

Dell™ Networking

N2024/N2024P/N2048/N2048P/N3024/N3024F/N3024P/N3048/N3048P

Upgrading Dell™ Networking N2000/N3000 Series Switches to 6.3.2.7 Firmware



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Upgrade Procedure Dell™ Networking N2024/N2024P/N2048/N2048P/N3024/N3024F/N3024P/N3048/N3048P Switches

Introduction

This document provides specific procedures for upgrading the Dell™ Networking N2024/N2024P/N2048/N2048P/N3024/N3024F/N3024P/N3048/N3048P switches to firmware version 6.3.2.7 or later.

IMPORTANT: After upgrading the switch firmware version to 6.3.2.7, the boot code update is required on N2000 and N3000 series switches via serial console if switch is running with the older boot code version. The latest boot code version available for N2000 and N3000 series switches is “U-Boot SPL 2012.10-00078-g24e99ea (Jun 24 2014 - 16:41:18)”. Administrators upgrading N2000 and N3000 series switches **MUST** follow the boot-code update instructions documented in this procedure.

IMPORTANT: Administrators upgrading Dell Networking N3000 Aggregation Router (BGP) from 6.x.x.x to 6.3.2.37 version of firmware **MUST** follow the instructions documented in this procedure. Dell Networking N3000 Ethernet Switch can run as Access Router (non-BGP) or Aggregation Router (BGP) based on the firmware version running on the switch. The firmware image “N3000_BGPv6.3.2.37.stk” provides the BGP functionality and the image “N3000_N2000v6.3.2.7.stk” features Web interface, OpenFlow, iSCSI, GARP, GVRP, GMRP, Auto-VoIP, DVLAN, MVR, and MLAG.

IMPORTANT: New CPLD version 15 is available for both N3000 and N2000 Series switches as part firmware version 6.3.2.3 and later. After upgrading switches to version 6.3.2.3 and later, the CPLD can be updated manually via CLI command 'update cpld' on stack master and/or standalone switches. To update CPLD on stack members, execute 'devshell cpldUpdate' command from the serial console of each stack members in the stack individually.

Please **DO NOT** power cycle the switch when CPLD update is in progress. Manual power-cycle is required after CPLD update completes for new CPLD version to take effect. Verify CPLD Version with the command 'show version' from CLI after switch power-cycle.

Downgrading N3000 and N2000 Series switches from firmware version 6.3.2.7 and later with the updated CPLD version 15 running to any prior 6.x.x.x version can **ONLY** be done by downgrading the switch via interim FW version B.6.3.2 (N3000_N2000vB.6.3.2.stk or N3000_BGPvB.6.3.32.stk) by following the instructions documented in the “Firmware Downgrade” section of this document.

Upgrade Procedure Dell™ Networking N2024/N2024P/N2048/N2048P/N3024/N3024F/N3024P/N3048/N3048P Switches

It is recommended that this document be thoroughly reviewed prior to installing or upgrading of this product.

Global Support

For information regarding the latest available firmware, release note revisions, or additional assistance, please visit support.dell.com.

Upgrade Overview

Administrators must have access to the CLI via telnet, SSH or the serial port to perform the upgrade procedure.

Upgrade Procedure for Dell Networking N2000/N3000 Series Switches

The upgrade procedure given below upgrades an individual switch or a stack of switches running firmware version 6.x.x.x. This is a normal operation of the upgrade procedure. **Please do not interrupt switch operation during the upgrade process as this may result in corruption of flash memory. Do not power off a switch undergoing the upgrade process unless specifically directed to do so by the instructions.**

 **NOTE:** A TFTP server must be on the network and the switch software must be accessible to the TFTP server before attempting to download the switch software by TFTP.

 **NOTE:** The following TFTP server may be used if you do not have one: http://tftpd32.jounin.net/tftpd32_download.html

To upgrade a switch running a 6.x.x.x version of firmware to the 6.3.2.7 version of firmware or later, uses the procedure below. An annotated upgrade example is shown following this section.

1. Back up your configuration.
2. If using telnet or ssh to perform the upgrade procedure and if the current configuration does not contain a non-default enable authentication method or enable password, configure an enable password and save the configuration. Example steps to configure an enable password are shown below:


```
console#configure
console(config)#enable password <password>
console(config)#exit
console#copy running-config startup-config
```

3. Download the 6.3.2.7 firmware image to the switch or stack master.

 **NOTE:** Activate the image to use as the boot (active) image after the switch resets. Images on the N2000/N3000 series switches are named active and backup.

4. Activate 6.3.2.7 firmware.

Upgrade Procedure Dell™ Networking N2024/N2024P/N2048/N2048P/N3024/N3024F/N3024P/N3048/N3048P Switches

 **NOTE: Boot code update is required for Dell Networking N2000 and N3000 Series Switches after reloading the switch with firmware version 6.3.2.7 as active image if switch is running with the older boot-code version.**


5. To ensure that new HiveAgent application (without HiveManager online) is properly installed in the switch, the following commands must be run before upgrading to 6.3.2.7 from a 6.3.x.x release. This step is not applicable for customers managing their switches via HiveManager.

```
console#application stop hiveagent
console#delete user-apps/ah_ha.conf_s
Delete user-apps/ah_ha.conf_s ? (y/n) y
console#delete user-apps/hiveagent_pr_s
Delete user-apps/hiveagent_pr_s ? (y/n) y
console#delete user-apps/ah_ha.conf
Delete user-apps/ah_ha.conf ? (y/n) y
console#delete user-apps/hiveagent_pr
Delete user-apps/hiveagent_pr ? (y/n) y
console#delete user-apps/hiveagent
Delete user-apps/hiveagent ? (y/n) y
```

6. Reload the switch.
7. Update boot code if switch is running with the older boot-code version. The latest boot-code version is “U-Boot SPL 2012.10-00078-g24e99ea (Jun 24 2014 - 16:41:18)” which can be identified from the console log on switch boot-up. Please this step if switch is already running with the latest boot-code version.
8. Update CPLD to latest version 15 (if switch is running with the older CPLD version)
9. Reload the switch again for boot code to take effect.

Upgrade Procedure for Dell Networking N3000 Aggregation-Router (BGP) Switches

The upgrade procedure given below upgrades an individual switch or a stack of switches running firmware version 6.x.x.x. This is a normal operation of the upgrade procedure. **Please do not interrupt switch operation during the upgrade process as this may result in corruption of flash memory. Do not power off a switch undergoing the upgrade process unless specifically directed to do so by the instructions.**

 **NOTE: A TFTP server must be on the network and the switch software must be accessible to the TFTP server before attempting to download the switch software by TFTP.**

 **NOTE: The following TFTP server may be used if you do not have one:**
http://tftpd32.jounin.net/tftpd32_download.html

Upgrade Procedure Dell™ Networking N2024/N2024P/N2048/N2048P/N3024/N3024F/N3024P/N3048/N3048P Switches

To upgrade a switch running a 6.x.x.x version of firmware to the 6.3.2.37 version of firmware or later, uses the procedure below. An annotated upgrade example is shown following this section.

1. Back up your configuration.
2. If using telnet or ssh to perform the upgrade procedure and if the current configuration does not contain a non-default enable authentication method or enable password, configure an enable password and save the configuration. Example steps to configure an enable password are shown below:

```
console#configure
console(config)#enable password <password>
console(config)#exit
console#copy running-config startup-config
```

3. Download the 6.3.2.37 firmware image to the switch or stack master.
4. Activate 6.3.2.37 firmware.

 **NOTE: Boot code update is required for Dell Networking N3000 Series Switches after reloading the switch with firmware version 6.3.2.37 as active image if switch is running with the older boot-code version.**

5. To ensure that new HiveAgent application (without HiveManager online) is properly installed in the switch, the following commands must be run before upgrading to 6.3.2.37 from a 6.3.x.x release. This step is not applicable for customers managing their switches via HiveManager.

```
console#application stop hiveagent
console#delete user-apps/ah_ha.conf_s
Delete user-apps/ah_ha.conf_s ? (y/n) y
console#delete user-apps/hiveagent_pr_s
Delete user-apps/hiveagent_pr_s ? (y/n) y
console#delete user-apps/ah_ha.conf
Delete user-apps/ah_ha.conf ? (y/n) y
console#delete user-apps/hiveagent_pr
Delete user-apps/hiveagent_pr ? (y/n) y
console#delete user-apps/hiveagent
Delete user-apps/hiveagent ? (y/n) y
```

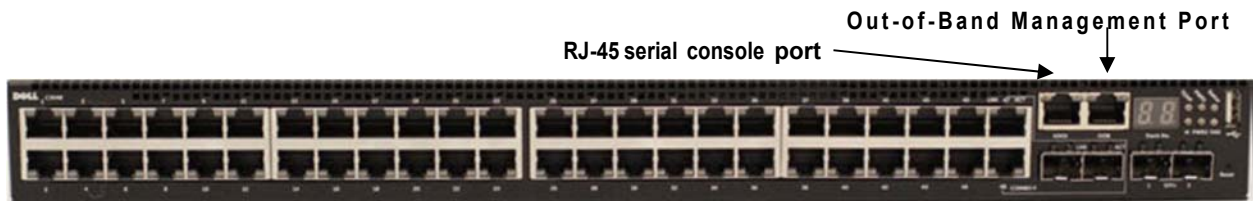
6. Reload the switch.
7. Update boot code if switch is running with the older boot-code version. The latest boot-code version is “U-Boot SPL 2012.10-00078-g24e99ea (Jun 24 2014 - 16:41:18)” which can be identified from the console log on switch boot-up. Please this step if switch is already running with the latest boot-code version.
8. Update CPLD to latest version 15 (if switch is running with the older CPLD version)
9. Reload the switch again for boot code to take effect.

