1 OmniStack Switches

Introduction

The OmniStack® family is a group of stand-alone 10BaseT and 10/100 Mbps Ethernet switches that offer advanced switching technology at an affordable price. Many OmniStack switches provide high-speed uplink ports or a slot for an uplink submodule that connects to high-speed servers and backbones.

OmniStack switches use basically the same hardware architecture and software as the OmniSwitch. This means that the OmniStack includes support for switching features such as ATM LAN Emulation, AutoTracker policy-based Virtual LANs (VLANs), IP and IPX Routing, any-to-any switching, port mirroring, RMON, SNMP trap support, etc.

This section provides information on all OmniStack workgroup switches. For information on uplink submodules, see Chapter 2, "OmniStack Uplink Submodules." For information on loading software on an OmniStack, see Chapter 4, "Installing Switch Software." For information on setting up the OmniStack for the first time, refer to your *OmniStack Getting Started Guide*.

HRE Availability

Alcatel's Hardware Routing Engine (HRE) is now available on the OmniStack. This daughtercard (HRE-OSTK) can significantly enhance routing performance. For more information on the HRE-OSTK, including routing performance, CAM information, and hardware and memory requirements, refer to *OmniStack Hardware Routing Engine (HRE-OSTK)* on page 1-80.

OmniStack Workgroup Switches

There are five OmniStack families: 1000, 2000, 3000, 4000, and 5000.

The OmniStack 1000 family consists of:

- OS-1024C 24-10BaseT ports with two fixed 100BaseTx uplink ports
- OS-1024F 24-10BaseT ports with two fixed 100BaseFx uplink ports
- OS-1024CF 24-10BaseT ports with one fixed 100BaseTx uplink port and one fixed 100BaseFx uplink port
- OS-1032C 32-10BaseT ports with two fixed 100BaseTx uplink ports
- OS-1032F 32-10BaseT ports with two fixed 100BaseFx uplink ports
- OS-1032CF 32-10BaseT ports with one fixed 100BaseTx and one fixed 100BaseFx uplink port

The OmniStack 2000 family consists of:

- OS-2032 32-10BaseT ports with one slot for an uplink submodule

The OmniStack 3000 family consists of:

- OS-3032 32-10BaseT ports with one slot for an uplink submodule
- OS-3032E 32-10BaseT port expansion module for the OS-3032

continued on next page...

OmniStack Workgroup Switches, continued

The OmniStack 4000 family consists of:

- OS-4016 16-10/100BaseTx ports
- OS-4024C 24-10/100BaseTx ports with two fixed 100BaseTx uplink ports
- OS-4024F 24-10/100BaseTx ports with two fixed 100BaseFx uplink ports
- OS-4024CF 24-10/100BaseTx ports with one fixed 100BaseTx uplink port and one fixed 100BaseFx uplink port
- OS-4024G 24-10/100BaseTx ports with two fixed 1000BaseFx (Gigabit Ethernet) uplink ports

The OmniStack 5000 family consists of:

- OS-5024 24-10/100BaseTx ports with one slot for an uplink submodule

Handling Fiber and Fiber Optic Connectors

Using fiber is extremely simple, but a few important rules should always be followed:

Step 1. Use Premium Grade Jumper Cables with Duplex SC Connectors

There are many brands of fiber optic jumper cables, with a wide range of quality between each manufacturer. Premium cables do three things well:

- They provide a good polish on the fiber optic connector endface (where the light exits the cable). Endface geometries must be exceptionally precise and aligned to extremely tight tolerances. The better the endface geometry, the lower the loss and more consistent the connection. Poor connector interfaces will reflect light back into the laser, causing an increase in laser noise.
- They mate well with other connector interfaces. Chances are the manufacturer of the jumper cable will not be the same as the manufacturer of the transceiver connector interface. Premium jumper cables mechanically align themselves well into most transceiver interfaces. This provides both better performance as well as better repeatability. You will always see a variance in transceiver power due to connector alignment, often as much as 0.3 to 0.7 dB. Good jumper cables help reduce this variance.
- They continue to mate well after many insertions and removals. Premium grade jumper use premium connectors that maintain their mechanical integrity up to and beyond 2000 insertion cycles.

For better repeatability, always use duplex (two connectors fused together and terminated to two cables) SC connectors on your jumper cables when connecting to a fiber-optic transceiver. Two simplex connectors inserted into a transceiver interface will often have up to 3 dB greater variation in repeatability compared to duplex connectors.

Never bend the fiber optic cable beyond its recommended minimum bend radius (1.2 inches minimum). This introduces bend losses and reflections that will degrade the performance of your system. It can also damage the fiber, although fiber is much tougher than most would assume. Still, it is highly recommended to buy only jumper cables with 3mm Kevlar jacketing, which offer superior protection and longer life.

Step 2. Keep Your Fiber Optic Connectors Clean

Unlike electrical connectors, fiber-optic connectors need to be extremely clean to ensure good system performance. Microscopic particles on the connector endface (where the light exits the connector) can degrade the performance of your system, often to the point of failure. If you have low-power output from a fiber-optic transceiver or a fault signal from your equipment, cleaning your fiber-optic connectors should always be done before trouble shooting.

Follow the steps below to clean your fiber optic connector:

1. Hold the connector cleaner tool in the palm of your left hand and, with the silver shutter upwards, rotate the cloth-forwarding lever (located on the right side of the tool) with your thumb away from your body. As the lever winds the cleaning cloth inside the case, it simultaneously opens the silver shutter located at the top of the unit.

2. Keeping your thumb pressed on the cloth-forwarding lever, press the optical plug ferrule endface against the cleaning cloth and drag the plug down toward your body (there should be arrows on the top of the tool that indicate the proper wiping direction). The connector is now clean.

3. Release the cloth-forwarding lever, allowing it to return to its initial position.

A cleaning cloth reel can enable over 400 cleanings and is replaceable. When cables are not being used, always put the plastic or rubber endcaps back on the connector to ensure cleanliness.

Step 3. Keep the Transceiver Interface Clean

If you have cleaned your connectors, but still experience low-power output from a fiber-optic transceiver or a fault signal from your equipment, you should clean the transceiver interface by blowing inert dusting gas inside the transceiver interface. This removes dust and other small particles that may block the optical path between the optics of the transceiver and the connector's endface.

Step 4. Attenuate Properly

Often equipment using laser-based transceivers need to have the optical path attenuated when performing loop-back testing or testing between two pieces of equipment. Too much optical power launched into the receiver will cause saturation and result in system failure. If you are using single mode fiber and you do not know the power output of the laser, it is always best to use a 10 dB attenuator when testing. Using the wrong type of attenuator will introduce problems, most notably reflection of light back into the laser, often resulting in excess noise and causing system failure.

Inline attenuators eliminate the need for additional jumper cables and thus reduce the number of connection interfaces. This increases the integrity of the optical path resulting in a more accurate test.

Applications and Configurations

As a workgroup switch, the OmniStack provides the flexibility to interconnect existing Ethernet hubs and devices as well as the power to provide access to high-speed servers and backbones. The product family includes a suite of modular and non-modular products to support a variety of needs and, when combined with the powerful OmniSwitch, can address almost any switched LAN application.

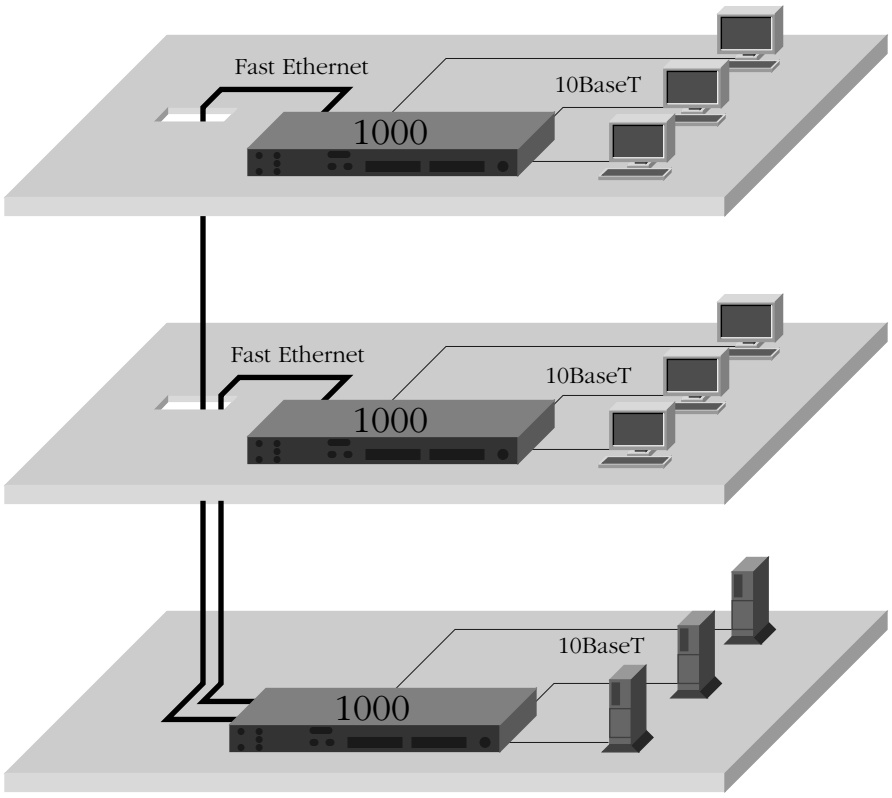
Each OmniStack provides a varying number of port interfaces — 10 Mbps and/or 100 Mbps — which can be connected to Ethernet hubs and devices. Each Ethernet port is assigned the full 10 Mbps or 100 Mbps of bandwidth. Some models also provide modular or non-modular uplinks to high-speed servers or backbones via Fast Ethernet or ATM. When attaching to an ATM backbone, you can take advantage of the OmniStack's support for a variety of transport services, such as point-to-point bridging (RFC 1483), LAN Emulation, Classical IP (RFC 1577), and VLAN clusters.

The following pages provide a number of examples of how OmniStack and OmniSwitch products can be deployed to meet a variety of corporate network needs.

Configuration Example #1

Company A occupies the lower three floors of a multi-story building. Their LAN serves 25 users on the second floor and 20 users on the third. Their seven servers are located in the first floor data center. The entire building is wired with twisted pair copper, and there are no plans to change the cable plant. Approximately three to five users, and one server, are added to the LAN each year, and the growth rate is expected to remain unchanged for the foreseeable future.

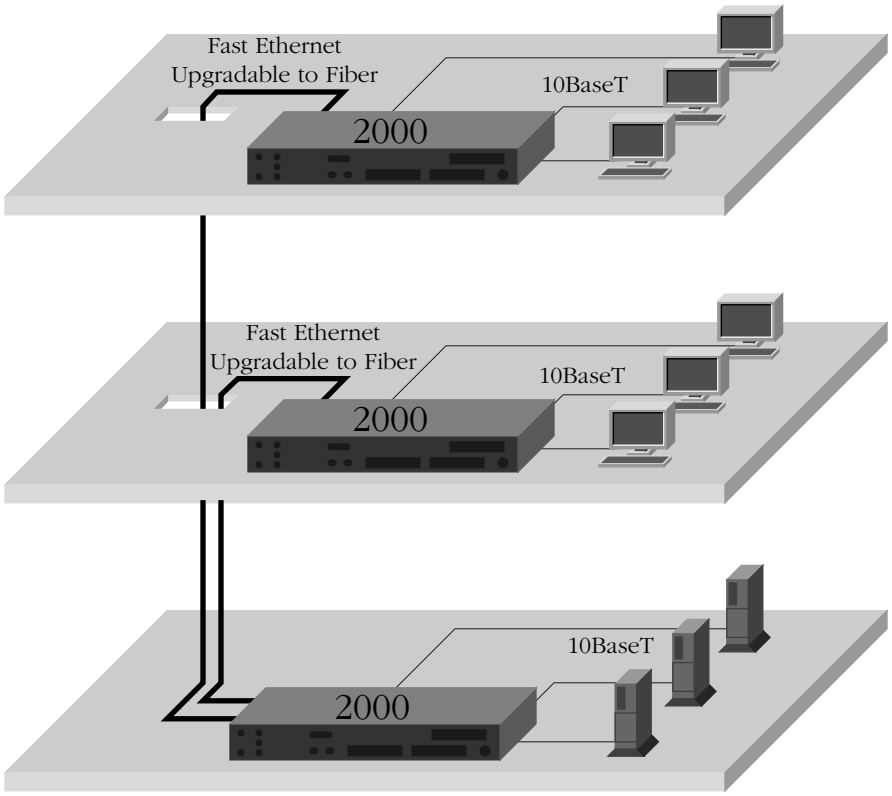
The network manager has implemented a fully-switched yet cost effective infrastructure using the OmniStack 1000 family, specifically the OS-1032C. All users and servers connect to the network via switched 10BaseT ports.The switches are connected to each other with fast 100BaseTx uplink ports to eliminate bottlenecks between the users and servers.



Configuration Example #2

Company B is similar to Company A except that they are a subsidiary of a parent company which occupies the upper floors of the same building. While Company B's network needs are managed independently, the parent company is considering replacing the copper in the risers of the building with fiber sometime next year, requiring modification of Company B's high-speed switch-to-switch connections.

Thus, Company B's network manager has chosen to use the Alcatel OmniStack OS-2032 which provides 32 10BaseT ports and modularity for the uplink ports. Each switch is currently configured with an OS-ESM-100C-4 submodule, which provides four 100BaseTx ports for connection between floors. Later these modules will be swapped out for either OS-ESM-100FM-2 or OS-ESM-100FS-2 depending on whether multimode or single mode fiber is deployed.

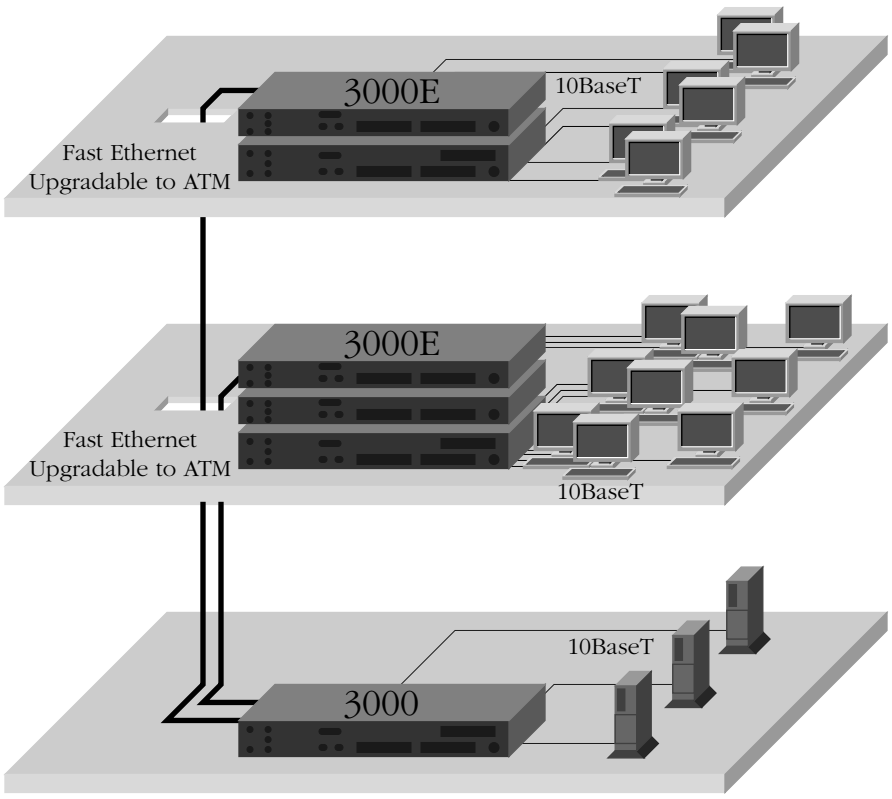


Configuration Example #3

Company C occupies the lower three floors of a multi-story building. Their LAN serves 75 users on the second floor and 40 users on the third. Their 11 servers are located in the first floor data center. The building is currently wired with twisted pair copper and, while there has been discussion of running fiber between floors, there are no firm plans to change the cable plant. The LAN has been adding twenty to thirty users plus one or two servers a year and, because Company C's market is expanding rapidly, that growth rate may increase. Further, Company C may find it necessary to rent additional space on the fourth floor sometime next year.

Company C has chosen to utilize the Alcatel OmniStack 3000 family of products to build a network which meets their current needs yet is upgradable to support their requirements for many years with the addition of some new equipment and/or by redeploying units being installed now. The data center is supported by a single OS-3032 with an OS-ESM-100C-4 submodule for the 100BaseTx connections to the other switches. The 75 users on the second floor connect to the LAN via a similarly equipped OS-3032 with two additional OS-3032E units to support the higher density of 10BaseT connections. The OmniStack unit on the third floor has a single OS-3032 and expects to add a second expansion module as the user population increases.

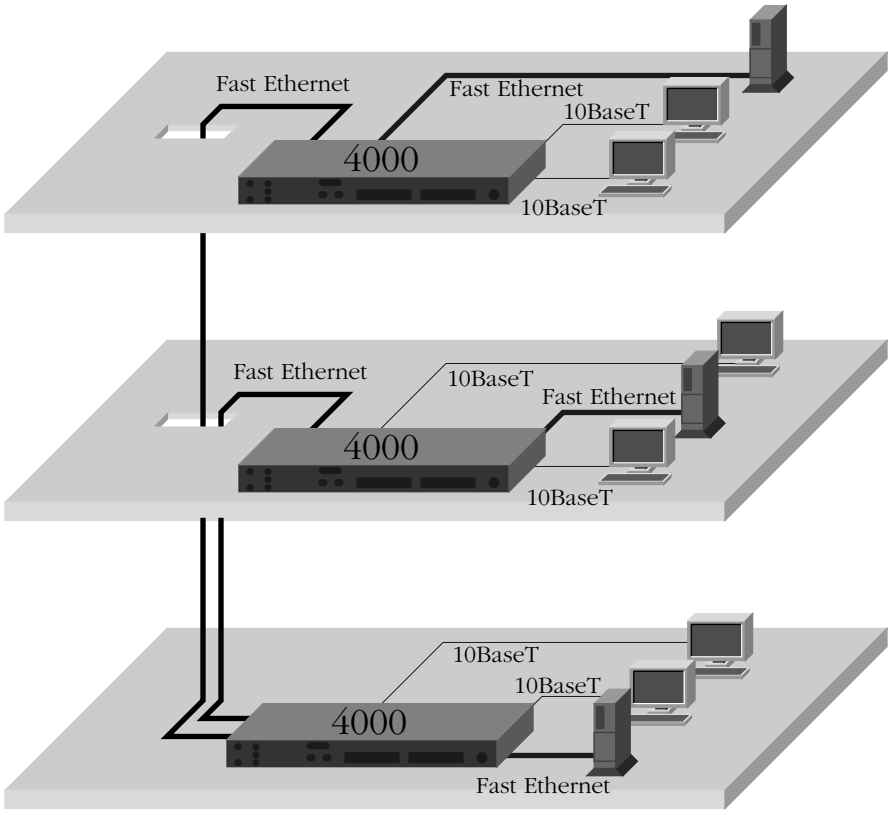
In the future, if fiber is run between floors, Company C will upgrade the uplink submodules to 100BaseFx or ATM. Further, if growth accelerates, the network management team expects to upgrade the data center switch to a modular OmniSwitch and redeploy the OS-3032 to service the fourth floor when added.



Configuration Example #4

Company D occupies a 3-story building. Their LAN includes 40 users and servers distributed fairly evenly among all three of the floors. Each user needs a 10Mbps connection to the Ethernet LAN, while the highly active servers require 100Mbps speeds. The entire building is wired with twisted pair copper, and there are no plans to change the cable plant. The size of the LAN is very constant, and it is expected to grow very slightly or not at all in the coming years.

The woman responsible for administering the LAN has additional responsibilities and thus must devote as little time as possible to ongoing support of the network. She has decided to deploy an OmniStack OS-4016 switch on each of the three floors, creating a network infrastructure which is affordable, easy to set up and manage, and which can support the mixed speed requirements of each floor.



