



CHAPTER 2

Getting Started with CDS Video Navigator

This chapter explains how to perform the initial configuration tasks needed to get Cisco Content Delivery System (CDS) Video Navigator and Cisco CDS Poster Art Server running. (Both applications are preinstalled together.) Read the following sections and perform the initial configuration tasks in this order:

1. [Configuring Terminal Emulation Software, page 2-2](#)
2. [Connecting Cables to the CDE110, page 2-2](#)
3. [Configuring the Ethernet Interfaces, page 2-3](#)
4. [Configuring Video Navigator, page 2-5](#)
5. [Preparing to Configure Poster Art Server, page 2-6](#)
6. [Configuring the Apache Web Server, page 2-6](#)
7. [Starting Video Navigator and Verifying System Status, page 2-7](#)

Where optional support for resiliency by means of the Cisco Application Control Engine (ACE) module is required, see [Configuring for Resiliency with Cisco ACE \(Optional\), page 2-9](#), for basic configuration steps. In addition, [Information on CDE110 Hardware, page 2-10](#) contains some notes on the hardware components and configuration used with Video Navigator.

This chapter assumes that the Cisco CDE110 hardware has been installed as described in the [Cisco Content Delivery Engine 110 Hardware Installation Guide](#), including connecting cables and connecting power.



Note

To upgrade from a previous release, contact your Cisco account team.

Configuring Terminal Emulation Software

The RJ-45 serial ports on the Cisco CDE110 front and back panels can be used for administrative access to the CDE110 through a terminal server. Terminal emulation software must be configured as follows:

- Bits per second: 9600
- Data bits: 8
- Parity: none
- Stop bits: 1
- Hardware flow control: ON

Connecting Cables to the CDE110

The following cable connections are used on the CDE110:

- For the four Ethernet interfaces on the back of the CDE110, use Category 5 UTP cables to connect the following:
 - Ethernet interface to the network that includes the set-top boxes (STBs) that Video Navigator serves
 - Ethernet interface to the network used for management and video backoffice (VBO) communication
- If a terminal server is used, the RJ-45 cable from the terminal server is connected to an RJ-45 serial port on the front or back of the CDE110.
- If a PC is connected directly to the CDE110 serial port, the cable from the PC is connected to an RJ-45 serial port on the front or back of the CDE110. The PC end of the cable connected to the CDE110 serial port varies, depending on the type of ports supported by the PC.

**Note**

The serial port is used for the system console. Only one serial port (front or back) can be used, because it is one shared serial port. A system console is typically used—rather than a monitor, keyboard, and mouse directly attached to the CDE110.

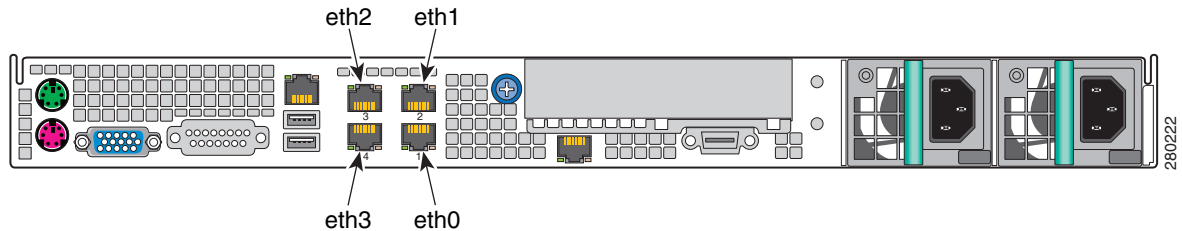
- If a monitor, keyboard, and mouse are used, the cables for the devices are connected to the appropriate connectors on the CDE110.

For the location of connectors on the CDE110 front and back panels, see the [Cisco Content Delivery Engine 110 Hardware Installation Guide](#).

Configuring the Ethernet Interfaces

This section explains how to configure an Ethernet interface on the CDE110. For software configuration, the RJ-45 Ethernet ports on the CDE110 back panel are specified as eth0, eth1, eth2, and eth3, as shown in Figure 2-1.

Figure 2-1 Port Numbering for Software Configuration



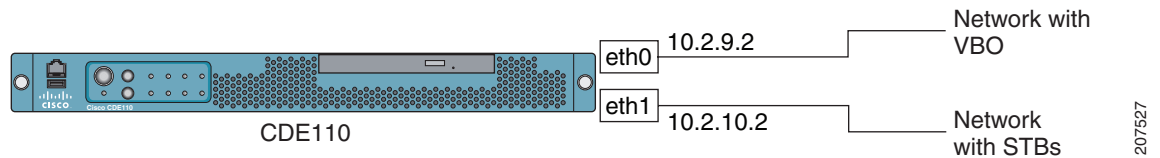
Note

On the back panel, the ports labeled 1, 2, 3, and 4 are, respectively, for interfaces eth0, eth1, eth2, and eth3.

