Catalyst 2900 Series XL

Cisco's Catalyst® 2900 Series XL is a full line of 10/100 autosensing Fast Ethernet switches that offer outstanding performance, versatile modularity, and easy-to-use management. The Catalyst 2900 Series XL includes four models, with different port densities, configuration options, and pricing to meet a broad range of network design requirements.

The 8-port Catalyst 2908 XL switch is ideal for aggregating smaller Ethernet and Fast Ethernet workgroups and servers. The Catalyst 2916M XL 16-port switch is also an excellent aggregation device, as well as the perfect solution for providing dedicated 10- or 100-Mbps bandwidth to individual users. The Catalyst 2916M XL's two versatile module slots provide expansion capabilities, higher-speed connectivity, and future support for feature modules, allowing users the flexibility to upgrade their networks and preserve their initial investment. The 24-port Catalyst 2924 XL and Catalyst 2924C XL switches are ideal for delivering low-cost, high-performance, 10- or 100-Mbps bandwidth to individual users and servers.

Applications

High Performance Desktop Connectivity (10/100 to the desktop)

The Catalyst 2916M XL, the Catalyst 2924 XL, or Catalyst 2924C XL can all be deployed as high performance solutions for providing 10/100 directly to the desktop. The Catalyst 2924 XL or Catalyst 2924C XL offer the lowest price per port and Fast EtherChannel uplink capability in a fixed configuration, while the Catalyst 2916M XL offers Fast EtherChannel and a clear migration path to Gigabit Ethernet, ATM and virtual LANs. The Catalyst 2924C XL

will be used in networks where there is a need to deploy high performance 10/100 desktop connectivity over an extended distance (up to 2 kilometers) with fiber optic cabling.

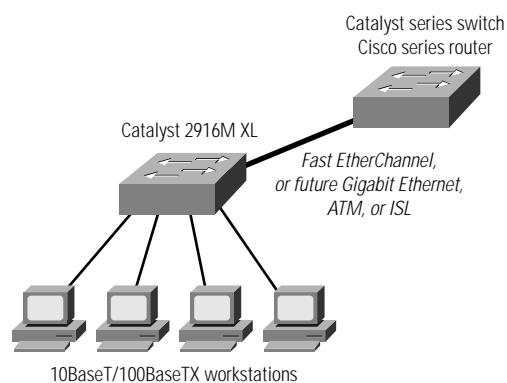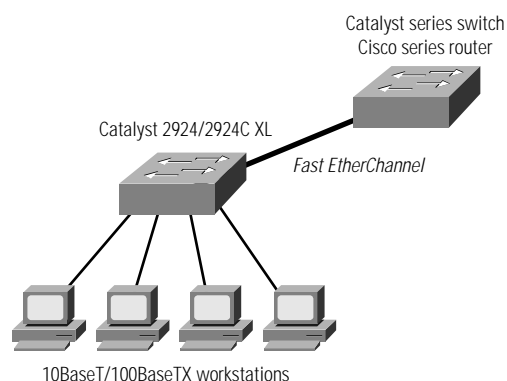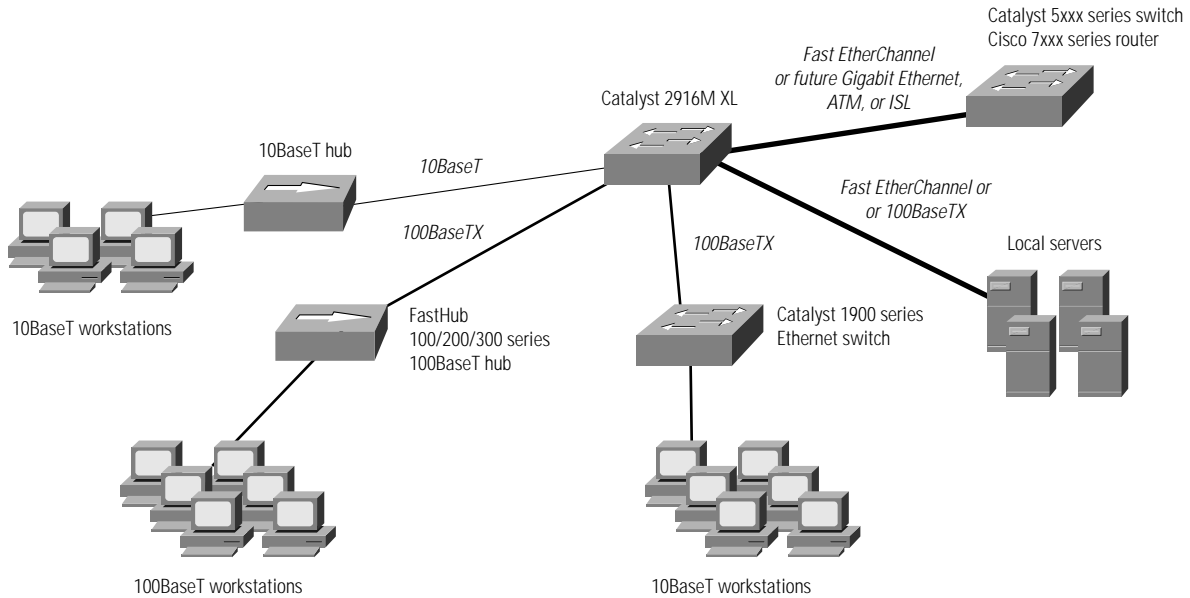Figure 1   The Catalyst 2916M XL, Catalyst 2924 XL, or Catalyst 2924C XL for High Performance Desktop Connectivity

