



Using the Cisco Media Convergence Server Network Teaming Driver with Operating System Version 2000.2.6

The Cisco Media Convergence Server (MCS) Network Teaming Driver enables the functionality for the failover fault-tolerant network adapters. This driver works with Cisco Media Convergence Servers that have dual network interface cards (NICs) installed. With this functionality, the standby NIC can handle all IP traffic in the event of a failure of the primary NIC.



Note

Operating system version 2000.2.6 automatically installs the Network Teaming Driver as part of the installation process. You must perform configuration tasks, as described in this document, to set up and use the Network Teaming Driver.



Note

Use this document with operating system version 2000.2.6 or later. Refer to *Installing the Cisco Media Convergence Server Network Teaming Driver with Operating System Version 2000.2.4 and 2000.2.5* for information about installing and configuring the Network Teaming Driver with earlier versions of the operating system.

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Related Cisco CallManager and Operating System Documentation

Table 1 provides a list of Cisco CallManager and operating system documentation. You can navigate to the appropriate documentation by clicking on the URLs that are shown in this table.

Table 1 Quick Reference for Documentation and Software URLs

Related Documentation and Software	URL and Additional Information
Operating system documentation and Virtual Network Computing (VNC) documentation (not readme documentation)	http://www.cisco.com/univercd/cc/td/doc/product/voice/iptel_os/index.htm
Cisco MCS data sheets	http://www.cisco.com/en/US/products/hw/voiceapp/ps378/index.html
Software-only servers (IBM, HP, Compaq, Aquarius)	http://www.cisco.com/en/US/products/hw/voiceapp/ps378/prod_brochure_list.html
Cisco CallManager Compatibility Matrix	http://www.cisco.com/univercd/cc/td/doc/product/voice/c_callmg/index.htm
Cisco CallManager documentation, including installation and upgrade documentation	http://www.cisco.com/univercd/cc/td/doc/product/voice/c_callmg/index.htm
Cisco IP Telephony Applications Backup and Restore documentation	http://www.cisco.com/univercd/cc/td/doc/product/voice/backup/index.htm
Support patches and readme documentation	http://www.cisco.com/kobayashi/sw-center/sw-voice.shtml Note The operating system and SQL Server 2000 support patches post on the voice products operating system cryptographic software page. You can navigate to the site from the Cisco CallManager software page.

Server and Operating System Requirements

The following servers support the Network Teaming Driver:

- Cisco MCS-7825H-2.2 (or later)
- Cisco MCS-7835H-2.4 (or later)

- Cisco MCS-7845H-2.4 (or later)
- Cisco MCS-7835-1266
- Cisco-verified, customer-provided HP DL380 G2 server
- Cisco-verified, customer-provided HP DL380 G3 server, including single and dual processors
- Cisco-verified, customer-provided HP DL320 G2 server

**Note**

Cisco requires that you install Cisco-provided operating system version 2000.2.6 or later before you configure this driver.

Preparation and Considerations

Review the following information before you configure the Network Teaming Driver:

- Cisco requires that you install Cisco-provided operating system version 2000.2.6 or later.
- You must reboot the server after you perform the driver configuration tasks.
- If you want to dissolve the network team or uninstall the driver, you must reboot the server for the changes to take effect.
- Perform all configuration tasks on every server in the cluster where the driver is supported.

**Caution**

Cisco strongly recommends that you configure the Network Teaming Driver before you install or upgrade Cisco CallManager.

If you do not perform the tasks in the recommended order and decide to configure the driver after the application upgrade, you might encounter a Service Control Manager error message, as shown in [Figure 9 on page 11](#). To resolve this problem, follow the procedure in the “[Troubleshooting the Network Teaming Driver](#)” section on page 11.

