Configuring Call Home

This chapter describes how to configure the Call Home feature in Cisco IOS Software Release 12.2SX.

Note For complete syntax and usage information for the commands used in this chapter, see the *Cisco 7600 Series Router Cisco IOS Command Reference* at this URL: http://www.cisco.com/en/US/products/ps6922/prod_command_reference_list.html

This chapter includes the following sections:

Understanding Call Home

Call Home provides e-mail-based and web-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, XML delivery to a support website, and utilization of Cisco Smart Call Home services for direct case generation with the Cisco Systems Technical Assistance Center (TAC).

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

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

Flexible message delivery and format options make it easy to integrate specific support requirements.

The Call Home feature offers the following advantages:

- 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 Adaptive Markup Language (AML) document type definitions (DTDs). The XML format enables communication with the Cisco TAC.
- Multiple concurrent message destinations.
- Multiple message categories including configuration, diagnostics, environmental conditions, inventory, and syslog events.
- Filtering of messages by severity and pattern matching.
- Scheduling of periodic message sending.

Obtaining Smart Call Home

If you have a service contract directly with Cisco Systems, you can register your devices for the Smart Call Home service. Smart Call Home provides fast resolution of system problems by analyzing Call Home messages sent from your devices and providing background information and recommendations. For issues that can be identified as known, particularly GOLD diagnostics failures, Automatic Service Requests will be generated with the Cisco TAC.

Smart Call Home offers the following features:

- Continuous device health monitoring and real-time diagnostics alerts.
- Analysis of call home messages from your device and, where appropriate, Automatic Service Request generation, routed to the appropriate TAC team, including detailed diagnostic information to speed problem resolution.
- Secure message transport directly from your device or through a downloadable Transport Gateway (TG) aggregation point. You can use a TG aggregation point in cases requiring support for multiple devices or in cases where security requirements mandate that your devices may not be connected directly to the Internet.
- Web-based access to Call Home messages and recommendations, inventory and configuration information for all Call Home devices. Provides access to associated Field Notices, Security Advisories and End-of-Life Information.

You need the following items to register:

- The SMARTnet contract number for your router.
- Your e-mail address
- Your Cisco.com ID

For detailed information on Smart Call Home, see the Smart Call Home page at this location:

http://www.cisco.com/go/smartcall/

Configuring Call Home

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

- At least one destination profile (predefined or user-defined) must be configured. The destination profile(s) used depends on whether the receiving entity is a pager, e-mail, or automated service such as Cisco Smart Call Home.
  - If the destination profile uses e-mail message delivery, you must specify a Simple Mail Transfer Protocol (SMTP) server.
  - If the destination profile uses secure HTTP (HTTPS) message transport, you must configure a trustpoint certificate authority (CA).
- The contact e-mail, phone, and street address information should be configured so that the receiver can determine the origin of messages received.
- The router must have IP connectivity to an e-mail server or the destination HTTP server.
- If Cisco Smart Call Home is used, an active service contract must cover the device being configured.

To configure Call Home, follow these steps:

Step 1 Configure your site's contact information.

Step 2 Configure destination profiles for each of your intended recipients.

Step 3 Subscribe each destination profile to one or more alert groups, and set alert options.

Step 4 Configure e-mail settings or HTTPS settings (including CA certificate), depending on the transport method.

Step 5 Enable the Call Home feature.

Step 6 Test Call Home messages.

Tip From the Smart Call Home web application, you can download a basic configuration script to assist you in the configuration of the Call Home feature for use with Smart Call Home and the Cisco TAC. The script will also assist in configuring the trustpoint CA for secure communications with the Smart Call Home service. The script, provided on an as-is basis, can be downloaded from this URL: http://www.cisco.com/go/smartcall/

Configuring Contact Information

Each router must include a contact e-mail address. You can optionally include a phone number, street address, contract ID, customer ID, and site ID.

To assign the contact information, perform this task:

	Command	Purpose
Step 1	`Router# configure terminal`	Enters configuration mode.
Step 2	`Router(config)# call-home`	Enters the Call Home configuration submode.
Step 3	`Router(cfg-call-home)# contact-email-addr` *email-address*	Assigns the customer's e-mail address. Enter up to 200 characters in e-mail address format with no spaces.

	Command	Purpose
Step 4	`Router(cfg-call-home)# phone-number +phone-number`	(Optional) Assigns 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	`Router(cfg-call-home)# street-address street-address`	(Optional) Assigns the customer's street address where RMA equipment can be shipped. Enter up to 200 characters. If you include spaces, you must enclose your entry in quotes (“”).
Step 6	`Router(cfg-call-home)# customer-id text`	(Optional) Identifies the customer ID. Enter up to 64 characters. If you include spaces, you must enclose your entry in quotes (“”).
Step 7	`Router(cfg-call-home)# site-id text`	(Optional) Identifies the customer site ID. Enter up to 200 characters. If you include spaces, you must enclose your entry in quotes (“”).
Step 8	`Router(cfg-call-home)# contract-id text`	(Optional) Identifies the customer's contract ID for the router. Enter up to 64 characters. If you include spaces, you must enclose your entry in quotes (“”).

This example shows the configuration of contact information:

```
Router# configure terminal
Enter configuration commands, one per line.  End with CNTL/Z.
Router(config)# call-home
Router(cfg-call-home)# contact-email-addr username@example.com
Router(cfg-call-home)# phone-number +1-800-555-4567
Router(cfg-call-home)# street-address “1234 Picaboo Street, Any city, Any state, 12345”
Router(cfg-call-home)# customer-id Customer1234
Router(cfg-call-home)# site-id Site1ManhattanNY
Router(cfg-call-home)# contract-id Company1234
Router(cfg-call-home)# exit
Router(config)#
```

Configuring Destination Profiles

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.

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

Note If you use the Cisco Smart Call Home service, the destination profile must use the XML message format.

You can configure the following 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 (including HTTPS), for delivery of 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 will be enabled.
  - For the predefined Cisco TAC profile, you can enable either transport method but not both.
- Destination address—The actual address related to the transport method to which the alert should be sent.
- Message formatting—The message format used for sending the alert.
  - The format options for a user-defined destination profile are long-text, short-text, or XML. The default is XML.
  - For the predefined Cisco TAC profile, only XML is allowed.
- Message size—The maximum destination message size. The valid range is 50 to 3,145,728 bytes and the default is 3,145,728 bytes.

