Upgrading to Release 2.2.1

This chapter describes the upgrade procedure for the CDSM, VVIM, and CDS servers. This chapter covers the following topics:

- Upgrading the Software on a CDSM or VVIM, page 3-1
- Upgrading a TV CDS Server to Release 2.2.1, page 3-3
- Upgrading a New CDS Server to Release 2.2.1, page 3-14
- Imaging a CDS Server with 64-Bit OS using a DVD, page 3-16

⚠
Caution   Before proceeding with the software upgrade, review Chapter 2, "Overview of Upgrading and Downgrading the TV CDS Software" for information on getting the Release 2.2.1 software files, prerequisites for the software upgrade, the upgrade sequence for the devices in the CDS, and information about the upgrade and downgrade kits.

Upgrading the Software on a CDSM or VVIM

If the VVI or CDS has redundant VVIMs or CDSMs, upgrade the secondary CDSM or VVIM first, then upgrade the primary.

The primary and secondary CDSM (or VVIM) can be determined by entering the **ifconfig -a | more** command. The primary has the following output:

```
eth0:1    Link encap:Ethernet HWaddr 00:11:00:00:00:00
          inet addr:172.22.98.54 Bcast:172.22.99.255 Mask:255.255.254.0
          UP BROADCAST RUNNING MULTICAST MTU:1500 Metric:1
          Memory:b8820000-b8840000
```

The primary CDSM has device eth0:1. The secondary CDSM does not have the virtual IP address as up.

✎
Note   Upgrading a CDSM requires that the CDS-TV-2.2.1.iso and cdsinstall software files have been downloaded and copied to the CDSM. The cdsinstall script has changed for Release 2.2.1. Make sure you download the cdsinstall script from Cisco and copy it to /root directory on each CDSM and VVIM before upgrading them. Use the scp command to copy the software files. For example, if the remote server that you downloaded the software files to has an IP address of 172.22.97.109 and the files are stored in the CDSdownloads directory, the following commands are used:

```
# scp -p 172.22.97.109:/CDSdownloads/CDS-TV.2.2.1.iso /
# scp -p 172.22.97.109:/CDSdownloads/cdsinstall /root
```

Note Before upgrading the CDSMs, review the information in the "Introduction" section on page 2-1. For information on downloading the software files, see the "Getting the Cisco TV CDS Software Files for Release 2.2.1" section on page 2-4.

To upgrade the software on a CDSM or VVIM, do the following:

Step 1 Log in to the secondary CDSM as *root*.

Step 2 Back up the configuration and database files on the existing CDSM. For information on this procedure, see the "Performing a Backup on the CDSM" section on page 5-16.

Step 3 Run the cdsinstall script to upgrade the ISO image to Release 2.2.1.

```
# /root
# ./cdsinstall /CDS-TV-2.2.1.iso
Select Deployment Type (ctrl-c to quit):
  1) CDSM
1
CDSM Selected
Mounting CDS-TV-PROD.iso at /mnt/cdrom
Running inst.sh for isa
Killing running processes: statsd
Un-taring isa-base.tgz
Calling forprod.sh
Removing RTSP-specific files
Installing ISA-specific files (existing files backed up to .file)
ISA installation complete

Starting fixperms.sh
   Loading File List
   Processing File List
Ending fixperms.sh
Calling inst.sh for cdsm
Killing running processes: statsd

Starting cdsupgrade.sh
   Current SW version to backup is cdstv-2.1.3-es4-b4
   Processing File Lists
      /arroyo/image/backup/cdstv-2.1.3-es4-b4/files/common-files: does not exist
      /arroyo/image/backup/cdstv-2.1.3-es4-b4/files/isa-files: does not exist
      /arroyo/image/backup/cdstv-2.1.3-es4-b4/files/rtsp-files: does not exist
   Processing /arroyo/image/backup/cdstv-2.1.3-es4-b4/files/cdsm-files
Ending cdsupgrade.sh
Un-taring cdsm-base.tgz
Calling forprod.sh
Installing CDSM-specific files (existing files backed up to .file)
Upgrading CmdTool2 if necessary

Set Write Policy to WriteBack on Adapter 0, VD 0 (target id: 0) success
Set Write Policy to WriteBack on Adapter 0, VD 1 (target id: 1) success
Set Write Policy to WriteBack on Adapter 0, VD 2 (target id: 2) success
Set Write Policy to WriteBack on Adapter 0, VD 3 (target id: 3) success
Set Write Policy to WriteBack on Adapter 0, VD 4 (target id: 4) success
Set Write Policy to WriteBack on Adapter 0, VD 5 (target id: 5) success
Set Write Policy to WriteBack on Adapter 0, VD 6 (target id: 6) success

Set Write Cache OK if bad BBU on Adapter 0, VD 0 (target id: 0) success
Set Write Cache OK if bad BBU on Adapter 0, VD 1 (target id: 1) success
Set Write Cache OK if bad BBU on Adapter 0, VD 2 (target id: 2) success
Set Write Cache OK if bad BBU on Adapter 0, VD 3 (target id: 3) success
Set Write Cache OK if bad BBU on Adapter 0, VD 4 (target id: 4) success
```

```
                    Set Write Cache OK if bad BBU on Adapter 0, VD 5 (target id: 5) success
                    Set Write Cache OK if bad BBU on Adapter 0, VD 6 (target id: 6) success

                    Set Disk Cache Policy to Enabled on Adapter 0, VD 0 (target id: 0) success
                    Set Disk Cache Policy to Enabled on Adapter 0, VD 1 (target id: 1) success
                    Set Disk Cache Policy to Enabled on Adapter 0, VD 2 (target id: 2) success
                    Set Disk Cache Policy to Enabled on Adapter 0, VD 3 (target id: 3) success
                    Set Disk Cache Policy to Enabled on Adapter 0, VD 4 (target id: 4) success
                    Set Disk Cache Policy to Enabled on Adapter 0, VD 5 (target id: 5) success
                    Set Disk Cache Policy to Enabled on Adapter 0, VD 6 (target id: 6) success
                    CDSM installation complete

                    Starting fixperms.sh
                       Loading File List
                       Processing File List
                    Ending fixperms.sh
                    Unmounting /mnt/cdrom
                    cdsinstall completed. Please reboot the device.
```