Upgrade Procedure Dell™ Networking N2024/N2024P/N2048/N2048P/N3024/N3024F/N3024P/N3048/N3048P Switches

How to Access Serial Console on N2000/N3000 series switches

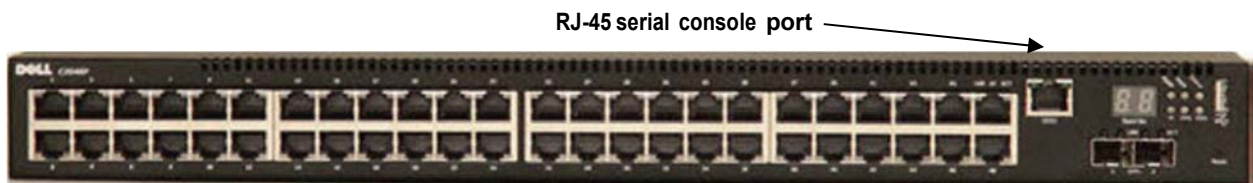
- 📌 **NOTE:** How to access serial console of the N3000 Series switch? Use a supplied “RJ45 Yost to DB9 serial cable” to access the serial console. Connect the RJ45 end of the cable to the RJ45 serial console port and the DB9 connector to your PC. Download and Install the terminal emulation software on your PC (for example, PuTTY) to access the serial console with the correct settings (default setting 9600 baud, 8 data bits, no parity bit, 1 stop bit, and no flow control).

Figure.1 N3048 with 48 10/100/1000BASE-T Ports (Front Panel)



- 📌 **NOTE:** How to access serial console of the N2000 Series switch? Use a supplied “RJ45 Yost to DB9 serial cable” to access the serial console. Connect the RJ45 end of the cable to the RJ45 serial console port and the DB9 connector to your PC. Download and Install the terminal emulation software on your PC (for example, PuTTY) to access the serial console with the correct settings (default setting 9600 baud, 8 data bits, no parity bit, 1 stop bit, and no flow control). N2000 switches do not have an out-of-band interface.

Figure.2 N2048 Switch with 48 10/100/1000BASE-T Ports (Front Panel)



- 📌 **NOTE:** By default, no network information is configured. The DHCP client is enabled on the OOB interface by default on N3000 and N4000 switches. The DHCP client is enabled on VLAN 1 by default on the N2000 switches. DNS is enabled, but no DNS servers are configured. VLAN 1 does not have an IP address, subnet mask, or default gateway configured on N3000 and N4000 switches. You can assign an IP address or IPv6 addresses to the OOB management port and to any VLAN. By default, all ports are members of VLAN 1. If you assign an IP address to VLAN 1, you can connect to the switch management interface by using any of the front-panel switch ports. This is required to manage the N2000 switches over an Ethernet port.

Upgrade Procedure Dell™ Networking N2024/N2024P/N2048/N2048P/N3024/N3024F/N3024P/N3048/N3048P Switches

Upgrade Example for Dell Networking N2000/N3000 Access-Router Switches

This example shows an annotated upgrade example for a N3048 Access-Router switch running 6.x.x.x firmware. This example presumes the administrator is logged in to the switch or stack via Serial console. You can also follow this upgrade procedure via telnet or SSH after setting enable password if it is not set so.

1. Back up your configuration. The following commands copy the running-config to a TFTP server:

```
console#copy running-config tftp://10.10.10.200/myconfig.txt
Mode..... TFTP
Set TFTP Server IP..... 10.10.10.200
TFTP Path..... /
TFTP Filename..... myconfig.txt
Data Type..... Config Script
Source Filename..... running-config
Management access will be blocked for the duration of the transfer
Are you sure you want to start? (y/n) y
11062 bytes transferred
File transfer operation completed successfully.
console#
```

2. Set an enable password and save the configuration (not required if an alternative enable authentication method is already configured).

```
console#configure
console(config)# enable password <password>
console(config)# exit
console# copy running-config startup-config
```

3. Download the 6.3.2.7 firmware image from a TFTP server.

```
console#copy tftp://10.10.10.200/N3000_N2000v6.3.2.7.stk backup
Transfer Mode..... TFTP
Server IP Address..... 10.10.10.200
Source File Path..... /
Source Filename..... N3000_N2000v6.3.2.7.stk
Data Type..... Code
Destination Filename..... backup
Management access will be blocked for the duration of the transfer
Are you sure you want to start? (y/n) y

TFTP Code transfer starting...
29145182 bytes transferred...
File contents are valid. Copying file to flash...
Attempting to send the STK file to other units in the stack...
File transfer operation completed successfully.
```

```
console#show version
```

```
Machine Description..... Dell Networking Switch
System Model ID..... N3048
Machine Type..... Dell Networking N3048
Serial Number..... CN0H784T282983AR0013A00
Manufacturer..... 0xbc00
Operating System..... Linux 3.6.5-fa655e13
Burned In MAC Address..... F8B1.561A.60E3
System Object ID..... 1.3.6.1.4.1.674.10895.3058
SOC Version..... BCM56340_A0
HW Version..... 3
CPLD Version..... 13
```

unit	active	backup	current-active	next-active
1	6.0.0.7	6.3.2.7	6.0.0.7	6.0.0.7

Upgrade Procedure Dell™ Networking N2024/N2024P/N2048/N2048P/N3024/N3024F/N3024P/N3048/N3048P Switches



NOTE: Set the image to use as the boot (active) image after the switch resets. Images on the N2000 and N3000 series switches are named active and backup.

4. Activate the 6.3.2.7 firmware

```
console#boot system backup
Activating image backup ..
```

5. HiveAgent application has been upgraded to a newer version 1.0.2.0 in 6.3.2.7 release for N1500, N2000 and N3000 switches. To ensure that new HiveAgent application (without HiveManager online) is properly installed in the switch, the following commands must be run before upgrading to 6.3.2.7 from a 6.3.x.x release. Below steps are not applicable for customers managing their switches via HiveManager.

```
console#application stop hiveagent
console#delete user-apps/ah_ha.conf_s
Delete user-apps/ah_ha.conf_s ? (y/n) y
console#delete user-apps/hiveagent_pr_s
Delete user-apps/hiveagent_pr_s ? (y/n) y
console#delete user-apps/ah_ha.conf
Delete user-apps/ah_ha.conf ? (y/n) y
console#delete user-apps/hiveagent_pr
Delete user-apps/hiveagent_pr ? (y/n) y
console#delete user-apps/hiveagent
Delete user-apps/hiveagent ? (y/n) y
```

6. Reload the switch.

```
console#reload
Management switch has unsaved changes.
Are you sure you want to continue? (y/n) y
```

```
Configuration Not Saved!
Are you sure you want to reload the stack? (y/n) y
```

NOTE: If using the serial port to update the firmware, the following output will be observed. If logged in via telnet or SSH, rebooting the switch will close the connection. Rebooting may take several minutes to complete and the switch may reboot itself more than once during the upgrade procedure.

```
<184> May 29 11:39:34 172.25.129.239-1 UNITMGR[115707620]: unitmgr.c(6343) 990 %% Reset
initiated on unit 1, reason: User Request
<186> May 29 11:39:34 172.25.129.239-1 General[115707620]: unitmgr.c(6362) 991 %%
Event(0x0)
Reference platform resetting ...
starting pid 93
syncing filesystems...This may take a few moments
Rebooting system!
The system is going down NOW!
Sent SIGTERM to all processes
Sent SIGKILL to all processes
Requesting system reboot
```

```
U-Boot SPL 2012.10-00078-g24e99ea (Jun 24 2014 - 16:41:18)
BENCH SCREENING TEST1
=====
```

Upgrade Procedure Dell™ Networking N2024/N2024P/N2048/N2048P/N3024/N3024F/N3024P/N3048/N3048P Switches

```
IPROC_XGPLL_CTRL_3: 0x15400000
IPROC_XGPLL_STATUS: 0x800001a4
DCO code: 26
PASS
=====
HWRev: 0x51 Force-AVS: 0x0 VOUT Init: 0x64 VOUT Set: 0x64
DEV ID= 0000dc14
SKU ID = 0x0
DDR type: DDR3
MEMC 0 DDR speed = 800MHz
ddr_init2: Calling soc_ddr40_set_shmoo_dram_config
ddr_init2: Calling soc_ddr40_phy_calibrate
C01. Check Power Up Reset_Bar
C02. Config and Release PLL from reset
C03. Poll PLL Lock
C04. Calibrate ZQ (ddr40_phy_calib_zq)
C05. DDR PHY VTT On (Virtual VTT setup) DISABLE all Virtual VTT
C06. DDR40_PHY_DDR3_MISC
C07. VDL Calibration
C07.1
C07.2
C07.4
C07.4.1
C07.4.4
VDL calibration result: 0x30000003 (cal_steps = 0)
C07.4.5
C07.4.6
C07.5
C08. DDR40_PHY_DDR3_MISC : Start DDR40_PHY_RDLY_ODT....
C09. Start ddr40_phy_autoidle_on (MEM_SYS_PARAM_PHY_AUTO_IDLE) ....
C10. Wait for Phy Ready
Programming controller register
ddr_init2: Calling soc_ddr40_shmoo_ctl
Validate Shmoo parameters stored in flash ..... OK
Press Ctrl-C to run Shmoo ..... skipped
Restoring Shmoo parameters from flash ..... done
Running simple memory test ..... OK
DDR Tune Completed
  Micron MT29F2G08ABAEA, 128 KiB blocks, 2 KiB pages, 16B OOB, 8-bit
NAND:  chipsize 256 MiB

U-Boot 2012.10-00078-g24e99ea (Jun 24 2014 - 16:41:18)

DRAM:  1 GiB
WARNING: Caches not enabled
NAND:  Micron MT29F2G08ABAEA, 128 KiB blocks, 2 KiB pages, 16B OOB, 8-bit
NAND:  chipsize 256 MiB
In:    serial
Out:   serial
Err:   serial
arm_clk=1000MHz, axi_clk=499MHz, apb_clk=124MHz, arm_periph_clk=500MHz
Net:   Registering eth
Broadcom BCM IPROC Ethernet driver 0.1
Using GMAC0 (0x18022000)
```

