



## **Release Notes for Cisco 8000 Series Routers, IOS XR Release 24.3.2**

[Cisco 8200, 8600, 8700, and 8800 Series Routers](#) 2

[What's New in Cisco IOS XR Release 24.3.2](#) 2

[Release 24.3.2 Packages](#) 2

[Caveats](#) 10

[Determine Software Version](#) 11

[Determine Firmware Support](#) 11

[Compatibility Matrix for EPNM and Crosswork with Cisco IOS XR Software](#) 29

[Important Notes](#) 29

[Related Documentation](#) 30

Revised: December 9, 2024

# Cisco 8200, 8600, 8700, and 8800 Series Routers



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**Note** Cisco IOS XR Release 24.3.2 is an Extended Maintenance Release of [Cisco IOS XR Release 24.3.1](#) for Cisco 8000 Series routers. For more details on the Cisco IOS XR release model and associated support, see [Guidelines for Cisco IOS XR Software](#).

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## What's New in Cisco IOS XR Release 24.3.2

Cisco IOS XR Release 24.3.2 is a maintenance release for Cisco 8000 Series routers. There are no new software features or hardware introduced in this release.

For more details on the Cisco IOS XR release model and associated support, see [Software Lifecycle Support Statement - IOS XR](#).

## Release 24.3.2 Packages

The Cisco IOS XR software is composed of a base image (ISO) that provides the XR infrastructure. The ISO image is made up of a set of packages (also called RPMs). These packages are of three types:

- A mandatory package that is included in the ISO
- An optional package that is included in the ISO
- An optional package that is not included in the ISO

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

To determine the Cisco IOS XR Software packages installed on your router, log in to the router and enter the **show install active** command:

```
RP/0/RP0/CPU0# show install active
Sat Dec 7 13:37:28.916 PST
XR Software Hash: c2b11a14bd4b73feddf6bc6320a789f4e3bad01f1112c21551b7031fb70af0af

Xr Package                                                                                               Version
-----
xr-8000-af-ea                                                                                           24.3.2v1.0.0-1
xr-8000-aib                                                                                             24.3.2v1.0.0-1
xr-8000-bfd                                                                                             24.3.2v1.0.0-1
xr-8000-buffhdr-ea                                                                                     24.3.2v1.0.0-1
xr-8000-bundles                                                                                         24.3.2v1.0.0-1
xr-8000-card-support                                                                                   24.3.2v1.0.0-1
xr-8000-cdp-ea                                                                                         24.3.2v1.0.0-1
```

xr-8000-cem-driver	24.3.2v1.0.0-1
xr-8000-cfm	24.3.2v1.0.0-1
xr-8000-common-otn	24.3.2v1.0.0-1
xr-8000-core	24.3.2v1.0.0-1
xr-8000-cpa	24.3.2v1.0.0-1
xr-8000-cpa-devobj-gnss	24.3.2v1.0.0-1
xr-8000-cpa-devobj-misc	24.3.2v1.0.0-1
xr-8000-cpa-driver-fpgalib-kmod-oe	24.3.2v1.0.0-1
xr-8000-cpa-npu	24.3.2v1.0.0-1
xr-8000-cpa-sb-data	24.3.2v1.0.0-1
xr-8000-dot1x	24.3.2v1.0.0-1
xr-8000-dsm	24.3.2v1.0.0-1
xr-8000-dyinggasp-pd	24.3.2v1.0.0-1
xr-8000-edpl	24.3.2v1.0.0-1
xr-8000-encap-id	24.3.2v1.0.0-1
xr-8000-ether-ea	24.3.2v1.0.0-1
xr-8000-fabric	24.3.2v1.0.0-1
xr-8000-feat-mgr	24.3.2v1.0.0-1
xr-8000-fib-ea	24.3.2v1.0.0-1
xr-8000-forwarder	24.3.2v1.0.0-1
xr-8000-fpd	24.3.2v1.0.0-1
xr-8000-fwd-tools	24.3.2v1.0.0-1
xr-8000-fwplib	24.3.2v1.0.0-1
xr-8000-gil-ea	24.3.2v1.0.0-1
xr-8000-host-core	24.3.2v1.0.0-1
xr-8000-hw-resmon	24.3.2v1.0.0-1
xr-8000-l2fib	24.3.2v1.0.0-1
xr-8000-l2mcast	24.3.2v1.0.0-1
xr-8000-leabaofa	24.3.2v1.0.0-1
xr-8000-li	24.3.2v1.0.0-1
xr-8000-libofaasync	24.3.2v1.0.0-1
xr-8000-lpts-ea	24.3.2v1.0.0-1

xr-8000-mcast	24.3.2v1.0.0-1
xr-8000-netflow	24.3.2v1.0.0-1
xr-8000-npu	24.3.2v1.0.0-1
xr-8000-oam	24.3.2v1.0.0-1
xr-8000-optics	24.3.2v1.0.0-1
xr-8000-os-oe	24.3.2v1.0.0-1
xr-8000-os-oe-extra	24.3.2v1.0.0-1
xr-8000-pbr	24.3.2v1.0.0-1
xr-8000-pd-port-mode	24.3.2v1.0.0-1
xr-8000-pfilter	24.3.2v1.0.0-1
xr-8000-pidb	24.3.2v1.0.0-1
xr-8000-pktio	24.3.2v1.0.0-1
xr-8000-ple-sdk	24.3.2v1.0.0-1
xr-8000-pm	24.3.2v1.0.0-1
xr-8000-port-mapper	24.3.2v1.0.0-1
xr-8000-ppinfo	24.3.2v1.0.0-1
xr-8000-pwhe-ea	24.3.2v1.0.0-1
xr-8000-qos-ea	24.3.2v1.0.0-1
xr-8000-ras	24.3.2v1.0.0-1
xr-8000-sat	24.3.2v1.0.0-1
xr-8000-span	24.3.2v1.0.0-1
xr-8000-spio	24.3.2v1.0.0-1
xr-8000-spp-ea	24.3.2v1.0.0-1
xr-8000-timing	24.3.2v1.0.0-1
xr-8000-tunnel-ip	24.3.2v1.0.0-1
xr-8000-utapp-blaze	24.3.2v1.0.0-1
xr-8000-vether	24.3.2v1.0.0-1
xr-8000-ztp-ea	24.3.2v1.0.0-1
xr-aaa	24.3.2v1.0.0-1
xr-acl	24.3.2v1.0.0-1
xr-apphosting	24.3.2v1.0.0-1
xr-appmgr	24.3.2v1.0.0-1

