



CHAPTER 1

Introduction to Cisco Device Diagnostics

Device Diagnostics are delivered through Cisco's Smart Call Home. This partner version of Smart Call Home is supported by both the Partner Support Service (PSS) and Smart Care services offerings, which helps partners to develop and deliver their own proactive diagnostics service to quickly identify and resolve network issues on select Cisco devices.

This chapter provides an overview of the Cisco Device Diagnostics service and covers the following areas:

- [Benefits of Device Diagnostics.](#)
- [Device Diagnostics Interaction with Call Home.](#)
- [System Requirements for the Call Home Feature](#)
- [System Requirements for the Call Home Feature.](#)
- [System Requirements for Device Diagnostics.](#)
- [Transport Gateway Software Package.](#)
- [Quick Start for Device Diagnostics.](#)
- [Technical Support Information](#)

Benefits of Device Diagnostics

Device Diagnostics offers proactive diagnostics and real-time alerts on select Cisco devices and provides higher network availability and increased operational efficiency utilizing the partner features of the Device Diagnostics delivery architecture.

Device Diagnostics is a new, secure connected service of Partner Support Services (PSS) and Smart Care that is currently available on the following products:

- ASA 5500
- ASR 5000 /9000
- Cisco 7200 /7301 /7600
- Cisco Catalyst 2960 /3560 /3750 /4500 /4900 /6509
- Cisco CRS Routers
- Cisco Metro Ethernet (ME) 3400(e) /3750 /4924 /6500 Series Switches
- Cisco Unified Communications Manager (CUCM)
- Cisco XR 12000 Series Router
- ISR 800, 1800, 2800, 3800
- ISR G2 1900, 2900, 3900
- MDS 9000
- Nexus 2000 / 4000 /5000 / 7000
- UBR 7000 and UBR 10000 Series routers
- Unified Computing System (UCS) 6100
- UCS C Rack Server

Device Diagnostics offers higher network availability through proactive, fast issue resolution by:

- Identifying issues quickly with continuous monitoring, real-time, proactive alerts, and detailed diagnostics.
- Making the partner is aware of potential problems by providing PSIRTs and field notices that are specific to only those types of devices in your network.
- Resolving critical problems faster, with access to partner experts.

Device Diagnostics offers increased operational efficiency by providing partners the ability to:

- Use staff resources more efficiently by reducing troubleshooting time.
- Generated partner requests are routed to the partner via emails, which provides detailed diagnostic information that speeds up problem resolution.

**Note**

No service requests are sent to TAC, instead the detailed information is emailed to the partner, as a partner request; the partner then uses this information to resolve any device problems.

Device Diagnostics offers fast, web-based access to needed information that provides partners the ability to:

- Review all Call Home messages, diagnostics, and recommendations in one place.
- Check partner request status quickly.
- View the most up-to-date inventory and configuration information for all Call Home devices.

Device Diagnostics Interaction with Call Home

The [Device Diagnostics service](#) provides proactive messaging by capturing and processing Call Home diagnostics and inventory alarms. The Call Home feature on the Cisco devices provides the capability for a partner to configure Call Home profiles that define:

- Events of interest.
- Destination addresses.
- Transport methods.
- Message formats.

Within a profile a partner can select events of interest by subscribing to specific alert groups which define specific actions to take when certain events occur:

- A partner could configure a profile and subscribe to diag events and subscribe to diag alert groups which have a destination address that is an email address using a short text format. Using the email transport method allows an individual to be paged at home via short text email when a major diagnostic failure occurs.
- All environmental events might be sent via HTTPS to a network management stations.
- Generate Call Home messages via HTTPS (or email) to the partner for specific types of events that will generate a partner request; the message will proactively send all needed error information to the partner for further analysis.

The Device Diagnostics Service, in conjunction with supporting Cisco devices, provides a mechanism for Cisco hardware to send the following information to the partner.

- Periodic system messages.
- Real time system event messages.

Call Home messages that are sent periodically include inventory and configuration information.

The inventory and configuration messages are used to generate the Device Report and improve hardware and software quality by identifying failure trends.

