



Release Notes for Cisco NCS 540 Series Routers, Cisco IOS XR Release 7.6.1

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What's New in Cisco IOS XR Release 7.6.1

Hardware	Description
Optics	<p>Note Optics support varies across devices such as routers, line cards, and RPs. To know if an optics is compatible with a specific Cisco device, refer to the Transceiver Module Group (TMG) Compatibility Matrix.</p> <p>This release introduces the following optics:</p> <ul style="list-style-type: none">• Cisco 40GBASE Quad Small Form-Factor Pluggable (QSFP)<ul style="list-style-type: none">• QSFP-40G-CSR-S• Cisco 25GBASE Small Form-Factor Pluggable (SFP28)<ul style="list-style-type: none">• SFP-25G-AOCxM• SFP-H25G-CUxM• Cisco 100GBASE Quad Small Form-Factor Pluggable (QSFP)<ul style="list-style-type: none">• QSFP-100G-DR-S

The following features are supported on all the NCS 540 variants.

Feature	Description
IP Addresses and Services	

Feature	Description
Enable Ingress Interface Logging on ACE	<p>Using the log-input keyword, you can now enable Access Control Entries (ACEs) to generate log messages that help you identify the interface through which a particular traffic stream ingresses the routers. This information aids in optimizing traffic flow across the network.</p> <p>There was no option to enable logging of ingress interfaces with an ACE in earlier releases. This feature introduces an optional keyword log-input for the following commands:</p> <ul style="list-style-type: none"> • permit (IPv4) • permit (IPv6) • deny (IPv4) • deny (IPv6)
Modular QoS	
MPLS EXP Marking for EVPN Multi-Homed Services	You can now differentiate traffic in the MPLS forwarding domain and manage traffic from ingress PE to egress PE based on the MPLS EXP bit of the MPLS header for EVPN multi-home scenarios.
Multicast	
Access Pseudowire in VPLS Bridge Domains	You can configure EVPN in the access node under the same bridge domain as EVPN in the core and create a pseudowire (PW) to the nearest PE that binds the access circuits using EVPN. This PW between the access PE and the single-homed PE ensures that the access nodes can leverage the benefits of EVPN.
MPLS	
Enhanced Targeted LDP Session Scale Values	With the unidimensional scale parameter value increased to 1000 on the router, you can now configure more targeted LDP sessions, which use targeted "hello" messages to discover extended neighbors in an MPLS network.
Routing	

Feature	Description
IGP IP Flexible Algorithm for IS-IS Protocol	<p>With IS-IS protocol extensions supporting Interior Gateway Protocol (IGP) Flexible Algorithm (Flex-Algorithm) on the IP data plane, you can now use the Algorithm to calculate IGP paths in an IP network without running Segment Routing. The IGP Flex-Algorithm allows for user-defined algorithms where the IGP computes paths based on a user-defined combination of metric type and constraints.</p> <p>Earlier, you could calculate IGP only using the Shortest Path First (SPF), which meant that you didn't have any choice except to use the default IGP path calculated based on a native IGP metric.</p> <p>The following command is introduced:</p> <ul style="list-style-type: none"> • data-plane ip <p>The following commands are modified:</p> <ul style="list-style-type: none"> • ipv4 address • ipv6 address • show isis topology
MPLS TE Preference for Tunnels	<p>You can now configure the MPLS TE traffic for equal-cost multipath (ECMP) such that it flows only through TE tunnels. This is useful in scenarios where the hardware has resource constraints that limit the number of mixed ECMP routes.</p> <p>In earlier releases, IS-IS installed multiple ECMPs for a route in the Routing Information Base (RIB) through TE tunnels and physical interfaces by default.</p> <p>This feature introduces the following command:</p> <ul style="list-style-type: none"> • mpls traffic-eng tunnel preferred
32 IS-IS Instances	<p>You can now configure up to 32 IS-IS instances, thus enhancing the ability to isolate resources within your router and on the network. This ability enables you to configure more instances consuming network-wide resources at different rates, giving you more flexibility to manage your networks efficiently.</p> <p>In earlier releases, you could configure up to 16 IS-IS instances.</p>
<p>System Setup and Software Installation</p>	
Build Golden ISO (GISO) Using gisobuild.py Tool	<p>This feature allows you to build your GISO image without support from Cisco. You can now select the install files, add your RPMs, repackage them as a custom image, and install the image.</p> <p>In previous releases, you had to contact Cisco to get your GISO built.</p> <p>Note Not supported on N540-24Q8L2DD-SYS variant.</p>
<p>L2VPN and Ethernet Services</p>	

Feature	Description
CFM on EVPN ELAN	<p>This feature introduces CFM support for single-homed EVPN Emulated Local Area Network (ELAN) services.</p> <p>This functionality helps you to monitor the ELAN services of users against their contractual service-level agreements (SLAs), thereby providing high speed Layer 2 and Layer 3 services with high resiliency and less operational complexity to different market segments.</p>
EVPN Active/Active Multihome Source with IGMP Snooping	<p>Supports multicast data packets from multihomed sources when the source is behind a BVI and the receivers at the core or on a bridge domain.</p> <p>Note Not supported on N540-24Q8L2DD-SYS variant.</p>
Hierarchical EVPN Access Pseudowire	<p>You can configure EVPN VPWS in the access node under the same bridge domain as EVPN in the core to build a PW to the nearest high-end PE that stitches those access circuits using EVPN. This allows the access nodes to leverage the benefits of EVPN.</p> <p>This feature also allows you to reduce the number of pseudowires (PWs) between the network provider edge (N-PE) devices by replacing PE devices with user provider edge (U-PE) and network provider edge (N-PE) devices.</p> <p>Note Not supported on N540-24Q8L2DD-SYS variant.</p>
Enhancement to the show ethernet cfm command to include LTR and LTM statistics	<p>This enhancement adds statistics for Linktrace Messages (LTM) and Linktrace Replies (LTR) in the show ethernet cfm local meps verbose command output. Using LTM and LTR count, you can trace the source of network failure and track the path to a unicast destination MAC address.</p>
Configurable Recovery Time for EVPN Core Isolation Group	<p>You can now configure the recovery time for the EVPN core isolation group after the core interfaces recover from a network failure. This functionality is important because post-failure recovery, you can provide sufficient time for the EVPN PE nodes to relearn the MAC addresses and BGP routes received from the remote PEs. There's also time to handle delays in exchanging EVPN routes after recovery.</p> <p>This feature introduces the core-de-isolation command under the EVPN Timers configuration mode.</p>
Segment Routing	
Programming Non-Active Candidate Paths of an SR Policy	<p>By programming non-active candidate paths (CPs) in the forwarding plane, you ensure that if the existing active CP is unavailable, the traffic switches quickly to the new CP, thus minimizing loss of traffic flow.</p> <p>In earlier releases, instantiating a non-active CP to the forwarding plane after the unavailability of the active CP could take a few seconds, resulting in potential loss of traffic flow.</p> <p>This feature introduces the following command:</p> <ul style="list-style-type: none"> • max-install-standby-cpaths
Programmability	

