

Cisco 6260 IP DSL Switch

BUILT FOR RAPID, LARGE-SCALE DEPLOYMENT OF DIGITAL SUBSCRIBER LINE (DSL) SERVICES, THE CISCO 6260 IS DESIGNED FOR INCUMBENT LOCAL EXCHANGE CARRIERS (ILECs), COMPETITIVE LECs (CLECs), AND MULTITENANT DWELLING UNIT (MDU) SERVICE PROVIDERS AROUND THE WORLD WHO NEED NEXT-GENERATION DSL SERVICE SOLUTIONS TODAY. THE CISCO 6260 IP DSL SWITCH ENABLES THE MOST COMPREHENSIVE SET OF IP+ATM CAPABILITIES WITH COMMON MULTI-DSL TECHNOLOGIES. THE CISCO 6260 SWITCH IS IP-READY AND SUPPORTS AN EVOLUTION PATH FOR MANAGED SERVICES USING MULTIPROTOCOL LABEL SWITCHING (MPLS), VIRTUAL PRIVATE NETWORKS (VPN), MULTICASTING, IP ROUTING AND QUALITY OF SERVICE (QoS). THE CISCO 6260 SWITCH SUPPORTS BOTH ASYMMETRICAL AND SYMMETRICAL DSL (ADSL AND SDSL) TECHNOLOGIES.

Driving Service Profitability

Differentiated, Value-Based Service Offerings

Achieving higher customer satisfaction and service profitability requires next-generation network solutions focused on service value and differentiation, scalability, and operational cost reductions. The Cisco 6260 IP DSL switch provides these next-generation capabilities today, incorporating key features not found in earlier-generations of DSL access multiplexers (DSLAMs).

Designed for large-scale deployment of high-performance, multiservice, and profit-centered DSL services, the Cisco 6260 IP DSL switch supports a rich suite of ADSL and SDSL line technologies. These line technologies—combined with the family's high-powered asynchronous transfer mode (ATM) switching fabric, edge switch-class traffic management features, scalable network management capabilities, and IP-ready architecture—enables service providers to move beyond simple, unprofitable, non-extensible data transmission connections into profit-generating, New World service offerings.

The Cisco 6260 offers numerous high-value features enabling service providers to expand their customer base and generate higher service revenue levels. These features include support for multiple ADSL technologies such as ANSI T1.413 Issue 2, ITU G.992.1 (G.dmt), and G.992.2 (G.lite). In

addition, the Cisco 6260 provides support for advanced ATM class-of-service (CoS) and QoS offerings, support for ATM switched virtual circuits (SVCs), and support for ATM traffic management and shaping. When combined with MPLS to enable service providers to offer high-revenue-generating service-level agreements (SLAs) for the combined ATM and IP traffic serviced by our DSL switch.

The Internet has created an explosion of potential for data, voice, and video services for customers ranging from consumer Internet access to sophisticated business-to-business e-commerce. At the same time, the competition for end-customer capture has never been greater. Network providers have learned that first-generation, transmission-oriented DSLAMs focused on transmission layer performance alone do not provide the foundation required to satisfy the growing need for the increasingly stratified service offerings required to meet the wide variety of residential and business customer needs. Building networks around the Cisco 6260 switch along with the powerful Cisco family of customer premises equipment (CPE), aggregation, network switching, routing, and end-to-end network management solutions gives network providers the power to move to true multiservice network offerings over a single, extensible, New World network architecture.

Figure 1 Cisco 6260 IP DSL Switch



Cisco 6260 Product Overview

The Cisco 6260 is a multiservice IP DSL switch designed for worldwide markets and customers including PTTs, CLECs, and MDU service providers. The Cisco 6260 provides a fully redundant ETSI platform with the capability to support up to 240 DSL modems per shelf (120 using four-port line cards) and up to 3120 ports per system (1560 using four-port line cards) using advanced, fair-service subtending capabilities. Initial DSL line-card options include ANSI-compliant T1.413 Issue 2 and ITU-compliant G.lite with plans for symmetrical G.shdsl offerings in the near future. The Cisco 6260 also includes optional support for plain old telephone service (POTS) via optional POTS splitter equipment and ISDN via optional POTS, and ISDN splitter equipment supplied through Cisco alliance providers.

Figure 2 Cisco Four Port ADSL Card



Internally, the Cisco 6260 switch supports a standards-based, highly scalable ATM switching architecture that provides for a variety of advanced QoS and traffic-management capabilities. The architecture supports up to one million cells of buffering to ensure optimal application throughput and performance. Other advanced capabilities include support for ATM signaling for automated virtual circuit provisioning (or soft PVCs) and native ATM SVC applications, traffic shaping, and fair-service subtending. The Cisco 6260 runs the widely deployed Cisco IOS® software and is completely SNMP-managed using Cisco DSL Manager, an advanced element-management platform with support for standards-based management interfaces that allow for integration into higher-layer management architectures.

