System 3000 Intelligent Networking Hubs

Improve Network Performance

Enhance Network Reliability

Increase Network Flexibility

Monitor Multiple Network Levels

Futureproof Network Investment

The System 3000™ family of intelligent networking hubs delivers a flexible platform for implementing and supporting a variety of large, complex physical star-topology networks over a building's structured cabling system. Far more versatile than the single-technology hubs, the modular System 3000 chassis is an extremely reliable, easy-to-use, upgradable platform that supports shared media, routing, bridging, and switching technology.

The System 3000 features a multiple-bus backplane architecture that enables it to simultaneously support a combination of 10 megabit-per-second (Mbps) Ethernet and 100 Mbps Fast Ethernet, 4 and 16 Mbps Token Ring, and 100 Mbps Fiber Distributed Data Interface (FDDI) networks. Through a variety of Ethernet, Fast Ethernet, Token Ring, and FDDI connectivity modules, as well as internetworking and network management modules, network designers can create custom configurations that meet their specific networking needs now and in the future.

A Department chassis is also available for moderate-density Ethernet and Token Ring network environments.

Bay Networks

Benefits

Improve Network Performance

The Model 3000 Premises Chassis has a multisegment backplane that supports multiple Ethernet, Token Ring, and either Fast Ethernet or FDDI networks, enabling segmentation for higher performance. High-speed Fast Ethernet and FDDI modules support 100 Mbps connections for high-performance links to the network center, servers, and high-bandwidth users. System 3000 hubs integrating Fast Ethernet are shown in Figure 1.

Enhance Network Reliability

The System 3000 has unsurpassed reliability, having logged more than one billion hours of total usage since 1989. It is the most successful hub in networking history, with more than 250,000 units and six million ports installed worldwide. The System 3000 is a proven, reliable, low-risk networking solution.

Increase Network Flexibility

The System 3000 Premises Chassis is designed for large, high-density network environments, where it supports multiple independent LANs operating over structured cabling configured in an active-star topology. Fully utilized, a single Model 3000 can simultaneously support the following to deliver maximum flexibility for a wide variety of network topologies:

- Five independent Ethernet segments
- Two Token Ring networks

and either:

- Three FDDI paths

or

- Three Fast Ethernet segments

The hub can also accommodate Ethernet switching modules, bridges, routers, and terminal servers, as well as remote access interfaces, delivering integrated internetworking solutions from a single platform (see Figure 2).

Monitor Multiple Network Levels

The System 3000 is supported by Bay Networks Optivity® network management system. The chassis' dedicated network management interface bus provides the management system with hub-, module-, and port-level statistics and control capabilities.

Futureproof Network Investment

The modular design of the System 3000 platform supports emerging technologies, such as Fast Ethernet, Ethernet switching, remote access, and RMON2 capabilities. Bay Networks is committed to delivering simple, straightforward migration strategies that allow users to fully leverage their previous investment in System 3000 equipment at every step of the transition to emerging LAN and internetworking technologies.

Features

Bay Networks offers two types of System 3000 hubs, the Model 3000 Premises and the Model 3000 Department chassis, each supporting a variety of network configurations.

Model 3000 Premises Chassis

The Model 3000 Chassis, designed to support high-density networks, includes 12 slots that accommodate a combination of host modules, bridges and routers, and network management modules. The chassis can be mounted on a tabletop or installed as 11 units in a standard 19-inch equipment rack. Seven different versions of the Model 3000 are available.

Model 3000N The Model 3000N Premises Chassis consists of a multiple-slot frame, a front-accessible modular fan tray, a front-accessible Model 3002A 460-watt Power Supply, and a backplane capable of supporting up to five independent, manageable 10 Mbps Ethernet segments. The backplane also includes a dedicated network management interface bus and a power supply bus.

Model 3000NT The Model 3000NT Premises Chassis is identical to the Model 3000N, with the addition of two Token Ring buses on the hub backplane. The Token Ring buses support two independent, manageable Token Rings, each of which can operate at either 4 Mbps or 16 Mbps.

Model 3000CT The Model 3000CT Premises Chassis is a preconfigured chassis capable of supporting five 10 Mbps Ethernet, three 100 Mbps Fast Ethernet segments, and two 4 or 16 Mbps Token Ring segments simultaneously. The 12-slot Model 3000CT chassis can hold any combination of System 3000 Ethernet, Fast Ethernet, and Token Ring host modules, internetworking modules, and network management modules to provide a key component for building shared/switched microsegmented networks.