Upgrade Procedure Dell™ Networking N2024/N2024P/N2048/N2048P/N3024/N3024F/N3024P/N3048/N3048P Switches

```
et0: ethHw_chipAttach: Chip ID: 0xdc14; phyaddr: 0x1
serdes_reset_core pbyaddr(0x1) id2(0xf)
bcmiproc_eth-0
boot in 3 s
Creating 1 MTD partitions on "nand0":
0x000000200000-0x00000f000000 : "mtd=4"
Loading file '/image2' to addr 0x70000000 with size 22136835 (0x0151c803)...
Done
## Booting kernel from Legacy Image at 70000074 ...
  Image Name:      System for iproc_pct
  Image Type:      ARM Linux Multi-File Image (gzip compressed)
  Data Size:       22136655 Bytes = 21.1 MiB
  Load Address:   61008000
  Entry Point:    61008000
  Contents:
    Image 0: 2523553 Bytes = 2.4 MiB
    Image 1: 1782864 Bytes = 1.7 MiB
    Image 2: 474 Bytes = 474 Bytes
    Image 3: 17829739 Bytes = 17 MiB
  Verifying Checksum ... OK
## Loading init Ramdisk from multi component Legacy Image at 70000074 ...
  Uncompressing Multi-File Image ... OK
boot_prep_linux commandline: console=ttyS0,9600 maxcpus=2 mem=1024M root=/dev/ram
mtdparts=nand_iproc.0:1024k(nboot),512k(nenv),256k(vpd),256k(shmoo),243712k(fs),16384k(dia
gs) ubi.mtd=fs ethaddr=00:1e:c9:de:a5:14 quiet

Starting kernel ...

starting pid 884, tty '': '/etc/init.d/rcS'
starting pid 1014, tty '/dev/ttyS0': '/etc/rc.d/rc.fastpath'
Mounting /dev/mtdblock4 at /mnt/fastpath...done.
Mounting tmpfs at /mnt/application...done.
Checking for USB Device... done.
No USB Device found!

Dell Networking Boot Options
=====

Select a menu option within 3 seconds or the Operational Code will start automatically...

1 - Start Operational Code
2 - Display Boot Menu

Select (1, 2)#
Extracting Operational Code from .stk file...done.
Loading Operational Code...done.
Decompressing Operational Code...done.
Uncompressing apps.lzma
SyncDB Running...

<185> May 29 11:40:25 0.0.0.0-0 General[fp_main_task]: unitmgr.c(6477) 1 %% Reboot 1 (0x1)
DMA pool size: 16777216
AXI unit 0: Dev 0xb342, Rev 0x01, Chip BCM56342_A0, Driver BCM56340_A0
SOC unit 0 attached to PCI device BCM56342_A0
Reflashing port 52 to Firmware in OPR Code
```

Upgrade Procedure Dell™ Networking N2024/N2024P/N2048/N2048P/N3024/N3024F/N3024P/N3048/N3048P Switches

```

Migrating from version 1.06 to 1.07
Step 1: Halting the system.
Step 2: Uploading the SPI loader and data into main memory.
Step 3: Waiting for the Programming phase to be completed.
Step 4: Restarting system.
PHY Flashing Successful
<186> May 29 11:40:45 0.0.0.0-1 General[fp_main_task]: bootos.c(195) 9 %%
Event(0xaaaaaaaa)started!
<185> May 29 11:40:45 0.0.0.0-1 SIM[Cnfgr_Thread ]: sim_util.c(3774) 10 %% Switch was
reset due to operator intervention.
(Unit 1 - Waiting to select management unit)>
Applying Global configuration, please wait ...
Applying Interface configuration, please wait ...
console>

```

- After the switch has finished rebooting, log in and verify that the firmware has been updated to the **6.3.2.7** version using the **show version** command. A single switch will typically reboot in around two minutes. A stack may take significantly longer to complete the upgrade process.

console#show version

```

Machine Description..... Dell Networking Switch
System Model ID..... N3048
Machine Type..... Dell Networking N3048
Serial Number..... CNOWKWF4282984BQ0089A02
Manufacturer..... 0xbc00
Burned In MAC Address..... F8B1.5662.C8A0
System Object ID..... 1.3.6.1.4.1.674.10895.3061
SOC Version..... BCM56342_A0
HW Version..... 5
CPLD Version..... 15
Image File..... N3000_N2000v6.3.2.7
Software Capability..... ACCESS ROUTER

```

unit	active	backup	current-active	next-active
1	6.3.2.7	6.0.0.7	6.3.2.7	6.3.2.7

- The switch or stack is now ready for normal operation. Verify the configuration and make any changes needed prior to connecting the switch to the operational network.
- Update Boot Code using the hidden CLI command “update bootcode” if switch is running with older boot-code version. The latest boot-code version is “U-Boot SPL 2012.10-00078-g24e99ea (Jun 24 2014 - 16:41:18)” which can be identified from the console log on switch boot-up. Please this step if switch is already running with the latest boot-code version.

console#update bootcode

Are you sure you would like to update the bootcode? (y/n) y

```

Issuing boot code update command...
Boot code update command issued.

```

- Update CPLD to version 15 using the hidden CLI command “update cpld” if switch (stack master or standalone) is running with older CPLD version. The latest CPLD version is 15 which can be identified via CLI command ‘show version’. Please skip steps 10 and 11 if switch is already running with the latest CPLD version 15.

```

console#update cpld
This operation will reset the switch on completion. Are you sure you would like to update
the CPLD? (y/n) y
Management switch has unsaved changes.
Would you like to save the changes? (y/n).y

```

Upgrade Procedure Dell™ Networking N2024/N2024P/N2048/N2048P/N3024/N3024F/N3024P/N3048/N3048P Switches

```
Configuration Saved!

Issuing CPLD update command...
Warning: This operation will reset the switch on completion.
Processing virtual machine file "/mnt/application/cpld.vme".....

CREATED BY: ispVM(R) System Version 18.1
CREATION DATE: 11/24/16 10:24:03

+====+
| PASS! |
+====+

CPLD update exited with a return code of 0

CPLD update command issued.
```

11. Power-cycle the switches (Unplug and Plug power cable) for new CPLD version 15 to take effect.

```
U-Boot SPL 2012.10-00078-g24e99ea (Jun 24 2014 - 16:41:18)
BENCH SCREENING TEST1
=====
IPROC_XGPLL_CTRL_3: 0x15400000
IPROC_XGPLL_STATUS: 0x800001a4
DCO code: 26
PASS
=====
HWRev: 0x51 Force-AVS: 0x0 VOUT Init: 0x64 VOUT Set: 0x64
DEV ID= 0000dc14
SKU ID = 0x0
DDR type: DDR3
MEMC 0 DDR speed = 800MHz
ddr_init2: Calling soc_ddr40_set_shmoo_dram_config
ddr_init2: Calling soc_ddr40_phy_calibrate
C01. Check Power Up Reset_Bar
C02. Config and Release PLL from reset
C03. Poll PLL Lock
C04. Calibrate ZQ (ddr40_phy_calib_zq)
C05. DDR PHY VTT On (Virtual VTT setup) DISABLE all Virtual VTT
C06. DDR40_PHY_DDR3_MISC
C07. VDL Calibration
C07.1
C07.2
C07.4
C07.4.1
C07.4.4
VDL calibration result: 0x30000003 (cal_steps = 0)
C07.4.5
C07.4.6
C07.5
C08. DDR40_PHY_DDR3_MISC : Start DDR40_PHY_RDLY_ODT....
C09. Start ddr40_phy_autoidle_on (MEM_SYS_PARAM_PHY_AUTO_IDLE) ....
C10. Wait for Phy Ready
Programming controller register
ddr_init2: Calling soc_ddr40_shmoo_ctl
Validate Shmoo parameters stored in flash ..... OK
Press Ctrl-C to run Shmoo ..... skipped
```

Upgrade Procedure Dell™ Networking N2024/N2024P/N2048/N2048P/N3024/N3024F/N3024P/N3048/N3048P Switches

```
Restoring Shmoo parameters from flash ..... done
Running simple memory test ..... OK
DDR Tune Completed
  Micron MT29F2G08ABAEA, 128 KiB blocks, 2 KiB pages, 16B OOB, 8-bit
NAND:  chipsize 256 MiB

U-Boot 2012.10-00078-g24e99ea (Jun 24 2014 - 16:41:18)

DRAM:  1 GiB
WARNING: Caches not enabled
NAND:  Micron MT29F2G08ABAEA, 128 KiB blocks, 2 KiB pages, 16B OOB, 8-bit
NAND:  chipsize 256 MiB
In:    serial
Out:   serial
Err:   serial
arm_clk=1000MHz, axi_clk=499MHz, apb_clk=124MHz, arm_periph_clk=500MHz
Net:   Registering eth
Broadcom BCM IPROC Ethernet driver 0.1
Using GMAC0 (0x18022000)
et0: ethHw_chipAttach: Chip ID: 0xdc14; phyaddr: 0x1
serdes_reset_core pbyaddr(0x1) id2(0xf)
bcmiproc_eth-0
boot in 3 s
Creating 1 MTD partitions on "nand0":
0x0000000200000-0x000000f000000 : "mtd=4"
Loading file '/image2' to addr 0x70000000 with size 22136835 (0x0151c803)...
Done
## Booting kernel from Legacy Image at 70000074 ...
Image Name:   System for iproc_pct
Image Type:   ARM Linux Multi-File Image (gzip compressed)
Data Size:    22136655 Bytes = 21.1 MiB
Load Address: 61008000
Entry Point:  61008000
Contents:
  Image 0: 2523553 Bytes = 2.4 MiB
  Image 1: 1782864 Bytes = 1.7 MiB
  Image 2: 474 Bytes = 474 Bytes
  Image 3: 17829739 Bytes = 17 MiB
Verifying Checksum ... OK
## Loading init Ramdisk from multi component Legacy Image at 70000074 ...
Uncompressing Multi-File Image ... OK
boot_prep_linux commandline: console=ttyS0,9600 maxcpus=2 mem=1024M root=/dev/ram
mtdparts=nand_iproc.0:1024k(nboot),512k(nenv),256k(vpd),256k(shmoo),243712k(fs),16384k(dia
gs) ubi.mtd=fs ethaddr=00:1e:c9:de:a5:14 quiet

Starting kernel ...
starting pid 884, tty '': '/etc/init.d/rcS'
starting pid 1014, tty '/dev/ttyS0': '/etc/rc.d/rc.fastpath'
Mounting /dev/mtdblock4 at /mnt/fastpath...done.
Mounting tmpfs at /mnt/application...done.
Checking for USB Device... done.
No USB Device found!
```

