



CHAPTER 2

Installing the CTM R7.2 Server and Oracle9i

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

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



Note

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



Note

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



Caution

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

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

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



Note

The C shell is assumed for all UNIX commands.

2.1.1 Installing Oracle9i

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

2.1.1.1 Setting the Environment for Installation

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

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

```
ls -l
```

Table 2-1 Disk Directories

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

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

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

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

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

a. Enter the following commands:

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

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

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

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

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

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

```
groupadd -g 3303 dba
```

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

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

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

```
passwd oracle
```

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

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

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

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

```
ls -laR
```



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

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

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

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

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



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

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

```
isainfo -kv
```

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



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

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

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

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

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

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

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

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

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

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

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

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

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

```
cd /
eject cdrom
```

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

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

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

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

2.1.1.1.1 Understanding the ctm_backup Directory

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

- CTM database
- Configuration files
- Database ARCHIVELOG files

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

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

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



Note

The C shell is assumed for all UNIX commands.

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

```
su - oracle
```



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

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

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

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

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

```
echo $DISPLAY
```

In the output, you should see:

```
<hostname_or_IP_address>:0.0
```

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

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

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

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

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

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

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

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

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

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

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

```
cd /tmp/
```



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

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

```
./orainstRoot.sh
```

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



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

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

Step 11 Enter the following command at the command prompt:

```
eject cdrom
```

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

Step 13 Minimize the terminal window.

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

- For 32-bit Oracle, enter:

```
/cdrom/orc19201_2
```

- For 64-bit Oracle, enter:

```
/cdrom/disk2
```

Click **OK**.

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

Step 16 Enter the following command at the command prompt:

```
eject cdrom
```

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

Step 18 Minimize the terminal window.

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

- For 32-bit Oracle, enter:

```
/cdrom/orc19201_3
```

- For 64-bit Oracle, enter:

```
/cdrom/disk3
```

Click **OK**.

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

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

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

```
./root.sh
```

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



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

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

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

Step 24 Enter the following command to eject the CD:

```
eject cdrom
```

2.1.1.3 Downloading the 9.2.0.6 Patch for Oracle9i

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

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

The output shows:

```
Oracle9i Patch                9.2.0.6.0
```



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

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



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Step 2 Click **Patches**.

Step 3 Click **Simple Search**.

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

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

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

Step 6 Click **Go**.

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

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

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

- For 32-bit Oracle, enter:

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

- For 64-bit Oracle, enter:

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

2.1.1.4 Installing the 9.2.0.6 Patch for Oracle9i



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

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

```
su - oracle
```

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

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

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

```
echo $DISPLAY
```

In the output, you should see:

```
<hostname_or_IP_address>:0.0
```

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

- For 32-bit Oracle, enter:

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

- For 64-bit Oracle, enter:

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



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

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

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

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

Step 7 Click **Next**.

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

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

- For 32-bit Oracle, enter:

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

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

- For 64-bit Oracle, enter:

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

2.1.1.5 Downloading the Oracle Patch Installer



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

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



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Step 2 Click **Patches**.

Step 3 Click **Simple Search**.

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

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

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

Step 6 Click **Go**.

Step 7 Click **Download**.

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



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

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

Step 10 Click **Download**.

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

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

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

2.1.1.6 Installing and Applying Additional Oracle Patches

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

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



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Step 2 Click **Patches**.

Step 3 Click **Simple Search**.

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

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

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

Step 6 Click **Go**.

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

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

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



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

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

Step 10 Click **Simple Search**.

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

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

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

Step 13 Click **Go**.

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

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

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

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

Step 17 Click **Simple Search**.

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

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

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



---

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

---

## 2.1.2 Updating the System Parameters



---

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

---

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

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

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

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

```
echo $DISPLAY
```

In the output, you should see:

```
<hostname_or_IP_address>:0.0
```

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

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

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



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

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

Then, continue updating the system parameters.



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

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

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

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



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



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



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



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

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

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

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

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

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

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



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

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



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

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

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

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

```
init 6
```




---

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

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




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

---

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

---

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

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

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

```
echo $DISPLAY
```

In the output, you should see:

```
<hostname_or_IP_address>:0.0
```

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

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

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




---

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

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

Then, continue updating the system parameters.