Perform the following procedure before you configure the driver:

Procedure

- Step 1** After you install Cisco-provided operating system 2000.2.6 on every server in the cluster, right-click **My Network Places**.
- Step 2** Right-click **Local Area Connection**; choose **Properties**.
- Step 3** Choose the **Internet Protocol (TCP/IP)** component and click the **Properties** button.
- Step 4** In [Table 2 on page 4](#), write down the IP information, including the IP address, subnet mask, the default gateway, and the DNS/WINS settings.

**Tip**

To obtain the WINS setting, click the **Advanced** button for WINS settings.

Table 2 Internet Protocol Information for the Primary Network Card

Information	Your Entry
IP address	
Subnet mask	
Default gateway	
DNS settings <ul style="list-style-type: none"> • Primary • Secondary 	
WINS settings <ul style="list-style-type: none"> • Primary • Secondary 	
Link speed setting	
Duplex setting	

- Step 5** After you record the information, click **Cancel**.
- Step 6** In the Local Area Connection window, click the **Configure** button.
- Step 7** Click the **Advanced** tab.
- Step 8** In the Property pane, locate the speed and duplex settings.
These could be one or two different settings, depending on the server type.
- Step 9** In [Table 2](#), write down the speed and duplex setting values for the primary network card.
- Step 10** Right-click the second network card connection, **Local Area Connection 2**.
- Step 11** Choose **Enable**.



Note The installation of Cisco-provided operating system version 2000.2.6 or later automatically disables the second network card. You must enable it now.

Configuration Tasks

This section includes information about configuring the Network Teaming Driver.

Configuring the Network Teaming Driver

To configure the Network Teaming Driver, perform the following procedure:

Procedure

- Step 1** Locate the HP Network Configuration Utility 7 in the Windows 2000 system tray or by navigating to **Start > Settings > Control Panel > HP Network**.

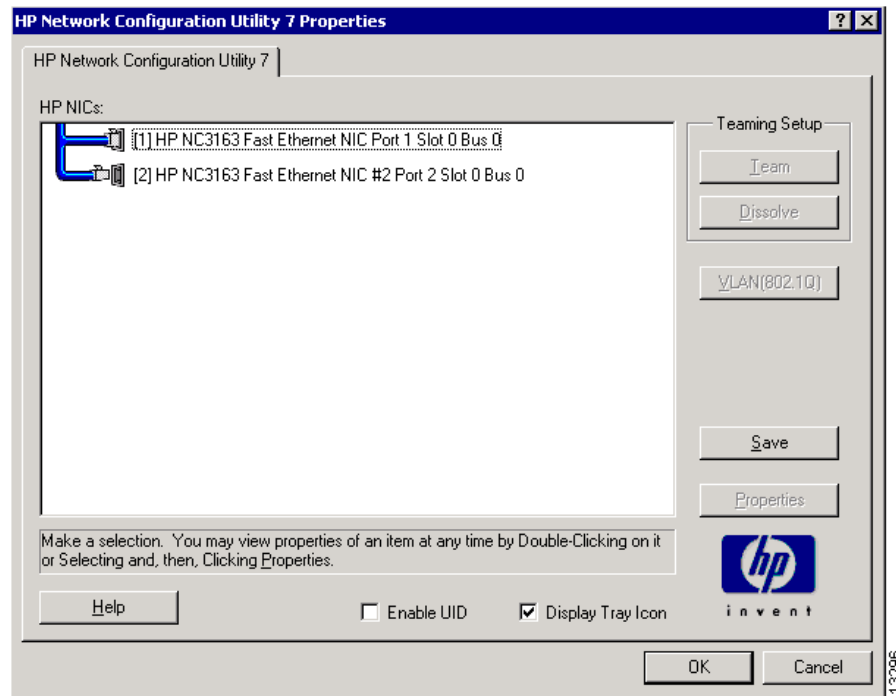
The icon looks like the image shown in [Figure 1](#).

