CHAPTER 4

Installing the Internet Streamer CDS Software and Initially Configuring a CDE

This chapter describes the initial installation of the Cisco Internet Streamer CDS Release 2.0-2.1 software application suite, and the initial configuration of the CDE. This chapter contains the following sections:

Before You Begin

You need the following to perform the initial installation and configuration of the CDS:

- CDE100 or CDE200
- USB CD-ROM drive (for CDE200 only)
- Internal IDE compact flash drive (pre-installed)
- Terminal server connection with the following parameters:
  - 9600 baud
  - 8 bits
  - No parity
  - Redirection After BIOS POST is off in CDE BIOS setup
  - Console redirection enabled for COM1
- CDS image CD
- Network connection

Note On the CDE200, use the USB port to connect the USB CD-ROM drive. After the initial installation, remove the USB CD-ROM drive. The internal IDE compact flash drive becomes the boot drive for subsequent operations.

Note For the CDE100, use the internal CD-ROM drive for recovery or remanufacture procedures.

For the CDE200, do not use the internal CD-ROM drive for recovery or remanufacture procedures. Use the external USB CD-ROM drive for all procedures that require a CD-ROM drive.

You also need to configure the ports on the CDE200 as shown below:

- The two built-in Gigabit Ethernet ports are GigabitEthernet 1/0 and GigabitEthernet 2/0 and are management ports using channel bonding 1 (see Figure 1-18).

Ethernet Management Ports	Gigabit Ethernet Management Ports
eth0	g1/0
eth1	g2/0

- The four interface ports on the stream interfaces are GigabitEthernet 3/0, GigabitEthernet 4/0, GigabitEthernet 5/0 and GigabitEthernet 6/0 using channel bonding 2 (see Figure 1-18).

Ethernet Stream Interface Ports	Gigabit Ethernet Stream Interface Ports
eth2	g3/0
eth3	g4/0
eth4	g5/0
eth5	g6/0

Installation and Configuration Order

Perform the initial installation and configuration of your CDS network in the following order:

1. Run the BIOS setup utility on each CDE in the CDS network.
2. Install the CDS Release 2.0-2.1 software on each CDE in the CDS network.
3. Configure the CDSM.

Caution It is very important that the onboard SCSI controller be disabled on the CDE200. Do this by physically opening the CDE200 case (by removing two side screws and a back thumbscrew), and verifying that the jumper labeled “JPA-1” (located about two inches below the center PCI-X slot—slot 3 of 5) has pins 2 and 3 connected (instead of 1 and 2). Pin 1 is closest to the rear of the case and pin 3 is closest to the front.

Running the BIOS Setup Utility

Running the BIOS setup utility is different for the CDE100 and the CDE200; therefore, this section provides a separate BIOS setup procedure for each CDE.

Running the BIOS Setup Utility for the CDE100

Perform the following steps to run the BIOS setup utility for the CDE100:

Step 1 Power on the CDE100.

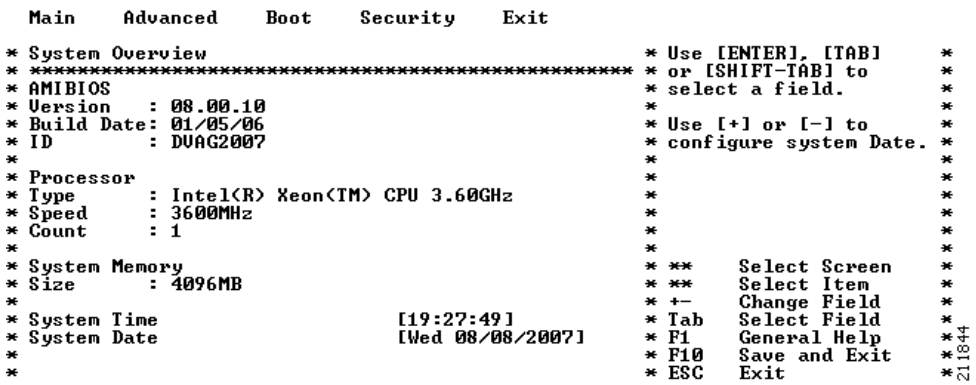
Step 2 Insert the CD with the CDS image into the internal CD-ROM drive.

Step 3 Reboot the CDE100 and wait for the initial BIOS screen to appear.

Note Step 4 through Step 16 are required only for the initial installation. The BIOS setup does not need to be changed for the second and subsequent installations or recovery.

Step 4 To enter the BIOS Setup menu, press **Delete** as instructed at the bottom of the BIOS screen. The Main menu appears (see Figure 4-1).

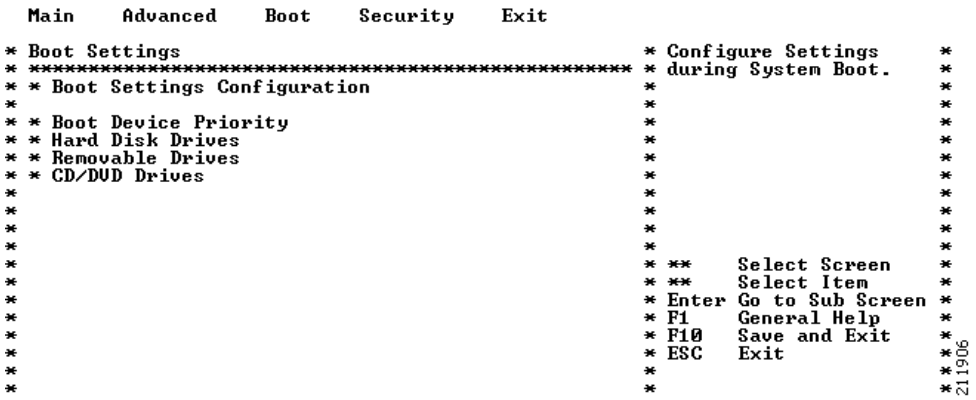
Figure 4-1 Main Menu



Tip If you are viewing the initial BIOS screen through a remote terminal server, **Ctrl-Backspace** functions the same as the **Delete** key.