Upgrade Procedure Dell™ Networking N2024/N2024P/N2048/N2048P/N3024/N3024F/N3024P/N3048/N3048P Switches

```
Dell Networking Boot Options
=====
Select a menu option within 3 seconds or the Operational Code will start automatically...

1 - Start Operational Code
2 - Display Boot Menu

Select (1, 2)#

Extracting Operational Code from .stk file...done.
Loading Operational Code...done.
Decompressing Operational Code...done.
Uncompressing apps.lzma
SyncDB Running...

<185> May 29 11:40:25 0.0.0.0-0 General[fp_main_task]: unitmgr.c(6477) 1 %% Reboot 1 (0x1)
DMA pool size: 16777216
AXI unit 0: Dev 0xb342, Rev 0x01, Chip BCM56342_A0, Driver BCM56340_A0
SOC unit 0 attached to PCI device BCM56342_A0
Reflashing port 52 to Firmware in OPR Code
Migrating from version 1.06 to 1.07
Step 1: Halting the system.
Step 2: Uploading the SPI loader and data into main memory.
Step 3: Waiting for the Programming phase to be completed.
Step 4: Restarting system.
PHY Flashing Successful
<186> May 29 11:40:45 0.0.0.0-1 General[fp_main_task]: bootos.c(195) 9 %%
Event(0xaaaaaaaaa)started!
<185> May 29 11:40:45 0.0.0.0-1 SIM[Cnfgr_Thread ]: sim_util.c(3774) 10 %% Switch was
reset due to operator intervention.
(Unit 1 - Waiting to select management unit)>
Applying Global configuration, please wait ...
Applying Interface configuration, please wait ...
console>
```

12. Verify the boot-code version “**U-Boot SPL 2012.10-00078-g24e99ea (Jun 24 2014 - 16:41:18)**” from the serial console on switch boot-up.
13. After switch power-cycle, verify the CPLD version is updated to the latest version 15 by running the command “show version”

Upgrade Procedure Dell™ Networking N2024/N2024P/N2048/N2048P/N3024/N3024F/N3024P/N3048/N3048P Switches

Stacking Notes

Regarding steps 2, 3 and 4 above:

- The “copy” command will take longer to complete with a stack of switches. This is due to the master switch copying the software to the member switches. The master switch will display the line “Distributing the code to the members of the stack!” for several minutes until the copy is done.
- The “copy” command will copy the software to all the switches as “backup” image

console#show version

```
Machine Description..... Dell Networking Switch
System Model ID..... N3048
Machine Type..... Dell Networking N3048
Serial Number..... CN0H784T282983AR0013A00
Manufacturer..... 0xbc00
Operating System..... Linux 3.6.5-fa655e13
Burned In MAC Address..... F8B1.561A.60E3
System Object ID..... 1.3.6.1.4.1.674.10895.3058
SOC Version..... BCM56340_A0
HW Version..... 3
CPLD Version..... 13
```

unit	active	backup	current-active	next-active
1	6.0.0.7	6.3.2.7	6.0.0.7	6.0.0.7
2	6.0.0.7	6.3.2.7	6.0.0.7	6.0.0.7
3	6.0.0.7	6.3.2.7	6.0.0.7	6.0.0.7

console# boot system backup

```
Activating image backup ..
```

console#show version

```
Machine Description..... Dell Networking Switch
System Model ID..... N3048
Machine Type..... Dell Networking N3048
Serial Number..... CN0H784T282983AR0013A00
Manufacturer..... 0xbc00
Operating System..... Linux 3.6.5-fa655e13
Burned In MAC Address..... F8B1.561A.60E3
System Object ID..... 1.3.6.1.4.1.674.10895.3058
SOC Version..... BCM56340_A0
HW Version..... 3
CPLD Version..... 13
```

unit	active	backup	current-active	next-active
1	6.0.0.7	6.3.2.7	6.0.0.7	6.3.2.7
2	6.0.0.7	6.3.2.7	6.0.0.7	6.3.2.7
3	6.0.0.7	6.3.2.7	6.0.0.7	6.3.2.7

Reload the stack of switches.

console#reload

```
Management switch has unsaved changes.
Are you sure you want to continue? (y/n) y
```

```
Configuration Not Saved!
Are you sure you want to reload the stack? (y/n) y
```

After the stack of switches has finished rebooting, log in and verify that the firmware has been updated to the **6.3.2.7** version using the *show version* command. A single switch will typically reboot in around two minutes. A stack may take significantly longer to complete the upgrade process.

Upgrade Procedure Dell™ Networking N2024/N2024P/N2048/N2048P/N3024/N3024F/N3024P/N3048/N3048P Switches

console#show version

```
Machine Description..... Dell Networking Switch
System Model ID..... N3048
Machine Type..... Dell Networking N3048
Serial Number..... CNOWKWF4282984BQ0089A02
Manufacturer..... 0xbc00
Burned In MAC Address..... F8B1.5662.C8A0
System Object ID..... 1.3.6.1.4.1.674.10895.3061
SOC Version..... BCM56342_A0
HW Version..... 5
CPLD Version..... 15
Image File..... N3000_N2000v6.3.2.7
Software Capability..... ACCESS ROUTER
```

unit	active	backup	current-active	next-active
1	6.3.2.7	6.0.0.7	6.3.2.7	6.3.2.7
2	6.3.2.7	6.0.0.7	6.3.2.7	6.3.2.7
3	6.3.2.7	6.0.0.7	6.3.2.7	6.3.2.7

Update Boot Code using the hidden CLI command “update bootcode” from Stack Master. This will update boot code on all members in the stack. The latest boot-code version is “U-Boot SPL 2012.10-00078-g24e99ea (Jun 24 2014 - 16:41:18)” which can be identified from the console log on switch boot-up. Please skip next two steps if switch is already running with the latest boot-code version.

console#update bootcode

```
Are you sure you would like to update the bootcode? (y/n) y
```

Reload the stack of switches for boot code update to take effect.

console#reload

```
Management switch has unsaved changes.
Are you sure you want to continue? (y/n) y
```

```
Configuration Not Saved!
Are you sure you want to reload the stack? (y/n) y
```

Update CPLD to version 15 using the hidden CLI command “update cpld” if switch (stack master or standalone) is running with older CPLD version. To update CPLD to version 15 on stack members, execute 'devshell cpldUpdate' command from the serial console of every stack member in the stack individually.

Unit 2 - CLI unavailable - please connect to master on Unit 1)>devshell cpldUpdate

```
Devshell output (Session #0): cpldUpdate
Warning: This operation will reset the switch on completion.
Processing virtual machine file "/mnt/application/cpld.vme".....
```

```
CREATED BY: ispvM(R) System Version 18.1
CREATION DATE: 11/24/16 10:24:03
```

```
+=====+
| PASS! |
+=====+
CPLD update exited with a return code of 0
```

```
value = 0 = 0x0
```

Upgrade Procedure Dell™ Networking N2024/N2024P/N2048/N2048P/N3024/N3024F/N3024P/N3048/N3048P Switches

Upgrade Example for Dell Networking N3000 Aggregation-Router (BGP) Switches

This example shows an annotated upgrade example for a N3048 switch running 6.x.x.x firmware. This example presumes the administrator is logged in to the switch or stack via Serial console. You can also follow this upgrade procedure via telnet or SSH after setting enable password if it is not set so.

1. Back up your configuration. The following commands copy the running-config to a TFTP server:

```
console#copy running-config tftp://10.10.10.200/myconfig.txt
Mode..... TFTP
Set TFTP Server IP..... 10.10.10.200
TFTP Path..... /
TFTP Filename..... myconfig.txt
Data Type..... Config Script
Source Filename..... running-config
Management access will be blocked for the duration of the transfer
Are you sure you want to start? (y/n) y
11062 bytes transferred
File transfer operation completed successfully.
console#
```

2. Set an enable password and save the configuration (not required if an alternative enable authentication method is already configured).

```
console#configure
console(config)# enable password <password>
console(config)# exit
console# copy running-config startup-config
```

3. Download the 6.3.2.37 firmware image from a TFTP server.

```
console#copy tftp://10.10.10.200/N3000_BGPv6.3.2.37.stk backup
Transfer Mode..... TFTP
Server IP Address..... 10.10.10.200
Source File Path..... /
Source Filename..... N3000_BGPv6.3.2.37.stk
Data Type..... Code
Destination Filename..... backup
Management access will be blocked for the duration of the transfer
Are you sure you want to start? (y/n) y

TFTP Code transfer starting...
24652507 bytes transferred...
File contents are valid. Copying file to flash...
Attempting to send the STK file to other units in the stack...
File transfer operation completed successfully.
```

```
console#show version
Machine Description..... Dell Networking Switch
System Model ID..... N3048
Machine Type..... Dell Networking N3048
Serial Number..... CN0WKWF4282984BQ0089A02
Manufacturer..... 0xbc00
Burned In MAC Address..... F8B1.5662.C8A0
System Object ID..... 1.3.6.1.4.1.674.10895.3061
SOC Version..... BCM56342_A0
HW Version..... 5
CPLD Version..... 15
Image File..... N3000_BGPv6.3.2.34
Software Capability..... AGGREGATION ROUTER
unit  active      backup      current-active  next-active
-----
1      6.3.2.34      6.3.2.37      6.3.2.34      6.3.2.34
```

Upgrade Procedure Dell™ Networking N2024/N2024P/N2048/N2048P/N3024/N3024F/N3024P/N3048/N3048P Switches



NOTE: Set the image to use as the boot (active) image after the switch resets. Images on the N2000 and N3000 series switches are named active and backup.

