



## **Cisco Transport Manager Release 8.5 Installation Guide**

March 17, 2010

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# Preface

## New and Changed Information

The following table describes information that has been added or changed since the *Cisco Transport Manager Release 8.5 Installation Guide* was last published online.

**Table 1** *New and Changed Information in This Guide*

Date Released	Revision	Location
November 30, 2007	Initial version.	—
January 15, 2008	<p>Changed the following command in <a href="#">Step 11</a> of the procedure to install the Oracle 10.2.0.3 patch in a high availability configuration:</p> <pre>opatch apply OPatch.SKIP_VERIFY=true</pre> <p>The command now reads:</p> <pre>../OPatch/opatch apply OPatch.SKIP_VERIFY=true</pre>	<p><a href="#">2.1.1.7 Post Installation Steps—High Availability Configuration, page 2-12</a></p>
	<p>Removed this step when installing Set 2 of the Oracle 10g 10.2.0.3 patch:</p> <p>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.</p>	<ul style="list-style-type: none"> <li>• <a href="#">2.1.1.4 (Oracle Server) Installing Set 2 of the Oracle 10g 10.2.0.3 Patch for the Solaris Operating System (SPARC 64-Bit), page 2-9</a></li> <li>• <a href="#">2.2.1.1 (Oracle Client) Installing Set 2 of the Oracle 10g 10.2.0.3 Patch for the Solaris Operating System (SPARC 64-Bit), page 2-23</a></li> </ul>
January 23, 2008	<p>Added this note:</p> <p>The CTM server must run on a dedicated workstation. Any application that is not explicitly listed in this chapter as being required or supported by CTM cannot be installed on the dedicated CTM server workstation.</p>	<p><a href="#">1.1 CTM Server Requirements, page 1-1</a></p>
February 8, 2008	<p>Replaced Sun Solaris patch 119757-09 with 119757-04, because Sun withdrew 119757-09.</p>	<p><a href="#">1.1 CTM Server Requirements, page 1-1</a></p>
February 29, 2008	<p>Added this text to <a href="#">Step 36</a>:</p> <p>The Password field sets the password for all CTM users migrated from the CTM R8.0 server.</p>	<p><a href="#">3.3.1 Installing the CTM R8.5 Server and Upgrading the Database, page 3-4</a></p>

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

Date Released	Revision	Location
March 3, 2008	Added this note to <a href="#">Step 36</a> : Users can login to the CTM R8.5 server using this password. They will be prompted to change their passwords on first login.	<a href="#">3.3.1 Installing the CTM R8.5 Server and Upgrading the Database, page 3-4</a>
April 22, 2008	Added the <i>Migration Matrix for CTM Service Pack Releases</i> to the CTM documentation set.	<a href="#">Related Documentation, page xiv</a>
	Added steps to check the ORACLE_SID variable in the .cshrc file when upgrading from an earlier CTM release.	<ul style="list-style-type: none"> <li>• <a href="#">2.1.1.1 Setting the Environment for Installation, page 2-2</a></li> <li>• <a href="#">2.2.1 Installing the Oracle 10g Client on the CTM Server Workstation, page 2-19</a></li> </ul>
	Added steps to install the latest CTM R8.0 service pack and to run the pre- and postmigration scripts.	<ul style="list-style-type: none"> <li>• <a href="#">3.3.1 Installing the CTM R8.5 Server and Upgrading the Database, page 3-4</a></li> <li>• <a href="#">3.4.1 Installing the CTM R8.5 Server on the CTM Server Workstation, page 3-12</a></li> <li>• <a href="#">3.4.2 Upgrading the Database on the CTM Database Workstation, page 3-16</a></li> </ul>
April 22, 2008	Modified the values detailed for the high end configuration in <a href="#">Table 1-4</a> . Changed 329 GB to 234 GB (without PM collection) and changed 951 GB to 856 GB (with PM collection).	<a href="#">1.1.2 Disk Space Specifications, page 1-5</a>
June 6, 2008	Corrected the disk space requirements for small, medium, and large networks.	<a href="#">Table 1-4</a>
June 13, 2008	For disk space requirements, added that the disk space shown does not include the /ctm_backup directory.	<a href="#">1.1.2 Disk Space Specifications, page 1-5</a>
June 17, 2008	Corrected the following command in <a href="#">Step 11</a> :  <code>./runInstaller -silent -responseFile /oracle/oracle10.std.rsp &amp;</code>  to read:  <code>./runInstaller -silent -responseFile /oracle/oracle10_std.rsp &amp;</code>	<a href="#">2.1.1.2 Installing the Oracle 10g Software with the Response File (*.rsp) Provided by Cisco, page 2-5</a>
July 16, 2008	Changed the following command in <a href="#">Step 19</a> :  <code>cd /opt/CiscoTransportManagerServer.oldCTM/patch/migration/8.5.0</code>  to read:  <code>cd /opt/CiscoTransportManagerServer/patch/migration/8.5.0</code>	<a href="#">3.4.2 Upgrading the Database on the CTM Database Workstation, page 3-16</a>

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

Date Released	Revision	Location
July 24, 2008	Added this note:  It is possible to use and configure disk arrays for database storage with any type of RAID layout. You can do so only if the disk throughput is equal to or higher than the throughput calculated for internal disks.	<a href="#">1.1.1 Server Specifications, page 1-3</a>
July 31, 2008	Added the T2 processor specifications.	<ul style="list-style-type: none"> <li>• <a href="#">1.1 CTM Server Requirements, page 1-1</a></li> <li>• <a href="#">Table 1-3</a></li> </ul>
	Added the required Oracle 10g patch for CTM server installation.	<ul style="list-style-type: none"> <li>• <a href="#">1.1 CTM Server Requirements, page 1-1</a></li> <li>• <a href="#">1.4 Installation Prerequisites, page 1-17</a></li> </ul>
October 16, 2008	Added two steps before creating a soft link for the initCTM.ora file:  Copy the ADMIN_CTM.tar file from the /temp directory to the /oracle directory.  Enter the following command to extract the ADMIN_CTM tar file:  <b>tar xvf ADMIN_CTM.tar</b>	<a href="#">3.3.1 Installing the CTM R8.5 Server and Upgrading the Database, page 3-4, Step 20 to Step 21</a>
October 27, 2008	Added this note:  Although you do not have to modify the /etc/system file to implement the System V TPC, you might have to make other changes to /etc/system later in this procedure.	<a href="#">2.1.1.2 Installing the Oracle 10g Software with the Response File (*.rsp) Provided by Cisco, page 2-5, Step 3</a>
March 10, 2009	Made changes to the procedure to install CTM R8.5 and Oracle 10g on the same workstation.	<a href="#">2.1.1.1 Setting the Environment for Installation, page 2-2 to 2.1.1.5 Post Installation Steps, page 2-10</a>
April 7, 2009	Added this note:  If you are using Veritas as a disk management system, Oracle patch 5752399 is required. For more information on this patch requirement, visit the Oracle MetaLink website and see Note: 405825.1 “10.2.0.3: Solaris: Veritas/Solstice: SVR4 Error: 25: Inappropriate ioctl for device.”	<a href="#">1.1 CTM Server Requirements, page 1-1</a>
April 20, 2009	Added this step:  To verify that you have the Opatch utility 10.2.0.3.2 installed, enter the following command as the oracle user:  <b>\$ORACLE_HOME/OPatch/opatch version</b>  The following messages appear:  Invoking OPatch 10.2.0.3.2 OPatch Version: 10.2.0.3.2 OPatch succeeded.	<a href="#">2.1.1.6.2 Installing the Additional Oracle Patches, page 2-11</a>

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

Date Released	Revision	Location
May 19, 2009	<p>Added this footnote:</p> <p>A small installation with UltraSPARC processors requires a minimum of 4 GB of RAM; however, 8 GB of RAM is recommended.</p>	<ul style="list-style-type: none"> <li>• <a href="#">Table 1-1</a></li> <li>• <a href="#">Table 1-2</a></li> </ul>
July 28, 2009	<p>Added this note:</p> <p>CTM R8.5 does not support local or global Sun zones.</p>	<a href="#">1.1 CTM Server Requirements, page 1-1</a>
August 20, 2009	<p>Changed the RAM requirement from 4 GB to 8 GB for a small CTM configuration on a T2 processor.</p>	<a href="#">Table 1-3</a>
	<p>Added this footnote:</p> <p>For a small installation on a T2 processor, the CTM R8.5.0.240 patch is required. See CSCsy01229 in the <a href="#">Release Notes for Cisco Transport Manager Release 8.5</a> for information about downloading and installing the CTM R8.5.0.240 patch.</p>	<a href="#">Table 1-3</a>
	<p>Added this footnote:</p> <p>In a small network configuration, the swap space must be at least 1.5 times the RAM. Therefore, if your server has 4 GB of RAM, you must have 6 GB of swap space. If your server has 8 GB of RAM, you must have 12 GB of swap space.</p>	<ul style="list-style-type: none"> <li>• <a href="#">Table 1-6, Part 1</a></li> <li>• <a href="#">Table 1-6, Part 2</a></li> <li>• <a href="#">Table 1-7, Part 1</a></li> <li>• <a href="#">Table 1-7, Part 2</a></li> </ul>
	<p>Split the partition specifications for installing the CTM server and Oracle 10g on the same workstation into separate tables, depending on whether PM collection is enabled or disabled.</p>	<ul style="list-style-type: none"> <li>• <a href="#">Table 1-6, Part 1</a></li> <li>• <a href="#">Table 1-6, Part 2</a></li> </ul>
	<p>Revised this step, which applies only to small CTM installations on T2 workstations:</p> <p>(For a small installation on a T2 workstation only) Enter the following command to set the shared memory of the “default” project to 2 GB:</p> <pre>projmod -s -K "project.max-shm-memory=(privileged,2147483648,deny) " 'default'</pre>	<a href="#">2.1.1.2 Installing the Oracle 10g Software with the Response File (*.rsp) Provided by Cisco, page 2-5</a>
	<p>Added this step:</p> <p>For a small installation on a T2 processor, the CTM R8.5.0.240 patch is required. See CSCsy01229 in the <a href="#">Release Notes for Cisco Transport Manager Release 8.5</a> for information about downloading and installing the CTM R8.5.0.240 patch.</p>	<a href="#">2.1.3 Installing the CTM R8.5 Server and Database, page 2-15, Step 19</a>
March 4, 2010	<p>Added <a href="#">Appendix E “Changing the CTM Server IP Address.”</a> Previously, this content was located in the <i>Cisco Transport Manager Release 8.5 User Guide</i>.</p>	<a href="#">Appendix E, “Changing the CTM Server IP Address”</a>

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

Date Released	Revision	Location
March 17, 2010	Added this caution: Contact the Cisco Technical Assistance Center (TAC) before adding new modules on a patched CTM server.	<a href="#">3.7 Adding New Modules, page 3-21</a>
	Added this caution: Contact the Cisco TAC before installing CTM GateWay/CORBA on a patched CTM server.	<a href="#">4.1 Installing CTM GateWay/CORBA R8.5, page 4-1</a>

## Introduction

This guide explains how to install Cisco Transport Manager (CTM) Release 8.5 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) and switches. 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 8.5, CTM supports the Cisco Optical Networking System (ONS) family of optical NEs, 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 8.5](#) for the NE software versions that are supported in CTM R8.5. The CTM release notes are available on the product CD and online at [http://www.cisco.com/en/US/products/sw/opticsw/ps2204/prod\\_release\\_notes\\_list.html](http://www.cisco.com/en/US/products/sw/opticsw/ps2204/prod_release_notes_list.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 XP Professional, and Windows Server 2003 Terminal Server
- 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	<b>boldface</b> font
Variables for which you supply values	<i>italic</i> font
Displayed session and system information	screen font
Information you enter	<b>boldface screen</b> font
Variables you enter	<i>italic_screen</i> font
Selecting a menu item	<b>Option &gt; Network Preferences</b>



## 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.



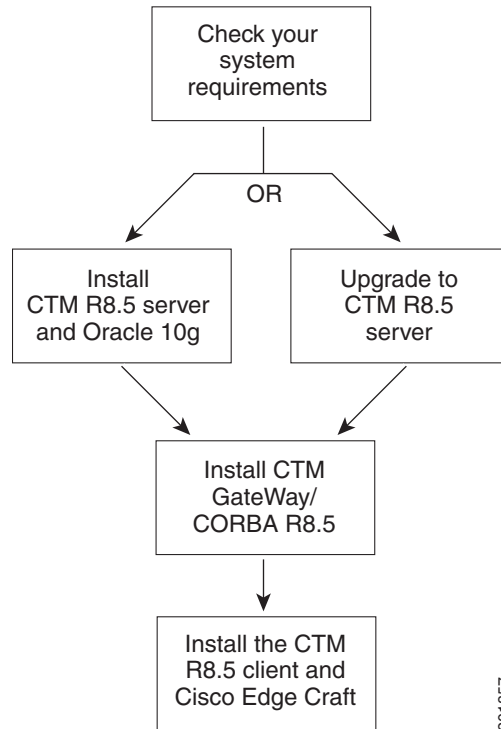
## Timesaver

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 R8.5 or upgrading from an earlier release. See [Chapter 1, “System Requirements.”](#)
2. For a new CTM R8.5 server installation, see [Table 3](#) and [Chapter 2, “Installing the CTM R8.5 Server and Oracle 10g.”](#)
3. When upgrading to the CTM R8.5 server from an earlier installation, see [Table 3](#) and [Chapter 3, “Upgrading to CTM R8.5 from an Earlier Release.”](#)
4. To install CTM GateWay/CORBA, see [Chapter 4, “Installing CTM GateWay/CORBA R8.5.”](#) 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 R8.5.

5. To install the CTM R8.5 client and Cisco Edge Craft (optional), see [Chapter 5, “Installing the CTM R8.5 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.

## Installation and Upgrade Scenarios

The following table describes the different installation scenarios for CTM R8.5, and where information on these scenarios can be found. Based on your requirements and on your existing installation, choose one of the scenarios listed.

**Table 3** *Installation and Upgrade Scenarios*

What is your existing release?	Will you install the CTM R8.5 server and Oracle 10g database on separate workstations?	For more information, see
New installation	No	Page 2-1
New installation	Yes	Page 2-18
CTM R8.0	No	Page 3-4
CTM R8.0	Yes	Page 3-11



### Note

If you are upgrading from a release prior to CTM R8.0, you must first upgrade to CTM R8.0. Refer to the *Cisco Transport Manager Release 8.0 Installation Guide* for the exact installation procedure. After you install CTM R8.0, you can upgrade to CTM R8.5.

## Related Documentation



### Note

You can access the most current CTM R8.5 documentation online at [http://www.cisco.com/en/US/products/sw/opticsw/ps2204/tsd\\_products\\_support\\_series\\_home.html](http://www.cisco.com/en/US/products/sw/opticsw/ps2204/tsd_products_support_series_home.html).

The CTM documentation set comprises the following guides:

- *Release Notes for Cisco Transport Manager Release 8.5*—Describes the caveats for CTM.
- *Cisco Transport Manager Release 8.5 Installation Guide*—This guide.
- *Cisco Transport Manager Release 8.5 User Guide*—Describes how to use the CTM software, which consists of user applications and tools for network discovery, network configuration, connection management, fault management, system administration, and security management.
- *Cisco Transport Manager Release 8.5 GateWay/CORBA User Guide and Programmer Manual*—Describes the CTM GateWay/CORBA northbound interface product that is available for CTM. This document serves as a reference for developers of OSS applications that work with the CTM GateWay/CORBA interface.
- *Cisco Transport Manager Release 8.5 Database Schema*—Describes the database schema that CTM uses to store information in a Structured Query Language (SQL) database such as the Oracle database. The document is designed for users who need to create their own reports without using CTM.
- *Cisco Transport Manager Release 8.5 High Availability Installation Guide*—Explains how to install CTM in a high availability (HA) environment.



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**Note** The *Cisco Transport Manager Release 8.5 High Availability Installation Guide* is not available online. Contact your Cisco account representative to obtain this guide.

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- [Cisco Transport Manager Release 8.5 ML Provisioning Methodology](#)—Describes the methodology that CTM uses to provision ML-series cards.
- [Cisco Transport Manager Release 8.5 Basic External Authentication](#)—Describes how CTM supports basic external authentication.
- [Migration Matrix for CTM Service Pack Releases](#)—Describes the migration matrix for CTM service pack releases.

## Obtaining Documentation and Submitting a Service Request

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

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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 1-9](#)
- [1.3 Oracle Licensing for CTM, page 1-14](#)
- [1.4 Installation Prerequisites, page 1-17](#)



### Note

- At the time of the CTM R8.5 release, CiscoView is supported on Solaris 8 but not on Solaris 10. Therefore, CiscoView is not provided with CTM R8.5. Contact your Cisco account representative to obtain CiscoView for Solaris 10 once it becomes available.
  - 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 any of the following specifications:

- Sun Solaris 10, release 11/06, on a Sun SPARC-based server
- T2 processor on Sun Solaris 10, release 5/08

Cisco tests certain simulated network configurations, which are listed in [Table 1-1](#) to [Table 1-2](#). Your setup and performance might vary depending on the size of your network and the usage pattern of management tasks.



### Note

- The CTM server must run on a dedicated workstation. Any application that is not explicitly listed in this chapter as being required or supported by CTM cannot be installed on the dedicated CTM server workstation.
- 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.
- 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.

- CTM R8.5 does not support local or global Sun zones.

**Caution**

During the Solaris 10 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.

**Note**

When Solaris 10 is installed, it also installs the International Input Method Server (IIMS), which uses the CTM internal port 9010. Port 9010 is used by an MGX process called eventd. If the eventd process cannot start, internal CTM alarms appear continuously in the Alarm Browser. This indicates that CTM is automatically restarting the eventd process. The IIMS is required only for non-English input methods; it is not required in CTM. To avoid internal CTM alarms and to make port 9010 available, make sure that the IIMS is not running.

**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 118560-02, 118712-18, 118815-06, 118833-36, 118872-04, 118918-24, 118959-03, 119059-31, 119130-33, 119254-44, 119317-01, 119574-02, 119578-30, 119757-04, 119764-06, 119903-02, 120011-14, 120061-02, 120292-01, 120329-02, 120719-02, 120900-04, 121002-03, 121004-03, 121012-02, 121118-13, 121133-02, 121296-01, 121308-11, 121453-02, 122911-07, 123003-03, 123005-05, 123186-02, 123630-01, 124188-02, 125196-05, 125378-02, 125476-02, and 126258-03 or later, available on SunSolve Online at <http://sunsolve.sun.com>.

**Note**

Patch 125378-02 is required to comply with the Daylight Saving Time changes that occurred in the United States in March 2007, as described in the Energy Policy Act of 2005. This patch is not necessary 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.



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**Note** Always install Solaris patches in single-user mode.

