



# Release Notes for Cisco NCS 540 Series Routers, Cisco IOS XR Release 7.7.2

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## What's New in Cisco IOS XR Release 7.7.2

Cisco IOS XR Release 7.7.2 is a maintenance release for Cisco NCS 560 Series routers. There are no new Hardware or Software features introduced in this release.

For more details on the Cisco IOS XR release model and associated support, see [Guidelines for Cisco IOS XR Software](#).

## New in Documentation

## Caveats

*Table 1: Cisco IOS XR NCS 540 Routers Specific Bugs*

Bug ID	Headline
<a href="#">CSCwd22443</a>	CPRI interface down post reload
<a href="#">CSCwc00673</a>	Continuous HW_PROG_ERROR seen after commit replace of configuration

## IOS XR Base Images and Optional Packages

For more information on system setup and software installation process, see [System Setup and Software Installation Guide for Cisco NCS 540 Series Routers](#).

For general and ordering information see:

- [Cisco Network Convergence System 540 Fronthaul Routers Data Sheet](#)
- [Cisco Network Convergence System 540 Large Density Router Data Sheet](#)
- [Cisco Network Convergence System 540 Medium Density Routers Data Sheet](#)
- [Cisco Network Convergence System 540 Small Density Router Data Sheet](#)

To install the Cisco NCS 540 Series Routers, see [Cisco NCS 540 Router Hardware Installation Guide](#).

## Release 7.7.2 Software

The following tables list the supported base images and optional packages and their corresponding file names.

- The first table lists the supported software for N540-24Z8Q2C-SYS, N540-ACC-SYS, and N540X-ACC-SYS variants.
- The second table lists the supported software for N540-24Q8L2DD-SYS, N540X-16Z4G8Q2C-A/D, N540-28Z4C-SYS-A/D, N540X-12Z16G-SYS-A/D, N540-12Z20G-SYS-A/D, N540-FH-CSR-SYS, N540X-16Z8Q2C-D and N540-FH-AGG-SYS variants.
- The third table lists the supported software for N540X-4Z14G2Q-A/D, N540X-8Z16G-SYS-A/D, N540-6Z14S-SYS-D, and N540X-6Z18G-SYS-A/D variants.

**Table 2: Release 7.7.2 Software for N540-24Z8Q2C-SYS, N540-ACC-SYS, and N540X-ACC-SYS**

Base Image	Filename
IOS XR Base Image	ncs540-mini-x-7.7.2.iso
USB Boot Package	ncs540-usb_boot-7.7.2.zip
<b>Optional Packages not included in the base image</b>	
Package	Filename
IOS XR Manageability	ncs540-mgbl-1.0.0.0-r772.x86_64.rpm
IOS XR MPLS	ncs540-mpls-1.0.0.0-r772.x86_64.rpm ncs540-mpls-te-rsvp-1.0.0.0-r772.x86_64.rpm
IOS XR Security	ncs540-k9sec-1.0.0.0-r772.x86_64.rpm
IOS XR ISIS	ncs540-isis-1.0.0.0-r772.x86_64.rpm
IOS XR OSPF	ncs540-ospf-1.0.0.0-r772.x86_64.rpm
IOS XR Lawful Intercept	ncs540-li-1.0.0.0-r772.x86_64.rpm
IOS XR Multicast	ncs540-mcast-1.0.0.0-r772.x86_64.rpm
IOS XR EIGRP	ncs540-eigrp-1.0.0.0-r772.x86_64.rpm
IOS XR LI-CTRL	ncs540-lictrl-1.0.0.0-r772.x86_64.rpm

**Table 3: Release 7.7.2 Software for N540-24Q8L2DD-SYS, N540X-16Z4G8Q2C-A/D, N540-28Z4C-SYS-A/D, N540X-12Z16G-SYS-A/D, N540-12Z20G-SYS-A/D, N540-FH-CSR-SYS, N540X-16Z8Q2C-D and N540-FH-AGG-SYS**

Base Image	Filename
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IOS XR Base Image	ncs540l-x64-7.7.2.iso
USB Boot Package	ncs540l-usb_boot-7.7.2.zip
<b>Optional Packages not included in the base image</b>	
<b>Package</b>	<b>Filename</b>
IOS XR Telnet (xr-telnet)	NCS540l-iosxr-7.7.2.tar
IOS XR EIGRP (xr-eigrp)	NCS540l-iosxr-7.7.2.tar
IOS XR CDP (xr-cdp)	NCS540l-iosxr-7.7.2.tar
IOS XR k9sec (xr-k9sec)	NCS540l-k9sec-rpms.7.7.2.tar
IOS XR RIP (xr-rip)	NCS540l-iosxr-7.7.2.tar

*Table 4: Release 7.7.2 Software for N540X-4Z14G2Q-A/D, N540X-8Z16G-SYS-A/D, N540-6Z14S-SYS-D, and N540X-6Z18G-SYS-A/D*

Base Image	Filename
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IOS XR Base Image	ncs540l-aarch64-7.7.2.iso
USB Boot Package	ncs540l-aarch64-usb_boot-7.7.2.zip
<b>Optional Packages not included in the base image</b>	
<b>Package</b>	<b>Filename</b>
IOS XR Telnet (xr-telnet)	NCS540l-aarch64-iosxr-optional-rpms-7.7.2.tar
IOS XR EIGRP (xr-eigrp)	NCS540l-aarch64-iosxr-optional-rpms-7.7.2.tar
IOS XR CDP (xr-cdp)	NCS540l-aarch64-iosxr-optional-rpms-7.7.2.tar
IOS XR k9sec (xr-k9sec)	NCS540l-aarch64-k9sec-rpms.7.7.2.tar
IOS XR RIP (xr-rip)	NCS540l-aarch64-iosxr-optional-rpms-7.7.2.tar

## Determine Software Version

Log in to the router and enter the **show version** command on the N540-24Z8Q2C-SYS, N540-ACC-SYS, and N540X-ACC-SYS variants:

```
RP/0/RP0/CPU0:Router# show version
Cisco IOS XR Software, Version 7.7.2
Copyright (c) 2013-2022 by Cisco Systems, Inc.
```

Build Information:

```
Built By      : ingunawa
Built On     : Wed Oct 26 12:38:22 PDT 2022
Built Host   : iox-lnx-096
Workspace    : /auto/srcarchive14/prod/7.7.2/ncs540/ws
Version     : 7.7.2
Location    : /opt/cisco/XR/packages/
Label       : 7.7.2
```

```
cisco NCS-540 () processor
System uptime is 1 hour 33 minutes
```

Log in to the router and enter the **show version** command on the N540X-16Z4G8Q2C-A/D, N540-28Z4C-SYS-A/D, N540X-12Z16G-SYS-A/D, and N540-12Z20G-SYS-A/D variants:

```
RP/0/RP0/CPU0:Router# show version
Cisco IOS XR Software, Version 7.7.2 LNT
Copyright (c) 2013-2022 by Cisco Systems, Inc.
```

Build Information:

```
Built By      : ingunawa
Built On     : Wed Oct 26 17:22:02 UTC 2022
Built Host   : iox-ucs-002
Workspace    : /auto/srcarchive14/prod/7.7.2/ncs540l/ws
Version     : 7.7.2
Label       : 7.7.2
```

```
cisco NCS540L (C3708 @ 1.70GHz)
cisco N540X-16Z4G8Q2C-A (C3708 @ 1.70GHz) processor with 8GB of memory
ncs540l uptime is 1 hour, 36 minutes
Cisco NCS 540 System with 16x10G+4x1GCU+8x25G+2x100G AC Chassis
```

Log in to the router and enter the **show version** command on the N540X-8Z16G-SYS-A/D, and N540X-6Z18G-SYS-A/D variants:

```
RP/0/RP0/CPU0:Router# show version
Cisco IOS XR Software, Version 7.7.2 LNT
Copyright (c) 2013-2022 by Cisco Systems, Inc.
```

Build Information:

```
Built By      : ingunawa
Built On     : Wed Oct 26 17:22:02 UTC 2022
Built Host   : iox-ucs-004
Workspace    : /auto/srcarchive14/prod/7.7.2/ncs540l-aarch64/ws
Version     : 7.7.2
Label       : 7.7.2
```

```
cisco NCS540L
cisco N540X-6Z18G-SYS-D processor with 8GB of memory
ncs540l-aarch64 uptime is 1 hour, 46 minutes
Cisco NCS 540 Series Fixed Router 18x1G, 6x1/10G, DC
```

Log in to the router and enter the **show version** command on the N540-24Q8L2DD-SYS variant:

```
RP/0/RP0/CPU0:Router# show version
Cisco IOS XR Software, Version 7.7.2 LNT
Copyright (c) 2013-2022 by Cisco Systems, Inc.
```

Build Information:

```
Built By      : ingunawa
Built On     : Wed Oct 26 17:22:02 UTC 2022
Built Host   : iox-ucs-002
Workspace    : /auto/srcarchive14/prod/7.7.2/ncs540l/ws
Version     : 7.7.2
Label       : 7.7.2
```

## Determine Firmware Support

```
cisco NCS540L (D1519 @ 1.50GHz)
cisco N540-24Q8L2DD-SYS (D1519 @ 1.50GHz) processor with 16GB of memory
N540-24Q8L2DD-SYS uptime is 1 hour, 50 minutes
Cisco NCS540 Series, Fixed Router 2x400G, 8x50G, 24x25G Chassis
```

Log in to the router and enter the **show version** command on the N540-FH-AGG-SYS variant:

```
RP/0/RP0/CPU0:Router# show version
Cisco IOS XR Software, Version 7.7.2 LNT
Copyright (c) 2013-2022 by Cisco Systems, Inc.
```

## Build Information:

```
Built By      : ingunawa
Built On     : Wed Oct 26 17:22:02 UTC 2022
Build Host   : iox-ucs-002
Workspace    : /auto/srcarchive14/prod/7.7.2/ncs5401/ws
Version     : 7.7.2
Label       : 7.7.2
```

```
cisco NCS540L (C3708 @ 1.70GHz)
cisco N540-FH-AGG-SYS (C3708 @ 1.70GHz) processor with 8GB of memory
ROUTER uptime is 1 hour, 48 minutes
Cisco NCS 540 FH System with 24xCPRI/25G/10G/TSN+4x100G
```

## Determine Firmware Support

Use the show command in EXEC mode to view the hardware components with their current FPD version and status. The status of the hardware must be “CURRENT”; Running and Programed version must be the same. The Golden FPDs with “NEED UPGD” can be ignored, the Golden FPDs are not upgradable.