4. Activate the 6.3.2.37 firmware

```
console#boot system backup
Activating image backup ..
```

5. HiveAgent application has been upgraded to a newer version 1.0.2.0 for N1500, N2000 and N3000 switches. To ensure that new HiveAgent application (without HiveManager online) is properly installed in the switch, the following commands must be run before upgrading to 6.3.2.37 from a 6.3.x.x release. Below steps are not applicable for customers managing their switches via HiveManager.

```
console#application stop hiveagent
console#delete user-apps/ah_ha.conf_s
Delete user-apps/ah_ha.conf_s ? (y/n) y
console#delete user-apps/hiveagent_pr_s
Delete user-apps/hiveagent_pr_s ? (y/n) y
console#delete user-apps/ah_ha.conf
Delete user-apps/ah_ha.conf ? (y/n) y
console#delete user-apps/hiveagent_pr
Delete user-apps/hiveagent_pr ? (y/n) y
console#delete user-apps/hiveagent
Delete user-apps/hiveagent ? (y/n) y
```

6. Reload the switch.

```
console#reload
Management switch has unsaved changes.
Are you sure you want to continue? (y/n) y
```

```
Configuration Not Saved!
Are you sure you want to reload the stack? (y/n) y
```

NOTE: If using the serial port to update the firmware, the following output will be observed. If logged in via telnet or SSH, rebooting the switch will close the connection. Rebooting may take several minutes to complete and the switch may reboot itself more than once during the upgrade procedure.

```
<184> May 29 11:39:34 172.25.129.239-1 UNITMGR[115707620]: unitmgr.c(6343) 990 %% Reset
initiated on unit 1, reason: User Request
```

```
<186> May 29 11:39:34 172.25.129.239-1 General[115707620]: unitmgr.c(6362) 991 %%
Event(0x0)
```

```
Reference platform resetting ...
starting pid 93
syncing filesystems...This may take a few moments
Rebooting system!
The system is going down NOW!
Sent SIGTERM to all processes
Sent SIGKILL to all processes
Requesting system reboot
```

```
U-Boot SPL 2012.10-00078-g24e99ea (Jun 24 2014 - 16:41:18)
```

Upgrade Procedure Dell™ Networking N2024/N2024P/N2048/N2048P/N3024/N3024F/N3024P/N3048/N3048P Switches

```
BENCH SCREENING TEST1
=====
IPROC_XGPLL_CTRL_3: 0x15400000
IPROC_XGPLL_STATUS: 0x800001a4
DCO code: 26
PASS
=====
HWRev: 0x51 Force-AVS: 0x0 VOUT Init: 0x64 VOUT Set: 0x64
DEV ID= 0000dc14
SKU ID = 0x0
DDR type: DDR3
MEMC 0 DDR speed = 800MHz
ddr_init2: Calling soc_ddr40_set_shmoo_dram_config
ddr_init2: Calling soc_ddr40_phy_calibrate
C01. Check Power Up Reset_Bar
C02. Config and Release PLL from reset
C03. Poll PLL Lock
C04. Calibrate ZQ (ddr40_phy_calib_zq)
C05. DDR PHY VTT On (Virtual VTT setup) DISABLE all Virtual VTT
C06. DDR40_PHY_DDR3_MISC
C07. VDL Calibration
C07.1
C07.2
C07.4
C07.4.1
C07.4.4
VDL calibration result: 0x30000003 (cal_steps = 0)
C07.4.5
C07.4.6
C07.5
C08. DDR40_PHY_DDR3_MISC : Start DDR40_PHY_RDLY_ODT....
C09. Start ddr40_phy_autoidle_on (MEM_SYS_PARAM_PHY_AUTO_IDLE) ....
C10. Wait for Phy Ready
Programming controller register
ddr_init2: Calling soc_ddr40_shmoo_ctl
Validate Shmoo parameters stored in flash ..... OK
Press Ctrl-C to run Shmoo ..... skipped
Restoring Shmoo parameters from flash ..... done
Running simple memory test ..... OK
DDR Tune Completed
  Micron MT29F2G08ABAEA, 128 KiB blocks, 2 KiB pages, 16B OOB, 8-bit
NAND:  chipsize 256 MiB

U-Boot 2012.10-00078-g24e99ea (Jun 24 2014 - 16:41:18)

DRAM:  1 GiB
WARNING: Caches not enabled
NAND:  Micron MT29F2G08ABAEA, 128 KiB blocks, 2 KiB pages, 16B OOB, 8-bit
NAND:  chipsize 256 MiB
In:    serial
Out:   serial
Err:   serial
arm_clk=1000MHz, axi_clk=499MHz, apb_clk=124MHz, arm_periph_clk=500MHz
Net:   Registering eth
```

Upgrade Procedure Dell™ Networking N2024/N2024P/N2048/N2048P/N3024/N3024F/N3024P/N3048/N3048P Switches

```
Broadcom BCM IPROC Ethernet driver 0.1
Using GMAC0 (0x18022000)
et0: ethHw_chipAttach: Chip ID: 0xdc14; phyaddr: 0x1
serdes_reset_core pbyaddr(0x1) id2(0xf)
bcmiproc_eth-0
boot in 3 s
Creating 1 MTD partitions on "nand0":
0x000000200000-0x00000f000000 : "mtd=4"
Loading file '/image2' to addr 0x70000000 with size 22136835 (0x0151c803)...
Done
## Booting kernel from Legacy Image at 70000074 ...
Image Name:      System for iproc_pct
Image Type:      ARM Linux Multi-File Image (gzip compressed)
Data Size:       22136655 Bytes = 21.1 MiB
Load Address:    61008000
Entry Point:     61008000
Contents:
  Image 0: 2523553 Bytes = 2.4 MiB
  Image 1: 1782864 Bytes = 1.7 MiB
  Image 2: 474 Bytes = 474 Bytes
  Image 3: 17829739 Bytes = 17 MiB
Verifying Checksum ... OK
## Loading init Ramdisk from multi component Legacy Image at 70000074 ...
Uncompressing Multi-File Image ... OK
boot_prep_linux cmdline: console=ttyS0,9600 maxcpus=2 mem=1024M root=/dev/ram
mtdparts=nand_iproc.0:1024k(nboot),512k(nenv),256k(vpd),256k(shmoo),243712k(fs),16384k(dia
gs) ubi.mtd=fs ethaddr=00:1e:c9:de:a5:14 quiet

Starting kernel ...

starting pid 884, tty '': '/etc/init.d/rcS'
starting pid 1014, tty '/dev/ttyS0': '/etc/rc.d/rc.fastpath'
Mounting /dev/mtdblock4 at /mnt/fastpath...done.
Mounting tmpfs at /mnt/application...done.
Checking for USB Device... done.
No USB Device found!

Dell Networking Boot Options
=====

Select a menu option within 3 seconds or the Operational Code will start automatically...

1 - Start Operational Code
2 - Display Boot Menu

Select (1, 2)#
Extracting Operational Code from .stk file...done.
Loading Operational Code...done.
Decompressing Operational Code...done.
Uncompressing apps.lzma
SyncDB Running...

<185> May 29 11:40:25 0.0.0.0-0 General[fp_main_task]: unitmgr.c(6477) 1 %% Reboot 1 (0x1)
DMA pool size: 16777216
AXI unit 0: Dev 0xb342, Rev 0x01, Chip BCM56342_A0, Driver BCM56340_A0
```

Upgrade Procedure Dell™ Networking N2024/N2024P/N2048/N2048P/N3024/N3024F/N3024P/N3048/N3048P Switches

```

SOC unit 0 attached to PCI device BCM56342_A0
Reflashing port 52 to Firmware in OPR Code
Migrating from version 1.06 to 1.07
Step 1: Halting the system.
Step 2: Uploading the SPI loader and data into main memory.
Step 3: Waiting for the Programming phase to be completed.
Step 4: Restarting system.
PHY Flashing Successful
<186> May 29 11:40:45 0.0.0.0-1 General[fp_main_task]: bootos.c(195) 9 %%
Event(0xaaaaaaaa)started!
<185> May 29 11:40:45 0.0.0.0-1 SIM[Cnfgr_Thread ]: sim_util.c(3774) 10 %% Switch was
reset due to operator intervention.
(Unit 1 - Waiting to select management unit)>
Applying Global configuration, please wait ...
Applying Interface configuration, please wait ...
console>

```

7. After the switch has finished rebooting, log in and verify that the firmware has been updated to the **6.3.2.7** version using the **show version** command. A single switch will typically reboot in around two minutes. A stack may take significantly longer to complete the upgrade process.

console#show version

```

Machine Description..... Dell Networking Switch
System Model ID..... N3048
Machine Type..... Dell Networking N3048
Serial Number..... CN0WKWF4282984BQ0089A02
Manufacturer..... 0xbc00
Burned In MAC Address..... F8B1.5662.C8A0
System Object ID..... 1.3.6.1.4.1.674.10895.3061
SOC Version..... BCM56342_A0
HW Version..... 5
CPLD Version..... 15
Image File..... N3000_N2000v6.3.2.37
Software Capability..... AGGREGATION ROUTER
unit  active      backup      current-active  next-active
-----
1      6.3.2.37      6.3.2.34      6.3.2.37      6.3.2.37

```

8. The switch or stack is now ready for normal operation. Verify the configuration and make any changes needed prior to connecting the switch to the operational network.
9. Update Boot Code using the hidden CLI command “update bootcode” if switch is running with older boot-code version. The latest boot-code version is “U-Boot SPL 2012.10-00078-g24e99ea (Jun 24 2014 - 16:41:18)” which can be identified from the console log on switch boot-up. Please this step if switch is already running with the latest boot-code version.

console#update bootcode

```
Are you sure you would like to update the bootcode? (y/n) y
```

```
Issuing boot code update command...
Boot code update command issued.
```