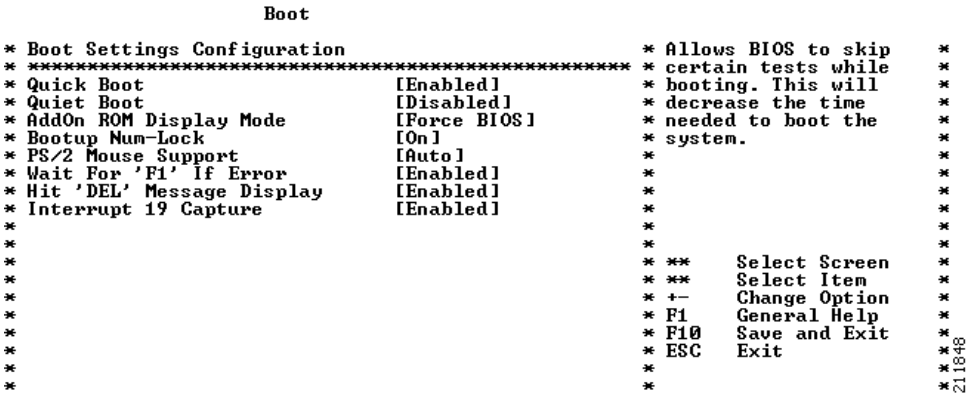
Step 5 From the Main menu, choose **Boot** and press **Enter**. The Boot Settings menu appears (see Figure 4-2).

Figure 4-2 Boot Settings Menu



Step 6 From the Boot Settings menu, choose **Boot Settings Configuration** and press **Enter**. The Boot Settings Configuration screen appears (see Figure 4-3).

Figure 4-3 Boot Settings Configuration Screen

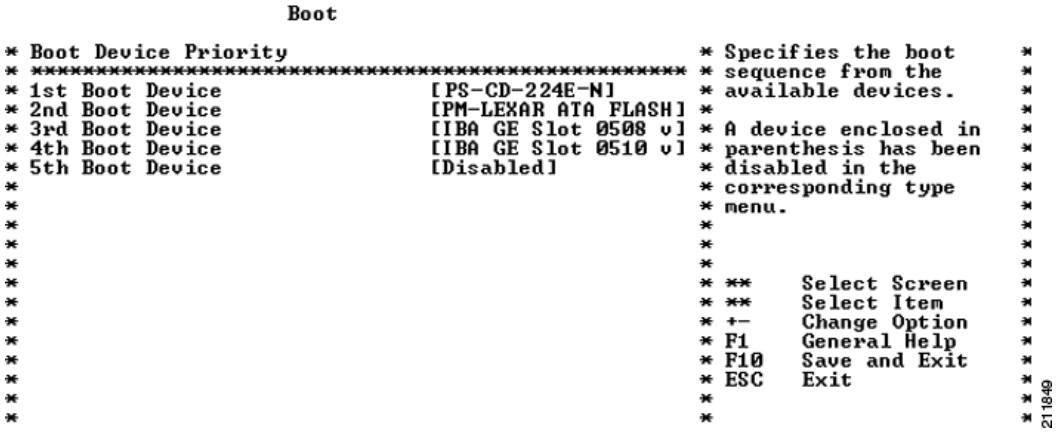


a. Set the **Quick Boot** option to **Enabled**.

b. Set the **Quiet Boot** option to **Disabled**.

Step 7 Press **Esc** to return to the Boot menu and choose **Boot Device Priority**. The Boot Device Priority screen appears (see Figure 4-4).

Figure 4-4 Boot Device Priority Screen



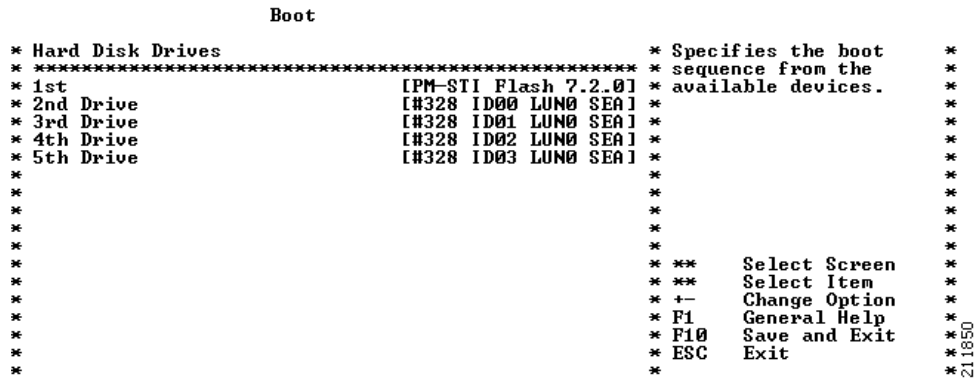
Step 8 Use the on-screen instructions to move the elements into the following order:

1. CD-ROM drive (first boot device)
2. Flash device (first hard drive)
3. Removable devices
4. Network device

Caution The devices must be in the correct order for the installation to be successful.

