System Specifications

Table A-1 lists the system specifications for the Cisco 6400 carrier-class broadband aggregator.

Table A-1 Cisco 6400 Specifications

Description	Specifications
Switch capacity	5 Gbps[1] shared memory, nonblocking switch fabric 65,536 cells of ATM cell buffers
Software images	Default image PNNI and plug-and-play capacity
Dimensions (H x W x D)	21.75 in. x 17.5 in. x 12.0 in. (55.2 cm x 44.4 cm x 30.4 cm) standard 19-in. rack mount Chassis depth with optional cable cover is 13.75 in. (34.9 cm) NSP: 16.0 in. x 2.0 in. x 10.0 in. (40.6 cm x 5.0 cm x 25.4 cm) NRP: 16.0 in x 1.2 in x 10.0 in (40.6 cm x 3.0 cm x 25.4 cm) OC-3/STM-1 NLC: 7.0 in. x 1.2 in. x 10.0 in. (17.7 cm x 3.0 cm x 25.4 cm) DS3 NLC: 7.0 in. x 1.2 in. x 10.0 in. (17.7 cm x 3.0 cm x 25.4 cm) OC-12/STM-4 NLC: 16.0 in. x 1.2 in. x 10.0 in. (40.6 cm x 3.0 cm x 25.4 cm)
Weight	Chassis minimum configuration (1 NSP, 1 PEM): 80 lb (37 kg) Chassis fully configured (2 NSPs, 6 NRPs, 4 OC-3/STM-1 or 4 DS3 or 2 OC-12/STM-4 NLCs, and 2 PEMs): 130 lb (59 kg)
Input power requirement	1200W maximum (PEM-PWR-DC) (DC version) 1400W maximum (PEM-PWR-AC) (AC version)
Power dissipation	1200W maximum, 900W typical with maximum configuration
Heat dissipation	1200W (3768 Btu[2]/hr) (DC version) 1400W (4760 Btu/hr) (AC version)
DC input voltage range	–40.5 to –72 VDC (rated -48/-60 VDC)
DC current rating (input)	Maximum power budget: 20A @ –48 VDC
AC input voltage range	90 to 255 VAC (rated 100 to 240 VAC using AC PEM) (See *Cisco 6400 Hardware Installation and Maintenance Guide, Appendix D* for AC power shelf ratings)
AC current rating (input)	15A @ 100 VAC, 7A @ 240 VAC, using AC PEM (See *Cisco 6400 Hardware Installation and Maintenance Guide, Appendix D* for AC power shelf ratings)

Table A-1 Cisco 6400 Specifications (continued)

Description	Specifications
Airflow	140 cfm[3] through the system blower module 200 cfm through the system blower module when the exhaust temperature exceeds 40°C
Operating temperature range	25 to 104°F (–4 to 40°C) Short-term operating temperature is limited to 131°F (55°C) in compliance with Bellcore GR-63
Nonoperating temperature range	–40 to 167°F (–40 to 75°C)
Humidity	5 to 95%, noncondensing
Altitude	–200 to 10,000 ft (–61 to 3048 m)
Interface timing	Loop timing, network timing derived from any NLC interface, Stratum 4 accuracy when internally timed. NSP-S3B also allows network timing from CO BITS, Stratum 3 accuracy when internally timed.
Node switch processor (NSP)	64 MB DRAM, 8 MB Flash memory, 20 MB FlashDisk card (C6400-NSP-1) Upgradeable to 128 MB DRAM (MEM-NSP-128M) Upgradeable with 350 MB Flash disk (MEM-NSP-FD350)
Node route processor (NRP)	64 MB DRAM, 8 MB Flash memory (C6400-NRP-1) Upgradeable to 128 MB DRAM (MEM-NRP-128M) Upgradeable to 16 MB Flash memory (MEM-NRP-FS16M)
Full-height node line card (NLC) carrier module	Carrier module for 2 half-height NLCs with covers for empty slots installed (C6400-CARRIER)
OC-3/STM-1 NLC	NLC with 2 SONET STS-3c/SDH STM-1 single-mode intermediate reach fiber ports, SC connectors (NLC-2OC3-SM)
Fiber-optic power levels: OC-3 single-mode intermediate reach Output center wavelength Transmit Receive	 1261 to 1360 nm[4] Minimum: –14.0 dBm Maximum: –8.0 dBm Minimum: –32.5 dBm Maximum: –8.0 dBm
DS3 NLC	NLC with 2 coaxial cable connections with BNC connectors (NLC-2DS3-BNC) Maximum station-to-station cabling distance is 450 ft (137 m)
OC-12/STM-4 NLC	NLC with 1 SONET STS-12c/SDH STM-4 single-mode intermediate reach fiber ports, SC connector (NLC-1OC12-SM)

Table A-1 Cisco 6400 Specifications (continued)

Description	Specifications
Fiber-optic power levels: OC-12 single-mode intermediate reach Output center wavelength Transmit Receive	 1261 to 1360 nm Minimum: –15.0 dBm[5] Maximum: –8.0 dBm Minimum: –28.0 dBm Maximum: –8.0 dBm
NSP interface ports	RJ-45 IEEE 802.3 Ethernet 10BaseT RJ-45 auxiliary (AUX) port for modem access RJ-45 console (CON) port for terminal access
ATM connections	32,000 point-to-point, 2048 point-to-multipoint (maximum)
Network management	Port TX and RX LEDs, switch and common equipment status LEDs Port snooping and connection steering Multiple standard and enterprise MIBs Text-based command-line interface based on familiar router interface Standard Cisco IOS security capabilities: password and TACACS, Telnet, TFTP, BOOTP, LAN Emulation client, RFC 1577 *Classical IP over ATM client (for management access)*
Mean time between failures	17 years per RIN

Table A-1 Cisco 6400 Specifications (continued)

Description	Specifications
Maximum station-to-station cabling distance	10BaseT Ethernet—Category 3-5 UTP: 328 ft (100 m) ATM single-mode—8/125-micron single-mode fiber: 9 miles (15 km)
Agency Approvals	Safety: UL 1950, CSA-C22.2 No. 950-95, EN60950, ACA TS001, AS/NZS 3260, IEC 950, NOM 019, Laser Safety: 21CRF1040, Subchapter J, EN60825-1, EN60825-2 Emission: 47CFR15 Class A (FCC), CISPR22 Class B, EN55022 Class B, AS/NZS 3548 Class B, ICES-003 Class B, VCCI Class B, BSMI (CNS 13438) Class B, IEC1000-3-2, IEC1000-3-3 Immunity: EN61000-4-2/IEC-61000-4-2, EN61000-4-3/IEC-61000-4-3, EN61000-4-4/IEC-61000-4-4, EN61000-4-5/IEC-61000-4-5, EN61000-4-6/IEC-61000-4-6 EN61000-4-11/IEC-61000-4-11 Bellcore: GR-63-CORE, GR-1089-CORE, SR-3580 NEBS Level 3 ETSI: EN 300 386-2

1. Gbps = gigabits per second
2. Btu = British thermal units
3. cfm = cubic feet per minute
4. nm = nanometers

Note If the Cisco 6400 is used in an environment where lightning-induced transients are likely to couple to the signal lines, use of shielded interconnection cables for the 100BaseT ports is highly recommended. In addition, use of shielded interconnection cables for the 100BaseT ports is required to meet Bellcore GR1089 CORE Section 4.5.9 and ETSI section 5.2.2.2 (intrabuilding lightning surge).