

Cisco XR 12000 Performance Route Processor-3

Product Overview

The Cisco® XR 12000 Performance Router Processor-3 (PRP-3, Figure 1) is the premium route processor for the Cisco XR 12000 Series Routers, addressing the unique route processing requirements of carrier-grade IP and Multiprotocol Label Switching (MPLS) packet infrastructures. It also provides a Building Integrated Timing Supply (BITS) interface, a component of the Cisco XR 12000 Series BITS architecture that will enable network service synchronization on the platform in the future.

This premium route processor is responsible for the following functions:

- Executing routing protocol stacks
- Performing all protocol communications with other routers
- Building and distributing forwarding information to all line cards
- Uploading the OS software system images to all installed line cards upon powering up
- Providing out-of-band system console and auxiliary ports and Ethernet ports for router configuration and maintenance
- Monitoring and managing the power and temperature of system components such as line cards, power supplies, and fans

Figure 1. Cisco XR 12000 PRP-3



Features and Benefits

The Cisco XR 12000 PRP-3 delivers all the previously listed functions with enhanced performance and capabilities. It also delivers the following feature enhancements:

- Gigabit Ethernet management ports (additional port added since PRP-2)
- Hard-drive support (optional part; double the memory capacity of the PRP-2)
- BITS input ports (to address future network service synchronization requirements)

- Up to 4-GB compact flash memory image support (identical device used for internal and external flash to simplify inventory)
- Memory scalability up to 8 GB (double the memory capacity of the PRP-2)

Product Specifications

Table 1. Technical Specifications

| Description | Specification |
|-----------------------|--|
| Chassis Compatibility | <ul style="list-style-type: none"> • Cisco XR 12816, XR 12810, XR 12416, XR 12410, XR 12406, XR 12404, XR 12016*, XR 12010, XR 12006, and XR 12004 Routers |
| Memory Options | <ul style="list-style-type: none"> • Two 2-GB synchronous dynamic RAM (SDRAM) modules • Two 4-GB SDRAM modules • 2-GB compact flash (for internal and external storage) • 4-GB compact flash (for internal and external storage) • 80-GB hard drive |
| Connectivity | <ul style="list-style-type: none"> • Console port (RJ-45 connector) • Auxiliary port (RJ-45 connector) • Two 10/100/1000 Ethernet ports over copper • Two RJ-48 connectors for BITS input clocks (for future BITS option) |

Note: The PRP3 is supported with these chassis operating with IOS XR 3.8 and higher.

*The PRP-3 is not supported in the Cisco XR 12016 configured with original fabric cards GSR16/80-CSC and GSR16/80-SFC. The enhanced fabric cards 12016E-CSC and 12016E-SFC do support this premium route processor.

Table 2. Power Requirements

| Description | Specification |
|-------------|-------------------------------------|
| Power | 130W |
| Indicators | Alphanumeric and LED status display |

Table 3. Physical and Environmental Specifications

| Description | Specification |
|------------------------|--|
| Temperature | <ul style="list-style-type: none"> • Operating: 32 to 104°F (0 to 40°C) • Storage: -4 to 149°F (-20 to 65°C) |
| Humidity | <ul style="list-style-type: none"> • Operating (non-condensing): 10-90% • Storage (non-condensing): 5-95% |
| Dimensions (H x W x D) | 14.5 x 1.25 x 18.5 in. (36.8 x 3.2 x 45.7 cm) (occupies single thin slot) |
| Weight | 6.0 lb (2.7 kg) |