---




---

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

---

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

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

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

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

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

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



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



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



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



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

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

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

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

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

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

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



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




---

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

---




---

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

---

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




---

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

---

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




---

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

---

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

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

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



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



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



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

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

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

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

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

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

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

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

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

**Caution**

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

---

```
init 6
```

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

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

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

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

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

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

**Note**

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

---

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

```
cd /
eject cdrom
```

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

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

You should see the following output:

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



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

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

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



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

### 2.2.1 Installing Oracle9i on the CTM Database Workstation

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

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

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

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

```
ls -l
```

**Table 2-2** Disk Directories

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

Table 2-2 Disk Directories (continued)

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

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

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

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

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

```
groupadd -g 3303 dba
```

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

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

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

```
passwd oracle
```

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

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

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

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

```
ls -laR
```



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

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

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

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

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




---

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

---

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

```
isainfo -kv
```

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




---

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

---

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

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

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

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

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

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

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

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

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

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

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

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

```
cd /
eject cdrom
```

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

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

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

```
vi /.cshrc
```

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

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

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

---

## 2.2.1.2 Installing Oracle9i on the CTM Database Workstation



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

---

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

---

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

```
su - oracle
```



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

---

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

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

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

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

```
echo $DISPLAY
```

In the output, you should see:

```
<hostname_or_IP_address>:0.0
```

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

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

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

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

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

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

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

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

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

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

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

```
cd /tmp/
```



---

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

---

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

```
./orainstRoot.sh
```

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



---

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

---

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

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

```
eject cdrom
```

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

**Step 13** Minimize the terminal window.

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

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

Click **OK**.

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

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

```
eject cdrom
```

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

**Step 18** Minimize the terminal window.

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

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

Click **OK**.

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

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

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

```
./root.sh
```

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



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

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

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

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

```
eject cdrom
```

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

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

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

The output shows:

```
Oracle9i Patch 9.2.0.6.0
```

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



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

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

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

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

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

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

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

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

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

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

- For 32-bit Oracle, enter:

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

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

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



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

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

```
su - oracle
```

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

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

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

```
echo $DISPLAY
```

In the output, you should see:

```
<hostname_or_IP_address>:0.0
```

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

- For 32-bit Oracle, enter:

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

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



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

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

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

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

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

- For 32-bit Oracle, enter:

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

- For 64-bit Oracle, enter:

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

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



**Note**

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



**Note**

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

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



**Note**

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

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

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

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



**Note**

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

- Step 9** In the Patch 2617419 window, go to the Platform or Language field and choose **Generic Platform** (the default).
- Step 10** Click **Download**.
- Step 11** Save the patch to the /oraclesw9i/product/9.2 directory.
- Step 12** Enter the following commands to change the patch ownership and unzip the patch:

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

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

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

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



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- Step 2** Click **Patches**.
- Step 3** Click **Simple Search**.
- Step 4** In the Search by Patch Number field, enter **2733910**.
- Step 5** In the Platform or Language field, choose one of the following options, depending on your Oracle version:
- **Solaris Operating System (SPARC 32-bit)**
  - **Solaris Operating System (SPARC 64-bit)**
- Step 6** Click **Go**.
- Step 7** Click **Download**. For 32-bit Oracle, download **p2733910\_9206\_SOLARIS.zip**. For 64-bit Oracle, download **p2733910\_9206\_SOLARIS64.zip**.
- Step 8** As the oracle user, save the patch to the /oraclesw9i directory and enter the following commands to unzip the .zip file:

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



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

- Step 9** In the MetaLink window, click **Patches**.
- Step 10** Click **Simple Search**.
- Step 11** In the Search by Patch Number field, enter **4067938**.
- Step 12** In the Platform or Language field, choose one of the following options, depending on your Oracle version:
- **Solaris Operating System (SPARC 32-bit)**

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

- For 32-bit, enter:

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

- For 64-bit, enter:

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

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

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

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

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

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



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

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

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

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

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

```
echo $DISPLAY
```

In the output, you should see:

```
<hostname_or_IP_address>:0.0
```

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

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

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



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

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

Then, continue updating the system parameters.