Figure 1 HP Network Configuration Utility 7 Icon



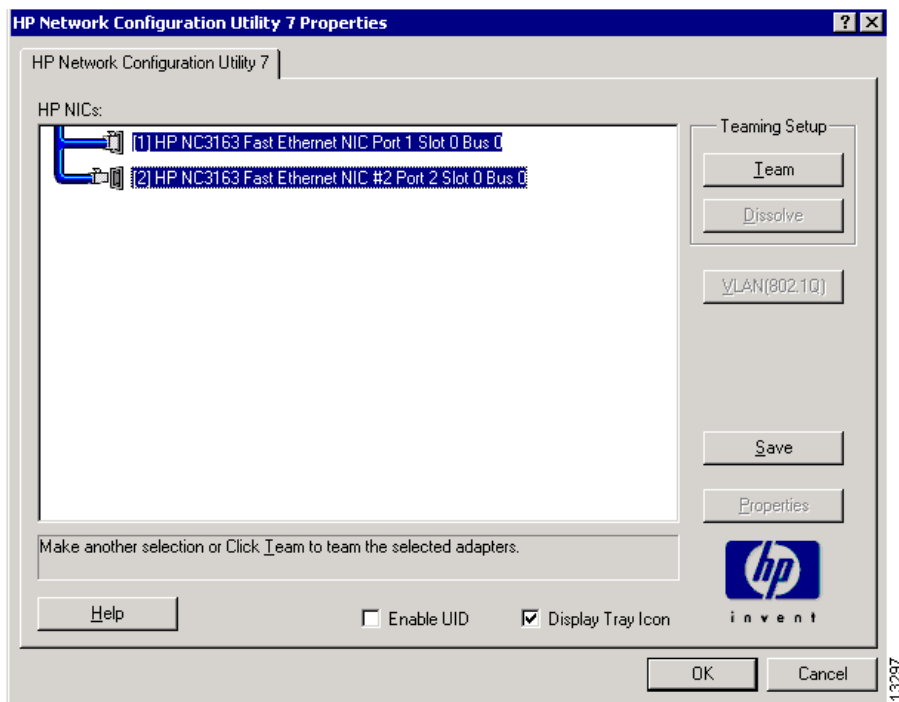
- Step 2** Double-click the icon to launch the HP Network Configuration Utility 7, as shown in [Figure 2](#).

Figure 2 HP Network Configuration Utility Properties Page



- Step 3** Click on each HP NIC that is listed to select both entries, as shown in [Figure 3](#).

Figure 3 Selected HP NICs



Step 4 In the Teaming Setup window, click **Team** to team the selected HP NICs.

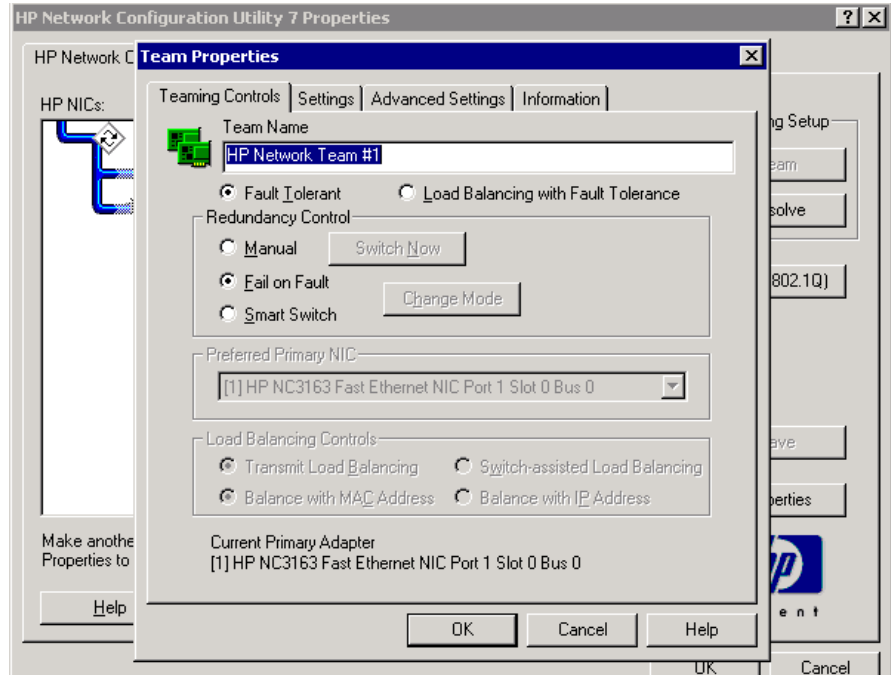
The Team Properties window displays. Verify that the following properties are chosen, as shown in [Figure 4 on page 7](#):