Call Home messages that are generated by system events include diagnostic and environmental messages:

- Diagnostic messages are generated when GOLD failures occur (see [Generic Online Diagnostics on the Cisco Catalyst 6500 Series Switch](#)).
- [Environmental messages, via EEM](#), are sent when temperature, power and other types of system related thresholds are crossed resulting in major, minor or recovery alarms.



Note The Diagnostic and Environmental tests run on all [Smart Call Home supported product types](#).

The information in these messages provide timely and proactive service to assist the partner in managing and maintaining their network.

System Requirements for the Call Home Feature

The following items are the system requirements for Call Home feature on the following Cisco supported devices:

Device Diagnostics Supported Products Table

Table 1-1

	Product	Minimum OS Version or Planned
Data Center Products		
	MDS 9000	NX-OS 4.1.1 or SAN-OS 1.0 (see MDS 9000 note below table)
	Nexus 2000	NX-OS 4.0
	Nexus 4000	NX-OS 4.1(2)E1(1)
	Nexus 5000	NX-OS 4.0 r
	Nexus 7000	NX-OS 4.0
	Unified Computing System (UCS) 6100	UCS OS 1.0
	UCS C Rack Server	UCS 1.4(2b)
LAN Switching Products		
	Catalyst 2960	IOS 12.2(58)SE
	Catalyst 3560	IOS 12.2(58)SE
	Catalyst 3750	IOS 12.2(58)SE
	Catalyst 4500	IOS 12.2(52)SG
	Catalyst 4900	IOS 12.2(52)SG
	Catalyst 6509	IOS 12.2(33)SXH
Routing Products		
	Cisco 7200	12.4(24)T
	Cisco 7301	12.4(24)T
	Cisco 7600	12.2(33)SRC

Table 1-1

	Product	Minimum OS Version or Planned
	ISR 800, 1800, 2800, 3800	15.1(1)T
	ISR G2 1900, 2900, 3900	15.1(1)T
Security/HUCS		
	ASA 5500	8.2(2)
Service Provider and Metro Ethernet Products		
	Cisco ASR 5000 Series Router	12.0
	Cisco ASR 9000 Series Router	IOS XR 4.1.0
	Cisco CRS Routers	IOS XR 4.1.0
	Cisco ME 3400	IOS 12.2(58)SE
	Cisco ME 3750	IOS 12.2(58)SE
	Cisco ME 4924	12.2(52)SG
	Cisco ME 6500	12.2(33)SXH
	Cisco UBR 7000	12.2(33)SCE
	Cisco UBR 10000	12.2(33)SCE
	Cisco XR 12000 Series Router	IOS XR 4.1.0
Voice and Unified Communications		
	Cisco Unified Computing Manager (CUCM)	UCS 8.6



Note Earlier versions of the MDS 9000 operating system (SAN-OS 1.x, 2.x, 3.x) can be used, those operating systems will be supported by Smart Call Home MML to AML translation.

- Refer to the appropriate device Configuration Guide for information on how to do the following:
 - How to configure the Email Address field correctly before triggering the Call Home commands.
 - For IOS devices, how to use the **call-home send alert-group** command to generate an on-demand Call Home message.



Note To see a list of the various device configuration guides go to <http://www.cisco.com/go/smartcall> and look under the Technical Documentation section.

System Requirements for Device Diagnostics

The following information identifies the system requirements that are needed to support the Device Diagnostics service:

- The Cisco device must be supported under a valid partner support service or Smart Care contract. If the device is not covered by a contract, the device can be registered for a trial period. The contact person's user profile must have a valid service contract.
- The Cisco device must be able to reach the Cisco backend, which receives the Call-Home messages from the Cisco device and sends out Device Diagnostics email notifications, reports, and information.
- Only Internet Explorer (IE) browsers are supported.
- The Device Diagnostics devices have the same minimum OS requirements that support the Call Home feature that were [noted in the previous table](#).
- A CCO ID that has an associated bill-to ID on the PSS or Smart Care contracts, which cover their end customer's devices, needs to exist in their profile or have PSS or Smart Care contracts exist in their profile.

- Device needs to be covered by a PSS or Smart Care contract that is managed by the partner.

