BAYSTACK 300 SERIES ETHERNET SWITCHES

BAYSTACK SWITCHES

The BayStack™ 300 Series Ethernet Switches are cost-effective switched Ethernet solutions.

The BayStack™ 300 Series Ethernet Switches are designed to improve network performance and prepare networks for future bandwidth needs by segmenting the network into smaller domains, and by providing affordable dedicated bandwidth to power-user desktops and high-utilization servers.

The BayStack 303 Ethernet Desktop Switch is the most affordable enterprise- class desktop switch available, while the BayStack 304 Ethernet Segment Switch defines the best value in segment switching today. Both models feature an MDA slot for an additional autosensing 10BASE-T/100BASE-TX or 100BASE-FX port, supporting a second high-bandwidth 100 Mbps connection to another switch, server, or uplink to the network center.

The BayStack 301 Ethernet Desktop Switch features unique deep-packet filtering (keying on up to 255 bytes into an Ethernet frame), for tremendous administrative control of switch traffic. The BayStack 301 Switch is pre-configured with 22 10BASE-T switched Ethernet ports and 2 built-in 100BASE-TX ports. See Table 1 for complete port and MDA configurations.

Bay Networks Where Information Flows.™

FEATURES AND BENEFITS

Affordability

The BayStack™ 300 Series Ethernet Switches deliver excellent affordability for businesses that are building their networks with future growth in mind.

Built-in VLAN Support

Each BayStack 300 Series switch supports port-based Virtual LANs (VLANs) to extend the broadcast domain, segment network traffic, and improve performance and manageability. VLANs enable adds, moves and changes to be easily accomplished, and also provide a measure of security by limiting broadcast domains. Traffic in different segments and subnets can be separated for maximum throughput and secure networking. Up to 8 port-based VLANS for BayStack 303 and 304 switches, and up to 24 port-based VLANs for the BayStack 301 switch, are supported.

Web-based Network Management

BayStack 303 and 304 Ethernet switches include built-in web-based network management, so network administrators can easily access key information such as device summary, configuration, fault management, statistics, applications, and support. Network managers can access data about their network and individual switches via the local corporate intranet.

Fully Integrated into Optivity Network Management Software

The BayStack™ 300 Series Ethernet Switches are fully integrated into Optivity® network management software from Bay Networks, enabling complete Simple Network Management Protocol (SNMP) and RMON monitoring and control. Network administrators can manage their entire network, including all hubs, switches, and routers, from a single management station. Using Bay Networks' Optivity can dramatically reduce the total cost of network ownership.

Flexible Management Options

BayStack 300 Series switches can be configured and managed by console interface, Telnet, or any SNMP-compatible application such as the Bay Networks Optivity network management system. In addition to full management via Optivity, or web-based management, an easy-to-use menu-driven interface can be accessed via console or Telnet for complete configuration and management. Also, the use of BootP can help retrieve the network configuration of a BayStack 303 or 304 switch and some parameters from server.

Asymmetrical MAC Addressing

High-speed uplink ports on the BayStack 303 and 304 switches can be set to asymmetrical MAC addressing mode to prevent excessive flooding of switch traffic when the number of addresses in the forwarding table exceeds the switch capacity.

MAC Address Table Lookup

MAC table lookup for learned addresses allows users to look up specific MAC entries in the switch forwarding table using a specific MAC address as the access key. The entry tells you whether a specific MAC address has been learned by the switch. It also displays the associated port number on which the MAC frame was first received, making it a useful diagnostic tool to ensure switch settings are optimized for your growing network.

Table 1 Port and MDA (Media-Dependent Adapter) Configurations of the BayStack 300 Series Ethernet Switches

BayStack 300 Series Ethernet Switches	10BASE-T Ports	10BASE-TX Ports	Autosensing 10BASE-T/100BASE-TX Ports	MDA Slot
301	22	2	–	–
303	24	–	1	1
304	12	–	1	1

Concurrent RMON on Every Port

BayStack 300 Series switches feature concurrent RMON on every port, enabling standards-based RMON managers and Optivity applications to manage the network as well as the device. The BayStack 303 and 304 switches support four groups of RMON (Alarms, Events, History, and Statistics) on every port. The BayStack 301 switch supports two groups of RMON (Alarms and Events) on every port.