xr-bcdl	24.3.2v1.0.0-1
xr-bfd	24.3.2v1.0.0-1
xr-bgp	24.3.2v1.0.0-1
xr-bgputil	24.3.2v1.0.0-1
xr-bng-stubs	24.3.2v1.0.0-1
xr-bundles	24.3.2v1.0.0-1
xr-cal-pi	24.3.2v1.0.0-1
xr-cdp	24.3.2v1.0.0-1
xr-cds	24.3.2v1.0.0-1
xr-cfgmgr	24.3.2v1.0.0-1
xr-cfm	24.3.2v1.0.0-1
xr-cofo	24.3.2v1.0.0-1
xr-core	24.3.2v1.0.0-1
xr-core-calv	24.3.2v1.0.0-1
xr-cpa-common	24.3.2v1.0.0-1
xr-cpa-common-optics	24.3.2v1.0.0-1
xr-cpa-common-psu	24.3.2v1.0.0-1
xr-cpa-driver-devobj-misc	24.3.2v1.0.0-1
xr-cpa-driver-devobj-npu	24.3.2v1.0.0-1
xr-cpa-driver-devobj-phy	24.3.2v1.0.0-1
xr-cpa-driver-devobj-sensors	24.3.2v1.0.0-1
xr-cpa-driver-devobj-storage	24.3.2v1.0.0-1
xr-cpa-driver-devobj-test	24.3.2v1.0.0-1
xr-cpa-driver-devobj-timing	24.3.2v1.0.0-1
xr-cpa-driver-fpgalib-access	24.3.2v1.0.0-1
xr-cpa-driver-fpgalib-common	24.3.2v1.0.0-1
xr-cpa-driver-fpgalib-infra	24.3.2v1.0.0-1
xr-cpa-driver-fpgalib-misc	24.3.2v1.0.0-1
xr-cpa-driver-fpgalib-optics	24.3.2v1.0.0-1
xr-cpa-driver-optics	24.3.2v1.0.0-1
xr-cpa-ethsw	24.3.2v1.0.0-1
xr-cpa-idprom	24.3.2v1.0.0-1

xr-cpa-tamlib	24.3.2v1.0.0-1
xr-ctc	24.3.2v1.0.0-1
xr-debug	24.3.2v1.0.0-1
xr-dhcp	24.3.2v1.0.0-1
xr-diags	24.3.2v1.0.0-1
xr-diskboot	24.3.2v1.0.0-1
xr-drivers	24.3.2v1.0.0-1
xr-edpl	24.3.2v1.0.0-1
xr-eem	24.3.2v1.0.0-1
xr-elmi-stubs	24.3.2v1.0.0-1
xr-ema	24.3.2v1.0.0-1
xr-enhancedmanageability	24.3.2v1.0.0-1
xr-erp	24.3.2v1.0.0-1
xr-featurecapability	24.3.2v1.0.0-1
xr-fib	24.3.2v1.0.0-1
xr-filesysinv	24.3.2v1.0.0-1
xr-foundation-8000	24.3.2v1.0.0-1
xr-fpd	24.3.2v1.0.0-1
xr-gil	24.3.2v1.0.0-1
xr-ha-infra	24.3.2v1.0.0-1
xr-healthcheck	24.3.2v1.0.0-1
xr-host-core	24.3.2v1.0.0-1
xr-httpclient	24.3.2v1.0.0-1
xr-icpe-eth	24.3.2v1.0.0-1
xr-icpe-opt	24.3.2v1.0.0-1
xr-identifier	24.3.2v1.0.0-1
xr-infra-sla	24.3.2v1.0.0-1
xr-install	24.3.2v1.0.0-1
xr-ip-apps	24.3.2v1.0.0-1
xr-ip-core	24.3.2v1.0.0-1
xr-ip-infra-vrf	24.3.2v1.0.0-1
xr-ip-mibs	24.3.2v1.0.0-1

xr-ip-static	24.3.2v1.0.0-1
xr-ipc	24.3.2v1.0.0-1
xr-ipsla	24.3.2v1.0.0-1
xr-is-is	24.3.2v1.0.0-1
xr-k9sec	24.3.2v1.0.0-1
xr-l2snooptransport	24.3.2v1.0.0-1
xr-l2vpn	24.3.2v1.0.0-1
xr-ldp	24.3.2v1.0.0-1
xr-li	24.3.2v1.0.0-1
xr-licensing	24.3.2v1.0.0-1
xr-link-oam	24.3.2v1.0.0-1
xr-linuxnetworking	24.3.2v1.0.0-1
xr-linuxsecurity	24.3.2v1.0.0-1
xr-lldp	24.3.2v1.0.0-1
xr-lpts	24.3.2v1.0.0-1
xr-manageabilityxml	24.3.2v1.0.0-1
xr-mandatory	24.3.2v1.0.0-1
xr-mcast	24.3.2v1.0.0-1
xr-mcastl2snoop	24.3.2v1.0.0-1
xr-mda	24.3.2v1.0.0-1
xr-mpls	24.3.2v1.0.0-1
xr-mpls-oam	24.3.2v1.0.0-1
xr-mpls-oam-client	24.3.2v1.0.0-1
xr-mpls-static	24.3.2v1.0.0-1
xr-netflow	24.3.2v1.0.0-1
xr-networkboot	24.3.2v1.0.0-1
xr-nosi	24.3.2v1.0.0-1
xr-ntp	24.3.2v1.0.0-1
xr-ofa	24.3.2v1.0.0-1
xr-optics	24.3.2v1.0.0-1
xr-orrspf	24.3.2v1.0.0-1
xr-os-oe-apps	24.3.2v1.0.0-1

