



Network Server 500 and Network Server 700

The Network Server 500 and 700 are Apple's fastest, most powerful, reliable, and expandable server solutions for demanding network file, print, and database applications.

The high-performance Network Servers are based on the 132-megahertz and 150-megahertz PowerPC 604 RISC processors, and both run the robust AIX for Apple Network Servers operating system.

Designed from the lockable wheels up as highly available, reliable, and secure, both Network Servers offer optional hot-swappable redundant tray-mounted hard drives that slide in and out of the front storage bays in seconds. These bays provide outstanding storage flexibility because they can hold tray-mounted optical drives, tape drives, and hard drives—in full-or half-height configurations.

The Network Server 500 and 700 are easy to network, with built-in Ethernet support and optional support for up to seven Ethernet segments using Peripheral Component Interconnect (PCI) expansion cards.

The Network Server 700 also offers optional hot-swappable redundant power supplies that easily slide in and out.

Network Servers are designed around industry standards. From AIX to PCI to SCSI, they're built to fit into your multiplatform network environment. And each features a built-in quad-speed CD-ROM drive for installing software or serving information to users of networked desktop computers.

In addition, they're designed to be easy to reconfigure and service: Each major component—including the

logic board—can be replaced in less than 60 seconds.

Logic boards on both servers can be easily upgraded to 512 megabytes of DRAM main memory, and their PowerPC microprocessors are located on upgradable, replaceable processor cards.

Network Servers are easy to expand, with six PCI expansion slots, and up to 256 gigabytes of total hard drive storage capacity.

The Network Server enclosures offer controlled, key-lockable access to front-mounted hard disk drives, CD-ROM drives, tape drives, and other media.

The most powerful servers Apple has ever built, the industrial-strength Network Servers can meet the needs of the most demanding publishing, education, and technical customers.



Technical Specifications

Network Server 500

Microprocessor

- PowerPC 604 RISC microprocessor running at 132 MHz, located on upgradable, replaceable CPU card
- Integrated floating-point unit and 32K level 1 cache memory
- 512K level 2 cache memory

Memory

- 32MB of error-detecting parity DRAM
- Expandable to up to 512MB of DRAM
- 8 slots for 168-pin, 72-bit, 60ns DIMMs

Storage

- Support for 7 internal SCSI devices
- One AppleCD 600i CD-ROM drive (up to 600KB/sec data-transfer rate) standard on all configurations
- DDS-2 DAT drive (4GB uncompressed, up to 12GB compressed) in some configurations
- One Apple SuperDrive 1.44MB floppy disk drive standard on all configurations

Networking

- Built-in AAUI Ethernet
- Two serial ports
- Support for AppleTalk and TCP/IP networking software

Displays

- LCD status display for system monitoring
- Support for up to 20-inch Apple displays at 256 colors
- Support for most third-party displays as well as VGA and SVGA monitors

Display support

- Built-in 1MB DRAM
- Resolutions:
 - 1,024 pixels by 768 pixels
 - 800 pixels by 600 pixels
 - 640 pixels by 480 pixels

Interfaces

- Six PCI expansion slots
- Two Fast/Wide SCSI-2 channels support 7 internal devices
- SCSI-1 channel supports up to 7 external devices (compatible with SCSI-1 devices)
- Support for 56 external SCSI devices using optional PCI RAID cards
- AAUI-15 Ethernet connector (requires adapter)
- Standard three-row DB-15 video port for display support (Macintosh Display Adapter included)
- Two DMA DIN-8 serial ports (RS-232/RS-422)
- One Apple Desktop Bus (ADB) port for a keyboard, mouse, and other devices
- 16-bit stereo sound input and output ports

Drive bays

- Front bays support seven half-height or three full-height (5.25-inch) tray-mounted SCSI devices, and SCSI IDs are electronically pre-configured in each bay location
- Top four bays share one (20MB/sec) Fast/Wide SCSI-2 channel
- Bottom three bays share a second (20MB/sec) Fast/Wide SCSI-2 channel

Software sold separately

- Operating system: AIX for Apple Network Servers version 4.1 with trial versions of IPT uShare and CanOPI; Helios EtherShare, EtherShare OPI, and PCShare; Legato Networker; and APC Power Chute

