



CHAPTER 2

Installing the CTM R9.0 Server and Oracle 10g



Caution

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

This chapter describes how to install CTM R9.0 and Oracle 10g. It contains the following sections:

- [2.1 Installing CTM R9.0 and Oracle 10g on the Same Workstation, page 2-1](#)
- [2.2 Installing CTM R9.0 and Oracle 10g on Separate Workstations, page 2-9](#)
- [2.3 New Zealand Daylight Saving Time Updates, page 2-29](#)
- [2.5 Upgrading the Performance of the Oracle Database, page 2-30](#)



Note

- For an explanation of error messages that you might encounter during the server installation, see [Appendix B, “Understanding Installation Error Messages.”](#)
 - If you need instructions to mount or unmount CDs, see [Appendix D, “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.
 - After the CTM R9.0 installation is complete, you have the option of upgrading the CTM network configuration size and adding new modules. For more information, see [3.8 Upgrading the CTM Network Configuration Size, page 3-33](#) and [3.9 Adding New Modules, page 3-34](#).
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2.1 Installing CTM R9.0 and Oracle 10g on the Same Workstation



Note

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

This section describes how to install the CTM R9.0 server and Oracle 10g on the same Sun Solaris 10 server.

2.1.1 Setting the Environment for Installation

Step 1 Log in 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 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
/db01_rd ²	Optional partition for the redo logs
/db02	For the basedata tablespace, alarmdata tablespace, and eventdata tablespace used by CTM
/db02_rd ²	Optional partition for the redo logs
/db03	For the data tablespace used by CTM
/db04	For the index tablespace used by CTM
/db05	For the archived and undo tablespace used by CTM
/ctm_backup ^{3,4}	For the backed-up database and configuration files Note The /ctm_backup partition is required for backups.
/oracle	For the Oracle software
/tftpboot	For the TFTP directory Note Disk partitioning is not required for /tftpboot, but the directory is required. If the /tftpboot directory is required by the NEs being managed, it will be created in 2.1.2 Updating the System Parameters, page 2-3 .

1. For performance reasons, it is recommended that you keep the /db01 and /db02 partitions on separate physical disks with distinct controllers.
2. This partition is optional; however, it is recommended to increase database performance. To optimize I/O data transfers, the db01_rd and db02_rd partitions should be on separate physical disks with distinct controllers. These disks and controllers are in addition to the disks and controllers mentioned in the preceding footnote.
3. 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.
4. If the oracle user does not have read/write permission, backup and restore operations will fail. Use the `chmod 777 /ctm_backup` command to modify the 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 1-5](#).



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

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

```
groupadd -g 3303 dba
```

Step 4 Enter the following command to create a UNIX 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
```

**Caution**

The oracle user must set the home directory to /oracle. If the home directory is not set to /oracle, the Oracle software might not start.

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 and enter the following command:

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

Step 9 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, see the Sun Solaris documentation for mounting the CD-ROM.

Step 10 Install Oracle 10g. Complete all of [A.1 Installing Oracle 10g, page A-1](#) and [A.2 Downloading and Installing the Alert Patch for Oracle CPUApr2008 \(Patch Number 6864068\), page A-10](#) before proceeding to [Step 11](#).

Step 11 Complete all of [A.3 Downloading and Installing the Oracle Patch 5201883, page A-12](#) before proceeding to [Step 12](#).

Step 12 If you are using Veritas as a disk management system, Oracle patch 5752399 is required in both high availability (HA) and non-HA configurations. See [A.4 Downloading and Installing the Oracle Patch 5752399, page A-12](#).

2.1.2 Updating the System Parameters

Step 1 Log in 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 command 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 If you do not have a TFTP directory, complete the following substeps to create one:

a. Enter the following commands:

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

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

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

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

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

Step 6 Enter the following command:

```
# inetconv
```

Step 7 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 for your database. CTM is the default SID value shown during the installation. Remember to change it if you chose another value.

Step 8 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_17 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; then, continue this procedure:

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

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

Step 9 At the Introduction screen, click **Next**.

- Step 10** 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 11** At the Installation Options screen, choose **New installation**; then, click **Next**.
- Step 12** 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 13** At the Select Modules to Install screen, choose **All of the Above Modules**; then, click **Next**.
- Step 14** 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 15** 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 16** At the Update the System Parameters screen, choose **Optimize CTM database parameters** and **Optimize CTM server parameters**; then, click **Next**.
- Step 17** If the project files in `/etc/project` are corrupted, the CTM R9.0 installation will be cancelled. Use **cat** or **more** to review the contents of `/etc/project`. The contents should match those reported in [Table A-1 on page A-3](#). If the contents are not the same, modify the `/etc/project` file to match. If you modify the file, you *must* reboot the server; then, restart the installation at [2.1.3 Installing the CTM R9.0 Server and Database, page 2-5](#).
- Step 18** If you receive the following warning prompt, click **OK**:
- ```
For proper operation, restart the machine.
```
- Step 19** If you receive the following warning prompt:
- ```
The setup will exit now. Restart the machine for the new settings to take effect.
```
- Click **OK**; then, enter the following command to reboot the system:
- ```
init 6
```

## 2.1.3 Installing the CTM R9.0 Server and Database

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 1-2](#) for details.



**Caution** For a small installation on a T2 processor, the CTM R9.0.0.550 patch is required. See CSCsy01229 in the [Release Notes for Cisco Transport Manager Release 9.0](#) for information about downloading and installing the CTM R9.0.0.550 patch.

---

**Step 1** Log in 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 command 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
```

The setup program searches for Sun Microsystems JRE version 1.5.0\_17 on your workstation.

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

```
Please wait, Cisco Transport Manager Server Release 9.0 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**.



**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.
  - The license for CTM GateWay/CORBA is sold separately. If you are using this feature in a production environment, you must purchase a license. See [Chapter 4, “Installing CTM GateWay/CORBA R9.0”](#) for details.
- 

**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



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

---

- Step 11** At the Main Options screen, check *only* the following check boxes; then, click **Next**:
- **Create CTM database**
  - **Install CTM server**
- Step 12** At the Select Network Configuration screen, specify the size of your network; then, click **Next**.
- Step 13** 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 [1.5 Overview of Sudo Commands, page 1-18](#).

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- Step 14** (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 15** At the Server IP Address screen, verify that the correct hostname and IP address are shown for the CTM server; then, click **Next**.
- Step 16** 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 17** 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 18** At the CTM Database Installation Directories screen, the setup program verifies that the directories exist as recommended in [Table 2-1 on page 2-2](#). Click **Next**.
- Step 19** 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**.
- 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 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:

- 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** to **e** for the other disks.

**Note**

If you chose to install only the optical module or only the MGX module, the CTM installer might automatically skip one or more 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**.

**Caution**

After you click the Done button, background processes continue to run for several minutes. Before proceeding to the next step, 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.

**Step 24** Complete [A.5 Postinstallation Steps for the Alert Patch for Oracle CPUApr2008 \(Patch Number 6864068\)](#), page A-13 before proceeding to **Step 25**.

**Step 25** As the root user, enter the following command to reboot the system. The CTM server starts automatically after rebooting:

```
init 6
```

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

**Step 26** To verify that the CTM R9.0 server is running, enter the **showctm** command after the server reboots. The **showctm** command displays the CTM server version running as 9.0, followed by the build number. In the command output, you should see two instances of “CTM Server,” “SnmpTrapService,” “SMService,” and “Apache Web Server.” This indicates that the CTM server is running.

## 2.2 Installing CTM R9.0 and Oracle 10g on Separate Workstations



**Note**

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

This section describes how to install the CTM R9.0 server and Oracle 10g on separate Sun Solaris 10 servers. There are two scenarios for installing the CTM R9.0 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 R9.0 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.

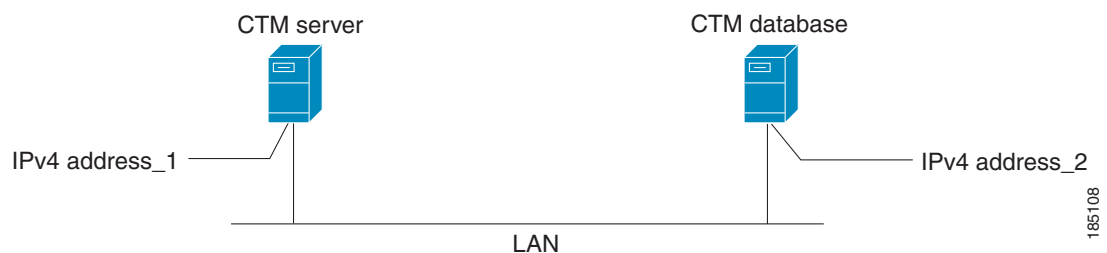
The following figure illustrates the standard dual-server installation. Server 1 is the CTM database server and Server 2 is the database server.



**Note**

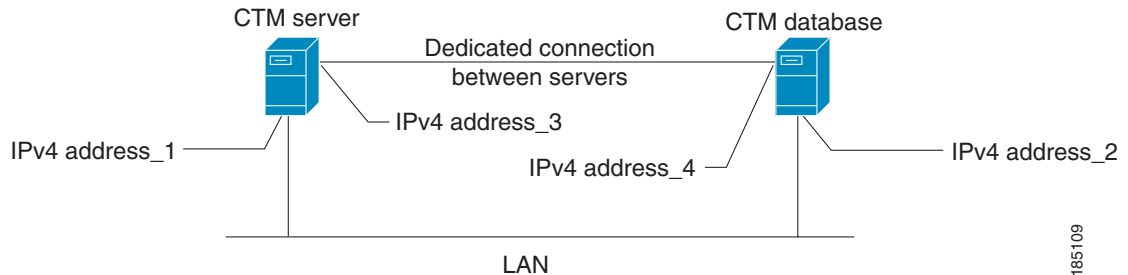
The CTM server, CTM client, and CTM database work only with IPv4 addresses. IPv6 is not supported.

**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**



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## 2.2.1 Preliminary Tasks

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

```
/bin/csh
```

- Step 2** To install CTM, the CTM database workstation must be able to execute commands on the CTM server workstation using the remote shell (rsh). Enter the following command to verify whether rsh is enabled:

```
rsh <IP_address_of_CTM_server> ls
```

- Step 3** If an error is returned, you must open a shell on the CTM server workstation and edit the `/.rhosts` file. Complete the following substeps:

- a. 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.

- b. Enter the following command to verify whether rsh is configured to support authentication using the `/.rhosts` file:

```
grep ^rsh /etc/pam.conf
```

In the command output, the first line should report:

```
rsh auth sufficient pam_rhosts_auth.so.1
```

If the output of the first line is different, add the following line as the first line in the rsh configuration lines:

```
rsh auth sufficient pam_rhosts_auth.so.1
```

- c. Enter the following command to verify whether rlogin is configured to support authentication using the `/.rhosts` file:

```
grep ^rlogin /etc/pam.conf
```

In the command output, the first line should report:

```
rlogin auth sufficient pam_rhosts_auth.so.1
```

If the output of the first line is different, add the following line as the first line in the rlogin configuration lines:

```
rlogin auth sufficient pam_rhosts_auth.so.1
```

- d. Enter the following command to verify whether the rsh service is enabled:

```
svcs | grep shell
```

The command output should show that the svc:/network/shell:default service is online. If the svc:/network/shell:default service is not online, enter the following command:

```
svcadm enable shell:default
```

- e. Enter the following command to verify whether the rlogin service is enabled:

```
svcs | grep rlogin
```

The command output should show that the svc:/network/login:rlogin service is online. If the svc:/network/login:rlogin service is not online, enter the following command:

```
svcadm enable rlogin
```

- Step 4** If an error was returned when you completed [Step 2](#) (`rsh <IP_address_of_CTM_server> ls`), repeat [Step 1](#) and [Step 2](#).
- Step 5** The CTM server works correctly only if it can execute commands on the CTM database workstation using the remote shell (rsh). You just completed [Step 1](#) to [Step 4](#) on the CTM database workstation; now, repeat these steps on the CTM server workstation.

## 2.2.2 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.

### 2.2.2.1 Preliminary Steps

- Step 1** Log in as the root user on the workstation where the CTM server will run. The C shell (csh) is recommended. To start the C shell, enter the following command:
- ```
/bin/csh
```
- Step 2** Enter the following command to verify that the disk directories shown in [Table 2-2](#) exist:
- ```
ls -l
```

Table 2-2 Disk Directories

| Directory                | Contents                                                                                    |
|--------------------------|---------------------------------------------------------------------------------------------|
| /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 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
```

**Caution**

The oracle user must set the home directory to /oracle. If the home directory is not set to /oracle, the Oracle software might not start.

**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.

## 2.2.2.2 Installing the Oracle 10g Client

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

**Step 2** 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 3** If you are upgrading from an earlier CTM release, verify that the ORACLE\_SID environment variable is set correctly in the .cshrc file. Enter the following command to find the ORACLE\_SID:

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

For Oracle9i installed on CTM R8.0, the command output is similar to the following:

```
<Oracle_SID>:/oracle/product/9.2:Y
```

For Oracle 10g installed on CTM R8.5, the command output is similar to the following:

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

**Step 4** Complete one of the following options, depending on the value of *<Oracle\_SID>*:

- If the *<Oracle\_SID>* is CTM, proceed to [Step 5](#).
- 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 5** 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 6** 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 7** Enter the following commands to eject the CTM Server Disk 1 installation CD:

```
cd /
eject cdrom
```

**Step 8** Enter the following command to log in as the oracle user:

```
su - oracle
```



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

**Step 9** Insert the disk for the Oracle Database 10g Client release 2 (10.2) installation.

**Step 10** Enter the following command to set the display on your terminal:

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

**Step 11** Enter the following command to verify that the display is set correctly:

```
echo $DISPLAY
```

In the command output, you should see:

```
<hostname_or_IP_address>:0.0
```

**Step 12** (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, see your Oracle documentation for instructions on how to download and extract the correct software for the installation.

**Step 13** 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 14** 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 15** Click **Next** in the Welcome panel; then, click **Next** in the Available Product Components panel. Click **Install** in the Summary panel.

**Step 16** 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 17** Enter the following command to run the orainstRoot.sh script:

```
./orainstRoot.sh
```

**Step 18** Return to the Oracle Universal Installer screen and click **Continue**.

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

**Step 19** 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 20** Enter the following command to run the root.sh script:

```
./root.sh
```

**Step 21** 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 22** Return to the Oracle Setup Privileges screen and click **OK**.

**Step 23** Download the 10.2.0.3 patch for Oracle 10g on the CTM server workstation. Complete [A.1.3 Downloading Set 2 of the Oracle 10g 10.2.0.3 Patch for the Solaris Operating System \(SPARC 64-Bit\)](#), page A-5 before proceeding to [Step 24](#).


**Step 24** Install the 10.2.0.3 patch for Oracle 10g on the CTM server workstation. Complete the following sections:

- [2.2.2.3 \(Oracle Client\) Installing Set 2 of the Oracle 10g 10.2.0.3 Patch for the Solaris Operating System \(SPARC 64-Bit\)](#), page 2-15
- [2.2.2.4 Postinstallation Steps](#), page 2-15
- [2.2.2.5 Installing Oracle CPUApr2008](#), page 2-16

- [2.2.2.6 Setting Up the UNIX Environment on the CTM Server Workstation, page 2-16](#)

