

# Release Notes for Cisco NCS 540 Series Routers, Cisco IOS XR Release 7.4.2

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## Network Convergence System 540 Series Routers



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- Note** Cisco IOS XR Release 7.4.2 is an Extended Maintenance Release of [Cisco IOS XR Release 7.4.1](#) for Cisco NCS 540 Series routers. For more details on the Cisco IOS XR release model and associated support, see [Guidelines for Cisco IOS XR Software](#).

## What's New in Cisco IOS XR Release 7.4.2

Feature	Description
<b>Fronthaul</b>	
<a href="#">Prioritize Transportation of Frames Using Frame Preemption</a>	<p>Based on IEEE 802.1Qbu-2016 and Time-Sensitive Networking (TSN) standards, Frame Preemption is now available on converged xHaul transport networks. This feature accelerates the transport of express frames such as radio packets or low latency service packets.</p> <p>This feature is available on N540-FH-CSR-SYS and N540-FH-AGG-SYS routers by transporting radio traffic and traditional enterprise access traffic.</p> <p>For more information, see <a href="#">Cisco NCS 540 Fronthaul Router Portfolio At-a-Glance</a>.</p>
<b>L2VPN</b>	

Feature	Description
<a href="#">EVPN Seamless Integration with VPWS</a>	<p>This feature enables you to seamlessly migrate the PE nodes from VPWS to EVPN-VPWS service without disruption in traffic. Such a migration offers your service providers the option to use VPWS or EVPN-VPWS services on PE nodes.</p> <p>This feature introduces the <b>vpws-seamless-integration</b> command.</p>
<a href="#">Layer 2 Ingress QoS Matching for IPv4 and IPv6 Destination Addresses</a>	<p>Using this feature, you can match class maps to IPv4 and IPv6 destination addresses on Layer 2 networks. The Layer 2 interface service policy has the relevant class maps, actioning them for ingress QoS operations.</p> <p>This feature provides you with an additional level of classification for aggregated customer traffic at your ingress, thus giving you granular control on traffic flows.</p> <p>This feature introduces the following commands:</p> <ul style="list-style-type: none"> <li>• <b>match destination-address</b></li> <li>• <b>hw-module profile qos l2-match-dest-addr-v4v6</b></li> </ul>
<b>Segment Routing</b>	
LDP over SRTE	This feature allows an LDP-targeted adjacency over a Segment Routing policy between two routers, enabling the collapsed forwarding function. This leads to simplified network topologies and reduced operating expenses.
SR Policy Path Protection	This feature enables path protection for SR policies. It allows you to configure an SR policy with working (active) and protect (backup) candidate paths pre-programmed in the forwarding. You can monitor these candidate paths using SR Policy Liveness Monitoring probes. When the head-end detects a liveness failure on the working candidate path, it triggers a switchover to the protect candidate path.
<b>Hardware</b>	
<a href="#">Support for General Purpose Input/Output (GPIO) External Alarm Port</a>	<p>With this release, you can enable external alarms, such as external doors, voltage, fire, thermal, and water sensors on the following variants of Cisco NCS 540 routers:</p> <ul style="list-style-type: none"> <li>• N540X-6Z18G-SYS-A/D</li> <li>• N540X-8Z16G-SYS-A/D</li> <li>• N540X-4Z14G2Q-A/D</li> </ul> <p>For more information, see the <a href="#">Cisco Network Convergence System 540 Small Density Routers Data Sheet</a>.</p>

## Restrictions and Limitations on the Cisco NCS 540 Series Router

- Enabling or disabling frame preemption on the Time Sensitive Networking (TSN) port results in traffic drop for N540-FH-CSR-SYS. The port Twenty Five G0/0/12 is used as the TSN port.
- Fabric multicast queue stats are not supported in N540X-8Z16G-SYS-A/D, N540X-6Z18G-SYS-A/D, and N540X-4Z14G2Q-A/D variants.
- Unlabeled BGP PIC EDGE for global prefixes is not supported.

- The **show inventory** and the **show diagnostic** commands do not display the fan serial number for N540-28Z4C-SYS-A/D, N540-12Z20G-SYS-A/D, and N540X-12Z16G-SYS-A/D variants.
- The interface ports 0/0/0/24 to 0/0/0/31 do not support 1G Copper SFPs on N540-24Z8Q2C-SYS, N540-ACC-SYS, and N540X-ACC-SYS variants. Also, these ports do not support Auto-Negotiation with 1GE optical SFPs and they cannot act as 1GE Synchronous Ethernet sources.
- The interface ports 0/0/0/20 to 0/0/0/27 do not support 1G Copper SFPs on N540X-16Z4G8Q2C-A and N540X-16Z4G8Q2C-D variants. Also, these ports do not support Auto-Negotiation with 1GE optical SFPs and they cannot act as 1GE Synchronous Ethernet sources.
- Remove the speed settings on the 1G Copper optics when 10M/100M is configured and replaced with 1G SFP optics.
- The **hw-module profile mfib statistics** command is not supported.

