PRODUCT INFORMATION

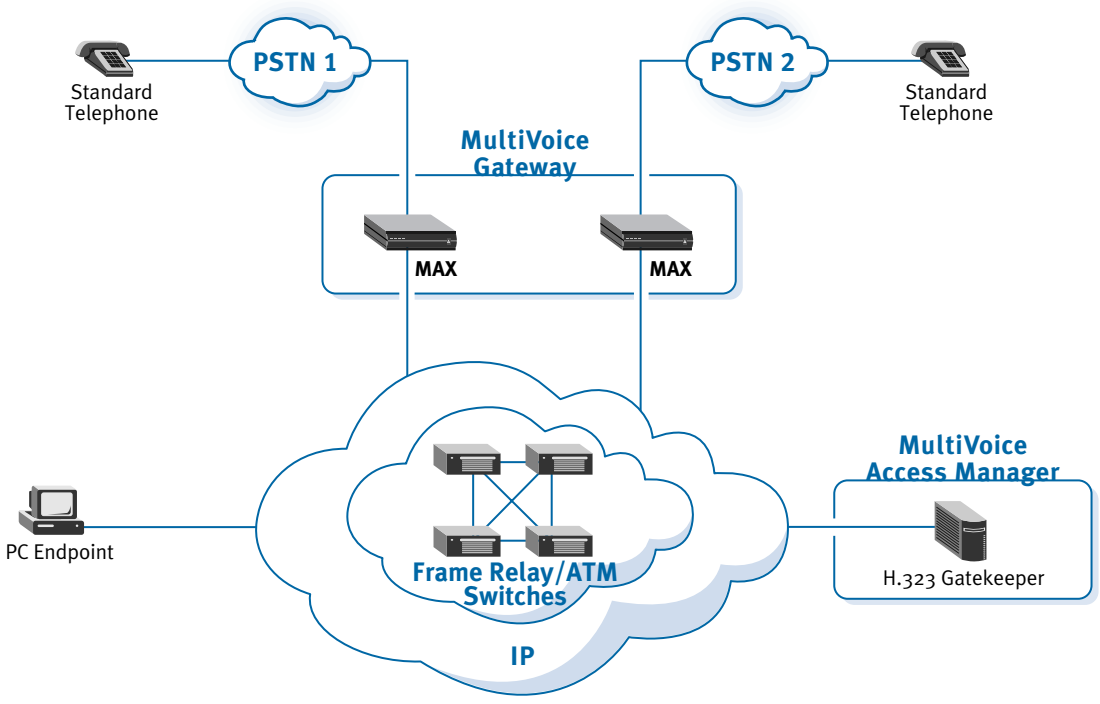
Ascend

MultiVoice for the MAX

MultiVoice™ for the MAX™ enables voice traffic to be sent and received over IP-based networks such as the Internet, private intranets and extranets. Part of the Ascend MultiVoice strategy, MultiVoice for the MAX offers an integrated Voice-over-IP (VoIP) solution that is high quality, high performance, cost justifiable, scalable and based on international standards. It gives enterprise customers, service providers and carriers an immediate and affordable way to introduce real-time voice communications to their traditional IP backbone networks.

Available for MAX 2000, 4000 and 6000 series WAN access switches, MultiVoice for the MAX is without equal in real-time IP Telephony; no other VoIP solution is so extensive and integrated. Whether your company is an enterprise hoping to save on long distance and internal voice network costs, an ISP exploring transaction-based billing and new service opportunities, or a CLEC investigating ways to generate additional revenue from leased lines and local calls, MultiVoice for the MAX is the solution.

MultiVoice for the MAX VoIP Network



MultiVoice for the MAX enables telephone calls to be transmitted over IP networks with toll-quality clarity and integrity. The MultiVoice Gateway component serves as the interface between IP networks and the PSTN, and the MultiVoice Access Manager component provides network routing functions.

The Industry's Most Highly Integrated System for Voice-over-IP

Complete VoIP solution integrates easily with existing networks to give you VoIP today

Why waste time piecing together unscalable and unintegrated VoIP solutions from other companies when MultiVoice for the MAX enables you to start implementing VoIP services today? MultiVoice for the MAX is supported on new MAX 6000 units (up to 48-port T1 or 60-port E1) and on MAX 2000 units (12-port T1 and 16-port E1) as a VoIP bundle. It is also supported on existing MAX 4000 units as an upgrade with additional hardware and software. No matter which of these MAX platforms you select, you get a coherent and seamless VoIP solution that grows with your network. (For even greater scalability and port density, MultiVoice for the MAX will soon be available for the MAX TNT. Contact Ascend for availability.)

Latest VoIP software technology enables highest quality voice transmission, granular management and reliable authentication

Groundbreaking Ascend VoIP software technology enables MultiVoice for the MAX to deliver high signal transmission quality as well as sophisticated management and user authentication features. Software components include MultiVoice Gateway for the MAX and MultiVoice Access Manager. Integrating seamlessly with the MAX hardware, they give MultiVoice for the MAX its unsurpassed clarity, versatility and security. Ascend Navis™ network management software provides network operators the capability to manage the network with easy-to-use graphical interfaces.