xr-os-oe-core	24.3.2v1.0.0-1
xr-os-oe-docker	24.3.2v1.0.0-1
xr-os-oe-hardware	24.3.2v1.0.0-1
xr-ospf	24.3.2v1.0.0-1
xr-p4rt	24.3.2v1.0.0-1
xr-perf-meas	24.3.2v1.0.0-1
xr-perfmgmt	24.3.2v1.0.0-1
xr-pfi	24.3.2v1.0.0-1
xr-pird-stubs	24.3.2v1.0.0-1
xr-pkt-trace	24.3.2v1.0.0-1
xr-pm-alarm	24.3.2v1.0.0-1
xr-portmode	24.3.2v1.0.0-1
xr-procmgr	24.3.2v1.0.0-1
xr-python	24.3.2v1.0.0-1
xr-qos	24.3.2v1.0.0-1
xr-rid-mgr	24.3.2v1.0.0-1
xr-routing	24.3.2v1.0.0-1
xr-rpl	24.3.2v1.0.0-1
xr-rsvp-te	24.3.2v1.0.0-1
xr-sanitizer-tools	24.3.2v1.0.0-1
xr-security	24.3.2v1.0.0-1
xr-security-tams	24.3.2v1.0.0-1
xr-secy-driver	24.3.2v1.0.0-1
xr-servicelayer	24.3.2v1.0.0-1
xr-snmpp	24.3.2v1.0.0-1
xr-snmpp-hw	24.3.2v1.0.0-1
xr-span	24.3.2v1.0.0-1
xr-spi-core	24.3.2v1.0.0-1
xr-spi-hw	24.3.2v1.0.0-1
xr-spp	24.3.2v1.0.0-1
xr-sr	24.3.2v1.0.0-1
xr-stats	24.3.2v1.0.0-1



```

xr-stp 24.3.2v1.0.0-1
xr-stubs 24.3.2v1.0.0-1
xr-sysdb 24.3.2v1.0.0-1
xr-syslog 24.3.2v1.0.0-1
xr-telemetry 24.3.2v1.0.0-1
xr-telnet 24.3.2v1.0.0-1
xr-timing 24.3.2v1.0.0-1
xr-tmpdir-cleanup 24.3.2v1.0.0-1
xr-track 24.3.2v1.0.0-1
xr-transport 24.3.2v1.0.0-1
xr-tty 24.3.2v1.0.0-1
xr-tunnel-ip 24.3.2v1.0.0-1
xr-tunnel-nve 24.3.2v1.0.0-1
xr-upgradematrix 24.3.2v1.0.0-1
xr-utils 24.3.2v1.0.0-1
xr-vether 24.3.2v1.0.0-1
xr-vpnmib 24.3.2v1.0.0-1
xr-xmlinfra 24.3.2v1.0.0-1
xr-xrlicurl 24.3.2v1.0.0-1
xr-ztp 24.3.2v1.0.0-1

```

To know about all the RPMs installed including XR, OS and other components use the **show install active all** command.

To view all supported Cisco IOS XR Software upgrades from the current version according to the support data installed on the running system, enter the **show install upgrade-matrix running** command:

```

Router# show install upgrade-matrix running
Matrix: XR version: 24.3.2, File version:1.0, Version: N/A

```

The upgrade matrix indicates that the following system upgrades are supported from the current XR version:

From	To	Restrictions
24.3.2	24.1.1	-
24.3.2	24.1.2	-
24.3.2	24.2.11	-
24.3.2	24.2.2	-
24.3.2	24.3.1	-

24.3.2	24.4.1	-
24.3.2	7.10.1	-
24.3.2	7.10.2	-
24.3.2	7.11.1	-
24.3.2	7.11.2	-
24.3.2	7.11.21	-
24.3.2	7.3.4	Target fixes; Caveats; Replace performed via reimage
24.3.2	7.3.5	Target fixes; Caveats; Replace performed via reimage
24.3.2	7.3.6	Caveats; Replace performed via reimage
24.3.2	7.5.3	Target fixes; Caveats; Replace performed via reimage
24.3.2	7.5.4	Target fixes; Caveats; Replace performed via reimage
24.3.2	7.5.5	Caveats; Replace performed via reimage
24.3.2	7.7.2	Target fixes; Caveats; Replace performed via reimage
24.3.2	7.8.1	Target fixes; Caveats; Replace performed via reimage
24.3.2	7.8.2	Target fixes; Caveats; Replace performed via reimage
24.3.2	7.9.1	Caveats; Replace performed via reimage
24.3.2	7.9.2	Caveats; Replace performed via reimage

Add the from and to versions to the end of the CLI command, for data on versions with additional restrictions

For example, to display restrictions for the 24.3.2->24.1.1 upgrade, use

```
'show install upgrade-matrix running 24.3.2 24.1.1'
```

The software modularity approach provides a flexible model that allows you to install a subset of IOS XR packages on devices based on your individual requirements. All critical components are modularized as packages so that you can select the features that you want to run on your router.




---

**Note** The above show command output displays mandatory packages that are installed on the router. To view the optional and bug fix RPM packages, first install the package and use the **show install active summary** command.

---

## Caveats

There are no caveats in this release.

## Determine Software Version

Log in to the router and enter the **show version** command:

```
RP/0/RP0/CPU0# show version
Cisco IOS XR Software, Version 24.3.2 LNT
Copyright (c) 2013-2024 by Cisco Systems, Inc.
```

Build Information:

```
Built By      : cisco
Built On     : Fri Dec 06 16:33:26 UTC 2024
Build Host   : iox-ucs-002
Workspace    : /auto/srcarchive11/prod/24.3.2/8000/ws/
Version      : 24.3.2
Label       : 24.3.2
```

```
cisco 8000 (Intel(R) Xeon(R) CPU D-1530 @ 2.40GHz)
cisco 8808 (Intel(R) Xeon(R) CPU D-1530 @ 2.40GHz) processor with 32GB of memory
ios uptime is 5 hours, 27 minutes
Cisco 8808 8-slot Chassis
```

## Determine Firmware Support

Log in to the router and enter **show fpd package** command:

### Cisco 8200 Series Router

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

```
=====
```

Field Programmable Device Package					
=====					
Card Type	FPD Description	Req Reload	SW Ver	Min Req SW Ver	Min Req Board Ver
=====					
8101-32FH	Bios	YES	1.21	1.21	0.0
	BiosGolden	YES	1.21	1.13	0.0
	IoFpga	YES	1.11	1.11	0.35
	IoFpgaGolden	YES	1.11	1.02	0.35
	PowerCpld	YES	1.17	1.17	0.0
	SsdIntelS3520	YES	1.21	1.21	0.0
	SsdIntelS4510	YES	11.32	11.32	0.0
	ssdIntelS4520	YES	1.11	1.11	0.0

```
-----
```

SsdMicron5100	YES	7.01	7.01	0.0
SsdMicron5300	YES	0.01	0.01	0.0
x86Fpga	YES	1.89	1.89	0.35
x86FpgaGolden	YES	1.89	1.06	0.35
x86TamFw	YES	6.16	6.16	0.0
x86TamFwGolden	YES	6.16	6.05	0.0

---

8101-32FH-O	Bios	YES	0.241	0.241	0.0
	BiosGolden	YES	0.241	0.218	0.0
	IoFpga	YES	1.11	1.11	0.35
	IoFpgaGolden	YES	1.11	1.02	0.35
	PowerCpld	YES	1.17	1.17	0.0
	SsdIntelS3520	YES	1.21	1.21	0.0
	SsdIntelS4510	YES	11.32	11.32	0.0
	ssdIntelS4520	YES	1.11	1.11	0.0
	SsdMicron5100	YES	7.01	7.01	0.0
	SsdMicron5300	YES	0.01	0.01	0.0
	x86Fpga	YES	1.89	1.89	0.35
	x86FpgaGolden	YES	1.89	1.06	0.35
	x86TamFw	YES	6.16	6.16	0.0
	x86TamFwGolden	YES	6.16	6.05	0.0

