



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 ¹	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 ²	For the archived logs
/ctm_backup ^{3,4}	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 Note 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.

- 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 ¹
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.



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

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/opatch 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/opatch directory.

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

```
grep "file name" /oracle/product/10.2.0/cfgtoollogs/opatch/<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/opatch 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:

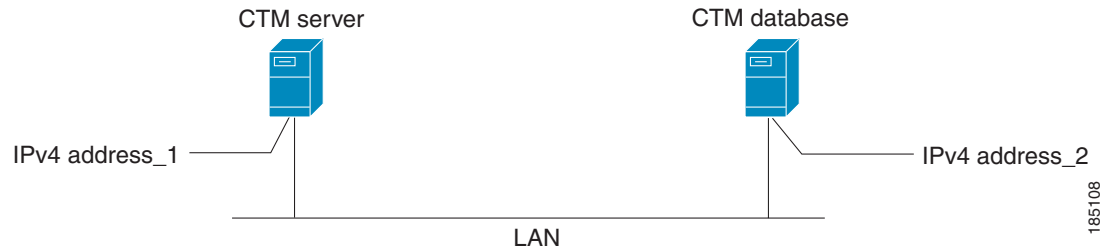
- Standard dual-server installation
- Dual-server installation with a dedicated connection between servers (for example, a cross-cable connection)



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.

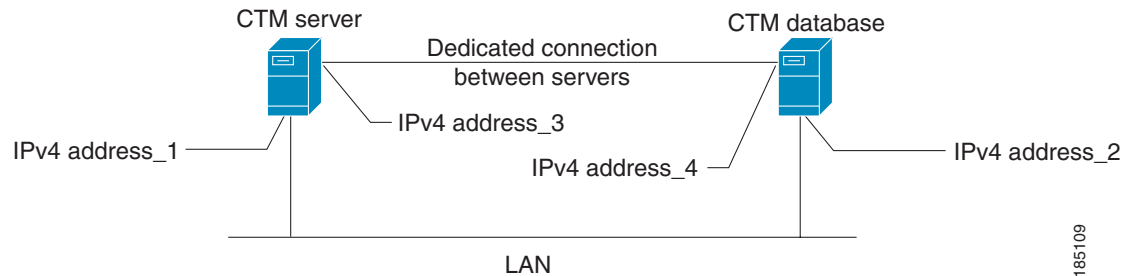
The following figure illustrates the standard dual-server installation. Server 1 is the CTM database server and Server 2 is the database server.

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 ¹	For the backed-up configuration files
/oracle	For the Oracle software
/tftpboot	For the TFTP directory
	Note 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>.