Feature	Description
Accounting Records for NETCONF Operations	Depending on the accounting configuration command you use, every NETCONF operation that the router performs is reported to the local server as syslog messages or remote AAA servers like TACACS+ as accounting messages, or both.

The following features are supported on N540-24Q8L2DD-SYS variant.

Feature	Description
Modular QoS	
Scale Limits for H-QoS on Cisco NCS 540-24Q8L2DD-SYS Routers	<p>With this release, 750 egress interfaces and subinterfaces are available for configuring QoS policies in the H-QoS model on Cisco NCS 540-24Q8L2DD-SYS routers. You can now achieve higher egress policy-map scales because of the increased number of VOQs available per subinterface.</p> <p>In earlier releases, 250 egress interfaces and subinterfaces were available for configuring QoS policies in the H-QoS model.</p>
Interface and Hardware Component	
Local LAG hashing with PPPoE traffic	Load Balancing for Link Aggregation (LAG) AC and Equal Cost Multipath (ECMP) for PPPoE traffic is now available on Cisco NCS 540 routers and operates in the native and compatible modes. This load balancing is achieved by distributing PPPoE traffic on all available links. This feature is now supported on Cisco N540-24Q8L2DD-SYS router.
CFM Monitoring on EVPN	Ethernet Connectivity Fault Management (CFM) is a service-level OAM protocol that provides tools for monitoring and troubleshooting end-to-end Ethernet services per VLAN. With this release, CFM over EVPN is supported on Cisco N540-24Q8L2DD-SYS router and operate in compatibility mode.
SPAN over PW	<p>Pseudowire-Switched Port Analyzer (PW-SPAN) is now available on Cisco N540-24Q8L2DD-SYS router and operate in the native mode.</p> <p>You can mirror designated traffic on the source port over a pseudo-wire to a central location with PW-SPAN. This functionality, also known as pseudo-wire traffic mirroring, allows the centralization of expensive network traffic analysis tools.</p>
L2VPN and Ethernet Services	
MSTP and PVRST	This feature is now supported on Cisco N540-24Q8L2DD-SYS router and operate in native and compatibility modes.
Flow-Label Support on FAT-PW	This enhancement enables the MPLS OAM pings to work between Cisco devices and the third-party devices. Thus, allowing Flow-Aware Transport (FAT) Pseudowires (PW) to provide the load-balance capability across equal-cost multipath (ECMP) routes by adding a new label, called Flow Label, onto the bottom of the label stack. This feature is now supported on Cisco N540-24Q8L2DD-SYS router.
Segment Routing	

Feature	Description
SR Performance Measurement: Measurement Modes	This feature is now supported on Cisco N540-24Q8L2DD-SYS router and operate in native and compatibility modes. This feature supports one-way, two-way, and loopback measurement modes.
SR Performance Measurement: IP Endpoint Delay Measurement and Liveness Monitoring	This feature measures the end-to-end delay and monitors liveness of a specified IP endpoint node, including VRF-aware (awareness of multiple customers belonging to different VRFs), is now supported on Cisco N540-24Q8L2DD-SYS router.

The following feature is supported on N540-ACC-SYS, N540X-ACC-SYS, and N540-24Z8Q2C-SYS variants.

Feature	Description
System Security	
Reimage Protection for Routers	By disallowing USB and PXE boots at the BIOS level, this feature aims to prevent the resale of stolen routers. Such intervention ensures that attackers can't use the USB or PXE boot facility to erase the existing configuration and boot the stolen router with a fresh IOS XR image for resale. This feature introduces the platform security reimage-protection enable command and is supported on the following NCS 540 router variants: <ul style="list-style-type: none"> • N540-ACC-SYS • N540X-ACC-SYS • N540-24Z8Q2C-SYS

The following feature is supported on N540-ACC-SYS, N540X-ACC-SYS, N540-24Z8Q2C-SYS, N540-FH-CSR-SYS, N540-FH-AGG-SYS, N540X-16Z4G8Q2C-A/D, N540-12Z20G-SYS-A/D, and N540X-12Z16G-SYS-A/D variants.

Feature	Description
Network Synchronization	

Feature	Description
Synchronous Ethernet ESMC and SSM, and ITU-T G.8262.1	<p>Ethernet Synchronization Message Channel (ESMC) allows you to transmit Synchronization Status Message (SSM) information by using the ESMC protocol data units (PDUs).</p> <p>In this release, Synchronous Ethernet ESMC and SSM are supported on the following Cisco NCS 540 router variants:</p> <ul style="list-style-type: none"> • N540-ACC-SYS • N540X-ACC-SYS • N540-24Z8Q2C-SYS • N540-FH-CSR-SYS • N540-FH-AGG-SYS <p>ITU-T G.8262.1 defines the Timing characteristics of a synchronous equipment slave clock.</p> <p>In this release, ITU-T G.8262.1 is supported on the following Cisco NCS 540 router variants:</p> <ul style="list-style-type: none"> • N540-28Z4C-SYS-A/D • N540X-16Z4G8Q2C-A/D • N540-12Z20G-SYS-A/D • N540X-12Z16G-SYS-A/D • N540-ACC-SYS • N540X-ACC-SYS • N540-24Z8Q2C-SYS • N540-FH-CSR-SYS • N540-FH-AGG-SYS

Restrictions and Limitations on the Cisco NCS 540 Series Router

- 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.