Figure 2-2 shows the example IP addresses used in the configuration examples in this section.

- Interface eth0 connects to the network used for management and VBO communication.
- Interface eth1 connects to the network containing the STBs.

Figure 2-2 Example IP Addresses for Video Navigator Configuration



To configure the CDE110 Ethernet interfaces for Video Navigator, do the following:

Step 1 Press the front panel power switch to power on the CDE110.

The operating system boots.

Step 2 Log in as **root** with the password **rootroot**.



Note

To change the default password, use the **passwd** command.

Step 3 To configure the eth0 and eth1 used by Video Navigator, use a text editor to modify the two appropriate `/etc/sysconfig/network-scripts/ifcfg-eth#` files (where # is the number of the Ethernet interface, such as `ifcfg-eth1`), and do the following:

- Change ONBOOT to **yes**.
- Add the following:

```
IPADDR=ip_address_of_this_system_eth#
```

- Add the following:

```
NETMASK=netmask_for_eth#_network
```

For example, for the eth1 interface, the /etc/sysconfig/network-scripts/ifcfg-eth1 file would include the following after the modifications:

```
ONBOOT=yes
IPADDR=10.2.10.2
NETMASK=255.255.255.0
```

- Step 4** To bring the Ethernet interfaces up, use the **ifup** command for eth0 and eth1 as in the following example:

```
[root@system]# ifup eth1
```

- Step 5** Verify that the eth0 and eth1 interfaces are configured correctly and are up and running.

- Use the **ifconfig interface** command to verify that each Ethernet interface is up and running and that the IP address and netmask for each are set correctly. The following example is for eth1:

```
[root@system]# ifconfig eth1

eth1      Link encap:Ethernet  HWaddr 00:0E:0C:C6:F3:0F
          inet addr:10.2.10.2  Bcast:10.2.10.255  Mask:255.255.255.0
          inet6 addr: fe80::20e:cff:fec6:f30f/64  Scope:Link
          UP BROADCAST RUNNING MULTICAST  MTU:1500  Metric:1
          RX packets:3 errors:0 dropped:0 overruns:0 frame:0
          TX packets:36 errors:0 dropped:0 overruns:0 carrier:0
          collisions:0 txqueuelen:1000
          RX bytes:192 (192.0 b)  TX bytes:2700 (2.6 KiB)
          Base address:0x3000 Memory:b8800000-b8820000
```

- Use the **ip link show eth#** command (where # is the Ethernet interface number) to check that the link is up. The following example is for eth1:

```
[root@system]# ip link show eth1

eth1: <BROADCAST,MULTICAST,UP,LOWER_UP> mtu 1500 qdisc pfifo_fast qlen 1000
link/ether 00:0e:0c:c6:e4:fe brd ff:ff:ff:ff:ff:ff
```

- Use the **ping** command to check that the CDE110 can reach the devices directly connected to the Ethernet interfaces (for example, a directly connected router):

```
[root@system]# ping device_IP_address
```

- Step 6** Use a text editor to modify the /etc/hosts file and add a line with the IP address for eth0 and the associated hostname, as in the following example:

```
10.2.9.2 starfire-iptv
```

- Step 7** Save and close the /etc/hosts file.



Note For the host system IP address, it is recommended that you use the IP address of the Ethernet interface that points to the management network and the VBO.

- Step 8** Use a text editor to modify the /etc/sysconfig/network file and change HOSTNAME to the hostname of this system, as in the following example:

```
HOSTNAME=starfire-iptv
```

- Step 9** Save and close the /etc/sysconfig/network file.

**Note**

The changes to the files `/etc/hosts` and `/etc/sysconfig/network` do not take effect until the system is rebooted in [Step 10](#).

Step 10 To restart the system, issue the following command:

```
[root@system]# init 6
```

The operating system restarts.

Configuring Video Navigator

Video Navigator is a web application that requires minimal configuration.

**Note**

This section deals only with the specifics of configuring Video Navigator. For the details of configuring Poster Art Server, see the [“Preparing to Configure Poster Art Server”](#) section on page 2-6.

To configure Video Navigator, do the following:

Step 1 Log in as root.

Step 2 Change the working directory as follows:

```
$ cd /home/isa/MIDAS/config
```

Step 3 Ensure that the the following lines are present in the `backoffice.properties` file:

```
BackofficeVendor=EventIS
```

```
BackofficeUrl=http://192.124.21.22/
```

Step 4 Save and close the `backoffice.properties` file.

