01/aml-
block">
<aml-block:Header>
<aml-block:Type>http://www.cisco.com/2005/05/callhome/syslog</aml-
block:Type>
<aml-block:CreationDate>1993-03-01 01:29:38 GMT+00:00</aml-
block:CreationDate>
<aml-block:Builder>
<aml-block:Name>Cat2k/3k</aml-block:Name>
<aml-block:Version>2.0</aml-block:Version>
</aml-block:Builder>
<aml-block:BlockGroup>
<aml-block:GroupId>G23:FDO1335Z1BY:AF3BE582</aml-block:GroupId>
<aml-block:Number>0</aml-block:Number>
<aml-block:IsLast>true</aml-block:IsLast>
<aml-block:IsPrimary>true</aml-block:IsPrimary>
<aml-block:WaitForPrimary>false</aml-block:WaitForPrimary>
</aml-block:BlockGroup>
<aml-block:Severity>2</aml-block:Severity>
</aml-block:Header>
<aml-block:Content>
<ch:CallHome xmlns:ch="http://www.cisco.com/2005/05/callhome"
version="1.0">
<ch:EventTime>1993-03-01 01:29:37 GMT+00:00</ch:EventTime>
<ch:MessageDescription>*Mar  1 01:29:37.198: %CLEAR-5-COUNTERS: Clear
counter on all interfaces by lab on console</ch:MessageDescription>
<ch:Event>
<ch:Type>syslog</ch:Type>
<ch:SubType></ch:SubType>
<ch:Brand>Cisco Systems</ch:Brand>
<ch:Series>Cat3560 Series Switches</ch:Series>
</ch:Event>
<ch:CustomerData>
<ch:UserData>
<ch:Email>crdc_3560_testbed@cisco.com</ch:Email>
</ch:UserData>
<ch:ContractData>
```

```
<ch:CustomerId></ch:CustomerId>
<ch:SiteId>123456</ch:SiteId>
<ch:ContractId></ch:ContractId>
<ch:DeviceId>WS-C3560V2-48PS-CR@C@FDO1335Z1BY</ch:DeviceId>
</ch:ContractData>
<ch:SystemInfo>
<ch:Name>Switch</ch:Name>
<ch:Contact></ch:Contact>
<ch:ContactEmail>crdc_3560_testbed@cisco.com</ch:ContactEmail>
<ch:ContactPhoneNumber>+8602124057927</ch:ContactPhoneNumber>
<ch:StreetAddress>966. Yishan Rd. Shanghai, China</ch:StreetAddress>
</ch:SystemInfo>
<ch:CCOID></ch:CCOID>
</ch:CustomerData>
<ch:Device>
<rme:Chassis xmlns:rme="http://www.cisco.com/rme/4.0">
<rme:Model>WS-C3560V2-48PS-CR</rme:Model>
<rme:HardwareVersion></rme:HardwareVersion>
<rme:SerialNumber>FDO1335Z1BY</rme:SerialNumber>
<rme:AdditionalInformation>
<rme:AD name="PartNumber" value="800-33161-01" />
<rme:AD name="SoftwareVersion" value="12.2(20110301:143745)103" />
<rme:AD name="SystemObjectId" value="1.3.6.1.4.1.9.1.102" />
<rme:AD name="SystemDescription" value="Cisco IOS Software, C3560
Software (C3560-IPSERVICESK9-M), Experimental Version
12.2(20110301:143745) [diazhang-CSCtj33100_V122_58_0_57_SE 103]
Copyright (c) 1986-2011 by Cisco Systems, Inc.
Compiled Tue 01-Mar-11 21:57 by diazhang" />
</rme:AdditionalInformation>
</rme:Chassis>
</ch:Device>
</ch:CallHome>
</aml-block:Content>
<aml-block:Attachments>
<aml-block:Attachment type="inline">
<aml-block:Name>show logging</aml-block:Name>
<aml-block:Data encoding="plain">
<![CDATA[
Syslog logging: enabled (0 messages dropped, 0 messages rate-limited, 0
flushes, 0 overruns, xml disabled, filtering disabled)

No Active Message Discriminator.