## Caveats

This section describes open and resolved severity 1 and 2 caveats and select severity 3 caveats:

- The “Open Caveats” sections list open caveats that apply to the current release and may apply to previous releases. A caveat that is open for a prior release and is still unresolved applies to all future releases until it is resolved.
- The “Resolved Caveats” sections list caveats resolved in a specific release, but open in previous releases.

The bug IDs are sorted alphanumerically.




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**Note** The Caveats section includes the bug ID and a short description of the bug. For details on the symptoms, conditions, and workaround for a specific caveat you must use the Bug Search Tool.

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### Cisco IOS XR Caveats Release 7.4.2

Bug ID	Headline
<a href="#">CSCwa35067</a>	External error, xtc_api_connect log seen post RPFO.
<a href="#">CSCvz95369</a>	Continuous BCMDPA_L1_PORT_CREATION_FAILURE messages post RPVM FO on router.

### Bug Search Tool

Use the [Cisco Bug Search Tool](#) to access open and resolved bugs for a release.

The tool allows you to search for a specific bug ID, or for all bugs specific to a product and a release.

## IOS XR 7.4.2 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 Medium Density Routers Data Sheet](#)
- [Cisco Network Convergence System 540 Small Density Router Data Sheet](#)
- [Cisco Network Convergence System 540 Large Density Router Data Sheet](#)
- [Cisco Network Convergence System 540 Fronthaul Routers Data Sheet](#)

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

### Release 7.4.2 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, and N540-12Z20G-SYS-A/D variants.
- The third table lists the supported software for N540X-4Z14G2Q-A/D, N540X-8Z16G-SYS-A/D and N540X-6Z18G-SYS-A/D variants.

**Table 1: Release 7.4.2 Software for N540-24Z8Q2C-SYS, N540-ACC-SYS, and N540X-ACC-SYS**

Base Image	Filename	Description
IOS XR Base Image	ncs540-mini-x-7.4.2.iso	IOS XR mandatory base image.
USB Boot Package	ncs540-usb_boot-7.4.2.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-r742.x86_64.rpm	Supports Extensible Markup Language (XML) Parser, Telemetry, Netconf, gRPC and HTTP server
IOS XR MPLS	ncs540-mpls-1.0.0.0-r742.x86_64.rpm ncs540-mpls-te-rsvp-1.0.0.0-r742.x86_64.rpm	Supports MPLS and MPLS Traffic Engineering (MPLS-TE)

IOS XR Security	ncs540-k9sec-1.0.0.0-r742.x86_64.rpm	Supports MACsec and 802.1X
IOS XR ISIS	ncs540-isis-1.0.0.0-r742.x86_64.rpm	Supports ISIS
IOS XR OSPF	ncs540-ospf-1.0.0.0-r742.x86_64.rpm	Supports OSPF
IOS XR Lawful Intercept	ncs540-li-1.0.0.0-r742.x86_64.rpm	Supports Lawful Intercept (LI)
IOS XR Multicast	ncs540-mcast-1.0.0.0-r742.x86_64.rpm	Supports Multicast
IOS XR EIGRP	ncs540-eigrp-1.0.0.0-r742.x86_64.rpm	Supports EIGRP

**Table 2: Release 7.4.2 Software for N540-24Q8L2DD-SYS, N540X-16Z4G8Q2C-A/D, N540-28Z4C-SYS-A/D, N540X-12Z16G-SYS-A/D, and N540-12Z20G-SYS-A/D**

Base Image	Filename	Description
IOS XR Base Image	ncs540l-x64-7.4.2.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-ipsla</li> <li>• xr-is-is</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-perfmgmt</li> <li>• xr-track</li> </ul> <p>These optional packages are also included in NCS540l-iosxr-7.4.2.tar.</p>
USB Boot Package	ncs540l-usb_boot-7.4.2.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-iosxr-7.4.2.tar	Supports Telnet
IOS XR EIGRP (xr-eigrp)	NCS540l-iosxr-7.4.2.tar	Supports EIGRP
IOS XR CDP (xr-cdp)	NCS540l-iosxr-7.4.2.tar	Supports CDP
IOS XR k9sec (xr-k9sec)	NCS540l-k9sec-rpms.7.4.2.tar	Supports 802.1X

**Table 3: Release 7.4.2 Software for N540X-4Z14G2Q-A/D, N540X-8Z16G-SYS-A/D and N540X-6Z18G-SYS-A/D**

Base Image	Filename	Description
IOS XR Base Image	ncs540l-aarch64-7.4.2.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-ipsla</li> <li>• xr-is-is</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-perfmgmt</li> <li>• xr-track</li> </ul> <p>These optional packages are also included in NCS540l-aarch64-iosxr-optional-rpms-7.4.2.tar</p>
USB Boot Package	ncs540l-aarch64-usb_boot-7.4.2.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-7.4.2.tar	Supports Telnet
IOS XR EIGRP (xr-eigrp)	NCS540l-aarch64-iosxr-optional-rpms-7.4.2.tar	Supports EIGRP
IOS XR CDP (xr-cdp)	NCS540l-aarch64-iosxr-optional-rpms-7.4.2.tar	Supports CDP
IOS XR k9sec (xr-k9sec)	NCS540l-aarch64-k9sec-rpms.7.4.2.tar	Supports 802.1X