To create and configure a destination profile, perform this task:

	Command	Purpose
Step 1	`Router# configure terminal`	Enters configuration mode.
Step 2	`Router(config)# call-home`	Enters the Call Home configuration submode.
Step 3	`Router(cfg-call-home)# profile` *name*	Enters the Call Home destination profile configuration submode for the specified destination profile. If the specified destination profile does not exist, it is created.
	`Router(cfg-call-home)# no profile` *name*	Deletes the named user-defined destination profile.
	`Router(cfg-call-home)# no profile all`	Deletes all user-defined destination profiles.
Step 4	`Router(cfg-call-home-profile)# [no] destination transport-method {email | http}`	(Optional) Enables the message transport method. The **no** option disables the method.
Step 5	`Router(cfg-call-home-profile)# destination address {email` *email-address* `| http` *url*`}`	Configures the destination e-mail address or URL to which Call Home messages will be sent. **Note** When entering a destination URL, include either **http://** or **https://**, depending on whether the server is a secure server. If the destination is a secure server, you must also configure a trustpoint CA.
Step 6	`Router(cfg-call-home-profile)# destination preferred-msg-format {long-text | short-text | xml}`	(Optional) Configures a preferred message format. The default is XML.
Step 7	`Router(cfg-call-home-profile)# destination message-size` *bytes*	(Optional) Configures a maximum destination message size for the destination profile.
Step 8	`Router(cfg-call-home-profile)# active`	Enables the destination profile. By default, the profile is enabled when it is created.
	`Router(cfg-call-home-profile)# no active`	Disables the destination profile.
Step 9	`Router(cfg-call-home-profile)# exit`	Exits the Call Home destination profile configuration submode and returns to the Call Home configuration submode.

	Command	Purpose
Step 10	`Router(cfg-call-home)# end`	Returns to privileged EXEC mode.
Step 11	`Router# show call-home profile {name | all}`	Displays destination profile configuration for specified profile or all configured profiles.

Copying a Destination Profile

To create a new destination profile by copying an existing profile, perform this task:

	Command	Purpose
Step 1	`Router# configure terminal`	Enters configuration mode.
Step 2	`Router(config)# call-home`	Enters the Call Home configuration submode.
Step 3	`Router(cfg-call-home)# copy profile source-profile target-profile`	Creates a new destination profile with the same configuration settings as the existing destination profile.

Subscribing to Alert Groups

An alert group is a predefined subset of Call Home alerts supported in all routers. Different types of Call Home alerts are grouped into different alert groups depending on their type. These alert groups are available:

- Configuration
- Diagnostic
- Environment
- Inventory
- Syslog

The triggering events for each alert group are listed in the "Alert Group Trigger Events and Commands" section on page 64-18, and the contents of the alert group messages are listed in the "Message Contents" section on page 64-24.

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

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

To subscribe a destination profile to an alert group, perform this task:

	Command	Purpose
Step 1	`Router# configure terminal`	Enters configuration mode.
Step 2	`Router(config)# call-home`	Enters Call Home configuration submode.

	Command	Purpose
Step 3	`Router(cfg-call-home)# alert-group {all|configuration|diagnostic|environment|inventory|syslog|crash}`	Enables the specified alert group. Use the keyword **all** to enable all alert groups. By default, all alert groups are enabled.
	`Router(cfg-call-home)# no alert-group {all|configuration|diagnostic|environment|inventory|syslog}`	Disables the specified alert group. Use the keyword **all** to disable all alert groups.
Step 4	`Router(cfg-call-home)# profile name`	Enters the Call Home destination profile configuration submode for the specified destination profile.
Step 5	`Router(cfg-call-home-profile)# subscribe-to-alert-group configuration [periodic {daily hh:mm | monthly date hh:mm | weekly day hh:mm}]`	Subscribes this destination profile to the Configuration alert group. The Configuration alert group can be configured for periodic notification, as described in the "Configuring Periodic Notification" section on page 64-8.
	`Router(cfg-call-home-profile)# subscribe-to-alert-group all`	Subscribes to all available alert groups.
	`Router(cfg-call-home-profile)# no subscribe-to-alert-group {all|configuration|diagnostic|environment|inventory|syslog|crash}`	Unsubscribes to the specified alert group. Use the keyword **all** to unsubscribe to all alert groups.
Step 6	`Router(cfg-call-home-profile)# subscribe-to-alert-group diagnostic [severity catastrophic|disaster|fatal|critical|major|minor|warning|notification|normal|debugging]`	Subscribes this destination profile to the Diagnostic alert group. The Diagnostic alert group can be configured to filter messages based on severity, as described in the "Configuring Message Severity Threshold" section on page 64-8.
Step 7	`Router(cfg-call-home-profile)# subscribe-to-alert-group environment [severity catastrophic|disaster|fatal|critical|major|minor|warning|notification|normal|debugging]`	Subscribes this destination profile to the Environment alert group. The Environment alert group can be configured to filter messages based on severity, as described in the "Configuring Message Severity Threshold" section on page 64-8.
Step 8	`Router(cfg-call-home-profile)# subscribe-to-alert-group inventory [periodic {daily hh:mm | monthly date hh:mm | weekly day hh:mm}]`	Subscribes this destination profile to the Inventory alert group. The Inventory alert group can be configured for periodic notification, as described in the "Configuring Periodic Notification" section on page 64-8.
Step 9	`Router(cfg-call-home-profile)# subscribe-to-alert-group syslog [severity catastrophic|disaster|fatal|critical|major|minor|warning|notification|normal|debugging] [pattern string]`	Subscribes this destination profile to the Syslog alert group. The Syslog alert group can be configured to filter messages based on severity, as described in the "Configuring Message Severity Threshold" section on page 64-8. You can specify a pattern to be matched in the syslog message. If the pattern contains spaces, you must enclose it in quotes ("").

	Command	Purpose
Step 10	`Router(cfg-call-home-profile)# subscribe-to-alert-group crash`	Subscribes this destination profile to the Crash alert group.
Step 11	`Router(cfg-call-home-profile)# exit`	Exits 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, you can choose to receive the alert group messages asynchronously or periodically at a specified time. The sending period can be one of the following:

- 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 numeric date, from 1 to 31, and the time of day, in the format *date hh:mm*.

Configuring Message Severity Threshold

When you subscribe a destination profile to the Diagnostic, Environment, or Syslog alert group, you can set a threshold for the sending of alert group messages based on the message's level of severity. Any message with a value lower than the destination profile's specified threshold is not sent to the destination.

The severity threshold is configured using the keywords in Table 64-1, 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 normal (level 1).

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

Table 64-1 Severity and Syslog Level Mapping

Level	Keyword	Syslog Level	Description
9	**catastrophic**	N/A	Network-wide catastrophic failure.
8	**disaster**	N/A	Significant network impact.
7	**fatal**	Emergency (0)	System is unusable.
6	**critical**	Alert (1)	Critical conditions, immediate attention needed.
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, you can optionally specify a text pattern to be matched within each syslog message. If you configure a pattern, a Syslog alert group message will be 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.

Configuring General E-Mail Options

To use the e-mail message transport service, you must configure at least one Simple Mail Transfer Protocol (SMTP) e-mail server address. You can configure these options:

- From and reply-to e-mail addresses, and up to four backup e-mail servers.
- Set a rate limit on e-mail or HTTP messages and specify the VPN routing or forwarding(VRF) instance name to send call-home e-mail messages.
- **vrf** and **source-interface** (or **source-ip-address**) to send e-mail messages. To configure the above options to send http(s) messages, use the **ip http client source-interface** *interface-name* command in global configuration mode, where the **source-interface** can be associated with the VRF you would like to set.