Network Server 700

Microprocessor

- PowerPC 604 RISC microprocessor running at 150 MHz, located on upgradable, replaceable CPU card
- Integrated floating-point unit and 32K level 1 cache memory
- 1MB level 2 cache memory

Memory

- 32MB or 48MB of error-detecting parity DRAM
- Expandable to up to 512MB of DRAM
- 8 slots for 168-pin, 72-bit, 60ns DIMMs

Storage

- Support for 9 internal SCSI devices, including two fixed-mount half-height drives
- One AppleCD 600i CD-ROM drive (up to 600KB/sec data-transfer rate) standard on all configurations
- DDS-2 DAT drive (4GB uncompressed, up to 12GB compressed) in some configurations
- One Apple SuperDrive 1.44MB floppy disk drive standard on all configurations

Networking

- Built-in AAUI Ethernet
- Two serial ports
- Supports AppleTalk and TCP/IP networking software

Displays

- LCD status display for system monitoring
- Support for up to 20-inch Apple displays at 256 colors
- Support for most third-party displays as well as VGA and SVGA monitors

Display support

- Built-in 1MB DRAM
- Resolutions:
 - 1,024 pixels by 768 pixels
 - 800 pixels by 600 pixels
 - 640 pixels by 480 pixels

Interfaces

- Six PCI expansion slots
- Two Fast/Wide SCSI-2 channels support 9 internal devices
- SCSI-1 channel supports up to 7 external devices (compatible with SCSI-1 devices)
- Support for 56 external SCSI devices using optional PCI RAID cards
- AAUI-15 Ethernet connector (requires adapter)
- Standard three-row DB-15 video port for display support (Macintosh Display Adapter included)
- Two DMA DIN-8 serial ports (RS-232/RS-422)
- One Apple Desktop Bus (ADB) port for a keyboard, mouse, and other devices
- 16-bit stereo sound input and output ports

Drive bays

- Front bays support seven half-height or three full-height (5.25-inch) tray-mounted SCSI devices, and SCSI IDs are electronically pre-configured in each bay location
- Top four front bays share one (20MB/sec) Fast/Wide SCSI-2 channel
- Bottom three front bays share a second (20MB/sec) Fast/Wide SCSI-2 channel
- Two rear fixed-mount bays share the same Fast/Wide SCSI-2 channel (along with the bottom three front bays) and support two half-height devices

Software sold separately

- Operating system: AIX for Apple Network Servers version 4.1 with trial versions of IPT uShare and CanOPI; Helios EtherShare, EtherShare OPI, and PCShare; Legato Networker; and APC Power Chute

Network Server 500

Enclosure

- Front and back key-controlled access to all components, including:
 - Three-position translucent locking front door that offers three levels of access. The first level allows full access to seven front SCSI drives and media such as CD-ROMs and tape cartridges. The second level allows removable media access for replacement of floppy disks, tape cartridges, and CD-ROMs, but prohibits removal of storage drives and power supplies. The third level locks the access door closed, and prohibits access to storage drives, removable media, and power supplies.
 - Keylock rear slide-out cabinet access to logic board, processor card, DIMM sockets, and PCI slots (keylock powers down system when unlocked)
 - Keylock rear cabinet door
- Seven tray-mounted SCSI drive bays with hot-swap option
- Locking wheels
- Dual hot-swappable fans
- Speaker
- Security slot (requires a third-party accessory)
- Power cord lock
- Optional 19-inch rack-mount kit

System administration

- Supports administration at console with AIX system administration tools
- Supports remote administration from a networked Mac OS, Windows, or UNIX software-based computer

Keyboard and mouse

- Supports ADB keyboards with numeric keypads
- Supports ADB Mouse II

Clock/calendar

- Custom integrated circuit with long-life lithium battery

Electrical requirements

- Line voltage: 100 to 240 V AC, RMS single phase, automatically configured
- Frequency: 50 to 60 Hz, single phase
- Power: 325W maximum for power supply (not including monitor)

PCI power requirements

- Maximum current draw for all PCI cards: 50W

ADB power requirements

- Maximum current draw for all ADB devices: 500 mA (a maximum of three ADB devices is recommended)
- Mouse draws 10 mA
- Keyboard draws 25 to 80 mA (varies with keyboard model used)