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- Sun Microsystems Java Runtime Environment (JRE) Standard Edition version 1.5.0\_12 (installed automatically for the CTM server and CTM GateWay/CORBA, and bundled with the CTM client).
- Oracle 10g software plus the following patch:
  - 10.2.0.3



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**Note** For instructions on how to install Oracle 10g, see [2.1 Installing CTM R8.5 and Oracle 10g on the Same Workstation, page 2-1](#) or [2.2 Installing CTM R8.5 and Oracle 10g on Separate Workstations, page 2-18](#).

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**Note** If you are using Veritas as a disk management system, Oracle patch 5752399 is required. For more information on this patch requirement, visit the Oracle MetaLink website and see Note: 405825.1 “10.2.0.3: Solaris: Veritas/Solstice: SVR4 Error: 25: Inappropriate ioctl for device.”

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- Oracle 10g licenses for Sun Solaris.



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**Note** Oracle licenses can be purchased either for the server processor or for named users. For more information on Oracle 10g named users, see [1.3 Oracle Licensing for CTM, page 1-14](#).

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- Available swap space (see [Table 1-6, Part 1](#); [Table 1-6, Part 2](#); [Table 1-7, Part 1](#); and [Table 1-7, Part 2](#) for swap space requirements).
- CD-ROM drive.

## 1.1.1 Server Specifications

[Table 1-1](#) to [Table 1-2](#) show recommended optical 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 Oracle 10g database are installed on the same workstation. The CTM server can run on any platform that supports Sun Solaris 10.



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**Note** The processor requirements for UltraSPARC IV apply also to UltraSPARC IV+. CTM R8.5 requires the same number of processors regardless of whether you use UltraSPARC IV or UltraSPARC IV+.

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**Note** It is possible to use and configure disk arrays for database storage with any type of RAID layout. You can do so only if the disk throughput is equal to or higher than the throughput calculated for internal disks.

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**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 <sup>1</sup>
Small	Standard Edition	2 x UltraSPARC III or 2 x IIIi CPU	1.2 GHz	4 GB <sup>2</sup>	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

1. These numbers assume you are using fully-equipped ONS 15454 MSP nodes (for example, 12 OC-48, 2 TCC, and 1 XC10G with up to 2 SDCC links and 48 SONET cross-connections per node). Note that these numbers should be used as a guideline, and will vary depending on the software and hardware configuration of your NEs.
2. A small installation with UltraSPARC processors requires a minimum of 4 GB of RAM; however, 8 GB of RAM is recommended.

**Note**

It is recommended that you keep the /db01 and /db02 partitions on two different physical disks with distinct controllers.

**Table 1-2 Recommended Specifications for the CTM Server Installation—MGX**

Network Size	Oracle Database Type	Processor	CPU Speed	RAM <sup>1</sup>	No. of Network Partitions	Max. No. of Clients	Max. No. of MGX NEs
Small	Standard Edition	2 x UltraSPARC III or 2 x IIIi CPU	1.2 GHz	4 GB <sup>2</sup>	1	30	6
Medium	Enterprise Edition	4 x UltraSPARC III or 2 x UltraSPARC IV CPU	1.2 GHz	16 GB	1	50	20
Large	Enterprise Edition	8 x UltraSPARC III or 4 x UltraSPARC IV CPU	1.2 GHz	32 GB	1	50	50
High end	Enterprise Edition	8 x UltraSPARC IV CPU with fiber-channel disk array	1.2 GHz	64 GB	1	100	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. A small installation with UltraSPARC processors requires a minimum of 4 GB of RAM; however, 8 GB of RAM is recommended.

The following list details the server configuration parameters and 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](#) and [Table 1-2](#), 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 a small configuration, performance is identical whether Standard Edition or Enterprise Edition is used. In medium or larger networks, Oracle Enterprise Edition is required.

- **Processor**—The server can manage more NEs as the number of processors increases above what is shown in [Table 1-1](#) and [Table 1-2](#). The server can manage fewer NEs as the number of processors decreases.
- **CPU Speed**—The server can manage more NEs if the CPU speed is faster than what is shown in [Table 1-1](#) and [Table 1-2](#). 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](#) and [Table 1-2](#). 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.

The T2 processor is supported starting in CTM R8.5.0.361.2 on Solaris 10 release 5/08. [Table 1-3](#) shows the recommended T2 processor specifications for installing the CTM server.

**Table 1-3 Recommended T2 Processor Specifications for CTM Server Installation**

Network Size	Number of Cores	Clock	RAM
Small <sup>1</sup>	T2 processor with 4 cores	1.2 GHz	8 GB
Medium	T2 processor with 4 cores	1.2 GHz	16 GB
Large	T2 processor with 4 cores	1.2 GHz	32 GB
High end	T2 processor with 8 cores	1.4 GHz	64 GB

1. For a small installation on a T2 processor, the CTM R8.5.0.240 patch is required. See CSCsy01229 in the [Release Notes for Cisco Transport Manager Release 8.5](#) for information about downloading and installing the CTM R8.5.0.240 patch.

## 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 1-4](#)) and MGX NEs (which requires 46 GB of disk space according to [Table 1-5](#)), you will require 95 GB disk space total.

[Table 1-4](#) to [Table 1-5](#) show disk space requirements for optical and MGX NEs based on network size and PM collection status when you are installing the CTM server and Oracle 10g database on the same workstation. The disk space shown does not include the /ctm\_backup directory.

**Table 1-4 Disk Space Requirements for Installing the CTM Server and Oracle 10g 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	50 GB	111 GB
Medium	500	92 GB	238 GB
Large	2000	142 GB	446 GB
High end	3000	234 GB	856 GB

**Table 1-5** Disk Space Requirements for Installing the CTM Server and Oracle 10g on the Same Workstation—MGX

Network Size	Maximum No. of NEs	Total Disk Space Without PM Collection	Total Disk Space with PM Collection
Small	6	46 GB	103 GB
Medium	20	72 GB	215 GB
Large	50	133 GB	435 GB
High end	100	306 GB	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).

### 1.1.2.1 Understanding the `ctm_backup` Directory

As shown in [Table 2-1 on page 2-2](#), 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.

It is recommended that the `/ctm_backup` size be equivalent to the sum of the single database partitions (that is, the sum of `/oracle`, `/db01`, `/db02`, `/db03`, `/db04`, and `/db05`) as detailed in [Table 1-6, Part 1](#); [Table 1-6, Part 2](#); [Table 1-7, Part 1](#); and [Table 1-7, Part 2](#).



#### Note

- The final `/ctm_backup` size is also related to the ARCHIVELOG files.
- The `/ctm_backup` directory can be a symbolic link to a user-defined directory and must have read/write permissions.

## 1.1.3 Partition Specifications


**Note**

It is recommended that you use the partition sizes detailed in this section. CTM performance will be severely impacted if you do not use the recommended partition sizes.

Table 1-6, Part 1 shows partition specifications for installing the CTM server and Oracle 10g on the same workstation when PM collection is enabled.

**Table 1-6, Part 1** *Partition Sizing for Installing the CTM Server and Oracle 10g on the Same Workstation—PM Collection Enabled*

Network Size	/	swap <sup>1</sup>	/oracle	/db01	/db02	/db03	/db04	/db05 <sup>2</sup>	/ctm_backup
Small	11 GB	6 GB <sup>3</sup>	5 GB	5 GB	6 GB	40 GB	30 GB	8 GB	See
Medium	15 GB	24 GB	5 GB	8 GB	16 GB	90 GB	70 GB	10 GB	1.1.2.1 Understanding the ctm_backup Directory, page 1-6.
Large	15 GB	48 GB	5 GB	10 GB	26 GB	190 GB	140 GB	12 GB	
High end	15 GB	96 GB	5 GB	12 GB	50 GB	360 GB	300 GB	18 GB	

1. Use swap when creating the partition. Do not use /swap.
2. The /db05 directory is required only if you want to install the CTM database in ARCHIVELOG mode.
3. In a small network configuration, the swap space must be at least 1.5 times the RAM. Therefore, if your server has 4 GB of RAM, you must have 6 GB of swap space. If your server has 8 GB of RAM, you must have 12 GB of swap space.

Table 1-6, Part 2 shows partition specifications for installing the CTM server and Oracle 10g on the same workstation when PM data collection is disabled.

**Table 1-6, Part 2** *Partition Sizing for Installing the CTM Server and Oracle 10g on the Same Workstation—PM Collection Disabled*

Network Size	/	swap <sup>1</sup>	/oracle	/db01	/db02	/db03	/db04	/db05 <sup>2</sup>	/ctm_backup
Small	11 GB	6 GB <sup>3</sup>	5 GB	5 GB	6 GB	5 GB	4 GB	8 GB	See
Medium	15 GB	24 GB	5 GB	8 GB	16 GB	8 GB	6 GB	10 GB	1.1.2.1 Understanding the ctm_backup Directory, page 1-6.
Large	15 GB	48 GB	5 GB	10 GB	26 GB	14 GB	12 GB	12 GB	
High end	15 GB	96 GB	5 GB	12 GB	50 GB	20 GB	18 GB	18 GB	

1. Use swap when creating the partition. Do not use /swap.
2. The /db05 directory is required only if you want to install the CTM database in ARCHIVELOG mode.
3. In a small network configuration, the swap space must be at least 1.5 times the RAM. Therefore, if your server has 4 GB of RAM, you must have 6 GB of swap space. If your server has 8 GB of RAM, you must have 12 GB of swap space.

### 1.1.4 Important Note About MGX Debug Levels and Log Files

Table 1-7, Part 1 shows the partition specifications for the CTM server when installing the CTM server and Oracle 10g on separate workstations.

**Table 1-7, Part 1 Partition Sizing for the CTM Server when Installing the CTM Server and Oracle 10g on Separate Workstations**

CTM Server									
Network Size	/	swap <sup>1</sup>	/oracle	/db01	/db02	/db03 <sup>2</sup>	/db04 <sup>3</sup>	/db05 <sup>4</sup>	/ctm_backup
Small	11 GB	6 GB <sup>5</sup>	5 GB	—	—	—	—	—	—
Medium	15 GB	24 GB	5 GB	—	—	—	—	—	—
Large	15 GB	48 GB	5 GB	—	—	—	—	—	—
High end	15 GB	96 GB	5 GB	—	—	—	—	—	—

1. Use swap when creating the partition. Do not use /swap.
2. 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.
3. 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.
4. The /db05 directory is required only if you want to install the CTM database in ARCHIVELOG mode.
5. In a small network configuration, the swap space must be at least 1.5 times the RAM. Therefore, if your server has 4 GB of RAM, you must have 6 GB of swap space. If your server has 8 GB of RAM, you must have 12 GB of swap space.

Table 1-7, Part 2 shows the partition specifications for the Oracle 10g database server when installing the CTM server and Oracle 10g on separate workstations.

**Table 1-7, Part 2 Partition Sizing for the Oracle 10g Database Server when Installing the CTM Server and Oracle 10g on Separate Workstations**

Oracle 10g Database Server									
Network Size	/	swap <sup>1</sup>	/oracle	/db01	/db02	/db03 <sup>2</sup>	/db04 <sup>3</sup>	/db05 <sup>4</sup>	/ctm_backup
Small	10 GB	4 GB <sup>5</sup>	5 GB	5 GB	6 GB	40 GB	30 GB	8 GB	See <a href="#">1.1.2.1 Understanding the ctm_backup Directory, page 1-6</a> .
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. Use swap when creating the partition. Do not use /swap.
2. 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.
3. 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.
4. The /db05 directory is required only if you want to install the CTM database in ARCHIVELOG mode.
5. In a small network configuration, the swap space must be at least 1.5 times the RAM. Therefore, if your server has 4 GB of RAM, you must have 6 GB of swap space. If your server has 8 GB of RAM, you must have 12 GB of swap space.

## 1.1.4 Important Note About MGX Debug Levels and Log Files

By default, the MGX debug levels and the number of log files to retain are kept low to save disk space. During the first few installations or upgrades, it is recommended (but not mandatory) that you increase the debug level of some MGX processes to assist in debugging any issues that might arise.

It is recommended that you increase the debug level for the following processes:

- topod (debug level 5)
- ILMITopoc (debug level 5)
- ooemc (debug level 7; retain up to 50 log files)
- nts (debug level 5; retain up to 20 log files)
- snmpcomm (debug level 5)
- NMServer (debug level 5; retain up to 20 log files)

For information about changing the debug level for these processes, see the *Cisco Transport Manager Release 8.5 User Guide*, Chapter 9, section “Setting Debug Options.”

After running the system for several weeks without any issues, you can reduce the debug levels to save disk space.

## 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 1-8](#).

**Table 1-8** Minimum Requirements for the CTM Client

Platform	Network Size	RAM <sup>1,2,3</sup>	CPUs	CPU Speed	Disk Space Without CEC <sup>4</sup>	Disk Space with CEC	Other
Sun Ultra 5 workstation <sup>5</sup>	Small	256 MB	1	333 MHz	640 MB	710 MB	<ul style="list-style-type: none"> <li>• Sun Solaris 10 release 11/06 with Common Desktop Environment (CDE), with graphics support for 16-bit color or higher</li> <li>• Mozilla 1.7 (the version integrated in Solaris 10 release 11/06)</li> </ul>
	Medium	512 MB					
	Large	512 MB					
	High end	1 GB					
Pentium 4 class PC	Small	512 MB	1	450 MHz	630 MB	700 MB	<ul style="list-style-type: none"> <li>• 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</li> <li>• Microsoft Internet Explorer 6.0 or Mozilla 1.7.13, with JavaScript enabled</li> <li>• Microsoft Windows XP and Windows 2003 patch number KB928388 is available for the revised Daylight Saving Time in 2007</li> </ul>
	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 256 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).

## 1.2.1 Verifying the Mozilla Version for the Solaris Client

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.

It is strongly recommended that you install the CTM client on a workstation separate from the CTM server. Installing the CTM client and server on the same workstation consumes server resources and causes performance degradation.

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 1-2](#).

## 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 1.7, enter:

```
ln -s /usr/sfw/bin/mozilla /usr/bin/mozilla
```

- To verify the environmental variables for Mozilla, enter:

```
echo $PATH
```



**Note** `"/usr/bin/"` should be found inside the `ld` library path string.

```
echo $LD_LIBRARY_PATH
```



**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
```

- To verify the correct version of Mozilla, enter:

```
mozilla -version
```

- In the output, you should see the correct Mozilla version:

