

CISCO 7200 AND 7301 SERIES ROUTERS

Cisco® 7200VXR Series routers deliver outstanding versatility in a compact form factor; they are particularly suitable for applications that require Gigabit Ethernet and OC-3/STM-1 Packet over SONET (POS) connectivity with exceptional IP services performance. Offering packet-processing speeds of up to one million packets per second, three built-in Gigabit Ethernet ports on the routing engine, a huge range of port-adaptor options, and an unparalleled number of sophisticated IP service capabilities, the Cisco 7200VXR is an ideal high-end branch-office aggregation router.

The latest generation of integrated services routers such as the Cisco 1800, 2800, and 3800 series platforms enable the deployment of sophisticated communications services and applications in even the smallest of remote offices. However, the ultimate success of such deployments and their operation depend on the installation of an efficient and scalable system at the network aggregation points. The Cisco 7200VXR is ideally suited to meet this challenge and deliver these applications transparently.

A primary strengths of the Cisco 7200VXR are its modularity and flexibility. It offers a choice of 4- and 6-slot chassis, a selection of processors providing up to 1 Mpps, an extensive range of LAN and WAN interfaces, and single or dual power supplies, helping enable customers to customize their systems to achieve desired levels of performance, connectivity, and capacity. The Cisco 7200VXR Series is typically deployed for general enterprise WAN aggregation, voice over IP (VoIP), security, and various other IP applications because of its exceptionally broad routing features. Its flexibility, modularity, and cost-effectiveness offer both investment protection and maximum return on investment, allowing organizations to upgrade and redeploy a Cisco 7200VXR Series router as business and network requirements change.

As a compact form factor of the Cisco 7200VXR, the Cisco 7301 uses the same processor engine as the Cisco 7200VXR to provide throughput of up to 1 Mpps. It also offers extensive port-adaptor support. Similar to the Cisco 7200VXR with the NPE-G1 Network Processing Engine, the Cisco 7301 provides three built-in 10/100/1000 Ethernet ports and support for one port adaptor. The Cisco 7301 also supports AC and DC power supplies with the option of dual power supplies in applications where increased resiliency is required.

The Cisco 7301 is most attractive when customers are looking for the performance and functions of Cisco 7200VXR Series routers but desire a more compact form factor for dedicated applications.