10. Update CPLD to version 15 using the hidden CLI command “update cpld” if switch (stack master or standalone) is running with older CPLD version. The latest CPLD version is 15 which can be identified via CLI command ‘show version’. Please skip steps 10 and 11 if switch is already running with the latest CPLD version 15.

```
console#update cpld
This operation will reset the switch on completion. Are you sure you would like to update
the CPLD? (y/n) y
```

Upgrade Procedure Dell™ Networking N2024/N2024P/N2048/N2048P/N3024/N3024F/N3024P/N3048/N3048P Switches

```
Management switch has unsaved changes.
Would you like to save the changes? (y/n).y
Configuration Saved!

Issuing CPLD update command...
Warning: This operation will reset the switch on completion.
Processing virtual machine file "/mnt/application/cpld.vme".....

CREATED BY: ispVM(R) System Version 18.1
CREATION DATE: 11/24/16 10:24:03

+====+
| PASS! |
+====+

CPLD update exited with a return code of 0

CPLD update command issued.
```

11. Power-cycle the switches (Unplug and Plug power cable) for new CPLD version 15 to take effect.

```
U-Boot SPL 2012.10-00078-g24e99ea (Jun 24 2014 - 16:41:18)
BENCH SCREENING TEST1
=====
IPROC_XGPLL_CTRL_3: 0x15400000
IPROC_XGPLL_STATUS: 0x800001a4
DCO code: 26
PASS
=====
HWRev: 0x51 Force-AVS: 0x0 VOUT Init: 0x64 VOUT Set: 0x64
DEV ID= 0000dc14
SKU ID = 0x0
DDR type: DDR3
MEMC 0 DDR speed = 800MHz
ddr_init2: Calling soc_ddr40_set_shmoo_dram_config
ddr_init2: Calling soc_ddr40_phy_calibrate
C01. Check Power Up Reset_Bar
C02. Config and Release PLL from reset
C03. Poll PLL Lock
C04. Calibrate ZQ (ddr40_phy_calib_zq)
C05. DDR PHY VTT On (Virtual VTT setup) DISABLE all Virtual VTT
C06. DDR40_PHY_DDR3_MISC
C07. VDL Calibration
C07.1
C07.2
C07.4
C07.4.1
C07.4.4
VDL calibration result: 0x30000003 (cal_steps = 0)
C07.4.5
C07.4.6
C07.5
C08. DDR40_PHY_DDR3_MISC : Start DDR40_PHY_RDLY_ODT...
C09. Start ddr40_phy_autoidle_on (MEM_SYS_PARAM_PHY_AUTO_IDLE) ....
C10. Wait for Phy Ready
Programming controller register
ddr_init2: Calling soc_ddr40_shmoo_ctl
Validate Shmoo parameters stored in flash ..... OK
```


Upgrade Procedure Dell™ Networking N2024/N2024P/N2048/N2048P/N3024/N3024F/N3024P/N3048/N3048P Switches

```
Press Ctrl-C to run Shmoo ..... skipped
Restoring Shmoo parameters from flash ..... done
Running simple memory test ..... OK
DDR Tune Completed
  Micron MT29F2G08ABAEA, 128 KiB blocks, 2 KiB pages, 16B OOB, 8-bit
NAND:  chipsize 256 MiB

U-Boot 2012.10-00078-g24e99ea (Jun 24 2014 - 16:41:18)

DRAM:  1 GiB
WARNING: Caches not enabled
NAND:  Micron MT29F2G08ABAEA, 128 KiB blocks, 2 KiB pages, 16B OOB, 8-bit
NAND:  chipsize 256 MiB
In:    serial
Out:   serial
Err:   serial
arm_clk=1000MHz, axi_clk=499MHz, apb_clk=124MHz, arm_periph_clk=500MHz
Net:   Registering eth
Broadcom BCM IPROC Ethernet driver 0.1
Using GMAC0 (0x18022000)
et0: ethHw_chipAttach: Chip ID: 0xdc14; phyaddr: 0x1
serdes_reset_core phyaddr(0x1) id2(0xf)
bcmiproc_eth-0
boot in 3 s
Creating 1 MTD partitions on "nand0":
0x0000000200000-0x000000f000000 : "mtd=4"
Loading file '/image2' to addr 0x70000000 with size 22136835 (0x0151c803)...
Done
## Booting kernel from Legacy Image at 70000074 ...
Image Name:   System for iproc_pct
Image Type:   ARM Linux Multi-File Image (gzip compressed)
Data Size:    22136655 Bytes = 21.1 MiB
Load Address: 61008000
Entry Point:  61008000
Contents:
  Image 0: 2523553 Bytes = 2.4 MiB
  Image 1: 1782864 Bytes = 1.7 MiB
  Image 2: 474 Bytes = 474 Bytes
  Image 3: 17829739 Bytes = 17 MiB
Verifying Checksum ... OK
## Loading init Ramdisk from multi component Legacy Image at 70000074 ...
Uncompressing Multi-File Image ... OK
boot_prep_linux commandline: console=ttyS0,9600 maxcpus=2 mem=1024M root=/dev/ram
mtdparts=nand_iproc.0:1024k(nboot),512k(nenv),256k(vpd),256k(shmoo),243712k(fs),16384k(dia
gs) ubi.mtd=fs ethaddr=00:1e:c9:de:a5:14 quiet

Starting kernel ...
starting pid 884, tty '': '/etc/init.d/rcS'
starting pid 1014, tty '/dev/ttyS0': '/etc/rc.d/rc.fastpath'
Mounting /dev/mtdblock4 at /mnt/fastpath...done.
Mounting tmpfs at /mnt/application...done.
Checking for USB Device... done.
No USB Device found!
```

Upgrade Procedure Dell™ Networking N2024/N2024P/N2048/N2048P/N3024/N3024F/N3024P/N3048/N3048P Switches

```
Dell Networking Boot Options
=====
Select a menu option within 3 seconds or the Operational Code will start automatically...

1 - Start Operational Code
2 - Display Boot Menu

Select (1, 2)#

Extracting Operational Code from .stk file...done.
Loading Operational Code...done.
Decompressing Operational Code...done.
Uncompressing apps.lzma
SyncDB Running...

<185> May 29 11:40:25 0.0.0.0-0 General[fp_main_task]: unitmgr.c(6477) 1 %% Reboot 1 (0x1)
DMA pool size: 16777216
AXI unit 0: Dev 0xb342, Rev 0x01, Chip BCM56342_A0, Driver BCM56340_A0
SOC unit 0 attached to PCI device BCM56342_A0
Reflashing port 52 to Firmware in OPR Code
Migrating from version 1.06 to 1.07
Step 1: Halting the system.
Step 2: Uploading the SPI loader and data into main memory.
Step 3: Waiting for the Programming phase to be completed.
Step 4: Restarting system.
PHY Flashing Successful
<186> May 29 11:40:45 0.0.0.0-1 General[fp_main_task]: bootos.c(195) 9 %%
Event(0xaaaaaaaaa)started!
<185> May 29 11:40:45 0.0.0.0-1 SIM[Cnfgr_Thread ]: sim_util.c(3774) 10 %% Switch was
reset due to operator intervention.
(Unit 1 - Waiting to select management unit)>
Applying Global configuration, please wait ...
Applying Interface configuration, please wait ...
console>
```

12. Verify the boot-code version “**U-Boot SPL 2012.10-00078-g24e99ea (Jun 24 2014 - 16:41:18)**” from the serial console on switch boot-up.
13. After switch power-cycle, verify the CPLD version is updated to the latest version 15 by running the command “show version”

Upgrade Procedure Dell™ Networking N2024/N2024P/N2048/N2048P/N3024/N3024F/N3024P/N3048/N3048P Switches

Stacking Notes

Regarding steps 2, 3 and 4 above:

- The “copy” command will take longer to complete with a stack of switches. This is due to the master switch copying the software to the member switches. The master switch will display the line “Distributing the code to the members of the stack!” for several minutes until the copy is done.
- The “copy” command will copy the software to all the switches as “backup” image

console#show version

```
Machine Description..... Dell Networking Switch
System Model ID..... N3048
Machine Type..... Dell Networking N3048
Serial Number..... CN0WKWF4282984BQ0089A02
Manufacturer..... 0xbc00
Burned In MAC Address..... F8B1.5662.C8A0
System Object ID..... 1.3.6.1.4.1.674.10895.3061
SOC Version..... BCM56342_A0
HW Version..... 5
CPLD Version..... 15
Image File..... N3000_BGPv6.3.2.34
Software Capability..... AGGREGATION ROUTER
```

unit	active	backup	current-active	next-active
1	6.3.2.34	6.3.2.37	6.3.2.34	6.3.2.34
2	6.3.2.34	6.3.2.37	6.3.2.34	6.3.2.34
3	6.3.2.34	6.3.2.37	6.3.2.34	6.3.2.34

console# boot system backup

```
Activating image backup ..
```

console#show version

```
Machine Description..... Dell Networking Switch
System Model ID..... N3048
Machine Type..... Dell Networking N3048
Serial Number..... CN0WKWF4282984BQ0089A02
Manufacturer..... 0xbc00
Burned In MAC Address..... F8B1.5662.C8A0
System Object ID..... 1.3.6.1.4.1.674.10895.3061
SOC Version..... BCM56342_A0
HW Version..... 5
CPLD Version..... 15
Image File..... N3000_BGPv6.3.2.34
Software Capability..... AGGREGATION ROUTER
```

unit	active	backup	current-active	next-active
1	6.3.2.34	6.3.2.37	6.3.2.34	6.3.2.37
2	6.3.2.34	6.3.2.37	6.3.2.34	6.3.2.37
3	6.3.2.34	6.3.2.37	6.3.2.34	6.3.2.37

Reload the stack of switches.

console#reload

```
Management switch has unsaved changes.
Are you sure you want to continue? (y/n) y
```

```
Configuration Not Saved!
Are you sure you want to reload the stack? (y/n) y
```

Upgrade Procedure Dell™ Networking N2024/N2024P/N2048/N2048P/N3024/N3024F/N3024P/N3048/N3048P Switches