---

8201-24H8FH	Bios	YES	1.21	1.21	0.0
	BiosGolden	YES	1.21	0.13	0.0
	IoFpga	YES	1.11	1.11	0.35
	IoFpgaGolden	YES	1.11	1.02	0.35
	PowerCpld	YES	1.17	1.17	0.0
	SsdIntelS3520	YES	1.21	1.21	0.0
	SsdIntelS4510	YES	11.32	11.32	0.0
	ssdIntelS4520	YES	1.11	1.11	0.0
	SsdMicron5100	YES	7.01	7.01	0.0
	SsdMicron5300	YES	0.01	0.01	0.0

	x86Fpga	YES	1.89	1.89	0.35
	x86FpgaGolden	YES	1.89	1.06	0.35
	x86TamFw	YES	6.16	6.16	0.0
	x86TamFwGolden	YES	6.16	6.05	0.0
-----					
8201-24H8FH-O	Bios	YES	0.241	0.241	0.0
	BiosGolden	YES	0.241	0.218	0.0
	IoFpga	YES	1.11	1.11	0.35
	IoFpgaGolden	YES	1.11	1.02	0.35
	PowerCpld	YES	1.17	1.17	0.0
	SsdIntelS3520	YES	1.21	1.21	0.0
	SsdIntelS4510	YES	11.32	11.32	0.0
	ssdIntelS4520	YES	1.11	1.11	0.0
	SsdMicron5100	YES	7.01	7.01	0.0
	SsdMicron5300	YES	0.01	0.01	0.0
	x86Fpga	YES	1.89	1.89	0.35
	x86FpgaGolden	YES	1.89	1.06	0.35
	x86TamFw	YES	6.16	6.16	0.0
	x86TamFwGolden	YES	6.16	6.05	0.0
-----					
8201-32FH	Bios	YES	1.21	1.21	0.0
	BiosGolden	YES	1.21	0.13	0.0
	IoFpga	YES	1.11	1.11	0.35
	IoFpgaGolden	YES	1.11	1.02	0.35
	PowerCpld	YES	1.17	1.17	0.0
	SsdIntelS3520	YES	1.21	1.21	0.0
	SsdIntelS4510	YES	11.32	11.32	0.0
	ssdIntelS4520	YES	1.11	1.11	0.0
	SsdMicron5100	YES	7.01	7.01	0.0
	SsdMicron5300	YES	0.01	0.01	0.0
	x86Fpga	YES	1.89	1.89	0.35
	x86FpgaGolden	YES	1.89	1.06	0.35

	x86TamFw	YES	6.16	6.16	0.0
	x86TamFwGolden	YES	6.16	6.05	0.0
-----					
8201-32FH-O	Bios	YES	0.241	0.241	0.0
	BiosGolden	YES	0.241	0.218	0.0
	IoFpga	YES	1.11	1.11	0.35
	IoFpgaGolden	YES	1.11	1.02	0.35
	PowerCpld	YES	1.17	1.17	0.0
	SsdIntelS3520	YES	1.21	1.21	0.0
	SsdIntelS4510	YES	11.32	11.32	0.0
	ssdIntelS4520	YES	1.11	1.11	0.0
	SsdMicron5100	YES	7.01	7.01	0.0
	SsdMicron5300	YES	0.01	0.01	0.0
	x86Fpga	YES	1.89	1.89	0.35
	x86FpgaGolden	YES	1.89	1.06	0.35
	x86TamFw	YES	6.16	6.16	0.0
	x86TamFwGolden	YES	6.16	6.05	0.0
-----					
PSU1.4KW-ACPE	DT-PrimMCU	NO	3.01	3.01	0.0
	DT-SecMCU	NO	2.02	2.02	0.0
	QC-PrimMCU	NO	1.00	1.00	0.0
	QC-SecMCU	NO	1.00	1.00	0.0
-----					
PSU1.4KW-ACPI	DT-PrimMCU	NO	3.01	3.01	0.0
	DT-SecMCU	NO	2.02	2.02	0.0
	QC-PrimMCU	NO	1.00	1.00	0.0
	QC-SecMCU	NO	1.00	1.00	0.0
-----					
PSU2KW-ACPE	PO-PrimMCU	NO	1.03	1.03	0.0
	PO-SecMCU	NO	1.06	1.06	0.0
	QC-PrimMCU	NO	1.01	1.01	0.0
	QC-SecMCU	NO	1.04	1.04	0.0

```

-----
PSU2KW-ACPI      PO-PrimMCU      NO      1.03      1.03      0.0
                  PO-SecMCU       NO      1.08      1.08      0.0
                  QC-PrimMCU      NO      1.01      1.01      0.0
                  QC-SecMCU       NO      3.02      3.01      0.0
-----
PSU2KW-DCPE      PO-PrimMCU      NO      1.07      1.07      0.0
-----
PSU2KW-DCPI      PO-PrimMCU      NO      1.07      1.07      0.0
                  QC-PrimMCU      NO      1.00      1.00      0.0
                  QC-SecMCU       NO      1.00      1.00      0.0
-----
PSU2KW-HVPI      PO-PrimMCU      NO      1.09      1.09      0.0
                  PO-SecMCU       NO      1.10      1.10      0.0

```

**Cisco 8600 Series Router**

RP/0/RP0/CPU0# **show fpd package**

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=====
                                Field Programmable Device Package
                                =====
                                Req   SW   Min Req  Min Req
                                Reload Ver   SW Ver  Board Ver
Card Type      FPD Description
=====
-----
86-3.2KW-AC    EM-LogicMCU     NO     0.10   0.10    0.0
                EM-PrimMCU      NO     0.02   0.02    0.0
                EM-SecMCU       NO     0.02   0.02    0.0
-----
86-3.2KW-DC    EM-LogicMCU     NO     0.11   0.11    0.0
                EM-PrimMCU      NO     0.04   0.04    0.0
                EM-SecMCU       NO     0.04   0.04    0.0
-----
86-MPA-14H2FH-M  IoFpga         YES    1.06   1.06    0.1

