

Cisco 7400 Series Internet Router

A Quick Look

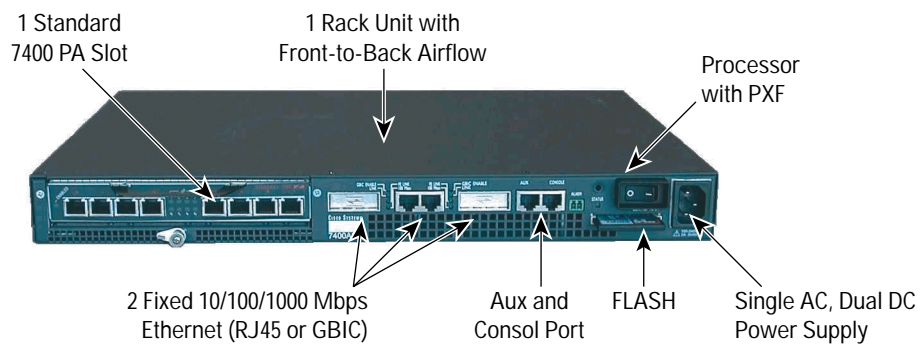


The Cisco 7400 Series Internet Router is one of the industry’s leading Internet routers available in a compact form factor—one_rack unit (RU). The high performance, exceptional flexibility, and versatility found in the Cisco 7400 ideally positions this router for applications such as broadband subscriber aggregation, managed services customer premises equipment (CPE), and network services gateway.

Key Benefits

- “Pay-as-you-grow” granularity with small, stackable form factor
- Highest service density and performance per 1RU in the industry
- High level of flexibility and versatility with support for over 40 modular interfaces, including serial, Channelized, ISDN, Frame Relay, ATM, IP, and 64K to OC-3
- Support up to 320,000 subscribers per 7-foot rack

Cisco 7401 Chassis



Features and Benefits

Features	Benefits
One-RU Form Factor with Front-to-Back Airflow and Single Port Adapter Slot	Built for stackability with space efficiency and maximum performance density
Two Fixed 10/100/1000-Mbps Ports (RJ-45 for Fast Ethernet and Ethernet, and Gigabit Interface Converter [GBIC] for Gigabit Ethernet)	Maximizes LAN connectivity without extra rack space
AC, DC 48V, DC 24V, or Dual DC 48V with 50W Power Consumption	Flexibility and high availability with one-third of traditional power consumption
Up to 300-kpps Processing Capability	Provides high-performance routing and processing performance, OC-3 wire rate
Processor with Parallel Express Forwarding Technology	Delivers high-performance, hardware-accelerated, high-touch IP services
Cisco IOS® Software	Supports IP network services, including quality of service (QoS), security, compression, and IP Security Triple Digital Encryption Standard (IPSec 3DES) encryption at high speed
Broad Range of WAN Media Interfaces from DS0 to OC-3 (40+ port adapters)	Provides a flexible and redeployable solution for traffic aggregation
Service Selection Gateway (SSG)	Creates value-added revenue by providing Web-based self-provisioning services
Common Port Adapters with Cisco 7500 and Cisco 7200 Routers	Stocking spares simplification and investment protection in interfaces
Cisco Element Manager Framework (CEMF)	Simplifies and accelerates the deployment and management of new services and elements across the network
Cluster Management	Manages stack as a cluster from a single interface
Stackability	"Pay as you grow;" provides an opportunity to build and redeploy the stack to other parts of the network as demand changes
Managed Service CPE	Ideal New World CPE with full Multiprotocol Label Switching (MPLS) and MPLS virtual private network (VPN) support



Applications

The Cisco 7400 targets specific market segments with two product bundles:

- *Cisco 7401 ASR-BB*—Broadband subscriber aggregation including digital subscriber line (xDSL), ISDN, fiber-to-the-curb (FTTC), and wireless
- *Cisco 7401 ASR-CP*—Managed service (CPE and customer-leased equipment and full MPLS provider edge (PE) and MPLS VPN services
- *Cisco 7401 ASR-CP*—Network service gateway for QoS enforcement or hardware-accelerated service (PXF)

Broadband Aggregation	Managed Services CPE	Network Services Gateway
Rich Multicast Features	MPLS	Network Address Translation (NAT)
Point-to-Point Protocol (PPPoX)	MPLS VPN	Access control list (ACL)
Intelligent Layer 2 Tunneling Protocol (L2TP) Services	MPLS traffic engineering (TE)	Committed access rate (CAR)
Routed Bridge Encapsulation (RBE)	MPLS QoS	QoS enforcement (low-latency queuing [LLQ], Class-Based Weighted Fair Queuing [CBWFQ], Class-Based Weighted Random Early Detection [CBWRED])
Authentication, Authorization, and Accounting (AAA)	Multiple virtual routing and forwarding (MVRF)	NetFlow accounting
SSG	Service-level agreement (SLA) management	Router reflector
Self-Provisioning of ATM Virtual Circuit (VC)	Provisioning/accounting	Virtual LAN (VLAN)

Broadband Subscriber Aggregation (Cisco 7401 ASR-BB)