Feature Summary

- Global availability and compliance—The Cisco 6260 switch is designed for worldwide market and deployment needs based on ETSI compliance and compatibility with international telephone network requirements. Cisco worldwide technical and customer service support teams are regionally deployed to ensure the highest level of customer care and service support available.
- ETS-300 mechanical design—The Cisco 6260 switch is designed for ETS-300 or 19-inch deployment applications. Interface cabling and wiring for both products have full-front access, making them ideal for back-to-back or flush-to-wall installations often found in MDU environments.
- Advanced services ATM architecture—The Cisco 6260 internal design is based on a high-performance ATM switching architecture that includes more than one million cells of buffering, support for multiple ATM service qualities (CBR, VBR, VBR-nrt, UBR), and a variety of ATM traffic management and shaping capabilities.
- Scalability with fair-service subtending—The Cisco 6260 supports subtending of up to 13 shelves of user traffic, all concentrated onto a single network WAN interface port. A variety of WAN and subtend interface port configurations are available, allowing for flexible service architecture design and optimized cost. The Cisco 6260 subtending architecture ensures that all subscriber traffic has fair and prioritized access to network bandwidth thereby ensuring sustained throughput and performance for all users.

- Multiservice DSL support—The Cisco 6260 supports a variety of DSL modem line-card options. First release product supports a four-port ITU/ANSI-compliant ADSL line card and up to 120 ports per shelf. ITU-compliant ADSL over ISDN (G.992.1 Annex B) and SDSL line cards are also planned for future releases.
- SVCs—Support for ITU and ATM Forum UNI 3.1 and 4.0 SVCs provides end-user applications with real-time access to bandwidth and QoS. Support for PNNI call routing and call admission control (CAC) is also included.
- Soft PVC provisioning—ATM signaling can also be utilized between the Cisco 6260 access network and the Cisco 6260 element-management system for automated provisioning of ATM virtual circuits. This capability, also referred to as soft PVCs, greatly reduces the time and cost of manual, step-by-step VC provisioning.
- Network-management support—The Cisco DSL Manager provides comprehensive Cisco 6260 element-management and operations support based on standard SNMP technology. Additionally, using standards-based network management interfaces and protocols, the Cisco DSL Manager can be directly integrated with other Cisco or customer-provided operations management systems for delivery of integrated, end-to-end service management solutions.
- Multiservice IP+ATM DSL solutions—Cisco multiservice IP+ATM DSL solutions enable the delivery of multimedia and managed services to both residential and business users over one DSL infrastructure. The Cisco end-to-end DSL service offering, enabled by Cisco 6000 IP DSL switch, offers privacy, QoS, flexibility, and scalability with IP+ATM, to any user, any place.
- Fairness-based subtending—Individual rate schedulers can support up to 3120 ports with a subtended configuration allowing service providers to extract maximum value from each ATM wide area network (WAN) connection without creating the “parking lot” problem characteristic of first-generation DSLAM architectures.

Figure 3 NI2 System Card



Table 1 Cisco 6260 IP DSL Switch

Technical Specification	
Dimensions (ETS Mechanical) (H x W x D)	<ul style="list-style-type: none"> • 23.5 x 17.5 x 11 in. (598 x 445 x 278 mm)
Weight (empty)	<ul style="list-style-type: none"> • 48 lb (21.8 kg)
Card Slots	<ul style="list-style-type: none"> • 32 total • NI-2 system cards: 2 (1 + 1 redundant optional, future) • Subscriber line cards: 30 (N + 1 redundant optional, future)
DC Power Entry Modules	<ul style="list-style-type: none"> • 2 (1 + 1 redundant optional)
AC Power Entry Modules (future)	<ul style="list-style-type: none"> • 2 (1 + 1 future redundant optional)
Cabling	<ul style="list-style-type: none"> • DSL interface connectors: 10 RJ-21 (50-pin CHAMP) • Auxiliary ports: 1 DB-9 connector • Console ports: 1 DB-9 connector • Office alarm support: 6 alarm relay connectors
NI-2 System Card-Interface Options	<p>Interfaces</p> <ul style="list-style-type: none"> • 1 STM-1 WAN Interface, 1 STM-1 subtend interface <ul style="list-style-type: none"> – Dual SC fiber – Single mode intermediate reach and multi-mode • 1 E-3 WAN interface, 2 E-3 subtend interfaces • 18 x E1 IMA WAN/subtend interfaces <p>IP+ATM Features</p> <ul style="list-style-type: none"> • UNI 3.1/4.0 • UBR, ABR, VBR-nrt, VBR-rt, CBR • PVCs, SPVCs, and SVCs • 512K VCs, 256 VPs (32 shaped) • ILMI • IISP/PNNI • Egress traffic shaping • Traffic policing (usage parameter control) per ITU-T I.371 and ATM Forum UNI Specifications • EPD, PPD 2H 00 • MPLS/VPN <p>Management System</p> <ul style="list-style-type: none"> • Cisco DSL Manager <p>Other</p> <ul style="list-style-type: none"> • MIPS processor running Cisco IOS 12.0(5) DA and SNMP V2 • Management interfaces <ul style="list-style-type: none"> – In-band: ATM VC – Out-of-band: 10BASET Ethernet • RS-232 console (RJ-48) • RS-232 auxiliary (RJ-48) • External timing interface (BITS)
DSL Interface Options	<ul style="list-style-type: none"> • ADSL <ul style="list-style-type: none"> – ANSI T1.413 Issue 2 – ITU G.992.1 (G.dmt Annex A) – ITU G.992.1 Annex B (ADSL over ISDN) – ITU G.992.2 (G.lite) • G.SHDSL (future)