Transport Gateway Software Package

The Transport Gateway is an optional software package that can be downloaded and installed to enable the Call Home environment to securely send messages to Device Diagnostics via the Transport Gateway.

**Note**

The software package must be installed and configured before Call Home messages can be successfully sent to and received by Device Diagnostics.

The Transport Gateway code can be downloaded from the following location:
<http://www.cisco.com/cgi-bin/tablebuild.pl/cisco-transport-gateway>

**Note**

The Transport Gateway download page is available to only registered Cisco.com users that have a valid Cisco Service Agreement.

Quick Start for Device Diagnostics

There are three key areas that are involved with getting a Device Diagnostics system to operate, those areas deal with installing and configuring the following items:

- Device Diagnostics service on the Cisco Backend; no configuration or installing is required. You only need to access the Smart Call Home web application at the following <https://tools.cisco.com/sch/>.
- Optionally, the Transport Gateway needs to be installed and configured when the partner wants a secure method of delivering their Call Home messages to the Cisco Backend.
- Call Home feature on the partner devices that generate periodic system messages and real time system event messages.

The following items identify the high-level steps used to install and configure the various components used for establishing a connection between the Call Home feature and Device Diagnostics service on the Cisco Backend:

- The following tasks represent the key steps required to install, configure and register the Transport Gateway:

- [Download the Transport Gateway Package](#) for a Windows, Solaris, or Linux platform at the following URL:

<http://www.cisco.com/cgi-bin/tablebuild.pl/cisco-transport-gateway>;



Note Go to section Network Analysis and Planning and Cisco Transport Gateway.

- Install the Transport Gateway software for one of the following operating systems:
 - [Install the Transport Gateway for Linux](#)
 - [Install the Transport Gateway for Solaris](#)
 - [Install the Transport Gateway Package for Windows](#)
 - [Launch the Cisco Transport Gateway Application.](#)
 - [Set Proxy Settings.](#)
 - [Test the Connection Before Registration.](#)
 - [Register the Transport Gateway.](#)
 - [Configure the Transport Gateway.](#)
- For Call Home perform the following tasks:
 - Go to the following URL to see an example of detailed information on how to configure the Call Home feature on a Catalyst 6500:
<http://www.cisco.com/en/US/docs/switches/lan/catalyst6500/ios/12.2S X/configuration/guide/callhome.html#wp1302128>
 - To get detailed information on how to configure the Call Home feature on other products supported by Device Diagnostics, use the product specific configuration guides on the SCH marketing page at http://www.cisco.com/en/US/products/ps7334/serv_home.html.

**Note**

Go to the Smart Call Home Collateral and Resources area of the page, and look under the Technical Documentation column where there is a list of the various product configuration guides.

- You can configure the Call Home feature on a Cisco device using one of the following basic configurations:
 - [Call Home Configuration - HTTPS](#)
 - [Call Home Configuration - Call Home Messages to Transport Gateway / HTTPS to Cisco](#)
 - [Call Home Configuration - Email to Device Diagnostics](#)
- From a device, send the first Call Home message to the Cisco Backend. The application will send an email notification about the automatic device registration in Device Diagnostics for this device. There are no pending device registrations for devices supported with a PSS or Smart Care contract.
- On the Smart Call Home web application perform the following tasks:
 - [Launch Smart Call Home](#).
 - [Accept the Legal agreement](#), which gives you access to the Smart Call Home web application.

Technical Support Information

For technical support, please contact Cisco Smart Services Bureau (SSB) via:

Email: ask-smart-services@cisco.com <mailto:ask-smart-services@cisco.com>

Telephone:

US and Canada: +1-877-330-9746

Europe:	Austria	0800 006 206
	Belgium	0800 49913
	France	0805 119 745
	Germany	0800 589 1725

US and Canada: +1-877-330-9746

Italy	800 085 681
Netherlands	0800 0201 276
Spain	800 600472
Switzerland	0800 840011
UK	0800 2795112

From the rest of the world, choose the appropriate phone number from http://www.cisco.com/en/US/support/tsd_cisco_worldwide_contacts.html