## 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:R1_PE1#show version
Thu Feb 17 09:43:42.405 IST
Cisco IOS XR Software, Version 7.4.2
Copyright (c) 2013-2022 by Cisco Systems, Inc.
```

### Build Information:

```
Built By      : ingunawa
Built On     : Wed Feb 16 05:24:50 PST 2022
Built Host   : iox-lnx-025
Workspace    : /auto/srcarchive15/prod/7.4.2/ncs540/ws
Version     : 7.4.2
Location    : /opt/cisco/XR/packages/
Label       : 7.4.2
```

```
cisco NCS-540 () processor
System uptime is 29 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:R11_PE5_EG#show version
Thu Feb 17 09:46:40.990 IST
Cisco IOS XR Software, Version 7.4.2 LNT
Copyright (c) 2013-2022 by Cisco Systems, Inc.
```

### Build Information:

```
Built By      : ingunawa
Built On     : Wed Feb 16 12:00:31 UTC 2022
Build Host   : iox-lnx-063
Workspace    : /auto/srcarchive15/prod/7.4.2/ncs540l/ws
Version     : 7.4.2
Label       : 7.4.2
```

```
cisco NCS540L (C3708 @ 1.70GHz)
cisco N540X-16Z4G8Q2C-A (C3708 @ 1.70GHz) processor with 8GB of memory
BB3_EG uptime is 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 N540-24Q8L2DD-SYS variant:

```
RP/0/RP0/CPU0:R1_PE1#show version
Thu Feb 17 09:44:24.889 IST
Cisco IOS XR Software, Version 7.4.2 LNT
Copyright (c) 2013-2022 by Cisco Systems, Inc.
```

### Build Information:

```
Built By      : ingunawa
Built On     : Wed Feb 16 12:00:31 UTC 2022
Build Host   : iox-lnx-063
```

```
Workspace : /auto/srcarchive15/prod/7.4.2/ncs5401/ws
Version   : 7.4.2
Label     : 7.4.2
```

```
cisco NCS540L (D1519 @ 1.50GHz)
cisco N540-24Q8L2DD-SYS (D1519 @ 1.50GHz) processor with 16GB of memory
Arches_PE42 uptime is 48 minutes
Cisco NCS540 Series, Fixed Router 2x400G, 8x50G, 24x25G Chassis
```

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

```
RP/0/RP0/CPU0:R1_PE1#show version
Thu Feb 17 09:48:31.844 IST
Cisco IOS XR Software, Version 7.4.2 LNT
Copyright (c) 2013-2022 by Cisco Systems, Inc.
```

Build Information:

```
Built By      : ingunawa
Built On      : Wed Feb 16 14:35:17 UTC 2022
Build Host    : iox-lnx-021
Workspace     : /auto/srcarchive15/prod/7.4.2/ncs5401-aarch64/ws
Version       : 7.4.2
Label        : 7.4.2
```

```
cisco NCS540L
cisco N540X-8Z16G-SYS-A processor with 8GB of memory
Galapagos_Srv6_PE67 uptime is 26 minutes
Cisco NCS 540 Series Fixed Router 12x1G, 4xCu, 8x1/10G, AC
```

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

```
RP/0/RP0/CPU0:R1_PE1#show version
Thu Feb 17 10:31:19.046 IST
Cisco IOS XR Software, Version 7.4.2 LNT
Copyright (c) 2013-2022 by Cisco Systems, Inc.
```

Build Information:

```
Built By      : ingunawa
Built On      : Wed Feb 16 12:00:31 UTC 2022
Build Host    : iox-lnx-063
Workspace     : /auto/srcarchive15/prod/7.4.2/ncs5401/ws
Version       : 7.4.2
Label        : 7.4.2
```

```
cisco NCS540L (C3708 @ 1.70GHz)
cisco N540-FH-AGG-SYS (C3708 @ 1.70GHz) processor with 8GB of memory
CE7-Lion uptime is 6 minutes
Cisco NCS 540 FH System with 24xCPRI/25G/10G/TSN+4x100G
```

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

```
RP/0/RP0/CPU0:R1_PE1#show version
Thu Feb 17 10:29:18.084 IST
Cisco IOS XR Software, Version 7.4.2 LNT
Copyright (c) 2013-2022 by Cisco Systems, Inc.
```

Build Information:

```
Built By      : ingunawa
Built On      : Wed Feb 16 12:00:31 UTC 2022
Build Host    : iox-lnx-063
Workspace     : /auto/srcarchive15/prod/7.4.2/ncs5401/ws
Version       : 7.4.2
Label        : 7.4.2
```

```
cisco NCS540L (C3708 @ 1.70GHz)
```



```
cisco N540-FH-CSR-SYS (C3708 @ 1.70GHz) processor with 8GB of memory
CE8-Jaguar uptime is 4 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 location all fpd** commands on the Cisco N540-24Z8Q2C-SYS, N540X-ACC-SYS, and N540-ACC-SYS variants:

