

Cisco 7200 VXR Series Routers Quick Look Guide

The Cisco 7200 VXR Series Router delivers exceptional performance/price with its compact form factor, modularity, scalability, and wide range of deployment options. With processing speeds up to 2 Million packets per second (pps), port adapters ranging from NxDS0 to Gigabit Ethernet and OC-3, and an unparalleled number of high-touch IP services, the Cisco 7200 VXR is an excellent choice for the Services Aggregation WAN/MAN edge, with features that support the following deployments:

- WAN Edge-Award-winning quality-of-service (QoS) feature performance
- Broadband Aggregation-Up to 16,000 PPP sessions per chassis
- Multiprotocol Label Switching (MPLS) PE-Leading choice for provider-edge deployment
- Voice, video, and data integration-Time-division multiplexing (TDM)-enabled VXR chassis and voice port adapters
- IP Security (IPsec) virtual private network (VPN)-Scalable to 5000 tunnels per chassis
- High-end Customer Premise Equipment (CPE)
- IP-to-IP Gateway support-Provides a network-to-network interface point for signaling interworking (H.323, SIP), media interworking, address and port translations (privacy and topology hiding), billing and CDR normalization, and QoS and bandwidth management (QoS marking using TOS)

Cisco 7200 VXR Features And Benefits

Table 1. Cisco 7200 VXR Features and Benefits

| Features | Benefits |
|--|---|
| Compact Form Factor | With a 3-RU chassis, the Cisco 7200 VXR is an ideal solution for a stackable, scalable midrange routing solution. |
| Performance/Price Leadership | With processing capacity of up to 2 Mpps, the Cisco 7200 VXR is the most powerful single-processor platform from Cisco Systems. |
| IP Services Leadership | The Cisco 7200 VXR is the leading platform for new feature development and currently has an unparalleled number of high-touch IP services. |
| Services Acceleration | The VPN Acceleration delivers hardware-accelerated IPsec services for a variety of solution areas-including IPsec VPN and network-based VPN. |
| Voice-Enabled | The Cisco 7200 VXR provides full multi-service gateway functionality for voice over IP, Frame Relay or ATM as well as IP-to-IP Gateway support. |
| Unparalleled Connectivity Options | The Cisco 7200 VXR provides high port density and extensive LAN and WAN (up to Gigabit ethernet and OC-3) connectivity options, dramatically reducing the cost per port and allowing flexible deployment options. |
| Investment Protection-Scalability, Common Port Adapters, and a Wide Range of Deployment Options | The Cisco 7200 VXR port and service adapters, combined with the Cisco 7500, and 7600 product lines, simplify stocking of spares and protecting customer investment in interfaces. |
| Full Cisco IOS Support | The Cisco 7200 VXR supports network services, including quality of service, security, compression, and encryption at high speeds. |

Flexibility, Modularity and Performance in a Compact Form Factor

Table 2. Cisco 7200 VXR Target Applications

| Application | Benefit |
|---|---|
| WAN Edge | With an unparalleled number of high-touch IP services and hardware accelerated WAN Edge and QoS services, the Cisco 7200 VXR is an ideal WAN Edge connectivity or aggregation solution. |
| Broadband Subscriber Aggregation | The Cisco 7200 VXR supports up to 16,000 PPP or L2TP sessions. This enables aggregation of a large number of users into a compact form factor saving rack space and reducing hardware investment dollars. |
| MPLS PE Functionality | The Cisco 7200 VXR is an ideal MPLS PE solution. MPLS fuses the intelligence of routing with the performance of switching to scale existing networks to meet future growth demands. Networks can handle more traffic, users, media-rich data or bandwidth-intensive applications. |
| IPSec VPN | <ul style="list-style-type: none"> Using the VPN Acceleration Module service adapter (part number: SA-VAM2+), the Cisco 7200 VXR can aggregate up to 5000 3DES and AES encrypted sessions per chassis. Further, with the new VPN Services Adapter Module (part number: C7200-VSA), three times more performance is offered. |
| Voice and Data Integration | The Cisco 7200 VXR provides the highest density Cisco voice gateway solution with 20 T1/18 E1 trunk terminations in 3RU. The Cisco 7200 VXR, with its advanced QoS features, can also integrate voice and data within the same chassis enabling customers to transport voice over data networks, save on capital equipment costs associated with two networks, TDM and packet-based, including the recurring management costs of each. |
| IP-to-IP Gateway Support | <p>Direct IP-interconnections between VoIP networks lower costs, lower latency, improve voice quality, and offer greater flexibility to support emerging services when compared with public-switched telephone network (PSTN) or time-division multiplexing (TDM) interconnections.</p> <p>The Cisco Multiservice IP-to-IP Gateway provides a network-to-network interface point for:</p> <ul style="list-style-type: none"> Signaling interworking (H.323, SIP) Media interworking Address and port translations (privacy and topology hiding) Billing and CDR normalization QoS and bandwidth management (QoS marking using TOS) |