Cisco IOS XR Caveats Release 7.6.1

Bug ID	Headline
CSCwb13103	IPv6 BFD packets getting control timer expired due to that ISIS OSPF protocols flapped during RPFO

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 7.6.1 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, and N540-FH-AGG-SYS 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 7.6.1 Software for N540-24Z8Q2C-SYS, N540-ACC-SYS, and N540X-ACC-SYS

Base Image	Filename	Description
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IOS XR Base Image	ncs540-mini-x-7.6.1.iso	IOS XR man
USB Boot Package	ncs540-usb_boot-7.6.1.zip	Package requi Includes the s
Optional Packages not included in the base image		
Package	Filename	Description
IOS XR Manageability	ncs540-mgbl-1.0.0.0-r761.x86_64.rpm	Supports Ext gRPC and HT
IOS XR MPLS	ncs540-mpls-1.0.0.0-r761.x86_64.rpm ncs540-mpls-te-rsvp-1.0.0.0-r761.x86_64.rpm	Supports MPI
IOS XR Security	ncs540-k9sec-1.0.0.0-r761.x86_64.rpm	Supports MA
IOS XR ISIS	ncs540-isis-1.0.0.0-r761.x86_64.rpm	Supports ISIS
IOS XR OSPF	ncs540-ospf-1.0.0.0-r761.x86_64.rpm	Supports OSPF
IOS XR Lawful Intercept	ncs540-li-1.0.0.0-r761.x86_64.rpm	Supports Law
IOS XR Multicast	ncs540-mcast-1.0.0.0-r761.x86_64.rpm	Supports Mul
IOS XR EIGRP	ncs540-eigrp-1.0.0.0-r761.x86_64.rpm	Supports EIG
IOS XR LI-CTRL	ncs540-lictrl-1.0.0.0-r761.x86_64.rpm	Supports LI-C

Table 2: Release 7.6.1 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, and N540-FH-AGG-SYS

Base Image	Filename	Description
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IOS XR Base Image	ncs540l-x64-7.6.1.iso	IOS XR base ima The base ISO ima <ul style="list-style-type: none"> • xr-bgp • xr-ipsla • xr-is-is • xr-lldp • xr-mcast • xr-mpls-oam • xr-ncs540l-n • xr-ncs540l-n • xr-netflow • xr-ospf • xr-perfmgmt • xr-track These optional pa
USB Boot Package	ncs540l-usb_boot-7.6.1.zip	Package required Includes the same

Optional Packages not included in the base image

Package	Filename	Description
IOS XR Telnet (xr-telnet)	NCS540l-iosxr-7.6.1.tar	Supports Telnet
IOS XR EIGRP (xr-eigrp)	NCS540l-iosxr-7.6.1.tar	Supports EIGRP
IOS XR CDP (xr-cdp)	NCS540l-iosxr-7.6.1.tar	Supports CDP
IOS XR k9sec (xr-k9sec)	NCS540l-k9sec-rpms.7.6.1.tar	Supports 802.1X
IOS XR RIP (xr-rip)	NCS540l-iosxr-7.6.1.tar	Supports RIP

Table 3: Release 7.6.1 Software for N540X-4Z14G20-A/D, N540X-8Z16G-SYS-A/D and N540X-6Z18G-SYS-A/D

Base Image	Filename	Description
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IOS XR Base Image	ncs540l-aarch64-7.6.1.iso	IOS XR base image The ISO image includes the following optional packages: <ul style="list-style-type: none"> • xr-bgp • xr-ipsla • xr-is-is • xr-lldp • xr-mcast • xr-mpis-ospf • xr-ncs540l • xr-ncs540l-isis • xr-netflow • xr-ospf • xr-perfm • xr-track These optional packages are included in the NCS540l-aarch64-7.6.1.iso image.
USB Boot Package	ncs540l-aarch64-usb_boot-7.6.1.zip	Package required for USB boot. Includes the software for the USB boot.
Optional Packages not included in the base image		
Package	Filename	Description
IOS XR Telnet (xr-telnet)	NCS540l-aarch64-iosxr-optional-rpms-7.6.1.tar	Supports Telnet
IOS XR EIGRP (xr-eigrp)	NCS540l-aarch64-iosxr-optional-rpms-7.6.1.tar	Supports EIGRP
IOS XR CDP (xr-cdp)	NCS540l-aarch64-iosxr-optional-rpms-7.6.1.tar	Supports CDP
IOS XR k9sec (xr-k9sec)	NCS540l-aarch64-k9sec-rpms.7.6.1.tar	Supports 802.1X
IOS XR RIP (xr-rip)	NCS540l-aarch64-iosxr-optional-rpms-7.6.1.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 7.6.1
Copyright (c) 2013-2022 by Cisco Systems, Inc.
```

Build Information:

Determine Software Version

```

Built By      : ingunawa
Built On     : Sat Mar 26 19:42:00 PDT 2022
Built Host   : iox-ucs-050
Workspace    : /auto/srcarchive17/prod/7.6.1/ncs540/ws
Version      : 7.6.1
Location     : /opt/cisco/XR/packages/
Label       : 7.6.1

```

```

cisco NCS-540 () processor
System uptime is 1 day 4 hours 21 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 7.6.1 LNT
Copyright (c) 2013-2022 by Cisco Systems, Inc.

```

Build Information:

```

Built By      : ingunawa
Built On     : Sun Mar 27 01:29:19 UTC 2022
Built Host   : iox-ucs-049
Workspace    : /auto/srcarchive17/prod/7.6.1/ncs5401/ws
Version      : 7.6.1
Label       : 7.6.1

```

```

cisco NCS540L (C3708 @ 1.70GHz)
cisco N540X-16Z4G8Q2C-A (C3708 @ 1.70GHz) processor with 8GB of memory
R4-EG-PE4 uptime is 1 day, 4 hours, 25 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, and N540X-6Z18G-SYS-A/D variants:

```

RP/0/RP0/CPU0:Router# show version
Cisco IOS XR Software, Version 7.6.1 LNT
Copyright (c) 2013-2022 by Cisco Systems, Inc.