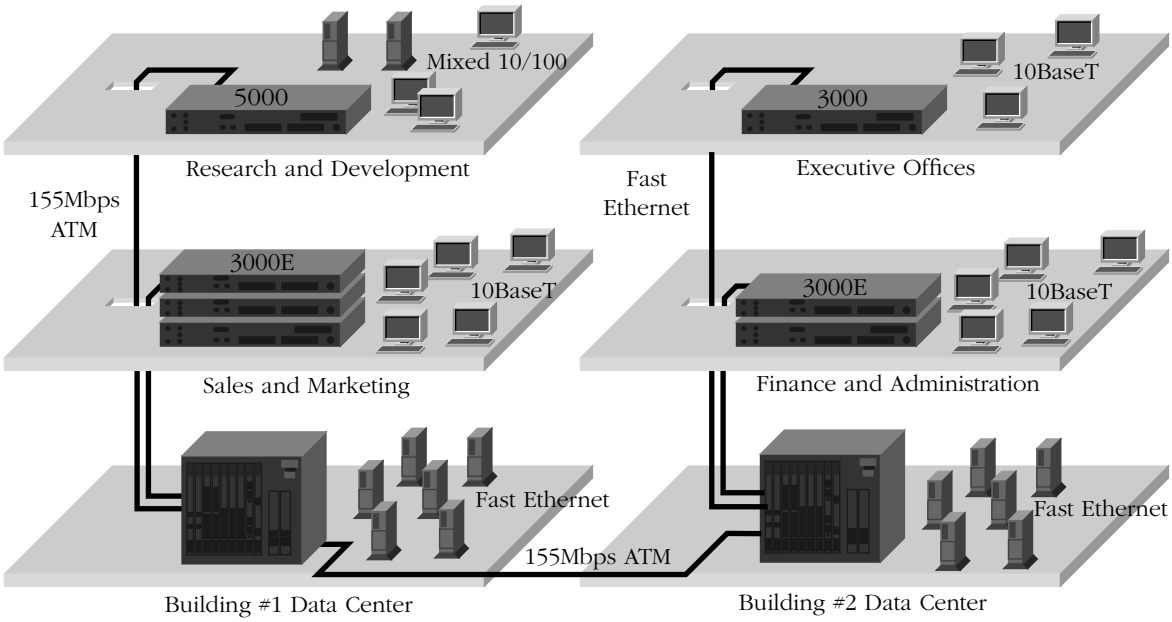
Configuration Example #5

Company E occupies two buildings on a single corporate campus. While Building Two is wired completely with twisted pair copper, Building One has multimode fiber in the risers and twisted pair on each floor. The Company hopes to upgrade the Building Two risers to fiber next year. Each building has a data center in the basement which houses the servers, and there is fiber between the two buildings.

The Research and Development team owns some additional servers which they keep on their floor and manage themselves. All servers in the network are connected via 100BaseTx and all users are provided 10BaseT ports. Company E is growing rapidly and expects to expand by acquiring additional floors in Building One.

The network management team has implemented a network which uses a variety of OmniStack and OmniSwitch products from Alcatel. Each data center is equipped with a modular OmniSwitch which can be modified and expanded as the network changes. Each OmniSwitch is equipped with a 155Mbps ATM port providing a link between buildings, and the switch in Building One has additional ATM ports for connection to the other floors. Each OmniSwitch also has 100BaseTx modules to support the servers.

Except for Research and Development, all other departments are serviced with OS-3032 and an appropriate number of OS-3032E expansion units depending on the number of users. In Building One the OS-3032's are equipped with OS-ASM-155RFM-1, while units in the all-copper Building Two have OS-ESM-100C-4 uplink modules which will be upgraded when fiber is installed. The Research and Development floor is outfitted with an OS-5024 and OS-ASM-155RFM-1 since their requirements are mixed 10/100 Ethernet.



OmniStack Slot Designations

The front panel of an OmniStack is divided into several areas labeled **S1**, **S2**, **S3**, etc. These areas relate to the conceptual division of the switch into several modules, or slots. The User Interface and Command Line Interface, accessible via the front panel Console port, rely on these slot designations for many of its management and configuration commands.

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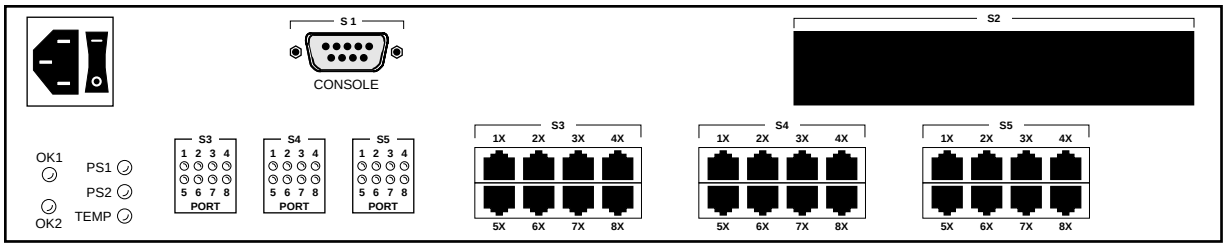
S1 is Slot 1 and contains the equivalent of a management module. The User Interface and Command Line Interface refer to the management module as the MPM.

If the switch provides fixed uplink ports or an uplink submodule slot, it is labeled S2 for Slot 2.



Since these LEDs report the status of the Ethernet ports to the right, they share the same "slot" designation as the ports they are monitoring. For example, since the first block of LEDs in this example are assigned to the ports labeled S3, the first block of LEDs are also labeled S3.

If the switch provides fixed uplink ports or an uplink submodule slot, the Ethernet port connectors are labeled S3, S4, etc., depending upon the number of "slots" supported by the switch you are working with.

If the switch does not provide fixed uplink ports or an uplink submodule, the numbering of these slots starts with S2.

OmniStack 1024C

The OmniStack 1024C provides 24 10BaseT ports for connecting to Ethernet hubs and devices and two 10BaseT/100BaseTx uplink ports for connecting to high-speed servers and backbones.

♦ Important Note ♦

The OmniStack 1024C does not support the Hardware Routing Engine (HRE-OSTK) or Backup Power System (BPS).

Front Panel

The front panel of the OmniStack 1024C contains (4) chassis/management LEDs, (24) Ethernet port LEDs, (1) console management port, (2) 10BaseT/100BaseTx Fast Ethernet uplink ports, and (24) 10BaseT Ethernet ports. The chassis/management LEDs are used to monitor the hardware and software status for the switch. The Ethernet port LEDs provide the link integrity status for each of the twenty-four (24) 10BaseT ports. The Fast Ethernet uplink LEDs provide the link integrity status for each of the two (2) 10BaseT/100BaseTx ports. The console management port can be connected to a management station (a laptop or desktop computer, for example) in order to monitor and manage the switch via the OmniStack 1024's browser interface.

♦ Attention ♦

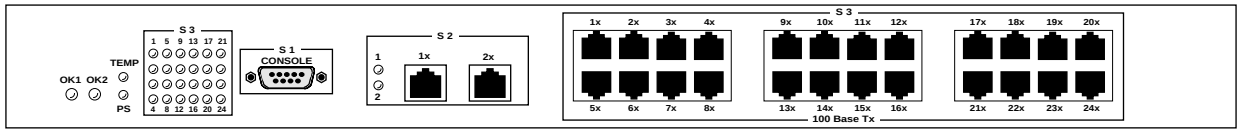
The OmniStack 1024 workgroup switch *does not* support the standard User Interface (UI). For detailed information on using and configuring the OmniStack 1024, refer to the separate OmniStack 1024 User Manual.

Refer to the illustration below for additional front panel layout information.

Console Management Port. Refer to *The Console Management Port* on page 1-12 for further information.

2 Fast Ethernet Uplink Ports. Each port supports one auto-sensing 10BaseT/100BaseTx (Copper) Fast Ethernet uplink connection.

LEDs, located just to the left of these ports, display the link integrity status for the corresponding Fast Ethernet uplink connection.



Ethernet Port LEDs. See *OmniStack 1024 and 4024 Ethernet Port LEDs* on page 1-79 for details.

Chassis/Management LEDs. See *OmniStack 1024 and 4024 Management LEDs* on page 1-78 for details.

Ethernet 10BaseT Ports. Each port supports one switched Ethernet segment at 10 Mbps. Each port can use unshielded twisted pair (UTP) or shielded twisted pair (STP) cable to connect to a single high-traffic device.

OmniStack 1024C Front Panel

Configuring the Ethernet Ports

For detailed information on configuring OmniStack 1024 Ethernet ports, refer to the separate OmniStack 1024 User Guide.

The Console Management Port

You can gain access to switch management software through the serial (RS-232C) port on the switch's front panel. The Console port is a male Data Terminal Equipment (DTE) 9-pin "D" connector (DB-9) per the IBM AT serial port specification. It is typically connected to a modem. You can also connect directly from this port to a PC or terminal with a standard null-modem cable available in most computer equipment stores.

If the connecting device does not conform to the IBM AT serial port specification, then you may need to use a special cable or adapter. (See *OmniStack Pinouts* on page 1-91 for information on the pin signals used for this port.)

The Console port supports serial data rates of 1200, 9600 and 19200 bps. By default, it is set to 9600 bps.

♦ Note ♦

The OmniStack 1024 does not support 38,400 bps serial data rate.

Rear Panel

AC Power Connector. Plug the supplied AC power cord into this connector.

Power Switch. To turn the switch on, move the power switch to the on (|) position. To turn the switch off, move the switch to the off (○) position.

Technical Specifications

OmniStack 1024C Technical Specifications	
Ports	(24) 10BaseT Ethernet ports (RJ-45, MDI) (2) 10BaseT/100BaseTx uplink ports (RJ-45) (1) serial port for management software (DB-9, RS-232, DTE)
Power Connectors	(1) AC power connector on the rear panel No backup Power System support.
Standards Supported	IEEE 802.3, IEEE 10BaseT, 100BaseTx
Data Rate	10BaseT Ethernet ports: 10 Mbps 10BaseT/100BaseTx uplink ports: 10 Mbps or 100 Mbps (auto-sensing) Console serial port: 1.2, 9.6, or 19.2 Kbps
Maximum Frame Size	1,518 bytes (Ethernet)
Connections Supported	10BaseT Ethernet ports: half-duplex or full-duplex connections to hub or device 10BaseT/100BaseTx uplink ports: half-duplex or full-duplex connections to server or other switch
Cables Supported	10BaseT Ethernet ports: Unshielded twisted-pair (UTP)—100 ohms; Shielded twisted-pair (STP)—100 ohms 10BaseT/100BaseTx uplink ports: Unshielded twisted-pair (UTP)—100 ohms (Category 5 required when running at 100 Mbps); Shielded twisted-pair (STP)—100 ohms
Distances Supported	10BaseT/100BaseTx uplink ports: 100 m
Addresses Supported	2,048 MAC addresses
Memory	Flash memory: 4 MB DRAM memory: 16 MB Frame buffering: 4 MB
Physical Dimensions	17 1/4” w, 1 3/4” h, 12 3/16” d
Weight	10 lbs.
Voltage Range	90-265 VAC, 47 to 63 Hz auto-ranging and auto-sensing
Current Draw	1.4 Amps at 110 VAC
Watts	40
Current Provided	8 Amps
Operating Temperatures	0 to 40 degrees Celsius 32 to 104 degrees Fahrenheit
Agency Listings	UL 1950; CSA-C22.2; EN60950; FCC Class A (Part 15); EN 55022 Class A with UTP; VCCI Class 2 on shielded UTP; CE Mark

OmniStack 1024F

The OmniStack 1024F provides 24 10BaseT ports for connecting to Ethernet hubs and devices and two 100BaseFx uplink ports for connecting to high-speed servers and backbones.

♦ Important Note ♦

The OmniStack 1024F does not support the Hardware Routing Engine (HRE-OSTK) or Backup Power System (BPS).

Front Panel

The front panel of the OmniStack 1024F contains (4) chassis/management LEDs, (24) Ethernet port LEDs, (1) console management port, (2) 100BaseFx Fast Ethernet uplink ports, and (24) 10BaseT Ethernet ports. The chassis/management LEDs are used to monitor the hardware and software status for the switch. The Ethernet port LEDs provide the link integrity status for each of the twenty-four (24) 10BaseT ports. The Fast Ethernet uplink LEDs provide the link integrity status for each of the two (2) 100BaseFx ports. The console management port can be connected to a management station (a laptop or desktop computer, for example) in order to monitor and manage the switch via the OmniStack 1024's browser interface.

♦ Attention ♦

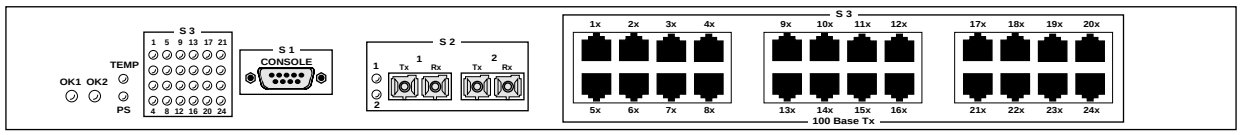
The OmniStack 1024 workgroup switch *does not* support the standard User Interface (UI). For detailed information on using and configuring the OmniStack 1024, refer to the separate OmniStack 1024 User Manual.

Refer to the illustration below for additional front panel layout information.

Console Management Port. Refer to *The Console Management Port* on page 1-16 for further information.

2 Fast Ethernet Uplink Ports. Each port supports one 100BaseFx (Fiber) Fast Ethernet uplink connection.

LEDs, located just to the left of these ports, display the link integrity status for the corresponding Fast Ethernet uplink connection.



Ethernet Port LEDs. See *OmniStack 1024 and 4024 Ethernet Port LEDs* on page 1-79 for details.

Ethernet 10BaseT Ports. Each port supports one switched Ethernet segment at 10 Mbps.

Chassis/Management LEDs. See *OmniStack 1024 and 4024 Management LEDs* on page 1-78 for details.

OmniStack 1024F Front Panel

Configuring the Ethernet Ports

For detailed information on configuring OmniStack 1024 Ethernet ports, refer to the separate OmniStack 1024 User Guide.

The Console Management Port

You can gain access to switch management software through the serial (RS-232C) port on the switch's front panel. The Console port is a male Data Terminal Equipment (DTE) 9-pin "D" connector (DB-9) per the IBM AT serial port specification. It is typically connected to a modem. You can also connect directly from this port to a PC or terminal with a standard null-modem cable available in most computer equipment stores.

If the connecting device does not conform to the IBM AT serial port specification, then you may need to use a special cable or adapter. (See *OmniStack Pinouts* on page 1-91 for information on the pin signals used for this port.)

The Console port supports serial data rates of 1200, 9600 and 19200 bps. By default, it is set to 9600 bps.

♦ Note ♦

The OmniStack 1024 does not support 38,400 bps serial data rate.

Rear Panel

AC Power Connector. Plug the supplied AC power cord into this connector.

Power Switch. To turn the switch on, move the power switch to the on (|) position. To turn the switch off, move the switch to the off (○) position.

Technical Specifications

OmniStack 1024F Technical Specifications	
Ports	(24) 10BaseT Ethernet ports (RJ-45, MDI) (2) 100BaseFx uplink ports (SC); (1) serial port for management software (DB-9, RS-232, DTE)
Power Connectors	(1) AC power connector on the rear panel No backup Power System support.
Standards Supported	IEEE 802.3, IEEE 10BaseT, 100BaseFx
Data Rate	10BaseT Ethernet ports: 10 Mbps 100BaseFx uplink ports: 100 Mbps Console serial port: 1.2, 9.6, or 19.2 Kbps
Maximum Frame Size	1,518 bytes (Ethernet)
Connections Supported	10BaseT Ethernet ports: half-duplex or full-duplex connections to hub or device 100BaseFx uplink ports: Fast Ethernet backbone
Cables Supported	10BaseT Ethernet ports: Unshielded twisted-pair (UTP)—100 ohms; Shielded twisted-pair (STP)—100 ohms 100BaseFx uplink ports: 62.5/125 µm multimode fiber
Distances Supported	2 km (half-duplex)
Optical Power Output	-19 to -14 dBm
Receiver Sensitivity	-31 to -14 dBm
Power Budget	12 dBm
Addresses Supported	1,024 MAC addresses (option: 4,096 MAC addresses)
Addresses Supported	2,048 MAC addresses
Memory	Flash memory: 4 MB DRAM memory: 16 MB Frame buffering: 4 MB
Operating Temperatures	0 to 40 degrees Celsius 32 to 104 degrees Fahrenheit
Agency Listings	UL 1950; CSA-C22.2; EN60950; FCC Class A (Part 15); EN 55022 Class A with UTP; VCCI Class 2 on shielded UTP; CE Mark

Technical Specifications, continued

OmniStack 1024F Technical Specifications, continued	
Physical Dimensions	17 1/4" w, 1 3/4" h, 12 3/16" d
Weight	10 lbs.
Voltage Range	90-265 VAC, 47 to 63 Hz auto-ranging and auto-sensing
Current Draw	1.4 Amps at 110 VAC
Watts	40
Current Provided	8 Amps

OmniStack 1024CF

The OmniStack 1024CF provides 24 10BaseT ports for connecting to Ethernet hubs and devices, along with one 10BaseT/100BaseTx uplink port and one 100BaseFx port for connecting to high-speed servers and backbones.

♦ Important Note ♦

The OmniStack 1024CF does not support the Hardware Routing Engine (HRE-OSTK) or Backup Power System (BPS).

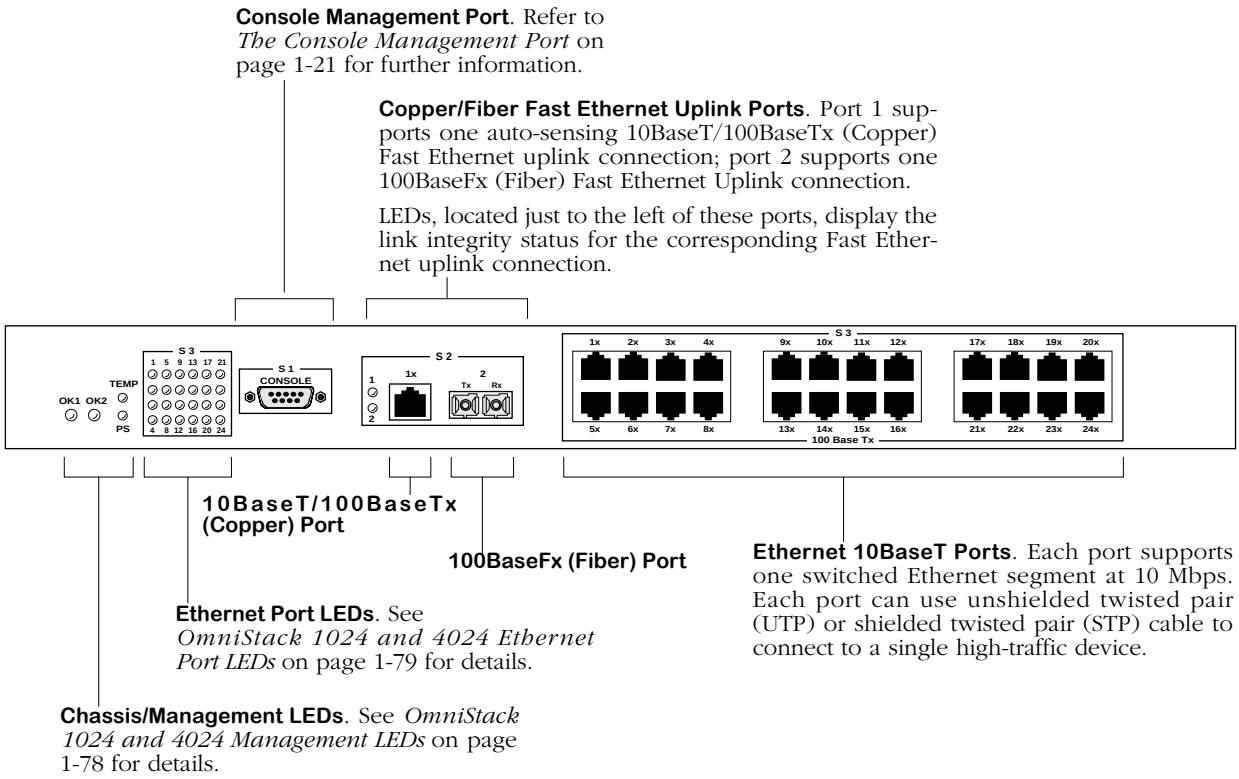
Front Panel

The front panel of the OmniStack 1024CF contains (4) chassis/management LEDs, (24) Ethernet port LEDs, (1) console management port, (1) 100BaseFx Fast Ethernet uplink port, (1) 10BaseT/100BaseTx Fast Ethernet uplink port, and (24) 10BaseT Ethernet ports. The chassis/management LEDs are used to monitor the hardware and software status for the switch. The Ethernet port LEDs provide the link integrity status for the twenty-four (24) 10BaseT ports. The Fast Ethernet uplink LEDs provide the link integrity status for the 10BaseT/100BaseTx and 100BaseFx uplink ports. The console management port can be connected to a management station in order to monitor and manage the switch via the OmniStack 1024's browser interface.

♦ Attention ♦

The OmniStack 1024 workgroup switch *does not* support the standard User Interface (UI). For detailed information on using and configuring the OmniStack 1024, refer to the separate OmniStack 1024 User Manual.

Refer to the illustration below for additional front panel layout information.