Complete these steps to configure general e-mail options:

	Command	Purpose
Step 1	`Router# configure terminal`	Enters configuration mode.
Step 2	`Router(config)# call-home`	Enters Call Home configuration submode.
Step 3	`Router(cfg-call-home)# mail-server {ipv4-address | name} priority number`	Assigns an e-mail server address and its relative priority among configured e-mail servers. Provide either: • the e-mail server's IP address or • the e-mail server's fully qualified domain *name* (FQDN) of 64 characters or less. Assign a priority *number* between 1 (highest priority) and 100 (lowest priority).
	`Router(cfg-call-home)# no mail-server {ipv4-address | name | all}`	Removes one e-mail server or all e-mail servers from the configuration.
Step 4	`Router(cfg-call-home)# sender from email-address`	(Optional) Assigns the e-mail address that will appear in the from field in Call Home e-mail messages. If no address is specified, the contact e-mail address is used.
Step 5	`Router(cfg-call-home)# sender reply-to email-address`	(Optional) Assigns the e-mail address that will appear in the reply-to field in Call Home e-mail messages.
Step 6	`Router(cfg-call-home)# rate-limit number`	(Optional) Specifies a limit on the number of messages sent per minute, from 1 to 60. The default is 20.
Step 7	`Router(cfg-call-home)# vrf name`	(Optional) Specifies the VRF instance to send Call Home e-mail messages. If no VRF is specified, the global routing table is used.

	Command	Purpose
Step 8	`Router(cfg-call-home)#` **`source-interface`** *`interface-name`*	(Optional) Specifies the source interface to send call home e-mail messages to. If no source interface or ip address is specified, an interface in the routing table is used.
Step 9	`Router(cfg-call-home)#` **`sourcee-ip-address`** *`ip-address`*	(Optional) Specifies the source IP address to send the call home e-mail messages to. **Note** Do not specify the source interface and IP address at the same time. Specify either the source interface name or the IP address.

The following notes apply when configuring general e-mail options:

- Backup e-mail servers can be defined by repeating the **mail-server** command using different priority numbers.
- The **mail-server priority** *number* parameter can be configured from 1 to 100. The server with the highest priority (lowest priority number) will be tried first.

This example shows the configuration of general e-mail parameters, including a primary and secondary e-mail server:

```
Router# configure terminal
Enter configuration commands, one per line.  End with CNTL/Z.
Router(config)# call-home
Router(cfg-call-home)# mail-server smtp.example.com priority 1
Router(cfg-call-home)# mail-server 192.168.0.1 priority 2
Router(cfg-call-home)# sender from username@example.com
Router(cfg-call-home)# sender reply-to username@example.com
Router(cfg-call-home)# exit
Router(config)#
```

Enabling Call Home

To enable or disable the Call Home feature, perform this task:

	Command	Purpose
Step 1	`Router#` **`configure terminal`**	Enters configuration mode.
Step 2	`Router(config)#` **`service call-home`**	Enables the Call Home feature.
	`Router(config)#` **`no service call-home`**	Disables the Call Home feature.

Testing Call Home Communications

You can test Call Home communications by sending messages manually using two command types. 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.

Sending a Call Home Test Message Manually

To manually send a Call Home test message, perform this task:

	Command	Purpose
Step 1	`Router# call-home test ["test-message"] profile name`	Sends a test message to the specified destination profile. The user-defined test message text is optional, but must be enclosed in quotes ("") if it contains spaces. If no user-defined message is configured, a default message will be sent.

Sending a Call Home Alert Group Message Manually

To manually trigger a Call Home alert group message, perform this task:

	Command	Purpose
Step 1	`Router# call-home send alert-group configuration [profile name]`	Sends a configuration alert group message to one destination profile if specified, or to all subscribed destination profiles.
	`Router# call-home send alert-group diagnostic {module number | slot/subslot | slot/bay_number} [profile name]`	Sends a diagnostic alert group message to the configured destination profile if specified, or to all subscribed destination profiles. You must specify the module or port whose diagnostic information should be sent.
	`Router# call-home send alert-group inventory [profile name]`	Sends an inventory alert group message to one destination profile if specified, or to all subscribed destination profiles.

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

- Only the configuration, diagnostic, and inventory alert groups can be sent manually.
- When you manually trigger a configuration, diagnostic, or inventory alert group message and you specify a destination profile name, a message is sent to the destination profile regardless of the profile's active status, subscription status, or severity setting.
- When you manually trigger a configuration or inventory alert group message and do not specify a destination profile name, a message is sent to all active profiles that have either a normal or periodic subscription to the specified alert group.
- When you manually trigger a diagnostic alert group message and do not specify a destination profile name, the command will cause the following actions:
  - For any active profile that subscribes to diagnostic events with a severity level of less than minor, a message is sent regardless of whether the module or interface has observed a diagnostic event.
  - For any active profile that subscribes to diagnostic events with a severity level of minor or higher, a message is sent only if the specified module or interface has observed a diagnostic event of at least the subscribed severity level; otherwise, no diagnostic message is sent to the destination profile.

Sending a Request for an Analysis and Report

You can use the **call-home request** command to submit information about your system, to receive information such as security alerts, known bugs, best practices, and command references.

Complete these steps to request report and analysis information from the Cisco Output Interpreter (COI) tool:

	Command	Purpose
Step 1	`Router# call-home request output-analysis "show-command" [profile name] [ccoid user-id]`	Sends the output of the specified show command for analysis. The show command must be contained in quotes ("").
Step 1	`Router# call-home request {config-sanity | bugs-list | command-reference | product-advisory} [profile name] [ccoid user-id]`	Sends the output of a predetermined set of commands such as the **show running-config all**, **show version** and **show module (standalone)** commands, for analysis. Specifies the report type requested.

Follow these guidelines when manually sending a Call Home report and analysis request:

- If you specify a **profile** *name*, the request is sent to the profile, else the request is sent to the Cisco TAC profile. You need not enable the recipient profile for the **call-home request**. The profileis programmed to specify email address where the transport gateway is configured so that the request message is forwarded to the Cisco TAC and you receive the reply from the Smart Call Home service.
- The **ccoid** *user-id* is the registered identifier of the Smart Call Home user. If you specify the user-id, the response is sent to the email address of the registered user, else the response is sent to the contact email address of the device.
- Based on the keyword that specifies the report type requested, this information is returned:
  - **config-sanity**—Information on best practices as related to the current running configuration.
  - **bugs-list**—Known bugs in the running version and in the currently configured 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 may affect devices in your network.

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

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

Information About Crash Dump Reporting

The main feature of Call Home version 2 is crash dump reporting, which helps in troubleshooting. In the event of a crash, the necessary crash-related information is collected and stored in the crashinfo file in the router. The information is also collated into a Call Home message that the router forwards, either to the Smart Call Home backend server, or to users.

