

# Release Notes for Cisco NCS 540 Series Routers, Cisco IOS XR Release 7.9.2

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## What's New in Cisco IOS XR Release 7.9.2

Cisco IOS XR Release 7.9.2 is a maintenance release for Cisco NCS 540 Series routers. There are no new software features or hardware introduced in this release.

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

## Caveats

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

Bug ID	Headline
<a href="#">CSCvw49101</a>	Issues with replace pattern when interface is configred under dhcp ipv4
<a href="#">CSCwe48642</a>	BGP VPNv4 prefix with ATTR_SET is not installed in VRF routing table

## 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 7.9.2 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, N540-6Z18G-SYS-A/D, and N540X-6Z18G-SYS-A/D variants.

Visit the [Cisco Software Download page](#) to download the Cisco IOS XR software images.

**Table 2: Release 7.9.2 Software for N540-24Z8Q2C-SYS, N540-ACC-SYS, and N540X-ACC-SYS**

Base Image	Filename	Description
IOS XR Base Image	ncs540-mini-x-7.9.2.iso	IOS XR mandatory base image.
USB Boot Package	ncs540-usb_boot-7.9.2.zip	Package required to perform USB Boot. Includes the same packages as the base image.
<b>Optional Packages not included in the base image</b>		
Package	Filename	Description
IOS XR Manageability	ncs540-mgbl-1.0.0.0-r792.x86_64.rpm	Supports Extensible Markup Language (XML) Parser, Telemetry, Netconf, gRPC and HTTP server
IOS XR MPLS	ncs540-mpls-1.0.0.0-r792.x86_64.rpm ncs540-mpls-te-rsvp-1.0.0.0-r792.x86_64.rpm	Supports MPLS and MPLS Traffic Engineering (MPLS-TE)
IOS XR Security	ncs540-k9sec-1.0.0.0-r792.x86_64.rpm	Supports MACsec and 802.1X
IOS XR ISIS	ncs540-isis-1.0.0.0-r792.x86_64.rpm	Supports ISIS
IOS XR OSPF	ncs540-ospf-1.0.0.0-r792.x86_64.rpm	Supports OSPF
IOS XR Lawful Intercept	ncs540-li-1.0.0.0-r792.x86_64.rpm	Supports Lawful Intercept (LI)
IOS XR Multicast	ncs540-mcast-1.0.0.0-r792.x86_64.rpm	Supports Multicast
IOS XR EIGRP	ncs540-eigrp-1.0.0.0-r792.x86_64.rpm	Supports EIGRP
IOS XR LI-CTRL	ncs540-lictrl-1.0.0.0-r792.x86_64.rpm	Supports LI-CTRL

**Table 3: Release 7.9.2 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	Description
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IOS XR Base Image	ncs540l-x64-7.9.2.iso	<p>IOS XR base image with mandatory packages</p> <p>The base ISO image also includes the following optional packages:</p> <ul style="list-style-type: none"> <li>• xr-bgp</li> <li>• xr-cdp</li> <li>• xr-eigrp</li> <li>• xr-ipsla</li> <li>• xr-is-is</li> <li>• xr-k9sec</li> <li>• xr-lictrl</li> <li>• xr-lldp</li> <li>• xr-mcast</li> <li>• xr-mpls-oam</li> <li>• xr-netflow</li> <li>• xr-ospf</li> <li>• xr-perf-meas</li> <li>• xr-perfngmt</li> <li>• xr-rip</li> <li>• xr-telnet</li> <li>• xr-track</li> </ul> <p>These optional packages are also included in NCS540l-iosxr-7.9.2.tar.</p>
USB Boot Package	ncs540l-usb_boot-7.9.2.zip	<p>Package required to perform USB Boot.</p> <p>Includes the same packages as the base image.</p>

**Optional Packages not included in the base image**

Package	Filename	Description
IOS XR Telnet (xr-telnet)	NCS540l-iosxr-7.9.2.tar	Supports Telnet
IOS XR EIGRP (xr-eigrp)	NCS540l-iosxr-7.9.2.tar	Supports EIGRP
IOS XR CDP (xr-cdp)	NCS540l-iosxr-7.9.2.tar	Supports CDP
IOS XR k9sec (xr-k9sec)	NCS540l-k9sec-rpms.7.9.2.tar	Supports 802.1X
IOS XR RIP (xr-rip)	NCS540l-iosxr-7.9.2.tar	Supports RIP

**Table 4: Release 7.9.2 Software for N540X-4Z14G2Q-A/D, N540X-8Z16G-SYS-A/D, N540-6Z14S-SYS-D, N540-6Z18G-SYS-A/D, and N540X-6Z18G-SYS-A/D**

Base Image	Filename	Description
IOS XR Base Image	ncs540l-aarch64-7.9.2.iso	<p>IOS XR base image with mandatory packages.</p> <p>The ISO image also includes the following optional packages:</p> <ul style="list-style-type: none"> <li>• xr-bgp</li> <li>• xr-cdp</li> <li>• xr-eigrp</li> <li>• xr-ipsla</li> <li>• xr-is-is</li> <li>• xr-k9sec</li> <li>• xr-lictrl</li> <li>• xr-lldp</li> <li>• xr-mcast</li> <li>• xr-mpls-oam</li> <li>• xr-ncs540l-mcast</li> <li>• xr-ncs540l-netflow</li> <li>• xr-netflow</li> <li>• xr-ospf</li> <li>• xr-perf-meas</li> <li>• xr-perfmgmt</li> <li>• xr-rip</li> <li>• xr-telnet</li> <li>• xr-track</li> </ul> <p>These optional packages are also included in NCS540l aarch64 iosxr optional rpms-7.9.2.tar.</p>
USB Boot Package	ncs540l-aarch64-usb_boot-7.9.2.zip	<p>Package required to perform USB Boot.</p> <p>Includes the same packages as the base image.</p>
<b>Optional Packages not included in the base image</b>		
Package	Filename	Description

