

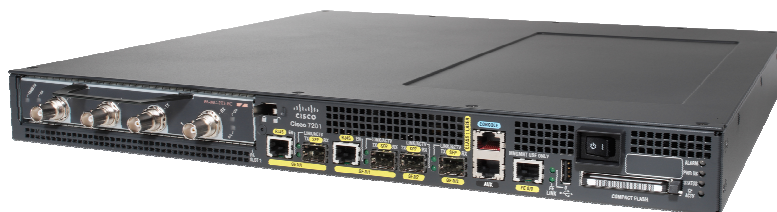
Cisco 7201 Router

Product Overview

The Cisco® 7201 Router is a compact, high-performance 1-rack-unit (1RU) router coupled with a broad set of interfaces and Cisco IOS® Software features, making it ideal for both service providers and enterprise applications (Figure 1).

The Cisco 7201 addresses the demand for performance and flexibility by further increasing its processing capacity and enabling the latest Cisco IOS Software features.

Figure 1. Cisco 7201



Benefits of the Cisco 7201 include the following (refer to Table 1 for details):

- Provides up to twice the performance compared to the Cisco 7301 – up to 2 million packets per second (2Mpps) in Cisco Express Forwarding
- Offers four built-in Gigabit Ethernet (GE) ports
- Provides one dedicated 10/100-Mbps copper Ethernet port for management
- Provides one USB port for general storage and security token storage
- Offers 1 GB of DRAM memory by default; upgradeable to 2 GB of available DRAM
- Offers greatly improved price/performance ratio
- Provides a single Cisco 7000 Series port adapter slot
- Supports complete Cisco IOS Software feature set
- Provides pluggable GE optics (Small Form-Factor Pluggable [SFP] optics)
- Has compact, power-efficient 1RU form factor
- Offers front-to-back airflow and single-sided management

Broadband Applications

- Broadband aggregation – PPP Termination and Aggregation/L2TP Access Concentrator (PTA/LAC) or L2TP Network Server/L2TP Tunnel Switch (LNS/TS) Broadband Network Gateway (BNG)/Broadband Remote Access Server router capable of handling up to 8000 simultaneous sessions and allowing for a pay-as-you-grow “rack and stack” architecture
- TISPAN RCEF – Intelligent service gateway (ISG) router capable of intelligent subscriber management that captures incremental revenue; supports up to 8000 simultaneous Point-to-Point Protocol (PPP) and IP sessions.

Service Provider Edge Applications

- IPv6 gateway – Linking between an IPv4 network and an IPv6 network, including IPv6 VPN architectures
- Managed services – High-end customer premises equipment (CPE) or Multiprotocol Label Switching-customer edge (MPLS-CE) devices because of its high-performance, feature-rich support with both GE LAN connectivity and WAN port adapter connectivity
- High-availability design – Redundancy with 2 CPEs configured for Hot Standby Router Protocol (HSRP) or Layer 3 load balancing
- Cost-effective route reflector – Ideally suited as a low-cost route reflector with its ability to hold one million routes with its maximum of 2-GB memory installed

Enterprise Applications

- High-end CPE in large branch – The Cisco 7201 offers four built-in GE interfaces in a compact 1RU form factor with powerful performance and support to all required services at an enterprise branch office. Acting as managed or unmanaged high-end CPE, the Cisco 7201 supports Ethernet as a single technology for LAN and WAN at the branch, a cost-effective alternative to traditional WAN links with flexible bandwidth offerings: 10/100/1000 Mbps.
- Enterprise high-speed Internet gateway – The Cisco 7201 is a dedicated high-performance Internet gateway with the option to connect to a service provider by using either onboard FE or GE ports or a traditional WAN port adapter (PA) in the PA slot. Support for features such as IP Security (IPsec) and stateful firewall at very high speeds makes it an ideal Internet gateway (security) appliance.
- Optimized edge routing (OER) – The solution containing a Cisco 7201 as a master controller (MC), a Cisco 7206 border router at the hub site, and an integrated services router (ISR) as the border router or master controller in the branch provides WAN availability, WAN performance, and load distribution. The solution reduces operational cost, optimizes application performance, balances load between two networks, and provides operational simplicity and constant network performance monitoring. It is Cisco's highest-performing OER solution, and it supports up to 15,000 prefixes.
- Tunnel-less VPN services – The solution containing a Cisco 7201 as a key server, a Cisco 7206 at the hub site, and an integrated services router (ISR) in the branch supports Cisco Group Encrypted Transport (GET) VPN to satisfy federal or industry regulations requiring confidential communications. The service integration delivers greater value, stronger branding, operational simplicity, and easy service rollout.