Step 4   Reboot the CDSM.

```
# reboot
```

Step 5   To finalize the software upgrade, log in to the CDSM GUI as a user with Engineering access level. The CDSM Setup page is displayed. In the **Deployed CServer Version** drop-down list, choose **2.2.x**. Verify the other settings on the CDSM Setup page and click **Submit**.

Step 6   Upgrade the primary CDSM (Step 1 to Step 5), if applicable.

Upgrading a TV CDS Server to Release 2.2.1

Note   Before upgrading the CDS servers, review the information in Chapter 2, "Overview of Upgrading and Downgrading the TV CDS Software."

Caution   If you are upgrading a Release 2.2.0 Beta or early field trial (EFT) CDS server, do not run the upgrade script again. All that is required is to install the CDS-TV-2.2.1.iso software image file. For Vaults, Streamers, and ISVs, offload the servers before installing the software image file, and disable the offload afterwards.

To upgrade a CDS server, do the following:

Step 1   Verify that the CDS server has the necessary space and copy the upgrade kit to it.

```
# ssh <IP_addr_CDS_server> -l root
# df –k /root
# scp -p <remote ip>:<remote location of kit> /root
```

Step 2   Verify the MD5 checksum value.

```
# md5sum cdstv-2.2.1-upgrade-kit.sh
```

The value provided should be compared against the value shown on the Cisco software download website. If they do not match, remove the file and download it again.

Step 3   Run the self-extracting file to extract the contents.

```
# ./cdstv-2.2.1-upgrade-kit.sh
```

There should be no errors during the extraction of the files in the kit. After extracting the kit, verify that there are no errors before proceeding. If an error message is displayed or "cdstv-os-5.1-x86_64.iso: OK" is not displayed as the last line, the kit may have had errors in downloading. Download and extract the kit again. See the "Upgrade Kit Content" section on page 2-10 for information on the content of the kit.

Step 4   Change directory to the cds_remote_upgrade directory and run the cds_remote_iso_install script with the --check option. See the "cds_remote_iso_install Details" section on page 2-12 for more information.

```
# cd cds_remote_upgrade
# ./cds_remote_iso_install --check
```

If all prerequisite checks pass, the server is ready to be brought offline to perform the upgrade.

> ✎
> **Note**   The Vaults, Streamers, and ISVs must be offloaded. There is no requirement to offload the Caching Nodes for a software upgrade.

Step 5   Using the CDSM GUI, offload the server that you want to upgrade.

   a.   Click **Maintain > Servers > Server Offload**. The Server Offload page is displayed.

   b.   From the **Server IP** drop-down list, choose the IP address or nickname of the server and click **Display**.

   c.   Choose **Enable** and click **Submit**.

Step 6   Log into the server as *root*.

Step 7   Ensure that the server is fully offloaded.

   a.   Verify that the TRICKLE_DOWN file exists in the /usr/tmp directory.

   b.   Check the protocoltiming log.

```
tail -f /arroyo/log/protocoltiming.log.20090917
```

You should see the following:

```
Remote vaults 2 caches 0 streamers 1, Adapters fill 4 (1024) stream 4 (1316)
CPU Receive: Ave0+0+0 Cur 0+0+0, Network: 0, Poll: 34 (0 scaled)
Warning: Server is going OFFLINE
```

   c.   For a Streamer, make sure that all the active streams have moved over to the other Streamers. Check the Active Streams line in the protocoltiming log.

Step 8   Run the cds_remote_iso_install script with the --upgrade option, and vnc-listener sub-option if being used.