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	IoFpgaGolden	NO	1.06	1.00	0.1
-----					
86-MPA-24Z-M	IoFpga	YES	1.06	1.06	0.1
	IoFpgaGolden	NO	1.06	1.00	0.1
-----					
86-MPA-4FH-M	IoFpga	YES	1.06	1.06	0.1
	IoFpgaGolden	NO	1.06	1.00	0.1
-----					
8608-FS [FB]	IoFpga	NO	1.11	1.11	0.2
	IoFpgaGolden	NO	1.11	1.00	0.2
-----					
8608-RP	Bios	YES	1.20	1.20	0.0
	BiosGolden	YES	1.20	1.01	0.0
	IoFpga	YES	1.10	1.10	0.0
	IoFpgaGolden	NO	1.10	1.01	0.0
	SsdMicron7300M2	YES	2.60	2.60	0.0
	SsdMicron7450M2	YES	11.00	11.00	0.0
	SsdSRMP8N2	YES	14.38	14.38	0.0
	x86Fpga	YES	1.07	1.07	0.0
	x86FpgaGolden	YES	1.07	1.07	0.0
	x86TamFw	YES	7.12	7.12	0.0
	x86TamFwGolden	YES	7.12	7.12	0.0
-----					
8608-SC0-128	IoFpga	YES	1.01	1.01	0.0
	IoFpgaGolden	YES	1.01	1.01	0.0
-----					
8608-SC0-128 [FB]	IoFpga	NO	1.11	1.11	0.2
	IoFpgaGolden	NO	1.11	1.00	0.2
-----					
PSU4.3KW-HVPI	DT-LogicMCU	NO	2.05	2.05	0.0
	DT-PrimMCU	NO	1.08	1.08	0.0
	DT-SecMCU	NO	1.08	1.08	0.0



## Cisco 8700 Series Router

RP/0/RP0/CPU0# show fpd package

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=====
                                Field Programmable Device Package
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Card Type	FPD Description	Req Reload	SW Ver	Min Req SW Ver	Min Req Board Ver
8711-32FH-M	Bios	YES	5.05	5.05	0.0
	BiosGolden	YES	5.05	5.05	0.0
	IoFpga	YES	1.09	1.09	0.0
	IoFpgaGolden	YES	1.09	1.09	0.0
	x86Fpga	YES	2.11	2.11	0.0
	x86FpgaGolden	YES	2.11	2.11	0.0
	x86TamFw	YES	9.07	9.07	0.0
	x86TamFwGolden	YES	9.07	9.07	0.0
8711-32FH-M[FB]	IoFpga	NO	1.10	1.10	0.0
	IoFpgaGolden	NO	1.10	1.00	0.0
PSU2KW-ACPE	PO-PrimMCU	NO	1.03	1.03	0.0
	PO-SecMCU	NO	1.06	1.06	0.0
	QC-PrimMCU	NO	1.01	1.01	0.0
	QC-SecMCU	NO	1.04	1.04	0.0
PSU2KW-ACPI	PO-PrimMCU	NO	1.03	1.03	0.0
	PO-SecMCU	NO	1.08	1.08	0.0
	QC-PrimMCU	NO	1.01	1.01	0.0
	QC-SecMCU	NO	3.02	3.01	0.0
PSU2KW-DCPE	PO-PrimMCU	NO	1.07	1.07	0.0

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-----
PSU2KW-DCPI      PO-PrimMCU      NO      1.07      1.07      0.0
                  QC-PrimMCU      NO      1.00      1.00      0.0
                  QC-SecMCU       NO      1.00      1.00      0.0

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**Cisco 8800 Series Router**

RP/0/RP0/CPU0# **show fpd package**

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                          Field Programmable Device Package
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Card Type	FPD Description	Req Reload	SW Ver	Min Req SW Ver	Min Req Board Ver
88-LC0-34H14FH	Bios	YES	1.21	1.21	0.0
	BiosGolden	YES	1.21	0.13	0.0
	EthSwitch	YES	1.05	1.05	0.0
	EthSwitchGolden	YES	1.05	0.07	0.0
	IoFpga	YES	1.09	1.09	0.1
	IoFpgaGolden	YES	1.09	1.01	0.1
	SsdIntelS3520	YES	1.21	1.21	0.0
	SsdIntelS4510	YES	11.32	11.32	0.0
	ssdIntelS4520	YES	1.11	1.11	0.0
	SsdMicron5100	YES	7.01	7.01	0.0
	SsdMicron5300	YES	0.01	0.01	0.0
	x86Fpga	YES	0.97	0.97	0.1
	x86FpgaGolden	YES	0.97	0.78	0.1
	x86TamFw	YES	6.18	6.18	0.1
	x86TamFwGolden	YES	6.18	6.10	0.1
88-LC0-34H14FH-O	Bios	YES	0.241	0.241	0.0
	BiosGolden	YES	0.241	0.218	0.0

	EthSwitch	YES	1.05	1.05	0.0
	EthSwitchGolden	YES	1.05	0.07	0.0
	IoFpga	YES	1.09	1.09	0.1
	IoFpgaGolden	YES	1.09	1.01	0.1
	SsdIntelS3520	YES	1.21	1.21	0.0
	SsdIntelS4510	YES	11.32	11.32	0.0
	ssdIntelS4520	YES	1.11	1.11	0.0
	SsdMicron5100	YES	7.01	7.01	0.0
	SsdMicron5300	YES	0.01	0.01	0.0
	x86Fpga	YES	0.97	0.97	0.1
	x86FpgaGolden	YES	0.97	0.78	0.1
	x86TamFw	YES	6.18	6.18	0.1
	x86TamFwGolden	YES	6.18	6.10	0.1
-----					
88-LC0-36FH	Bios	YES	1.21	1.21	0.0
	BiosGolden	YES	1.21	0.13	0.0
	EthSwitch	YES	1.05	1.05	0.0
	EthSwitchGolden	YES	1.05	0.07	0.0
	IoFpga	YES	1.19	1.19	0.1
	IoFpgaGolden	YES	1.19	1.00	0.1
	SsdIntelS3520	YES	1.21	1.21	0.0
	SsdIntelS4510	YES	11.32	11.32	0.0
	ssdIntelS4520	YES	1.11	1.11	0.0
	SsdMicron5100	YES	7.01	7.01	0.0
	SsdMicron5300	YES	0.01	0.01	0.0
	x86Fpga	YES	1.51	1.51	0.1
	x86FpgaGolden	YES	1.51	1.04	0.1
	x86TamFw	YES	6.19	6.19	0.1
	x86TamFwGolden	YES	6.19	6.05	0.1
-----					
88-LC0-36FH-M	Bios	YES	1.21	1.21	0.0
	BiosGolden	YES	1.21	0.13	0.0