Port Mirroring

Full RMON and RMON2 capabilities are available for the BayStack 303 and 304 switches via port mirroring, using a Bay Networks StackProbe™ or other compatible external probe. Port mirroring copies packets flowing through a specific port and sends the replicated data to the probe, which performs detailed RMON/RMON2 analysis operations. This enables detailed analysis of switched traffic for debugging and troubleshooting.

Supports IEEE 802.1D Spanning Tree Protocol

Spanning Tree Protocol detects and eliminates logical loops in a Layer 2 bridged or switched network. When multiple paths exist, the Spanning Tree algorithm automatically configures the network and places some ports on standby to form a network with the most efficient traffic paths, avoiding the continual looping of frames. If a path fails, the protocol reconfigures the network to activate standby ports and bring up redundant paths to maintain network operations. This feature is disabled by default, for the BayStack 301 switch. However, for the BayStack 303 and 304 switches, it is on by default.

Spanning Tree Protocol Enhancements

Users can selectively disable Spanning Tree Protocol (STP) on individual ports of a BayStack 303 or 304 switch when the switch is set up with STP enabled. Also, with Fast Start STP, BayStack 303 or 304 switch ports can transition to a faster forwarding rate than in standard 802.1d STP mode. Fast Start STP is particularly useful on ports where there may be only one device connecting into the switch and it may not be desirable to wait for the usual 30 to 35 seconds for STP convergence. Fast Start STP can provide connectivity to stations within 4 seconds of the established link.

Security

BayStack 303 and 304 switches have certain security measures to stop unauthorized access. MAC address-based security allows the BayStack 303 or 304 switch to prevent unauthorized users from accessing the network. Network access is based on source MAC addresses of the authorized stations. In addition, the enhanced management access control feature validates user access to a BayStack 303 or 304 switch against a list of IP addresses of authorized stations. Access is restricted up to eight stations whose IP addresses have been authorized for management access.

Deep-Packet Filtering

Individual deep-packet filters can be created by defining any pattern within the first 255 bytes of an Ethernet frame for the BayStack 301 desktop switch. The BayStack 303 and 304 switches support limited destination address filtering to restrict communication to up to 8 specific stations. This provides tremendous administrative control of switch traffic, improving security and effectively increasing available user bandwidth by restricting most traffic from certain designated network segments.

BAYSTACK 300 SERIES APPLICATIONS

The BayStack 300 Series Ethernet Switches are designed to meet several specific needs:

- to provide connectivity between computer users on shared 10 Mbps hub segments and high-speed servers;
- to deliver affordable high-density switched 10 Mbps bandwidth directly to the desktop (see Figure 1);
- to connect users to centralized servers located in data centers, via high speed 100BASE-TX or 100BASE-FX links;
- to provide additional network traffic management with a unique deep-packet filtering capability (BayStack 301 desktop switch).

Combined with other BayStack products, such as hubs, switches, routers, Internet access, and remote access equipment, the BayStack 300 Series switches offer a simple, affordable way to add high-performance capabilities to Ethernet networks.

Figure 2 depicts the ability of the BayStack 304 to facilitate desktop and segment switching.

Figure 1 Desktop Switching

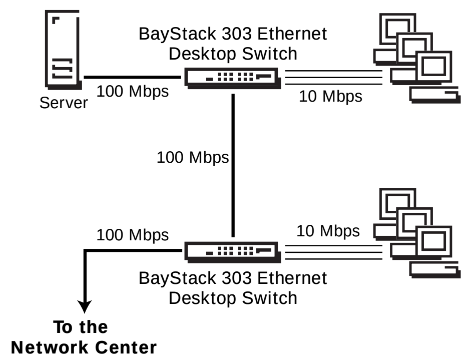
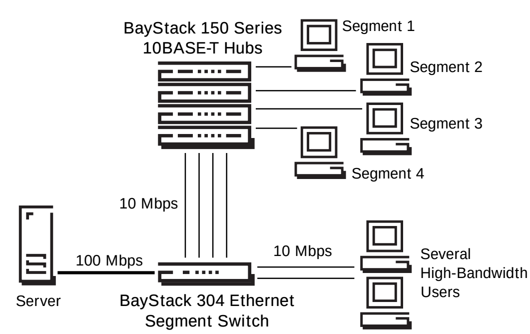


