Cisco AS5200 Universal Access Server

Cisco's AS5200 Universal Access Server (AS5200) is designed to meet the growing demands of Internet service providers (ISPs), telecommunication carriers, and other providers who offer managed Internet connections, as well as corporations that provide both digital and analog access to users on an enterprise network.

As the first member in a new family of universal access products, the AS5200 integrates traditional and advanced telecommunication technologies and ensures cost-effective scalability to accommodate future growth in network demand. It offers breakthroughs in universal access, modem management, scalability, and network management in an integrated basic telephone service and Integrated Service Digital Network (ISDN) solutions.

Universal Access

The AS5200 is the first in a series of universal access servers to deliver hybrid asynchronous serial and ISDN service to accommodate both mobile users and high-bandwidth dedicated telecommuters. By terminating both analog modem and ISDN calls on the same chassis from the same trunk line, the AS5200 enables ISPs and enterprise network managers to meet traditional analog dialin needs, while supporting the growing demand for high-speed ISDN access. The AS5200 also supports the most complete set of access protocols through the Cisco Internetwork Operating System (Cisco IOS™) software, including IP, IPX, AppleTalk, PPP, Serial Line Internet Protocol (SLIP), and X.3/X.28. This extensive protocol support enables Cisco to offer the industry's premier universal access functionality for large-scale deployment.

Cisco's line of universal access servers contains the functionality of channel service units (CSUs), channel banks, call switches, communication servers, routers, ISDN capabilities, and 48 (for T1) or 60 (for E1) modems tightly integrated in one standalone chassis, making it ideal for mixed media environments. This high degree of component integration in one chassis eliminates the incompatibility problems that are common with multibox, multivendor installations and increases overall system reliability.

Scalability

Cisco's implementation of the Multichassis, Multilink Point-to-Point Protocol (MMP) allows customers to start small and scale additional access servers as required, while still being able to dial into one call center. ISPs and enterprise network managers with large dialin pools can easily scale and integrate their access infrastructures to aggregate multiple calls on multiple servers, providing a higher bandwidth solution to their end users. These scalability features are critical for service providers and enterprise customers as they build resilient systems that leverage distributed network reliability.

Full Power of Cisco IOS Software

The AS5200 is a key component of Cisco's complete end-to-end solution set for dial connectivity. No other vendor can offer remote users as many options for Internet access and enterprise extension. The AS5200 is also boosted considerably by the power of the Cisco IOS software, the de facto standard in internetworking. Cisco IOS software gives AS5200 customers the opportunity to affordably deploy virtual private networks. Users can also save through bandwidth optimization techniques such as data compression and can deploy high-quality network security firewalls and data encryption. Scalability is enabled by Multilink Point-to-Point Protocol (MP) and MMP.

Cisco Systems

Security

The primary concern for most network managers today is security. The AS5200, along with the popular and robust Cisco IOS software, provides comprehensive security throughout customer core networks. For remote user environments, the AS5200 extends that proven core security to mixed-media dialin sites. Among the security features supported by the Cisco IOS software are access lists, violation logging, RADIUS, Kerberos V, and TACACS+ with Authentication, Authorization, and Accounting.

Managed Modems

The Cisco AS5200 provides complete centrally managed modem capabilities, key requirements for service providers and enterprises building large dialin pools. The AS5200 modems can be managed via the same tools used to manage the rest of the network, providing network managers with one solution at a central management point. The modem management feature set includes call-in-progress monitoring, hard and soft busy out, grouping, a user-defined threshold for alarms, and statistics. Through a direct connect session via the out-of-band management port, administrators can view real-time information (for current or previous calls) such as modem modulation scheme, modem protocol, modem EIA/TIA-232 signal states, modem transmit and receive rates, analog signal-to-noise ratio, and so on.

Central Management

Lower operating costs are achievable with the AS5200's set of central management capabilities. In addition to advanced modem management features, the AS5200 can be managed with CiscoWorks^{TM} software, which provides extensive bandwidth optimization features to help service providers and enterprise customers lower the recurring costs associated with operating a geographically dispersed wide-area network. In addition, Cisco's configuration management capabilities provide network managers with complete control over network statistics and the ability to configure and tune network operations from a central location. Finally, comprehensive debugging tools in Cisco IOS software substantially reduce the time and cost associated with problem isolation and correction.

Summary

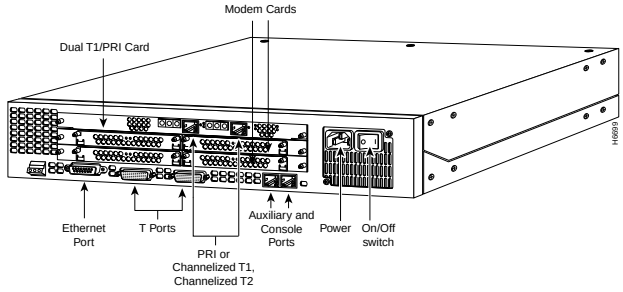
Through the rich features available in the Cisco IOS software, combined with the AS5200 universal access platform and other industry leading Cisco remote access, router, and switching products, enterprises and service providers can for the first time deploy massive access infrastructures that are universally accessible, completely scalable, and cost effective. Customers can protect and leverage their Cisco infrastructure investments in training and expertise across new Cisco platforms. This true end-to-end solution differentiates Cisco from its competition.