```
RP/0/RP0/CPU0:R1_PE1# show fpd package
Thu Feb 17 09:43:45.683 IST
```

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

Card Type	FPD Description	Req Reload	SW Ver	Min Req SW Ver	Min Req Board Ver
N540-24Z8Q2C-M	Bootloader (A)	YES	1.14	1.14	0.0
	CPU-IOFPGA (A)	YES	0.07	0.07	0.0
	MB-IOFPGA (A)	YES	0.23	0.23	0.0
	MB-MIFPGA	YES	0.05	0.05	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	71.00	71.00	0.0
	SATA-M600-MCT (A)	NO	5.00	5.00	0.0
	SATA-SMART-128G (A)	NO	1241.00	1241.00	0.0
N540-ACC-SYS	Bootloader (A)	YES	1.14	1.14	0.0
	CPU-IOFPGA (A)	YES	0.07	0.07	0.0
	MB-IOFPGA (A)	YES	0.23	0.23	0.0
	MB-MIFPGA	YES	0.05	0.05	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	71.00	71.00	0.0
	SATA-M600-MCT (A)	NO	5.00	5.00	0.0
	SATA-SMART-128G (A)	NO	1241.00	1241.00	0.0
N540-PWR400-A	LIT-PrimMCU-ACFW (A)	NO	0.04	0.04	0.0
	LIT-SecMCU-ACFW (A)	NO	0.07	0.07	0.0
N540-PWR400-D	LIT-PrimMCU-DCFW (A)	NO	0.04	0.04	0.0
	LIT-SecMCU-DCFW (A)	NO	0.06	0.06	0.0
	SDG-PrimMCU-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	1.14	1.14	0.0
	CPU-IOFPGA (A)	YES	0.07	0.07	0.0
	MB-IOFPGA (A)	YES	0.23	0.23	0.0
	MB-MIFPGA	YES	0.05	0.05	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	71.00	71.00	0.0
	SATA-M600-MCT (A)	NO	5.00	5.00	0.0
	SATA-SMART-128G (A)	NO	1241.00	1241.00	0.0

## Determine Firmware Support

```
-----
```

N540X-ACC-SYS	Bootloader (A)	YES	1.14	1.14	0.0
	CPU-IOFPGA (A)	YES	0.07	0.07	0.0
	MB-IOFPGA (A)	YES	0.23	0.23	0.0
	MB-MIFPGA	YES	0.05	0.05	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	71.00	71.00	0.0
	SATA-M600-MCT (A)	NO	5.00	5.00	0.0
	SATA-SMART-128G (A)	NO	1241.00	1241.00	0.0

```
RP/0/RP0/CPU0:R1_PE1# show hw-module location all fpd
Thu Feb 17 09:43:49.733 IST
```

```
Auto-upgrade:Disabled
```

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	1.14	1.14
0/RP0	N540-ACC-SYS	1.0	CPU-IOFPGA	CURRENT	0.07	0.07
0/RP0	N540-ACC-SYS	1.0	MB-IOFPGA	CURRENT	0.23	0.23
0/RP0	N540-ACC-SYS	1.0	SATA-M500IT-MU-B	CURRENT	4.00	4.00
0/PM0	N540-PWR400-A	1.256	LIT-PrimMCU-ACFW	CURRENT	0.04	0.04
0/PM0	N540-PWR400-A	1.256	LIT-SecMCU-ACFW	CURRENT	0.07	0.07
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 location all fpd** commands on the Cisco N540-28Z4C-SYS-A/D, N540-12Z20G-SYS-A/D, N540X-12Z16G-SYS-A/D and N540X-16Z4G8Q2C-A/D variants:

