

## Cisco XR 12000 and 12000 Series Performance Route Processor-2

The Cisco® XR 12000 and 12000 Series Performance Route Processor-2 (PRP-2) is the next-generation route processor for all Cisco XR 12000 and 12000 series routers. The Cisco PRP-2 offers up to 100-percent performance improvement on most system tasks, up to 4 GB of memory, a Gigabit Ethernet management port, and a hard drive option. The Cisco PRP-2 delivers the scalability needed for service and network convergence. It also provides a Building Integrated Timing Supply (BITS) interface, a component of the Cisco XR 12000 and Cisco 12000 series BITS architecture that will enable network service synchronization on the platform in the future.

### Product Overview

The Cisco PRP-2 (Figure 1) is the next-generation route processor for the Cisco XR 12000 and 12000 series routers, addressing the unique route processing requirements of carrier-grade IP and Multiprotocol Label Switching (MPLS) packet infrastructures. It 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 operating system software system images to all installed line cards upon powering up
- Providing out-of-band system console and auxiliary ports and an Ethernet port 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 and 12000 Series PRP-2



The Cisco PRP-2 delivers all these functions with enhanced performance and capabilities. It also delivers the following feature enhancements (depending on the software version running):

- Gigabit Ethernet management port
- Hard-drive support (optional part)
- BITS input ports
- Up to 4 GB compact image Flash memory support (optional part)
- Memory scalability up to 4 GB

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

For a detailed list of feature support for Cisco IOS® XR Software and Cisco IOS Software on these products, refer to the release notes of the appropriate version.

## Product Specifications

**Table 1.** Technical Specifications

Description	Specification
Chassis Compatibility	<ul style="list-style-type: none"> <li>• Cisco 12816, 12810, 12416, 12410, 12406, 12404, 12016, 12012, 12010, 12008, 12006, and 12004 routers</li> <li>• Cisco XR 12416, XR 12410, XR 12406, XR 12404, XR 12016, XR 12010, XR 12006, and XR 12004 routers</li> </ul>
PRP-2 Memory Options	<ul style="list-style-type: none"> <li>• One or two 1-GB synchronous dynamic RAM (SDRAM)</li> <li>• One or two 2-GB SDRAM modules</li> <li>• 64-MB Advanced Technology Attachment (ATA) PC Card</li> <li>• 128-MB ATA PC Card</li> <li>• 256-MB ATA PC Card</li> <li>• 512-MB ATA PC Card</li> <li>• 1-GB ATA PC Card</li> <li>• 2-GB ATA PC Card</li> <li>• 4-GB ATA PC Card</li> <li>• 1-GB compact flash for image storage</li> <li>• 2-GB compact flash for image storage</li> <li>• 4-GB compact flash for image storage</li> <li>• 40-GB hard drive</li> </ul>
Connectivity	<ul style="list-style-type: none"> <li>• Console port (RJ-45 connector)</li> <li>• Auxiliary port (RJ-45 connector)</li> <li>• Two 10/100 Ethernet ports (RJ-45 connectors)</li> <li>• One 10/100/1000 Ethernet port over copper (with Cisco IOS Software Release 12.0(30)S)</li> <li>• Two RJ-48 connectors for BITS input clocks (for future BITS option)</li> </ul>

**Table 2.** Power Requirements

Description	Specification
Power	60W
Indicators	Alphanumeric and LED status display

**Table 3.** Physical and Environmental Specifications

Description	Specification
Temperature	<ul style="list-style-type: none"> <li>Operating: 32 to 104°F (0 to 40°C)</li> <li>Storage: -4 to 149°F (-20 to 65°C)</li> </ul>
Humidity	<ul style="list-style-type: none"> <li>Operating (noncondensing): 10–90%</li> <li>Storage (noncondensing): 5–95%</li> </ul>
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"> <li>UL 60950</li> <li>CSA 22.2-No. 60950</li> <li>EN60950</li> <li>IEC 60950 CB Scheme</li> <li>ACA TS001</li> <li>AS/NZS 3260</li> </ul>
EMI	<ul style="list-style-type: none"> <li>FCC Class A</li> <li>ICES 003 Class A</li> <li>AS/NZS 3548 Class B</li> <li>CISPR 22 Class B</li> <li>EN55022/EN50082-1 Class B</li> <li>ETSI EN 300 386 (EN55022 Class B)</li> <li>VCCI Class B</li> </ul>
Immunity	<ul style="list-style-type: none"> <li>EN 61000-4-2, ESD Level 4 (15-kV air, 8-kV contact)</li> <li>EN 61000-4-3, radiated immunity Level 3 (10V/m)</li> <li>EN 61000-4-4 EFT Level 4</li> <li>EN 61000-4-5 surge</li> <li>EN 61000-4-6 conducted immunity Level 3 (10V)</li> <li>EN 61000-4-11 voltage dips and sags</li> <li>EN 55024</li> </ul>
ETSI	EN 300 386/EN 300 386-2 Class B
Network Equipment Building Standards (NEBS)	<p>This product is designed to meet the following requirements (qualification in progress):</p> <ul style="list-style-type: none"> <li>SR-3580---NEBS: criteria levels (Level 3 compliant)</li> <li>GR-63-Core---NEBS: physical protection</li> <li>GR-1089-Core---NEBS: EMC and safety</li> </ul>

