Upgrading the ROMMON and CPLD

This chapter describes the procedures to upgrade the ROMMON on the Cisco DNA Traffic Telemetry Appliance.

Upgrading the ROMMON

The ROMMON must be upgraded on the Cisco DNA Traffic Telemetry Appliance if the system message on the appliance indicates that the ROMMON requires an upgrade, or when a Cisco technical support representative suggests a ROMMON upgrade.

Compatibility Requirements

Note For information about the compatibility between the ROMMON releases and the Cisco DNA Traffic Telemetry Appliance, see the "ROMMON Release Requirements " section in the Cisco DNA Traffic Telemetry Appliance Release Notes.

To upgrade the ROMMON image, you must have access to the privileged EXEC mode prompt or the diagnostic mode prompt on the appliance.

Checking the Current ROMMON Version

If you are unsure whether a ROMMON upgrade is required, follow the instructions provided in this section.

Run the **show rom-monitor** command or the **show platform** command to display the version of ROMMON running on your appliance. If the output shows that the release to which you plan to upgrade is already installed, you need not upgrade the ROMMON.

For a single form-factor platform, such as the Cisco DNA Traffic Telemetry Appliance, all of the following commands display the same output:

- **show rom-monitor 0**
- **show rom-monitor F0**
- **show rom-monitor FP**
- **show rom-monitor R0**
- **show rom-monitor RP**

In the following example, the output of the **show rom-monitor** command indicates that an upgrade to Release 15.4(2r)S is not required:

```
Device# show rom-monitor 0
System Bootstrap, Version 15.4(2r)S, RELEASE SOFTWARE (fc1)
Copyright (c) 1994-2014  by cisco Systems, Inc.
```

Upgrading the ROMMON for the Cisco DNA Traffic Telemetry Appliance

Use this procedure to upgrade the ROMMON for the Cisco DNA Traffic Telemetry Appliance:

Step 1   (Optional) Run the **show platform** command or the **show rom-monitor** *slot* command to see the current release number of ROMMON on the hardware.

Step 2   If the ROMMON image has not been copied onto the appliance, copy the PKG file that is made available as part of this ROMMON release onto the bootflash: or usb[0-1]: file system using the **copy** *source-location destination-location* command.

Step 3   Run the **dir** *file-system* command to verify that the ROMMON file is copied into the specified directory.

Step 4   Run the **upgrade rom-monitor filename** *location* **all** command to begin the ROMMON image upgrade, where *location* is the path to the ROMMON file.

> **Caution**   Do not remove hardware, turn off power, or interrupt the appliance in any way during the ROMMON upgrade. Although the appliance should be able to recover from most interruptions during the ROMMON upgrade, certain scenarios may cause unpredictable problems.

Step 5   Messages pertaining to the upgrade are displayed on the console. After the display of these messages stops and the device prompt is available, run the **reload** command to reload the appliance.

> **Note**   If you change the configuration register setting through Cisco IOS after initiating a ROMMON upgrade, but before reloading the appliance, the configuration register setting will not be applied. Reload the appliance and allow the ROMMON upgrade to be applied prior to changing the configuration register in Cisco IOS.

Step 6   If autoboot has not been enabled by using the **config-register 0x2102** command, run the **boot** *filesystem:/file-location* command at the ROMMON prompt to boot the Cisco IOS XE image, where *filesystem:/file-location* is the path to the consolidated package file. The ROMMON upgrade is not permanent for any piece of hardware until the Cisco IOS XE image is booted.

> **Note**   If you enter the **reset** command twice when booting from the ROMMON prompt, the ROMMON upgrade will automatically fall back to the previous ROMMON image. The following message appears after you enter the reset command the second time, and the earlier version of the ROMMON image is installed: Rommon upgrade requestedMaximum upgrade attempts exceeded, continuing with old Rommon...

Step 7   Run the **enable** command at the user prompt to enter the privileged EXEC mode after the boot is complete.

Step 8 Run the **show platform** command or the **show rom-monitor** *slot* command to verify whether the ROMMON has been upgraded.