Following are some user prompts and operation to be aware of when running the upgrade script:

   • If the vnc-listener sub-option is not used, the script prompts for the listener. If a listener is not available, then press **Enter** to continue the upgrade.

> ✎
> **Note**   Not using a listener may limit the ability to debug issues that might occur during the upgrade process.

   • Prerequisite checks are performed to ensure the server can be upgraded.

- If the TV CDS processes are still running when the upgrade script runs, you are prompted to stop the processes and reboot the server. This is a required step to perform a backup of the configuration and database files on the server. After the server reboots, run the upgrade script again.

- Before the server reboots, /etc/rc.d/rc.local is moved to /etc/rc.d/upgrade.rc.local. When the CDS server reboots, there is no rc.local file, so the CDS processes are not started.

- When the upgrade script is run again, prerequisite checks are performed again and a backup is created. The **scp** command is used to copy the backup to a remote server. You are prompted to enter the following remote server information:

  - IP address of the remote server

  - Remote directory location

  - User for the scp operation

- After the backup is copied to the remote server, you are prompted one last time to choose to perform the upgrade. If yes is provided, power must be maintained to the system until the upgrade is complete. The upgrade is complete when a login prompt is provided on the serial console.

Upgrade Script Output—First-Time Run

```
# ./cds_remote_iso_install --upgrade

*********************************************************************
******          WARNING     WARNING     WARNING          ******
*********************************************************************
This program will perform an OS upgrade on this CDS server.
The current configuration will be backed up and stored on the
/boot_cds partition. This backup will be used to restore the
the system.

This program will request the following information:
 - Location of OS ISO for upgrade (if default value is not used)
 - Serial console baud rate (if default value is not used)
 - Details for VNC listener
 - Details for saving backup on a remote server

This program will check the following:
 - CDS application running state
 - Connectivity to the vnc listener (If vnc option is requested)
 - Needed files, disk space, and system integrity

Details of the upgrade process will be logged in:
    /var/log/cds/cds_upgrade_host.log

Continue the upgrade procedure? [yes/no]: yes

VNC Listener IP[:Port]? []:

Upgrade version: cdstv-2.2.1
Script mode: --upgrade
Hardware type: Merrimack
ISO location: /root/cds_remote_upgrade/cdstv-os-5.1-x86_64.iso
Baud rate: 115200
Script running directory: /root/cds_remote_upgrade
Command line options: --upgrade
Doing prerequisite checking... [DONE]
  ISO image SHA1 checksum 7e0977dc5ad93c13593f165315d5bb98db840da5 matches
7e0977dc5ad93c13593f165315d5bb98db840da5 in iso.sha1sum.
  Created directory /mnt/cdrom.
  Mounted /root/cds_remote_upgrade/cdstv-os-5.1-x86_64.iso on /mnt/cdrom.
  Server has offline enabled
```

```
    CDSTV application processes " avsdb statsd cserver" are running


    /dev/hda1 is mounted on /boot.
    /boot is 21% used.
    /dev/hda2 is mounted on /.
    / has 4798544 KB space available, more than 1000000 KB required.
    /dev/sda2 is mounted on /home.
    /dev/sda3 is mounted on /var.
    /dev/sda6 is mounted on /arroyo.
    /dev/sda1 is mounted on /arroyo/db.
    ***WARNING: /dev/sda7 does not exist, it needs to be created from /dev/sda6.
    /dev/sda6 has 37150281KB total disk space, more than 8000000KB required to create new
/dev/sda7.
    Stored chkconfig --list output to chkconfig-list.output.
    Copied chkconfig-list.output to /root/chkconfig-list.output.
    Copied /etc/rc.d/rc.local to /etc/rc.d/upgrade.rc.local.
    Found CDS version cdstv-2.1.3-b30 to backup
    Found restore.list.
    Found backup.list.
    Detailed size of backup files list:
      /home/isa  197952KB
      /etc  31432KB
      /root/chkconfig-list.output  4KB
      /arroyo/test  48KB
      /arroyo/image/tags  4KB
      /usr/local/share/snmp/snmpd.conf  4KB
      /var/spool/cron  12KB
      /var/net-snmp  8KB
    Total available space on /arroyo/db: 46095492 KB,
    Space needed for /arroyo/db/DATADIR: 25120 KB,
    Space needed for /arroyo/log: 1860 KB,
    Total estimated space required for all archives is: 256444 KB,
    Excluded space of preexisting backups: 0 KB,
    Calculated space needed for backup: 85481 KB.
    There is enough space for backup.

*******   NOTICE  *********

CDS-TV processes are running. A reboot is required to stop these processes.
Note: If the system is active (i.e. "offline disabled" state), the reboot may disrupt live
services.

After the reboot this program will need to be manually rerun to continue.

Reboot this system now to stop the CDS-TV processes? [yes/no]: yes

 ********** NOTICE *********
The /etc/rc.d/rc.local has been moved so the CDS-TV application processes will not start
after reboot.

Cleaning up... [DONE]
  /mnt/cdrom is unmounted.


Logfile at: /var/log/cds/cds_upgrade_host.log.
It's also available at boot_cds/upgrade/cds_upgrade_host.log after upgrade completed.
The system is going to reboot in 5 seconds...
INIT: Sending processes the TERM signal
… details omitted …
```