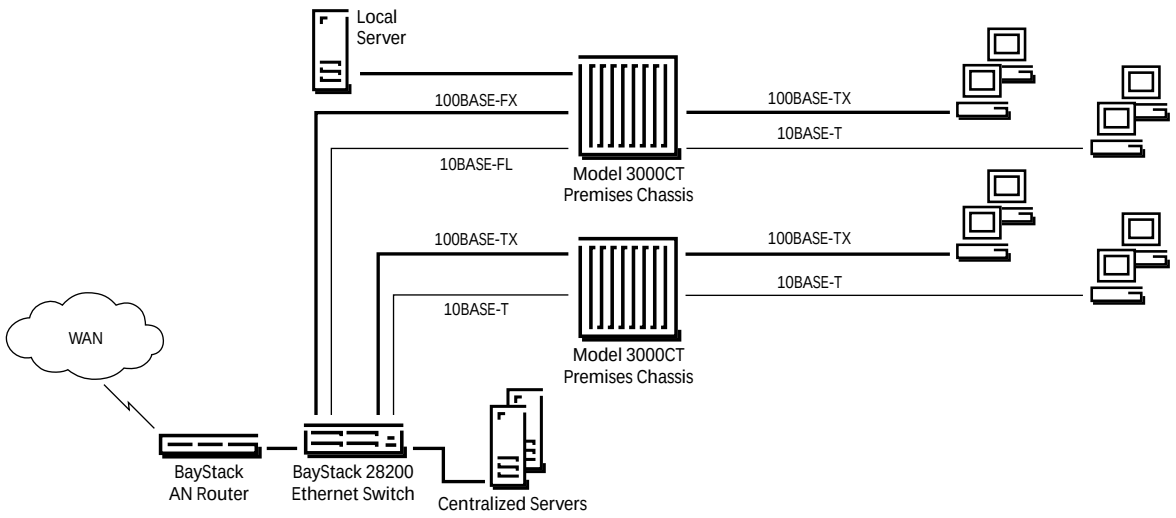
Model 3000S The Model 3000S Premises Chassis is identical to the Model 3000NT Premises Chassis, with the addition of an FDDI bus configured to support up to three separate FDDI segments — primary, secondary, and local — running at 100 Mbps. The Model 3000S can be configured to simultaneously support any combination of 10 Mbps Ethernet, 4 or 16 Mbps Token Ring, and 100 Mbps FDDI networks.

Redundant Power Supplies

The System 3000 intelligent networking hub also offers optional redundant power supplies. The Model 3000NTR, Model 3000 CTR, and Model 3000SR chassis are identical to the Model 3000NT, Model 3000CT, and Model 3000S, respectively, with the addition of redundant 460-watt power supply systems designed around the Model 3100R Summing Module and two Model 3002A Power Supplies.

The Model 3100R Summing Module resides between the power supplies, where it manages power sharing within the hub.

Figure 1 **System 3000 Hubs Integrate High-Performance Fast Ethernet Connectivity**



This load sharing capability enables both power supplies to simultaneously provide current throughout the chassis. In the event that one power supply should fail, power is automatically shifted to the functioning source for uninterrupted service. Both power supplies are individually capable of supporting a fully configured System 3000 hub under worst-case conditions.

Model 3030 Department Chassis

The Model 3030 Department Chassis is a four-slot version of the Premises chassis, designed for medium-density departmental networks. The Model 3030 accommodates any combination of System 3000 host, network management, or internetworking modules supporting Ethernet and Token Ring.

The Model 3030's dedicated network management interface bus provides the management system with hub-, module-, and port-level statistics and control capabilities.

The Model 3030 includes brackets for installation in an EIA-standard 19-inch rack, where it occupies three rack-mounting units. The Model 3030 can also be wall mounted with the appropriate brackets or set on a tabletop.