Example: Upgrading a ROMMON

The following sequence of commands is an example of the procedure to upgrade the ROMMON on a Cisco DNA Traffic Telemetry Appliance:

```
Device# copy tftp boot
Address or name of remote host []? 2.0.0.2
Source filename []? images/nightster/dn-apl-tta-m-rommon.154-2r.S.pkg
Destination filename [dn-apl-tta-m-rommon.154-2r.S.pkg]?
Accessing tftp://2.0.0.2/images/nightster/dn-apl-tta-m-rommon.154-2r.S.pkg...
Loading images/nightster/dn-apl-tta-m-rommon.154-2r.S.pkg from 2.0.0.2 (via GigabitEthernet0):
 !
[OK - 3832112 bytes]
3832112 bytes copied in 1.206 secs (3177539 bytes/sec)
Device# upgrade rom-monitor filename bootflash:dn-apl-tta-m-rommon.154-2r.S.pkg all
Chassis model Cisco DNA Traffic Telemetry Appliance has a single rom-monitor.
Upgrade rom-monitor
Target copying rom-monitor image file
File size : //tmp/rommon_upgrade/latest.bin
File size is : 3211264
FIPS File size is : 3211264
ROMMON Image Type : X86
File /tmp/rommon_upgrade/latest.bin is a FIPS ROMMON image
FIPS-140-3 Load Test on /tmp/rommon_upgrade/latest.bin has PASSED.
Authenticity of the image has been verified.
4259840+0 records in
4259840+0 records out
131072+0 records in
131072+0 records out
655360+0 records in
655360+0 records out
Checking upgrade image...
3211264+0 records in
6272+0 records out
Upgrade image MD5 signature is b806b4bffb47e9be24d26ecd976212e8
Burning upgrade partition...
3211264+0 records in
3211264+0 records out
Checking upgrade partition...
3211264+0 records in
3211264+0 records out
Copying ROMMON environment
4259840+0 records in
4259840+0 records out
131072+0 records in
131072+0 records out
131072+0 records in
131072+0 records out
655360+0 records in
655360+0 records out
Upgrade flash partition MD5 signature is b806b4bffb47e9be24d26ecd976212e8
ROMMON upgrade complete.
To make the new ROMMON permanent, you must restart the RP.
Device# reload
Proceed with reload? [confirm]
*Mar 24 17:39:33.712 EDT: %SYS-5-RELOAD: Reload requested by console. Reload Reason: Reload
```

```
 Command.Mar 24 17:39:48.058 R0/0: %PMAN-5-EXITACTION: P rocess manager is exiting: process
 exit with reload chassis code
Initializing Hardware ...
System integrity status: 00000610
System Bootstrap, Version 12.2(20140222:162915) [rommon_release_1_49 101], DEVELOPMENT
SOFTWARE
Copyright (c) 1994-2014  by cisco Systems, Inc.
Compiled Sat 02/22/2014  9:10:52.81
Current image running: Boot ROM1
Last reset cause: LocalSoft
DN-APL-TTA-M platform with 8388608 Kbytes of main memory
Rommon upgrade requested
Flash upgrade reset 1 in progress
.......
Initializing Hardware ...
System integrity status: 00000610
System Bootstrap, Version 15.4(2r)S, RELEASE SOFTWARE (fc1)
Copyright (c) 1994-2014  by cisco Systems, Inc.
Current image running: *Upgrade in progress* Boot ROM0
Last reset cause: BootRomUpgrade
***           Incorrect BIOS parameters          ***
*** Correcting the BIOS parameters and rebooting ***
Initializing Hardware ...
System integrity status: 00000610
System Bootstrap, Version 12.2(20140222:162915) [rommon_release_1_49 101], DEVELOPMENT
SOFTWARE
Copyright (c) 1994-2014  by cisco Systems, Inc.
Compiled Sat 02/22/2014  9:10:52.81
Current image running: Boot ROM1
Last reset cause: LocalSoft
DN-APL-TTA-M platform with 8388608 Kbytes of main memory
Rommon upgrade requested
Flash upgrade reset 2 in progress
.......
Initializing Hardware ...
System integrity status: 00000610
System Bootstrap, Version 15.4(2r)S, RELEASE SOFTWARE (fc1)
Copyright (c) 1994-2014  by cisco Systems, Inc.
Current image running: *Upgrade in progress* Boot ROM0
Last reset cause: BootRomUpgrade
DN-APL-TTA-M platform with 8388608 Kbytes of main memory
```

Note   From here, you can manually reload from the ROMMON prompt, or let the appliance auto boot directly to Cisco IOS.