Log in to the router and enter the **show fpd package** and **show hw-module fpd** commands on the Cisco N540-24Z8Q2C-SYS, N540X-ACC-SYS, and N540-ACC-SYS variants:

```
RP/0/RP0/CPU0:Router# show fpd package
=====
Field Programmable Device Package
=====
Card Type          FPD Description          Req   SW   Min Req  Min Req
=====  =====  =====  =====  =====  =====
N540-24Z8Q2C-M    Bootloader (A)          YES   1.16  1.16     0.0
                  CPU-IOFPGA (A)         YES   0.10  0.10     0.0
                  MB-IOFPGA (A)         YES   0.26  0.26     0.0
                  MB-MIFPGA             YES   0.05  0.05     0.0
                  SATA-INTEL_240G (A)    NO   1132.00  1132.00  0.0
                  SATA-INTEL_480G (A)    NO   1132.00  1132.00  0.0
                  SATA-M500IT-MC (A)     NO    3.00   3.00     0.0
                  SATA-M500IT-MU-A (A)   NO    5.00   5.00     0.0
                  SATA-M500IT-MU-B (A)   NO    4.00   4.00     0.0
                  SATA-M5100 (A)        NO   75.00  75.00    0.0
                  SATA-M600-MCT (A)     NO    5.00   5.00     0.0
                  SATA-M600-MU (A)      NO    6.00   6.00     0.0
                  SATA-Micron (A)       NO    1.00   1.00     0.0
                  SATA-SMART-128G (A)   NO  1241.00  1241.00  0.0
                  SSFP_E1F_0           NO   13.01  13.01    0.0
                  SSFP_E1F_1           NO   13.01  13.01    0.0
                  SSFP_E1F_10          NO   13.01  13.01    0.0
                  SSFP_E1F_11          NO   13.01  13.01    0.0
                  SSFP_E1F_12          NO   13.01  13.01    0.0
                  SSFP_E1F_13          NO   13.01  13.01    0.0
                  SSFP_E1F_14          NO   13.01  13.01    0.0
                  SSFP_E1F_15          NO   13.01  13.01    0.0
```

	SSFP_E1F_16	NO	13.01	13.01	0.0
	SSFP_E1F_17	NO	13.01	13.01	0.0
	SSFP_E1F_18	NO	13.01	13.01	0.0
	SSFP_E1F_19	NO	13.01	13.01	0.0
	SSFP_E1F_2	NO	13.01	13.01	0.0
	SSFP_E1F_20	NO	13.01	13.01	0.0
	SSFP_E1F_21	NO	13.01	13.01	0.0
	SSFP_E1F_22	NO	13.01	13.01	0.0
	SSFP_E1F_23	NO	13.01	13.01	0.0
	SSFP_E1F_24	NO	13.01	13.01	0.0
	SSFP_E1F_25	NO	13.01	13.01	0.0
	SSFP_E1F_26	NO	13.01	13.01	0.0
	SSFP_E1F_27	NO	13.01	13.01	0.0
	SSFP_E1F_28	NO	13.01	13.01	0.0
	SSFP_E1F_29	NO	13.01	13.01	0.0
	SSFP_E1F_3	NO	13.01	13.01	0.0
	SSFP_E1F_30	NO	13.01	13.01	0.0
	SSFP_E1F_31	NO	13.01	13.01	0.0
	SSFP_E1F_4	NO	13.01	13.01	0.0
	SSFP_E1F_5	NO	13.01	13.01	0.0
	SSFP_E1F_6	NO	13.01	13.01	0.0
	SSFP_E1F_7	NO	13.01	13.01	0.0
	SSFP_E1F_8	NO	13.01	13.01	0.0
	SSFP_E1F_9	NO	13.01	13.01	0.0
	SSFP_OC3_STM1_0	NO	12.01	12.01	0.0
	SSFP_OC3_STM1_1	NO	12.01	12.01	0.0
	SSFP_OC3_STM1_10	NO	12.01	12.01	0.0
	SSFP_OC3_STM1_11	NO	12.01	12.01	0.0
	SSFP_OC3_STM1_12	NO	12.01	12.01	0.0
	SSFP_OC3_STM1_13	NO	12.01	12.01	0.0
	SSFP_OC3_STM1_14	NO	12.01	12.01	0.0
	SSFP_OC3_STM1_15	NO	12.01	12.01	0.0
	SSFP_OC3_STM1_16	NO	12.01	12.01	0.0
	SSFP_OC3_STM1_17	NO	12.01	12.01	0.0
	SSFP_OC3_STM1_18	NO	12.01	12.01	0.0
	SSFP_OC3_STM1_19	NO	12.01	12.01	0.0
	SSFP_OC3_STM1_2	NO	12.01	12.01	0.0
	SSFP_OC3_STM1_20	NO	12.01	12.01	0.0
	SSFP_OC3_STM1_21	NO	12.01	12.01	0.0
	SSFP_OC3_STM1_22	NO	12.01	12.01	0.0
	SSFP_OC3_STM1_23	NO	12.01	12.01	0.0
	SSFP_OC3_STM1_24	NO	12.01	12.01	0.0
	SSFP_OC3_STM1_25	NO	12.01	12.01	0.0
	SSFP_OC3_STM1_26	NO	12.01	12.01	0.0
	SSFP_OC3_STM1_27	NO	12.01	12.01	0.0
	SSFP_OC3_STM1_28	NO	12.01	12.01	0.0
	SSFP_OC3_STM1_29	NO	12.01	12.01	0.0
	SSFP_OC3_STM1_3	NO	12.01	12.01	0.0
	SSFP_OC3_STM1_30	NO	12.01	12.01	0.0
	SSFP_OC3_STM1_31	NO	12.01	12.01	0.0
	SSFP_OC3_STM1_4	NO	12.01	12.01	0.0
	SSFP_OC3_STM1_5	NO	12.01	12.01	0.0
	SSFP_OC3_STM1_6	NO	12.01	12.01	0.0
	SSFP_OC3_STM1_7	NO	12.01	12.01	0.0
	SSFP_OC3_STM1_8	NO	12.01	12.01	0.0
	SSFP_OC3_STM1_9	NO	12.01	12.01	0.0
-----					
N540-ACC-SYS	Bootloader (A)	YES	1.16	1.16	0.0
	CPU-IOFPGA (A)	YES	0.10	0.10	0.0
	MB-IOFPGA (A)	YES	0.26	0.26	0.0
	MB-MIFPGA	YES	0.05	0.05	0.0
	SATA-INTEL_240G (A)	NO	1132.00	1132.00	0.0
	SATA-INTEL_480G (A)	NO	1132.00	1132.00	0.0
	SATA-M500IT-MC (A)	NO	3.00	3.00	0.0