```
RP/0/RP0/CPU0:R11_PE5_EG#show fpd package
Thu Feb 17 09:46:49.339 IST
```

```
=====
```

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	YES	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	1.33	1.33	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	YES	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	1.33	1.33	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	YES	2.03	2.03	0.0	
	ADM-MBConfig	YES	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	1.08	1.08	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	YES	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	1.33	1.33	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	YES	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	1.33	1.33	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	YES	1.02	1.02	1.0
	ADM2_Config	YES	1.02	1.02	1.0
	DpFpgaCpri	YES	0.20	0.20	0.0
	DpFpgaEth	YES	1.18	1.18	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	YES	0.09	0.09	0.0
	ADM1_Config	YES	1.01	1.01	2.0
	ADM2_Config	YES	0.09	0.09	0.0
	ADM2_Config	YES	1.01	1.01	2.0
	DpFpga	YES	0.19	0.19	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-IP65-SYS	DpFpga	YES	0.19	0.19	0.0
	IoFpga	YES	1.24	1.24	0.0
	IoFpgaGolden	YES	1.24	1.24	0.0
	Primary-BIOS	YES	1.17	1.17	0.0
	StdbyFpga	YES	0.43	0.43	0.0
	StdbyFpgaGolden	YES	0.43	0.43	0.0
	TamFw	YES	6.05	6.05	0.0
	TamFwGolden	YES	6.05	6.05	0.0
-----					
N540X-12Z16G-SYS-A	ADMConfig	YES	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	1.33	1.33	0.0

## Determine Firmware Support

	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	YES	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	1.33	1.33	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	YES	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	1.33	1.33	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	YES	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	1.33	1.33	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
-----					
PWR-400W-ACPI	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
-----					
PWR-400W-DCPI	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
-----					
PWR-750W-ACPI	EM-PrimMCU	NO	1.02	1.02	0.0
	EM-SecMCU	NO	1.03	1.03	0.0
-----					
PWR-750W-DCPI	EM-PrimMCU	NO	1.03	1.03	0.0
	EM-SecMCU	NO	3.01	3.01	0.0

RP/0/RP0/CPU0:R1\_PE1# show hw-module location all fpd  
Thu Feb 17 09:46:54.223 IST

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	N540X-16Z4G8Q2C-A	1.0	ADMConfig	CURRENT	1.05	1.05
0/RP0						
0/RP0/CPU0	N540X-16Z4G8Q2C-A	1.0	IoFpga	CURRENT	2.07	2.07
0/RP0						
0/RP0/CPU0	N540X-16Z4G8Q2C-A	1.0	IoFpgaGolden	B NEED UPGD		1.31
0/RP0						
0/RP0/CPU0	N540X-16Z4G8Q2C-A	1.0	Primary-BIOS	S CURRENT	1.33	1.33

```

0/RP0
0/RP0/CPU0 N540X-16Z4G8Q2C-A 1.0 StdbyFpga S CURRENT 0.40 0.40
0/RP0
0/RP0/CPU0 N540X-16Z4G8Q2C-A 1.0 StdbyFpgaGolden BS NEED UPGD 0.37
0/RP0
0/RP0/CPU0 N540X-16Z4G8Q2C-A 1.0 TamFw S CURRENT 4.11 4.11
0/RP0
0/RP0/CPU0 N540X-16Z4G8Q2C-A 1.0 TamFwGolden BS CURRENT 4.11
0/RP0

```

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

```

RP/0/RP0/CPU0:R1_PE1# show fpd package
Thu Feb 17 09:44:27.123 IST

```

```

=====
Field Programmable Device Package
=====
Card Type          FPD Description          Req  SW    Min Req  Min Req
=====          =====          =====  =====  =====  =====
N540-12Z20G-SYS-A  ADMConfig                YES   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   1.33   1.33     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                YES   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   1.33   1.33     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             YES   2.03   2.03     0.0
                   ADM-MBConfig             YES   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   1.08   1.08     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                YES   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   1.33   1.33     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                YES   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   1.33   1.33     0.0
                   StdbyFpga                 YES   0.40   0.40     0.0

```

## Determine Firmware Support

	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	YES	1.02	1.02	1.0
	ADM2_Config	YES	1.02	1.02	1.0
	DpFpgaCpri	YES	0.20	0.20	0.0
	DpFpgaEth	YES	1.18	1.18	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	YES	0.09	0.09	0.0
	ADM1_Config	YES	1.01	1.01	2.0
	ADM2_Config	YES	0.09	0.09	0.0
	ADM2_Config	YES	1.01	1.01	2.0
	DpFpga	YES	0.19	0.19	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-IP65-SYS	DpFpga	YES	0.19	0.19	0.0
	IoFpga	YES	1.24	1.24	0.0
	IoFpgaGolden	YES	1.24	1.24	0.0
	Primary-BIOS	YES	1.17	1.17	0.0
	StdbyFpga	YES	0.43	0.43	0.0
	StdbyFpgaGolden	YES	0.43	0.43	0.0
	TamFw	YES	6.05	6.05	0.0
	TamFwGolden	YES	6.05	6.05	0.0
-----					
N540X-12Z16G-SYS-A	ADMConfig	YES	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	1.33	1.33	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	YES	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	1.33	1.33	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	YES	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	1.33	1.33	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      YES    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    1.33    1.33    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
-----
PWR-400W-ACPI     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
-----
PWR-400W-DCPI     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
-----
PWR-750W-ACPI     EM-PrimMCU     NO     1.02    1.02    0.0
                  EM-SecMCU      NO     1.03    1.03    0.0
-----
PWR-750W-DCPI     EM-PrimMCU     NO     1.03    1.03    0.0
                  EM-SecMCU      NO     3.01    3.01    0.0

```

```

RP/0/RP0/CPU0:R1_PE1# show hw-module location all fpd
Thu Feb 17 09:44:32.816 IST

