



Cisco Transport Manager Release 7.2 Installation Guide

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Preface

New and Changed Information

The following table describes information that has been added or changed since the initial release of the *Cisco Transport Manager Release 7.2 Installation Guide*.

Table 1 *New and Changed Information in This Guide*


Date Released	Revision	Location
January 17, 2007	Added this caution:  Caution You must use the CTM installation CDs for installation. If you manually copy the installer to a storage disk, the installation could fail because of missing permissions in the installation scripts.	Page 2-1
	Modified some of the values in the table “ Recommended Specifications for the CTM Server Installation—CRS-1 and XR 12000. ”	Table 1-2
February 1, 2007	Added this requirement for the CTM client on Windows: Microsoft Windows XP and Windows 2003 patch number KB928388 is available for the revised Daylight Saving Time in 2007.	Table 1-11
February 6, 2007	Noted that you can add new modules or upgrade the CTM network configuration size whether you are installing CTM R7.2 as a new installation or upgrading to CTM R7.2 from an earlier release.	3.5 Upgrading the CTM Network Configuration Size, page 3-18 3.6 Adding New Modules, page 3-18

Table 1 *New and Changed Information in This Guide (continued)*


Date Released	Revision	Location
February 21, 2007	<p>Added this caution before entering the init 6 command:</p>  <p>Caution After you click the Done button in the installation GUI, the background processes continue to run for several minutes. Before rebooting, you must wait for the reboot message on the terminal where you started the installation. Depending on the server performance, the background processes can take up to 15 minutes before the reboot message appears. Rebooting the server before this message appears will break CTM functionalities.</p>	<p>3.1.1 Installing the CTM R7.2 Server and Upgrading the Database, page 3-2</p> <p>3.2.2 Installing the CTM R7.2 Server on the CTM Server Workstation, page 3-12</p>
March 1, 2007	Noted that CTM is not validated against Network File System (NFS)-mounted drives. Their use might require more CPU, memory, and disk space than is specified in the Systems Requirements chapter.	Chapter 1, “System Requirements”
March 5, 2007	Noted that Java Runtime Environment (JRE) is installed automatically for the CTM server and CTM GateWay/CORBA, and bundled with the CTM client.	Chapter 1, “System Requirements”
April 4, 2007	Added a procedure that explains how to use the SSH client from SSH Communications Security or Tectia with MGX NEs.	5.1.4 Enabling the SSH Remote Access CLI for MGX, page 5-4
May 7, 2007	Added this step when installing the 9.2.0.6 patch for Oracle9i: After the patch is installed, read the Oracle patch README.html file to carry out the post-installation steps and check any caveats associated with this patch.	2.1.1.4 Installing the 9.2.0.6 Patch for Oracle9i, page 2-8
June 13, 2007	Removed this text: The disk space values are for new installations of CTM R7.2 only. If you are migrating from a previous release, you will need this amount of disk space in addition to the disk space used by the previous release. The partition sizes are for new installations of CTM R7.2 only. If you are migrating from a previous release, each partition will require this amount of disk space in addition to the size of the partitions used by the previous release.	Chapter 1, “System Requirements”

Table 1 **New and Changed Information in This Guide (continued)**

Date Released	Revision	Location
August 9, 2007	Noted that the Cisco 7600 module is installed only if the /etc/resolv.conf file is present.	2.2.2 Updating the System Parameters on the CTM Database Workstation, page 2-29 2.2.3 Installing the CTM R7.2 Database, page 2-31 2.2.5 Updating the System Parameters on the CTM Server Workstation, page 2-41
September 2, 2008	Added steps to install the latest CTM R7.0 service pack and to run the pre- and postmigration scripts.	3.1.1 Installing the CTM R7.2 Server and Upgrading the Database, page 3-2 3.2.1 Upgrading the Database on the CTM Database Workstation, page 3-8

Introduction

This guide explains how to install Cisco Transport Manager (CTM) Release 7.2 and how to upgrade from previous releases.

CTM is an advanced management system that provides functionality at the element and network management levels for Cisco optical network elements (NEs). CTM supports fault, configuration, performance, and security management functional areas. CTM also serves as a foundation for integration into a larger overall Operations Support System (OSS) environment by providing northbound gateway interfaces to higher layer management systems.

In Release 7.2, CTM supports the Cisco 7600 Series Edge Router (Cisco 7600); the Cisco Optical Networking System (ONS) family of optical NEs; the Cisco Carrier Routing System 1 (CRS-1), which includes the Cisco Catalyst 6509; the Cisco XR 12000; the Cisco MGX 8880 Voice Gateway and MGX 8850/8830 Voice-Enabled Multiservice Switch; and the Cisco MDS 9000 Multilayer Director and Fabric Switch.



Note

See the *Release Notes for Cisco Transport Manager Release 7.2* for the NE software versions that are supported in CTM R7.2. The CTM release notes are available on the product CD and online at http://www.cisco.com/en/US/products/sw/opticsw/ps2204/tsd_products_support_series_home.html.



Caution

Before updating the software image on an NE, check the CTM release notes to verify whether the NE software version is supported in this CTM release.

Audience

The primary audience for this guide includes network operations personnel and system administrators. This guide assumes that you are familiar with the following products and topics:

- Basic internetworking terminology and concepts
- Network topology and protocols
- Microsoft Windows 2000 Professional, Windows 2000 Terminal Server, and Windows XP Professional
- Sun Microsystems Solaris administration
- Oracle database administration

Conventions

This document uses the conventions listed in the following table.

Table 2 **Document Conventions**

Item	Convention
Commands and keywords	boldface font
Variables for which you supply values	<i>italic</i> font
Displayed session and system information	screen font
Information you enter	boldface screen font
Variables you enter	<i>italic_screen</i> font
Menu items and button names	boldface font
Selecting a menu item	Option > Network Preferences



Note

Means *reader take note*. Notes contain helpful suggestions or references to material not covered in the publication.



Caution

Means *reader be careful*. In this situation, you might do something that could result in equipment damage or loss of data.



Tip

Means the following information will help you solve a problem.



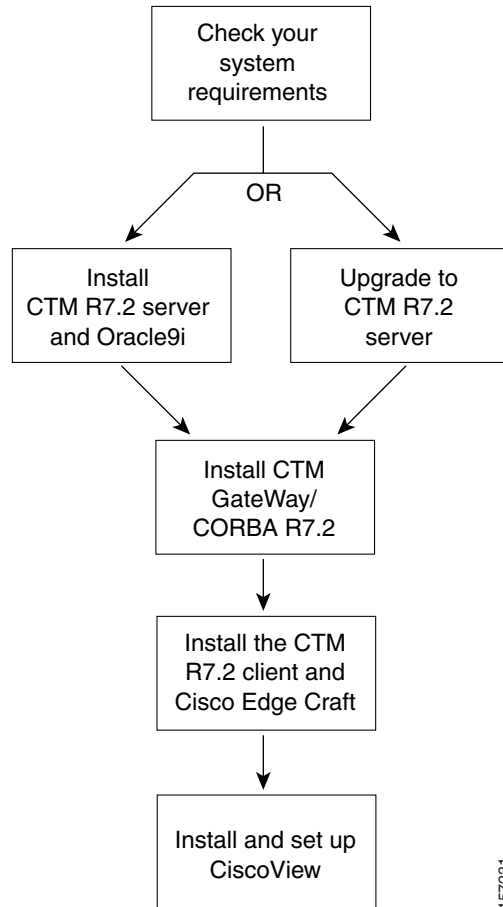
Timesaver

Means *the described action saves time*. You can save time by performing the action described in the paragraph.

Installation and Upgrade Overview

The following figure describes the typical CTM installation and upgrade workflow and the various components that can be installed in addition to CTM.

Figure 1 *CTM Installation and Upgrade Workflow*



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1. Check your system requirements before installing CTM R7.2 or upgrading from an earlier release. See [Chapter 1, “System Requirements.”](#)
2. For a new CTM R7.2 server installation, see [Table 3 on page xii](#) and [Chapter 2, “Installing the CTM R7.2 Server and Oracle9i.”](#)
3. When upgrading to the CTM R7.2 server from an earlier installation, see [Table 3 on page xii](#) and [Chapter 3, “Upgrading to CTM R7.2 from an Earlier Release.”](#)
4. To install CTM GateWay/CORBA, see [Chapter 4, “Installing CTM GateWay/CORBA R7.2.”](#) The CTM GateWay/CORBA option is a CORBA-based interface that provides higher-layer management systems with information for all supported NEs. You can install CTM GateWay/CORBA when you install the CTM server or you can install it separately after the CTM server installation.



Note You must purchase a separate license for CTM GateWay/CORBA R7.2.

5. To install the CTM R7.2 client and Cisco Edge Craft (optional), see [Chapter 5, “Installing the CTM R7.2 Client and Cisco Edge Craft.”](#) Cisco Edge Craft is the local craft application used to manage ONS 15302 and ONS 15305 NEs. You can install the CTM client manually or automatically. Cisco Edge Craft cannot be upgraded automatically even though it is bundled with the CTM client.
6. To install CiscoView (an optional application used by CTM to configure and monitor ONS 155xx NEs), see [Chapter 6, “Installing and Setting Up CiscoView.”](#) CiscoView must be installed after the CTM server installation.

Installation and Upgrade Scenarios

The following table describes the different installation scenarios for CTM R7.2, and where information on these scenarios can be found. Based on your requirements and on your existing installation, choose one of the installation scenarios listed.

Table 3 *Installation and Upgrade Scenarios*

What is your existing release?	Will you install the CTM R7.2 server and Oracle9i database on separate workstations?	For more information, see
New installation	No	Page 2-1
New installation	Yes	Page 2-19
CTM R7.0	No	Page 3-2
CTM R7.0	Yes	Page 3-8
CTM R6.0	No	Page 3-2
CTM R6.0	Yes	Page 3-8

Obtaining Documentation, Obtaining Support, and Security Guidelines

For information on obtaining documentation, submitting a service request, and gathering additional information, see the monthly *What’s New in Cisco Product Documentation*, which also lists all new and revised Cisco technical documentation, at:

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

Subscribe to the *What’s New in Cisco Product Documentation* as a Really Simple Syndication (RSS) feed and set content to be delivered directly to your desktop using a reader application. The RSS feeds are a free service and Cisco currently supports RSS version 2.0.



CHAPTER 1

System Requirements

This chapter describes what is required to install CTM. It contains the following sections:

- 1.1 CTM Server Requirements, page 1-1
- 1.2 CTM Client Requirements, page 1-10
- 1.3 Oracle Licensing for CTM, page 1-14
- 1.4 Installation Prerequisites, page 1-17



Note

Although Cisco makes every attempt to ensure the availability of third-party hardware and software platforms specified for CTM, Cisco reserves the right to change or modify system requirements due to third-party vendor product availability or changes that are beyond Cisco's control.

1.1 CTM Server Requirements

The CTM server runs on Sun Solaris 8, hardware release 02/04 (or later), on a Sun SPARC-based server. Earlier releases of Solaris 8 can be updated by applying the latest recommended patch cluster available from Sun at <http://sunsolve.sun.com/pub-cgi/show.pl?target=patches/patch-access>.



Note

Websites referenced in this section are Copyright © 1994-2006, Sun Microsystems, Inc.

Cisco tests certain simulated network configurations, which are listed in [Table 1-1](#). Your setup and performance might vary depending on the size of your network and the usage pattern of management tasks.



Note

CTM is capable of using a nonlocal database, meaning the database is installed on a separate server. For information about this configuration, contact your Cisco account representative.



Note

CTM is not validated against Network File System (NFS)-mounted drives. Their use might require more CPU, memory, and disk space than is specified in the following tables.

**Caution**

During the Solaris 8 installation, you are prompted to select software to install. (The default is End User System Support—769 MB.) Select **Entire Distribution plus OEM support—1491 MB**. If you do not select this, the CTM installation will fail.

**Caution**

Configure your file systems to allow large files. By default, no single file can be larger than 2 GB. This can be problematic for large database installations of the CTM server. Select **Include Solaris 64-bit support**.

To install the CTM server, it is required that you have:

- Sun Solaris patches 108528-29, 108652-90, 108714-08, 108773-18, 108921-23, 108940-68, 108987-13, 108989-02, 108993-45, 109147-24, 110386-03, 110934-23, 111023-02, 111111-03, 111308-03, 111310-01, 111327-05, 112396-02, 112438-03, and 117000-05 or later, available on SunSolve Online at <http://sunsolve.sun.com>.
- Sun Solaris patches 109809-02 and 108993-52 or higher, for compliance with the Daylight Saving Time changes of March 2007 (U.S. Energy Policy Act of 2005). These two patches must be installed on the CTM server workstation and on the CTM client, if it is installed on a different workstation. These patches are not required outside of U.S. time zones.

**Note**

These Solaris patches might be superseded by more recent patches. Visit Sun's website for the most up-to-date patch information.

**Note**

While installing Solaris patches, you might receive a message saying "This patch is obsoleted by patch <number>, which has already been applied to this system." This message indicates that an updated version of the patch is already installed, and no action is required.

**Note**

Enter the `showrev -p | grep <patch_number>` command to verify that the required Solaris patches are installed.

**Note**

Many of these patches are part of a Solaris patch cluster called `J2SE_Solaris_8_Recommended.zip`, which you can download from http://patches.sun.com/clusters/J2SE_Solaris_8_Recommended.zip. After downloading the patch cluster, enter the following commands as the root user to unzip the file to a local directory:

```
unzip J2SE_Solaris_8_Recommended.zip
cd J2SE_Solaris_8_Recommended
./install_cluster
```

**Note**

Always install Solaris patches in single-user mode.

- Sun Microsystems Java Runtime Environment (JRE) Standard Edition version 1.4.2_11 (installed automatically for the CTM server and CTM GateWay/CORBA, and bundled with the CTM client).

- Oracle9i Release 2 software plus the 9.2.0.6 patch.
- Oracle9i licenses for Sun Solaris.



Note Oracle licenses can be purchased either for the server processor or for named users. For more information on Oracle9i named users, see [1.3 Oracle Licensing for CTM, page 1-14](#).

- Available swap space (see [Table 1-9](#) and [Table 1-10, Part 2](#) for swap space requirements).
- CD-ROM drive.

If you are installing CiscoView in addition to CTM, the following Solaris patches are required:

- 109326-14, 110898-09, 110945-08, 111626-03

The following Solaris patches are recommended for CiscoView:

- 108964-06, 110286-02, 110615-11, 110662-12, 110951-05

1.1.1 Server Specifications

[Table 1-1](#), [Table 1-2](#), [Table 1-3](#), and [Table 1-4](#) show recommended optical, Cisco IOS XR, Cisco 7600, and MGX hardware specifications for installing the CTM server, and the resulting maximum number of NEs the server manages for each configuration. The tables also show sample configurations when the CTM server and Oracle9i database are installed on the same workstation. The CTM server can run on any platform that supports Sun Solaris 8.



Note To calculate the memory required for multiple NE types, add the specified RAM required for each NE type. For instance, in a small network, if you are adding optical NEs (which requires 4 GB of RAM according to [Table 1-1](#)) and CRS-1 NEs (which requires 4 GB of RAM according to [Table 1-2](#)), you will require 8 GB RAM total.

Table 1-1 Recommended Specifications for the CTM Server Installation—Optical

Network Size	Oracle Database Type	Processor	CPU Speed	RAM	No. of Network Partitions	Max. No. of Optical NEs
Small	Standard Edition	2 x UltraSPARC-III or 2 x IIIi CPU	1.2 GHz	4 GB	1	200
Medium	Enterprise Edition	4 x UltraSPARC-III or 2 x UltraSPARC-IV CPU	1.2 GHz	16 GB	1	500
Large	Enterprise Edition	8 x UltraSPARC-III or 4 x UltraSPARC-IV CPU	1.2 GHz	32 GB	4	2000
High end	Enterprise Edition	8 x UltraSPARC-IV CPU with fiber-channel disk array	1.2 GHz	64 GB	6	3000

Values in [Table 1-2](#) assume that performance monitoring (PM) data collection is not enabled. It is recommended that you:

- Enable PM data collection only on the NEs where PM collection is required.
- Add to the PM data collection while monitoring system performance.
- Collect only the required PM data types.

Also, the values in [Table 1-2](#) are based on 5000 Access Control Lists (ACLs) and 2000 IP Explicit Paths (IEPs).

Table 1-2 Recommended Specifications for the CTM Server Installation—CRS-1 and XR 12000

Network Size	Oracle Database Type	Processor	CPU Speed	RAM	No. of Network Partitions ¹	Max. No. of CRS-1 NEs ²
Small	Standard Edition	2 x UltraSPARC-III or 2 x IIIi CPU	1.2 GHz	4 GB	1	20
Medium	Enterprise Edition	4 x UltraSPARC-III or 2 x UltraSPARC-IV CPU	1.2 GHz	16 GB	2	80
Large	Enterprise Edition	8 x UltraSPARC-III or 4 x UltraSPARC-IV CPU	1.2 GHz	32 GB	3	100
High end	Enterprise Edition	8 x UltraSPARC-IV CPU with fiber-channel disk array	1.2 GHz	64 GB	4	130

1. In a standard configuration, the recommended maximum number of NEs per partition is 40.
2. These numbers assume you are using all CRS-1 NEs with 16-slot chassis. Note that these numbers should be used as a guideline, and will vary depending on the software and hardware configuration of your NEs.

Table 1-3 Recommended Specifications for the CTM Server Installation—Cisco 7600

Network Size	Oracle Database Type	Processor	CPU Speed	RAM	No. of Network Partitions	Max. No. of Cisco 7600 NEs ¹
Small	Standard Edition	2 x UltraSPARC-III or 2 x IIIi CPU	1.2 GHz	4 GB	1	20
Medium	Enterprise Edition	4 x UltraSPARC-III or 2 x UltraSPARC-IV CPU	1.2 GHz	16 GB	1	40
Large	Enterprise Edition	8 x UltraSPARC-III or 4 x UltraSPARC-IV CPU	1.2 GHz	32 GB	1	40
High end	Enterprise Edition	8 x UltraSPARC-IV CPU with fiber-channel disk array	1.2 GHz	64 GB	1	40

1. These numbers assume you are using all Cisco 7600 NEs with 9-slot chassis. Note that these numbers should be used as a guideline, and will vary depending on the software and hardware configuration of your NEs.

Table 1-4 Recommended Specifications for the CTM Server Installation—MGX

Network Size	Oracle Database Type	Processor	CPU Speed	RAM ¹	No. of Network Partitions	Max. No. of Clients	Max. No. of MGX NEs with PM	Max. No. of MGX NEs Without PM ²
Small	Standard Edition	2 x UltraSPARC-III or 2 x IIIi CPU	1.2 GHz	4 GB	1	30	3	5
Medium	Enterprise Edition	4 x UltraSPARC-III or 2 x UltraSPARC-IV CPU	1.2 GHz	16 GB	1	50	10	20
Large	Enterprise Edition	8 x UltraSPARC-III or 4 x UltraSPARC-IV CPU	1.2 GHz	32 GB	1	50	25	50
High end	Enterprise Edition	8 x UltraSPARC-IV CPU with fiber-channel disk array	1.2 GHz	64 GB	1	100	50	100

1. The memory required for the maximum number of NEs is for a single NE type. A network with multiple NE types might require additional memory.
2. Note that these numbers should be used as a guideline, and will vary depending on the configuration and the state of your network.

**Note**

The installation procedure assumes that you are performing the installation directly from the workstation. X-terminal sessions are not supported for the CTM server installation.

The following list details the server configuration parameters and particularly the effect of changes in each parameter on the maximum number of NEs the server can manage:

- **Network Size:** If the network size is increased from the size shown in [Table 1-1](#), [Table 1-2](#), [Table 1-3](#), and [Table 1-4](#), more resources are reserved for the higher number of NEs to be managed.
- **Oracle Database Type:** Standard Edition is allowed only in small configurations. In the small configuration, performance is identical whether Standard Edition or Enterprise Edition is used. In medium or larger networks, Oracle Enterprise Edition is required.
- **CPUs:** The server can manage more NEs as the number of CPUs increases above what is shown in [Table 1-1](#), [Table 1-2](#), [Table 1-3](#), and [Table 1-4](#). The server can manage fewer NEs as the number of CPUs decreases.
- **CPU Speed:** The server can manage more NEs if the CPU speed is faster than what is shown in [Table 1-1](#), [Table 1-2](#), [Table 1-3](#), and [Table 1-4](#). The server can manage fewer NEs as the CPU speed decreases.
- **RAM:** The server can manage more NEs if the RAM increases above what is shown in [Table 1-1](#), [Table 1-2](#), [Table 1-3](#), and [Table 1-4](#). The server can manage fewer NEs as the RAM decreases.
- **Number of Network Partitions:** For each network partition, the server reserves resources for the higher number of NEs to be managed. The server can manage more NEs as the number of network partitions increases. The server can manage fewer NEs as the number of network partitions decreases.

1.1.2 Disk Space Specifications


Note

To calculate the disk space required for multiple NE types, add together the specified disk space required for each NE type. For instance, in a small network without PM collection, if you are adding optical NEs (which requires 49 GB of disk space according to [Table 1-5](#)) and CRS-1 NEs (which requires 46 GB of disk space according to [Table 1-6](#)), you will require 95 GB disk space total.

[Table 1-5](#), [Table 1-6](#), [Table 1-7](#), and [Table 1-8](#) show disk space requirements for optical, Cisco IOS XR, Cisco 7600, and MGX NEs based on network size and PM collection status when you are installing the CTM server and Oracle9i database on the same workstation.

Table 1-5 *Disk Space Requirements for Installing the CTM Server and Oracle9i on the Same Workstation—Optical*

Network Size	Maximum No. of NEs	Total Disk Space Without PM Collection	Total Disk Space with PM Collection
Small	200	49 GB	110 GB
Medium	500	75 GB	221 GB
Large	2000	136 GB	441 GB
High end	3000	329 GB	951 GB

Table 1-6 *Disk Space Requirements for Installing the CTM Server and Oracle9i on the Same Workstation—CRS-1 and XR 12000*

Network Size	Maximum No. of NEs	Total Disk Space Without PM Collection	Total Disk Space with PM Collection
Small	5	46 GB	47 GB
Medium	80	72 GB	88 GB
Large	100	100 GB	120 GB
High end	130	130 GB	156 GB

Table 1-7 *Disk Space Requirements for Installing the CTM Server and Oracle9i on the Same Workstation—Cisco 7600*

Network Size	Maximum No. of NEs	Total Disk Space Without PM Collection	Total Disk Space with PM Collection
Small	5	47 GB	—
Medium	40	77 GB	—
Large	40	105 GB	—
High end	40	135 GB	—

Table 1-8 Disk Space Requirements for Installing the CTM Server and Oracle9i on the Same Workstation—MGX

Network Size	Maximum No. of NEs Without PM Collection	Total Disk Space Without PM Collection	Max No. of NEs with PM Collection	Total Disk Space with PM Collection
Small	5	46 GB	3	103 GB
Medium	20	72 GB	10	215 GB
Large	50	133 GB	25	435 GB
High end	100	306 GB	50	952 GB

Note the following PM assumptions for optical NEs:

- In a small network, PM data collection assumes 30 days of storage for PM data collected across 200 optical NEs, assuming an average of 200 interfaces per NE, up to a maximum of 40,000 interfaces (includes logical and physical interfaces).
- In a medium network, PM data collection assumes 30 days of storage for PM data collected across 400 optical NEs, assuming an average of 200 interfaces per NE, up to a maximum of 80,000 interfaces (includes logical and physical interfaces).
- In a large network, PM data collection assumes 30 days of storage for PM data collected across 2000 optical NEs, assuming an average of 200 interfaces per NE, up to a maximum of 200,000 interfaces (includes logical and physical interfaces).
- In a high-end network, PM data collection assumes 30 days of storage for PM data collected across 3000 optical NEs, assuming an average of 200 interfaces per NE, up to a maximum of 500,000 interfaces (includes logical and physical interfaces).

1.1.3 Partition Specifications

Table 1-9 shows partition specifications for installing the CTM server and Oracle9i on the same workstation. Table 1-10, Part 1 and Table 1-10, Part 2 show partition specifications for installing the CTM server and Oracle9i on separate workstations.



Note

It is recommended that you set up the /opt partition as a separate partition.

Table 1-9 Partition Sizing for Installing the CTM Server and Oracle9i on the Same Workstation

Network Size	root	swap	oraclesw9i	db01	db02	db03 ¹	db04 ²	db05 ³
Small	11 GB	6 GB	5 GB	5 GB	6 GB	40 GB	30 GB	8 GB
Medium	15 GB	12 GB	5 GB	8 GB	16 GB	90 GB	70 GB	10 GB
Large	15 GB	48 GB	5 GB	10 GB	26 GB	190 GB	140 GB	12 GB
High end	15 GB	196 GB	5 GB	12 GB	50 GB	360 GB	300 GB	18 GB

1. If PM collection is not enabled, the /db03 directory requires 5 GB for a small network, 8 GB for a medium network, 14 GB for a large network, and 20 GB for a high-end network.
2. If PM collection is not enabled, the /db04 directory requires 4 GB for a small network, 6 GB for a medium network, 12 GB for a large network, and 18 GB for a high-end network.
3. The /db05 directory is required only if you want to install the CTM database in ARCHIVELOG mode.

Table 1-10, Part 1 Partition Sizing for the CTM Server When Installing the CTM Server and Oracle9i on Separate Workstations

CTM Server								
Network Size	root	swap	oraclesw9i	db01	db02	db03	db04	db05
Small	11 GB	6 GB	5 GB	—	—	—	—	—
Medium	15 GB	12 GB	5 GB	—	—	—	—	—
Large	15 GB	48 GB	5 GB	—	—	—	—	—
High end	15 GB	196 GB	5 GB	—	—	—	—	—

Table 1-10, Part 2 Partition Sizing for the Oracle9i Database Server When Installing the CTM Server and Oracle9i on Separate Workstations

Oracle9i Database Server								
Network Size	root	swap	oraclesw9i	db01	db02	db03 ¹	db04 ²	db05 ³
Small	10 GB	4 GB	5 GB	5 GB	6 GB	40 GB	30 GB	8 GB
Medium	10 GB	6 GB	5 GB	8 GB	16 GB	90 GB	70 GB	10 GB
Large	10 GB	12 GB	5 GB	10 GB	26 GB	190 GB	140 GB	12 GB
High end	10 GB	12 GB	5 GB	12 GB	50 GB	360 GB	300 GB	18 GB

1. If PM collection is not enabled, the /db03 directory requires 5 GB for a small network, 8 GB for a medium network, 14 GB for a large network, and 20 GB for a high-end network.
2. If PM collection is not enabled, the /db04 directory requires 4 GB for a small network, 6 GB for a medium network, 12 GB for a large network, and 18 GB for a high-end network.
3. The /db05 directory is required only if you want to install the CTM database in ARCHIVELOG mode.

1.1.4 Important Note About Installing the Cisco 7600 Module

The Config Engine component of the Cisco 7600 module, which is automatically installed when the Cisco 7600 module is installed, requires and comprises the following application packages:

- Tomcat version 4.1.18
- Tibco version 7.2
- Apache version 1.3.26
- SMCtcl version 8.3.1
- SMCossl version 0.9.6g
- Expect version 5.31
- CSCOTools version 1.0

If you are installing the Cisco 7600 module, you must ensure either that the server does not have these applications installed or that any installed applications on the server are the same versions as those required for the Config Engine. You can also use the **pkgrm** command to remove these packages from the server before installing CTM on the server.

To verify the application versions running on the server, enter the following commands on the command line:

- For Tomcat, enter:
`pkginfo -l tomcat`
- For Tibco, enter:
`pkginfo -l Tibco`
- For Apache, enter:
`pkginfo -l apache`
- For SMCtl, enter:
`pkginfo -l SMCtl`
- For SMCossl, enter:
`pkginfo -l SMCossl`
- For Expect, enter:
`pkginfo -l SMCexpect`
- For CSCOTools, enter:
`pkginfo -l CSCOTools`

To remove the applications from the server, enter the following commands on the command line:

- For Tomcat, enter:
`pkgrm tomcat`
- For Tibco, enter:
`pkgrm Tibco`
- For Apache, enter:
`pkgrm apache`
- For SMCtl, enter:
`pkgrm SMCctl`
- For SMCossl, enter:
`pkgrm SMCossl`
- For Expect, enter:
`pkgrm SMCexpect`
- For CSCOTools, enter:
`pkgrm CSCOTools`

1.2 CTM Client Requirements

To install the CTM client, it is recommended that you have a Sun Solaris workstation or Microsoft Windows PC configured as shown in [Table 1-11](#).

Table 1-11 Minimum Requirements for the CTM Client

Platform	Network Size	RAM ^{1,2,3}	CPUs	CPU Speed	Disk Space Without CEC ⁴	Disk Space with CEC	Other
Sun Ultra 5 workstation ⁵	Small	256 MB	1	333 MHz	640 MB	710 MB	<ul style="list-style-type: none"> Sun Solaris 8 hardware release 02/04 with Common Desktop Environment (CDE), with graphics support for 16-bit color or higher Mozilla 7.0, with JavaScript enabled
	Medium	512 MB					
	Large	512 MB					
	High end	512 MB					
Pentium III or Pentium 4 class PC	Small	256 MB ⁶	1	450 MHz	630 MB	700 MB	<ul style="list-style-type: none"> Microsoft Windows 2000 Professional with Service Pack 3, Windows XP Professional with Service Pack 2, or Windows Server 2003 Enterprise Edition with Terminal Services, each with graphics support for 16-bit color or higher Microsoft Internet Explorer 6.0, Netscape 7.0, or Mozilla 7.0(.1), with JavaScript enabled Microsoft Windows XP and Windows 2003 patch number KB928388 is available for the revised Daylight Saving Time in 2007
	Medium	512 MB					
	Large	512 MB					
	High end	512 MB					

1. If you are running multiple CTM client sessions on a single client workstation, add 128 MB of RAM for each additional CTM client.
2. If you are running more than two simultaneous Cisco Transport Controller (CTC) sessions on a single client workstation, add 64 MB of RAM for each CTC client.
3. It is recommended that you set the client virtual memory to two times the size of the physical memory (two times the amount of RAM).
4. Disk space requirements are for CTM and Cisco Edge Craft (CEC) client software only.
5. It is not mandatory that the CTM client run on a Sun Ultra 5 workstation. You can run the CTM client on other comparable Sun workstations.
6. If you have Cisco MGX nodes in your network, increase the RAM to 512 MB for a small network.

CTM supports a maximum of:

- 30 simultaneous CTM client sessions for a small network
- 60 simultaneous sessions for a medium network
- 100 simultaneous sessions for a large network
- 100 simultaneous sessions for a high-end network



Note

If your network contains MGX nodes, the maximum number of supported clients is lower. See [Table 1-4](#).