Environmental requirements

- Operating temperature: 50° to 104° F (10° to 40° C)
- Storage temperature: -40° to 116.6° F (-40° to 47° C)
- Relative humidity: 5% to 95% noncondensing
- Altitude: 0 to 10,000 ft. (0 to 3,048 m)

Size and weight

- Height: 24.5 in. (62.2 cm)
- Width: 16.5 in. (41.9 cm)
- Depth: 18 in. (45.7 cm)
- Weight: 84 to 92 lb. (38 to 41 kg)—varies based on internal devices installed

Regulatory approval

- FCC Class A
- CE
- VCCI Class One
- UL/CSA

Network Server 700

Enclosure

- Front and back key-controlled access to all components, including:
 - Three-position translucent locking front bay door that offers three levels of access. The first level allows full access to seven front SCSI drives and media such as CD-ROMs and tape cartridges, as well as the power supplies. The second level allows removable media access for replacement of floppy disks, tape cartridges and, CD-ROMs, but prohibits removal of storage drives and power supplies. The third level, locks the access door closed, and prohibits access to storage drives, removable media, and power supplies.
 - Keylock rear slide-out cabinet access to logic board, processor card, DIMM sockets, and PCI slots (keylock powers down system when unlocked)
 - Keylock rear cabinet door for access to two fixed-mount hard drive bays
- Seven tray-mounted SCSI drive bays with hot-swap option
- Optional hot-swappable power supplies
- Locking wheels
- Dual hot-swappable fans
- Speaker
- Security slot (requires a third-party accessory)
- Power cord lock
- Optional 19-inch rack-mount kit

System administration

- Supports administration at console with AIX system administration tools
- Supports remote administration from a networked Mac OS, Windows, or UNIX software-based computer

Keyboard and mouse

- Supports ADB keyboards with numeric keypads
- Supports ADB Mouse II

Clock/calendar

- Custom integrated circuit with long-life lithium battery

Electrical requirements

- Line voltage: 100 to 240 V AC, RMS single phase, automatically configured
- Frequency: 50 to 60 Hz, single phase
- Power: 425W maximum for both main and optional, load-balanced, redundant power supply (not including monitor)

PCI power requirements

- Maximum current draw for all PCI cards: 90W

ADB power requirements

- Maximum current draw for all ADB devices: 500 mA (a maximum of three ADB devices is recommended)
- Mouse draws 10 mA
- Keyboard draws 25 to 80 mA (varies with keyboard model used)

Environmental requirements

- Operating temperature: 50° to 104° F (10° to 40° C)
- Storage temperature: -40° to 116.6° F (-40° to 47° C)
- Relative humidity: 5% to 95% noncondensing
- Altitude: 0 to 10,000 ft. (0 to 3,048 m)