Crash dump reporting generates crash reports for the following:

- Active Supervisor crashes
- Standby Supervisor crashes
- Crashes of all line cards and service modules that run on IOS, and are supported on the 7600 chassis

The feature also helps collect tracebacks in real time for events such as nonfatal assertion failures, abnormal executions, and memory allocation failures. Crash dump reports are generated when the router configuration includes the email address of the customer.

If an email address is included, Cisco sends an email to the customer along with a generated HTTPS link (with an embedded token) at:

- The enablement of crash-dump reporting
- Occurrence of the first crash

Note The **remote** command is not supported on the Cisco 7600 SIP-200 and Cisco 7600 SIP-400 line cards.

Prerequisites for Crash Dump Reporting

- Users must select the option to actively authorize the forwarding of information to Cisco.
- When configuring the router, users must opt for the crash dump feature.
- Preinstalled certificate authorities for IOS must be provided.
- Instead of connecting the networking equipment directly to the Internet, a gateway or HTTP proxy must be used.
- HTTP to HTTPS translation, using a gateway or proxy, must be enabled to support noncrypto images.
- A proxy or transport gateway must be used to provide an isolation layer between the customer network and the Internet.
- The router must be connected to an email server or the destination HTTP.
- The PI code is a prerequisite for the 7600 Series platform code to work.
- At least one Simple Mail Transfer Protocol (SMTP) email server address must be configured.

Note To get crash dump reports, a destination profile must be subscribed to the alert group, crash. For the procedure to do this, see "Subscribing to Alert Groups" section on page 64-6.

Configuring and Enabling Smart Call Home

For application and configuration information of the Cisco Smart Call Home service, see the "FastStart" section of the *Smart Call Home User Guide* at this location:

http://www.cisco.com/go/smartcall/

The user guide includes configuration examples for sending Smart Call Home messages directly from your device or through a transport gateway (TG) aggregation point. You can use a TG aggregation point in cases requiring support for multiple devices or in cases where security requirements mandate that your devices may not be connected directly to the Internet.

Because the Smart Call Home service uses HTTPS as the transport method, you must also configure its CA as a trustpoint, as described in the *Smart Call Home User Guide*.

Displaying Call Home Configuration Information

To display the configured Call Home information, perform this task:

	Command	Purpose
Step 1	`Router#` **`show call-home`**	Displays the Call Home configuration in summary.
	`Router#` **`show call-home detail`**	Displays the Call Home configuration in detail.
	`Router#` **`show call-home alert-group`**	Displays the available alert groups and their status.
	`Router#` **`show call-home mail-server status`**	Checks and displays the availability of the configured e-mail server(s).
	`Router#` **`show call-home profile`** {**`all`** | *`name`*}	Displays the configuration of the specified destination profile. Use the keyword **all** to display the configuration of all destination profiles.
	`Router#` **`show call-home statistics`**	Displays the statistics of Call Home events.

Examples 55-2 to 55-8 show the results when using different options of the **show call-home** command.

Example 64-1 Configured Call Home Information

```
Router# show call-home
Current call home settings:
    call home feature : disable
    call home message's from address: switch@example.com
    call home message's reply-to address: support@example.com

    vrf for call-home messages: Not yet set up

    contact person's email address: technical@example.com

    contact person's phone number: +1-408-555-1234
    street address: 1234 Picaboo Street, Any city, Any state, 12345
    customer ID: ExampleCorp
    contract ID: X123456789
    site ID: SantaClara
    source ip address: Not yet set up
    source interface: Not yet set up
    Mail-server[1]: Address: smtp.example.com Priority: 1
    Mail-server[2]: Address: 192.168.0.1 Priority: 2
    Rate-limit: 20 message(s) per minute

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

Profiles:
    Profile Name: campus-noc
    Profile Name: CiscoTAC-1

Router#
```

Example 64-2 Configured Call Home Information in Detail

```
Router# show call-home detail
Current call home settings:
    call home feature : disable
    call home message's from address: switch@example.com
    call home message's reply-to address: support@example.com

    vrf for call-home messages: Not yet set up

    contact person's email address: technical@example.com

    contact person's phone number: +1-408-555-1234
    street address: 1234 Picaboo Street, Any city, Any state, 12345
    customer ID: ExampleCorp
    contract ID: X123456789
    site ID: SantaClara
    source ip address: Not yet set up
    source interface: Not yet set up
    Mail-server[1]: Address: smtp.example.com Priority: 1
    Mail-server[2]: Address: 192.168.0.1 Priority: 2
    Rate-limit: 20 message(s) per minute

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

Profiles:

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

Router#
```

Example 64-3 Available Call Home Alert Groups

```
Router# 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

Router#
```

Example 64-4 E-Mail Server Status Information

```
Router# 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]

Router#
```

Example 64-5 Information for All Destination Profiles (Predefined and User-Defined)

```
Router# 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

Router#
```

Example 64-6 Information for a User-Defined Destination Profile

```
Router# 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

Router#
```

Example 64-7 Call Home Statistics

```
Router# show call-home statistics
Message Types Total Email HTTP
------------- -------------------- -------------------- ------------------
Total Success 13 13 0
Config 1 1 0
Diagnostic 0 0 0
Environment 0 0 0
Inventory 10 10 0
SysLog 1 1 0
Test 0 0 0
Request 0 0 0
Send-CLI 1 1 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 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 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
```

Default Settings

Table 64-2 lists the default Call Home settings.

Table 64-2 Default Call Home Settings

Parameters	Default
Call Home feature status	Disabled
User-defined profile status	Active
Predefined Cisco TAC profile status	Inactive
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
Alert group status	Enabled
Call Home message severity threshold	1 (normal)
Message rate limit for messages per minute	20

Alert Group Trigger Events and Commands

Call Home trigger events are grouped into alert groups, with each alert group assigned CLI commands to execute when an event occurs. The CLI command output is included in the transmitted message. Table 64-3 lists the trigger events included in each alert group, including the severity level of each event and the executed CLI commands for the alert group.