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

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

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

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

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

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

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

**Note**

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

**Note**

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

**Note**

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

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

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

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

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

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

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

**Note**

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

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



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

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



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

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

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

```
init 6
```

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

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

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

## 2.2.3 Installing the CTM R7.2 Database



**Note**

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

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

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

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

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

```
echo $DISPLAY
```

In the output, you should see:

```
<hostname_or_IP_address>:0.0
```

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

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

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

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

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



**Note**

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

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



**Caution**

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

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



**Note**

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

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

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



**Note**

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

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

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



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

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

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

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

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

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

```
ls -l
```

**Table 2-3** Disk Directories

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

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

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

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

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

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

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

```
groupadd -g 3303 dba
```

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

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

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

```
passwd oracle
```

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

```
cd /
eject cdrom
```

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

```
su - oracle
```




---

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

---

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

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

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

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

```
echo $DISPLAY
```

In the output, you should see:

```
<hostname_or_IP_address>:0.0
```

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

```
cd /cdrom/cdrom0
```

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

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

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

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

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

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

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

```
cd /tmp
```



---

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

---

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

```
./orainstRoot.sh
```

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



---

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

---

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

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

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

```
./root.sh
```

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

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

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

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

```
cd /
eject cdrom
```

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


**Note**

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


**Note**

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

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


**Note**

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

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

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

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

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

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

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

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


**Note**

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

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

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

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

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

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

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


**Note**

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

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



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

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

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

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

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

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

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

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

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

- For 32-bit Oracle, enter:

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

- For 64-bit Oracle, enter:

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

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



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

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

```
su - oracle
```

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

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

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

```
echo $DISPLAY
```

In the output, you should see:

```
<hostname_or_IP_address>:0.0
```

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

- For 32-bit Oracle, enter:

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

- For 64-bit Oracle, enter:

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




---

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

---

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

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

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

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

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

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

- For 32-bit Oracle, enter:

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

- For 64-bit Oracle, enter:

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

---

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

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

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




---

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---

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

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

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

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



---

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

---

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

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

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


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


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

2.2.4.5 Setting Up the UNIX Environment on the CTM Server Workstation

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



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

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

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



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

---

You should receive the following reply:

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

---

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

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

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

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

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

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

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

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

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



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

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

Then, continue updating the system parameters.

Step 3 Click **Next** at the Introduction screen.

Step 4 At the License Agreement screen, read the license agreement and click the **I accept the terms of the license agreement** radio button. Click **Next**.

Step 5 At the Installation Options screen, choose **New installation**; then, click **Next**.

Step 6 At the Select Products to Install screen, check the **Cisco Transport Manager server** check box. The Web Server check box is selected by default. Click **Next**.

Step 7 At the Select Modules to Install screen, select individual modules or select all; then, click **Next**.

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



Note

- The MDS 9000 module is a common module that will be installed with any selection.
- Additional individual modules can be installed after the original module installation is complete. For installation of additional modules, the server will need to be installed again but the database does not need to be recreated.
- The Cisco 7600 module is installed only if the `/etc/resolv.conf` file is present. If the file is missing, the installation displays an error message and quits.

Step 8 At the Main Options screen, check only the **Check system settings** check box; then, click **Next**.



Caution

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

Step 9 At the Select Network Configuration screen, specify the size of your network; then, click **Next**.



Note

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

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

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

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



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

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

```
init 6
```

2.2.6 Installing the CTM 7.2 Server on the CTM Server Workstation

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

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

a. Enter the following commands:

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

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

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

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

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

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

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

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

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

Step 3 Click **Next** at the Introduction screen.

Step 4 At the License Agreement screen, read the license agreement and click the **I accept the terms of the license agreement** radio button. Click **Next**.

Step 5 At the Installation Options screen, choose **New installation**; then, click **Next**.

Step 6 At the Select Products to Install screen, check the **Cisco Transport Manager server** check box. The Web Server check box is selected by default. Click **Next**.

Step 7 At the CTM Group Information & Sudo Installation screen, confirm the name of the UNIX group to which you want to assign administrator privileges. Check or uncheck the **Install CTM Sudo** check box. Click **Next**.