OmniStack 1024CF Front Panel

Configuring the Ethernet Ports

For detailed information on configuring OmniStack 1024 Ethernet ports, refer to the separate OmniStack 1024 User Guide.

The Console Management Port

You can gain access to switch management software through the serial (RS-232C) port on the switch's front panel. The Console port is a male Data Terminal Equipment (DTE) 9-pin "D" connector (DB-9) per the IBM AT serial port specification. It is typically connected to a modem. You can also connect directly from this port to a PC or terminal with a standard null-modem cable available in most computer equipment stores.

If the connecting device does not conform to the IBM AT serial port specification, then you may need to use a special cable or adapter. (See *OmniStack Pinouts* on page 1-91 for information on the pin signals used for this port.)

The Console port supports serial data rates of 1200, 9600 and 19200 bps. By default, it is set to 9600 bps.

♦ Note ♦

The OmniStack 1024 does not support 38,400 bps serial data rate.

Rear Panel

AC Power Connector. Plug the supplied AC power cord into this connector.

Power Switch. To turn the switch on, move the power switch to the on (|) position. To turn the switch off (○) position.

Technical Specifications

OmniStack 1024CF Technical Specifications	
Ports	(24) 10BaseT Ethernet ports (RJ-45, MDI) (1) 10BaseT/100BaseTx uplink port (RJ-45) (1) 100BaseFx uplink port (SC) (1) Console port for management software (DB-9, RS-232, DTE)
Power Connectors	(1) AC power connector on the rear panel No backup Power System support.
Standards Supported	IEEE 802.3, IEEE 10BaseT, 100BaseTx, 100BaseFx
Data Rate	10BaseT Ethernet ports: 10 Mbps 10BaseT/100BaseTx uplink port: 10 Mbps or 100 Mbps (auto-sensing) 100BaseFx uplink port: 100 Mbps Console port: 1.2, 9.6, or 19.2 Kbps
Maximum Frame Size	1,518 bytes (Ethernet)
Connections Supported	10BaseT Ethernet ports: half-duplex or full-duplex connections to hub or device 10BaseT/100BaseTx uplink ports: half-duplex or full-duplex connections to server or other switch 100BaseFx uplink port: Fast Ethernet backbone
Cables Supported	10BaseT Ethernet ports: Unshielded twisted-pair (UTP)—100 ohms; Shielded twisted-pair (STP)—100 ohms 10BaseT/100BaseTx uplink port: Unshielded twisted-pair (UTP)—100 ohms (Category 5 required when running at 100 Mbps); Shielded twisted-pair (STP)—100 ohms 100BaseFx uplink port: 62.5/125 µm multimode fiber
Distances Supported	Copper: 100 m Fiber: 2 km (half-duplex)
Optical Power Output	-19 to -14 dBm
Receiver Sensitivity	-31 to -14 dBm
Power Budget	12 dBm
Addresses Supported	2,048 MAC addresses
Memory	Flash memory: 4 MB DRAM memory: 16 MB Frame buffering: 4 MB
Operating Temperatures	0 to 40 degrees Celsius 32 to 104 degrees Fahrenheit
Agency Listings	UL 1950; CSA-C22.2; EN60950; FCC Class A (Part 15); EN 55022 Class A with UTP; VCCI Class 2 on shielded UTP; CE Mark

Technical Specifications, continued

OmniStack 1024CF Technical Specifications, continued	
Physical Dimensions	17 1/4" w, 1 3/4" h, 12 3/16" d
Weight	10 lbs.
Voltage Range	90-265 VAC, 47 to 63 Hz auto-ranging and auto-sensing
Current Draw	1.4 Amps at 110 VAC
Watts	40
Current Provided	8 Amps

OmniStack 1032C

The OmniStack 1032C provides 32 10BaseT ports for connecting to Ethernet hubs and devices and two 10/100BaseTx uplink ports (Fast Ethernet) for connecting to high-speed servers and backbones.

♦ Important Note ♦

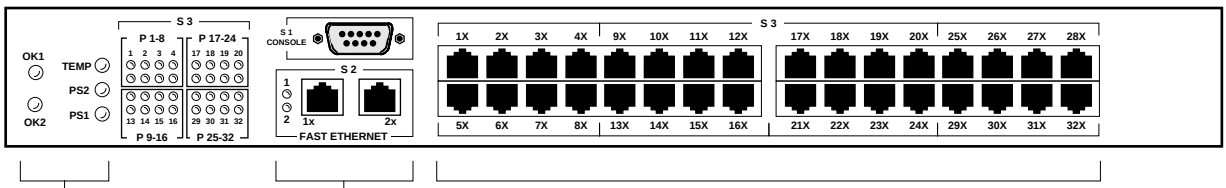
The OmniStack 1032C does not support the Hardware Routing Engine (HRE-OSTK).

Front Panel

The front panel of the OmniStack 1032C contains chassis/management LEDs, Ethernet ports, Ethernet port LEDs, and a Console management port. Management LEDs describe the hardware and software status of the entire switch. The Ethernet port LEDs provide the link integrity status for each Ethernet port. A management station can be connected to the Console port to monitor and manage the switch via the built-in interface software. The following illustration describes the front panel.

Ethernet Port LEDs. See *OmniStack Ethernet LEDs* on page 11-77 for more information.

Console Management Port. Refer to *The Console Management Port* on page 1-26 for further information.



Ethernet 10BaseT Ports. Each port supports one switched Ethernet segment at the full 10 Mbps of bandwidth. Each port can use unshielded twisted pair (UTP) or shielded twisted pair (STP) cable to connect to a single high-traffic device, such as a mail or file server, or a hub serving multiple devices.

Fast Ethernet Ports. Two 10/100BaseTx Fast Ethernet uplink ports for connecting to high-speed servers and backbones.

Management LEDs. See *OmniStack Management LEDs* on page 11-76 for descriptions.

OmniStack 1032C Front Panel

Configuring the Ethernet Ports

The two Fast Ethernet ports support a fully switched 10 or 100 Mbps connection in full- or half-duplex mode. By default, the ports are configured for autosensing and half-duplex operation. To change these settings, refer to the **10/100cfg** command in Chapter 13, "Managing Ethernet Ports." The **10/100vc** command in Chapter 13 lets you view the current line speed and link mode of each port.

The 10BaseT Ethernet ports can be configured for half- or full-duplex operation. To configure the ports, refer to the **10/100cfg** command in Chapter 13, "Managing Ethernet Ports." By default, the ports are configured for half-duplex connections.

The Console Management Port

You can gain access to switch management software through the serial (RS-232C) port on the switch's front panel. The Console port is a male Data Terminal Equipment (DTE) 9-pin "D" connector (DB-9) per the IBM AT serial port specification. It is typically connected to a modem. You can also connect directly from this port to a PC or terminal with a standard null-modem cable available in most computer equipment stores.

If the connecting device does not conform to the IBM AT serial port specification, then you may need to use a special cable or adapter. (See *OmniStack Pinouts* on page 1-91 for information on the pin signals used for this port.)

The Console port supports serial data rates of 1200, 9600, 19200, and 38400 bps. By default, it is set to 9600 bps. You can change this setting using the **ser** command that is described in Chapter 7, "Configuring Switch-Wide Parameters." You can connect or disconnect a serial cable to this port at any time without disrupting the switch.

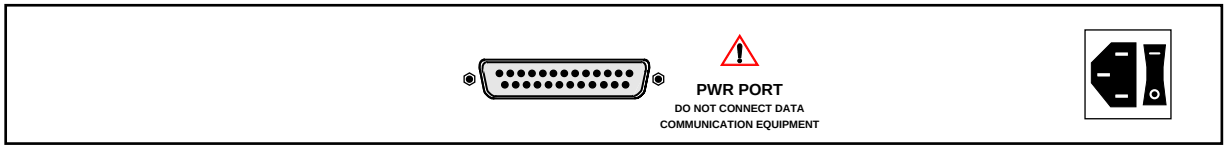
♦ Note ♦

The OmniStack 1032 only supports switch software release 3.3.1 and earlier.

Rear Panel

The rear panel of the OmniStack 1032C provides an AC power connector and a Backup Power System (BPS) connector.

AC Power Connector and on/off switch. Plug the supplied AC power cord into this connector. To turn the switch on, move the on/off switch to the on (—) position. To turn the switch off, move the switch to the off (O) position.



Backup Power System (BPS) Connector. If you are installing a BPS, connect one of the BPS cables to this connector. For more information on the BPS, refer to *Backup Power System* on page 1-81.

OmniStack 1032C Rear Panel

❖ Caution ❖

Do NOT connect any data communications equipment to the DB-25 BPS connector. Although similar in appearance to a standard datacom DB-25 connector, connecting anything other than the Backup Power System module to this connector may cause damage to the attached equipment.

Technical Specifications

OmniStack 1032C Technical Specifications	
Ports	32 10BaseT Ethernet ports (RJ-45, MDI); Two 10/100BaseTx Fast Ethernet uplink ports (RJ-45); One serial Console port (DB-9, RS-232, DTE)
Power Connectors	One AC power connector on the rear panel One shielded female DB25 connector for the Backup Power System (BPS) on the rear panel
Standards Supported	IEEE 802.3, IEEE 10BaseT
Data Rate	10BaseT ports: 10 Mbps 10/100BaseTx ports: 10 Mbps or 100 Mbps Console port: 1.2, 9.6, 19.2, or 38.4 Kbps
Maximum Frame Size	1,518 bytes
Connections Supported	10BaseT ports: hub or device; half- or full-duplex 100BaseTx ports: high-traffic device, such as a mail or file server, or a hub serving multiple devices
Cables Supported 10BaseT ports	Unshielded twisted-pair (UTP)—100 ohms Shielded twisted-pair (STP)—100 ohms
Cables Supported 100BaseTx ports	Unshielded twisted-pair (UTP)—100 ohms, Category 5
Addresses Supported	1,024 MAC addresses (option: 4,096 MAC addresses)
Memory	Flash memory: 4 MB DRAM memory: 8 MB (option: 16MB) Frame buffering: 4 MB
Physical Dimensions	1.75” high, 17.1” wide, 14.6” deep
Weight	8 lbs
Voltage Range	90-265 VAC, 47 to 63 Hz auto-ranging and auto-sensing
Current Draw	1.4 Amps at 110 VAC
Watts (Output)	65
Current Provided	10 Amps
Operating Temperatures	0 to 40 degrees Celsius 32 to 104 degrees Fahrenheit
Agency Listings	UL 1950; CSA-C22.2; EN 60950; FCC Class A (Part 15); FCC Class B with STP; EN 55022 Class B with STP; VCCI Class 2 on shielded UTP; CE Mark

OmniStack 1032F

The OmniStack 1032F provides 32 10BaseT ports for connecting to Ethernet hubs and devices and two 100BaseFx uplink ports (Fast Ethernet) for connecting to high-speed servers and backbones.

♦ Important Note ♦

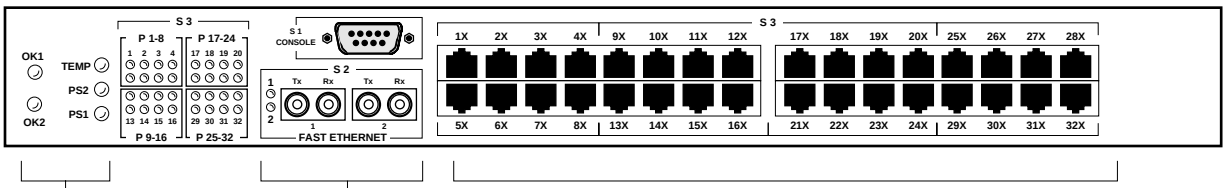
The OmniStack 1032F does not support the Hardware Routing Engine (HRE-OSTK).

Front Panel

The front panel of the OmniStack 1032F contains chassis/management LEDs, Ethernet ports, Ethernet port LEDs, and a Console management port. Management LEDs describe the hardware and software status of the entire switch. The Ethernet port LEDs provide the link integrity status for each 10BaseT port. A management station can be connected to the Console port to monitor and manage the switch via the built-in interface software. The following illustration describes the front panel.

Ethernet Port LEDs. See *OmniStack Ethernet LEDs* on page 11-77 for descriptions.

Console Management Port. Refer to *The Console Management Port* on page 1-30 for further information.



Ethernet 10BaseT Ports. Each port supports one switched Ethernet segment at the full 10 Mbps of bandwidth. Each port can use unshielded twisted pair (UTP) or shielded twisted pair (STP) cable to connect to a single high-traffic device, such as a mail or file server, or a hub serving multiple devices.

Fast Ethernet Ports. Two 100BaseFx Fast Ethernet uplink ports for connecting to high-speed servers and backbones.

Management LEDs. See *OmniStack Management LEDs* on page 11-76 for descriptions.

OmniStack 1032F Front Panel

Configuring the Ethernet Ports

The two Fast Ethernet ports support a fully switched 100 Mbps connection in full- or half-duplex mode. By default, the ports are configured for autosensing and half-duplex operation. To change these settings, refer to the **10/100cfg** command in Chapter 13, "Managing Ethernet Ports." The **10/100vc** command in Chapter 13 lets you view the current line speed and link mode of each port.

The 10BaseT Ethernet ports can be configured for half- or full-duplex operation. To configure the ports, refer to the **10/100cfg** command in Chapter 13, "Managing Ethernet Ports." By default, the ports are configured for half-duplex connections.

The Console Management Port

You can gain access to switch management software through the serial (RS-232C) port on the switch's front panel. The Console port is a male Data Terminal Equipment (DTE) 9-pin "D" connector (DB-9) per the IBM AT serial port specification. It is typically connected to a modem. You can also connect directly from this port to a PC or terminal with a standard null-modem cable available in most computer equipment stores.

If the connecting device does not conform to the IBM AT serial port specification, then you may need to use a special cable or adapter. (See *OmniStack Pinouts* on page 1-91 for information on the pin signals used for this port.)

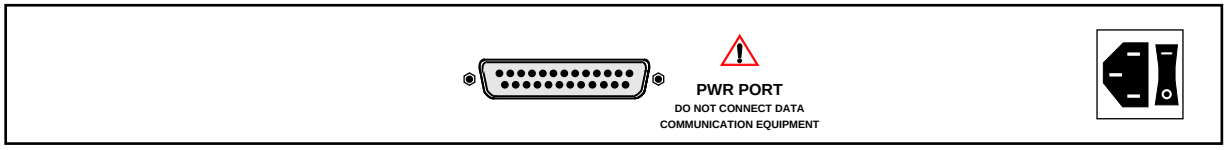
The Console port supports serial data rates of 1200, 9600, 19200, and 38400 bps. By default, it is set to 9600 bps. You can change this setting using the **ser** command that is described in Chapter 7, "Configuring Switch-Wide Parameters." You can connect or disconnect a serial cable to this port at any time without disrupting the switch.

♦ Note ♦

The OmniStack 1032 only supports switch software release 3.3.1 and earlier.

Rear Panel

The rear panel of the OmniStack 1032F provides an AC power connector and a Backup Power System (BPS) connector.



AC Power Connector and on/off switch. Plug the supplied AC power cord into this connector. To turn the switch on, move the on/off switch to the on (—) position. To turn the switch off, move the switch to the off (O) position.

Backup Power System (BPS) Connector. If you are installing a BPS, connect one of the BPS cables to this connector. For more information on the BPS, refer to *Backup Power System* on page 1-81.

OmniStack 1032F Rear Panel

❖ Caution ❖

Do NOT connect any data communications equipment to the DB-25 BPS connector. Although similar in appearance to a standard datacom DB-25 connector, connecting anything other than the Backup Power System module to this connector may cause damage to the attached equipment.

Technical Specifications

OmniStack 1032F Technical Specifications	
Ports	32 10BaseT Ethernet ports (RJ-45, MDI); Two 100BaseFx Ethernet uplink ports (SC); One serial Console port (DB-9, RS-232, DTE)
Power Connectors	One AC power connector on the rear panel One shielded female DB25 connector for the Backup Power System (BPS) on the rear panel
Standards Supported	IEEE 802.3, IEEE 10BaseT
Data Rate	10BaseT ports: 10 Mbps 100BaseFx ports: 100 Mbps Console port: 1.2, 9.6, 19.2, or 38.4 Kbps
Maximum Frame Size	1,518 bytes
Connections Supported	10BaseT ports: hub or device; half- or full-duplex 100BaseFx ports: high-traffic device, such as a mail or file server, or a hub serving multiple devices
Cables Supported 10BaseT ports	Unshielded twisted-pair (UTP)—100 ohms Shielded twisted-pair (STP)—100 ohms
Cables Supported 100BaseFx ports	62.5 micron Multimode fiber (13 dBm)
100BaseFx Distances Supported	2 km (half-duplex mode); 4.5 km (full-duplex mode)
100BaseFx Optical Power Output	-19 to -14 dBm
100BaseFx Optical Receiver Sensitivity and Saturation	-31 to -14 dBm
100BaseFx Power Budget	12 dBm
Addresses Supported	1,024 MAC addresses (option: 4,096 MAC addresses)
Memory	Flash memory: 4 MB DRAM memory: 8 MB (option: 16MB) Frame buffering: 4 MB
Physical Dimensions	1.75” high, 17.1” wide, 14.6” deep
Weight	8 lbs
Voltage Range	90-265 VAC, 47 to 63 Hz auto-ranging and auto-sensing
Current Draw	1.4 Amps at 110 VAC
Watts (Output)	65
Current Provided	10 Amps
Operating Temperatures	0 to 40 degrees Celsius 32 to 104 degrees Fahrenheit
Agency Listings	UL 1950; CSA-C22.2; EN 60950; FCC Class A (Part 15); FCC Class B with STP; EN 55022 Class B with STP; VCCI Class 2 on shielded UTP; CE Mark

OmniStack 1032CF

The OmniStack 1032CF provides 32 10BaseT ports for connecting to Ethernet hubs and devices and one 10/100BaseTx uplink port and one 100BaseFx uplink port (Fast Ethernet) for connecting to high-speed servers and backbones.

♦ Important Note ♦

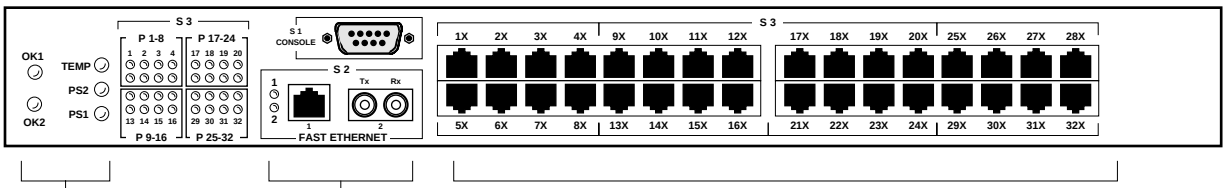
The OmniStack 1032CF does not support the Hardware Routing Engine (HRE-OSTK).

Front Panel

The front panel of the OmniStack 1032CF contains chassis/management LEDs, Ethernet ports, Ethernet port LEDs, and a Console management port. Management LEDs describe the hardware and software status of the entire switch. The Ethernet port LEDs provide the link integrity status for each 10BaseT port. A management station can be connected to the Console port to monitor and manage the switch via the built-in interface software. The following illustration describes the front panel.

Ethernet Port LEDs. See *OmniStack Ethernet LEDs* on page 11-77 for descriptions.

Console Management Port. Refer to *The Console Management Port* on page 1-34 for further information.



Ethernet 10BaseT Ports. Each port supports one switched Ethernet segment at the full 10 Mbps of bandwidth. Each port can use unshielded twisted pair (UTP) or shielded twisted pair (STP) cable to connect to a single high-traffic device, such as a mail or file server, or a hub serving multiple devices.

Fast Ethernet Ports. A 10/100BaseTx uplink port and a 100BaseFX uplink port for connecting to high-speed servers and backbones.

Management LEDs. See *OmniStack Management LEDs* on page 11-76 for descriptions.

OmniStack 1032CF Front Panel

Configuring the Ethernet Ports

The two Fast Ethernet ports support a fully switched 10/100 (copper RJ-45 connector) or 100 Mbps (fiber SC connector) connection in full- or half-duplex mode. By default, the ports are configured for autosensing and half-duplex operation. To change these settings, refer to the **10/100cfg** command in Chapter 13, "Managing Ethernet Ports." The **10/100vc** command in Chapter 13 lets you view the current line speed and link mode of each port.

The 10BaseT Ethernet ports can be configured for half- or full-duplex operation. To configure the ports, refer to the **10/100cfg** command in Chapter 13, "Managing Ethernet Ports." By default, the ports are configured for half-duplex connections.

The Console Management Port

You can gain access to switch management software through the serial (RS-232C) port on the switch's front panel. The Console port is a male Data Terminal Equipment (DTE) 9-pin "D" connector (DB-9) per the IBM AT serial port specification. It is typically connected to a modem. You can also connect directly from this port to a PC or terminal with a standard null-modem cable available in most computer equipment stores.