MultiVoice Gateway for the MAX

MultiVoice Gateway for the MAX provides the interface between the public switched telephone network (PSTN) and an IP or Frame Relay network. It uses standard protocols and techniques to packetize and compress voice signals at the transmitting gateway and to restore the signals at the receiving gateway.

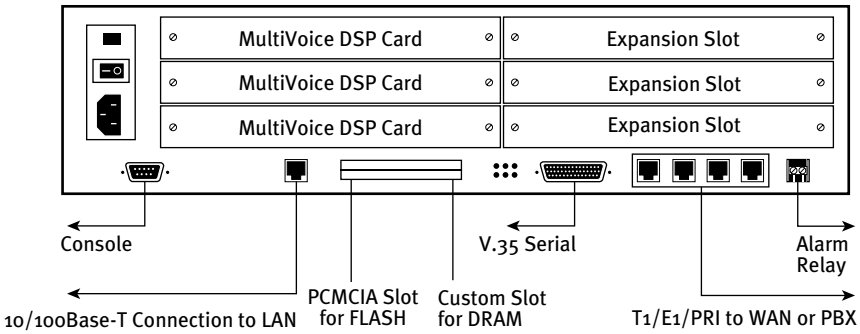
- Interfaces PSTN to T1, PRI, E1 and E1/R2 WAN interfaces
- Supports different levels of voice compression (including silence detection and removal) to reduce data throughput requirements on the packet network
- Emulates PSTN phone networks through DTMF tone detection and generation
- Supports Ethernet or Frame Relay connections to the WAN
- Works with MultiVoice Access Manager to establish and terminate calls
- Supports phone-to-phone and phone-to-PC connections

MultiVoice Access Manager

MultiVoice Access Manager supports the network routing functions that connect voice calls on the IP network. It is also responsible for user authentication, alias translation and call accounting features.

- Installs on any server running Windows NT 4.0 (Intel-based) or Solaris v.2.5.1 (SPARC-based)
- Authenticates users, as determined by Personal Identification Numbers (PINs) and/or Automatic Number Identification/Calling Line ID (ANI/CLID)
- Converts telephone numbers to IP addresses and maps aliases to actual numbers and addresses
- Familiar Web browser interface makes it easy for network managers to add, modify, remove and display user and gateway database information, and to configure gateway coverage areas
- Supports call accounting record keeping and third-party billing support

MAX 6000 Backpanel



A Versatile VoIP Solution for Enterprise Networks, Service Providers and Carriers

Because it delivers the network integrity and signal quality customers have come to expect from traditional voice networks, MultiVoice for the MAX is ideal for enterprise customers, service providers and CLECs whose goal is providing top-notch voice transport over IP networks. Now the secure, scalable, manageable and reliable networks customers depend on for transmitting computer data can transmit voice data without disruption. With MultiVoice for the MAX, customers derive more value from their networks.

Enterprise Benefits

MultiVoice for the MAX lets enterprise customers use the same hardware platform for voice and data when accessing the corporate network.

- Unloads overburdened private voice networks by using spare capacity in the customer's internal packet network (intranet) to carry voice calls between PBXs
- Provides a backup for existing voice trunks so important business calls won't be lost to downtime
- Simplifies management by allowing MIS managers to support small or branch office locations over a single packet network

ISP Benefits

Service Providers using MultiVoice for the MAX get voice services from their MAX units at a very competitive per-port price.

- Gives ISPs a ready way to offer new services and generate additional revenue from the existing network infrastructure and customer base
- Provides a convenient way to cost justify increased Internet access "pipes" to carry voice traffic in addition to standard data traffic
- Enables customers to be billed according to their network usage and the transmission quality standards they select

CLEC/Telco Benefits

MultiVoice for the MAX enables carriers to use their existing IP network to offload the switched telephone network while providing comparable signal transmission quality.

- Lowers backbone infrastructure cost by using a single data network to support multiple voice and data services
- Creates new opportunities for generating revenue from leased lines and local calls
- Enables a two-tier pricing structure (circuit switched service/packet switched service) to address the competitive threat from other service providers

MultiVoice Alliance Program (MAP)

The Ascend MultiVoice Alliance Program (MAP) is a service delivery framework that supplies network service providers (NSPs) with "best-in-class" IP based service solutions from leading third-party application developers.

MAP gives NSPs a quick and convenient way to roll out multiple services on the MultiVoice platform, as well as the flexibility to tailor their networks to address particular service needs. With third-party applications delivered through MAP, NSPs can offer a portfolio of value-added services that include the PSTN-type features and innovative capabilities customers want most.