## Determine Firmware Support

SATA-M500IT-MU-A (A)	NO	5.00	5.00	0.0
SATA-M500IT-MU-B (A)	NO	4.00	4.00	0.0
SATA-M5100 (A)	NO	75.00	75.00	0.0
SATA-M600-MCT (A)	NO	5.00	5.00	0.0
SATA-M600-MU (A)	NO	6.00	6.00	0.0
SATA-Micron (A)	NO	1.00	1.00	0.0
SATA-SMART-128G (A)	NO	1241.00	1241.00	0.0
SSFP_E1F_0	NO	13.01	13.01	0.0
SSFP_E1F_1	NO	13.01	13.01	0.0
SSFP_E1F_10	NO	13.01	13.01	0.0
SSFP_E1F_11	NO	13.01	13.01	0.0
SSFP_E1F_12	NO	13.01	13.01	0.0
SSFP_E1F_13	NO	13.01	13.01	0.0
SSFP_E1F_14	NO	13.01	13.01	0.0
SSFP_E1F_15	NO	13.01	13.01	0.0
SSFP_E1F_16	NO	13.01	13.01	0.0
SSFP_E1F_17	NO	13.01	13.01	0.0
SSFP_E1F_18	NO	13.01	13.01	0.0
SSFP_E1F_19	NO	13.01	13.01	0.0
SSFP_E1F_2	NO	13.01	13.01	0.0
SSFP_E1F_20	NO	13.01	13.01	0.0
SSFP_E1F_21	NO	13.01	13.01	0.0
SSFP_E1F_22	NO	13.01	13.01	0.0
SSFP_E1F_23	NO	13.01	13.01	0.0
SSFP_E1F_24	NO	13.01	13.01	0.0
SSFP_E1F_25	NO	13.01	13.01	0.0
SSFP_E1F_26	NO	13.01	13.01	0.0
SSFP_E1F_27	NO	13.01	13.01	0.0
SSFP_E1F_28	NO	13.01	13.01	0.0
SSFP_E1F_29	NO	13.01	13.01	0.0
SSFP_E1F_3	NO	13.01	13.01	0.0
SSFP_E1F_30	NO	13.01	13.01	0.0
SSFP_E1F_31	NO	13.01	13.01	0.0
SSFP_E1F_4	NO	13.01	13.01	0.0
SSFP_E1F_5	NO	13.01	13.01	0.0
SSFP_E1F_6	NO	13.01	13.01	0.0
SSFP_E1F_7	NO	13.01	13.01	0.0
SSFP_E1F_8	NO	13.01	13.01	0.0
SSFP_E1F_9	NO	13.01	13.01	0.0
SSFP_OC3_STM1_0	NO	12.01	12.01	0.0
SSFP_OC3_STM1_1	NO	12.01	12.01	0.0
SSFP_OC3_STM1_10	NO	12.01	12.01	0.0
SSFP_OC3_STM1_11	NO	12.01	12.01	0.0
SSFP_OC3_STM1_12	NO	12.01	12.01	0.0
SSFP_OC3_STM1_13	NO	12.01	12.01	0.0
SSFP_OC3_STM1_14	NO	12.01	12.01	0.0
SSFP_OC3_STM1_15	NO	12.01	12.01	0.0
SSFP_OC3_STM1_16	NO	12.01	12.01	0.0
SSFP_OC3_STM1_17	NO	12.01	12.01	0.0
SSFP_OC3_STM1_18	NO	12.01	12.01	0.0
SSFP_OC3_STM1_19	NO	12.01	12.01	0.0
SSFP_OC3_STM1_2	NO	12.01	12.01	0.0
SSFP_OC3_STM1_20	NO	12.01	12.01	0.0
SSFP_OC3_STM1_21	NO	12.01	12.01	0.0
SSFP_OC3_STM1_22	NO	12.01	12.01	0.0
SSFP_OC3_STM1_23	NO	12.01	12.01	0.0
SSFP_OC3_STM1_24	NO	12.01	12.01	0.0
SSFP_OC3_STM1_25	NO	12.01	12.01	0.0
SSFP_OC3_STM1_26	NO	12.01	12.01	0.0
SSFP_OC3_STM1_27	NO	12.01	12.01	0.0
SSFP_OC3_STM1_28	NO	12.01	12.01	0.0
SSFP_OC3_STM1_29	NO	12.01	12.01	0.0
SSFP_OC3_STM1_3	NO	12.01	12.01	0.0
SSFP_OC3_STM1_30	NO	12.01	12.01	0.0



	SSFP_OC3_STM1_31	NO	12.01	12.01	0.0
	SSFP_OC3_STM1_4	NO	12.01	12.01	0.0
	SSFP_OC3_STM1_5	NO	12.01	12.01	0.0
	SSFP_OC3_STM1_6	NO	12.01	12.01	0.0
	SSFP_OC3_STM1_7	NO	12.01	12.01	0.0
	SSFP_OC3_STM1_8	NO	12.01	12.01	0.0
	SSFP_OC3_STM1_9	NO	12.01	12.01	0.0
-----					
N540-PWR400-A	LIT-PrimCU-ACFW (A)	NO	0.04	0.04	0.0
	LIT-SecMCU-ACFW (A)	NO	0.07	0.07	0.0
-----					
N540-PWR400-D	LIT-PrimCU-DCFW (A)	NO	0.04	0.04	0.0
	LIT-SecMCU-DCFW (A)	NO	0.06	0.06	0.0
	SDG-PrimCU-DCFW (A)	NO	1.03	1.03	0.0
	SDG-SecMCU-DCFW (A)	NO	1.03	1.03	0.0
-----					
N540-X-24Z8Q2C-M	Bootloader (A)	YES	1.16	1.16	0.0
	CPU-IOFPGA (A)	YES	0.10	0.10	0.0
	MB-IOFPGA (A)	YES	0.26	0.26	0.0
	MB-MIFPGA	YES	0.05	0.05	0.0
	SATA-INTEL_240G (A)	NO	1132.00	1132.00	0.0
	SATA-INTEL_480G (A)	NO	1132.00	1132.00	0.0
	SATA-M500IT-MC (A)	NO	3.00	3.00	0.0
	SATA-M500IT-MU-A (A)	NO	5.00	5.00	0.0
	SATA-M500IT-MU-B (A)	NO	4.00	4.00	0.0
	SATA-M5100 (A)	NO	75.00	75.00	0.0
	SATA-M600-MCT (A)	NO	5.00	5.00	0.0
	SATA-M600-MU (A)	NO	6.00	6.00	0.0
	SATA-Micron (A)	NO	1.00	1.00	0.0
	SATA-SMART-128G (A)	NO	1241.00	1241.00	0.0
	SSFP_E1F_0	NO	13.01	13.01	0.0
	SSFP_E1F_1	NO	13.01	13.01	0.0
	SSFP_E1F_10	NO	13.01	13.01	0.0
	SSFP_E1F_11	NO	13.01	13.01	0.0
	SSFP_E1F_12	NO	13.01	13.01	0.0
	SSFP_E1F_13	NO	13.01	13.01	0.0
	SSFP_E1F_14	NO	13.01	13.01	0.0
	SSFP_E1F_15	NO	13.01	13.01	0.0
	SSFP_E1F_16	NO	13.01	13.01	0.0
	SSFP_E1F_17	NO	13.01	13.01	0.0
	SSFP_E1F_18	NO	13.01	13.01	0.0
	SSFP_E1F_19	NO	13.01	13.01	0.0
	SSFP_E1F_20	NO	13.01	13.01	0.0
	SSFP_E1F_21	NO	13.01	13.01	0.0
	SSFP_E1F_22	NO	13.01	13.01	0.0
	SSFP_E1F_23	NO	13.01	13.01	0.0
	SSFP_E1F_24	NO	13.01	13.01	0.0
	SSFP_E1F_25	NO	13.01	13.01	0.0
	SSFP_E1F_26	NO	13.01	13.01	0.0
	SSFP_E1F_27	NO	13.01	13.01	0.0
	SSFP_E1F_28	NO	13.01	13.01	0.0
	SSFP_E1F_29	NO	13.01	13.01	0.0
	SSFP_E1F_3	NO	13.01	13.01	0.0
	SSFP_E1F_30	NO	13.01	13.01	0.0
	SSFP_E1F_31	NO	13.01	13.01	0.0
	SSFP_E1F_4	NO	13.01	13.01	0.0
	SSFP_E1F_5	NO	13.01	13.01	0.0
	SSFP_E1F_6	NO	13.01	13.01	0.0
	SSFP_E1F_7	NO	13.01	13.01	0.0
	SSFP_E1F_8	NO	13.01	13.01	0.0
	SSFP_E1F_9	NO	13.01	13.01	0.0
	SSFP_OC3_STM1_0	NO	12.01	12.01	0.0
	SSFP_OC3_STM1_1	NO	12.01	12.01	0.0