Table 64-3 Call Home Alert Groups, Events, and Actions

Alert Group	Call Home Trigger Event	Syslog Event	Severity	Description and CLI Commands Executed
Syslog				Event logged to syslog. (Only sent to TAC if syslog level 0, 1, or 2) CLI commands executed: **show logging**
	SYSLOG	LOG_EMERG	0	System is unusable.
	SYSLOG	LOG_ALERT	1	Action must be taken immediately.
	SYSLOG	LOG_CRIT	2	Critical conditions.
	SYSLOG	LOG_ERR	3	Error conditions.
	SYSLOG	LOG_WARNING	4	Warning conditions.
	SYSLOG	LOG_NOTICE	5	Normal but signification condition.
	SYSLOG	LOG_INFO	6	Informational.
	SYSLOG	LOG_DEBUG	7	Debug-level messages.
	SYSLOG	C2PLUSWITHNODB	2	The module in slot %d has no forwarding daughter board. Power denied.
	SYSLOG	DFCMISMATCH	2	Module %d DFC incompatible with supervisor engine DFC. Power denied.
	SYSLOG	BADFLOWCTRL	2	Module %d not at an appropriate hardware revision level to support DFC. Power denied.
	SYSLOG	BADFLOWCTRL_WARN	2	WARNING: Module %d not at an appropriate hardware revision level to support DFC3.
	SYSLOG	BADPINN1	2	Module %d not at an appropriate hardware revision level to coexist with PFC3 system. Power denied.
	SYSLOG	FANUPGREQ	2	Module %d not supported without fan upgrade.
	SYSLOG	INSUFFCOO	4	Module %d cannot be adequately cooled.
	SYSLOG	PROVISION	6	Module %d does not meet the provisioning requirements, power denied.
	SYSLOG	PWRFAILURE	6	Module %d is being disabled due to power converter failure.
	SYSLOG	LC_FAILURE	3	Module %d has major online diagnostic failure, %s.
	SYSLOG	HARD_RESET	3	Module %d is being hard reset as a part of switchover error recovery.
	SYSLOG	SOFT_RESET	3	Module %d is being soft reset as a part of switchover error recovery.
		DOWNGRADE	6	Fabric-capable module %d not at an appropriate hardware revision level, and can only run in flow-through mode.

Table 64-3 Call Home Alert Groups, Events, and Actions (continued)

Alert Group	Call Home Trigger Event	Syslog Event	Severity	Description and CLI Commands Executed
Environmental				Events related to power, fan, and environment sensing elements, such as temperature alarms. (Sent to TAC.) CLI commands executed: **show environment** **show logging** **show module** **show power**
	FAN_ FAILURE	FANPSINCOMPAT	4	Fan tray and power supply %d are incompatible.
		ALARMCLR	4	The specified alarm condition has been cleared, and shutdown has been cancelled.
	FAN_ FAILURE	FANHIOUTPUT	4	Version %d high-output fan tray is in effect.
	FAN_ FAILURE	FANLOOUTPUT	4	Version %d low-output fan tray is in effect.
	FAN_ FAILURE	FANVERCHK	4	Power supply %d inserted is only compatible with Version %d fan tray.
	FAN_ FAILURE	FANTRAYFAILED	4	Fan tray failed.
	FAN_ FAILURE	FANTRAYOK	4	Fan tray OK.
	FAN_ FAILURE	FANCOUNTFAILED	4	Required number of fan trays is not present.
	FAN_ FAILURE	FANCOUNTOK	4	Required number of fan trays is present.
	FAN_ FAILURE	PSFANFAIL	4	The fan in power supply has failed.
	FAN_ FAILURE	PSFANOK	4	The fan in power supply is OK.
	TEMPERATU RE_ALARM	MAJORTEMPALARM	2	Exceeded allowed operating temperature range.
		MAJORTEMPALARM RECOVER	4	Returned to allowed operating temperature range.
	TEMPERATU RE_ALARM	MINORTEMPALARM	4	Exceeded normal operating temperature range.
		MINORTEMPALARM RECOVER	4	Returned to normal operating temperature range.
	VTT_FAILED	VTTFAILED	4	VTT %d failed.
		VTTOK	4	VTT %d operational.
	VTT_FAILED	VTTMAJFAILED	0	Too many VTT failures to continue system operation.

Table 64-3 Call Home Alert Groups, Events, and Actions (continued)

Alert Group	Call Home Trigger Event	Syslog Event	Severity	Description and CLI Commands Executed
		VTTMAJ RECOVERED	2	Enough VTTs operational to continue system operation.
	CLOCK_FAILED	CLOCKFAILED	4	Clock failed.
		CLOCKOK	4	Clock operational.
	CLOCK_FAILED	CLOCKMAJFAILED	0	Too many clocks failed to continue system operation.
		CLOCKMAJRECOVERED	2	Enough clocks operational to continue system operation.
		SHUTDOWN-SCHEDULED	2	Shutdown for %s scheduled in %d seconds.
		SHUTDOWN_NOT_SCHEDULED	2	Major sensor alarm for %s is ignored, %s will not be shut down.
		SHUTDOWN-CANCELLED	2	Shutdown cancelled.
		SHUTDOWN	2	Shutdown %s now because of %s.
		SHUTDOWN-DISABLED	1	Need to shut down %s now but shutdown action is disabled.
		RESET_SCHEDULED	2	System reset scheduled in seconds.
		CLOCK_SWITCHOVER	2	Changing system switching clock.
		CLOCK_A_MISSING	4	Cannot detect clock A in the system.
		CLOCK_B_MISSING	4	Cannot detect clock B in the system.
		USE_RED_CLOCK	4	System is using the redundant clock (clock B).
		ENABLED	4	Power to module in slot %d set on.
		DISABLED	4	Power to module in slot %d set %s.
		PSOK	4	Power supply %d turned on.
	POWER_SUPPLY_FAILURE	PSFAIL	4	Power supply %d output failed.
		PSREDUNDANTMODE	4	Power supplies set to redundant mode.
		PSCOMBINEDMODE	4	Power supplies set to combined mode.
		PSREDUNDANTMISMATCH	4	Power supplies rated outputs do not match.
		PSMISMATCH	4	Power supplies rated outputs do not match.
		PSNOREDUNDANCY	4	Power supplies are not in full redundancy, power usage exceed lower capacity supply.

Table 64-3 Call Home Alert Groups, Events, and Actions (continued)

Alert Group	Call Home Trigger Event	Syslog Event	Severity	Description and CLI Commands Executed
	POWER_ SUPPLY_ FAILURE	PSOCPSHUTDOWN	2	Power usage exceeds power supply %d allowable capacity.
		PSREDUNDANTONE SUPPLY	4	In power-redundancy mode, system is operating on one power supply.
		PSREDUNDANTBOT HSUPPLY	4	In power-redundancy mode, system is operating on both power supplies.
	POWER_ SUPPLY_ FAILURE	UNDERPOWERED	4	Insufficient power to operate all FRUs in system.
	POWER_ SUPPLY_ FAILURE	COULDNOTREPOWE R	4	Wanted to repower FRU (slot %d) but could not.
	POWER_ SUPPLY_ FAILURE	POWERDENIED	4	Insufficient power, module in slot %d power denied.
		UNSUPPORTED	4	Unsupported module in slot %d, power not allowed: %s.
	POWER_ SUPPLY_ FAILURE	INSUFFICIENT POWER	2	Powering down all line cards as there is not enough power to operate all critical cards.
		INPUTCHANGE	4	Power supply %d input has changed. Power capacity adjusted to %sW.
		PSINPUTDROP	4	Power supply %d input has dropped.
Inventory				Inventory status should be provided whenever a unit is cold-booted, or when FRUs are inserted or removed. This is considered a noncritical event, and the information is used for status and entitlement. (Sent to TAC.) CLI commands executed: **remote command switch show version** **show diagbus** **show idprom all** **show install running (ION only)** **show inventory** **show module** **show version**
	HARDWARE_ INSERTION	INSPS	6	Power supply inserted in slot %d.
	HARDWARE_ REMOVAL	REMPS	6	Power supply removed from slot %d.