Figure 1.
Cisco 7206VXR and NPE-G1 processor



Figure 2.
Cisco 7301

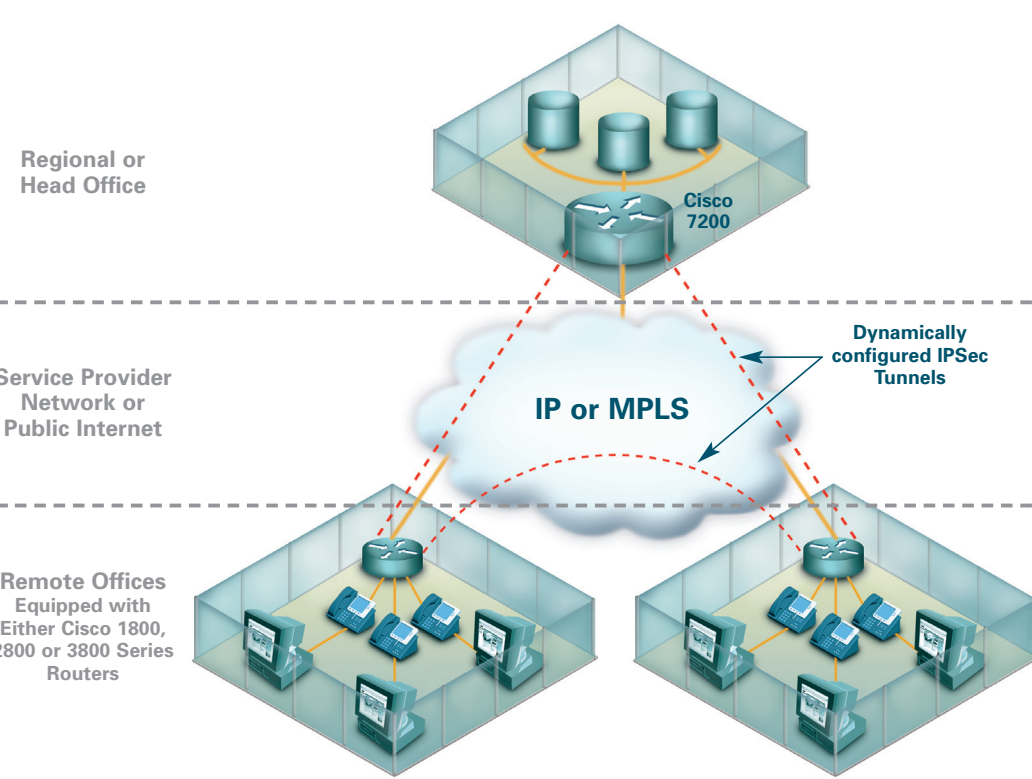


Figure 4.
Dynamic Multipoint VPNs Greatly Simplify the Creation and Management of Site-to-Site Encrypted Tunnels