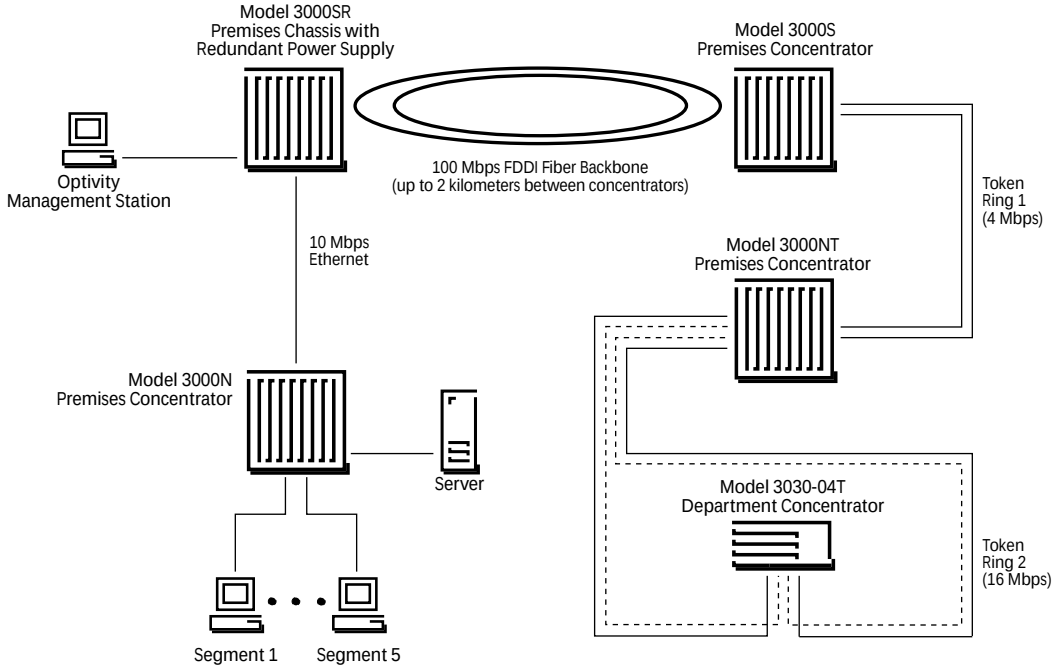
Front panel LED status indicators report ac and dc power and fan failures to simplify troubleshooting and fault determination. The easily removable back panel holds the power supply and fan, providing a single assembly for rapid replacement and movement.

Model 3030-01 The Model 3030-01 includes a chassis, an easily accessible power supply/fan unit, and a backplane with 10 Mbps Ethernet, network management interface, and power supply buses.

Model 3030-04 The Model 3030-04 is identical to the Model 3030-01, with the addition of two Token Ring buses. The Token Ring buses support two independent Token Ring segments, each of which can operate at either 4 Mbps or 16 Mbps. The Model 3030-04 can support three networks — one Ethernet and two Token Ring — simultaneously.

The System 3000 can be installed in two mounting arrangements: on a tabletop and in an EIA-standard 19-inch equipment rack, occupying 11 rack-mounting units. Five versions of the Model 3000 Premises chassis are available.

Figure 2 **System 3000 Hubs Support Multiple, Integrated Ethernet, Token Ring, and Fast Ethernet or FDDI Networks from a Common Platform**



Technical Specifications

Technical specifications for the System 3000 Intelligent Networking Hubs are shown in Table 1.

Table 1 **System 3000 Intelligent Networking Hubs Technical Specifications**

Network Protocols	
Ethernet	10 Mbps Manchester encoded IEEE 802.3
Fast Ethernet	100 Mbps IEEE 802.3u (Model 3000CT and Model 3000CTR)
Token Ring	4 Mbps or 16 Mbps differential Manchester encoding IEEE 802.5 (Model 3000NT, Model 3000NTR, Model 3000CT, Model 3000 CTR, and Model 3000S)
FDDI	100 Mbps with 4B/5B coding over three paths (primary, secondary, and local; Model 3000S and Model 3000SR)
Standards Support	IEEE AUI
	IEEE 802.3 10BASE-T
	IEEE 802.3 10BASE2
	IEEE 802.3 FOIRL
	IEEE 802.5 Token Ring
	IEEE 802.3u 100BASE-T, 100BASE-TX, 100BASE-FX
	ANSI FDDI X3T9.5 FDDI
	ISO 9314-1 FDDI Physical Protocol (PHY) standard
	ISO 9314-3 FDDI Physical Medium Dependent (PMD) standard
Physical Dimensions	
Model 3000 Hub	(H) 19.2 in. x (W) 19 in. x (D) 12 in. (includes rack-mount flanges)
	(H) 48.8 cm x (W) 48.3 cm x (D) 30.5 cm (includes rack-mount flanges)
Model 3030 Hub	(H) 5.2 in. x (W) 19 in. x (D) 15 in. [(H) 13.2 cm x (W) 48.3 cm x (D) 38.1 cm]

