



ASCENLINK
The Intelligent WAN Load Balancer

Aggregating Links For Maximum Performance

Optimal Network Connectivity | Reliable Network Access | Flexible Network Management

Enterprises are increasingly relying on the internet for delivery of critical components for everyday business operations. Any delays or interruptions in connectivity can easily result in reduced productivity, lost business opportunities and a damaged reputation. Maintaining a reliable and efficient internet connection to ensure the operation of critical applications is therefore key to the success of the enterprise.

Xtera Communications' AscenLink intelligently balances internet and intranet traffic across multiple WAN connections, providing additional low-cost incoming and outgoing bandwidth for the enterprise and substantially increased connection reliability. AscenLink is supported by a user-friendly UI and a flexible policy-based performance management system. AscenLink provides a unique solution that offers comprehensive multi-WAN management that keeps costs down as well as keeping customers and users connected.



AscenLink is the most robust, cost-effective way to:

- Increase the performance of your:
 - Internet access
 - Public-to-Enterprise access
 - Site-to-site private intranet
- Lower Operating Costs
- Increase your network reliability
- Enable Cloud / Web 2.0 Applications
- Monitor Network Performance

Increase Network Performance

AscenLink increases network performance in three key areas:

- Access to Internet resources from the Enterprise
- Access to Enterprise resources from the Internet
- Creation of Enterprise Intranet connections between sites

AscenLink intelligently aggregates multiple broadband and/or leased access lines to significantly increase Internet access performance. AscenLink provides users with shared Internet access from 20Mbit/s to 3Gbit/s. AscenLink makes reacting to network demands fast, flexible and inexpensive. AscenLink transforms underperforming networks into responsive, cost-effective and easy-to-manage business assets.

AscenLink load balances Internet service requests from Enterprise users, optimally distributing traffic across all available access links. AscenLink's 7 different Load Balancing algorithms provide the flexibility to maximize productivity from any network scenario.

AscenLink also load balances service requests from Internet users accessing Enterprise-hosted web, email or VPN servers. Multiple links, media and ISPs can be utilized without complex interfaces or programming with your service providers. Bandwidth can be added and removed quickly and easily.

AscenLink gives you high-performance inter-site connectivity without the need to lease expensive links such as T1 and T3. AscenLink aggregates multiple low-cost Internet access links to create site-to-site Virtual Private Line (VPL) Tunnels of up to 1Gbit/s for LAN-like performance between company locations. By using multiple carriers and media, reliability of these VPL Tunnels can exceed that of traditional engineered carrier links.

Substantially Lower Operating Costs

Once bandwidth requirements exceed traditional asymmetrical Internet access services (like ADSL) there is a very high jump in bandwidth cost to engineered, dedicated access facilities like DS-1/DS-3. Even Metro Ethernet is a large cost increment where it is available. Adding shared Internet access links is substantially less expensive and delivery is substantially faster.

Traditional point-to-point private lines for company intranets are still priced by distance and capacity. Replacing or augmenting dedicated point-to-point services with Virtual Private Line Tunnels reduces costs substantially while increasing available bandwidth and reliability.

AscenLink makes low-cost network access links behave and perform like specially-engineered carrier services at a fraction of the cost.

- Deploy DSL services and get DS-3/STM-1-like speed and reliability while waiting for the carrier to pull fiber
- Add and remove bandwidth for seasonal requirements quickly and easily
- Increase bandwidth to web servers and use multiple ISPs without BGP4 management issues

Increase Network Reliability

Businesses can no longer afford Internet downtime. AscenLink provides fault tolerance for both inbound and outbound IP traffic to ensure a stable and dependable network. Even multiple link failures, while reducing available bandwidth, will not stop traffic. By using diverse media (fiber, copper, wireless) and multiple ISPs (Telco, Cableco, 4G), AscenLink can deliver better than carrier-class "5-9's" reliability.

AscenLink can be deployed in High Availability mode with fully redundant hardware for increased reliability. Larger AscenLink models also feature redundant power supplies for further protection from hardware failures.