## Determine Firmware Support

	SSFP_OC3_STM1_10	NO	12.01	12.01	0.0
	SSFP_OC3_STM1_11	NO	12.01	12.01	0.0
	SSFP_OC3_STM1_12	NO	12.01	12.01	0.0
	SSFP_OC3_STM1_13	NO	12.01	12.01	0.0
	SSFP_OC3_STM1_14	NO	12.01	12.01	0.0
	SSFP_OC3_STM1_15	NO	12.01	12.01	0.0
	SSFP_OC3_STM1_16	NO	12.01	12.01	0.0
	SSFP_OC3_STM1_17	NO	12.01	12.01	0.0
	SSFP_OC3_STM1_18	NO	12.01	12.01	0.0
	SSFP_OC3_STM1_19	NO	12.01	12.01	0.0
	SSFP_OC3_STM1_2	NO	12.01	12.01	0.0
	SSFP_OC3_STM1_20	NO	12.01	12.01	0.0
	SSFP_OC3_STM1_21	NO	12.01	12.01	0.0
	SSFP_OC3_STM1_22	NO	12.01	12.01	0.0
	SSFP_OC3_STM1_23	NO	12.01	12.01	0.0
	SSFP_OC3_STM1_24	NO	12.01	12.01	0.0
	SSFP_OC3_STM1_25	NO	12.01	12.01	0.0
	SSFP_OC3_STM1_26	NO	12.01	12.01	0.0
	SSFP_OC3_STM1_27	NO	12.01	12.01	0.0
	SSFP_OC3_STM1_28	NO	12.01	12.01	0.0
	SSFP_OC3_STM1_29	NO	12.01	12.01	0.0
	SSFP_OC3_STM1_3	NO	12.01	12.01	0.0
	SSFP_OC3_STM1_30	NO	12.01	12.01	0.0
	SSFP_OC3_STM1_31	NO	12.01	12.01	0.0
	SSFP_OC3_STM1_4	NO	12.01	12.01	0.0
	SSFP_OC3_STM1_5	NO	12.01	12.01	0.0
	SSFP_OC3_STM1_6	NO	12.01	12.01	0.0
	SSFP_OC3_STM1_7	NO	12.01	12.01	0.0
	SSFP_OC3_STM1_8	NO	12.01	12.01	0.0
	SSFP_OC3_STM1_9	NO	12.01	12.01	0.0
-----					
N540X-ACC-SYS	Bootloader (A)	YES	1.16	1.16	0.0
	CPU-IOFPGA (A)	YES	0.10	0.10	0.0
	MB-IOFPGA (A)	YES	0.26	0.26	0.0
	MB-MIFPGA	YES	0.05	0.05	0.0
	SATA-INTEL_240G (A)	NO	1132.00	1132.00	0.0
	SATA-INTEL_480G (A)	NO	1132.00	1132.00	0.0
	SATA-M500IT-MC (A)	NO	3.00	3.00	0.0
	SATA-M500IT-MU-A (A)	NO	5.00	5.00	0.0
	SATA-M500IT-MU-B (A)	NO	4.00	4.00	0.0
	SATA-M5100 (A)	NO	75.00	75.00	0.0
	SATA-M600-MCT (A)	NO	5.00	5.00	0.0
	SATA-M600-MU (A)	NO	6.00	6.00	0.0
	SATA-Micron (A)	NO	1.00	1.00	0.0
	SATA-SMART-128G (A)	NO	1241.00	1241.00	0.0
	SSFP_E1F_0	NO	13.01	13.01	0.0
	SSFP_E1F_1	NO	13.01	13.01	0.0
	SSFP_E1F_10	NO	13.01	13.01	0.0
	SSFP_E1F_11	NO	13.01	13.01	0.0
	SSFP_E1F_12	NO	13.01	13.01	0.0
	SSFP_E1F_13	NO	13.01	13.01	0.0
	SSFP_E1F_14	NO	13.01	13.01	0.0
	SSFP_E1F_15	NO	13.01	13.01	0.0
	SSFP_E1F_16	NO	13.01	13.01	0.0
	SSFP_E1F_17	NO	13.01	13.01	0.0
	SSFP_E1F_18	NO	13.01	13.01	0.0
	SSFP_E1F_19	NO	13.01	13.01	0.0
	SSFP_E1F_2	NO	13.01	13.01	0.0
	SSFP_E1F_20	NO	13.01	13.01	0.0
	SSFP_E1F_21	NO	13.01	13.01	0.0
	SSFP_E1F_22	NO	13.01	13.01	0.0
	SSFP_E1F_23	NO	13.01	13.01	0.0
	SSFP_E1F_24	NO	13.01	13.01	0.0
	SSFP_E1F_25	NO	13.01	13.01	0.0

SSFP_E1F_26	NO	13.01	13.01	0.0
SSFP_E1F_27	NO	13.01	13.01	0.0
SSFP_E1F_28	NO	13.01	13.01	0.0
SSFP_E1F_29	NO	13.01	13.01	0.0
SSFP_E1F_3	NO	13.01	13.01	0.0
SSFP_E1F_30	NO	13.01	13.01	0.0
SSFP_E1F_31	NO	13.01	13.01	0.0
SSFP_E1F_4	NO	13.01	13.01	0.0
SSFP_E1F_5	NO	13.01	13.01	0.0
SSFP_E1F_6	NO	13.01	13.01	0.0
SSFP_E1F_7	NO	13.01	13.01	0.0
SSFP_E1F_8	NO	13.01	13.01	0.0
SSFP_E1F_9	NO	13.01	13.01	0.0
SSFP_OC3_STM1_0	NO	12.01	12.01	0.0
SSFP_OC3_STM1_1	NO	12.01	12.01	0.0
SSFP_OC3_STM1_10	NO	12.01	12.01	0.0
SSFP_OC3_STM1_11	NO	12.01	12.01	0.0
SSFP_OC3_STM1_12	NO	12.01	12.01	0.0
SSFP_OC3_STM1_13	NO	12.01	12.01	0.0
SSFP_OC3_STM1_14	NO	12.01	12.01	0.0
SSFP_OC3_STM1_15	NO	12.01	12.01	0.0
SSFP_OC3_STM1_16	NO	12.01	12.01	0.0
SSFP_OC3_STM1_17	NO	12.01	12.01	0.0
SSFP_OC3_STM1_18	NO	12.01	12.01	0.0
SSFP_OC3_STM1_19	NO	12.01	12.01	0.0
SSFP_OC3_STM1_2	NO	12.01	12.01	0.0
SSFP_OC3_STM1_20	NO	12.01	12.01	0.0
SSFP_OC3_STM1_21	NO	12.01	12.01	0.0
SSFP_OC3_STM1_22	NO	12.01	12.01	0.0
SSFP_OC3_STM1_23	NO	12.01	12.01	0.0
SSFP_OC3_STM1_24	NO	12.01	12.01	0.0
SSFP_OC3_STM1_25	NO	12.01	12.01	0.0
SSFP_OC3_STM1_26	NO	12.01	12.01	0.0
SSFP_OC3_STM1_27	NO	12.01	12.01	0.0
SSFP_OC3_STM1_28	NO	12.01	12.01	0.0
SSFP_OC3_STM1_29	NO	12.01	12.01	0.0
SSFP_OC3_STM1_3	NO	12.01	12.01	0.0
SSFP_OC3_STM1_30	NO	12.01	12.01	0.0
SSFP_OC3_STM1_31	NO	12.01	12.01	0.0
SSFP_OC3_STM1_4	NO	12.01	12.01	0.0
SSFP_OC3_STM1_5	NO	12.01	12.01	0.0
SSFP_OC3_STM1_6	NO	12.01	12.01	0.0
SSFP_OC3_STM1_7	NO	12.01	12.01	0.0
SSFP_OC3_STM1_8	NO	12.01	12.01	0.0
SSFP_OC3_STM1_9	NO	12.01	12.01	0.0

RP/0/RP0/CPU0:Router# show hw-module fpd  
 Auto-upgrade:Enabled

Location	Card type	HWver	FPD device	ATR Status	FPD Versions	
					Running	Programd
0/RP0	N540-ACC-SYS	1.0	MB-MIFPGA	CURRENT	0.05	0.05
0/RP0	N540-ACC-SYS	1.0	Bootloader	CURRENT	1.16	1.16
0/RP0	N540-ACC-SYS	1.0	CPU-IOFPGA	CURRENT	0.10	0.10
0/RP0	N540-ACC-SYS	1.0	MB-IOFPGA	CURRENT	0.26	0.26
0/RP0	N540-ACC-SYS	1.0	SATA-M500IT-MU-B	CURRENT	4.00	4.00
0/PM0	N540-PWR400-A		SDG-PrimCU-ACFW	NOT READY		
0/PM0	N540-PWR400-A		SDG-SecMCU-ACFW	NOT READY		
0/PM1	N540-PWR400-A	1.256	LIT-PrimCU-ACFW	CURRENT	0.04	0.04
0/PM1	N540-PWR400-A	1.256	LIT-SecMCU-ACFW	CURRENT	0.07	0.07

## Determine Firmware Support

Log in to the router and enter the **show fpd package** and **show hw-module fpd** commands on the Cisco N540-28Z4C-SYS-A/D, N540-12Z20G-SYS-A/D, N540X-12Z16G-SYS-A/D, N540X-16Z8Q2C-D, and N540X-16Z4G8Q2C-A/D variants:

```
RP/0/RP0/CPU0:Router# show fpd package
Thu Oct 27 12:57:06.084 IST
```

```
=====
                                     Field Programmable Device Package
                                     =====
Card Type          FPD Description          Req   SW   Min Req  Min Req
=====          =====          Reload Ver   SW Ver   Board Ver
=====          =====          =====
N540-12Z20G-SYS-A  ADMConfig                NO    1.05   1.05     0.0
                  IoFpga                   YES    2.07   2.07     0.0
                  IoFpgaGolden             YES    2.07   2.03     0.0
                  Primary-BIOS             YES    1.41   1.41     0.0
                  StdbyFpga                YES    0.40   0.40     0.0
                  StdbyFpgaGolden         YES    0.40   0.40     0.0
                  TamFw                    YES    4.11   4.11     0.0
                  TamFwGolden             YES    4.11   4.11     0.0
-----
N540-12Z20G-SYS-D  ADMConfig                NO    1.05   1.05     0.0
                  IoFpga                   YES    2.07   2.07     0.0
                  IoFpgaGolden             YES    2.07   2.03     0.0
                  Primary-BIOS             YES    1.41   1.41     0.0
                  StdbyFpga                YES    0.40   0.40     0.0
                  StdbyFpgaGolden         YES    0.40   0.40     0.0
                  TamFw                    YES    4.11   4.11     0.0
                  TamFwGolden             YES    4.11   4.11     0.0
-----
N540-24Q8L2DD-SYS ADM-DBConfig             NO    2.03   2.03     0.0
                  ADM-MBConfig             NO    2.01   2.01     0.0
                  IoFpga                   YES    2.12   2.12     0.0
                  IoFpgaGolden             YES    2.12   2.12     0.0
                  Primary-BIOS             YES    4.05   4.05     0.0
                  StdbyFpga                YES    2.59   2.59     0.0
                  StdbyFpgaGolden         YES    2.56   2.39     0.0
                  TamFw                    YES    6.05   6.05     0.0
                  TamFwGolden             YES    6.05   6.05     0.0
-----
N540-28Z4C-SYS-A  ADMConfig                NO    1.05   1.05     0.0
                  IoFpga                   YES    2.07   2.07     0.0
                  IoFpgaGolden             YES    2.07   2.03     0.0
                  Primary-BIOS             YES    1.41   1.41     0.0
                  StdbyFpga                YES    0.40   0.40     0.0
                  StdbyFpgaGolden         YES    0.40   0.40     0.0
                  TamFw                    YES    4.11   4.11     0.0
                  TamFwGolden             YES    4.11   4.11     0.0
-----
N540-28Z4C-SYS-D  ADMConfig                NO    1.05   1.05     0.0
                  IoFpga                   YES    2.07   2.07     0.0
                  IoFpgaGolden             YES    2.07   2.03     0.0
                  Primary-BIOS             YES    1.41   1.41     0.0
                  StdbyFpga                YES    0.40   0.40     0.0
                  StdbyFpgaGolden         YES    0.40   0.40     0.0
                  TamFw                    YES    4.11   4.11     0.0
                  TamFwGolden             YES    4.11   4.11     0.0
-----
N540-FH-AGG-SYS   ADM1_Config              NO    1.02   1.02     1.0
                  ADM2_Config              NO    1.02   1.02     1.0
                  DpFpgaCpri              YES    0.22   0.22     0.0
                  DpFpgaEth                YES    1.20   1.20     0.0
=====
```