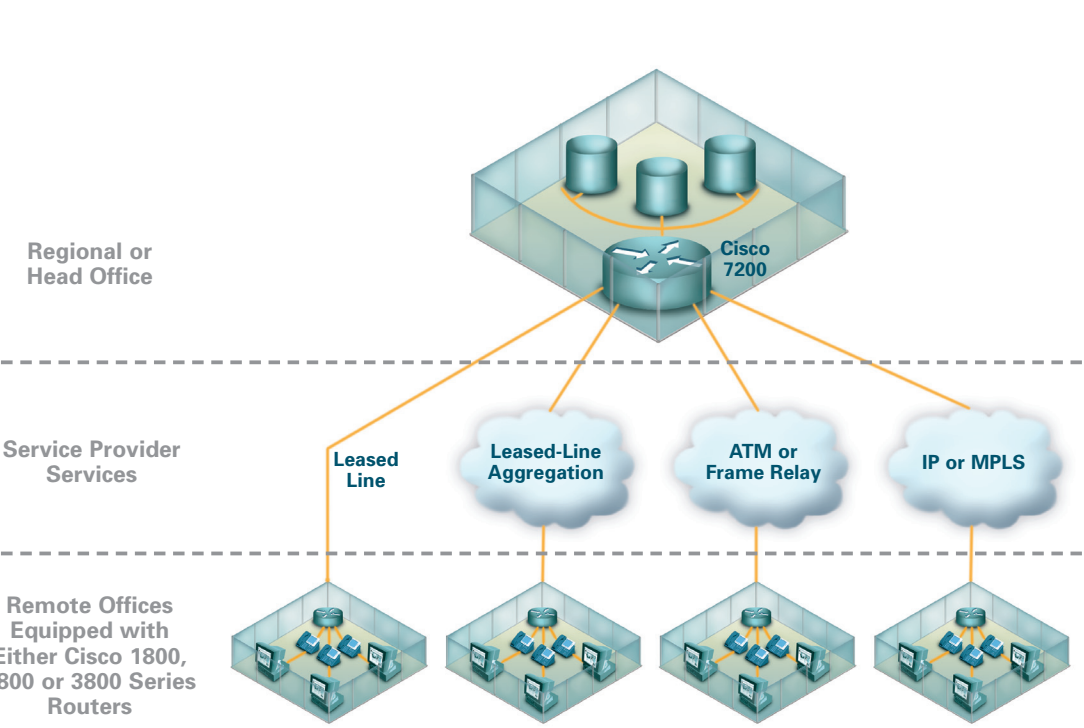


Figure 3.
The Cisco 7200VXR Offers a Huge Range of Connection Options

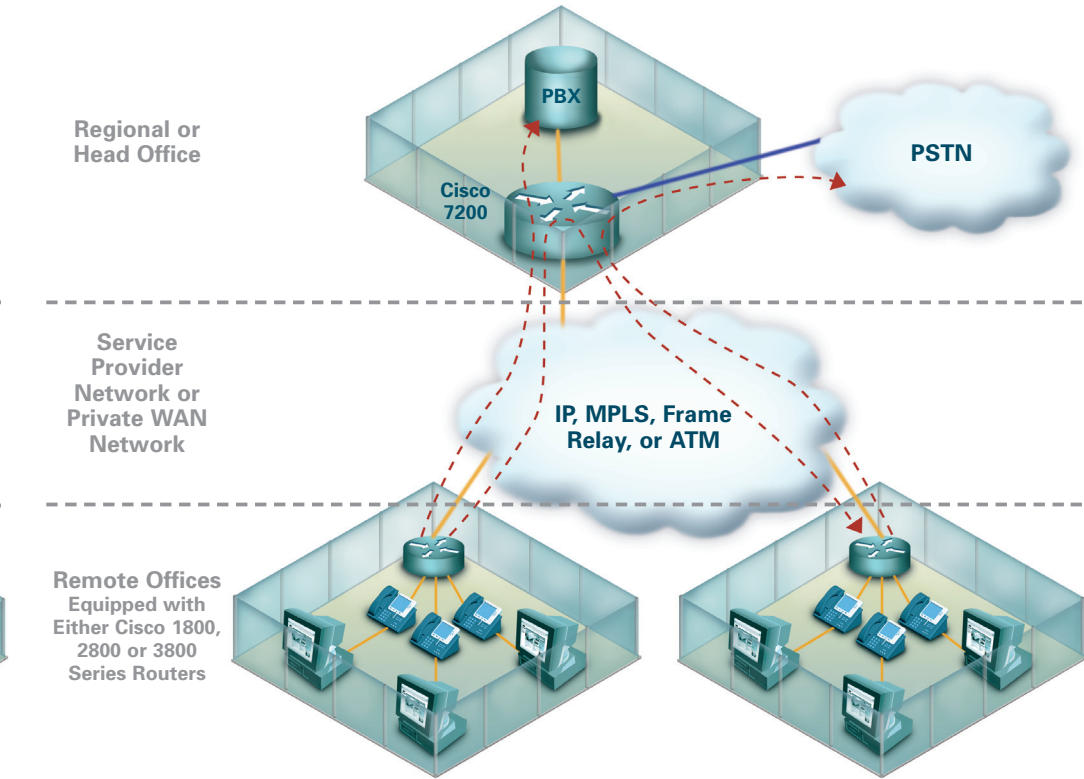


Figure 5.
The Cisco 7200VXR Enables the Deployment of Efficient and Cost-Effective Voice-over-Packet Solutions for Site-to-Site and PSTN Break-Out Solutions

Compact Form Factor

The Cisco 7200VXR can support up to six port adapters in a fully modular three-rack-unit (3RU) form factor. Up to 16 chassis can be supported in a single 7-foot rack. With its smaller form factor, the Cisco 7301 provides the most powerful and feature-rich 1RU router solution in the industry.

Exceptional Value

As the most powerful Cisco single-processor platform, the Cisco 7200VXR offers customers a superior price-performance ratio supporting high-speed media and high-density configurations with up to 1 Mpps processing at a cost-effective price point.

Simplified Network Convergence

The Cisco 7200VXR Series Multiservice Interchange (MIX)-enabled backplane allows for integration of data, voice, and video in a single WAN aggregation device. With the latest quality-of-service (QoS) features, the Cisco 7200VXR Series helps enable enterprises to build highly efficient networks that can both optimize bandwidth usage and guarantee the performance of delay- and loss-sensitive applications such as voice and video.

