



Software Recovery Procedures

This chapter discusses how to recover a corrupted system image, how to recover a lost password, and how to recover from missing disk-based software on a Content Engine, Content Router, or Content Distribution Manager.

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Recovering the System Software

The Content Engine, Content Router, and Content Distribution Manager have a resident rescue system image that is invoked should the image in Flash memory be corrupted. A corrupted system image can result from a power failure that occurs while a system image is being written to Flash memory. The rescue image can download a system image to the main memory of the device and write it to Flash memory.

To install a new system image using the rescue image, perform the following steps:

- Step 1** Download the system image file (*.sysimg) to a host that is running an FTP server.
- Step 2** Establish a console connection to the device and open a terminal session.
- Step 3** Reboot the device by toggling the power on/off switch.

The rescue image dialog appears. The following example demonstrates how to interact with the rescue dialog (user input is denoted by entries in bold typeface):

```
This is the rescue image. The purpose of this software is to let
you download and install a new system image onto your system's
boot flash device. This software has been invoked either manually
(if you entered `***' to the bootloader prompt) or has been
invoked by the bootloader if it discovered that your system image
in flash had been corrupted.
```

To download an image, this software will request the following information from you:

- which network interface to use
- IP address and netmask for the selected interface
- default gateway IP address
- server IP address
- which protocol to use to connect to server
- username/password (if applicable)
- path to system image on server

Please enter an interface from the following list:

```
0: FastEthernet 0/0
1: FastEthernet 0/1
0
```

Using interface FastEthernet 0/0

Please enter the local IP address to use for this interface:

```
[Enter IP Address]: 172.16.22.22
```

Please enter the netmask for this interface:

```
[Enter Netmask]: 255.255.255.224
```

Please enter the IP address for the default gateway:

```
[Enter Gateway IP Address]: 172.16.22.1
```

Please enter the IP address for the FTP server where you wish to obtain the new system image:

```
[Enter Server IP Address]: 172.16.10.10
```

Please enter your username on the FTP server (or 'anonymous'):
[Enter Username on server (e.g. anonymous)]: **anonymous**

Please enter the password for username 'anonymous' on FTP server (an email address):

Please enter the directory containing the image file on the FTP server:
[Enter Directory on server (e.g. /)]: /

Please enter the file name of the system image file on the FTP server:
[Enter Filename on server]: **ACNS-4.2.1-K9.sysimg**

Here is the configuration you have entered:

Current config:
 IP Address: 172.16.22.22
 Netmask: 255.255.255.224
Gateway Address: 172.16.22.1
 Server Address: 172.16.10.10
 Username: anonymous
 Password:
Image directory: /
Image filename: ACNS-4.2.1-K9.sysimg

Attempting download...
Downloaded 10711040 byte image file
A new system image has been downloaded.
You should write it to flash at this time.
Please enter 'yes' below to indicate that this is what you want to do:
[Enter confirmation ('yes' or 'no')]: **yes**
Ok, writing new image to flash
.....
.....Finished writing image to flash.
Enter 'reboot' to reboot, or 'again' to download and install a new image:
[Enter reboot confirmation ('reboot' or 'again')]: **reboot**
Restarting system.

Initializing memory. Please wait.

- Step 4** Log in to the device as username **admin**. Verify that you are running the correct version by entering the **show version** command.

```
Username: admin
Password:
```

```
Console> enable
Console# show version
Copyright (c) 1986-2002 by Cisco Systems, Inc.
Cisco Application and Content Networking Software Release 4.2
Compiled 18:48:10 Oct 24 2002 by (cisco)
```

```
System was restarted on Wed Oct 31 22:12:25 2002.
The system has been up for 1 day, 5 hours, 26 minutes, 53 seconds.
```

Recovering a Lost Password for the ACNS Software Cache Application

If you are using the Cache application, and an administrator password is forgotten, lost, or misconfigured, perform the following steps to reset the password on the device.