- **Fault Tolerant**
- **Fail on Fault**



Note HP Network Team #1 represents the default name for the team.

Figure 4 Team Properties

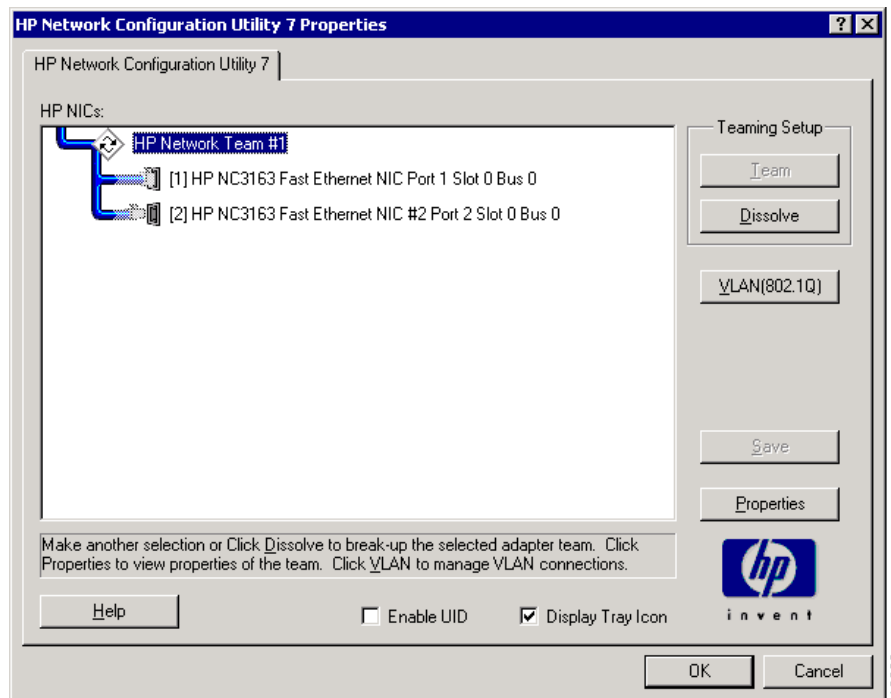


Step 5 Click **OK** on the Team Properties window.

You have created the HP Network Team.

Step 6 Click **OK** on the HP Network Configuration Utility 7 Properties window. See [Figure 5](#).

Figure 5 HP Network Team #1



A confirmation window appears.