By enabling the multifunction capabilities of the Cisco 7201, customers can simplify their network architectures, significantly reduce initial equipment costs, and increase revenue opportunities through value-added services.

Features and Benefits

Table 1 lists the features and benefits of the Cisco 7201.

Table 1. Features and Benefits of Cisco 7201

Feature	Benefit
Performance	<ul style="list-style-type: none"> Offers up to 2 million packets per second (2Mpps) in Cisco Express Forwarding switching Offers up to twice the performance compared to Cisco 7301 Dramatically increases the performance and scalability of the Cisco 7200VXR Series in WAN and MAN applications for both enterprise and service providers
Modularity	<ul style="list-style-type: none"> Enables maximum investment protection through the ability to upgrade processors incrementally
Single Cisco 7000 Family Port Adapter Slot	<ul style="list-style-type: none"> Offers backward compatibility with existing port adapters (with a few exceptions) Maximizes investment protection and flexibility by allowing customers to use existing port adapters, also simplifying sparing <p>Note: Only a few end-of-sale port adapters are not supported with the Cisco 7201; details follow.</p>
Compact Form Factor and Low Power Consumption (85 watts)	<ul style="list-style-type: none"> Uniquely positioned as one of the fastest 1RU routers in the industry today; customers can maximize router performance where space is constrained "Rack and stack" allows customers to maximize the use of space in expensive Internet service provider (ISP) data centers Ideal for a dedicated security or quality-of-service (QoS) appliance at the edge of enterprise networks
Support for Cisco IOS Software	<ul style="list-style-type: none"> Supports a wide range of IP and non-IP network services, including QoS, MPLS, broadband aggregation, integrated security, encryption, voice, and more
Four built-in GE Ports Directly on the Chassis	<ul style="list-style-type: none"> Maximizes LAN connectivity and performance without taking up slot capacity High-speed LAN interfaces no longer have to share a PCI bus with port adapters The first two ports provide either RJ45 copper or SFP optical connectivity; the other two ports provide only SFP optical connectivity because of space constraint. The first two ports can also be configured as 10/100 (Ethernet/FE) when RJ45 copper interface is used. (refer to Figure 2)
1 GB of DRAM Default Memory, Upgradeable to 2 GB of DRAM	<ul style="list-style-type: none"> Supports more routes and routing tables Supports more MPLS virtual routing and forwarding instances (VRFs) Supports more sessions for broadband aggregation Enables higher scalability on features such as NetFlow, Network Address Translation (NAT), access control lists (ACLs), and more Cisco IOS Software Supports a wide range of IP and non-IP network services, including QoS, MPLS, broadband aggregation, integrated security, encryption, voice, and more
Built-in I/O function (Compact Flash Memory, Console Port, Auxiliary Port, and Boot Flash Memory)	<ul style="list-style-type: none"> Reduces costs
Dedicated Management for 10-/100-Mbps Ethernet	<ul style="list-style-type: none"> Reduces costs and protects chassis port density
Digital Diagnostics on SFP Interfaces	<ul style="list-style-type: none"> Provides a powerful tool that monitors many manageable parameters, including optical transmit and receive power, voltage and temperature measurement, and factory parameters
Time Domain Reflectometry (TDR) on Copper Interfaces	<ul style="list-style-type: none"> Provides an effective method of isolating fault at the remote end of the copper wire by monitoring reflected pulsed signals
One USB port	<ul style="list-style-type: none"> Supports v1.1 and v2.0 (12-Mbps maximum speed) Provides a large, removable storage for files Stores security e-tokens for VPN applications
Redundant Power Supply with Field-Replaceable Unit (FRU) Capability	<ul style="list-style-type: none"> Improved reliability
Front-to-Back Airflow	<ul style="list-style-type: none"> Four fan intakes Efficient heat dissipation

Product Specifications: Hardware Components

Chassis

The Cisco 7201 Router is designed with a view to enhance operational efficiency. It incorporates a 1.7-GHz processor and includes four GE interfaces with four SFP optical interfaces, a single Cisco 7000 Series router port adapter slot, a 64-MB Compact Flash card, and auxiliary and console ports in a compact (1RU) chassis. Table 2 gives specifications of the Cisco 7201 Router.