```
Mozilla 1.7, ...
```

## 1.2.2 Using Remote Application Software with the CTM R8.5 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)

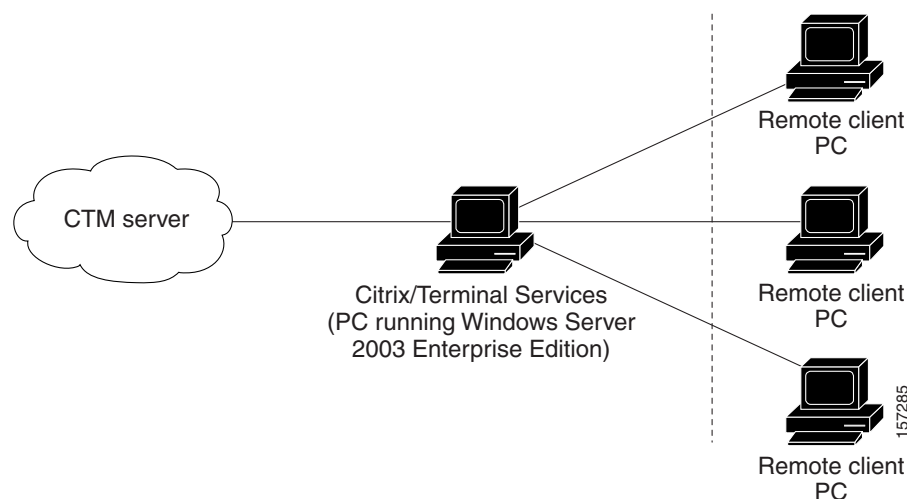
where:

- 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 1-9** 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

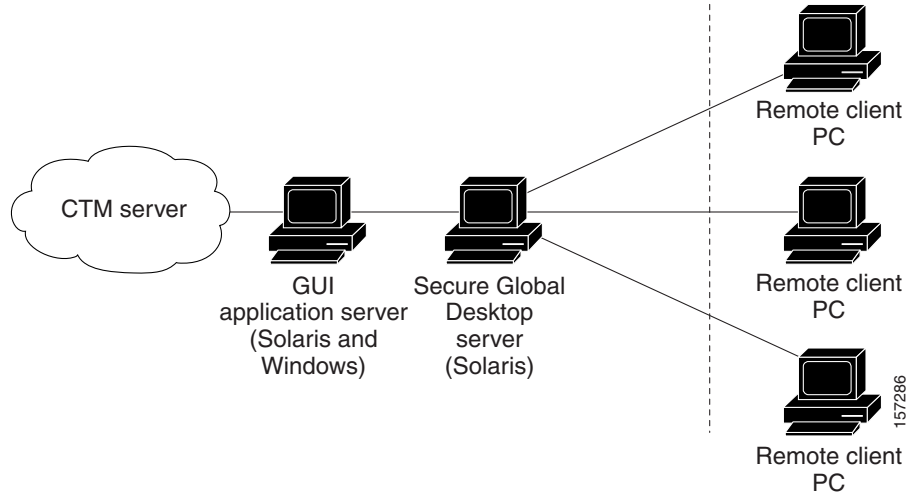
In this example, the hardware requirements for 10 clients are:

- 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 1-10** *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 1-11** *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). The following table shows the Java heap memory values.

**Table 1-12** *Java Heap Sizes*

Network Size	Initial Heap Size	Maximum Heap Size
Small	100 MB	192 MB
Medium	128 MB	256 MB

**Table 1-12** Java Heap Sizes (continued)

Network Size	Initial Heap Size	Maximum Heap Size
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 R8.5 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 1-17](#)

**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 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 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).

**Note**

For the purpose of counting the number of processors, a multicore chip with  $n$  cores is determined by multiplying  $n$  cores by a core processor licensing factor of 0.75. All cores on all multicore chips for each licensed program for each core processor licensing factor listed above are aggregated, before multiplying by the appropriate core processor licensing factor. All fractions of a number are rounded up to the next whole number. When licensing Standard Edition programs on servers with a maximum of one processor with one or two cores, only one processor is counted.

- *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.

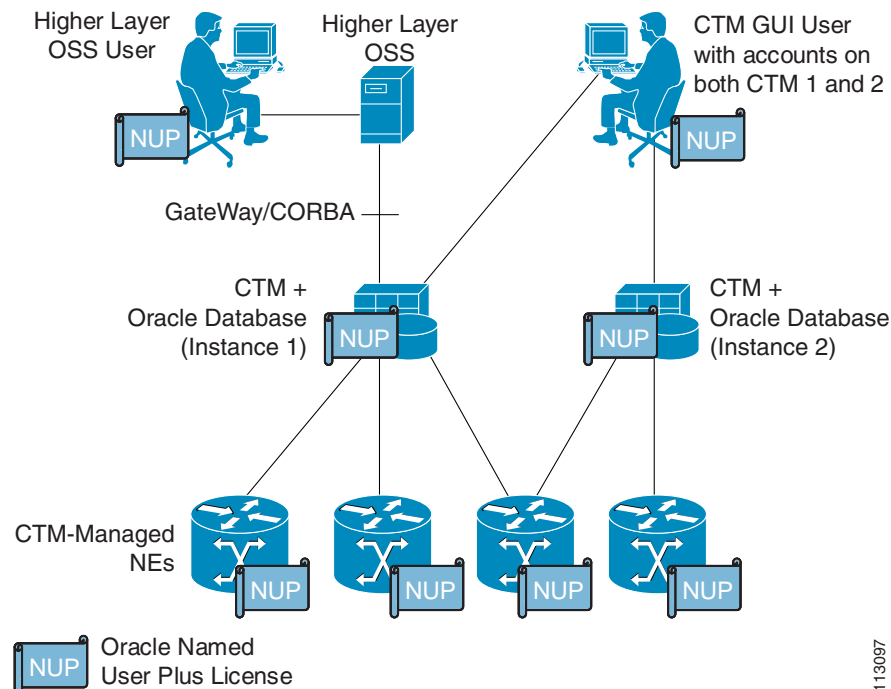
In the context of a CTM environment, *human-operated device* means any device operated by a user who has direct or indirect access to CTM. Direct access is gained through a user account on CTM that allows access through the CTM client GUI. Indirect access is possible through a user account on a higher-layer 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.

Oracle database editions have the following differences:

- Oracle Standard Edition—Requires a minimum of five Named User Plus licenses or the total number of actual users, whichever number is higher. Oracle Standard Edition can be licensed only on servers that have a maximum capacity of four sockets. A blade server that meets these criteria is also eligible for licensing this program. Effective with the release of Oracle 10g, the Oracle Standard Edition product includes the Real Application Clusters database option. The Real Application Clusters option is not included with any Standard Edition versions prior to Oracle 10g. Customers who participate in Oracle's Update Subscription Service for the Standard Edition database can upgrade to the 10g version of the product for the supported licenses. Also, customers must use Oracle Cluster Ready Services as the clusterware; third-party clusterware is not supported. Customers must use Oracle Automatic Storage Management to manage all data.
- Oracle Enterprise Edition—Requires a minimum of 25 Named User Plus per processor licenses or the total number of actual users, whichever number is higher.

The following figure 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

Oracle Database Enterprise Edition (EE) provides improved scalability performance. The two major features in this release are:

- The Oracle partitioning option (not available in the Oracle SE)
- An increased number of maximum supported CPUs (Oracle SE supports a maximum of only four CPUs)



**Note**

---

Oracle EE requires a separate license.

---

### 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, with only one core 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

If the processors are UltraSPARC IV and IV+ (dual core), the calculation for processor licensing is:

- Processor:  $(8 \times 2) \times 0.75 = 12$  processor licenses

### 1.3.1.2 CTM with Oracle EE (Example B)

The same service provider as in the previous example 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 workstations 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

If the processors are UltraSPARC IV and IV+ (dual core), the calculation for processor licensing is:

- Processor: 2 processor licenses

## 1.4 Installation Prerequisites

Before installing the CTM server and the Oracle 10g database on your Sun Solaris 10 server, verify the following:

- You have the correct Solaris patches installed. (See [1.1 CTM Server Requirements, page 1-1](#).)




---

**Note** Solaris 10 can be installed only on a 64-bit workstation.

---

- You have the correct version of Oracle 10g—Oracle 10g software plus the 10.2.0.3 patch, Standard or Enterprise Edition, for Sun Solaris.
- 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.
- 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 R8.5 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\_ipaddress.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: /usr/bin/prune_admin_job_table.sh
%CTM_UNIX_group hostname=(root) NOPASSWD:
/opt/CiscoTransportManagerServer/bin/prune_admin_job_table.sh
%CTM_UNIX_group hostname=(root) NOPASSWD: /usr/bin/prune_server_monitor.sh
%CTM_UNIX_group hostname=(root) NOPASSWD:
/opt/CiscoTransportManagerServer/bin/prune_server_monitor.sh
%CTM_UNIX_group hostname=(root) NOPASSWD: /usr/bin/prune_ne.sh
%CTM_UNIX_group hostname=(root) NOPASSWD: /opt/CiscoTransportManagerServer/bin/prune_ne.sh
%CTM_UNIX_group hostname=(root) NOPASSWD: /usr/bin/prune_pm.sh
%CTM_UNIX_group hostname=(root) NOPASSWD: /opt/CiscoTransportManagerServer/bin/prune_pm.sh
%CTM_UNIX_group hostname=(root) NOPASSWD: /usr/bin/prune_fm.sh
%CTM_UNIX_group hostname=(root) NOPASSWD: /opt/CiscoTransportManagerServer/bin/prune_fm.sh
%CTM_UNIX_group hostname=(root) NOPASSWD: /usr/bin/prune_audittrail.sh
%CTM_UNIX_group hostname=(root) NOPASSWD:
/opt/CiscoTransportManagerServer/bin/prune_audittrail.
%CTM_UNIX_group hostname=(root) NOPASSWD: /usr/bin/prune_errlog.sh
```

```
%CTM_UNIX_group hostname=(root) NOPASSWD:
/opt/CiscoTransportManagerServer/bin/prune_errlog.
%CTM_UNIX_group hostname=(root) NOPASSWD: /usr/bin/prune_auditlog.sh
%CTM_UNIX_group hostname=(root) NOPASSWD:
/opt/CiscoTransportManagerServer/bin/prune_auditlog.
%CTM_UNIX_group hostname=(root) NOPASSWD: /usr/bin/getinfo.sh
%CTM_UNIX_group hostname=(root) NOPASSWD: /opt/CiscoTransportManagerServer/bin/getinfo.sh
%CTM_UNIX_group hostname=(root) NOPASSWD: /usr/bin/showctm
%CTM_UNIX_group hostname=(root) NOPASSWD: /opt/CiscoTransportManagerServer/bin/showctm
%CTM_UNIX_group hostname=(root) NOPASSWD: /usr/bin/ctms-stop-service
%CTM_UNIX_group hostname=(root) NOPASSWD:
/opt/CiscoTransportManagerServer/bin/ctms-stop-service
%CTM_UNIX_group hostname=(root) NOPASSWD: /usr/bin/ctms-stop
%CTM_UNIX_group hostname=(root) NOPASSWD: /opt/CiscoTransportManagerServer/bin/ctms-stop
%CTM_UNIX_group hostname=(root) NOPASSWD: /usr/bin/ctms-abort
%CTM_UNIX_group hostname=(root) NOPASSWD: /opt/CiscoTransportManagerServer/bin/ctms-abort
%CTM_UNIX_group hostname=(root) NOPASSWD: /usr/bin/ctms-start
%CTM_UNIX_group hostname=(root) NOPASSWD: /opt/CiscoTransportManagerServer/bin/ctms-start
```

## 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.

- 
- 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 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 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
```

The following is an example of the output of the `showctm` command, where all of the attributes (except for the process names) are flexible:

```
CTM Processes for Cisco Transport Manager Server Version: 8.5 Build: <build_number>
```

```
-----
USER   PID   %CPU   %MEM   START   TIME   PROCESS
-----
root   2509   0.2    0.425528   16:21:08   0:13   CTM Server
root   2463   0.0    0.018032   16:21:03   0:00   CTM Server
root   2695   0.4    4.438779289056   16:21:51   0:58   SnmpTrapService
root   2538   0.1    4.638281692280   16:21:10   0:40   SMService
root   2491   0.0    0.0        16:21:07   0:00   Apache Web Server
-----
```

## 1.4.6 Explanation of the `ctms-stop-service` Command

The `ctms-stop-service` command kills the service and starts a new instance of the service automatically.

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

**Step 2** On the command line, enter one of the following commands to stop the CTM process and automatically start a new service:

- SM service:

```
ctms-stop-service SMService
```

- NE/PM services:  
`ctms-stop-service <service_ID_number>`
  - CTM GateWay/CORBA service:  
`ctms-stop-service -1`
  - SNMP trap service:  
`ctms-stop-service -2`
-

■ 1.4.6 Explanation of the ctms-stop-service Command



## CHAPTER 2

# Installing the CTM R8.5 Server and Oracle 10g



### Caution

A reliable network connection is required when carrying out an installation on a remote workstation.



### Note

After the CTM R8.5 installation is complete, you have the option of upgrading the CTM network configuration size and adding new modules. For more information, see [3.6 Upgrading the CTM Network Configuration Size, page 3-20](#) and [3.7 Adding New Modules, page 3-21](#).

This chapter describes how to install CTM R8.5 and Oracle 10g. It contains the following sections:

- [2.1 Installing CTM R8.5 and Oracle 10g on the Same Workstation, page 2-1](#)
- [2.2 Installing CTM R8.5 and Oracle 10g on Separate Workstations, page 2-18](#)
- [2.3 New Zealand Daylight Saving Time Updates, page 2-35](#)



### Note

- For an explanation of error messages that you might encounter during the server installation, see [Appendix A, “Understanding Installation Error Messages.”](#)
- If you need instructions to mount or unmount CDs, see [Appendix C, “Mounting and Unmounting CDs on Sun Solaris.”](#)
- You must use the CTM installation CDs to complete the 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 R8.5 and Oracle 10g on the Same Workstation



### Note

Refer to [Chapter 1, “System Requirements”](#) before you carry out any of the procedures in this section.

This section describes how to install the CTM R8.5 server and Oracle 10g on the same Sun Solaris 10 server.

The following sections detail the procedure to follow:

- [2.1.1 Installing Oracle 10g, page 2-2](#)
- [2.1.2 Updating the System Parameters, page 2-13](#)
- [2.1.3 Installing the CTM R8.5 Server and Database, page 2-15](#)

## 2.1.1 Installing Oracle 10g

This section provides supporting information to assist you with the Oracle 10g installation.



### Note

- Oracle 10g is available on a 64-bit architecture only.
- Use the information in this section in conjunction with the Oracle documentation available on the Oracle website at <http://www.oracle.com>. The Oracle website is copyright © 2004, Oracle Corporation. All rights reserved.

### 2.1.1.1 Setting the Environment for Installation

Complete the following steps to set the environment for installation:

**Step 1** Log in as the root user.

**Step 2** If you are using an xterm window or a remote host, enter the following commands to place the command prompt in csh and enable the xterm connection from the clients:

```
csh
setenv DISPLAY <hostname_or_IP_address>:0.0
/usr/openwin/bin/xhost +
```



**Note** The `setenv` command does not work correctly unless you are in csh.

**Step 3** 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 <sup>1</sup>	For the system tablespace used by Oracle
/db02	For the basedata tablespace, alarmdata tablespace, and eventdata tablespace used by CTM
/db03	For the data tablespace used by CTM
/db04	For the INDEX tablespace used by CTM
/db05 <sup>2</sup>	For the archived logs
/ctm_backup <sup>3,4</sup>	For the backed-up database and configuration files

**Table 2-1** Disk Directories (continued)

Directory	Contents
/oracle	For the Oracle software
/tftpboot	For the TFTP directory <b>Note</b> Disk partitioning is not required for /tftpboot, but the directory is required.

- For performance reasons, it is recommended that you keep the /db01 and /db02 partitions on two different physical disks with distinct controllers.
- If you want to install the CTM database in ARCHIVELOG mode, the /db05 directory is required. ARCHIVELOG mode is required for hot database backups.
- 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.
- If the Oracle user does not have read/write permission, backup and restore operations will fail. Use the `chmod 777 /ctm_backup` command to set the correct permissions on the directory. If a symbolic link is on the storage device, verify the command. See [1.1.2.1 Understanding the ctm\\_backup Directory](#), page 1-6.



**Note** Check that the **STTY** command is not used in the shell configuration file. For example, check that the **STTY** command is not used in the `.login`, `.cshrc`, and `.profile` files.

**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 group for installation of the Oracle software:

```
groupadd oinstall
```

**Step 6** Enter the following command to create a UNIX account to own the Oracle software:

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

**Step 7** Enter the following command to change the Oracle user password:

```
passwd oracle
```

**Step 8** Enter the new password; then, re-enter the password to confirm it.

**Step 9** Insert the CTM Server Disk 1 installation CD and enter the following command:

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

**Step 10** 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 the Sun Solaris documentation for mounting the CD-ROM.

**Step 11** 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 /oracle/.cshrc
```

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

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



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

**Step 12** If you are upgrading from an earlier CTM release, verify that the ORACLE\_SID environment variable is set correctly in the .cshrc file. Complete the following substeps:

a. Enter the following command to find the ORACLE\_SID:

```
cat /var/opt/oracle/oratab | grep product
```

The command returns an output that is similar to the following:

```
<Oracle SID>:/oracle/product/9.2:Y
```

b. Complete one of the following options, depending on the value of <Oracle SID>:

- If the <Oracle SID> is CTM, proceed to [Step 13](#).
- If the <Oracle SID> is not CTM, open the /oracle/.cshrc file using a text editor. In the following line, replace CTM with the value of <Oracle SID> in the oratab file:

```
setenv ORACLE_SID CTM
```

**Step 13** Complete one of the following options, depending on your Oracle version:

- Enter the following commands if you are installing 64-bit Oracle Enterprise Edition and Oracle patch 10.2.0.3:

```
cp /cdrom/cdrom0/Disk1/oracle10_enterp.rsp /oracle
cp /cdrom/cdrom0/Disk1/patchset_64bit_10203.rsp /oracle
```

- Enter the following commands if you are installing 64-bit Oracle Standard Edition and Oracle patch 10.2.0.3:

```
cp /cdrom/cdrom0/Disk1/oracle10_std.rsp /oracle
cp /cdrom/cdrom0/Disk1/patchset_64bit_10203.rsp /oracle
```

**Step 14** Enter the following commands to change ownership of the Oracle software directories:

```
/usr/bin/chown -R oracle:dba /oracle
/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 15** Enter the following command to add execution permissions:

```
/usr/bin/chmod +x /oracle/.cshrc
```

**Step 16** Enter the following commands to eject the CTM Server Disk 1 installation CD:

```
cd /
eject cdrom
```

**Step 17** Enter the following commands to create a temporary staging area:

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

### 2.1.1.2 Installing the Oracle 10g Software with the Response File (\*.rsp) Provided by Cisco

- Step 1** Log in as the root user.
- Step 2** (Depending on the distribution media of the Oracle software) Insert the DVD or use the image provided on the Oracle website at <http://www.oracle.com>. The Oracle website is copyright © 2004, Oracle Corporation. All rights reserved.



**Note** If you do not have a DVD, refer to your Oracle documentation for instructions on how to download and extract the correct software for the installation.



**Note** Refer to the official Oracle Content Database Installation Guide as a reference when carrying out the steps detailed in this section. See the official Oracle Content Database Installation Guide at [http://download.oracle.com/docs/cd/B32119\\_01/doc/contentdb.1012/b31415/toc.htm](http://download.oracle.com/docs/cd/B32119_01/doc/contentdb.1012/b31415/toc.htm).

- Step 3** Check the current values for the kernel parameters shown in [Table 2-2](#).
- Kernel parameters are set in previous versions of Solaris by editing the file `/etc/system`. In Solaris 10, you are not required to make changes to the `/etc/system` file to implement the System V TPC. Solaris 10 uses the resource control facility for its implementation.



**Note** Although you do not have to modify the `/etc/system` file to implement the System V TPC, you might have to make other changes to `/etc/system` later in this procedure.

[Table 2-2](#) lists the mapping of the parameter names used in the previous versions of Solaris with the new variables that are used as input to the resource control feature as well as the Oracle minimum recommended values to set for these resources.

**Table 2-2 Recommended Resource Control Values**

Parameter	Replaced by <i>Resource Control</i>	Recommended Value
noexec_user_stack	—	1
semsys:seminfo_semmni	project.max-sem-ids	100
semsys:seminfo_semmsl	process.max-sem-nsems	256
shmsys:shminfo_shmmax	project.max-shm-memory	4294967295 <sup>1</sup>
shmsys:shminfo_shmmni	project.max-shm-ids	100

1. This value is equivalent to 4.00 GB (gigabytes).

If your system shows values higher than those recommended in [Table 2-2](#) for any of these parameters, you can leave them unchanged. If your system shows values lower than those recommended, you will need to change them to comply with the recommended values.

To check the current values of the Resource Control variables listed in [Table 2-2](#), complete the following substeps:

- a. Enter the following command to identify the value for `project.max-sem-ids`:

```
prctl -n project.max-sem-ids -i project user.root
```

In the output, you should see the following (taking into account that values shown could be different on your server):

```
project: 1: user.root
NAME      PRIVILEGE      VALUE      FLAG      ACTION      RECIPIENT
project.max-sem-ids
  privileged      128        -          deny      -
  system          16.8M      max        deny      -
```

In this example, the existing value for the project.max-sem-ids parameter is 128.

- b. Enter the following command to identify the value for project.max-shm-memory:

```
prctl -n project.max-shm-memory -i project user.root
```

In the output, you should see the following (taking into account that values shown could be different on your server):

```
project: 1: user.root
NAME      PRIVILEGE      VALUE      FLAG      ACTION      RECIPIENT
project.max-shm-memory
  privileged      4.00GB     -          deny      -
  system          16.0EB     max        deny      -
```

In this example, the existing value for the project.max-shm-memory parameter is 4.00GB.

- c. (For a small installation on a T2 workstation only) Enter the following command to set the shared memory of the “default” project to 2 GB:

```
projmod -s -K "project.max-shm-memory=(privileged,2147483648,deny)" 'default'
```

- d. Enter the following command to identify the value for project.max-shm-ids:

```
prctl -n project.max-shm-ids -i project user.root
```

In the output, you should see the following (taking into account that values shown could be different on your server):

```
project: 1: user.root
NAME      PRIVILEGE      VALUE      FLAG      ACTION      RECIPIENT
project.max-shm-ids
  privileged      128        -          deny      -
  system          16.8M      max        deny      -
```

In this example, the existing value for the project.max-shm-ids parameter is 128.

- e. Enter the following command to identify the value for process.max-sem-nsems:

```
prctl -n process.max-sem-nsems -i process $$
```

In the output, you should see the following (taking into account that values shown could be different on your server):

```
process: 15100: -csh
NAME      PRIVILEGE      VALUE      FLAG      ACTION      RECIPIENT
project.max-sem-nsems
  privileged      512        -          deny      -
  system          32.8K      max        deny      -
```

In this example, the existing value for the process.max-sem-nsems parameter is 512.

- Step 4** The values for these parameters should be the same as, or greater than, the values listed in [Table 2-2](#). If any of the parameters are lower, use the following instructions to change them to be equal to the values in [Table 2-2](#). On Solaris 10, the parameters modified with the **prctl** command are not permanent and are lost after a system reboot. To set the parameters permanently, use the **projmod** command, as follows:

```
cp /etc/project /etc/project.orig
projmod -s -K "project.max-sem-ids=(privileged,100,deny)" 'user.root'
projmod -s -K "process.max-sem-nsems=(privileged,256,deny)" 'user.root'
projmod -s -K "project.max-shm-memory=(privileged,4294967295,deny)" 'user.root'
projmod -s -K "project.max-shm-ids=(privileged,100,deny)" 'user.root'
```

**Step 5** Enter the following command to verify that your changes were effective:

```
grep user.root /etc/project
```

In the output, you should see information similar to the following example, where the parameters associated to user.root are reported in a single line separated by semicolons:

```
user.root:1:::process.max-sem-nsems=(privileged,256,deny);project.max-sem-ids=(privileged,100,deny);project.max-shm-ids=(privileged,100,deny);project.max-shm-memory=(privileged,4294967295,deny)
```

Verify that the parameters shown in the output are set to the same value that they were set to in [Step 4](#).

**Step 6** Edit the /etc/system file by adding the following line to the bottom of the file, if the line is not already present:

```
set noexec_user_stack=1
```

**Step 7** Reboot your server if you changed any of the parameters in [Step 4](#) or [Step 6](#).

**Step 8** Enter the following commands to set the shell, TERM, and DISPLAY parameters:

```
# csh
# setenv TERM vt100
# setenv DISPLAY <hostname_or_IP_address>:0.0
# /usr/openwin/bin/xhost +
```

**Step 9** Enter the following command to log into the database workstation as the Oracle user:

```
su - oracle
```

**Step 10** Depending on the distribution media of the Oracle software, change to the directory where the runInstaller application is located. For example, if you are using a DVD, enter `cd /dvd/dvd0`.

**Step 11** Complete one of the following options to start the Oracle installer, depending on your Oracle version:

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

```
./runInstaller -silent -responseFile /oracle/oracle10_enterp.rsp &
```
- If you are installing 64-bit Oracle Standard Edition, enter:  

```
./runInstaller -silent -responseFile /oracle/oracle10_std.rsp &
```

**Step 12** You are prompted to run the /oracle/oraInventory/orainstRoot.sh script with root privileges. Log into another terminal window as the root user and enter the following command:

```
/oracle/oraInventory/orainstRoot.sh
```

**Step 13** You are prompted to run the /oracle/product/10.2.0/root.sh script. Log into another terminal window as the root user and enter the following command:

```
/oracle/product/10.2.0/root.sh
```

At the prompt for the local bin directory, enter the following command:

```
/oracle/product/10.2.0/local/bin
```

**Step 14** The client static library (libclntst10.a) is not generated during installation. Complete the following substeps to generate and link your applications to the client static library:

- a. Enter the following command to log into the database workstation as the Oracle user:

```
su - oracle
```

- b. Enter the following command to generate the client static library:

```
$ORACLE_HOME/bin/genclntst
```

---

### 2.1.1.3 Downloading Set 2 of the Oracle 10g 10.2.0.3 Patch for the Solaris Operating System (SPARC 64-Bit)

CTM R8.5 requires that Set 2 of the Oracle 10g 10.2.0.3 patch is installed.



**Note**

You must create a MetaLink account to download the 10.2.0.3 patch from the Oracle website.

---

**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** Extract the 316900.1 document.

**Step 3** Click **Advanced** at the top of the Oracle MetaLink page.

**Step 4** Enter **316900.1** in the Document ID field; then, click **Submit**. The 316900.1 document provides the following information:

- System requirements
- Lists of resolved bugs
- List of known issues

**Step 5** Click **Patches**.

**Step 6** Click **Simple Search**.

**Step 7** Enter **5337014** in the Search by Patch Number(s) field.

**Step 8** Choose **Solaris Operating System (SPARC 64-bit)** from the Platform or Language list box.

**Step 9** Click **Go**.

**Step 10** Click **Download** to download the p5337014\_10203\_SOLARIS64.zip file.

**Step 11** Enter the following command to log into the database workstation as the Oracle user:

```
su - oracle
```

**Step 12** Transfer or copy the file to the /oracle directory.

**Step 13** Enter the following command to prepare the patch:

```
unzip p5337014_10203_SOLARIS64.zip
```

**Step 14** Remove the p5337014\_10203\_SOLARIS64.zip file from the /oracle directory.

---

### 2.1.1.4 (Oracle Server) Installing Set 2 of the Oracle 10g 10.2.0.3 Patch for the Solaris Operating System (SPARC 64-Bit)

Skip this section if you already installed the 10.2.0.3 patch for Oracle 10g.

**Step 1** You should still be logged in as oracle from the previous section. If not, 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 commands to set the DISPLAY variable:

```
setenv DISPLAY <hostname_or_IP_address>:0.0
setenv TERM vt100
/usr/openwin/bin/xhost +
```

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

```
echo $DISPLAY
echo $TERM
```

In the output, you should see:

```
<hostname_or_IP_address>:0.0
vt100
```

**Step 4** Stop all Oracle processes if they are running.

**Step 5** Enter the following commands to install the 10.2.0.3 patch:

```
cd Disk1
./runInstaller -silent -responseFile /oracle/patchset_64bit_10203.rsp
```

**Step 6** At the prompt to run the root.sh script, log into another terminal window as the root user and enter the following commands:

```
/oracle/product/10.2.0/root.sh
```

**Step 7** At the prompt for the local bin directory, enter the following path in the root.sh script:

```
/oracle/product/10.2.0/local/bin
```



**Note** You are prompted to overwrite some files. Reply yes to all of the prompts.

---

**Step 8** Enter the following command to remove the 10.2.0.3 patch installation files:

```
rm -rf /oracle/Disk1
```

---

### 2.1.1.5 Post Installation Steps

After you install Set 2 of the Oracle 10.2.0.3 patch for the Solaris operating system (SPARC 64-bit), complete the following steps on every database associated with the upgraded Oracle home as recommended by the official Oracle patch README.html file.


**Note**

This section includes only the required post installation steps. Refer to the README.html document that accompanies the Oracle patch for the complete post installation steps.

**Step 1** You should still be logged in as oracle from the previous section. If not, enter the following command to log into the database workstation as the Oracle user:

```
su - oracle
```

**Step 2** By default, all new files and directories are created with restricted access during the patch set installation. Users or third-party applications with a group identifier that is different from the database will see permission errors when they try to access client utilities or libraries in the database home. Enter the following command to run the changePerm.sh script:

```
$ORACLE_HOME/install/changePerm.sh
```

Select “y” when prompted to continue.

**Step 3** The client static library (libclntst10.a) is not generated during installation. Enter the following command to generate and link your applications to the client static library:

```
$ORACLE_HOME/bin/genclntst
```

### 2.1.1.6 Downloading and Installing the Additional Patches Required After Installing the Oracle 10g 10.2.0.3 Patch Set 2 for the Solaris Operating System (SPARC 64-Bit)

You need to download and install the following additional patches:

- Patch 4898608 to migrate the Opatch utility from 10.2.0.1.4 to 10.2.0.3.2
- Patch 6235161


**Caution**

Install patch 4898608 before installing patch 6235161. Refer to the official installation guide included with the patch itself.

#### 2.1.1.6.1 Downloading the Additional Oracle Patches

This section describes how to download the additional required Oracle patches.

**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** Select **Patch** from the menu and search for the 4898608 patch.

- Step 3** Click **Download** to download the p4898608\_10203\_GENERIC.zip file to your local workstation.
- Step 4** Enter the following command to log into the database workstation as the Oracle user:
- ```
su - oracle
```
- Step 5** Save the patch to the \$ORACLE\_HOME directory.
- Step 6** Go to <http://metalink.oracle.com> and click **Login to MetaLink**. Enter your Oracle MetaLink username and password.
- Step 7** Select **Patch** from the menu and search for the 6235161 patch.
- Step 8** Choose **Solaris Operating System (SPARC 64-bit)** from the Platform or Language list box.
- Step 9** Click **Go**.
- Step 10** Click **Download** to download the p6235161\_10203\_SOLARIS64.zip file to your local workstation.
- Step 11** Enter the following command to log into the database workstation as the Oracle user:
- ```
su - oracle
```
- Step 12** Save the patch to the \$ORACLE\_HOME directory.
- 

### 2.1.1.6.2 Installing the Additional Oracle Patches

This section describes how to install the additional required Oracle patches.



**Caution** Install patch 4898608 before installing patch 6235161.

---

- Step 1** Enter the following command to log into the database workstation as the Oracle user:
- ```
su - oracle
```
- Step 2** Check that the Oracle processes are not running.
- Step 3** Enter the following commands to unzip p4898608\_10203\_GENERIC.zip into your Oracle home directory:
- ```
cd $ORACLE_HOME
unzip p4898608_10203_GENERIC.zip
```
- Step 4** At the prompt asking if you want to replace all files, choose **Replace All**.  
Patch 4898608 is now installed.
- Step 5** To verify that you have the Opatch utility 10.2.0.3.2 installed, enter the following command as the oracle user:
- ```
$ORACLE_HOME/OPatch/opatch version
```
- The following messages appear:
- ```
Invoking OPatch 10.2.0.3.2
OPatch Version: 10.2.0.3.2
OPatch succeeded.
```
- Step 6** Enter the following commands to unzip p6235161\_10203\_SOLARIS64.zip into your Oracle home directory:
- ```
cd $ORACLE_HOME
```

```
unzip p6235161_10203_SOLARIS64.zip
```

A new 6235161 folder is created.

**Step 7** Enter the following command to change to the 6235161 folder:

```
cd 6235161
```

**Step 8** Enter the following command to apply the patch:

```
../OPatch/patch apply
```




---

**Note** You might receive a warning message after installing the patch. If you receive a warning message, complete [Step 9](#) and [Step 10](#). If you do not receive a warning message, skip to [Step 11](#).

---

**Step 9** Check the latest log file in the /oracle/product/10.2.0/cfgtoollogs/patch directory.

**Step 10** Enter the following command, where you type "file name" exactly as shown:

```
grep "file name" /oracle/product/10.2.0/cfgtoollogs/patch/<log_file>
```

The file size should have increased by 4 bytes.

**Step 11** Enter the following command to check whether the 6235161 patch is installed:

```
../OPatch/patch lsinventory | grep 6235161
```

The output should show the 6235161 patch number.

**Step 12** Enter the following commands to perform some general cleanup:

```
rm -rf $ORACLE_HOME/6235161
rm $ORACLE_HOME/p6235161_10203_SOLARIS64.zip
rm $ORACLE_HOME/p4898608_10203_GENERIC.zip
```

---

### 2.1.1.7 Post Installation Steps—High Availability Configuration

Because there is a critical bug on the Oracle 10.2.0.3 patch that is installed with the CTM high availability configuration that uses Veritas 5.0, you must install another Oracle patch. Refer to Note: 405825.1 “10.2.0.3: Solaris: Veritas/Solstice: SVR4 Error: 25: Inappropriate ioctl for device” on the Oracle MetaLink website. The bug symptom is that you receive the following error message at Oracle startup: “ORA-27037: Unable to obtain file status.”




---

**Note** This section includes only the required post installation steps. Refer to the README.html document that accompanies the Oracle patch for the complete post installation steps.

---

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

**Step 2** Select **Patch** from the menu and search for the 5752399 patch.

**Step 3** Choose **Solaris Operating System (SPARC 64-bit)** from the Platform or Language list box.

**Step 4** Click **Go**.

**Step 5** Click **Download** to download the p5752399\_10203\_SOLARIS64.zip file to your local workstation.

- Step 6** Enter the following command to log into the database workstation as the Oracle user:
- ```
su - oracle
```
- Step 7** Save the patch to the \$ORACLE\_HOME directory.
- Step 8** Enter the following command to extract the patch files as the Oracle user:
- ```
unzip p5752399_10203_SOLARIS64.zip
```
- A subdirectory called 5752399 is created.
- Step 9** As the Oracle user, enter the following command to change directories to the 5752399 directory:
- ```
cd 5752399
```
- Step 10** Read the README.txt file for the Oracle installation information.
- Step 11** Complete the following substeps to install the patch:
- Stop all Oracle processes if they are running.
  - Enter the following command:
 

```
../OPatch/opatch apply OPatch.SKIP_VERIFY=true
```
- Step 12** Enter the following command to check whether the 5752399 patch is installed:
- ```
../OPatch/opatch lsinventory | grep 5752399
```
- The output should show the 5752399 patch number.
- 

## 2.1.2 Updating the System Parameters

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

```
mkdir /tftpboot
chmod 777 /tftpboot
```
  - 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 and enter the following command, without arguments:

```
inetconv
```

- Step 4** Edit the `/var/opt/oracle/oratab` file by adding the following line as the first line in the file:

```
<SID>:/oracle/product/10.2.0:Y
```



**Note** `<SID>` is the ORACLE SID that you chose to use for your database. CTM is the default SID value shown during the installation. Remember to change it if you chose another value.

- Step 5** 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 1.5.0\_12 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 this procedure.



**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 this procedure.

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

```
Please wait, Cisco Transport Manager Server Release 8.5 is being configured for your
system. This may take a moment...
```

- Step 6** At the Introduction screen, click **Next**.

- Step 7** 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 8** At the Installation Options screen, choose **New installation**; then, click **Next**.

- Step 9** 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 10** At the Select Modules to Install screen, choose **All of the Above Modules**; then, click **Next**.

- Step 11** 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 12** 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 13** At the Update the System Parameters screen, check the following check boxes; then, click **Next**:

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

**Step 14** If a warning prompt is displayed, click **Exit Setup** and enter the following command to reboot the system:

```
init 6
```

## 2.1.3 Installing the CTM R8.5 Server and Database

Log in as the root user and complete the following steps:

**Step 1** Before proceeding with the installation, verify that your server has enough RAM available for your CTM network size. See [1.1.1 Server Specifications, page 1-3](#) for details.

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

```
ssh  
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 1.5.0\_12 on your workstation.

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

```
Please wait, Cisco Transport Manager Server Release 8.5 is being configured for your  
system. This may take a moment...
```

**Step 5** At the Introduction screen, click **Next**.

**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, choose **New installation**; then, click **Next**.

**Step 8** 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. 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 R8.5.”](#)

**Step 9** 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
- All of the Above Modules



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

**Step 10** At the Main Options screen, check the following check boxes; then, click **Next**:

- **Create CTM database**
- **Install CTM server**

**Step 11** At the Select Network Configuration screen, specify the size of your network; 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** (For optical modules 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**.

**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 optical 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** For a small installation on a T2 processor, the CTM R8.5.0.240 patch is required. See CSCsy01229 in the [Release Notes for Cisco Transport Manager Release 8.5](#) for information about downloading and installing the CTM R8.5.0.240 patch.

**Step 20** The Pre-Installation Summary screen shows the items that will be installed. Click **Install**.

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

- a. As the root user, open a separate terminal window and enter the following command to eject the CTM Server Disk 1 installation CD:
 

```
eject
```
- b. Insert the CTM Server Disk 2 installation CD and click **Browse**.
- c. The Select a Folder dialog box opens. Double-click **cdrom**; then, single-click **cdrom0**. The filename text box now reads /cdrom/cdrom0.
- d. In the Select a Folder dialog box, click **Select**.

- e. In the Insert New Media screen, click **OK**.
- f. Repeat substeps **a** through **e** for the other disks.

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



**Note** It might take 60 to 90 minutes or longer to install CTM, depending on your system performance and on the modules you are installing.

**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, 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
```

After the server reboot, it might take up to 20 minutes for the CTM server to come up.

**Step 25** To verify that the CTM R8.5 server is running, enter the **showctm** command after the server reboots. The **showctm** command displays the CTM server version running as 8.5, 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.

## 2.2 Installing CTM R8.5 and Oracle 10g on Separate Workstations

This section describes how to install the CTM R8.5 server and Oracle 10g on separate Sun Solaris 10 servers. There are two scenarios for installing the CTM R8.5 server and Oracle 10g on separate Sun Solaris 10 servers:

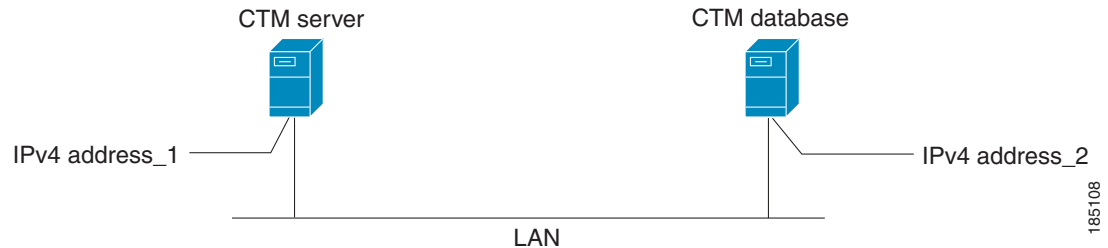
- Standard dual-server installation
- Dual-server installation with a dedicated connection between servers (for example, a cross-cable connection)



**Note** The installation procedure for installing the CTM R8.5 server and Oracle 10g on separate Sun Solaris 10 servers is similar for both scenarios. This chapter highlights any differences in the two installation scenarios wherever they occur.

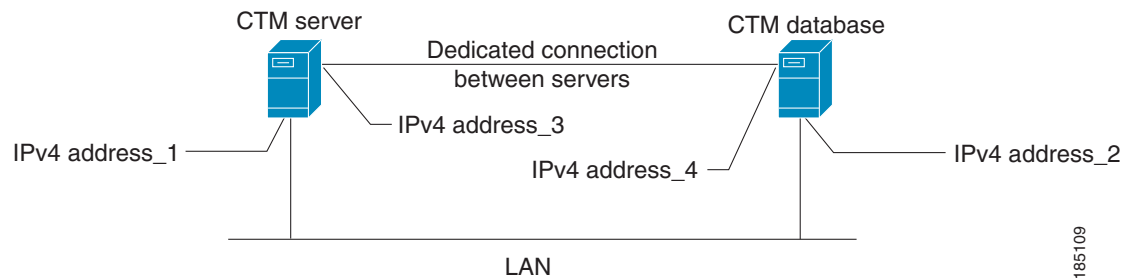
The following figure illustrates the standard dual-server installation. Server 1 is the CTM database server and Server 2 is the database server.

**Figure 2-1** *Standard Dual-Server Installation*



The following figure illustrates the dual-server installation with a dedicated connection between servers. Server 1 is the CTM server and Server 2 is the CTM database server.

**Figure 2-2** *Dual-Server Installation with a Dedicated Connection between Servers*



The following sections describe how to install the CTM R8.5 server and Oracle 10g on separate Sun Solaris 10 servers:

- [2.2.1 Installing the Oracle 10g Client on the CTM Server Workstation, page 2-19](#)
- [2.2.2 Updating the System Parameters on the CTM Server Workstation, page 2-25](#)
- [2.2.3 Installing the CTM R8.5 Server on the CTM Server Workstation, page 2-27](#)
- [2.2.4 Installing Oracle 10g on the CTM Database Workstation, page 2-29](#)
- [2.2.5 Updating the System Parameters on the CTM Database Workstation, page 2-30](#)
- [2.2.6 Installing the CTM R8.5 Database, page 2-31](#)
- [2.2.7 Updating CTM and CTM Database Parameters for a Dual-Server Installation with a Dedicated Connection between Servers, page 2-33](#)
- [2.2.8 Verifying the Oracle 10g Client Installation on the CTM Server Workstation and Restarting the CTM Server, page 2-34](#)

## 2.2.1 Installing the Oracle 10g Client on the CTM Server Workstation



### Note

Refer to [Chapter 1, “System Requirements”](#) before you carry out any of the procedures in this section.

## 2.2.1 Installing the Oracle 10g Client on the CTM Server Workstation

This section describes how to install the Oracle 10g client software on a Sun Solaris 10 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
/oracle	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 command to enable the xterm connection from the clients:

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

**Step 3** Enter the following command to create a UNIX group for database administrators (if it does not already exist):

```
groupadd -g 3303 dba
```

**Step 4** Enter the following command to create a UNIX group for installation of the Oracle software:

```
groupadd oinstall
```

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

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

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

```
passwd oracle
```

**Step 7** Enter the new password; then, re-enter the password to confirm it.

**Step 8** Insert the CTM Server Disk 1 installation CD.

**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 /oracle/.cshrc
```

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

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

**Step 10** If you are upgrading from an earlier CTM release, verify that the ORACLE\_SID environment variable is set correctly in the .cshrc file. Complete the following substeps:

a. Enter the following command to find the ORACLE\_SID:

```
cat /var/opt/oracle/oratab | grep product
```

The command returns an output that is similar to the following:

```
<Oracle SID>:/oracle/product/9.2:Y
```

- b. Complete one of the following options, depending on the value of *<Oracle SID>*:
  - If the *<Oracle SID>* is CTM, proceed to [Step 11](#).
  - If the *<Oracle SID>* is not CTM, open the `/oracle/.cshrc` file using a text editor. In the following line, replace CTM with the value of *<Oracle SID>* in the `oratab` file:

```
setenv ORACLE_SID CTM
```

**Step 11** Enter the following commands to copy the `oracle10_client.rsp` and `clientpatchset_64bit_10203.rsp` response files to your workstation:

```
cp /cdrom/cdrom0/Disk1/oracle10_client.rsp /oracle
cp /cdrom/cdrom0/Disk1/clientpatchset_64bit_10203.rsp /oracle
```




---

**Note** The Oracle patch 10.2.0.3 is available officially only for 64-bit workstations. This patch is not available for 32-bit workstations.