1.2.1 Verifying the Mozilla Version for the Solaris Client

To verify the application version running on the Solaris client, enter the following commands on the command line:

- To create a link in /usr/bin that points to Mozilla version 7.0, enter:

```
ln -s /mozilla_installation_dir/mozilla mozilla
```

- To verify the environmental variables for Mozilla, enter:

```
echo $PATH
```



Note "/usr/bin/" should be found inside the path string.

```
echo $LD_LIBRARY_PATH (if correct it should be "/usr/local/lib")
```



Note "/usr/local/lib" should be found inside the path string.

- To correct the environmental variables for Mozilla, enter:

```
setenv PATH /usr/bin:$PATH
setenv LD_LIBRARY_PATH /usr/local/lib
```

1.2.2 Using Remote Application Software with the CTM R7.2 Client

Client launch and operation are supported by the following remote application software:

- Windows Server 2003 Enterprise Edition with Terminal Services
- Citrix Presentation Server 4.0
- Secure Global Desktop Enterprise Edition 4.0 (previously known as Tarantella Enterprise)



Note

If you are using Secure Global Desktop, enable full-duplex autodetection on the GUI server interface to prevent performance slowdown.

The hardware requirements for the remote application depend on the number of clients that the system must export, calculated with the following formula:

Target RAM = base RAM + (delta RAM x number of clients)

Target CPU = base CPU + (delta CPU x number of clients)

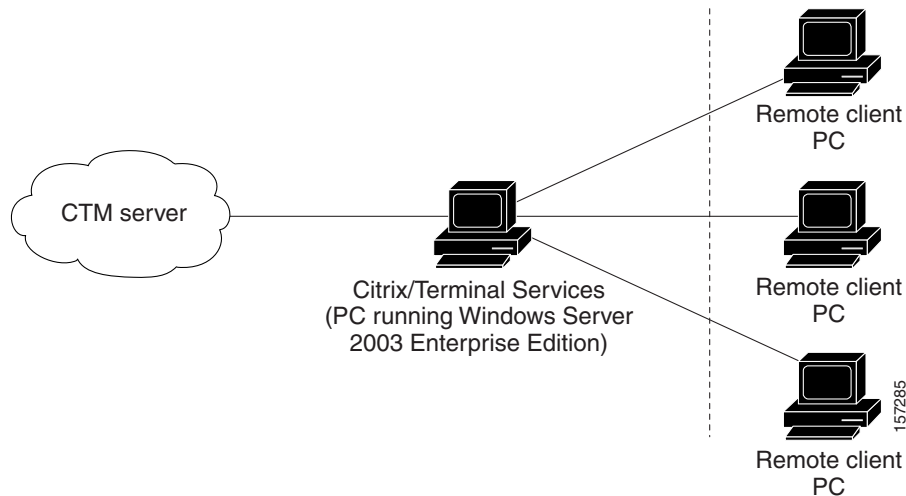
where:

- base RAM—Amount of RAM required by the remote application software.
- base CPU—Amount of CPU required by the remote application software.
- delta RAM—Amount of RAM required for each additional client.
- delta CPU—Amount of CPU required for each additional client.

1.2.2.1 Citrix and Windows Server 2003 Terminal Services

The following figure shows the environment for a remote Citrix Presentation Server or Windows Server 2003 Terminal Server. In this example, the GUI application server and the presentation server reside on the same workstation.

Figure 1-1 Remote Citrix or Windows Server 2003 Terminal Server Environment



The following table shows requirements for a remote Citrix or Windows Server 2003 Enterprise Edition Terminal Server.

Table 1-12 Requirements for Citrix and Windows Server 2003 Enterprise Edition with Terminal Services

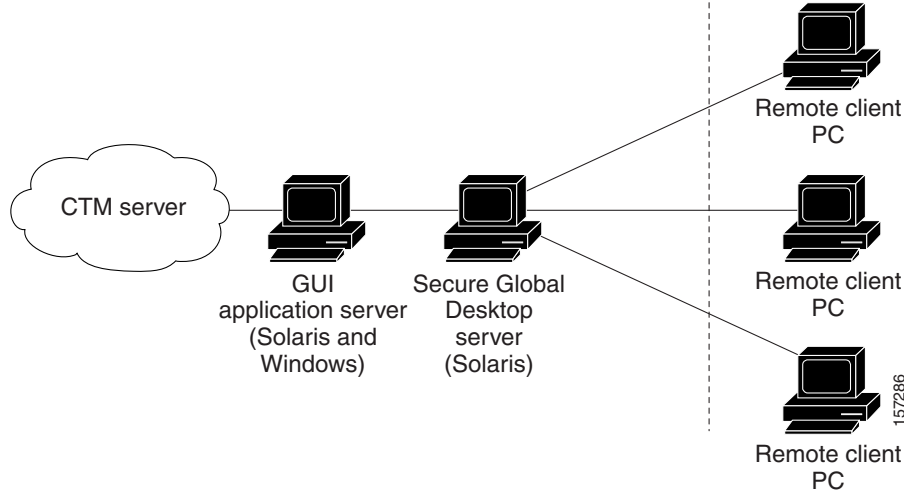
Remote Application Software	Base RAM	Delta RAM	Base CPU	Delta CPU
Windows Server 2003 Enterprise Edition with Terminal Services	512 MB	150 MB	450 MHz	240 MHz
Citrix Presentation Server 4.0	512 MB	150 MB	450 MHz	240 MHz

In this example, the hardware requirements for 10 clients are:

- CPU = 450 MHz + (240 MHz x 10) = 2850 MHz
- RAM = 512 MB + (150 MB x 10) = 2012 MB

1.2.2.2 Secure Global Desktop Enterprise Edition 4.0

The following figure shows the environment for a remote client via the Secure Global Desktop server. In this example, the GUI application server and the Secure Global Desktop server reside on different workstations. The application server can be a Windows Server 2003 Enterprise Edition with Terminal Services or a Solaris workstation.

Figure 1-2 Remote Secure Global Desktop Environment

The following table shows requirements for a remote Secure Global Desktop server on a Solaris workstation and a GUI application server on a Windows PC.

Table 1-13 Requirements for Secure Global Desktop Server and GUI Application Server on Separate Solaris and Windows Workstations

Server and Platform	Base RAM	Delta RAM	Base CPU	Delta CPU
Secure Global Desktop server on Solaris	256 MB	7 MB	100 MHz	7 MHz
GUI application server on Windows Server 2003 Enterprise Edition with Terminal Services	512 MB	150 MB	450 MHz	240 MHz

In this example, the hardware requirements for 10 clients are:

- Secure Global Desktop server CPU = 100 MHz + (7 MHz x 10) = 170 MHz
- Secure Global Desktop server RAM = 256 MB + (7 MB x 10) = 326 MB
- Application server CPU = 450 MHz + (240 MHz x 10) = 2850 MHz
- Application server RAM = 512 MB + (150 MB x 10) = 2012 MB

The following table shows requirements for a remote Secure Global Desktop server on a Solaris workstation and a GUI application server on another Solaris workstation.

Table 1-14 Requirements for Secure Global Desktop Server and GUI Application Server on Separate Solaris Workstations

Server and Platform	Base RAM	Delta RAM	Base CPU	Delta CPU
Secure Global Desktop server on Solaris	256 MB	40 MB	100 MHz	30 MHz
GUI application server on Solaris	512 MB	200 MB	333 MHz	110 MHz

In this example, the hardware requirements for 10 clients are:

- Secure Global Desktop server CPU = 100 MHz + (30 MHz x 10) = 400 MHz
- Secure Global Desktop server RAM = 256 MB + (40 MB x 10) = 656 MB
- Application server CPU = 333 MHz + (110 MHz x 10) = 1433 MHz
- Application server RAM = 512 MB + (200 MB x 10) = 2512 MB

1.2.3 Java Heap Sizes

The CTM client startup script provides small and high-end memory allocation and identifies the maximum heap allocation for the client Java Virtual Machine (JVM) process. The CTM client launches with the appropriate minimum and maximum Java heap sizes based on the server configuration (small, medium, large, or high end). [Table 1-15](#) shows the Java heap memory values.

Table 1-15 Java Heap Sizes

Network Size	Initial Heap Size	Maximum Heap Size
Small	100 MB	192 MB
Medium	128 MB	256 MB
Large	192 MB	512 MB
High end	256 MB	1024 MB



Caution

The client memory type should match (or exceed) the server memory type. If a client configured for a small network logs into a medium, large, or high-end server, the small client could crash due to memory limitations. Therefore, a warning dialog box appears if a client configured for a small network logs into a medium, large, or high-end server.

1.3 Oracle Licensing for CTM

This section explains how to calculate the total number of Oracle Named User Plus licenses required for your CTM R7.2 server and client installations. This section describes with examples the following Oracle database editions:

- [1.3.1 Oracle Enterprise Edition, page 1-16](#)
- [1.3.2 Oracle Standard Edition, page 1-16](#)



Note

See the Oracle website for detailed information about Oracle licensing definitions and requirements.

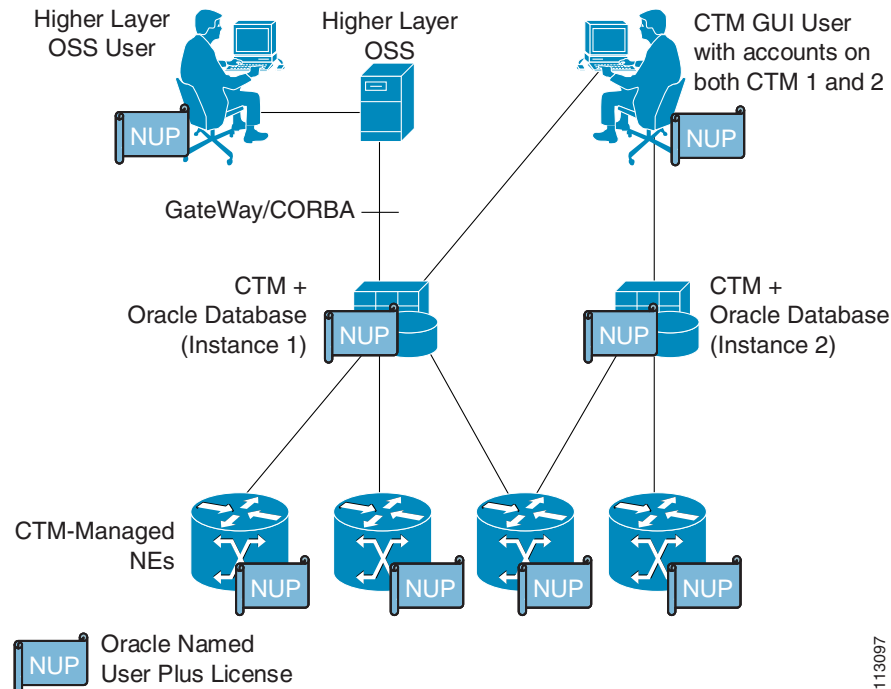
Oracle's technology products, including the Oracle database required for use with CTM, are licensed using one of two possible metrics. Which metric to use normally depends on which will result in a lower price for the database. If for some reason the number of database users cannot be counted, the Processor metric must be used. However, in the case of a CTM environment, database users normally can be counted:

- *Processor*: This metric is defined as the number of processors on the server on which the Oracle database is installed and/or running. This option must be used in environments in which software users cannot easily be identified or counted (not normally the case in a CTM environment).
- *Named User Plus*: This metric is used in environments in which users can be identified and counted. Named User Plus includes both human-operated and automated devices. All human-operated and automated devices that access the program must be licensed. A Named User Plus license may access the program on any instances on which it is deployed, provided that the minimum license requirement on each server is met.

In the context of a CTM environment, *human-operated device* means any device operated by a user who has direct or indirect access to CTM. Direct access is gained through a user account on CTM that allows access through the CTM client GUI. Indirect access is possible through a user account on a higher-layer OSS, which in turn communicates with CTM through either CTM GateWay/CORBA or CTM GateWay/TL1. Automated users include the NEs managed by CTM and the CTM server itself.

Figure 1-3 shows an example CTM environment to illustrate identifying the human and automated database users that must be counted.

Figure 1-3 Example CTM Environment



In the example shown in Figure 1-3 there are two independent CTM servers and Oracle database instances. There are four NEs, one of which is managed by both CTM servers. There is one direct CTM user and one indirect user. So in this example the total number of Oracle named users is as follows:

CTM servers: 2*

NEs: 4**

CTM users: 1**

Higher-layer OSS users: 1

Total Named User Plus: 8 = 2 + 4 + 1 + 1

*Because of the *self-monitor feature* of CTM, a CTM server itself is considered an automated user of the database and is therefore counted.

**A Named User Plus license entitles the user to access Oracle on any instances where it is deployed. So if a user has access to multiple CTM servers, only a single license is needed per user. Also, if an NE is managed by multiple CTM servers, only a single license is needed per NE.

This example explains how to count the named users, but the number of named users required is the larger of either 1) the actual count or 2) the required minimum. The required minimum will vary depending on the edition of the Oracle database (for example, standard, enterprise, and so forth).

1.3.1 Oracle Enterprise Edition

Due to the scalability features included, Oracle Database Enterprise Edition (EE) is required for CTM servers managing medium to high-end CTM installations.

1.3.1.1 CTM with Oracle EE (Example A)

A service provider has 800 NEs and a data center with 10 CTM client workstations. 100 employees in the data center are authorized to use the CTM client. Some of the employees in the data center share the same CTM account (username/password). CTM is running on a Sun V880 with 8 processors and 32 GB of RAM.

- Named User Plus: 1) Minimum = 8 processors x 25 users/processor = 200 or 2) Count = 800 licenses for NEs + 100 licenses for data center personnel + 1 CTM server = 901

Result: 901 Named User Plus licenses are required

- Processor: 8 Processor licenses

1.3.1.2 CTM with Oracle EE (Example B)

The same service provider customer as in [1.3.1.1 CTM with Oracle EE \(Example A\)](#) decides to enable CTM GateWay/CORBA and connect to a higher-layer OSS that handles inventory management. There are 20 employees in the data center authorized to access the inventory system; 5 of them are also CTM users (that is, they are a subset of the 100 CTM users identified in the previous example). In this case, the total number of human users is:

95 CTM-only users + 15 inventory system-only users + 5 CTM/inventory system users, or 115 human named users.

As a result of adding the OSS and related users, the total number of named users required has increased from 901 to 916.

1.3.2 Oracle Standard Edition

For small CTM installations, Oracle Database Standard Edition (SE) offers a low-cost alternative. Oracle Database SE cannot be licensed on machines with a capacity of greater than 4 processors.

1.3.2.1 CTM with Oracle SE (Example)

A large enterprise customer has 78 NEs and 5 CTM client workstations. 15 employees in the data center are authorized to use the CTM client. Some of the employees in the data center share the same CTM account (username/password). CTM is running on a Sun V240 with 2 processors and 4 GB RAM.

- Named User Plus: 1) Minimum = 2 processors x 5 users/processor = 10 or 2) Count = 78 licenses for NEs + 15 licenses for data center personnel + 1 CTM server = 94

Result: 94 Named User Plus licenses are required

- Processor: 2 Processor licenses

1.4 Installation Prerequisites

Before installing the CTM server and the Oracle9i database on your Sun Solaris 8 server, verify the following:

- You have the correct Solaris patches installed. (See [1.1 CTM Server Requirements, page 1-1.](#))
- You have the correct version of Oracle9i—Standard or Enterprise Edition, for Sun Solaris.



Note Enter the following command to determine what type of applications you can run on your operating system (OS):

```
isainfo -kv
```

If the output reads “64-bit sparcv9 kernel modules,” you can run both 64-bit and 32-bit applications. If the output reads “32-bit sparcv9 kernel modules,” you can run only 32-bit applications. It is recommended that you be able to run both 64-bit and 32-bit applications.

- You refer to the OS documentation to make sure to address any OS-dependant updates.
- You meet all of the system requirements described in this chapter.
- The **ping** command is included in your Path environment variable.
- Decide whether or not you want to install the CTM database in ARCHIVELOG mode. If you plan to perform hot database backups, ARCHIVELOG mode is required.
- Verify that your /ctm_backup directory (the disk directory for the backed-up database and configuration files) is at least as big as the total sum of your database data files. If the /ctm_backup directory is not equal to the total size of your database data files, you are prompted with a warning message that you might not have enough disk space.
- Decide which nonroot users you want to be able to run CTM UNIX commands. (See [1.4.1 Overview of Sudo Commands, page 1-18.](#))

1.4.1 Overview of Sudo Commands

Sudo software (freeware) version 1.6.6 is bundled with the CTM R7.2 software. The sudo software enables nonroot UNIX users to run the following UNIX commands:

- **ctms-start**
- **ctms-abort**
- **ctms-stop**
- **ctms-stop-service**
- **showctm**
- **getinfo.sh**
- **prune_auditlog.sh**
- **prune_errlog.sh**
- **prune_audittrail.sh**
- **prune_fm.sh**
- **prune_pm.sh**
- **prune_ne.sh**
- **prune_server_monitor.sh**
- **prune_admin_job_table.sh**
- **prune_ne_ip_address.sh**

During the CTM server installation, the setup program prompts you to specify the name of the UNIX group to which you want to assign administrator privileges. By default, this group is set to the root group. If you specify a group other than root, the setup program verifies that the UNIX group exists on the system and adds entries to the `/etc/sudoers` file. Entries in this file reflect the commands that the specified UNIX group can run by using the **sudo** command.

The following entries in the `/etc/sudoers` file reflect the commands that can be run as nonroot:

```
%CTM_UNIX_group
hostname=(root) NOPASSWD: \
/opt/CiscoTransportManagerServer/bin/ctms-start, \
/opt/CiscoTransportManagerServer/bin/ctms-abort, \
/opt/CiscoTransportManagerServer/bin/ctms-stop, \
/opt/CiscoTransportManagerServer/bin/ctms-stop-service, \
/opt/CiscoTransportManagerServer/bin/showctm, \
/opt/CiscoTransportManagerServer/bin/getinfo.sh, \
/opt/CiscoTransportManagerServer/bin/prune_auditlog.sh, \
/opt/CiscoTransportManagerServer/bin/prune_errlog.sh, \
/opt/CiscoTransportManagerServer/bin/prune_audittrail.sh, \
/opt/CiscoTransportManagerServer/bin/prune_fm.sh, \
/opt/CiscoTransportManagerServer/bin/prune_pm.sh, \
/opt/CiscoTransportManagerServer/bin/prune_ne.sh, \
/opt/CiscoTransportManagerServer/bin/prune_server_monitor.sh, \
/opt/CiscoTransportManagerServer/bin/prune_admin_job_table.sh, \
/opt/CiscoTransportManagerServer/bin/prune_ne_ip_address.sh
```

1.4.2 Explanation of the `ctms-start` Command

A complete set of administrative command scripts is added to the application during installation. One command automatically starts the CTM server processes every time the server is started. The server processes can also be started or stopped manually as necessary; the scripts are located in the `/opt/CiscoTransportManagerServer/bin` directory.

The `ctms-start` command sets the appropriate environment variables and starts the CTM server. The amount of time it takes for the CTM server to start varies based on the number of NEs in the configuration and the size of the database. Use `ctms-start` only when the CTM server has stopped.

The `ctms-start` command also starts the Config Engine if the Cisco 7600 NE is installed.

Step 1 Log into the CTM server workstation as the root user.

Step 2 On the command line, enter the following command:

```
ctms-start
```



Note It can take from 0 to 5 minutes for the server processes to start after the `ctms-start` command has finished execution. This is because NE services and gateway services (if enabled) are still initializing for all of the NEs that are deployed. Wait 5 minutes after entering the `ctms-start` command; then, enter the `showctm` command. The NE service corresponding to all the deployed NEs should have started.

1.4.3 Explanation of the `ctms-stop` Command

The `ctms-stop` command stops the CTM server gracefully. The stop procedure shuts down the server and cleans all memory and connections. The `ctms-stops` command also shuts down the Config Engine if the Cisco 7600 NE is installed. The overall process takes approximately 5 minutes.

Step 1 Log into the CTM server workstation as the root user.

Step 2 On the command line, enter the following command:

```
ctms-stop
```

1.4.4 Explanation of the `ctms-abort` Command

The `ctms-abort` command kills all of the running processes immediately and stops the CTM server. The `ctms-aborts` command also stops the Config Engine if the Cisco 7600 NE is installed. The overall process takes no longer than 2 to 3 minutes.

Step 1 Log into the CTM server workstation as the root user.

Step 2 On the command line, enter the following command:

```
ctms-abort
```

1.4.5 Explanation of the showctm Command

The **showctm** command provides CTM version and process information.

Step 1 Log into the CTM server workstation as the root user.

Step 2 On the command line, enter the following command:

```
showctm
```

1.4.6 Explanation of the ctms-stop-service Command

The **ctms-stop-service** command stops CTM processes.

Step 1 Log into the CTM server workstation as the root user.

Step 2 On the command line, enter the following command:

```
ctm-stop-service
```



CHAPTER 2

Installing the CTM R7.2 Server and Oracle9i

This chapter describes how to install CTM R7.2 and Oracle9i. It contains the following sections:

- [2.1 Installing CTM R7.2 and Oracle9i on the Same Workstation, page 2-1](#)
- [2.2 Installing CTM R7.2 and Oracle9i on Separate Workstations, page 2-19](#)
- [2.3 Setting Up Sudo, page 2-47](#)



Note

For an explanation of error messages that you might encounter during the server installation, see [Appendix A, “Understanding Installation Error Messages.”](#)



Note

If you need instructions to mount or unmount CDs, see [Appendix C, “Mounting and Unmounting CDs on Sun Solaris.”](#)



Caution

You must use the CTM installation CDs for installation. If you manually copy the installer to a storage disk, the installation could fail because of missing permissions in the installation scripts.

2.1 Installing CTM R7.2 and Oracle9i on the Same Workstation

This section describes how to install the CTM R7.2 server and Oracle9i on the same Sun Solaris 8 server.



Note

The C shell is assumed for all UNIX commands.

2.1.1 Installing Oracle9i

This section provides supporting information to assist you with the Oracle9i installation. Use this information with Oracle’s documentation.

2.1.1.1 Setting the Environment for Installation

To set the environment for installation, log in as the root user and complete the following steps:

Step 1 Enter the following command to verify that the disk directories shown in [Table 2-1](#) exist:

```
ls -l
```

Table 2-1 Disk Directories

Directory	Contents
/db01	For the system tablespace used by Oracle
/db02	For the basedata tablespace, the alarmdata tablespace, and the eventdata tablespace used by CTM
/db03	For the data tablespace used by CTM
/db04	For the INDEX tablespace used by CTM
/db05 ¹	For the archived logs
/ctm_backup ^{2,3}	For the backed-up database and configuration files
/oraclesw9i	For the Oracle software
/tftpboot	For the TFTP directory
	Note Disk partitioning is not required for /tftpboot, but the directory is required.

1. If you want to install the CTM database in ARCHIVELOG mode, the /db05 directory is required. ARCHIVELOG mode is required for hot database backups.
2. The /ctm_backup directory can be a symbolic link to a storage device. Note that performance degrades if you map all of your symbolic links to the same partition and you do not have disk striping.
3. If the oracle user does not have read/write permission, backup and restore operations will fail. When the directory is created, `chmod 777 /ctm_backup` must be done. If a symbolic link is on the storage device, verify the command. See [2.1.1.1.1 Understanding the ctm_backup Directory, page 2-4](#).

Step 2 Enter the following commands to create a soft link to use your existing partitions:

```
ln -s /<partition_name_1> /db01
ln -s /<partition_name_2> /db02
ln -s /<partition_name_3> /db03
ln -s /<partition_name_4> /db04
ln -s /<partition_name_5> /db05
ln -s /<partition_name_6> /ctm_backup
ln -s /<partition_name_7> /oraclesw9i
```

Step 3 If you do not have a TFTP directory, complete the following substeps to create one:

a. Enter the following commands:

```
mkdir /tftpboot
chmod 777 /tftpboot
```

b. Verify that the TFTP entry in the `/etc/inetd.conf` file is not commented.

The following example represents a typical TFTP entry in the `/etc/inetd.conf` file. In this example, the TFTP directory is /tftpboot:

```
tftp dgram udp6 wait root /usr/sbin/in.tftpd in.tftpd -s /tftpboot
```

c. If the TFTP entry is commented, remove the pound sign (#) at the beginning of the line to uncomment it.

Step 4 Enter the following command to create a UNIX group for database administrators:

```
groupadd -g 3303 dba
```

Step 5 Enter the following command to create a UNIX account to own the Oracle software:

```
useradd -g dba -m -s /bin/csh -d /oraclesw9i oracle
```

Step 6 Enter the following command to change the oracle user password:

```
passwd oracle
```

Enter the new password; then, re-enter the password to confirm it.

Step 7 Insert the CTM Server Disk 1 installation CD and enter the following command:

```
cd /cdrom/cdrom0/Disk1
```

Step 8 Enter the following command to list the files in the cdrom/cdrom0/Disk1 directory:

```
ls -laR
```



Note If a list of files is returned, it indicates that you can access the CD-ROM successfully. If no files are visible, or if an error message is returned, refer to Sun Solaris documentation for mounting the CD-ROM.

Step 9 Enter the following command to copy the default profile to the Oracle home directory:

```
cp /cdrom/cdrom0/Disk1/InstData/Solaris/VM/cfg/{small | medium | large | highend}/.cshrc /oraclesw9i/.cshrc
```

For example, to copy the default profile for a small network, enter:

```
cp /cdrom/cdrom0/Disk1/InstData/Solaris/VM/cfg/small/.cshrc /oraclesw9i/.cshrc
```



Note If you installed Oracle Standard Edition, you must copy the default profile for a small network.

Step 10 Enter the following command to determine what type of applications you can run on your operating system (OS):

```
isainfo -kv
```

If the output reads “64-bit sparcv9 kernel modules,” you can run both 64-bit and 32-bit applications. If the output reads “32-bit sparcv9 kernel modules,” you can run only 32-bit applications.



Note It is recommended that you be able to run both 64-bit and 32-bit applications.

Step 11 Complete one of the following options, depending on your Oracle version:

- If you are installing 32-bit Oracle Enterprise Edition, enter:

```
cp /cdrom/cdrom0/Disk1/svrcustom.rsp /oraclesw9i
cp /cdrom/cdrom0/Disk1/patchset.rsp /oraclesw9i
```

- If you are installing 64-bit Oracle Enterprise Edition, enter:

```
cp /cdrom/cdrom0/Disk1/svrcustom_64bit.rsp /oraclesw9i
cp /cdrom/cdrom0/Disk1/patchset_64bit.rsp /oraclesw9i
```

- If you are installing 32-bit Oracle Standard Edition, enter:

```
cp /cdrom/cdrom0/Disk1/svrcustom_std.rsp /oraclesw9i
cp /cdrom/cdrom0/Disk1/patchset.rsp /oraclesw9i
```

- If you are installing 64-bit Oracle Standard Edition, enter:

```
cp /cdrom/cdrom0/Disk1/svrcustom_std_64bit.rsp /oraclesw9i
cp /cdrom/cdrom0/Disk1/patchset_64bit.rsp /oraclesw9i
```

Step 12 Enter the following commands to change ownership of the Oracle software directories:

```
/usr/bin/chown -R oracle:dba /oraclesw9i
/usr/bin/chown -R oracle:dba /db01
/usr/bin/chown -R oracle:dba /db02
/usr/bin/chown -R oracle:dba /db03
/usr/bin/chown -R oracle:dba /db04
/usr/bin/chown -R oracle:dba /db05
/usr/bin/chown -R oracle:dba /ctm_backup
```

Step 13 Enter the following commands to eject the CTM Server Disk 1 installation CD:

```
cd /
eject cdrom
```

Step 14 Enter the following commands to create a temporary staging area:

```
cd /
mkdir temp
chmod 777 /temp
```

Step 15 If you are using an xterm window or a remote host, enter the following command to enable the xterm connection from the clients:

```
/usr/openwin/bin/xhost +
```

2.1.1.1.1 Understanding the ctm_backup Directory

As shown in [Table 2-1](#), the ctm_backup directory is a repository used by the oracle user to back up the following main categories of information:

- CTM database
- Configuration files
- Database ARCHIVELOG files

The oracle user must have read/write permissions or the database backup will fail. The database should be blocked if the ARCHIVELOG files cannot be backed up.

Note that ctm_backup is a symbolic link to a user-defined directory and must have read/write permissions.

2.1.1.2 Installing the Oracle9i Software with the .rsp Response File Provided by Cisco



Note

The C shell is assumed for all UNIX commands.

Step 1 Enter the following command to log in as the oracle user:

```
su - oracle
```



Tip To verify the username, enter the **id** command.

Step 2 Insert disk one of the Oracle9i installation CDs in the CD-ROM drive.

Step 3 Enter the following command to set the display on your terminal:

```
setenv DISPLAY <hostname_or_IP_address>:0.0
```

Step 4 Enter the following command to verify that the display is set correctly:

```
echo $DISPLAY
```

In the output, you should see:

```
<hostname_or_IP_address>:0.0
```

Step 5 Depending on your Oracle version, complete one of the following options to start the Oracle Installer:

- If you are installing 32-bit Oracle Enterprise Edition, enter:

```
cd /cdrom/orcl9201_1
./runInstaller -responseFile /oraclesw9i/svrcustom.rsp &
```

- If you are installing 64-bit Oracle Enterprise Edition, enter:

```
cd /cdrom/disk1
./runInstaller -responseFile /oraclesw9i/svrcustom_64bit.rsp &
```

- If you are installing 32-bit Oracle Standard Edition, enter:

```
cd /cdrom/orcl9201_1
./runInstaller -responseFile /oraclesw9i/svrcustom_std.rsp &
```

- If you are installing 64-bit Oracle Standard Edition, enter:

```
cd /cdrom/disk1
./runInstaller -responseFile /oraclesw9i/svrcustom_std_64bit.rsp &
```

Step 6 At the Inventory Location screen, click **OK**.

Step 7 The Oracle Universal Installer screen appears and prompts you to run the /tmp/orainstRoot.sh script. Log into another terminal window as the root user and enter the following command:

```
cd /tmp/
```



Note The Installer does not prompt you to run the /tmp/orainstRoot.sh script if you have a previous version of Oracle installed on your workstation or if the /var/opt/oracle/oratab file already exists on your workstation.

Step 8 Enter the following command to run the orainstRoot.sh script:

```
./orainstRoot.sh
```

Step 9 Return to the Oracle Universal Installer screen and click **Continue**.



Note The Oracle Universal Installer process might take up to 5 minutes.