If the connecting device does not conform to the IBM AT serial port specification, then you may need to use a special cable or adapter. (See *OmniStack Pinouts* on page 1-91 for information on the pin signals used for this port.)

The Console port supports serial data rates of 1200, 9600, 19200, and 38400 bps. By default, it is set to 9600 bps. You can change this setting using the **ser** command that is described in Chapter 7, "Configuring Switch-Wide Parameters." You can connect or disconnect a serial cable to this port at any time without disrupting the switch.

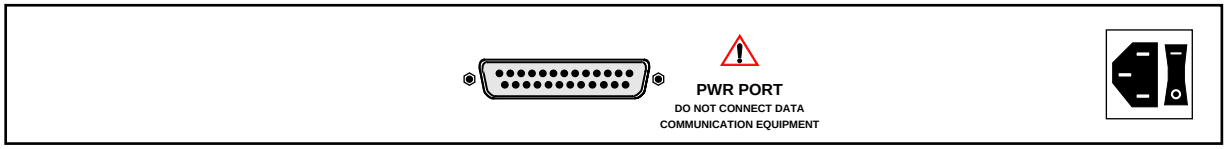
♦ Note ♦

The OmniStack 1032 only supports switch software release 3.3.1 and earlier.

Rear Panel

The rear panel of the OmniStack 1032CF provides an AC power connector and a Backup Power System (BPS) connector.

AC Power Connector and on/off switch. Plug the supplied AC power cord into this connector. To turn the switch on, move the on/off switch to the on (—) position. To turn the switch off, move the switch to the off (O) position.



Backup Power System (BPS) Connector. If you are installing a BPS, connect one of the BPS cables to this connector. For more information on the BPS, refer to *Backup Power System* on page 1-81.

OmniStack 1032CF Rear Panel

❖ Caution ❖

Do NOT connect any data communications equipment to the DB-25 BPS connector. Although similar in appearance to a standard datacom DB-25 connector, connecting anything other than the Backup Power System module to this connector may cause damage to the attached equipment.

Technical Specifications

OmniStack 1032CF Technical Specifications	
Ports	32 10BaseT Ethernet ports (RJ-45, MDI); One 10/100BaseTx Fast Ethernet uplink port (RJ-45) One 100BaseFx Fast Ethernet uplink ports (SC); One serial Console port (DB-9, RS-232, DTE)
Power Connectors	One AC power connector on the rear panel One shielded female DB25 connector for the Backup Power System (BPS) on the rear panel
Standards Supported	IEEE 802.3, IEEE 10BaseT
Data Rate	10BaseT ports: 10 Mbps 10/100BaseTx ports: 10 Mbps or 100 Mbps 100BaseFx port: 100 Mbps Console port: 1.2, 9.6, 19.2, or 38.4 Kbps
Maximum Frame Size	1,518 bytes
Connections Supported	10BaseT ports: hub or device; half- or full-duplex
Cables Supported 10BaseT ports	Unshielded twisted-pair (UTP)—100 ohms Shielded twisted-pair (STP)—100 ohms
Cables Supported 100BaseTx ports	Unshielded twisted-pair (UTP)—100 ohms, Category 5
Addresses Supported	1,024 MAC addresses (option: 4,096 MAC addresses)
Memory	Flash memory: 4 MB DRAM memory: 8 MB (option: 16MB) Frame buffering: 4 MB
Physical Dimensions	1.75” high, 17.1” wide, 14.6” deep
Weight	8 lbs
Voltage Range	90-265 VAC, 47 to 63 Hz auto-ranging and auto-sensing
Current Draw	1.4 Amps at 110 VAC
Watts (Output)	65
Current Provided	10 Amps
Operating Temperatures	0 to 40 degrees Celsius 32 to 104 degrees Fahrenheit
Agency Listings	UL 1950; CSA-C22.2; EN 60950; FCC Class A (Part 15); FCC Class B with STP; EN 55022 Class B with STP; VCCI Class 2 on shielded UTP; CE Mark

OmniStack 2032

The OmniStack 2032 provides 32 10BaseT ports for connecting to Ethernet hubs and devices and one slot for a high-speed uplink submodule that can connect to Fast Ethernet or ATM servers and backbones. (For detailed information on uplink submodules, refer to Chapter 2, "OmniStack Uplink Submodules.")

Front Panel

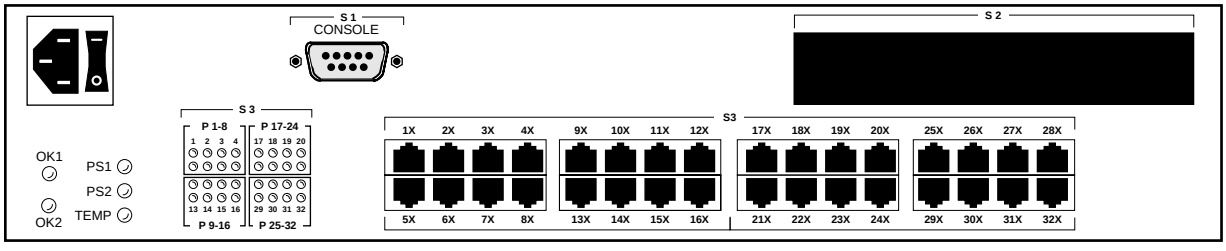
The front panel of the OmniStack 2032 contains an AC power connector, chassis/management LEDs, Ethernet ports, Ethernet port LEDs, a Console management port, and a slot for a slide-in uplink submodule. Management LEDs describe the hardware and software status of the entire switch. The Ethernet port LEDs provide the link integrity status for each 10BaseT port. A management station can be connected to the Console port to monitor and manage the switch via the built-in interface software.

The following illustration describes the front panel.

AC Power Connector and on/off switch. Plug the supplied AC power cord into this connector. To turn the switch on, move the on/off switch to the on (—) position. To turn the switch off, move the switch to the off (O) position.

Console Management Port. Refer to *The Console Management Port* on page 1-38 for further information.

Uplink Submodule Slot. Refer to Chapter 2, "OmniStack Uplink Submodules," for additional information.



Ethernet 10BaseT Ports. Each port supports one switched Ethernet segment at the full 10 Mbps of bandwidth. Each port can use unshielded twisted pair (UTP) or shielded twisted pair (STP) cable to connect to a single high-traffic device, such as a mail or file server, or a hub serving multiple devices.

Ethernet Port LEDs. See *OmniStack Ethernet LEDs* on page 11-77 for descriptions.

Management LEDs. See *OmniStack Management LEDs* on page 11-76 for descriptions.

OmniStack 2032 Front Panel

Configuring the Ethernet Ports

The 10BaseT Ethernet ports can be configured for half- or full-duplex operation. To configure the ports, refer to the **10/100cfg** command in Chapter 13, "Managing Ethernet Ports." By default, the ports are configured for half-duplex connections.

The Console Management Port

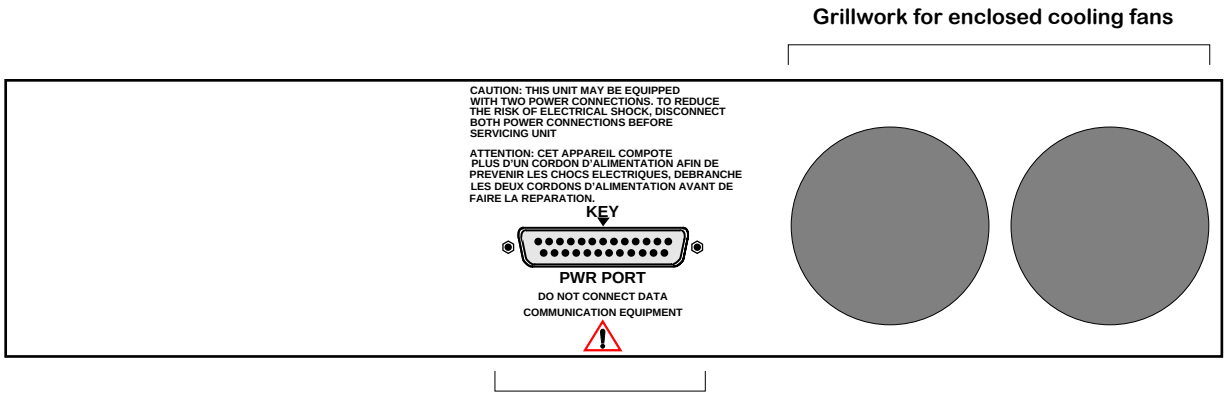
You can gain access to switch management software through the serial (RS-232C) port on the switch's front panel. The Console port is a male Data Terminal Equipment (DTE) 9-pin "D" connector (DB-9) per the IBM AT serial port specification. It is typically connected to a modem. You can also connect directly from this port to a PC or terminal with a standard null-modem cable available in most computer equipment stores.

If the connecting device does not conform to the IBM AT serial port specification, then you may need to use a special cable or adapter. (See *OmniStack Pinouts* on page 1-91 for information on the pin signals used for this port.)

The Console port supports serial data rates of 1200, 9600, 19200, and 38400 bps. By default, it is set to 9600 bps. You can change this setting using the **ser** command that is described in Chapter 7, "Configuring Switch-Wide Parameters." You can connect or disconnect a serial cable to this port at any time without disrupting the switch.

Rear Panel

The rear panel of the OmniStack 2032 provides a Backup Power System (BPS) connector and ventilation openings for the internal cooling fans.



Backup Power System (BPS) Connector. If you are installing a BPS, connect one of the BPS cables to this connector. For more information on the BPS, refer to *Backup Power System* on page 1-81.

OmniStack 2032 Rear Panel

♦ Caution ♦

Do NOT connect any data communications equipment to the DB-25 BPS connector. Although similar in appearance to a standard datacom DB-25 connector, connecting anything other than the Backup Power System module to this connector may cause damage to the attached equipment.

DC Power Supply Availability

The OmniStack 2032 workgroup switch is also available with an internal -48V (65W) DC power supply (Model # OS-2032-48V).

Technical Specifications

OmniStack 2032 Technical Specifications	
Ports	32 10BaseT Ethernet ports (RJ-45, MDI); One high-speed uplink submodule slot; One serial Console port (DB-9, RS-232, DTE)
Power Connectors	One AC power connector on the front panel (DC power connector available on OS-2032-48V models) One shielded female DB25 connector for the Backup Power System (BPS) on the rear panel
Standards Supported	IEEE 802.3, IEEE 10BaseT
Data Rate	10BaseT ports: 10 Mbps Console port: 1.2, 9.6, 19.2, or 38.4 Kbps
Maximum Frame Size	1,518 bytes (Ethernet)
Connections Supported	10BaseT ports: hub or device; half- or full-duplex
Cables Supported 10BaseT ports	Unshielded twisted-pair (UTP)—100 ohms Shielded twisted-pair (STP)—100 ohms
Addresses Supported	2,048 MAC addresses (option: 4096 MAC addresses)
Memory	Flash memory: 4 MB DRAM memory: 16 MB Frame buffering: 4 MB
Physical Dimensions	3.5” high, 17.1” wide, 14.6” deep
Weight	13 lbs., fully populated with an uplink submodule
Voltage Range	90-265 VAC, 47 to 63 Hz auto-ranging and auto-sensing
Current Draw	1.4 Amps at 110 VAC
Watts (Output)	150
Current Provided	25 Amps
Operating Temperatures	0 to 40 degrees Celsius 32 to 104 degrees Fahrenheit
Agency Listings	UL 1950; CSA-C22.2; EN60950; FCC Class A (Part 15); FCC Class B with STP; EN 55022 Class A with UTP; VCCI Class 2 on shielded UTP; CE Mark

OmniStack 3032

The OmniStack 3032 provides 32 10BaseT ports for connecting to Ethernet hubs and devices and one slot for a high-speed uplink submodule that can connect to Fast Ethernet or ATM servers and backbones. (For detailed information on uplink submodules, refer to Chapter 2, "OmniStack Uplink Submodules.")

The OmniStack 3032 is expandable by connecting up to two OmniStack 3032E expansion modules via rear panel expansion connectors. An OmniStack 3032 with two OmniStack 3032E expansion modules can support 96 10BaseT ports.

Front Panel

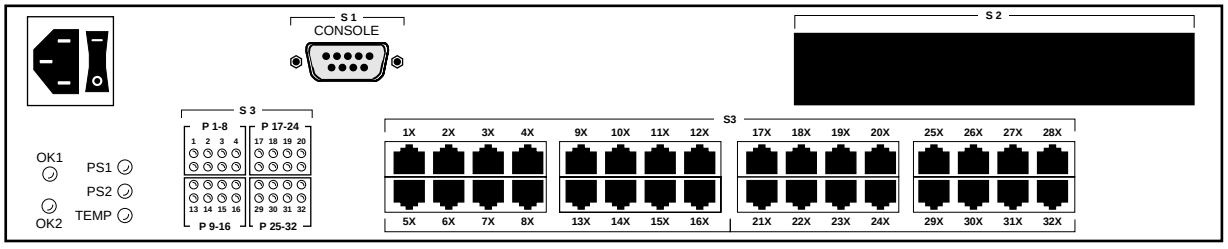
The front panel of the OmniStack 3032 contains an AC power connector, chassis/management LEDs, Ethernet ports, Ethernet port LEDs, a Console management port, and a slot for a slide-in uplink submodule. Management LEDs describe the hardware and software status of the entire switch. The Ethernet port LEDs provide the link integrity status for each 10BaseT port. A management station can be connected to the Console port to monitor and manage the switch via the built-in interface software.

The following illustration describes the front panel.

AC Power Connector and on/off switch. Plug the supplied AC power cord into this connector. To turn the switch on, move the on/off switch to the on (—) position. To turn the switch off, move the switch to the off (O) position.

Console Management Port. Refer to *The Console Management Port* on page 1-42 for further information.

Uplink Submodule Slot. Refer to Chapter 2, "OmniStack Uplink Submodules," for additional information.



Ethernet 10BaseT Ports. Each port supports one switched Ethernet segment at the full 10 Mbps of bandwidth. Each port can use unshielded twisted pair (UTP) or shielded twisted pair (STP) cable to connect to a single high-traffic device, such as a mail or file server, or a hub serving multiple devices.

Ethernet Port LEDs. See *OmniStack Ethernet LEDs* on page 11-77 for descriptions.

Management LEDs. See *OmniStack Management LEDs* on page 11-76 for descriptions.

OmniStack 3032 Front Panel

Configuring the Ethernet Ports

The 10BaseT Ethernet ports can be configured for half- or full-duplex operation. To configure the ports, refer to the **10/100cfg** command in Chapter 13, "Managing Ethernet Ports." By default, the ports are configured for half-duplex connections.

The Console Management Port

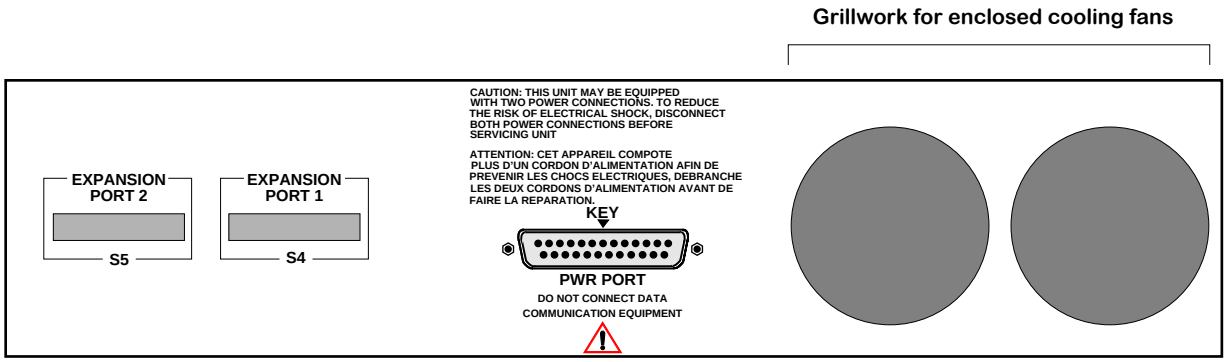
You can gain access to switch management software through the serial (RS-232C) port on the switch's front panel. The Console port is a male Data Terminal Equipment (DTE) 9-pin "D" connector (DB-9) per the IBM AT serial port specification. It is typically connected to a modem. You can also connect directly from this port to a PC or terminal with a standard null-modem cable available in most computer equipment stores.

If the connecting device does not conform to the IBM AT serial port specification, then you may need to use a special cable or adapter. (See *OmniStack Pinouts* on page 1-91 for information on the pin signals used for this port.)

The Console port supports serial data rates of 1200, 9600, 19200, and 38400 bps. By default, it is set to 9600 bps. You can change this setting using the **ser** command that is described in Chapter 7, "Configuring Switch-Wide Parameters." You can connect or disconnect a serial cable to this port at any time without disrupting the switch.

Rear Panel

The rear panel of the OmniStack 3032 provides a Backup Power System (BPS) connector and ventilation openings for the internal cooling fans.



Expansion Port Connectors. Connect OmniStack 3032E expansion chassis to these connectors. If you are only installing one OmniStack 3032E, it should be connected to expansion port 1 (**S4**).

Backup Power System (BPS) Connector. If you are installing a BPS, connect one of the BPS cables to this connector. For more information on the BPS, refer to *Backup Power System* on page 1-81.

❖ Caution ❖

Do NOT connect any data communications equipment to the PWR PORT DB-25 BPS connector. Although similar in appearance to a standard datacom DB-25 connector, connecting anything other than the Backup Power System module to this connector may cause damage to the attached equipment. elopement.

OmniStack 3032 Rear Panel

DC Power Supply Availability

The OmniStack 3032 workgroup switch is also available with an internal -48V (65W) DC power supply (Model # OS-3032-48V).

Technical Specifications

OmniStack 3032 Technical Specifications	
Ports	32 10BaseT Ethernet ports (RJ-45, MDI); One high-speed uplink submodule slot; One serial port for management software (DB-9, RS-232, DTE) Two expansion ports on the rear panel (SCSI)
Power Connectors	One AC power connector on the front panel (DC power connector available on OS-3032-48V models) One shielded female DB25 connector for the Backup Power System (BPS) on the rear panel
Standards Supported	IEEE 802.3, IEEE 10BaseT
Data Rate	10BaseT ports: 10 Mbps Console port: 1.2, 9.6, 19.2, or 38.4 Kbps
Maximum Frame Size	1,518 bytes (Ethernet)
Connections Supported	10BaseT ports: hub or device; half- or full-duplex
Cables Supported 10BaseT ports	Unshielded twisted-pair (UTP)—100 ohms Shielded twisted-pair (STP)—100 ohms
Addresses Supported	3,072 MAC addresses (option: 8,192 MAC addresses)
Memory	Flash memory: 4 MB DRAM memory: 16 MB Frame buffering: 8 MB
Physical Dimensions	3.5” high, 17.1” wide, 14.6” deep
Weight	13 lbs., fully populated with an uplink submodule
Voltage Range	90-265 VAC, 47 to 63 Hz auto-ranging and auto-sensing
Current Draw	1.4 Amps at 110 VAC
Watts (Output)	150
Current Provided	25 Amps
Operating Temperatures	0 to 40 degrees Celsius 32 to 104 degrees Fahrenheit
Agency Listings	UL 1950; CSA-C22.2; EN60950; FCC Class A (Part 15); EN 55022 Class A with UTP; VCCI Class 2 on shielded UTP; CE Mark

OmniStack 3032E

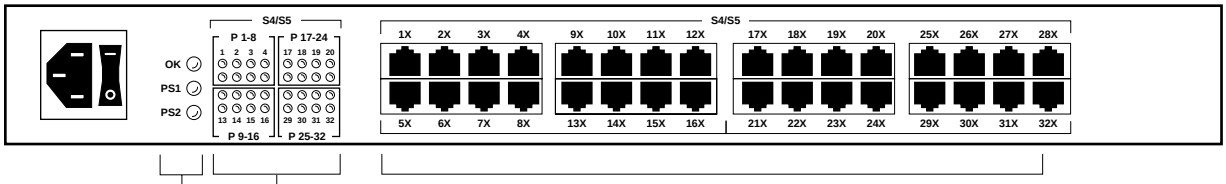
The OmniStack 3032E provides 32 10BaseT ports for connecting to Ethernet hubs and devices. The OmniStack 3032E is an expansion chassis for the OmniStack 3032 switch. Up to two OmniStack 3032E expansion chassis can be connected to an OmniStack 3032 switch. The OmniStack 3032E can not function as a stand-alone switch – it must be used in conjunction with the OmniStack 3032 switch.

Front Panel

The front panel of the OmniStack 3032 contains an AC power connector, Ethernet ports, and Ethernet port LEDs. The Ethernet port LEDs provide the link integrity status for each 10BaseT port.