---

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

```
/usr/bin/chown -R oracle:dba /oracle
/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 command to log in as the Oracle user:

```
su - oracle
```




---

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

---

**Step 15** Insert the disk for the Oracle Database 10g Client release 2 (10.2) installation.

**Step 16** Enter the following command to set the display on your terminal:

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

**Step 17** 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 18** (Depending on the distribution media of the Oracle software) Insert the DVD or use the image provided on the Oracle website at <http://www.oracle.com>.




---

**Note** If you do not have a DVD, refer to your Oracle documentation for instructions on how to download and extract the correct software for the installation.

---




---

**Note** The Oracle website is copyright © 2004, Oracle Corporation. All rights reserved.

---

**Step 19** Depending on the distribution media of the Oracle software, change to the directory where the application runInstaller is located. For example, if you are using a DVD, enter **cd /dvd/dvd0**.

**Step 20** Enter the following command to install the Oracle client:

```
./runInstaller -responseFile /oracle/oracle10_client.rsp
```

The Oracle Net Configuration Assistant screen might appear, depending on whether Oracle is already installed on the server. If the Oracle Net Configuration Assistant screen appears, check the **Perform typical configuration** check box; then, click **Next**.

**Step 21** Click **Next** in the Welcome panel; then, click **Next** in the Available Product Components panel. Click **Install** in the Summary panel.

**Step 22** 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 23** Enter the following command to run the orainstRoot.sh script:

```
./orainstRoot.sh
```

**Step 24** Return to the Oracle Universal Installer screen and click **Continue**.




---

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

---

**Step 25** You are prompted to run /oracle/product/10.2.0/root.sh from another window. Log into another terminal window as the root user and enter the following command:

```
cd /oracle/product/10.2.0
```

**Step 26** Enter the following command to run the root.sh script:

```
./root.sh
```

**Step 27** At the prompt for the local bin directory, enter the following command in the root.sh script:

```
/oracle/product/10.2.0/local/bin
```

**Step 28** Return to the Oracle Setup Privileges screen and click **OK**.

**Step 29** Download the 10.2.0.3 patch for Oracle 10g on the CTM server workstation. See [2.1.1.3 Downloading Set 2 of the Oracle 10g 10.2.0.3 Patch for the Solaris Operating System \(SPARC 64-Bit\)](#), page 2-8.

**Step 30** Install the 10.2.0.3 patch for Oracle 10g on the CTM server workstation. See [2.2.1.1 \(Oracle Client\) Installing Set 2 of the Oracle 10g 10.2.0.3 Patch for the Solaris Operating System \(SPARC 64-Bit\)](#), page 2-23.

---

### 2.2.1.1 (Oracle Client) Installing Set 2 of the Oracle 10g 10.2.0.3 Patch for the Solaris Operating System (SPARC 64-Bit)

Skip this section if you already installed the 10.2.0.3 patch for Oracle 10g.

---

**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** Stop all Oracle processes if they are running.

**Step 5** Enter the following command to install the 10.2.0.3 patch:

```
/oracle/Disk1/runInstaller -silent -responseFile /oracle/clientpatchset_64bit_10203.rsp
```

**Step 6** At the prompt, log into another terminal window as the root user and enter the following command to run the root.sh script:

```
/oracle/product/10.2.0/root.sh
```

**Step 7** At the prompt for the local bin directory, enter the following path in the root.sh script:

```
/oracle/product/10.2.0/local/bin
```



---

**Note** You are prompted to overwrite some files. Reply yes to all of the prompts.

---

**Step 8** Enter the following command to remove the 10.2.0.3 patch installation files:

```
rm -rf /oracle/Disk1
```

---

### 2.2.1.2 Post Installation Steps

After you install Set 2 of the Oracle 10.2.0.3 patch for the Solaris operating system (SPARC 64-bit), complete the following steps on every database associated with the upgraded Oracle home as recommended by the official Oracle patch README.html file.



---

**Note** This section includes only the required post installation steps. Refer to the README.html document that accompanies the Oracle patch for the complete post installation steps.

---

- 
- Step 1** Enter the following command to log into the database workstation as the Oracle user:
- ```
su - oracle
```
- Step 2** By default, all new files and directories are created with restricted access during the patch set installation. Users or third-party applications with a group identifier that is different from the database will see permission errors when they try to access client utilities or libraries in the database home. Enter the following command to run the changePerm.sh script:

```
$ORACLE_HOME/install/changePerm.sh
```

Select “y” when prompted to continue.

**Step 3** The client static library (libclntst10.a) is not generated during installation. Enter the following command to generate and link your applications to the client static library:

```
$ORACLE_HOME/bin/genclntst
```

---

### 2.2.1.3 Setting Up the UNIX Environment on the CTM Server Workstation

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

- 
- Step 1** Insert the CTM Server Disk 1 installation CD.
- Step 2** If the tnsnames.ora file in the /oracle/product/10.2.0/network/admin directory exists, enter the following command to copy it from the CTM Server Disk 1 installation CD:
- ```
cp /cdrom/cdrom0/Disk1/InstData/Solaris/VM/cfg/{small | medium | large | highend}/tnsnames.ora /oracle/product/10.2.0/network/admin/tnsnames.ora
```
- Step 3** If the listener.ora file in the /oracle/product/10.2.0/network/admin directory exists, enter the following command to copy it from the CTM Server Disk 1 installation CD:
- ```
cp /cdrom/cdrom0/Disk1/InstData/Solaris/VM/cfg/{small | medium | large | highend}/listener.ora /oracle/product/10.2.0/network/admin/listener.ora
```
- Step 4** If the sqlnet.ora file in the /oracle/product/10.2.0/network/admin directory exists, enter the following command to copy it from the CTM Server Disk 1 installation CD:
- ```
cp /cdrom/cdrom0/Disk1/InstData/Solaris/VM/cfg/{small | medium | large | highend}/sqlnet.ora /oracle/product/10.2.0/network/admin/sqlnet.ora
```
- Step 5** Enter the following commands to change file permissions and ownership:
- ```
chmod +w /oracle/product/10.2.0/network/admin/*
chown oracle:dba /oracle/product/10.2.0/network/admin/*
```
- Step 6** Depending on the type of installation you are performing, complete one of the following options:
- Standard dual server—Edit the tnsnames.ora file by replacing the newdbname parameter with the string “CTM” and the CTM hostname parameter with the hostname or IP address of the workstation where the CTM database will run. See IP\_Address 2 in [Figure 2-1 on page 2-19](#).
  - Dual server with a dedicated connection—Edit the tnsnames.ora file by replacing the newdbname parameter with the string “CTM” and the CTM hostname parameter with the IP address of the workstation where the CTM database will run. See IP\_Address 4 in [Figure 2-2 on page 2-19](#).



**Note** There are multiple instances of the *newdbname* parameter. You must replace all instances with the string “CTM.”

- Step 7** Edit the listener.ora file by replacing the *newdbname* parameter with the string “CTM” and the CTM hostname parameter with the hostname or IP address of the workstation where the CTM database will run.



**Note** There are multiple instances of the *newdbname* parameter. You must replace all instances with the string “CTM.”

- Step 8** Edit the /var/opt/oracle/oratab file by adding the following line as the first line in the file:

```
CTM:/oracle/product/10.2.0:Y
```

## 2.2.2 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 and enter the following command, without arguments:

```
inetconv
```

- 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 8.5 is being configured for your
system. This may take a moment...
```

The setup program searches for Sun Microsystems JRE version 1.5.0\_12 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 this procedure.

**Step 3** At the Introduction screen, click **Next**.

**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
- All of the Above Modules



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



**Note** Additional individual modules can be installed after the original module installation is complete. For installation of additional modules, the server will need to be reinstalled but the database does not need to be recreated.

**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** If a warning prompt is displayed, click **Exit Setup** and enter the following command to reboot the system:

```
init 6
```

## 2.2.3 Installing the CTM R8.5 Server on the CTM Server Workstation

To install the CTM R8.5 server, log in as the root user on the workstation where the CTM server will run and complete the following steps:

**Step 1** Edit the `/var/opt/oracle/oratab` file by adding the following line as the first line in the file, if it is not already present:

```
CTM:/oracle/product/10.2.0:N
```

**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 8.5 is being configured for your
system. This may take a moment...
```

**Step 3** At the Introduction screen, click **Next**.

**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 *only*. The Web Server check box is selected by default. Click **Next**.



**Note** If you need to install CTM GateWay/CORBA, you must install it after the CTM server and database installation. See [Chapter 4, “Installing CTM GateWay/CORBA R8.5”](#) for details.

**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
- All of the Above Modules



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

**Step 8** At the Main Options screen, check the **Install CTM server** check box *only*; 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 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 11** (For optical modules 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**.

**Step 12** At the Server IP Address screen, accept the default value and click **Next**.



**Note** If you are installing the MGX module, you are prompted for the hostname, which is editable.

**Step 13** (For optical modules only) At the Configure TFTP screen, complete the following substeps if you want to enable TFTP:

- a. Check the **Enable TFTP Server** check box.
- b. Enter the TFTP directory name. The default is /tftpboot.
- c. Click **Next**.

**Step 14** Depending on the type of installation you are performing, complete one of the following options:

- Standard dual server—At the Specify CTM Database to Connect to screen, enter the IP address or hostname of the workstation where the CTM database will run; then, click **Next**. See IP\_Address 2 in [Figure 2-1 on page 2-19](#).
- Dual server with a dedicated connection—At the Specify CTM Database to Connect to screen, enter the IP address of the workstation where the CTM database will run; then, click **Next**. See IP\_Address 4 in [Figure 2-2 on page 2-19](#).



**Caution** Be sure to enter the correct IP address or hostname. Do not simply accept the default.



**Note** (For standard dual server only) 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, it 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**.
- Step 17** At the Insert New Media screen, complete the following substeps:
- As the root user, open a separate terminal window and enter the following command to eject the CTM Server Disk 1 installation CD:  

```
eject
```
  - 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**.
  - Repeat substeps **a** through **e** for the other disks.
- 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 **Done**.
- Step 20** After you click the Done button, background processes continue to run for several minutes. When the installation is complete, the following message is displayed:
- ```
Installation complete. Please see <install_directory>/install.log for details.  
Please REBOOT THE SYSTEM before starting Cisco Transport Manager Server
```
- Do not reboot the system at this time. Before rebooting, you must install the CTM database, which you will do in a later section.

## 2.2.4 Installing Oracle 10g on the CTM Database Workstation

Complete the steps detailed in [2.1.1 Installing Oracle 10g, page 2-2](#).

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

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** Before proceeding with the installation, verify that your server has enough RAM available for your CTM network size. See [1.1.1 Server Specifications, page 1-3](#) for details.

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

```
DISPLAY=<hostname_or_IP_address>:0.0
export DISPLAY
```

**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 1.5.0\_12 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 this procedure.



**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 this procedure.

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

```
Please wait, Cisco Transport Manager Server Release 8.5 is being configured for your
system. This may take a moment...
```

**Step 5** At the Introduction screen, click **Next**.

**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, choose **New installation**; then, click **Next**.

**Step 8** At the Select Products to install screen, check the **Cisco Transport Manager server** check box; then, click **Next**.

**Step 9** 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
- All of the Above Modules



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

**Step 10** 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 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 Update the System Parameters screen, check only the **Optimize CTM database parameters** check box; then, click **Next**.

**Step 13** If a warning prompt appears, click **Exit Setup** and enter the following command to reboot the system:

```
init 6
```

**Step 14** (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 workstation.

## 2.2.6 Installing the CTM R8.5 Database



**Note** Before installing the CTM R8.5 database, verify that Oracle 10g is installed in the `/oracle` directory.

To install the CTM R8.5 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:

```
DISPLAY=<hostname_or_IP_address>:0.0
export DISPLAY
```

**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** To install CTM, the remote shell (rsh) must be enabled. Enter the following command to verify whether rsh is enabled:

```
rsh <IP_address_of_CTM_server> ls
```

If an error is returned, you must open a shell on the CTM server workstation and edit the `/.rhosts` file. As the root user, enter the following commands to modify the `/.rhosts` file:

```
# cat >> /.rhosts << EOF
<database_workstation_name> root
EOF
```

where `<database_workstation_name>` is the hostname of the CTM database workstation.

**Step 4** 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 8.5 is being configured for your
system. This may take a moment...
```

**Step 5** At the Introduction screen, click **Next**.

**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, choose **New installation**; then, click **Next**.

**Step 8** 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 9** 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
- All of the Above Modules




---

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

---

**Step 10** 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 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 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; then, click **Next**.
- Step 13** (For optical modules only) At the FTP Information screen, accept the default values; then, click **Next**.
- Step 14** At the Server IP Address screen, accept the default value and click **Next**.




---

**Note** If you are installing the MGX module, you are prompted for the hostname, which is editable.

---

- Step 15** 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 16** Depending on the type of installation you are performing, complete one of the following options:
- Standard dual server—Enter the hostname or the IP address of the workstation where the CTM server is installed; then, click **Next**. See IP\_Address 1 in [Figure 2-1 on page 2-19](#).
  - Dual server with a dedicated connection—Enter the IP address of the workstation where the CTM server is installed; then, click **Next**. See IP\_Address 3 in [Figure 2-2 on page 2-19](#).




---

**Note** (For standard dual server only) 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 17** At the Pre-Installation Summary screen, click **Install** to create the CTM database.
- Step 18** The Install Complete screen summarizes the results of the installation. Click **Done**.
- Step 19** Enter the following command to verify that the Oracle 10g database and listener are running:

```
ps -ef | grep ora
```

The output displays tnslsnr and ora\_[...]<Oracle\_SID> processes.

---

## 2.2.7 Updating CTM and CTM Database Parameters for a Dual-Server Installation with a Dedicated Connection between Servers

To update the system parameters, complete the following steps:

---

- Step 1** Log in as the root user on the workstation where the CTM database is installed.
- Step 2** Enter the following command to verify that the CTM server is running:
- ```
showctm
```
- Step 3** If the CTM server is running, enter the following command to stop the server before performing the upgrade:
- ```
ctms-abort
```

**Step 4** Enter the following command on the CTM database workstation (see Server 2 in [Figure 2-2 on page 2-19](#)):

```
cd /opt/CiscoTransportManagerServer/bin
```

**Step 5** Enter the following command on the CTM database workstation to run the `change_alt_db_host.sh` script (see Server 2 on [Figure 2-2 on page 2-19](#)):

```
./change_alt_db_host.sh <IP_address_2> <IP_address_4> <IP_address_3>
```



**Note** See [Figure 2-2 on page 2-19](#) for details of the IP addresses to enter in the preceding command.

The following text appears:

```
"Please be sure that CTM server application is stopped."
"Press ENTER to continue, CTRL-C to abort..."
```

**Step 6** Press **Enter**.

The following information appears on screen to confirm that the following updates are complete:

- CTMServer.cfg update completed
- Listener.ora update completed

## 2.2.8 Verifying the Oracle 10g Client Installation on the CTM Server Workstation and Restarting the CTM Server

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

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

```
su - oracle
```

**Step 2** Enter the following command to verify that the CTM server can connect to the Oracle 10g database:

```
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)
```



**Note** The msec value can be greater than 0.

**Step 3** Log out from the Oracle user and enter the following command to return to the shell as the root user:

```
exit
```

**Step 4** Enter the following command to reboot the system:

```
init 6
```

The CTM server starts automatically after rebooting.

**Step 5** To verify that the CTM R8.5 server is running, enter the **showctm** command after the server reboots. The **showctm** command displays the CTM server version running as 8.5, 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.

**Step 6** 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. Restart the CTM server. This restarts the latest installed web server.

---

## 2.3 New Zealand Daylight Saving Time Updates

If you are located in New Zealand, you must apply the steps described in [Appendix D, “Updating CTM Daylight Saving Time for New Zealand”](#) to make the CTM server compliant with the New Zealand Daylight Saving Time (DST) settings update.

For details, refer to the New Zealand Department of Internal Affairs website at <http://www.dia.govt.nz/diawebsite.nsf>.





# CHAPTER 3

## Upgrading to CTM R8.5 from an Earlier Release

---



### Caution

---

A reliable network connection is required when carrying out an installation on a remote workstation.