```

Build Information:

```

Built By      : ingunawa
Built On     : Sun Mar 27 01:22:05 UTC 2022
Built Host   : iox-ucs-048
Workspace    : /auto/srcarchive17/prod/7.6.1/ncs5401-aarch64/ws
Version      : 7.6.1
Label       : 7.6.1

```

```

cisco NCS540L
cisco N540X-6Z18G-SYS-A processor with 8GB of memory
R13-Darwin-CE1 uptime is 1 day, 1 hour, 43 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 7.6.1 LNT
Copyright (c) 2013-2022 by Cisco Systems, Inc.

```

Build Information:

```

Built By      : ingunawa
Built On     : Sun Mar 27 01:29:19 UTC 2022
Built Host   : iox-ucs-049
Workspace    : /auto/srcarchive17/prod/7.6.1/ncs5401/ws
Version      : 7.6.1
Label       : 7.6.1

```

```
cisco NCS540L (D1519 @ 1.50GHz)
cisco N540-24Q8L2DD-SYS (D1519 @ 1.50GHz) processor with 16GB of memory
R18_PE9_Arches uptime is 1 day, 9 hours, 36 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
Auto-upgrade:Enabled
Attribute codes: B golden, P protect, S secure
```

Location Reload Loc	Card type	HWver	FPD device	ATR Status	FPD Versions	
					Running	Programd
0/RP0/CPU0 0/RP0	N540X-4Z14G2Q-A	0.3	ADMConfig	CURRENT	5.00	5.00
0/RP0/CPU0 0/RP0	N540X-4Z14G2Q-A	0.3	IoFpga	CURRENT	0.17	0.17
0/RP0/CPU0 0/RP0	N540X-4Z14G2Q-A	0.3	IoFpgaGolden	B NEED UPGD		0.15
0/RP0/CPU0 0/RP0	N540X-4Z14G2Q-A	0.3	Prim-BootLoader	CURRENT	20.04	20.04
0/RP0/CPU0 0/RP0	N540X-4Z14G2Q-A	0.3	StdbyFpga	S CURRENT	1.09	1.09
0/RP0/CPU0 0/RP0	N540X-4Z14G2Q-A	0.3	StdbyFpgaGolden	BS NEED UPGD		0.30
0/RP0/CPU0 0/RP0	N540X-4Z14G2Q-A	0.3	TamFw	S CURRENT	6.05	6.05
0/RP0/CPU0 0/RP0	N540X-4Z14G2Q-A	0.3	TamFwGolden	BS CURRENT		6.05

Determine Firmware Support

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

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

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

```
=====
```

Field Programmable Device Package						
Card Type	FPD Description	Req Reload	SW Ver	Min Req SW Ver	Min Req Board Ver	
N540-24Z8Q2C-M	Bootloader (A)	YES	1.16	1.16	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	
	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	

```
=====
```

Determine Firmware Support

SSFP_E1F_11	NO	13.01	13.01	0.0	
SSFP_E1F_12	NO	13.01	13.01	0.0	
SSFP_E1F_13	NO	13.01	13.01	0.0	
SSFP_E1F_14	NO	13.01	13.01	0.0	
SSFP_E1F_15	NO	13.01	13.01	0.0	
SSFP_E1F_16	NO	13.01	13.01	0.0	
SSFP_E1F_17	NO	13.01	13.01	0.0	
SSFP_E1F_18	NO	13.01	13.01	0.0	
SSFP_E1F_19	NO	13.01	13.01	0.0	
SSFP_E1F_2	NO	13.01	13.01	0.0	
SSFP_E1F_20	NO	13.01	13.01	0.0	
SSFP_E1F_21	NO	13.01	13.01	0.0	
SSFP_E1F_22	NO	13.01	13.01	0.0	
SSFP_E1F_23	NO	13.01	13.01	0.0	
SSFP_E1F_24	NO	13.01	13.01	0.0	
SSFP_E1F_25	NO	13.01	13.01	0.0	
SSFP_E1F_26	NO	13.01	13.01	0.0	
SSFP_E1F_27	NO	13.01	13.01	0.0	
SSFP_E1F_28	NO	13.01	13.01	0.0	
SSFP_E1F_29	NO	13.01	13.01	0.0	
SSFP_E1F_3	NO	13.01	13.01	0.0	
SSFP_E1F_30	NO	13.01	13.01	0.0	
SSFP_E1F_31	NO	13.01	13.01	0.0	
SSFP_E1F_4	NO	13.01	13.01	0.0	
SSFP_E1F_5	NO	13.01	13.01	0.0	
SSFP_E1F_6	NO	13.01	13.01	0.0	
SSFP_E1F_7	NO	13.01	13.01	0.0	
SSFP_E1F_8	NO	13.01	13.01	0.0	
SSFP_E1F_9	NO	13.01	13.01	0.0	
SSFP_OC3_STM1_0	NO	12.01	12.01	0.0	
SSFP_OC3_STM1_1	NO	12.01	12.01	0.0	
SSFP_OC3_STM1_10	NO	12.01	12.01	0.0	
SSFP_OC3_STM1_11	NO	12.01	12.01	0.0	
SSFP_OC3_STM1_12	NO	12.01	12.01	0.0	
SSFP_OC3_STM1_13	NO	12.01	12.01	0.0	
SSFP_OC3_STM1_14	NO	12.01	12.01	0.0	
SSFP_OC3_STM1_15	NO	12.01	12.01	0.0	
SSFP_OC3_STM1_16	NO	12.01	12.01	0.0	
SSFP_OC3_STM1_17	NO	12.01	12.01	0.0	
SSFP_OC3_STM1_18	NO	12.01	12.01	0.0	
SSFP_OC3_STM1_19	NO	12.01	12.01	0.0	
SSFP_OC3_STM1_2	NO	12.01	12.01	0.0	
SSFP_OC3_STM1_20	NO	12.01	12.01	0.0	
SSFP_OC3_STM1_21	NO	12.01	12.01	0.0	
SSFP_OC3_STM1_22	NO	12.01	12.01	0.0	
SSFP_OC3_STM1_23	NO	12.01	12.01	0.0	
SSFP_OC3_STM1_24	NO	12.01	12.01	0.0	
SSFP_OC3_STM1_25	NO	12.01	12.01	0.0	
SSFP_OC3_STM1_26	NO	12.01	12.01	0.0	
SSFP_OC3_STM1_27	NO	12.01	12.01	0.0	
SSFP_OC3_STM1_28	NO	12.01	12.01	0.0	
SSFP_OC3_STM1_29	NO	12.01	12.01	0.0	
SSFP_OC3_STM1_3	NO	12.01	12.01	0.0	
SSFP_OC3_STM1_30	NO	12.01	12.01	0.0	
SSFP_OC3_STM1_31	NO	12.01	12.01	0.0	
SSFP_OC3_STM1_4	NO	12.01	12.01	0.0	
SSFP_OC3_STM1_5	NO	12.01	12.01	0.0	
SSFP_OC3_STM1_6	NO	12.01	12.01	0.0	
SSFP_OC3_STM1_7	NO	12.01	12.01	0.0	
SSFP_OC3_STM1_8	NO	12.01	12.01	0.0	
SSFP_OC3_STM1_9	NO	12.01	12.01	0.0	

