



Upgrading the Cisco Prime Network Analysis Module Software

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This document provides details about upgrading an existing installation of Cisco Prime Network Analysis Module (NAM) software to version 6.2.

This document has the following sections:

- [Prerequisites, page 2](#)
- [Supported Upgrade Paths, page 2](#)
- [Upgrading the NAM Software to Version 6.2—Which Procedure Do I Use?, page 2](#)
- [Upgrading Using the Prime NAM CLI, page 3](#)
- [Upgrading Using the Helper Utility, page 9](#)
- [Prime NAM Platforms and Supported Upgrade Methods, page 11](#)
- [Upgrade Limitations, page 12](#)
- [Related Documentation, page 12](#)



Prerequisites

Ensure that you review the [Cisco Prime Network Analysis Modules Compatibility Matrix](#) and are familiar with:

- File Transfer Protocol (FTP) or Trivial File Transfer Protocol (TFTP)
- Basic Catalyst or Nexus switch administration, if upgrading a NAM-3 or NAM-NX1 module.

Supported Upgrade Paths

Upgrading to Prime NAM 6.2 is supported from Prime NAM 5.x, 6.0, and 6.1.

If you are running NAM version 5.0, we recommend that you upgrade to 5.1.x first, and then upgrade to 6.2.

Upgrading the NAM Software to Version 6.2—Which Procedure Do I Use?

In most cases, we recommend using the NAM CLI to perform a standard upgrade. If you do not care to retain your existing data and configuration, or wish to start fresh for any other reason, use the NAM CLI to perform a reformat upgrade.

The helper utility is a small program running in a barebones software environment that facilitates upgrade or recovery operations. The helper utility is accessed by rebooting the NAM into helper mode. Upgrading via the helper utility is typically required only when you wish to perform a reformat upgrade from NAM version 5.1(2) or below, as those versions do not support a reformat upgrade via the NAM CLI. Additionally, in cases where a NAM encounters issues that render it unable to boot into the application image, the helper utility can typically be used to reimage the NAM to restore operations.

The table below summarizes your upgrade options and provides a reference to the appropriate section.

Table 1 **Upgrade Options**

Procedure	Data Saved	Config Files Saved	Application Image Replaced	See...
Standard upgrade using the Prime NAM CLI	Y	Y	Y	Upgrading Using the Prime NAM CLI, page 3
Reformat upgrade using the Prime NAM CLI	N	N	Y	Upgrading Using the Prime NAM CLI, page 3
Standard upgrade using the helper utility	Y	Y	Y	Upgrading Using the Helper Utility, page 9
Reformat upgrade using the helper utility	N	N	Y	Upgrading Using the Helper Utility, page 9

**Note**

To utilize the Cisco Nexus 7000 Series Release 6.2(8) performance improvements for Data Center protocols (VxLAN, FabricPath, OTV, LISP, Segment ID, VNTag, and FCoE), you can upgrade the FPGA image in your Cisco Nexus 7000 Series NAM-NX1. For details on how to upgrade your FPGA image, see [FPGA/EPLD Upgrade Note for Cisco Prime NAM-NX1, 6.0](#).

Upgrading Using the Prime NAM CLI

An overview of the procedure for upgrading using the NAM CLI is as follows:

1. Before starting the upgrade process, we recommend performing a complete backup of your current configuration. Use the command line interface to upload your configuration to an external server. See [Backing Up Your Configuration, page 4](#).
2. Download the desired version of the NAM software and use the upgrade CLI command to perform the upgrade. See [Upgrading Your Software, page 4](#).
3. After completing the upgrade process, we recommend backing up your configuration again (to a different backup file than used in Step 1). This backup will capture any configuration updates that were made automatically as part of the upgrade, and will be useful in case of a future error that requires reinstallation of the NAM software (e.g., hard disk failure). [Restoring Your Configuration, page 5](#).

Starting with the NAM 6.2(1) release, the NAM application image is a *signed image*, meaning that the image includes a digital signature that can be used to detect whether the image has been tampered with or otherwise modified. This signature is checked during installation, and if found not to match against the image, installation aborts. Any earlier release of NAM software does not include a digital signature, and is referred to as an *unsigned image*.