The following illustration describes the front panel.

AC Power Connector and on/off switch. Plug the supplied AC power cord into this connector. To turn the switch on, move the on/off switch to the on (—) position. To turn the switch off, move the switch to the off (O) position.



Ethernet 10BaseT Ports. Each port supports one switched Ethernet segment at the full 10 Mbps of bandwidth. Each port can use unshielded twisted pair (UTP) or shielded twisted pair (STP) cable to connect to a single high-traffic device, such as a mail or file server, or a hub serving multiple devices.

Ethernet Port LEDs. See *OmniStack Ethernet LEDs* on page 11-77 for descriptions.

Management LEDs. See *OmniStack Management LEDs* on page 11-76 for descriptions. Note that the 3032E has only one OK LED, which is On Green when the hardware is in a normal operational state.

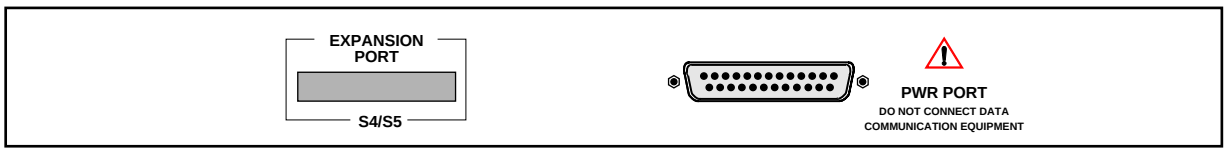
OmniStack 3032E Front Panel

Configuring the Ethernet Ports

The 10BaseT Ethernet ports can be configured for half- or full-duplex operation. To configure the ports, refer to the **10/100cfg** command in Chapter 13, "Managing Ethernet Ports." By default, the ports are configured for half-duplex connections.

Rear Panel

The rear panel of the OmniStack 3032E provides a Backup Power System (BPS) connector and an expansion port connector.



Expansion Port. Connect this port to one of the two expansion ports on the rear panel of the OmniStack 3032 (does not matter which one).

Backup Power System (BPS) Connector. If you are installing a BPS, connect one of the BPS cables to this connector. For more information on the BPS, refer to *Backup Power System* on page 1-81.

❖ Caution ❖

Do NOT connect any data communications equipment to the PWR PORT DB-25 BPS connector. Although similar in appearance to a standard datacom DB-25 connector, connecting anything other than the Backup Power System module to this connector may cause damage to the attached equipment. elopement.

OmniStack 3032E Rear Panel

DC Power Supply Availability

The OmniStack 3032E expansion chassis is also available with an internal -48V (65W) DC power supply (Model # OS-3032E-48V).

Technical Specifications

OmniStack 3032E Technical Specifications	
Ports	32 10BaseT Ethernet ports (RJ-45, MDI); One expansion port connector on the rear panel (SCSI)
Power Connectors	One AC power connector on the front panel (DC power connector available on OS-3032E-48V models) One shielded female DB25 connector for the Backup Power System (BPS) on the rear panel
Standards Supported	IEEE 802.3, IEEE 10BaseT
Data Rate	10BaseT ports: 10 Mbps
Maximum Frame Size	1,518 bytes
Connections Supported	10BaseT ports: hub or device; half-duplex or full-duplex
Cables Supported 10BaseT ports	Unshielded twisted-pair (UTP)—100 ohms Shielded twisted-pair (STP)—100 ohms
Physical Dimensions	1.75" high, 17.1" wide, 14.6" deep
Weight	8 lbs.
Voltage Range	90-265 VAC, 47 to 63 Hz auto-ranging and auto-sensing
Current Draw	1.4 Amps at 110 VAC
Watts (Output)	65
Current Provided	10 Amps
Operating Temperatures	0 to 40 degrees Celsius 32 to 104 degrees Fahrenheit
Agency Listings	UL 1950; CSA-C22.2; EN60950; FCC Class A (Part 15); EN 55022 Class A with UTP; VCCI Class 2 on shielded UTP; CE Mark

OmniStack 4016

The OmniStack 4016 provides 16 10BaseT/100BaseT ports for connecting to Ethernet hubs and devices. Each port is autosensing, meaning that it will automatically configure itself to match the attached hub or device's data rate (i.e., 10 Mbps or 100 Mbps).

♦ Important Note ♦

The OmniStack 4016 does not support the Hardware Routing Engine (HRE-OSTK).

Front Panel

The front panel of the OmniStack 4016 contains an AC power connector, chassis/management LEDs, Ethernet ports, Ethernet port LEDs, and a Console management port. Management LEDs describe the hardware and software status of the entire switch. The Ethernet port LEDs provide the link integrity status for each 10BaseT/100BaseT port. A management station can be connected to the Console port to monitor and manage the switch via the built-in interface software. The following illustration describes the front panel.

AC Power Connector and on/off switch. Plug the supplied AC power cord into this connector. To turn the switch on, move the on/off switch to the on (—) position. To turn the switch off, move the switch to the off (O) position.

Console Management Port. Refer to *The Console Management Port* on page 1-49 for further information.

Ethernet 10BaseT/100BaseT Ports. Each port supports one switched Ethernet segment at the full 10 Mbps or 100 Mbps of bandwidth and will automatically configure itself to match the data speed of the attached hub or device. Each port can use unshielded twisted pair (UTP) or shielded twisted pair (STP) cable to connect to a single high-traffic device.

Ethernet Port LEDs. See *OmniStack Ethernet LEDs* on page 11-77 for descriptions.

Management LEDs. See *OmniStack Management LEDs* on page 11-76 for descriptions.

OmniStack 4016 Front Panel

Configuring the Ethernet Ports

The Ethernet ports support a fully switched 10 or 100 Mbps connection in full- or half-duplex mode. By default, the ports are configured for autosensing and half-duplex operation. To change these settings, refer to the **10/100cfg** command in Chapter 13, "Managing Ethernet Ports." The **10/100vc** command in Chapter 13 lets you view the current line speed and link mode of each port.

The Console Management Port

You can gain access to switch management software through the serial (RS-232C) port on the switch's front panel. The Console port is a male Data Terminal Equipment (DTE) 9-pin "D" connector (DB-9) per the IBM AT serial port specification. It is typically connected to a modem. You can also connect directly from this port to a PC or terminal with a standard null-modem cable available in most computer equipment stores.

If the connecting device does not conform to the IBM AT serial port specification, then you may need to use a special cable or adapter. (See *OmniStack Pinouts* on page 1-91 for information on the pin signals used for this port.)

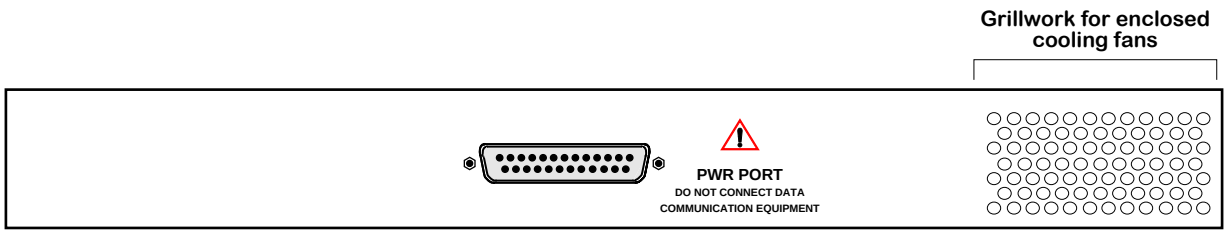
The Console port supports serial data rates of 1200, 9600, 19200, and 38400 bps. By default, it is set to 9600 bps. You can change this setting using the **ser** command that is described in Chapter 7, "Configuring Switch-Wide Parameters." You can connect or disconnect a serial cable to this port at any time without disrupting the switch.

♦ Note ♦

The OmniStack 4016 only supports switch software release 3.3.1 and earlier.

Rear Panel

The rear panel of the OmniStack 4016 provides a Backup Power System (BPS) connector and ventilation openings for the internal cooling fans.



Backup Power System (BPS) Connector. If you are installing a BPS, connect one of the BPS cables to this connector. For more information on the BPS, refer to *Backup Power System* on page 1-81.

❖ Caution ❖

Do NOT connect any data communications equipment to the PWR PORT DB-25 BPS connector. Although similar in appearance to a standard datacom DB-25 connector, connecting anything other than the Backup Power System module to this connector may cause damage to the attached equipment. elopement.

OmniStack 4016 Rear Panel

Technical Specifications

OmniStack 4016 Technical Specifications	
Ports	16 10BaseT/100BaseT Ethernet ports (RJ-45, MDI); One serial Console port (DB-9, RS-232, DTE)
Power Connectors	One AC power connector on the front panel One shielded female DB25 connector for the Backup Power System (BPS) on the rear panel
Standards Supported	IEEE 802.3, IEEE 10BaseTx
Data Rate	10BaseT/100BaseT ports: 10 Mbps or 100 Mbps Console port: 1.2, 9.6, 19.2, or 38.4 Kbps
Maximum Frame Size	1,518 bytes
Connections Supported	10BaseT/100BaseT ports: hub or device; half- or full-duplex
Cables Supported 10BaseT/100BaseT ports	Unshielded twisted-pair (UTP)—100 ohms (Category 5 required when running at 100 Mbps) Shielded twisted-pair (STP)—100 ohms
Addresses Supported	1,024 MAC addresses (option: 4,096 MAC addresses)
Memory	Flash memory: 4 MB DRAM memory: 8 MB (option: 16MB) Frame buffering: 4 MB
Physical Dimensions	3.5” high, 17.1” wide, 14.6” deep
Weight	8 lbs.
Voltage Range	90-265 VAC, 47 to 63 Hz auto-ranging and auto-sensing
Current Draw	1.4 Amps at 110 VAC
Watts (Output)	65
Current Provided	10 Amps
Operating Temperatures	0 to 40 degrees Celsius 32 to 104 degrees Fahrenheit
Agency Listings	UL 1950; CSA-C22.2; EN60950; FCC Class A (Part 15); FCC Class B with STP; EN 55022 Class A with UTP; VCCI Class 2 on shielded UTP; CE Mark

OmniStack 4024C

The OmniStack 4024C provides 24 10BaseT/100BaseTx auto-sensing ports for connecting to Ethernet hubs and devices and two 100BaseTx uplink ports for connecting to high-speed servers and backbones.

♦ Important Note ♦

The OmniStack 4024C does not support the Hardware Routing Engine (HRE-OSTK) or Backup Power System (BPS).

Routing Information

The OmniStack 4024C can route up to approximately 2000 packets per second (pps). If routing input greatly exceeds 2000 pps, the switch may stop routing until traffic flow is reduced.

Front Panel

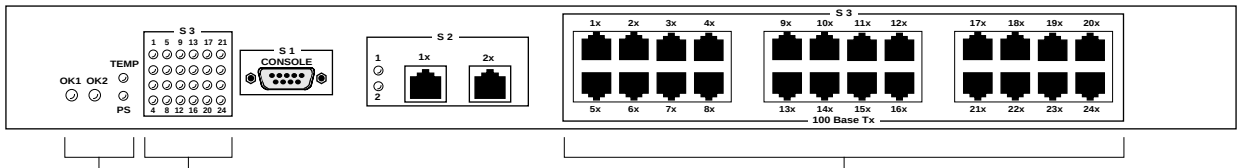
The front panel of the OmniStack 4024C contains (4) chassis/management LEDs, (24) Ethernet port LEDs, (1) console management port, (2) 100BaseTx Fast Ethernet uplink ports, and (24) 10BaseT/100BaseTx Ethernet ports. The chassis/management LEDs are used to monitor the hardware and software status for the switch. The Ethernet port LEDs provide the link integrity status for each of the twenty-four (24) 10BaseT/100BaseTx ports. The Fast Ethernet uplink LEDs provide the link integrity status for each of the two (2) 100BaseTx ports. The console management port can be connected to a management station (a laptop or desktop computer, for example) in order to monitor and manage the switch via the built-in interface software.

Refer to the illustration below for additional front panel layout information.

Console Management Port. Refer to *The Console Management Port* on page 1-53 for further information.

2 Fast Ethernet Uplink Ports. Each port supports one auto-sensing 10BaseT/100BaseTx (Copper) Fast Ethernet uplink connection.

LEDs, located just to the left of these ports, display the link integrity status for the corresponding Fast Ethernet uplink connection.



Ethernet Port LEDs. See *OmniStack 1024 and 4024 Ethernet Port LEDs* on page 1-79 for details.

Chassis/Management LEDs. See *OmniStack 1024 and 4024 Management LEDs* on page 1-78 for details.

Ethernet 10BaseT/100BaseTx Ports. Each port supports one switched Ethernet segment at the full 10 Mbps or 100 Mbps of bandwidth and will automatically configure itself to match the data speed of the attached hub or device. Each port can use unshielded twisted pair (UTP) or shielded twisted pair (STP) cable to connect to a single high-traffic device.

For information on configuring these ports via the User Interface, refer to *Configuring the Ethernet Ports* on page 1-53.

OmniStack 4024C Front Panel

Configuring the Ethernet Ports

Each of the twenty-four (24) Ethernet ports on the OS 4024 supports a fully-switched 10 or 100 Mbps connection in full- or half-duplex mode. By default, each port is configured to operate in auto-sensing, half-duplex mode. However, each port may be manually configured via the **10/100cfg** command. (The **10/100cfg** command allows you to disable or enable auto-sensing and/or set the link mode to half- or full-duplex.)

An additional software command, **10/100vc**, allows you to view the current line speed and link mode of each port connection. For more information on the **10/100cfg** and **10/100vc** commands, refer to Chapter 13, "Managing Ethernet Ports."

The Console Management Port

You can access the switch management software via the console (RS-232C) port on the OS 4024's front panel. The console management port is a male Data Terminal Equipment (DTE) 9-pin "D" (DB-9) connector, per the IBM AT serial port specification. You can connect directly from this port to a PC or terminal with a standard null-modem cable available in most computer equipment stores.

If the connecting device does not conform to the IBM AT serial port specification, you may need to use a special cable or adapter. (See *OmniStack Pinouts* on page 1-91 for information on the pin signals used for this port.)

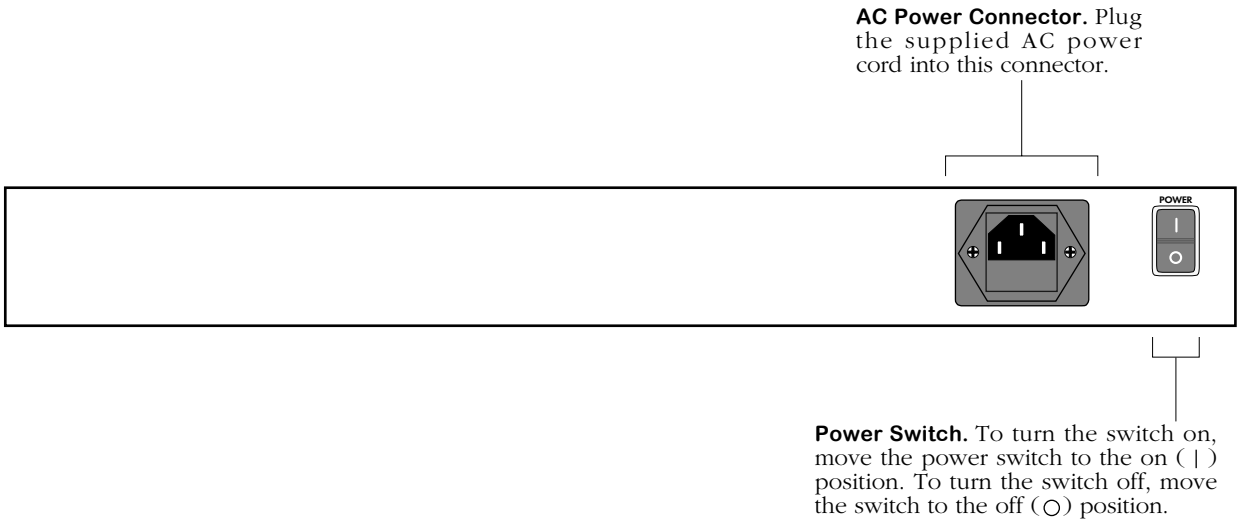
You can connect or disconnect a serial cable at the console port at any time without disrupting the switch.

The console management port supports serial data rates of 1200, 9600, and 19200 bps. By default, the rate is set to 9600 bps. You can change this setting via the **ser** command (described in Chapter 7, "Configuring Switch-Wide Parameters").

♦ Note ♦

The OmniStack 4024 does not support 38,400 bps serial data rate.

Rear Panel



DC Power Supply Availability

The OmniStack 4024C workgroup switch is also available with an internal -48V (65W) DC power supply (Model # OS-4024C-48V).

Technical Specifications

OmniStack 4024C Technical Specifications	
Ports	(24) 10BaseT/100BaseTx Ethernet ports (RJ-45, MDI) (2) 10BaseT/100BaseTx uplink ports (RJ-45) (1) serial port for management software (DB-9, RS-232, DTE)
Power Connectors	(1) AC power connector on the rear panel (DC power connector available on OS-4024C-48V models)
Standards Supported	IEEE 802.3, IEEE 10BaseT, 100BaseTx
Data Rate	10BaseT/100BaseTx Ethernet ports: 10 Mbps or 100 Mbps (auto-sensing) 10BaseT/100BaseTx uplink ports: 10 Mbps or 100 Mbps (auto-sensing) Console serial port: 1.2, 9.6, or 19.2 Kbps
Maximum Frame Size	1,518 bytes (Ethernet)
Connections Supported	10BaseT/100BaseTx Ethernet ports: half-duplex or full-duplex connections to hub or device 10BaseT/100BaseTx uplink ports: half-duplex or full-duplex connections to server or other switch
Cables Supported	10BaseT/100BaseTx Ethernet ports: Unshielded twisted-pair (UTP)—100 ohms (Category 5 required when running at 100 Mbps); Shielded twisted-pair (STP)—100 ohms 10BaseT/100BaseTx uplink ports: Unshielded twisted-pair (UTP)—100 ohms (Category 5 required when running at 100 Mbps); Shielded twisted-pair (STP)—100 ohms
Distances Supported	10BaseT/100BaseTx uplink ports: 100 m
Addresses Supported	1,024 MAC addresses (option: 4,096 MAC addresses)
Memory	Flash memory: 4 MB DRAM memory: 16 MB Frame buffering: 4 MB
Physical Dimensions	17 1/4" w, 1 3/4" h, 12 3/16" d
Weight	10 lbs.
Voltage Range	90-265 VAC, 47 to 63 Hz auto-ranging and auto-sensing
Current Draw	1.4 Amps at 110 VAC
Watts	65
Current Provided	10 Amps
Operating Temperatures	0 to 40 degrees Celsius 32 to 104 degrees Fahrenheit
Agency Listings	UL 1950; CSA-C22.2; EN60950; FCC Class A (Part 15); EN 55022 Class A with UTP; VCCI Class 2 on shielded UTP; CE Mark

OmniStack 4024F

The OmniStack 4024F provides 24 10BaseT/100BaseTx auto-sensing ports for connecting to Ethernet hubs and devices and two 100BaseFx uplink ports for connecting to high-speed servers and backbones.

♦ Important Note ♦

The OmniStack 4024F does not support the Hardware Routing Engine (HRE-OSTK) or Backup Power System (BPS).

