

# Ascend

## Ascend MAX Line vs. Shiva LanRover Access Switch

### Brief Description: Shiva LanRover Access Switch (LRAS)

The LanRover Access Switch from Shiva Corporation, Bedford, MA is the company's first attempt to provide an integrated high-end access switch targeted at large corporations and ISPs. The LanRover Access Switch is aimed to compete squarely with the MAX™ line (20XX and 40XX). The product was announced during InterOp Las Vegas in April of '96 and started shipping in June 1996.

- Modular, 11-slot remote access server with 3 slots dedicated for internal processing/network interface/control functions and 8 slots for integrating modems, T1/E1 and PRI
- LAN-to-LAN routing support for IP, IPX and Appletalk
- Support for up to 72 modems (90 in E1 version) and 4 T1/E1/PRI per box (support for 96/120 analog modems is planned)
- Number of ports per modem card is 12; single T1/E1/PRI and dual T1/E1/PRI cards are available
- Remote client software for user to LAN application
- Multi-processing architecture over a TDM backplane (256 64 Kbps channels)
- Support for integrated analog/ISDN (72 concurrent sessions, with over 100 promised)
- Announced future support for ATM and Frame Relay
- Optional PowerBurst data caching client/agent software (North America only)
- New Web management software in Beta will add server activity analysis to Shiva's static NetManager and enable management of other LanRovers

#### List Pricing

Chassis, controller	\$16,400
12-port modem card	\$8,500
12-port 56K modem card	\$5,950
Single T1/PRI card	\$4,800
Dual T1/PRI card	\$7,600
Firewall	\$6,500

- In mid-June, Shiva announced a new unbundled pricing policy for the LanRover line called the "LanRover Power-Up Series" that allows users to purchase software features as components/upgrades. The LanRover is available in the "Power Base" configuration that includes basic routing and configuration software. The "Connectivity Kit" adds dial-out/fax functionality and LAN-to-LAN routing, the "Security Kit" provides authentication and monitoring functionality and the "Performance Kit" adds Shiva's PowerBurst acceleration software. The "Power Suite" option bundles all of the kits listed with RADIUS accounting/call report functionality via LanRover AccessManager™. The U.S. pricing follows:

Connectivity kit	\$499
Security kit	\$499
Performance kit	\$1,999
Power suite	\$2,499



## Ascend MAX Line Competitive Advantages — “The Silver Bullets”

- High degree of scalability and flexibility: Ascend is the leader in providing scalable and flexible access concentrator solutions. The MAX line provides scalable and flexible configurations from 8 to 672 Series56™ Digital Modems and up to 4 T1/E1 or PRI connections (MAX 20XX/400XX) and up to 150 T1s (MAX TNT) thus covering a wide array of customer needs.
- High density modem integration and mixed analog/ISDN sessions: Ascend's MAX 400X line can integrate up to a maximum of 72 modems and provide up to 96 concurrent sessions of analog/ISDN (120 concurrent sessions for E1).
- Most comprehensive set of security features including fully integrated, dynamic firewall capability and extended RADIUS dictionary (over 120 enhancements)
- Guaranteed interoperability with a wide number of modem manufacturers and carrier networks including carriers in over 36 countries
- End-to-end network management: Ascend's NetClarity™ is a multi-vendor solution that provides total Network management — designed specifically for ISPs, carriers and corporations to support a variety of network access services and devices. NetClarity provides discovery and mapping, configuration management, performance measurement and fault monitoring functionality to provide a customized view of the network as a whole, or device by device.
- Proven track record and investment protection: Ascend has the largest installed base of integrated access switches and has been shipping high density access concentrators for over three years. Ascend has installed over 2 million digital ports and over 1.5 million digital modems worldwide. Customers can be assured of investment protection because of Ascend's commitment to developing scalable, compatible and high performance platform solutions.
- Support for a complete set of WAN access protocols: Switched 56, DDS 56, T1/FT1, E1, ISDN BRI and PRI and Frame Relay
- MP+ and Multi-chassis MP+ support: With the introduction of MAX Stack, a feature which maximizes bandwidth availability by enabling multiple MAX WAN access switches to function together as one logical switch for MP, MP+ and BACP calls, Ascend has clearly established itself as the only remote access vendor providing comprehensive bandwidth management features. For example, a single incoming MP call that requests greater bandwidth is given additional unused channels from any MAX unit in the stack. MAX Stack reduces the complexity and increases the simplicity of provisioning access to multiple central site WAN access switches.
- High speed modem support: The MAX line offers new Series56 Digital Modem and xDSL support (IDSL on the MAX 400X platform and IDSL, SDSL, RADSL support on the MAX TNT) for ISPs and enterprises that want to offer their users the widest available access options and upgrade paths.
- Low price/high value: The MAX line now includes low cost products that are bundled with leading edge security and management capabilities offer higher functionality at more competitive prices.