	IoFpga	YES	1.30	1.30	0.0
	IoFpgaGolden	YES	1.30	1.30	0.0
	Primary-BIOS	YES	1.33	1.33	0.0
	StdbyFpga	YES	0.46	0.46	0.0
	StdbyFpgaGolden	YES	0.46	0.46	0.0
	TamFw	YES	6.05	6.05	0.0
	TamFwGolden	YES	6.05	6.05	0.0
-----					
N540-FH-CSR-SYS	ADM1_Config	NO	0.09	0.09	0.0
	ADM1_Config	NO	1.01	1.01	2.0
	ADM2_Config	NO	0.09	0.09	0.0
	ADM2_Config	NO	1.01	1.01	2.0
	DpFpga	YES	0.21	0.21	0.0
	IoFpga	YES	1.30	1.30	0.0
	IoFpgaGolden	YES	1.30	1.30	0.0
	Primary-BIOS	YES	1.33	1.33	0.0
	StdbyFpga	YES	0.46	0.46	0.0
	StdbyFpgaGolden	YES	0.46	0.46	0.0
	TamFw	YES	6.05	6.05	0.0
	TamFwGolden	YES	6.05	6.05	0.0
-----					
N540-PWR400-A	LI-PrimMCU	NO	0.04	0.04	0.0
	LI-SecMCU	NO	0.06	0.06	0.0
	PrimMCU	NO	1.02	1.02	0.0
	SecMCU	NO	1.03	1.03	0.0
-----					
N540-PWR400-D	LI-PrimMCU	NO	0.04	0.04	0.0
	LI-SecMCU	NO	0.06	0.06	0.0
	PrimMCU	NO	1.03	1.03	0.0
	SecMCU	NO	1.03	1.03	0.0
-----					
N540-PWR750-A	EM-PrimMCU	NO	1.02	1.02	0.0
	EM-SecMCU	NO	1.03	1.03	0.0
-----					
N540-PWR750-D	EM-PrimMCU	NO	1.03	1.03	0.0
	EM-SecMCU	NO	3.01	3.01	0.0
-----					
N540X-12Z16G-SYS-A	ADMConfig	NO	1.05	1.05	0.0
	IoFpga	YES	2.07	2.07	0.0
	IoFpgaGolden	YES	2.07	2.03	0.0
	Primary-BIOS	YES	1.41	1.41	0.0
	StdbyFpga	YES	0.40	0.40	0.0
	StdbyFpgaGolden	YES	0.40	0.40	0.0
	TamFw	YES	4.11	4.11	0.0
	TamFwGolden	YES	4.11	4.11	0.0
-----					
N540X-12Z16G-SYS-D	ADMConfig	NO	1.05	1.05	0.0
	IoFpga	YES	2.07	2.07	0.0
	IoFpgaGolden	YES	2.07	2.03	0.0
	Primary-BIOS	YES	1.41	1.41	0.0
	StdbyFpga	YES	0.40	0.40	0.0
	StdbyFpgaGolden	YES	0.40	0.40	0.0
	TamFw	YES	4.11	4.11	0.0
	TamFwGolden	YES	4.11	4.11	0.0
-----					
N540X-16Z4G8Q2C-A	ADMConfig	NO	1.05	1.05	0.0
	IoFpga	YES	2.07	2.07	0.0
	IoFpgaGolden	YES	2.07	2.03	0.0
	Primary-BIOS	YES	1.41	1.41	0.0
	StdbyFpga	YES	0.40	0.40	0.0
	StdbyFpgaGolden	YES	0.40	0.40	0.0
	TamFw	YES	4.11	4.11	0.0
	TamFwGolden	YES	4.11	4.11	0.0
-----					

Determine Firmware Support

N540X-16Z4G8Q2C-D	ADMConfig	NO	1.05	1.05	0.0
	IoFpga	YES	2.07	2.07	0.0
	IoFpgaGolden	YES	2.07	2.03	0.0
	Primary-BIOS	YES	1.41	1.41	0.0
	StdbyFpga	YES	0.40	0.40	0.0
	StdbyFpgaGolden	YES	0.40	0.40	0.0
	TamFw	YES	4.11	4.11	0.0
	TamFwGolden	YES	4.11	4.11	0.0
N540X-16Z8Q2C-A	ADMConfig	NO	1.05	1.05	0.0
	IoFpga	YES	2.07	2.07	0.0
	IoFpgaGolden	YES	2.07	2.03	0.0
	Primary-BIOS	YES	1.41	1.41	0.0
	StdbyFpga	YES	0.40	0.40	0.0
	StdbyFpgaGolden	YES	0.40	0.40	0.0
	TamFw	YES	4.11	4.11	0.0
	TamFwGolden	YES	4.11	4.11	0.0
N540X-16Z8Q2C-D	ADMConfig	NO	1.05	1.05	0.0
	IoFpga	YES	2.07	2.07	0.0
	IoFpgaGolden	YES	2.07	2.03	0.0
	Primary-BIOS	YES	1.41	1.41	0.0
	StdbyFpga	YES	0.40	0.40	0.0
	StdbyFpgaGolden	YES	0.40	0.40	0.0
	TamFw	YES	4.11	4.11	0.0
	TamFwGolden	YES	4.11	4.11	0.0

RP/0/RP0/CPU0:Router# show hw-module fpd  
 Auto-upgrade:Enabled  
 Attribute codes: B golden, P protect, S secure

Location	Card type	HWver	FPD device	ATR Status	FPD Versions	
					Running	Programd
0/RP0/CPU0	N540X-16Z4G8Q2C-A	1.0	ADMConfig	CURRENT	1.05	1.05
0/RP0/CPU0	N540X-16Z4G8Q2C-A	1.0	IoFpga	CURRENT	2.07	2.07
0/RP0/CPU0	N540X-16Z4G8Q2C-A	1.0	IoFpgaGolden	B NEED UPGD		1.31
0/RP0/CPU0	N540X-16Z4G8Q2C-A	1.0	Primary-BIOS	S CURRENT	1.41	1.41
0/RP0/CPU0	N540X-16Z4G8Q2C-A	1.0	StdbyFpga	S CURRENT	0.40	0.40
0/RP0/CPU0	N540X-16Z4G8Q2C-A	1.0	StdbyFpgaGolden	BS NEED UPGD		0.37
0/RP0/CPU0	N540X-16Z4G8Q2C-A	1.0	TamFw	S CURRENT	4.11	4.11
0/RP0/CPU0	N540X-16Z4G8Q2C-A	1.0	TamFwGolden	BS CURRENT		4.11

Log in to the router and enter the **show fpd package** and **show hw-module fpd** commands on the Cisco N540X-6Z18G-SYS-A/D, N540X-4Z14G2Q-A/D, and N540X-8Z16G-SYS-A/D variants:

```
RP/0/RP0/CPU0:Router# show fpd package
```

Field Programmable Device Package					
Card Type	FPD Description	Req Reload	SW Ver	Min Req SW Ver	Min Req Board Ver
N540-6Z14S-SYS-D	ADMConfig	NO	5.03	5.03	0.0
	BckUp-BootLoader	YES	20.05	20.05	0.0