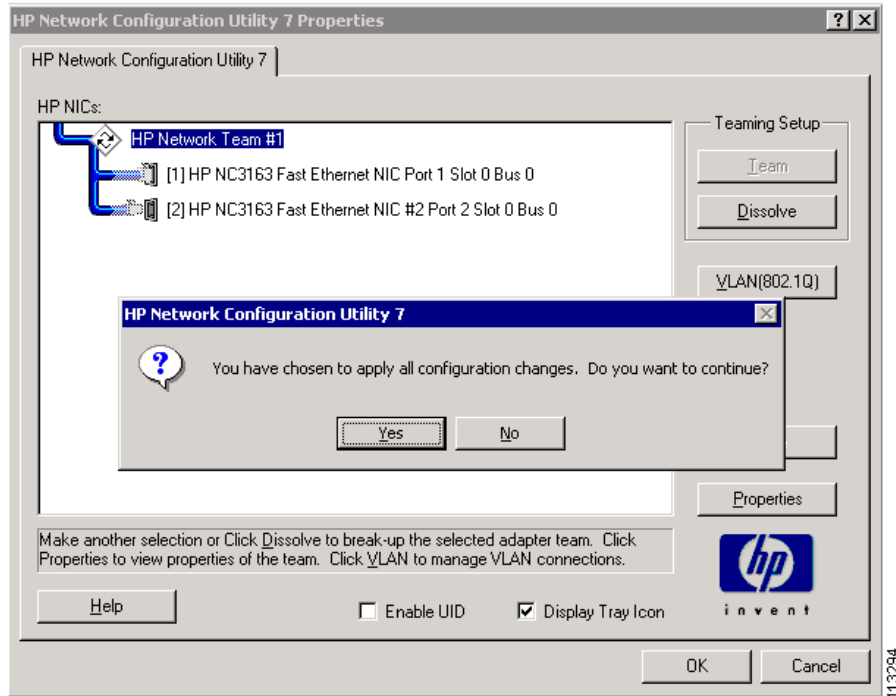


Tip

You can change the team properties, if desired, by clicking on **Properties** in the HP Network Configuration Utility 7 Team Properties window. For example, you can use Properties to change the name of the HP Network Team, if desired. After you change the properties, click **OK**.

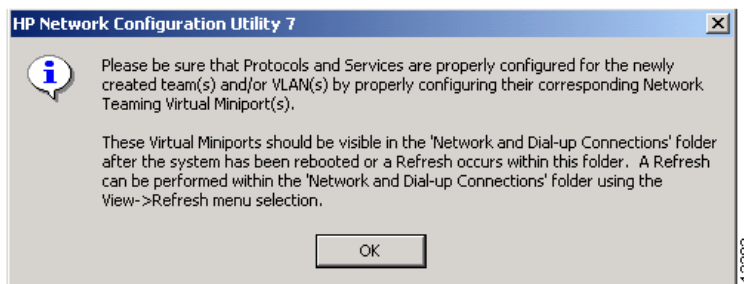
Step 7 To confirm your changes and continue, click **Yes**. See [Figure 6](#).

Figure 6 Confirmation

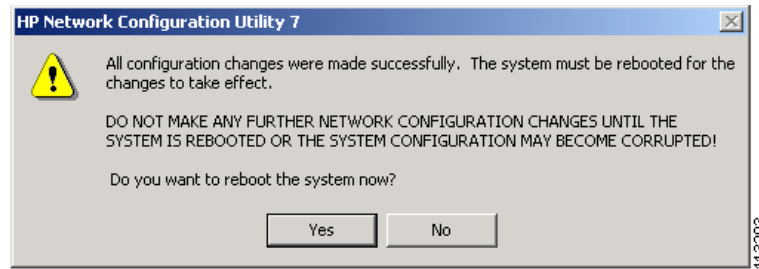




Step 8 Wait while the adapters are being configured; then, click **OK**, as shown in [Figure 7](#).

Figure 7 Completed Configuration



Step 9 To reboot the server, click **Yes**, as shown in [Figure 8](#).