Table 64-3 Call Home Alert Groups, Events, and Actions (continued)

Alert Group	Call Home Trigger Event	Syslog Event	Severity	Description and CLI Commands Executed
	HARDWARE_ REMOVAL	REMCARD	6	Card removed from slot %d, interfaces disabled.
		STDBY_REMCARD	6	The OIR facility on the standby supervisor engine was notified by the active supervisor engine that a processor from slot[n] has been removed.
	HARDWARE_ INSERTION	INSCAR	6	Card inserted in slot %d, interfaces are now online.
		STDBY_INSCARD	6	The standby supervisor engine was notified, card online in slot %d.
		SEQ_MISMATCH	6	SCP sequence mismatch for card in slot %d : %s.
	HARDWARE_ REMOVAL	UNKNOWN	3	Unknown card in slot %d, card is being disabled.
		STDBY_UNKNOWN	3	The standby supervisor engine was notified, Unknown card in slot %d.
	HARDWARE_ REMOVAL	UNSUPPORTED	3	Card in slot %d is unsupported. %s.
		PWRCYCLE	3	Card in module %d, is being power-cycled %s.
		STDBY_PWRCYCLE	3	The standby supervisor engine was notified, Card in module %d is being power-cycled %s.
		CONSOLE	6	Changing console ownership to %s processor.
		RUNNING_CONFIG	6	During switchover, the OIR facility is unable to clean up running-config processor.
		DISALLOW	6	Supervisor engine attempting to come up as secondary in EHSA mode, will not be allowed.
	HARDWARE_ REMOVAL	REMFAN	6	Fan %d removed.
	HARDWARE_ INSERTION	INSFAN	6	Fan %d inserted.
	HARDWARE_ INSERTION	PSINSERTED	4	Power supply inserted in slot %d.

Table 64-3 Call Home Alert Groups, Events, and Actions (continued)

Alert Group	Call Home Trigger Event	Syslog Event	Severity	Description and CLI Commands Executed
Diagnostic				Events related to standard or intelligent line cards. (Sent to TAC.) CLI commands executed: **remote command switch show version** **show buffers** **show diagnostic result module <slot#> detail** **show diagnostic result module all** **show install running (ION only)** **show inventory** **show logging** **show logging system last 100** **show module** **show version**
		DIAG_OK		
		DIAG_BYPASS		
	DIAGNOSTIC S_FAILURE	DIAG_ERROR		
	DIAGNOSTIC S_FAILURE	DIAG_MINOR_ERRO R		
	DIAGNOSTIC S_FAILURE	DIAG_MAJOR_ERRO R		
Configuration				User-generated request for configuration. (Sent to TAC.) CLI commands executed: **remote command switch show version** **show install running (ION only)** **show module** **show running-config all** **show startup-config** **show version**
Test		TEST		User-generated test message. (Sent to TAC.) CLI commands executed: **show install running (ION only)** **show module** **show version**

Message Contents

The following tables display the content formats of alert group messages:

- Table 64-4 describes the content fields of a short text message.

- Table 64-5 describes the content fields that are common to all long text and XML messages. The fields specific to a particular alert group message are inserted at a point between the common fields. The insertion point is identified in the table.
- Table 64-6 describes the inserted content fields for reactive messages (system failures that require a TAC case) and proactive messages (issues that might result in degraded system performance).
- Table 64-7 describes the inserted content fields for an inventory message.

Table 64-4 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	Plain English description of triggering event
Alarm urgency level	Error level such as that applied to a system message

Table 64-5 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*	CallHome/EventTime
Message name	Name of message. Specific event names are listed in the "Alert Group Trigger Events and Commands" section on page 64-18.	(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.	(for long text message only)
Severity level	Severity level of message (see Table 64-1 on page 64-8).	Body/Block/Severity
Source ID	Product type for routing. Specifically Catalyst 6500.	(for long text message only)
Device ID	Unique device identifier (UDI) for end device generating message. This field should be empty if the message is nonspecific to a fabric switch. The format is *type*@*Sid*@*serial*. • *type* is the product model number from 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: WS-C6509@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 64-5 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. The format is *type*@*Sid*@*serial*. • *type* is the product model number from 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: WS-C6509@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 host name 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 contact for this unit.	CallHome/CustomerData/SystemInfo/ContactEmail
Contact phone number	Phone number of the person identified as the contact for this unit.	CallHome/CustomerData/SystemInfo/ContactPhoneNumber
Street address	Optional field containing street address for RMA part shipments associated with this unit.	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 of the unit.	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	The System ObjectID that uniquely identifies the system.	CallHome/Device/Cisco_Chassis/AdditionalInformation/ AD@name="sysObjectID"
SysDesc	System description for the managed element.	CallHome/Device/Cisco_Chassis/AdditionalInformation/ AD@name="sysDescr"
The following fields may be repeated if multiple CLI commands are executed for this alert group.		
Command output name	The exact name of the issued CLI command.	/aml/Attachments/Attachment/Name
Attachment type	Type (usually inline).	/aml/Attachemtents/Attachment@type

Table 64-5 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)
MIME type	Normally text/plain or encoding type.	/aml/attachments/attachment/Data@encoding
Command output text	Output of command automatically executed (see Table 64-3 on page 64-19).	/aml/attachments/attachment/atdata

Table 64-6 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
Supervisor module software version	Top-level software version.	CallHome/Device/Cisco_Chassis/AdditionalInformation/AD@name="SoftwareVersion"
Affected FRU name	Name of the affected FRU generating the event message.	CallHome/Device/Cisco_Chassis/Cisco_Card/Model
Affected FRU serial number	Serial number of affected FRU.	CallHome/Device/Cisco_Chassis/Cisco_Card/SerialNumber
Affected FRU part number	Part number of affected FRU.	CallHome/Device/Cisco_Chassis/Cisco_Card/PartNumber
FRU slot	Slot number of FRU generating the event message.	CallHome/Device/Cisco_Chassis/Cisco_Card/LocationWithinContainer
FRU hardware version	Hardware version of affected FRU.	CallHome/Device/Cisco_Chassis/Cisco_Card/HardwareVersion
FRU software version	Software version(s) running on affected FRU.	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 halted).	/aml/body/process/processState
Process exception	Exception or reason code.	/aml/body/process/exception