N540-ACC-SYS	Bootloader (A)	YES	1.16	1.16	0.0
	CPU-IOFPGA (A)	YES	0.07	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
SSFP_E1F_0	NO	13.01	13.01	0.0
SSFP_E1F_1	NO	13.01	13.01	0.0
SSFP_E1F_10	NO	13.01	13.01	0.0
SSFP_E1F_11	NO	13.01	13.01	0.0
SSFP_E1F_12	NO	13.01	13.01	0.0
SSFP_E1F_13	NO	13.01	13.01	0.0
SSFP_E1F_14	NO	13.01	13.01	0.0
SSFP_E1F_15	NO	13.01	13.01	0.0
SSFP_E1F_16	NO	13.01	13.01	0.0
SSFP_E1F_17	NO	13.01	13.01	0.0
SSFP_E1F_18	NO	13.01	13.01	0.0
SSFP_E1F_19	NO	13.01	13.01	0.0
SSFP_E1F_2	NO	13.01	13.01	0.0
SSFP_E1F_20	NO	13.01	13.01	0.0
SSFP_E1F_21	NO	13.01	13.01	0.0
SSFP_E1F_22	NO	13.01	13.01	0.0
SSFP_E1F_23	NO	13.01	13.01	0.0
SSFP_E1F_24	NO	13.01	13.01	0.0
SSFP_E1F_25	NO	13.01	13.01	0.0
SSFP_E1F_26	NO	13.01	13.01	0.0
SSFP_E1F_27	NO	13.01	13.01	0.0
SSFP_E1F_28	NO	13.01	13.01	0.0
SSFP_E1F_29	NO	13.01	13.01	0.0
SSFP_E1F_3	NO	13.01	13.01	0.0
SSFP_E1F_30	NO	13.01	13.01	0.0
SSFP_E1F_31	NO	13.01	13.01	0.0
SSFP_E1F_4	NO	13.01	13.01	0.0
SSFP_E1F_5	NO	13.01	13.01	0.0
SSFP_E1F_6	NO	13.01	13.01	0.0
SSFP_E1F_7	NO	13.01	13.01	0.0
SSFP_E1F_8	NO	13.01	13.01	0.0
SSFP_E1F_9	NO	13.01	13.01	0.0
SSFP_OC3_STM1_0	NO	12.01	12.01	0.0
SSFP_OC3_STM1_1	NO	12.01	12.01	0.0
SSFP_OC3_STM1_10	NO	12.01	12.01	0.0
SSFP_OC3_STM1_11	NO	12.01	12.01	0.0
SSFP_OC3_STM1_12	NO	12.01	12.01	0.0
SSFP_OC3_STM1_13	NO	12.01	12.01	0.0
SSFP_OC3_STM1_14	NO	12.01	12.01	0.0
SSFP_OC3_STM1_15	NO	12.01	12.01	0.0
SSFP_OC3_STM1_16	NO	12.01	12.01	0.0
SSFP_OC3_STM1_17	NO	12.01	12.01	0.0
SSFP_OC3_STM1_18	NO	12.01	12.01	0.0
SSFP_OC3_STM1_19	NO	12.01	12.01	0.0
SSFP_OC3_STM1_2	NO	12.01	12.01	0.0
SSFP_OC3_STM1_20	NO	12.01	12.01	0.0
SSFP_OC3_STM1_21	NO	12.01	12.01	0.0
SSFP_OC3_STM1_22	NO	12.01	12.01	0.0
SSFP_OC3_STM1_23	NO	12.01	12.01	0.0
SSFP_OC3_STM1_24	NO	12.01	12.01	0.0
SSFP_OC3_STM1_25	NO	12.01	12.01	0.0
SSFP_OC3_STM1_26	NO	12.01	12.01	0.0
SSFP_OC3_STM1_27	NO	12.01	12.01	0.0
SSFP_OC3_STM1_28	NO	12.01	12.01	0.0
SSFP_OC3_STM1_29	NO	12.01	12.01	0.0
SSFP_OC3_STM1_3	NO	12.01	12.01	0.0

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	SSFP_OC3_STM1_30	NO	12.01	12.01	0.0
	SSFP_OC3_STM1_31	NO	12.01	12.01	0.0
	SSFP_OC3_STM1_4	NO	12.01	12.01	0.0
	SSFP_OC3_STM1_5	NO	12.01	12.01	0.0
	SSFP_OC3_STM1_6	NO	12.01	12.01	0.0
	SSFP_OC3_STM1_7	NO	12.01	12.01	0.0
	SSFP_OC3_STM1_8	NO	12.01	12.01	0.0
	SSFP_OC3_STM1_9	NO	12.01	12.01	0.0