Table 1 | **System 3000 Intelligent Networking Hubs Technical Specifications (continued)**

Environmental Specifications	
Operating Temperature	5° to 40°C
Operating Humidity	85% max relative humidity, noncondensing
Operating Altitude	10,000 ft (3,048 m)
Storage Temperature	-25° to 70°C
Storage Humidity	95% max relative humidity, noncondensing
Free Fall/Drop	ISO 4180-2, NSTA 1A
Vibration	IEC 68-2-6/34
Stock/Bump	IEC 68-2-27/29
Thermal Rating	
Model 3000	460 W (1,600 Btu/hr) max (fully loaded); 62 W (210 Btu/hr) min (empty)
Model 3030	150 W (510 Btu/hr) max (fully loaded); 15 W (50 Btu/hr) min (empty)
Weight	
Model 3000	
Chassis Assembly Without Power Supply	33.3 lbs (15 kg)
Power Supply	10.2 lbs (4.6 kg)
Fully Loaded	Approximately 75 lbs (34 kg)
Shipping Weight	Approximately 60 lbs (27 kg)
Model 3030	
Chassis	17.7 lbs (8 kg)
Fully Loaded	Approximately 28 lbs (13 kg)
Shipping Weight	Approximately 30 lbs (14 kg)
Safety Agency Approvals	UL Listed (UL 1950) CSA certified (CSA 22.2 #950) TUV licensed (EN 60 950)
Electromagnetic Emissions	
Meets Requirements of	FCC Part 15, Subpart B, Class A EN 55 022 (CISPR 22: 1985), Class A or B General License VDE 0871, Class B (AmtsblVfg 243/1991, 46/1992) VCCI Class 1 ITE (Refer to individual reference sheets for additional information)
Electromagnetic Susceptibility	
Electrostatic Discharge (ESD)	IEC 801-2, Level 2/4
Radiated Electromagnetic Field	IEC 801-2, Level 2
Electrical Fast Transient/Burst	IEC 801-4, Level 2/3
Electrical Surge	IEC 801-5, Level 1/3
	CE (Refer to individual reference sheets for additional information)

Technical specifications for the Model 3002A Power Supply are shown in Table 2.

Table 2 **Model 3002A Power Supply Technical Specifications**

Features	Slide mounted modular power supply AC cable supplied for standard U.S. outlets AC power-on lighted switch and DC power-good LED AC input voltage selection on front panel Protection: Overvoltage protected outputs Short circuit protection on outputs Thermal shutdown on overheating
Physical Dimensions	(H) 15 in. x (W) 2.4 in. x (D) 10.6 in. [(H) 38 cm x (W) 6.2 cm x (D) 26.9 cm]
Weight	10.2 lbs (4.6 kg)
Input Connector	Meets IEC and CEE-22 specifications
Safety Agency Approvals	UL Recognized, CSA Certified, TUV Licensed UL listed (UL 1950) CSA certified (CSA 22.2 #950) TUV licensed (EN 60 950)
Electromagnetic Emissions	
Meets Requirements of	FCC Part 15, Subpart B, Class A EN 55 022 (CISPR 22: 1985), Class A or B General License VDE 0871, Class B (AmtsblVfg 243/1991, 46/1992) VCCI Class 1 ITE (Refer to individual reference sheets for additional information)
Electromagnetic Susceptibility	
Electrostatic Discharge (ESD)	IEC 801-2, Level 2/4
Radiated Electromagnetic Field	IEC 801-2, Level 2
Electrical Fast Transient/Burst	IEC 801-4, Level 2/3
Electrical Surge	IEC 801-5, Level 1/3
	CE (Refer to individual reference sheets for additional information)
AC Characteristics	
AC Line Frequency	47-63 Hz
V ac Input Requirement	90-132 V ac (110 V ac operation); 180-265 V ac (220 V ac operation)
AC Volt Amperes Rating	1,200 VA max
Current Rating	8 amps (110 V ac operation); 4.2 amps (220 V ac operation)

Technical specifications for the 3100R Summing Module (for Model 3000NTR, Model 3000CTR, and Model 3000SR RPSU) are shown in Table 3.