Table 64-7 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
Supervisor module software version	Top-level software version.	CallHome/Device/Cisco_Chassis/AdditionalInformation/AD@name="SoftwareVersion"
FRU name	Name of the affected FRU generating the event message.	CallHome/Device/Cisco_Chassis/Cisco_Card/Model
FRU s/n	Serial number of FRU.	CallHome/Device/Cisco_Chassis/Cisco_Card/SerialNumber
FRU part number	Part number of FRU.	CallHome/Device/Cisco_Chassis/Cisco_Card/PartNumber
FRU slot	Slot number of FRU.	CallHome/Device/Cisco_Chassis/Cisco_Card/LocationWithinContainer
FRU hardware version	Hardware version of FRU.	CallHome/Device/Cisco_Chassis/Cisco_Card/HardwareVersion
FRU software version	Software version(s) running on FRU.	CallHome/Device/Cisco_Chassis/Cisco_Card/SoftwareIdentity/VersionString

Table 64-8 Inserted Fields for a User-Generated Test Message

Data Item (Plain Text and XML)	Description (Plain Text and XML)	XML Tag (XML Only)
Process ID	Unique process ID.	/aml/body/process/id
Process state	State of process (for example, running or halted).	/aml/body/process/processState
Process exception	Exception or reason code.	/aml/body/process/exception

Sample Syslog Alert Notification in Long-Text Format

```
source:MDS9000
Switch Priority:7
Device Id:WS-C6509@C@FG@07120011
Customer Id:Example.com
Contract Id:123
Site Id:San Jose
Server Id:WS-C6509@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:User Name
Contact Email:admin@yourcompany.com
Contact Phone:+1 408 555-1212
Street Address:#1234 Picaboo Street, Any city, Any state, 12345
Event Description:2006 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:WS-C6509
Affected Chassis Serial Number:FG@07120011
Affected Chassis Hardware Version:0.104
Affected Chassis Software Version:3.1(1)
Affected Chassis Part No:73-8607-01
end chassis information:
```