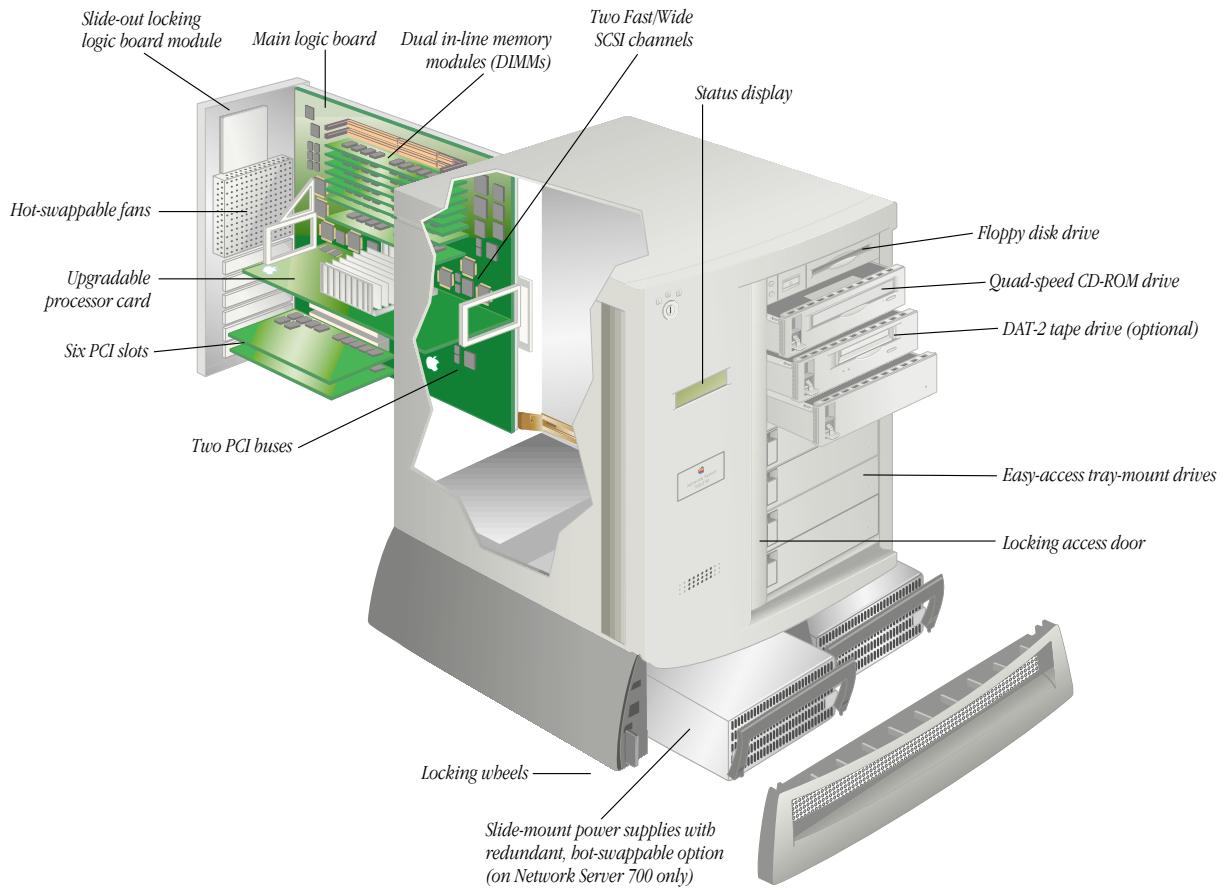
Size and weight

- Height: 24.5 in. (62.2 cm)
- Width: 16.5 in. (41.9 cm)
- Depth: 18 in. (45.7 cm)
- Weight: 84 to 92 lb. (38 to 41 kg)—varies based on internal devices installed

Regulatory approval

- FCC Class A
- CE
- VCCI Class One
- UL/CSA

Network Server Close-up



Rear-mounted fans can be replaced in seconds, without service interruption—and without tools.

In the unlikely event that a fan fails at night or in the absence of a replacement, temperature-overload sensors on the logic board initiate a system shutdown, avoiding overheating and further component loss.



An external SCSI-1 port supports up to seven additional devices. You can add devices such as the Digital Linear Tape (DLT) drive from Quantum, which makes high-speed backups of up to 20 gigabytes per cartridge (uncompressed).

The high-speed internal PCI bus allows you to add up to six PCI cards, including PCI Ethernet and FastEthernet cards, as well as a PCI RAID disk array card. Third-party PCI cards are also available.



Removal of the logic board is remarkably easy.

An experienced but nontechnical user can remove and replace a Network Server's logic board in less than one minute. Just unlock and slide open the back panel, unsnap the board from its mounting bracket, and you can set it on a bench for service or upgrades.



The Network Servers allow you to plug and unplug the processor daughtercard so that you can upgrade your server's performance as faster CPU cards become available.

Also included are two built-in Fast/Wide SCSI-2 channels that deliver internal access speeds of up to 40 megabytes per second to the storage drives. Standard SCSI support for external devices is also included.

Looking deeper, the processor-to-second-level cache bus moves information at 256 megabytes per second.

Features

Performance

- 150-MHz PowerPC 604 RISC processor with floating-point unit and 32K on-chip cache on an upgradable, replaceable processor card (model 700)
- 132-MHz PowerPC 604 RISC processor with floating-point unit and 32K on-chip cache on an upgradable, replaceable processor card (model 500)
- Two PCI buses
- Supports up to six PCI Ethernet cards
- Two 20MB/sec Fast/Wide SCSI channels

Reliability and high availability

- Optional redundant hot-swappable disk drives
- Optional redundant hot-swappable power supplies (model 700)
- Dual hot-swappable fans
- Parity memory protection
- Optional third-party uninterruptible power supply (battery backup)