Table 2. Product Specifications for Cisco 7201 Router

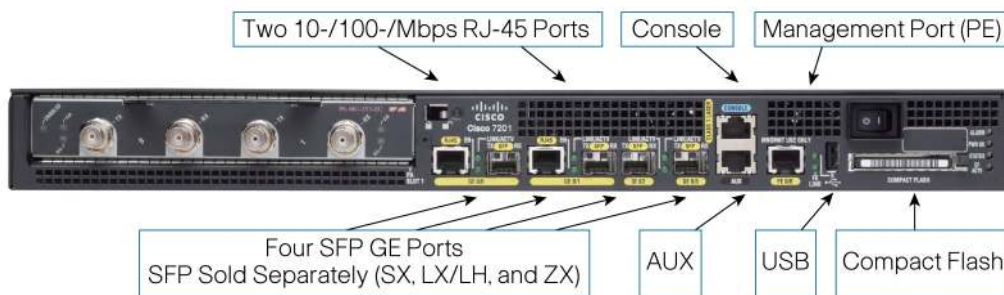
Product	Specifications
Processor	1.67-GHz Motorola Freescale 7448 processor
Performance	2,000,000 pps or more
LAN ports	4 Gigabit Ethernet ports
Gigabit Ethernet Optics	SFP <ul style="list-style-type: none"> • Short wave (SX) • Long wave/long haul (LX/LH) • Extended wavelength (ZX) • RJ-45 copper SFP
DRAM	1 GB default (2 GB maximum)
Compact Flash	64 MB default (256 MB maximum)
Cisco IOS Software Release	12.2(31)SB4, 12.4XD7, and 12.4PI6

In order to ensure high system availability required for mission-critical applications, the Cisco 7201 also supports:

- Physical alarm relay in case of device failure
- Dual AC and dual DC power supplies
- Online insertion and removal (OIR) of port adapters
- Environmental monitors with levels of escalation to ensure corrective action prior to system shutdown

Connectivity

- Gigabit Ethernet ports – Four GE ports are available on the Cisco 7201 (Figure 2). The first two ports provide either RJ45 copper or SFP optical connectivity; the other two ports provide only SFP optical connectivity because of space constraint. The first two ports can also be configured as 10/100Mbps (Ethernet/FE) when RJ45 copper interface is used.
- Gigabit Ethernet port features – All four ports support the IEEE 802.1Q standard.
- The Cisco 7201 supports three types of SFP interfaces – SX, LX/LH, and ZX – for varying fiber length requirements.
- Console and auxiliary ports – The Cisco 7201 has a console port, and an auxiliary port on the front end of the chassis.
- Management of 10/100 Mbps Ethernet port – This Ethernet/FE port is strictly dedicated for management purposes.

Figure 2. Cisco 7201 Ports

The Cisco 7201 includes a single Cisco 7000 Series port adapter slot, which protects existing customer investment in interfaces and simplifies sparring. The Cisco 7201 offers scalable density with a wide range of interfaces, including:

- Serial and multi-channel T1/E1 and T3/E3 interfaces and Packet-over-SONET/SDH (PoS) OC-3
- OC-3/STM-1 PoS, T3/E3 and OC-3/STM-1 ATM, and T1/E1 Inverse Multiplexing over ATM (IMA)
- ISDN Primary Rate Interface (PRI), Basic Rate Interface (BRI), and High-Speed Serial Interface (HSSI)
- Support for hardware encryption and Layer 3 compression (VPN accelerator modules)

Memory

- SDRAM – The Cisco 7201 ships with default memory of 1-GB SDRAM, extensible to 2-GB SDRAM. There is only one memory slot. The memory on the Cisco 7201 is double data-rate (DDR) memory, which provides high-performance memory access rates. Note: The Cisco 7301 SDRAM memory module is not compatible with the Cisco 7201 SDRAM memory module.
- Compact Flash memory – The 256-MB Compact Flash memory used on the Cisco 7201 is the same Compact Flash memory used with the Cisco 7200, Cisco 7401, and Cisco 7300 Series routers.
- 2-MB NVRAM – NVRAM provides sufficient room for large configurations such as broadband or MPLS deployments.
- 1-MB Layer 2 cache – This cache provides more room for storing cached information and allows faster CPU instruction processing.
- 64-MB boot flash memory – The 64-MB internal flash memory is large enough to hold multiple boot helper images, crash files, Cisco IOS Software images, logging files, etc.
- USB port – The USB Flash feature provides an optional secondary storage capability. Images, configurations, or other files can be copied to or from the Cisco USB Flash memory with the same reliability as storing and retrieving files using the Compact Flash card. Cisco USB Flash memory is available in 64-, 128-, and 256-MB sizes.

Processor

1.67-GHz Motorola Freescale 7448 processor

Product Specifications: Software

The Cisco 7201 supports the following Cisco IOS Software releases:

- 12.2SB
- 12.4XD
- 12.4T

Cisco IOS Software images dedicated for the Cisco 7201 will have the file names starting with “c7200p”, the same as those for the Cisco 7200 NPE-G2 Network Processing Engine.