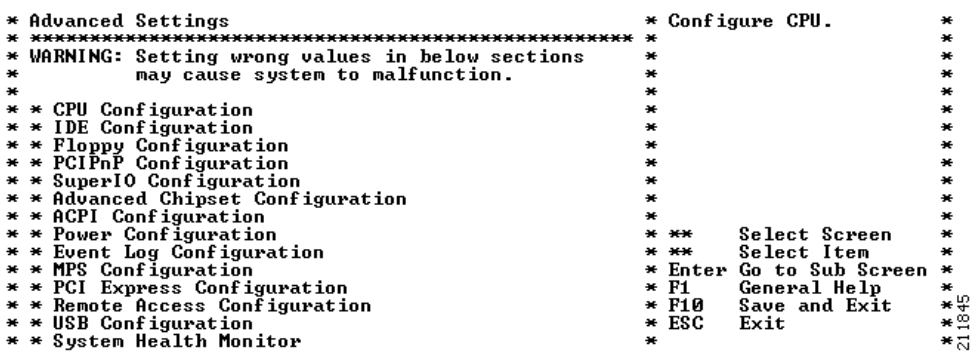
Step 9 Use the **Down** Arrow key to expand the hard disk drive and expose its subelements (see Figure 4-5).

Figure 4-5 Hard Disk Drives Screen



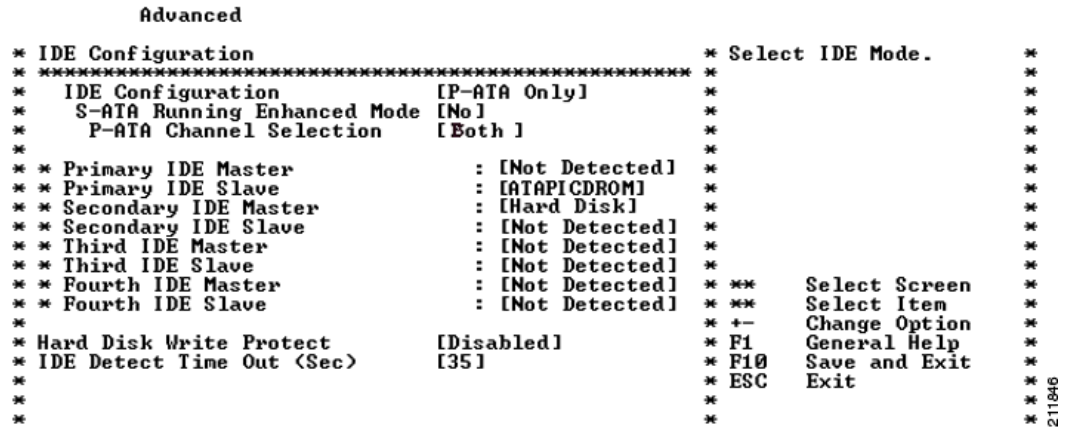
Step 10 Press **Esc** to return to the Main menu. Use the arrow keys to choose **Advanced** and press **Enter**. The Advanced Settings menu appears (see Figure 4-6).

Figure 4-6 Advanced Settings Menu



Step 11 Choose **IDE Configuration** and press **Enter**. The IDE Configuration screen appears (see Figure 4-7).

Figure 4-7 IDE Configuration Screen



a. Set the **IDE Configuration** option to **P-ATA Only**.

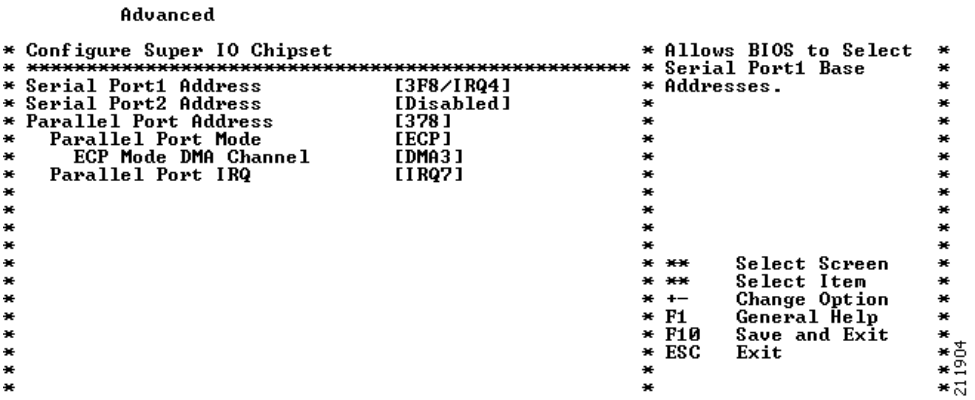
b. Set the **S-ATA Running Enhanced Mode** option to **No**.

c. Set the **P-ATA Channel Selection** option to **Both**.

Note On the CDE100, the Primary IDE Slave is connected to the internal CD-ROM drive, the Secondary IDE Master is connected to a 128-MB compact flash drive.

Step 12 Press **Esc** to return to the Advanced menu. Choose **Super I/O Configuration** and press **Enter**. The Configure Super I/O Chipset screen appears (see Figure 4-8).

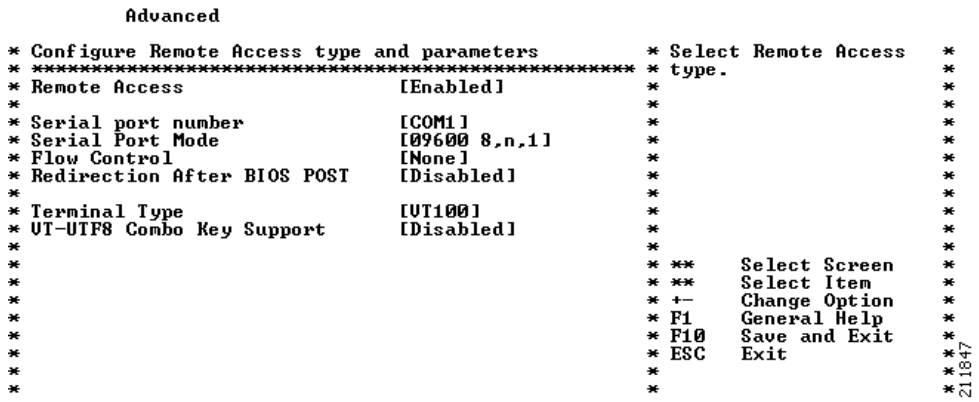
Figure 4-8 Configure Super I/O Chipset Screen



Set the **Serial Port2 Address** option to **Disabled**.