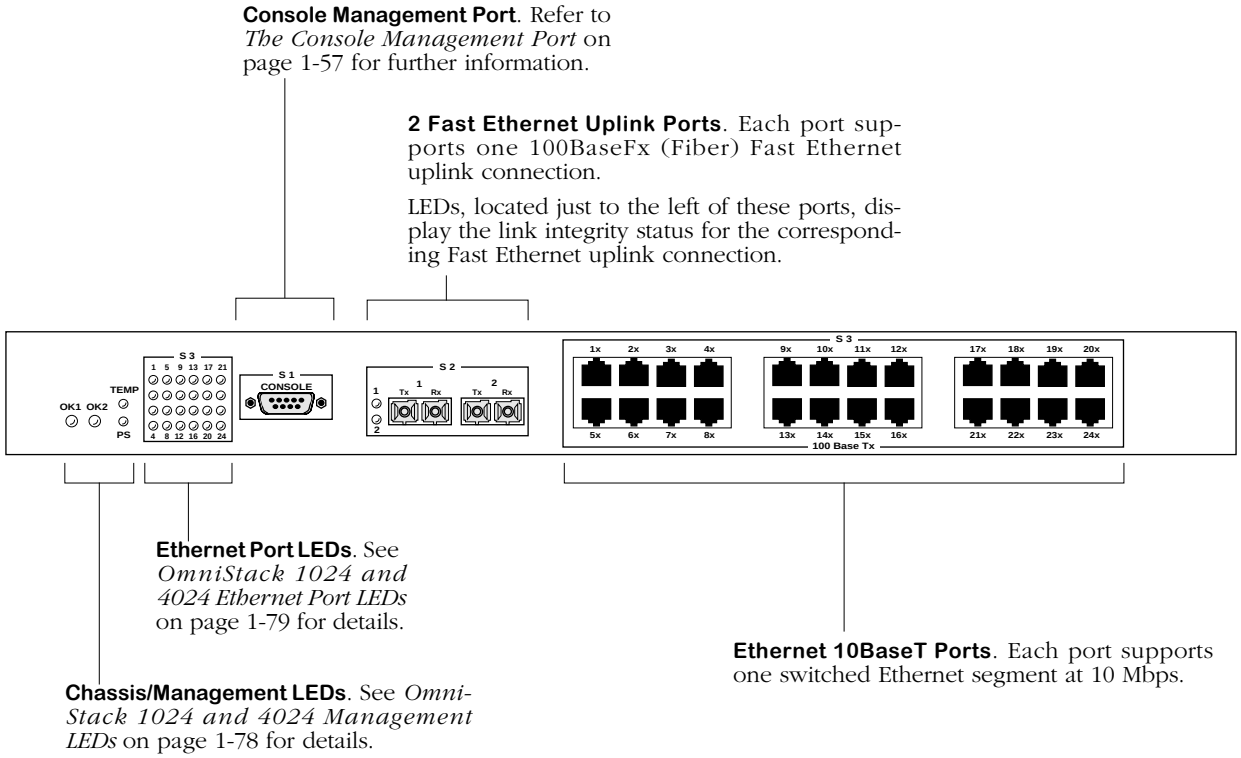
Routing Information

The OmniStack 4024F can route up to approximately 2000 packets per second (pps). If routing input greatly exceeds 2000 pps, the switch may stop routing until traffic flow is reduced.

Front Panel

The front panel of the OmniStack 4024F contains (4) chassis/management LEDs, (24) Ethernet port LEDs, (1) console management port, (2) 100BaseFx Fast Ethernet uplink ports, and (24) 10BaseT Ethernet ports. The chassis/management LEDs are used to monitor the hardware and software status for the switch. The Ethernet port LEDs provide the link integrity status for each of the twenty-four (24) 10BaseT ports. The Fast Ethernet uplink LEDs provide the link integrity status for each of the two (2) 100BaseFx ports. The console management port can be connected to a management station (a laptop or desktop computer, for example) in order to monitor and manage the switch via the built-in interface software.

Refer to the illustration below for additional front panel layout information.



OmniStack 4024F Front Panel

Configuring the Ethernet Ports

Each of the twenty-four (24) Ethernet ports on the OS 4024 supports a fully-switched 10 or 100 Mbps connection in full- or half-duplex mode. By default, each port is configured to operate in auto-sensing, half-duplex mode. However, each port may be manually configured via the **10/100cfg** command. (The **10/100cfg** command allows you to disable or enable auto-sensing and/or set the link mode to half- or full-duplex.)

An additional software command, **10/100vc**, allows you to view the current line speed and link mode of each port connection. For more information on the **10/100cfg** and **10/100vc** commands, refer to Chapter 13, "Managing Ethernet Ports."

The Console Management Port

You can access the switch management software via the console (RS-232C) port on the OS 4024's front panel. The console management port is a male Data Terminal Equipment (DTE) 9-pin "D" (DB-9) connector, per the IBM AT serial port specification. You can connect directly from this port to a PC or terminal with a standard null-modem cable available in most computer equipment stores.

If the connecting device does not conform to the IBM AT serial port specification, you may need to use a special cable or adapter. (See *OmniStack Pinouts* on page 1-91 for information on the pin signals used for this port.)

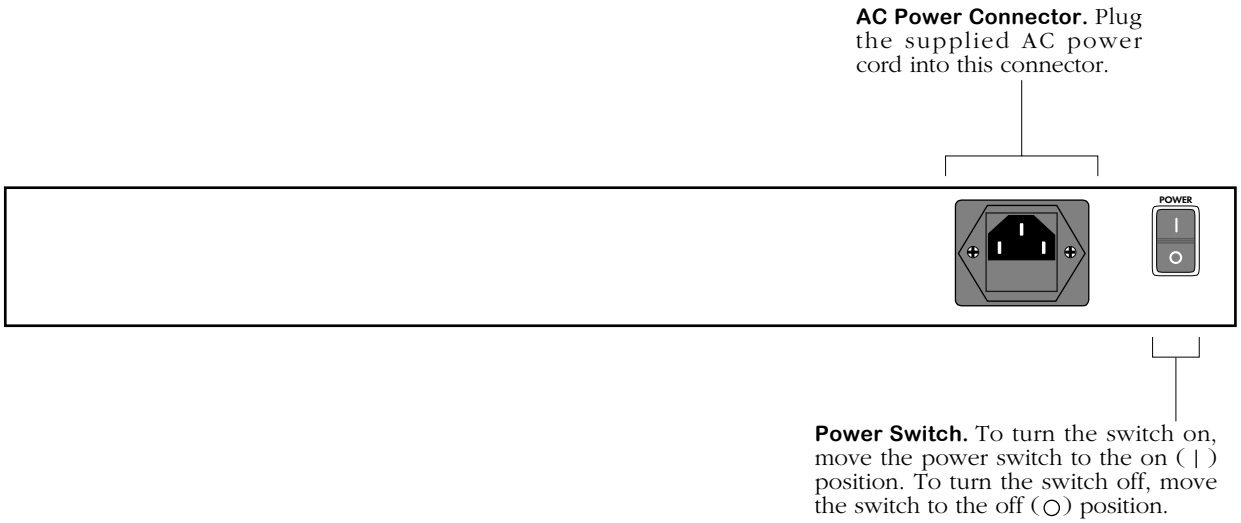
You can connect or disconnect a serial cable at the console port at any time without disrupting the switch.

The console management port supports serial data rates of 1200, 9600, and 19200 bps. By default, the rate is set to 9600 bps. You can change this setting via the **ser** command (described in Chapter 7, "Configuring Switch-Wide Parameters").

♦ Note ♦

The OmniStack 4024 does not support 38,400 bps serial data rate.

Rear Panel



DC Power Supply Availability

The OmniStack 4024F workgroup switch is also available with an internal -48V (65W) DC power supply (Model # OS-4024F-48V).

Technical Specifications

OmniStack 4024F Technical Specifications	
Ports	(24) 10BaseT/100BaseTx Ethernet ports (RJ-45, MDI) (2) 100BaseFx uplink ports (SC) (1) serial port for management software (DB-9, RS-232, DTE)
Power Connectors	(1) AC power connector on the rear panel (DC power connector available on OS-4024F-48V models)
Standards Supported	IEEE 802.3, IEEE 10BaseT, 100BaseTx, 100BaseFx
Data Rate	10BaseT/100BaseTx Ethernet ports: 10 Mbps or 100 Mbps (auto-sensing) 100BaseFx uplink ports: 100 Mbps Console serial port: 1.2, 9.6, or 19.2 Kbps
Maximum Frame Size	1,518 bytes (Ethernet)
Connections Supported	10BaseT/100BaseTx Ethernet ports: half-duplex or full-duplex connections to hub or device 100BaseFx uplink ports: Fast Ethernet backbone
Cables Supported	10BaseT/100BaseTx Ethernet ports: Unshielded twisted-pair (UTP)—100 ohms (Category 5 required when running at 100 Mbps); Shielded twisted-pair (STP)—100 ohms 100BaseFx uplink ports: 62.5 µm (13 dBm) multimode fiber
Distances Supported	2 km (half-duplex); 4.5 km (full-duplex)
Optical Power Output	-19 to -14 dBm
Receiver Sensitivity	-31 to -14 dBm
Power Budget	12 dBm
Addresses Supported	1,024 MAC addresses (option: 4,096 MAC addresses)
Memory	Flash memory: 4 MB DRAM memory: 16 MB Frame buffering: 4 MB
Operating Temperatures	0 to 40 degrees Celsius 32 to 104 degrees Fahrenheit
Agency Listings	UL 1950; CSA-C22.2; EN60950; FCC Class A (Part 15); EN 55022 Class A with UTP; VCCI Class 2 on shielded UTP; CE Mark

continued on next page...

Technical Specifications, continued

OmniStack 4024F Technical Specifications, continued	
Physical Dimensions	17 1/4" w, 1 3/4" h, 12 3/16" d
Weight	10 lbs.
Voltage Range	90-265 VAC, 47 to 63 Hz auto-ranging and auto-sensing
Current Draw	1.4 Amps at 110 VAC
Watts	65
Current Provided	10 Amps

OmniStack 4024CF

The OmniStack 4024CF provides 24 10BaseT/100BaseTx auto-sensing ports for connecting to Ethernet hubs and devices, along with one 100BaseTx uplink port and one 100BaseFx uplink port for connecting to high-speed servers and backbones.

♦ Important Note ♦

The OmniStack 4024CF does not support the Hardware Routing Engine (HRE-OSTK) or Backup Power System (BPS).

Routing Information

The OmniStack 4024CF can route up to approximately 2000 packets per second (pps). If routing input greatly exceeds 2000 pps, the switch may stop routing until traffic flow is reduced.

Front Panel

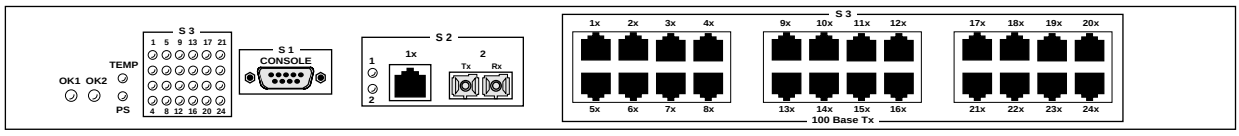
The front panel of the OmniStack 4024CF contains (4) chassis/management LEDs, (24) Ethernet port LEDs, (1) console management port, (1) 100BaseFx Fast Ethernet uplink port, (1) 100BaseTx Fast Ethernet uplink port, and (24) 10BaseT/100BaseTx Ethernet ports. The chassis/management LEDs are used to monitor the hardware and software status for the entire switch. The Ethernet port LEDs provide the link integrity status for each of the twenty-four (24) 10BaseT/100BaseTx ports. The Fast Ethernet uplink LEDs provide the link integrity status for the 100BaseFx and 100BaseTx uplink ports. The console management port can be connected to a management station (a laptop or desktop computer, for example) in order to monitor and manage the switch via the built-in interface software.

Refer to the illustration below for additional front panel layout information.

Console Management Port. Refer to *The Console Management Port* on page 1-62 for further information.

Copper/Fiber Fast Ethernet Uplink Ports. Port 1 supports one auto-sensing 10BaseT/100BaseTx (Copper) Fast Ethernet uplink connection; port 2 supports one 100BaseFx (Fiber) Fast Ethernet Uplink connection.

LEDs, located just to the left of these ports, display the link integrity status for the corresponding Fast Ethernet uplink connection.



100BaseTx (Copper) Port

100BaseFx (Fiber) Port

Ethernet Port LEDs. See *OmniStack 1024 and 4024 Ethernet Port LEDs* on page 1-79

Chassis/Management LEDs. See *OmniStack 1024 and 4024 Management LEDs* on page 1-78 for details.

Ethernet 10BaseT/100BaseTx Ports. Each port supports one switched Ethernet segment at the full 10 Mbps or 100 Mbps of bandwidth and will automatically configure itself to match the data speed of the attached hub or device. Each port can use unshielded twisted pair (UTP) or shielded twisted pair (STP) cable to connect to a single high-traffic device.

For information on configuring these ports via the User Interface, refer to *Configuring the Ethernet Ports* on page 1-62.

OmniStack 4024CF Front Panel

Configuring the Ethernet Ports

Each of the twenty-four (24) Ethernet ports on the OS 4024 supports a fully-switched 10 or 100 Mbps connection in full- or half-duplex mode. By default, each port is configured to operate in auto-sensing, half-duplex mode. However, each port may be manually configured via the **10/100cfg** command. (The **10/100cfg** command allows you to disable or enable auto-sensing and/or set the link mode to half- or full-duplex.)

An additional software command, **10/100vc**, allows you to view the current line speed and link mode of each port connection. For more information on the **10/100cfg** and **10/100vc** commands, refer to Chapter 13, "Managing Ethernet Ports."

The Console Management Port

You can access the switch management software via the console (RS-232C) port on the OS 4024's front panel. The console management port is a male Data Terminal Equipment (DTE) 9-pin "D" (DB-9) connector, per the IBM AT serial port specification. You can connect directly from this port to a PC or terminal with a standard null-modem cable available in most computer equipment stores.

If the connecting device does not conform to the IBM AT serial port specification, you may need to use a special cable or adapter. (See *OmniStack Pinouts* on page 1-91 for information on the pin signals used for this port.)

You can connect or disconnect a serial cable at the console port at any time without disrupting the switch.

The console management port supports serial data rates of 1200, 9600, and 19200 bps. By default, the rate is set to 9600 bps. You can change this setting via the **ser** command (described in Chapter 7, "Configuring Switch-Wide Parameters").

♦ Note ♦

The OmniStack 4024 does not support 38,400 bps serial data rate.

Rear Panel

AC Power Connector. Plug the supplied AC power cord into this connector.

Power Switch. To turn the switch on, move the power switch to the on (|) position. To turn the switch off, move the switch to the off (○) position.

DC Power Supply Availability

The OmniStack 4024CF workgroup switch is also available with an internal -48V (65W) DC power supply (Model # OS-4024CF-48V).

Technical Specifications

OmniStack 4024CF Technical Specifications	
Ports	(24) 10BaseT/100BaseTx Ethernet ports (RJ-45, MDI) (1) 10BaseT/100BaseTx uplink port (RJ-45) (1) 100BaseFx uplink port (SC) (1) Console port for management software (DB-9, RS-232, DTE)
Power Connectors	(1) AC power connector on the rear panel (DC power connector available on OS-4024CF-48V models)
Standards Supported	IEEE 802.3, IEEE 10BaseT, 100BaseTx, 100BaseFx
Data Rate	10BaseT/100BaseTx Ethernet ports: 10 Mbps or 100 Mbps (auto-sensing) 10BaseT/100BaseTx uplink port: 10 Mbps or 100 Mbps (auto-sensing) 100BaseFx uplink port: 100 Mbps Console port: 1.2, 9.6, or 19.2 Kbps
Maximum Frame Size	1,518 bytes (Ethernet)
Connections Supported	10BaseT/100BaseTx Ethernet ports: half-duplex or full-duplex connections to hub or device 10BaseT/100BaseTx uplink ports: half-duplex or full-duplex connections to server or other switch 100BaseFx uplink port: Fast Ethernet backbone
Cables Supported	10BaseT/100BaseTx Ethernet ports: Unshielded twisted-pair (UTP)—100 ohms (Category 5 required when running at 100 Mbps); Shielded twisted-pair (STP)—100 ohms 10BaseT/100BaseTx uplink port: Unshielded twisted-pair (UTP)—100 ohms (Category 5 required when running at 100 Mbps); Shielded twisted-pair (STP)—100 ohms 100BaseFx uplink port: 62.5 µm (13 dBm) multimode fiber
Distances Supported	Copper: 100 m Fiber: 2 km (half-duplex); 4.5 km (full-duplex)
Optical Power Output	-19 to -14 dBm
Receiver Sensitivity	-31 to -14 dBm
Power Budget	12 dBm
Addresses Supported	1,024 MAC addresses (option: 4,096 MAC addresses)
Memory	Flash memory: 4 MB DRAM memory: 16 MB Frame buffering: 4 MB
Operating Temperatures	0 to 40 degrees Celsius 32 to 104 degrees Fahrenheit
Agency Listings	UL 1950; CSA-C22.2; EN60950; FCC Class A (Part 15); EN 55022 Class A with UTP; VCCI Class 2 on shielded UTP; CE Mark

continued on next page...

Technical Specifications, continued

OmniStack 4024CF Technical Specifications, continued	
Physical Dimensions	17 1/4" w, 1 3/4" h, 12 3/16" d
Weight	10 lbs.
Voltage Range	90-265 VAC, 47 to 63 Hz auto-ranging and auto-sensing
Current Draw	1.4 Amps at 110 VAC
Watts	65
Current Provided	10 Amps

OmniStack 4024G

The OmniStack 4024G provides 24 10BaseT/100BaseTx auto-sensing ports for connecting to Ethernet hubs and devices and two 1000BaseFx multimode uplink ports for connecting to high-speed servers and backbones.

♦ Important Note ♦

The OmniStack 1024C does not support the Hardware Routing Engine (HRE-OSTK) or Backup Power System (BPS).

Routing Information

The OmniStack 4024G can route up to approximately 2000 packets per second (pps). If routing input greatly exceeds 2000 pps, the switch may stop routing until traffic flow is reduced.

Front Panel

The front panel of the OmniStack 4024G contains (4) chassis/management LEDs, (24) Ethernet port LEDs, (1) console management port, (2) 1000BaseFx Gigabit Ethernet uplink ports, and (24) 10BaseT/100BaseTx Ethernet ports. The chassis/management LEDs are used to monitor the hardware and software status for the entire switch. The Ethernet port LEDs provide the link integrity status for each of the twenty-four (24) 10BaseT/100BaseTx ports. The Gigabit Ethernet uplink LEDs provide the link integrity status for each of the two (2) 1000BaseFx ports. The console management port can be connected to a management station in order to monitor and manage the switch via the built-in interface software.

Refer to the illustration below for additional front panel layout information.

Console Management Port. Refer to *The Console Management Port* on page 1-68 for further information.

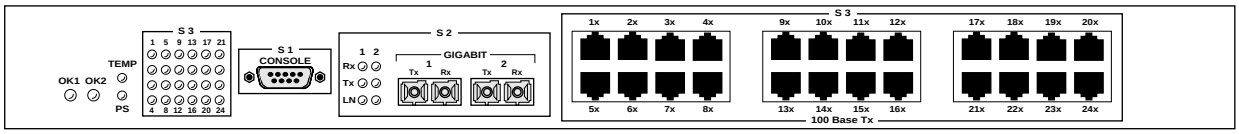
2 Gigabit Ethernet Uplink Ports. Each port supports one multimode 1000BaseFx Gigabit Ethernet uplink connection.

Definitions for port LEDs are listed below:

RX (Receive). Displays Green when the corresponding port is receiving data.

TX (Transmit). Displays Green when the corresponding port is transmitting data.

LINK (Link Status/Disabled). Displays Green when the corresponding port has a valid physical link and a signal is present. (Under normal conditions, this LED should always display Green whenever a cable is connected.)



Ethernet Port LEDs. See *OmniStack 1024 and 4024 Ethernet Port LEDs* on page 1-

Chassis/Management LEDs. See *OmniStack 1024 and 4024 Management LEDs* on page 1-78 for details.

Ethernet 10BaseT/100BaseTx Ports. Each port supports one switched Ethernet segment at the full 10 Mbps or 100 Mbps of bandwidth and will automatically configure itself to match the data speed of the attached hub or device. Each port can use unshielded twisted pair (UTP) or shielded twisted pair (STP) cable to connect to a single high-traffic device.

For information on configuring these ports via the User Interface, refer to *Configuring the Ethernet Ports* on page 1-68.

OmniStack 4024G Front Panel

Configuring the Ethernet Ports

Each of the twenty-four (24) Ethernet ports on the OS 4024 supports a fully-switched 10 or 100 Mbps connection in full- or half-duplex mode. By default, each port is configured to operate in auto-sensing, half-duplex mode. However, each port may be manually configured via the **10/100cfg** command. (The **10/100cfg** command allows you to disable or enable auto-sensing and/or set the link mode to half- or full-duplex.)

An additional software command, **10/100vc**, allows you to view the current line speed and link mode of each port connection. For more information on the **10/100cfg** and **10/100vc** commands, refer to Chapter 13, "Managing Ethernet Ports."

The Console Management Port

You can access the switch management software via the console (RS-232C) port on the OS 4024's front panel. The console management port is a male Data Terminal Equipment (DTE) 9-pin "D" (DB-9) connector, per the IBM AT serial port specification. You can connect directly from this port to a PC or terminal with a standard null-modem cable available in most computer equipment stores.

If the connecting device does not conform to the IBM AT serial port specification, you may need to use a special cable or adapter. (See *OmniStack Pinouts* on page 1-91 for information on the pin signals used for this port.)