Step 10 The Disk Location dialog box prompts you for disk two of the Oracle9i installation CDs. Return to the terminal window where you ran the `./runInstaller` command and press **Return** on your keyboard to bring up the command prompt.

Step 11 Enter the following command at the command prompt:

```
eject cdrom
```

Step 12 Remove disk one and insert disk two of the Oracle9i installation CDs.

Step 13 Minimize the terminal window.

Step 14 Return to the Disk Location dialog box and change the path to read as one of the following, depending on your Oracle version:

- For 32-bit Oracle, enter:

```
/cdrom/orc19201_2
```

- For 64-bit Oracle, enter:

```
/cdrom/disk2
```

Click **OK**.

Step 15 The Disk Location dialog box prompts you for disk three of the Oracle9i installation CDs. Return to the terminal window where you ran the `./runInstaller` command and press **Return** on your keyboard to bring up the command prompt.

Step 16 Enter the following command at the command prompt:

```
eject cdrom
```

Step 17 Remove disk two and insert disk three of the Oracle9i installation CDs.

Step 18 Minimize the terminal window.

Step 19 Return to the Disk Location dialog box and change the path to read as one of the following, depending on your Oracle version:

- For 32-bit Oracle, enter:

```
/cdrom/orc19201_3
```

- For 64-bit Oracle, enter:

```
/cdrom/disk3
```

Click **OK**.

Step 20 You are prompted to run `/oraclesw9i/product/9.2/root.sh` from another window. Log into another terminal window as the root user and enter the following command:

```
cd /oraclesw9i/product/9.2
```

Step 21 Enter the following command to run the `root.sh` script:

```
./root.sh
```

Step 22 At the prompt for the local bin directory, enter the following path in the `root.sh` script:



Note The `/oraclesw9i/product/9.2/local/bin` directory must be created before running the `root.sh` script.

```
/oraclesw9i/product/9.2/local/bin
```

Step 23 Return to the Oracle Setup Privileges screen and click **OK**.

Step 24 Enter the following command to eject the CD:

```
eject cdrom
```

2.1.1.3 Downloading the 9.2.0.6 Patch for Oracle9i

If you already have the 9.2.0.6 patch for Oracle9i installed, you can skip this section. To find out which patches have been installed, enter the following commands as the oracle user:

```
cd $ORACLE_HOME/OPatch/  
./opatch lsinventory -detail | grep -i "oracle9i patch"
```

The output shows:

```
Oracle9i Patch                9.2.0.6.0
```



Caution This command will fail if Oracle 9i is not installed.

Step 1 Go to <http://metalink.oracle.com> and click **Login to MetaLink**. Enter your Oracle MetaLink username and password.



Note This website is Copyright © 2004, Oracle Corporation. All rights reserved.

Step 2 Click **Patches**.

Step 3 Click **Simple Search**.

Step 4 In the Search by Patch Number(s) field, enter **3948480**.

Step 5 In the Platform or Language field, choose one of the following options, depending on your Oracle version:

- **Solaris Operating System (SPARC 32-bit)**
- **Solaris Operating System (SPARC 64-bit)**

Step 6 Click **Go**.

Step 7 Click **Download**. For 32-bit Oracle, download **p3948480_9206_SOLARIS.zip**. For 64-bit Oracle, download **p3948480_9206_SOLARIS64.zip**.

Step 8 As the oracle user, save the patch to the /oraclesw9i directory.

Step 9 As the root user, enter one of the following sets of commands to prepare the patch set, depending on your Oracle version:

- For 32-bit Oracle, enter:

```
cd /oraclesw9i  
unzip p3948480_9206_SOLARIS.zip
```

- For 64-bit Oracle, enter:

```
cd /oraclesw9i  
unzip p3948480_9206_SOLARIS64.zip
```

2.1.1.4 Installing the 9.2.0.6 Patch for Oracle9i


Note

If you already have the 9.2.0.6 patch for Oracle9i installed, you can skip this section.

Step 1 Enter the following command to log into the database workstation as the oracle user:

```
su - oracle
```

Step 2 If you are using an xterm window or a remote host, enter the following command to set the DISPLAY variable:

```
setenv DISPLAY <hostname_or_IP_address>:0.0
```

Step 3 Enter the following command to verify that the display is set correctly:

```
echo $DISPLAY
```

In the output, you should see:

```
<hostname_or_IP_address>:0.0
```

Step 4 Depending on your Oracle version, enter one of the following sets of commands to install the 9.2.0.6 patch:

- For 32-bit Oracle, enter:

```
cd /oraclesw9i/Disk1
./runInstaller -responseFile /oraclesw9i/patchset.rsp
```

- For 64-bit Oracle, enter:

```
cd /oraclesw9i/Disk1
./runInstaller -responseFile /oraclesw9i/patchset_64bit.rsp
```


Note

If the Disk Location screen pops up, click **Cancel**.

Step 5 At the prompt to run the root.sh script, log into another terminal window as the root user and enter the following commands:

```
cd /oraclesw9i/product/9.2
./root.sh
```

Step 6 After the script finishes running, return to the prompt popup window and click **OK**.

Step 7 Click **Next**.

Step 8 After the patch is installed, read the Oracle patch README.html file to carry out the post-installation steps and check any caveats associated with this patch.

Step 9 Depending on your Oracle version, enter one of the following sets of commands to remove the 9.2.0.6 patch installation files:

- For 32-bit Oracle, enter:

```
rm -rf /oraclesw9i/Disk1
rm -rf /oraclesw9i/p3948480_9206_SOLARIS.zip
```

```
rm -rf /oraclesw9i/README.html
```

- For 64-bit Oracle, enter:

```
rm -rf /oraclesw9i/Disk1
rm -rf /oraclesw9i/p3948480_9206_SOLARIS64.zip
rm -rf /oraclesw9i/README.html
```

2.1.1.5 Downloading the Oracle Patch Installer



Note The Oracle patch installer is used to install additional Oracle patches. If you have already installed the Oracle patch installer, you can skip this section.

Step 1 Go to <http://metalink.oracle.com> and click **Login to MetaLink**. Enter your Oracle MetaLink username and password.



Note This website is Copyright © 2004, Oracle Corporation. All rights reserved.

Step 2 Click **Patches**.

Step 3 Click **Simple Search**.

Step 4 In the Search by Patch Number(s) field, enter **2617419**.

Step 5 In the Platform or Language field, choose one of the following options, depending on your Oracle version:

- **Solaris Operating System (SPARC 32-bit)**
- **Solaris Operating System (SPARC 64-bit)**

Step 6 Click **Go**.

Step 7 Click **Download**.

Step 8 In the list of patches returned, click the first patch, which has the latest release number.



Note Do not be concerned if the patch refers to a later version of Oracle.

Step 9 In the Patch 2617419 window, go to the Platform or Language field and choose **Generic Platform** (the default).

Step 10 Click **Download**.

Step 11 Save the patch to the /oraclesw9i/product/9.2 directory.

Step 12 Enter the following commands to change the patch ownership and unzip the patch:

```
chown oracle:dba /oraclesw9i/product/9.2/p2617419_10102_GENERIC.zip
cd /oraclesw9i/product/9.2
unzip p2617419_10102_GENERIC.zip
```

2.1.1.6 Installing and Applying Additional Oracle Patches

Complete the following steps to install and apply additional required Oracle patches.

Step 1 Go to <http://metalink.oracle.com> and click **Login to MetaLink**. Enter your Oracle MetaLink username and password.



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Step 2 Click **Patches**.

Step 3 Click **Simple Search**.

Step 4 In the Search by Patch Number field, enter **2733910**.

Step 5 In the Platform or Language field, choose one of the following options, depending on your Oracle version:

- **Solaris Operating System (SPARC 32-bit)**
- **Solaris Operating System (SPARC 64-bit)**

Step 6 Click **Go**.

Step 7 Click **Download**. For 32-bit Oracle, download **p2733910_9206_SOLARIS.zip**. For 64-bit Oracle, download **p2733910_9206_SOLARIS64.zip**.

Step 8 As the oracle user, save the patch to the /oraclesw9i directory and enter the following commands to unzip the .zip file:

```
cd /oraclesw9i
unzip <patch_zip_filename>
```



Note The 32-bit patch 2733910 unzips to .4092208. This is not an error.

Step 9 In the MetaLink window, click **Patches**.

Step 10 Click **Simple Search**.

Step 11 In the Search by Patch Number field, enter **4067938**.

Step 12 In the Platform or Language field, choose one of the following options, depending on your Oracle version:

- **Solaris Operating System (SPARC 32-bit)**
- **Solaris Operating System (SPARC 64-bit)**

Step 13 Click **Go**.

Step 14 Click **Download**. For 32-bit Oracle, download **p4067938_9206_SOLARIS.zip**. For 64-bit Oracle, download **p4067938_9206_SOLARIS64.zip**.

Step 15 As the oracle user, save the patch to the /oraclesw9i directory and enter the following commands to unzip the .zip file:

```
cd /oraclesw9i
unzip <patch_zip_filename>
```

Step 16 In the MetaLink window, click **Patches**.

Step 17 Click **Simple Search**.

- Step 18** In the Search by Patch Number field, enter **4147836**.
- Step 19** In the Platform or Language field, choose one of the following options, depending on your Oracle version:
- **Solaris Operating System (SPARC 32-bit)**
 - **Solaris Operating System (SPARC 64-bit)**
- Step 20** Click **Go**.
- Step 21** Click **Download**. For 32-bit Oracle, download **p4147836_9206_SOLARIS.zip**. For 64-bit Oracle, download **p4147836_9206_SOLARIS64.zip**.
- Step 22** As the oracle user, save the patch to the /oraclesw9i directory and enter the following commands to unzip the .zip file:
- ```
cd /oraclesw9i
unzip <patch_zip_filename>
```
- Step 23** For 64-bit Oracle only, the **opatch apply** command might fail. If this happens, edit the \$ORACLE\_HOME/inventory/ContentsXML/oraclehomeproperties.xml file by changing <ARU\_ID>453</ARU\_ID> to <ARU\_ID>23</ARU\_ID>. This is a known Oracle bug.
- Step 24** Depending on your configuration, enter one of the following sets of commands as the oracle user to change directories to the patch directory and apply the 2733910 patch (which unzips to 4092208 on a 32-bit workstation):
- For 32-bit, enter:

```
cd 4092208
/oraclesw9i/product/9.2/OPatch/opatch apply
```
  - For 64-bit, enter:

```
cd 2733910
/oraclesw9i/product/9.2/OPatch/opatch apply
```
- Step 25** Enter the following commands to change directories to the patch directory and apply the 4067938 patch:
- ```
cd 4067938
/oraclesw9i/product/9.2/OPatch/opatch apply
```
- Step 26** Enter the following commands to change directories to the patch directory and apply the 4147836 patch:
- ```
cd 4147836
/oraclesw9i/product/9.2/OPatch/opatch apply
```



---

**Note** Remove all downloaded Oracle patch zip files that are irrelevant.

---

## 2.1.2 Updating the System Parameters



---

**Note** The C shell is assumed for all UNIX commands.

---

To update the system parameters, log in as the root user and complete the following steps:

- Step 1** If you are using an xterm window or a remote host, enter the following command to set the DISPLAY variable:

```
setenv DISPLAY <hostname_or_IP_address>:0.0
```

- Step 2** Enter the following command to verify that the display is set correctly:

```
echo $DISPLAY
```

In the output, you should see:

```
<hostname_or_IP_address>:0.0
```

- Step 3** Insert the CTM Server Disk 1 installation CD and enter the following commands:

```
cd /
cdrom/cdrom0/Disk1/ctmsetup.sh
```

The setup program searches for Sun Microsystems JRE version 1.4.2\_11 on your workstation.



- Note** If JRE is not installed, the setup program starts the Java installation program. Follow the prompts to install JRE. Enter **yes** at the following binary license code agreement prompt:

```
Do you agree to the above license terms? [yes or no]
```

Then, continue updating the system parameters.



- Note** If the required Solaris patches are missing, you must install them manually. Click **Cancel**; then, click **Quit**. Download the patches from SunSolve Online at <http://sunsolve.sun.com>. After you install the patches, continue updating the system parameters.

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Wait for up to 60 seconds while the following message appears:

```
Please wait, Cisco Transport Manager Server Release 7.2 is being configured for your
system. This may take a moment...
```

- Step 4** Click **Next** at the Introduction screen.
- Step 5** At the License Agreement screen, read the license agreement and click the **I accept the terms of the license agreement** radio button. Click **Next**.
- Step 6** At the Installation Options screen, choose **New installation**; then, click **Next**.
- Step 7** At the Select Products to Install screen, check the **Cisco Transport Manager server** check box; then, click **Next**.



- Note** The Web Server check box is selected automatically when you choose Cisco Transport Manager server. The web server allows you to use an HTTP connection to download files from the CTM server to the CTM client. The web server is also used to launch the online help and CiscoView, which is an application used by CTM to configure and monitor ONS 155xx NEs. The web server is required for the CTM server.



**Caution** Do not check the other check boxes on the Select Products to Install screen.



**Note** The license for CTM GateWay/CORBA is sold separately. If you are using this feature in a production environment, you must purchase a license. You can install CTM GateWay/CORBA when you install the CTM server; however, this section assumes that you are installing the two products separately. For more information, see [Chapter 4, “Installing CTM GateWay/CORBA R7.2.”](#)



**Note** The license for CiscoView is sold separately if used to manage the ONS 15530, ONS 15540 ESP, or ONS 15540 ESPx. If you are using this feature in a production environment to manage the ONS 15530, ONS 15540 ESP, or ONS 15540 ESPx, you must purchase a license for LAN Management Solution (LMS) Release 2.5, which includes CiscoView.

The license for CiscoView is bundled with CTM if used to manage the ONS 15501 DC or AC. You do not need to purchase a separate CiscoView license to manage the ONS 15501 DC or AC.

If you check the Install CiscoView Server check box, you receive the following prompt:

```
CiscoView installation has been moved to CTM Server Disk 4. After CTM server has
been installed, insert the CTM Server Disk 4 and run the './installCiscoView.sh'
script.
```

You must install the CTM server before you can install CiscoView. After installing the CTM server, see [Chapter 6, “Installing and Setting Up CiscoView.”](#)

**Step 8** At the Select Modules to Install screen, choose **All of the Above Modules**. Click **Next**.

**Step 9** At the Main Options screen, check only the **Check system settings** check box; then, click **Next**.



**Caution** Do not check the other check boxes on the Main Options screen. You will check the other options during the next phase of the installation.

**Step 10** At the Select Network Configuration screen, specify the size of your network; then, click **Next**.



**Note** If you installed Oracle Standard Edition, you can only choose **Small**.

**Step 11** At the Update the System Parameters screen, check the following check boxes; then, click **Next**:

- **Optimize CTM database parameters**
- **Optimize CTM server parameters**

**Step 12** At the warning prompt, click **Exit Setup** and enter the following command to reboot the system:

```
init 6
```




---

**Note** The warning prompt only appears the first time the CTM software is installed.

---

## 2.1.3 Installing the CTM R7.2 Server and Database




---

**Note** The C shell is assumed for all UNIX commands.

---

To install the CTM server, log in as the root user and complete the following steps:

---

**Step 1** If you are using an xterm window or a remote host, enter the following command to set the DISPLAY variable:

```
setenv DISPLAY <hostname_or_IP_address>:0.0
```

**Step 2** Enter the following command to verify that the display is set correctly:

```
echo $DISPLAY
```

In the output, you should see:

```
<hostname_or_IP_address>:0.0
```

**Step 3** Insert the CTM Server Disk 1 installation CD and enter the following commands:

```
cd /
cdrom/cdrom0/Disk1/ctmsetup.sh
```

The setup program searches for Sun Microsystems JRE version 1.4.2\_11 on your workstation.




---

**Note** If JRE is not installed, the setup program starts the Java installation program. Follow the prompts to install JRE. Enter **yes** at the following binary license code agreement prompt:

```
Do you agree to the above license terms? [yes or no]
```

Then, continue updating the system parameters.

---




---

**Note** If the required Solaris patches are missing, you must install them manually. Click **Cancel**; then, click **Quit**. Download the patches from SunSolve Online at <http://sunsolve.sun.com>. After you install the patches, continue updating the system parameters.

---

Wait for up to 60 seconds while the following message appears:

```
Please wait, Cisco Transport Manager Server Release 7.2 is being configured for your system. This may take a moment...
```

**Step 4** Click **Next** at the Introduction screen.

**Step 5** At the License Agreement screen, read the license agreement and click the **I accept the terms of the license agreement** radio button. Click **Next**.

**Step 6** At the Installation Options screen, choose **New installation**; then, click **Next**.

**Step 7** At the Select Products to Install screen, check the **Cisco Transport Manager server** check box; then, click **Next**.



**Note** The Web Server check box is selected automatically when you choose Cisco Transport Manager server. The web server allows you to use an HTTP connection to download files from the CTM server to the CTM client. The web server is also used to launch the online help and CiscoView, which is an application used by CTM to configure and monitor ONS 155xx NEs. The web server is required for the CTM server.



**Caution** Do not check the other check boxes on the Select Products to Install screen.



**Note** The license for CTM GateWay/CORBA is sold separately. If you are using this feature in a production environment, you must purchase a license. You can install CTM GateWay/CORBA when you install the CTM server; however, this section assumes that you are installing the two products separately. For more information, see [Chapter 4, “Installing CTM GateWay/CORBA R7.2.”](#)



**Note** The license for CiscoView is sold separately if used to manage the ONS 15530, ONS 15540 ESP, or ONS 15540 ESPx. If you are using this feature in a production environment to manage the ONS 15530, ONS 15540 ESP, or ONS 15540 ESPx, you must purchase a license for LAN Management Solution (LMS) Release 2.5, which includes CiscoView.

The license for CiscoView is bundled with CTM if used to manage the ONS 15501 DC or AC. You do not need to purchase a separate CiscoView license to manage the ONS 15501 DC or AC.

If you check the Install CiscoView Server check box, you receive the following prompt:

```
CiscoView installation has been moved to CTM Server Disk 4. After CTM server has
been installed, insert the CTM Server Disk 4 and run the './installCiscoView.sh'
script.
```

You must install the CTM server before you can install CiscoView. After installing the CTM server, see [Chapter 2, “Installing the CTM R7.2 Server and Oracle9i.”](#)

**Step 8** At the Select Modules to Install screen, select individual modules or select all; then, click **Next**.

- Optical Module: ONS 15xxx (inc. shelf controller)
- Cisco MGX Voice Gateway
- IOS XR Module: XR 12000, CRS-1 (inc. shelf controller)
- IOS Module: Cisco 7600
- All of the Above Modules



**Note** The MDS 9000 module is a common module that will be installed with any selection.




---

**Note** The Catalyst 6509 is included in the optical module and IOS XR module.

---




---

**Note** The Cisco 7600 module is installed only if the `/etc/resolv.conf` file is present. If the file is missing, the installation displays an error message and quits.

---

- Step 9** At the Main Options screen, check the **Check system settings**, **Create CTM database**, and **Install CTM server** check boxes; then, click **Next**.
- Step 10** At the Select Network Configuration screen, specify the size of your network; then, click **Next**.
- Step 11** At the Update the System Parameters screen, check only the **Optimize CTM server parameters** check box; then, click **Next**.
- Step 12** At the CTM Group Information & Sudo Installation screen, complete the following substeps:
- a. Enter the name of the UNIX group to which you want to assign administrator privileges.
  - b. To install sudo, check the **Install CTM Sudo** check box. If you do not want to install sudo, uncheck the check box.
  - c. Click **Next**.




---

**Note** For information about the sudo feature, see [1.4.1 Overview of Sudo Commands, page 1-18](#).

---

- Step 13** At the FTP Information screen, complete the following substeps to configure an FTP account for ONS 15216 EDFA3 software download operations:
- a. Enter the following information:
    - FTP username
    - FTP user password
    - Confirm FTP user password
    - FTP directory
  - b. Check or uncheck the **Create new FTP account** check box. If checked, the FTP user will be created automatically on the CTM server workstation by the install script. If unchecked, it is assumed that an FTP user already exists on the CTM server workstation.
  - c. Click **Next**.




---

**Note** This option is available if you have selected to install the optical module.

---

- Step 14** At the Server IP Address screen, specify an IP address for the CTM server; then, click **Next**.
- Step 15** At the Configure TFTP Server screen, complete the following substeps if you want to enable TFTP for the optical, Cisco IOS XR, and Cisco 7600 modules:
- a. Check the **Enable TFTP Server** check box.
  - b. Enter the TFTP directory name. The default is `/tftpboot`.
  - c. Click **Next**.
- Step 16** At the Database Information screen, specify the IP address of the database workstation and specify whether or not you want to install the database in ARCHIVELOG mode. Click **Next**.

**Step 17** At the CTM Database Installation Directories screen, the setup program verifies that the directories exist as recommended in [Table 2-1](#). Click **Next**.

**Step 18** At the Destination Folder screen, specify where you want to install the CTM server. The default directory is `/opt/CiscoTransportManagerServer`. You can click **Change** to choose a different destination. After you specify your destination, click **Next**.



**Note** If the destination directory that you specified is a new directory, you will receive the message “Specified directory does not exist, create it?” Click **Yes**.



**Note** Do not specify any mount point as the target installation directory for the server installation, or the installation data might be lost when the workstation restarts.



**Caution** CTM checks for the `/opt/CiscoTransportManagerServer` directory or a symbolic link to it. If CTM cannot find the `/opt/CiscoTransportManagerServer` directory or a symbolic link, CTM creates a symbolic link automatically. Therefore, do not delete any instances of `/opt/CiscoTransportManagerServer` from your CTM file structure.

**Step 19** The Pre-Installation Summary screen shows the items that will be installed. Click **Install**.

**Step 20** At the Insert New Media screen, complete the following substeps:

- a. Eject the CTM Server Disk 1 installation CD, insert the CTM Server Disk 2 installation CD, and click **Browse**.
- b. The Select a Folder dialog box opens. Double-click **cdrom**; then, double-click **cdrom0**, and then single-click **Disk2**. The filename text box now reads `/cdrom/cdrom0/Disk2`.
- c. In the Select a Folder dialog box, click **Select**.
- d. In the Insert New Media screen, click **OK**.

**Step 21** At the Insert New Media screen, complete the following substeps:

- a. Eject the CTM Server Disk 2 installation CD, insert the CTM Server Disk 3 installation CD, and click **Browse**.
- b. The Select a Folder dialog box opens. Double-click **cdrom**; then, double-click **cdrom0**, and single-click **Disk3**. The filename text box now reads `/cdrom/cdrom0/Disk3`.
- c. In the Select a Folder dialog box, click **Select**.
- d. In the Insert New Media screen, click **OK**.

**Step 22** The Web Server Installation Summary screen summarizes the results of the web server installation. Click **Next**.

**Step 23** The Install Complete screen summarizes the results of the installation. Click **Done**.

**Step 24** As the root user, enter the following command to reboot the system. The CTM server starts automatically after rebooting:

**Caution**

After you click the Done button in the installation GUI, the background processes continue to run for several minutes. Before rebooting, you must wait for the reboot message on the terminal where you started the installation. Depending on the server performance, the background processes can take up to 15 minutes before the reboot message appears. Rebooting the server before this message appears will break CTM functionalities.

---

```
init 6
```

- Step 25** To verify that the CTM R7.2 server is running, enter the **showctm** command after the server reboots. The **showctm** command displays the CTM server version running as 7.2, followed by the build number. In the output, you will see two instances of “CTM Server,” “SnmpTrapService,” “SMService,” and “Apache Web Server.” This indicates that the CTM server is running. You should also see NE-specific processes, depending on your network. You might also see CTM GateWay/CORBA and CTM GateWay/TL1 instances.
- 

## 2.1.4 Copying the Client Upgrade Files After the CTM Server Installation

You have two options for upgrading each client installation to the latest version of CTM that is on the server. You can choose to:

- Manually upgrade each client installation. If you have a previously installed version of the CTM client, you must delete the directory where the previous client is installed before installing the CTM R7.2 client. See [5.1 Installing the CTM Client and Cisco Edge Craft on Microsoft Windows, page 5-2](#) or [5.4 Installing the CTM Client and Cisco Edge Craft on Sun Solaris, page 5-6](#) for more information.
- Automatically upgrade each client when it connects to a server. During login, if the CTM client software version is older than the CTM server software version, the client will be prompted for upgrade. See [5.2 Starting the CTM Client in Microsoft Windows, page 5-5](#) or [5.5 Starting the CTM Client in Sun Solaris, page 5-8](#) for more information.

For this option you must copy the client installation files to the server. The CTM client and server installation files reside on separate installation CDs. Files for the Solaris client are located on Disk 1 and the files for Windows client are located on Disk 2.

To copy the client installation files to the server, you must eject the CTM server CD, insert the CTM client CD, and run an automated script, `CopyUpgradeFiles.sh`, to copy the client installation files to a specific folder under the CTM server installation directory. To do this, log in as the root user and complete the following steps.

**Note**

The CTM server must be installed before completing the following steps.

---

- Step 1** Enter the following commands to eject the CTM server installation CD:

```
cd /
eject cdrom
```

- Step 2** Insert the CTM client installation CD and enter the following command:

```
cdrom/cdrom0/ctmc/CopyUpgradeFiles.sh
```

You should see the following output:

```
Copying the client upgrade files can take several minutes.
Copying CTM Client upgrade files...
Copying Solaris client upgrade files
Solaris client upgrade files copied
Please insert CTM client Windows CD to CD ROM, Copy will continue in 60 seconds...
Could not find Window Client CD, Please insert CTM client Windows CD to continue
Copy will continue in 300 seconds...
Copying Windows client upgrade files
Done...All upgrade files have been copied to server successfully!
Please hit Enter key to return to the prompt mode
```



**Note** This operation will occupy 800 MB of disk space.

## 2.2 Installing CTM R7.2 and Oracle9i on Separate Workstations

This section describes how to install the CTM R7.2 server and Oracle9i on separate Sun Solaris 8 servers.



**Note** The C shell is assumed for all UNIX commands.

### 2.2.1 Installing Oracle9i on the CTM Database Workstation

This section provides supporting information to assist you with the Oracle9i installation. Use this information with Oracle's documentation.

#### 2.2.1.1 Setting the Environment for Installation on the CTM Database Workstation

To set the environment for installation, log in as the root user on the workstation where the CTM database will run and complete the following steps:

**Step 1** Enter the following command to verify that the disk directories shown in [Table 2-2](#) exist:

```
ls -l
```

**Table 2-2** Disk Directories

| Directory          | Contents                                                                                                                              |
|--------------------|---------------------------------------------------------------------------------------------------------------------------------------|
| /db01              | For the system tablespace used by Oracle                                                                                              |
| /db02              | For the basedata tablespace, the alarmdata tablespace, the eventdata tablespace used by CTM, and the system tablespace used by Oracle |
| /db03              | For the data tablespace used by CTM                                                                                                   |
| /db04              | For the INDEX tablespace used by CTM                                                                                                  |
| /db05 <sup>1</sup> | For the archived logs                                                                                                                 |

Table 2-2 Disk Directories (continued)

| Directory                | Contents                                                                                    |
|--------------------------|---------------------------------------------------------------------------------------------|
| /ctm_backup <sup>2</sup> | For the backed-up database and configuration files                                          |
| /oraclesw9i              | For the Oracle software                                                                     |
| /tftpboot                | For the TFTP directory                                                                      |
|                          | <b>Note</b> Disk partitioning is not required for /tftpboot, but the directory is required. |

1. If you want to install the CTM database in ARCHIVELOG mode, the /db05 directory is required. ARCHIVELOG mode is required for hot database backups.
2. The /ctm\_backup directory can be a symbolic link to a storage device. Note that performance degrades if you map all of your symbolic links to the same partition and you do not have disk striping.

**Step 2** Enter the following commands to create a soft link to use your existing partitions:

```
ln -s /<partition_name_1> /db01
ln -s /<partition_name_2> /db02
ln -s /<partition_name_3> /db03
ln -s /<partition_name_4> /db04
ln -s /<partition_name_5> /db05
ln -s /<partition_name_6> /ctm_backup
ln -s /<partition_name_7> /oraclesw9i
```

**Step 3** Enter the following command to create a UNIX group for database administrators:

```
groupadd -g 3303 dba
```

**Step 4** Enter the following command to create a UNIX account to own the Oracle software:

```
useradd -g dba -m -s /bin/csh -d /oraclesw9i oracle
```

**Step 5** Enter the following command to change the oracle user password:

```
passwd oracle
```

Enter the new password; then, re-enter the password to confirm it.

**Step 6** Insert the CTM Server Disk 1 installation CD and enter the following command:

```
cd /cdrom/cdrom0/Disk1
```

**Step 7** Enter the following command to list the files in the cdrom/cdrom0/Disk1 directory:

```
ls -laR
```



**Note** If a list of files is returned, it indicates that you can access the CD-ROM successfully. If no files are visible, or if an error message is returned, refer to Sun Solaris documentation for mounting the CD-ROM.

**Step 8** Enter the following command to copy the default profile to the Oracle home directory:

```
cp /cdrom/cdrom0/Disk1/InstData/Solaris/VM/cfg/{small | medium | large | highend}/.cshrc
/oraclesw9i/.cshrc
```

For example, to copy the default profile for a small network, enter:

```
cp /cdrom/cdrom0/Disk1/InstData/Solaris/VM/cfg/small/.cshrc /oraclesw9i/.cshrc
```




---

**Note** If you installed Oracle Standard Edition, you must copy the default profile for a small network.

---

**Step 9** Enter the following command to determine what type of applications you can run on your OS:

```
isainfo -kv
```

If the output reads “64-bit sparcv9 kernel modules,” you can run both 64-bit and 32-bit applications. If the output reads “32-bit sparcv9 kernel modules,” you can run only 32-bit applications.