Upgrade Script Output—Second-Time Run

```
# ./cds_remote_iso_install --upgrade
*********************************************************************
******          WARNING       WARNING       WARNING          ******
*********************************************************************
This program will perform an OS upgrade on this CDS server.
The current configuration will be backed up and stored on the
/boot_cds partition. This backup will be used to restore the
the system.

This program will request the following information:
 - Location of OS ISO for upgrade (if default value is not used)
 - Serial console baud rate (if default value is not used)
 - Details for VNC listener
 - Details for saving backup on a remote server

This program will check the following:
 - CDS application running state
 - Connectivity to the vnc listener (If vnc option is requested)
 - Needed files, disk space, and system integrity

Details of the upgrade process will be logged in:
    /var/log/cds/cds_upgrade_host.log

Continue the upgrade procedure? [yes/no]: yes

VNC Listener IP[:Port]? []: 1.1.1.1:5500

Upgrade version: cdstv-2.2.1
Script mode: --upgrade
Hardware type: Merrimack
ISO location: /root/cds_remote_upgrade/cdstv-os-5.1-x86_64.iso
Baud rate: 115200
Script running directory: /root/cds_remote_upgrade
Command line options: --upgrade
VNC Listener IP[:Port]: 1.1.1.1:5500
Doing prerequisite checking... [DONE]
  VNC Listener 1.1.1.1:5500 is reachable.
  ISO image SHA1 checksum 7e0977dc5ad93c13593f165315d5bb98db840da5 matches
7e0977dc5ad93c13593f165315d5bb98db840da5 in iso.sha1sum.
  Created directory /mnt/cdrom.
  Mounted /root/cds_remote_upgrade/cdstv-os-5.1-x86_64.iso on /mnt/cdrom.
  CDSTV application processes are not running.
  /dev/hda1 is mounted on /boot.
  /boot is 21% used.
  /dev/hda2 is mounted on /.
  / has 4795500 KB space available, more than 1000000 KB required.
  /dev/sda2 is mounted on /home.
  /dev/sda3 is mounted on /var.
  /dev/sda6 is mounted on /arroyo.
  /dev/sda1 is mounted on /arroyo/db.
  ***WARNING: /dev/sda7 does not exist, it needs to be created from /dev/sda6.
  /dev/sda6 has 37150281KB total disk space, more than 8000000KB required to create new
/dev/sda7.
  Stored chkconfig --list output to chkconfig-list.output.
  Copied chkconfig-list.output to /root/chkconfig-list.output.
  Found CDS version cdstv-2.1.3-b30 to backup
  Found restore.list.
  Found backup.list.
  Detailed size of backup files list:
    /home/isa  197952KB
    /etc  31428KB
    /root/chkconfig-list.output  4KB
```

```
      /arroyo/test  48KB
      /arroyo/image/tags  4KB
      /usr/local/share/snmp/snmpd.conf  4KB
      /var/spool/cron  12KB
      /var/net-snmp  8KB
   Total available space on /arroyo/db: 46095308 KB,
   Space needed for /arroyo/db/DATADIR: 25304 KB,
   Space needed for /arroyo/log: 1952 KB,
   Total estimated space required for all archives is: 256716 KB,
   Excluded space of preexisting backups: 0 KB,
   Calculated space needed for backup: 85572 KB.
   There is enough space for backup.

Doing backup... [DONE]
   Successfully created backup archive
/arroyo/db/host_cdstv-2.1.3-b1_20100319-144833_backup.tgz.
   Successfully created backup db archive
/arroyo/db/host_cdstv-2.1.3-b1_20100319-144833_backup_db.tgz.
   Successfully created backup log archive
/arroyo/db/host_cdstv-2.1.3-b1_20100319-144833_backup_log.tgz.

Backup archive /arroyo/db/host_cdstv-2.1.3-b1_20100319-144833_backup.tgz is complete.

Backup db archive /arroyo/db/host_cdstv-2.1.3-b1_20100319-144833_backup_db.tgz is
complete.

Backup log archive /arroyo/db/host_cdstv-2.1.3-b1_20100319-144833_backup_log.tgz is
complete.

Would you like to upload backup archives to a remote server? [yes/no]: yes