Table 4. Regulatory Approvals

| Description | Specification |
|-------------|--|
| Safety | <ul style="list-style-type: none"> • UL 60950 • CSA 22.2-No. 60950 • EN60950 • IEC 60950 CB Scheme • ACA TS001 • AS/NZS 3260 |
| EMI | <ul style="list-style-type: none"> • FCC Class A • ICES 003 Class A • AS/NZS 3548 Class A • CISPR 22 Class A • EN55022/EN50082-1 Class A • ETSI EN 300 386 (EN55022 Class A) • VCCI Class A |

| Description | Specification |
|---|--|
| Immunity | <ul style="list-style-type: none"> • EN 61000-4-2, ESD Level 4 (15-kV air, 8-kV contact) • EN 61000-4-3, radiated immunity Level 3 (10V/m) • EN 61000-4-4 EFT Level 4 • EN 61000-4-5 surge • EN 61000-4-6 conducted immunity Level 3 (10V) • EN 61000-4-11 voltage dips and sags • EN 55024 |
| ETSI | EN 300 386/EN 300 386-2 Class B |
| Network Equipment Building Standards (NEBS) | This product is designed to meet the following requirements (qualification completed): <ul style="list-style-type: none"> • SR-3580 – NEBS: criteria levels (Level 3 compliant) • GR-63-Core – NEBS: physical protection • GR-1089-Core – NEBS: EMC and safety |

System Requirements

Table 5. System Requirements

| Specification | Requirement |
|---------------|--|
| Hardware | Configurable in any of the Cisco XR 12000 Series chassis. Supported in the older Cisco 12006, 12010, 12404, 12406, 12410, 12416, 12810, and 12816 Routers. The PRP-3 is not supported in chassis configured with fabric cards GSR16/80-CSC and GSR16/80-SFC. |
| Software | Cisco IOS XR Release 3.8. The PRP-3 is not supported in Cisco IOS Software. |

Warranty Information

Find warranty information on the [Product Warranties](#) page on Cisco.com.

Ordering Information

To place an order, visit the [Cisco Ordering Home Page](#). To download software, visit the [Cisco Software Center](#).

Table 6. Ordering Information

| Product Description | Part Number |
|--|---------------------------------|
| Cisco XR 12000 Performance Route Processor 3 | PRP-3 |
| Cisco XR 12000 Performance Route Processor 3 (redundant option) | PRP-3/R |
| Cisco XR 12000 Performance Route Processor 3 (spare) | PRP-3= |
| Cisco XR 12000 PRP-3 4GB Memory (2x2GB DIMM) (includes two 4GB for internal and external memory) | MEM-PRP3-4G |
| Cisco XR 12000 PRP-3 4GB Memory (2x2GB DIMM) (spare) | MEM-PRP3-4G= |
| Cisco XR 12000 PRP-3 8GB Memory (2x4GB DIMM) (includes two 8GB for internal and external memory) | MEM-PRP3-8G |
| Cisco XR 12000 PRP-3 8GB Memory (2x4GB DIMM) | MEM-PRP3-8G= |
| Cisco XR 12000 PRP-3 2GB Compact Flash (option and spare) | FLASH-PRP3-2G FLASH-PRP3-2G= |
| Cisco XR 12000 PRP-3 4GB Compact Flash (option and spare) | FLASH-PRP3-4G FLASH-PRP3-4G= |
| Cisco XR 12000 PRP-3 80G Hard Drive (option only) | HD-PRP3 |

Cisco Services

Cisco has earned high customer satisfaction ratings for its wide range of support offerings for service providers. Whether the goal is speed to market, maximizing network availability, or enhancing customer satisfaction and retention, Cisco is committed to the success of service providers.

For More Information

The Cisco XR 12000 Series Routers are a portfolio of intelligent routing solutions that scale from 2.5-Gbps to n x 10-Gbps capacity per slot, enabling carrier-class IP/MPLS networks and accelerating the evolution toward IP Next-Generation Networks (NGNs). Built for investment protection, this portfolio delivers up to 1.28 terabits per second (Tbps) switching capacity with wire-speed feature performance, scalability, and graceful hardware and software upgrade paths.

For a detailed list of Cisco IOS® XR Software features supported on these products, refer to the release notes of the appropriate version.

For more information about Cisco service and support programs and benefits, visit:

<https://www.cisco.com/c/en/us/services/order-services.html>.

For more information about the Cisco XR 12000 Performance Route Processor-3, visit:

<http://www.cisco.com/go/12000>.



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