	IoFpga	YES	0.17	0.17	0.0
	IoFpgaGolden	YES	0.15	0.15	0.0
	Prim-BootLoader	YES	20.05	20.05	0.0
	StdbyFpga	YES	1.09	1.09	0.0
	StdbyFpgaGolden	YES	0.33	0.33	0.0
	TamFw	YES	6.05	6.05	0.0
	TamFwGolden	YES	6.05	6.05	0.0
-----					
N540X-4Z14G2Q-A	ADMConfig	NO	5.00	5.00	0.0
	BckUp-BootLoader	YES	20.05	20.05	0.0
	IoFpga	YES	0.17	0.17	0.0
	IoFpgaGolden	YES	0.15	0.15	0.0
	Prim-BootLoader	YES	20.05	20.05	0.0
	StdbyFpga	YES	1.09	1.09	0.0
	StdbyFpgaGolden	YES	0.33	0.33	0.0
	TamFw	YES	6.05	6.05	0.0
	TamFwGolden	YES	6.05	6.05	0.0
-----					
N540X-4Z14G2Q-D	ADMConfig	NO	5.00	5.00	0.0
	BckUp-BootLoader	YES	20.05	20.05	0.0
	IoFpga	YES	0.17	0.17	0.0
	IoFpgaGolden	YES	0.15	0.15	0.0
	Prim-BootLoader	YES	20.05	20.05	0.0
	StdbyFpga	YES	1.09	1.09	0.0
	StdbyFpgaGolden	YES	0.33	0.33	0.0
	TamFw	YES	6.05	6.05	0.0
	TamFwGolden	YES	6.05	6.05	0.0
-----					
N540X-6Z18G-SYS-A	ADMConfig	NO	5.00	5.00	0.0
	BckUp-BootLoader	YES	20.05	20.05	0.0
	IoFpga	YES	0.17	0.17	0.0
	IoFpgaGolden	YES	0.15	0.15	0.0
	Prim-BootLoader	YES	20.05	20.05	0.0
	StdbyFpga	YES	1.09	1.09	0.0
	StdbyFpgaGolden	YES	0.33	0.33	0.0
	TamFw	YES	6.05	6.05	0.0
	TamFwGolden	YES	6.05	6.05	0.0
-----					
N540X-6Z18G-SYS-D	ADMConfig	NO	5.00	5.00	0.0
	BckUp-BootLoader	YES	20.05	20.05	0.0
	IoFpga	YES	0.17	0.17	0.0
	IoFpgaGolden	YES	0.15	0.15	0.0
	Prim-BootLoader	YES	20.05	20.05	0.0
	StdbyFpga	YES	1.09	1.09	0.0
	StdbyFpgaGolden	YES	0.33	0.33	0.0
	TamFw	YES	6.05	6.05	0.0
	TamFwGolden	YES	6.05	6.05	0.0
-----					
N540X-8Z16G-SYS-A	ADMConfig	NO	5.00	5.00	0.0
	BckUp-BootLoader	YES	20.05	20.05	0.0
	IoFpga	YES	0.17	0.17	0.0
	IoFpgaGolden	YES	0.15	0.15	0.0
	Prim-BootLoader	YES	20.05	20.05	0.0
	StdbyFpga	YES	1.09	1.09	0.0
	StdbyFpgaGolden	YES	0.33	0.33	0.0
	TamFw	YES	6.05	6.05	0.0
	TamFwGolden	YES	6.05	6.05	0.0
-----					
N540X-8Z16G-SYS-D	ADMConfig	NO	5.00	5.00	0.0
	BckUp-BootLoader	YES	20.05	20.05	0.0
	IoFpga	YES	0.17	0.17	0.0
	IoFpgaGolden	YES	0.15	0.15	0.0
	Prim-BootLoader	YES	20.05	20.05	0.0
	StdbyFpga	YES	1.09	1.09	0.0

Determine Firmware Support

StdbyFpgaGolden	YES	0.33	0.33	0.0
TamFw	YES	6.05	6.05	0.0
TamFwGolden	YES	6.05	6.05	0.0

```
RP/0/RP0/CPU0:Router# show hw-module fpd
Auto-upgrade:Enabled
Attribute codes: B golden, P protect, S secure
```

Location Reload Loc	Card type	HWver	FPD device	ATR Status	FPD Versions	
					Running	Programd
0/RP0/CPU0 0/RP0	N540X-6Z18G-SYS-D	0.2	ADMConfig	NEED UPGD	1.02	1.02
0/RP0/CPU0 0/RP0	N540X-6Z18G-SYS-D	0.2	IoFpga	CURRENT	0.17	0.17
0/RP0/CPU0 0/RP0	N540X-6Z18G-SYS-D	0.2	IoFpgaGolden	B CURRENT		0.15
0/RP0/CPU0 0/RP0	N540X-6Z18G-SYS-D	0.2	Prim-BootLoader	CURRENT	20.05	20.05
0/RP0/CPU0 0/RP0	N540X-6Z18G-SYS-D	0.2	StdbyFpga	S CURRENT	1.09	1.09
0/RP0/CPU0 0/RP0	N540X-6Z18G-SYS-D	0.2	StdbyFpgaGolden	BS NEED UPGD		0.00
0/RP0/CPU0 0/RP0	N540X-6Z18G-SYS-D	0.2	TamFw	S CURRENT	6.05	6.05
0/RP0/CPU0 0/RP0	N540X-6Z18G-SYS-D	0.2	TamFwGolden	BS NEED UPGD		5.06

Log in to the router and enter the **show fpd package** and **show hw-module fpd** commands on the Cisco N540-24Q8L2DD-SYS variant:

```
RP/0/RP0/CPU0:Router# show fpd package
```

Field Programmable Device Package						
Card Type	FPD Description	Req Reload	SW Ver	Min Req SW Ver	Min Req Board Ver	
N540-12Z20G-SYS-A	ADMConfig	NO	1.05	1.05	0.0	
	IoFpga	YES	2.07	2.07	0.0	
	IoFpgaGolden	YES	2.07	2.03	0.0	
	Primary-BIOS	YES	1.41	1.41	0.0	
	StdbyFpga	YES	0.40	0.40	0.0	
	StdbyFpgaGolden	YES	0.40	0.40	0.0	
	TamFw	YES	4.11	4.11	0.0	
	TamFwGolden	YES	4.11	4.11	0.0	
N540-12Z20G-SYS-D	ADMConfig	NO	1.05	1.05	0.0	
	IoFpga	YES	2.07	2.07	0.0	
	IoFpgaGolden	YES	2.07	2.03	0.0	
	Primary-BIOS	YES	1.41	1.41	0.0	
	StdbyFpga	YES	0.40	0.40	0.0	
	StdbyFpgaGolden	YES	0.40	0.40	0.0	
	TamFw	YES	4.11	4.11	0.0	
	TamFwGolden	YES	4.11	4.11	0.0	
N540-24Q8L2DD-SYS	ADM-DBConfig	NO	2.03	2.03	0.0	
	ADM-MBConfig	NO	2.01	2.01	0.0	
	IoFpga	YES	2.12	2.12	0.0	
	IoFpgaGolden	YES	2.12	2.12	0.0	
	Primary-BIOS	YES	4.05	4.05	0.0	
	StdbyFpga	YES	2.59	2.59	0.0	
	StdbyFpgaGolden	YES	2.56	2.39	0.0	



	TamFw	YES	6.05	6.05	0.0
	TamFwGolden	YES	6.05	6.05	0.0
-----					
N540-28Z4C-SYS-A	ADMConfig	NO	1.05	1.05	0.0
	IoFpga	YES	2.07	2.07	0.0
	IoFpgaGolden	YES	2.07	2.03	0.0
	Primary-BIOS	YES	1.41	1.41	0.0
	StdbyFpga	YES	0.40	0.40	0.0
	StdbyFpgaGolden	YES	0.40	0.40	0.0
	TamFw	YES	4.11	4.11	0.0
	TamFwGolden	YES	4.11	4.11	0.0
-----					
N540-28Z4C-SYS-D	ADMConfig	NO	1.05	1.05	0.0
	IoFpga	YES	2.07	2.07	0.0
	IoFpgaGolden	YES	2.07	2.03	0.0
	Primary-BIOS	YES	1.41	1.41	0.0
	StdbyFpga	YES	0.40	0.40	0.0
	StdbyFpgaGolden	YES	0.40	0.40	0.0
	TamFw	YES	4.11	4.11	0.0
	TamFwGolden	YES	4.11	4.11	0.0
-----					
N540-FH-AGG-SYS	ADM1_Config	NO	1.02	1.02	1.0
	ADM2_Config	NO	1.02	1.02	1.0
	DpFpgaCpri	YES	0.22	0.22	0.0
	DpFpgaEth	YES	1.20	1.20	0.0
	IoFpga	YES	1.30	1.30	0.0
	IoFpgaGolden	YES	1.30	1.30	0.0
	Primary-BIOS	YES	1.33	1.33	0.0
	StdbyFpga	YES	0.46	0.46	0.0
	StdbyFpgaGolden	YES	0.46	0.46	0.0
	TamFw	YES	6.05	6.05	0.0
	TamFwGolden	YES	6.05	6.05	0.0
-----					
N540-FH-CSR-SYS	ADM1_Config	NO	0.09	0.09	0.0
	ADM1_Config	NO	1.01	1.01	2.0
	ADM2_Config	NO	0.09	0.09	0.0
	ADM2_Config	NO	1.01	1.01	2.0
	DpFpga	YES	0.21	0.21	0.0
	IoFpga	YES	1.30	1.30	0.0
	IoFpgaGolden	YES	1.30	1.30	0.0
	Primary-BIOS	YES	1.33	1.33	0.0
	StdbyFpga	YES	0.46	0.46	0.0
	StdbyFpgaGolden	YES	0.46	0.46	0.0
	TamFw	YES	6.05	6.05	0.0
	TamFwGolden	YES	6.05	6.05	0.0
-----					
N540-PWR400-A	LI-PrimMCU	NO	0.04	0.04	0.0
	LI-SecMCU	NO	0.06	0.06	0.0
	PrimMCU	NO	1.02	1.02	0.0
	SecMCU	NO	1.03	1.03	0.0
-----					
N540-PWR400-D	LI-PrimMCU	NO	0.04	0.04	0.0
	LI-SecMCU	NO	0.06	0.06	0.0
	PrimMCU	NO	1.03	1.03	0.0
	SecMCU	NO	1.03	1.03	0.0
-----					
N540-PWR750-A	EM-PrimMCU	NO	1.02	1.02	0.0
	EM-SecMCU	NO	1.03	1.03	0.0
-----					
N540-PWR750-D	EM-PrimMCU	NO	1.03	1.03	0.0
	EM-SecMCU	NO	3.01	3.01	0.0
-----					
N540X-12Z16G-SYS-A	ADMConfig	NO	1.05	1.05	0.0
	IoFpga	YES	2.07	2.07	0.0