N540-PWR400-A	LIT-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	1.16	1.16	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
	SSFP_E1F_0	NO	13.01	13.01	0.0
	SSFP_E1F_1	NO	13.01	13.01	0.0
	SSFP_E1F_10	NO	13.01	13.01	0.0
	SSFP_E1F_11	NO	13.01	13.01	0.0
	SSFP_E1F_12	NO	13.01	13.01	0.0
	SSFP_E1F_13	NO	13.01	13.01	0.0
	SSFP_E1F_14	NO	13.01	13.01	0.0
	SSFP_E1F_15	NO	13.01	13.01	0.0
	SSFP_E1F_16	NO	13.01	13.01	0.0
	SSFP_E1F_17	NO	13.01	13.01	0.0
	SSFP_E1F_18	NO	13.01	13.01	0.0
	SSFP_E1F_19	NO	13.01	13.01	0.0
	SSFP_E1F_2	NO	13.01	13.01	0.0
	SSFP_E1F_20	NO	13.01	13.01	0.0
	SSFP_E1F_21	NO	13.01	13.01	0.0
	SSFP_E1F_22	NO	13.01	13.01	0.0
	SSFP_E1F_23	NO	13.01	13.01	0.0
	SSFP_E1F_24	NO	13.01	13.01	0.0
	SSFP_E1F_25	NO	13.01	13.01	0.0
	SSFP_E1F_26	NO	13.01	13.01	0.0
	SSFP_E1F_27	NO	13.01	13.01	0.0
	SSFP_E1F_28	NO	13.01	13.01	0.0
	SSFP_E1F_29	NO	13.01	13.01	0.0
	SSFP_E1F_3	NO	13.01	13.01	0.0
	SSFP_E1F_30	NO	13.01	13.01	0.0
	SSFP_E1F_31	NO	13.01	13.01	0.0
	SSFP_E1F_4	NO	13.01	13.01	0.0
	SSFP_E1F_5	NO	13.01	13.01	0.0
	SSFP_E1F_6	NO	13.01	13.01	0.0
	SSFP_E1F_7	NO	13.01	13.01	0.0
	SSFP_E1F_8	NO	13.01	13.01	0.0
	SSFP_E1F_9	NO	13.01	13.01	0.0
	SSFP_OC3_STM1_0	NO	12.01	12.01	0.0
	SSFP_OC3_STM1_1	NO	12.01	12.01	0.0
	SSFP_OC3_STM1_10	NO	12.01	12.01	0.0
	SSFP_OC3_STM1_11	NO	12.01	12.01	0.0
	SSFP_OC3_STM1_12	NO	12.01	12.01	0.0

	SSFP_OC3_STM1_13	NO	12.01	12.01	0.0
	SSFP_OC3_STM1_14	NO	12.01	12.01	0.0
	SSFP_OC3_STM1_15	NO	12.01	12.01	0.0
	SSFP_OC3_STM1_16	NO	12.01	12.01	0.0
	SSFP_OC3_STM1_17	NO	12.01	12.01	0.0
	SSFP_OC3_STM1_18	NO	12.01	12.01	0.0
	SSFP_OC3_STM1_19	NO	12.01	12.01	0.0
	SSFP_OC3_STM1_2	NO	12.01	12.01	0.0
	SSFP_OC3_STM1_20	NO	12.01	12.01	0.0
	SSFP_OC3_STM1_21	NO	12.01	12.01	0.0
	SSFP_OC3_STM1_22	NO	12.01	12.01	0.0
	SSFP_OC3_STM1_23	NO	12.01	12.01	0.0
	SSFP_OC3_STM1_24	NO	12.01	12.01	0.0
	SSFP_OC3_STM1_25	NO	12.01	12.01	0.0
	SSFP_OC3_STM1_26	NO	12.01	12.01	0.0
	SSFP_OC3_STM1_27	NO	12.01	12.01	0.0
	SSFP_OC3_STM1_28	NO	12.01	12.01	0.0
	SSFP_OC3_STM1_29	NO	12.01	12.01	0.0
	SSFP_OC3_STM1_3	NO	12.01	12.01	0.0
	SSFP_OC3_STM1_30	NO	12.01	12.01	0.0
	SSFP_OC3_STM1_31	NO	12.01	12.01	0.0
	SSFP_OC3_STM1_4	NO	12.01	12.01	0.0
	SSFP_OC3_STM1_5	NO	12.01	12.01	0.0
	SSFP_OC3_STM1_6	NO	12.01	12.01	0.0
	SSFP_OC3_STM1_7	NO	12.01	12.01	0.0
	SSFP_OC3_STM1_8	NO	12.01	12.01	0.0
	SSFP_OC3_STM1_9	NO	12.01	12.01	0.0

N540X-ACC-SYS	Bootloader (A)	YES	1.16	1.16	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
	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

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

```
RP/0/RP0/CPU0:Router# show hw-module fpd
```

```
Auto-upgrade:Enabled
```

Location	Card type	HWver	FPD device	ATR Status	FPD Versions	
					Running	Programd
0/RP0	N540-ACC-SYS	1.0	MB-MIFPGA	CURRENT	0.05	0.05
0/RP0	N540-ACC-SYS	1.0	Bootloader	CURRENT	1.16	1.16
0/RP0	N540-ACC-SYS	1.0	CPU-IOFPGA	CURRENT	0.07	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 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:Router# show fpd package
```

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

Card Type	FPD Description	Req Reload	SW Ver	Min Req SW Ver	Min Req Board Ver
N540-12Z20G-SYS-A	ADMConfig	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	0.22	0.22	0.0
	DpFpgaEth	YES	1.20	1.20	0.0
	IoFpga	YES	1.30	1.30	0.0
	IoFpgaGolden	YES	1.30	1.30	0.0
	Primary-BIOS	YES	1.33	1.33	0.0
	StdbyFpga	YES	0.46	0.46	0.0
	StdbyFpgaGolden	YES	0.46	0.46	0.0
	TamFw	YES	6.05	6.05	0.0
	TamFwGolden	YES	6.05	6.05	0.0
N540-FH-CSR-SYS	ADM1_Config	YES	0.09	0.09	0.0
	ADM1_Config	YES	1.01	1.01	2.0

Determine Firmware Support

	ADM2_Config	YES	0.09	0.09	0.0
	ADM2_Config	YES	1.01	1.01	2.0
	DpFpga	YES	0.21	0.21	0.0
	IoFpga	YES	1.30	1.30	0.0
	IoFpgaGolden	YES	1.30	1.30	0.0
	Primary-BIOS	YES	1.33	1.33	0.0
	StdbyFpga	YES	0.46	0.46	0.0
	StdbyFpgaGolden	YES	0.46	0.46	0.0
	TamFw	YES	6.05	6.05	0.0
	TamFwGolden	YES	6.05	6.05	0.0

N540-PWR400-A	LI-PrimMCU	NO	0.04	0.04	0.0
	LI-SecMCU	NO	0.06	0.06	0.0
	PrimMCU	NO	1.02	1.02	0.0
	SecMCU	NO	1.03	1.03	0.0

N540-PWR400-D	LI-PrimMCU	NO	0.04	0.04	0.0
	LI-SecMCU	NO	0.06	0.06	0.0
	PrimMCU	NO	1.03	1.03	0.0
	SecMCU	NO	1.03	1.03	0.0

N540-PWR750-A	EM-PrimMCU	NO	1.02	1.02	0.0
	EM-SecMCU	NO	1.03	1.03	0.0

N540-PWR750-D	EM-PrimMCU	NO	1.03	1.03	0.0
	EM-SecMCU	NO	3.01	3.01	0.0

N540X-12Z16G-SYS-A	ADMConfig	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