```

```

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 0/RP0	N540-24Q8L2DD-SYS	2.0	ADM-DBConfig	CURRENT	2.03	2.03
0/RP0/CPU0 0/RP0	N540-24Q8L2DD-SYS	2.0	ADM-MBConfig	CURRENT	2.01	2.01
0/RP0/CPU0 0/RP0	N540-24Q8L2DD-SYS	2.0	IoFpga	CURRENT	2.12	2.12
0/RP0/CPU0 0/RP0	N540-24Q8L2DD-SYS	2.0	IoFpgaGolden	B NEED UPGD		0.00
0/RP0/CPU0 0/RP0	N540-24Q8L2DD-SYS	2.0	Primary-BIOS	S CURRENT	1.08	1.08
0/RP0/CPU0 0/RP0	N540-24Q8L2DD-SYS	2.0	StdbyFpga	S CURRENT	2.59	2.59
0/RP0/CPU0 0/RP0	N540-24Q8L2DD-SYS	2.0	StdbyFpgaGolden	BS NEED UPGD		0.00
0/RP0/CPU0 0/RP0	N540-24Q8L2DD-SYS	2.0	TamFw	S CURRENT	6.05	6.05
0/RP0/CPU0 0/RP0	N540-24Q8L2DD-SYS	2.0	TamFwGolden	BS NEED UPGD		0.00

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

```

RP/0/RP0/CPU0:R1_PE1# show fpd package
Thu Feb 17 09:48:35.981 IST

```

```

=====
Field Programmable Device Package
=====
Req      SW      Min Req  Min Req

```

## Determine Firmware Support

Card Type	FPD Description	Reload	Ver	SW Ver	Board Ver
N540X-4Z14G2Q-A	BckUp-BootLoader	YES	20.04	20.04	0.0
	IoFpga	YES	0.17	0.17	0.0
	IoFpgaGolden	YES	0.17	0.17	0.0
	Prim-BootLoader	YES	20.04	20.04	0.0
	StdbyFpga	YES	0.33	0.33	0.0
	StdbyFpgaGolden	YES	0.33	0.33	0.0
	TamFw	YES	6.05	6.05	0.0
N540X-4Z14G2Q-D	BckUp-BootLoader	YES	20.04	20.04	0.0
	IoFpga	YES	0.17	0.17	0.0
	IoFpgaGolden	YES	0.17	0.17	0.0
	Prim-BootLoader	YES	20.04	20.04	0.0
	StdbyFpga	YES	0.33	0.33	0.0
	StdbyFpgaGolden	YES	0.33	0.33	0.0
	TamFw	YES	6.05	6.05	0.0
N540X-6Z18G-SYS-A	BckUp-BootLoader	YES	20.04	20.04	0.0
	IoFpga	YES	0.17	0.17	0.0
	IoFpgaGolden	YES	0.17	0.17	0.0
	Prim-BootLoader	YES	20.04	20.04	0.0
	StdbyFpga	YES	0.33	0.33	0.0
	StdbyFpgaGolden	YES	0.33	0.33	0.0
	TamFw	YES	6.05	6.05	0.0
N540X-6Z18G-SYS-D	BckUp-BootLoader	YES	20.04	20.04	0.0
	IoFpga	YES	0.17	0.17	0.0
	IoFpgaGolden	YES	0.17	0.17	0.0
	Prim-BootLoader	YES	20.04	20.04	0.0
	StdbyFpga	YES	0.33	0.33	0.0
	StdbyFpgaGolden	YES	0.33	0.33	0.0
	TamFw	YES	6.05	6.05	0.0
N540X-8Z16G-SYS-A	BckUp-BootLoader	YES	20.04	20.04	0.0
	IoFpga	YES	0.17	0.17	0.0
	IoFpgaGolden	YES	0.17	0.17	0.0
	Prim-BootLoader	YES	20.04	20.04	0.0
	StdbyFpga	YES	0.33	0.33	0.0
	StdbyFpgaGolden	YES	0.33	0.33	0.0
	TamFw	YES	6.05	6.05	0.0
N540X-8Z16G-SYS-D	BckUp-BootLoader	YES	20.04	20.04	0.0
	IoFpga	YES	0.17	0.17	0.0
	IoFpgaGolden	YES	0.17	0.17	0.0
	Prim-BootLoader	YES	20.04	20.04	0.0
	StdbyFpga	YES	0.33	0.33	0.0
	StdbyFpgaGolden	YES	0.33	0.33	0.0
	TamFw	YES	6.05	6.05	0.0

```
RP/0/RP0/CPU0:R1_PE1# show hw-module location all fpd
Thu Feb 17 09:48:40.779 IST
```