### 2.2.2.3 (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 command 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
```
- 

### 2.2.2.4 Postinstallation 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 postinstallation steps. See the README.html document that accompanies the Oracle patch for the complete postinstallation 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
```
- Choose “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
```
-

2.2.2.5 Installing Oracle CPUApr2008

-
- Step 1** Complete all of [A.1.6 Downloading and Installing the OPatch \(Patch Number 4898608\)](#), page A-7.
- Step 2** Complete all of [A.2 Downloading and Installing the Alert Patch for Oracle CPUApr2008 \(Patch Number 6864068\)](#), page A-10.
-

2.2.2.6 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 Oracle SID (the default is *CTM*) and the CTM hostname parameter with the hostname or IP address of the workstation where the CTM database will run. See IPv4 address\_2 in [Figure 2-1 on page 2-9](#).
- Dual server with a dedicated connection—Edit the tnsnames.ora file by replacing the newdbname parameter with the Oracle SID (the default is *CTM*) and the CTM hostname parameter with the IP address of the workstation where the CTM database will run. See IPv4 address\_4 in [Figure 2-2 on page 2-10](#).



**Note** There are multiple instances of the *newdbname* parameter. You must replace all instances with the Oracle SID.

**Step 7** Edit the listener.ora file by replacing the newdbname parameter with the Oracle SID (the default is *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 Oracle SID.

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

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

For example, if the *<Oracle\_SID>* is *CTM*, add the following line:

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

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

**Step 1** Log in as the root user on the workstation where the CTM server will run. 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 command 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** If you do not have a TFTP directory, complete the following substeps to create one:

a. Enter the following commands:

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

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

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

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

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

**Step 6** Enter the following command:

```
inetconv
```

**Step 7** 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 9.0 is being configured for your
system. This may take a moment...
```

The setup program searches for Sun Microsystems JRE version 1.5.0\_17 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; then, continue this procedure:

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

- 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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**Step 8** At the Introduction screen, click **Next**.

**Step 9** At the License Agreement screen, read the license agreement and click the **I accept the terms of the license agreement** radio button. Click **Next**.

**Step 10** At the Installation Options screen, choose **New installation**; then, click **Next**.

**Step 11** 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 12** At the Select Modules to Install screen, select individual modules or select all; then, click **Next**.

- Optical Module: ONS 15xxx (inc. shelf controller)
- Cisco MGX Voice Gateway
- All of the Above Modules

**Note**

- The MDS 9000 module is a common module that will be installed with any selection.
- Additional individual modules can be installed after the original module installation is complete. For installation of additional modules, the server will need to be reinstalled but the database does not need to be recreated.

**Step 13** At the Main Options screen, check *only* the **Check system settings** check box; then, click **Next**.

**Caution**

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

**Step 14** 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 15** At the Update the System Parameters screen, check *only* the **Optimize CTM server parameters** check box; then, click **Next**.

**Step 16** If a warning prompt is displayed, click **Exit Setup** and enter the following command to reboot the system:

```
init 6
```

## 2.2.4 Installing the CTM R9.0 Server on the CTM Server Workstation

**Step 1** Log in as the root user on the workstation where the CTM server will run. 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 command 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** 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 6** 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 9.0 is being configured for your
system. This may take a moment...
```

**Step 7** At the Introduction screen, click **Next**.

**Step 8** 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 9** At the Installation Options screen, choose **New installation**; then, click **Next**.

**Step 10** 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**.



**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 R9.0”](#) for details.

**Step 11** 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 12** At the Main Options screen, check *only* the **Install CTM server** check box; then, click **Next**.



**Caution**

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

**Step 13** 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 14** 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 15** (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 16** At the Server IP Address screen, accept the default value and click **Next**.

**Step 17** (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 18** 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 IPv4 address\_2 in [Figure 2-1 on page 2-9](#).
- 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 2-10](#).



**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 19** 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**.
- 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 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:
- 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** to **e** for the other disks.

**Note**

If you chose to install only the optical module or only the MGX module, the CTM installer might automatically skip one or more disks.

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

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

- Step 24** (Required only if you installed the MGX module) If you chose a nondefault Oracle SID, edit the following files and replace *CTM* with your actual Oracle SID:

- `/opt/CiscoTransportManagerServer/cwm/svplus/.profile`
- `/opt/CiscoTransportManagerServer/cwm/svplus/.cshrc`

- Step 25** 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.

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

- Step 1** Log into the CTM database 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 verify that the disk directories shown in [Table 2-3](#) exist:

```
ls -l
```

**Table 2-3** Disk Directories

| Directory                  | Contents                                                                                                                                                                                                                                                                      |
|----------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| /db01 <sup>1</sup>         | For the system tablespace used by Oracle                                                                                                                                                                                                                                      |
| /db01_rd <sup>2</sup>      | Optional partition for the redo logs                                                                                                                                                                                                                                          |
| /db02                      | For the basedata tablespace, alarmdata tablespace, and eventdata tablespace used by CTM                                                                                                                                                                                       |
| /db02_rd <sup>2</sup>      | Optional partition for the redo logs                                                                                                                                                                                                                                          |
| /db03                      | For the data tablespace used by CTM                                                                                                                                                                                                                                           |
| /db04                      | For the index tablespace used by CTM                                                                                                                                                                                                                                          |
| /db05                      | For the archived and undo tablespace used by CTM                                                                                                                                                                                                                              |
| /ctm_backup <sup>3,4</sup> | For the backed-up database and configuration files<br><b>Note</b> The /ctm_backup partition is required for backups.                                                                                                                                                          |
| /oracle                    | For the Oracle software                                                                                                                                                                                                                                                       |
| /tftpboot                  | For the TFTP directory<br><b>Note</b> Disk partitioning is not required for /tftpboot, but the directory is required. If the /tftpboot directory is required by the NEs being managed, it will be created in <a href="#">2.1.2 Updating the System Parameters, page 2-3</a> . |

1. For performance reasons, it is recommended that you keep the /db01 and /db02 partitions on separate physical disks with distinct controllers.
2. This partition is optional; however, it is recommended to increase database performance. To optimize I/O data transfers, the db01\_rd and db02\_rd partitions should be on separate physical disks with distinct controllers. These disks and controllers are in addition to the disks and controllers mentioned in the preceding footnote.
3. 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.
4. If the oracle user does not have read/write permission, backup and restore operations will fail. Use the `chmod 777 /ctm_backup` command to modify the 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 1-5](#).

**Note**

Verify that the **STTY** command is not used in the shell configuration file. For example, verify that the **STTY** command is not used in the .login, .cshrc, and .profile files.

**Step 3**

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

```
groupadd -g 3303 dba
```

**Step 4**

Enter the following command to create a UNIX 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
```

**Caution**

The oracle user must set the home directory to /oracle. If the home directory is not set to /oracle, the Oracle software might not start.

**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 and enter the following command:
- ```
cd /cdrom/cdrom0/Disk1
```
- Step 9** 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, see the Sun Solaris documentation for mounting the CD-ROM.

- Step 10** Complete all of [A.1 Installing Oracle 10g, page A-1](#) and [A.2 Downloading and Installing the Alert Patch for Oracle CPUApr2008 \(Patch Number 6864068\), page A-10](#) before proceeding to [Step 11](#).
- Step 11** Complete all of [A.3 Downloading and Installing the Oracle Patch 5201883, page A-12](#).

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

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 1-2](#) for details.

- Step 1** Log in as the root user on the workstation where the CTM database will run. 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 command 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
```

The setup program searches for Sun Microsystems JRE version 1.5.0\_17 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; then, continue this procedure:

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

- 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.

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

```
Please wait, Cisco Transport Manager Server Release 9.0 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**.
- 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

**Note**

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

- 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 *only* the **Optimize CTM database parameters** check box; then, click **Next**.
- Step 14** If a warning prompt appears, click **Exit Setup** and enter the following command to reboot the system:
- ```
init 6
```
- Step 15** (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.

2.2.7 Installing the CTM R9.0 Database



Note Before installing the CTM R9.0 database, verify that Oracle 10g is installed in the /oracle directory.

Step 1 Log in as the root user on the workstation where the CTM database will run. 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 command 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
```

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

```
Please wait, Cisco Transport Manager Server Release 9.0 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 *only* the **Cisco Transport Manager server** check box. The Web Server check box is selected by default. Click **Next**.

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



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

Step 11 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 Be sure to uncheck the other check boxes on the Main Options screen.

