


Cisco 7200 Series Router

Premier Customer Premise Equipment Application



To focus on their core business competencies, enterprises are increasingly outsourcing their corporate-wide area network (WAN) infrastructures to service providers who are equipped to meet demands for growing bandwidth and features in a cost-effective manner. This trend has created the need for a compact, flexible, and easy-to-manage platform for service provisioning at customer premises.

Cisco Systems supplies the broadest and most robust family of customer premise equipment (CPE) devices in the industry. Combining an unparalleled number of available services with interface flexibility and cost-effectiveness, the Cisco 7200 Series Router is a premier example of the strength of Cisco Systems' CPE portfolio.

The Cisco 7200 delivers all of the managed CPE features required by service providers for a cost-effective and flexible solution, including the following benefits:

- Breadth of services-Unparalleled number of services including quality of service (QoS), WAN edge services (NetFlow), security services such as network address translation (NAT), access control list (ACL), and hardware encryption, Multiprotocol Label Switching (MPLS), and voice, video, and data integration
- Flexibility-Versatile platform that allows service providers to use one platform for various applications and services
- Compact form factor-Three-rack unit (RU) form factor is minimal, maximizing service provider revenue per square foot
- Modular and upgradable hardware-Modular architecture enables service providers to upgrade their customers to new WAN technologies, add new services, and upgrade performance to meet the increasing need for service-enabled bandwidth without forklift equipment replacement
- Cost-effectiveness-Low entry point price per port makes the value of the Cisco 7200 at the customer premise unbeatable
- Breadth of connectivity options-Over 60 port adapters and an unparalleled number of LAN and WAN connectivity options to meet any CPE connectivity needs
- Comprehensive management services-Remote management of provisioning, troubleshooting, and software upgrades allow service providers to minimize operation costs, deploy new services, and maintain customer service-level agreements (SLAs)

Breadth of Services

With its wide variety of services, the Cisco 7200 is a versatile platform. Some of the services available on the Cisco 7200 include the following.



QoS/Bandwidth Management Services

QoS services are instrumental to the proper handling of time-sensitive traffic such as voice or video, especially when the network is shared with traditional data applications. The Cisco 7200 is an effective platform for providing a large breadth of QoS features to the network. In addition, with the NSE-1 and its Parallel Express Forwarding (PXF) processing capabilities, the Cisco 7200 can provide accelerated QoS services such as Weighted Fair Queuing (WFQ), Class-Based WFQ (CBWFQ), Weighted Random Early Detection (WRED), and committed access rate (CAR). For more information about accelerated services refer to: <http://www.cisco.com/warp/public/cc/pd/ifaa/prossor/nse1/>

MPLS

An increasing number of service providers are moving their MPLS networks to the customer edge (CE). Because of the tremendous number of MPLS features available on the Cisco 7200, it is the number one choice for MPLS edge connectivity.

Integrated Data, Voice, and Video (Multiservice) Solutions

The integrated multiservice interchange (MIX) bus on the Cisco 7200 VXR chassis delivers flexible support for hybrid environments including time-division multiplexing (TDM) voice, voice over IP (VoIP), and voice over Frame Relay (VoFR). Digital voice port adapters provide large-scale, high-capacity voice termination to private branch exchanges (PBXs) and the public switched telephone network (PSTN). With high-density Digital Signal Processors (DSPs) and T1/E1 interfaces, these modules have the horsepower to deliver up to 60 channels of highly compressed voice for bandwidth-sensitive WAN applications and up to 120 channels of toll-quality voice for large LAN and campus voice applications.

WAN Edge Services

The Cisco 7200 excels at providing high-touch IP services. Key services at the customer premise include NAT, ACLs, and NetFlow. In addition, with the NSE-1 processor and its PXF processing capabilities, the Cisco 7200 can provide accelerated WAN edge services without degrading performance. For more information about accelerated services, refer to <http://www.cisco.com/warp/public/cc/pd/ifaa/prossor/nse1/>

Virtual Private Network Edge Device

As enterprises seek to leverage the Internet to reduce costs and expand services, the Cisco 7200 is perfectly positioned to provision managed virtual private network (VPN) services. The Cisco 7200 supports VPN protocols such as IP Security (IPSec) and MPLS VPN.

Using the Integrated Services Adapter (ISA) for hardware assisted 56-bit and Triple Data Encryption Standard (3DES) IPSec encryption, the Cisco 7200 enables service providers to offer VPN services. The SA-ISA provides up to 2000 IPSec sessions for aggregating secure tunnels and up to 90 Mbps of encrypted throughput.