---

**Note** Cisco recommends being able to run both 64-bit and 32-bit applications.

---

**Step 10** Complete one of the following options, depending on your Oracle version:

- If you are installing 32-bit Oracle Enterprise Edition, enter:

```
cp /cdrom/cdrom0/Disk1/svrcustom.rsp /oraclesw9i
cp /cdrom/cdrom0/Disk1/patchset.rsp /oraclesw9i
```

- If you are installing 64-bit Oracle Enterprise Edition, enter:

```
cp /cdrom/cdrom0/Disk1/svrcustom_64bit.rsp /oraclesw9i
cp /cdrom/cdrom0/Disk1/patchset_64bit.rsp /oraclesw9i
```

- If you are installing 32-bit Oracle Standard Edition, enter:

```
cp /cdrom/cdrom0/Disk1/svrcustom_std.rsp /oraclesw9i
cp /cdrom/cdrom0/Disk1/patchset.rsp /oraclesw9i
```

- If you are installing 64-bit Oracle Standard Edition, enter:

```
cp /cdrom/cdrom0/Disk1/svrcustom_std_64bit.rsp /oraclesw9i
cp /cdrom/cdrom0/Disk1/patchset_64bit.rsp /oraclesw9i
```

**Step 11** Enter the following commands to change ownership of the Oracle software directories:

```
/usr/bin/chown -R oracle:dba /oraclesw9i
/usr/bin/chown -R oracle:dba /db01
/usr/bin/chown -R oracle:dba /db02
/usr/bin/chown -R oracle:dba /db03
/usr/bin/chown -R oracle:dba /db04
/usr/bin/chown -R oracle:dba /db05
/usr/bin/chown -R oracle:dba /ctm_backup
```

**Step 12** Enter the following commands to eject the CTM Server Disk 1 installation CD:

```
cd /
eject cdrom
```

**Step 13** Enter the following commands to create a temporary staging area:

```
cd /
mkdir temp
chmod 777 /temp
```

**Step 14** Enter the following command on both the database workstation and the server workstation:

```
vi /.cshrc
```

Comment the “stty” statement from the /.cshrc file, if it exists.

**Step 15** If you are using an xterm window or a remote host, enter the following command to enable the xterm connection from the clients:

```
/usr/openwin/bin/xhost +
```

---

## 2.2.1.2 Installing Oracle9i on the CTM Database Workstation



**Note** The C shell is assumed for all UNIX commands.

---

To install Oracle9i on the workstation where the CTM database will run:

---

**Step 1** Enter the following command to log in as the oracle user:

```
su - oracle
```



**Tip** To verify the username, enter the **id** command.

---

**Step 2** Insert disk one of the Oracle9i installation CDs in the CD-ROM drive.

**Step 3** Enter the following command to set the display on your terminal:

```
setenv DISPLAY <hostname_or_IP_address>:0.0
```

**Step 4** Enter the following command to verify that the display is set correctly:

```
echo $DISPLAY
```

In the output, you should see:

```
<hostname_or_IP_address>:0.0
```

**Step 5** Depending on your Oracle version, complete one of the following options to start the Oracle Installer:

- If you are installing 32-bit Oracle Enterprise Edition, enter:

```
cd /cdrom/cdrom0
./runInstaller -responseFile /oraclesw9i/svrcustom.rsp &
```

- If you are installing 64-bit Oracle Enterprise Edition, enter:

```
cd /cdrom/cdrom0
./runInstaller -responseFile /oraclesw9i/svrcustom_64bit.rsp &
```

- If you are installing 32-bit Oracle Standard Edition, enter:

```
cd /cdrom/cdrom0
./runInstaller -responseFile /oraclesw9i/svrcustom_std.rsp &
```

- If you are installing 64-bit Oracle Standard Edition, enter:

```
cd /cdrom/cdrom0
./runInstaller -responseFile /oraclesw9i/svrcustom_std_64bit.rsp &
```

**Step 6** At the Inventory Location screen, click **OK**.

**Step 7** The Oracle Universal Installer screen appears and prompts you to run the /tmp/orainstRoot.sh script. Log into another terminal window as the root user and enter the following command:

```
cd /tmp/
```



---

**Note** The Installer does not prompt you to run the `/tmp/orainstRoot.sh` script if you have a previous version of Oracle installed on your workstation or if the `/var/opt/oracle/oratab` file already exists on your workstation.

---

**Step 8** Enter the following command to run the `orainstRoot.sh` script:

```
./orainstRoot.sh
```

**Step 9** Return to the Oracle Universal Installer screen and click **Continue**.



---

**Note** The Oracle Universal Installer process might take up to 5 minutes.

---

**Step 10** The Disk Location dialog box prompts you for disk two of the Oracle9i installation CDs. Return to the terminal window where you ran the `./runInstaller` command and press **Return** on your keyboard to bring up the command prompt.

**Step 11** Enter the following command at the command prompt:

```
eject cdrom
```

**Step 12** Remove disk one and insert disk two of the Oracle9i installation CDs.

**Step 13** Minimize the terminal window.

**Step 14** Return to the Disk Location dialog box and change the path to read as one of the following, depending on your Oracle version:

- For 32-bit Oracle, enter:  
`/cdrom/cdrom0/orc19201_2`
- For 64-bit Oracle, enter:  
`/cdrom/cdrom0/disk2`

Click **OK**.

**Step 15** The Disk Location dialog box prompts you for disk three of the Oracle9i installation CDs. Return to the terminal window where you ran the `./runInstaller` command and press **Return** on your keyboard to bring up the command prompt.

**Step 16** Enter the following command at the command prompt:

```
eject cdrom
```

**Step 17** Remove disk two and insert disk three of the Oracle9i installation CDs.

**Step 18** Minimize the terminal window.

**Step 19** Return to the Disk Location dialog box and change the path to read as one of the following, depending on your Oracle version:

- For 32-bit Oracle, enter:  
`/cdrom/cdrom0/orc19201_3`
- For 64-bit Oracle, enter:  
`/cdrom/cdrom0/disk3`

Click **OK**.

**Step 20** You are prompted to run `/oraclesw9i/product/9.2/root.sh` from another window. Log into another terminal window as the root user and enter the following command:

```
cd /oraclesw9i/product/9.2
```

**Step 21** Enter the following command to run the `root.sh` script:

```
./root.sh
```

**Step 22** At the prompt for the local bin directory, enter the following path in the `root.sh` script:



**Note** The `/oraclesw9i/product/9.2/local/bin` directory must be created before running the `root.sh` script.

```
/oraclesw9i/product/9.2/local/bin
```

**Step 23** Return to the Oracle Setup Privileges screen and click **OK**.

**Step 24** Enter the following command to eject the CD:

```
eject cdrom
```

### 2.2.1.3 Downloading the 9.2.0.6 Patch for Oracle9i on the CTM Database Workstation

If you already have the 9.2.0.6 patch for Oracle9i installed, you can skip this section. To find out which patches have been installed, enter the following commands as the oracle user:

```
cd $ORACLE_HOME/OPatch/
./opatch lsinventory -detail | grep -i "oracle9i patch"
```

The output shows:

```
Oracle9i Patch 9.2.0.6.0
```

**Step 1** Go to <http://metalink.oracle.com> and click **Login to MetaLink**. Enter your Oracle MetaLink username and password.



**Note** This website is Copyright © 2004, Oracle Corporation. All rights reserved.

**Step 2** Click **Patches**.

**Step 3** Click **Simple Search**.

**Step 4** In the Search by Patch Number(s) field, enter **3948480**.

**Step 5** In the Platform or Language field, choose one of the following options, depending on your Oracle version:

- **Solaris Operating System (SPARC 32-bit)**
- **Solaris Operating System (SPARC 64-bit)**

**Step 6** Click **Go**.

**Step 7** Click **Download**. For 32-bit Oracle, download **p3948480\_9206\_SOLARIS.zip**. For 64-bit Oracle, download **p3948480\_9206\_SOLARIS64.zip**.

**Step 8** As the oracle user, save the patch to the `/oraclesw9i` directory.

**Step 9** As the root user, enter one of the following sets of commands to prepare the patch set, depending on your Oracle version:

- For 32-bit Oracle, enter:  

```
cd /oraclesw9i
unzip p3948480_9206_SOLARIS.zip
```
- For 64-bit Oracle, enter:  

```
cd /oraclesw9i
unzip p3948480_9206_SOLARIS64.zip
```

### 2.2.1.4 Installing the 9.2.0.6 Patch for Oracle9i on the CTM Database Workstation



**Note** If you already have the 9.2.0.6 patch for Oracle9i installed, you can skip this section.

**Step 1** Enter the following command to log into the database workstation as the oracle user:

```
su - oracle
```

**Step 2** If you are using an xterm window or a remote host, enter the following command to set the DISPLAY variable:

```
setenv DISPLAY <hostname_or_IP_address>:0.0
```

**Step 3** Enter the following command to verify that the display is set correctly:

```
echo $DISPLAY
```

In the output, you should see:

```
<hostname_or_IP_address>:0.0
```

**Step 4** Depending on your Oracle version, enter one of the following sets of commands to install the 9.2.0.6 patch:

- For 32-bit Oracle, enter:  

```
cd /oraclesw9i/Disk1
./runInstaller -responseFile /oraclesw9i/patchset.rsp
```
- For 64-bit Oracle, enter:  

```
cd /oraclesw9i/Disk1
./runInstaller -responseFile /oraclesw9i/patchset_64bit.rsp
```



**Note** If the Disk Location screen pops up, click **Cancel**.

**Step 5** At the prompt to run the root.sh script, log into another terminal window as the root user and enter the following commands:

```
cd /oraclesw9i/product/9.2
./root.sh
```

**Step 6** After the script finishes running, return to the prompt popup window and click **OK**.

- Step 7** Click **Next**.
- Step 8** After the patch is installed, read the Oracle patch README.html file to carry out the post-installation steps and check any caveats associated with this patch.
- Step 9** Depending on your Oracle version, enter one of the following sets of commands to remove the 9.2.0.6 patch installation files:

- For 32-bit Oracle, enter:

```
rm -rf /oraclesw9i/Disk1
rm -rf /oraclesw9i/p3948480_9206_SOLARIS.zip
rm -rf /oraclesw9i/README.html
```

- For 64-bit Oracle, enter:

```
rm -rf /oraclesw9i/Disk1
rm -rf /oraclesw9i/p3948480_9206_SOLARIS64.zip
rm -rf /oraclesw9i/README.html
```

### 2.2.1.5 Downloading the Oracle Patch Installer on the CTM Database Workstation



**Note**

The Oracle patch installer is used to install additional Oracle patches. If you have already installed the Oracle patch installer, you can skip this section.



**Note**

You must log in as an oracle user to download and unzip files.

- Step 1** Go to <http://metalink.oracle.com> and click **Login to MetaLink**. Enter your Oracle MetaLink username and password.



**Note**

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- Step 2** Click **Patches**.
- Step 3** Click **Simple Search**.
- Step 4** In the Search by Patch Number(s) field, enter **2617419**.
- Step 5** In the Platform or Language field, choose one of the following options, depending on your Oracle version:
- Solaris Operating System (SPARC 32-bit)**
  - Solaris Operating System (SPARC 64-bit)**

- Step 6** Click **Go**.

- Step 7** Click **Download**.

- Step 8** In the list of patches returned, click the first patch, which has the latest release number.



**Note**

Do not be concerned if the patch refers to a later version of Oracle.

**Step 9** In the Patch 2617419 window, go to the Platform or Language field and choose **Generic Platform** (the default).

**Step 10** Click **Download**.

**Step 11** Save the patch to the /oraclesw9i/product/9.2 directory.

**Step 12** Enter the following commands to change the patch ownership and unzip the patch:

```
chown oracle:dba /oraclesw9i/product/9.2/p2617419_10102_GENERIC.zip
cd /oraclesw9i/product/9.2
unzip p2617419_10102_GENERIC.zip
```

### 2.2.1.6 Installing and Applying Additional Oracle Patches on the CTM Database Workstation

Complete the following steps to install and apply additional required Oracle patches.

**Step 1** Go to <http://metalink.oracle.com> and click **Login to MetaLink**. Enter your Oracle MetaLink username and password.



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**Step 2** Click **Patches**.

**Step 3** Click **Simple Search**.

**Step 4** In the Search by Patch Number field, enter **2733910**.

**Step 5** In the Platform or Language field, choose one of the following options, depending on your Oracle version:

- **Solaris Operating System (SPARC 32-bit)**
- **Solaris Operating System (SPARC 64-bit)**

**Step 6** Click **Go**.

**Step 7** Click **Download**. For 32-bit Oracle, download **p2733910\_9206\_SOLARIS.zip**. For 64-bit Oracle, download **p2733910\_9206\_SOLARIS64.zip**.

**Step 8** As the oracle user, save the patch to the /oraclesw9i directory and enter the following commands to unzip the .zip file:

```
cd /oraclesw9i
unzip <patch_zip_filename>
```



**Note** The 32-bit patch 2733910 unzips to ./4092208. This is not an error.

**Step 9** In the MetaLink window, click **Patches**.

**Step 10** Click **Simple Search**.

**Step 11** In the Search by Patch Number field, enter **4067938**.

**Step 12** In the Platform or Language field, choose one of the following options, depending on your Oracle version:

- **Solaris Operating System (SPARC 32-bit)**

- **Solaris Operating System (SPARC 64-bit)**

**Step 13** Click **Go**.

**Step 14** Click **Download**. For 32-bit Oracle, download **p4067938\_9206\_SOLARIS.zip**. For 64-bit Oracle, download **p4067938\_9206\_SOLARIS64.zip**.

**Step 15** As the oracle user, save the patch to the /oraclesw9i directory and enter the following commands to unzip the .zip file:

```
cd /oraclesw9i
unzip <patch_zip_filename>
```

**Step 16** In the MetaLink window, click **Patches**.

**Step 17** Click **Simple Search**.

**Step 18** In the Search by Patch Number field, enter **4147836**.

**Step 19** In the Platform or Language field, choose one of the following options, depending on your Oracle version:

- **Solaris Operating System (SPARC 32-bit)**
- **Solaris Operating System (SPARC 64-bit)**

**Step 20** Click **Go**.

**Step 21** Click **Download**. For 32-bit Oracle, download **p4147836\_9206\_SOLARIS.zip**. For 64-bit Oracle, download **p4147836\_9206\_SOLARIS64.zip**.

**Step 22** As the oracle user, save the patch to the /oraclesw9i directory and enter the following commands to unzip the .zip file:

```
cd /oraclesw9i
unzip <patch_zip_filename>
```

**Step 23** For 64-bit Oracle only, the **opatch apply** command might fail. If this happens, edit the \$ORACLE\_HOME/inventory/ContentsXML/oraclehomeproperties.xml file by changing <ARU\_ID>453</ARU\_ID> to <ARU\_ID>23</ARU\_ID>. This is a known Oracle bug.

**Step 24** Depending on your configuration, enter one of the following sets of commands as the oracle user to change directories to the patch directory and apply the 2733910 patch (which unzips to 4092208 on a 32-bit workstation):

- For 32-bit, enter:

```
cd 4092208
/oraclesw9i/product/9.2/OPatch/opatch apply
```

- For 64-bit, enter:

```
cd 2733910
/oraclesw9i/product/9.2/OPatch/opatch apply
```

**Step 25** Enter the following commands to change directories to the patch directory and apply the 4067938 patch:

```
cd 4067938
/oraclesw9i/product/9.2/OPatch/opatch apply
```

**Step 26** Enter the following commands to change directories to the patch directory and apply the 4147836 patch:

```
cd 4147836
/oraclesw9i/product/9.2/OPatch/opatch apply
```

## 2.2.2 Updating the System Parameters on the CTM Database Workstation



**Note** The C shell is assumed for all UNIX commands.

To update the system parameters, log in as the root user on the workstation where the CTM database will run and complete the following steps:

**Step 1** If you are using an xterm window or a remote host, enter the following command to set the DISPLAY variable:

```
setenv DISPLAY <hostname_or_IP_address>:0.0
```

**Step 2** Enter the following command to verify that the display is set correctly:

```
echo $DISPLAY
```

In the output, you should see:

```
<hostname_or_IP_address>:0.0
```

**Step 3** Insert the CTM Server Disk 1 installation CD and enter the following commands:

```
cd /
cdrom/cdrom0/Disk1/ctmsetup.sh
```

The setup program searches for Sun Microsystems JRE version 1.4.2\_11 on your workstation.



**Note** If JRE is not installed, the setup program starts the Java installation program. Follow the prompts to install JRE. Enter **yes** at the following binary license code agreement prompt:

```
Do you agree to the above license terms? [yes or no]
```

Then, continue updating the system parameters.



**Note** If the required Solaris patches are missing, you must install them manually. Click **Cancel**; then, click **Quit**. Download the patches from SunSolve Online at <http://sunsolve.sun.com>. After you install the patches, continue updating the system parameters.

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Wait for up to 60 seconds while the following message appears:

```
Please wait, Cisco Transport Manager Server Release 7.2 is being configured for your
system. This may take a moment...
```

**Step 4** Click **Next** at the Introduction screen.

**Step 5** At the License Agreement screen, read the license agreement and click the **I accept the terms of the license agreement** radio button. Click **Next**.

**Step 6** At the Installation Options screen, choose **New installation**; then, click **Next**.

**Step 7** At the Select Products to install screen, check the **Cisco Transport Manager server** check box; then, click **Next**.

**Note**

The Web Server check box is selected automatically when you choose Cisco Transport Manager server. The web server allows you to use an HTTP connection to download files from the CTM server to the CTM client. The web server is also used to launch the online help and CiscoView, which is an application used by CTM to configure and monitor ONS 155xx NEs. The web server is required for the CTM server.

**Note**

The license for CTM GateWay/CORBA is sold separately. If you are using this feature in a production environment, you must purchase a license. You can install CTM GateWay/CORBA when you install the CTM server; however, this section assumes that you are installing the two products separately. For more information, see [Chapter 4, “Installing CTM GateWay/CORBA R7.2.”](#)

**Note**

The license for CiscoView is sold separately if used to manage the ONS 15530, ONS 15540 ESP, or ONS 15540 ESPx. If you are using this feature in a production environment to manage the ONS 15530, ONS 15540 ESP, or ONS 15540 ESPx, you must purchase a license for LAN Management Solution (LMS) Release 2.5, which includes CiscoView.

The license for CiscoView is bundled with CTM if used to manage the ONS 15501 DC or AC. You do not need to purchase a separate CiscoView license to manage the ONS 15501 DC or AC.

If you check the Install CiscoView Server check box, you receive the following prompt:

```
CiscoView installation has been moved to CTM Server Disk 4. After CTM server has
been installed, insert the CTM Server Disk 4 and run the './installCiscoView.sh'
script.
```

You must install the CTM server before you can install CiscoView. After installing the CTM server, see [Chapter 6, “Installing and Setting Up CiscoView.”](#)

**Step 8** At the Select Modules to Install screen, select individual modules or select all; then, click **Next**.

- Optical Module: ONS 15xxx (inc. shelf controller)
- Cisco MGX Voice Gateway
- IOS XR Module: XR 12000, CRS-1 (inc. shelf controller)
- IOS Module: Cisco 7600
- All of the Above Modules

**Note**

- The MDS 9000 module is a common module that will be installed with any selection.
- The Cisco 7600 module is installed only if the /etc/resolv.conf file is present. If the file is missing, the installation displays an error message and quits.

**Step 9** At the Main Options screen, check only the **Check system settings** check box; then, click **Next**.



**Caution** Do not check the other check boxes on the Main Options screen. You will check the other options during the next phase of the installation.

**Step 10** At the Select Network Configuration screen, specify the size of your network; then, click **Next**.



**Note** If you installed Oracle Standard Edition, you can only choose **Small**.

**Step 11** At the Update the System Parameters screen, check only the **Optimize CTM database parameters** check box; then, click **Next**.

**Step 12** At the warning prompt, click **Exit Setup** and enter the following command to reboot the system:

```
init 6
```

**Step 13** (Optional) If you plan to perform a database backup on the remote database setup, you must add an entry for the root user to the `/.rhosts` file on the database server. Enter the following commands to modify the `/.rhosts` file:

```
$ cat >> /.rhosts << EOF
<server_name> root
EOF
```

where `<server_name>` is the hostname of the server machine.

## 2.2.3 Installing the CTM R7.2 Database



**Note**

- The C shell is assumed for all UNIX commands.
- Before installing the CTM R7.2 database, verify that Oracle9i is installed in the `/oraclesw9i` directory.

To install the CTM R7.2 database, log in as the root user on the workstation where the CTM database will run and complete the following steps:

**Step 1** If you are using an xterm window or a remote host, enter the following command to set the `DISPLAY` variable:

```
setenv DISPLAY <hostname_or_IP_address>:0.0
```

**Step 2** Enter the following command to verify that the display is set correctly:

```
echo $DISPLAY
```

In the output, you should see:

```
<hostname_or_IP_address>:0.0
```

**Step 3** Insert the CTM Server Disk 1 installation CD and enter the following commands:

```
cd /
cdrom/cdrom0/Disk1/ctmsetup.sh
```

Wait for up to 60 seconds while the following message appears:

Please wait, Cisco Transport Manager Server Release 7.2 is being configured for your system. This may take a moment...

- Step 4** Click **Next** at the Introduction screen.
- Step 5** At the License Agreement screen, read the license agreement and click the **I accept the terms of the license agreement** radio button. Click **Next**.
- Step 6** At the Installation Options screen, choose **New installation**; then, click **Next**.
- Step 7** At the Select Products to Install screen, check only the **Cisco Transport Manager server** check box. The **Web Server** check box is selected by default. Click **Next**.
- Step 8** At the Select Modules to Install screen, select individual modules or select all; then, click **Next**.
- Optical Module: ONS 15xxx (inc. shelf controller)
  - Cisco MGX Voice Gateway
  - IOS XR Module: XR 12000, CRS-1 (inc. shelf controller)
  - IOS Module: Cisco 7600
  - All of the Above Modules



**Note**

- The MDS 9000 module is a common module that will be installed with any selection.
- The Cisco 7600 module is installed only if the /etc/resolv.conf file is present. If the file is missing, the installation displays an error message and quits.

- Step 9** At the Main Options screen, check only the **Create CTM database** check box and specify the Oracle SID. (The default is CTM.) Click **Next**.



**Caution**

Make sure to uncheck the other check boxes on the Main Options screen.

- Step 10** At the Select Network Configuration screen, specify the size of your network; then, click **Next**.



**Note**

If you installed Oracle Standard Edition, you can only choose **Small**.

- Step 11** At the CTM Group Information & Sudo Installation screen, confirm the name of the UNIX group to which you want to assign administrator privileges. Check or uncheck the Install CTM Sudo check box. Click **Next**.

- Step 12** At the FTP Information screen, accept the default selections; then, click **Next**.



**Note**

This option is available if you have selected to install the optical module.

- Step 13** At the Database Information screen, specify the IP address of the database workstation and specify whether or not you want to install the database in ARCHIVELOG mode. Click **Next**.

- Step 14** At the Specify CTM Server IP to connect screen, specify either the hostname or the IP address of the machine on which the CTM Server is installed. Click **Next**.



**Caution** If a hostname is entered, CTM will give confirmation of physical IP address. Click **yes**.

- Step 15** At the CTM Database Installation Directories screen, the setup program verifies that the directories exist as recommended in [Table 2-2](#). Click **Next**.
- Step 16** At the Pre-Installation Summary screen, click **Install** to create the CTM database.
- Step 17** The Install Complete screen summarizes the results of the installation. Click **Done**.

## 2.2.4 Installing the Oracle9i Client on the CTM Server Workstation

This section describes how to install the Oracle9i client software on a Sun Solaris 8 server to meet the CTM server requirements for a remote database configuration.

Log in as the root user on the workstation where the CTM server will run and complete the following steps:

- Step 1** Enter the following command to verify that the disk directories shown in [Table 2-3](#) exist:

```
ls -l
```

**Table 2-3** *Disk Directories*

| Directory                | Contents                                                                                    |
|--------------------------|---------------------------------------------------------------------------------------------|
| /ctm_backup <sup>1</sup> | For the backed-up configuration files                                                       |
| /oraclesw9i              | For the Oracle software                                                                     |
| /tftpboot                | For the TFTP directory                                                                      |
|                          | <b>Note</b> Disk partitioning is not required for /tftpboot, but the directory is required. |

1. The /ctm\_backup directory can be a symbolic link to a storage device. Note that performance degrades if you map all of your symbolic links to the same partition and you do not have disk striping.

- Step 2** Enter the following commands to create a soft link to use your existing partitions:

```
ln -s /<partition_name_1> /ctm_backup
ln -s /<partition_name_2> /oraclesw9i
```

- Step 3** Enter the following command to enable the xterm connection from the clients:

```
/usr/openwin/bin/xhost +
```

- Step 4** Enter the following command to create a UNIX group for database administrators:

```
groupadd -g 3303 dba
```

- Step 5** Enter the following command to create a UNIX account to own the Oracle software:

```
useradd -g dba -m -s /bin/csh -d /oraclesw9i oracle
```

- Step 6** Enter the following command to change the oracle user password:

```
passwd oracle
```

Enter the new password; then, re-enter the password to confirm it.

**Step 7** Insert the CTM Server Disk 1 installation CD.

**Step 8** Enter the following command to copy the default profile to the Oracle home directory:

```
cp /cdrom/cdrom0/Disk1/InstData/Solaris/VM/cfg/{small | medium | large | highend}/.cshrc
/oraclesw9i/.cshrc
```

For example, to copy the default profile for a small network, enter:

```
cp /cdrom/cdrom0/Disk1/InstData/Solaris/VM/cfg/small/.cshrc /oraclesw9i/.cshrc
```

**Step 9** Complete one of the following options, depending on your Oracle version:

- If you are installing 32-bit Oracle Enterprise Edition, enter the following command to copy the clientcustom.rsp response file to your workstation:

```
cp /cdrom/cdrom0/Disk1/clientcustom.rsp /oraclesw9i
cp /cdrom/cdrom0/Disk1/patchset.rsp /oraclesw9i
```

- If you are installing 64-bit Oracle Enterprise Edition, enter the following command to copy the clientcustom\_64bit.rsp response file to your workstation:

```
cp /cdrom/cdrom0/Disk1/clientcustom_64bit.rsp /oraclesw9i
cp /cdrom/cdrom0/Disk1/patchset_64bit.rsp /oraclesw9i
```

- If you are installing 32-bit Oracle Standard Edition, enter the following command to copy the clientcustom\_std.rsp response file to your workstation:

```
cp /cdrom/cdrom0/Disk1/clientcustom_std.rsp /oraclesw9i
cp /cdrom/cdrom0/Disk1/patchset.rsp /oraclesw9i
```

- If you are installing 64-bit Oracle Standard Edition, enter the following command to copy the clientcustom\_std\_64bit.rsp response file to your workstation:

```
cp /cdrom/cdrom0/Disk1/clientcustom_std_64bit.rsp /oraclesw9i
cp /cdrom/cdrom0/Disk1/patchset_64bit.rsp /oraclesw9i
```

**Step 10** Enter the following commands to change ownership of the Oracle software directories:

```
/usr/bin/chown -R oracle:dba /oraclesw9i
/usr/bin/chown -R oracle:dba /ctm_backup
```

**Step 11** Enter the following commands to eject the CTM Server Disk 1 installation CD:

```
cd /
eject cdrom
```

**Step 12** Enter the following command to log in as the oracle user:

```
su - oracle
```



**Tip** To verify the username, enter the **id** command.

**Step 13** Insert disk one of the Oracle9i installation CDs.

**Step 14** Enter the following command to set the display on your terminal:

```
setenv DISPLAY <hostname_or_IP_address>:0.0
```

**Step 15** Enter the following command to verify that the display is set correctly:

```
echo $DISPLAY
```

In the output, you should see:

```
<hostname_or_IP_address>:0.0
```

**Step 16** Enter the following command to point to the cdrom/cdrom0 directory:

```
cd /cdrom/cdrom0
```

**Step 17** Depending on your Oracle version, complete one of the following options to install the Oracle client:

- If you are installing 32-bit Oracle Enterprise Edition, enter:  

```
./runInstaller -responseFile /oraclesw9i/clientcustom.rsp
```
- If you are installing 64-bit Oracle Enterprise Edition, enter:  

```
./runInstaller -responseFile /oraclesw9i/clientcustom_64bit.rsp
```
- If you are installing 32-bit Oracle Standard Edition, enter:  

```
./runInstaller -responseFile /oraclesw9i/clientcustom_std.rsp
```
- If you are installing 64-bit Oracle Standard Edition, enter:  

```
./runInstaller -responseFile /oraclesw9i/clientcustom_std_64bit.rsp
```

**Step 18** The Oracle Universal Installer screen prompts you to run the /tmp/orainstRoot.sh script. Log into another terminal window as the root user and enter the following command:

```
cd /tmp
```



---

**Note** The Installer does not prompt you to run the /tmp/orainstRoot.sh script if you have a previous version of Oracle installed on your workstation or if the /var/opt/oracle/oratab file already exists on your workstation.

---

**Step 19** Enter the following command to run the orainstRoot.sh script:

```
./orainstRoot.sh
```

**Step 20** Return to the Oracle Universal Installer screen and click **Continue**.



---

**Note** The Oracle Universal Installer process might take up to 5 minutes.

---

**Step 21** You are prompted to run /oraclesw9i/product/9.2/root.sh from another window. Log into another terminal window as the root user and enter the following command:

```
cd /oraclesw9i/product/9.2
```

**Step 22** Enter the following command to run the root.sh script:

```
./root.sh
```

**Step 23** At the prompt for the local bin directory, enter the following command in the root.sh script:

```
/oraclesw9i/product/9.2/local/bin
```

**Step 24** Return to the Oracle Setup Privileges screen and click **OK**.

**Step 25** Enter the following commands to eject the CD:

```
cd /
eject cdrom
```

---

### 2.2.4.1 Downloading the Oracle Patch Installer on the CTM Server Workstation


**Note**

The Oracle patch installer is used to install additional Oracle patches. If you have already installed the Oracle patch installer, you can skip this section.


**Note**

You must log in as an oracle unix user to download and unzip files.

**Step 1** Go to <http://metalink.oracle.com> and click **Login to MetaLink**. Enter your Oracle MetaLink username and password.


**Note**

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**Step 2** Click **Patches**.

**Step 3** Click **Simple Search**.

**Step 4** In the Search by Patch Number(s) field, enter **2617419**.

**Step 5** In the Platform or Language field, choose one of the following options, depending on your Oracle version:

- **Solaris Operating System (SPARC 32-bit)**
- **Solaris Operating System (SPARC 64-bit)**

**Step 6** Click **Go**.

**Step 7** Click **Download**.

**Step 8** In the list of patches returned, click the first patch, which has the latest release number.


**Note**

Do not be concerned if the patch refers to a later version of Oracle.

**Step 9** In the Patch 2617419 window, go to the Platform or Language field and choose **Generic Platform** (the default).

**Step 10** Click **Download**.

**Step 11** Save the patch to the `/oraclesw9i/product/9.2` directory.

**Step 12** Enter the following commands to change the patch ownership and unzip the patch:

```
chown oracle:dba /oraclesw9i/product/9.2/p2617419_10102_GENERIC.zip
cd /oraclesw9i/product/9.2
unzip p2617419_10102_GENERIC.zip
```

### 2.2.4.2 Downloading the 9.2.0.6 Patch for Oracle9i on the CTM Server Workstation


**Note**

If you already have the 9.2.0.6 patch for Oracle9i installed, you can skip this section.