In NAM 6.1(1) and earlier, the NAM CLI is not designed to verify signed images. Signed images will still install successfully, but the signature will not be verified. Therefore, when upgrading from these versions, the integrity of the target image should be verified using the corresponding checksum published on Cisco.com. Furthermore, the following warning messages may be displayed, and should be ignored (the "trailing garbage" is the digital signature):

```
gzip: stdin: decompression OK, trailing garbage ignored
tar: Child returned status 2
tar: Error exit delayed from previous errors
```

**Note**

Once a signed image has been installed on a NAM, its CLI will refuse to install an unsigned image, since the signature verification step fails when there is no signature. If installation of an older, unsigned version of the NAM software becomes necessary, use the helper utility, or the recovery procedure for that software version.

The following table summarizes the upgrade scenarios that are supported via the CLI:

Current Image Version	Target Image Version	Scenario supported?
6.1(1) or earlier (unsigned image)	6.1(1) or earlier (unsigned image)	Yes
6.1(1) or earlier (unsigned image)	6.2(1) or later (signed image)	Yes (ignore messages about trailing garbage)

Current Image Version	Target Image Version	Scenario supported?
6.2(1) or later (signed image)	6.1(1) or earlier (unsigned image)	No (use helper utility, or recovery procedure)
6.2(1) or later (signed image)	6.2(1) or later (signed image)	Yes

Backing Up Your Configuration

We recommend that you perform a complete backup of your Prime NAM configuration to facilitate recovery in case of an unexpected error during the upgrade process.



Note

Capture files and monitoring data are not backed up.

To back up your current configuration, use the following NAM CLI command:

```
config upload ftp://user:password@server/path backup_file_name
```

For example:

```
config upload ftp://admin:secret@172.20.104.11/archive/nam_config backup_file_name
```

The **config upload** command saves a copy of the NAM configuration to the destination you specify.

For 5.1.x and 6.0(1), there are two backup files:

- backup_file_name
- backup_file_name.namxml.tar

For 6.0(2) and 6.1, there is only one backup file, with a .namconf.tar suffix.

The destination address must include a valid server name, and the login user must have read/write access to the specified directory.

Upgrading Your Software

To upgrade the application image on the Prime NAM, follow these steps:

Step 1 Download the application image for the Prime NAM at the following URL:

<https://software.cisco.com/download/navigator.html>

Look for a file named **nam-app-x86_64.x-x-x.SPA.bin.gz**, where x-x-x is the NAM software version and "SPA" designates a signed, production image (if installing a NAM image prior to version 6.2(1), the filename will not include "SPA"). This file will be referred to as the NAM application image.

Step 2 Store the NAM application image on an external server (e.g., the server where you archived your NAM configuration).

Step 3 Issue the appropriate command from [Table 1-2](#).

Table 1-2 Upgrade Commands

Command ¹	Purpose
upgrade ftp://user:pass@server/path/filename	Perform a standard upgrade, retaining configuration and data.
upgrade² ftp://user:pass@server/path/filename reformat	Perform a reformat upgrade, which clears existing configuration and data before applying the NAM application image.
	 Caution All configuration and data will be lost.

1. You may also use HTTP instead of FTP. Username and password are not mandatory
2. Supported in version 5.1(3), and 6.0 and later. Not supported in 5.1(2) and earlier (use the helper utility instead).

For example:

```
upgrade ftp://admin:secret@10.10.10.1/archive/nam_software/nam-app-x86_64.6-2-1.SPA.bin.gz
reformat
```



Note By default, the CDB (network monitoring database) will be converted to the latest schema.

- Step 4** Enter **Yes** to complete the installation.
- After the installation is complete, you can log into the user interface.

Upgrade Examples

The following examples illustrate the upgrade process for a NAM 2320 appliance:



Note The upgrade procedure for NAM 2304 is identical to the procedure outlined below. For other platforms like NAM-3 and NAM-NX1, we recommend that you log into the switch and connect to the NAM console (using service-module session or attach console module, respectively) before starting the upgrade. This is so you can track the progress of the upgrade.