Table 3. Cisco 7200 VXR: Processor, Port/Service Adapter and Memory Support

| Feature | Description | Part Number |
|--|--|--|
| Network Processing Engines | <ul style="list-style-type: none"> 2Mpps 1Mpps 400Kpps 225Kpps | <ul style="list-style-type: none"> NPE-G2 NPE-G1 NPE-400 NPE-225 |
| I/O Cards | <ul style="list-style-type: none"> 2-port Fast Ethernet/Ethernet 1-port GE + 1-port Ethernet No LAN ports | <ul style="list-style-type: none"> C7200 VXR-I/O-2FE/E C7200 VXR-I/O-GE+E C7200 VXR-I/O-2FE/E |
| Flash PCMCIA Memory for I/O Controllers | <ul style="list-style-type: none"> 64 MB (default) 128 MB (max) | <ul style="list-style-type: none"> MEM-I/O-FLD64M MEM-I/O-FLD128M |
| Compact Flash Memory for NPE-G1 | <ul style="list-style-type: none"> 64 MB (default) 128 MB 256 MB (max) | <ul style="list-style-type: none"> MEM-NPE-G1-FLD64 MEM-NPE-G1-FLD128 MEM-NPE-G1-FLD256 |
| Compact Flash Memory for NPE-G2 | <ul style="list-style-type: none"> 256M (default and max) | <ul style="list-style-type: none"> MEM-NPE-G2-FLD256 |
| DRAM Memory | <ul style="list-style-type: none"> For NPE-225: <ul style="list-style-type: none"> 128 MB (default) 256 MB (max) For NPE-400: <ul style="list-style-type: none"> 256 MB (default) 512 MB (max) For NPE-G1: <ul style="list-style-type: none"> 256 MB (default) 512 MB 1 GB (max) For NPE-G2: <ul style="list-style-type: none"> 1 GB (default) 2 GB (in the future) | <ul style="list-style-type: none"> For NPE-225: <ul style="list-style-type: none"> MEM-SD-NPE-128MB MEM-SD-NSE-256MB For NPE-400: <ul style="list-style-type: none"> MEM-NPE-400-256MB MEM-NPE-400-512MB For NPE-G1: <ul style="list-style-type: none"> MEM-NPE-G1-256MB MEM-NPE-G1-512MB MEM-NPE-G1-1GB For NPE-G2: <ul style="list-style-type: none"> MEM-NPE-G2-1GB |