```
Auto-upgrade:Enabled
Attribute codes: B golden, P protect, S secure
```

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



## Reload Loc

Card Type	FPD Description	Req Reload	SW Ver	Min Req SW Ver	Min Req Board Ver
0/RP0/CPU0 N540X-8Z16G-SYS-A 0/RP0	IoFpga	0.2	CURRENT	0.17	0.17
0/RP0/CPU0 N540X-8Z16G-SYS-A 0/RP0	IoFpgaGolden	0.2	B NEED UPGD		0.00
0/RP0/CPU0 N540X-8Z16G-SYS-A 0/RP0	Prim-BootLoader	0.2	CURRENT	20.04	20.04
0/RP0/CPU0 N540X-8Z16G-SYS-A 0/RP0	StdbyFpga	0.2	S CURRENT	0.34	0.34
0/RP0/CPU0 N540X-8Z16G-SYS-A 0/RP0	StdbyFpgaGolden	0.2	BS NEED UPGD		0.25
0/RP0/CPU0 N540X-8Z16G-SYS-A 0/RP0	TamFw	0.2	S CURRENT	6.05	6.05
0/RP0/CPU0 N540X-8Z16G-SYS-A 0/RP0	TamFwGolden	0.2	BS CURRENT		6.05

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:R1_PE1# show fpd package
Thu Feb 17 10:32:43.297 IST
```

```
=====
```

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	YES	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	1.33	1.33	0.0
	StdbyFpga	YES	0.40	0.40	0.0
	StdbyFpgaGolden	YES	0.40	0.40	0.0
	TamFwGolden	YES	4.11	4.11	0.0
N540-12Z20G-SYS-D	ADMConfig	YES	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	1.33	1.33	0.0
	StdbyFpga	YES	0.40	0.40	0.0
	StdbyFpgaGolden	YES	0.40	0.40	0.0
	TamFwGolden	YES	4.11	4.11	0.0
N540-24Q8L2DD-SYS	ADM-DBConfig	YES	2.03	2.03	0.0
	ADM-MBConfig	YES	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	1.08	1.08	0.0
	StdbyFpga	YES	2.59	2.59	0.0
	StdbyFpgaGolden	YES	2.56	2.39	0.0
	TamFwGolden	YES	6.05	6.05	0.0
N540-28Z4C-SYS-A	ADMConfig	YES	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	1.33	1.33	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
-----					
N540-28Z4C-SYS-D	ADMConfig	YES	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	1.33	1.33	0.0
	StdbbyFpga	YES	0.40	0.40	0.0
	StdbbyFpgaGolden	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	YES	1.02	1.02	1.0
	ADM2_Config	YES	1.02	1.02	1.0
	DpFpgaCpri	YES	0.20	0.20	0.0
	DpFpgaEth	YES	1.18	1.18	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
	StdbbyFpga	YES	0.46	0.46	0.0
	StdbbyFpgaGolden	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	YES	0.09	0.09	0.0
	ADM1_Config	YES	1.01	1.01	2.0
	ADM2_Config	YES	0.09	0.09	0.0
	ADM2_Config	YES	1.01	1.01	2.0
	DpFpga	YES	0.19	0.19	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
	StdbbyFpga	YES	0.46	0.46	0.0
	StdbbyFpgaGolden	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-IP65-SYS	DpFpga	YES	0.19	0.19	0.0
	IoFpga	YES	1.24	1.24	0.0
	IoFpgaGolden	YES	1.24	1.24	0.0
	Primary-BIOS	YES	1.17	1.17	0.0
	StdbbyFpga	YES	0.43	0.43	0.0
	StdbbyFpgaGolden	YES	0.43	0.43	0.0
	TamFw	YES	6.05	6.05	0.0
	TamFwGolden	YES	6.05	6.05	0.0
-----					
N540X-12Z16G-SYS-A	ADMConfig	YES	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	1.33	1.33	0.0
	StdbbyFpga	YES	0.40	0.40	0.0
	StdbbyFpgaGolden	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	YES	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	1.33	1.33	0.0
	StdbbyFpga	YES	0.40	0.40	0.0
	StdbbyFpgaGolden	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	YES	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	1.33	1.33	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	YES	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	1.33	1.33	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
-----					
PWR-400W-ACPI	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
-----					
PWR-400W-DCPI	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
-----					
PWR-750W-ACPI	EM-PrimMCU	NO	1.02	1.02	0.0
	EM-SecMCU	NO	1.03	1.03	0.0
-----					
PWR-750W-DCPI	EM-PrimMCU	NO	1.03	1.03	0.0
	EM-SecMCU	NO	3.01	3.01	0.0

RP/0/RP0/CPU0:R1\_PE1# show hw-module fpd  
Thu Feb 17 10:32:39.110 IST

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
0/RP0						
0/RP0/CPU0	N540-FH-AGG-SYS	1.0	ADM2_Config	NEED UPGD	0.91	0.91
0/RP0						
0/RP0/CPU0	N540-FH-AGG-SYS	1.0	DpFpgaCpri	NOT READY	0.00	0.20
N/A						
0/RP0/CPU0	N540-FH-AGG-SYS	1.0	DpFpgaEth	CURRENT	1.18	1.18
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						

## Determine Firmware Support

```

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

```

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:R1_PE1# show fpd package
Thu Feb 17 10:29:23.162 IST

```