No Inactive Message Discriminator.


    Console logging: level debugging, 36 messages logged, xml disabled,
                     filtering disabled
    Monitor logging: level debugging, 0 messages logged, xml disabled,
                     filtering disabled
    Buffer logging:  level debugging, 36 messages logged, xml disabled,
                    filtering disabled
    Exception Logging: size (4096 bytes)
    Count and timestamp logging messages: disabled
    File logging: disabled
    Persistent logging: disabled

No active filter modules.

    Trap logging: level informational, 38 message lines logged
```

```
Log Buffer (1000000 bytes):

*Mar  1 00:00:51.573: %LINEPROTO-5-UPDOWN: Line protocol on Interface
Vlan1, changed state to downAuth Manager registration failed

*Mar  1 00:00:53.242: %SPANTREE-5-EXTENDED_SYSID: Extended SysId enabled
for type vlan
*Mar  1 00:00:56.723: %LINEPROTO-5-UPDOWN: Line protocol on Interface
FastEthernet0/1, changed state to down
*Mar  1 00:00:57.017: %SYS-5-CONFIG_I: Configured from memory by console
*Mar  1 00:00:58.359: %SYS-5-RESTART: System restarted --
Cisco IOS Software, C3560 Software (C3560-IPSERVICESK9-M), Experimental
Version 12.2(20110301:143745) [diazhang-CSCtj33100_V122_58_0_57_SE 103]
Copyright (c) 1986-2011 by Cisco Systems, Inc.
Compiled Tue 01-Mar-11 21:57 by diazhang
*Mar  1 00:00:58.502: %SSH-5-ENABLED: SSH 1.99 has been enabled
*Mar  1 00:01:00.817: %LINEPROTO-5-UPDOWN: Line protocol on Interface
FastEthernet0/1, changed state to up
*Mar  1 00:01:02.377: %LINK-3-UPDOWN: Interface FastEthernet0/1, changed
state to up
*Mar  1 00:14:03.407: %SYS-5-CONFIG_I: Configured from console by lab on
console
*Mar  1 00:14:11.871: %CALL_HOME-3-SMTP_SEND_FAILED: Unable to send
notification using all SMTP servers (ERR 7, error in connecting to SMTP
server)
*Mar  1 00:15:35.279: %SYS-5-CONFIG_I: Configured from console by lab on
console
*Mar  1 00:15:43.693: %CALL_HOME-3-SMTP_SEND_FAILED: Unable to send
notification using all SMTP servers (ERR 7, error in connecting to SMTP
server)
*Mar  1 00:17:31.537: %SYS-5-CONFIG_I: Configured from console by lab on
console
*Mar  1 00:17:39.976: %CALL_HOME-3-SMTP_SEND_FAILED: Unable to send
notification using all SMTP servers (ERR 7, error in connecting to SMTP
server)
*Mar  1 00:21:47.146: %SYS-5-CONFIG_I: Configured from console by lab on
console
*Mar  1 00:21:55.543: %CALL_HOME-3-SMTP_SEND_FAILED: Unable to send
notification using all SMTP servers (ERR 7, error in connecting to SMTP
server)
*Mar  1 00:24:27.838: %SYS-5-CONFIG_I: Configured from console by lab on
console
*Mar  1 00:24:36.327: %CALL_HOME-3-SMTP_SEND_FAILED: Unable to send
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server)
*Mar  1 00:25:55.222: %SYS-5-CONFIG_I: Configured from console by lab on
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*Mar  1 00:33:34.146: %SYS-5-CONFIG_I: Configured from console by lab on
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*Mar  1 00:41:28.983: %CALL_HOME-3-SMTP_SEND_FAILED: Unable to send
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*Mar  1 00:48:33.883: %SYS-5-CONFIG_I: Configured from console by lab on
console
*Mar  1 00:48:52.732: %CLEAR-5-COUNTERS: Clear counter on all interfaces
by lab on console
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console
*Mar  1 00:52:52.185: %CLEAR-5-COUNTERS: Clear counter on all interfaces
```