IOS XR Telnet (xr-telnet)	NCS540l-aarch64-iosxr-optional-rpms-7.9.2.tar	Supports Telnet
IOS XR EIGRP (xr-eigrp)	NCS540l-aarch64-iosxr-optional-rpms-7.9.2.tar	Supports EIGRP
IOS XR CDP (xr-cdp)	NCS540l-aarch64-iosxr-optional-rpms-7.9.2.tar	Supports CDP
IOS XR k9sec (xr-k9sec)	NCS540l-aarch64-k9sec-rpms.7.9.2.tar	Supports 802.1X
IOS XR RIP (xr-rip)	NCS540l-aarch64-iosxr-optional-rpms-7.9.2.tar	Supports RIP

## 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 7.9.2
Copyright (c) 2013-2023 by Cisco Systems, Inc.
```

### Build Information:

```
Built By      : deenayak
Built On     : Wed Jun 28 22:19:37 PDT 2023
Built Host   : 5b4c626eec35
Workspace    : /auto/srcarchive16/prod/7.9.2/ncs540/ws
Version     : 7.9.2
Location    : /opt/cisco/XR/packages/
Label       : 7.9.2
```

```
cisco NCS-540 () processor
System uptime is 2 hour, 36 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 7.9.2 LNT
Copyright (c) 2013-2023 by Cisco Systems, Inc.
```

### Build Information:

```
Built By      : deenayak
Built On     : Thu Jun 29 03:07:05 UTC 2023
Build Host   : beaf251dc3f5
Workspace    : /auto/srcarchive16/prod/7.9.2/ncs540l/ws
Version     : 7.9.2
Label       : 7.9.2
```

```
cisco NCS540L (C3708 @ 1.70GHz)
cisco N540X-16Z4G8Q2C-A (C3708 @ 1.70GHz) processor with 8GB of memory
EG-PE4 uptime is 2 hour, 45 minutes
Cisco NCS 540 System with 16x10G+4x1Gcu+8x25G+2x100G DC
```

Log in to the router and enter the **show version** command on the N540X-8Z16G-SYS-A/D, N540-6Z18G-SYS-A/D, N540-6Z14S-SYS-D, N540X-4Z14G2Q-A/D, and N540X-6Z18G-SYS-A/D variants:

```
RP/0/RP0/CPU0:Router#show version
Cisco IOS XR Software, Version 7.9.2 LNT
Copyright (c) 2013-2023 by Cisco Systems, Inc.
```

### Build Information:

## Determine Firmware Support

```
Built By      : deenayak
Built On     : Thu Jun 29 03:07:05 UTC 2023
Build Host   : b231e24791d3
Workspace    : /auto/srcarchive16/prod/7.9.2/ncs5401-aarch64/ws
Version      : 7.9.2
Label       : 7.9.2
```

```
cisco NCS540L
cisco N540X-6Z18G-SYS-A processor with 8GB of memory
R13-Darwin-CE1 uptime is 2 hour, 54 minutes
Cisco NCS 540 Series Fixed Router 18x1G, 6x1/10G, AC
```

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 7.9.2 LNT
Copyright (c) 2013-2023 by Cisco Systems, Inc.
```

```
Build Information:
Built By      : deenayak
Built On     : Thu Jun 29 03:07:05 UTC 2023
Build Host   : beaf251dc3f5
Workspace    : /auto/srcarchive16/prod/7.9.2/ncs5401/ws
Version      : 7.9.2
Label       : 7.9.2
```

```
cisco NCS540L (D1519 @ 1.50GHz)
cisco N540-24Q8L2DD-SYS (D1519 @ 1.50GHz) processor with 16GB of memory
R18_PE9_Arches uptime is 12 hours, 18 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-CSR-SYS variant:

```
RP/0/RP0/CPU0:Router#show version
Cisco IOS XR Software, Version 7.9.2 LNT
Copyright (c) 2013-2023 by Cisco Systems, Inc.
```

```
Build Information:
Built By      : deenayak
Built On     : Thu Jun 29 03:07:05 UTC 2023
Build Host   : beaf251dc3f5
Workspace    : /auto/srcarchive16/prod/7.9.2/ncs5401/ws
Version      : 7.9.2
Label       : 7.9.2
```

```
cisco NCS540L (C3708 @ 1.70GHz)
cisco N540-FH-CSR-SYS (C3708 @ 1.70GHz) processor with 8GB of memory
R16_PE8_Jaguar uptime is 2 hour, 9 minutes
N540-FH-CSR-SYS
```

## 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:



**Note** If the **Req Reload** field is mentioned as **Yes** in the output, then it indicates the need for a router reboot for the FPD's latest version to take effect.

