Ascend

PLATFORM FEATURES

# Ascend Signaling System 7 (SS7) Gateway

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The Ascend SS7 Gateway (ASG) is based upon a fault-tolerant, central-office compliant computing platform that supports the Internet Call Diversion (ICD) application with full Signaling System 7 (SS7) capabilities. The ASG is fully integrated with Ascend MAX TNT™ WAN access switches, alleviating congestion on voice networks by diverting data calls from Class 5 switches.

A 50,000 port configuration includes a Model 418 fault-tolerant ASG platform with .05GB memory, SS7 links and an Internet Call Diversion software license. Cost for this configuration works out to an economical $24/port (U.S.). A 100,000 port configuration includes a Model 428 fault-tolerant ASG platform with 1GB memory, SS7 links and an Internet Call Diversion software license; the cost is equivalent to $18/port (U.S.). These configurations are based upon industry-wide averages for data call traffic patterns; they may not be the same for every service provider. Installed configurations will be based on traffic studies in individual service provider networks.

Adding PCI-based I/O controllers can provide additional connectivity. Customers outside the U.S. should contact their local Ascend representative or reseller for pricing and availability information.

## Features

- ***Integrated end-to-end solution builds on market-leading technology.*** Because the ASG integrates with the carrier-class MAX TNT WAN access switch, service providers benefit from a proven solution that is a long-standing market share leader. Ascend has been recognized as the market leader for the first half of 1998 in the following markets: total worldwide remote access server (RAS) concentrator revenue and ports shipped (International Data Corp.); RAS concentrator end-user revenue, manufacturer revenue and port shipments (Cahner's In-Stat); total remote access concentration, service provider remote access concentration, and asynchronous port shipments (The Dell'Oro Group); and access concentrator factory revenue (Dataquest). In addition to first-half figures, Ascend has recently been recognized as the market leader for all of 1998 in remote access concentrator revenue (Frost & Sullivan).

- ***Fault-tolerant system.*** The ASG Platform is designed for trouble-free set-up, robust processing, and 99.999% availability. All computation, storage, and internal I/O operations run in parallel on duplexed hardware. Each circuit board continually checks itself for hardware errors. If a logic fault is detected, the system stops the faulty board instantly. The duplex partner board continues processing uninterrupted.

- ***Built-in reliability and 24 x 7 serviceability assure uninterrupted service.*** The ASG monitors and diagnoses its own operation, automatically alerting the Ascend Technical Assistance Center (ATAC) at the first sign of a potential problem. A replacement part is dispatched to arrive the next business day and can be installed without interrupting the system's operation. All major components of the fault-tolerant hardware platform, including processors, disks and power supplies, are fully duplicated to assure uninterrupted operation even in the event of a component failure. In addition, the ASG includes sophisticated power-up diagnostics, duplicated ECC-protected memory and duplicated disks and SCSI controllers to prevent data corruption.

- ***Carrier-class solution enables smooth deployment.*** The ASG platform meets Network Equipment Building System (NEBS), European Telecommunications Standards Institute (ETSI) and other standard specifications for computer equipment in central office and switching environments. The platform is engineered and packaged to operate on -48 volts DC power for central office installability worldwide.

- ***Open systems architecture.*** The open system platform uses industry standard PCI I/O and the HP-UX™ operating system. In addition, the multipurpose architecture supports deployment of additional applications and services on the same platform.

- ***Scalability from 50,000 to 100,000 ports.*** A single gateway can support many network access devices that are sited in one location or geographically distributed, delivering a solution that can scale up to tens of thousands of modem ports. These configurations are based upon industry-wide averages for data call traffic patterns; they may not be the same for every service provider. Installed configurations will be based on traffic studies in individual service provider networks.

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# Physical and Environmental Specifications

## Cabinet Dimensions

- Height 182.9 cm (72 in)
- Width 60.0 cm (23.6 in)
- Depth 60.0 cm (23.6 in)
- Weight 318.2 kg (700 lb.) max. configuration

## Environment

Operating Temperature
Installed at:

- -200 to 6,000 ft 4.5° to 40° C (40° to 104° F)
- 6,000 to 8,000 ft 4.5° to 35° C (40° to 95° F)
- 8,000 to 10,000 ft 4.5° to 30° C (40° to 86° F)

Short Term (<72 hrs) Operating Temperature
Installed at:

- -200 to 6,000 ft 1.7° to 49° C (35° to 120°F)
- 6,000 to 8,000 ft 1.7° to 45° C (35° to 113° F)
- 8,000 to 10,000 ft 1.7° to 35° C (35° to 95° F)

Max. Rate of Temperature Change:

- 12°C/hr (21.6°F/hr)

Maximum Heat Dissipation:

- 11,100 BTU/hr

Operating Humidity:

- 10% to 80% non-condensing

Acoustic Noise:

- 39.8 dbA

## Electrical

- DC Service Requirements
- -48 VDC 60A, Maximum Configuration
- (2 60A Feeds Recommended for Redundancy)

- DC Input Voltage
- Nominal -48.0 VDC
- Maximum -60.0 VDC
- Minimum -40.5 VDC

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# Central Office Standards

**Safety**
NEBS fire resistance and electrical environment standards; AT&T NEDS electrical safety criteria, hazardous material objectives; European ETSI electronic data processing equipment standards

**Electromagnetic Radiation**
FCC Class A commercial equipment standard; AT&T NEDS electromagnetic interference standard; European ETSI emissions standards; Japanese VCCI Class 1 commercial equipment standards

**Electromagnetic Susceptibility**
European IEC radiated electronic field requirements

**Electrostatic Discharge**
AT&T NEDS electrostatic discharge specification; European IEC electrostatic field requirements

**Power Line Distortion**
European standards for electrical fast transients and power and communication line surge

**Telecommunications**
U.S., Europe, and Japan approvals for telecommunications

**Acoustic Noise**
ISO and AT&T NEDS acoustical noise standard

**Thermal Environment**
AT&T NEDS environmental temperature and humidity specification

**Transportation Shock and Vibration**
NEBS Transportation Test, Drop Test; AT&T NEDS shock and vibration specifications

**Earthquake and Office Vibration**
NEBS Seismic Zone 4 Test, Office Vibration Test; AT&T NEDS earthquake and office vibration tests

ASCEND

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