Expansion and storage

- 32MB or 48MB of main parity memory, expandable to 512MB
- Six PCI slots for expansion cards
- Up to six internal tray-mounted hard disk drives of up to 4GB each, with hot-swap and redundancy option, expandable to up to 256GB
- Two internal fixed-mount disk drives (model 700)
- Internal quadruple-speed CD-ROM drive standard
- Internal DDS-2 digital audiotape (DAT) drive (some configurations)
- External SCSI-1 bus supports up to seven devices
- Eight ports support a wide range of peripherals

Networking

- Built-in AAUI Ethernet connector
- Support for PCI Ethernet and PCI Fast Ethernet cards
- Support for AppleTalk and TCP/IP networking protocols
- Two serial ports

Enclosure

- Three key-controlled access levels for tray-mounted front drive bays
- Key-controlled access to power supplies
- Key-controlled slide-out module for access to main logic board, processor card, PCI slots, and memory sockets
- Key-controlled rear access to two fixed-mount half-height drives (model 700)
- Locking wheels
- Dual hot-swappable fans
- Optional 19-inch rack-mount kit

Compatibility

- Binary compatible with thousands of AIX applications

Application software

- Trial versions of IPT uShare and CanOPI; Helios EtherShare, EtherShare OPI, and PCShare; Legato Networker; and APC Power Chute included with the AIX for Apple Network Server Accessory Kit

Service and support

- Includes 1-year on-site hardware warranty with second-business-day response
- Includes lifetime telephone hardware troubleshooting
- Includes 90 days of telephone software support
- Offers optional next-business-day on-site service response plan
- Offers optional 7-day, 24-hour telephone support plan and priority queuing

Ordering Information and Accessories

Network Server Configurations

Network Server 700/150 (48MB/4GB/CD/DAT)

Order No. M3470LL/A

- Network Server 700 features a 150MHz 604 processor with 48MB of parity memory, 1MB level 2 cache, 4GB Fast/Wide SCSI-2 disk drive, internal quadruple-speed CD-ROM drive, DDS-2 DAT drive, and 1.4MB Apple SuperDrive floppy disk drive
- Limited one-year hardware warranty

Network Server 700/150 (32MB/1GB/CD)

Order No. M3471LL/A

- Network Server 700 features a 150MHz 604 processor with 32MB of parity memory, 1MB level 2 cache, 1GB SCSI-2 disk drive, internal quadruple-speed CD-ROM drive, and 1.4MB Apple SuperDrive floppy disk drive
- Limited one-year hardware warranty

Network Server 500/132 (32MB/2GB/CD/DAT)

Order No. M3468LL/A

- Network Server 500 features a 132MHz 604 processor with 32MB of parity memory, 512K level 2 cache, 2GB Fast/Wide SCSI-2 disk drive, internal quadruple-speed CD-ROM drive, DDS-2 DAT drive, and 1.4MB Apple SuperDrive floppy disk drive
- Limited one-year hardware warranty

Network Server 500/132 (32MB/CD)

Order No. M3469LL/A

- Network Server 500 features a 132MHz 604 processor with 32MB of parity memory, 512K level 2 cache, quadruple-speed CD-ROM drive, and 1.4MB Apple SuperDrive floppy disk drive
- Limited one-year hardware warranty

Peripherals and Accessories

AIX for Apple Network Servers

Accessory Kit

Order No. M4525Z/A

- AIX for Apple Network Servers version 4.1
- Trial software
- Mouse
- Power cord lock
- Power Macintosh Display Adapter
- Complete setup, learning, and reference documentation

Network Server Memory Expansion Kits

16MB Parity Memory Upgrade Kit

Order No. M4017Z/A

- Includes two 8MB dual in-line memory modules (DIMMs)
- Incorporates the 168-pin industry-standard JEDEC DIMM form factor
- Operates at 60ns speed

32MB Parity Memory Upgrade Kit

Order No. M4018Z/A

- Includes two 16MB dual in-line memory modules (DIMMs)
- Incorporates the 168-pin industry-standard JEDEC DIMM form factor
- Operates at 60ns speed

64MB Parity Memory Upgrade Kit

Order No. M4019Z/A

- Includes two 32MB dual in-line memory modules (DIMMs)
- Incorporates the 168-pin industry-standard JEDEC DIMM form factor
- Operates at 60ns speed