```
RP/0/RP0/CPU0:Router# show fpd package
1      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_32      NO      12.01      12.01      0.0
      SSFP_OC3_STM1_33      NO      12.01      12.01      0.0
      SSFP_OC3_STM1_34      NO      12.01      12.01      0.0
      SSFP_OC3_STM1_35      NO      12.01      12.01      0.0
      SSFP_OC3_STM1_36      NO      12.01      12.01      0.0
      SSFP_OC3_STM1_37      NO      12.01      12.01      0.0
      SSFP_OC3_STM1_38      NO      12.01      12.01      0.0
      SSFP_OC3_STM1_39      NO      12.01      12.01      0.0
      SSFP_OC3_STM1_4      NO      12.01      12.01      0.0
      SSFP_OC3_STM1_40      NO      12.01      12.01      0.0
      SSFP_OC3_STM1_41      NO      12.01      12.01      0.0
      SSFP_OC3_STM1_42      NO      12.01      12.01      0.0
      SSFP_OC3_STM1_43      NO      12.01      12.01      0.0
      SSFP_OC3_STM1_44      NO      12.01      12.01      0.0
      SSFP_OC3_STM1_45      NO      12.01      12.01      0.0
      SSFP_OC3_STM1_46      NO      12.01      12.01      0.0
      SSFP_OC3_STM1_47      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
      SSFP_STM1_TSOP_0      NO      13.00      13.00      0.0
      SSFP_STM1_TSOP_1      NO      13.00      13.00      0.0
      SSFP_STM1_TSOP_10     NO      13.00      13.00      0.0
      SSFP_STM1_TSOP_11     NO      13.00      13.00      0.0
      SSFP_STM1_TSOP_12     NO      13.00      13.00      0.0
      SSFP_STM1_TSOP_13     NO      13.00      13.00      0.0
      SSFP_STM1_TSOP_14     NO      13.00      13.00      0.0
      SSFP_STM1_TSOP_15     NO      13.00      13.00      0.0
      SSFP_STM1_TSOP_16     NO      13.00      13.00      0.0
      SSFP_STM1_TSOP_17     NO      13.00      13.00      0.0
      SSFP_STM1_TSOP_18     NO      13.00      13.00      0.0
      SSFP_STM1_TSOP_19     NO      13.00      13.00      0.0
      SSFP_STM1_TSOP_2      NO      13.00      13.00      0.0
      SSFP_STM1_TSOP_20     NO      13.00      13.00      0.0
```

## Determine Firmware Support

	SSFP_STM1_TSOP_21	NO	13.00	13.00	0.0
	SSFP_STM1_TSOP_22	NO	13.00	13.00	0.0
	SSFP_STM1_TSOP_23	NO	13.00	13.00	0.0
	SSFP_STM1_TSOP_24	NO	13.00	13.00	0.0
	SSFP_STM1_TSOP_25	NO	13.00	13.00	0.0
	SSFP_STM1_TSOP_26	NO	13.00	13.00	0.0
	SSFP_STM1_TSOP_27	NO	13.00	13.00	0.0
	SSFP_STM1_TSOP_28	NO	13.00	13.00	0.0
	SSFP_STM1_TSOP_29	NO	13.00	13.00	0.0
	SSFP_STM1_TSOP_3	NO	13.00	13.00	0.0
	SSFP_STM1_TSOP_30	NO	13.00	13.00	0.0
	SSFP_STM1_TSOP_31	NO	13.00	13.00	0.0
	SSFP_STM1_TSOP_32	NO	13.00	13.00	0.0
	SSFP_STM1_TSOP_33	NO	13.00	13.00	0.0
	SSFP_STM1_TSOP_34	NO	13.00	13.00	0.0
	SSFP_STM1_TSOP_35	NO	13.00	13.00	0.0
	SSFP_STM1_TSOP_36	NO	13.00	13.00	0.0
	SSFP_STM1_TSOP_37	NO	13.00	13.00	0.0
	SSFP_STM1_TSOP_38	NO	13.00	13.00	0.0
	SSFP_STM1_TSOP_39	NO	13.00	13.00	0.0
	SSFP_STM1_TSOP_4	NO	13.00	13.00	0.0
	SSFP_STM1_TSOP_40	NO	13.00	13.00	0.0
	SSFP_STM1_TSOP_41	NO	13.00	13.00	0.0
	SSFP_STM1_TSOP_42	NO	13.00	13.00	0.0
	SSFP_STM1_TSOP_43	NO	13.00	13.00	0.0
	SSFP_STM1_TSOP_44	NO	13.00	13.00	0.0
	SSFP_STM1_TSOP_45	NO	13.00	13.00	0.0
	SSFP_STM1_TSOP_46	NO	13.00	13.00	0.0
	SSFP_STM1_TSOP_47	NO	13.00	13.00	0.0
	SSFP_STM1_TSOP_5	NO	13.00	13.00	0.0
	SSFP_STM1_TSOP_6	NO	13.00	13.00	0.0