---

This chapter describes how to upgrade to CTM R8.5 from an earlier release. This chapter contains the following sections:

- [3.1 Backing Up the Database on Solaris 10 Before Migration, page 3-2](#)
- [3.2 Solaris Migration to Sun Solaris 10, Release 11/06, page 3-3](#)
- [3.3 Upgrading from CTM R8.0 and Oracle9i to CTM R8.5 and Oracle 10g on the Same Workstation, page 3-4](#)
- [3.4 Upgrading from CTM R8.0 and Oracle9i to CTM R8.5 and Oracle 10g on Separate Workstations, page 3-11](#)
- [3.5 Verifying That the Oracle 10g and CTM Server Processes Are Running, page 3-19](#)
- [3.6 Upgrading the CTM Network Configuration Size, page 3-20](#)
- [3.7 Adding New Modules, page 3-21](#)
- [3.8 New Zealand Daylight Saving Time Updates, page 3-22](#)



### Note

---

You can upgrade to CTM R8.5 directly from CTM R8.0. If you are upgrading from a release prior to CTM R8.0, you must first upgrade to CTM R8.0. Refer to the [Cisco Transport Manager Release 8.0 Installation Guide](#) for the exact installation procedure. After you install CTM R8.0, you can upgrade to CTM R8.5.

---



### Note

---

After upgrading to CTM R8.5, the old CTM server directory is moved to CiscoTransportManagerServer-old. Any data previously saved in the following directories is saved in the new /opt/CiscoTransportManagerServer directory:

- /opt/CiscoTransportManagerServer/admin
- /opt/CiscoTransportManagerServer/images
- /opt/CiscoTransportManagerServer/cms
- /opt/CiscoTransportManagerServer/bin/jcorbagw.sh
- /opt/CiscoTransportManagerServer/cfg/usr

- `/opt/CiscoTransportManagerServer/cfg/corbagw.properties`

Before removing the old version, move any relevant data to the new 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 R8.5, verify that the NE versions in your network are supported by CTM R8.5. See the [Release Notes for Cisco Transport Manager Release 8.5](#) for the NE software versions that are supported. If your network contains NEs that are not supported in CTM R8.5, 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.”](#)
- If you need instructions to mount or unmount CDs, see [Appendix C, “Mounting and Unmounting CDs on Sun Solaris.”](#)

After the upgrade is complete, you can delete `/opt/CiscoTransportManagerServer.oldCTM` and also the install location it points to (if it is a link) because the new server `/opt/CiscoTransportManagerServer` is now installed.

Complete the following steps if you canceled the upgrade:

- 
- Step 1** Delete the new CTM server that was installed—`/opt/CiscoTransportManagerServer`—as well as the install location it points to. The new server installation might not be complete.
- Step 2** Delete `/opt/CiscoTransportManagerServer.oldCTM` and create a new `/opt/CiscoTransportManagerServer` (if it is a link) that points to the same old install location. Alternately, rename `/opt/CiscoTransportManagerServer.oldCTM` to `/opt/CiscoTransportManagerServer` (if it is a directory).
- Step 3** Reimport the database.
- Step 4** Check the database version in the `/opt/newdbinfo` file. The database version should be the old CTM release (that is, CTM R8.0).
- Step 5** Proceed with the upgrade.
- 

## 3.1 Backing Up the Database on Solaris 10 Before Migration

Before upgrading the database to CTM R8.5, 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.

To back up CTM, refer to the following sections in Chapter 4 of the *Cisco Transport Manager Release 8.5 User Guide*:

- Backing Up the CTM Database from the CTM GUI
- Backing Up the CTM Database from the CLI

## 3.2 Solaris Migration to Sun Solaris 10, Release 11/06

- 
- Step 1** Before upgrading to Solaris 10, verify that your root directory has enough space. A minimum of 6 GB of free root space must be available.
- Step 2** Enter the following command to reboot the system:
- ```
init 0
```
- Step 3** Insert the Solaris 10 media for installation.
- Step 4** At the OK prompt, enter the following command:
- ```
boot cdrom
```
- Step 5** The workstation reboots and you are prompted to enter values for system identification.
- Step 6** When prompted, select the **Upgrade Installation** feature. Continue the OS upgrade using the default values.
- Step 7** After the OS upgrade is complete, relink the Oracle database and any other Oracle tools or programs. When you upgrade the OS, the version of OS-level utilities (such as Motif and the C compiler) might change. Relinking Oracle and your other products ensures that the database and tools use libraries and utilities that are currently on the system.

As the Oracle user, complete the following substeps to relink the Oracle database and tools:

- a. Enter the following command:

```
env | pg
```



---

**Note** Make sure that you see the correct absolute path for \$ORACLE\_HOME in the variable definitions.

---

- b. Enter the following commands to run the relink script provided in the \$ORACLE\_HOME/bin directory:

```
cd $ORACLE_HOME/bin
relink all
```

The **relink all** command does not relink every executable that Oracle provides. (You can check which executables were relinked by using the **ls -l** command in the \$ORACLE\_HOME/bin directory to check the time stamps.) However, the **relink all** command recreates the shared libraries that most executables rely on, thereby resolving most issues that require a valid relink.

---

## 3.3 Upgrading from CTM R8.0 and Oracle9i to CTM R8.5 and Oracle 10g on the Same Workstation

This section describes how to upgrade from CTM R8.0 and Oracle9i to CTM R8.5 and Oracle 10g when you are installing the CTM R8.5 server and the Oracle 10g database on the same workstation.



### Note

- The procedures in this section are extracted from the Oracle documentation. Use the information in this section in conjunction with the Oracle documentation available on the Oracle website at [www.oracle.com](http://www.oracle.com). The Oracle website is copyright © 2004, Oracle Corporation. All rights reserved.
- If you are upgrading from a release prior to CTM R8.0, you must first upgrade to CTM R8.0. Refer to the *Cisco Transport Manager Release 8.0 Installation Guide* for the exact installation procedure. After you install CTM R8.0, you can upgrade to CTM R8.5.

### 3.3.1 Installing the CTM R8.5 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** Before proceeding with the installation, verify that your server has enough RAM available for your CTM network size. See [1.1.1 Server Specifications, page 1-3](#) for details.
- Step 2** Enter the following command to verify that the CTM R8.0 server is running:
- ```
showctm
```
- Step 3** If the CTM server is running, enter the following command to stop the server before performing the upgrade:
- ```
ctms-abort
```
- Step 4** Install the latest CTM R8.0 service pack. See the *Migration Matrix for CTM Service Pack Releases* for more information.
- Step 5** Enter the following commands:
- ```
cd /opt/CiscoTransportManagerServer/patch/migration/8.5.0
./pre_migration.sh
cd /
```
- Step 6** Enter the following commands to copy the pre- and postmigration scripts:
- ```
cp /cdrom/cdrom0/Disk1/InstData/Solaris/VM/pre_migration_Ora9i2Ora10g.sh
/opt/CiscoTransportManagerServer/bin
cp /cdrom/cdrom0/Disk1/InstData/Solaris/VM/migration_Ora9i2Ora10g.sh
/opt/CiscoTransportManagerServer/bin
cp /cdrom/cdrom0/Disk1/InstData/Solaris/VM/pre_migration_extract_size.sql
/opt/CiscoTransportManagerServer/bin
```
- Step 7** Verify that the following scripts have execution permissions:
- `pre_migration_Ora9i2Ora10g.sh`
  - `migration_Ora9i2Ora10g.sh`
  - `pre_migration_extract_size.sql`

**Step 8** If the scripts do not have execution permissions, enter the following commands:

```
chmod ugo+x pre_migration_Ora9i2Ora10g.sh
chmod ugo+x migration_Ora9i2Ora10g.sh
chmod ugo+x pre_migration_extract_size.sql
```



**Note** The location of the jre folder might vary. This step is required from the installation of Solaris 10, Release 11/06.

**Step 9** Enter the following command:

```
mv /usr/bin/java.old /usr/bin/java
```

**Step 10** Enter the following commands to run the premigration script:

```
cd /opt/CiscoTransportManagerServer/bin
./pre_migration_Ora9i2Ora10g.sh /cdrom/cdrom0 [<working_directory>]
```



**Note** The /cdrom/cdrom0 directory is the mount point where the Disk1 directory is located. It is required so that the CTM Server Disk 1 installation CD is mounted.



**Note** The <working\_directory> is an optional parameter to specify the directory where the premigration phase can store the required files. The default location is /temp/ORA\_MIG10. Take note of the <working\_directory> parameter if you are planning to use a location other than the default location.

**Step 11** Wait until the premigration script completes successfully. In the output, you should see:

```
"Preliminary checks phase SUCCESSFUL...."
```

**Step 12** Enter the following commands to shut down Oracle:

```
su - oracle
dbshutimmediate
```



**Caution** The command to shut down Oracle does not work in a high availability (HA) installation.



**Caution** In a local redundancy HA environment, the /var/opt/oracle/oraInst.loc file is present in only one of the two servers in the same cluster. Verify that you can launch the installer where the file is present.

**Step 13** 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 14** Enter the following commands to uninstall the previous version of Oracle:

- For version 9.2.0.7, enter:  
/oraclesw9i/product/9.2/oui/bin/runInstaller

- For version 9.2.0.8, enter:

```
/oraclesw9i/Disk1/runInstaller
```

**Step 15** Click the **Deinstall Product** button. In the Inventory panel, select all of the Oracle products listed and click the **Remove** button. When Oracle is uninstalled, click the **Exit** button.

**Step 16** Complete the following preinstallation steps:

- Enter the following command to view the CTM Oracle SID:

```
echo $ORACLE_SID
```

- Edit the `/var/opt/oracle/oratab` file as the root user. In this file, replace the `"/oraclesw9i/product/9.2"` string with `"/oracle/product/10.2.0"`.




---

**Note** Check that the first line of the file contains the CTM Oracle SID (as detailed in substep a).

---




---

**Note** It is not possible to install Oracle 10g in the same directory as Oracle9i.

---

- Edit the `/var/opt/oracle/oraInst.loc` file as the root user. In this file, replace the `"/oraclesw9i"` string with `"/oracle"`.

**Step 17** Complete the following substeps to create a new Oracle home directory and install group, and then upgrade the existing Oracle user to the new environment:

- Log in as the root user.
  - Enter the following command to create the oinstall group:
- ```
groupadd oinstall
```
- Enter the following command to create the new mount point for the Oracle user home directory:
- ```
mkdir /oracle
```
- Enter the following command to change ownership to the `/oracle` directory and its contents:
- ```
chown -R oracle:dba /oracle
```
- Enter the following command to remove all files and subdirectories from the `/oraclesw9i` directory:
- ```
rm -R /oraclesw9i/*
```
- If `/oraclesw9i` is a mount point for a dedicated partition for the Oracle application, enter the following commands to unmount the related partition and delete the mount point:

```
umount /oraclesw9i
rm -R /oraclesw9i
usermod -g oinstall -G dba -m -s /bin/csh -d /oracle oracle
```




---

**Note** When working in an HA installation, do not complete substep g; that is, for an HA installation, do not modify the `/etc/vfstab` file.

---

- Modify the `/etc/vfstab` file. In this file, replace the `"/oraclesw9i"` string with `"/oracle"`.
- Mount the `/oracle` mount point.

**Step 18** Install Oracle 10g. Complete the procedures detailed in [2.1.1 Installing Oracle 10g, page 2-2](#), starting from [Step 11](#) in section [2.1.1.1 Setting the Environment for Installation, page 2-2](#).

**Step 19** After completing the installation, enter the following command to log into the database workstation as the Oracle user:

```
su - oracle
```

**Step 20** Copy the ADMIN\_CTM.tar file from the /temp directory to the /oracle directory.

**Step 21** Enter the following command to extract the ADMIN\_CTM tar file:

```
tar xvf ADMIN_CTM.tar
```

**Step 22** Enter the following command to create a soft link for the initCTM.ora file:

```
ln -s /oracle/admin/<Oracle_SID>/pfile/init<Oracle_SID>.ora /oracle/product/10.2.0/
dbs/init<Oracle_SID>.ora
```

**Step 23** As the root user, enter the following command to run the postmigration script:

```
cd /opt/CiscoTransportManagerServer/bin ./migration_Ora9i2Ora10g.sh [<working_directory>]
```



**Note** The *<working\_directory>* is an optional parameter to specify the directory where the premigration phase can store the required files. The default location is /temp/ORA\_MIG10. Take note of the *<working\_directory>* parameter if you are planning to use a location other than the default location. If you specified a working directory in [Step 10](#), use the same *<working\_directory>*.

**Step 24** The migration\_Ora9i2Ora10g.sh script checks the results of the migration step. You should not see any error messages.

**Step 25** As the Oracle user, enter the following commands:

```
chmod 777 $ORACLE_HOME/network/log
chmod 777 $ORACLE_HOME/network/trace
chmod +t $ORACLE_HOME/network/log
chmod +t $ORACLE_HOME/network/trace
```

**Step 26** As the root user, insert the CTM Server Disk 1 installation CD and enter the following commands:

```
cp /cdrom/cdrom0/Disk1/InstData/Solaris/VM/cfg/{small | medium | large | highend}/dbstart
/oracle/product/10.2.0/bin/dbstart
chown oracle:dba /oracle/product/10.2.0/bin/dbstart
chmod +x /oracle/product/10.2.0/bin/dbstart
```

**Step 27** Enter the following commands to start the CTM installation:

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

The setup program searches for Sun Microsystems JRE version 1.5.0\_12 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 this procedure.



**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 this procedure.

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

```
Please wait, Cisco Transport Manager Server Release 8.5 is being configured for your
system. This may take a moment...
```

**Step 28** At the Introduction screen, click **Next**.

**Step 29** 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 30** At the Installation Options screen, choose **Upgrade from existing CTM release**; then, click **Next**.

**Step 31** 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. 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 R8.5.”](#)



**Note** If the CTM GateWay/CORBA check box is disabled and checked due to a previous installation, installation is mandatory during the upgrade. If the CTM GateWay/CORBA check box is disabled and unchecked, do not attempt installation during the upgrade.

**Step 32** 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
- All of the Above Modules



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

**Step 33** 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 34** At the Select Network Configuration Type screen, select the option to upgrade your current network configuration type.

**Step 35** 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 36** At the User Migration screen, complete the following substeps:

- a. Select the **Migrate Users** or **Do not migrate users** check box. Complete the Password and Password (confirm) fields if you chose to migrate the CTM users. The Password field sets the password for all CTM users migrated from the CTM R8.0 server.



---

**Note** Users can login to the CTM R8.5 server using this password. They will be prompted to change their passwords on first login.

---

- b. Click **Next**.

**Step 37** 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 38** (For optical modules 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 the *Cisco Transport Manager Release 8.5 User Guide* for more information.

**Step 39** 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 40** At the Configure TFTP Server screen, complete the following substeps if you want to enable TFTP for optical modules:

- a. Check the **Enable TFTP Server** check box.
- b. Enter the TFTP directory name. The default is /tftpboot.
- c. Click **Next**.

**Step 41** 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 42** 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 43** 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. Repeat substeps a through d for the other disks.

**Step 44** The Web Server Installation Summary screen summarizes the results of the web server installation. Click **Next**.

**Step 45** The Install Complete screen summarizes the results of the installation. Click **Next**.

**Step 46** The Upgrade Server and Database Complete screen displays the log location. Click **Done**.

**Step 47** Enter the following commands:

```
cd /opt/CiscoTransportManagerServer.oldCTM/patch/migration/8.5.0
./post_migration.sh
cd /
```

**Step 48** 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 49** To verify that the CTM R8.5 server is running, enter the **showctm** command after the server reboots. The **showctm** command displays the CTM server version running as 8.5, 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.

## 3.4 Upgrading from CTM R8.0 and Oracle9i to CTM R8.5 and Oracle 10g on Separate Workstations

This section describes how to upgrade from CTM R8.0 and Oracle9i to CTM R8.5 and Oracle 10g when you are installing the CTM R8.5 server and the Oracle 10g database on separate Sun Solaris 10 workstations.

**Note**

- The procedures in this section are extracted from the Oracle documentation. Use the information in this section in conjunction with the Oracle documentation available on the Oracle website at [www.oracle.com](http://www.oracle.com). The Oracle website is copyright © 2004, Oracle Corporation. All rights reserved.
- If you are upgrading from a release prior to CTM R8.0, you must first upgrade to CTM R8.0. Refer to the [Cisco Transport Manager Release 8.0 Installation Guide](#) for the exact installation procedure. After you install CTM R8.0, you can upgrade to CTM R8.5.

## 3.4.1 Installing the CTM R8.5 Server on the CTM Server Workstation

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** Before proceeding with the installation, verify that your server has enough RAM available for your CTM network size. See [1.1.1 Server Specifications, page 1-3](#) for details.

**Step 2** Enter the following command to verify that the CTM R8.0 server is running:

```
showctm
```

**Step 3** If the CTM server is running, enter the following command to stop the server before performing the upgrade:

```
ctms-abort
```

**Step 4** Install the latest CTM R8.0 service pack. See the [Migration Matrix for CTM Service Pack Releases](#) for more information.

**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** Enter the following commands to uninstall the previous version of the Oracle client:

- For version 9.2.0.7, enter:

```
su - oracle
/oraclesw9i/product/9.2/oui/bin/runInstaller
```

- For version 9.2.0.8, enter:

```
su - oracle
/oraclesw9i/Disk1/runInstaller
```

**Step 8** Complete the following preinstallation steps:

- Enter the following command to view the CTM Oracle SID:

```
echo $ORACLE_SID
```

- Edit the `/var/opt/oracle/oratab` file as the root user. In this file, replace the `"/oraclesw9i/product/9.2"` string with `"/oracle/product/10.2.0"`.



**Note** Check that the first line of the file contains the CTM Oracle SID (as detailed in substep a).



**Note** It is not possible to install Oracle 10g in the same directory as Oracle9i.

- c. Edit the `/var/opt/oracle/oraInst.loc` file as the root user. In this file, replace the `"/oraclesw9i"` string with `"/oracle"`.
- Step 9** Complete the following substeps to create a new Oracle home directory and install group. Afterward, upgrade the existing Oracle user to the new environment.
- a. Log in as the root user.
- b. Enter the following command to create the `oinstall` group:
- ```
groupadd oinstall
```
- c. Enter the following command to create the new mount point for the Oracle user home directory:
- ```
mkdir /oracle
```
- d. Enter the following command to change ownership to the `/oracle` directory and its contents:
- ```
chown -R oracle:dba /oracle
```
- e. Enter the following command to remove all files and subdirectories from the `/oraclesw9i` directory:
- ```
rm -R /oraclesw9i/*
```
- f. If `/oraclesw9i` is a mount point for a dedicated partition for the Oracle application, enter the following commands to unmount the related partition and delete the mount point:
- ```
umount /oraclesw9i
rm -R /oraclesw9i
usermod -g oinstall -G dba -m -s /bin/csh -d /oracle oracle
```
- g. Mount the `/oracle` mount point.
- Step 10** Install the Oracle 10g client. See from [Step 8](#) onward in [2.2.1 Installing the Oracle 10g Client on the CTM Server Workstation](#), page 2-19.
- Step 11** 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 1.5.0\_12 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 this procedure.