EthSwitch	YES	1.05	1.05	0.0
EthSwitchGolden	YES	1.05	0.07	0.0
IoFpga	YES	1.19	1.19	0.1
IoFpgaGolden	YES	1.19	1.00	0.1
SsdIntelS3520	YES	1.21	1.21	0.0
SsdIntelS4510	YES	11.32	11.32	0.0
ssdIntelS4520	YES	1.11	1.11	0.0
SsdMicron5100	YES	7.01	7.01	0.0
SsdMicron5300	YES	0.01	0.01	0.0
x86Fpga	YES	1.51	1.51	0.1
x86FpgaGolden	YES	1.51	1.04	0.1
x86TamFw	YES	6.19	6.19	0.1
x86TamFwGolden	YES	6.19	6.05	0.1

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88-LC0-36FH-M-2	Bios	YES	1.21	1.21	0.0
	BiosGolden	YES	1.21	0.13	0.0
	EthSwitch	YES	1.05	1.05	0.0
	EthSwitchGolden	YES	1.05	0.07	0.0
	IoFpga	YES	1.19	1.19	0.1
	IoFpgaGolden	YES	1.19	1.00	0.1
	SsdIntelS3520	YES	1.21	1.21	0.0
	SsdIntelS4510	YES	11.32	11.32	0.0
	ssdIntelS4520	YES	1.11	1.11	0.0
	SsdMicron5100	YES	7.01	7.01	0.0
	SsdMicron5300	YES	0.01	0.01	0.0
	x86Fpga	YES	1.51	1.51	0.1
	x86FpgaGolden	YES	1.51	1.04	0.1
	x86TamFw	YES	6.19	6.19	0.1
	x86TamFwGolden	YES	6.19	6.05	0.1

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88-LC0-36FH-MO	Bios	YES	0.241	0.241	0.0
	BiosGolden	YES	0.241	0.218	0.0

	EthSwitch	YES	1.05	1.05	0.0
	EthSwitchGolden	YES	1.05	0.07	0.0
	IoFpga	YES	1.19	1.19	0.1
	IoFpgaGolden	YES	1.19	1.00	0.1
	SsdIntelS3520	YES	1.21	1.21	0.0
	SsdIntelS4510	YES	11.32	11.32	0.0
	ssdIntelS4520	YES	1.11	1.11	0.0
	SsdMicron5100	YES	7.01	7.01	0.0
	SsdMicron5300	YES	0.01	0.01	0.0
	x86Fpga	YES	1.51	1.51	0.1
	x86FpgaGolden	YES	1.51	1.04	0.1
	x86TamFw	YES	6.19	6.19	0.1
	x86TamFwGolden	YES	6.19	6.05	0.1
-----					
88-LC0-36FH-O	Bios	YES	0.241	0.241	0.0
	BiosGolden	YES	0.241	0.218	0.0
	EthSwitch	YES	1.05	1.05	0.0
	EthSwitchGolden	YES	1.05	0.07	0.0
	IoFpga	YES	1.19	1.19	0.1
	IoFpgaGolden	YES	1.19	1.00	0.1
	SsdIntelS3520	YES	1.21	1.21	0.0
	SsdIntelS4510	YES	11.32	11.32	0.0
	ssdIntelS4520	YES	1.11	1.11	0.0
	SsdMicron5100	YES	7.01	7.01	0.0
	SsdMicron5300	YES	0.01	0.01	0.0
	x86Fpga	YES	1.51	1.51	0.1
	x86FpgaGolden	YES	1.51	1.04	0.1
	x86TamFw	YES	6.19	6.19	0.1
	x86TamFwGolden	YES	6.19	6.05	0.1
-----					
88-LC1-12TH24FH-E	Bios	YES	1.20	1.20	0.41
	BiosGolden	YES	1.20	1.01	0.41

EthSwitch	YES	1.05	1.05	0.0
EthSwitchGolden	YES	1.05	0.07	0.0
IoFpga	YES	1.05	1.05	0.0
IoFpgaGolden	YES	1.05	1.00	0.0
SsdMicron7300M2	YES	2.60	2.60	0.0
SsdMicron7450M2	YES	11.00	11.00	0.0
SsdSRMP8N2	YES	14.38	14.38	0.0
x86Fpga	YES	1.04	1.04	0.31
x86FpgaGolden	YES	1.04	1.00	0.31
x86TamFw	YES	7.16	7.16	0.31
x86TamFwGolden	YES	7.16	7.13	0.31

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88-LC1-36EH	Bios	YES	1.20	1.20	0.41
	BiosGolden	YES	1.20	1.01	0.41
	EthSwitch	YES	1.05	1.05	0.0
	EthSwitchGolden	YES	1.05	0.07	0.0
	IoFpga	YES	1.05	1.05	0.0
	IoFpgaGolden	YES	1.05	1.00	0.0
	SsdMicron7300M2	YES	2.60	2.60	0.0
	SsdMicron7450M2	YES	11.00	11.00	0.0
	SsdSRMP8N2	YES	14.38	14.38	0.0
	x86Fpga	YES	1.04	1.04	0.31
	x86FpgaGolden	YES	1.04	1.00	0.31
	x86TamFw	YES	7.16	7.16	0.31
	x86TamFwGolden	YES	7.16	7.13	0.31

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88-LC1-52Y8H-EM	Bios	YES	1.20	1.20	0.0
	BiosGolden	YES	1.20	1.01	0.0
	EthSwitch	YES	1.05	1.05	0.0
	EthSwitchGolden	YES	1.05	0.07	0.0
	IoFpga	YES	1.02	1.02	0.1
	IoFpgaGolden	YES	1.02	1.00	0.1

	SsdMicron7300M2	YES	2.60	2.60	0.0
	SsdMicron7450M2	YES	11.00	11.00	0.0
	SsdSRMP8N2	YES	14.38	14.38	0.0
	x86Fpga	YES	1.01	1.01	0.1
	x86FpgaGolden	YES	1.01	1.00	0.1
	x86TamFw	YES	9.05	9.05	0.1
	x86TamFwGolden	YES	9.05	9.05	0.1
-----					
8800-LC-36FH	Bios	YES	1.36	1.36	0.0
	BiosGolden	YES	1.36	1.15	0.0
	EthSwitch	YES	1.05	1.05	0.0
	EthSwitchGolden	YES	1.05	0.07	0.0
	IoFpga	YES	1.39	1.39	0.0
	IoFpgaGolden	YES	1.39	0.08	0.0
	SsdIntelS3520	YES	1.21	1.21	0.0
	SsdIntelS4510	YES	11.32	11.32	0.0
	ssdIntelS4520	YES	1.11	1.11	0.0
	SsdMicron5100	YES	7.01	7.01	0.0
	SsdMicron5300	YES	0.01	0.01	0.0
	x86Fpga	YES	1.56	1.56	0.0
	x86FpgaGolden	YES	1.56	0.33	0.0
	x86TamFw	YES	5.17	5.17	0.0
	x86TamFwGolden	YES	5.17	5.05	0.0
-----					
8800-LC-36FH-O	Bios	YES	1.208	1.208	0.0
	BiosGolden	YES	1.208	1.207	0.0
	EthSwitch	YES	1.05	1.05	0.0
	EthSwitchGolden	YES	1.05	0.07	0.0
	IoFpga	YES	1.39	1.39	0.0
	IoFpgaGolden	YES	1.39	0.08	0.0
	SsdIntelS3520	YES	1.21	1.21	0.0
	SsdIntelS4510	YES	11.32	11.32	0.0