Step 8 At the FTP Information screen, complete the following substeps to configure an FTP account for ONS 15216 EDFA3 software download operations:

a. Enter the following information:

- FTP username
- FTP user password
- Confirm FTP user password
- FTP directory

- b. Check or uncheck the **Create new FTP account** check box. If checked, the FTP user will be created automatically on the CTM server workstation by the install script. If unchecked, it is assumed that an FTP user already exists on the CTM server workstation.
- c. Click **Next**.

Step 9 At the Main Options screen, check the **Install CTM server** check box; then, click **Next**.



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

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

Step 11 At the Select Network Configuration screen, specify the size of your network; then, click **Next**.



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

Step 12 At the Configure FTP screen, complete the following substeps if you want to enable TFTP for the ONS 15216 EDFA2, ONS 15501, ONS 15530, and ONS 15540:

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

Step 13 At the Specify CTM Database to Connect to screen, enter the IP address or hostname of the workstation where Oracle9i is installed; then, click **Next**.



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



Note If you entered a hostname, the setup program automatically translates the hostname to a physical IP address and prompts you to confirm the address. Click **Yes**.

Step 14 At the Destination Folder screen, specify where you want to install the CTM server. The default directory is /opt/CiscoTransportManagerServer. You can click **Change** to choose a different destination. After you specify your destination, click **Next**.



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



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

**Caution**

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

- Step 15** The Pre-Installation Summary screen shows the items that will be installed. Click **Install**.
- Step 16** At the Insert New Media screen, complete the following substeps:
- Eject the CTM Server Disk 1 installation CD, insert the CTM Server Disk 2 installation CD, and click **Browse**.
 - The Select a Folder dialog box opens. Double-click **cdrom**; then, single-click **cdrom0**. The filename text box now reads `/cdrom/cdrom0`.
 - In the Select a Folder dialog box, click **Select**.
 - In the Insert New Media screen, click **OK**.
- Step 17** The Web Server Installation Summary screen summarizes the results of the web server installation. Click **Next**.
- Step 18** The Install Complete screen summarizes the results of the installation. Click **Done**.
- Step 19** Enter the following command to reboot the system. The CTM server starts automatically after rebooting:

**Caution**

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

```
init 6
```

- Step 20** To verify that the CTM R7.2 server is running, enter the **showctm** command after the server reboots. The `showctm` command displays the CTM server version running as 7.2, followed by the build number. In the output, you will see two instances of “CTM Server,” “SnmpTrapService,” “SMService,” and “Apache Web Server.” This indicates that the CTM server is running. You should also see NE-specific processes, depending on your network. You might also see CTM GateWay/CORBA and CTM GateWay/TL1 instances.
- Step 21** If the following error is returned on the command prompt for the web server:

```
(125)Address already in use: make_sock: could not bind to address <IP_address> no listening sockets available, shutting down
```

Complete the following substeps:

- Enter the following command on the server workstation; then, kill the processes listed:


```
ps -ef | grep httpd | grep CiscoTransportManagerServer | grep -v grep
```
- Enter the following command to shut down the CTM server:


```
ctms-stop
```
- Restart the CTM server (this restarts the latest installed web server).

2.2.7 Copying the Client Upgrade Files After the CTM Server Installation

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

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

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


Note

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

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

```
cd /
eject cdrom
```

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

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

You should see the following output:

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


Note

This operation will occupy 800 MB of disk space.

2.3 Setting Up Sudo

As described in [1.4.1 Overview of Sudo Commands, page 1-18](#), the CTM server installation includes installation of the UNIX sudo command. This command allows nonroot users who belong to the UNIX group specified during installation to run certain CTM administrative commands. For security reasons, the installed sudo command **setuid** is disabled by default. You must enable setuid on the sudo command in order for it to work.

**Note**

Sudo is often available in the standard UNIX environment established by the CTM server system administrator. If so, it is not necessary to use the sudo bundled with CTM or follow this procedure to enable it. Instead, you can use the sudo established by the system administrator.

To enable setuid:

Step 1 Log into the CTM server as the root user and enter the following command:

```
chmod 4111 /opt/CiscoTransportManagerServer/admin/sudo/sudo
```

Step 2 Verify that users have /opt/CiscoTransportManagerServer/admin/sudo in their path environment, so that they can execute sudo without having to specify the full path.