- Step 1** Connect to the CIMC CLI interface. We recommend accessing the NAM CLI via the CIMC console so that you can track the progress of the upgrade and respond to any prompts (e.g., whether to convert or delete the monitoring database); this is not possible when accessing the NAM CLI via an SSH or Telnet session through the management port.
- Step 2** Press **Enter** if no login prompt appears.
- Step 3** At the login prompt, provide the NAM CLI username and password (root/root by default).
- Step 4** Issue the CLI command: **upgrade <image_url>**
- Step 5** Enter **y** to confirm that you want to proceed with the upgrade. The system will reboot into helper mode, update the NAM application image, and then reboot back into the NAM application.
- Step 6** After the system restarts, a message like the following may be displayed:

The database format has changed and needs to be deleted or converted. Converting the database can take up to a few hours. Deleting the database is quick, but you will lose monitoring data.

(10 seconds) Convert or Delete? [C/d]:

You may enter **c** to convert the CDB (network monitoring) data. If you enter **c**, all existing CDB data will be converted and carried over, which can take a few hours, depending on the amount of monitoring data stored. This is the default action.

You may enter **d** to delete the data, if you do not need to keep it. If you enter **d**, all existing CDB data is wiped out.

If you do not provide any input, this prompt will time out after 10 seconds, at which point the default **c** action will be taken.

Step 7 After the upgrade is done, the login prompt appears. Log in with your username and password.

In this example, **nam-2320.cisco.com** denotes a NAM-2320 appliance, and **nam-2320-cimc.cisco.com** is its CIMC.

```
$ ssh admin@nam-2320-cimc.cisco.com
admin@nam-2320-cimc.cisco.com's password:
ucs-c240-m3# connect host
CISCO Serial Over LAN:
Close Network Connection to Exit

Cisco Prime Network Analysis Module

nam-2320.cisco.com login: root
Password:
Last login: Fri May 29 02:18:16 2015 on ttyS0

Cisco Prime NAM Appliance 2320 (NAM2320-K9) Console, 6.1(1)
Copyright (c) 1999-2014 by Cisco Systems, Inc.

root@ nam-2320.cisco.com # upgrade
http://nam-www.cisco.com/images/nam-app-x86_64.6-2-1.SPA.bin.gz
Fetching image http://nam-www.cisco.com/images/nam-app-x86_64.6-2-1.SPA.bin.gz:
##### 99.8%

gzip: stdin: decompression OK, trailing garbage ignored
tar: Child returned status 2
tar: Error exit delayed from previous errors
Upgrading NAM application with
http://nam-www.cisco.com/images/nam-app-x86_64.6-2-1.SPA.bin.gz (373982573)

Upgrade file http://nam-www.cisco.com/images/nam-app-x86_64.6-2-1.SPA.bin.gz
is downloaded. Upgrading will automatically replace
contents of application partition.

Note: the system will reboot into the helper image, install the new
application image and then reboot back to the newly installed image!
Do you want to proceed installing it? [y/N] y
Proceeding with installation. Please do not interrupt.
Rebooting to helper to continue the installation ...
reboot to helper

Stopping periodic command scheduler: cron.
Stopping OpenBSD Secure Shell server: sshd.
Stopping internet superserver: xinetd.
Stopping internet superserver: xinetd-ipv4.
Stopping NTP server: ntpd.
```

```

Stopping PTP HW Clock to System Clock sync: phc2sys.
Stopping PTP stack: ptp4l.
Saving the system clock..
Hardware Clock updated to Fri May 29 02:21:30 UTC 2015.
Shutting down NAM, part 2:
Stopping NAM monitoring daemons:
Stopping httpd
Stopping watchdog
Stopping devconfd
Stopping md_poller
Stopping mond
ntki0:01:NTKI_DestroyPacketFeedV4: NTCI_StoppktFeed must be called prior to
NTCI_DestroyPacketFeed.
Stopping namelookupd
Shutting down dmand
Shutting down iscsi daemon
Disconnecting iSCSI targets:.
Stopping iSCSI initiator service:.
Shutting down configd
Saving random seed...: done.
Shutting down NAM (NAM2320-K9), part 1:
Stopping Name Service Cache Daemon: nscd.
Stopping deferred execution scheduler: atd.
Stopping NFS common utilities: statd.
Stopping klogd . . .
Stopping syslogd . . .
Unmounting remote filesystems... done.
Deactivating swap...done.
Unmounting local filesystems...umount: /: device is busy
done.
mount: you must specify the filesystem type
Starting reboot command: reboot
Rebooting...
Restarting system.
.....
... snip ...
.....
Upgrading NAM Appliance
Installing image left by application upgrade command
Starting application upgrade
Checking upgrade.bin

Executing pre install actions...

Initializing the application image partition.
This process may take several minutes...

Applying the image, this process may take several minutes...
File size: 370934505
Signature Envelope Size: 388

Image /mnt/payload/ifname verified sucessfully.
Unsigned image is written to /mnt/payload/ifname.tar.gz

Image /mnt/payload/ifname verified sucessfully

Performing post install, please wait...

Running post install script: /tmp/post-install
Application image upgrade complete. You can boot the image now.
Copying helper network setup to NAM image...
Done!

INIT: Sending processes the TERM signal