Figure 8 Successful Configuration Changes

- Step 10** Launch the HP Network Configuration Utility 7, as described in [Step 2](#).
- Step 11** Click **NIC Port #1** (or a variation of that name) to select the NIC; then, click **Properties**.
- Step 12** Click the **Settings** tab.
- Step 13** Choose **Speed/Duplex Setting** and enter the setting that you recorded in [Table 2 on page 4](#).
- Step 14** Click **OK**.
- Step 15** Click **NIC Port #1** (or a variation of that name) to deselect the NIC.
- Step 16** Repeat [Step 11](#) through [Step 14](#) for **NIC Port #2** (or a variation of that name).
- Step 17** Click **OK**.
- Step 18** Right-click **My Network Places**; choose **Properties** for the Local Area Connection.
An additional network card, Local Area Connection 3, displays in the window.
- Step 19** Right-click the teamed connection; choose **Properties**.
- Step 20** Choose the **Internet Protocol (TCP/IP)** option and click the **Properties** button.
- Step 21** From [Table 2 on page 4](#), enter the information, including the IP address, the subnet mask, the default gateway, and the DNS/WINS settings.
-
-  **Tip** To enter the WINS setting, click the **Advanced** button for WINS settings. After you enter the information, make sure that you click **OK**.
-
- Step 22** After you enter the information, click **OK**.
- Step 23** Click **OK**.
- Step 24** Close the Network and Dial-up Connections window.
-
-  **Note** You do not need to reboot the server.
-
- Step 25** Perform all teaming procedures on every server in the cluster where the teaming driver is supported.
- Step 26** Perform Cisco CallManager installation tasks. See [Table 1 on page 2](#) for reference to Cisco CallManager documentation.
-

Dissolving the Network Teaming Driver

When you dissolve the driver, you disassociate the two NICs and the virtual NIC that is used for the driver. The teaming drivers remain installed, but they no longer are configured or used.



Note

The server will use NIC #1 only for IP telephony.

To dissolve the Network Teaming Driver, perform the following procedure:

Procedure

-
- Step 1** Double-click the HP Network Configuration Utility 7 icon that appears in the Windows 2000 system tray.
 - Step 2** Click **HP Network Team #1**.
 - Step 3** Click **Dissolve**.
 - Step 4** Click **OK**.
 - Step 5** To apply changes, click **Yes**.
 - Step 6** To reboot, click **Yes**.
 - Step 7** After the server reboots, disable the second NIC.



Caution

Failing to disable the second NIC may result in two IP addresses being assigned to the server. Assigning two IP addresses to the Cisco CallManager server may cause a loss of service.

Uninstallation Tasks

When you uninstall the driver, you delete the drivers from the server. The server will use NIC #1 only for IP telephony.

To uninstall the Network Teaming Driver, perform the following procedure:

Procedure

-
- Step 1** Right-click **My Network Places** and choose **Properties**.
 - Step 2** Right-click any active network card connection and click **Properties**.
 - Step 3** Choose **HP Network Configuration Utility 7** and click **Uninstall**.
 - Step 4** To uninstall the driver, click **Yes**.
 - Step 5** For the changes to take effect, click **Yes** to reboot the server.
 - Step 6** After the server reboots, disable the second NIC.

**Note**

If you need to reinstall the Network Teaming Driver, you must run HPConfigUtil.exe. To do this, navigate to `c:\Utils\DualNIC\HPConfigUtil.exe` and follow the procedure for configuring the driver (see [Step 10](#) in the “Configuring the Network Teaming Driver” section on page 5).

**Caution**

Failing to disable the second NIC may result in two IP addresses being assigned to the server. Assigning two IP addresses to the Cisco CallManager server may cause a loss of service.

Uninstallation Verification

To verify that you have uninstalled the driver, perform the following procedure:

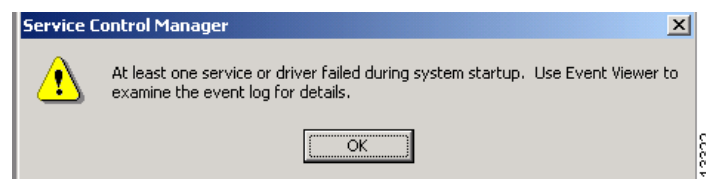
Procedure

-
- Step 1** Right-click **My Network Properties** and choose **Properties**.
In the list that displays, the network team should not appear.
- Step 2** Right-click the primary network card connection, which is, by default, Local Area Connection, and choose **Properties**.
- Step 3** Choose **Internet Protocol (TCP/IP)** option and click **Properties**.
- Step 4** Verify that the settings from [Step 4](#) in the “Preparation and Considerations” section on page 3 display.
-

Troubleshooting the Network Teaming Driver

After you configure the Network Teaming Driver and install Cisco CallManager, you might encounter a Service Control Manager error message, such as the one shown in [Figure 9](#).