Preparing to Configure Poster Art Server

Poster Art Server is configured by means of an XML file that must first be uncompressed.

Do the following to uncompress the Poster Art Server configuration file.

-
- Step 1** Go to the directory where the compressed file resides. The following is the default directory when Poster Art Server is installed as part of Video Navigator:

```
cd /home/isa/MIDAS/webapps/
```

- Step 2** Uncompress the file.

```
jar xvf paserver.war
```



Note The resulting file is web.xml, in the directory WEB-INF. For an example of this file, see the [“web.xml” section on page 5-18](#).

- Step 3** You can now edit the XML file with any text editor.

For details, see [Chapter 3, “Understanding and Using the Cisco CDS Poster Art Server,”](#) and proceed to the [“Configuring Poster Art Server” section on page 3-8](#).

Configuring the Apache Web Server

You must configure the Apache web server to work with multiple IP addresses. Typically, two CDE110 Ethernet interfaces are configured with IP addresses. One Ethernet interface is for the STB client-facing VLAN, and the other Ethernet interface is for the management- and VBO-facing VLAN.

Do the following to configure the Apache web server:

-
- Step 1** Log in as root or use the **su** command to change to user root.

- Step 2** Change the working directory.

```
# cd /usr/local/apache2/bin
```

- Step 3** Stop the Apache httpd daemon.

```
# ./apachectl stop
```

- Step 4** Change the working directory.

```
# cd /usr/local/apache2/conf
```

- Step 5** Use a text editor to modify the httpd.conf file.

- a.** Search for the following section:

```
# Listen: Allows you to bind Apache to specific IP addresses and/or
# ports, instead of the default. See also the <VirtualHost>
# directive.
#
# Change this to Listen on specific IP addresses as shown below to
# prevent Apache from glomming onto all bound IP addresses.
#
Listen 80
```

- b. Replace `Listen 80` with the following:

```
Listen xxx.xx.xx.xxx:80
Listen yyy.yy.yy.yyy:80
```

In the preceding, `xxx.xx.xx.xxx` and `yyy.yy.yy.yyy` are the IP addresses that you configured for the two CDE110 Ethernet interfaces.

- c. Save and close the `httpd.conf` file.

Step 6 Change the working directory.

```
# cd /usr/local/apache2/bin
```

Step 7 Start the Apache `httpd` daemon.

```
# ./apachectl start
```

Starting Video Navigator and Verifying System Status

The following system services are started automatically each time the CDE110 is powered on:

- `sshd`—Secure Shell daemon
- `httpd`—HyperText Transfer Protocol daemon (the Apache web server)
- `tomcat5`—Apache Tomcat application server

This section shows you how to do the following:

1. Manually start Video Navigator when you start the application for the first time.
2. Verify that Video Navigator is running correctly.
3. Configure Video Navigator to start automatically when the CDE110 is powered on or restarted.



Note

The name “midas” appears in the Video Navigator commands and directory names. This name was used for Video Navigator when the commands were created.

Do the following to start Video Navigator and verify that the needed processes are running:

Step 1 Log in as root and change to user `isa` by using the `su - isa` command.

```
su - isa
```

Step 2 Start Video Navigator.

```
$ start_midas
```

```
MIDAS not running ..... starting MIDAS
```

Step 3 Verify that the Video Navigator process is running.

```
$ check_midas
```

```
MIDAS (2.1.X.X) is running
```

If Video Navigator is not running, the output is as follows:

```
MIDAS is not running
```

Step 4 Test the STB client-facing web services interface.

```
$ cd /home/isa/MIDAS_IntegrationTest
```

```
$ clientinterfacetest
```

The **clientinterfacetest** script does not verify the connection from Video Navigator to the STB. It verifies that the client-facing web services interface of Video Navigator is working correctly.

If the test is *successful*, the output is as follows:

```
*****
Start testing liveness of MIDAS client interface.
*****
output = <html><body><h1>Welcome to MIDAS Server</h1></body></html>

Test successful
```

If the test is *not successful*, the output is as follows:

```
*****
Start testing liveness of MIDAS client interface.
*****
Method failed: HTTP/1.1 503 Service Temporarily Unavailable
Test unsuccessful
```

Step 5 Log in as root or use the **su** command to get root privileges.