Figure 2 Hybrid Desktop/Segment Switching



ORDERING INFORMATION

Ordering information appears in Table 2

Table 2 BayStack 300 Series Ethernet Switches Ordering Information

Order Number	Description
CW2001001	BayStack 301 Ethernet Desktop Switch
AL2001?04	BayStack 303 Ethernet Desktop Switch
AL2001?05	BayStack 304 Ethernet Segment Switch
AL3133001	MTX-1 10BASE-T/100BASE-TX MDA for BayStack 303 and 304 Switches
AL3133002	MFX-1 100BASE-FX MDA for BayStack 303 and 304 Switches

TECHNICAL SPECIFICATIONS

Technical specifications appear in Table 3.

Table 3 BayStack 300 Series Ethernet Switches Technical Specifications

Network Protocol and Standards Compatibility	IEEE 802.3 CSMA/CD (ISO/IEC 8802-3)
	IEEE 802.3i 10BASE-T (ISO/IEC 8802-3)
	IEEE 802.3u 100BASE-T (ISO/IEC 8802-3)
	IEEE 802.1D MAC Bridges (ISO/IEC 10038)
Data Rates	10 Mbps Manchester encoding (10BASE-T; 10BASE-FL)
	100 Mbps 4B/5B encoding (100BASE-TX; 100BASE-FX)
Electrical Specifications	
Input Power	
BayStack 301, 303, and 304	60 W max
Thermal Rating	
BayStack 301	157 BTU/hr
BayStack 303	138 BTU/hr
BayStack 304	138 BTU/hr
AC Line Frequency	47 – 63 Hz
Input Voltage (rms)	
BayStack 301, 303, 304	100 – 240 VAC
Volt Amperes Rating	
BayStack 301	108 VA
BayStack 303 and 304	105 VA
Fuses	
BayStack 301	Internal, not accessible to user
BayStack 303 and 304	Internal, not accessible to user
Physical Specifications	
BayStack 301	(H) 1.75 in. x (W) 17.2 in. x (D) 11.0 in.
	(H) 4.5 cm x (W) 43.7 cm x (D) 27.9 cm
BayStack 303 and 304	(H) 2.77 in. x (W) 17.5 in. x (D) 13.55 in.
	(H) 7.04 cm x (W) 44.4 cm x (D) 34.42 cm
Weight	
BayStack 301	7.5 lb (3.4 kg)
BayStack 303	9.4 lb (4.14 kg)
BayStack 304	7.8 lb (3.54 kg)

Table 3 BayStack 300 Series Ethernet Switches Technical Specifications (continued)

Environmental Specifications	
Operating Temperature	5° to 40°C
Storage Temperature	-25° to 70°C
Operating Humidity	85% max relative humidity, non-condensing
Storage Humidity	95% max relative humidity, non-condensing
Operating Altitude	10,000 ft (3,000 m) max
Storage Altitude	10,000 ft (3,000 m) max
Fall/Drop	ISO 4180-s, NSTA 1A
Vibration	IEC 68-2-6/34
Shock/Bump	IEC 68-2-27/29
Electromagnetic Emissions	
Meets Requirements of	FCC Part 15, Subpart B, Class A
	EN 55022 (CISPR 22: 1985),
	VCCI Class 1 ITE
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Electromagnetic Susceptibility	
Electrostatic Discharge (ESD)	EC 801-2, Level 2
Radiated Electromagnetic Field	EC 801-3, Level 1
Electrical Fast Transient/Burst	EC 801-4, Level 2
Safety Agency Approvals	UL listed (UL 1950)
	CSA 22.2 #950 with D3 deviations
	CSA certified (CSA 22.2 #950, IEC950)
	IEC 950/EN 60 950 (TUV)
	UL-94-V1 flammability requirements for all PC boards
	TUV licensed (EN 60 950)

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