Enable Cloud / Web 2.0 Applications

Traditional WAN Optimization products expect that all users connect only to Headquarters servers and Internet gateways over dedicated, symmetric leased lines, but that is already "yesterday's" architecture. Today users want to mix HQ connectivity with direct Cloud access to Web 2.0 applications like email, collaborative documentation, ERP, CRM and online backup.

AscenLink gives you the flexibility to customize your network, giving you complete control. Direct cloud-based applications to links optimized for them and reduce the bandwidth demand on expensive dedicated circuits. Combine access links and/or dedicated circuits into Virtual Private Line Tunnels that will support the fastest video streaming or video conferencing servers that Headquarters can offer.

AscenLink is designed for easy deployment and rapid integration into any existing network topology.

Monitor Network Performance

AscenLink and its companion reporting package, LinkReport, provide comprehensive monitoring and reporting tools to ensure your network is running at peak efficiency. Usage and Quality reports not only allow management to react to network problems, but to plan network capacity, avoiding unnecessary expense while improving network performance.

AscenLink is managed via a powerful Web User Interface. Configuration changes are instantly stored without the need to re-start the system. Configuration files can be backed-up and restored remotely. Traffic measurements, alarms, logs and other management data are stored for trend analysis and management overview.

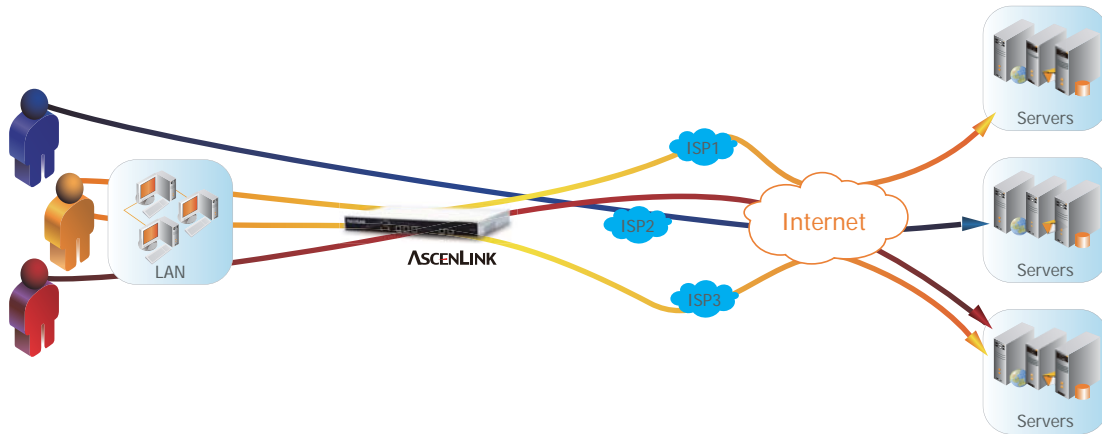


Key Features

Outbound Link Load Balancing

AscenLink distributes traffic across as many as 50 WAN links, under control of load balancing algorithms.

AscenLink's 7 advanced load balancing algorithms let you easily fine-tune how traffic is distributed across the available links. Each deployment can be fully customized with the most flexible assignment of application traffic in the industry.



Optimum Routing

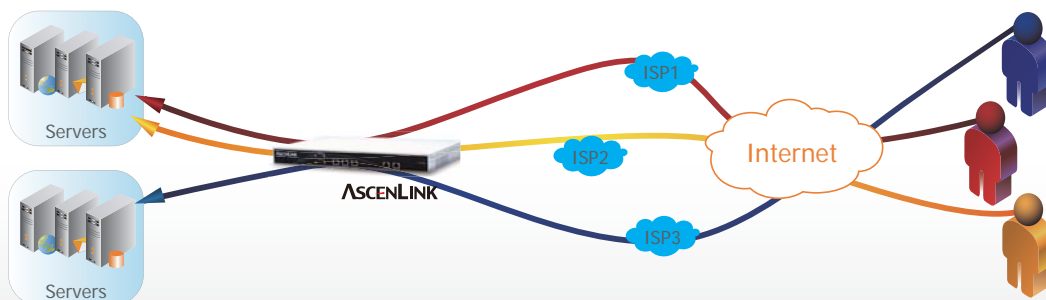
AscenLink continuously monitors the public Internet to select the shortest and fastest route for mission-critical applications. Non-critical traffic can be routed away from the best links when prioritized traffic is present on the links or traffic can be assigned permanently to different groups of WAN links.