Step 6 Verify that the sshd process is running and look for output similar to that shown below.

```
# ps -ef | grep sshd
```

```
root      2835      1  0 Jul18 ?          00:00:00 /usr/sbin/sshd
```

Step 7 Verify that the httpd process is running and look for output similar to that shown below.

```
# ps -ef | grep httpd
```

```
root      2880      1  0 Jul18 ?          00:00:00 /usr/sbin/httpd
apache    4881    2880  0 04:03 ?          00:00:00 /usr/sbin/httpd
apache    4882    2880  0 04:03 ?          00:00:00 /usr/sbin/httpd
apache    4883    2880  0 04:03 ?          00:00:00 /usr/sbin/httpd
apache    4884    2880  0 04:03 ?          00:00:00 /usr/sbin/httpd
apache    4885    2880  0 04:03 ?          00:00:00 /usr/sbin/httpd
apache    4886    2880  0 04:03 ?          00:00:00 /usr/sbin/httpd
apache    4887    2880  0 04:03 ?          00:00:00 /usr/sbin/httpd
apache    4888    2880  0 04:03 ?          00:00:00 /usr/sbin/httpd
```

Step 8 Verify the tomcat5 process is running and look for output similar to that shown below.

```
# ps -ef | grep tomcat5

root      2915      1  0 Jul18 ?           00:00:11 /usr/java/default/bin/java
-Djava.util.logging.manager=org.apache.juli.ClassLoaderLogManager
-Djava.util.logging.config.file=/usr/share/tomcat5/conf/logging.properties
-Djava.endorsed.dirs=/usr/share/tomcat5/common/endorsed -classpath
:/usr/share/tomcat5/bin/bootstrap.jar:/usr/share/tomcat5/bin/commons-logging-api.jar
-Dcatalina.base=/usr/share/tomcat5 -Dcatalina.home=/usr/share/tomcat5
-Djava.io.tmpdir=/usr/share/tomcat5/temp org.apache.catalina.startup.Bootstrap start
```

Step 9 Do one of the following after checking that the sshd, httpd, and tomcat5 processes are running:

- If these checks indicate that all processes are running, proceed to [Step 10](#).
- If any of these checks fail, restart the processes that are not running. As an example, to restart the tomcat5 process, use the **service tomcat5 restart** command. Then verify that the processes are running and proceed to [Step 10](#).

Step 10 Change the working directory.

```
# cd /etc
```

Step 11 To configure Video Navigator to start automatically when the CDE110 is powered on or restarts, use a text editor to modify the rc.local file.

- a. Uncomment the following line by deleting the # character:

```
#su - isa -c "cd /home/isa/MIDAS; ./run_midas >& /home/isa/MIDAS/midas_log&"
```

- b. Save and close the rc.local file.

Configuring for Resiliency with Cisco ACE (Optional)

Video Navigator basically takes HTTP requests from the STB. To provide resiliency, the Cisco Application Control Engine (ACE) module is used to connect to two or more Video Navigator servers. The basic configuration is as follows:

1. Add an extra VLAN for the subscriber-facing ports on the Video Navigator servers.
2. Place the outside port on the ACE module in the subscriber-facing VLAN.
3. Place the inside port of the ACE module on the extra VLAN with the Video Navigator servers.
4. Create a virtual IP address on the ACE module (in the subscriber-facing VLAN).
5. Add each Video Navigator server as a real server to the server farm (in the extra VLAN) associated with the virtual IP address.
6. Configure the ACE module to forward traffic from only port 80 or port 443 to the Video Navigator servers.
7. Monitor those ports periodically to determine whether a real server is available.

The ACE module supports two kinds of aliveness check, port aliveness and application aliveness, as follows:

- To check for port aliveness, ACE periodically pings the desired ports to see whether they are reachable. If the ping succeeds, it is assumed that the remote server is operating properly; otherwise, the server is identified as failed and is not used until the next successful ping.

- To check for application aliveness, the operator must define in ACE the contents of the desired request and response messages. ACE periodically sends the request to the Video Navigator server, and compares the response message with the configured value. If the two match, it is assumed that the remote server is operating properly; otherwise, the server is identified as failed and is not used until the next successful match.

Because subscriber-specific data is queried each time an STB browses the VoD catalog, it is possible that one Video Navigator server in the farm has subscriber-specific data that the others do not.

**Caution**

It is important that browsing sessions from the same STB be directed to the same server in the server farm. The ACE module has a feature that can make a session from a given IP address “sticky” to a particular server. Basically, this ensures that all HTTP packets from a given IP address are directed to the same server for a configurable period of time (usually much longer than an average browsing session).

**Note**

For supporting information, see the references in “[Support for Resiliency with Cisco ACE](#)” section on [page 1-6](#).

Information on CDE110 Hardware

For information about the Cisco Content Delivery Engine 110, see the *Cisco Content Delivery Engine 110 Hardware Installation Guide* at the following URL:

http://www.cisco.com/en/US/docs/video/cds/cde/cde110/installation/guide/cde110_install.html