Figure 2   The Catalyst 2924 XL or Catalyst 2924C XL for High Performance Desktop Connectivity

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Enterprise Workgroup and Server Aggregation

The Catalyst 2916M XL and the Catalyst 2908 XL will be deployed in wiring closets to aggregate workgroup networking devices such as Fast Ethernet hubs, Ethernet hubs and switches, and workgroup servers. Fast EtherChannel® allows customers to logically "bond" multiple Fast Ethernet links, creating a high-capacity uplink to the corporate/campus backbone. The future Gigabit Ethernet, ATM, and ISL modules (Catalyst 2916M XL only) will allow customers the flexibility to upgrade their networks and preserve their initial investment.

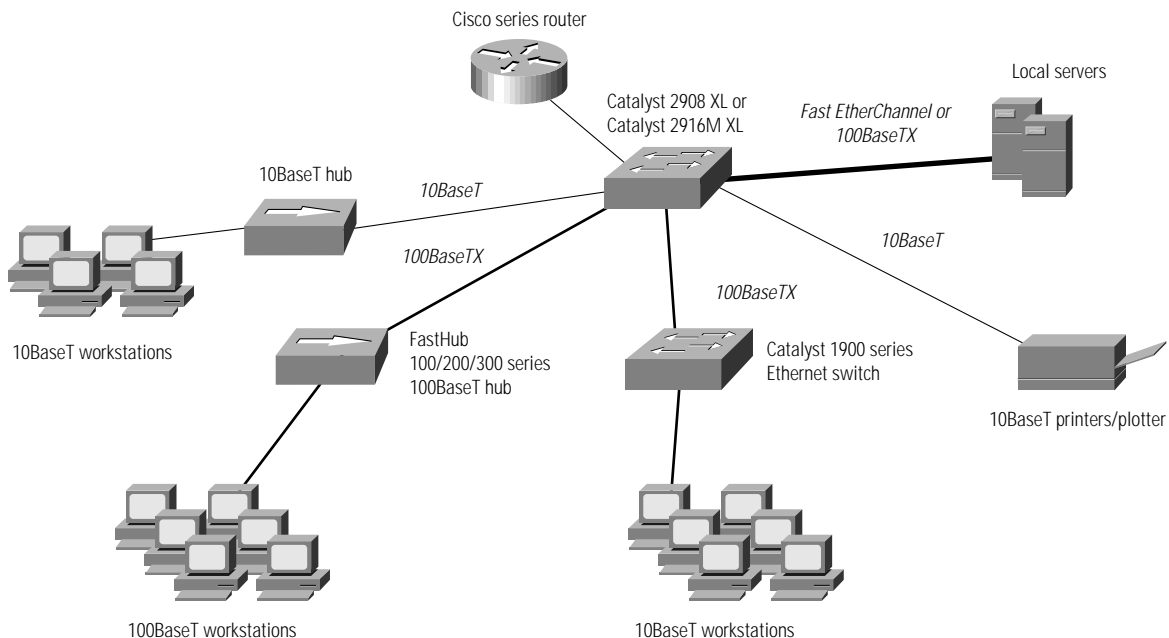Figure 3   The Catalyst 2916M XL as Enterprise Workgroup and Server Aggregator