```

```

trap
Stopping internet superserver: inetd.
Stopping OpenBSD Secure Shell server: sshd.
Stopping internet superserver: xinetd.
Stopping internet superserver: xinetd-ipv4.
: done.
Shutting down NAM (NAM2320-K9), part 1:
Stopping klogd . . .
Stopping syslogd . . .
Sending all processes the TERM signal... done.
Sending all processes the KILL signal... done.
Unmounting remote filesystems... done.
Deactivating swap...done.
Unmounting local filesystems...done.
Starting reboot command: reboot
Rebooting...
Restarting system.
.....
... snip ...
.....
Checking CDB version

The database format has changed and needs to be deleted or converted.
Converting the database can take up to a few hours.
Deleting the database is quick, but you will lose monitoring data.

(10 seconds) Convert or Delete? [C/d]:
(9 seconds) Convert or Delete? [C/d]:
(8 seconds) Convert or Delete? [C/d]:
(7 seconds) Convert or Delete? [C/d]:
(6 seconds) Convert or Delete? [C/d]:
(5 seconds) Convert or Delete? [C/d]:
(4 seconds) Convert or Delete? [C/d]:
(3 seconds) Convert or Delete? [C/d]:
(2 seconds) Convert or Delete? [C/d]:
(1 second) Convert or Delete? [C/d]:
Prompt timeout, proceeding with conversion.
Converting CDB to latest schema, do not power down the NAM.
Press <ENTER> to see progress or <q/Q> to quit and delete.

INIT: Entering runlevel: 3
Starting syslogd . . .
Starting klogd . . .
Starting NFS common utilities: statd.
Starting internet superserver: xinetd.n
Starting internet superserver: xinetd-ipv4.n
Starting NAM Time Script
NTP and PTP not configured.
Sync to Switch
Starting Name Service Cache Daemon: nscd.
Starting smartd: failed (17: ).
Starting deferred execution scheduler: atd.
Starting Anachronistic daemon: anacron.
Starting periodic command scheduler: cron.
nam3 NAM2320-K9
Starting NAM, part 2:
Initializing NAM swapfile
Unable to send command to VMware hypervisor.
Synchronizing management IP host entries
Starting iSCSI Daemon
Starting dmand
Starting shared
Starting NAM monitoring daemons:
NTService currently in service mode. Stopping NTService.

```

```

Waiting for NTService to exit.
NTService stopped [Done]
Starting NTService (this may take a while) [Done]
Starting namelookupd
Starting mond
Starting md_poller
Starting devconfd
Starting watchdog
Starting configd
INFO: Starting the Packet Decode Service (PDS) on NAM_TARGET: UCS_SL_2RU

Cisco Prime Network Analysis Module

nam-2320.cisco.com login:

```

Upgrading Using the Helper Utility

If you are performing a typical upgrade of the NAM software, we suggest following the NAM CLI upgrade procedure, documented in the previous section. Typically, the helper utility is accessed directly only when there is a problem with an existing NAM installation that requires more extreme measures, such as wiping the hard disks before reinstalling the NAM software image. The helper utility is also required when downgrading from a signed image to an unsigned image; such a downgrade cannot be performed via the NAM CLI. (For additional background on signed and unsigned images, refer to the previous section.)

To access the helper utility, issue the `reboot -helper` command from the NAM CLI to reboot into helper mode. If the NAM CLI is inaccessible, follow the recovery procedure documented in the Installation and Configuration Guide for that platform to boot the corresponding recovery image, which contains the helper utility.

Once the helper utility menu appears, use **option 2** (Download application image and reformat HDD) to download the desired application image and write the image to the disk. If booting a recovery image in ISO format, you may instead use **option 3** (Install application image from CD and reformat HDD) to avoid downloading a separate application image.