Table 3 **Model 3100R Summing Module Technical Specifications (for Model 3000NTR, Model 3000CTR, and Model 3000SR Redundant Power System)**

Electrical Specifications	
Power Consumption	25 W (+5 V), 7 W (+12 V)
Thermal Rating	109 Btu/hr maximum
Physical Dimensions	(H) 15 in. x (W) 1.2 in. x (D) 10.6 in. [(H) 38 cm x (W) 3.1 cm x (D) 26.9 cm]
Weight	3 lbs (1.4 kg)
Environmental Specifications	
Operating Temperature	5° to 40°C
Operating Humidity	85% max relative humidity, noncondensing
Operating Altitude	10,000 ft (3,048 m)
Storage Temperature	-25° to 70°C
Storage Humidity	95% max relative humidity, noncondensing
Free Fall/Drop	ISO 4180-2, NSTA 1A
Vibration	IEC 68-2-6/34
Stock/Bump	IEC 68-2-27/29
Electromagnetic Emissions	
Meets Requirements of	FCC Part 15, Subpart B, Class A EN 55 022 (CISPR 22: 1985), Class A or B General License VDE 0871, Class B (AmtsblVfg 243/1991, 46/1992) VCCI Class 1 ITE (Refer to individual reference sheets for additional information)
Electromagnetic Susceptibility	
Electrostatic Discharge (ESD)	IEC 801-2, Level 2/4
Radiated Electromagnetic Field	IEC 801-2, Level 2
Electrical Fast Transient/Burst	IEC 801-4, Level 2/3
Electrical Surge	IEC 801-5, Level 1/3
	CE (Refer to individual reference sheets for additional information)

Technical specifications for the Model 3030 Power Supply are shown in Table 4.

Table 4 **Model 3030 Power Supply System Technical Specifications**

Power Supply Characteristics	AC cable supplied for standard U.S. outlets AC power-on lighted switch and DC power-good LED Protection: Overvoltage protected outputs Short circuit protection on outputs
Input Connector	Meets IEC and CEE-22 specifications
AC Characteristics	
AC Line Frequency	47-63 Hz
V ac Input Requirement	90-250 V ac
AC Volt Amperes Rating	300 VA max
Current Rating	3.0 amps nominal at 110 volts; 1.5 amps nominal at 220 volts

Ordering Information

The ordering information for the System 3000 Premises and Department hubs is shown in Table 5.

Table 5 | **System 3000 Connectivity Multisegment Premises Hubs and Department Hubs Ordering Information**

Order Number	Description
3000N	Model 3000N Premises Chassis with Multisegment Ethernet Backplane and Model 3002A 460-watt Power Supply
3000NT	Model 3000NT Premises Chassis with Multisegment Ethernet/Token Ring Backplane and Model 3002A 460-watt Power Supply
3000NTR	Model 3000NTR Premises Chassis with Multisegment Ethernet/Token Ring Redundant Power Backplane, Summing Module, and two Model 3002A 460-watt Power Supplies
AC2202002	Model 3000CT Premises Chassis with Multisegment Ethernet/Fast Ethernet/Token Ring Backplane and Model 3002A 460-watt Power Supply
AC2202001	Model 3000CTR Premises Chassis with Multisegment Ethernet/Fast Ethernet/Token Ring Backplane, Summing Module, and two Model 3002A 460-watt Power Supplies
3000S	Model 3000S Premises Chassis with Multisegment Ethernet/Token Ring/FDDI Backplane and Model 3002 460-watt Power Supply
3000SR	Model 3000SR Premises Chassis with Multisegment Ethernet/Token Ring/FDDI Redundant Power Backplane, Summing Module, and two Model 3002A 460-watt Power Supplies
3030-01-HW	Model 3030-01-HW Department Chassis with 150-watt Power Supply and Ethernet Backplane (01); installation and maintenance documentation included
3030-04-HW	Model 3030-04-HW Department Chassis with 150-watt Power Supply and Ethernet/Token Ring Backplane (04); installation and maintenance documentation included

Note: Installation and maintenance documentation included; optional 48-volt power supply is available. The System 3000 family of intelligent hubs, or hubs, deliver a flexible platform for implementing and supporting a variety of large, complex physical star-topology networks over a building's structured cabling system.

System 3000 hubs feature a multiple-bus backplane architecture that enables them to simultaneously support a combination of 10 Mbps Ethernet, 100 Mbps Fast Ethernet, 4 Mbps and 16 Mbps Token Ring, and 100 Mbps FDDI networks. Through a variety of Ethernet, Token Ring, and FDDI connectivity, and internetworking and network management modules, network designers can create custom configurations that meet their specific networking needs.

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