Note

There is no way to restore a lost password. You must reset the password to a new one, as described in this procedure.

- Step 1** Establish a console connection to the device and open a terminal session.
- Step 2** Reboot the device. While the device is rebooting, watch for the following prompt and press **Enter** when you see it:

```
Cisco ACNS boot:hit RETURN to set boot flags:0009
```

- Step 3** When prompted to enter bootflags, enter this value:

```
0x8000
```

For example:

```
Available boot flags (enter the sum of the desired flags):
0x4000 - bypass nvram config
```

```
0x8000 - disable login security
```

```
[CE boot - enter bootflags]:0x8000  
You have entered boot flags = 0x8000  
Boot with these flags? [yes]:yes
```

```
[Display output omitted]
```

- Step 4** When the device completes the boot sequence, you are prompted to enter the username to access the CLI. Enter the default administrator username (**admin**):

```
Cisco Content Engine Console
```

```
Username: admin
```

```
Setting the configuration flags to 0x8000 lets you into the system,  
bypassing all security. Setting the configuration flags field to  
0x4000 lets you bypass the NVRAM configuration.
```

- Step 5** Once you see the CLI prompt, set the password for the user using the **username name password** command in global configuration mode.

- Step 6** Use the **write** command to save the configuration change.

- Step 7** Reboot your device.

In ACNS software, the bootflags are reset to 0x0 on every reboot.

Recovering a Lost Password for the ACNS Software E-CDN Application

If the E-CDN application is enabled and the administrator password is forgotten, lost, or misconfigured, perform the following steps to reset the password on the Content Distribution Manager. Once the password is reset on the Content Distribution Manager, these changes propagate out to any Content Router or Content Engine devices that are managed by the Content Distribution Manager.



Note

There is no way to restore a lost password. You must reset the password to a new one, as described in this procedure.

- Step 1** Establish a console connection to the Content Distribution Manager and open a terminal session.
- Step 2** Reboot the device. While the device is rebooting, watch for the following prompt and press **Enter** when you see it:

```
Cisco ACNS boot:hit RETURN to set boot flags:0009
```

- Step 3** When prompted to enter bootflags, enter this value:

0x8000

For example:

```
Available boot flags (enter the sum of the desired flags):
0x4000 - bypass nvram config
0x8000 - disable login security
```

```
[ACNS boot - enter bootflags]:0x8000
You have entered boot flags = 0x8000
Boot with these flags? [yes]:yes
```

[Display output omitted]

- Step 4** When the device completes the boot sequence, you are prompted to enter the username to access the CLI. Enter the default administrator username (**admin**):

```
Cisco Content Engine Console
```

```
Username: admin
```

```
cdm#
```

```
Setting the configuration flags to 0x8000 lets you into the system,
bypassing all security. Setting the configuration flags field to
0x4000 lets you bypass the NVRAM configuration.
```

- Step 5** Once you see the CLI prompt, wait several minutes to allow the E-CDN application to start completely (check the output of the **show ecdn** command and look for “ECDN content distribution manager is running”). Then reset the administrator password to its default value (“default”) by running the **ecdn reset-cdm-gui-password** command in global configuration mode.

```
cdm(config)# ecdn reset-cdm-gui-password
```

- Step 6** Use the **write** command to save the configuration change.

- Step 7** Reboot the Content Distribution Manager.
- In ACNS software, the bootflags are reset to 0x0 on every reboot.
- Step 8** After the Content Distribution Manager has rebooted, the administrator password can be changed to a nondefault value using the Content Distribution Manager GUI.
-

Recovering from Missing Disk-Based Software

This section describes the recovery procedures to use, if for some reason the software installation on the first disk drive (disk00) is corrupt or missing.

This situation is most likely to occur only if you replaced disk00 in your Content Engine, Content Router, or Content Distribution Manager. By design, the software installation on disk00 cannot be corrupted by a system crash or a power failure.

