

Apple Workgroup Server 95



The Apple Workgroup Server 95 provides file/print, database, information retrieval, and other server-based solutions with the performance, scalability, and manageability needed by large or data-intensive workgroups. The most powerful and expandable of Apple's server family, this system is based on the 33-megahertz Motorola 68040 microprocessor and offers high-performance features such as SCSI DMA support, a large second-level 68040 memory cache, and parity memory. The server is driven by a highly tuned version of A/UX software, Apple's implementation of the multi-tasking UNIX operating system. And when the Apple Workgroup Server 95 operates with AppleShare Pro, up to 200 users can simultaneously connect to the server.

You can quickly and flexibly expand the server by adding SCSI devices, increasing DRAM, and increasing the second-level memory cache. The

server is easy to manage and maintain; every system ships with Retrospect A/UX, a powerful yet easy-to-use utility that allows you to automatically back up data on the optional DAT tape drive (included in the configuration pictured above). An easy-to-use documentation viewer provides convenient, quick reference to on-line documentation.

Apple servers continue the "plug and play" tradition established by the Macintosh. Because it's a snap to install, maintain, reconfigure, and expand, the Apple Workgroup Server 95 offers the lowest long-term cost of ownership in its class.* To provide file/print, database, information retrieval, or other server-based solutions for demanding desktop publishing, imaging, business administration, or document-management applications, build your networks around the Apple Workgroup Server 95.

*Based on a report by Business Research Group, Newton, MA.

Apple Workgroup Server 95 Features

High performance

- ▶ Leading AppleShare file server performance
- ▶ Tuned for relational database performance
- ▶ Enhanced with SCSI DMA, asynchronous I/O, and a large external cache

Expansion

- ▶ 16MB of RAM, expandable to 256MB
- ▶ Four SCSI channels (two SCSI DMA)
- ▶ Up to 20 SCSI devices
- ▶ Room for six internal SCSI drives
- ▶ Four usable NuBus expansion slots
- ▶ Up to 5,000 open files when running AppleShare Pro, compared with 346 open files with other AppleShare systems

Usability

- ▶ Preinstalled operating system, file/print services, backup, and networking software
- ▶ Pretuned and configured for file/print or relational database services
- ▶ Easy server administration with Macintosh System 7 user interface
- ▶ Full-function, graphical backup utility

System software

- ▶ Tuned version of A/UX, a standard UNIX operating system with Macintosh System 7 features
- ▶ Preinstalled TCP/IP and NFS software

Networking

- ▶ Full support for AppleTalk and TCP/IP networking protocols
- ▶ Built-in Ethernet and LocalTalk support

Ordering Information

Configuration Summary						<i>All configurations include these items:</i> <ul style="list-style-type: none"> ▶ Mouse ▶ 1.4MB Apple SuperDrive ▶ A/UX system software installer CD-ROM for one-button installation of file/print environment and relational database environment ▶ Retrospect A/UX backup software preloaded on the hard drive ▶ Apple Documentation Viewer on-line documentation ▶ Complete set of hard-copy documentation ▶ Limited warranty
	M6855LL/A	M6875LL/A	M6895LL/A	M3074LL/A*	M3075LL/A*	
Memory (RAM)	16MB	32MB	48MB	32MB	48MB	Keyboard, display, and appropriate Ethernet transceiver sold separately. A CD-ROM drive (such as the AppleCD SC, AppleCD SC Plus, AppleCD 150, or AppleCD 300 drive) is required for reinstallation of A/UX system software or installation of applications such as AppleShare Pro or AppleSearch.
Second-level memory cache	128K	512K	512K	256K	512K	
Hard disk(s)	230MB	1GB	230MB, 1GB	2GB	250MB, 2GB	
DDS-DC 4mm tape drive	Not included	Included	Included	Included	Included	
A/UX pretuned and preinstalled to run	File/print or application services	File/print or application services	Relational database services	File/print or application services	Relational database services	
AppleShare Pro file/print software	Not included	Included, preinstalled	Not included	Included, preinstalled	Not included	Service and Support <ul style="list-style-type: none"> ▶ 24-hour telephone support ▶ 1-year hardware warranty with on-site repair ▶ Additional on-site service options

*These configurations include the bracket and SCSI cable necessary to support five internal hard drives. All other configurations support two internal hard drives.

Upgrade Kits and Accessory Kits

AppleShare Pro

Order No. M6825Z/A

- ▶ File and print software for Apple Workgroup Server 95

Apple Workgroup Server PDS Card

Upgrade Kit**

Order No. M6940Z/A

- ▶ Processor-direct slot card for the Macintosh Quadra 900 or 950 (128K second-level memory cache built in)
- ▶ A/UX system software installer CD-ROM (installation of system software, Retrospect A/UX backup software, and Apple Documentation Viewer)
- ▶ A/UX CD-ROM for file/print environment and A/UX CD-ROM for database environment
- ▶ Complete documentation
- ▶ Limited warranty
- ▶ CPU labels

**These kits upgrade a Macintosh Quadra 900 or 950 to an Apple Workgroup Server 95. A CD-ROM drive is required to install system software.