VPN Support

Using the VPN Acceleration Module 2+ (VAM2+), the Cisco 7301 and Cisco 7200VXR Series VPN routers deliver IP Security (IPSec) encryption scalability to 280 Mbps for the most demanding headend and site-to-site VPN deployments.

Enhanced Security

The security capabilities of the Cisco 7301 and Cisco 7200VXR include support for a fully featured stateful firewall, intrusion prevention, access control lists (ACLs), and IPSec. Possessing the intelligence and performance to accurately identify, classify, and stop malicious or damaging traffic in real time, the Cisco 7301 and Cisco 7200VXR help enable the network to proactively defend itself.

Maximum ROI

A low price-per-port entry point makes the value of the Cisco 7301 and Cisco 7200VXR unbeatable, while allowing customers to easily upgrade and redeploy their equipment as network needs change. The processor-based system architecture helps ensure that new functions can be applied quickly and easily through simple software updates.

Flexibility and Modularity

A rapidly developing global commercial environment means that enterprises and organizations need solutions that can both fit their present needs and help them build toward the emerging demands of the future. To meet these challenging requirements, the Cisco 7200VXR offers a tremendous variety of feature and connectivity options that provide exceptional deployment flexibility.

The Cisco 7200VXR and Cisco 7301 draw on the extensive array of features available within Cisco IOS® Software to deliver an unrivalled range of capabilities without compromising flexibility.

Connectivity options available for the Cisco 7200VXR and 7301 include:

- Ethernet at 10 Mbps, 100 Mbps and 1 Gbps rates
- Token Ring
- High-Speed Serial Interface (HSSI)
- Enterprise Systems Connection (ESCON)
- ISDN Primary Rate Interface (PRI) and Basic Rate Interface (BRI)
- Digital voice
- Serial lines X.21, V.35, RS-232, or E1/T1 (Frame Relay or IP)
- Channelized and unchannelized E1/T1, E3/T3, and STM-1/OC-3
- ATM from E1/T1 to STM-1/OC-3
- POS STM-1/OC-3
- Dynamic Packet Transport (DPT)

Connectivity with the Cisco 7200VXR and Cisco 7301 is provided by port adaptors that are inserted into dedicated slots within the system chassis. Different port adaptors can be combined to match precisely the connection requirements based on the cost and availability of carrier services.

This breadth of connectivity options combines with flexibility and scalability to meet changing needs without requiring chassis replacement. With 100-percent modularity—processor, I/O controller, port adapter, power supply, and memory are all modular components—the Cisco 7200VXR can be continuously upgraded. This helps ensure that the Cisco 7200VXR consistently delivers the highest levels of performance and functions while preserving the original investment.

Application capabilities of the Cisco 7200VXR and 7301 include:

- Multiprotocol routing—IPv4, IPv6, Internetwork Packet Exchange (IPX), DECnet, Systems Network Architecture (SNA), etc.
- IBM SNA integration with IP networks
- Security—Stateful firewall; intrusion prevention system (IPS); hardware encryption for IPSec; Network Address Translation (NAT); ACL; and authentication, authorization, and accounting (AAA)
- Network-based application recognition (NBAR)
- Data, voice, and video integration
- Quality of service (QoS)
- Broadband aggregation (L2TP network server [LNS] and L2TP access concentrator [LAC])
- Route reflector
- Multiprotocol Label Switching (MPLS)— Provider and Provider Edge functions, MPLS virtual private networking (MPLS VPN, Layer 2 and Layer 3); MPLS QoS; and MPLS Traffic Engineering (MPLS-TE)
- Multicast
- Dynamic Multipoint VPNs (DMVPNs)