Sample Syslog Alert Notification in XML Format

```
From: example
Sent: Wednesday, April 25, 2007 7:20 AM
To: User (user)
Subject: System Notification From Router - syslog - 2007-04-25 14:19:55
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.example.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.example.com/services/DDCEService</aml-session:To>
<aml-session:Path>
<aml-session:Via>http://www.example.com/appliance/uri</aml-session:Via>
</aml-session:Path>
<aml-session:From>http://www.example.com/appliance/uri</aml-session:From>
<aml-session:MessageId>M2:69000101:C9D9E20B</aml-session:MessageId>
</aml-session:Session>
</soap-env:Header>
<soap-env:Body>
<aml-block:Block xmlns:aml-block="http://www.example.com/2004/01/aml-block">
<aml-block:Header>
<aml-block:Type>http://www.example.com/2005/05/callhome/syslog</aml-block:Type>
<aml-block:CreationDate>2007-04-25 14:19:55 GMT+00:00</aml-block:CreationDate>
<aml-block:Builder>
<aml-block:Name>Cat6500</aml-block:Name>
<aml-block:Version>2.0</aml-block:Version>
</aml-block:Builder>
<aml-block:BlockGroup>
<aml-block:GroupId>G3:69000101:C9F9E20C</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.example.com/2005/05/callhome" version="1.0">
```

```
<ch:EventTime>2007-04-25 14:19:55 GMT+00:00</ch:EventTime>
<ch:MessageDescription>03:29:29: %CLEAR-5-COUNTERS: Clear counter on all interfaces by
console</ch:MessageDescription>
<ch:Event>
<ch:Type>syslog</ch:Type>
<ch:SubType></ch:SubType>
<ch:Brand>Cisco Systems</ch:Brand>
<ch:Series>Catalyst 6500 Series Switches</ch:Series>
</ch:Event>
<ch:CustomerData>
<ch:UserData>
<ch:Email>user@example.com</ch:Email>
</ch:UserData>
<ch:ContractData>
<ch:CustomerId>12345</ch:CustomerId>
<ch:SiteId>building 1</ch:SiteId>
<ch:ContractId>abcdefg12345</ch:ContractId>
<ch:DeviceId>WS-C6509@C@69000101</ch:DeviceId>
</ch:ContractData>
<ch:SystemInfo>
<ch:Name>Router</ch:Name>
<ch:Contact></ch:Contact>
<ch:ContactEmail>user@example.com</ch:ContactEmail>
<ch:ContactPhoneNumber>+1 408 555-1212</ch:ContactPhoneNumber>
<ch:StreetAddress>270 E. Tasman Drive, San Jose, CA</ch:StreetAddress>
</ch:SystemInfo>
</ch:CustomerData>
<ch:Device>
<rme:Chassis xmlns:rme="http://www.example.com/rme/4.0">
<rme:Model>WS-C6509</rme:Model>
<rme:HardwareVersion>1.0</rme:HardwareVersion>
<rme:SerialNumber>69000101</rme:SerialNumber>
<rme:AdditionalInformation>
<rme:AD name="PartNumber" value="73-3438-03 01" />
<rme:AD name="SoftwareVersion" value="12.2(20070421:012711)" />
</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)
    Console logging: level debugging, 53 messages logged, xml disabled,
                     filtering disabled
    Monitor logging: level debugging, 0 messages logged, xml disabled,
                     filtering disabled
    Buffer logging: level debugging, 53 messages logged, xml disabled,
                    filtering disabled
    Exception Logging: size (4096 bytes)
    Count and timestamp logging messages: disabled
    Trap logging: level informational, 72 message lines logged

Log Buffer (8192 bytes):

00:00:54: curr is 0x20000

00:00:54: RP: Currently running ROMMON from F2 region
00:01:05: %SYS-5-CONFIG_I: Configured from memory by console
00:01:09: %SYS-5-RESTART: System restarted --
```

```
Cisco IOS Software, s72033_rp Software (s72033_rp-ADVENTERPRISEK9_DBG-VM), Experimental
Version 12.2(20070421:012711)
Copyright (c) 1986-2007 by Cisco Systems, Inc.
Compiled Thu 26-Apr-07 15:54 by xxx

Firmware compiled 11-Apr-07 03:34 by integ Build [100]


00:01:01: %PFREDUN-6-ACTIVE: Initializing as ACTIVE processor for this switch

00:01:01: %SYS-3-LOGGER_FLUSHED: System was paused for 00:00:00 to ensure console
debugging output.

00:03:00: SP: SP: Currently running ROMMON from F1 region
00:03:07: %C6K_PLATFORM-SP-4-CONFREG_BREAK_ENABLED: The default factory setting for config
register is 0x2102.It is advisable to retain 1 in 0x2102 as it prevents returning to
ROMMON when break is issued.

00:03:18: %SYS-SP-5-RESTART: System restarted --
Cisco IOS Software, s72033_sp Software (s72033_sp-ADVENTERPRISEK9_DBG-VM), Experimental
Version 12.2(20070421:012711)
Copyright (c) 1986-2007 by Cisco Systems, Inc.
Compiled Thu 26-Apr-07 18:00 by xxx
00:03:18: %SYS-SP-6-BOOTTIME: Time taken to reboot after reload =  339 seconds
00:03:18: %OIR-SP-6-INSPS: Power supply inserted in slot 1
00:03:18: %C6KPWR-SP-4-PSOK: power supply 1 turned on.
00:03:18: %OIR-SP-6-INSPS: Power supply inserted in slot 2
00:01:09: %SSH-5-ENABLED: SSH 1.99 has been enabled
00:03:18: %C6KPWR-SP-4-PSOK: power supply 2 turned on.
00:03:18: %C6KPWR-SP-4-PSREDUNDANTMISMATCH: power supplies rated outputs do not match.
00:03:18: %C6KPWR-SP-4-PSREDUNDANTBOTHSUPPLY: in power-redundancy mode, system is
operating on both power supplies.
00:01:10: %CRYPTO-6-ISAKMP_ON_OFF: ISAKMP is OFF
00:01:10: %CRYPTO-6-ISAKMP_ON_OFF: ISAKMP is OFF
00:03:20: %C6KENV-SP-4-FANHIOUTPUT: Version 2 high-output fan-tray is in effect
00:03:22: %C6KPWR-SP-4-PSNOREDUNDANCY: Power supplies are not in full redundancy, power
usage exceeds lower capacity supply
00:03:26: %FABRIC-SP-5-FABRIC_MODULE_ACTIVE: The Switch Fabric Module in slot 6 became
active.
00:03:28: %DIAG-SP-6-RUN_MINIMUM: Module 6: Running Minimal Diagnostics...
00:03:50: %DIAG-SP-6-DIAG_OK: Module 6: Passed Online Diagnostics
00:03:50: %OIR-SP-6-INSCARD: Card inserted in slot 6, interfaces are now online
00:03:51: %DIAG-SP-6-RUN_MINIMUM: Module 3: Running Minimal Diagnostics...
00:03:51: %DIAG-SP-6-RUN_MINIMUM: Module 7: Running Minimal Diagnostics...
00:03:51: %DIAG-SP-6-RUN_MINIMUM: Module 9: Running Minimal Diagnostics...
00:01:51: %MFIB_CONST_RP-6-REPLICATION_MODE_CHANGE: Replication Mode Change Detected.
Current system replication mode is Ingress
00:04:01: %DIAG-SP-6-DIAG_OK: Module 3: Passed Online Diagnostics
00:04:01: %OIR-SP-6-DOWNGRADE: Fabric capable module 3 not at an appropriate hardware
revision level, and can only run in flowthrough mode
00:04:02: %OIR-SP-6-INSCARD: Card inserted in slot 3, interfaces are now online
00:04:11: %DIAG-SP-6-DIAG_OK: Module 7: Passed Online Diagnostics
00:04:14: %OIR-SP-6-INSCARD: Card inserted in slot 7, interfaces are now online
00:04:35: %DIAG-SP-6-DIAG_OK: Module 9: Passed Online Diagnostics
00:04:37: %OIR-SP-6-INSCARD: Card inserted in slot 9, interfaces are now online
00:00:09: DaughterBoard (Distributed Forwarding Card 3)

Firmware compiled 11-Apr-07 03:34 by integ Build [100]


00:00:22: %SYS-DFC4-5-RESTART: System restarted --
Cisco IOS Software, c61c2 Software (c61c2-SPDBG-VM), Experimental Version
12.2(20070421:012711)
Copyright (c) 1986-2007 by Cisco Systems, Inc.
```

```
Compiled Thu 26-Apr-07 17:20 by xxx
00:00:23: DFC4: Currently running ROMMON from F2 region
00:00:25: %SYS-DFC2-5-RESTART: System restarted --
Cisco IOS Software, c6slc Software (c6slc-SPDBG-VM), Experimental Version
12.2(20070421:012711)
Copyright (c) 1986-2007 by Cisco Systems, Inc.
Compiled Thu 26-Apr-07 16:40 by username1
00:00:26: DFC2: Currently running ROMMON from F2 region
00:04:56: %DIAG-SP-6-RUN_MINIMUM: Module 4: Running Minimal Diagnostics...
00:00:09: DaughterBoard (Distributed Forwarding Card 3)

Firmware compiled 11-Apr-07 03:34 by integ Build [100]

slot_id is 8

00:00:31: %FLASHFS_HES-DFC8-3-BADCARD: /bootflash:: The flash card seems to be corrupted
00:00:31: %SYS-DFC8-5-RESTART: System restarted --
Cisco IOS Software, c6lc2 Software (c6lc2-SPDBG-VM), Experimental Version
12.2(20070421:012711)
Copyright (c) 1986-2007 by Cisco Systems, Inc.
Compiled Thu 26-Apr-07 17:20 by username1
00:00:31: DFC8: Currently running ROMMON from S (Gold) region
00:04:59: %DIAG-SP-6-RUN_MINIMUM: Module 2: Running Minimal Diagnostics...
00:05:12: %DIAG-SP-6-RUN_MINIMUM: Module 8: Running Minimal Diagnostics...
00:05:13: %DIAG-SP-6-RUN_MINIMUM: Module 1: Running Minimal Diagnostics...
00:00:24: %SYS-DFC1-5-RESTART: System restarted --
Cisco IOS Software, c6slc Software (c6slc-SPDBG-VM), Experimental Version
12.2(20070421:012711)
Copyright (c) 1986-2007 by Cisco Systems, Inc.
Compiled Thu 26-Apr-07 16:40 by username1
00:00:25: DFC1: Currently running ROMMON from F2 region
00:05:30: %DIAG-SP-6-DIAG_OK: Module 4: Passed Online Diagnostics
00:05:31: %SPAN-SP-6-SPAN_EGRESS_REPLICATION_MODE_CHANGE: Span Egress HW Replication Mode
Change Detected. Current replication mode for unused asic session 0 is Centralized
00:05:31: %SPAN-SP-6-SPAN_EGRESS_REPLICATION_MODE_CHANGE: Span Egress HW Replication Mode
Change Detected. Current replication mode for unused asic session 1 is Centralized
00:05:31: %OIR-SP-6-INSCARD: Card inserted in slot 4, interfaces are now online
00:06:02: %DIAG-SP-6-DIAG_OK: Module 1: Passed Online Diagnostics
00:06:03: %OIR-SP-6-INSCARD: Card inserted in slot 1, interfaces are now online
00:06:31: %DIAG-SP-6-DIAG_OK: Module 2: Passed Online Diagnostics
00:06:33: %OIR-SP-6-INSCARD: Card inserted in slot 2, interfaces are now online
00:04:30: %XDR-6-XDRIPCNOTIFY: Message not sent to slot 4/0 (4) because of IPC error
timeout. Disabling linecard. (Expected during linecard OIR)
00:06:59: %DIAG-SP-6-DIAG_OK: Module 8: Passed Online Diagnostics
00:06:59: %OIR-SP-6-DOWNGRADE_EARL: Module 8 DFC installed is not identical to system PFC
and will perform at current system operating mode.
00:07:06: %OIR-SP-6-INSCARD: Card inserted in slot 8, interfaces are now online

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