**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 this procedure.

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

```
Please wait, Cisco Transport Manager Server Release 8.5 is being configured for your
system. This may take a moment...
```

**Step 12** At the Introduction screen, click **Next**.

**Step 13** 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 14** At the Installation Options screen, choose **Upgrade from existing CTM release**; then, click **Next**.

**Step 15** 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 16** 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
- All of the Above Modules




---

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

---

**Step 17** 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 18** 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 19** (For optical modules 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 the [Cisco Transport Manager Release 8.5 User Guide](#) for more information.

---

- Step 20** 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 21** At the Configure TFTP Server screen, complete the following substeps if you want to enable TFTP for optical modules:

- Check the **Enable TFTP Server** check box.
- Enter the TFTP directory name. The default is /tftpboot.
- Click **Next**.

- Step 22** 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 23** 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 24** 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 25** 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**.

- 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. Repeat substeps **a** through **d** for the other disks.

**Step 26** The Web Server Installation Summary screen summarizes the results of the web server installation. Click **Next**.

**Step 27** The Install Complete screen summarizes the results of the installation. Click **Next**.

**Step 28** The Upgrade Server Complete screen displays the log location. Click **Done**.

**Step 29** 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 30** To verify that the CTM R8.5 server is running, enter the **showctm** command after the server reboots. The **showctm** command displays the CTM server version running as 8.5, 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.

## 3.4.2 Upgrading the Database on the CTM Database Workstation

To upgrade the database, log in as the root user on the CTM database workstation 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** Enter the following commands:

```
cd /opt/CiscoTransportManagerServer/patch/migration/8.5.0
./pre_migration.sh
cd /
```

**Step 4** Install Oracle 10g. See [Step 2](#) through [Step 26](#) of [3.3.1 Installing the CTM R8.5 Server and Upgrading the Database, page 3-4](#).

**Step 5** 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 1.5.0\_12 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 this procedure.



**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 this procedure.

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

```
Please wait, Cisco Transport Manager Server Release 8.5 is being configured for your  
system. This may take a moment...
```

**Step 6** At the Introduction screen, click **Next**.

**Step 7** 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 8** 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 [3.6 Upgrading the CTM Network Configuration Size, page 3-20](#).

**Step 9** 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. 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 R8.5.”](#)

---

**Step 10** 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
- All of the Above Modules

**Step 11** 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.

---

**Step 12** (Optional) If you selected **Upgrade CTM network configuration size** in [Step 8](#), the Select to Upgrade Network Configuration Type screen appears. Select the option to upgrade your current network configuration type.

**Step 13** (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 14** At the User Migration screen, complete the following substeps:

- a. Select the **Migrate Users** or **Do not migrate users** check box. Complete the Password and Password (confirm) fields if you chose to migrate the CTM users.
- b. Click **Next**.

**Step 15** 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 16** (For optical modules only) At the FTP Information screen, accept the default values; then, click **Next**.

**Step 17** The Pre Installation Summary screen shows the items that will be installed. Click **Install**.



**Note** It might take 40 minutes or longer to upgrade the database, depending on your system performance.

**Step 18** The Upgrade Database Complete screen summarizes the results of the upgrade. Click **Done**.

**Step 19** Enter the following commands:

```
cd /opt/CiscoTransportManagerServer/patch/migration/8.5.0
./post_migration.sh
cd /
```

## 3.5 Verifying That the Oracle 10g and CTM Server Processes Are Running

After installation, complete the following steps to verify that the Oracle 10g 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:
Oracle10g...
```

**Step 2** Enter the following command to exit SQL\*Plus:

```
exit
```

**Step 3** Enter the following command to verify that the CTM R8.5 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
```

## 3.6 Upgrading the CTM Network Configuration Size



### Note

You can complete the following procedure whether you are installing CTM R8.5 as a new installation or upgrading to CTM R8.5 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**.
- Step 6** As the root user, enter the following command to reboot the system:

```
init 6
```



### Note

The CTM server starts automatically after rebooting. After the server reboot, it might take up to 20 minutes for the CTM server to come up.

## 3.7 Adding New Modules

**Note**

You can complete the following procedure whether you are installing CTM R8.5 as a new installation or upgrading to CTM R8.5 from an earlier release.

**Caution**

Contact the Cisco Technical Assistance Center (TAC) before adding new modules on a patched CTM server.

**Step 1** 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 8.5 is being configured for your  
system. This may take a moment...
```

**Step 2** At the Introduction screen, click **Next**.

**Step 3** 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 4** At the Installation Options screen, choose **Add new modules**; then, click **Next**.

**Step 5** 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
- All of the Above Modules

**Note**

All service modules of the MGX NE, including the RPM module, should be upgraded to R5.4 before adding the NE to CTM in SNMPv3 mode. Otherwise, CTM cannot synchronize with the NE.

**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 6** (For optical modules only) 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 7** At the Configure TFTP Server screen, complete the following substeps if you want to enable TFTP for optical modules:

- a. Check the **Enable TFTP Server** check box.

- b. Enter the TFTP directory name. The default is /tftpboot.
- c. Click **Next**.

**Step 8** At the Pre Installation Summary screen, click **Install**.

**Step 9** At the Add New Module Complete screen, click **Done**.

---

## 3.8 New Zealand Daylight Saving Time Updates

If you are located in New Zealand, you must apply the steps described in [Appendix D, “Updating CTM Daylight Saving Time for New Zealand”](#) to make the CTM server compliant with the New Zealand Daylight Saving Time (DST) settings update.

For details, refer to the New Zealand Department of Internal Affairs website at <http://www.dia.govt.nz/diawebsite.nsf>.



## CHAPTER 4

# Installing CTM GateWay/CORBA R8.5

---



### Caution

A reliable network connection is required when carrying out an installation on a remote workstation.

---

The CTM GateWay/CORBA R8.5 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 R8.5 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 R8.5 server.



### Tip

For more information about CORBA support, including how to configure CTM GateWay/CORBA, see the [Cisco Transport Manager Release 8.5 GateWay/CORBA User Guide and Programmer Manual](#).

---

This chapter contains the following sections:

- [4.1 Installing CTM GateWay/CORBA R8.5, page 4-1](#)
- [4.2 Re-enabling CTM GateWay/CORBA After Reinstalling the CTM Database, page 4-3](#)

## 4.1 Installing CTM GateWay/CORBA R8.5



### 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.
  - The CTM database must be up and running before installing CTM GateWay/CORBA.
- 



### Caution

Contact the Cisco TAC before installing CTM GateWay/CORBA on a patched CTM server.

---

**Step 1** Log into the CTM server workstation as the root user. The C shell (csh) is recommended. To start the C shell, enter the following command:

```
/bin/csh
```

**Step 2** 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** 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 5** Insert the CTM Server Disk 1 installation CD and enter the following commands:

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



**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 this procedure.

The installation begins. Wait for up to 60 seconds while the following message appears:

```
Please wait, Cisco Transport Manager Server Release 8.5 is being configured for your
system. This may take a moment...
```

**Step 6** At the Introduction screen, click **Next**.

**Step 7** 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 8** At the Installation Options screen, check **New Installation**; then, click **Next**.

**Step 9** At the Select Products to Install screen, check the **Cisco Transport Manager CORBA GateWay** check box; then, click **Next**.

**Step 10** At the Server IP Address screen, specify an IP address for the server setup; then, click **Next**.

**Step 11** The Pre-Installation Summary screen shows the items that will be installed. Click **Install**.

**Step 12** At the Insert New Media screen, complete the following substeps:

- a. As the root user, open a separate terminal window and enter the following command to eject the CTM Server Disk 1 installation CD:
 

```
eject
```
- b. Insert the required CTM Server Disk installation CD and click **Browse**.
- c. The Select a Folder dialog box opens. Double-click **cdrom**; then, single-click **cdrom0**. The filename text box now reads `/cdrom/cdrom0`.
- d. In the Select a Folder dialog box, click **Select**.

e. In the Insert New Media screen, click **OK**.

**Step 13** The Install Complete screen summarizes the results of the installation. Click **Done**.

---

## 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 R8.5 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 R8.5 client you can remove earlier versions, or leave them installed.
  - 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, page 5-1](#)
- [5.2 Upgrading the CTM Client Manually, page 5-11](#)
- [5.3 Upgrading the CTM Client Automatically, page 5-12](#)
- [5.4 New Zealand Daylight Saving Time Updates, page 5-12](#)



### 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

This section describes how to install the CTM client and Cisco Edge Craft on Microsoft Windows and Solaris.

## 5.1.1 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 Microsoft Windows workstation.


**Note**

You must have administrator privileges on the local workstation and the client software must be shut down before installing the CTM client.

### 5.1.1.1 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** At the Introduction screen, click **Next**.
- 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\TransportManagerClient8_5`. The text box is disabled. 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**

The MGX Voice Gateway applications cannot be launched from the Domain Explorer if the CTM client is installed in a location that has spaces in the directory path.


**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 workstation performing the installation can reach the ONS 1530x devices through UDP port 161 before launching Cisco Edge Craft.

---

- 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.
- 

### 5.1.1.2 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 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.

#### 5.1.1.2.1 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 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**.

---

### 5.1.1.3 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. PuTTY is 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 sshclient.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 SSH Client directory path.
  - d. Click **OK**; then, click **OK** to close the System Properties dialog box.
- 

## 5.1.2 Starting the CTM Client in Microsoft Windows

It is not necessary to restart the workstation before starting the CTM client.

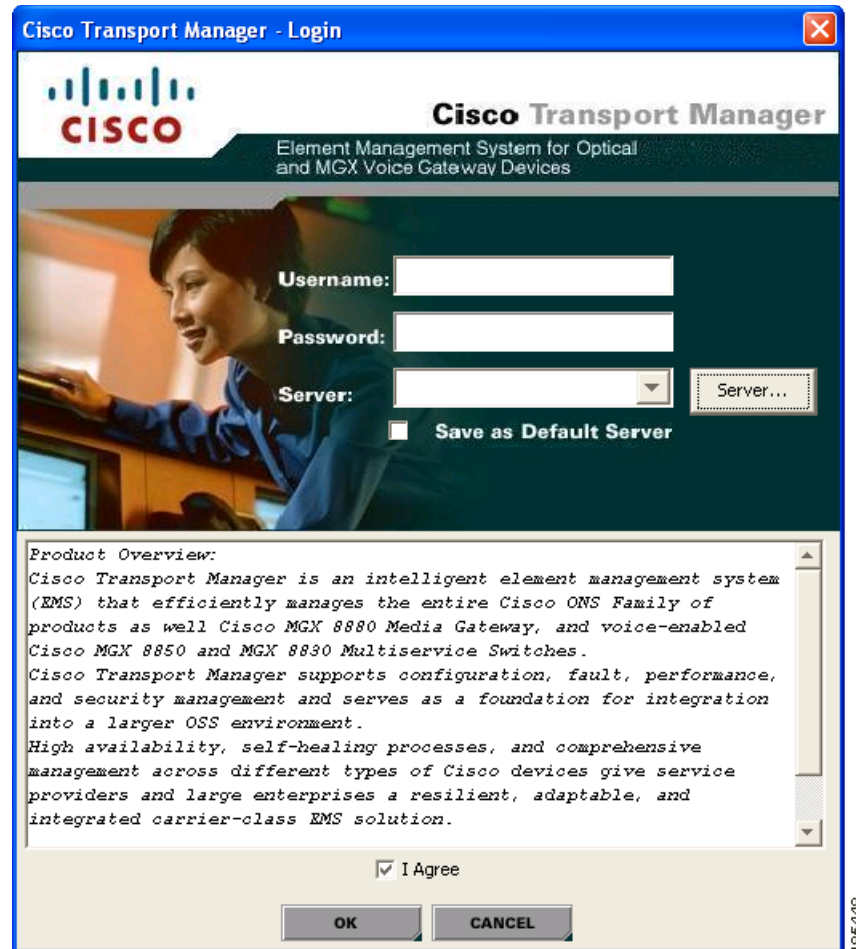
- 
- Step 1** Depending on the option you chose during installation, double-click the CTM desktop icon or choose the CTM Start menu shortcut to start the client. The Cisco Transport Manager - Login window appears (see [Figure 5-1](#)), displaying the default Cisco text.



**Note** The text displayed in the Cisco Transport Manager - Login window can be customized to display information for the particular server that you want to connect to. To display your own custom message, you must create a text file that contains your custom text. Save the file with the filename OtherLegal.txt in the <server\_installation\_directory>/webServer/htdocs directory.

---

Figure 5-1 Cisco Transport Manager - Login Window



**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 15 asterisks (\*), regardless of the actual length of the password.

**Step 3** Supply the details of the server that you want to connect to in the Server field, in one of the following ways:

- Click the **Server** button. Enter the CTM server hostname or IP address in the Selection Server dialog box. Click **Save** to save your server details in the Server drop-down list.
- Click the **Server** drop-down list and select the server that you want to connect to.




---

**Note** When the selected server has the OtherLegal.txt file saved in the `<server_installation_directory>/webServer/htdocs/` directory, the text contained in this file appears in the text area of the Cisco Transport Manager - Login window. If the selected server does not have the OtherLegal.txt file present, the default Cisco message shown in [Figure 5-1](#) is displayed.

---




---

**Tip** Check the **Save As Default Server** check box to save the selected server as your default server for the next time you log in.

---




---

**Tip** The I Agree check box is unchecked when the OtherLegal.txt file is present in the CTM server installation. The I Agree check box is checked by default when the OtherLegal.txt file is not present in the CTM server installation.

---

**Step 4** Check the **I Agree** check box (if it is not already checked).

**Step 5** Click **OK**.




---

**Note** Do not enter a hostname unless Domain Name System (DNS) is enabled in your network.

---

**Step 6** 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 15 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 7** Change the password; then, click **OK**.

**Step 8** Click **OK** in the log in advisory dialog box.

---

## 5.1.3 Starting Cisco Edge Craft in Microsoft Windows

- 
- Step 1** Choose **Start > Programs > Accessories > Command Prompt** to open a Windows DOS Command Prompt window.
- Step 2** Change directories to the `<CTM_home_directory>/CiscoEdgeCraft/bin` directory. You can click **Change** to choose a different destination.
- Step 3** Double-click 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 IP address of the NE that you want to connect to.
  - b. Ignore the User field.
  - c. Enter the Password string. The password string represents the NE community string, which is set in the NE flash memory by using the command-line interface (CLI).
  - d. Click **Logon**.
- 

## 5.1.4 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 10 workstation.

### 5.1.4.1 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** At the Introduction screen, click **Next**.
- 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 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.



**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 workstation performing the installation can reach the ONS 1530x devices through UDP port 161 before launching Cisco Edge Craft.

**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
```

---

### 5.1.4.2 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 path name. Also, verify that the **DISPLAY** variable is set correctly.

---

## 5.1.5 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.
```

**Step 2** Wait 10 to 20 seconds for the CTM client application to start. The Cisco Transport Manager - Login window appears (see [Figure 5-1 on page 5-5](#)), displaying the default Cisco text.



**Note** The text displayed in the Cisco Transport Manager - Login window can be customized to display information for the particular server that you want to connect to. To display your own custom message, you must create a text file that contains your custom text. Save the file with the filename OtherLegal.txt in the `<server_installation_directory>/webServer/htdocs` directory.

**Step 3** 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 15 asterisks (\*), regardless of the actual length of the password.

**Step 4** Supply the details of the server that you want to connect to in the Server field, in one of the following ways:

- Click the **Server** button. Enter the CTM server hostname or IP address in the Selection Server dialog box. Click **Save** to save your server details in the Server drop-down list.
- Click the **Server** drop-down list and select the server that you want to connect to.



**Note** When the selected server has the OtherLegal.txt file saved in the `<server_installation_directory>/webServer/htdocs/` directory, the text contained in this file appears in the text area of the Cisco Transport Manager - Login window. If the selected server does not have the OtherLegal.txt file present, the default Cisco message shown in [Figure 5-1 on page 5-5](#) is displayed.



**Tip** Check the **Save As Default Server** check box to save the selected server as your default server for the next time you log in.



**Tip** The I Agree check box is unchecked when the OtherLegal.txt file is present in the CTM server installation. The I Agree check box is checked by default when the OtherLegal.txt file is not present in the CTM server installation.

**Step 5** Check the **I Agree** check box (if it is not already checked).

**Step 6** Click **OK**.



**Note** Do not enter a hostname unless DNS is enabled in your network.

**Step 7** 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 15 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 8** Change the password; then, click **OK**.

**Step 9** Click **OK** in the login advisory dialog box.

---

## 5.1.6 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:

- a. Enter the IP address of the NE that you want to connect to.
  - b. Ignore the User field.
  - c. Enter the Password string. The password string represents the NE community string, which is set in the NE flash memory by using the CLI.
  - d. Click **Logon**.
- 

## 5.2 Upgrading the CTM Client Manually

This section describes how to manually upgrade the CTM client.



### Note

You must have Administrator privileges on the local workstation and the client software must be shut down before installing the CTM client.

---

## 5.2.1 Upgrading the CTM Client or Cisco Edge Craft on Microsoft Windows

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 R8.5 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](#).

To install the CTM Client and Cisco Edge Craft, see [5.1.1 Installing the CTM Client and Cisco Edge Craft on Microsoft Windows, page 5-2](#).

## 5.2.2 Upgrading the CTM Client or Cisco Edge Craft on Sun Solaris

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 R8.5 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.4 Uninstalling the CTM Client and Cisco Edge Craft on Sun Solaris, page B-3](#).

To install the CTM Client and Cisco Edge Craft, see [5.1.4 Installing the CTM Client and Cisco Edge Craft on Sun Solaris, page 5-7](#).

## 5.3 Upgrading the CTM Client Automatically

Upgrading the CTM client automatically is not supported in CTM R8.5.

## 5.4 New Zealand Daylight Saving Time Updates

If you are located in New Zealand, you must apply the steps described in [Appendix D, “Updating CTM Daylight Saving Time for New Zealand”](#) to make the CTM server compliant with the New Zealand DST settings update.

For details, refer to the New Zealand Department of Internal Affairs website at <http://www.dia.govt.nz/diawebsite.nsf>.



# APPENDIX A

## Understanding Installation Error Messages

This appendix describes the CTM installation error messages and recommended actions. For information on CTM installation caveats, refer to the “Installation and Upgrade Caveats” section of the [Release Notes for Cisco Transport Manager Release 8.5](#).

### A.1 CTM Client Installation Error Messages

The following table 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 <b>Previous</b> and select a new installation location.
Error: The installation of Cisco Edge Craft will overwrite the CTM client installation.	Click <b>Previous</b> and select a new installation location.

## A.2 CTM Server Installation Error Messages

The following table 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.
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).

**Table A-2** Server Installation Error Messages (continued)

Error Message	Recommended Action
<p>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.</p>	<ol style="list-style-type: none"> <li>1. Start or install the CTM database.</li> <li>2. When the server and database are installed on separate workstations (and before you install CTM GateWay/CORBA on the server workstation), 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.</li> <li>3. Retry the CTM GateWay/CORBA installation.</li> </ol>
<p>EID-382: The CTM server is initializing. Please try again after some time.</p>	<p>Wait for several minutes for the server to finish initializing.</p>





# APPENDIX **B**

## Uninstalling CTM, Cisco Edge Craft, and the Oracle Database

---

This appendix describes how to uninstall the CTM R8.5 server, the CTM R8.5 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

Before uninstalling the CTM server, use the **ctms-stop** command to shut down the server.

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:

```
/opt/CiscoTransportManagerServer<version>/UninstallerData/IAUninstaller.sh
```

For example, enter the following command to uninstall CTM R8.5:

```
/opt/CiscoTransportManagerServer8.5/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 the CTM server is still running, you are prompted with an error dialog box. To stop the uninstallation process, click **OK**. Use either the **ctms-stop** or **ctms-abort** command to stop the CTM server. The uninstall process will proceed once the CTM server is no longer running.