Step 13 Press **Esc** to return to the Advanced menu. Choose **Remote Access Configuration** and press **Enter**. The Configure Remote Access Type and Parameters screen appears (see Figure 4-9).

Figure 4-9 Configure Remote Access Type and Parameters Screen



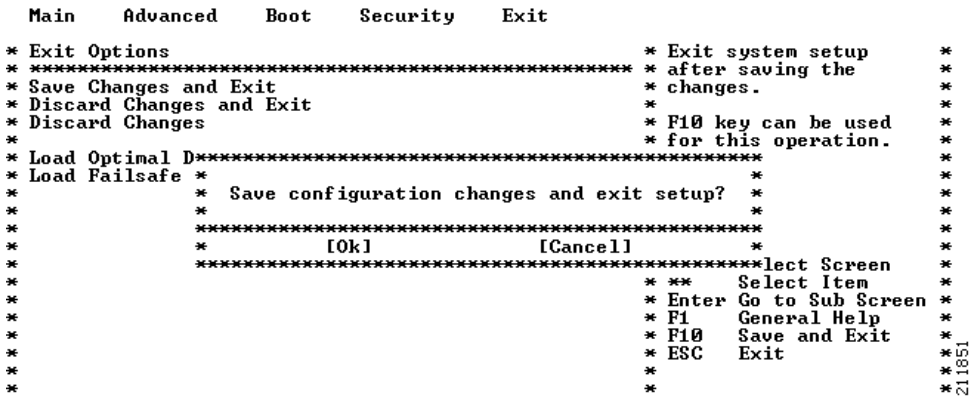
a. Set the **Serial port number** option to **COM 1**.

b. Set the **Serial Port Mode** option to **9600 8, n, 1**.

c. Set the **Redirection After BIOS POST** option to **Disabled**.

Step 14 When you are finished, navigate to the **Exit** submenu and choose **Save and Exit**. Press **OK** when prompted (see Figure 4-10).

Figure 4-10 Exit Options Screen



Step 15 Ensure that the CD with the CDS image is in the internal CD-ROM drive and press **Enter** to confirm and reboot the system. Your configuration is saved, you exit the BIOS Setup menu, and the system reboots.

The system boots from the image on the CD. This requires a terminal server to be hooked up to the serial port of the CDE100. All communication is done through the serial port (see the "Before You Begin" section on page 4-1 for terminal server settings).

Once the CD starts booting, it displays a spinning "|" symbol for approximately five minutes. Allow the booting to proceed and monitor the sequence from a remote terminal provided by the terminal server.

The CD boot menu is displayed at the conclusion of this boot sequence:

```
Welcome to the installer. The installer enables installation of a new software image onto
your system, or recovers a previous image in the event that the hardware was changed.

    MODEL: CDE100
       FLASH: found, directory validated
     COOKIE: valid
       IMAGE: DEVELOPMENT[jbohach-lnx02:/data/jbohach/ws/ipvideo/refact-dev-1
    FLASHDEV: /dev/hdX

Installer Main Menu:
1. Configure Network
2. Manufacture flash
3. Install flash cookie
4. Install flash image from network
5. Install flash image from cdrom
6. Install flash image from disk
7. Wipe out disks and install.bin image
8. Exit (and reboot)
9. Force manufacturing flash
Choice [0]:
```

Step 16 Confirm that the FLASHDEV: line near the top of the menu displays something similar to "/dev/hdX", where "X" can be any letter.

a. If no flash device is found, choose **Option 8** to exit and reboot, and enter the BIOS Setup menu again. Confirm that the BIOS detected the flash device.

b. If the BIOS detects the CD-ROM drive but the CD installation menu is not displayed, this is an abnormal condition. Contact Cisco Technical Support at the following URL:

http://www.cisco.com/cisco/web/support/index.html

Running the BIOS Setup Utility for the CDE200

Perform the following steps to run the BIOS setup utility for the CDE200:

Step 1 Ensure that the CDE200 is powered off.

Step 2 Attach the USB CD-ROM drive to any available USB port at the rear of the CDE200 (see Figure 1-4).

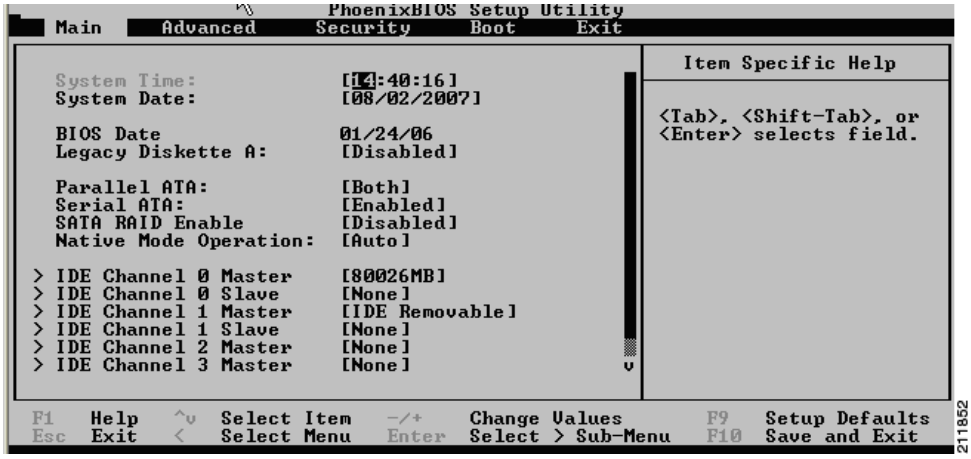
Step 3 Power on the USB CD-ROM drive.