The **show platform** command displays the upgraded version of the ROMMON:

```
Device# show platform
Chassis type: DN-APL-TTA-M
Slot      Type                State                 Insert time (ago)
--------- ------------------- --------------------- -----------------
0         DN-APL-TTA-M          ok                     17:51:08
0/0       BUILT-IN-2T+6X1GE   ok                    17:50:18
0/1       SPA-1X10GE-L-V2     ok                    17:50:18
R0        DN-APL-TTA-M          ok                     17:51:08
R0/0                          ok, active            17:51:08
R0/1                          ok, standby           17:49:51
F0        DN-APL-TTA-M          ok, active             17:51:08
```

```
P0        ASR1001X-PWR-AC      ok                      17:50:44
P1        ASR1001X-PWR-AC      ok                      17:50:42
P2        ASR1001-X-FANTRAY    ok                      17:50:45
Slot      CPLD Version         Firmware Version
--------- -------------------- --------------------------------------
0         14022717             15.4(2r)S << New ROMmon is confirmed
R0        14022717             15.4(2r)S
F0        14022717             15.4(2r)S
```

Hardware That Requires a CPLD Upgrade

The Cisco DNA Traffic Telemetry Appliance has the capability to allow users to perform Complex Programmable Logic Device (CPLD) upgrades in the field.

For details about Cisco DNA Traffic Telemetry Appliance hardware configuration combinations that require a CPLD field-programmable upgrade for components, see "Upgrading Field Programmable Hardware Devices for Cisco DNA Traffic Telemetry Appliance."

Upgrading the CPLD

To upgrade the CPLD, follow these steps:

Step 1 Copy the **.pkg** file to your bootflash directory.

Step 2 Enter the **upgrade hw-programmable cpld filename bootflash:***<cpld.pkg>***RP active** command:

Device# upgrade hw-programmable cpld filename bootflash:nightster_cpld_14041015.pkg RP active

Upgrade CPLD on Route-Processor 0 from current version 13081317 to 14041015 [Press Enter to confirm]

This command could take up to 10 minutes, please wait and do not power-cycle the chassis or the card. Otherwise, hardware may be unrecoverable. The system will be automatically power-cycled upon completion. [Press Enter to confirm]

Note If you decide not to upgrade the CPLD after step 2, press **Ctrl-C** to quit.

Step 3 Press **Enter**.

The appliance upgrades the CPLD, and information is displayed onscreen. The appliance then power cycles and returns to your configuration register-based setting (Cisco IOS boot or ROMMON prompt).

Step 4 To confirm that the upgrade is complete, enter the **show platform** command:

Device# show platform

Chassis type: DN-APL-TTA-M

Slot Type State Insert time (ago)

--------- ------------------ -------------------- ----------------

0 DN-APL-TTA-M ok 2d22h

0/0 BUILT-IN-2T+6X1GE ok 2d20h

R0 DN-APL-TTA-M ok, active 2d22h

F0 DN-APL-TTA-M ok, active 2d22h

P0 ASR1001X-PWR-AC ok 2d22h

P1 ASR1001X-PWR-AC ps, fail 2d22h

P2 ASR1001-X-FANTRAY f1, fail 2d22h

Slot CPLD Version Firmware Version

--------- ------------------ ---------------------------------------

0 **14041015** 15.4(2r)S

R0 **14041015** 15.4(2r)S

F0 **14041015** 15.4(2r)S

Checking Hardware and Software Compatibility

Cisco software is packaged in feature sets consisting of software images that support specific platforms. The feature sets that are available for a specific platform depend on which Cisco software images are included in a release. To identify the set of software images available in a specific release or to find out if a feature is available in a given Cisco IOS XE software image, use Cisco Feature Navigator or the corresponding software release notes.

Using Cisco Feature Navigator

Use Cisco Feature Navigator to find information about platform support and software image support. Cisco Feature Navigator enables you to determine which Cisco IOS XE software images support a specific software release, feature set, or platform. To access Cisco Feature Navigator, go to http://www.cisco.com/go/cfn. An account on cisco.com is not required.