After the stack of switches has finished rebooting, log in and verify that the firmware has been updated to the **6.3.2.7** version using the **show version** command. A single switch will typically reboot in around two minutes. A stack may take significantly longer to complete the upgrade process.

console#show version

```
Machine Description..... Dell Networking Switch
System Model ID..... N3048
Machine Type..... Dell Networking N3048
Serial Number..... CN0WKWF4282984BQ0089A02
Manufacturer..... 0xbc00
Burned In MAC Address..... F8B1.5662.C8A0
System Object ID..... 1.3.6.1.4.1.674.10895.3061
SOC Version..... BCM56342_A0
HW Version..... 5
CPLD Version..... 15
Image File..... N3000_BGPv6.3.2.37
Software Capability..... AGGREGATION ROUTER
```

unit	active	backup	current-active	next-active
1	6.3.2.7	6.3.2.34	6.3.2.37	6.3.2.37
2	6.3.2.7	6.3.2.34	6.3.2.37	6.3.2.37
3	6.3.2.7	6.3.2.34	6.3.2.37	6.3.2.37

Update Boot Code using the hidden CLI command “update bootcode” from Stack Master. This will update boot code on all members in the stack. The latest boot-code version is “U-Boot SPL 2012.10-00078-g24e99ea (Jun 24 2014 - 16:41:18)” which can be identified from the console log on switch boot-up. Please skip next two steps if switch is already running with the latest boot-code version.

console#update bootcode

```
Are you sure you would like to update the bootcode? (y/n) y
```

Reload the stack of switches for boot code update to take effect.

console#reload

```
Management switch has unsaved changes.
Are you sure you want to continue? (y/n) y
```

```
Configuration Not Saved!
Are you sure you want to reload the stack? (y/n) y
```

Update CPLD to version 15 using the hidden CLI command “update cpld” if switch (stack master or standalone) is running with older CPLD version. To update CPLD to version 15 on stack members, execute 'devshell cpldUpdate' command from the serial console of every stack member in the stack individually.

Unit 2 - CLI unavailable - please connect to master on Unit 1)>devshell cpldUpdate

```
Devshell output (Session #0): cpldUpdate
Warning: This operation will reset the switch on completion.
Processing virtual machine file "/mnt/application/cpld.vme".....
```


```
CREATED BY: ispvM(R) System Version 18.1
CREATION DATE: 11/24/16 10:24:03
```

```
+=====+
| PASS! |
+=====+
CPLD update exited with a return code of 0

value = 0 = 0x0
```

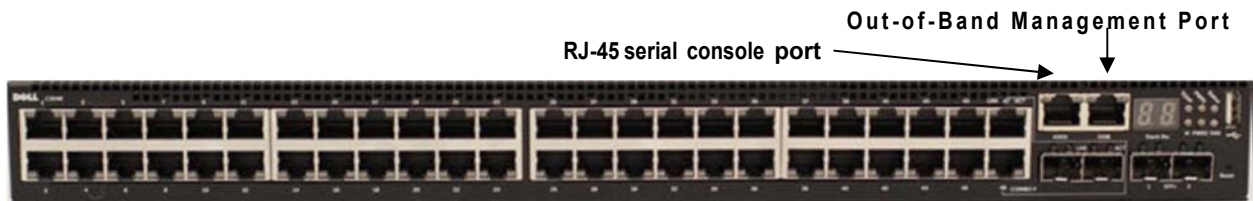
Upgrade Procedure Dell™ Networking N2024/N2024P/N2048/N2048P/N3024/N3024F/N3024P/N3048/N3048P Switches

Switch Recovery Procedure

 **NOTE:** The Switch Recovery procedure requires one to connect to each switch individually via the serial port. It will not upgrade stack members other than the switch directly connected via the serial port. If the switches are connected via stacking cables, disconnect the stacking cables to perform the recovery procedure.

1. Connect a serial cable to the serial console port on the switch (8-No Parity-1-9600-No Flow Control).
 - a. Use the supplied RJ45 Yost to DB9 serial cable. Connect the RJ45 end to the switch console port and the DB9 connector to your PC. Set the terminal emulation software (for example., PuTTY) to the correct settings (default setting 9600 baud, 8 data bits, no parity bit, 1 stop bit, and no flow control).

Figure.3 N3048 with 48 10/100/1000BASE-T Ports (Front Panel)



2. When the boot menu appears, select *2 – Start Boot Menu* within 10 seconds of the prompt appearing. If the boot menu does not appear after power cycling the switch, check the serial port settings and the serial cable connections. Make sure that RTS/CTS (HW flow control) and XON/XOFF (SW flow control) are disabled on the terminal. It is preferred to use the serial cable supplied with the switch. If you do not have the original serial cable, it may be necessary to use a NULL modem device to access the switch via the serial cable. Check the serial cable setup with an operational switch to verify that it works properly.
3. Download 6.3.2.7 (N2000/N3000) or 6.3.2.37 (N3000_AGGREGATION_ROUTER) firmware based on switch type using TFTP by selecting option *4 - Load new operational code* from the boot menu.
4. Verify that the firmware has been updated to the 6.3.2.7 version using the *show version* command.
5. Update Boot Code using the hidden CLI command “**update bootcode**” from CLI.
6. Update CPLD to version 15 using the hidden CLI command “**update cpld**” if switch (stack master or standalone) is running with older CPLD version. The latest CPLD version is 15 which can be identified via CLI command ‘show version’.

Upgrade Procedure Dell™ Networking N2024/N2024P/N2048/N2048P/N3024/N3024F/N3024P/N3048/N3048P Switches

Switch Recovery Example

1. Connect a serial cable to the serial console port of the switch (8-No Parity-1-9600-No Flow Control)
2. Power cycle the switch
3. When the boot menu appears, select 2 – *Start Boot Menu*

```
Dell Networking Boot Options
=====
Select a menu option within 3 seconds or the Operational Code will start automatically...

1 - Start Operational Code
2 - Display Boot Menu
```

Select (1, 2) #**2**

```
Boot Main Menu
=====
1 - Start Operational Code
2 - Select Baud Rate
3 - Retrieve Logs
4 - Load New Operational Code
5 - Display Operational Code Details
9 - Reboot
10 - Restore Configuration to Factory Defaults
11 - Activate Backup Image
12 - Start Password Recovery
```

4. If not already loaded, download the firmware to the switch using TFTP (Select option 4 - *Load new operational code*)

```
Boot Main Menu
=====
1 - Start Operational Code
2 - Select Baud Rate
3 - Retrieve Logs
4 - Load New Operational Code
5 - Display Operational Code Details
9 - Reboot
10 - Restore Configuration to Factory Defaults
11 - Activate Backup Image
12 - Start Password Recovery
Enter Choice# 4
Creating tmpfs filesystem on /mnt/download for download...done.
Current Active Image# /dev/mtd7
Which Image to Update Active (/dev/mtd7) OR Back-Up (/dev/mtd6)? Select (A/B): A
You selected to update Active Image /dev/mtd7...
Select Mode of Transfer (Press T/X/Y/Z for TFTP/XMODEM/YMODEM/ZMODEM) []:T

Please ensure TFTP server is running to begin Transfer...
Enter Server IP []:10.10.10.200
Enter Host IP []:10.10.10.224
Enter Host Subnet Mask [255.255.255.0]:255.255.0.0
```

Upgrade Procedure Dell™ Networking N2024/N2024P/N2048/N2048P/N3024/N3024F/N3024P/N3048/N3048P Switches

```
Enter Gateway IP []:10.10.10.254
Enter Filename []:N3000_N2000v6.3.2.7.stk
Do you want to continue? Press(Y/N): y
Bringing up eth0 interface...done.
Adding default gateway 10.10.10.254 to the Routing Table...done.
Erasing /dev/mtd7!!!
Erasing 128 Kibyte @ 17e0000 -- 99 % complete.
Updating code file...done.
Code Update Instructions Found!
Critical components modified on Active Partition -- System Reboot Recommended!
```

```
Reboot? (Y/N): y
Rebooting...
starting pid 11
syncing filesystems....This may take a few moments
Rebooting system!
```

```
Reference platform resetting ...
starting pid 85
syncing filesystems....This may take a few moments
Rebooting system!
The system is going down NOW!
Sent SIGTERM to all processes
Sent SIGKILL to all processes
Requesting system reboot
```

U-Boot SPL 2012.10-00078-g24e99ea (Jun 24 2014 - 16:41:18)

BENCH SCREENING TEST1

=====

IPROC_XGPLL_CTRL_3: 0x15400000

IPROC_XGPLL_STATUS: 0x800001a4

DCO code: 26

PASS

=====

HWRev: 0x51 Force-AVS: 0x0 VOUT Init: 0x64 VOUT Set: 0x64

DEV ID= 0000dc14

SKU ID = 0x0

DDR type: DDR3

MEMC 0 DDR speed = 800MHz

ddr_init2: Calling soc_ddr40_set_shmoo_dram_config

ddr_init2: Calling soc_ddr40_phy_calibrate

C01. Check Power Up Reset_Bar

C02. Config and Release PLL from reset

C03. Poll PLL Lock

C04. Calibrate ZQ (ddr40_phy_calib_zq)

C05. DDR PHY VTT On (Virtual VTT setup) DISABLE all Virtual VTT

C06. DDR40_PHY_DDR3_MISC

C07. VDL Calibration

C07.1

C07.2

C07.4

C07.4.1

C07.4.4

VDL calibration result: 0x30000003 (cal_steps = 0)