**Step 6** At the Uninstall Complete screen, click **Quit**.

**Step 7** Choose **y** or **n** when prompted to remove the files that were not removed by the uninstaller script.

## B.3 Uninstalling the CTM Client and Cisco Edge Craft on Microsoft Windows



**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 and Cisco Edge Craft client sessions that are currently open.

**Step 2** Use the Windows Add or Remove Programs tool to uninstall the CTM client.

- a. From the Start menu > Control Panel, choose **Add or Remove Programs**.
- b. In the Add or Remove Programs dialog box, choose **Cisco Transport Manager Client** and click **Change/Remove**.
- c. At the Uninstall Cisco Transport Manager Client screen, click **Uninstall**.
- d. At the prompt to close any CTM client sessions that are currently open, click **OK**.
- e. At the Uninstall Complete screen, click **Done**.
- f. Close the Add or Remove Programs dialog box.

**Step 3** Delete the directory where the CTM client was installed. The default installation directory is C:\Cisco\TransportManagerClient8\_5.

## 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/CiscoTransportManagerClient8.5):

```
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 Oracle 10g Software

**Caution**

If you remove the Oracle 10g software, you cannot use CTM R8.5. Be sure that you want to remove the Oracle 10g software before completing the following steps.

**Step 1** Use the Oracle universal installer to uninstall the Oracle 10g software. Refer to the official Oracle installation guide for more information. Enter the following commands:

```
su - oracle  
/oracle/product/10.2.0/oui/bin/runInstaller
```

**Step 2** Select **Uninstall all products**.

**Step 3** In a dual-server scenario, log into the Oracle database workstation as the root user and enter the following commands:

```
rm -rf /oracle/product/10.2.0
rm -rf /var/opt/oracle/oraInst.loc
```

**Step 4** In a single-server scenario, log into the CTM server workstation as the root user and enter the following commands:

```
rm -rf /oracle/product/10.2.0
rm -rf /var/opt/oracle/oraInst.loc
```

---

## B.6 Reverting to the Previous Database

To revert to the database as it was prior to the upgrade to CTM R8.5, see the *Cisco Transport Manager Release 8.5 User Guide*, which is available online at [http://www.cisco.com/en/US/products/sw/opticsw/ps2204/products\\_user\\_guide\\_list.html](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.
- 
- Step 4** 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 5** 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 6** 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 7** 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 8** Enter the following command to stop the `vold` process:

```
kill -15 <process_ID_number>
```

**Step 9** Enter the following command to restart the vold process:

```
/usr/sbin/vold &
```

**Step 10** 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.

**Step 4** 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 5** 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 6** 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 7** 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 8** Enter the following command to stop the vold process:

```
kill -15 <process_ID_number>
```

**Step 9** Enter the following command to restart the vold process:

```
/usr/sbin/vold &
```

**Step 10** If you have problems using the vold daemon, enter the following command to mount the CD-ROM:

```
mount -F hfsfs -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 11** Use a text editor to create an /etc/dfs/dfstab file, if one does not already exist.

**Step 12** Add the following line to the /etc/dfs/dfstab file:

```
share -F nfs -o ro /cdrom/cdrom0
```

**Step 13** 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 the **share** or **shareall** command.

**Step 14** Go to the workstation where you want to install the application.

**Step 15** Log in as the superuser by entering the **su** command and the root password, or log in as the root user.

**Step 16** Enter the following command to create a /cdrom directory, if one does not already exist:

```
mkdir -p /cdrom/<directory_name>
```

**Step 17** 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.

---



## Updating CTM Daylight Saving Time for New Zealand

---

This appendix describes how to make CTM compliant with the New Zealand Daylight Saving Time (DST) settings update. This appendix contains the following sections:

- [D.1 DST Compliance for the CTM Server, page D-1](#)
- [D.2 DST Compliance for the CTM Client on Solaris, page D-3](#)
- [D.3 DST Compliance for the CTM Client on Windows, page D-4](#)

### D.1 DST Compliance for the CTM Server

This section describes how to make the CTM server compliant with the New Zealand DST settings.

- Step 1** Download the Solaris patch required to support the DST changes from SunSolve Online at <http://sunsolve.sun.com>. The required patch is 125378-02 or higher.



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- Step 2** Download Oracle patch number 6113507, required to support the DST changes. To download the additional required Oracle patch, complete the following substeps:

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



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- b. Select **Patch** from the menu and search for the 6113507 patch.
- c. Choose **Solaris Operating System (SPARC 64-bit)** from the Platform or Language list box.
- d. Click **Go**.
- e. Click **Download** to download the p6113507\_10203\_SOLARIS64.zip file to your local workstation.
- f. Enter the following command to log into the database workstation as the Oracle user:

```
su - oracle
```

g. Save the patch to the \$ORACLE\_HOME directory.

**Step 3** Download the TZupdater tool, release 1.2.1 or higher, from the Sun Developer Network (SDN) website at [http://java.sun.com/javase/tzupdater\\_README.html](http://java.sun.com/javase/tzupdater_README.html). The TZupdater installer is a single file named tzupdater-1\_2\_1-2007f.zip.

**Step 4** As the root UNIX user, enter the following command to shut down the CTM server:

```
ctms-stop
```

**Step 5** As the oracle UNIX user, enter the following commands to stop the CTM database:

```
su - oracle
lsnrctl stop
sqlplus /nolog
connect / as sysdba
shutdown immediate
quit
```

**Step 6** Install the Solaris patches.

**Step 7** Install the additional required Oracle patch. Complete the following substeps:

a. Enter the following commands to unzip p6113507\_10203\_SOLARIS64.zip to your Oracle home directory:

```
cd $ORACLE_HOME
unzip p6113507_10203_SOLARIS64.zip
```

A new 6113507 folder is created.

b. Enter the following command to change to the 6113507 folder:

```
cd 6113507
```

c. Enter the following command to apply the patch:

```
../OPatch/patch apply
```

d. Enter the following command to check whether the 6113507 patch is installed:

```
../OPatch/patch lsinventory | grep 6113507
```

The output should show the 6113507 patch number.

**Step 8** Install the TZupdater tool. Read the installation and usage instructions for the TZupdater tool at [http://java.sun.com/javase/tzupdater\\_README.html](http://java.sun.com/javase/tzupdater_README.html). Then, complete the following substeps:

a. As the root UNIX user, enter the following command:

```
su - root
```

b. Copy the tzupdater-1\_2\_1-2007f.zip file to the /tmp directory. Then enter:

```
cd /tmp
```

c. Enter the following command to unzip the tzupdater-1\_2\_1-2007f.zip file:

```
unzip tzupdater-1_2_1-2007f.zip
```

A directory named tzupdater-*<version>*-*<date>* is created.

d. Enter the following command to enter the tzupdater-*<version>*-*<date>* directory:

```
cd tzupdater-1.2.1-2007f
```

e. Enter the following command to locate the JRE used by the CTM server:

```
ls -la /bin/javane
```

You should see output similar to the following:

```
lrwxrwxrwx [...] /bin/javane -> /opt/jre1.5.0_12/bin/java
```

In this example, the `<jre_location>` is `/opt/jre1.5.0_12`.

- f. Enter the following command:

```
<jre_location>/bin/java -jar ./tzupdater.jar -u
```

In this example, enter the following command:

```
/opt/jre1.5.0_12/bin/java -jar ./tzupdater.jar -u
```

- g. If no message is displayed, enter the following commands to verify that the settings have been applied:

```
cd <jre_location>/lib
ls -la | grep zi
```

You should see that the `zi` directory is modified with the current date and a `zi.tzdata<date>` directory is displayed, where `<date>` is the date of the old time zone database that was replaced; for example, `zi.tzdata2007e`.

- Step 9** Enter the following commands to remove the temporary files:

```
cd /tmp
rm tzupdater*.zip
rm -r tzupdater*
```

- Step 10** As the oracle UNIX user, enter the following commands to start the CTM database:

```
su - oracle
sqlplus /nolog
connect / as sysdba
startup
quit
lsnrctl start
```

- Step 11** As the root UNIX user, enter the following command to verify that the Oracle processes are running:

```
ps -ef | grep ora
```

- Step 12** Enter the following command to start the CTM server:

```
ctms-start
```

## D.2 DST Compliance for the CTM Client on Solaris

This section describes how to make the Solaris CTM client compliant with the New Zealand DST settings.

- Step 1** Download the Solaris patch required to support the DST changes from SunSolve Online at <http://sunsolve.sun.com>. The required patch is 125378-02 or higher.



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- Step 2** Download the TZupdater tool, release 1.2.1 or higher, from the Sun Developer Network (SDN) website at [http://java.sun.com/javase/tzupdater\\_README.html](http://java.sun.com/javase/tzupdater_README.html). The TZupdater installer is a single file.
- Step 3** Exit all of the CTM clients running on the workstation that you are going to patch.
- Step 4** Install the Solaris patches.
- Step 5** Install the TZupdater tool. Read the installation and usage instructions for the TZupdater tool at [http://java.sun.com/javase/tzupdater\\_README.html](http://java.sun.com/javase/tzupdater_README.html). Then, complete the following substeps:
- As the root UNIX user, enter the following command:
 

```
su - root
```
  - Enter the following command to copy the tzupdater-1\_2\_1-2007f.zip file to the /tmp directory:
 

```
cd /tmp
```
  - Enter the following command to unzip the tzupdater-1\_2\_1-2007f.zip file:
 

```
unzip tzupdater-1_2_1-2007f.zip
```

A directory named tzupdater-*<version>*-*<date>* is created.
  - Enter the following command to enter the tzupdater-*<version>*-*<date>* directory:
 

```
cd tzupdater-1.2.1-2007f
```
  - Enter the following command:
 

```
/opt/CiscoTransportManagerClient/jre/bin/java -jar ./tzupdater.jar -u
```
  - Enter the following commands to verify that the JRE has been patched correctly:
 

```
cd /opt/CiscoTransportManagerClient/jre/lib
ls -la | grep zi
```

You should see that the zi directory is modified with the current date and a zi.tzdata*<date>* directory is displayed, where *<date>* is the date of the old time zone database that was replaced; for example, zi.tzdata2007e.
- Step 6** Enter the following commands to remove the temporary files:
- ```
cd /tmp
rm tzupdater*.zip
rm -r tzupdater*
```

## D.3 DST Compliance for the CTM Client on Windows

This section describes how to make the Windows CTM client compliant with the New Zealand DST settings.

- Step 1** Download the TZupdater tool and the necessary Windows patch:
- Download the Windows patch required to support the DST changes from the Microsoft website at <http://www.microsoft.com>. The patch required is KB933360.



**Note** The KB933360 patch is not supported for Microsoft Windows 2000 Professional.

- b. Download the TZUpdater tool, release 1.2.1 or higher, from the Sun Developer Network (SDN) website at [http://java.sun.com/javase/tzupdater\\_README.html](http://java.sun.com/javase/tzupdater_README.html). The TZUpdater installer is a single file named tzupdater-1\_2\_1-2007f.zip.

**Step 2** Exit all of the CTM clients running on the Windows CTM client that you are going to patch.

**Step 3** Install the Windows patch. Refer to the instructions on the Microsoft website at <http://www.microsoft.com>.

**Step 4** Install the TZUpdater tool. Read the installation and usage instructions for the TZUpdater tool at [http://java.sun.com/javase/tzupdater\\_README.html](http://java.sun.com/javase/tzupdater_README.html). Then, complete the following substeps:

- a. Copy the tzupdater-*<version>*.zip file to a temporary directory.
- b. Unzip the file using WinZip or a similar tool. A directory named tzupdater-*<version>*-*<date>* is created; for example, tzupdater-1.2.1-2007f.
- c. Using Windows Explorer, change directories to display the new directory that you created.
- d. Right-click the directory and select the **Open Command Window Here** option.
- e. Enter the following command:

```
<CTM_client_install_directory>\jre\bin\java -jar .\tzupdater.jar -u
```

For example, if your client is installed in the C:\Cisco\TransportManagerClient8\_5 directory, enter:

```
C:\Cisco\TransportManagerClient8_5\jre\bin\java -jar .\tzupdater.jar -u
```

**Step 5** Verify that JRE has been patched correctly. Enter the directory where the CTM client is installed; then, enter the jre\lib directory. You should see that the zi directory is modified with the current date and a zi.tzdata*<date>* directory is displayed, where *<date>* is the date of the old time zone database that was replaced; for example, zi.tzdata2007e.

---





## Changing the CTM Server IP Address

---

This appendix describes how to change the IP address of the CTM server when CTM and Oracle are on the same or separate servers.

### E.1 Changing the IP Address when CTM and Oracle Are on the Same Server

To change the IP address of a standalone CTM server with a single IP interface when CTM and Oracle are on the same server, complete the following steps:

- 
- Step 1** Log into the CTM server as the root user.
- Step 2** Enter the following command to shut down the CTM server:
- ```
ctms-stop
```
- Step 3** Enter the following commands to shut down Oracle:
- ```
# su - oracle
% sqlplus /nolog
SQL> connect <username>/<password> as sysdba
SQL> shutdown immediate;
SQL> exit
% exit
```
- Step 4** Complete the following substeps:
- Enter the following command to change the IP address in the `/etc/netmasks` file:

```
# vi /etc/netmasks
```
  - Enter the following command to change the IP address in the `/etc/inet/ipnodes` file:

```
# vi /etc/inet/ipnodes
```
  - Enter the following command to change the IP address in the `/etc/hosts` file:

```
# vi /etc/hosts
```
  - Enter the following command to change the IP address in the `etc/hostname.xxx` file, where `xxx` is the IP interface that is defined in the Solaris server:

```
# vi /etc/hostname.xxx
```
  - Enter the following command to change the default router file, if required:

```
# vi /etc/defaultrouter
```

- f. Enter the following command to change the subnet mask on the CTM server:

```
# vi /etc/netmasks
```

**Step 5** Complete the following application-level steps:

- a. Enter the following command to change the IP address in the Oracle listener file:

```
# vi /oracle/product/10.2.0/network/admin/listener.ora
```

- b. Enter the following command to change the IP address in the Oracle tnsnames file:

```
# vi /oracle/product/10.2.0/network/admin/tnsnames.ora
```

- c. Enter the following command to change the IP address in the CTM server configuration file:

```
# vi /opt/CiscoTransportManagerServer/cfg/CTMServer.cfg
```




---

**Note** Make sure to change all IP addresses where they are referenced.

---

- d. Enter the following command to change the IP address in the jacORB properties file:

```
# vi /opt/CiscoTransportManagerServer/openfusion/classes/jacorb.properties
```

- e. Enter the following command to change the IP address in the web server configuration file:

```
# vi /opt/CiscoTransportManagerServer/webServer/conf/httpd.conf
```

**Step 6** Enter the following commands to halt and reboot the CTM server:

```
# sync;sync;halt
OK boot -r
```

**Step 7** After the CTM server has rebooted, enter the following command to verify that it has started:

```
# showctm
```

**Step 8** Enter the following command to stop the CTM server:

```
# ctms-stop
```

**Step 9** Enter the following command to update the Orbix domain:

```
# /opt/CiscoTransportManagerServer/cwm/svplus/scripts/conf_orbix.csh PUBLISH_IP
<new_IP_address>
```




---

**Note** The conf\_orbix.csh file is available only if you installed the MGX module.

---

**Step 10** Enter the following command to start the CTM server:

```
# ctms-start
```

---

If you change the CTM server IP address, you must replace the old IP address with the new IP address in the configuration files shown in the following table. Use a standard UNIX text editor such as vi to update the files. Changes in the configuration files take effect after rebooting the server.

**Table E-1** Configuration Files that Require Updating

| Filename                                                                                                               | Location                                                                                          |
|------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------|
| <b>UNIX Configuration Files</b>                                                                                        |                                                                                                   |
| hosts                                                                                                                  | /etc                                                                                              |
| netmasks                                                                                                               | /etc                                                                                              |
| defaultrouter                                                                                                          | /etc                                                                                              |
| ipnodes                                                                                                                | /etc/inet                                                                                         |
| <b>Oracle Configuration Files</b>                                                                                      |                                                                                                   |
| tnsnames.ora                                                                                                           | /oracle/product/10.2.0/network/admin                                                              |
| listener.ora                                                                                                           | /oracle/product/10.2.0/network/admin                                                              |
| <b>CTM Server Configuration File</b>                                                                                   |                                                                                                   |
| CTMServer.cfg                                                                                                          | /opt/CiscoTransportManagerServer/cfg                                                              |
| jacorb.properties                                                                                                      | /opt/CiscoTransportManagerServer/openfusion/classes                                               |
| httpd.conf                                                                                                             | /opt/CiscoTransportManagerServer/webServer/conf                                                   |
| <b>Note</b> Two IP address instances require modification:<br><br>Listen <IP_address>:51<br>ServerName <IP_address>:51 |                                                                                                   |
| CTMServer.perm                                                                                                         | /opt/CiscoTransportManagerServer/cfg/                                                             |
| NotificationService.xml                                                                                                | /opt/CiscoTransportManagerServer/openfusion/domains/<br>OpenFusion/localhost/NotificationService/ |
| <b>Note</b> The NotificationService.xml file is present only if CTM GateWay/CORBA is installed.                        |                                                                                                   |

## E.2 Changing the IP Address when CTM and Oracle Are on Separate Servers

To change the IP address of the CTM server when CTM and Oracle are on separate servers, complete [E.1 Changing the IP Address when CTM and Oracle Are on the Same Server, page E-1](#) on both the CTM server workstation and on the CTM database workstation. Apply the changes to the same files on both servers.

■ E.2 Changing the IP Address when CTM and Oracle Are on Separate Servers



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