Using the Software Recovery Shell in ACNS 4.0 and ACNS 4.1 Software

This section describes the software recovery shell feature. Use this feature if the ACNS 4.0 or 4.1 software detects that the software installation on the first disk drive (disk00) is corrupt or missing.



Note

For information on the physical location of the disks and how to remove and replace a disk drive (for the seven-rack unit chassis models), refer to the hardware installation guide that shipped with your system.

After you replace disk00 and power up your system, the following error message appears:

```
There appears to be an incomplete or problematic software
installation on your first disk drive. This may be due to
older software having previously been installed on your system.
Alternatively, if you have just replaced the first disk drive,
software will have to be installed onto it.
```

```

Try getting on to network from saved parameters...
get-on-net-pp:got pp_signature!= 0xcfcfcfcf (0x0), bailing
no pp
Looking for network configuration from saved CLI config...
Done get to net
done
Manual intervention required to download new software!
If your network configuration was retrieved and applied successfully,
then you can telnet in and interact with the software-recovery shell.
Alternatively, you can run software-recovery shell on console right
now.
If you are reading this right now, you should probably enter 'yes'
below unless you plan to telnet to the box.

```

If the FTP download fails for any reason, the whole process is repeated. When the device has booted to the point that the above message appears, and assuming that you have previously saved network parameters, you can use Telnet to access the device at this point and interact with the software-recovery shell.

The other option is to run the software-recovery shell directly on the console by typing **yes** at the initial prompt, as follows:

```
Run software-recovery-shell on console? Enter yes if desired:yes
```

After you have entered the software-recovery shell, the following dialog appears. (In this example, administrator entries are shown in bold type.)

```

This is config-shell
It appears that ACNS 4.x software is not properly installed on your
first disk drive (disk00). [/sw and/or /swstore not mounted]

You have several options:
- You can continue booting. This will require that disk00
  be erased and reformatted and that a full ACNS 4.1 release image
  be downloaded and installed to disk00. This is probably what
  you should do, unless you specifically know otherwise.
- You can reboot and invoke the rescue image, if you know what
  you are doing.

What would you like to do [continue or reboot]: continue
Please confirm. disk00 will be reformatted!
Confirm [continue, reboot]: continue
Ok, deleting data on disk00
Syncing partition table
Running acns_disk hidden
Ok, now we need to download and install a full ACNS 4.x software
release.

```

The name of this file from www.cisco.com will be something like

```
CE507-ACNS-411-K9.bin
```

Please obtain this file and place it on an FTP server accessible over the network from this system.

Please enter FTP server IP address: **172.16.193.245**

Please enter directory on ftp server containing release image (e.g. /): **/nfs/acns/centralbuild/target/acns_latest**

Please enter filename on ftp server (e.g. filename.bin):

CE507-ACNS-411-K9.bin

Enter username for remote ftp server: **johndoe**

Enter password for remote ftp server:

Initiating FTP download...

printing one # per 1MB downloaded

Sending: USER johndoe

vista2.cisco.com FTP server (Version wu-2.6.0(1) Mon Feb 28 10:30:36 EST 2000) ready.

Password required for johndoe.

Sending: PASS *****

User johndoe logged in.

Sending: TYPE I

Type set to I.

Sending: PASV

Entering Passive Mode (128,107,193,245,48,146)

Sending: CWD /nfs/acns/centralbuild/target/acns_latest

CWD command successful.

Sending PASV

Entering Passive Mode (128,107,193,245,48,146)

Sending: RETR CE507-ACNS-411-K9.bin

Opening BINARY mode data connection for CE507-ACNS-411-K9.bin(86046491 bytes).

#####

Installing phase3 bootloader...

Installing system image to flash: image on flash identical to new image, no work required

/acns/bin/config-shell: ftp_to_install appeared to succeed.

/acns/bin/config-shell: running install-to-sw

Installing application components...[di] [li] [re] [sm] [so]

Running post-install hooks...

Syncing filesystems...

/acns/bin/install-to-sw: DONE.