Remote SSH server address:192.168.28.25

Remote SSH server path: /arroyo/backup

Username: root

scp /arroyo/db/host_cdstv-2.1.3-b1_20100319-144833_backup*.tgz root@1.1.1.1:/arroyo/backup
root@1.1.1.1's password:
Successfully copied /arroyo/db/host_cdstv-2.1.3-b1_20100319-144833_backup.tgz to
192.168.28.25
Successfully copied /arroyo/db/host_cdstv-2.1.3-b1_20100319-144833_backup_db.tgz to
192.168.28.25
Successfully copied /arroyo/db/host_cdstv-2.1.3-b1_20100319-144833_backup_log.tgz to
192.168.28.25

 ********* WARNING *********
All prerequisite checking has completed and the upgrade is ready
to continue. In the next section of this upgrade, the OS will be
reloaded and power must be maintained to the system. This is
the last chance to manually terminate this upgrade.
Would you like to continue? [yes/no]: yes

Creating upgrade partition for remote installation... [DONE]
   Located hard drive sda.
   Located /dev/sda6 on /dev/sda.
   ***ERROR: Partition /dev/sda7 does not exist on /dev/sda.
   /dev/sda6 has 37150281KB total disk space, more than 8000000KB required to create new
/dev/sda7.
   Unmounted /arroyo/db.
   Unmounted /arroyo.
   Detected /dev/sda6 has label /arroyo.
   Deleted /dev/sda6.
   Created /dev/sda6 starting from 103GB to 136GB.
   Created ext3 for /dev/sda6.
```

```
  Restored label /arroyo for /dev/sda6.
  Created /dev/sda7 starting from 136GB to 141GB.
  Created ext3 for /dev/sda7.
  Created directory /boot_cds.
  Mounted /dev/sda7 on /boot_cds.
  Created directory /boot_cds/upgrade.
  Mounted /dev/sda6 on /arroyo.
  Created directory /arroyo/db.
  Mounted /dev/sda1 on /arroyo/db.

Copying install ISO Image /root/cds_remote_upgrade/cdstv-os-5.1-x86_64.iso to
/boot_cds/upgrade... [DONE]
  Copied /root/cds_remote_upgrade/cdstv-os-5.1-x86_64.iso to /boot_cds/upgrade/.

Removing other ISO in /boot_cds/upgrade (other than cdstv-os-5.1-x86_64.iso)... [DONE]

Copying upgrade files to upgrade directory /boot_cds/upgrade... [DONE]
  Copied ks_remote_template.cfg to /boot_cds/upgrade/ks_remote_template.cfg.
  Copied cds_remote_iso_install to /boot_cds/upgrade/cds_remote_iso_install.
  Copied cdsmodify.sh to /boot_cds/upgrade/cdsmodify.sh.
  Copied backup.list to /boot_cds/upgrade/backup.list.
  Copied restore.list to boot_cds/upgrade/restore.list.
  Copied cdsinstall to /boot_cds/upgrade/cdsinstall.
  Copied chkconfig-list.output to /boot_cds/upgrade/chkconfig-list.output.
  Copied /mnt/cdrom/isolinux/vmlinuz to /boot/vmlinuz-cds.
  Copied /mnt/cdrom/isolinux/initrd.img to /boot/initrd-cds.img.
  Copied restore_cfg.sh to /boot_cds/upgrade/restore_cfg.sh.
  Copied backup_cfg.sh to /boot_cds/upgrade/backup_cfg.sh.
  Copied cds_upg_report.sh to boot_cds/upgrade/cds_upg_report.sh.

Generating stage1 kickstart for selected upgrade options... [DONE]

Modifying grub.conf for selected upgrade options... [DONE]

Copying upgrade files from /boot_cds/upgrade to /upgrade... [DONE]
  Created directory /upgrade.
  Copied /boot_cds/upgradecdstv-os-5.1-x86_64.iso to /upgrade/cdstv-os-5.1-x86_64.iso.
  Copied //upgrade/cdsmodify.sh to /upgrade/cdsmodify.sh.
  Copied boot_cds/upgrade/CDS_UPGRADE_INFO to /upgrade/CDS_UPGRADE_INFO.
  Copied /boot_cds/upgrade/ks_upgrade_host_stage1.cfg to
/upgrade/ks_upgrade_host_stage1.cfg.

Removing unnecessary backup files... [DONE]
  Removed /root/CDS_BACKUP_INFO


Cleaning up... [DONE]
  /mnt/cdrom is unmounted.

Logfile at: /var/log/cds/cds_upgrade_host.log.
It's also available at /boot_cds/upgrade/cds_upgrade_host.log after upgrade completed.
The system is going to reboot in 5 seconds...
INIT: Switching to runlevel: 6
INIT: Sending processes the TERM signal
Stopping HAL daemon: [ OK ]
Stopping atd: [ OK ]
…output omitted…
```