**Step 1** Go to <http://metalink.oracle.com> and click **Login to MetaLink**. Enter your Oracle MetaLink username and password.



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**Step 2** Click **Patches**.

**Step 3** Click **Simple Search**.

**Step 4** In the Search by Patch Number(s) field, enter **3948480**.

**Step 5** In the Platform or Language field, choose one of the following options, depending on your Oracle version:

- **Solaris Operating System (SPARC 32-bit)**
- **Solaris Operating System (SPARC 64-bit)**

**Step 6** Click **Go**.

**Step 7** Click **Download**. For 32-bit Oracle, download **p3948480\_9206\_SOLARIS.zip**. For 64-bit Oracle, download **p3948480\_9206\_SOLARIS64.zip**.

**Step 8** As the oracle user, save the patch to the /oraclesw9i directory.

**Step 9** As the oracle user, enter one of the following sets of commands to prepare the patch set, depending on your Oracle version:

- For 32-bit Oracle, enter:

```
cd /oraclesw9i
unzip p3948480_9206_SOLARIS.zip
```

- For 64-bit Oracle, enter:

```
cd /oraclesw9i
unzip p3948480_9206_SOLARIS64.zip
```

### 2.2.4.3 Installing the 9.2.0.6 Patch for Oracle9i on the CTM Server Workstation



**Note** If you already have the 9.2.0.6 patch for Oracle9i installed, you can skip this section.

**Step 1** Enter the following command to log into the database workstation as the oracle user:

```
su - oracle
```

**Step 2** If you are using an xterm window or a remote host, enter the following command to set the DISPLAY variable:

```
setenv DISPLAY <hostname_or_IP_address>:0.0
```

**Step 3** Enter the following command to verify that the display is set correctly:

```
echo $DISPLAY
```

In the output, you should see:

```
<hostname_or_IP_address>:0.0
```

**Step 4** Depending on your Oracle version, enter one of the following sets of commands to install the 9.2.0.6 patch:

- For 32-bit Oracle, enter:

```
cd /oraclesw9i/Disk1
./runInstaller -responseFile /oraclesw9i/patchset.rsp
```

- For 64-bit Oracle, enter:

```
cd /oraclesw9i/Disk1
./runInstaller -responseFile /oraclesw9i/patchset_64bit.rsp
```




---

**Note** If the Disk Location screen pops up, click **Cancel**.

---

**Step 5** At the prompt to run the root.sh script, log into another terminal window as the root user and enter the following commands:

```
cd /oraclesw9i/product/9.2
./root.sh
```

**Step 6** After the script finishes running, return to the prompt popup window and click **OK**.

**Step 7** Click **Next**.

**Step 8** After the patch is installed, read the Oracle patch README.html file to carry out the post-installation steps and check any caveats associated with this patch.

**Step 9** Depending on your Oracle version, enter one of the following sets of commands to remove the 9.2.0.6 patch installation files:

- For 32-bit Oracle, enter:

```
rm -rf /oraclesw9i/Disk1
rm -rf /oraclesw9i/p3948480_9206_SOLARIS.zip
rm -rf /oraclesw9i/README.html
```

- For 64-bit Oracle, enter:

```
rm -rf /oraclesw9i/Disk1
rm -rf /oraclesw9i/p3948480_9206_SOLARIS64.zip
rm -rf /oraclesw9i/README.html
```

---

### 2.2.4.4 Installing and Applying Additional Oracle Patches on the CTM Server Workstation

Complete the following steps to install and apply additional required Oracle patches.

**Step 1** Go to <http://metalink.oracle.com> and click **Login to MetaLink**. Enter your Oracle MetaLink username and password.




---

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---

**Step 2** Click **Patches**.

**Step 3** Click **Simple Search**.

- Step 4** In the Search by Patch Number field, enter **2733910**.
- Step 5** In the Platform or Language field, choose one of the following options, depending on your Oracle version:
- **Solaris Operating System (SPARC 32-bit)**
  - **Solaris Operating System (SPARC 64-bit)**
- Step 6** Click **Go**.
- Step 7** Click **Download**. For 32-bit Oracle, download **p2733910\_9206\_SOLARIS.zip**. For 64-bit Oracle, download **p2733910\_9206\_SOLARIS64.zip**.
- Step 8** As the oracle user, save the patch to the /oraclesw9i directory and enter the following commands to unzip the .zip file:

```
cd /oraclesw9i
unzip <patch_zip_filename>
```



---

**Note** The 32-bit patch 2733910 unzips to .4092208. This is not an error.

---

- Step 9** In the MetaLink window, click **Patches**.
- Step 10** Click **Simple Search**.
- Step 11** In the Search by Patch Number field, enter **4067938**.
- Step 12** In the Platform or Language field, choose one of the following options, depending on your Oracle version:
- **Solaris Operating System (SPARC 32-bit)**
  - **Solaris Operating System (SPARC 64-bit)**
- Step 13** Click **Go**.
- Step 14** Click **Download**. For 32-bit Oracle, download **p4067938\_9206\_SOLARIS.zip**. For 64-bit Oracle, download **p4067938\_9206\_SOLARIS64.zip**.
- Step 15** As the oracle user, save the patch to the /oraclesw9i directory and enter the following commands to unzip the .zip file:
- ```
cd /oraclesw9i
unzip <patch_zip_filename>
```
- Step 16** In the MetaLink window, click **Patches**.
- Step 17** Click **Simple Search**.
- Step 18** In the Search by Patch Number field, enter **4147836**.
- Step 19** In the Platform or Language field, choose one of the following options, depending on your Oracle version:
- **Solaris Operating System (SPARC 32-bit)**
 - **Solaris Operating System (SPARC 64-bit)**
- Step 20** Click **Go**.
- Step 21** Click **Download**. For 32-bit Oracle, download **p4147836_9206_SOLARIS.zip**. For 64-bit Oracle, download **p4147836_9206_SOLARIS64.zip**.
- Step 22** As the oracle user, save the patch to the /oraclesw9i directory and enter the following commands to unzip the .zip file:

```
cd /oraclesw9i
unzip <patch_zip_filename>
```

- Step 23** For 64-bit Oracle only, the **opatch apply** command might fail. If this happens, edit the \$ORACLE_HOME/inventory/ContentsXML/oraclehomeproperties.xml file by changing <ARU_ID>453</ARU_ID> to <ARU_ID>23</ARU_ID>. This is a known Oracle bug.
- Step 24** Depending on your configuration, enter one of the following sets of commands as the oracle user to change directories to the patch directory and apply the 2733910 patch (which unzips to 4092208 on a 32-bit workstation):
- For 32-bit, enter:


```
cd 4092208
/oraclesw9i/product/9.2/OPatch/opatch apply
```
 - For 64-bit, enter:


```
cd 2733910
/oraclesw9i/product/9.2/OPatch/opatch apply
```
- Step 25** Enter the following commands to change directories to the patch directory and apply the 4067938 patch:
- ```
cd 4067938
/oraclesw9i/product/9.2/OPatch/opatch apply
```
- Step 26** Enter the following commands to change directories to the patch directory and apply the 4147836 patch:
- ```
cd 4147836
/oraclesw9i/product/9.2/OPatch/opatch apply
```

2.2.4.5 Setting Up the UNIX Environment on the CTM Server Workstation

- Step 1** Insert the CTM Server Disk 1 installation CD.
- Step 2** If the tnsnames.ora file in the /oraclesw9i/product/9.2/network/admin directory exists, enter the following commands to back up the file and copy it from the CTM Server Disk 1 installation CD:
- ```
cp /cdrom/cdrom0/Disk1/InstData/Solaris/VM/cfg/{small | medium | large |
highend}/tnsnames.ora /oraclesw9i/product/9.2/network/admin/tnsnames.ora
```
- Step 3** Enter the following command to change file permissions:
- ```
chmod +w /oraclesw9i/product/9.2/network/admin/tnsnames.ora
```
- Step 4** Edit the tnsnames.ora file by replacing the parameter *CTMhostname* with the hostname or IP address of the workstation where Oracle9i is installed and running.
- Step 5** Edit the /var/opt/oracle/oratab file by adding the following line as the first line in the file:
- ```
<Oracle_SID>:/oraclesw9i/product/9.2:N
```



**Note** The default Oracle SID is CTM.

### 2.2.4.6 Verifying the Oracle9i Client Installation on the CTM Server Workstation

- 
- Step 1** Verify that the Oracle9i database is running on the workstation where it was installed.
- Step 2** Enter the following command to log in as the oracle user:
- ```
su - oracle
```
- Step 3** Enter the following command to verify that the Oracle9i database can connect to the CTM server:
- ```
tnsping <Oracle_SID>
```



**Note** The default Oracle SID is CTM.

---

You should receive the following reply:

```
Attempting to contact (DESCRIPTION = (ADDRESS = (PROTOCOL= TCP) (Host=
<IP_address_where_database_is_running>)(Port= 1521)) (
CONNECT_DATA = (SID = <ORACLE_SID>)))
OK (0 msec)
```

---

## 2.2.5 Updating the System Parameters on the CTM Server Workstation

To update the system parameters, log in as the root user on the workstation where the CTM server will run and complete the following steps:

- 
- Step 1** If you do not have a TFTP directory, complete the following substeps to create one:
- a. Enter the following commands:
 

```
mkdir /tftpboot
chmod 777 /tftpboot
```
  - b. Verify that the TFTP entry in the `/etc/inetd.conf` file is not commented.
 

The following example represents a typical TFTP entry in the `/etc/inetd.conf` file. In this example, the TFTP directory is `/tftpboot`:

```
tftp dgram udp6 wait root /usr/sbin/in.tftpd in.tftpd -s /tftpboot
```
  - c. If the TFTP entry is commented, remove the pound sign (`#`) at the beginning of the line to uncomment it.
- Step 2** Insert the CTM Server Disk 1 installation CD and enter the following commands:
- ```
cd /
cdrom/cdrom0/Disk1/ctmsetup.sh
```

The CTM server installation begins. Wait for up to 60 seconds while the following message appears:

```
Please wait, Cisco Transport Manager Server Release 7.2 is being configured for your
system. This may take a moment...
```

The setup program searches for Sun Microsystems JRE version 1.4.2_11 on your workstation.



Note If JRE is not installed, the setup program starts the Java installation program. Follow the prompts to install JRE. Enter **yes** at the following binary license code agreement prompt:

```
Do you agree to the above license terms? [yes or no]
```

Then, continue updating the system parameters.

Step 3 Click **Next** at the Introduction screen.

Step 4 At the License Agreement screen, read the license agreement and click the **I accept the terms of the license agreement** radio button. Click **Next**.

Step 5 At the Installation Options screen, choose **New installation**; then, click **Next**.

Step 6 At the Select Products to Install screen, check the **Cisco Transport Manager server** check box. The Web Server check box is selected by default. Click **Next**.

Step 7 At the Select Modules to Install screen, select individual modules or select all; then, click **Next**.

- Optical Module: ONS 15xxx (inc. shelf controller)
- Cisco MGX Voice Gateway
- IOS XR Module: XR 12000, CRS-1 (inc. shelf controller)
- IOS Module: Cisco 7600
- All of the Above Modules



Note

- The MDS 9000 module is a common module that will be installed with any selection.
- Additional individual modules can be installed after the original module installation is complete. For installation of additional modules, the server will need to be installed again but the database does not need to be recreated.
- The Cisco 7600 module is installed only if the `/etc/resolv.conf` file is present. If the file is missing, the installation displays an error message and quits.

Step 8 At the Main Options screen, check only the **Check system settings** check box; then, click **Next**.



Caution

Make sure to uncheck the other check boxes on the Main Options screen.

Step 9 At the Select Network Configuration screen, specify the size of your network; then, click **Next**.



Note

If you installed Oracle Standard Edition, you can only choose **Small**.

Step 10 At the Update the System Parameters screen, check only the **Optimize CTM server parameters** check box; then, click **Next**.

Step 11 At the CTM Group Information & Sudo Installation screen, confirm the name of the UNIX group to which you want to assign administrator privileges. Check or uncheck the **Install CTM Sudo** check box. Click **Next**.

Step 12 At the FTP Information screen, accept the default selections; then, click **Next**.



Note This option is available if you have selected to install the optical module.

Step 13 At the warning prompt, click **Exit Setup** and enter the following command to reboot the system:

```
init 6
```

2.2.6 Installing the CTM 7.2 Server on the CTM Server Workstation

To install the CTM R7.2 server, log in as the root user on the workstation where the CTM server will run and complete the following steps:

Step 1 If you do not have a TFTP directory, complete the following substeps to create one:

a. Enter the following commands:

```
mkdir /tftpboot
chmod 777 /tftpboot
```

b. Verify that the TFTP entry in the /etc/inetd.conf file is not commented.

The following example represents a typical TFTP entry in the /etc/inetd.conf file. In this example, the TFTP directory is /tftpboot:

```
tftp dgram udp6 wait root /usr/sbin/in.tftpd in.tftpd -s /tftpboot
```

c. If the TFTP entry is commented, remove the pound sign (#) at the beginning of the line to uncomment it.

Step 2 Insert the CTM Server Disk 1 installation CD and enter the following commands:

```
cd /
cdrom/cdrom0/Disk1/ctmsetup.sh
```

The CTM server installation begins. Wait for up to 60 seconds while the following message appears:

```
Please wait, Cisco Transport Manager Server Release 7.2 is being configured for your
system. This may take a moment...
```

Step 3 Click **Next** at the Introduction screen.

Step 4 At the License Agreement screen, read the license agreement and click the **I accept the terms of the license agreement** radio button. Click **Next**.

Step 5 At the Installation Options screen, choose **New installation**; then, click **Next**.

Step 6 At the Select Products to Install screen, check the **Cisco Transport Manager server** check box. The Web Server check box is selected by default. Click **Next**.

Step 7 At the CTM Group Information & Sudo Installation screen, confirm the name of the UNIX group to which you want to assign administrator privileges. Check or uncheck the **Install CTM Sudo** check box. Click **Next**.

Step 8 At the FTP Information screen, complete the following substeps to configure an FTP account for ONS 15216 EDFA3 software download operations:

a. Enter the following information:

- FTP username
- FTP user password
- Confirm FTP user password
- FTP directory

- b. Check or uncheck the **Create new FTP account** check box. If checked, the FTP user will be created automatically on the CTM server workstation by the install script. If unchecked, it is assumed that an FTP user already exists on the CTM server workstation.
- c. Click **Next**.

Step 9 At the Main Options screen, check the **Install CTM server** check box; then, click **Next**.



Caution Make sure to uncheck the other check boxes on the Main Options screen.

Step 10 At the Server IP Address screen, specify an IP address for the server setup; then, click **Next**.

Step 11 At the Select Network Configuration screen, specify the size of your network; then, click **Next**.



Note If you installed Oracle Standard Edition, you can only choose **Small**.

Step 12 At the Configure FTP screen, complete the following substeps if you want to enable TFTP for the ONS 15216 EDFA2, ONS 15501, ONS 15530, and ONS 15540:

- a. Check the **Enable TFTP Server** check box.
- b. Enter the TFTP directory name. The default is /tftpboot.
- c. Click **Next**.

Step 13 At the Specify CTM Database to Connect to screen, enter the IP address or hostname of the workstation where Oracle9i is installed; then, click **Next**.



Caution Be sure to enter the correct IP address or hostname. Do not simply accept the default.



Note If you entered a hostname, the setup program automatically translates the hostname to a physical IP address and prompts you to confirm the address. Click **Yes**.

Step 14 At the Destination Folder screen, specify where you want to install the CTM server. The default directory is /opt/CiscoTransportManagerServer. You can click **Change** to choose a different destination. After you specify your destination, click **Next**.



Note If the destination directory that you specified is a new directory, you will receive the message “Specified directory does not exist, create it?” Click **Yes**.



Note Do not specify any mount point as the target installation directory for the server installation, or the installation data might be lost when the workstation restarts.

**Caution**

CTM checks for the `/opt/CiscoTransportManagerServer` directory or a symbolic link to it. If CTM cannot find the `/opt/CiscoTransportManagerServer` directory or a symbolic link, CTM creates a symbolic link automatically. Therefore, do not delete any instances of `/opt/CiscoTransportManagerServer` from your CTM file structure.

- Step 15** The Pre-Installation Summary screen shows the items that will be installed. Click **Install**.
- Step 16** At the Insert New Media screen, complete the following substeps:
- Eject the CTM Server Disk 1 installation CD, insert the CTM Server Disk 2 installation CD, and click **Browse**.
 - The Select a Folder dialog box opens. Double-click **cdrom**; then, single-click **cdrom0**. The filename text box now reads `/cdrom/cdrom0`.
 - In the Select a Folder dialog box, click **Select**.
 - In the Insert New Media screen, click **OK**.
- Step 17** The Web Server Installation Summary screen summarizes the results of the web server installation. Click **Next**.
- Step 18** The Install Complete screen summarizes the results of the installation. Click **Done**.
- Step 19** Enter the following command to reboot the system. The CTM server starts automatically after rebooting:

**Caution**

After you click the Done button in the installation GUI, the background processes continue to run for several minutes. Before rebooting, you must wait for the reboot message on the terminal where you started the installation. Depending on the server performance, the background processes can take up to 15 minutes before the reboot message appears. Rebooting the server before this message appears will break CTM functionalities.

```
init 6
```

- Step 20** To verify that the CTM R7.2 server is running, enter the **showctm** command after the server reboots. The `showctm` command displays the CTM server version running as 7.2, followed by the build number. In the output, you will see two instances of “CTM Server,” “SnmpTrapService,” “SMService,” and “Apache Web Server.” This indicates that the CTM server is running. You should also see NE-specific processes, depending on your network. You might also see CTM GateWay/CORBA and CTM GateWay/TL1 instances.
- Step 21** If the following error is returned on the command prompt for the web server:

```
(125)Address already in use: make_sock: could not bind to address <IP_address> no listening sockets available, shutting down
```

Complete the following substeps:

- Enter the following command on the server workstation; then, kill the processes listed:


```
ps -ef | grep httpd | grep CiscoTransportManagerServer | grep -v grep
```
- Enter the following command to shut down the CTM server:


```
ctms-stop
```
- Restart the CTM server (this restarts the latest installed web server).

2.2.7 Copying the Client Upgrade Files After the CTM Server Installation

You have two options for upgrading each client installation to the latest version of CTM that is on the server. You can choose to:

- Manually upgrade each client installation. If you have a previously installed version of the CTM client, you must delete the directory where the previous client is installed before installing the CTM R7.2 client. See [5.1 Installing the CTM Client and Cisco Edge Craft on Microsoft Windows, page 5-2](#) or [5.4 Installing the CTM Client and Cisco Edge Craft on Sun Solaris, page 5-6](#) for more information.
- Automatically upgrade each client when it connects to a server. During login, if the CTM client software version is older than the CTM server software version, the client will be prompted for upgrade. See [5.2 Starting the CTM Client in Microsoft Windows, page 5-5](#) or [5.5 Starting the CTM Client in Sun Solaris, page 5-8](#) for more information.

For this option you must copy the client installation files to the server. The CTM client and server installation files reside on separate installation CDs. To copy the client installation files to the server, you must eject the CTM server CD, insert the CTM client CD, and run an automated script, `CopyUpgradeFiles.sh`, to copy the client installation files to a specific folder under the CTM server installation directory. To do this, log in as the root user and complete the following steps.



Note

The CTM server must be installed before completing the following steps.

Step 1 Enter the following commands to eject the CTM server installation CD:

```
cd /
eject cdrom
```

Step 2 Insert the CTM client installation CD and enter the following command:

```
cdrom/cdrom0/ctmc/CopyUpgradeFiles.sh
```

You should see the following output:

```
Copying the client upgrade files can take several minutes.
Copying CTM Client upgrade files...
Copying Solaris client upgrade files
Solaris client upgrade files copied
Please insert CTM client Windows CD to CD ROM, Copy will continue in 60 seconds...
Could not find Window Client CD, Please insert CTM client Windows CD to continue
Copy will continue in 300 seconds...
Copying Windows client upgrade files
Done...All upgrade files have been copied to server successfully!
Please hit Enter key to return to the prompt mode
```



Note

This operation will occupy 800 MB of disk space.

2.3 Setting Up Sudo

As described in [1.4.1 Overview of Sudo Commands, page 1-18](#), the CTM server installation includes installation of the UNIX sudo command. This command allows nonroot users who belong to the UNIX group specified during installation to run certain CTM administrative commands. For security reasons, the installed sudo command **setuid** is disabled by default. You must enable setuid on the sudo command in order for it to work.

**Note**

Sudo is often available in the standard UNIX environment established by the CTM server system administrator. If so, it is not necessary to use the sudo bundled with CTM or follow this procedure to enable it. Instead, you can use the sudo established by the system administrator.

To enable setuid:

Step 1 Log into the CTM server as the root user and enter the following command:

```
chmod 4111 /opt/CiscoTransportManagerServer/admin/sudo/sudo
```

Step 2 Verify that users have /opt/CiscoTransportManagerServer/admin/sudo in their path environment, so that they can execute sudo without having to specify the full path.



CHAPTER 3

Upgrading to CTM R7.2 from an Earlier Release

This chapter describes how to upgrade to CTM R7.2 from an earlier release. This chapter contains the following sections:

- [3.1 Upgrading from CTM R6.0 or CTM R7.0 to CTM R7.2 and Oracle9i on the Same Workstation, page 3-2](#)
- [3.2 Upgrading from CTM R6.0 or CTM R7.0 to CTM R7.2 and Oracle9i on Separate Workstations, page 3-8](#)
- [3.3 Verifying that the Oracle9i and CTM Server Processes Are Running, page 3-16](#)
- [3.4 Setting Up Sudo, page 3-17](#)
- [3.5 Upgrading the CTM Network Configuration Size, page 3-18](#)
- [3.6 Adding New Modules, page 3-18](#)



Note

After upgrading to CTM R7.2, the old CTM server directory is moved to `CiscoTransportManagerServer-old`. Any data previously saved under `/opt/CiscoTransportManagerServer/admin`, `/opt/CiscoTransportManagerServer/images`, `/opt/CiscoTransportManagerServer/cms`, `/opt/CiscoTransportManagerServer/bin/jcorbagw.sh`, `/opt/CiscoTransportManagerServer/cfg/usr`, and `/opt/CiscoTransportManagerServer/cfg/corbagw.properties` is saved under the new directory. Before removing the old version, move any relevant data to the new `/opt/CiscoTransportManagerServer` directory.



Caution

When migrating data, the migration could stall if the `/temp` directory contains temporary files left over from previous upgrades. Remove all temporary files from `/temp` before upgrading CTM.



Caution

Before upgrading to CTM R7.2, verify that the NE versions in your network are supported by CTM R7.2. See the [Release Notes for Cisco Transport Manager Release 7.2](#) for the NE software versions that are supported. If your network contains NEs that are not supported in CTM R7.2, it will not be possible to discover or manage them.



Note

For an explanation of error messages that you might encounter during the upgrade, see [Appendix A, “Understanding Installation Error Messages.”](#)

**Note**

If you need instructions to mount or unmount CDs, see [Appendix C, “Mounting and Unmounting CDs on Sun Solaris.”](#)

3.1 Upgrading from CTM R6.0 or CTM R7.0 to CTM R7.2 and Oracle9i on the Same Workstation

This section describes how to upgrade from CTM R6.0 or CTM R7.0 to CTM R7.2 when you are installing the CTM R7.2 server and the Oracle9i database on the same Sun Solaris 8 server.

Before upgrading the database to CTM R7.2, it is strongly recommended that you back up the existing database. This ensures that you can revert to the old data in the event that the upgrade fails.

**Note**

The C shell is assumed for all UNIX commands.

3.1.1 Installing the CTM R7.2 Server and Upgrading the Database

To install the CTM server and upgrade the database, log in as the root user and complete the following steps:

-
- Step 1** Enter the following command to verify that the CTM R7.2 server is running:
- ```
showctm
```
- Step 2** If the CTM server is running, enter the following command to stop the server before performing the upgrade:
- ```
ctms-abort
```
- Step 3** *(If you are upgrading from CTM R6.0, skip this step.)* If you are upgrading from CTM R7.0, install the latest CTM R7.0 service pack. See the [Migration Matrix for CTM Service Pack Releases](#) for more information.
- Step 4** *(If you are upgrading from CTM R6.0, skip this step.)* If you are upgrading from CTM R7.0, enter the following commands:
- ```
cd /opt/CiscoTransportManagerServer/patch/migration/7.2.0
./pre_migration.sh
cd /
```
- Step 5** If you are using an xterm window or a remote host, enter the following command to set the DISPLAY variable:
- ```
setenv DISPLAY <hostname_or_IP_address>:0.0
```
- Step 6** Enter the following command to verify that the display is set correctly:
- ```
echo $DISPLAY
```
- In the output, you should see:
- ```
<hostname_or_IP_address>:0.0
```

Step 7 Insert the CTM Server Disk 1 installation CD and enter the following commands:

```
cd /  
cdrom/cdrom0/Disk1/ctmsetup.sh
```

The setup program searches for Sun Microsystems JRE version 1.4.2_11 on your workstation.



Note If JRE is not installed, the setup program starts the Java installation program. Follow the prompts to install JRE. Enter **yes** at the following binary license code agreement prompt:
Do you agree to the above license terms? [yes or no]

Then, continue installing the CTM server and upgrading the database.



Note If the required Solaris patches are missing, you must install them manually. Click **Cancel**; then, click **Quit**. Download the patches from SunSolve Online at <http://sunsolve.sun.com>. After you install the patches, continue installing the CTM server and upgrading the database.

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Wait for up to 60 seconds while the following message appears:

```
Please wait, Cisco Transport Manager Server Release 7.2 is being configured for your  
system. This may take a moment...
```

Step 8 Click **Next** at the Introduction screen.

Step 9 At the License Agreement screen, read the license agreement and click the **I accept the terms of the license agreement** radio button. Click **Next**.

Step 10 At the Installation Options screen, choose **Upgrade from existing CTM release**; then, click **Next**.



Note If your network size is medium or large, you can also choose **Upgrade CTM network configuration size**. (Small or high-end network sizes cannot be upgraded.) Alternately, you can upgrade the network size as a separate step; see [3.5 Upgrading the CTM Network Configuration Size, page 3-18](#).

Step 11 At the Select Products to Install screen, check the **Cisco Transport Manager server** check box; then, click **Next**.



Note The Web Server check box is selected automatically when you choose Cisco Transport Manager server. The web server allows you to use an HTTP connection to download files from the CTM server to the CTM client. The web server is also used to launch the online help and CiscoView, which is an application used by CTM to configure and monitor ONS 155xx NEs. The web server is required for the CTM server.



Caution Do not check the other check boxes on the Select Products to Install screen.



Note The license for CTM GateWay/CORBA is sold separately. If you are using this feature in a production environment, you must purchase a license. You can install CTM GateWay/CORBA when you install the CTM server; however, this section assumes that you are installing the two products separately. For more information, see [Chapter 4, “Installing CTM GateWay/CORBA R7.2.”](#)



Note The license for CiscoView is sold separately if used to manage the ONS 15530, ONS 15540 ESP, or ONS 15540 ESPx. If you are using this feature in a production environment to manage the ONS 15530, ONS 15540 ESP, or ONS 15540 ESPx, you must purchase a license for LAN Management Solution (LMS) Release 2.5, which includes CiscoView.

The license for CiscoView is bundled with CTM if used to manage the ONS 15501 DC or AC. You do not need to purchase a separate CiscoView license to manage the ONS 15501 DC or AC.



Note If you check the Install CiscoView Server check box, you receive the following prompt:

```
CiscoView installation has been moved to CTM Server Disk 4. After CTM server has
been installed, insert the CTM Server Disk 4 and run the './installCiscoView.sh'
script.
```

You must install the CTM server before you can install CiscoView. After installing the CTM server, see [Chapter 6, “Installing and Setting Up CiscoView.”](#)

Step 12 At the Select Modules to Install screen, select individual modules or select all; then, click **Next**.

- Optical Module: ONS 15xxx (inc. shelf controller)
- Cisco MGX Voice Gateway
- IOS XR Module: XR 12000, CRS-1 (inc. shelf controller)
- All of the Above Modules



Note The MDS 9000 module is a common module that will be installed with any selection.



Note Because the Cisco 7600 module is not supported in earlier releases, the IOS Module: Cisco 7600 option is disabled. To add this module, see [3.6 Adding New Modules, page 3-18](#).

Step 13 At the Main Options screen, complete the following substeps:

- a. Check the **Upgrade CTM database** check box.
- b. Check the **Install CTM server** check box.
- c. Click **Next**.

Step 14 (Optional) If you selected **Upgrade CTM network configuration size** in [Step 10](#), the Select to Upgrade Network Configuration Type screen appears. Select the option to upgrade your current network configuration type.

Step 15 (Optional) At the Select Network Configuration screen, select which of the following available network configuration types you want to upgrade:

- Large
- High end



Note This screen is displayed only if you selected the Upgrade Network Configuration Type option in the previous step.

Step 16 At the CTM Group Information & Sudo Installation screen, complete the following substeps:

- Enter the name of the UNIX group to which you want to assign administrator privileges.
- To install sudo, check the **Install CTM Sudo** check box. If you do not want to install sudo, uncheck the check box.
- Click **Next**.



Note For information about the sudo feature, see [1.4.1 Overview of Sudo Commands, page 1-18](#).

Step 17 (For optical selections only) At the FTP Information screen, complete the following substeps to configure an FTP account for software download operations:

- Enter the following information:
 - FTP username
 - FTP user password
 - Confirm FTP user password
 - FTP directory
- Check or uncheck the **Create new FTP account** check box. If checked, the FTP user will be created automatically on the CTM server workstation by the install script. If unchecked, it is assumed that an FTP user already exists on the CTM server workstation.
- Click **Next**.



Note The FTP information that you enter during the CTM server installation can be modified later from the CTM client Control Panel window. See *Cisco Transport Manager Release 7.2 User Guide* for more information.

Step 18 At the Server IP Address screen, specify an IP address for the CTM server. The Hostname field is automatically populated with the hostname of the selected IP address. After confirming the IP address and hostname details, click **Next**.



Note The hostname is available only if you select Cisco MGX Voice Gateway.

Step 19 At the Configure TFTP Server screen, complete the following substeps if you want to enable TFTP for optical or Cisco IOS XR devices:

- Check the **Enable TFTP Server** check box.
- Enter the TFTP directory name. The default is /tftpboot.

c. Click **Next**.



Note Because the Cisco 7600 module is not supported in earlier releases, this screen does not apply to the Cisco 7600.

Step 20 At the Destination Folder screen, specify where you want to install the CTM server. The default directory is `/opt/CiscoTransportManagerServer`. You can click **Change** to choose a different destination. After you specify your destination, click **Next**.