The release image you just downloaded contains a base system component.

Installing it to flash.

image on flash identical to new image, no work required

/bin/ln: /home/ftp: File exists

```
Running pre-200 hooks...
ftp server could not be started since /local1 is not present
BOOT: entering runlevel 200 (full operations)!
code150.sh: no process killed
```

Cisco Content Engine Console

Using the Command-Line Interface in ACNS 4.2 Software

This section explains how to recover from missing disk-based software or a failed system disk when you are using ACNS 4.2 software. In earlier versions of ACNS software, a feature called the software recovery shell was used to recover from missing disk-based software. A new procedure that uses the CLI has been implemented in the ACNS 4.2 software release.

If the system disk (disk00) fails or is missing, ACNS 4.2 software continues to run; however, it runs in a degraded mode in which HTTP proxy and related HTTP features still work, but most other features fail.

To recover from this condition, follow these steps:

-
- Step 1** Power down the device and replace the failed or missing disk00 with a new, blank disk.
 - Step 2** After the new disk is installed, power up the device.
 - Step 3** From a console or through a Telnet session, check the startup messages that appear on your screen.

If there is a problem with disk00 or the disk-based software, a message similar to the following appears:

```
*****
Your first disk is not in standard configuration.
You might need to run 'disk recover' from the CLI.
*****
```

Step 4 Log in as **admin**.

```
Cisco Content Engine Console
```

```
Username: admin
Password:
System Initialization Finished.
```

```
ce-507 con now available
```

```
Press RETURN to get started!
```

Step 5 Enter the **disk recover** command to create the file systems on disk00 that are for internal system use.

```
ce-507# disk recover
This will erase everything on disk00. Are you sure? [no]yes
System filesystems appear to have been installed.
Please verify your software installation with 'show flash'
and install a new image if necessary.
ce-507#
ce-507# show flash
/diamond/bin/exec_show_flash: could not open /swstore/manifest: No
such file or directory
Your software installation is damaged.
Please run 'copy ftp install' to install a new image.
```

Step 6 Enter the **copy ftp install** command to download and install a new system image.

```
ContentEngine# copy ftp install ftp-server remotefiledir
remotefilename
```

For example:

```
# copy ftp install vista /users2/gid/bfc/boot ce507-ACNS-4.2.1-K9.bin
Enter username for remote ftp server: gid
Enter password for remote ftp server:
Initiating FTP download...
printing one # per 1MB downloaded
Sending: USER gid
vista.cisco.com FTP server (Version wu-2.6.0(1) Mon Feb 28 10:30:36
EST 2000) ready.
Password required for gid.
Sending: PASS *****
User gid logged in.
Sending: TYPE I
Type set to I.
```

```

Sending: PASV
Entering Passive Mode (128,107,193,244,173,205)
Sending: CWD /users2/gid/bfc/boot
CWD command successful.
Sending PASV
Entering Passive Mode (128,107,193,244,173,205)
Sending: RETR ruby.bin
Opening BINARY mode data connection for ruby.bin (102794344 bytes).
#####
#####
Installing phase3 bootloader...
Installing system image to flash: image on flash identical to new
image, no work required
The new software will run after you reload.
ce-507#
ce-507# show flash
ACNS software version (disk-based code): ACNS-4.2.0-b5

System image on flash:
Version: sapphire_4.2

System flash directory:
System image: 91 sectors
120 sectors total, 7 sectors free.

Bootloader on flash:
sh: strings: command not found

ce-507#

```

- Step 7** Enter the **disk config** command to define file system space allocations on disk00. For example:

```
ContentEngine# disk config sysfs 10% cfs 20% mediafs 20% ecdnfs 50%
```



Note Disk allocation percentages or values should reflect the anticipated usage for each file type.

Alternatively, you can run the **disk config** command after you reboot the software.

- Step 8** Use the **reload** command to reboot the software with the new disk and new system image running.

```
ContentEngine# reload
```