## Availability and Ordering

**Table 5.** Ordering Information

Product Description	Part Number
Cisco XR 12000 and 12000 Series Performance Router Processor-2	<ul style="list-style-type: none"> <li>PRP-2</li> <li>XR-PRP-2</li> </ul>
Cisco XR 12000 and 12000 Series Performance Router Processor-2 (redundant option)	<ul style="list-style-type: none"> <li>PRP-2/R</li> <li>XR-PRP-2/R</li> </ul>
Cisco XR 12000 and 12000 Series Performance Router Processor-2 (spare)	<ul style="list-style-type: none"> <li>PRP-2=</li> </ul>
Cisco 12000 Series One 1-GB SDRAM	<ul style="list-style-type: none"> <li>MEM-PRP-1G</li> <li>MEM-PRP-1G=</li> </ul>
Cisco 12000 Series Two 1-GB SDRAM, available as factory upgrade only	<ul style="list-style-type: none"> <li>2MEM-PRP2-1G</li> </ul>
Cisco 12000 Series 2-GB SDRAM	<ul style="list-style-type: none"> <li>MEM-PRP2-2G</li> <li>XR-MEM-PRP2-2G</li> <li>MEM-PRP2-2G=</li> </ul>

Product Description	Part Number
Cisco 12000 Series 4-GB SDRAM	<ul style="list-style-type: none"> <li>MEM-PRP2-4G</li> <li>XR-MEM-PRP2-4G</li> </ul>
Cisco 12000 Series 64-MB ATA PC Card (flash disk)	<ul style="list-style-type: none"> <li>MEM-12KRP-FD64M</li> <li>MEM-12KRP-FD64M=</li> </ul>
Cisco 12000 Series 128-MB ATA PC Card (flash disk) (and spare)	<ul style="list-style-type: none"> <li>MEM-12KRP-FD128M</li> <li>MEM-12KRP-FD128M=</li> </ul>
Cisco 12000 Series 256-MB ATA PC Card (flash disk) (and spare)	<ul style="list-style-type: none"> <li>MEM-12KRP-FD256M</li> <li>MEM-12KRP-FD256M=</li> </ul>
Cisco 12000 series 512-MB ATA PC Card (flash disk) (and spare)	<ul style="list-style-type: none"> <li>MEM-12KRP-FD512M</li> <li>MEM-12KRP-FD512M=</li> </ul>
Cisco 12000 Series 1-GB ATA PC Card (flash disk) (and spare)	<ul style="list-style-type: none"> <li>MEM-12KRP-FD1G</li> <li>MEM-12KRP-FD1G=</li> </ul>
Cisco 12000 series 2-GB ATA PC Card (flash disk) (and spare)	<ul style="list-style-type: none"> <li>MEM-FD2G</li> <li>XR-MEM-FD2G</li> <li>MEM-FD2G=</li> </ul>
Cisco 12000 series 4-GB ATA PC Card (flash disk) (and spare)	<ul style="list-style-type: none"> <li>MEM-FD4G</li> <li>MEM-FD4G=</li> </ul>
Cisco 12000 Series 40-GB Hard Drive for PRP-2 (and spare)	<ul style="list-style-type: none"> <li>HD-PRP2-40G</li> <li>HD-PRP2-40G=</li> </ul>
Cisco 12000 series 2-GB Compact Flash Module for PRP-2 (and spare)	<ul style="list-style-type: none"> <li>FLASH-2G</li> <li>XR-FLASH-2G</li> <li>FLASH-2G=</li> </ul>
Cisco 12000 series 4-GB Compact Flash Module for PRP-2 (and spare)	<ul style="list-style-type: none"> <li>FLASH-4G</li> <li>FLASH-4G=</li> </ul>
Cisco 12000 Series 1-GB Compact Flash Module for PRP-2 (and spare)	<ul style="list-style-type: none"> <li>FLASH-PRP2-1G</li> <li>FLASH-PRP2-1G=</li> </ul>

## Service and Support

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

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

[http://www.cisco.com/public/Support\\_root.shtml](http://www.cisco.com/public/Support_root.shtml)

For more information about the Cisco XR 12000 and 12000 Series Performance Route Processor-2, visit: <http://www.cisco.com/go/12000>



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