Step 4 Power on the CDE200 and wait for the initial BIOS screen to appear.

Note Step 5 through Step 12 are required only for the initial installation. The BIOS setup does not need to be changed for the second and subsequent installations or recovery.

Step 5 To enter the BIOS Setup menu, press **Delete** as instructed at the bottom of the BIOS screen. The Main menu appears (see Figure 4-11).

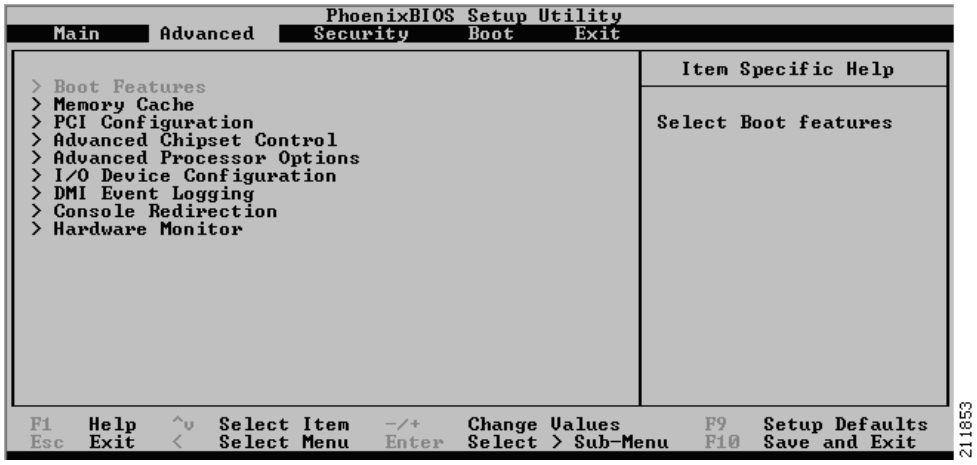
Figure 4-11 Main Menu



Tip If you are viewing the initial BIOS screen through a remote terminal server, **Ctrl-Backspace** functions the same as the **Delete** key.

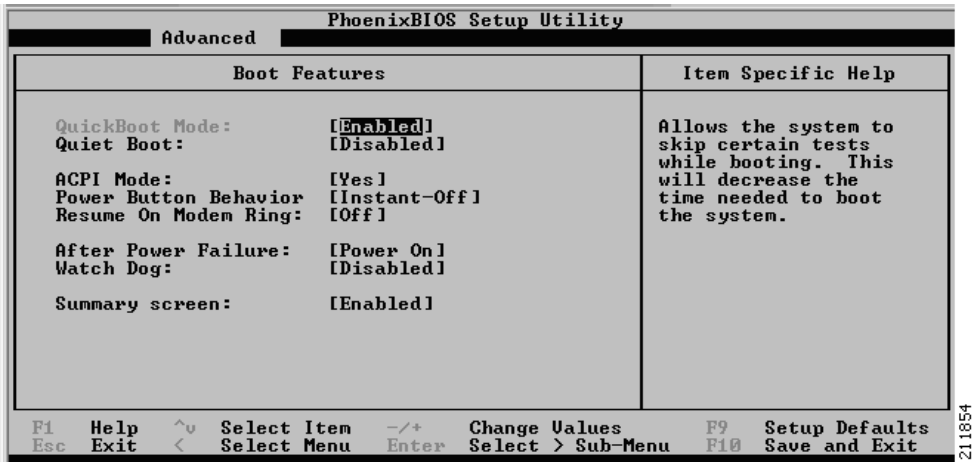
Step 6 Use the arrow keys to navigate to the Advanced menu and press **Enter**. The Advanced menu appears (see Figure 4-12).

Figure 4-12 Advanced Menu



Step 7 Choose **Boot Features** and press **Enter**. The Boot Features screen appears (see Figure 4-13).

Figure 4-13 Boot Features Screen



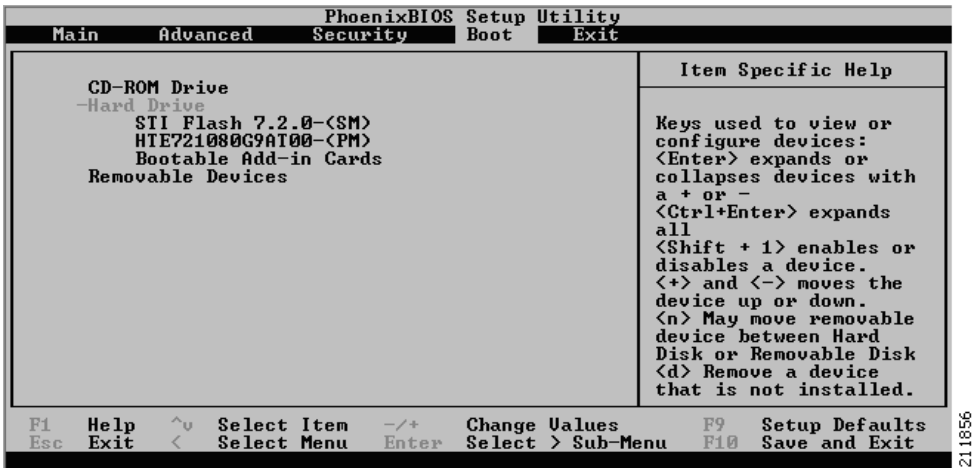
a. Set the **QuickBoot Mode** option to **Enabled**.

b. Set the **Quiet Boot** option to **Disabled**.

c. Set the **After Power Failure** option to **Power On**.

Step 8 Use the **Down** Arrow key to expand **+Hard Drive** and expose its subelements (see Figure 4-14).