C07.4.5

C07.4.6

C07.5

Upgrade Procedure Dell™ Networking N2024/N2024P/N2048/N2048P/N3024/N3024F/N3024P/N3048/N3048P Switches

```
C08. DDR40_PHY_DDR3_MISC : Start DDR40_PHY_RDLY_ODT....
C09. Start ddr40_phy_autoidle_on (MEM_SYS_PARAM_PHY_AUTO_IDLE) ....
C10. Wait for Phy Ready
Programming controller register
ddr_init2: Calling soc_ddr40_shmoo_ctl
Validate Shmoo parameters stored in flash ..... OK
Press Ctrl-C to run Shmoo ..... skipped
Restoring Shmoo parameters from flash ..... done
Running simple memory test ..... OK
DDR Tune Completed
  Micron MT29F2G08ABAEA, 128 KiB blocks, 2 KiB pages, 16B OOB, 8-bit
NAND:  chipsize 256 MiB

U-Boot 2012.10-00078-g24e99ea (Jun 24 2014 - 16:41:18)
DRAM:  1 GiB
WARNING: Caches not enabled
NAND:  Micron MT29F2G08ABAEA, 128 KiB blocks, 2 KiB pages, 16B OOB, 8-bit
NAND:  chipsize 256 MiB
In:    serial
Out:   serial
Err:   serial
arm_clk=1000MHz, axi_clk=499MHz, apb_clk=124MHz, arm_periph_clk=500MHz
Net:   Registering eth
Broadcom BCM IPROC Ethernet driver 0.1
Using GMAC0 (0x18022000)
et0:  ethHw_chipAttach: Chip ID: 0xdc14; phyaddr: 0x1
serdes_reset_core pbyaddr(0x1) id2(0xf)
bcmiproc_eth-0
boot in 3 s
Creating 1 MTD partitions on "nand0":
0x0000000200000-0x00000f0000000 : "mtd=4"
Loading file '/image2' to addr 0x70000000 with size 22136835 (0x0151c803)...
Done
## Booting kernel from Legacy Image at 70000074 ...
   Image Name:   System for iproc_pct
   Image Type:   ARM Linux Multi-File Image (gzip compressed)
   Data Size:    22136655 Bytes = 21.1 MiB
   Load Address: 61008000
   Entry Point:  61008000
   Contents:
     Image 0: 2523553 Bytes = 2.4 MiB
     Image 1: 1782864 Bytes = 1.7 MiB
     Image 2: 474 Bytes = 474 Bytes
     Image 3: 17829739 Bytes = 17 MiB
   Verifying Checksum ... OK
## Loading init Ramdisk from multi component Legacy Image at 70000074 ...
   Uncompressing Multi-File Image ... OK
boot_prep_linux commandline: console=ttyS0,9600 maxcpus=2 mem=1024M root=/dev/ram
mtdparts=nand_iproc.0:1024k(nboot),512k(nenv),256k(vpd),256k(shmoo),243712k(fs),16384k(dia
gs) ubi.mtd=fs ethaddr=00:1e:c9:de:a5:14 quiet

Starting kernel ...
starting pid 884, tty '': '/etc/init.d/rcS'
starting pid 1014, tty '/dev/ttyS0': '/etc/rc.d/rc.fastpath'
Mounting /dev/mtdblock4 at /mnt/fastpath...done.
```


Upgrade Procedure Dell™ Networking N2024/N2024P/N2048/N2048P/N3024/N3024F/N3024P/N3048/N3048P Switches

```

Mounting tmpfs at /mnt/application...done.
Checking for USB Device... done.
No USB Device found!

Dell Networking Boot Options
=====
Select a menu option within 3 seconds or the Operational Code will start automatically...
1 - Start Operational Code
2 - Display Boot Menu

Select (1, 2)#
Extracting Operational Code from .stk file...done.
Loading Operational Code...done.
Decompressing Operational Code...done.
Uncompressing apps.lzma
SyncDB Running...

<185> May 29 11:40:25 0.0.0.0-0 General[fp_main_task]: unitmgr.c(6477) 1 %% Reboot 1 (0x1)
DMA pool size: 16777216
AXI unit 0: Dev 0xb342, Rev 0x01, Chip BCM56342_A0, Driver BCM56340_A0
SOC unit 0 attached to PCI device BCM56342_A0
Reflashing port 52 to Firmware in OPR Code
Migrating from version 1.06 to 1.07
Step 1: Halting the system.
Step 2: Uploading the SPI loader and data into main memory.
Step 3: Waiting for the Programming phase to be completed.
Step 4: Restarting system.
PHY Flashing Successful
<186> May 29 11:40:45 0.0.0.0-1 General[fp_main_task]: bootos.c(195) 9 %%
Event(0xaaaaaaaa)started!
<185> May 29 11:40:45 0.0.0.0-1 SIM[Cnfgr_Thread ]: sim_util.c(3774) 10 %% Switch was
reset due to operator intervention.
(Unit 1 - Waiting to select management unit)>
Applying Global configuration, please wait ...
Applying Interface configuration, please wait ...
console>

```

5. Verify that the 6.3.2.7 version of firmware is loaded on the switch. The switch or stack is now ready for normal operation. Verify the configuration and make any changes needed prior to connecting the switch to the operational network.

console#show version

```

Machine Description..... Dell Networking Switch
System Model ID..... N3024F
Machine Type..... Dell Networking N3024F
Serial Number..... CNOWKWF4282984BQ0089A02
Manufacturer..... 0xbc00
Burned In MAC Address..... F8B1.5662.C8A0
System Object ID..... 1.3.6.1.4.1.674.10895.3061
SOC Version..... BCM56342_A0
HW Version..... 5
CPLD Version..... 15
Image File..... N3000_N2000v6.3.2.7
Software Capability..... ACCESS ROUTER
unit active      backup      current-active next-active
-----
1      6.3.2.7      6.3.2.4      6.3.2.7      6.3.2.7

```

Upgrade Procedure Dell™ Networking N2024/N2024P/N2048/N2048P/N3024/N3024F/N3024P/N3048/N3048P Switches

6. Update Boot Code using the hidden CLI command “**update bootcode**” from CLI. The latest boot-code version is “U-Boot SPL 2012.10-00078-g24e99ea (Jun 24 2014 - 16:41:18)” which can be identified from the console log on switch boot-up. Please skip next two steps if switch is already running with the latest boot-code version.

console#update bootcode

Are you sure you would like to update the bootcode? (y/n) y

7. Reload the switch for boot code update to take effect.

console#reload

Management switch has unsaved changes.

Are you sure you want to continue? (y/n) y

Configuration Not Saved!

Are you sure you want to reload the stack? (y/n) y

8. Update CPLD to version 15 using the hidden CLI command “**update cpld**” if switch (stack master or standalone) is running with older CPLD version. The latest CPLD version is 15 which can be identified via CLI command ‘show version’.


Firmware Downgrade

Downgrading from 6.3.2.7 to 6.x.x.x is supported on Dell Networking N3000_N2000 Series switches.

IMPORTANT: Dell Networking N3000 and N2000 Series switches require firmware version 6.0.1.3 or later and cannot be downgraded to earlier releases.

Also, migration of configuration information from a later release to an earlier release is not supported. The existing configuration may or may not work with downgraded firmware, therefore, it is best to be physically present at the switch site and to be prepared to access the switch over the serial port if necessary when downgrading firmware.

Auto-downgrade of a stack is not enabled by default. If downgrading a stack, be sure to enable auto-downgrade by configuring the switch using CLI command “**boot auto-copy-sw allow-downgrade**” before loading new firmware onto the stack master.

 **NOTE:** Downgrading from firmware version 6.3.2.7 with the updated CPLD version 15 (Verify CPLD Version from CLI via “show version”) to prior version 6.x.x.x can be done **ONLY** by downgrading via an interim FW version B.6.3.2 or B.6.3.32 on Dell Networking N3000_N2000 Series switches. With interim FW image, the switches can be downgraded to older CPLD code first. Failure to follow the procedures described in that document when downgrading from 6.3.2.7 to 6.x.x.x firmware may result in an inoperable switch!


To downgrade a switch running FW version 6.3.2.7 (with CPLD Ver. 15) to 6.x.x.x version (with CPLD Ver. 13), use the procedure below. This procedure is applicable only for switches running with the latest CPLD version 15 and decide to downgrade the switches to FW version 6.x.x.x.

Upgrade Procedure Dell™ Networking N2024/N2024P/N2048/N2048P/N3024/N3024F/N3024P/N3048/N3048P Switches

1. Back up your configuration.
2. Download the interim firmware image (**N3000_N2000vB.6.3.2.stk** or **N3000_BGPvB.6.3.32.stk**) to the switch or stack master.

 **NOTE: Activate the interim image to use as the boot (active) image after the switch resets. The interim image is running with the older CPLD version 13.**

3. Activate B.6.3.2 firmware.

 **NOTE: CPLD Downgrade to version 13 is required for Dell Networking N2000 and N3000 Series Switches when switch firmware is downgraded to prior version. After downgrading the CPLD, the switch should be power-cycled for the CPLD code to take effect.**

4. Reload the switch or stack of switches.
5. When switch is running FW version **B.6.3.2**, update CPLD to version **13**. Run CLI command ‘update cpld’ from stack master and/or standalone unit. To update stack members, run ‘devshell cpldUpdate’ command from serial console. Please **DO NOT** power-cycle the switch when CPLD update is in progress.
6. Switches auto reload after CPLD downgrade to version 13 completes.
7. Download and activate any 6.x.x.x firmware image to the switch.

Boot Code Upgrade and Downgrade

Boot Code upgrade is required for **N2024/N2024P/N2048/N2048P/N3024/N3024F/N3024P/N3048/N3048P** switches after upgrading from 6.x.x.x to 6.3.2.7 firmware. The latest boot-code version is “**U-Boot SPL 2012.10-00078-g24e99ea (Jun 24 2014 - 16:41:18)**” which can be identified from the console log on switch boot-up. Please skip steps 9 and 10 if switch is already running with the latest boot-code version.

No Boot Code downgrade is required for **N2024/N2024P/N2048/N2048P/N3024/N3024F/N3024P/N3048/N3048P** switches

Hardware Supported

- Dell Networking N2024 Ethernet Switch
- Dell Networking N2024P Ethernet Switch
- Dell Networking N2048 Ethernet Switch
- Dell Networking N2048P Ethernet Switch
- Dell Networking N3024 Ethernet Switch
- Dell Networking N3024P Ethernet Switch
- Dell Networking N3024F Ethernet Switch
- Dell Networking N3048 Ethernet Switch
- Dell Networking N3048P Ethernet Switch

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