Product Specifications: Port Adaptor (PA) Support for Cisco 7201

The Cisco 7201 Router supports PAs with the following part numbers:

- PA-A6-OC3MM
- PA-2FE-TX
- PA-A6-OC3SMI
- PA-A6-OC3SML
- PA-E3
- PA-2T3+
- PA-MC-8TE1+
- PA-MC-E3
- PA-A6-T3
- PA-POS-1OC3
- PA-POS-2OC3
- PA-GE
- PA-A3-8E1IMA
- PA-MC-T3
- PA-A3-8T1IMA
- PA-MC-STM-1MM
- PA-4E1G/75
- PA-MC-STM-1SMI
- PA-4E1G/120
- PA-MC-4T1
- PA-4T+
- PA-MC-2E1/120
- PA-2E3
- PA-MC-4T1
- PA-2FE-FX
- PA-A6-E3
- PA-MC-2T1
- PA-8E
- PA-H

- PA-T3+
- PA-A3-OC3MM
- PA-A3-OC3SMI
- PA-A3-T3
- PA-A3-E3

Note: The PAs with the following part numbers are available in Cisco IOS Software Releases 12.4T and 12.2SRC (upcoming release):

- PA-MC-T3-EC
- PA-MC-2T3-EC
- PA-T3/E3-EC
- PA-2T3/E3-EC

Note: The PAs with the following part numbers are available in Cisco IOS Software Releases 12.4T

- SA-VAM2+

Product Specifications: Power Requirements

Table 3 gives the power requirements of the Cisco 7201.

Table 3. Power Requirements of Cisco 7201

Dual AC power supply information	Dual AC Power Supply Information
Input power	150W maximum
Typical input power	85W
Input voltage rating	100 to 240 VAC wide input with power factor correction
Input current rating	2A maximum
Typical input current	0.85A at 100 VAC 0.35A at 240 VAC
Input frequency rating	50/60 Hz
Input cable	Use only Cisco agency approved power cords

Dual DC power supply information	Dual DC power supply information
Input power	150W maximum
Typical input power	85W
Nominal input voltage rating	–48 and –60 VDC
Input current rating	6A maximum
Typical input current	1.8A at –48 VDC; 1.4A at –60 VDC
Input cable	16-AWG (1.0mm) or 18-AWG (0.75mm) wire with a circuit breaker rating of 20A maximum; the ground wire must be at least as large as the supply wires

Product Specifications: Physical and Environmental Specifications

Table 4 gives the physical and environmental specifications of the Cisco 7201.

Table 4. Physical and Environmental Specifications of Cisco 7201

Feature	Specification
Physical Specifications	
Dimensions (H x W x D)	1.75 x 19 x 16.9 in. (4.44 x 48.26 x 42.93 cm)
Weight	Chassis fully configured with a port adapter ~16.5 lb (7.48 kg)
Heat Dissipation	290 Btu/hr at 85W typical input power 512 Btu/hr at 150W maximum input power
Environment Specifications	
Operating Temperature	32 to 104°F (0 to 40°C)
Storage Temperature	-4 to 149°F (-20 to 65°C)
Operating Humidity	10 to 90% non-condensing
Storage Relative Humidity	5 to 95%
Operating Altitude	60 to 2000m

Product Regulatory Approval and Compliance

Table 5 gives the regulatory approval and compliance of the Cisco 7201.

Table 5. Product Regulatory Approval and Compliance

Regulatory	Compliance
Safety	<ul style="list-style-type: none"> • CAN/CSA-C22.2 No. 60950-1-03 • EN 60950-1 • IEC 60950-1 • AS/NZS 60950-1 • EN/IEC 60825-1 • 21 CFR 1040 • UL60950-1
EMC	<ul style="list-style-type: none"> • AS/NZS CISPR22 Class A • 47CFR Part 15 Class A (FCC Regulations) • EN300386 • EN55022 Class A • EN61000-3-2 • EN61000-3-3 • ICES003 Class A • VCCI Class A • CISPR22 Class A
NEBS	<ul style="list-style-type: none"> • Designed to meet GR-63-Core NEBS Level 3 • Designed to meet GR-1089-Core NEBS Level 3
ETSI	<ul style="list-style-type: none"> • Designed to meet ETS 300 019-1-1, Class 1.2 Storage • Designed to meet ETS 300 019-1-2, Class 2.3 Transportation • Designed to meet ETS 300 019-1-3, Class 3.2 Stationary Use

Ordering Information

Tables 6 to 12 provide the information needed to order the Cisco 7201 and related products.