Figure 4-14 Hard Disk Drives Screen



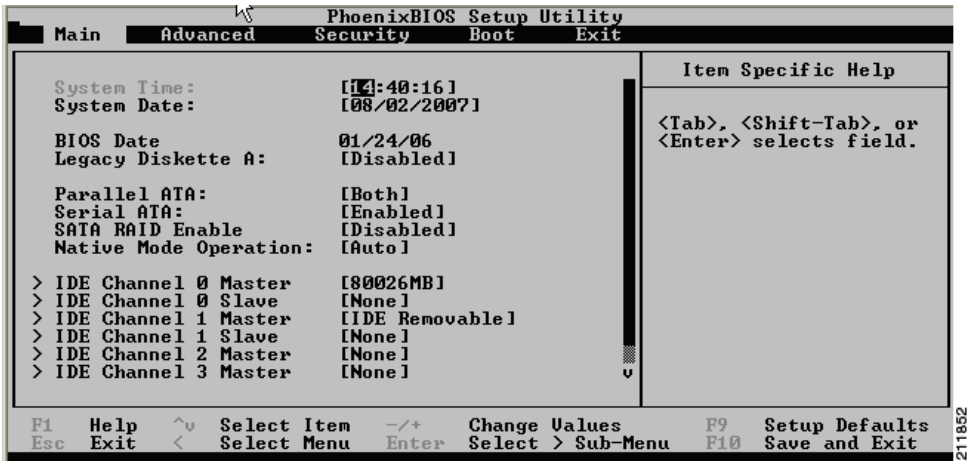
Step 9 Use the on-screen instructions to move the elements into the following order:

1. CD-ROM drive (first boot device)
2. Flash device (first hard drive)
3. Removable devices
4. Network device

Caution The devices must be in the correct order for the installation to be successful.

Step 10 Press **Esc** to return to the Main menu. To configure IDE, set the **IDE Channel 0 Master** option to **Auto**; you should see the maximum capacity [80026MB]. Then set the **IDE Channel 1 Master** option to **Auto**; you should see [IDE Removable] (see Figure 4-15).

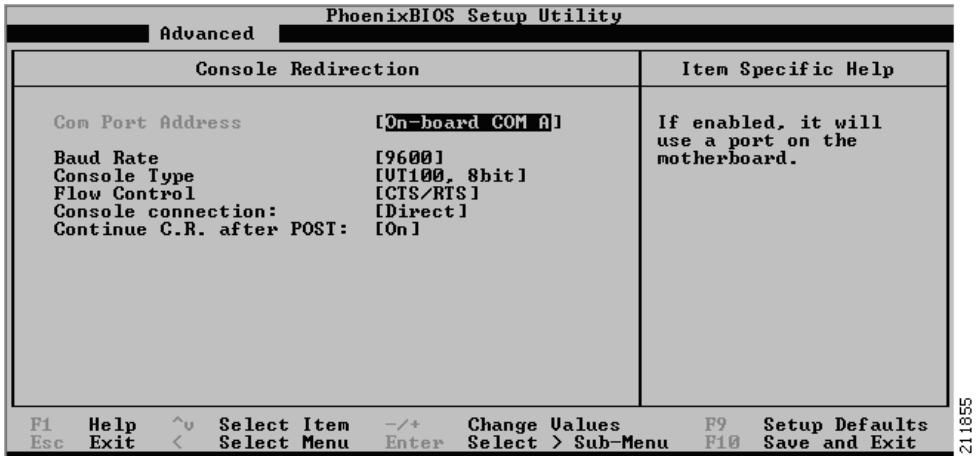
Figure 4-15 Main Menu



Note On the CDE200, the Primary IDE Master is connected to the 80-GB hard drive (not used), and the Secondary IDE Master is connected to a 128-MB compact flash drive.

Step 11 Use the arrow keys to return to the Advanced menu. Choose **Console Redirection** and press **Enter**. The Console Redirection screen appears (see Figure 4-16).

Figure 4-16 Console Redirection Screen



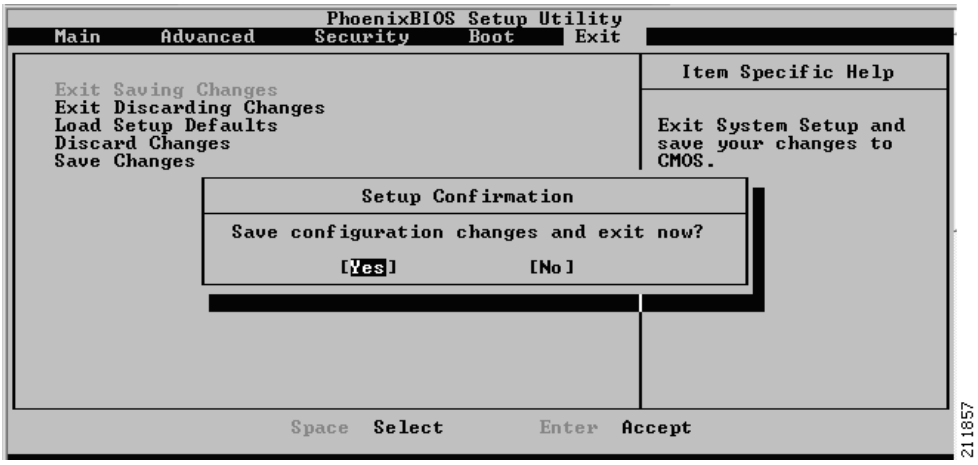
a. Set the **Com Port Address** option to **On-board COM A**.

b. Set the **Baud Rate** option to **9600**.

c. Set the **Continue C.R. after POST:** option to **On**.

Step 12 When you are finished, navigate to the **Exit** submenu and choose **Exit Saving Changes**. Press **Yes** when prompted (see Figure 4-17).