Note If the destination directory that you specified is a new directory, you will receive the message “Specified directory does not exist, create it?” Click **Yes**.



Note Do not specify any mount point as the target installation directory for the server installation, or the installation data might be lost when the workstation restarts.



Caution CTM checks for the `/opt/CiscoTransportManagerServer` directory or a symbolic link to it. If CTM cannot find the `/opt/CiscoTransportManagerServer` directory or a symbolic link, CTM creates a symbolic link automatically. Therefore, do not delete any instances of `/opt/CiscoTransportManagerServer` from your CTM file structure.

Step 21 The Pre-Installation Summary screen shows the items that will be installed. Click **Install**.



Note It might take 30 to 60 minutes or longer to install the CTM server and upgrade the database, depending on your system performance.

Step 22 At the Insert New Media screen, complete the following substeps:

- a. Eject the CTM Server Disk 1 installation CD, insert the CTM Server Disk 2 installation CD, and click **Browse**.
- b. The Select a Folder dialog box opens. Double-click **cdrom**; then, single-click **cdrom0**. The filename text box now reads `/cdrom/cdrom0`.
- c. In the Select a Folder dialog box, click **Select**.
- d. In the Insert New Media screen, click **OK**.
- e. Eject the CTM Server Disk 2 installation CD, insert the CTM Server Disk 3 installation CD, and click **Browse**.
- f. The Select a Folder dialog box opens. Double-click **cdrom**; then, single-click **cdrom0**. The filename text box now reads `/cdrom/cdrom0`.
- g. In the Select a Folder dialog box, click **Select**.
- h. In the Insert New Media screen, click **OK**.

Step 23 The Web Server Installation Summary screen summarizes the results of the web server installation. Click **Next**.

Step 24 The Install Complete screen summarizes the results of the installation. Click **Next**.

Step 25 The Upgrade Server and Database Complete screen displays the log location. Click **Done**.

Step 26 (If you are upgrading from CTM R6.0, skip this step.) If you are upgrading from CTM R7.0, enter the following commands:

```
cd /opt/CiscoTransportManagerServer.oldCTM/patch/migration/7.2.0
./post_migration.sh
cd /
```

Step 27 Enter the following command to reboot the system. The CTM server starts automatically after rebooting:

**Caution**

After you click the Done button in the installation GUI, the background processes continue to run for several minutes. Before rebooting, you must wait for the reboot message on the terminal where you started the installation. Depending on the server performance, the background processes can take up to 15 minutes before the reboot message appears. Rebooting the server before this message appears will break CTM functionalities.

```
init 6
```

Step 28 To verify that the CTM R7.2 server is running, enter the **showctm** command after the server reboots. The **showctm** command displays the CTM server version running as 7.2, followed by the build number. In the output, you will see two instances of “CTM Server,” “SnmpTrapService,” “SMService,” and “Apache Web Server.” This indicates that the CTM server is running. You should also see NE-specific processes, depending on your network. You might also see CTM GateWay/CORBA and CTM GateWay/TL1 instances.

3.1.2 Copying the Client Upgrade Files After the CTM Server Installation

You have two options for upgrading each client installation to the latest version of CTM that is on the server. You can choose to:

- Manually upgrade each client installation. If you have a previously installed version of the CTM client, you must delete the directory where the previous client is installed before installing the CTM R7.2 client. See [5.1 Installing the CTM Client and Cisco Edge Craft on Microsoft Windows, page 5-2](#) or [5.4 Installing the CTM Client and Cisco Edge Craft on Sun Solaris, page 5-6](#) for more information.
- Automatically upgrade each client when it connects to a server. During login, if the CTM client software version is older than the CTM server software version, the client will be prompted for upgrade. See [5.2 Starting the CTM Client in Microsoft Windows, page 5-5](#) or [5.5 Starting the CTM Client in Sun Solaris, page 5-8](#) for more information.

For this option you must copy the client installation files to the server. The CTM client and server installation files reside on separate installation CDs. To copy the client installation files to the server, you must eject the CTM server CD, insert the CTM client CD, and run an automated script, `CopyUpgradeFiles.sh`, to copy the client installation files to a specific folder under the CTM server installation directory. To do this, log in as the root user and complete the following steps.

**Note**

The CTM server must be installed before completing the following steps.

Step 1 Enter the following commands to eject the CTM server installation CD:

```
cd /
eject cdrom
```

Step 2 Insert the CTM client Solaris installation CD and enter the following command:

```
/cdrom/cdrom0/ctmc/CopyUpgradeFiles.sh
```

You should see the following output:

```
Copying the client upgrade files can take several minutes.
Copying CTM Client upgrade files...
Copying Solaris client upgrade files
Solaris client upgrade files copied
Please insert CTM client Windows CD to CD ROM, Copy will continue in 60 seconds...
Could not find Window Client CD, Please insert CTM client Windows CD to continue
Copy will continue in 300 seconds...
Copying Windows client upgrade files
Done...All upgrade files have been copied to server successfully!
Please hit Enter key to return to the prompt mode
```



Note This operation will occupy 800 MB of disk space.

3.2 Upgrading from CTM R6.0 or CTM R7.0 to CTM R7.2 and Oracle9i on Separate Workstations

This section describes how to upgrade from CTM R6.0 or CTM R7.0 to CTM R7.2 when you are installing the CTM R7.2 server and the Oracle9i database on separate Sun Solaris 8 servers.

Before upgrading the database to CTM R7.2, it is strongly recommended that you back up the existing database. This ensures that you can revert to the old data in the event that the upgrade fails.



Note The C shell is assumed for all UNIX commands.

3.2.1 Upgrading the Database on the CTM Database Workstation

To upgrade the database, log in as the root user on the CTM server workstation and complete the following steps:

Step 1 Enter the following command to verify that the CTM server is running:

```
showctm
```

Step 2 If the CTM server is running, enter the following command to stop the server before performing the upgrade:

```
ctms-abort
```

Step 3 (If you are upgrading from CTM R6.0, skip this step.) If you are upgrading from CTM R7.0, install the latest CTM R7.0 service pack. See the [Migration Matrix for CTM Service Pack Releases](#) for more information.

Step 4 Log in as the root user on the CTM database workstation and complete the following substeps:

- a. (If you are upgrading from CTM R6.0, skip this step.) If you're upgrading from CTM 7.0, enter the following commands:

```
cd /opt/CiscoTransportManagerServer/patch/migration/7.2.0
./pre_migration.sh
cd /
```

- b. If you are using an xterm window or a remote host, enter the following command to set the DISPLAY variable:

```
setenv DISPLAY <hostname_or_IP_address>:0.0
```

- c. Enter the following command to verify that the display is set correctly:

```
echo $DISPLAY
```

In the output, you should see:

```
<hostname_or_IP_address>:0.0
```

- d. Insert the CTM Server Disk 1 installation CD and enter the following commands:

```
cd /
cdrom/cdrom0/Disk1/ctmsetup.sh
```

The setup program searches for Sun Microsystems JRE version 1.4.2_11 on your workstation.



Note If JRE is not installed, the setup program starts the Java installation program. Follow the prompts to install JRE. Enter **yes** at the following binary license code agreement prompt:
Do you agree to the above license terms? [yes or no]

Then, continue upgrading the database.



Note If the required Solaris patches are missing, you must install them manually. Click **Cancel**; then, click **Quit**. Download the patches from SunSolve Online at <http://sunsolve.sun.com>. After you install the patches, continue installing the CTM server and database.

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Wait for up to 60 seconds while the following message appears:

```
Please wait, Cisco Transport Manager Server Release 7.2 is being configured for your
system. This may take a moment...
```

- e. Click **Next** at the Introduction screen.
- f. At the License Agreement screen, read the license agreement and click the **I accept the terms of the license agreement** radio button. Click **Next**.
- g. At the Installation Options screen, choose **Upgrade from existing CTM release**; then, click **Next**.



Note If your network size is medium or large, you can also choose **Upgrade CTM network configuration size**. (Small or high-end network sizes cannot be upgraded.) Alternately, you can upgrade the network size as a separate step; see [3.5 Upgrading the CTM Network Configuration Size](#), page 3-18.

- h. At the Select Products to Install screen, check the **Cisco Transport Manager server** check box; then, click **Next**.



Note The Web Server check box is selected automatically when you choose Cisco Transport Manager server. The web server allows you to use an HTTP connection to download files from the CTM server to the CTM client. The web server is also used to launch the online help and CiscoView, which is an application used by CTM to configure and monitor ONS 155xx NEs. The web server is required for the CTM server.



Caution Do not check the other check boxes on the Select Products to Install screen.



Note The license for CTM GateWay/CORBA is sold separately. If you are using this feature in a production environment, you must purchase a license. You can install CTM GateWay/CORBA when you install the CTM server; however, this section assumes that you are installing the two products separately. For more information, see [Chapter 4, “Installing CTM GateWay/CORBA R7.2.”](#)



Note The license for CiscoView is sold separately if used to manage the ONS 15530, ONS 15540 ESP, or ONS 15540 ESPx. If you are using this feature in a production environment to manage the ONS 15530, ONS 15540 ESP, or ONS 15540 ESPx, you must purchase a license for LAN Management Solution (LMS) Release 2.5, which includes CiscoView.

The license for CiscoView is bundled with CTM if used to manage the ONS 15501 DC or AC. You do not need to purchase a separate CiscoView license to manage the ONS 15501 DC or AC.

If you check the Install CiscoView Server check box, you receive the following prompt:

```
CiscoView installation has been moved to CTM Server Disk 4. After CTM server
has been installed, insert the CTM Server Disk 4 and run the
'./installCiscoView.sh' script.
```

You must install the CTM server before you can install CiscoView. After installing the CTM server, see [Chapter 6, “Installing and Setting Up CiscoView.”](#)

- i. At the Select Modules to Install screen, select individual modules or select all; then, click **Next**.
- Optical Module: ONS 15xxx (inc. shelf controller)
 - Cisco MGX Voice Gateway
 - IOS XR Module: XR 12000, CRS-1 (inc. shelf controller)

- All of the Above Modules



Note Because the Cisco 7600 module is not supported in earlier releases, the IOS Module: Cisco 7600 option is disabled. To add this module, see [3.6 Adding New Modules, page 3-18](#).

- j. At the Main Options screen, check only the **Upgrade CTM database** check box; then, click **Next**.



Note Be sure to uncheck the **Install CTM server** check box.

- k. (Optional) If you selected **Upgrade CTM network configuration size** in g., the Select to Upgrade Network Configuration Type screen appears. Select the option to upgrade your current network configuration type.

- l. (Optional) At the Select Network Configuration screen, select which of the following available network configuration types you want to upgrade:

- Large
- High end



Note This screen is displayed only if you selected the Upgrade Network Configuration Type option in the previous step.

- m. At the CTM Group Information & Sudo Installation screen, complete the following substeps:
1. Enter the name of the UNIX group to which you want to assign administrator privileges.
 2. To install sudo, check the **Install CTM Sudo** check box. If you do not want to install sudo, uncheck the check box.
 3. Click **Next**.



Note For information about the sudo feature, see [1.4.1 Overview of Sudo Commands, page 1-18](#).

- n. (For optical selections only) At the FTP Information screen, accept the default selections; then, click **Next**.

- o. The Pre-Installation Summary screen shows the items that will be installed. Click **Install**.



Note It might take 20 minutes or longer to upgrade the database, depending on your system performance.

- p. The Upgrade Database Complete screen summarizes the results of the upgrade. Click **Done**.

- q. (If you are upgrading from CTM R6.0, skip this step.) If you are upgrading from CTM R7.0, enter the following commands:

```
cd /opt/CiscoTransportManagerServer.oldCTM/patch/migration/7.2.0
./post_migration.sh
cd /
```

3.2.2 Installing the CTM R7.2 Server on the CTM Server Workstation


Note

The C shell is assumed for all UNIX commands.

To install the CTM server, log in as the root user on the workstation where the CTM server will run and complete the following steps:

- Step 1** If you are using an xterm window or a remote host, enter the following command to set the DISPLAY variable:

```
setenv DISPLAY <hostname_or_IP_address>:0.0
```

- Step 2** Enter the following command to verify that the display is set correctly:

```
echo $DISPLAY
```

In the output, you should see:

```
<hostname_or_IP_address>:0.0
```

- Step 3** Insert the CTM Server Disk 1 installation CD and enter the following commands:

```
cd /
cdrom/cdrom0/Disk1/ctmsetup.sh
```

The setup program searches for Sun Microsystems JRE version 1.4.2_11 on your workstation.


Note

If JRE is not installed, the setup program starts the Java installation program. Follow the prompts to install JRE. Enter **yes** at the following binary license code agreement prompt:

```
Do you agree to the above license terms? [yes or no]
```

Then, continue installing the CTM server.


Note

If the required Solaris patches are missing, you must install them manually. Click **Cancel**; then, click **Quit**. Download the patches from SunSolve Online at <http://sunsolve.sun.com>. After you install the patches, continue installing the CTM server.

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Wait for up to 60 seconds while the following message appears:

```
Please wait, Cisco Transport Manager Server Release 7.2 is being configured for your
system. This may take a moment...
```

- Step 4** Click **Next** at the Introduction screen.
- Step 5** At the License Agreement screen, read the license agreement and click the **I accept the terms of the license agreement** radio button. Click **Next**.
- Step 6** At the Installation Options screen, choose **Upgrade from existing CTM release**; then, click **Next**.
- Step 7** At the Select Products to Install screen, check the **Cisco Transport Manager server** check box; then, click **Next**.



Caution Do not check the other check boxes on the Select Products to Install screen.

Step 8 At the Select Modules to Install screen, select individual modules or select all; then, click **Next**.

- Optical Module: ONS 15xxx (inc. shelf controller)
- Cisco MGX Voice Gateway
- IOS XR Module: XR 12000, CRS-1 (inc. shelf controller)
- All of the Above Modules



Note The MDS 9000 module is a common module that will be installed with any selection.



Note Because the Cisco 7600 module is not supported in earlier releases, the IOS Module: Cisco 7600 option is disabled. To add this module, see [3.6 Adding New Modules, page 3-18](#).

Step 9 At the Main Options screen, check only the **Install CTM server** check box; then, click **Next**.



Note Be sure to uncheck the **Upgrade CTM database** check box.

Step 10 At the CTM Group Information & Sudo Installation screen, complete the following substeps:

- a. Enter the name of the UNIX group to which you want to assign administrator privileges.
- b. To install sudo, check the **Install CTM Sudo** check box. If you do not want to install sudo, uncheck the check box.
- c. Click **Next**.

Step 11 (For optical selections only) At the FTP Information screen, complete the following substeps to configure an FTP account for software download operations:

- a. Enter the following information:
 - FTP username
 - FTP user password
 - Confirm FTP user password
 - FTP directory
- b. Check or uncheck the **Create new FTP account** check box. If checked, the FTP user will be created automatically on the CTM server workstation by the install script. If unchecked, it is assumed that an FTP user already exists on the CTM server workstation.
- c. Click **Next**.



Note The FTP information that you enter during the CTM server installation can be modified later from the CTM client Control Panel window. See *Cisco Transport Manager Release 7.2 User Guide* for more information.

- Step 12** At the Server IP Address screen, specify an IP address for the CTM server. The Hostname field is automatically populated with the hostname of the selected IP address. After confirming the IP address and hostname details, click **Next**.



Note The hostname is available only if you select Cisco MGX Voice Gateway.

- Step 13** At the Configure TFTP Server screen, complete the following substeps if you want to enable TFTP for optical or Cisco IOS XR devices:

- a. Check the **Enable TFTP Server** check box.
- b. Enter the TFTP directory name. The default is /tftpboot.
- c. Click **Next**.

- Step 14** At the Specify CTM Database to Connect to screen, enter the IP address or hostname of the database workstation; then, click **Next**.



Caution Be sure to enter the correct IP address or hostname. Do not simply accept the default.



Note If you entered a hostname, the setup program automatically translates the hostname to a physical IP address and prompts you to confirm the address. Click **Yes**.

- Step 15** At the Destination Folder screen, specify where you want to install the CTM server. The default directory is /opt/CiscoTransportManagerServer. You can click **Change** to choose a different destination. After you specify your destination, click **Next**.



Note If the destination directory that you specified is a new directory, you will receive the message “Specified directory does not exist, create it?” Click **Yes**.



Note Do not specify any mount point as the target installation directory for the server installation, or the installation data might be lost when the workstation restarts.



Caution CTM checks for the /opt/CiscoTransportManagerServer directory or a symbolic link to it. If CTM cannot find the /opt/CiscoTransportManagerServer directory or a symbolic link, CTM creates a symbolic link automatically. Therefore, do not delete any instances of /opt/CiscoTransportManagerServer from your CTM file structure.

- Step 16** The Pre-Installation Summary screen shows the items that will be installed. Click **Install**.



Note It might take 20 minutes or longer to install the server, depending on your system performance.

- Step 17** At the Insert New Media screen, complete the following substeps:

- a. Eject the CTM Server Disk 1 installation CD, insert the CTM Server Disk 2 installation CD, and click **Browse**.

- b. The Select a Folder dialog box opens. Double-click **cdrom**; then, single-click **cdrom0**. The filename text box now reads `/cdrom/cdrom0`.
 - c. In the Select a Folder dialog box, click **Select**.
 - d. In the Insert New Media screen, click **OK**.
- Step 18** The Web Server Installation Summary screen summarizes the results of the web server installation. Click **Next**.
- Step 19** The Install Complete screen summarizes the results of the installation. Click **Next**.
- Step 20** The Upgrade Server Complete screen displays the log location. Click **Done**.
- Step 21** Enter the following command to reboot the system. The CTM server starts automatically after rebooting:

**Caution**

After you click the Done button in the installation GUI, the background processes continue to run for several minutes. Before rebooting, you must wait for the reboot message on the terminal where you started the installation. Depending on the server performance, the background processes can take up to 15 minutes before the reboot message appears. Rebooting the server before this message appears will break CTM functionalities.

```
init 6
```

- Step 22** To verify that the CTM R7.2 server is running, enter the **showctm** command after the server reboots. The **showctm** command displays the CTM server version running as 7.2, followed by the build number. In the output, you will see two instances of “CTM Server,” “SnmpTrapService,” “SMService,” and “Apache Web Server.” This indicates that the CTM server is running. You should also see NE-specific processes, depending on your network. You might also see CTM GateWay/CORBA and CTM GateWay/TL1 instances.

3.2.3 Copying the Client Upgrade Files After the CTM Server Installation

You have two options for upgrading each client installation to the latest version of CTM that is on the server. You can choose to:

- Manually upgrade each client installation. If you have a previously installed version of the CTM client, you must delete the directory where the previous client is installed before installing the CTM R7.2 client. See [5.1 Installing the CTM Client and Cisco Edge Craft on Microsoft Windows, page 5-2](#) or [5.4 Installing the CTM Client and Cisco Edge Craft on Sun Solaris, page 5-6](#) for more information.
- Automatically upgrade each client when it connects to a server. During login, if the CTM client software version is older than the CTM server software version, the client will be prompted for upgrade. See [5.2 Starting the CTM Client in Microsoft Windows, page 5-5](#) or [5.4 Installing the CTM Client and Cisco Edge Craft on Sun Solaris, page 5-6](#) for more information.

For this option you must copy the client installation files to the server. The CTM client and server installation files reside on separate installation CDs. To copy the client installation files to the server, you must eject the CTM server CD, insert the CTM client CD, and run an automated script, `CopyUpgradeFiles.sh`, to copy the client installation files to a specific folder under the CTM server installation directory. To do this, log in as the root user and complete the following steps.



Note The CTM server must be installed before completing the following steps.

Step 1 Enter the following commands to eject the CTM server installation CD:

```
cd /
eject cdrom
```

Step 2 Insert the CTM client Solaris installation CD and enter the following command:

```
/cdrom/cdrom0/ctmc/CopyUpgradeFiles.sh
```

You should see the following output:

```
Copying the client upgrade files can take several minutes.
Copying CTM Client upgrade files...
Copying Solaris client upgrade files
Solaris client upgrade files copied
Please insert CTM client Windows CD to CD ROM, Copy will continue in 60 seconds...
Could not find Window Client CD, Please insert CTM client Windows CD to continue
Copy will continue in 300 seconds...
Copying Windows client upgrade files
Done...All upgrade files have been copied to server successfully!
Please hit Enter key to return to the prompt mode
```



Note This operation will occupy 800 MB of disk space.

3.3 Verifying that the Oracle9i and CTM Server Processes Are Running

After installation, complete the following steps to verify that the Oracle9i and CTM server processes are running:

Step 1 Enter the following commands on the CTM database workstation to verify that CTM database is running:

```
su - oracle
sqlplus ctmanager/<password_for_ctmanager_Oracle_user>
```



Note The default password for the ctmanager oracle user is *ctm123!*.

You should see the following output:

```
Connected to:
Oracle9i...
```

Step 2 Enter the following command to exit SQL*Plus:

```
exit
```

Step 3 Enter the following command to verify that the CTM R7.2 server is running:

```
showctm
```

In the output, you should see the text “CTM Server,” “SnmpTrapService,” “SMService,” and “Apache Web Server.” This indicates that the CTM server is running. You should also see some NE-specific processes, depending on your network. You might also see CTM GateWay/CORBA and CTM GateWay/TL1 instances.

Step 4 If the CTM server is not running, log into the UNIX workstation as the root user and enter the following command:

```
ctms-start
```

Step 5 If the following error is returned on the command prompt for the web server:

```
(125)Address already in use: make_sock: could not bind to address <IP_address>
no listening sockets available, shutting down
```

Complete the following substeps:

a. Enter the following command on the server workstation; then, kill the processes listed:

```
ps -ef | grep httpd | grep CiscoTransportManagerServer | grep -v grep
```

b. Enter the following command to shut down the CTM server:

```
ctms-stop
```

c. Enter the following command to restart the CTM server (this restarts the latest installed web server):

```
ctms-start
```

Step 6 If you do not have root user privileges but you belong to the UNIX group that can use sudo functionality to run commands as nonroot, enter the following command:

```
sudo ctms-start
```

3.4 Setting Up Sudo

As described in [1.4.1 Overview of Sudo Commands, page 1-18](#), the CTM server installation includes installation of the UNIX sudo command. This command allows nonroot users who belong to the UNIX group specified during installation to run certain CTM administrative commands. For security reasons, the installed sudo command **setuid** is disabled by default. You must enable setuid on the sudo command in order for it to work.



Note

Sudo is often available in the standard UNIX environment established by the CTM server system administrator. If so, it is not necessary to use the sudo bundled with CTM or follow this procedure to enable it. Instead, you can use the sudo established by the system administrator.

To enable setuid:

Step 1 Log into the CTM server as the root user and enter the following command:

```
chmod 4111 /opt/CiscoTransportManagerServer/admin/sudo/sudo
```

- Step 2** Verify that users have `/opt/CiscoTransportManagerServer/admin/sudo` in their path environment, so that they can execute `sudo` without having to specify the full path.
-

3.5 Upgrading the CTM Network Configuration Size

You can complete the following procedure whether you are installing CTM R7.2 as a new installation or upgrading to CTM R7.2 from an earlier release.

- Step 1** At the Introduction screen, click **Next**.
- Step 2** At the License Agreement screen, read the license agreement and click the **I accept the terms of the license agreement** radio button. Click **Next**.
- Step 3** At the Installation Options screen, choose **Upgrade CTM network configuration size**; then, click **Next**.
- Step 4** At the Select Network Configuration screen, specify the size of your network; then, click **Next**.



Note You can upgrade the network configuration only if your network size is medium or large. Small and high-end configurations cannot be upgraded.

- Step 5** At the Pre-Installation Summary screen, click **Install**.
-

3.6 Adding New Modules

You can complete the following procedure whether you are installing CTM R7.2 as a new installation or upgrading to CTM R7.2 from an earlier release.

- Step 1** If the GUI is running, exit.
- Step 2** Enter the following command to stop the CTM server:
- ```
ctms-stop
```
- Step 3** Insert the CTM Server Disk 1 installation CD and enter the following commands:
- ```
cd /
cdrom/cdrom0/Disk1/ctmsetup.sh
```

Wait for up to 60 seconds while the following message appears:

```
Please wait, Cisco Transport Manager Server Release 7.2 is being configured for your system. This may take a moment...
```

- Step 4** Click **Next** at the Introduction screen.
- Step 5** At the License Agreement screen, read the license agreement and click the **I accept the terms of the license agreement** radio button. Click **Next**.
- Step 6** At the Installation Options screen, choose **Add new modules**; then, click **Next**.
- Step 7** At the Select Modules to Install screen, select individual modules or select all; then, click **Next**.

- Optical Module: ONS 15xxx (inc. shelf controller)
- Cisco MGX Voice Gateway
- IOS XR Module: XR 12000, CRS-1 (inc. shelf controller)
- IOS Module: Cisco 7600
- All of the Above Modules



Note For any modules that are already installed, the option to install them is dimmed. You cannot install modules that are already installed. Only modules that are not yet installed are selectable.

- Step 8** (For optical or Cisco 7600 modules) At the FTP Information screen, enter the following information to configure an FTP account for software download operations:
- FTP username
 - FTP user password
 - Confirm FTP user password
 - FTP directory
- Step 9** At the Configure TFTP Server screen, complete the following substeps if you want to enable TFTP for optical, Cisco IOS XR, and Cisco 7600 modules:
- a. Check the **Enable TFTP Server** check box.
 - b. Enter the TFTP directory name. The default is /tftpboot.
 - c. Click **Next**.
- Step 10** At the Pre-Installation Summary screen, click **Install**.
- Step 11** At the Add New Module Complete screen, click **Done**.
- Step 12** After the install is complete, enter the following command to start the CTM server:
- ```
ctms-start
```
- Step 13** Start the client GUI after all of the CTM server services are launched.
-





# CHAPTER 4

## Installing CTM GateWay/CORBA R7.2

The CTM GateWay/CORBA R7.2 option is a CORBA-based interface that provides higher layer management systems with information for all CTM-supported NEs.



### Note

The license for CTM GateWay/CORBA R7.2 is sold separately. If you are using this feature in a production environment, you must purchase a license.

You can install CTM GateWay/CORBA when you install the CTM server, or you can install CTM GateWay/CORBA separately. This chapter describes how to install CTM GateWay/CORBA as a separate option after installing the CTM R7.2 server.



### Tip

For more information about CORBA support, including how to configure CTM GateWay/CORBA, see the *Cisco Transport Manager GateWay/CORBA Release 7.2 User Guide and Programmer Manual*.

This chapter contains the following sections:

- [4.1 Installing CTM GateWay/CORBA R7.2, page 4-1](#)
- [4.2 Re-enabling CTM GateWay/CORBA After Reinstalling the CTM Database, page 4-3](#)

## 4.1 Installing CTM GateWay/CORBA R7.2



### Note

You must install CTM GateWay/CORBA on the same workstation as the CTM server. During the CTM GateWay/CORBA installation, you do not need to shut down the CTM server.



### Note

The CTM database must be up and running before installing CTM GateWay/CORBA.

Log into the CTM server workstation as the root user and complete the following steps in C shell:

### Step 1

If you are using an xterm window or a remote host, enter the following command to enable the xterm connection from the clients:

```
/usr/openwin/bin/xhost +
```

### Step 2

After the xterm connection is established, enter the following command to set the DISPLAY variable:

```
setenv DISPLAY <hostname_or_IP_address>:0.0
```

**Step 3** Enter the following command to verify that the display is set correctly:

```
echo $DISPLAY
```

In the output, you should see:

```
<hostname_or_IP_address>:0.0
```

**Step 4** Insert the CTM Server Disk 1 installation CD and enter the following commands:

```
cd /
cdrom/cdrom0/Disk1/ctmsetup.sh
```

The setup program searches for Sun Microsystems JRE version 1.4.2\_11 on your workstation.



**Note** If JRE is not installed, the setup program starts the Java installation program. Follow the prompts to install JRE. Enter **yes** at the following binary license code agreement prompt:  
Do you agree to the above license terms? [yes or no]

Then, continue installing CTM GateWay/CORBA.



**Note** If the required Solaris patches are missing, you must install them manually. Click **Cancel**; then, click **Quit**. Download the patches from SunSolve Online at <http://sunsolve.sun.com>. After you install the patches, continue installing CTM GateWay/CORBA.

The installation begins. Wait for up to 60 seconds while the following message appears:

```
Please wait, Cisco Transport Manager Server Release 7.2 is being configured for your
system. This may take a moment...
```

**Step 5** Click **Next** at the Introduction screen.

**Step 6** At the License Agreement screen, read the license agreement and click the **I accept the terms of the license agreement** radio button. Click **Next**.

**Step 7** At the Installation Options screen, check **New Installation**; then, click **Next**.

**Step 8** At the Select Products to Install screen, check the **Cisco Transport Manager CORBA GateWay** check box; then, click **Next**.

**Step 9** At the Server IP Address screen, specify an IP address for the server setup; then, click **Next**.

**Step 10** The Pre-Installation Summary screen shows the items that will be installed. Click **Install**.

**Step 11** The Install Complete screen summarizes the results of the installation. Click **Done**.

**Step 12** Enter the following commands to eject the CTM Server Disk 1 installation CD:

```
cd /
eject cdrom
```

## 4.2 Re-enabling CTM GateWay/CORBA After Reinstalling the CTM Database

If you reinstall the CTM database on the workstation where CTM GateWay/CORBA is installed, the CTM GateWay/CORBA node will be disabled in the Control Panel window.

To re-enable the CTM GateWay/CORBA node in the Control Panel, run the `update_config_for_gwcorba.sh` script located in the `/opt/CiscoTransportManagerServer/bin` directory.

■ 4.2 Re-enabling CTM GateWay/CORBA After Reinstalling the CTM Database



## CHAPTER 5

# Installing the CTM R7.2 Client and Cisco Edge Craft

---

This chapter describes how to install and start the CTM client and Cisco Edge Craft on Microsoft Windows or Sun Solaris. Cisco Edge Craft is the local craft application used to manage ONS 15302 and ONS 15305 NEs.



**Note**

---

You can have multiple versions of the Windows CTM client installed simultaneously (in different folders). When installing the CTM R7.2 client you can remove earlier versions, or leave them installed.

---



**Note**

---

You cannot have multiple versions of the Solaris CTM client installed on a Solaris workstation.