	SSFP_STM1_TSOP_7	NO	13.00	13.00	0.0
	SSFP_STM1_TSOP_8	NO	13.00	13.00	0.0
	SSFP_STM1_TSOP_9	NO	13.00	13.00	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	0.27	0.27	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	1427.00	1427.00	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_32	NO	13.01	13.01	0.0
SSFP_E1F_33	NO	13.01	13.01	0.0
SSFP_E1F_34	NO	13.01	13.01	0.0
SSFP_E1F_35	NO	13.01	13.01	0.0
SSFP_E1F_36	NO	13.01	13.01	0.0
SSFP_E1F_37	NO	13.01	13.01	0.0
SSFP_E1F_38	NO	13.01	13.01	0.0
SSFP_E1F_39	NO	13.01	13.01	0.0
SSFP_E1F_4	NO	13.01	13.01	0.0
SSFP_E1F_40	NO	13.01	13.01	0.0
SSFP_E1F_41	NO	13.01	13.01	0.0
SSFP_E1F_42	NO	13.01	13.01	0.0
SSFP_E1F_43	NO	13.01	13.01	0.0
SSFP_E1F_44	NO	13.01	13.01	0.0
SSFP_E1F_45	NO	13.01	13.01	0.0
SSFP_E1F_46	NO	13.01	13.01	0.0
SSFP_E1F_47	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_32	NO	12.01	12.01	0.0
SSFP_OC3_STM1_33	NO	12.01	12.01	0.0
SSFP_OC3_STM1_34	NO	12.01	12.01	0.0
SSFP_OC3_STM1_35	NO	12.01	12.01	0.0
SSFP_OC3_STM1_36	NO	12.01	12.01	0.0

## Determine Firmware Support

SSFP_OC3_STM1_37	NO	12.01	12.01	0.0
SSFP_OC3_STM1_38	NO	12.01	12.01	0.0
SSFP_OC3_STM1_39	NO	12.01	12.01	0.0
SSFP_OC3_STM1_4	NO	12.01	12.01	0.0
SSFP_OC3_STM1_40	NO	12.01	12.01	0.0
SSFP_OC3_STM1_41	NO	12.01	12.01	0.0
SSFP_OC3_STM1_42	NO	12.01	12.01	0.0
SSFP_OC3_STM1_43	NO	12.01	12.01	0.0
SSFP_OC3_STM1_44	NO	12.01	12.01	0.0
SSFP_OC3_STM1_45	NO	12.01	12.01	0.0
SSFP_OC3_STM1_46	NO	12.01	12.01	0.0
SSFP_OC3_STM1_47	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
SSFP_STM1_TSOP_0	NO	13.00	13.00	0.0
SSFP_STM1_TSOP_1	NO	13.00	13.00	0.0
SSFP_STM1_TSOP_10	NO	13.00	13.00	0.0
SSFP_STM1_TSOP_11	NO	13.00	13.00	0.0
SSFP_STM1_TSOP_12	NO	13.00	13.00	0.0
SSFP_STM1_TSOP_13	NO	13.00	13.00	0.0
SSFP_STM1_TSOP_14	NO	13.00	13.00	0.0
SSFP_STM1_TSOP_15	NO	13.00	13.00	0.0
SSFP_STM1_TSOP_16	NO	13.00	13.00	0.0
SSFP_STM1_TSOP_17	NO	13.00	13.00	0.0
SSFP_STM1_TSOP_18	NO	13.00	13.00	0.0
SSFP_STM1_TSOP_19	NO	13.00	13.00	0.0
SSFP_STM1_TSOP_2	NO	13.00	13.00	0.0
SSFP_STM1_TSOP_20	NO	13.00	13.00	0.0
SSFP_STM1_TSOP_21	NO	13.00	13.00	0.0
SSFP_STM1_TSOP_22	NO	13.00	13.00	0.0
SSFP_STM1_TSOP_23	NO	13.00	13.00	0.0
SSFP_STM1_TSOP_24	NO	13.00	13.00	0.0
SSFP_STM1_TSOP_25	NO	13.00	13.00	0.0
SSFP_STM1_TSOP_26	NO	13.00	13.00	0.0
SSFP_STM1_TSOP_27	NO	13.00	13.00	0.0
SSFP_STM1_TSOP_28	NO	13.00	13.00	0.0
SSFP_STM1_TSOP_29	NO	13.00	13.00	0.0
SSFP_STM1_TSOP_3	NO	13.00	13.00	0.0
SSFP_STM1_TSOP_30	NO	13.00	13.00	0.0
SSFP_STM1_TSOP_31	NO	13.00	13.00	0.0
SSFP_STM1_TSOP_32	NO	13.00	13.00	0.0
SSFP_STM1_TSOP_33	NO	13.00	13.00	0.0
SSFP_STM1_TSOP_34	NO	13.00	13.00	0.0
SSFP_STM1_TSOP_35	NO	13.00	13.00	0.0
SSFP_STM1_TSOP_36	NO	13.00	13.00	0.0
SSFP_STM1_TSOP_37	NO	13.00	13.00	0.0
SSFP_STM1_TSOP_38	NO	13.00	13.00	0.0
SSFP_STM1_TSOP_39	NO	13.00	13.00	0.0
SSFP_STM1_TSOP_4	NO	13.00	13.00	0.0
SSFP_STM1_TSOP_40	NO	13.00	13.00	0.0
SSFP_STM1_TSOP_41	NO	13.00	13.00	0.0
SSFP_STM1_TSOP_42	NO	13.00	13.00	0.0
SSFP_STM1_TSOP_43	NO	13.00	13.00	0.0
SSFP_STM1_TSOP_44	NO	13.00	13.00	0.0
SSFP_STM1_TSOP_45	NO	13.00	13.00	0.0
SSFP_STM1_TSOP_46	NO	13.00	13.00	0.0
SSFP_STM1_TSOP_47	NO	13.00	13.00	0.0
SSFP_STM1_TSOP_5	NO	13.00	13.00	0.0
SSFP_STM1_TSOP_6	NO	13.00	13.00	0.0
SSFP_STM1_TSOP_7	NO	13.00	13.00	0.0