Automatic Fall-back or Fail-over

AscenLink detects local access link failures and end-to-end failures in the network and can either fall-back to remaining WAN links or fail-over to redundant WAN links, if needed. Fall-back and Fail-over behavior is under complete control of the administrator, with flexible rule definitions to meet any situation likely to occur. Links and routes are automatically recovered when performance returns to acceptable levels. Notifications will be sent automatically to administrators when link or route problems occur.

Multi-Homing (Inbound Link Load Balancing)

Many enterprises host servers for email, and other public access services. AscenLink load balances incoming requests and responses across multiple WAN Links to improve user response and network reliability. Load balancing algorithms assure the enterprise that priority services are maintained and given appropriate upstream bandwidth.

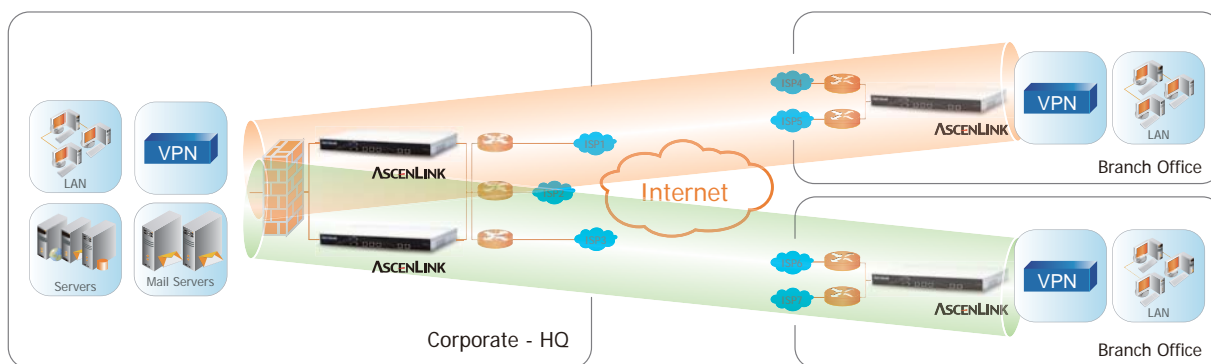


Virtual Servers (Server Load Balancing and High Availability)

AscenLink supports simple server load balancing and server health detection for multiple servers offering the same application. When service requests are distributed between servers, the servers that are slow or have failed are avoided and/or recovered automatically. Performance parameters are controlled by the administrator.

Tunnel Routing (Virtual Private Line Services)

Ascenlink offers the most powerful and flexible multi-link VPN functionality in the industry. Inter-site Tunnels can be created from fractional, full, multiple and fractions of multiple WAN links. Applications requiring large single-session bandwidth such as video conferencing or WAN Optimization can use multiple links to build the bandwidth needed. Multi-session traffic can share an appropriately-sized Tunnel. Tunnels have the same functionality as single links, supporting Load Balancing, Fall-back, Failover and Health Detection within and between Tunnels.



Scalability

AscenLink models support from 20Mbit/s to 3Gbit/s of data throughput. AscenLink is capable of aggregating smaller and older lines to improve data transmission without major network addressing changes. It can also support GbE and 10GbE fiber connectivity to carrier and LAN services. AscenLink can support up to 50 WAN connections – the most in the industry. All Ethernet ports can be programmed as LAN, DMZ or WAN ports. Throughput can be increased via License Key upgrades without replacing hardware. AscenLink grows with your networking needs.