---

This chapter contains the following sections:

- [5.1 Installing the CTM Client and Cisco Edge Craft on Microsoft Windows, page 5-2](#)
- [5.2 Starting the CTM Client in Microsoft Windows, page 5-5](#)
- [5.3 Starting Cisco Edge Craft in Microsoft Windows, page 5-6](#)
- [5.4 Installing the CTM Client and Cisco Edge Craft on Sun Solaris, page 5-6](#)
- [5.5 Starting the CTM Client in Sun Solaris, page 5-8](#)
- [5.6 Starting Cisco Edge Craft in Sun Solaris, page 5-10](#)



**Note**

---

For an explanation of error messages that you might encounter during the CTM client installation, see [Appendix A, “Understanding Installation Error Messages.”](#)

---

## 5.1 Installing the CTM Client and Cisco Edge Craft on Microsoft Windows

This section describes how to install the CTM client and Cisco Edge Craft on your Windows 2000 Professional, Windows 2000 Terminal Server, or Windows XP Professional workstation.



### Note

You must have administrator privileges on the local workstation and the client software must be shut down before installing the CTM client.

### 5.1.1 Uninstalling the Previous Version of the CTM Client or Cisco Edge Craft

If you installed a previous version of the CTM client and you want to install another version of the CTM client in the same location on your system, it is recommended that you uninstall the previous version before installing the CTM R7.2 client or Cisco Edge Craft. If you want to have another version of the CTM client in your system (without uninstalling the previous version), choose a different folder to install the CTM client.

To uninstall a CTM client, see [B.3 Uninstalling the CTM Client and Cisco Edge Craft on Microsoft Windows, page B-2](#).

### 5.1.2 Installing the CTM Client and Cisco Edge Craft

- 
- Step 1** Insert the CTM client installation CD and navigate to `ctmc\win32\setup.exe`. Double-click **setup.exe**.
- Step 2** Click **Next** at the Introduction screen.
- Step 3** At the Destination Folder screen, complete the following substeps:
- Specify where you want to install the CTM client. The default destination folder is `C:\Cisco\TransportManagerClient7_2`. You can click **Change** to choose a different destination.
  - Specify whether you want to create a CTM desktop icon, a CTM shortcut in the Start menu, or both. If you choose the Start menu shortcut option, specify the destination folder for the shortcut. The default shortcut folder is `Programs\Cisco Transport Manager`.
  - Click **Next**.
- 
- Note** If the destination directory that you specified is a new directory, you will receive the message “Specified directory does not exist, create it?” Click **Yes**.
- 
- Step 4** At the Select Default Memory Configuration screen, specify the size of your server installation (small, medium, large, or high end). Click **Next**.
- Step 5** At the Launch Cisco Edge Craft screen, specify whether you want to install Cisco Edge Craft at the same time as the CTM client. If you choose to install Cisco Edge Craft, it will be installed in the `<CTM_home_directory>/CiscoEdgeCraft/` folder. Click **Next**.

**Note**

If you do not choose to install Cisco Edge Craft in [Step 5](#), you cannot install it manually during a second installation. Instead, if you decide to install Cisco Edge Craft later, you will need to uninstall the CTM client and then repeat the CTM client installation, this time checking the check box to install Cisco Edge Craft.

**Note**

If your Cisco Edge Craft is bundled and installed with a CTM client, you cannot upgrade it with a standalone Cisco Edge Craft package.

**Note**

Cisco Edge Craft is an SNMP-based application. Verify that the machine performing the installation can reach the ONS 1530x devices through port UDP 161 before launching it.

- Step 6** The Pre-Installation Summary screen shows the items that will be installed and the space that is required. Click **Install**.
- Step 7** The Install Complete screen summarizes the results of the installation. Click **Done**.
- Step 8** Eject the CTM client installation CD.

## 5.1.3 Specifying the Default Browser to Display the Online Help

In Microsoft Windows, CTM uses the default browser to display the online help. If you want to use a specific browser to launch the CTM online help, make that the default browser for your workstation.

**Note**

During testing, Cisco uses Internet Explorer, Netscape, and Mozilla to display the online help; other browsers have not been tested.

The online help for Cisco Edge Craft requires Adobe Acrobat Reader. Acrobat Reader is not required in your PATH environment variable, but the PDF file type must be associated with Acrobat Reader.

### 5.1.3.1 Special Considerations when Proxy Server Is Enabled

If you are using a proxy-server enabled web browser, complete one of the following options, depending on your browser type.

For Internet Explorer, complete the following steps:

- Step 1** Choose **Tools > Internet Options**.
- Step 2** Click the **Connections** tab.
- Step 3** Click the **LAN Settings** button.
- Step 4** Complete one of the following options:
- Uncheck the **Use a proxy server for your LAN** check box.

- If the *Use a proxy server for your LAN* check box must remain checked, click **Advanced**. Enter your server IP address in the *Do not use proxy server addresses beginning with* field. Separate each address with a semicolon.

**Step 5** Click **OK**.

---

For Netscape and Mozilla, complete the following steps:

---

**Step 1** Choose **Edit > Preferences**.

**Step 2** Expand **Advanced** and choose **Proxies**.

**Step 3** Complete one of the following options:

- If you do not want to use a proxy, click **Direct connection to the Internet**.
- If you do not have a proxy location (URL), click **Manual proxy configuration**. In the *No Proxy for* field, enter the domains that you do not want to use a proxy for. Use a comma to separate domains.

**Step 4** Click **OK**.

---

## 5.1.4 Enabling the SSH Remote Access CLI for MGX

This procedure explains how to use the SSH client from SSH Communications Security or Tectia. Other SSH clients from other vendors are not supported. This procedure applies only to MGX devices.

---

**Step 1** Obtain SSH Tectia from [www.ssh.com](http://www.ssh.com).

**Step 2** Install SSH Tectia.

**Step 3** Open the local PC folder where Tectia is installed.

**Step 4** Change the name of the ssh-client-g3.exe executable to **sshclient.exe**.



**Note** The ssh-client-g3.exe filename is valid in Tectia release 5.1.3.8; the filename might be different for other release numbers.

---

**Step 5** Verify that the executable file exists in the current path. To do this, open a DOS shell and launch the sshclient.exe executable manually.

**Step 6** If the executable file does not exist in the current path, set the path environment to the directory path of putty.exe. To do this, complete the following substeps:

- a. Right-click **My Computer** and choose **Properties**.
  - b. Click the **Advanced** tab; then, click **Environment Variables**.
  - c. Select the PATH variable and add an entry for the PuTTY directory path.
  - d. Click **OK**; then, click **OK** to close the System Properties dialog box.
-

## 5.2 Starting the CTM Client in Microsoft Windows

**Step 1** Depending on the option you chose during installation, double-click the CTM desktop icon or choose the CTM Start menu shortcut to start the client.



**Note** It is not necessary to restart the workstation.

**Step 2** The first time you log in, use the default username and password:

- Username: **SysAdmin**
- Password: **Ctm123!**



**Note** The username and password are case sensitive. After you enter the password, the Password field displays a fixed-length string of 12 asterisks (\*), regardless of the actual length of the password.

**Step 3** Enter the CTM server hostname or IP address and click **OK**.



**Note** Do not enter a hostname unless Domain Name System (DNS) is enabled in your network.

**Step 4** By default, for security reasons you are prompted to change the password after you log in for the first time. Click **Yes**. The password complexity is configurable in the Control Panel > Security Properties pane. By default, the password must:

- Contain at least six characters, but not more than 12 characters.
- Contain at least two alphabetic characters (A–Z, a–z). Of the alphabetic characters, at least one must be uppercase and one must be lowercase.
- Contain at least one numeric character (0–9).
- Contain at least one special character (+ # % , . ; & !). The default special character set is TL1+UNIX.
- Allow a special character as the first or last character.
- Allow a numeric character as the first or last character.
- Not contain the username or any circular shift of the username. An uppercase letter and its corresponding lowercase letter are considered equivalent. For example, if the username is Arthur, the password cannot contain the string arthur, rthura, thurar, hurart, urarth, or rarthu.
- Differ from the old password by at least three characters. For example, if the old password is MikeBrady5!, the new password cannot be mikebrady5% because only the last character is different. However, the new password MikeBrady2!99 is acceptable because it differs from MikeBrady5! by three characters.

**Step 5** Change the password; then, click **OK**.

**Step 6** Click **OK** in the login advisory dialog box.

**Step 7** If your CTM client software version is older than the CTM server software version, you are prompted with the following dialog box:

CTM client needs to be upgraded for proper operation. Do you want to start the upgrade now? Selecting "No" will exit the application.

Click **Yes**. The CTM server automatically upgrades your CTM client to the newer version. Click **OK** at the “Proceeding with upgrade” prompt and follow the prompts to install the newer client version.



**Note** The default SysAdmin user has limited privileges. Create new CTM users with SuperUser privileges to have access to all CTM operations. See the *Cisco Transport Manager Release 7.2 User Guide* for information about user profiles and creating CTM users.

## 5.3 Starting Cisco Edge Craft in Microsoft Windows

**Step 1** Open a Windows DOS Command Prompt window. To do this, choose **Start > Programs > Accessories > Command Prompt**.

**Step 2** Change directories to the `<CTM_home_directory>/CiscoEdgeCraft/ bin` directory.



**Note** You can click **Change** to choose a different destination directory.

**Step 3** Run the **CiscoEdgeCraft.exe** file. The Cisco Edge Craft login screen appears.



**Note** It is not necessary to restart the workstation.

**Step 4** At the Cisco Edge Craft login screen, complete the following substeps:

- a. Enter the community string. The community string represents the NE password, which is set in the NE Flash memory by using the command-line interface (CLI).
- b. Enter the IP address of the NE that you want to connect to.
- c. Click **Logon**.

## 5.4 Installing the CTM Client and Cisco Edge Craft on Sun Solaris

This section describes how to install the CTM client and Cisco Edge Craft on your Sun Solaris 8 workstation.

### 5.4.1 Uninstalling the Previous Version of the CTM Client or Cisco Edge Craft

If you installed a previous version of the CTM client or Cisco Edge Craft, you must delete the directory where the previous client is installed before installing the CTM R7.2 client or Cisco Edge Craft. See [B.4 Uninstalling the CTM Client and Cisco Edge Craft on Sun Solaris, page B-3](#).

## 5.4.2 Installing the CTM Client and Cisco Edge Craft

**Step 1** Log in as the root user and insert the CTM client installation CD.

**Step 2** From a terminal window, enter the following commands:

```
cd /cdrom/cdrom0/ctmc/solaris/Disk1
./ctmcsetup.sh
```

The CTM client installation begins. Wait for up to 60 seconds while the following message appears:  
Installing Cisco Transport Manager client...

**Step 3** Click **Next** at the Introduction screen.

**Step 4** At the Destination Folder screen, complete the following substeps:

- a. Specify where you want to install the CTM client. The default destination folder is `/opt/CiscoTransportManagerClient`. You can click **Change** to choose a different destination.
- b. If you want to add a CTM icon to the Common Desktop Environment (CDE) front panel or add a CTM entry to the CDE Workspace menu, check the appropriate check box(es):

- **Add Icon to CDE Front Panel**
- **Add Entry to CDE Workspace Menu**

These options allow you to launch the CTM client without having to open a terminal or console window and invoke the `ctmc-start` command. If you choose either option, you might have to perform one of the following actions to see the changes:

- Restart your CDE Window Manager
- Log out of CDE; then, log back in
- Reboot the system

- c. Click **Next**.



**Note** If the destination directory that you specified is a new directory, you will receive the message “Specified directory does not exist, create it?” Click **Yes**.



**Note** Do not specify any mount point as the target installation directory for the client installation, or the installation data might be lost when the workstation restarts.

**Step 5** At the Select Default Memory Configuration screen, specify the size of your network (small, medium, large, or high end). Click **Next**.

**Step 6** At the Launch Cisco Edge Craft screen, specify whether you want to install Cisco Edge Craft at the same time as the CTM client. If you choose to install Cisco Edge Craft it will be installed in the `/opt/CiscoTransportManagerClient/CiscoEdgeCraft` folder. Click **Next**.



**Note** If your Cisco Edge Craft is bundled and installed with a CTM client, you cannot upgrade it with a standalone Cisco Edge Craft package.



**Note** Cisco Edge Craft is an SNMP-based application. Verify that the machine performing the installation can reach the ONS 1530x devices through port UDP 161 before launching it.

**Step 7** At the CTM Group Information screen, enter the name of the UNIX group to which you want to assign administrator privileges. The default is the group name of the root user. You can uncheck the *Ignore user-entered group name* check box and enter the group name of your choice. After you specify the CTM group name, click **Next**.



**Note** The group name must exist on the UNIX workstation in order for the CTM installation to proceed. The users that belong to the group must have the **umask 002** command configured.

**Step 8** The Pre-Installation Summary screen shows the items that will be installed and the space that is required. Click **Install**.

**Step 9** The Install Complete screen summarizes the results of the installation. Click **Done**.

**Step 10** Enter the following commands to eject the CTM client installation CD:

```
cd /
eject cdrom
```



**Note** If you do not choose to install Cisco Edge Craft in [Step 6](#), you cannot install it manually during a second installation. Instead, if you decide to install Cisco Edge Craft later, you will need to uninstall the CTM client and then repeat the CTM client installation, this time checking the check box to install Cisco Edge Craft.

### 5.4.3 Requirements to Display the Online Help

The online help for Cisco Edge Craft requires Adobe Acrobat Reader in your PATH environment variable.



**Tip** If you cannot launch the online help, open a command prompt from another window and enter the **xhost +** command, providing the full pathname. Also, verify that the DISPLAY variable is set correctly.

## 5.5 Starting the CTM Client in Sun Solaris

**Step 1** At the console, enter one of the following commands, depending on the size of your network configuration:

- If you are connecting to a small server, enter:  
`./ctmc-start -small`
- If you are connecting to a medium server, enter:  
`./ctmc-start -medium`

- If you are connecting to a large server, enter:  
`./ctmc-start -large`
- If you are connecting to a high-end server, enter:  
`./ctmc-start -highend`



**Caution** In the Bourne shell, if you enter **ctmc-start** to start the client and then execute **Ctrl+C** in the xterm window where the client was launched, the CTM client will terminate.



**Note** The installation program creates a soft link on `/usr/bin` for `ctmc-start`. If the soft link is missing, enter `<install_directory>/ctmc-start` at the console.

The following message appears:

```
Starting Cisco Transport Manager client. Please wait.
```

Wait 10 to 20 seconds for the CTM client application to start.

**Step 2** The first time you log in, enter the default username and password:

Username: **SysAdmin**

Password: **Ctm123!**



**Note** The username and password are case sensitive. After you enter the password, the Password field displays a fixed-length string of 12 asterisks (\*), regardless of the actual length of the password.

**Step 3** Enter the CTM server hostname or IP address and click **OK**.



**Note** Do not enter a hostname unless DNS is enabled in your network.

**Step 4** By default, for security reasons you are prompted to change the password after you log in for the first time. Click **Yes**. The password complexity is configurable in the Control Panel > Security Properties pane. By default, the password must:

- Contain at least six characters, but not more than 12 characters.
- Contain at least two alphabetic characters (A–Z, a–z). Of the alphabetic characters, at least one must be uppercase and one must be lowercase.
- Contain at least one numeric character (0–9).
- Contain at least one special character (+ # % , . ; & !). The default special character set is TL1+UNIX.
- Allow a special character as the first or last character.
- Allow a numeric character as the first or last character.
- Not contain the username or any circular shift of the username. An uppercase letter and its corresponding lowercase letter are considered equivalent. For example, if the username is Arthur, the password cannot contain the string arthur, rthura, thurar, hurart, urarth, or rarthu.

- Differ from the old password by at least three characters. For example, if the old password is MikeBrady5!, the new password cannot be mikebrady5% because only the last character is different. However, the new password MikeBrady2!99 is acceptable because it differs from MikeBrady5! by three characters.

**Step 5** Change the password; then, click **OK**.

**Step 6** Click **OK** in the login advisory dialog box.

**Step 7** If your CTM client software version is older than the CTM server software version, you are prompted with the following dialog box:

CTM client needs to be upgraded for proper operation. Do you want to start the upgrade now? Selecting "No" will exit the application.

Click **Yes**. The CTM server automatically upgrades your CTM client to the newer version. Click **OK** at the "Proceeding with upgrade" prompt and follow the prompts to install the newer client version.



**Note** The default SysAdmin user has limited privileges. Create new CTM users with SuperUser privileges to have access to all CTM operations. See the *Cisco Transport Manager Release 7.2 User Guide* for information about user profiles and creating CTM users.

## 5.6 Starting Cisco Edge Craft in Sun Solaris

**Step 1** Depending on the option you chose during installation, execute the link that you specified, or enter the following command:

```
/opt/CiscoTransportManagerClient/CiscoEdgeCraft/bin/CiscoEdgeCraft
```

**Step 2** At the Cisco Edge Craft login screen, complete the following substeps:

- Enter the community string. The community string represents the NE password, which is set in the NE Flash memory by using the CLI.
- Enter the IP address of the NE that you want to connect to.
- Click **Logon**.



# CHAPTER 6

## Installing and Setting Up CiscoView

---

This chapter contains the following sections:

- [6.1 Overview, page 6-1](#)
- [6.2 Preparing to Install CiscoView, page 6-2](#)
- [6.3 Installing Server-Based CiscoView, page 6-3](#)
- [6.4 Configuring Client Systems, page 6-5](#)
- [6.5 Downloading, Installing, and Upgrading New Device Packages, page 6-7](#)
- [6.6 Installing Embedded CiscoView, page 6-9](#)
- [6.7 Accessing CiscoView from CTM, page 6-10](#)
- [6.8 Troubleshooting the Installation, page 6-11](#)
- [6.9 Uninstalling CiscoView, page 6-16](#)

### 6.1 Overview

CiscoView is an application used by CTM to configure and monitor ONS 155xx NEs. CiscoView is included on the CTM Server Disk 4 installation CD. The CiscoView package contains the server-based CiscoView application and a device package for each supported device. You must install the CTM server before you can install CiscoView.



#### Note

The license for CiscoView is sold separately if used to manage the ONS 15530, ONS 15540 ESP, or ONS 15540 ESPx. If you are using this feature in a production environment to manage the ONS 15530, ONS 15540 ESP, or ONS 15540 ESPx, you must purchase a license for LAN Management Solution (LMS) Release 2.5, which includes CiscoView.

The license for CiscoView is bundled with CTM if used to manage the ONS 15501 DC or AC. You do not need to purchase a separate CiscoView license to manage the ONS 15501 DC or AC.

This chapter describes the requirements and installation procedures for server-based CiscoView. There is also a version of CiscoView that is embedded in the hardware, which provides the same functionality as server-based CiscoView. CiscoView is automatically launched from CTM when you use certain CTM options. CTM first tries to launch server-based CiscoView; if that fails, CTM launches embedded CiscoView. If embedded CiscoView is not available, an error message is displayed. Only server-based CiscoView is available for the ONS 15501.

For information about using CiscoView, see the *Cisco Transport Manager Release 7.2 User Guide* and the CiscoView online help.

Table 6-1 summarizes CiscoView support for the ONS 155xx devices.

**Table 6-1** Server-Based and Embedded CiscoView

| Network Element | Support for Server-Based CiscoView? | Support for Embedded CiscoView? |
|-----------------|-------------------------------------|---------------------------------|
| ONS 15501       | Yes                                 | No                              |
| ONS 15530       | Yes                                 | Yes                             |
| ONS 15540 ESP   | Yes                                 | Yes                             |
| ONS 15540 ESPx  | Yes                                 | Yes                             |

## 6.2 Preparing to Install CiscoView

Before you install CiscoView, verify the following:

- The CTM server is installed but is not running when you install CiscoView. Enter the **ctms-stop** command to stop the CTM server if it is running. The stop procedure shuts down the server and cleans all memory and connections. The overall process takes less than 5 minutes.
- You have root privileges to install CiscoView.



**Note**

If you need instructions to mount or unmount CDs, see [Appendix C, “Mounting and Unmounting CDs on Sun Solaris.”](#)

### 6.2.1 Server Requirements

Before installing CiscoView on the CTM R7.2 server, complete the following steps as the root user:

- 
- Step 1** See section [1.1 CTM Server Requirements, page 1-1](#), which lists patches required for CTM and CiscoView. Enter the **showrev -p | grep <patch\_number>** command to verify that the required Solaris patches are installed.
- Step 2** After installing the Solaris patches, enter the following command to reboot the server:
- ```
init 6
```
-

6.3 Installing Server-Based CiscoView

During the installation, the CiscoView application and all ONS 155xx device packages that were available when CiscoView 6.1 was released are installed. You might need to download additional packages to support your devices. For information on downloading and installing device packages, see [6.5 Downloading, Installing, and Upgrading New Device Packages, page 6-7](#).

**Note**

If you have an old version of CiscoView, that version will be uninstalled during the new installation.

- Step 1** Use the admin tool to check if a casuser user already exists. If a casuser user exists, modify the user as follows:
- The casuser must have no shell.
 - The casuser must have /opt/CSCOPx as the home directory.
 - The casuser must belong to the group casusers.

- Step 2** Insert the CTM Server Disk 4 installation CD (which contains the CiscoView software) and enter the following commands:

```
cd /cdrom/cdrom0/Disk4
./installCiscoView.sh
```

The installation script runs on the command tool. You will not see any dialog boxes or GUI windows.

**Note**

Let the installation script run on its own. If you receive any prompts during the execution of the script, do not enter any choices; the script proceeds with the default selections. It might take 20 to 30 minutes for the CiscoView installation to complete.

**Note**

During CiscoView installation, the installation window might become blank and the application appears to be unresponsive. If this occurs, use the /var/tmp/ctm_ciscoview_install.log file to view the status of installation. After the CiscoView installation is complete, the window returns to normal again.

After the script finishes, the command prompt reappears. The CiscoView installation is complete. When you start the CTM server, the CiscoView process starts along with other CTM processes.

**Note**

A warning message is displayed if obsolete Solaris patches are present on your server. Before running CiscoView, download and install the required patches from <http://sunsolve.sun.com>. See [6.2.1 Server Requirements, page 6-2](#).

**Note**

In this application, the following possible warning messages are normal; no action is required:

```
Warning: cscoosa was not found in /etc/services
Warning: cscoani was not found in /etc/services
```



Note If you want to start the CTM server before installing CiscoView, you can do so. However, you must enter the following command to start the CiscoView process alone, without disturbing the running CTM server:

```
/etc/init.d/dmgttd start
```

Step 3 If errors occurred during the installation, check the `/var/tmp/ctm_ciscoview_install.log` file. Each installation appends messages to this file. For troubleshooting information, see [6.8 Troubleshooting the Installation, page 6-11](#).



Tip Use the `ctms-start` and `ctms-stop` commands to start and stop the CiscoView daemon (`dmgttd`).



Tip Use the `showctm` command to see whether the CiscoView daemon is running. In the output, you should see the text “CiscoView.” This indicates that CiscoView server processes are running. Do not try to kill the individual processes.

Step 4 Set the following environment variables for CiscoView system administrators (CiscoView users with administrator privileges). These variables are not required for tasks performed by users from the desktop.

- Depending on your UNIX shell, add `/opt/CSCOPx/bin` to the `PATH` variable in the `.cshrc` or `.profile` files of CiscoView users who have administrator privileges.



Note The `cd` command takes you to the default user path, where you can locate the `.cshrc` or `.profile` files. Open the `.cshrc` or `.profile` file in an editor (such as `vi`) and add the following line:

```
set path = ($path /opt/CSCOPx/bin)
```

- Add `/opt/CSCOPx/man` to the `MANPATH` variable.



Note Open the `.cshrc` or `.profile` file in an editor (such as `vi`) and add the following line:

```
setenv MANPATH = ($MANPATH:/opt/CSCOPx/bin)
```

Step 5 Enter the following commands to eject the installation CD:

```
cd /
eject cdrom
```

6.4 Configuring Client Systems

First, verify that your client systems meet the requirements for CiscoView; then, use the procedures in this section to set up client systems.


Note

Verify that the CTM client is installed. If the CTM client is not installed, see [Chapter 5, “Installing the CTM R7.2 Client and Cisco Edge Craft.”](#)

6.4.1 Client Requirements

Before attempting to run CiscoView on a client, verify that the requirements listed in [Table 6-2](#) are met.

Table 6-2 Client Requirements

Requirement	Windows 2000/Windows XP	Solaris 8
Browser	Any of the following web browsers: <ul style="list-style-type: none"> • Mozilla 7.0(.1) • Internet Explorer 6.0 • Netscape 7.0 	Mozilla 7.0
Java Plug-in ¹	1.3.1-b24	1.3.1-b24
Patches	—	See section 1.1 CTM Server Requirements, page 1-1 , which lists patches required for CTM and CiscoView. Note Patches are available from SunSolve Online at http://sunsolve.sun.com . Download the patches and add them by using the addpatch <patch_number> command. This website is Copyright © 2006, Sun Microsystems, Inc.

1. CiscoView works only with the Java Plug-in 1.3.1-b24. The following Plug-in versions do not work: 1.4.2, 1.4.1, 1.4.0_01, 1.4.0, 1.3.1_04, 1.3.1_03, 1.3.1_02, 1.3.1_01a, 1.3.1_01, 1.3.0_05, 1.3.0_04, 1.3.0_03, 1.3.0_02, 1.3.0_01, or 1.3.0.

6.4.2 Setting Up a Microsoft Windows 2000 or Windows XP Client

Before launching CiscoView, set up the client:

-
- Step 1** Verify that one of the following browsers is installed as the default browser on the client system:
- Mozilla 7.0(.1)
 - Internet Explorer 6.0
 - Netscape 7.0
- Step 2** If Java Plug-in 1.3.1 is not installed on the client and you launch CiscoView, you will be prompted to download the Java Plug-in from the CTM server (valid only if the embedded CiscoView device package is used). On-screen instructions guide you through the download and installation process.
- Step 3** The browser requirements for embedded CiscoView are Netscape Navigator 4.77, 4.78, and 4.79 (Windows, AIX 4.3.3, HP-UX 11.0).



Note Use Netscape Navigator downloaded from Sun's website only.

6.4.3 Setting Up a Sun Solaris Client

Before launching CiscoView, set up the client:

-
- Step 1** Verify that Mozilla 7.0 is installed as the default browser on the client system.
 - Step 2** The browser requirements for embedded CiscoView are Netscape Navigator 4.76 for Solaris 2.6, 2.7, and 2.8.



Note Use Netscape Navigator downloaded from Sun's website only.

- Step 3** Verify that the Netscape executable is in the PATH environment variable.
- Step 4** In a terminal window, open a Netscape browser and enter the following URL to install CiscoView:

http://<CTM_server_name_or_IP_address>:1741



Note If you are using the embedded CiscoView device package and you are prompted to install Java Plug-in 1.3.1, follow the "Procedure" section in the on-screen instructions to download and install the Plug-in. Note that there is a step missing before Step 5 to unzip the downloaded file. To unzip the file, enter the **gunzip <downloaded_file>.gzip** command.

Be sure to follow all of the "Procedure" section in the on-screen instructions, including the prompt to run the **pam.sh** script.

If a Plug-in other than version 1.3.1 is installed, uninstall it; then, install Java Plug-in 1.3.1.

- Step 5** (Only for embedded CiscoView device packages) Depending on your UNIX shell, add one of the following jpi scripts to your environment startup file (for example, .cshrc, .profile, and so on).

- For the Bourne or Korn shell, add the following line:

```
. /jpi.profile
```

- For the Bash shell, add the following line:

```
source /jpi.profile
```

- For the C shell, add the following line:

```
source /jpi.cshrc
```

For example, for the Bourne or Korn shell, edit the .profile file (or the user's private file that is being executed from .profile) by adding the line **./jpi.profile** (and provide the path to jpi.profile).

- Step 6** (Only for embedded CiscoView device packages) Enter the following command to reboot the system:

```
init 6
```

Step 7 (Only for embedded CiscoView device packages) Enter the following command to verify that the variables have been set properly:

```
env | grep NPX
```

You should see:

```
NPX_JRE_PATH=/usr/j2se  
NPX_PLUGIN_PATH=/usr/j2se/jre/plugin/sparc/ns4:<note possibly more values are appended>
```

If you do not see the preceding line, repeat [Step 5](#).

Step 8 (Only for embedded CiscoView device packages) To verify that the CiscoView client is installed, open a terminal window, launch Netscape, and enter the following URL:

```
http://<CTM_server_name_or_IP_address>:1741
```

6.5 Downloading, Installing, and Upgrading New Device Packages

The Package Support Updater is used to integrate newly downloaded device packages into the CiscoView application. Use the Package Support Updater to:

- Integrate new Cisco device information asynchronously with the CiscoView engine
- Install or uninstall device packages
- Upgrade installed device packages
- View a list of currently installed device packages and their versions
- View a log of all device package changes
- Automate device package installations and upgrades

6.5.1 About Device Packages

CiscoView manages many different types of NEs. For each type of NE, there is a specific device package. Device packages for all of the devices supported at the time CiscoView 6.1 was released are included on the CiscoView CD-ROM.

6.5.2 Using the Package Support Updater in Web-Based Interactive Mode

The Device Updates link under Software Center takes you to the Device Updates page. It displays a count of devices supported for each product installed in the system. Click on the product name link to view a Package Map that lists all the installed device support packages of the product, and the version of each package. Package name identifies the device package. You have to use the package name while specifying the download policy.

Package Map is a snapshot of the currently installed device packages for a product. The backup-restore framework uses Package Map during data backup.

Click on the device type count link to view the Device Map that lists the SysObjectID, Device Name, Package Name, and Version.

To check for updates:

-
- Step 1** In the upper right corner of the CiscoView page, click the **CiscoWorks** link; then, choose **Common Services > Software Center > Device Updates**.
- The Device Updates page appears.
- Step 2** Check the check box corresponding to the product for which you want to check for updates; then, click **Check for Updates**.
- The Source Location page appears. You can check for updates on Cisco.com or on a server.
- Step 3** Click the **Cisco.com** radio button to check for updates on Cisco.com. Alternately, click the **Enter Server Path** radio button to check for updates on a server. Enter the path or use the **Browse** button to browse to the location.
- Step 4** Click **Next**.

The Available Packages and Installed Packages page appears with the following information:

- Package Name—Name of the package.
 - Type—Type of update. For example, whether the update is a device package or a patch.
 - Product Name—Product for which the update is available.
 - Installed Version—Current version of the product installed on the server.
 - Available Version—Version of the product that is available (other than the installed version).
 - Readme Details—Link to the Readme file(s) associated with the update.
 - Posted date—Date on which the update was posted on Cisco.com.
 - Size—Size of the update.
- Step 5** Check the check box corresponding to the package that you wish to update; then, click **Next**.
- The Device Update page appears. You can either download device packages or install device packages.
- To download device packages, click the **Download Device Packages** radio button.
 - To install device packages, click the **Install Device Packages** radio button.