```

SSFP_STM1_TSOP_8      NO      13.00    13.00    0.0
SSFP_STM1_TSOP_9      NO      13.00    13.00    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	0.27	0.27
0/RP0	N540-ACC-SYS	1.0	SATA-M500IT-MU-B	CURRENT	4.00	4.00
0/PM0	N540-PWR400-A	1.0	SDG-PrimMCU-ACFW	CURRENT	0.00	0.00
0/PM0	N540-PWR400-A	1.0	SDG-SecMCU-ACFW	CURRENT	0.00	0.00
0/PM1	N540-PWR400-A	1.0	SDG-PrimMCU-ACFW	CURRENT	0.00	0.00
0/PM1	N540-PWR400-A	1.0	SDG-SecMCU-ACFW	CURRENT	0.00	0.00

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
    
```

```

=====
Field Programmable Device Package
=====

```

Card Type	FPD Description	Req Reload	SW Ver	Min Req SW Ver	Min Req Board Ver
N540-12Z20G-SYS-A	ADM_FW	YES	14.03	14.03	0.0
	ADMConfig	NO	1.05	1.05	0.0
	IoFpga	YES	2.12	2.12	0.0
	IoFpgaGolden	YES	2.07	2.03	0.0
	Primary-BIOS	YES	1.46	1.46	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
N540-12Z20G-SYS-D	ADM_FW	YES	14.03	14.03	0.0
	ADMConfig	NO	1.05	1.05	0.0
	IoFpga	YES	2.12	2.12	0.0
	IoFpgaGolden	YES	2.07	2.03	0.0
	Primary-BIOS	YES	1.46	1.46	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
N540-24Q8L2DD-SYS	ADM-DBConfig	NO	2.05	2.05	0.0
	ADM-MBConfig	NO	2.05	2.05	0.0
	IoFpga	YES	2.12	2.12	0.0
	IoFpgaGolden	YES	2.12	2.12	0.0
	Primary-BIOS	YES	4.07	4.07	0.0
	SsdSAMSA64G3	YES	12.41	12.41	0.0
	StdbyFpga	YES	2.59	2.59	0.0
	StdbyFpgaGolden	YES	2.56	2.39	0.0
N540-28Z4C-SYS-A	TamFw	YES	6.05	6.05	0.0
	TamFwGolden	YES	6.05	6.05	0.0

## Determine Firmware Support

	ADMConfig	NO	1.05	1.05	0.0
	IoFpga	YES	2.12	2.12	0.0
	IoFpgaGolden	YES	2.07	2.03	0.0
	Primary-BIOS	YES	1.46	1.46	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
-----					
N540-28Z4C-SYS-D	ADM_FW	YES	14.03	14.03	0.0
	ADMConfig	NO	1.05	1.05	0.0
	IoFpga	YES	2.12	2.12	0.0
	IoFpgaGolden	YES	2.07	2.03	0.0
	Primary-BIOS	YES	1.46	1.46	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	1.46	1.46	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	1.46	1.46	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	ADM_FW	YES	14.03	14.03	0.0
	ADMConfig	NO	1.05	1.05	0.0
	IoFpga	YES	2.12	2.12	0.0
	IoFpgaGolden	YES	2.07	2.03	0.0

	Primary-BIOS	YES	1.46	1.46	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	ADM_FW	YES	14.03	14.03	0.0
	ADMConfig	NO	1.05	1.05	0.0
	IoFpga	YES	2.12	2.12	0.0
	IoFpgaGolden	YES	2.07	2.03	0.0
	Primary-BIOS	YES	1.46	1.46	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	ADM_FW	YES	14.03	14.03	0.0
	ADMConfig	NO	1.05	1.05	0.0
	IoFpga	YES	2.12	2.12	0.0
	IoFpgaGolden	YES	2.07	2.03	0.0
	Primary-BIOS	YES	1.46	1.46	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	ADM_FW	YES	14.03	14.03	0.0
	ADMConfig	NO	1.05	1.05	0.0
	IoFpga	YES	2.12	2.12	0.0
	IoFpgaGolden	YES	2.07	2.03	0.0
	Primary-BIOS	YES	1.46	1.46	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	2.12	2.12	0.0
	IoFpgaGolden	YES	2.07	2.03	0.0
	Primary-BIOS	YES	1.46	1.46	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	2.12	2.12	0.0
	IoFpgaGolden	YES	2.07	2.03	0.0
	Primary-BIOS	YES	1.46	1.46	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, A Anti Theft aware

				FPD Versions	
				=====	
Location	Card type	HWver	FPD device	ATR Status	Running Programd
Reload Loc					
0/RP0/CPU0	N540X-16Z4G8Q2C-A	0.2	ADM_FW	CURRENT	14.03 14.03
NOT REQ					

## Determine Firmware Support

0/RP0/CPU0 N540X-16Z4G8Q2C-A	0.2	ADMConfig	CURRENT	1.05	1.05
NOT REQ					
0/RP0/CPU0 N540X-16Z4G8Q2C-A	0.2	IoFpga	CURRENT	2.12	2.12
0/RP0					
0/RP0/CPU0 N540X-16Z4G8Q2C-A	0.2	IoFpgaGolden	B CURRENT		2.03
0/RP0					
0/RP0/CPU0 N540X-16Z4G8Q2C-A	0.2	Primary-BIOS	SA CURRENT	1.46	1.46
0/RP0					
0/RP0/CPU0 N540X-16Z4G8Q2C-A	0.2	StdbyFpga	S CURRENT	0.40	0.40
0/RP0					
0/RP0/CPU0 N540X-16Z4G8Q2C-A	0.2	StdbyFpgaGolden	BS NEED UPGD		0.00
0/RP0					
0/RP0/CPU0 N540X-16Z4G8Q2C-A	0.2	TamFw	S CURRENT	4.11	4.11
0/RP0					
0/RP0/CPU0 N540X-16Z4G8Q2C-A	0.2	TamFwGolden	BS NEED UPGD		0.00
0/RP0					

Log in to the router and enter the **show fpd package** and **show hw-module fpd** commands on the Cisco N540-6Z18G-SYS-A/D, N540X-6Z18G-SYS-A/D, N540-6Z14S-SYS-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   SW   Min Req  Min Req
=====  =====                Reload Ver   SW Ver   Board Ver
-----  -----
N540-6Z14S-SYS-D                 ADMConfig                       NO    5.03   5.03     0.0
                                   BckUp-BootLoader                YES   20.08  20.08     0.0
                                   IoFpga                          YES    0.17   0.17     0.0
                                   IoFpgaGolden                    YES    0.15   0.15     0.0
                                   Prim-BootLoader                 YES   20.08  20.08     0.0
                                   StdbyFpga                       YES    2.05   2.05     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
-----
N540-6Z18G-SYS-A                 ADMConfig                       NO    5.03   5.03     0.0
                                   BckUp-BootLoader                YES   20.08  20.08     0.0
                                   IoFpga                          YES    0.05   0.05     0.0
                                   IoFpgaGolden                    YES    0.03   0.03     0.0
                                   Prim-BootLoader                 YES   20.08  20.08     0.0
                                   StdbyFpga                       YES    2.05   2.05     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
-----
N540-6Z18G-SYS-D                 ADMConfig                       NO    5.03   5.03     0.0
                                   BckUp-BootLoader                YES   20.08  20.08     0.0
                                   IoFpga                          YES    0.05   0.05     0.0
                                   IoFpgaGolden                    YES    0.03   0.03     0.0
                                   Prim-BootLoader                 YES   20.08  20.08     0.0
                                   StdbyFpga                       YES    2.05   2.05     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   20.08  20.08     0.0
                                   IoFpga                          YES    0.17   0.17     0.0
                                   IoFpgaGolden                    YES    0.15   0.15     0.0
```