```

=====
                                Field Programmable Device Package
                                =====
Card Type          FPD Description          Req   SW   Min Req  Min Req
=====  =====  =====  =====  =====  =====
N540-12Z20G-SYS-A  ADMConfig                YES   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   1.33   1.33     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                YES   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   1.33   1.33     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             YES   2.03   2.03     0.0
                  ADM-MBConfig           YES   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   1.08   1.08     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                YES   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   1.33   1.33     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                YES   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   1.33   1.33     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              YES   1.02   1.02     1.0

```

	ADM2_Config	YES	1.02	1.02	1.0
	DpFpgaCpri	YES	0.20	0.20	0.0
	DpFpgaEth	YES	1.18	1.18	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	YES	0.09	0.09	0.0
	ADM1_Config	YES	1.01	1.01	2.0
	ADM2_Config	YES	0.09	0.09	0.0
	ADM2_Config	YES	1.01	1.01	2.0
	DpFpga	YES	0.19	0.19	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-IP65-SYS	DpFpga	YES	0.19	0.19	0.0
	IoFpga	YES	1.24	1.24	0.0
	IoFpgaGolden	YES	1.24	1.24	0.0
	Primary-BIOS	YES	1.17	1.17	0.0
	StdbyFpga	YES	0.43	0.43	0.0
	StdbyFpgaGolden	YES	0.43	0.43	0.0
	TamFw	YES	6.05	6.05	0.0
	TamFwGolden	YES	6.05	6.05	0.0
-----					
N540X-12Z16G-SYS-A	ADMConfig	YES	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	1.33	1.33	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	YES	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	1.33	1.33	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	YES	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	1.33	1.33	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	YES	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	1.33	1.33	0.0

## Determine Firmware Support

	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
-----					
PWR-400W-ACPI	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
-----					
PWR-400W-DCPI	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
-----					
PWR-750W-ACPI	EM-PrimMCU	NO	1.02	1.02	0.0
	EM-SecMCU	NO	1.03	1.03	0.0
-----					
PWR-750W-DCPI	EM-PrimMCU	NO	1.03	1.03	0.0
	EM-SecMCU	NO	3.01	3.01	0.0

RP/0/RP0/CPU0:R1\_PE1# show hw-module fpd  
Thu Feb 17 10:29:20.355 IST

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	N540-FH-CSR-SYS	1.0	ADM1_Config	NEED UPGD	0.07	0.07
0/RP0/CPU0 0/RP0	N540-FH-CSR-SYS	1.0	ADM2_Config	NEED UPGD	0.07	0.07
0/RP0/CPU0 0/RP0	N540-FH-CSR-SYS	1.0	DpFpga	CURRENT	0.19	0.19
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		1.19
0/RP0/CPU0 0/RP0	N540-FH-CSR-SYS	1.0	Primary-BIOS	S CURRENT	1.33	1.33
0/RP0/CPU0 0/RP0	N540-FH-CSR-SYS	1.0	StdbyFpga	S CURRENT	0.46	0.46
0/RP0/CPU0 0/RP0	N540-FH-CSR-SYS	1.0	StdbyFpgaGolden	BS NEED UPGD		0.00
0/RP0/CPU0 0/RP0	N540-FH-CSR-SYS	1.0	TamFw	S CURRENT	6.05	6.05
0/RP0/CPU0 0/RP0	N540-FH-CSR-SYS	1.0	TamFwGolden	BS NEED UPGD		5.03
0/PM1 NOT REQ	N540-PWR400-A	0.0	PrimMCU	NEED UPGD	0.02	0.02
0/PM1 NOT REQ	N540-PWR400-A	0.0	SecMCU	NEED UPGD	0.02	0.02

## Other Important Information

### 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-7.4.2.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, and N540-FH-CSR-SYS variants is available along with the software image in *NCS540l-docs-7.4.2.tar* file.

The upgrade document for N540X-4Z14G2Q-A/D, N540X-8Z16G-SYS-A/D, and N540X-6Z18G-SYS-A/D variants is available along with the software image in *NCS540l-aarch64-docs-7.4.2.tar* file.

### Use user-class Option 'xr-config' Instead Of 'exr-config' To Provision ZTP

In Cisco IOS XR Release 7.3.1 and earlier, the system accepts the device sending **user-class = "exr-config"**; however starting Cisco IOS XR Release 7.3.2 and later, you must use only **user-class = "xr-config"**.

In Cisco IOS XR Release 7.3.2 and later, use:

```
host cisco-rp0 {
  hardware ethernet e4:c7:22:be:10:ba;
  fixed-address 172.30.12.54;
  if exists user-class and option user-class = "iPXE" {
    filename = "http://172.30.0.22/boot.ipxe";
  } elseif exists user-class and option user-class = "xr-config" {
    filename = "http://172.30.0.22/scripts/cisco-rp0_ztp.sh";
  }
}
```

## Additional References

### Supported MIBs

The Cisco NCS 5500 MIB support list is also applicable to the Cisco NCS 540 Series Routers. For the list of supported MIBs, see the [Cisco NCS5500 MIB Support List](#).

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