Workgroup and Server Aggregation for Small- to Medium-sized Networks

Both the Catalyst 2908 XL and the Catalyst 2916M XL will be used as a network backbone for small- to medium-sized network configurations. Either product can be used to aggregate the various network resources in the organization.

Again, Fast EtherChannel can be used for high speed access to the centralized servers.

Figure 4   The Catalyst 2908 XL or Catalyst 2916M XL as Workgroup and Server Aggregator for Small- to Medium-sized Network Configurations

Features and Benefits Summary

Feature	Description	Benefit
10BaseT/100BaseTX Support	• 8, 16, 22, and 24 autosensing switched 10BaseT/100BaseTX ports • 4-port 10BaseT/100BaseTX switch module (Catalyst 2916M XL only)	• Delivers performance where required, such as server farms, power workgroups, and individual users • Preserves investment in legacy 10BaseT equipment, such as NIC cards, hubs, and switches • Cost-effective means to increase the port density of the Catalyst 2916M XL
100BaseFX Support	• 2 switched 100BaseFX ports (Catalyst 2924C XL only) • 2-port 100BaseFX switch module (Catalyst 2916M XL only)	• Delivers high-speed connectivity between Catalyst 2924C and another device over an extended distance of up to 2 kilometers • Cost-effective means to deliver connectivity between a Catalyst 2916M XL and another device over an extended distance of up to 2 kilometers
Versatile Module Slots (Catalyst 2916M XL)	• 2 versatile module slots accommodate future network expansion plans	• Flexible means to enhance the base switch offering without the need for a forklift upgrade • Future support for Gigabit Ethernet and OC-3 ATM • Future support for ISL delivers cost-effective means to deploy virtual LANs across the network
Autosensing on Each Port	• Detects the speed of the attached device and automatically configures the port for 10 or 100 Mbps	• Eases deployment of the switch in mixed 10 and 100BaseT environments
Autonegotiating on Each Port	• Automatically selects half- or full- duplex transmission mode	• Optimizes bandwidth utilization
Outstanding Performance	• 3.2-Gbps switching fabric and 1.19 to 3.0 million packets-per-second forwarding rate • Full-duplex operation on switched 100BaseT ports	• Meets the demands of the most intensive network • Ensures full wire-speed operation for each 10BaseT/ 100BaseTX port • Delivers up to 200 Mbps of bandwidth to end stations, servers, and between switches
	• 4-MB shared memory architecture • Bandwidth aggregation through Fast EtherChannel technology • Per-port broadcast storm control • Cisco Group Management Protocol (CGMP)	• Ensures highest possible throughput by eliminating head-of-line blocking, minimizing packet loss, and reducing congestion from multicast and broadcast traffic • Delivers up to 800-Mbps connectivity between switches, to routers and individual servers • Enhances fault tolerance • Prevents faulty end stations from degrading overall system performance with broadcast storms • Enables the switch to selectively forward routed IP multicast traffic to targeted multimedia end stations, reducing overall network traffic
Management and System Setup	• Simple Network Management Protocol (SNMP) and Telnet interface support • Telnet support for five simultaneous sessions • Command-line interface (CLI) -based management console • Built-in HTTP server • Support for CiscoWorks Windows network management software • Cisco Discovery Protocol (CDP)	• Delivers comprehensive in-band management • Allows menu-based management by terminal emulation software over the network • Provides detailed out-of-band management • Uses the same management interface as Cisco routers • Enables Web-based management interface through standard browser such as Netscape Navigator or Microsoft Explorer • Enables management on a per-port and per-switch basis • Provides a common management interface for Cisco routers, switches, and hubs • Enables a CiscoView network management station to automatically discover the switch in a network topology without user intervention