Firewall

The Cisco 7200 uses the Cisco IOS® Firewall Feature Set to provide robust firewall functionality and intrusion detection. In addition to protecting the network from common attacks such as Denial of Service (DoS), the Cisco IOS Firewall Feature Set supports sophisticated security services, including Content-based Access Control (CBAC), to support advanced multimedia applications such as H.323 voice and videoconferencing.

Flexibility

The tremendous number of available features and its upgrade capability make the Cisco 7200 an extremely flexible platform. This versatility allows service providers to deploy the Cisco 7200 in a wide variety of customer environments to generate continued revenue streams. When those customers require additional functionality, services, or performance, the Cisco 7200 can be re-deployed to other areas of the network.



Compact Form Factor

The Cisco 7200 is a 3RU platform and is available with either 4- or 6-port adapter expansion slots. Designed to be stackable, the Cisco 7200 provides high port density and services in a single rack. Its compact size allows service providers to conserve expensive colocation space and power.

The Cisco 7200 is an ideal CPE device for deployment in environments where multiple services can be deployed for a single customer. The Cisco 7200 provides the flexibility of multiple slots and an industry-leading variety of LAN and WAN interfaces while maintaining a compact and economical footprint.

Modular and Upgradable Hardware

The Cisco 7200 has a modular processor, I/O controller, port adapters, and power supplies, making upgrades to higher-speed connectivity and processing easy and cost-effective.

Processing Capabilities

The Cisco 7200 has packet forwarding rates of up to 400 Kpps with the NPE-400 and accelerated IP services performance with the NSE-1. The NPE-400 has the fastest forwarding rate of the Cisco 7200 processors. It is an excellent processor choice for customers deploying a wide range of features and functionality.

The NSE-1 processor uses Cisco's patented PXF technology, which is based on a programmable array of coprocessors that accelerate the IP processing to allow rich service implementation and fast packet processing. The PXF processor accelerates a variety of services (including NAT, QoS, ACLs, and NetFlow accounting), boosting performance up to 300 percent over traditional route processors. NSE-1 is an excellent processor choice when customers want to implement specific sets of services. For more information on the NSE-1, refer to <http://www.cisco.com/warp/public/cc/pd/ifaa/prossor/nse1/index.shtml>.

Breadth of Connectivity Options

To meet service providers' current and future customer needs, the Cisco 7200 provides high-speed LAN and WAN connectivity through both the I/O controller and port adapter slots. With an option of either four or six port adapter slots, the Cisco 7200 supports more than 60 interfaces with an unparalleled breadth of connectivity options. These connectivity options provide flexibility, scalability, and the ability to meet changing needs without chassis replacement. Because these port adapters are common to the Cisco 7200, 7400, and 7500 routers, and the FlexWAN module for the Cisco 7600, service providers are ensured continued investment protection. The common port adapters lower operational costs by simplifying stocking of spares and enabling platform migration at minimal costs.

Comprehensive Manageability

Cisco IOS Software provides a rich set of features and services and offers many benefits, including:

- Easy provisioning using the familiar Cisco IOS command-line interface (CLI)
- Widely deployed on over 5,000,000 units
- Leverages training investments and current product knowledge
- Easy to deploy with remote configuration and upgrade capabilities

The Cisco 7200 also integrates into the Cisco Element Management Framework (CEMF). CEMF is a scalable management framework designed to help service providers support multiple routing technologies from a common management system. CEMF aggregates accounting, configuration, fault and performance information into a common framework to simplify the network management process. Based on open standards, CEMF integrates with third-party and proprietary systems enhancing the service provider's existing operations support system (OSS) and allowing a gradual migration from legacy systems.

When used as an MPLS VPN edge device, the Cisco 7200 is supported by the Cisco VPN Solution Center (VPN SC). Cisco VPN SC is a network and service-level management solution that enables service providers to effectively deploy, manage, and support MPLS VPN services including service provisioning and activation, service auditing, service-level monitoring, and usage collection and reporting.

Enterprise customers are supported by the Cisco 7200 is supported by the CiscoWorks2000 Web-based provisioning and management tool. CiscoWorks2000 provides "point and click" management and provisioning of the Cisco 7200.

Summary

The Cisco 7200 is the ideal solution for CPE applications that require a feature-rich, compact and cost-effective platform. Extensive management options make the deployment and ongoing management of the Cisco 7200 a fast and simple process that allows service providers to differentiate their offerings, create competitive advantages, and keep their initial investment and ongoing maintenance costs to a minimum.

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