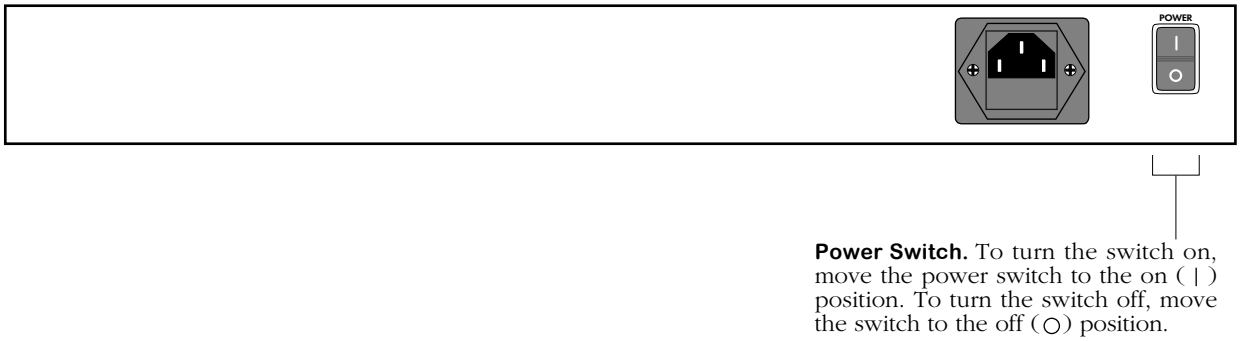
You can connect or disconnect a serial cable at the console port at any time without disrupting the switch.

The console management port supports serial data rates of 1200, 9600, and 19200 bps. By default, the rate is set to 9600 bps. You can change this setting via the **ser** command (described in Chapter 7, "Configuring Switch-Wide Parameters").

♦ Note ♦

The OmniStack 4024 does not support 38,400 bps serial data rate.

Rear Panel



DC Power Supply Availability

The OmniStack 4024G workgroup switch is also available with an internal -48V (65W) DC power supply (Model # OS-4024G-48V).

Technical Specifications

OmniStack 4024G Technical Specifications	
Ports	(24) 10BaseT/100BaseTx Ethernet ports (RJ-45, MDI) (2) 1000BaseFx Gigabit Ethernet uplink ports (SC) (1) serial port for management software (DB-9, RS-232, DTE)
Power Connectors	(1) AC power connector on the rear panel (DC power connector available on OS-4024G-48V models)
Standards Supported	IEEE 802.3z/2, IEEE 10BaseT, 100BaseTx, 1000BASE-SX
Data Rate	10BaseT/100BaseTx Ethernet ports: 10 Mbps or 100 Mbps (auto-sensing) 1000BaseFx uplink ports: 1000 Mbps Console serial port: 1.2, 9.6, or 19.2 Kbps
Maximum Frame Size	1,518 bytes (Ethernet)
Connections Supported	10BaseT/100BaseTx Ethernet ports: half-duplex or full-duplex to hub or device 1000BaseFx uplink ports: Gigabit Ethernet backbone
Cables Supported	10BaseT/100BaseTx Ethernet ports: Unshielded twisted-pair (UTP)—100 ohms (Category 5 required when running at 100 Mbps); Shielded twisted-pair (STP)—100 ohms 1000BaseFx uplink ports: 62.5/125 µm multimode fiber
Distances Supported	1000BaseFx uplink ports: 220 m
Output optical power	-9.5 to -4 dBm
Input optical power	-17 to 0 dBm
Addresses Supported	1,024 MAC addresses (option: 4,096 MAC addresses)
Memory	Flash memory: 4 MB DRAM memory: 16 MB Frame buffering: 4 MB
Operating Temperatures	0 to 40 degrees Celsius 32 to 104 degrees Fahrenheit
Agency Listings	UL 1950; CSA-C22.2; EN60950; FCC Class A (Part 15); EN 55022 Class A with UTP; VCCI Class 2 on shielded UTP; CE Mark

Technical Specifications, continued

OmniStack 4024G Technical Specifications, continued	
Physical Dimensions	17 1/4" w, 1 3/4" h, 12 3/16" d
Weight	10 lbs.
Voltage Range	90-265 VAC, 47 to 63 Hz auto-ranging and auto-sensing
Current Draw	1.4 Amps at 110 VAC
Watts	65
Current Provided	10 Amps

OmniStack 5024

The OmniStack 5024 provides 24 10BaseT/100BaseT ports for connecting to Ethernet hubs and devices and one slot for a high-speed uplink submodule that can connect to Fast Ethernet or ATM servers and backbones. (For detailed information on uplink submodules, refer to Chapter 2, "OmniStack Uplink Submodules.") Each of the 5024's 10BaseT/100BaseT ports is autosensing, meaning that it will automatically configure itself to match the attached hub or device's data rate (i.e., 10 Mbps or 100 Mbps).

Factory-Installed HRE-OSTK Availability

The OmniStack 5024 workgroup switch is available with a factory-installed Hardware Routing Engine (HRE-OSTK). Additional memory is included. The model number for this factory upgrade is OS-5024-L3. For more information on the HRE-OSTK, refer to *OmniStack Hardware Routing Engine (HRE-OSTK)* on page 1-80.

Additional Routing Information

The OmniStack 5024 supports slowpath routing (i.e., non-HRE and non-fastpath) at a maximum of 600 pps.

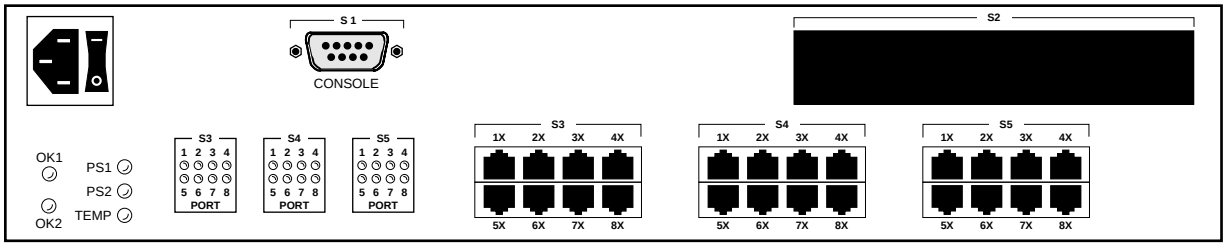
Front Panel

The front panel of the OmniStack 5024 contains an AC power connector, chassis/management LEDs, Ethernet ports, Ethernet port LEDs, a Console management port, and a slot for a slide-in uplink submodule. Management LEDs describe the hardware and software status of the entire switch. The Ethernet port LEDs provide the link integrity status for each 10BaseT/100BaseT port. A management station can be connected to the Console port to monitor and manage the switch via the built-in interface software. The following illustration describes the front panel.

AC Power Connector and on/off switch. Plug the supplied AC power cord into this connector. To turn the switch on, move the on/off switch to the on (—) position. To turn the switch off, move the switch to the off (O) position.

Console Management Port. Refer to *The Console Management Port* on page 1-73 for further information.

Uplink Submodule Slot. Refer to Chapter 2, "OmniStack Uplink Submodules," for additional information.



Ethernet Port LEDs. See *OmniStack Ethernet LEDs* on page 11-77 for descriptions.

Ethernet 10BaseT/100BaseT Ports. Each port supports one switched Ethernet segment at the full 10 Mbps or 100 Mbps of bandwidth and will automatically configure itself to match the data speed of the attached hub or device. Each port can use unshielded twisted pair (UTP) or shielded twisted pair (STP) cable to connect to a single high-traffic device.

Management LEDs. See *OmniStack Management LEDs* on page 11-76 for descriptions.

OmniStack 5024 Front Panel

Configuring the Ethernet Ports

The Ethernet ports support a fully switched 10 or 100 Mbps connection in full- or half-duplex mode. By default, the ports are configured for autosensing and half-duplex operation. To change these settings, refer to the **10/100cfg** command in Chapter 13, "Managing Ethernet Ports." The **10/100vc** command in Chapter 13 lets you view the current line speed and link mode of each port.

The Console Management Port

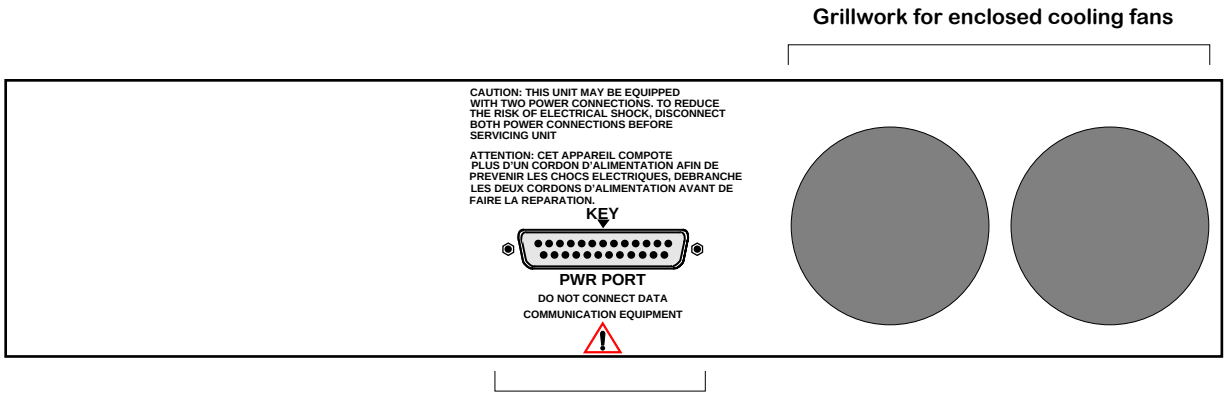
You can gain access to switch management software through the serial (RS-232C) port on the switch's front panel. The Console port is a male Data Terminal Equipment (DTE) 9-pin "D" connector (DB-9) per the IBM AT serial port specification. It is typically connected to a modem. You can also connect directly from this port to a PC or terminal with a standard null-modem cable available in most computer equipment stores.

If the connecting device does not conform to the IBM AT serial port specification, then you may need to use a special cable or adapter. (See *OmniStack Pinouts* on page 1-91 for information on the pin signals used for this port.)

The Console port supports serial data rates of 1200, 9600, 19200, and 38400 bps. By default, it is set to 9600 bps. You can change this setting using the **ser** command that is described in Chapter 7, "Configuring System-Wide Parameters." You can connect or disconnect a serial cable to this port at any time without disrupting the switch.

Rear Panel

The rear panel of the OmniStack 5024 provides a Backup Power System (BPS) connector and ventilation openings for the internal cooling fans.



Backup Power System (BPS) Connector. If you are installing a BPS, connect one of the BPS cables to this connector. For more information on the BPS, refer to *Backup Power System* on page 1-81.

OmniStack 5024 Rear Panel

❖ Caution ❖

Do NOT connect any data communications equipment to the DB-25 BPS connector. Although similar in appearance to a standard datacom DB-25 connector, connecting anything other than the Backup Power System module to this connector may cause damage to the attached equipment.

DC Power Supply Availability

The OmniStack 5024 workgroup switch is also available with an internal -48V (65W) DC power supply (Model # OS-5024-48V).

Technical Specifications

OmniStack 5024 Technical Specifications	
Ports	24 10BaseT/100BaseT Ethernet ports (RJ-45, MDI); One high-speed uplink submodule slot; One serial port for management software (DB-9, RS-232, DTE)
Power Connectors	One AC power connector on the front panel (DC power connector available on OS-5024-48V models) One shielded female DB25 connector for the Backup Power System (BPS) on the rear panel
Standards Supported	IEEE 802.3, IEEE 10BaseTx
Data Rate	10BaseT/100BaseT ports: 10 Mbps or 100 Mbps Console port: 1.2, 9.6, 19.2, or 38.4 Kbps
Maximum Frame Size	1,518 bytes (Ethernet)
Connections Supported	10BaseT/100BaseT ports: hub or device; half-duplex or full-duplex
Cables Supported 10BaseT/100BaseT ports	Unshielded twisted-pair (UTP)—100 ohms (Category 5 required when running at 100 Mbps) Shielded twisted-pair (STP)—100 ohms
Addresses Supported	3,072 MAC addresses (option: 8,192 MAC addresses)
Memory	Flash memory: 4 MB DRAM memory: 16 MB Frame buffering: 8 MB
Physical Dimensions	3.5” high, 17.1” wide, 14.6” deep
Weight	13 lbs., fully populated with an uplink submodule
Voltage Range	90-265 VAC, 47 to 63 Hz auto-ranging and auto-sensing
Current Draw	1.4 Amps at 110 VAC
Watts (Output)	150
Current Provided	25 Amps
Operating Temperatures	0 to 40 degrees Celsius 32 to 104 degrees Fahrenheit
Agency Listings	UL 1950; CSA-C22.2; EN60950; FCC Class A (Part 15); EN 55022 Class A with UTP; VCCI Class 2 on shielded UTP; CE Mark

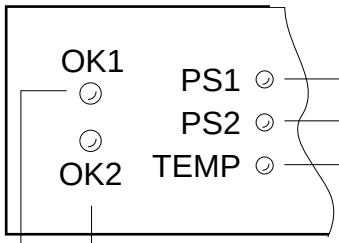
OmniStack Management LEDs

♦ OmniStack 1024 and 4024 Switches ♦

For a description of OmniStack 1024 and 4024 management LEDs, refer to *OmniStack 1024 and 4024 Management LEDs* on page 1-78.

Note

Depending upon the OmniStack model you are working with, the **PS1**, **PS2**, and **TEMP** LEDs will be in the order shown here or reversed with the **TEMP** LED on top, the **PS2** LED in the center and the **PS1** LED on the bottom.



PS1 (Power Supply Status). This dual-state LED is on Green when the switch is receiving the proper voltage from the AC power source. The **PS1** LED is Off when the switch is not receiving power. from the AC power source or if the switch is not receiving the correct voltage.

PS2 (Power Supply Status). If a Backup Power System (BPS) is installed and functioning properly, this LED will be On Green. The BPS normally has only one power supply installed, but it is possible to have two (to provide AC input power redundancy, for example). The **PS2** LED will be Off if a power supply in the BPS has failed, or is providing low output, or is turned off, even if a second BPS power supply is functioning properly and providing power to the switch.

TEMP (Temperature). On Amber to warn that the internal switch temperature is approaching operating limits. Note that this LED comes on before the temperature limit is reached.

OK2 (Software Status). Blinking Green when software has loaded successfully and the switch is ready to execute commands. Blinking Amber when the switch is in a transitional state, such as when it first boots up. If the **OK2** LED blinks Amber for an extended period of time (i.e., more than a minute), then you should reboot the switch. This LED is on solid Amber when software was not loaded successfully.

OK1 (Hardware Status). This dual-state LED is on Green when the switch has passed power-on hardware diagnostics successfully. On Amber when the hardware has failed diagnostic tests. If the **OK1** LED is alternating Green and Amber, then file system compaction is in progress.

Caution

Do not power down the switch while the **OK1** LED is alternating Green and Amber.

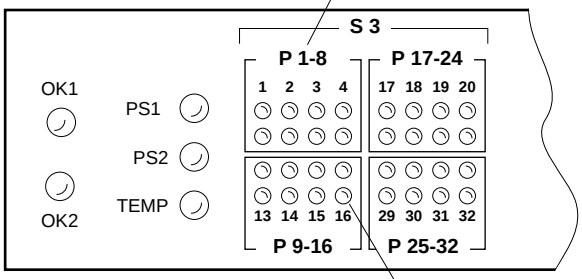
OmniStack Ethernet Port LEDs

The front panel of the switch is divided into several areas labeled S1, S2, S3, etc. These areas relate to the conceptual division of the switch into several modules. S1 is the management module (referred to in the User Interface and Command Line Interface as the MPM), S2 is the uplink module (if the switch supports an uplink module), and S3, S4, etc. are the device connection modules (i.e., the Ethernet device ports). Note that if the switch does not support an uplink module or uplink ports, S2 will denote a device connection module.

♦ OmniStack 1024 and 4024 Switches ♦

For a description of OmniStack 1024 and 4024 Ethernet port LEDs, refer to *OmniStack 1024 and 4024 Ethernet Port LEDs* on page 1-79.

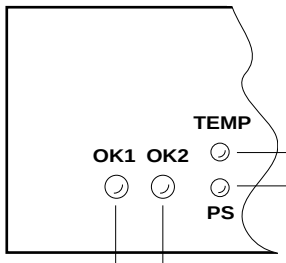
Each bank of LEDs corresponds to the bank of RJ-45 connectors to the right of the LEDs. For example, the eight LEDs labeled **P 1-8** correspond to the eight RJ-45 connectors labeled **1X – 8X** to the right.



An LED is on green continuously when a good cable connection exists on the corresponding port. The LED flashes when traffic is detected on the port. If the LED is off, a cable is not connected to the corresponding port or the connected cable does not have link integrity.

Ethernet Port LEDs

OmniStack 1024 and 4024 Management LEDs



TEMP (Temperature). Displays Green to warn that the internal switch temperature is approaching maximum operating limits.

Note that this LED comes on *before* the temperature limit has been reached.

PS (Power Supply Status). Displays Green when the switch is receiving the proper voltage from the AC power source.

Displays Amber when the switch is not receiving the proper voltage from the AC power source.

The **PS** LED is Off when the switch is not receiving power from the AC power source.

OK2 (Software Status). Blinking Green when software has loaded successfully and the switch is ready to execute commands.

Blinking Amber when the switch is in a transitional state, such as when it first boots up. [If the **OK2** LED blinks Amber for an extended period of time (i.e., more than a minute), you should reboot the switch.]

This LED displays solid Amber when software was not loaded successfully.

OK1 (Hardware Status). This dual-state LED displays Green when the switch has passed power-on hardware diagnostics successfully.

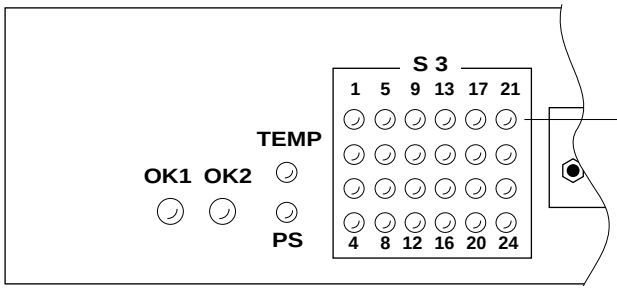
Displays Amber when the hardware has failed diagnostic tests.

The **OK1** LED alternates between Green and Amber whenever file system compaction is in progress.

Caution

Do not power down the switch while the **OK1** LED is alternating Green and Amber.

OmniStack 1024 and 4024 Ethernet Port LEDs



Ethernet Port LEDs. An LED displays solid Green when a good cable connection exists at the corresponding port.

The LED flashes when traffic is detected on the port.

If the LED is off, a cable is not connected to the corresponding port, or the connected cable does not have link integrity.

Each LED corresponds to an RJ-45 Ethernet port located at the right side of the OmniStack 1024 and 4024 front panel. For example, the LED labeled **21** displays the status of Ethernet port **21**, located in the Ethernet port bank at the right side of the module.

Ethernet Port LEDs

OmniStack Hardware Routing Engine (HRE-OSTK)

Introduction

The OmniStack Hardware Routing Engine (HRE-OSTK) is a submodule that installs directly into interface connectors located on the OmniStack's motherboard. The HRE-OSTK significantly enhances the OmniStack's routing performance by providing a dedicated routing ASIC.

Routing Performance

An OmniStack *without* an HRE-OSTK installed must route packets between Groups and VLANs by sending them up the IP protocol stack for processing and then back down the protocol stack for transmission. This method can be slow. Moreover, routing performance becomes limited by the OmniStack's available CPU cycles.

With the HRE-OSTK installed, routing is performed locally on the daughtercard, making it unnecessary for the OmniStack's MPM to process all packets. This process saves valuable CPU cycles.

Approximately 227,000 packets per second can be processed by the HRE-OSTK.

CAM Information

The HRE includes 2K of CAM and a 2048-entry header cache table.

Hardware and Memory Requirements

The HRE-OSTK can be installed on 2000, 3000, and 5000 series OmniStack switches only.

In addition, 16 MB of DRAM and 4 MB of flash memory is required to support the HRE-OSTK.

Backup Power System

The Backup Power System (BPS) is a chassis that accepts one or two power supplies and provides primary or redundant power for up to three OmniStack switches.

♦ Important Note ♦

The OmniStack 1024 and OmniStack 4024 workgroup switches do not support the Backup Power System (BPS).

The following power supplies can be installed in the BPS:

BPS-AC-PS-250 An AC power supply providing 50 Amps and 250 Watts of power at 5 Volts.

BPS-DC-PS-250 A 48 volt (input voltage) DC power supply providing 50 Amps and 250 Watts of power at 5 Volts. It requires the use of 12 to 14 gauge wire for connection to the DC power source. See *Connecting a DC Power Source to the BPS-DC-PS-250* on page 1-87 for more information.

Both of these power supplies are self-enclosed to allow safe hot-insertion and hot-removal.

Operation with One Power Supply Installed in the BPS

Connecting up to three OmniStack switches to an AC power source and the BPS provides "secondary power redundancy" where the BPS shares the electrical load with the attached switches. If the power supply in any connected OmniStack switch fails, the BPS picks up the load without disrupting service.