Figure 4-17 Exit Saving Changes Screen



Step 13 Ensure that the CD with the CDS software image is in the USB CD-ROM drive and press **Enter** to confirm and reboot the system. Your configuration is saved, you exit the BIOS Setup menu, and the system reboots.

a. Sometimes the USB CD-ROM drive is not detected by the BIOS after the first power-on. In this case, the CD-ROM drive is not present in the above Hard Drive element list. Press the **Reset** button (not the Power button) and try again. If it still fails, try a different USB CD-ROM drive.

b. If the USB CD-ROM drive is still not detected (not shown), press the **Reset** button again. If you are still unable to detect the CD-ROM drive at the BIOS level, contact Cisco Technical Support at the following URL:

http://www.cisco.com/cisco/web/support/index.html

The system boots from the image on the CD. This requires a terminal server to be hooked up to the serial port of the CDE200. All communication is done through the serial port (see the "Before You Begin" section on page 4-1 for terminal server settings.

Once the CD starts booting, it displays a spinning "|" symbol for approximately five minutes. Allow the booting to proceed and monitor the sequence from a remote terminal provided by the terminal server.

The CD boot menu is displayed at the conclusion of this boot sequence:

```
Welcome to the installer. The installer enables installation of a new software image onto
your system, or recovers a previous image in the event that the hardware was changed.

    MODEL: CDE200
       FLASH: found, directory validated
     COOKIE: valid
       IMAGE: DEVELOPMENT[jbohach-lnx02:/data/jbohach/ws/ipvideo/refact-dev-1
    FLASHDEV: /dev/hdX

Installer Main Menu:
1. Configure Network
2. Manufacture flash
3. Install flash cookie
4. Install flash image from network
5. Install flash image from cdrom
6. Install flash image from disk
7. Wipe out disks and install.bin image
8. Exit (and reboot)
9. Force manufacturing flash
Choice [0]:
```

Step 14 Confirm that the FLASHDEV: line near the top of the menu displays something similar to "/dev/hdX", where "X" can be any letter.

a. If no flash device is found, choose **Option 8** to exit and reboot, and enter the BIOS Setup menu again. Confirm that the BIOS detected the flash device.

b. If the BIOS detects the CD-ROM drive but the CD installation menu is not displayed, this is an abnormal condition. You can use a different USB CD-ROM drive and attempt the procedure again, or contact Cisco Technical Support at the following URL:

http://www.cisco.com/cisco/web/support/index.html

Installing the Software

Perform the following steps to install the software:

Step 1 Manufacture the IDE compact flash drive by selecting **Option 2**. This makes the IDE compact flash drive bootable. Enter **Y** to confirm the process.

Note This step is not necessary if the IDE compact flash drive has been previously manufactured. The system produces an error; ignore the error and proceed.

Step 2 Choose **Option 3** to install the flash cookie.

Step 3 Choose **Option 5** to install the flash image from the CD-ROM drive.

Step 4 Choose **Sub-option 2** and enter **Y** to confirm and proceed with the flash write.

Step 5 Choose **Option 7** to wipe out the disks and install the .bin image. Enter **Y** to confirm and wipe out all disks. You should see something like this:

```
Successfully installed product image.
            MODEL: CDE200
            FLASH: found, directory validated
            COOKIE: valid
            IMAGE: 2.0.0.320
            FLASHDEV: /dev/hdc
```

Step 6 Eject the CD from the CD-ROM drive, disconnect the CD-ROM drive from the CDE, and choose **Option 8** to exit and reboot. Press **Y** and **Enter** to confirm the reboot request.

The system boots from the IDE compact flash drive with the data installed from the CD. All prior data is removed and the original system remains unaffected.

Caution Be sure to disconnect the CD-ROM drive before rebooting the system or the system will not boot with the normal image.

Initially Configuring a CDE

This section provides the steps to perform the initial software configuration after a CDE has been loaded with a CDS software image for the first time. The initial configuration must be done on all CDEs (SEs, SRs, and CDSM) in a network.

Assigning the Primary Interface

The CDE must be configured with a primary interface that acts as the management interface for the CDE. Any interface in the CDE can be configured as the primary interface. Interface GigabitEthernet 1/0 is chosen by default to be the primary interface.

Enter the following commands to assign a primary interface:

```
CDE# configure
CDE(config)# primary-interface GigabitEthernet 1/0
```

Running the Setup Utility

Use the Setup utility to configure the network settings and register the CDEs with the CDSM.

Step 1 Enter the following commands to run the Setup utility:

```
CDE# setup
CDE#
What is the mode of the device (SE/SR/CDSM) [SE]: SE
Is this SE going to be managed by a CDSM (Content Delivery System Manager) (y/n) [y]:y
Please choose an interface to configure from the following list:

1: GigabitEthernet 1/0
2: GigabitEthernet 2/0
3: GigabitEthernet 3/0
4: GigabitEthernet 4/0
5: GigabitEthernet 5/0
6: GigabitEthernet 6/0

Enter choice: 1
Do you want to enable DHCP on this interface (y/n) [n]: n
Please enter the IP address of this interface: 209.165.200.255
Please enter the netmask of this interface: 255.255.255.244
Please enter the default gateway: 10.0.0.0
Please enter the domain name server ip: 172.16.0.0
Please enter the domain name: spcdn.com
Please enter the hostname: CDStr1
Please enter CDSM (Content Delivery System Manager) IP or Host name: 209.165.201.0
Press any key to continue

CDE# configure terminal
CDE# cms enable
```

This process initiates database services on the device that you just configured.

Note Once the IP default gateway has been set, we recommend you ping the outside network to verify it is reachable. Then verify that the CDSM is reachable.