	Prim-BootLoader	YES	20.08	20.08	0.0
	Stdbypfpga	YES	2.05	2.05	0.0
	StdbypfpgaGolden	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	20.08	20.08	0.0
	IoFpga	YES	0.17	0.17	0.0
	IoFpgaGolden	YES	0.15	0.15	0.0
	Prim-BootLoader	YES	20.08	20.08	0.0
	Stdbypfpga	YES	2.05	2.05	0.0
	StdbypfpgaGolden	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	20.08	20.08	0.0
	IoFpga	YES	0.17	0.17	0.0
	IoFpgaGolden	YES	0.15	0.15	0.0
	Prim-BootLoader	YES	20.08	20.08	0.0
	Stdbypfpga	YES	2.05	2.05	0.0
	StdbypfpgaGolden	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	20.08	20.08	0.0
	IoFpga	YES	0.17	0.17	0.0
	IoFpgaGolden	YES	0.15	0.15	0.0
	Prim-BootLoader	YES	20.08	20.08	0.0
	Stdbypfpga	YES	2.05	2.05	0.0
	StdbypfpgaGolden	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	20.08	20.08	0.0
	IoFpga	YES	0.17	0.17	0.0
	IoFpgaGolden	YES	0.15	0.15	0.0
	Prim-BootLoader	YES	20.08	20.08	0.0
	Stdbypfpga	YES	2.05	2.05	0.0
	StdbypfpgaGolden	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	20.08	20.08	0.0
	IoFpga	YES	0.17	0.17	0.0
	IoFpgaGolden	YES	0.15	0.15	0.0
	Prim-BootLoader	YES	20.08	20.08	0.0
	Stdbypfpga	YES	2.05	2.05	0.0
	StdbypfpgaGolden	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, A Anti Theft aware
```

				FPD Versions	
				=====	
Location	Card type	HWver	FPD device	ATR Status	Running Programd
Reload Loc					
-----					

## Determine Firmware Support

0/RP0/CPU0	N540X-6Z18G-SYS-A	0.2	ADMConfig	NEED UPGD	1.02	1.02
0/RP0						
0/RP0/CPU0	N540X-6Z18G-SYS-A	0.2	IoFpga	CURRENT	0.17	0.17
0/RP0						
0/RP0/CPU0	N540X-6Z18G-SYS-A	0.2	IoFpgaGolden	B NEED UPGD		0.00
0/RP0						
0/RP0/CPU0	N540X-6Z18G-SYS-A	0.2	Prim-BootLoader	A CURRENT	20.08	20.08
0/RP0						
0/RP0/CPU0	N540X-6Z18G-SYS-A	0.2	StdbyFpga	S CURRENT	2.05	2.05
0/RP0						
0/RP0/CPU0	N540X-6Z18G-SYS-A	0.2	StdbyFpgaGolden	BS NEED UPGD		0.00
0/RP0						
0/RP0/CPU0	N540X-6Z18G-SYS-A	0.2	TamFw	S CURRENT	6.05	6.05
0/RP0						
0/RP0/CPU0	N540X-6Z18G-SYS-A	0.2	TamFwGolden	BS CURRENT		6.05
0/RP0						

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   SW   Min Req  Min Req
=====  =====                Reload Ver   SW Ver   Board Ver
-----  -----
N540-12Z20G-SYS-A  ADM_FW                          YES   14.03  14.03    0.0
                  ADMConfig                       NO    1.05   1.05    0.0
                  IoFpga                          YES   2.12   2.12    0.0
                  IoFpgaGolden                     YES   2.07   2.03    0.0
                  Primary-BIOS                     YES   1.46   1.46    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  ADM_FW                          YES   14.03  14.03    0.0
                  ADMConfig                       NO    1.05   1.05    0.0
                  IoFpga                          YES   2.12   2.12    0.0
                  IoFpgaGolden                     YES   2.07   2.03    0.0
                  Primary-BIOS                     YES   1.46   1.46    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    2.05   2.05    0.0
                  ADM-MBConfig                    NO    2.05   2.05    0.0
                  IoFpga                          YES   2.12   2.12    0.0
                  IoFpgaGolden                     YES   2.12   2.12    0.0
                  Primary-BIOS                     YES   4.07   4.07    0.0
                  SsdSAMS64G3                   YES  12.41  12.41    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  ADM_FW                          YES   14.03  14.03    0.0
                  ADMConfig                       NO    1.05   1.05    0.0
                  IoFpga                          YES   2.12   2.12    0.0
                  IoFpgaGolden                     YES   2.07   2.03    0.0
                  Primary-BIOS                     YES   1.46   1.46    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	ADM_FW	YES	14.03	14.03	0.0
	ADMConfig	NO	1.05	1.05	0.0
	IoFpga	YES	2.12	2.12	0.0
	IoFpgaGolden	YES	2.07	2.03	0.0