Cisco 7200VXR and 7301 Series Specifications			
Processor (NPE-G1)	700 Mhz	Weight (fully loaded chassis)	50 lb (23 kg) 11 lb (4.8 kg)
Flash Memory	64 MB (expandable to 256 MB)		
System DRAM Memory	256 MB (expandable to 1 GB)	Performance	Up to 1 million packets per second (depending on configuration)
Memory Requirements	Cisco IOS Software image dependant; refer to the Cisco IOS Software Upgrade Planner for details		
Modular Slots for Cisco 7204	4	Console Port	1
	Modular Slots for Cisco 7206	Auxiliary Port	1
	6	Built-in Ethernet ports	3 x 10/100/1000 copper or optical (Cisco 7200VXR through gigabit interface converter (GBIC), Cisco 7301 through Small Form-Factor Pluggable (SFP))
Modular Slots for Cisco 7301	1	Base Configuration for 7200VXR	4- or 6-slot chassis, 1 AC power supply, IP software
Supported Port Adapters	70+ (see table right)		
Online insertion and removal (OIR) of port adapters	Yes	Base Configuration for 7301	1-slot chassis, integrated NPE-G1 Network Processing Engine, single AC power supply
Internal Power Supply	AC or DC with optional redundancy		
AC input voltage	100–240 VAC wide input with power factor correction	Compression	Software and hardware (VAM)
DC input voltage	–24 to –60 VDC for global DC power requirements	Encryption	Software and hardware (VAM)
Power consumption (maximum)	Cisco 7200VXR	Cisco IOS Software	Supported in Cisco IOS T, S and mainline release trains
	Cisco 7301		
Field-replaceable units	Cisco 7200VXR	Useful URLs	www.cisco.com/go/7200 www.cisco.com/go/software
	Cisco 7301		
Dimensions (Height x Width x Depth)	Cisco 7200VXR	Cisco 7301	5.25 x 16.8 x 17 in. (13.3 x 42.6 x 43.2 cm) 1.73 x 17.3 x 13.9 in. (4.4 x 44 x 35.3 cm)
	Cisco 7301		