Network Server Hard Drives

2GB Fast/Wide SCSI-2 Hard Drive and Tray

Order No. M4022Z/A

- Operates at 7200 revolutions per minute (RPM)
- Supports tag command queuing for increased disk performance
- Provides a sustained data rate of 7MB per second
- Includes a standard 68-pin SCSI-2 connector
- Comes pre-installed in Network Server drive tray for easy setup

4GB Fast/Wide SCSI-2 Hard Drive and Tray

Order No. M4023Z/A

- Operates at 7200 revolutions per minute (RPM)
- Supports tag command queuing for increased disk performance
- Provides a sustained data rate of 7MB per second
- Includes a standard 68-pin SCSI-2 connector
- Comes pre-installed in Network Server drive tray for easy setup

2GB Fast/Wide SCSI-2 Fixed Hard Drive and Rear Bracket

Order No. M4818Z/A

- Provides increased disk capacity located in the back of the system
- Can be used in a RAID disk array configuration but is not hot-swappable
- Provides the same disk drive features as M4022
- Available only for the Network Server 700

Two 4GB Fast/Wide SCSI-2 Fixed Hard Drives and Rear Bracket

Order No. M4819Z/A

- Provides increased disk capacity located in the back of the system
- Can be used in a RAID disk array configuration but is not hot-swappable
- Provides the same disk drive features as M4023
- Available only for the Network Server 700

Other Drives

Network Server DAT-2 4mm Tape Drive (4GB/12GB) in Removable Tray
Order No. M4025Z/A

Network Server AppleCD 600 Quad-Speed Drive in Removable Tray
Order No. M4024Z/A

Network Server Expansion

PCI RAID Card

Order No. M4030Z/A

- Supports RAID levels 0, 1, 0+1, 5
- Provides disk hot-swap, on-line replacement, and hot spare capability
- Includes two built-in Fast/Wide SCSI-2 channels
- Supports tag command queuing for increased disk performance
- Provides up to 32MB of write cache; 4MB is standard
- Includes built-in battery backup for the write cache
- Supports up to 9 internal SCSI drives
- Supports up to 14 external SCSI drives with two 68-pin connectors
- Each Network Server supports up to four PCI RAID cards
- RAID software driver comes standard with AIX 4.1 for Apple Network Servers

Network Server External SCSI Cable for RAID Card, 50 inch (68 pin to 68 pin)

Order No. M4031Z/A

PCI Ethernet Card

Order No. M4709Z/A

- 10-Mbit/sec Ethernet card
- Supports twisted-pair, AAUI, and thin coax connections
- Each Network Server supports up to six PCI Ethernet cards
- Ethernet software driver comes standard with AIX 4.1 for Apple Network Servers

PCI 100BaseTX Ethernet Card

Order No. M3906Z/A

- 100-Mbit/sec FastEthernet card
- Supports twisted-pair connections
- Each Network Server supports up to six PCI FastEthernet cards
- FastEthernet software driver comes standard with AIX 4.1 for Apple Network Servers



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Ethernet Adapters

Apple Ethernet Thin Coax Transceiver
Order No. M0329Z/B

Apple Ethernet Twisted-Pair Transceiver
Order No. M0437Z/B

Apple Ethernet AUI Adapter
Order No. M0432Z/A

Other Accessories

Redundant Power Supply

Order No. M4035Z/A

- Redundant 425W power supply for the Network Server 700
- The Network Server continues to operate after a power supply failure
- Supports replacement while the system is running; a failed power supply can be hot-swapped in 60 seconds
- Provides load-balancing between the two power supplies

19-inch Rack Mount Kit

Order No. M4036Z/A

- Includes a shelf with screws for mounting the Network Server in an industry-standard 19-inch rack

SCSI Drive Adapter Kit

Order No. M4028Z/A

- Provides the ability to add third-party SCSI drives inside the Network Servers, such as SCSI disk drives, tape drives, or CD-ROM drives
- Includes a 50-pin SCSI adapter and a 68-pin SCSI adapter
- Includes required cables that support most SCSI devices
- Each empty drive bay inside the Network Server includes a blank drive tray

Front-Drive Bezel Kit

Order No. M4029Z/A

- Required when adding a third-party SCSI tape drive or CD-ROM to the Network Servers
- Includes a tape drive bezel and a CD-ROM drive bezel