Figure 9 Service Control Manager Error Message



To identify and resolve this problem, perform the following procedure:

Procedure

-
- Step 1** Open the Event Viewer by choosing **Start > Programs > Administrative Tools > Event Viewer**.

Step 2 Select **System Log**.

Step 3 Browse the System Log to find an occurrence of the following entry around the time of the error:

- Source entry—Service Control Manager
- Event ID—7000

Step 4 Double-click the **Service Control Manager** entry to open up the Event Properties window.

The following description appears:

“The HP Network Configuration Utility 7 service failed to start due to the following error: The service cannot be started, either because it is disabled or because it has enabled devices associated with it.”

Step 5 Navigate to the **c:\Utils\DualNIC** folder and double-click **Teaming-CDP.cmd**.

The utility runs for a few seconds. The fix takes effect without rebooting the server.



Note Starting with the next reboot of the server, this error message will no longer appear.

Obtaining Documentation

Cisco provides several ways to obtain documentation, technical assistance, and other technical resources. These sections explain how to obtain technical information from Cisco Systems.

Cisco.com

You can access the most current Cisco documentation on the World Wide Web at this URL:

<http://www.cisco.com/univercd/home/home.htm>

You can access the Cisco website at this URL:

<http://www.cisco.com>

International Cisco websites can be accessed from this URL:

http://www.cisco.com/public/countries_languages.shtml

Documentation CD-ROM

Cisco documentation and additional literature are available in a Cisco Documentation CD-ROM package, which may have shipped with your product. The Documentation CD-ROM is updated regularly and may be more current than printed documentation. The CD-ROM package is available as a single unit or through an annual or quarterly subscription.

Registered Cisco.com users can order a single Documentation CD-ROM (product number DOC-CONDOCCD=) through the Cisco Ordering tool:

http://www.cisco.com/en/US/partner/ordering/ordering_place_order_ordering_tool_launch.html

All users can order annual or quarterly subscriptions through the online Subscription Store:

<http://www.cisco.com/go/subscription>

Ordering Documentation

You can find instructions for ordering documentation at this URL:

http://www.cisco.com/univercd/cc/td/doc/es_inpk/pdi.htm

You can order Cisco documentation in these ways:

- Registered Cisco.com users (Cisco direct customers) can order Cisco product documentation from the Networking Products MarketPlace:

<http://www.cisco.com/en/US/partner/ordering/index.shtml>

- Nonregistered Cisco.com users can order documentation through a local account representative by calling Cisco Systems Corporate Headquarters (California, USA.) at 408 526-7208 or, elsewhere in North America, by calling 800 553-NETS (6387).

Documentation Feedback

You can submit comments electronically on Cisco.com. On the Cisco Documentation home page, click **Feedback** at the top of the page.

You can send your comments in e-mail to bug-doc@cisco.com.

You can submit comments by using the response card (if present) behind the front cover of your document or by writing to the following address:

Cisco Systems
Attn: Customer Document Ordering
170 West Tasman Drive
San Jose, CA 95134-9883

We appreciate your comments.

Obtaining Technical Assistance

For all customers, partners, resellers, and distributors who hold valid Cisco service contracts, the Cisco Technical Assistance Center (TAC) provides 24-hour, award-winning technical support services, online and over the phone. Cisco.com features the Cisco TAC website as an online starting point for technical assistance.