	Primary-BIOS	YES	1.46	1.46	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	1.46	1.46	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	1.46	1.46	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	ADM_FW	YES	14.03	14.03	0.0
	ADMConfig	NO	1.05	1.05	0.0
	IoFpga	YES	2.12	2.12	0.0
	IoFpgaGolden	YES	2.07	2.03	0.0
	Primary-BIOS	YES	1.46	1.46	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

## Determine Firmware Support

	TamFwGolden	YES	4.11	4.11	0.0
-----					
N540X-12Z16G-SYS-D	ADM_FW	YES	14.03	14.03	0.0
	ADMConfig	NO	1.05	1.05	0.0
	IoFpga	YES	2.12	2.12	0.0
	IoFpgaGolden	YES	2.07	2.03	0.0
	Primary-BIOS	YES	1.46	1.46	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	ADM_FW	YES	14.03	14.03	0.0
	ADMConfig	NO	1.05	1.05	0.0
	IoFpga	YES	2.12	2.12	0.0
	IoFpgaGolden	YES	2.07	2.03	0.0
	Primary-BIOS	YES	1.46	1.46	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-D	ADM_FW	YES	14.03	14.03	0.0
	ADMConfig	NO	1.05	1.05	0.0
	IoFpga	YES	2.12	2.12	0.0
	IoFpgaGolden	YES	2.07	2.03	0.0
	Primary-BIOS	YES	1.46	1.46	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-16Z8Q2C-A	ADMConfig	NO	1.05	1.05	0.0
	IoFpga	YES	2.12	2.12	0.0
	IoFpgaGolden	YES	2.07	2.03	0.0
	Primary-BIOS	YES	1.46	1.46	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-16Z8Q2C-D	ADMConfig	NO	1.05	1.05	0.0
	IoFpga	YES	2.12	2.12	0.0
	IoFpgaGolden	YES	2.07	2.03	0.0
	Primary-BIOS	YES	1.46	1.46	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

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

				FPD Versions	
				=====	
Location	Card type	HWver	FPD device	ATR Status	Running Programd
Reload Loc					
0/RP0/CPU0	N540-24Q8L2DD-SYS	2.0	ADM-DBConfig	NEED UPGD	1.51 1.51
NOT REQ					
0/RP0/CPU0	N540-24Q8L2DD-SYS	2.0	ADM-MBConfig	NEED UPGD	2.02 2.02
NOT REQ					
0/RP0/CPU0	N540-24Q8L2DD-SYS	2.0	IoFpga	CURRENT	2.12 2.12
0/RP0					

0/RP0/CPU0	N540-24Q8L2DD-SYS	2.0	IoFpgaGolden	B	NEED UPGD		2.10
0/RP0							
0/RP0/CPU0	N540-24Q8L2DD-SYS	2.0	Primary-BIOS	S	CURRENT	4.07	4.07
0/RP0							
0/RP0/CPU0	N540-24Q8L2DD-SYS	2.0	SsdSAMSA64G3	S	CURRENT	12.41	12.41
0/RP0							
0/RP0/CPU0	N540-24Q8L2DD-SYS	2.0	StdbyFpga	S	CURRENT	2.59	2.59
0/RP0							
0/RP0/CPU0	N540-24Q8L2DD-SYS	2.0	StdbyFpgaGolden	BS	NEED UPGD		0.00
0/RP0							
0/RP0/CPU0	N540-24Q8L2DD-SYS	2.0	TamFw	S	CURRENT	6.05	6.05
0/RP0							
0/RP0/CPU0	N540-24Q8L2DD-SYS	2.0	TamFwGolden	BS	NEED UPGD		0.00
0/RP0							
0/PM0	N540-PWR400-A	0.0	PrimMCU		CURRENT	1.02	1.02
NOT REQ							
0/PM0	N540-PWR400-A	0.0	SecMCU		CURRENT	1.03	1.03
NOT REQ							

Log in to the router and enter the **show fpd package** and **show hw-module fpd** commands on the Cisco N540-FH-CSR-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	ADM_FW	YES	14.03	14.03	0.0	
	ADMConfig	NO	1.05	1.05	0.0	
	IoFpga	YES	2.12	2.12	0.0	
	IoFpgaGolden	YES	2.07	2.03	0.0	
	Primary-BIOS	YES	1.46	1.46	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	ADM_FW	YES	14.03	14.03	0.0	
	ADMConfig	NO	1.05	1.05	0.0	
	IoFpga	YES	2.12	2.12	0.0	
	IoFpgaGolden	YES	2.07	2.03	0.0	
	Primary-BIOS	YES	1.46	1.46	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	2.05	2.05	0.0	
	ADM-MBConfig	NO	2.05	2.05	0.0	
	IoFpga	YES	2.12	2.12	0.0	
	IoFpgaGolden	YES	2.12	2.12	0.0	
	Primary-BIOS	YES	4.07	4.07	0.0	
	SsdSAMSA64G3	YES	12.41	12.41	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	ADM_FW	YES	14.03	14.03	0.0	
	ADMConfig	NO	1.05	1.05	0.0	
	IoFpga	YES	2.12	2.12	0.0	

## Determine Firmware Support

	IoFpgaGolden	YES	2.07	2.03	0.0
	Primary-BIOS	YES	1.46	1.46	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	ADM_FW	YES	14.03	14.03	0.0
	ADMConfig	NO	1.05	1.05	0.0
	IoFpga	YES	2.12	2.12	0.0
	IoFpgaGolden	YES	2.07	2.03	0.0
	Primary-BIOS	YES	1.46	1.46	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	1.46	1.46	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	1.46	1.46	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	ADM_FW	YES	14.03	14.03	0.0
	ADMConfig	NO	1.05	1.05	0.0
	IoFpga	YES	2.12	2.12	0.0
	IoFpgaGolden	YES	2.07	2.03	0.0
	Primary-BIOS	YES	1.46	1.46	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	ADM_FW	YES	14.03	14.03	0.0
	ADMConfig	NO	1.05	1.05	0.0