Apple Workgroup Server PDS Card/DDS-DC Tape Drive

Drive Upgrade Kit**

Order No. M6945Z/A

- ▶ Processor-direct slot card for the Macintosh Quadra 900 or 950 (128K second-level cache built in)
- ▶ Internal DDS-DC 4mm tape backup drive
- ▶ All other features included with the Apple Workgroup Server PDS Card Upgrade Kit for the Macintosh Quadra 900 or 950

Apple Workgroup Server 95—16MB Parity DRAM Upgrade Kit

Order No. M6820Z/A

Adds 16MB of parity DRAM to the Apple Workgroup Server 95

Apple Workgroup Server 95—128KB/Tag Second-Level Memory Cache Upgrade Kit

Order No. M6810Z/A

Adds 128KB and Tag second-level 68040 memory cache to the PDS card for a total of 256KB of second-level memory cache

Apple Workgroup Server 95—256KB Second-Level Memory Cache Upgrade Kit

Order No. M6815Z/A

Adds 256KB of second-level 68040 memory cache to the PDS card for a total of 512KB of second-level memory cache (requires installation of 128KB/Tag Kit)

Blank DDS Tape 5 Pak

Order No. M2092Z/A

Blank DDS tape for use with internal DDS-DC drive (tape uses the Media Recognition System [MRS] standard)

Technical Specifications

Microprocessor

- Motorola 68040, 32-bit architecture, running at a clock speed of 33 MHz
- Integral Paged Memory Management Unit (PMMU), floating-point unit (FPU), and 8K internal cache

Memory

- Entry system comes with 16MB of parity RAM
- 16 Single In-line Memory Module (SIMM) sockets, allowing expansion to 256MB with 16MB SIMMS. Must replace all 4MB SIMMS with 16MB SIMMS to reach 256MB.
- Noncomposite memory SIMMS are required
- 128K second-level 68040 memory cache on board, expandable to 512K

Mass storage devices

- Built-in Apple SuperDrive 1.4MB floppy disk drive
- Accommodates five 3.5" half-height SCSI hard drives for a total of 10GB of internal storage and one CD-ROM or DDS-DC 4mm tape drive
- DDS-DC 4mm tape drive uses the Media Recognition System (MRS) and can back up 4GB to 6GB of compressed data (dependent on data being compressed) on 90-meter tapes

System software

- A/UX software, Apple's version of the multitasking, industry-standard UNIX operating system
- Performance-tuned for file/print and database services (including asynchronous I/O and SCSI DMA driver support)
- AppleTalk and TCP/NFS software preinstalled for convenient setup

Interfaces

- One Apple Desktop Bus (ADB) port supporting a keyboard, mouse, and other devices daisy-chained through a synchronous serial bus
- Two serial (RS-232/RS-422) ports, 230.4 Kbit/s maximum (up to 0.920 Mbit/s if clocked externally)
- Two SCSI DMA channels, four SCSI bus interfaces total
- All SCSI channels support disconnect/reconnect SCSI feature
- The two SCSI DMA channels support active termination and active negation
- Four usable NuBus expansion slots (the fifth slot is occupied by the PDS card)
- Sound input port for monaural sound input
- Dual mono line input ports
- AAUI Ethernet connector

Security

- Electronic key lock

Video display

- Can support up to 2MB of VRAM
- 1MB of VRAM standard
- Supports all Apple monitors
- Works with a wide range of third-party monitors including some 19-in. VGA, SVGA, NTSC, and PAL monitors

Keyboard and mouse

- Supports Apple Desktop Bus (ADB) keyboards
- Apple Desktop Bus Mouse II
- Custom chip with long-life lithium battery
- Clock/calendar

Electrical requirements

- Line voltage: 100 to 240 V AC, RMS automatically configured
- Frequency: 50 to 60 Hz, single phase
- Power: 303 W maximum, not including display power

ADB power requirements

- Maximum current draw for all ADB devices: 500 mA (three ADB devices maximum recommended)
- Mouse draws 80 mA
- Keyboard draws 25 to 80 mA, depending on the keyboard model used

Performance benchmarks

Performance metrics are listed below. As you can see, the new Apple Workgroup Server 95, A/UX, and AppleShare Pro software provide significant file server performance improvement over prior software versions.

File Server Throughput ¹

	Before A/UX 3.0.1, AppleShare Pro 1.0	After A/UX 3.1, AppleShare Pro 1.1	Performance increase
<i>Single Ethernet port with a 10-user load</i>			
<i>Sequential reads</i>	851KB per second	953KB per second	12%
<i>Sequential writes</i>	348KB per second	590KB per second	70%
<i>Enumerates ²</i>	132 items per second	295 items per second	123%

Database Benchmark ¹

<i>With ORACLE7 for A/UX 3.0.2</i>	
<i>Transactions per second</i>	65 TPC-B
<i>Price/performance</i>	\$695 per transaction
AIM Multiuser Benchmark ³	
<i>With A/UX 3.0.2</i>	
<i>AIM score</i>	22
<i>Jobs per second</i>	218
<i>Benchmark system cost</i>	\$6,648

Notes:

¹ File server throughput results and TPC-B database benchmarks are Apple estimates. TPC-B benchmark is unaudited.

² Enumerate performance represents browsing through files and directories on the server.

³ AIM benchmark results were generated by AIM Technology.

Size and weight

Main unit

- Height: 18.6 in. (47.3 cm)
- Width: 8.9 in. (22.4 cm)
- Depth: 20.6 in. (52.3 cm)
- Weight: 36 lb. 12 oz. (16.7 kg)*

Mouse

- Height: 1.3 in. (3.3 cm)
- Width: 2.4 in. (6.2 cm)
- Depth: 4.2 in. (10.7 cm)
- Weight: 4.0 oz. (0.10 kg)

*Weight will be greater with internal hard disks and additional internal storage devices.



Apple Workgroup Server 95

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