

Ascend MAX 4048/4060 vs. Bay Networks 8000 RAC

Brief Description: Bay 8000 RAC

The Bay 8000 RAC began shipping in October 1997. It is an access concentrator with a dual ISDN PRI/T1/E1 WAN interface that supports up to 48 modems (62 in E1 version). The Bay 8000 incorporates Rockwell-based DSP digital modems modified by Bay to provide 56K support for both x2 and K56Flex protocols.

In early November 1997, Bay introduced a new remote access server software suite for the 8000 that provides RADIUS support, Multilink Multichassis Point-to-Point Protocol (MPP) support, and V.110 support. The new software is expected to provide hardware-based compression that employs either Microsoft Point-to-Point Compression (MPPC) or STAC support; the corresponding hardware compression card lists at \$995. Bay's security server is called Bay-Secure Access Control that can be used for authentication, authorization and accounting support at an additional charge of \$4,500 or \$8,500 for server with backup.

Modem Port Price Comparison

Bay 8000 RAC	Ascend MAX 4048
\$417 \$614 (with backup security server and compression)	\$542

Important Note: While Bay is promoting the 8000's 56K flexibility between x2 and K56Flex protocols, but due to licensing issues, **users cannot run both x2 and K56Flex on the same 8000 box – they must chose either one protocol or the other.** Therefore *customers still have to purchase two boxes if they need to support both 56K technologies.*

Ascend MAX™ Line Competitive Advantages – “The Silver Bullets”

- **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 four million digital ports and has shipped over two million Series56™ Digital Modems since Spring 1997. Bay's new DSPs are not market tested, and Bay has a limited presence in the ISP market; in Q2'97 Bay had only a 0.8% share of access concentrator analog ports, and no presence in terms of ISDN PRI ports (Dell'Oro Group, 8/97).
- **Part of a scalable product line:** The MAX line provides scalable and flexible configurations from 8 to 672 modems and from a single T1/PRI to T3 connections thus covering a wide array of customer needs.
- **Support for a complete set of WAN access protocols:** Switched 56, DDS 56, T1/FT1, E1, ISDN BRI and PRI, and Frame Relay
- **Most comprehensive set of security features:** The MAX supports extended RADIUS dictionary (over 120 enhancements).
- **Dynamic, integrated firewall capability**
- **Ensured reliability and call performance:** The MAX 4048 supports MNP and MNP 10-EC error correction for cellular calls, V.42 bis data compression, and Group 3 fax support.
- **Integrated software:** the MAX 4048 includes bundled software with Hybrid Access 4000 and MAXStack
- **VPN support with optional ATMP or Point to Point Tunneling Protocol (PPTP) or L2TP (IPSec in the future)**
- **Guaranteed interoperability** with a wide number of modem manufacturers and carrier networks including carriers in over 36 countries
- **End-to-end network management:** Ascend NavisAccess™ 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. NavisAccess 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.
- **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 Multilink PPP 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 anywhere in the stack. MAX Stack reduces the complexity and increases the simplicity of provisioning access to multiple central site WAN access switches.
- **Low Price/High Value:** The MAX line now includes low cost products that are bundled with leading edge security and management capabilities to 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).

Selling against Bay Networks 8000 RAC

Bay 8000 RAC Weaknesses	Ascend MAX 4048 Advantages
<ul style="list-style-type: none"> • New, untested product with a Bay-modified Rockwell DSP just began shipping in October 1997 • Customer must choose between x2 and K56Flex support • 56K performance has not been proven in a production environment • New, untested software • New, untested optional compression hardware at an added cost of \$995 	<ul style="list-style-type: none"> • Ascend has the largest installed base of integrated access switches and has been shipping high-density access concentrators for over three years • Ascend has been shipping its Series56 DSPs since spring 1997, and has proven performance claims (Refer Tolly Group document #7284 and Tolly Group document #7309 "Ascend MAX TNT Remote Access Concentrator Performance and Scalability"). • Hardware compression is standard with Ascend's MAX line – Ascend's customer base has had full hardware compression capability for over three years
<ul style="list-style-type: none"> • No Multilink Protocol Plus, or MultiChassis MPP 	<ul style="list-style-type: none"> • MP and MultiChassis MP/MP+ support; <i>MAX Stack maximizes bandwidth availability by enabling multiple MAX WAN access switches to function together as one logical switch for Multilink PPP calls.</i>
<ul style="list-style-type: none"> • No Frame Relay support 	<ul style="list-style-type: none"> • Ascend's MAX line provides Frame Relay support.
<ul style="list-style-type: none"> • Limited reliability – no redundant power supply 	<ul style="list-style-type: none"> • Redundant power supply and NEBS compliancy.
<ul style="list-style-type: none"> • Limited security features with optional limited RADIUS server • No integrated, dynamic firewall capability 	<ul style="list-style-type: none"> • Standard RADIUS server authentication with over 120 extensions (Ascend Access Control™) comes standard with every MAX 4048/4060. • Low-cost, single vendor security solution with optional dynamic, integrated firewall capability
<ul style="list-style-type: none"> • Proprietary VPN support (Bay Stream Dial VPN Services) 	<ul style="list-style-type: none"> • Ascend's MAX line supports ATMP, PPTP and L2TP.

Comparison of Key Features – Ascend MAX 4048/4060 vs. Bay 8000 RAC

Feature	MAX 4048/4060	Bay 8000
List Price per port/Density Modem configuration/box Price/modem@48 modems	48 (60) \$542	48 (62) \$417-\$614
WAN Connectivity/ Bandwidth Management T1 V.34/K56Flex ISDN BRI ISDN PRI V.110 PPP Frame Relay Option MP MP+ MultiChassis MP MultiChassis MP+ Hardware Data Compression IP Multicast	Yes Yes Yes Yes Yes Yes Yes Yes Yes Yes Yes Yes Yes Yes	Yes Yes No Yes Yes Yes No Yes No Yes No \$995 Option No
Security PAP/CHAP Dynamic Firewall RADIUS Extended RADIUS Integrated Firewall VPN Tunneling support	Yes Yes Yes Yes Yes Yes	Yes No Yes No No Proprietary
Management and Control Full SNMP MIB Support Client Software Modem Round-Robin Allocation GUI configurator Total POP management QoS Reporting Multi-Vendor Router/Switch Support Complete Discovery and Mapping Multi-user, client server JAVA-based GUI configurator	Yes Yes Yes Yes Yes Yes Yes Yes Yes Yes Yes	Yes No No Yes No No No No No No No
Routed/Router Protocol Support IP IPX AppleTalk RIP2 OSPF	Yes Yes Yes Yes Yes	Yes Yes Yes Yes No



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