Cisco TAC Website

The Cisco TAC website (<http://www.cisco.com/tac>) provides online documents and tools for troubleshooting and resolving technical issues with Cisco products and technologies. The Cisco TAC website is available 24 hours a day, 365 days a year.

Accessing all the tools on the Cisco TAC website requires a Cisco.com user ID and password. If you have a valid service contract but do not have a login ID or password, register at this URL:

<http://tools.cisco.com/RPF/register/register.do>

Opening a TAC Case

The online TAC Case Open Tool (<http://www.cisco.com/tac/caseopen>) is the fastest way to open P3 and P4 cases. (Your network is minimally impaired or you require product information). After you describe your situation, the TAC Case Open Tool automatically recommends resources for an immediate solution. If your issue is not resolved using these recommendations, your case will be assigned to a Cisco TAC engineer.

For P1 or P2 cases (your production network is down or severely degraded) or if you do not have Internet access, contact Cisco TAC by telephone. Cisco TAC engineers are assigned immediately to P1 and P2 cases to help keep your business operations running smoothly.

To open a case by telephone, use one of the following numbers:

Asia-Pacific: +61 2 8446 7411 (Australia: 1 800 805 227)

EMEA: +32 2 704 55 55

USA: 1 800 553-2447

For a complete listing of Cisco TAC contacts, go to this URL:

<http://www.cisco.com/warp/public/687/Directory/DirTAC.shtml>

TAC Case Priority Definitions

To ensure that all cases are reported in a standard format, Cisco has established case priority definitions.

Priority 1 (P1)—Your network is “down” or there is a critical impact to your business operations. You and Cisco will commit all necessary resources around the clock to resolve the situation.

Priority 2 (P2)—Operation of an existing network is severely degraded, or significant aspects of your business operation are negatively affected by inadequate performance of Cisco products. You and Cisco will commit full-time resources during normal business hours to resolve the situation.

Priority 3 (P3)—Operational performance of your network is impaired, but most business operations remain functional. You and Cisco will commit resources during normal business hours to restore service to satisfactory levels.

Priority 4 (P4)—You require information or assistance with Cisco product capabilities, installation, or configuration. There is little or no effect on your business operations.

Obtaining Additional Publications and Information

Information about Cisco products, technologies, and network solutions is available from various online and printed sources.

- The Cisco Product Catalog describes the networking products offered by Cisco Systems, as well as ordering and customer support services. Access the Cisco Product Catalog at this URL:

http://www.cisco.com/en/US/products/products_catalog_links_launch.html

- Cisco Press publishes a wide range of networking publications. Cisco suggests these titles for new and experienced users: Internetworking Terms and Acronyms Dictionary, Internetworking Technology Handbook, Internetworking Troubleshooting Guide, and the Internetworking Design Guide. For current Cisco Press titles and other information, go to Cisco Press online at this URL:


<http://www.ciscopress.com>

- Packet magazine is the Cisco quarterly publication that provides the latest networking trends, technology breakthroughs, and Cisco products and solutions to help industry professionals get the most from their networking investment. Included are networking deployment and troubleshooting tips, configuration examples, customer case studies, tutorials and training, certification information, and links to numerous in-depth online resources. You can access Packet magazine at this URL:
<http://www.cisco.com/go/packet>
- iQ Magazine is the Cisco bimonthly publication that delivers the latest information about Internet business strategies for executives. You can access iQ Magazine at this URL:
<http://www.cisco.com/go/iqmagazine>
- Internet Protocol Journal is a quarterly journal published by Cisco Systems for engineering professionals involved in designing, developing, and operating public and private internets and intranets. You can access the Internet Protocol Journal at this URL:
http://www.cisco.com/en/US/about/ac123/ac147/about_cisco_the_internet_protocol_journal.html
- Training—Cisco offers world-class networking training. Current offerings in network training are listed at this URL:
<http://www.cisco.com/en/US/learning/index.html>

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