If you select **Download Device Packages**:

- a. Enter the folder in File Selection field or click **Browse** to select the folder.
- b. To set the frequency of downloads, select the run type from the Run Type drop-down list. You have the following options:
 - Immediate
 - Once
 - Daily
 - Weekly
 - Monthly

If you choose any of the options other than Immediate, set the date and time.

 - Select the date from the date picker.
 - Specify the time from the drop-down lists.
- c. In the Job Description field, enter a description for the download job. This is mandatory.
- d. Enter the e-mail ID in the E-mail field.

- e. Click **Next**.

The Summary window displays the details.

- f. Click **OK** to confirm.

If you select **Install Device Packages**:

- a. Click **Next**.

A summary of your inputs is displayed.

- b. Click **OK** to confirm.

A warning appears, informing you that the daemons are restarted.

- c. Click **OK** to continue the installation.

6.6 Installing Embedded CiscoView

To install the embedded CiscoView package:

- Step 1** Download the embedded CiscoView tar file (for example, ONS15530.v1-0.tar) from the following website:

<http://www.cisco.com/kobayashi/sw-center/netmgmt/ciscoview/embed-cview-planner.shtml>

- Step 2** Copy the tar file to the TFTP directory of the TFTP server.

- Step 3** Telnet to the device and enter the following CLI command to verify that CiscoView is not installed:

```
sh ciscoview version
```

If CiscoView is not installed, proceed to [Step 5](#).

- Step 4** If the directory is occupied by outdated CiscoView files, copy them to a different directory. Alternately, delete them by entering the following CLI commands:

```
delete slot1:cv/*
squeeze slot1:
```

- Step 5** Use TFTP to transfer the tar file from the TFTP server to the desired Flash device (BootFlash, PCMCIA, or SanDisk card). Enter the following command at the enable prompt to untar the file:

```
archive tar /xtract tftp://<TFTP_server>/<tar_filename device_name>:cv
```

where *<device_name>* equals slot0, slot1, disk0, disk1, or bootflash.



Note The untar should be done only in the cv directory of a Flash device.

For a redundant system, the embedded CiscoView files also need to be untarred in the Flash device of the secondary CPU (sby-slot0, sby-slot1, sby-disk0, sby-disk1, sby-bootflash).

- Step 6** Enter the following CLI commands at the config level to enable the HTTP server on the device:

```
config terminal
ip http server
end
```

- Step 7** (Optional) To troubleshoot or access package information, enter the following CLI commands:

```
sh ciscoview package
sh ciscoview version
```

Step 8 Enter the following commands to exit from the router:

```
write mem
exit
```

6.7 Accessing CiscoView from CTM

The following sections describe how to access CiscoView, depending on whether or not the CiscoView server is installed on the CTM server.

6.7.1 Accessing CiscoView When the CiscoView Server Is Not Installed on the CTM Server

If the CiscoView server is not installed on the CTM server, complete the following steps to launch CiscoView:



Note

Embedded CiscoView should already be installed. See [6.6 Installing Embedded CiscoView, page 6-9](#). If CiscoView is not installed, you might receive the error message “Error launching CiscoView” or “404 Not Found.”

- Step 1** Log into the CTM client with the appropriate CTM user access profile.
- Step 2** In the Domain Explorer window, do one of the following:
- Double-click an ONS 155xx node.
 - Right-click an ONS 155xx node and choose **Launch CiscoView**.
 - Select an ONS 155xx node and choose **Configuration > ONS 155XX > Launch CiscoView**.
- Step 3** At the Enter Network Password dialog box, enter the enable username and password. Click **OK**.
- Step 4** At the Java PlugIn Security Warning dialog box, click **Grant this session**.
- Step 5** At the Enter Network Password dialog box, enter the enable username and password. Click **Yes**.
- Step 6** At the Community String dialog box, the username and password fields are already filled in (encrypted). Click **OK**.
- CiscoView opens.
-

6.7.2 Accessing CiscoView When the CiscoView Server Is Installed on the CTM Server

If the CiscoView server is installed on the CTM server, complete the following steps to launch CiscoView:

- Step 1** Log into the CTM client with the appropriate CTM user access profile.
- Step 2** In the Domain Explorer window, do one of the following:
- Double-click an ONS 155xx node.
 - Right-click an ONS 155xx node and choose **Launch CiscoView**.
 - Select an ONS 155xx node and choose **Configuration > ONS 155XX > Launch CiscoView**.



Note If you receive an error that says “Can’t find applicable device package for <IP_address>,” you must install a device package for the device type. Click **OK** to close the error message dialog box. Complete [6.5 Downloading, Installing, and Upgrading New Device Packages, page 6-7](#). Then, retry [Step 2](#).



Note When you install devices packages or use CiscoView, you will receive a Java PlugIn Security Warning dialog box that prompts you to install and run signed applets distributed by Cisco Systems, Inc. Click **Grant this session** or **Grant always**. Click **Yes** at the prompt “Do you want to proceed?”

- Step 3** At the prompt to enter the username and password, enter the CiscoView admin account. The default username is *admin*; the default password is *admin*.



Note Do not enter the username and password of the user account defined on the node.

- Step 4** At the Community String dialog box, choose **SNMP V1/V2C** as the protocol. Enter the read-only (RO) and read-write (RW) community strings; then, click **OK**.

6.8 Troubleshooting the Installation

This section provides troubleshooting information for the CiscoView installation. For more information, see the “Troubleshooting the Installation” section in [Installation and Setup Guide for CD One on Windows 2000](#) or [Installation and Setup Guide for CD One on Solaris](#).



Note CiscoView will not launch if you have the Google Toolbar installed with the Popup Blocker option enabled. To disable the Popup Blocker option, select the Options menu to open the Toolbar Options dialog box and uncheck the check box next to Popup Blocker in the Accessories frame.

6.8.1 Explanation of Installation Messages

Table 6-3 shows messages that might occur during installation and describes the reasons and recommended actions.

Table 6-3 CiscoView Installation Messages

Message	Reason for Message	User Action
Access problem with directory.	Installation program cannot access the product directory that you specified.	Check permissions on the specified directory.
Bad installation root dir.	You are trying to install the product in an unusable directory.	Install the product in a different directory.
Base package did not install. Exiting.	Installation program cannot install a required package.	Contact your technical support representative.
Cannot backup /etc/services, no change will be made.	Installation program cannot copy /etc/services before modifying it.	Verify that there is enough space in /tmp.
Cannot become owner of file in directory <directory>.	You cannot become the file owner in the directory you specified as product root.	Check permissions on the specified directory.
Cannot change ownership of library. Exiting.	Installation program cannot write to the product root directory.	Check permissions on the specified directory.
Cannot create <directory>.	Installation program cannot write to the directory you specified.	Check permissions on the specified directory.
Cannot create symlink ln -s root /opt/CSCOpX.	Installation program cannot create a link from /opt/CSCOpX to the product root directory you specified.	Contact your technical support representative.
Cannot determine the CiscoView version.	Installation disk is corrupted.	Contact your technical support representative.
Cannot determine the version of product.	Installation program cannot determine the product version.	Contact your technical support representative.
Cannot make list of packages for installation.	Installation suffered a major failure.	Contact your technical support representative.
Cannot make root dir.	You do not have permission to make the product directory you specified for the program.	Check the permissions on the root.
Copy setupdir to nmsroot failed.	Installation program cannot write to the product root directory.	Check the permissions on the root.
Daemon Manager could not start. The port is in use.	The operating system has not reallocated the port.	Verify that all CiscoView processes are terminated (<code>/usr/ucb/ps -ef grep CSCO</code>). Wait 5 to 10 minutes; then, try to restart the daemon manager.
Installation in progress.	You are already running an installation on this workstation.	Run only one installation program at a time.
If no other packages are being installed, remove the following file and restart the install: /var/sadm/pkg/.save.CSCOweb	The previous installation failed or was killed.	Remove the /var/sadm/pkg/.save.CSCOweb file and restart the CiscoView installation.

Table 6-3 CiscoView Installation Messages (continued)

Message	Reason for Message	User Action
Missing file <file>.	Installation program cannot find the file.	Contact your technical support representative.
mkdir -p root failed. Exiting.	Installation program cannot create the root specified.	Check the permissions on the root.
No syslog facility is available.	No syslog facilities are available for CiscoView.	Make one of the facilities available.
Not enough disk space: root.	You selected a product root in a file system with insufficient space to load the product.	Make at least 2 GB of disk space available on the partition on which you will install the product.
OS version less than recommended or supported.	Operating system is not a supported version of Solaris.	Verify that you are running Solaris 8.
Package verification failed: pkg aborting.	While the packages were being loaded, one loaded incorrectly.	Verify that the package on the installation CD is properly loaded by using the pkgchk -d <disk>/packages <packagename> command. If the package was loaded properly, there might be a network problem if you are installing over the network using a remotely mounted CD.
Required JRE patches are unavailable on the system patch. Product will fail without these patches.	Installation program cannot find the required JRE patches.	Continue the installation and install patches after CiscoView is installed. Alternately, stop the installation and install the required patches before installing CiscoView.
Some files cannot get backed up, datafile missing.	During product upgrade, key files were not found and cannot be restored.	Check other directories for the missing files.
Syslog is not running.	Installation program cannot start syslogd on this workstation.	Restart syslogd.
The components have dependency errors.	Installation suffered a major failure.	Contact your technical support representative.
There is no table of contents file.	Installation disk is corrupted.	Contact your technical support representative.
You must be logged in as root to install or uninstall this product.	You must be logged in as the root user.	Log in as the root user and enter the correct password.
The installer has discovered a problem with the DNS resolution. The DNS must resolve within 10 seconds for CiscoView to work properly.	The DNS is not being resolved or is not resolving properly.	Continue the installation as usual; then, correct the DNS resolution problem.
/etc/hosts should be readable by all	/etc/hosts should have read permission for all.	Continue with the installation. Correct the permissions of /etc/hosts after the installation.

Table 6-3 CiscoView Installation Messages (continued)

Message	Reason for Message	User Action
/tmp permission should be 777	/tmp should have read/write permission for all.	The installation will quit. Change /tmp permissions and restart the installation.
This is not a supported architecture. The product cannot be installed on this server.	The server architecture should be 32-bit compatible.	Install the product on a 32-bit compatible server.
Setup has detected the following product on the destination server: CiscoWorks 2000 Integration Utility - Standalone	CiscoView and Standalone Network Management Integration Module (SNMIM) cannot coexist.	Uninstall SNMIM from the workstation and restart the setup.
Microsoft Internet Explorer has encountered a problem and needs to close. We are sorry for the inconvenience.	Two Java Plug-ins are installed for Internet Explorer, so Internet Explorer crashes.	Uninstall both Java Plug-ins; then, run CiscoView again. CiscoView automatically installs the required Java Plug-in.
ERROR: Update attributes of casuser failed. ERROR: Contact your system administrator to update casuser in NIS/NIS+. ERROR: casuser should have no shell, /opt/CSCOpX as home directory, and belong to group casusers.	The casuser is already present on the server workstation.	Contact your system administrator to update the casuser in NIS/NIS+. The casuser must have no shell, must have /opt/CSCOpX as the home directory, and must belong to the group casusers.

6.8.2 Problems After Installation

This section describes problems that might occur after installation and recommends workarounds.

6.8.2.1 CiscoView Fails to Launch

When trying to launch CiscoView for an NE, the browser URL string points to the NE IP address instead of to the CTM server IP address, resulting in a failure to launch CiscoView.

This problem occurs because CiscoView did not install correctly.

To work around this problem, complete the following steps:

Step 1 Enter the following command to stop the CTM server:

```
ctms-stop
```

Step 2 Kill the dmgtD demon if it is still running. To kill dmgtD demon, complete the following substeps:

a. Enter the following command to find the process ID:

```
ps -ef | grep dmgtD
```

The output from the above command will be similar to:

```
root 14135 1 0 11:25:53 ? 0:00 /opt/CSCOpX/objects/dmgt/dmgtD.sol
root 14474 3964 0 11:28:56 pts/3 0:00 grep dmgtD
```



Note The numeric value in the second field of the first line (in this example, 14135) is the process ID.

- b. Enter the following command to kill the dmgttd process using the appropriate process ID:

```
kill -9 <process_ID>
```

- Step 3** Enter the following command to restart the CTM server:

```
ctms-start
```

If CiscoView still does not start, complete the following steps:

- Step 1** Enter the following command to shut down the CTM server:

```
ctms-abort
```

- Step 2** Uninstall CiscoView. See [6.9 Uninstalling CiscoView, page 6-16](#).

- Step 3** Enter the following command to clean up the CiscoView uninstall process:

```
cleanview.sh(UninstallerData dir)
```

- Step 4** Kill the dmgttd demon if it is still running. To kill dmgttd demon, complete the following substeps:

- a. Enter the following command to find the process ID:

```
ps -ef | grep dmgttd
```

The output from the above command will be similar to:

```
root 14135 1 0 11:25:53 ? 0:00 /opt/CSCOpX/objects/dmgt/dmgttd.sol
root 14474 3964 0 11:28:56 pts/3 0:00 grep dmgttd
```



Note The numeric value in the second field of the first line (in this example, 14135) is the process ID.

- b. Enter the following command to kill the dmgttd process using the appropriate process ID:

```
kill -9 <process_ID>
```

- Step 5** Install CiscoView again. See [6.3 Installing Server-Based CiscoView, page 6-3](#).

- Step 6** Enter the following command to start the CTM server:

```
ctms-start
```

6.8.3 Browser Problems

If you have problems using the desktop, try the following:



Note Java Plug-in-related problems apply only to embedded CiscoView.

- If the desktop buttons do not work, Java and JavaScript are not enabled. If you are using Netscape Navigator, install it first and then install the Java Plug-in.
- Uncheck **Edit > Preferences > Advanced > Enable Java PlugIn** for Netscape Navigator 7.0.
- Verify that your cache is not set to zero. If you have browser problems, increase the cache settings.
- Do not resize the browser window while the desktop or main page is still loading. This can cause a Java error.
- If CiscoView does not come up the first time it is launched, uninstall the current Java Plug-in and try launching CiscoView again. You will be prompted to download the Java Plug-in from the CTM server. On-screen instructions guide you through the download and installation process.
- If you try to launch CiscoView on an NE that does not have embedded CiscoView installed, you will receive the following browser-specific error message (which might change depending on your browser version):

- Internet Explorer:

The page you are looking for is currently unavailable. The Web site might be experiencing technical difficulties, or you may need to adjust your browser settings.

- Netscape:

Netscape is unable to locate the server <server_name>. Please check the server name and try again.

The easiest way to assure proper operation of CiscoView is to install CiscoView on the CTM server. If that is not possible, CiscoView must be installed on all ONS 15530 and ONS 15540 NEs in the network.

6.8.4 List of Known Problems

Visit the following URL to view the problems known to exist in this release:

http://www.cisco.com/univercd/cc/td/doc/product/rtrmgmt/cw2000/cw2000_d/comser30/reInotes/cwcs_rns.htm#wp1078778

In particular, refer to the following sections:

- Installation Known Problems
- Software Center Known Problems
- Browser Known Problems
- CiscoView Known Problems


Note

To obtain more information about known problems, access the Cisco Software Bug Toolkit at <http://www.cisco.com/cgi-bin/Support/Bugtool/home.pl>. (You will be prompted to log into Cisco.com.)

6.9 Uninstalling CiscoView


Note

CiscoView is uninstalled automatically when the CTM server is uninstalled.

This section describes how to uninstall CiscoView separately from the CTM server, while leaving the CTM server installed.

To remove CiscoView files and settings:

Step 1 As the root user, enter the following commands to start the uninstall script:

```
cd /  
/opt/CSCOpX/bin/uninstall.sh
```

Uninstall messages are written to the `/var/tmp/ciscouninstall.log` file.

Step 2 Two messages appear, asking you to confirm that you want to uninstall CiscoWorks2000 (CiscoView) and the device packages installed on your system. To proceed with the uninstallation, enter `y` for both messages.

When the uninstallation is complete, the following message appears:

```
All files were deleted successfully.
```



Tip

You can also enter the following command as the root user to uninstall CiscoView:

```
/opt/<CTM_server_installation_directory>/UninstallerData/cleanview.sh
```



APPENDIX A

Understanding Installation Error Messages

A.1 CTM Client Installation Error Messages

Table A-1 lists the error messages that you might encounter during the CTM client installation and recommends solutions.

Table A-1 Client Installation Error Messages

Error Message	Recommended Action
EID-1: Enter the destination directory.	Specify the destination location.
EID-2: Physical memory on your machine is less than 256 MB; Cisco Transport Manager might not perform as expected.	Upgrade the system RAM to 256 MB or install the software on another workstation.
EID-3: Please select either desktop menu or Shortcut menu or both to proceed.	Specify whether you want to create a CTM desktop icon, a CTM shortcut in the Start menu, or both.
EID-24: Not enough space in the selected disk drive. Please choose a different disk drive.	Choose a disk drive that has enough space.
EID-26: Error occurred while extracting the files. Please check disk space and reinstall.	Verify that the system has enough disk space; then, reinstall the CTM client.
Warning: The installation will write over an existing installation. Press "Previous" if you want to change the install folder.	Click Previous and select a new installation location.
Error: The installation of Cisco Edge Craft will overwrite the CTM client installation.	Click Previous and select a new installation location.

A.2 CTM Server Installation Error Messages

Table A-2 lists the error messages that you might encounter during the CTM server installation and recommends solutions.

Table A-2 Server Installation Error Messages

Error Message	Recommended Action
EID-26: Enter a directory for the CTM Index tablespace.	Enter the directory name.
EID-27: Enter a directory for the CTM Data1 tablespace.	Enter the directory name.

Table A-2 Server Installation Error Messages (continued)

Error Message	Recommended Action
EID-28: Enter a directory for the CTM Data2 tablespace.	Enter the directory name.
EID-29: Enter the database administrator name.	Enter the database administrator name.
EID-30: Enter the database administrator password.	Enter the database administrator password.
EID-31: Enter the database file size in MB.	Enter the database file size.
EID-32: Enter a valid number for the database file size.	Enter the database file size.
EID-33: Enter the data file path.	Enter the data file path.
EID-35: The installation directory is not specified.	Specify the installation directory.
EID-36: I/O exception occurred while writing to the USER.DAT file.	Check file permissions and disk space.
EID-38: Error occurred while removing the USER.DAT file.	Check file permissions.
EID-43: Select at least one option to proceed.	Select at least one option.
EID-44: IP address and username must be specified.	Enter the IP address and username.
EID-45: Username and password are mandatory.	Enter the username and password.
EID-46: IP address or hostname is mandatory.	Enter the IP address or hostname.
EID-47: The installation directory must be specified.	Enter the installation directory.
EID-48: The IP address must be specified.	Enter the IP address.
EID-49: Hostname and password must be specified.	Enter the hostname and password.
EID-50: Hostname could not be located. Specify the correct name or IP address.	Enter the hostname or IP address.
EID-51: Both hostnames and the password must be specified.	Enter the hostname(s) and password.
EID-52: Source hostname could not be located. Specify the correct name or IP address.	Enter the source hostname or IP address.
EID-53: Destination hostname could not be located. Specify the correct name or IP address.	Enter the destination hostname or IP address.
EID-54: The hostname translates to multiple IP addresses. Specify one physical IP address.	Enter the IP address.
EID-100: Invalid SID. The SID is null or contains spaces. Enter an SID that is not null and does not contain spaces.	Enter a valid system ID (SID).
EID-101: The CTM GateWay/CORBA installation failed. The CTM database might be down or not installed. Start the CTM database or install it. Then, retry the CTM GateWay/CORBA installation.	<ol style="list-style-type: none"> 1. Start or install the CTM database. 2. When the server and database machines are installed on separate workstations (and before you install CTM GateWay/CORBA on the server machine), you must manually update the oratab file on the server for the Oracle SID of the remote database server. The oratab file is located in the /var/opt/oracle/ directory. 3. Retry the CTM GateWay/CORBA installation.
EID-382: The CTM server is initializing. Please try again after some time.	Wait for several minutes for the server to finish initializing.



APPENDIX **B**

Uninstalling CTM, Cisco Edge Craft, and the Oracle Database

This appendix describes how to uninstall the CTM R7.2 server, the CTM R7.2 client, Cisco Edge Craft, and the Oracle software. This appendix also describes how to delete the EMS information from the Oracle database.

B.1 Deleting the Oracle Database

Step 1 Log in as the root user on the server where the Oracle database is installed.

Step 2 Enter the following commands:

```
cd /opt/CiscoTransportManagerServer/bin
./delete_old_db.sh <ORACLE_SID>
```

B.2 Uninstalling the CTM Server



Note Before uninstalling the CTM server, use the **ctms-stop** command to shut down the server.



Note Uninstalling the CTM server automatically uninstalls the web server (if the web server was installed). The web server cannot be uninstalled on its own.

Step 1 Enter the following command to set the display on your terminal:

```
setenv DISPLAY <hostname_or_IP_address>:0.0
```

Step 2 Enter the following command to verify that the display is set correctly:

```
echo $DISPLAY
```

In the output, you should see:

```
<hostname_or_IP_address>:0.0
```

- Step 3** Log into the CTM server as the root user and enter the following command, where *<version>* is the specific version of the CTM server that you want to uninstall:

```
cd /opt/CiscoTransportManagerServer<version>/UninstallerData/IAUninstaller.sh
```

For example, enter the following command to uninstall CTM R7.0:

```
/opt/CiscoTransportManagerServer7.0/UninstallerData/IAUninstaller.sh
```

- Step 4** Wait for up to 60 seconds while the following message appears:

```
Uninstalling Cisco Transport Manager server...
```

- Step 5** At the Uninstall Cisco Transport Manager screen, click **Uninstall**.



Note If you are prompted to stop the CTM server, click **OK**.

- Step 6** At the Uninstall Complete screen, click **Quit**.
-

B.3 Uninstalling the CTM Client and Cisco Edge Craft on Microsoft Windows

- Step 1** On the workstation where the client will be uninstalled, close any CTM client sessions and Cisco Edge Craft client sessions that are currently open.

- Step 2** Use the Windows Add/Remove Programs tool to uninstall the CTM client.

- a. Choose **Start > Settings > Control Panel > Add/Remove Programs**.
- b. In the Add/Remove Programs dialog box, choose **Cisco Transport Manager Client** and click **Change/Remove**.
- c. At the Uninstall Cisco Transport Manager Client screen, click **Uninstall**.



Note If you are prompted to close any CTM client sessions that are currently open, click **OK**.

- d. At the Uninstall Complete screen, click **Done**.
- e. Close the Add/Remove Programs dialog box.

- Step 3** Delete the directory where the CTM client was installed. The default installation directory is C:\Cisco\TransportManagerClient7_2.
-

B.4 Uninstalling the CTM Client and Cisco Edge Craft on Sun Solaris

**Note**

If any reports or exports of CTM data have been stored under the client directory and need to be saved, move the reports to a different directory before uninstalling the CTM client.

Step 1 On the workstation where the client will be uninstalled, close any CTM client sessions that are currently open.

Step 2 Log in as the root user or become the root user on the workstation where the client will be uninstalled.

Step 3 Enter the following command to change directories to the /opt directory:

```
cd /opt
```

Step 4 Enter the following command to remove the /opt/CiscoTransportManagerClient directory:

```
rm -rf CiscoTransportManagerClient
```

If at the time of installation you specified a directory other than the default /opt/CiscoTransportManagerClient directory, enter the following command specifying the full path (for example, /opt/CiscoTransportManagerClient7.0):

```
rm -rf <full_path_to_installation_directory>
```

Step 5 Enter the following command to remove the symbolic link to ctmc-start:

```
rm /usr/bin/ctmc-start
```

**Caution**

In the Bourne shell, if you enter **ctmc-start** to start the client and then execute **Ctrl+C** in the xterm window where the client was launched, the CTM client will terminate.

B.5 Uninstalling the Oracle9i Software

**Caution**

If you remove the Oracle9i software, you cannot use CTM R7.2. Be sure that you want to remove the Oracle9i software before completing the following steps.

Step 1 Log into the Oracle database workstation as the root user and enter the following commands:

```
rm -rf /oraclesw9i/product/9.2  
rm -rf /var/opt/oracle/oraInst.loc
```

Step 2 Log into the CTM server workstation as the root user and enter the same commands:

```
rm -rf /oraclesw9i/product/9.2  
rm -rf /var/opt/oracle/oraInst.loc
```

B.6 Reverting to the Previous Database

To revert to the previous database prior to the upgrade to CTM R7.2, see the *Cisco Transport Manager Release 7.2 User Guide*, which is available online at http://www.cisco.com/en/US/products/sw/opticsw/ps2204/products_user_guide_list.html. Refer to the section “Restoring the CTM Database from the Previous Backup.”

**Note**

The revert procedure will result in loss of local database information stored after the upgrade. In other words, a reverse database migration is not supported; rather, a backup copy of the original database is used.



APPENDIX **C**

Mounting and Unmounting CDs on Sun Solaris

This appendix describes how to mount and unmount CD-ROMs on a Solaris system. It includes general information only. For more detailed instructions, consult your Sun documentation.

C.1 Mounting a Local CD-ROM Drive

To mount a local CD-ROM drive, insert the CD-ROM into the drive and complete the following steps:

-
- Step 1** Become the superuser by entering the **su** command and the root password at the command prompt, or log in as the root user. The command prompt changes to the pound sign (#).
- Step 2** If the `/cdrom` directory does not already exist, enter the following command to create it:
- ```
mkdir /cdrom
```
- Step 3** Mount the CD-ROM drive.



---

**Note** The `vold` process manages the CD-ROM device and performs the mounting. The CD-ROM might automatically mount onto the `/cdrom/cdrom0` directory.

---

If you are running File Manager, a separate File Manager window displays the contents of the CD-ROM. From the File Manager, double-click the **setup.sh** file. The Action: Run dialog box appears. Click **OK** to continue the installation.

- Step 4** If the `/cdrom/cdrom0` directory is empty because the CD-ROM was not mounted, or if the File Manager does not open a window displaying the contents of the CD-ROM, enter the following command to verify that the `vold` daemon is running:
- ```
ps -ef | grep vold | grep -v grep
```
- Step 5** If `vold` is running, the system displays the process identification number of `vold`. If the system does not display anything, enter the following command to restart the daemon:
- ```
/usr/sbin/vold &
```
- Step 6** If the `vold` daemon is running but did not mount the CD-ROM, stop the `vold` daemon and then restart it. To stop the `vold` process, you must know the process identification number. If you do not know the process identification number, enter the following command to obtain it:
- ```
ps -ef | grep vold | grep -v grep
```
- Step 7** Enter the following command to stop the `vold` process:

```
kill -15 <process_ID_number>
```

Step 8 Enter the following command to restart the vold process:

```
/usr/sbin/vold &
```

Step 9 If you have problems using the vold daemon, enter the following command to mount the CD-ROM:

```
mount -F hsfs -r ro /dev/dsk/cxydz /cdrom/cdrom0
```

where *x* is the CD-ROM drive controller number, *y* is the CD-ROM drive Small Computer System Interface (SCSI) ID number, and *z* is the slice of the partition on which the CD-ROM is located.

C.2 Mounting a Remote CD-ROM Drive

Insert the CD-ROM into the CD-ROM drive of the remote workstation and perform Steps 1 through 12 only on the remote workstation. Then, perform Steps 13 through 16 on the workstation where you want to install the application.

Step 1 Log in as the root user. The command prompt changes to the pound sign (#).

Step 2 If the /cdrom directory does not already exist, enter the following command to create it:

```
mkdir /cdrom
```

Step 3 Mount the CD-ROM drive.



Note The vold daemon process manages the CD-ROM device and performs the mounting. The CD-ROM might automatically mount onto the /cdrom/cdrom0 directory.

If you are running File Manager, a separate File Manager window displays the contents of the CD-ROM. From the File Manager, double-click the **setup.sh** file. The Action: Run dialog box appears. Click **OK** to continue the installation.

Step 4 If the /cdrom/cdrom0 directory is empty because the CD-ROM was not mounted, or if the File Manager does not open a window displaying the contents of the CD-ROM, enter the following command to verify that the vold daemon is running:

```
ps -ef | grep vold | grep -v grep
```

Step 5 If vold is running, the system displays /usr/sbin/vold. If the system does not display anything, enter the following command to restart the daemon:

```
/usr/sbin/vold &
```

Step 6 If the vold daemon is running but did not mount the CD-ROM, stop the vold daemon and then restart it. To stop the vold process, you must know the process identification number. If you do not know the process identification number, enter the following command to obtain it:

```
ps -ef | grep vold | grep -v grep
```

Step 7 Enter the following command to stop the vold process:

```
kill -15 <process_ID_number>
```

Step 8 Enter the following command to restart the vold process:

```
/usr/sbin/vold &
```

Step 9 If you have problems using the vold daemon, enter the following command to mount the CD-ROM:

```
mount -F hfs -r ro /dev/dsk/cxydz /cdrom/cdrom0
```

where *x* is the CD-ROM drive controller number, *y* is the CD-ROM drive SCSI ID number, and *z* is the slice of the partition on which the CD-ROM is located.

Step 10 Use a text editor to create an /etc/dfs/dfstab file, if one does not already exist.

Step 11 Add the following line to the /etc/dfs/dfstab file:

```
share -F nfs -o ro /cdrom/cdrom0
```

Step 12 Enter the following command to verify that your remote workstation is enabled as a Network File System (NFS) server:

```
ps -ef | grep nfs | grep -v grep
```

The output of this command shows whether or not the /usr/lib/nfs/nfsd and /usr/lib/nfs/mountd daemons are running. If they are not running, enter the following command to enable your workstation as an NFS server:

```
/etc/init.d/nfs.server start
```

If your workstation is enabled as an NFS server, enter one of the following commands:

```
share
```

or

```
shareall
```

Step 13 Go to the workstation where you want to install the application.

Step 14 Log in as superuser by entering the **su** command and the root password, or log in as the root user.

Step 15 Enter the following command to create a /cdrom directory, if one does not already exist:

```
mkdir -p /cdrom/<directory_name>
```

Step 16 Enter the following command to mount the CD-ROM drive:

```
/usr/sbin/mount -r <remote_workstation_name>:/cdrom/cdrom0 /cdrom/<directory_name>
```

C.3 Unmounting a Local CD-ROM Drive

Step 1 As the root user, enter the following commands:

```
cd  
umount /cdrom/cdrom0  
eject
```

Step 2 Remove the CD-ROM and store it in a safe place.

C.4 Unmounting a Remote CD-ROM Drive

Step 1 As the root user, enter the following command on the local workstation:

```
umount /cdrom/<directory_name>
```

Step 2 As the root user, enter the following command on the remote workstation:

```
umount /cdrom/cdrom0
```

Step 3 Remove the CD-ROM and store it in a safe place.



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