*Any feedback or suggestions are most welcome. This bulletin will be updated regularly. Also, please send any pertinent competitive information from the field to the attention of the Competitive Marketing group in Alameda (x72081).*

## Comparison of Key Features — Ascend MAX Line vs. Shiva LanRover Access Switch

Feature	MAX 20XX	MAX 40XX	Shiva LanRover Access Switch
<b>U.S. List Price</b>			
Base chassis	\$6,500	\$11-\$15,500	\$16,400*
Max.modems/box	12 to 24	8 to 96	72
Price/max modem configuration	\$17,900	\$26,100-\$54,000	\$64,500
Price/modem	\$746	\$542-\$750	\$896
Max. PRI/box	1	2 to 4	4
Concurrent sessions	12 to 24	48 to 96***	100**
Firewall pricing	\$2,000	\$4,000	\$6,500

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**WAN Connectivity/Bandwidth Management**

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T1/E1	Yes	Yes	Yes
V.34	Yes	Yes	Yes
ISDN BRI	Yes	Yes	No
ISDN PRI	Yes	Yes	Yes
PPP	Yes	Yes	Yes
Frame Relay	Yes	Yes	No
AppleTalk remote access	Yes	Yes	Yes
Multilink Protocol (MP)	Yes	Yes	Yes
Multilink Protocol Plus™ (MP+)	Yes	Yes	No
Hardware data compression	Yes	Yes	No
Multi-Chassis MP	Yes	Yes	No
Multi-Chassis MP+	Yes	Yes	No

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**Security**

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PAP/CHAP	Yes	Yes	Yes
TACACS & TACACS+	Yes	Yes	Yes
Dynamic firewall	Yes	Yes	No
RADIUS	Yes	Yes	Yes
Extended RADIUS	Yes	Yes	No
Integrated firewall	Yes	Yes	No
CLID	Yes	Yes	Yes
VPN Tunneling support	Yes	Yes	Yes

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**Network Management**

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Full SNMP MIB support	Yes	Yes	Yes
Total Network (multi-device) management	Yes	Yes	No
Multi-vendor router/switch support	Yes	Yes	No
QoS reporting	Yes	Yes	No
Complete discovery and mapping	Yes	Yes	No

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**Routed/Routing Protocol Support**

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IP	Yes	Yes	Yes
IPX	Yes	Yes	Yes
OSPF	Yes	Yes	Yes
RIP 2	Yes	Yes	Yes

Server Functions			
STAC compression	Yes	Yes	Yes
Terminal server	Yes	Yes	Yes
FAX out	Yes	Yes	Yes
Remote software download	Yes	Yes	Yes
LAN to LAN	Yes	Yes	Yes
Carrier Support			
Redundant power supply	Yes	Yes	No
Cellular service support	Yes	Yes	Yes
DSL Support			
	Yes	Yes	No
K56flex Support			
	Yes	Yes	Promised Summer '97

\* Based on component pricing prior to software unbundling

\*\* Shiva claims that it can provide "over 100 concurrent sessions"

\*\*\* The E1 version supports up to 120 concurrent sessions

## Selling against Shiva LanRover Access Switch

### Major Weaknesses — "The knock-offs"

- LanRover Access Switch is a single product solution and there is no scalable line of product offerings within the same platform.
- The MAX line provides lower per port prices while adding substantially higher value in terms of features and functionality.
- Incomplete WAN access protocol support set — no support for Frame Relay
- No dynamic firewall capability and very limited RADIUS implementation compared to the MAX line
- Not capable of doing transparent bridging for non-routable protocols
- Unconfirmed, imprecise concurrent session capability: claims "over 100"
- No end-to-end multi-device/multi-vendor network management: limited management capabilities are single device only.
- Shiva has no track record with high-end access switches and has very limited ISP experience: In its first year, the Shiva LRAS has barely achieved a 5% market share, whereas the Ascend MAX has a 50% share (IDC, 3/97). The MAX product line has a track record of 3+ years with the largest installed base of integrated WAN access systems.
- The LanRover product line has a history of reliability problems with its integrated modems. In the past, a survey of end-users by a major market research firm revealed this concern with the Shiva LanRover products.
- Q4'96 and Q1'97 showed disappointing results for Shiva's shareholders and the company has been in a "survival" mode rather than "growth" mode; the company relies heavily upon its OEM relationship with Nortel. In March, the two companies announced a mutually exclusive partnership in which Nortel will finance Shiva's Service Provider Group — the group that provides pre- and post- technical and sales support to the carrier and service provider segment — so that it, in effect, has become an arm of Nortel's sales and marketing organization.

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