The server reboots three times to perform different stages of the upgrade. If a VNC listener is used, on the second reboot, a new window is provided to the user with the status of the stage 2 operations taking place. This includes formatting the system progress bar, specific files that are being installed.

The details provided to the serial port console when the VNC Listener is used are the following:

```
Running anaconda, the Red Hat Enterprise Linux Server system installer - please wait...
Probing for video card:   ATI Technologies Inc ES1000
Starting VNC...


WARNING!!! VNC server running with NO PASSWORD!
You can use the vncpassword=<password> boot option
if you would like to secure the server.


The VNC server is now running.
Attempting to connect to vnc client on host 1.1.1.1...
Connected!
Press <enter> for a shell
Starting graphical installation...
XKB extension not present on:1
```

If a VNC listener is not used during the upgrade, details similar to the following are provided to the serial console:

```
Welcome to Red Hat Enterprise Linux Server


        +--------------------+ Formatting +--------------------+
        |                                                      |
        | Formatting /home file system...                      |
        |                                                      |
        |                        98%                           |
        |                                                      |
        +------------------------------------------------------+

  <Tab>/<Alt-Tab> between elements   |   <Space> selects   |   <F12> next screen

Welcome to Red Hat Enterprise Linux Server


        +-----------------+ Package Installation +-----------------+
        |                                                          |
        |   Name   : kernel-2.6.18-53.el5-x86_64                   |
        |   Size   : 77104k                                        |
        |   Summary: The Linux kernel (the core of the Linux       |
        |            operating system)                             |
        |                                                          |
        |                        100%                              |
        |                                                          |
        |                    Packages      Bytes       Time        |
        |    Total    :          211       470M     0:01:48        |
        |    Completed:          202       375M     0:01:26        |
        |    Remaining:            9        95M     0:00:21        |
        |                                                          |
        |                        79%                               |
        |                                                          |
        +----------------------------------------------------------+
  <Tab>/<Alt-Tab> between elements   |   <Space> selects   |   <F12> next screen
```

Additional messages are provided to the serial console that include, but are not be limited to, the following:

```
… Details omitted …
        /mnt/sysimage/dev done
        /mnt/sysimage/boot_cds done
        /mnt/sysimage done
rebooting system
Restarting system.
```

```
… details omitted …
Starting atd: [ OK ]
Starting HAL daemon: [ OK ]

Red Hat Enterprise Linux Server release 5.1 (Tikanga)
Kernel 2.6.18-53.el5 on an x86_64

Host login:
```

Step 9 Copy the CDS-TV-2.2.1.iso file to the /root directory of the CDS server and run the cdsinstall script.

```
# scp -p <user>@<remote_ip_address>:CDS-TV-2.2.1.iso /
# cd /root
# ./cdsinstall /CDS-TV-2.2.1.iso
```

Step 10 Select the deployment type of the server, choose **1** for an ISA deployment and **2** for an RTSP/FSI
deployment.

```
Select Deployment Type (ctrl-c to quit):
  1) ISA
  2) RTSP/FSI
2
RTSP Selected
Mounting /CDS-TV.iso at /mnt/cdrom
Calling inst.sh for common files
Killing running processes: statsd

Starting cdsupgrade.sh
   WARNING: No existing version found on this server.  Cannot backup existing files
Un-taring common-base.tgz
Fixing modprobe.conf
Loading File List
...done

Processing File List
...done

Moving modprobe.conf into place
...done

Installing kernel rpm
Installing cserver production rpm
Disabled various startup scripts in /etc/init.d
Installing busybox
warning: /home/packages/busybox-1.2.0-4.el5.i386.rpm: Header V3 DSA signature: NOKEY, key
ID 37017186
Installing kdump
warning: /home/packages/kexec-tools-1.101-194.4.el5.x86_64.rpm: Header V3 DSA signature:
NOKEY, key ID 37017186

Configuring kdump...

Starting kdump service...

No kdump initial ramdisk found.[WARNING]
Rebuilding /boot/initrd-2.6.18-53.el5kdump.img
kernel-debuginfo-2.6.18-53.el5 is not installed.  You need this to use makedumpfile!
please install it and restart the kdump service
Failed to run mkdumprd
Installing logrotate
warning: /home/packages/logrotate-3.7.4-8.i386.rpm: Header V3 DSA signature: NOKEY, key ID
37017186
Installing CmdTool2
```

```
Set Write Policy to WriteBack on Adapter 0, VD 0 (target id: 0) success

Set Write Cache OK if bad BBU on Adapter 0, VD 0 (target id: 0) success

Set Disk Cache Policy to Enabled on Adapter 0, VD 0 (target id: 0) success

Starting fixperms.sh
   Loading File List
   Processing File List
Ending fixperms.sh
Calling inst.sh for rtsp
Killing running processes: statsd
Un-taring rtsp-base.tgz
Calling forprod.sh
Removing ISA-specific files
Installing RTSP-specific files (existing files backed up to .file)
mv: `/home/isa/bss/database/avsdb' and `/arroyo/db/avsdb' are the same file
mv: `/home/isa/bss/database/AVSDBUtil' and `/arroyo/db/AVSDBUtil' are the same file
mv: `/home/isa/bss/database/DATADIR' and `/arroyo/db/DATADIR' are the same file
mv: `/home/isa/bss/database/lost+found' and `/arroyo/db/lost+found' are the same file
RTSP installation complete

Starting fixperms.sh
   Loading File List
   Processing File List
Ending fixperms.sh
Unmounting /mnt/cdrom
cdsinstall completed. Please reboot the device.
```

✏️ **Note**   The warning, "Failed to run," and move messages above are known, benign errors and can be ignored.