ssdIntelS4520	YES	1.11	1.11	0.0
SsdMicron5100	YES	7.01	7.01	0.0
SsdMicron5300	YES	0.01	0.01	0.0
x86Fpga	YES	1.56	1.56	0.0
x86FpgaGolden	YES	1.56	0.33	0.0
x86TamFw	YES	5.17	5.17	0.0
x86TamFwGolden	YES	5.17	5.05	0.0

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8800-LC-48H	Bios	YES	1.36	1.36	0.0
	BiosGolden	YES	1.36	1.15	0.0
	EthSwitch	YES	1.05	1.05	0.0
	EthSwitchGolden	YES	1.05	0.07	0.0
	IoFpga	YES	1.39	1.39	0.0
	IoFpgaGolden	YES	1.39	0.08	0.0
	SsdIntelS3520	YES	1.21	1.21	0.0
	SsdIntelS4510	YES	11.32	11.32	0.0
	ssdIntelS4520	YES	1.11	1.11	0.0
	SsdMicron5100	YES	7.01	7.01	0.0
	SsdMicron5300	YES	0.01	0.01	0.0
	x86Fpga	YES	1.56	1.56	0.0
	x86FpgaGolden	YES	1.56	0.33	0.0
	x86TamFw	YES	5.17	5.17	0.0
	x86TamFwGolden	YES	5.17	5.05	0.0

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8800-LC-48H-O	Bios	YES	1.208	1.208	0.0
	BiosGolden	YES	1.208	1.207	0.0
	EthSwitch	YES	1.05	1.05	0.0
	EthSwitchGolden	YES	1.05	0.07	0.0
	IoFpga	YES	1.39	1.39	0.0
	IoFpgaGolden	YES	1.39	0.08	0.0
	SsdIntelS3520	YES	1.21	1.21	0.0
	SsdIntelS4510	YES	11.32	11.32	0.0



ssdIntelS4520	YES	1.11	1.11	0.0
SsdMicron5100	YES	7.01	7.01	0.0
SsdMicron5300	YES	0.01	0.01	0.0
x86Fpga	YES	1.56	1.56	0.0
x86FpgaGolden	YES	1.56	0.33	0.0
x86TamFw	YES	5.17	5.17	0.0
x86TamFwGolden	YES	5.17	5.05	0.0

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8800-RP	Bios	YES	1.36	1.36	0.0
	BiosGolden	YES	1.36	1.15	0.0
	EthSwitch	YES	1.03	1.03	0.0
	EthSwitchGolden	YES	1.03	0.07	0.0
	SsdIntelS3520	YES	1.21	1.21	0.0
	SsdIntelS4510	YES	11.32	11.32	0.0
	ssdIntelS4520	YES	1.11	1.11	0.0
	SsdMicron5100	YES	7.01	7.01	0.0
	SsdMicron5300	YES	0.01	0.01	0.0
	TimingFpga	YES	1.02	1.02	0.0
	TimingFpgaGolden	YES	1.02	0.11	0.0
	x86Fpga	YES	1.39	1.39	0.0
	x86FpgaGolden	YES	1.39	0.24	0.0
	x86TamFw	YES	5.19	5.19	0.0
	x86TamFwGolden	YES	5.19	5.05	0.0

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8800-RP-O	Bios	YES	1.208	1.208	0.0
	BiosGolden	YES	1.208	1.207	0.0
	EthSwitch	YES	1.03	1.03	0.0
	EthSwitchGolden	YES	1.03	0.07	0.0
	SsdIntelS3520	YES	1.21	1.21	0.0
	SsdIntelS4510	YES	11.32	11.32	0.0
	ssdIntelS4520	YES	1.11	1.11	0.0
	SsdMicron5100	YES	7.01	7.01	0.0

SsdMicron5300	YES	0.01	0.01	0.0
TimingFpga	YES	1.02	1.02	0.0
TimingFpgaGolden	YES	1.02	0.11	0.0
x86Fpga	YES	1.39	1.39	0.0
x86FpgaGolden	YES	1.39	0.24	0.0
x86TamFw	YES	5.19	5.19	0.0
x86TamFwGolden	YES	5.19	5.05	0.0

---

8800-RP2	Bios	YES	1.20	1.20	0.3
	BiosGolden	YES	1.20	1.07	0.3
	EthSwitch	YES	1.03	1.03	0.0
	EthSwitchGolden	YES	1.03	0.07	0.0
	PcieSwitch	YES	120.14	120.14	0.7
	SsdMicron7300M2	YES	2.60	2.60	0.0
	SsdMicron7450M2	YES	11.00	11.00	0.0
	SsdSRMP8N2	YES	14.38	14.38	0.0
	TimingFpga	YES	1.01	1.01	0.0
	TimingFpgaGolden	YES	1.01	1.00	0.0
	x86Fpga	YES	1.14	1.14	0.6
	x86FpgaGolden	YES	1.14	1.02	0.6
	x86TamFw	YES	7.18	7.18	0.6
	x86TamFwGolden	YES	7.18	7.13	0.6

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8800-RP2-O	Bios	YES	1.00	1.00	0.3
	BiosGolden	YES	1.00	1.00	0.3
	EthSwitch	YES	1.03	1.03	0.0
	EthSwitchGolden	YES	1.03	0.07	0.0
	SsdIntelS3520	YES	1.21	1.21	0.0
	SsdIntelS4510	YES	11.32	11.32	0.0
	ssdIntelS4520	YES	1.11	1.11	0.0
	SsdMicron5100	YES	7.01	7.01	0.0
	SsdMicron5300	YES	0.01	0.01	0.0