To place an order, visit the [Cisco Ordering Home Page](#). To download software, visit the [Cisco Software Center](#).

Table 6. Chassis Ordering Information

Product Description	Part Number
Cisco 7201 Chassis, 1GB Memory, Dual P/S, 256MB Flash	CISCO7201
Rack Mount KIT for Cisco 7201	RCKMNT-7201=

Table 7. FRU Power Supply Ordering Information

Product Description	Part Number
Cisco 7201 AC Power Supply option	PWR-7201-AC
Cisco 7201 AC Power Supply option – Spare	PWR-7201-AC=
Cisco 7201 DC48 Power Supply Option	PWR-7201-DC
Cisco 7201 DC48 Power Supply Option – Spare	PWR-7201-DC=

Table 8. SDRAM Memory Ordering Information

Product Description	Part Number
Cisco 7201 Series 1GB Memory System	MEM-7201-1GB
Cisco 7201 Series 1GB Memory Spare	MEM-7201-1GB=
Cisco 7201 Series 2GB Memory System	MEM-7201-2GB
Cisco 7201 Series 2GB Memory Spare	MEM-7201-2GB=

Table 9. Compact Flash Ordering Information

Product Description	Part Number
Cisco 7201 Compact Flash Disk, 256 MB	MEM-7201-FLD256
Cisco 7201 Compact Flash Disk, 256 MB	MEM-7201-FLD256=

Table 10. USB Flash Token Ordering Information

Product Description	Part Number
64-MB USB flash token for Cisco 1800, 2800, 3800, and 7200 Series	MEMUSB-64FT
64-MB USB flash token for Cisco 1800, 2800, 3800, and 7200 Series – Spare	MEMUSB-64FT=
128-MB USB flash token for Cisco 1800, 2800, 3800, and 7200 Series	MEMUSB-128FT
128-MB USB flash token for Cisco 1800, 2800, 3800, and 7200 Series – Spare	MEMUSB-128FT=
256-MB USB flash token for Cisco 1800, 2800, 3800, and 7200 Series	MEMUSB-256FT
256-MB USB flash token for Cisco 1800, 2800, 3800, and 7200 Series – Spare	MEMUSB-256FT=

Table 11. SFP Ordering Information

Product Description	Part Number
Cisco 1000BASE-SX SFP (DOM)	SFP-GE-S
Cisco 1000BASE-SX SFP (DOM) – Spare	SFP-GE-S=
Cisco 1000BASE-LX/LH SFP (DOM)	SFP-GE-L
Cisco 1000BASE-LX/LH SFP (DOM) – Spare	SFP-GE-L=
Cisco 1000BASE-ZX Gigabit Ethernet SFP (DOM)	SFP-GE-Z
Cisco 1000BASE-ZX Gigabit Ethernet SFP (DOM) – Spare	SFP-GE-Z=
Cisco 1000BASE-T SFP (NEBS 3 ESD)	SFP-GE-T=

Table 12. Feature License Ordering Information

Product Description	Part Number
Cisco IOS 7200/7300/7400 Series Broadband 8000 User License	FR-BUS72
Cisco IOS 7200 Series Broadband User Services License	FR-BUS72=
ISG-SSG Feature License for 7200	FR-ISG72
ISG-SSG Feature License for 7301	FR-ISG73
Cisco 7200/7301 BBA Firewall Site License 10,000 Subscribers	FR-BUS-FW10=
Cisco 7200/7301 BBA Firewall Site License 30,000 Subscribers	FR-BUS-FW30=
Cisco 7200/7301 BBA Firewall Site License 50,000 Subscribers	FR-BUS-FW50=

Product Ordering Details: Migration Program

A Cisco Technology Migration Plan (TMP) has been established for this product. The Cisco TMP is a sales program that allows customers to trade in Cisco products to receive a trade-in credit toward the purchase of any new Cisco product. The program underscores Cisco's commitment to the customer. More specifics about this program are available at <http://www.cisco.com/go/tradein>.

Service and Support

Cisco offers a wide range of service and support options for its customers. More information about Cisco service and support programs and benefits is available at http://www.cisco.com/public/Support_root.shtml.

Using the Cisco Lifecycle Services approach, Cisco and its partners provide a broad portfolio of end-to-end services and support that can help increase the business value and return on investment for your network. This approach defines the minimum set of activities needed, by technology and by network complexity, to help you successfully deploy and operate Cisco technologies and optimize their performance throughout the lifecycle of your network.

For More Information

For more information about the Cisco 7201, visit <http://www.cisco.com/go/7200> (select Cisco 7201 Router) or contact your local Cisco account representative.



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