Wide Deployment

Over 3000 AscenLink systems have been deployed in more than 30 countries since 2004. Installations include over 1Gbit/s data traffic, more than 30 WAN links and Virtual Private Line Tunnels exceeding 400Mb/s. Xtera's experience in complex enterprise installations is unrivalled. Highly flexible Routing, Firewall, VLAN, DMZ and DNS parameters ensure that AscenLink will integrate into any enterprise network.

Models	702	703	706	710	5010	5050	5100	6100	6200	6300	
Application Environment	SOHO	SOHO/Branch	Branch	SME	Medium	Medium	Medium	Large	Large	HQ	
Operating System	LinkOS										
WAN Bandwidth (Mb/s)	20	30	60	100	100	500	1000	1000	2000	3000	
WAN Links	25	25	25	25	50	50	50	50	50	50	
Network Interfaces											
Base Unit											
10/100 Base-TX	1	1	1	1	-	-	-	-	-	-	
10/100/1000 Base-TX	4	4	4	4	6	6	6	8	8	8	
1000 Base(SFP) (Note 1)	-	-	-	-	4	4	4	8	8	8	
Optional Network Ports (Optional)											
10000 Base(SFP+) (Note 1)	-	-	-	-	-	-	-	2	2	2	
Other Ports											
HA Ports	RS232	RS232	RS232	RS232	RS232	RS232	RS232	RS232	Ethernet Xover	Ethernet Xover	Ethernet Xover
Physical Specifications											
Dimension (mm) (WxDxH)	440x270x44	440x270x44	440x270x44	440x270x44	440x390x88	440x390x88	440x390x88	431x580x88	431x580x88	431x580x88	
RU	1U	1U	1U	1U	2U	2U	2U	2U	2U	2U	
Weight (kg)	3.3	3.3	3.3	3.3	9.8	9.8	9.8	19	19	19	
Max. Power Consumption(W)	36	36	36	36	140	140	140	225	225	225	
Power Supply Unit	100-240 VAC 60W	100-240 VAC 60W	100-240 VAC 60W	100-240 VAC 60W	100-240 VAC 350W Redundant Hot-swappable	100-240 VAC 350W Redundant Hot-swappable	100-240 VAC 350W Redundant Hot-swappable	100-240 VAC 500W Redundant Hot-swappable	100-240 VAC 500W Redundant Hot-swappable	100-240 VAC 500W Redundant Hot-swappable	

Features

Load Balancing Algorithms

- Fixed / Weighted Round-Robin / Application / Connections / Traffic / FQDN / Optimum Route

Multihoming

- WAN Load Balancing and Fault Tolerance
- Multiple Domains
- DNS Relay

Bandwidth Management by:

- Max. and Min. Bandwidth
- Priority
- Source / Destination IP and Application
- Schedule

Firewall / Security

- Stateful Firewall
- Access Control List
- IP-MAC Mapping
- Connection Limit
- DoS Protection
- Physical DMZ
- User-configurable physical ports for LAN/WAN/DMZ

Tunnel Routing

- VPN Load Balancing
- AES Encryption
- Dynamic IP Support
- NAT Pass Through
- Peer Routing Exchange

Other Features

- Server High Availability
- Built-in DNS
- NAT Mode / Routing Mode
- RIP V1/2 and OSPF
- PPPoE / DHCP WAN Type Support
- Multiple Public IP Pass-Through
- IEEE 802.1q VLAN
- Redundant Power Supply (AL-5000, AL-6000)
- Automated Failover, N:N-1 Redundancy, On Demand Line Backup²
- HA (High Availability)³

Management

- Web Admin (SSL) / Console (RS323, SSH)
- LinkReport support (Optional)
- SNMP V1 / V2 / V3

1. AscenLink 5000 and 6000 series ship without SFP/SFP+ modules installed in the SFP/SFP+ ports.

2. Dial-on Demand Routing and Routing Backup.

3. Optional 2nd unit for 700, 5000 and 6000 series.

4. Xtera also makes the AscenLink 100 and 200 available for specialized deployments. Please contact Xtera for additional information on AL-100/200.

5. This specification is subject to change without notification.

6. Product names and logos belong to Xtera Communications.

7. For more information, you are cordially invited to visit our website at www.xtera.com