Determine Firmware Support

	IoFpgaGolden	YES	2.07	2.03	0.0
	Primary-BIOS	YES	1.41	1.41	0.0
	StdbyFpga	YES	0.40	0.40	0.0
	StdbyFpgaGolden	YES	0.40	0.40	0.0
	TamFw	YES	4.11	4.11	0.0
	TamFwGolden	YES	4.11	4.11	0.0
-----					
N540X-12Z16G-SYS-D	ADMConfig	NO	1.05	1.05	0.0
	IoFpga	YES	2.07	2.07	0.0
	IoFpgaGolden	YES	2.07	2.03	0.0
	Primary-BIOS	YES	1.41	1.41	0.0
	StdbyFpga	YES	0.40	0.40	0.0
	StdbyFpgaGolden	YES	0.40	0.40	0.0
	TamFw	YES	4.11	4.11	0.0
	TamFwGolden	YES	4.11	4.11	0.0
-----					
N540X-16Z4G8Q2C-A	ADMConfig	NO	1.05	1.05	0.0
	IoFpga	YES	2.07	2.07	0.0
	IoFpgaGolden	YES	2.07	2.03	0.0
	Primary-BIOS	YES	1.41	1.41	0.0
	StdbyFpga	YES	0.40	0.40	0.0
	StdbyFpgaGolden	YES	0.40	0.40	0.0
	TamFw	YES	4.11	4.11	0.0
	TamFwGolden	YES	4.11	4.11	0.0
-----					
N540X-16Z4G8Q2C-D	ADMConfig	NO	1.05	1.05	0.0
	IoFpga	YES	2.07	2.07	0.0
	IoFpgaGolden	YES	2.07	2.03	0.0
	Primary-BIOS	YES	1.41	1.41	0.0
	StdbyFpga	YES	0.40	0.40	0.0
	StdbyFpgaGolden	YES	0.40	0.40	0.0
	TamFw	YES	4.11	4.11	0.0
	TamFwGolden	YES	4.11	4.11	0.0
-----					
N540X-16Z8Q2C-A	ADMConfig	NO	1.05	1.05	0.0
	IoFpga	YES	2.07	2.07	0.0
	IoFpgaGolden	YES	2.07	2.03	0.0
	Primary-BIOS	YES	1.41	1.41	0.0
	StdbyFpga	YES	0.40	0.40	0.0
	StdbyFpgaGolden	YES	0.40	0.40	0.0
	TamFw	YES	4.11	4.11	0.0
	TamFwGolden	YES	4.11	4.11	0.0
-----					
N540X-16Z8Q2C-D	ADMConfig	NO	1.05	1.05	0.0
	IoFpga	YES	2.07	2.07	0.0
	IoFpgaGolden	YES	2.07	2.03	0.0
	Primary-BIOS	YES	1.41	1.41	0.0
	StdbyFpga	YES	0.40	0.40	0.0
	StdbyFpgaGolden	YES	0.40	0.40	0.0
	TamFw	YES	4.11	4.11	0.0
	TamFwGolden	YES	4.11	4.11	0.0

RP/0/RP0/CPU0:Router# show hw-module fpd  
 Auto-upgrade:Enabled  
 Attribute codes: B golden, P protect, S secure

					FPD Versions	
					=====	
Location	Card type	HWver	FPD device	ATR Status	Running	Programd
Reload Loc						
-----						
0/RP0/CPU0	N540-24Q8L2DD-SYS	7.0	ADM-DBConfig	NEED UPGD	1.51	1.51
	NOT REQ					
0/RP0/CPU0	N540-24Q8L2DD-SYS	7.0	ADM-MBConfig	CURRENT	2.01	2.01
	NOT REQ					
0/RP0/CPU0	N540-24Q8L2DD-SYS	7.0	IoFpga	CURRENT	2.12	2.12

0/RP0	0/RP0/CPU0	N540-24Q8L2DD-SYS	7.0	IoFpgaGolden	B	NEED UPGD		0.00
0/RP0	0/RP0/CPU0	N540-24Q8L2DD-SYS	7.0	Primary-BIOS	S	CURRENT	4.05	4.05
0/RP0	0/RP0/CPU0	N540-24Q8L2DD-SYS	7.0	StdbyFpga	S	CURRENT	2.59	2.59
0/RP0	0/RP0/CPU0	N540-24Q8L2DD-SYS	7.0	StdbyFpgaGolden	BS	NEED UPGD		0.00
0/RP0	0/RP0/CPU0	N540-24Q8L2DD-SYS	7.0	TamFw	S	CURRENT	6.05	6.05
0/RP0	0/RP0/CPU0	N540-24Q8L2DD-SYS	7.0	TamFwGolden	BS	NEED UPGD		0.00

Log in to the router and enter the **show fpd package** and **show hw-module fpd** commands on the Cisco N540-FH-AGG-SYS variant:

RP/0/RP0/CPU0:Router# show fpd package

```

=====
                                Field Programmable Device Package
                                =====
Card Type                FPD Description                Req  SW   Min Req  Min Req
                               Reload Ver   SW Ver   Board Ver
=====
-----
N540-12Z20G-SYS-A      ADMConfig                       NO    1.05   1.05     0.0
                        IoFpga                          YES    2.07   2.07     0.0
                        IoFpgaGolden                    YES    2.07   2.03     0.0
                        Primary-BIOS                    YES    1.41   1.41     0.0
                        StdbyFpga                      YES    0.40   0.40     0.0
                        StdbyFpgaGolden                YES    0.40   0.40     0.0
                        TamFw                          YES    4.11   4.11     0.0
                        TamFwGolden                    YES    4.11   4.11     0.0
-----
N540-12Z20G-SYS-D      ADMConfig                       NO    1.05   1.05     0.0
                        IoFpga                          YES    2.07   2.07     0.0
                        IoFpgaGolden                    YES    2.07   2.03     0.0
                        Primary-BIOS                    YES    1.41   1.41     0.0
                        StdbyFpga                      YES    0.40   0.40     0.0
                        StdbyFpgaGolden                YES    0.40   0.40     0.0
                        TamFw                          YES    4.11   4.11     0.0
                        TamFwGolden                    YES    4.11   4.11     0.0
-----
N540-24Q8L2DD-SYS      ADM-DBConfig                    NO    2.03   2.03     0.0
                        ADM-MBConfig                    NO    2.01   2.01     0.0
                        IoFpga                          YES    2.12   2.12     0.0
                        IoFpgaGolden                    YES    2.12   2.12     0.0
                        Primary-BIOS                    YES    4.05   4.05     0.0
                        StdbyFpga                      YES    2.59   2.59     0.0
                        StdbyFpgaGolden                YES    2.56   2.39     0.0
                        TamFw                          YES    6.05   6.05     0.0
                        TamFwGolden                    YES    6.05   6.05     0.0
-----
N540-28Z4C-SYS-A       ADMConfig                       NO    1.05   1.05     0.0
                        IoFpga                          YES    2.07   2.07     0.0
                        IoFpgaGolden                    YES    2.07   2.03     0.0
                        Primary-BIOS                    YES    1.41   1.41     0.0
                        StdbyFpga                      YES    0.40   0.40     0.0
                        StdbyFpgaGolden                YES    0.40   0.40     0.0
                        TamFw                          YES    4.11   4.11     0.0
                        TamFwGolden                    YES    4.11   4.11     0.0
-----
N540-28Z4C-SYS-D       ADMConfig                       NO    1.05   1.05     0.0
                        IoFpga                          YES    2.07   2.07     0.0
                        IoFpgaGolden                    YES    2.07   2.03     0.0