Caution

This option reformats the hard disk before writing the application image, resulting in the loss of all data such as reports, packet captures, and configuration. However, network connectivity configuration will be retained.



Note

If the Prime NAM application is already installed and has networking configured, these settings will be detected by the helper automatically. Otherwise, you must use **option n** to configure networking before using this option.

The helper utility downloads and installs a NAM application image from a local FTP or HTTP server. For details on where to download the NAM application image and image naming conventions, refer to [Upgrading the NAM Software to Version 6.2—Which Procedure Do I Use?, page 2](#).

The following table summarizes the upgrade scenarios that are supported via the helper utility:

Current Image Version	Target Image Version	Scenario supported?
6.1(1) or earlier (unsigned image)	6.1(1) or earlier (unsigned image)	Yes
6.1(1) or earlier (unsigned image)	6.2(1) or later (signed image)	Yes (ignore messages about trailing garbage)
6.2(1) or later (signed image)	6.1(1) or earlier (unsigned image)	Yes
6.2(1) or later (signed image)	6.2(1) or later (signed image)	Yes

Prime NAM Platforms and Supported Upgrade Methods

The below table summarizes the upgrade options supported by the CLI and helper utility. In general, this table applies both to standard and reformat upgrades, with the exception of certain legacy versions of the NAM software that do not support reformat upgrades from the CLI (refer to Table 5 for further details on reformat upgrade support).

Current Image Version	Target Image Version	Supported via CLI?	Supported via Helper?
6.1(1) or earlier (unsigned)	6.1(1) or earlier (unsigned)	Yes	
6.1(1) or earlier (unsigned)	6.2(1) or later (signed)	Yes (ignore messages about trailing garbage)	
6.2(1) or later (signed)	6.1(1) or earlier (unsigned)	No	Yes
6.2(1) or later (signed)	6.2(1) or later (signed)	Yes	

Reformat Upgrade Support

Table 3 lists the Prime NAM versions and platforms, and whether a reformat upgrade for that version and platform is supported from the CLI or helper utility (or both).

Table 3 NAM Versions and Support for Reformat Upgrade

Version	Platforms	Supported via CLI?	Supported via Helper?
5.0(1T)	NAM-3	No	Yes
5.1(1)			(option 2 in helper)
5.1(2)	NAM-3 Nexus 1110 NAM	No	Yes (option 2 in helper)
5.1(3)	NAM-2304/2320	Yes (upgrade <url> reformat)	Yes (option 2 in helper)
6.0(1)	NAM-NX1	Yes (upgrade <url> reformat)	Yes (option 2 in helper)
6.0(2)	NAM-3 NAM-2304/2320 NAM-NX1 Nexus 1110 NAM vNAM (ESXi, KVM)	Yes (upgrade <url> reformat)	Yes (option 2 in helper)

Table 3 *NAM Versions and Support for Reformat Upgrade*

Version	Platforms	Supported via CLI?	Supported via Helper?
6.1(1)	NAM-3 NAM-2304/2320 NAM-NX1 Nexus 1110 NAM vNAM (ESXi, KVM)	Yes (upgrade <url> reformat)	Yes (option 2 in helper)
6.2(1)	NAM-3 NAM-2304/2320 NAM-2420/2440 NAM-NX1 Nexus 1110 NAM vNAM (ESXi, KVM)	Yes (upgrade <url> reformat)	Yes (option 2 in helper)

Upgrade Limitations

After completing an upgrade, clear your web browser cache to avoid issues caused by old cached versions of NAM code or data conflicting with the new NAM software. If the browser cache is not cleared, you may encounter abnormal GUI behavior.

Review the known issues listed in the [Release Notes for Cisco Prime NAM 6.2](#), before you perform the upgrade.

GUI display filters are not carried over when upgrading to NAM 6.2. Such filters must be recreated as necessary.

Related Documentation

For additional information about other documentation, see the [Cisco Prime Network Analysis Module Documentation Overview](#) on Cisco.com.

Obtaining Documentation and Submitting a Service Request

For information on obtaining documentation, submitting a service request, and gathering additional information, see the monthly What's New in Cisco Product Documentation, which also lists all new and revised Cisco technical documentation, at the following URL:

<http://www.cisco.com/en/US/docs/general/whatsnew/whatsnew.html>

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