

## Cisco 7200VXR Series NPE-G2 Network Processing Engine

Increasingly, business applications and services affect aggregation requirements and router-integrated services across the WAN and metropolitan-area network (MAN), at both, the branch office and headquarter.

Consequently, to continue to meet the increasing need for performance for router-integrated services at the branch office and headquarters and to maintain exceptional value and flexibility, Cisco Systems® introduces the newest processor for the Cisco® 7200VXR Series—the Cisco 7200VXR NPE-G2 Network Processing Engine (Figure 1). The Cisco NPE-G2 addresses the demand for performance and flexibility by further increasing its processing capacity and helping enable the latest Cisco IOS® Software features. Table 1 lists its features.

**Figure 1.** Cisco 7200VXR Series NPE-G2



**Table 1.** Features of Cisco NPE-G2

Feature	Description
<b>Performance of up to 2 Million Packets per Second (pps) in Cisco Express Forwarding Switching</b>	<ul style="list-style-type: none"> <li>• Doubles the performance compared to Cisco NPE-G1</li> <li>• Dramatically increases the performance and scalability of the Cisco 7200VXR Series in WAN and MAN applications for both enterprises and service providers</li> </ul>
<b>Modularity</b>	<ul style="list-style-type: none"> <li>• Helps enable maximum investment protection through the ability to upgrade processors incrementally</li> </ul>
<b>Backward Compatibility with Existing Port Adapters (with a few exceptions)</b>	<ul style="list-style-type: none"> <li>• Provides investment protection through backward compatibility</li> <li>• <b>Note:</b> The following end-of-sale port adapters are not supported: <ul style="list-style-type: none"> <li>– Cisco Fibre Channel over IP Port Adapter (PA-FC-1G; this port adapter is end-of-sale status as of December 3, 2004)</li> <li>– Cisco 1-Port OC-12, Dual-Width DPT Port Adapter (PA-SRP-OC12; this port adapter is end-of-sale status as of July 15, 2005)</li> <li>– Cisco VPN Acceleration Module (SA-VAM; this service adapter is end-of-sale status as of April 28, 2006)</li> <li>– Cisco VPN Acceleration Module 2 (SA-VAM2; this service adapter is end-of-sale status as of April 28, 2006)</li> </ul> </li> </ul>
<b>Three Fixed Gigabit Ethernet Ports (10/100/1000-Mbps Copper or Small Form-Factor Pluggable Optics [SFP])</b>	<ul style="list-style-type: none"> <li>• Maximizes LAN connectivity and performance without taking up bandwidth points or midplane capacity</li> </ul>

Feature	Description
<b>Built-in I/O Function (Compact Flash Memory, Console Port, Auxiliary Port, and Bootflash Memory)</b>	<ul style="list-style-type: none"> <li>Reduces costs (Note: An I/O controller can still be used. The Cisco NPE-G2 is supported with the Cisco 7200VXR Series I/O controllers with the following part numbers: C7200-I/O, C7200-I/O-2FE, and C7200-I/O-GE+E.)</li> </ul>
<b>Support for Third Peripheral-Component-Interconnect (PCI) Bus to the I/O Controller Slot</b>	<ul style="list-style-type: none"> <li>Frees the current I/O controller ports from bandwidth allocation, allowing two PCI buses to be dedicated to the port adapter slots</li> <li>Provides cost-effective way for a slot expansion by using port adapter jacket card</li> <li>Provides a dedicated slot for the high-performance VPN services adapter</li> </ul>
<b>Double the Speed of the PCI Bus on the I/O slot</b>	<ul style="list-style-type: none"> <li>Dramatically increases the performance of Cisco 7200VXR Series VPN Services Adapter (VSA)</li> </ul>
<b>1 GB of DRAM Default Memory</b>	<p>Delivers the most amount of memory by default compared to existing Cisco 7200VXR Series network processing engines, offering the following benefits:</p> <ul style="list-style-type: none"> <li>Supports more routes and routing tables</li> <li>Supports more Multiprotocol Label Switching (MPLS) virtual routing and forwarding instances (VRFs)</li> <li>Supports more sessions for broadband aggregation</li> <li>Helps enable higher scalability on features such as NetFlow, Network Address Translation (NAT), access control lists (ACLs), and more</li> <li>Offers post-first customer shipment (FCS) support for optional upgrade to 2 GB DRAM</li> </ul>
<b>Cisco IOS Software</b>	<ul style="list-style-type: none"> <li>Supports a wide range of IP and non-IP network services, including quality of service (QoS), MPLS, broadband aggregation, integrated security, encryption, voice, and more</li> </ul>
<b>Dedicated Management for 10/100-Mbps Ethernet</b>	<ul style="list-style-type: none"> <li>Reduces costs and protects port density of the chassis</li> </ul>
<b>Two USB Ports</b>	<ul style="list-style-type: none"> <li>Provides a large, removable storage for files</li> <li>Stores security e-tokens for VPN applications</li> </ul>
<b>Digital Diagnostics on SFP Interfaces</b>	<ul style="list-style-type: none"> <li>Provides a powerful tool that monitors many manageable parameters, including optical transmit and receive power, voltage and temperature measurement, and factory parameters</li> </ul>
<b>Time Domain Reflectometry (TDR) on Copper Interfaces</b>	<ul style="list-style-type: none"> <li>Provides an effective method of isolating fault at the remote end of the copper wire by monitoring reflected pulsed signals</li> </ul>