The Cisco 7400 can aggregate thousands of broadband subscribers to enable value-added IP services. In service-provider networks, it can accept a large concentration of broadband subscriber traffic from a variety of devices such as DSL access multiplexers (DSLAMs), cable modem termination systems (CMTSs), and wireless concentrators. The Cisco 7400 can also efficiently terminate ISDN Primary Rate Interface (PRI) and BRI traffic, making it an ideal modular approach to building an ISDN DSL (IDSL) or ISDN infrastructure. When deployed by carriers and cable operators in regional data networks, the Cisco 7400 enables cost-effective, highly scalable, secure wholesale access for creating and deploying value-added IP services. Software features for Cisco 7400 broadband aggregation include:

- PPP over ATM, PPP over Ethernet, and PPP over VLAN
- RBE for RFC 1483 or RFC 1490-based permanent-virtual-circuit (PVC) terminations
- Virtual routing for high-density circuit termination with increased security, flexibility, and scalability
- Password Authentication Protocol/Challenge Handshake Authentication Protocol (PAP/CHAP) and Remote Access Dial-In User Service (RADIUS) authentication
- Intelligent L2TP tunneling support
- Differentiated, value-added services with hardware-accelerated PXF services along with flexible modular interfaces for traffic aggregation, including OC-3, DS3, Fast Ethernet and Gigabit Ethernet, POS, and more
- Ideal for small- and medium-density aggregation for network operators, competitive local exchange carriers (CLECs), and Internet service providers (ISPs)
- MPLS VPN and full L2TP-to-MPLS support

Managed Services CPE (Cisco 7401 ASR-CP)

The Cisco 7400 is an ideal platform for managed services where end customers are given their own router, and the service provider manages it for them. In many cases, stacks of routers are needed. In such environments, space, airflow, and heat/power dissipation are issues. The Cisco 7400 delivers the performance of the Cisco 7200 in one-third the space, with one-fifth the power and with front-to-back airflow.

Following is the list of PXF-accelerated managed services CPE features for the Cisco 7400:

- ATM, Frame Relay, Dynamic Packet Transport (DPT), POS, Channelized, and serial interfaces from 64K to OC-12
- Full range of traditional Cisco routing protocols, including Routing Information Protocol (RIP), Border Gateway Protocol (BGP), Open Shortest Path First (OSPF), and MPLS
- Virtual routing for high-density circuit termination with increased security, flexibility, and scalability
- Ideal for small and medium-density aggregation for network operators, CLECs, and ISPs
- MPLS VPN and full L2TP-to-MPLS support
- Stackability (50 watts, front-to-back airflow)
- Differentiated, value-added services with hardware-accelerated PXF services along with flexible modular interfaces for traffic aggregation, including OC-3, DS3, Fast Ethernet and Gigabit Ethernet, POS, and more

Network Services Gateway (Cisco 7401 ASR-CP)

Cisco IOS VPN services (including tunneling features Layer 2 Forwarding [L2F], L2TP, and generic routing encapsulation [GRE] tunneling) combined with security features, high-speed processing power, and unparalleled connectivity options make the Cisco 7400 an ideal choice for services gateway applications. Enterprises and ISPs use the Cisco 7400 as the preferred gateway for a wide variety of applications.

The following is a list of PXF-accelerated services supported for the network services gateway on the Cisco 7400:

- Network Address Translation (NAT)
- Access control list (ACL)
- NetFlow accounting and export
- Low-latency queuing (LLQ)
- Class-Based Weighted Fair Queuing (CBWFQ)
- Class-Based Weighted RED (CBWRED)
- Committed access rate (CAR)

Port and Service Adapters

LAN Port Adapters	Eight-port multichannel E1 port adapter with G.703 120-ohm interface
Four-port Ethernet 10BaseT	One-port multichannel T3
Eight-port Ethernet 10BaseT	Two-port multichannel T3, enhanced
One- or 2 two-port 100BaseFX	One-port multichannel E3
100BaseTX	Multichannel STM1
Five-port Ethernet 10BaseFL	ATM Port Adapters
Serial Port Adapters	ATM inverse multiplexer E1 (120 ohm)
Serial, enhanced	ATM inverse multiplexer T1
Serial, V.35, 232, X.21	ATM enhanced E3
E1 G.703 serial (75 ohm/unbalanced)	ATM enhanced DS3
E1 G.703 serial (120 ohm/balanced)	ATM enhanced OC3c/STM1, MM
HSSI Port Adapters	ATM enhanced OC3c/STM1, SMI
HSSI	ATM enhanced OC3c/STM1, SML
One- or two-port T3 serial with data service unit (DSU)	POS Port Adapters
One- or two-port T3 serial, enhanced	One-port Packet over SONET (POS) OC-3c/STM-1, MM
One- or two-port E3 serial with DSU	One-port POS OC-3c/STM-1, SMI
Multichannel Port Adapters	One-port POS OC-3c/STM-1, SML
Eight-port Basic Rate Interface (BRI), S/T interface	Digital Voice Port Adapters
Eight-port BRI, U interface	Two-port T1/E1 moderate-capacity enhanced voice
Two-port multichannel T1 with channel service units/DSUs (CSUs/DSUs)	Two-port T1/E1 high-capacity enhanced voice
Four-port multichannel T1 with CSUs/DSUs	Encryption/Compression
Eight-port multichannel T1 with CSUs/DSUs	Cisco VPN Acceleration Module (VAM, Q4 '01)
Two-port multichannel E1 port adapter with G.703 120-ohm interface	

For more information on the Cisco 7400, visit [//www.cisco.com/go/7400](http://www.cisco.com/go/7400).



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