```
by lab on console
*Mar  1 00:55:32.567: %CALL_HOME-3-SMTP_SEND_FAILED: Unable to send
notification using all SMTP servers (ERR 7, error in connecting to SMTP
server)
*Mar  1 00:57:39.562: %CALL_HOME-3-SMTP_SEND_FAILED: Unable to send
notification using all SMTP servers (ERR 7, error in connecting to SMTP
server)
*Mar  1 00:59:08.355: %SYS-5-CONFIG_I: Configured from console by lab on
console
*Mar  1 00:59:13.925: %CLEAR-5-COUNTERS: Clear counter on all interfaces
by lab on console
*Mar  1 01:00:26.881: %CLEAR-5-COUNTERS: Clear counter on all interfaces
by lab on console
*Mar  1 01:02:39.606: %SYS-5-CONFIG_I: Configured from console by lab on
console
*Mar  1 01:02:50.930: %CLEAR-5-COUNTERS: Clear counter on all interfaces
by lab on console
*Mar  1 01:16:27.175: %SYS-5-CONFIG_I: Configured from console by lab on
console
Switch#]]></aml-block:Data>
</aml-block:Attachment>
<aml-block:Attachment type="inline">
<aml-block:Name>show inventory</aml-block:Name>
<aml-block:Data encoding="plain">
<![CDATA[NAME: "1", DESCR: "WS-C3560V2-48PS"
PID: WS-C3560V2-48PS-CR, VID:      , SN: FDO1335Z1BY


Switch#]]></aml-block:Data>
</aml-block:Attachment>
</aml-block:Attachments>
</aml-block:Block>
</soap-env:Body>
</soap-env:Envelope>
```

Related Documentation

For additional information about your Cisco switches, including configuration examples and troubleshooting information, see the documents for your switch model:

- Catalyst 3750-X

  http://www.cisco.com/en/US/products/ps10745/tsd_products_support_series_home.html
- Catalyst 3560-X

  http://www.cisco.com/en/US/products/ps10744/tsd_products_support_series_home.html
- Catalyst 3750-E

  http://www.cisco.com/en/US/products/ps7077/tsd_products_support_series_home.html
- Catalyst 3560-E

  http://www.cisco.com/en/US/products/ps7078/tsd_products_support_series_home.html
- Catalyst 3750

  http://www.cisco.com/en/US/products/hw/switches/ps5023/tsd_products_support_series_home.html
- Catalyst 3560

  http://www.cisco.com/en/US/products/hw/switches/ps5528/tsd_products_support_series_home.html

- Catalyst 2975

  http://www.cisco.com/en/US/products/ps10081/tsd_products_support_series_home.html
- Catalyst 2960 and Catalyst 2960-S

  http://www.cisco.com/en/US/products/ps6406/tsd_products_support_series_home.html
- Catalyst 3750 Metro

  http://www.cisco.com/en/US/products/hw/switches/ps5532/tsd_products_support_series_home.html
- Cisco ME 3400

  http://www.cisco.com/en/US/products/ps6580/tsd_products_support_series_home.html
- Cisco ME 3400E

  http://www.cisco.com/en/US/products/ps9637/tsd_products_support_series_home.html
- Cisco Blade Switches for Dell

  http://www.cisco.com/en/US/products/ps8742/tsd_products_support_series_home.html
- Catalyst 3040

  http://www.cisco.com/en/US/products/ps8743/tsd_products_support_series_home.html
- Cisco Blade Switches for HP

  http://www.cisco.com/en/US/products/ps6748/tsd_products_support_series_home.html
- Cisco Switch Modules for IBM

  http://www.cisco.com/en/US/products/ps8741/tsd_products_support_series_home.html
- Cisco IE 3000

  http://www.cisco.com/en/US/products/ps9703/tsd_products_support_series_home.html

Obtaining Documentation and Submitting a Service Request

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http://www.cisco.com/en/US/docs/general/whatsnew/whatsnew.html

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