Table 1 Cisco 6260 IP DSL Switch (Continued)

Technical Specification	
Data Rate	ANSI T1.413 Issue 2, ITU G.992.1 (G.dmt) ADSL <ul style="list-style-type: none"> • Downstream speed range: 32 to 8032 kbps • Upstream speed range: 32 to 864 kbps • Increments: 32 kbps
	ITU G.992.2 (G.lite) ADSL <ul style="list-style-type: none"> • Downstream speed range: 32 to 1536 kbps • Upstream speed range: 32 to 512 kbps • Increments: 32 kbps
Power Input (redundant)	<ul style="list-style-type: none"> • -40.5 Volt DC to -75 volt DC
Power Consumption	<ul style="list-style-type: none"> • 830W (fully configured)
Maximum Power Input	<ul style="list-style-type: none"> • 1200W
Operating Temperature	<ul style="list-style-type: none"> • 23 to 131 F (-5 to 55 C)
Relative Humidity	<ul style="list-style-type: none"> • 5 to 95%
Cooling	<ul style="list-style-type: none"> • Forced air using internal fans
Environmental and Safety Compliance	ETSI: ETSI ETS 300 386
	EMI/RF: FCC Part 68 and Part 15 Class A; CSL Class A; EN 55022 Class A
	EMC: VCCI Class I; AS/NRZ 3548 Class A
	Safety: UL 1950 3rd Edition / CSA C22.2 No. 950 - with no D3 deviations, and with UL and either CSA or CUL approvals EN60950 with Amendments 1, 2, 3, and 4 for CE marking to LVD directive IEC950 with Amendments 1, 2, 3, and 4, and with all national deviations, and with a CB report Austel TS001 AS/NZS 3260 IEC825-1, -2 / EN60825 21CFR1040 ETS 300 046, 047, 153, 156, 248



Corporate Headquarters
 Cisco Systems, Inc.
 170 West Tasman Drive
 San Jose, CA 95134-1706
 USA
<http://www.cisco.com>
 Tel: 408 526-4000
 800 553-NETS (6387)
 Fax: 408 526-4100

European Headquarters
 Cisco Systems Europe
 11, Rue Camille Desmoulins
 92782 Issy Les Moulineaux
 Cedex 9
 France
<http://www-europe.cisco.com>
 Tel: 33 1 58 04 60 00
 Fax: 33 1 58 04 61 00

Americas Headquarters
 Cisco Systems, Inc.
 170 West Tasman Drive
 San Jose, CA 95134-1706
 USA
<http://www.cisco.com>
 Tel: 408 526-7660
 Fax: 408 527-0883

Asia Pacific Headquarters
 Cisco Systems Australia Pty., Ltd.
 Level 17, 99 Walker Street
 North Sydney
 NSW 2059 Australia
 Tel: 61 2 8448 7100
 Fax: 61 2 9957 4350

**Cisco Systems has more than 200 offices in the following countries. Addresses, phone numbers, and fax numbers are listed on the
 Cisco Connection Online Web site at <http://www.cisco.com/go/offices>.**

Argentina • Australia • Austria • Belgium • Brazil • Canada • Chile • China • Colombia • Costa Rica • Croatia • Czech Republic • Denmark • Dubai, UAE
 Finland • France • Germany • Greece • Hong Kong • Hungary • India • Indonesia • Ireland • Israel • Italy • Japan • Korea • Luxembourg • Malaysia
 Mexico • The Netherlands • New Zealand • Norway • Peru • Philippines • Poland • Portugal • Puerto Rico • Romania • Russia • Saudi Arabia • Singapore
 Slovakia • Slovenia • South Africa • Spain • Sweden • Switzerland • Taiwan • Thailand • Turkey • Ukraine • United Kingdom • United States • Venezuela