Cisco 7200VXR and 7301 Port-Adapter Support											
ATM Port-Adapter Part Numbers	Description	Cisco 7200VXR	Cisco 7301	Serial Port-Adapter Part Numbers	Description	Cisco 7200VXR	Cisco 7301	PA-MCX-2TE1	2-port MIX-enabled multichannel T1/E1 with CSU/DSU	Yes	No
PA-A3-8T1MA	8-port ATM inverse multiplexer T1	Yes	Yes	PA-4E1G/120	4-port E1 G.703 serial (120 ohm, balanced)	Yes	Yes	PA-MCX-4TE1	4-port MIX-enabled multichannel T1/E1 with CSU/DSU	Yes	No
PA-A3-8E1MA	8-port ATM inverse multiplexer E1 (120 ohm)	Yes	Yes	PA-4T+	4-port serial , enhanced	Yes	Yes	PA-MCX-8TE1	8-port MIX-enabled multichannel T1/E1 with CSU/DSU	Yes	No
PA-A3-T3	1-port ATM-enhanced T3 (4000 virtual connections)	Yes	Yes	PA-8T-232	8-port serial , RS-232	Yes	Yes	POS Port-Adapter Part Numbers	Description	Cisco 7200VXR	Cisco 7301
PA-A3-E3	1- ATM-enhanced E3 (4000 virtual connections)	Yes	Yes	PA-H	1-port HSSI	Yes	Yes	PA-POS-OC3-MM	1-port POS OC-3c/STM-1 multimode (MM)	Yes	Yes
	1-port ATM-enhanced OC-3c/STM-1 multimode, intermediate reach (IR), long reach (LR)			PA-2H	2-port HSSI	Yes	Yes	PA-POS-OC3-SMI	1-port POS OC-3c/STM-1 single mode (IR)	Yes	Yes
	(4000 virtual connections)			PA-E3	1-port E3 serial with E3 digital service unit (DSU)	Yes	Yes	PA-POS-OC3-SML	1-port POS OC-3c/STM-1 single mode (LR)	Yes	Yes
PA-A3-OC3-MM/SMI/SML		Yes	Yes	PA-2E3	2-port E3 serial with E3 DSUs	Yes	Yes	PA-POS-1OC3	1-port POS OC-3c/STM-1	Yes	Yes
PA-A6-T3	1-port ATM-enhanced T3 (8000 virtual connections)	Yes	Yes	PA-T3+	1-port T3 serial (enhanced)	Yes	Yes	PA-POS-2OC3	2-port POS OC-3c/STM-1	Yes	Yes
PA-A6-E3	1-port ATM-enhanced E3 (8000 virtual connections)	Yes	Yes	PA-2T3+	2-port T3 serial (enhanced)	Yes	Yes	PA-4C-E	1-port-enhanced ESCON channel	Yes	Yes
	1-port ATM-enhanced OC-3c/STM-1 multimode, IR, LR			Multi Channel Port-Adapter Part Numbers	Description	Cisco 7200VXR	Cisco 7301	DPT Port-Adapter Part Numbers	Description	Cisco 7200VXR	Cisco 7301
PA-A6-OC3-MM/SMI/SML	(8000 virtual connections)	Yes	Yes	PA-4B-U	4-port BRI, U interface	Yes	Yes	PA-SRP-OC12MM/SMI/SMX DPT-OC-12 MM/IR/LR		Yes	No
LAN Port-Adapter Part Numbers	Description	Cisco 7200VXR	Cisco 7301	PA-8B-S/T	8-port BRI, S/T interface	Yes	Yes	Digital Voice Port-Adapter Part Numbers	Description	Cisco 7200VXR	Cisco 7301
PA-A3-T3/E3	1-port ATM-enhanced DS-3 Ethernet	Yes	Yes	PA-MC-2T(1)	2-port multichannel T1 with integrated channel service units (CSUs)/DSUs	Yes	Yes	PA-VXC-2TE1+	2-port T1/E1 high-capacity enhanced voice	Yes	Yes
PA-2FE-TX/FX	2-port Fast Ethernet 100BASE-TX/FX	Yes	Yes	PA-MC-4T(1)	4-port multichannel T1 with integrated CSUs/DSUs	Yes	Yes	PA-VXB-2TE1+	2-port T1/E1 moderate-capacity enhanced voice	Yes	Yes
PA-4E	4-port Ethernet 10BASE-T	Yes	Yes	PA-MC-8T(1)	8-port multichannel T1 with integrated CSUs/DSUs	Yes	Yes	PA-VXA-1TE1-24+/30+	1-port T1/E1 digital voice with 24 or 30 channels	Yes	No
PA-5EFL	5-port Ethernet 10BASE-FL	Yes	Yes	PA-MC-8TE1+	8-port multichannel T1/E1	Yes	Yes	Service Adapters Part Numbers	Description	Cisco 7200VXR	Cisco 7301
PA-8E	8-port Ethernet 10BASE-T	Yes	Yes	PA-MC-2E1/120	2-port multichannel E1 with G.703 120-ohm interface	Yes	Yes	SA-VAM	VPN Acceleration Module	Yes	No
PA-FE-TX/FX	1-port Fast Ethernet 100BASE-FX/TX	Yes	Yes	PA-MC-8E1/120	8-port multichannel E1 with G.703 120-ohm interface	Yes	Yes	SA-VAM2	VPN Acceleration Module 2	Yes	Yes
PA-GE	Gigabit Ethernet	Yes	Yes	PA-MC-E3	1-port multichannel E3	Yes	Yes	SA-VAM2+	VPN Acceleration Module 2+	Yes	Yes
PA-4R-DTR	4-port dedicated Token Ring, 4/16 Mbps, half duplex (HDX) or full duplex (FDX)	Yes	No	PA-MC-T3	1-port multichannel T3	Yes	Yes				
				PA-MC-2T3+	2-port multichannel T3	Yes	Yes				
				PA-MC-STM-1MM	1-port multichannel STM-1 multimode	Yes	No				