Note, however, that a switch with a failed power supply should be replaced as soon as possible because the BPS may not be able to support a second failure. This would be particularly true if three high-current switches, such as the OS-5024, were connected to the BPS.

Alternatively, you could connect up to three OmniStack switches to the BPS without plugging those switches into any other power source (i.e., not use the switches' internal power supplies).

With the exception of the OS-5024, the BPS provides enough power to run up to three switches. Since the OS-5024 requires more power than the other OmniStack switches, a BPS with a single power supply provides enough power to run up to two 5OS-024 switches.

Operation with Two Power Supplies Installed in the BPS

Connecting up to three OmniStack switches to an AC power source and the BPS provides "secondary power redundancy" where the BPS shares the electrical load with the attached switches. If the power supply in any connected OmniStack switch fails, the BPS picks up the load without disrupting service.

Connecting up to three OmniStack switches to the BPS and then connecting the switches themselves to one independent power source and the BPS to another independent power source provides "primary power redundancy" as well as "secondary power redundancy." If the power supply in any connected OmniStack switch fails, the BPS picks up the load without disrupting service (secondary power redundancy). If one power source fails (for example the electrical circuit connected to the OmniStack switches) the second power source (in our example, the electrical circuit connected to the BPS) prevents the switches from failing (primary power redundancy).

With two power supplies, the BPS can provide power redundancy for up to three switches (i.e., the BPS backs up the switches' built-in power supplies) or the BPS can provide the power for up to three switches (i.e., the switches' built-in power supplies are not plugged in and the switches depend on the BPS for all power).

If the BPS is providing all power (i.e., the switches' built-in power supplies are not plugged in), one BPS power supply can fail without disrupting service, unless you have three 5024 switches connected to the BPS. If three 5024 switches are connected to the BPS, losing one power supply would cause all three connected switches to fail since the three 5024 switches require more power than one BPS power supply provides.

The BPS does not require that both power supplies be the same type (i.e., if desired, you can install an AC and DC power supply in the same BPS).

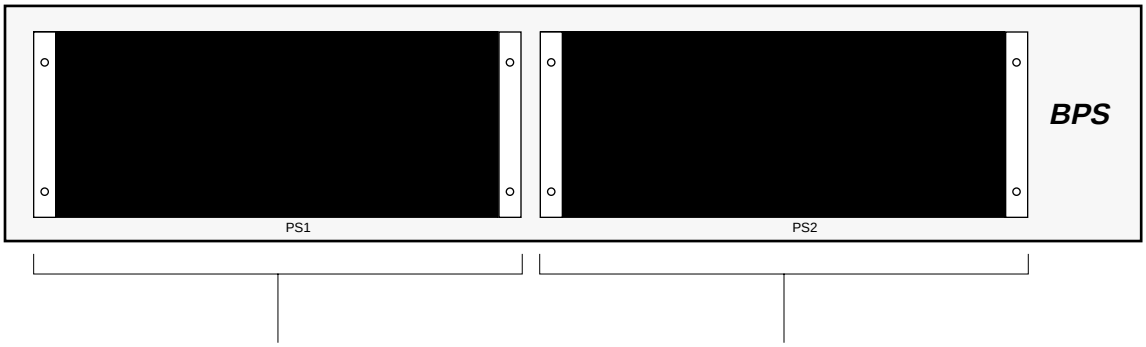
As mentioned before, with the exception of three 5024 switches, the BPS can support up to three failed power supplies in the connected switches without disrupting service. However, regardless of this capability, a switch with a failed power supply should be replaced as expeditiously as possible.

❖ Important ❖

The power supplies in the BPS must be turned on BEFORE the BPS is connected to an OmniStack switch.

Front Panel

The front panel provides two power supply bays, as shown in the following illustration.



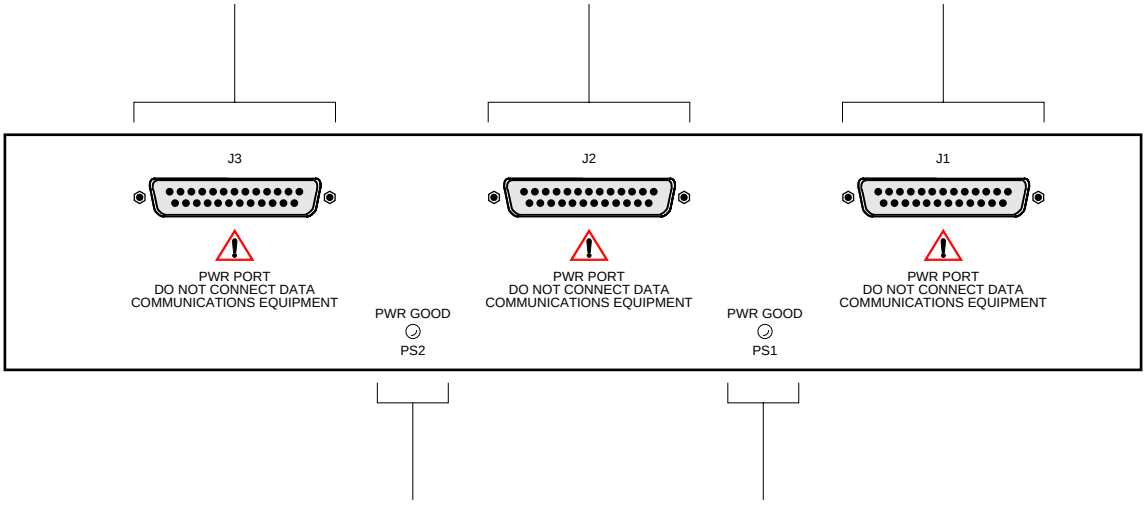
These power supply bays accept BPS-AC-PS-250 or BPS-DC-PS-250 power supplies. You can install the same type of power supply in each bay or install one of each type in each bay (i.e., you can install a BPS-AC-PS-250 in one bay and a BPS-DC-PS-250 in the other bay).

If you are only installing one power supply, you can use either bay.

Rear Panel

These BPS power connectors require a unique cable (model name BPS-EXP-CBL, part number 120086-00). Do NOT attempt to use a standard DB-25 to DB-25 data-com cable to connect the BPS to the OmniStack switches.

If you are connecting less than three OmniStack switches, you can use any of the BPS power connectors.



PS1 PS2 PWR GOOD LEDs. The PWR GOOD **PS1** LED reports the status of the power supply in bay one. The PWR GOOD **PS2** LED reports the status of the power supply in bay two.

If a power supply is not installed in bay one or two, the corresponding LED is off. If a power supply is installed, but not receiving power or has failed, the corresponding LED is off.

If a power supply is installed in bay one or two and operating normally, the corresponding LED is green.

❖ Caution ❖

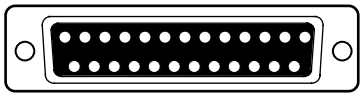
Do NOT connect any data communications equipment to these DB-25 BPS connectors. Although similar in appearance to a standard datacom DB-25 connector, connecting anything other than an OmniStack switch to these connectors may cause damage to the attached equipment.

NICHT MIT DATEN-KOMMUNIKATIONSGERÄTEN VERBINDEN.

The unit may be equipped with two power connections. To reduce the risk of electrical shock, disconnect both power connections before servicing unit.

Das Gerät kann mit zwei Netzanschlussen ausgestattei sein. Um einen elektrischen Schlag zu vermeiden, immer beide AuschlÜsse vor der Wartung vom Netz trennen.

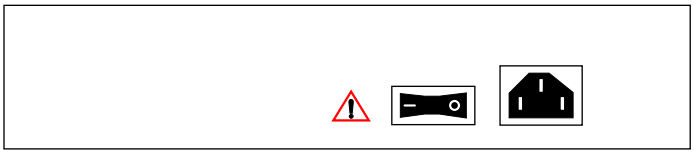
Technical Specifications

Backup Power System (BPS) Technical Specifications	
Dimensions	3.475 (h) x 17.125 (w) x 12.46 (l)
Number of power supply bays	2
Rear panel power connectors	3 male DB-25 power connectors
Power Supplies Supported	BPS-AC-PS-250, BPS-DC-PS-250
Maximum +5V operating current per power connector	25 Amps
Maximum +12V operating current per power connector	1 Amp
Maximum +5V operating current for all 3 power connectors	One Power Supply: 50 Amps Two Power Supplies: 75 Amps
Maximum +12V operating current for all 3 power connectors	One Power Supply: 1.5 Amps Two Power Supplies: 3 Amps
Cable Supported	BPS-EXP-CBL, part number 120086-00
Power Connector Pin-Outs	 Pin 1 Connection Detect 1 Pins 2 thru 5 Power Ground Pin 6 +12 VDC Pin 7 Key Pins 8 thru 13 Power Ground Pins 14 thru 18 +5 VDC Pin 19 BPS Present Pin 20 BPS Power Fail Pins 21 thru 24 +5 VDC Pin 25: Connection Detect 2

BPS Power Supplies

The OmniStack Backup Power System (BPS) supports two different power supplies:

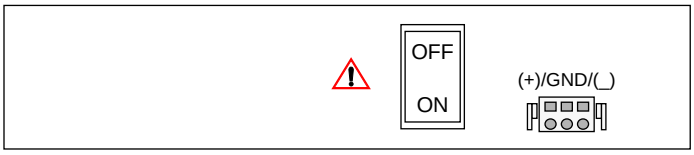
BPS-AC-PS-250 An AC power supply that provides 50 Amps and 250 Watts of power at 5 Volts. It supports an input voltage range of 90 – 270 VAC, 50 – 60 Hz.



BPS-DC-PS-250A 48 volt power supply that provides 50 Amps and 250 Watts of power at 5 Volts. It requires the use of 12 to 14 gauge wire for connection to the DC power source. It supports an input voltage range of -40 – -60 VDC (-48 VDC nominal).

♦ Important Note ♦

The OmniStack 1024 and OmniStack 4024 workgroup switches do not support the Backup Power System (BPS).



Removing or Installing a BPS Power Supply

You can remove or install a power supply even if power is being supplied to the BPS. For more information on the BPS, refer to *Backup Power System* on page 1-81. You will need a Phillips screwdriver to remove or install a power supply.

Installing a Power Supply

1. Ensure that the On/Off switch on the power supply is in the O (Off) position.
2. Holding the power supply with both hands, align it with the card guides in the slot where it is to be installed.
3. Using the card guides, gently slide the power supply into one of the BPS power slots. The power supply should slide easily as long as you keep it level and within the card guides. Keep sliding it back until it snaps into place against the BPS backplane. The power supply should fit snugly into its slot.
4. The power supply is secured by four screws on the front panel. Two of the screws are captive spring-loaded knurled fasteners that can be tightened by hand or with a flat blade screwdriver. The other two screws are countersunk Phillips-head screws.

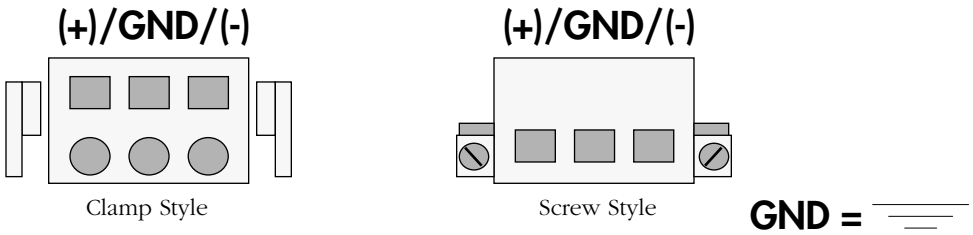
   Tighten all four screws to properly secure the power supply.
5. If the power supply is a BPS-AC-PS-250, attach the power cord to the AC input socket. If it is a BPS-DC-PS-250, refer to *Connecting a DC Power Source to the BPS-DC-PS-250* on page 1-87.
6. Turn the On/Off switch to the I (On) position when you are ready to provide power to the BPS through this power supply.

Removing a BPS Power Supply

1. Turn the On/Off switch to the O (Off) position on the power supply that you want to remove. If two power supplies are installed, power can still be provided to the power supply you are not removing, but it cannot be applied to the one you are removing.
2. Remove the power cord connected to the AC input socket or the wires from the DC power supply connector on the power supply you are removing. Even with the power Off, the BPS backplane could be damaged if the power cord or wires are attached and a power surge occurs.
3. The power supply is secured to the chassis by four screws. Remove the two Phillips-head countersunk screws and loosen and disengage the two captive spring-loaded fasteners on the power supply's front panel.
4. Holding on to the two front panel fasteners, pull the power supply straight out and away from the chassis.
5. Place the power supply in a safe, static-free location until it is re-installed.

Connecting a DC Power Source to the BPS-DC-PS-250

The BPS-DC-PS-250 provides a female power connector. Your switch will contain one of the two power connectors pictured below:



Two DC Power Supply Connector Styles

Both power connector styles require the use of 12 gauge wire. A clamp inside each connector keeps the power wire tightly in place during operation.

The style shown above on the left has side clamps that can be pinched to remove the connector. The style on the right has side screws that can be used to remove the connector.

The procedure for plugging a power source into each connector type will be different. For purposes of this procedure, the connector on the left will be referred to as the “clamp-style” connector and the connector on the right will be referred to as the “screw-style” connector.

Installing DC Power Source Wire Leads

These instructions describe how to connect your 3-wire DC power source to the power connector on your DC power supply. A small flat-tip screwdriver and a wire stripper are required for this procedure.

1. Prepare the three (3) wires—12 gauge—that will plug into the power supply. Ensure that they are not plugged into the 48-volt power source. Next, use a wire stripper to carefully strip about a half-inch off the end of each wire, removing the outer insulation to expose the copper core.

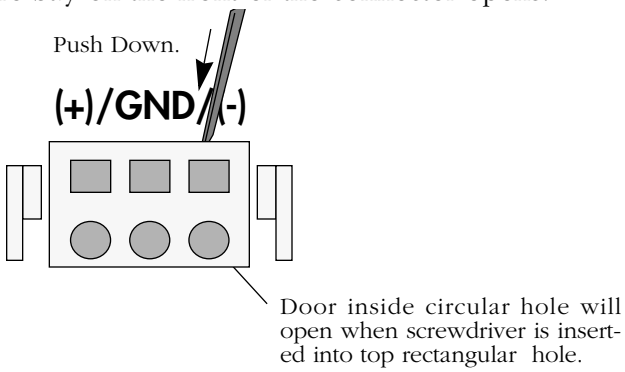
2. Twist the loose strands of copper wire together so that they form a tight braid. If possible, solder the entire braid of wire together for better conductivity.

3. Open the wire bay door for one of the three (3) power connector holes. The procedure for opening the bay door is different for each power connector style. Follow the instructions on the next page for your connector style.

"Clamp" Style Connector

This connector contains a row of square holes and row of circular holes. It also contains three rectangular holes on top; these top rectangular holes are used to open the circular holes on the connector front so that you can insert the wire lead.

a. Insert a flat-tip screwdriver into one of the top three (3) square holes. Use some force so that the door for the wire bay on the front of the connector opens.

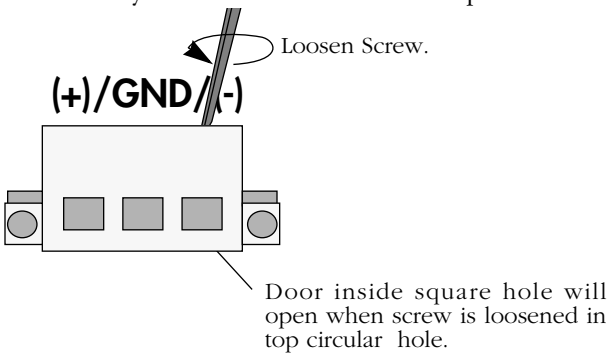


Opening Wire Bay on Clamp-Style Connector

"Screw" Style Connector

The front of this connector contains a row of square holes. It also contains three circular holes on top containing screws; you loosen the screws in these holes to open the square holes on the connector front so that you can insert the wire lead.

a. Insert a small flat-tip screwdriver into one of the top three (3) screw holes. Loosen the screw so that the door for the wire bay on the connector front opens.



Opening Wire Bay on Screw-Style Connector

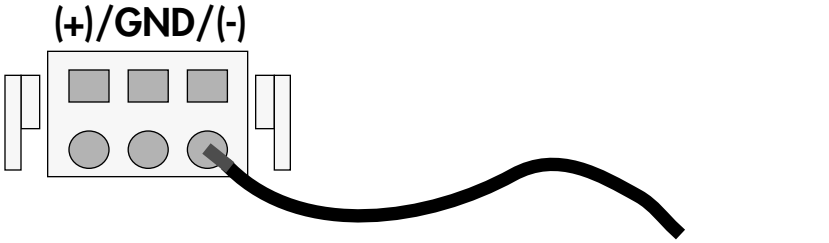
4. Insert the appropriate wire lead into the open circular hole. The silkscreen above each hole indicates which power lead—positive (+), ground (GND), or negative (-)—to plug into which hole. The lead you insert *must* match the lead attached to the 48-volt power source (i.e., positive to positive, negative to negative, ground to ground).

♦ Warning ♦

You must plug DC wire leads into the correct holes in the DC power connector. Use the labels above the DC power connector as a guide to positive, negative, and ground connections.

If you plug wire leads into wrong holes the power supply will not work and could result in damage.

Push the wire in far enough such that it reaches the back wall of the connector, about a half inch inside.



This end would plug into the negative (-) power source. The rightmost lead would plug into the positive (+) power source and the middle lead would plug into the ground (GND).

Inserting the Wire Lead Into the Circular Hole

5. Close the wire bay. The procedure for closing the bay door is different for each power connector style. Follow the instructions below for your connector style.

"Clamp" Style Connector

Remove the screwdriver from the rectangular hole on top of the power connector. The wire lead should be securely attached inside the connector. You should be able to pull on the wire and not dislodge it.

"Screw" Style Connector

Using the small screwdriver from Step 3a, tighten the screw above the wire bay into which you inserted a wire lead. The wire lead should be securely attached inside the connector. You should be able to pull on the wire and not dislodge it.

6. Repeat Steps 3 through 5 for the remaining two wire leads. Be sure that the end of each lead attaches to the same power source that you connected to on the power supply (i.e., positive to positive, negative to negative, ground to ground).

Power Cords

The power cord is the main disconnect device. It should be plugged into an easily accessible outlet. In the event that your power cord is lost or damaged, refer to the specifications below.

Das Netzkabel ist das hauptsaechliche Trennungsmittel fuer den Netzanschluss. Es sollte in eine leicht erreichbare Steckdose gesteckt werden. Im Falle des Verlustes oder Beschaedigung beziehen Sie sich auf unten stehende Spezifikationen.

Specifications

The power cord to be used with 115-Volt configuration is a minimum type SJT (SVT)18/3, rated at 250 Volts ac, 10 Amps with a maximum length of 15 feet. One end terminates in an IEC 320 attachment plug and the other end terminates in a NEMA 5-15P plug.

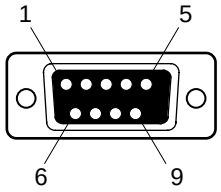
The power cord to be used with 230-Volt configuration is minimum type SJT (SVT) 18/3, rated 250 Volts ac, 10 Amps with a maximum length of 15 feet. One end terminates in an IEC 320 attachment plug and the other end terminates as required by the country where it will be installed.

European cords must be Harmonized (HAR) type.

In einer 230 Volt Umgebung ist ein Netzkabel vom Type VDE oder HAR, minimal 3 x 1.00 mm^2, 250 VAC, 10 Amps, maximal 4.5 m Laenge, zu verwenden. Ein Ende entspricht dem Stecker IEC 320. Das andere Ende den Anforderungen des Jeweiligen Landes.

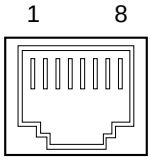
OmniStack Pinouts

Management Console Port



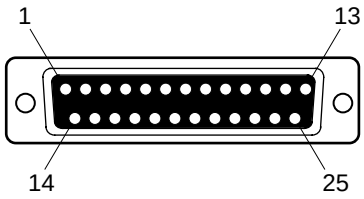
Pin Number	*Standard Signal Name*
1, 4, 6, 7, 8, 9	Not Used
3	RD (to OmniStack)
2	TD (from OmniStack)
5	Ground

10BaseT/100BaseT Ports



Pin Number	*Standard Signal Name*
1	RD +
2	RD –
4, 5, 7, 8	Not Used
3	TD +
6	TD –

Backup Power System (BPS) connector



Pin Number	*Standard Signal Name*
1	LP12RTN1
2 thru 5	Ground
6	P12VOUT1
8 thru 13	Ground
14 thru 18	+5V-VCCOUT
19	BPS Present
20	Power Fail
21 thru 24	+5V-VCCOUT