	IoFpga	YES	2.12	2.12	0.0
	IoFpgaGolden	YES	2.07	2.03	0.0
	Primary-BIOS	YES	1.46	1.46	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	ADM_FW	YES	14.03	14.03	0.0
	ADMConfig	NO	1.05	1.05	0.0
	IoFpga	YES	2.12	2.12	0.0
	IoFpgaGolden	YES	2.07	2.03	0.0
	Primary-BIOS	YES	1.46	1.46	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	ADM_FW	YES	14.03	14.03	0.0
	ADMConfig	NO	1.05	1.05	0.0
	IoFpga	YES	2.12	2.12	0.0
	IoFpgaGolden	YES	2.07	2.03	0.0
	Primary-BIOS	YES	1.46	1.46	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	2.12	2.12	0.0
	IoFpgaGolden	YES	2.07	2.03	0.0
	Primary-BIOS	YES	1.46	1.46	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	2.12	2.12	0.0
	IoFpgaGolden	YES	2.07	2.03	0.0
	Primary-BIOS	YES	1.46	1.46	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, A Anti Theft aware

						FPD Versions	
						=====	
Location	Card type	HWver	FPD device	ATR Status	Running Programd		
Reload Loc							
0/RP0/CPU0	N540-FH-CSR-SYS	1.0	ADM1_Config	CURRENT	0.09	0.09	
NOT REQ							
0/RP0/CPU0	N540-FH-CSR-SYS	1.0	ADM2_Config	CURRENT	0.09	0.09	
NOT REQ							

0/RP0/CPU0 0/RP0	N540-FH-CSR-SYS	1.0	DpFpga	CURRENT	0.21	0.21
0/RP0/CPU0 0/RP0	N540-FH-CSR-SYS	1.0	IoFpga	CURRENT	1.30	1.30
0/RP0/CPU0 0/RP0	N540-FH-CSR-SYS	1.0	IoFpgaGolden	B	NEED UPGD	1.13
0/RP0/CPU0 0/RP0	N540-FH-CSR-SYS	1.0	Primary-BIOS	SA	CURRENT	1.46
0/RP0/CPU0 0/RP0	N540-FH-CSR-SYS	1.0	StdbyFpga	S	CURRENT	0.46
0/RP0/CPU0 0/RP0	N540-FH-CSR-SYS	1.0	StdbyFpgaGolden	BS	NEED UPGD	0.42
0/RP0/CPU0 0/RP0	N540-FH-CSR-SYS	1.0	TamFw	S	CURRENT	6.05
0/RP0/CPU0 0/RP0	N540-FH-CSR-SYS	1.0	TamFwGolden	BS	CURRENT	6.05
0/PM1 NOT REQ	N540-PWR400-A	0.0	PrimMCU	CURRENT	1.02	1.02
0/PM1 NOT REQ	N540-PWR400-A	0.0	SecMCU	NEED UPGD	1.02	1.02

## Important Notes

- Prior to Cisco IOS XR Release 7.2.1, a segment of an explicit segment list can be configured as an IPv4 address (representing a Node or a Link) using the **index indexaddress ipv4 address** command.

Starting with Cisco IOS XR Release 7.2.1, an IPv4-based segment (representing a Node or a Link) can also be configured with the new **index index mpls adjacencyaddress** command. The configuration is stored in NVRAM in the same CLI format used to create it. There is no conversion from the old CLI to the new CLI.

Starting with Cisco IOS XR Release 7.9.1, the old CLI has been deprecated. Old configurations stored in NVRAM will be rejected at boot-up.

As a result, explicit segment lists with IPv4-based segments using the old CLI must be re-configured using the new CLI.

There are no CLI changes for segments configured as MPLS labels using the **index index mpls label label** command.

- If you are on a release before Cisco IOS XR Release 7.4.1, you can configure SR-ODN with Flexible Algorithm constraints using the **segment-routing traffic-eng on-demand color color dynamic sid-algorithm algorithm-number** command.

Starting with Cisco IOS XR Release 7.4.1, you can also configure SR-ODN with Flexible Algorithm constraints using the new **segment-routing traffic-eng on-demand color color constraints segments sid-algorithm algorithm-number** command.

From Cisco IOS XR Release 7.9.1, the **segment-routing traffic-eng on-demand color color dynamic sid-algorithm algorithm-number** command is deprecated. Previous configurations stored in NVRAM will be rejected at boot-up.

Hence, for Cisco IOS XR Release 7.9.1, you must reconfigure all SR-ODN configurations with Flexible Algorithm constraints that use the **on-demand dynamic sid-algorithm** with the **on-demand constraints** command.

## 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-7.9.2.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-7.9.2.tar* file.

The upgrade document for N540X-4Z14G2Q-A/D, N540X-8Z16G-SYS-A/D, N540-6Z14S-SYS-D, N540-6Z18G-SYS-A/D, and N540X-6Z18G-SYS-A/D variants is available along with the software image in *NCS540l-aarch64-docs-7.9.2.tar* file.



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**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>