```

## Determine Firmware Support

	Primary-BIOS	YES	1.41	1.41	0.0
	Stdbypfpga	YES	0.40	0.40	0.0
	Stdbypfpgagolden	YES	0.40	0.40	0.0
	Tamfw	YES	4.11	4.11	0.0
	Tamfwgolden	YES	4.11	4.11	0.0
-----					
N540-FH-AGG-SYS	ADM1_Config	NO	1.02	1.02	1.0
	ADM2_Config	NO	1.02	1.02	1.0
	Dpfpgacpri	YES	0.22	0.22	0.0
	Dpfpgaeth	YES	1.20	1.20	0.0
	iofpga	YES	1.30	1.30	0.0
	iofpgagolden	YES	1.30	1.30	0.0
	Primary-BIOS	YES	1.33	1.33	0.0
	Stdbypfpga	YES	0.46	0.46	0.0
	Stdbypfpgagolden	YES	0.46	0.46	0.0
	Tamfw	YES	6.05	6.05	0.0
	Tamfwgolden	YES	6.05	6.05	0.0
-----					
N540-FH-CSR-SYS	ADM1_Config	NO	0.09	0.09	0.0
	ADM1_Config	NO	1.01	1.01	2.0
	ADM2_Config	NO	0.09	0.09	0.0
	ADM2_Config	NO	1.01	1.01	2.0
	Dpfpga	YES	0.21	0.21	0.0
	iofpga	YES	1.30	1.30	0.0
	iofpgagolden	YES	1.30	1.30	0.0
	Primary-BIOS	YES	1.33	1.33	0.0
	Stdbypfpga	YES	0.46	0.46	0.0
	Stdbypfpgagolden	YES	0.46	0.46	0.0
	Tamfw	YES	6.05	6.05	0.0
	Tamfwgolden	YES	6.05	6.05	0.0
-----					
N540-PWR400-A	LI-PrimMCU	NO	0.04	0.04	0.0
	LI-SecMCU	NO	0.06	0.06	0.0
	PrimMCU	NO	1.02	1.02	0.0
	SecMCU	NO	1.03	1.03	0.0
-----					
N540-PWR400-D	LI-PrimMCU	NO	0.04	0.04	0.0
	LI-SecMCU	NO	0.06	0.06	0.0
	PrimMCU	NO	1.03	1.03	0.0
	SecMCU	NO	1.03	1.03	0.0
-----					
N540-PWR750-A	EM-PrimMCU	NO	1.02	1.02	0.0
	EM-SecMCU	NO	1.03	1.03	0.0
-----					
N540-PWR750-D	EM-PrimMCU	NO	1.03	1.03	0.0
	EM-SecMCU	NO	3.01	3.01	0.0
-----					
N540X-12Z16G-SYS-A	ADMConfig	NO	1.05	1.05	0.0
	iofpga	YES	2.07	2.07	0.0
	iofpgagolden	YES	2.07	2.03	0.0
	Primary-BIOS	YES	1.41	1.41	0.0
	Stdbypfpga	YES	0.40	0.40	0.0
	Stdbypfpgagolden	YES	0.40	0.40	0.0
	Tamfw	YES	4.11	4.11	0.0
	Tamfwgolden	YES	4.11	4.11	0.0
-----					
N540X-12Z16G-SYS-D	ADMConfig	NO	1.05	1.05	0.0
	iofpga	YES	2.07	2.07	0.0
	iofpgagolden	YES	2.07	2.03	0.0
	Primary-BIOS	YES	1.41	1.41	0.0
	Stdbypfpga	YES	0.40	0.40	0.0
	Stdbypfpgagolden	YES	0.40	0.40	0.0
	Tamfw	YES	4.11	4.11	0.0
	Tamfwgolden	YES	4.11	4.11	0.0

```

-----
N540X-16Z4G8Q2C-A  ADMConfig      NO      1.05    1.05    0.0
                    IoFpga         YES     2.07    2.07    0.0
                    IoFpgaGolden  YES     2.07    2.03    0.0
                    Primary-BIOS   YES     1.41    1.41    0.0
                    StdbyFpga     YES     0.40    0.40    0.0
                    StdbyFpgaGolden YES     0.40    0.40    0.0
                    TamFw         YES     4.11    4.11    0.0
                    TamFwGolden  YES     4.11    4.11    0.0
-----
N540X-16Z4G8Q2C-D  ADMConfig      NO      1.05    1.05    0.0
                    IoFpga         YES     2.07    2.07    0.0
                    IoFpgaGolden  YES     2.07    2.03    0.0
                    Primary-BIOS   YES     1.41    1.41    0.0
                    StdbyFpga     YES     0.40    0.40    0.0
                    StdbyFpgaGolden YES     0.40    0.40    0.0
                    TamFw         YES     4.11    4.11    0.0
                    TamFwGolden  YES     4.11    4.11    0.0
-----
N540X-16Z8Q2C-A    ADMConfig      NO      1.05    1.05    0.0
                    IoFpga         YES     2.07    2.07    0.0
                    IoFpgaGolden  YES     2.07    2.03    0.0
                    Primary-BIOS   YES     1.41    1.41    0.0
                    StdbyFpga     YES     0.40    0.40    0.0
                    StdbyFpgaGolden YES     0.40    0.40    0.0
                    TamFw         YES     4.11    4.11    0.0
                    TamFwGolden  YES     4.11    4.11    0.0
-----
N540X-16Z8Q2C-D    ADMConfig      NO      1.05    1.05    0.0
                    IoFpga         YES     2.07    2.07    0.0
                    IoFpgaGolden  YES     2.07    2.03    0.0
                    Primary-BIOS   YES     1.41    1.41    0.0
                    StdbyFpga     YES     0.40    0.40    0.0
                    StdbyFpgaGolden YES     0.40    0.40    0.0
                    TamFw         YES     4.11    4.11    0.0
                    TamFwGolden  YES     4.11    4.11    0.0

```

```

RP/0/RP0/CPU0:Router# show hw-module fpd
Auto-upgrade:Enabled
Attribute codes: B golden, P protect, S secure

```

Location	Card type	HWver	FPD device	ATR Status	FPD Versions	
					Running	Programd
Reload Loc						
0/RP0/CPU0	N540-FH-AGG-SYS	1.0	ADM1_Config	NEED UPGD	0.91	0.91
NOT REQ						
0/RP0/CPU0	N540-FH-AGG-SYS	1.0	ADM2_Config	NEED UPGD	0.91	0.91
NOT REQ						
0/RP0/CPU0	N540-FH-AGG-SYS	1.0	DpFpgaCpri	NOT READY		0.20
N/A						
0/RP0/CPU0	N540-FH-AGG-SYS	1.0	DpFpgaEth	CURRENT	1.20	1.20
0/RP0						
0/RP0/CPU0	N540-FH-AGG-SYS	1.0	IoFpga	CURRENT	1.30	1.30
0/RP0						
0/RP0/CPU0	N540-FH-AGG-SYS	1.0	IoFPgaGolden	B NEED UPGD		1.23
0/RP0						
0/RP0/CPU0	N540-FH-AGG-SYS	1.0	Primary-BIOS	S CURRENT	1.33	1.33
0/RP0						
0/RP0/CPU0	N540-FH-AGG-SYS	1.0	StdbyFpga	S CURRENT	0.46	0.46
0/RP0						
0/RP0/CPU0	N540-FH-AGG-SYS	1.0	StdbyFpgaGolden	BS NEED UPGD		0.00
0/RP0						
0/RP0/CPU0	N540-FH-AGG-SYS	1.0	TamFw	S CURRENT	6.05	6.05
0/RP0						

0/RP0/CPU0	N540-FH-AGG-SYS	1.0	TamFwGolden	BS	NEED UPGD	0.26
0/RP0						
0/PM1	N540-PWR750-A	0.0	PrimMCU		NOT READY	1.02 1.02
N/A						
0/PM1	N540-PWR750-A	0.0	SecMCU		NOT READY	1.03 1.03
N/A						

## Important Notes

### Supported Transceiver Modules

For more information on the supported transceiver modules, see [Transceiver Module Group \(TMG\) Compatibility Matrix](#). In the **Begin your Search** search box, enter the keyword NCS540 and click **Enter**.

### Upgrading Cisco IOS XR Software

Cisco IOS XR Software is installed and activated from modular packages, allowing specific features or software patches to be installed, upgraded, or downgraded without affecting unrelated processes.

The upgrade document for N540-24Z8Q2C-SYS, N540X-ACC-SYS, and N540-ACC-SYS variants is available along with the software image in *NCS540-docs-7.7.2.tar* file.

The upgrade document for N540-28Z4C-SYS-A/D, N540-12Z20G-SYS-A/D, N540X-12Z16G-SYS-A/D, N540X-16Z4G8Q2C-A/D, N540-24Q8L2DD-SYS, N540-FH-AGG-SYS, N540X-16Z8Q2C-D, and N540-FH-CSR-SYS variants is available along with the software image in *NCS540l-docs-7.7.2.tar* file.

The upgrade document for N540X-4Z14G2Q-A/D, N540X-8Z16G-SYS-A/D, N540-6Z14S-SYS-D, and N540X-6Z18G-SYS-A/D variants is available along with the software image in *NCS540l-aarch64-docs-7.7.2.tar* file.




---

**Note** Quad configurations will be lost when you perform a software downgrade on Cisco NCS 540 Routers that support quad configurations from IOS XR Release 7.5.1 onwards to a release prior to IOS XR Release 7.5.1 due to a non-backward compatibility change. The lost configuration can be applied manually after the downgrade.

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### Production Software Maintenance Updates (SMUs)

A production SMU is a SMU that is formally requested, developed, tested, and released. Production SMUs are intended for use in a live network environment and are formally supported by the Cisco TAC and the relevant development teams. Software bugs identified through software recommendations or Bug Search Tools are not a basis for production SMU requests.

For information on production SMU types, refer the [Production SMU Types](#) section of the *IOS XR Software Maintenance Updates (SMUs)* guide.

### Related Documentation

The most current Cisco NCS 540 router documentation is located at the following URL:

<https://www.cisco.com/c/en/us/support/routers/network-convergence-system-540-series-routers/products-installation-and-configuration-guides-list.html>

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