MAP offers IP-based service solutions in today's hottest application areas

The MultiVoice Alliance Program covers a variety of application areas, enabling NSPs with MultiVoice to choose the most sought after IP-based service solutions for their customers. Application areas currently include:

- **Billing/Provisioning** - Software billing solutions enable NSPs to bill customers based on usage
- **Settlement** - NSPs can terminate VoIP/FoIP calls worldwide by using a public or private clearinghouse
- **Faxing** - Internet based fax solutions allow NSPs to provide FoIP services to customers at significant cost savings
- **Multimedia** - IP-based multimedia applications enable NSPs to provide value-added services that take advantage of the voice, fax and data capabilities of the Internet
- **Unified Messaging** - These services let NSP customers access voice, fax and e-mail messages from a single "in-box"

Network-wide management lets users select the appropriate QoS level for their needs

MultiVoice for the MAX works on unmanaged IP networks such as the Internet, but even better results are achieved when a managed IP network is used. Because Ascend solutions include switches at the network core as well as access devices at the network edges, a managed end-to-end public or private IP network is easy to establish and operate.

Ascend IP Navigator™ software works with the carrier-class switches at the core layer and MAX units at the access layer to achieve superior performance, enhanced reliability and reduced latency. As a result, MultiVoice for the MAX can be delivered to customers along with an exclusive Quality of Service (QoS) feature called "Absolute" QoS, "Absolute" QoS improves the overall reliability and quality of packet voice calls so that the "toll quality" traditionally associated with the best switched telephone networks is now available on managed IP networks.

IP Navigator achieves "Absolute" QoS by using routing information in the IP packet header. Based on what the "type of service" field in the packet header specifies, the call is routed to the best path available, or mapped to an exclusive high-bandwidth path reserved for critical IP traffic. This capability allows carriers and service providers to offer different classes of MultiVoice service. For example, an ISP could offer a premium, toll-quality service priced at one rate and a "best-effort" service priced at a lower rate. Only MultiVoice for the MAX provides VoIP with such freedom of choice.

Specifications

MAX Platform Support	MAX 2000, 4000, 6000 series (Software upgrade and additional slot cards required for MAX 4000. MAX 2000 and 6000 can be purchased as MultiVoice VoIP bundles)
Slot Card Support	MultiVoice DSP8, MultiVoice DSP12, MultiVoice DSP16
H.323 Operations	Standard gateway operation
Telephony WAN Interfaces	T1, T1/PRI, E1/PRI, E1/R2
Voice Codec Support	G.711, G.729A and G.723.1 Includes G.165 compliant hybrid line echo cancellation and silence detection/comfort noise generation

Access Manager Platform Requirements (minimum configuration)

Windows NT	Pentium 100 MHz CPU 32 MB of system RAM 2 GB of hard disk space CD-ROM Drive 10/100Base-T Network Interface Card Windows NT v4.0
Solaris	128 MB of system RAM CD-ROM Drive Ethernet Card

Information on the MAX 2000, MAX 4000 and MAX 6000 series of WAN access switches, can be found in their respective datasheets, or under the Products listing at www.ascend.com

Ascend Communications, Inc.

Worldwide and North American Headquarters
One Ascend Plaza
1701 Harbor Bay Parkway
Alameda, CA 94502, United States
Tel: 510.769.6001
Fax: 510.747.2300
E-mail: info@ascend.com
Toll Free: 800.621.9578
Fax Server: 650.688.4343
Web Site: http://www.ascend.com

European Headquarters
Rudolf-Diesel-Strasse 16
D-64331 Weiterstadt
Germany
Tel: +49.6150.1094.10
Fax: +49.6150.1094.98

Japan Headquarters
Level 19 Shinjuku Daiichi-Seimei Bldg.
2-7-1 Nishi-Shinjuku
Shinjuku-ku, Tokyo 163-07, Japan
Tel: +81.3.5325.7397
Fax: +81.3.5325.7399
Web Site: http://www.ascend.co.jp

Asia-Pacific Headquarters
Suite 1908, Bank of America Tower
12 Harcourt Road
Hong Kong
Tel: +852.2844.7600
Fax: +852.2810.0298

Latin, South America and the Caribbean Headquarters
One Ascend Plaza
1701 Harbor Bay Parkway
Alameda, CA 94502, United States
Tel: 510.769.6001
Fax: 510.747.2669

Ascend Communications, Inc. develops, manufactures and sells wide area networking solutions for telecommunications carriers, Internet service providers, and corporate customers worldwide. For more information about Ascend and its products, please visit the Ascend Web site at http://www.ascend.com, or email info@ascend.com.

Ascend markets the B-STDX, CBX, GRF, GX, IP, MAX, Multiband, MultiDSL, Navis, Pipeline, SA, SecureConnect and STDX families of products. Ascend products are available in more than 40 countries worldwide.

Ascend and the Ascend logo are registered trademarks and all Ascend product names are trademarks of Ascend Communications, Inc. Other brand and product names are trademarks of their respective holders.

Specifications are subject to change without notice.

© Copyright 1999 Ascend Communications, Inc.

01-121
01/99

ASCEND Where Network Solutions Never End™

ISO 9001 REGISTERED