```
RP/0/RP0/CPU0:Router# show hw-module fpd
```

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

Location Reload Loc	Card type	HWver	FPD device	ATR	Status	FPD Versions	
						Running	Programd
0/RP0/CPU0 0/RP0	N540X-16Z4G8Q2C-A	0.2	ADMConfig		CURRENT	1.05	1.05
0/RP0/CPU0 0/RP0	N540X-16Z4G8Q2C-A	0.2	IoFpga		CURRENT	2.07	2.07
0/RP0/CPU0 0/RP0	N540X-16Z4G8Q2C-A	0.2	IoFpgaGolden	B	CURRENT		2.03
0/RP0/CPU0 0/RP0	N540X-16Z4G8Q2C-A	0.2	Primary-BIOS	S	CURRENT	1.33	1.33
0/RP0/CPU0 0/RP0	N540X-16Z4G8Q2C-A	0.2	StdbyFpga	S	CURRENT	0.40	0.40
0/RP0/CPU0 0/RP0	N540X-16Z4G8Q2C-A	0.2	StdbyFpgaGolden	BS	NEED UPGD		0.00
0/RP0/CPU0 0/RP0	N540X-16Z4G8Q2C-A	0.2	TamFw	S	CURRENT	4.11	4.11
0/RP0/CPU0 0/RP0	N540X-16Z4G8Q2C-A	0.2	TamFwGolden	BS	NEED UPGD		0.00

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

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

```

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

```

Card Type	FPD Description	Req Reload	SW Ver	Min Req SW Ver	Min Req Board Ver
N540-6Z14G-SYS-D	ADMConfig	YES	5.03	5.03	0.0
	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	1.09	1.09	0.0
	StdbyFpgaGolden	YES	1.09	1.09	0.0
	TamFwGolden	YES	6.05	6.05	0.0
N540X-4Z14G2Q-A	ADMConfig	YES	5.00	5.00	0.0
	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	1.09	1.09	0.0
	StdbyFpgaGolden	YES	0.34	0.34	0.0
	TamFwGolden	YES	6.05	6.05	0.0
N540X-4Z14G2Q-D	ADMConfig	YES	5.00	5.00	0.0
	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	1.09	1.09	0.0
	StdbyFpgaGolden	YES	0.34	0.34	0.0
	TamFwGolden	YES	6.05	6.05	0.0

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```

-----
N540X-6Z18G-SYS-A  ADMConfig          YES    5.00    5.00    0.0
                   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
                   StdbbyFpga       YES    1.09    1.09    0.0
                   StdbbyFpgaGolden YES    0.34    0.34    0.0
                   TamFw           YES    6.05    6.05    0.0
                   TamFwGolden      YES    6.05    6.05    0.0
-----
N540X-6Z18G-SYS-D  ADMConfig          YES    5.00    5.00    0.0
                   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
                   StdbbyFpga       YES    1.09    1.09    0.0
                   StdbbyFpgaGolden YES    0.34    0.34    0.0
                   TamFw           YES    6.05    6.05    0.0
                   TamFwGolden      YES    6.05    6.05    0.0
-----
N540X-8Z16G-SYS-A  ADMConfig          YES    5.00    5.00    0.0
                   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
                   StdbbyFpga       YES    1.09    1.09    0.0
                   StdbbyFpgaGolden YES    0.34    0.34    0.0
                   TamFw           YES    6.05    6.05    0.0
                   TamFwGolden      YES    6.05    6.05    0.0
-----
N540X-8Z16G-SYS-D  ADMConfig          YES    5.00    5.00    0.0
                   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
                   StdbbyFpga       YES    1.09    1.09    0.0
                   StdbbyFpgaGolden YES    0.34    0.34    0.0
                   TamFw           YES    6.05    6.05    0.0
                   TamFwGolden      YES    6.05    6.05    0.0

```

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

Auto-upgrade:Enabled

Attribute codes: B golden, P protect, S secure

Location	Card type	HWver	FPD device	ATR	Status	FPD Versions	
						Running	Programd
Reload Loc							
0/RP0/CPU0	N540X-4Z14G2Q-A	0.3	ADMConfig		CURRENT	5.00	5.00
0/RP0							
0/RP0/CPU0	N540X-4Z14G2Q-A	0.3	IoFpga		CURRENT	0.17	0.17
0/RP0							
0/RP0/CPU0	N540X-4Z14G2Q-A	0.3	IoFpgaGolden	B	NEED UPGD		0.15
0/RP0							
0/RP0/CPU0	N540X-4Z14G2Q-A	0.3	Prim-BootLoader		CURRENT	20.04	20.04
0/RP0							
0/RP0/CPU0	N540X-4Z14G2Q-A	0.3	StdbbyFpga	S	CURRENT	1.09	1.09
0/RP0							
0/RP0/CPU0	N540X-4Z14G2Q-A	0.3	StdbbyFpgaGolden	BS	NEED UPGD		0.30
0/RP0							
0/RP0/CPU0	N540X-4Z14G2Q-A	0.3	TamFw	S	CURRENT	6.05	6.05
0/RP0							

```
0/RP0/CPU0 N540X-4Z14G2Q-A      0.3 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
=====           =====           Relo  Ver   SW Ver   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   0.22   0.22     0.0
                   DpFpgaEth              YES   1.20   1.20     0.0
-----
```

