



Release Notes for Cisco 8000 Series Routers, IOS XR Release 24.1.2

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Cisco 8100, 8200, 8600, and 8800 Series Routers



Note Cisco IOS XR Release 24.1.2 is an Extended Maintenance Release of [Cisco IOS XR Release 24.1.1](#) 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](#).

What's New in Cisco IOS XR Release 24.1.2

Cisco IOS XR Release 24.1.2 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 24.1.2 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 summary
Active Packages:   XR: 210      All: 1560
Label:             24.1.2
Software Hash:     8805cb356c0eab23567aba3544fdefc9ffd84c422895c8049bd1c4cc5e1436e7
```

Optional Packages	Version
xr-8000-l2mcast	24.1.2v1.0.0-1
xr-8000-mcast	24.1.2v1.0.0-1
xr-8000-netflow	24.1.2v1.0.0-1
xr-bgp	24.1.2v1.0.0-1
xr-ipsla	24.1.2v1.0.0-1
xr-is-is	24.1.2v1.0.0-1
xr-lldp	24.1.2v1.0.0-1
xr-mcast	24.1.2v1.0.0-1
xr-mpls-oam	24.1.2v1.0.0-1
xr-netflow	24.1.2v1.0.0-1
xr-ops-script-repo	24.1.2v1.0.0-1
xr-ospf	24.1.2v1.0.0-1
xr-perf-meas	24.1.2v1.0.0-1

xr-perfmgmt
xr-track

24.1.2v1.0.0-1
24.1.2v1.0.0-1

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:

```
RP/0/RP0/CPU0:ios# show install upgrade-matrix running  
Matrix: XR version: 24.1.2, 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
24.1.2	24.1.1	-
24.1.2	7.10.1	-
24.1.2	7.10.2	-
24.1.2	7.11.1	-
24.1.2	7.11.2	-
24.1.2	7.5.3	Target fixes; Caveats; Replace performed via reimage
24.1.2	7.5.4	Target fixes; Caveats; Replace performed via reimage
24.1.2	7.5.5	Caveats; Replace performed via reimage
24.1.2	7.7.1	Target fixes; Caveats; Replace performed via reimage
24.1.2	7.7.2	Target fixes; Caveats; Replace performed via reimage
24.1.2	7.8.1	Target fixes; Caveats; Replace performed via reimage
24.1.2	7.8.2	Target fixes; Caveats; Replace performed via reimage
24.1.2	7.9.1	Caveats; Replace performed via reimage
24.1.2	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 24.1.2->24.1.1 upgrade, use
'show install upgrade-matrix running 24.1.2 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

Table 1: Cisco 8000 Series Router Specific Bugs

Bug ID	Headline
CSCwj25963	A router in its ideal state displays a counter overrun syslog message for one or more interfaces.

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 24.1.2 LNT
Copyright (c) 2013-2024 by Cisco Systems, Inc.
```

```
Build Information:
  Built By      : sajshah
  Built On     : Thu May 30 19:56:43 UTC 2024
  Build Host   : iox-ucs-055
  Workspace    : /auto/ioxdepot6/GISO/giso_build_lindt/giso_custom_create/ponaidu_2024-05-31_02-46-43_UTC
  Version     : 24.1.2
  Label       : 24.1.2-renum_dt_sit
```