| Feature | Description | Part Number |
|--|--|--|
| Port Adapter Jacket Card | <p>The Cisco 7200 VXR Series Port Adapter Jacket Card supports a single (selected high bandwidth) Port/Service Adapter. The Jacket Card can be inserted into the IO Slot of the Cisco 7204 VXR or Cisco 7206 VXR chassis and consequently increases the slot capacity from 4 to 5 slots and 6 to 7 slots respectively.</p> <p>Note: The Jacket Card supports the following Port/Service Adapters:</p> <ul style="list-style-type: none"> • With NPE-G1: PA-POS-2OC3, PA-MC-STM1-MM, PA-MC-STM1-SMI, PA-MC-2CT3+, SA-VAM2, and SA-VAM2+ • With NPE-G2: PA-POS-2OC3, PA-MC-STM1-MM, PA-MC-STM1-SMI, PA-MC-2CT3+, and SA-VAM2+ • With NPE-G1 and NPE-G2: PA-A3-T3, PA-A3-E3, PA-A3-OC3MM, PA-A3-OC3SMI, PA-A3-OC3SML, PA-A6-T3, PA-A6-E3, PA-A6-OC3MM, PA-A6-OC3SMI, PA-A6-OC3SML | <ul style="list-style-type: none"> • C7200-JC-PA • C7200-JC-PA= (spare) |
| ATM Port Adapters | <ul style="list-style-type: none"> • 1-port OC3/STM1 Enhanced multi- and single-mode • 1-port DS3 Enhanced • 1-port E3 Enhanced • 8-port T1 IMA Enhanced • 8-port E1 IMA Enhanced • ATM Circuit Emulation Services | <ul style="list-style-type: none"> • PA-A3-OC3MM, PA-A3-OC3SM • PA-A3-T3 • PA-A3-E3 • PA-A3-8T1IMA • PA-A3-8E1IMA • PA-A2-4T1, PA-A2-4E1 |
| SONET Port Adapters | <ul style="list-style-type: none"> • 1-port OC3/STM1 POS single- and multi-mode • 1-port OC3/STM1 POS with SFP pluggable optics • 2-port OC3/STM1 POS with SFP pluggable optics | <ul style="list-style-type: none"> • PA-POS-OC3-SM, PA-POS-OC3-MM • PA-POS-1OC3 • PA-POS-2OC3 |
| Dynamic Packet Transport (DPT) | <ul style="list-style-type: none"> • 1-port OC12 single- and multi-mode | <ul style="list-style-type: none"> • PA-SRP-OC12SM, PA-SRP-OC12MM |
| Voice-Enabled Port Adapters | <ul style="list-style-type: none"> • 1-port T1/E1 Enhanced Digital Voice-24 Channels • 1-port T1/E1 Enhanced Digital Voice-30 Channels • 2-port T1/E1 High Capacity Digital Voice • 2-port T1/E1 Medium Capacity Digital Voice • 2-port T1/E1 MIX-enabled T1/E1 • 4-port T1/E1 MIX-enabled T1/E1 • 8-port T1/E1 MIX-enabled T1/E1 | <ul style="list-style-type: none"> • PA-VXA-1TE1-24+ • PA-VXA-1TE1-30+ • PA-VXC-2TE1+ • PA-VXB-2TE1+ • PA-MCX-2TE1 • PA-MCX-4TE1 • PA-MCX-8TE1 |
| Multichannel and ISDN Port Adapters | <ul style="list-style-type: none"> • 2-port Enhanced Multichannel T3 • 1-port Multichannel T3 • 1-port Multichannel E3 • 1-port Multichannel STM-1 • 2-port Multichannel T1 (CSU/DSU & PRI) • 4-port Multichannel T1 (CSU/DSU & PRI) • 2-port Multichannel E1 (G.703/G.704&PRI) • 8-port Multichannel E1 (G.703/G.704&PRI) • 8-port ISDN BRI (S/T) • 4-port ISDN BRI (U) • 8-port Multichannel T1/E1 (CSU/DSU and ISDN PRI) | <ul style="list-style-type: none"> • PA-MC-2T3+ • PA-MC-T3 • PA-MC-E3 • PA-MC-STM-1 • PA-MC-2T1 • PA-MC-4T1 • PA-MC-2E1/120 • PA-MC-8E1/120 • PA-8B-S/T • PA-4B-U • PA-MC-8TE1+ |
| High Speed Serial Port Adapters | <ul style="list-style-type: none"> • 1-port HSSI • 2-port HSSI • 1-port High Speed Enhanced T3 Serial (with DSU) • 2-port High Speed Enhanced T3 Serial (with DSU) • 1-port High Speed E3 Serial (with DSU) • 2-port High Speed E3 Serial (with DSU) | <ul style="list-style-type: none"> • PA-H • PA-2H • PA-T3+ • PA-2T3+ • PA-E3 • PA-2E3 |

| Feature | Description | Part Number |
|---|--|--|
| Serial Port Adapters | <ul style="list-style-type: none"> • 4-port Serial, enhanced • 8-port Serial, V.35, RS-232, or X.21 • 4-port Serial E1 (G.703) | <ul style="list-style-type: none"> • PA-4T+ • PA-8T-V35, PA-8T-232, PA-8T-X21 • PA-4E1G/75, PA-4E1G/120 |
| Mainframe Channel Connection Port Adapters | <ul style="list-style-type: none"> • 1-port ESCON Channel Port Adapter | <ul style="list-style-type: none"> • PA-4C-E |
| LAN Port Adapters | <ul style="list-style-type: none"> • 4-port 10BaseT • 8-port 10BaseT • 5-port 10BaseFL • 1-port 100BaseTX, FX • 2-port 100BaseTX, FX • 1-port Gigabit Ethernet • 4-port Token Ring 4/16Mbps, Half/Full Duplex | <ul style="list-style-type: none"> • PA-4E • PA-8E • PA-5EFL • PA-FE-TX, PA-FE-FX • PA-2FE-TX, PA-2FE-FX • PA-GE • PA-4R-DTR |
| Service Adapter Modules | <ul style="list-style-type: none"> • VPN Acceleration Module • VPN Acceleration Module 2 • VPN Acceleration Module 2+ • VPN Service Adapter (VSA) (when available) | <ul style="list-style-type: none"> • SA-VAM; note: End-of-Sale as of April 28, 2006 • SA-VAM2; note: End-of-Sale as of April 28, 2006 • SA-VAM2+ • C7200-VSA |



Americas Headquarters
Cisco Systems, Inc.
170 West Tasman Drive
San Jose, CA 95134-1706
USA
www.cisco.com
Tel: 408 526-4000
800 553-NETS (6387)
Fax: 408 527-0883

Asia Pacific Headquarters
Cisco Systems (USA) Pte. Ltd.
168 Robinson Road
#28-01 Capital Tower
Singapore 068912
www.cisco.com
Tel: +65 6317 7777
Fax: +65 6317 7799

Europe Headquarters
Cisco Systems International BV
Haarlerbergpark
Haarlerbergweg 13-19
1101 CH Amsterdam
The Netherlands
www-europe.cisco.com
Tel: +31 0 800 020 0791
Fax: +31 0 20 357 1100

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