Step 2 After you have run the Setup utility on each SE or SR, they register with the CDSM. Save the configuration by entering the following command:

```
CDE# copy running-config startup-config
```

Verifying the CDSM

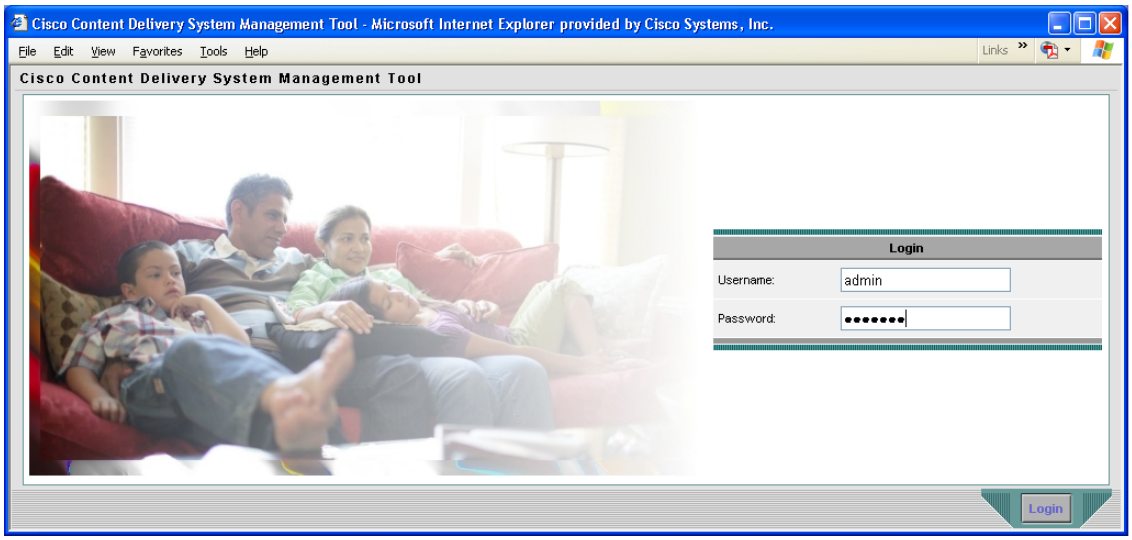
Perform the following steps to verify that the CDSM is operational:

Step 1 Launch a web browser. Enter the IP address of the CDSM in a web browser using the following format:

https://cdsm-IP:8443/

The CDSM Login page appears (see Figure 4-18).

Figure 4-18 CDSM Login Page



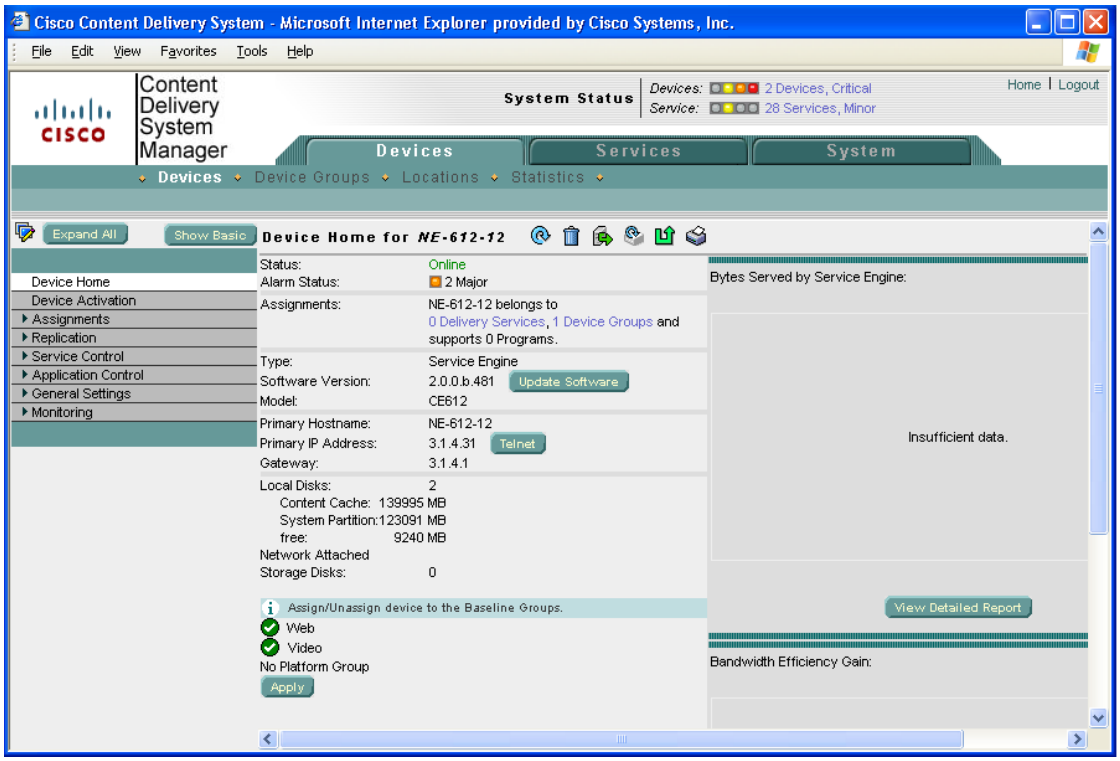
Step 2 Enter **admin** as the username and **default** as the password and press **Login**.

The CDSM Main menu appears (see Figure 4-19).

Figure 4-19 CDSM Main Menu

Step 3 From the CDSM Main menu, select the **Devices** tab. A list of all your registered Service Engines and Service Routers appears (see Figure 4-20).

Figure 4-20 Devices Page



Step 4 Verify that the devices you configured for your CDS network are listed.

Step 5 If a device is not listed, restart the CMS for that device by using either the console or Telnet connection and entering the following commands in global configuration mode:

```
CDE(config)# no cms enable
CDE(config)# cms enable
```

The installation is now complete. Refer to the *Cisco Internet Streamer CDS 2.0-2.1 Software Configuration Guide* for information on configuring and using the CDS. See the "Related Documentation" section on page 2-viii.