```
cisco 8000 (Intel(R) Xeon(R) CPU D-1530 @ 2.40GHz)
cisco 8201 (Intel(R) Xeon(R) CPU D-1530 @ 2.40GHz) processor with 32GB of memory
R4 uptime is 3 days, 10 hours, 17 minutes
Cisco 8201 Chassis w/ 24x400GE QSFP56-DD&12x100GE QSFP28
```

Determine Firmware Support

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

Cisco 8100 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	1.15	1.15	0.0
	BiosGolden	YES	1.15	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
	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-0	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
	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	1.15	1.15	0.0
	BiosGolden	YES	1.15	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
	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
	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	1.15	1.15	0.0
	BiosGolden	YES	1.15	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
	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
	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
PSU2KW-HVPI	PO-PrimMCU	NO	1.09	1.09	0.0
	PO-SecMCU	NO	1.10	1.10	0.0

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
8201	Bios	YES	1.29	1.29	0.0
	BiosGolden	YES	1.29	1.15	0.0
	IoFpga	YES	1.11	1.11	0.1
	IoFpgaGolden	YES	1.11	0.48	0.1
	SsdIntelS3520	YES	1.21	1.21	0.0
	SsdIntelS4510	YES	11.32	11.32	0.0
	SsdMicron5100	YES	7.01	7.01	0.0
	SsdMicron5300	YES	0.01	0.01	0.0
	x86Fpga	YES	1.06	1.06	0.0
	x86FpgaGolden	YES	1.06	0.48	0.0
	x86TamFw	YES	5.13	5.13	0.0
	x86TamFwGolden	YES	5.13	5.05	0.0
	8201-ON	Bios	YES	1.208	1.208
BiosGolden		YES	1.208	1.207	0.0
IoFpga		YES	1.11	1.11	0.1
IoFpgaGolden		YES	1.11	0.48	0.1
SsdIntelS3520		YES	1.21	1.21	0.0
SsdIntelS4510		YES	11.32	11.32	0.0
SsdMicron5100		YES	7.01	7.01	0.0
SsdMicron5300		YES	0.01	0.01	0.0
x86Fpga		YES	1.06	1.06	0.0
x86FpgaGolden		YES	1.06	0.48	0.0
x86TamFw		YES	5.13	5.13	0.0
x86TamFwGolden		YES	5.13	5.05	0.0
8201-SYS		Bios	YES	1.29	1.29
	BiosGolden	YES	1.29	1.15	0.0
	IoFpga	YES	1.11	1.11	0.1
	IoFpgaGolden	YES	1.11	0.48	0.1
	SsdIntelS3520	YES	1.21	1.21	0.0
	SsdIntelS4510	YES	11.32	11.32	0.0
	SsdMicron5100	YES	7.01	7.01	0.0
	SsdMicron5300	YES	0.01	0.01	0.0
	x86Fpga	YES	1.06	1.06	0.0
	x86FpgaGolden	YES	1.06	0.48	0.0
	x86TamFw	YES	5.13	5.13	0.0

	x86TamFwGolden	YES	5.13	5.05	0.0
8201-SYS-ON	Bios	YES	1.208	1.208	0.0
	BiosGolden	YES	1.208	1.207	0.0
	IoFpga	YES	1.11	1.11	0.1
	IoFpgaGolden	YES	1.11	0.48	0.1
	SsdIntelS3520	YES	1.21	1.21	0.0
	SsdIntelS4510	YES	11.32	11.32	0.0
	SsdMicron5100	YES	7.01	7.01	0.0
	SsdMicron5300	YES	0.01	0.01	0.0
	x86Fpga	YES	1.06	1.06	0.0
	x86FpgaGolden	YES	1.06	0.48	0.0
	x86TamFw	YES	5.13	5.13	0.0
	x86TamFwGolden	YES	5.13	5.05	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
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