Step 11   Move the /etc/rc.d/upgrade.rc.local file to /etc/rc.d/rc.local and reboot the server.

```
# mv –f /etc/rc.d/upgrade.rc.local /etc/rc.d/rc.local
# init 6
```

✏️ **Note**   During the initialization process of a CDS server or after recovering a CDS server that has been down for less than an hour, the CDS database performs a complete synchronization. The database synchronization takes about five minutes before the server becomes ready for service. If the CDS server is down for a much longer time than an hour, the database synchronization takes longer than five minutes. The **netstat** command does not show the interfaces as up until the synchronization has completed.

Step 12   After the CDS server has been verified as being reachable, log in to the CDSM GUI and disable the server offload.

    a.   Click **Maintain > Servers > Server Offload**. The Server Offload page is displayed.

    b.   From the **Server IP** drop-down list, choose the IP address or nickname of the server and click Display.

    c.   Choose **Disable** and click **Submit**.

Step 13   Using the CDSM GUI, verify the server is online.

    a.   Click **Monitor > System Health**. The System Health Monitor page is displayed.

    b.   The status boxes for the server should all be green.

It takes a few minutes to synchronize the database. Wait until the other CDS servers become reachable and the services are running. The CDSM GUI System Health Monitor Page can be used to verify that the CDS server is functioning correctly after the upgrade. The CDSM GUI System Health Monitor page shows the states of the network, disk, and services on each CDS server.

The upgrade is complete. If there are any issues, or if you want to review the upgrade process, run the **/boot_cds/upgrade/cds_upg_report.sh** script and use the resulting archive for the review.

Upgrading from Release 2.0.x to Release 2.2

Upgrading from Release 2.0.x to Release 2.2 has the following additional steps after upgrading the software:

- Transition from RoutingTable to SubnetTable
- Resubmitting DNS Entries

✎
Note For RTSP environments with NGOD deployments, before upgrading to Release 2.2.1 from Release 2.1.1, log in to the CDSM, choose **Configure > Server Level > RTSP Server**, select the IP address of a Streamer and write down the settings for the SOP fields for each Streamer. For more information, see the "Configuring Source Output Ports" section in the *Cisco TV CDS 2.2 RTSP Software Configuration Guide*.

Transition from RoutingTable to SubnetTable

Release 2.1.x introduced the ability to route interfaces to different subnets. After upgrading the TV CDS software to Release 2.2 from Release 2.0, any servers with incompatible routes are listed in red on the Route Tables page. This is because all routes that have **CServer Source** as the **Route Type** use the SubnetTable instead of the RoutingTable.

You can review the Route Table configuration for each of these servers, modify or delete the routes, and click **Submit** to apply the changes. The routes are converted to the new format and the server is listed in black. When all servers with incompatible routes are fixed, the warning message is removed and the entry in the system alarm drop-down list in the GUI banner is removed.

For more information, see either the *Cisco TV CDS 2.2 ISA Software Configuration Guide* or the *Cisco TV CDS 2.2 RTSP Software Configuration Guide*.

To verify the RoutingTable configuration has been transitioned to the SubnetTable, do the following:

Step 1 Log in to the CDS server as root.

Step 2 View the RoutingTable configuration.

```
# cat /arroyo/test/RoutingTable
    default gateway  192.169.78.94
    network  192.169.78.64 netmask 255.255.255.224 gateway 0.0.0.0
    default cache gateway  192.169.78.94
    local cache network  192.169.78.64 netmask 255.255.255.224
```

Step 3 View the c2k.log file.

```
tail -f /arroyo/log/c2k.log.<date>
```

Step 4 Log in to the CDSM and resubmit the route table.

    a. Choose **Configure > Server Level > Route Tables**. The Route Tables page is displayed.

    b. From the drop-down list, choose the IP address of a server and click **Display**. Any configured routes are displayed.

    c. In the Enter New Route section, enter the values displayed when you viewed the RoutingTable (Step 2); for example, in the Network field enter 192.169.78.64, in the Subnet Mask field enter 255.255.255.224, and in the Gateway field enter 192.169.78.94.

    d. From the **Route Type** drop-down list choose **CServer Source** and click **Submit**.

Step 5 On the CDS server, monitor the c2k.log file for any error messages that are displayed after submitting the Route Tables page in the CDSM GUI. For example. if the following routes are configured:

```
default gateway       192.169.78.94
network  192.169.78.64 netmask   255.255.255.0 gateway 0.0.0.0
network  192.0.0.0      netmask   255.0.0.0     gateway 192.169.78.94
```

the following error message is displayed in the c2k.log file when submitting the Route Tables page:

```
err:RoutingTable: intersecting network, ignoring network 192.0.0.0
```

Correct the intersecting routes by removing the route with the smaller subnet. In the example above, this is the192.169.78.64 route.