| Feature	Description	Benefit
	• Four groups of embedded RMON (History, Statistics, Alarms, and Events)	• Provides enhanced manageability, network monitoring, and traffic analysis
	• Network statistics gathered on a per-port basis or by using an RMON probe	• Facilitates troubleshooting and capacity planning by characterizing each port's utilization, errors, and other key statistics
Management and System Setup (continued)	• SPAN support for connection to a network analyzer or RMON probe	• Offers complete monitoring of a single port, group of ports, or the entire switch from a single network analyzer or RMON probe attached to a switch port
	• Multifunction per-port LEDs for port status, half-duplex/full-duplex, and 10BaseT/100BaseT indication, as well as switch-level status LEDs for system, RPS, module status, and bandwidth utilization	• Provides comprehensive and convenient visual management of the switch
	• Autoconfiguration	• Eases deployment of switches in the network by automatically configuring multiple switches across a network via a boot server
	• Trivial File Transfer Protocol (TFTP)	• Reduces the cost of administering software upgrades by downloading from a centralized location
	• Default configuration stored in Flash memory	• Ensures that the switch can be connected to the network and can pass traffic with minimal user intervention
	• Address Resolution Protocol (ARP) discovers the MAC address that corresponds to the IP address for any given host on the network	• Allows the network manager, from a central console, to identify a host IP address and its corresponding MAC address
	• 19-inch rack-mountable Catalyst 2908 XL, 2924 XL, and 2924C XL are available in one rack unit-high (1.73 in.) enclosure, and Catalyst 2916M XL is available in two rack unit-high enclosure (3.43 in.)	• Compliant with standard 19-inch rack-mount scheme for easy installation; allows high-density port allocation while conserving valuable rack space in the wiring closet
Fault Tolerance	• IEEE 802.1d Spanning-Tree Protocol	• Supports redundant backbone connections and loop-free networks for improved fault tolerance
	• Redundant power supply option	• External RPS provides a redundant power source for up to four units for improved fault tolerance
	• Low parts count design with 156,311 hours calculated MTBF	• Designed to provide the highest reliability for maximum network uptime
Security	• Secure addressing: secures a port to an individual MAC address or a group of up to 132 MAC addresses Addresses can be learned or manually entered; choice of actions upon secure address violation:	• For security-sensitive applications, prevents unauthorized users from accessing the network
	– Send/not send an SNMP trap – Suspend, disable, or leave security violation port enabled	• Provides administrators the choice of level of security, notification, and resulting actions
	• Password-protected in-band and out-of-band management	• Provides protection against unauthorized configuration changes and secures against unwanted intruders
	• Multilevel security on console access	• Prevents unauthorized users from altering the switch configuration
Warranty	• One year • Two and three year extension options available	• Backed by Cisco's service and support and the technology leadership that extends the reach of networks worldwide

Availability and Orderability

Model	Description	Availability
WS-C2908-XL	8-port 10BaseT/100BaseTX autosensing Fast Ethernet switch	January 1998
WS-C2916M-XL	16-port 10BaseT/100BaseTX autosensing Fast Ethernet switch with two expansion slots	January 1998
WS-C2924-XL	24-port 10BaseT/100BaseTX autosensing Fast Ethernet switch	March 1998
WS-C2924C-XL	24-port switch with 22 10BaseT/100BaseTX autosensing Fast Ethernet ports and two 100BaseFX ports.	March 1998
WS-X2914-XL	4-port 10BaseT/100BaseTX switch module for Catalyst 2916M XL	January 1998
WS-X2922-XL	2-port 100BaseFX switch module for Catalyst 2916M XL	January 1998

Future Modules

Description	Availability
Gigabit Ethernet	H2CY98
ISL	H2CY98
OC-3 ATM	TBD

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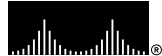
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