```

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

```

Card Type	FPD Description	Req Reload	SW Ver	Min Req SW Ver	Min Req Board Ver
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	1.03	1.03	0.1
	IoFpgaGolden	NO	1.03	1.00	0.1
86-MPA-24Z-M	IoFpga	YES	1.03	1.03	0.1

	IoFpgaGolden	NO	1.03	1.00	0.1
86-MPA-4FH-M	IoFpga	YES	1.03	1.03	0.1
	IoFpgaGolden	NO	1.03	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	1.09	1.09	0.0
	BiosGolden	YES	1.09	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
	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	8.04	1.04	0.0
	DT-PrimMCU	NO	8.02	1.02	0.0
	DT-SecMCU	NO	8.02	1.02	0.0

Cisco 8800 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
88-LC0-34H14FH	Bios	YES	1.15	1.15	0.0
	BiosGolden	YES	1.15	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
	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
	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	1.15	1.15	0.0
	BiosGolden	YES	1.15	0.13	0.0
	EthSwitch	YES	1.05	1.05	0.0
	EthSwitchGolden	YES	1.05	0.07	0.0
	IoFpga	YES	1.14	1.14	0.1
	IoFpgaGolden	YES	1.14	1.00	0.1
	SsdIntelS3520	YES	1.21	1.21	0.0
	SsdIntelS4510	YES	11.32	11.32	0.0
	SsdMicron5100	YES	7.01	7.01	0.0
	SsdMicron5300	YES	0.01	0.01	0.0
	x86Fpga	YES	1.48	1.48	0.1
	x86FpgaGolden	YES	1.48	1.04	0.1
	x86TamFw	YES	6.18	6.18	0.1
	x86TamFwGolden	YES	6.18	6.05	0.1

88-LC0-36FH-M	Bios	YES	1.15	1.15	0.0
	BiosGolden	YES	1.15	0.13	0.0
	EthSwitch	YES	1.05	1.05	0.0
	EthSwitchGolden	YES	1.05	0.07	0.0
	IoFpga	YES	1.14	1.14	0.1
	IoFpgaGolden	YES	1.14	1.00	0.1
	SsdIntelS3520	YES	1.21	1.21	0.0
	SsdIntelS4510	YES	11.32	11.32	0.0
	SsdMicron5100	YES	7.01	7.01	0.0
	SsdMicron5300	YES	0.01	0.01	0.0
	x86Fpga	YES	1.48	1.48	0.1
	x86FpgaGolden	YES	1.48	1.04	0.1
	x86TamFw	YES	6.18	6.18	0.1
	x86TamFwGolden	YES	6.18	6.05	0.1

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	1.14	1.14	0.1
	IoFpgaGolden	YES	1.14	1.00	0.1
	SsdIntelS3520	YES	1.21	1.21	0.0
	SsdIntelS4510	YES	11.32	11.32	0.0
	SsdMicron5100	YES	7.01	7.01	0.0
	SsdMicron5300	YES	0.01	0.01	0.0
	x86Fpga	YES	1.48	1.48	0.1
	x86FpgaGolden	YES	1.48	1.04	0.1
	x86TamFw	YES	6.18	6.18	0.1
	x86TamFwGolden	YES	6.18	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	1.14	1.14	0.1
	IoFpgaGolden	YES	1.14	1.00	0.1
	SsdIntelS3520	YES	1.21	1.21	0.0
	SsdIntelS4510	YES	11.32	11.32	0.0
	SsdMicron5100	YES	7.01	7.01	0.0
	SsdMicron5300	YES	0.01	0.01	0.0
	x86Fpga	YES	1.48	1.48	0.1
	x86FpgaGolden	YES	1.48	1.04	0.1
	x86TamFw	YES	6.18	6.18	0.1

	x86TamFwGolden	YES	6.18	6.05	0.1

88-LC1-12TH24FH-E	Bios	YES	1.09	1.09	0.41
	BiosGolden	YES	1.09	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
	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

88-LC1-36EH	Bios	YES	1.09	1.09	0.41
	BiosGolden	YES	1.09	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
	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

88-LC1-52Y8H-EM	Bios	YES	1.09	1.09	0.0
	BiosGolden	YES	1.09	1.01	0.0
	EthSwitch	YES	1.05	1.05	0.0
	EthSwitchGolden	YES	1.05	0.07	0.0
	IoFpga	YES	0.12	0.12	0.1
	IoFpgaGolden	YES	0.12	0.12	0.1
	SsdMicron7300M2	YES	2.60	2.60	0.0
	SsdMicron7450M2	YES	11.00	11.00	0.0
	x86Fpga	YES	0.05	0.05	0.1
	x86FpgaGolden	YES	0.05	0.05	0.1
	x86TamFw	YES	9.05	9.05	0.1
	x86TamFwGolden	YES	9.05	9.05	0.1

8800-LC-36FH	Bios	YES	1.29	1.29	0.0
	BiosGolden	YES	1.29	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
	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

	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-48H	Bios	YES	1.29	1.29	0.0
	BiosGolden	YES	1.29	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
	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-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
	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-RP	Bios	YES	1.29	1.29	0.0
	BiosGolden	YES	1.29	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
	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	1.38	1.38	0.0
	x86FpgaGolden	YES	1.38	0.24	0.0
	x86TamFw	YES	5.17	5.17	0.0
	x86TamFwGolden	YES	5.17	5.05	0.0

8800-RP-E	Bios	YES	1.29	1.29	0.0
	BiosGolden	YES	1.29	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
	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	1.38	1.38	0.0
	x86FpgaGolden	YES	1.38	0.24	0.0

	x86TamFw	YES	5.17	5.17	0.0
	x86TamFwGolden	YES	5.17	5.05	0.0

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
	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	1.38	1.38	0.0
	x86FpgaGolden	YES	1.38	0.24	0.0
	x86TamFw	YES	5.17	5.17	0.0
	x86TamFwGolden	YES	5.17	5.05	0.0

8800-RP2	Bios	YES	1.09	1.09	0.3
	BiosGolden	YES	1.09	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
	TimingFpga	YES	1.01	1.01	0.0
	TimingFpgaGolden	YES	1.01	1.00	0.0
	x86Fpga	YES	1.12	1.12	0.6
	x86FpgaGolden	YES	1.12	1.02	0.6
	x86TamFw	YES	7.17	7.17	0.6
	x86TamFwGolden	YES	7.17	7.13	0.6

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
	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
	FtFpgaGolden	NO	1.00	0.16	0.0

8804-FC0	IoFpga	YES	1.00	1.00	0.0
	IoFpgaGolden	YES	1.00	0.16	0.0

8808-FAN	FtFpga	NO	1.00	1.00	0.0
	FtFpgaGolden	NO	1.00	0.16	0.0

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
	IoFpgaGolden	YES	1.00	0.16	0.0

8808-FC1	IoFpga	YES	0.02	0.02	0.20
	IoFpgaGolden	YES	0.02	0.02	0.20

8808-FC1-G	IoFpga	YES	1.06	1.06	0.0
	IoFpgaGolden	YES	1.06	1.01	0.0
8812-FAN	FtFpga	NO	1.00	1.00	0.0
	FtFpgaGolden	NO	1.00	0.16	0.0
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
	FtFpgaGolden	NO	1.00	0.16	0.0
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
	IoFpgaGolden	YES	1.00	0.16	0.0
	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 2: Compatibility Matrix

Cisco IOS XR	Crosswork	EPNM
Release 24.1.2	Crosswork Optimization Engine 6.0	Evolved Programmable Network Manager 7.1.1

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](#).



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.

Supported Transceiver Modules

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

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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