Step 6 Verify that the RoutingTable is empty and the SubnetTable now has the information.

```
# cat /arroyo/test/RoutingTable
# cat /arroyo/test/SubnetTable
    network    192.169.78.64 netmask   255.255.255.224 gateway  192.169.78.94
    [root@Streamer210 ~]#
```

Resubmitting DNS Entries

Release 2.1.x also has the ability to configure up to 16 DNS servers on each of the System Level, Array Level, and Server Level DNS pages. After upgrading the TV CDS software to Release 2.2 from Release 2.0, any DNS entries need to be resubmitted. When all DNS entries are resubmitted, the warning message is removed and the entry in the system alarm drop-down list in the GUI banner is removed.

Upgrading a New CDS Server to Release 2.2.1

The Cisco TV CDS CDEs ship with the software installation files for Release 2.1.3. If a CDE received from Cisco is expected to be installed into a Release 2.2.1 deployment, it must be upgraded with the upgrade kit.

To upgrade a new CDS server, configure the management network on the CDS server by performing the following steps:

Step 1 To configure the Ethernet interface (eth0), which will be used to connect to the management network, use a text editor to modify the file /etc/sysconfig/network-scripts/ifcfg-eth0 and add the following lines:

- DEVICE=eth0
- BOOTPROTO=static

- ONBOOT=yes

- IPADDR=*ip_address_for_eth0*

- NETMASK=*netmask_for_eth0*

For example:

```
DEVICE=eth0
BOOTPROTO=static
ONBOOT=yes
IPADDR=172.22.97.162
NETMASK=255.255.255.128
```

Step 2   Save and close the ifcfg-eth0 file.

Step 3   To configure the network characteristics, use a text editor to modify the file /etc/sysconfig/network and add the following lines:

- NETWORKING=yes

- NETWORKING_IPV6=no

- HOSTNAME=*name*

- GATEWAY=*gateway_ip_address*

For example:

```
NETWORKING=yes
NETWORKING_IPV6=no
HOSTNAME=cdsm162
GATEWAY=172.22.97.129
```

The *gateway_ip_address* is the default gateway IP address—the address of the interface on the router that is directly attached to the CDE110 eth0 interface.

Step 4   Save and close the network file.

Step 5   To restart the network, issue the following command:

```
[root]# /etc/init.d/network restart

Shutting down interface eth0:                          [ OK ]
Shutting down loopback interface:                      [ OK ]
Bringing up loopback interface:                        [ OK ]
Bringing up interface eth0:                            [ OK ]

[root]#
```

![note icon]

Note   A serial console connection is highly recommended.

Perform the software upgrade procedure in Chapter 3, "Upgrading a TV CDS Server to Release 2.2.1." After completing the upgrade procedure, perform the add a server procedure in the "Adding a Server" section on page 5-10.

Imaging a CDS Server with 64-Bit OS using a DVD

If the CDS server upgrade process is interrupted because of power failure or for some similar reason, and if the upgrade was corrupted, you can use the DVD imaging process to load the OS and Release 2.2.1 software files. The DVD ISO imaging process can also be used for a clean installation. After the imaging is complete, you need to run the cdsinstall script to install the software.

To image a CDS server with the OS required to run the TV CDS Release 2.2.1 software, do the following:

Step 1 Download the CDS-TV-2.2.1-DVD-OS.iso file from the Cisco software download website. See the "Getting the Cisco TV CDS Software Files for Release 2.2.1" section on page 2-4 for more information.

Step 2 Burn the ISO image file to a DVD.

Step 3 Power the CDS server down.

Step 4 Remove all content drives (external drives) from the server.

Step 5 Connect a USB DVD ROM drive to the CDS server.

Step 6 Boot to the DVD ROM.

Step 7 At the boot: prompt, enter the server type to be installed. The server type options consist of the following:

- **a.** x00— CDE200/300/400 servers
- **b.** x20— CDE220-2C1/2C2/2D1 and CDE420 HDD servers
- **c.** x20ssd—CDE220-2S1/2S3 servers

> **Note** Sometimes the kickstart file is not found on initial boot. If this occurs, an error message is displayed. Press **Enter** on the cdrom:line and select **OK**. The installation proceeds. For more information, see CSCtf87159 in Appendix A, "Troubleshooting."

> **Note** For each Option (x00, x20, x20ssd), if the "console=ttyS0,115200n8" is added at the end of the option on the boot: line, the OS installation is performed by way of the serial console.

Step 8 After the server imaging has completed, halt the server.

```
init 0
```

Step 9 Power down the server.

```
poweroff
```

Step 10 Remove the USB DVD-ROM drive.

Step 11 Re-insert all the content drives,

Step 12 Power on the server and proceed with normal installation of the TV CDS Release 2.2.1 software by running the cdsinstall script.

> **Note** The CDS-TV-2.2.1-DVD-OS.iso file includes the ISO image file for the Release 2.2.1 software, so the cdsinstall and cdsconfig can be performed without additional transfer of files to the server.