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

Step 15 At the Database Information screen, accept the default value and specify whether or not you want to install the database in ARCHIVELOG mode. Click **Next**.

Step 16 At the Server IP Address screen, specify the IP address of the server workstation and click **Next**.

Step 17 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 IPv4 address_1 in [Figure 2-1 on page 2-9](#).
- Dual server with a dedicated connection—Enter the IP address of the workstation where the CTM server is installed; then, click **Next**. See IPv4 address_3 in [Figure 2-2 on page 2-10](#).



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 18 At the Pre-Installation Summary screen, click **Install** to create the CTM database.

Step 19 The Database Install Complete screen summarizes the results of the installation. Click **Done**.

Step 20 Enter the following command to verify that the Oracle 10g database and listener are running:

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

The command output displays tnslsnr and ora_[...]_<Oracle_SID> processes.

Step 21 Complete [A.5 Postinstallation Steps for the Alert Patch for Oracle CPUApr2008 \(Patch Number 6864068\)](#), page A-13 before proceeding to [Step 22](#).

Step 22 As the root user, enter the following command to reboot the system:



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
```

2.2.8 Updating CTM and CTM Database Parameters for a Dual-Server Installation with a Dedicated Connection Between Servers

- Step 1** Log in as the root user on the workstation where the CTM server 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 it before performing the upgrade:
- ```
ctms-stop
```
- Step 4** Enter the following command on the CTM database workstation (see Server 2 in [Figure 2-2 on page 2-10](#)):
- ```
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 2-10](#)):
- ```
./change_alt_db_host.sh <IP_address_2> <IP_address_4> <IP_address_3>
```



Note See [Figure 2-2 on page 2-10](#) 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
```

## 2.2.9 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 R9.0 server is running, enter the **showctm** command after the server reboots. The **showctm** command displays the CTM server version running as 9.0, followed by the build number. In the command output, you should see two instances of “CTM Server,” “SnmpTrapService,” “SMSService,” 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 E, “Updating CTM Daylight Saving Time for New Zealand”](#) to make the CTM server compliant with the New Zealand Daylight Saving Time (DST) settings update.

2.4 Upgrading the CTM Network Configuration Size


Note

You can complete the following procedure whether you are installing CTM R9.0 as a new installation or upgrading to CTM R9.0 from an earlier release.

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 9.0 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 **Upgrade CTM network configuration size**; then, click **Next**.

Step 5 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 6 At the Update System Parameters screen, choose **Optimize CTM database parameters** and **Optimize CTM server parameters**. (Both options are selected by default.) Click **Next**.

Step 7 At the Pre Installation Summary screen, click **Install**.

Step 8 As the root user, enter the following command to reboot the system:

```
init 6
```

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.

2.5 Upgrading the Performance of the Oracle Database

In CTM R9.0, redo logs are stored on a different disk to maximize I/O data transfers and speed up all database operations. This configuration is recommended on large and high-end networks that manage a large number of NEs.

Two partitions are created to support the configuration: /db01_rd and /db02_rd. The partitions are located on different physical disks and different I/O controllers. You can add the /db01_rd partition only, or you can add both /db01_rd and /db02_rd.


Note

No user action is required if the /db01_rd and /db02_rd partitions are already present at the time of installation. The CTM R9.0 installer configures the redo logs.

Complete the following steps to configure the Oracle redo logs:

Step 1 Enter the following command to shut down the CTM server:

```
ctms-stop
```

Step 2 Enter the following commands:

```
/usr/bin/chown -R oracle:dba /db01_rd  
/usr/bin/chown -R oracle:dba /db02_rd
```

Step 3 Enter the following commands to run the configuration script, where *small*, *medium*, *large*, and *highend* represent the size of the network selected during the CTM installation:

```
cd <CTM_installation_directory>/bin  
./rd_log_config.sh { small | medium | large | highend }
```

The script shuts down the Oracle database, configures the redo logs, and restarts the Oracle database.

Step 4 Enter the following command to start the CTM server:

```
ctms-start
```