## NEW FEATURES

With the introduction of the Cisco NPE-G2, the following is offered (refer to Table 1 for details):

- Provides double the performance compared to the Cisco 7200VXR NPE-G1—up to 2 million pps in Cisco Express Forwarding
- Offers three 10/100/1000-Mbps copper Ethernet ports and optical ports that do not consume any bandwidth points
- Provides one dedicated 10/100-Mbps copper Ethernet port for management
- Provides two USB ports for general storage and security token storage
- Offers 1 GB of DRAM memory by default; post-FCS: Optional upgrade to 2 GB DRAM
- Eliminates the requirement for an I/O controller
- Extends the use of the available I/O slot for a single port adapter or a Cisco 7200VXR VPN Service Adapter (part number C7200-VSA) (when available)
- Offers greatly improved price/performance ratio

## UPGRADE PATHS

The Cisco NPE-G2 is part of the Cisco Technology Migration Program (TMP). Customers are encouraged to review their networking requirements and to use the TMP to upgrade from previous generations of Cisco 7200VXR Series network processing engines to the Cisco NPE-G2. Refer to <http://www.cisco.com/go/TMP> and contact your local Cisco account representative related to the TMP.

## AVAILABILITY

The Cisco 7200VXR Series NPE-G2 is available and supported as of Cisco IOS Software Special Release 12.4(4)XD. The Cisco NPE-G2 will also be supported in Release 12.4T (as of fifth release of 12.4T) as well as—in the future—on Release 12.5 Mainline and Release 12.2SB.

The Cisco NPE-G2 is supported in the Cisco 7204VXR and Cisco 7206VXR chassis.

## ORDERING INFORMATION

Table 2 gives ordering information for the Cisco NPE-G2.

**Table 2.** Ordering Information for Cisco NPE-G2

Part Number	Description
<b>NPE-G2</b>	Cisco NPE-G2, including 1-GB default DRAM and 256-MB default flash memory
<b>NPE-G2=</b>	Cisco NPE-G2, including 1-GB default DRAM and 256-MB default flash memory, spare
<b>MEM-NPE-G2-1GB</b>	One 1-GB memory module for the Cisco NPE-G2
<b>MEM-NPE-G2-1GB=</b>	One 1-GB memory module for the Cisco NPE-G2, spare
<b>MEM-NPE-G2-FLD256</b>	256-MB Compact Flash disk for the Cisco NPE-G2
<b>MEM-NPE-G2-FLD256=</b>	256-MB Compact Flash disk for the Cisco NPE-G2, spare
<b>IO-CONTROLR-BLANK=</b>	I/O controller slot blank, spare
<b>MEMUSB-64FT</b>	64-MB USB flash token for Cisco 1800, 2800, 3800, and 7200 series
<b>MEMUSB-64FT=</b>	64-MB USB flash token for Cisco 1800, 2800, 3800, and 7200 series, spare
<b>MEMUSB-128FT</b>	128-MB USB flash token for Cisco 1800, 2800, 3800, and 7200 series
<b>MEMUSB-128FT=</b>	128-MB USB flash token for Cisco 1800, 2800, 3800, and 7200 series, spare
<b>MEMUSB-256FT</b>	256-MB USB flash token for Cisco 1800, 2800, 3800, and 7200 series
<b>MEMUSB-256FT=</b>	256-MB USB flash token for Cisco 1800, 2800, 3800, and 7200 series, spare

## FOR MORE INFORMATION

For more information about the Cisco NPE-G2, visit <http://www.cisco.com/go/7200> or contact your local Cisco account representative.

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