Features and Benefits

Feature	Benefit
Integrated CSUs, channel bank, router, and modems accommodate dual ISDN Primary Rate Interface (PRI) T1/E1 lines or channelized T1 lines	Services and terminates asynchronous modem and digital ISDN calls with one trunk line and one phone number as a simple, cost-efficient migration path from today's analog dialup environment to the fast-growing ISDN digital services
Modem management including modem statistics, real-time call-in-progress, monitoring modem activity log, modem hard/soft busy out, modem firmware up-grade, and so on	Monitors modem call progress and statistics in real time to reduce problem detection and resolution time
Flexible, dual-bank Flash architecture	Reduces software upgrade time and allows the storage of multiple software images in the same chassis
Full Cisco IOS support	Provides the widest array of networking and routing protocol support in the industry for large scale deployment
Remote management of CSU, router, and modem components	Centralizes network management to reduce operating cost
Scalable chassis with MMP capable of carrying increased density and higher-speed traffic	Allows customers to start small and stack additional servers as required, while still being able to dial into one call center
Bandwidth management with MP and dialer load threshold	Manages network bandwidth effectively to reduce unnecessary bandwidth associated costs for customers

Feature	Benefit
Virtual private network with Layer 2 Forwarding (L2F) Protocol	Adds more value to ISP's service package by: • Enabling the sharing of very large investments in access and core infrastructure • Allow local dialup calls to an ISP who agrees to forward the client company's users to a company run gateway • Supporting investments in non-IP protocol applications in a secure manner
WAN optimization including compression, routing filters, snapshot routing, and dial-on-demand routing	Helps customers to reduce WAN costs, the single largest cost of internetwork operation
Security management including TACACS+, RADIUS, access lists, and violation logging	Provides comprehensive security throughout customer's core network infrastructure
Internal socket for expansion to compression and encryption hardware assist engines	Allows easy future hardware upgrade of existing systems

Figure 1 AS5200 Rear Panel



AS5200 Technical Specifications

Processor Type	20-MHz 68030
Memory	Up to 16M main DRAM and 16M packet DRAM
Flash Memory	Up to 16M boot Flash, single or dual bank Up to 16M system Flash, single or dual bank
Chassis Slots	3
Ethernet (AUI)	1
High-Speed Synchronous Serial	2
Asynchronous Serial	Up to 48 (T1) or 60 (E1)
V.34 Modems	Up to 48 (T1) or 60 (E1)
ISDN PRI/T1 or ISDN PRI/E1	2
Channelized T1	2
Other Standard Components	Power supply and cord, one console cable, and two RJ-48C cables

Dimensions/Weight

- Dimensions (h x w x d): 3.4 in. x 17.5 in. x 15 in.
- Weight (average shipping weight): 25 lb. (11.4 kg)

Environmental Conditions and Power Requirements

- Input power: 170 Watts, AC or DC (typical)
- Output power: 120 Watts, AC or DC (typical)
- Efficiencies: 0.65 to 0.70
- Heat dissipation: 514 Btu/hr
- AC input voltage:
  85 VAC minimum
  120 VAC nominal
  132 VAC maximum
- DC input voltage:
  – 40 VDC minimum
  – 48 VDC nominal
  – 56 VDC maximum
- AC input current (maximum): 3A (rms)
- DC input current (maximum): 3A (rms)
- Operating temperature: 32 to 104F (0 to 40C)
- Nonoperating temperature: -4 to 149F (-20 to 65C)
- Operating relative humidity: 10 to 85%, noncondensing
- Nonoperating relative humidity: 5 to 95%, noncondensing

Regulatory Compliance

Safety Certifications

- UL 1950, third edition
- CSA 950, third edition
- EN 60950, with amendments 1, 2, and 3
- IEC 950
- AS/NZS 3260
- TS 001

Electromagnetic Emissions Certifications

- EN 55022B
- NZ/AS3548B
- VCCI II
- FCC A

Immunity

- 1000-4-2 (electrostatic discharge)
- 1000-4-3 (radiated emissions)
- 1000-4-4 (electrical fast transients)
- 1000-4-5 (surge)
- 1000-4-6 (conducted emissions)

AS2500 Software Subsets & Minimum Memory Requirements (Release 11.2)

Software Subsets	IP	IP PLus	Desktop	Desktop Plus	Enterprise	Enterprise Plus
System Flash	8M	8M	8M	8M	8M	8M
Boot Flash	4M	4M	4M	4M	4M	4M
Main DRAM	8M	8M	8M	8M	8M	8M
Packet DRAM	4M	4M	4M	4M	4M	4M

Note: Plus versions of IP and desktop basic feature sets also include modem management, V120 support, protocol translation, NAT, RMON, and IBM support. Plus version of enterprise basic feature set also includes modem management, V120, protocol translation, NAT, and RMON.

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