	TimingFpga	YES	1.01	1.01	0.0
	TimingFpgaGolden	YES	1.01	1.00	0.0
	x86Fpga	YES	0.128	0.128	0.3
	x86FpgaGolden	YES	0.128	0.128	0.3
	x86TamFw	YES	7.12	7.12	0.3
	x86TamFwGolden	YES	7.12	7.12	0.3
-----					
8804-FAN	FtFpga	NO	1.00	1.00	0.0
	FtFpga	NO	1.129	1.129	1.1
	FtFpgaGolden	NO	1.00	0.16	0.0
	FtFpgaGolden	NO	1.129	1.129	1.1
-----					
8804-FC0	IoFpga	YES	1.00	1.00	0.0
	IoFpga	YES	1.125	1.125	2.0
	IoFpgaGolden	YES	1.00	0.16	0.0
	IoFpgaGolden	YES	1.125	1.125	2.0
-----					
8808-FAN	FtFpga	NO	1.00	1.00	0.0
	FtFpga	NO	1.129	1.129	1.1
	FtFpgaGolden	NO	1.00	0.16	0.0
	FtFpgaGolden	NO	1.129	1.129	1.1
-----					
8808-FAN-V2	FtFpga	NO	1.00	1.00	0.0
	FtFpga	NO	1.129	1.129	1.1
	FtFpgaGolden	NO	1.00	0.16	0.0
	FtFpgaGolden	NO	1.129	1.129	1.1
-----					
8808-FC	IoFpga	YES	1.02	1.02	0.0
	IoFpgaGolden	YES	1.02	0.05	0.0
-----					
8808-FC0	IoFpga	YES	1.00	1.00	0.0
	IoFpga	YES	1.125	1.125	2.0

	IoFpgaGolden	YES	1.00	0.16	0.0
	IoFpgaGolden	YES	1.125	1.125	2.0
-----					
8808-FC1	IoFpga	YES	1.03	1.03	0.0
	IoFpgaGolden	YES	1.03	1.03	0.0
-----					
8812-FAN	FtFpga	NO	1.00	1.00	0.0
	FtFpga	NO	1.129	1.129	1.1
	FtFpgaGolden	NO	1.00	0.16	0.0
	FtFpgaGolden	NO	1.129	1.129	1.1
-----					
8812-FC	IoFpga	YES	1.02	1.02	0.0
	IoFpgaGolden	YES	1.02	0.05	0.0
	Retimer	YES	3.00	3.00	0.0
-----					
8818-FAN	FtFpga	NO	1.00	1.00	0.0
	FtFpga	NO	1.129	1.129	1.1
	FtFpgaGolden	NO	1.00	0.16	0.0
	FtFpgaGolden	NO	1.129	1.129	1.1
-----					
8818-FC	IoFpga	YES	1.02	1.02	0.0
	IoFpgaGolden	YES	1.02	0.05	0.0
	Retimer	YES	3.00	3.00	0.0
-----					
8818-FC0	IoFpga	YES	1.00	1.00	0.0
	IoFpga	YES	1.125	1.125	2.0
	IoFpgaGolden	YES	1.00	0.16	0.0
	IoFpgaGolden	YES	1.125	1.125	2.0
	Retimer	YES	3.00	3.00	0.0
-----					
PSU4.8KW-DC100	PO-PrimMCU	NO	51.85	51.85	0.0
	PO-SecMCU	NO	51.85	51.85	0.0

PSU6.3KW-20A-HV	DT-LogicMCU	NO	1.00	1.00	0.0
	DT-PrimMCU	NO	1.00	1.00	0.0
	DT-SecMCU	NO	1.00	1.00	0.0
PSU6.3KW-HV	AB-LogicMCU	NO	3.08	3.08	0.0
	AB-PrimMCU	NO	3.08	3.08	0.0
	AB-SecMCU	NO	3.06	3.06	0.0
	DT-LogicMCU	NO	4.11	4.11	0.0
	DT-PrimMCU	NO	4.01	4.01	0.0
	DT-SecMCU	NO	4.00	4.00	0.0
PWR-4.4KW-DC-V3	DT-LogicMCU	NO	3.02	3.02	0.0
	DT-Prim1MCU	NO	3.01	3.01	0.0
	DT-Prim2MCU	NO	3.01	3.01	0.0
	DT-Sec1MCU	NO	3.01	3.01	0.0
	DT-Sec2MCU	NO	3.01	3.01	0.0

## Compatibility Matrix for EPNM and Crosswork with Cisco IOS XR Software

The compatibility matrix lists the version of EPNM and Crosswork that are supported with Cisco IOS XR Release in this release.

**Table 1: Compatibility Matrix**

Cisco IOS XR	Crosswork	EPNM
Release 24.3.2	<a href="#">Crosswork Optimization Engine 6.0</a>	<a href="#">Evolved Programmable Network Manager 7.1.1</a>

## Important Notes

- The warning message that the smart licensing evaluation period has expired is displayed in the console every hour. There is, however, no functionality impact on the device. The issue is seen on routers that don't have the Flexible Consumption licensing model enabled. To stop the repetitive messaging, register the device with the smart licensing server and enable the Flexible Consumption model. Later load a new registration token.

To register the device with the smart licensing server, see the [Registering and Activating Your Router](#).

## Licensing

Starting with Cisco IOS XR Release 24.1.1, Smart Licensing Using Policy (SLP) is the default Licensing model. When you upgrade to the Cisco IOS XR Release 24.1.1 release or later, the Smart Licensing Using Policy is enabled by default.

You can migrate your devices to Smart Licensing with Policy model, see *Migrating from Smart Licensing to Smart Licensing Using Policy*, [Smart Licensing Using Policy on Cisco IOS XR Routers](#).

We recommend that you update to the latest version of [SSM On-Prem](#) or [Cisco Smart Licensing Utility](#).



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**Note** SSM On-Prem and CSSM both support SLP devices and SL devices. SLP devices and SL devices can coexist in a network. The Smart Licensing (SL) model is available in releases Cisco IOS XR Release 7.11.1 and earlier.

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## Production Software Maintenance Updates (SMUs)

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

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

## Supported Transceiver Modules

To determine the transceivers that Cisco hardware device supports, refer to the [Transceiver Module Group \(TMG\) Compatibility Matrix](#) tool.

## Cisco IOS XR Error messages

To view, search, compare, and download Cisco IOS XR Error Messages, refer to the [Cisco IOS XR Error messages](#) tool.

## Cisco IOS XR MIBs

To determine the MIBs supported by platform and release, refer to the [Cisco IOS XR MIBs](#) tool.

## Related Documentation

The most current Cisco 8000 router documentation is located at the following URL:

<https://www.cisco.com/c/en/us/td/docs/iosxr/8000-series-routers.html>





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