Determine Firmware Support

	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	0.21	0.21	0.0
	IoFpga	YES	1.30	1.30	0.0
	IoFpgaGolden	YES	1.30	1.30	0.0
	Primary-BIOS	YES	1.33	1.33	0.0
	StdbyFpga	YES	0.46	0.46	0.0
	StdbyFpgaGolden	YES	0.46	0.46	0.0
	TamFw	YES	6.05	6.05	0.0
	TamFwGolden	YES	6.05	6.05	0.0

N540-PWR400-A	LI-PrimMCU	NO	0.04	0.04	0.0
	LI-SecMCU	NO	0.06	0.06	0.0
	PrimMCU	NO	1.02	1.02	0.0
	SecMCU	NO	1.03	1.03	0.0

N540-PWR400-D	LI-PrimMCU	NO	0.04	0.04	0.0
	LI-SecMCU	NO	0.06	0.06	0.0
	PrimMCU	NO	1.03	1.03	0.0
	SecMCU	NO	1.03	1.03	0.0

N540-PWR750-A	EM-PrimMCU	NO	1.02	1.02	0.0
	EM-SecMCU	NO	1.03	1.03	0.0

N540-PWR750-D	EM-PrimMCU	NO	1.03	1.03	0.0
	EM-SecMCU	NO	3.01	3.01	0.0

N540X-12Z16G-SYS-A	ADMConfig	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

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

Auto-upgrade:Enabled

Attribute codes: B golden, P protect, S secure

						FPD Versions	
						=====	
Location	Card type	HWver	FPD device	ATR Status	Running	Programd	
Reload Loc							
0/RP0/CPU0	N540-24Q8L2DD-SYS	2.0	ADM-DBConfig	NEED UPGD	1.51	1.51	
0/RP0							
0/RP0/CPU0	N540-24Q8L2DD-SYS	2.0	ADM-MBConfig	CURRENT	2.01	2.01	
0/RP0							
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	1.08	1.08	
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

Auto-upgrade:Enabled

Attribute codes: B golden, P protect, S secure

						FPD Versions	
						=====	
Location	Card type	HWver	FPD device	ATR Status	Running	Programd	
Reload Loc							
0/RP0/CPU0	N540-FH-CSR-SYS	1.0	ADM1_Config	CURRENT	0.09	0.09	
0/RP0							
0/RP0/CPU0	N540-FH-CSR-SYS	1.0	ADM2_Config	CURRENT	0.09	0.09	
0/RP0							
0/RP0/CPU0	N540-FH-CSR-SYS	1.0	DpFpga	CURRENT	0.21	0.21	
0/RP0							
0/RP0/CPU0	N540-FH-CSR-SYS	1.0	IoFpga	CURRENT	1.30	1.30	
0/RP0							
0/RP0/CPU0	N540-FH-CSR-SYS	1.0	IoFpgaGolden	B NEED UPGD		1.23	
0/RP0							
0/RP0/CPU0	N540-FH-CSR-SYS	1.0	Primary-BIOS	S CURRENT	1.33	1.33	
0/RP0							

Determine Firmware Support

```

0/RP0/CPU0 N540-FH-CSR-SYS      1.0  StdbyFpga      S  CURRENT      0.46  0.46
0/RP0
0/RP0/CPU0 N540-FH-CSR-SYS      1.0  StdbyFpgaGolden BS  NEED UPGD      0.43
0/RP0
0/RP0/CPU0 N540-FH-CSR-SYS      1.0  TamFw          S  CURRENT      6.05  6.05
0/RP0
0/RP0/CPU0 N540-FH-CSR-SYS      1.0  TamFwGolden    BS  CURRENT      6.05
0/RP0
0/PM1      N540-PWR400-A    0.0  PrimMCU        NEED UPGD      0.02  0.02
NOT REQ
0/PM1      N540-PWR400-A    0.0  SecMCU         NEED UPGD      0.02  0.02
NOT REQ
RP/0/RP0/CPU0:Felidae-PE7#sh
show shutdown

```

```
RP/0/RP0/CPU0:Router# show hw-module fpd
```

```

=====
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
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
	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	0.22	0.22	0.0
	DpFpgaEth	YES	1.20	1.20	0.0
	IoFpga	YES	1.30	1.30	0.0
	IoFpgaGolden	YES	1.30	1.30	0.0
	Primary-BIOS	YES	1.33	1.33	0.0
	StdbyFpga	YES	0.46	0.46	0.0
	StdbyFpgaGolden	YES	0.46	0.46	0.0
	TamFw	YES	6.05	6.05	0.0
	TamFwGolden	YES	6.05	6.05	0.0

N540-FH-CSR-SYS	ADM1_Config	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	0.21	0.21	0.0
	IoFpga	YES	1.30	1.30	0.0
	IoFpgaGolden	YES	1.30	1.30	0.0
	Primary-BIOS	YES	1.33	1.33	0.0
	StdbyFpga	YES	0.46	0.46	0.0
	StdbyFpgaGolden	YES	0.46	0.46	0.0
	TamFw	YES	6.05	6.05	0.0
	TamFwGolden	YES	6.05	6.05	0.0

N540-PWR400-A	LI-PrimMCU	NO	0.04	0.04	0.0
	LI-SecMCU	NO	0.06	0.06	0.0
	PrimMCU	NO	1.02	1.02	0.0
	SecMCU	NO	1.03	1.03	0.0

N540-PWR400-D	LI-PrimMCU	NO	0.04	0.04	0.0
	LI-SecMCU	NO	0.06	0.06	0.0
	PrimMCU	NO	1.03	1.03	0.0
	SecMCU	NO	1.03	1.03	0.0

N540-PWR750-A	EM-PrimMCU	NO	1.02	1.02	0.0
	EM-SecMCU	NO	1.03	1.03	0.0

N540-PWR750-D	EM-PrimMCU	NO	1.03	1.03	0.0
	EM-SecMCU	NO	3.01	3.01	0.0

N540X-12Z16G-SYS-A	ADMConfig	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

Important Notes

Supported Transceiver Modules

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

Upgrading Cisco IOS XR Software

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

The upgrade document for N540-24Z8Q2C-SYS, N540X-ACC-SYS, and N540-ACC-SYS variants is available along with the software image in *NCS540-docs-7.6.1.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-7.6.1.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-7.6.1.tar* file.



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

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";
  } elsif 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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