

HEWLETT-PACKARD

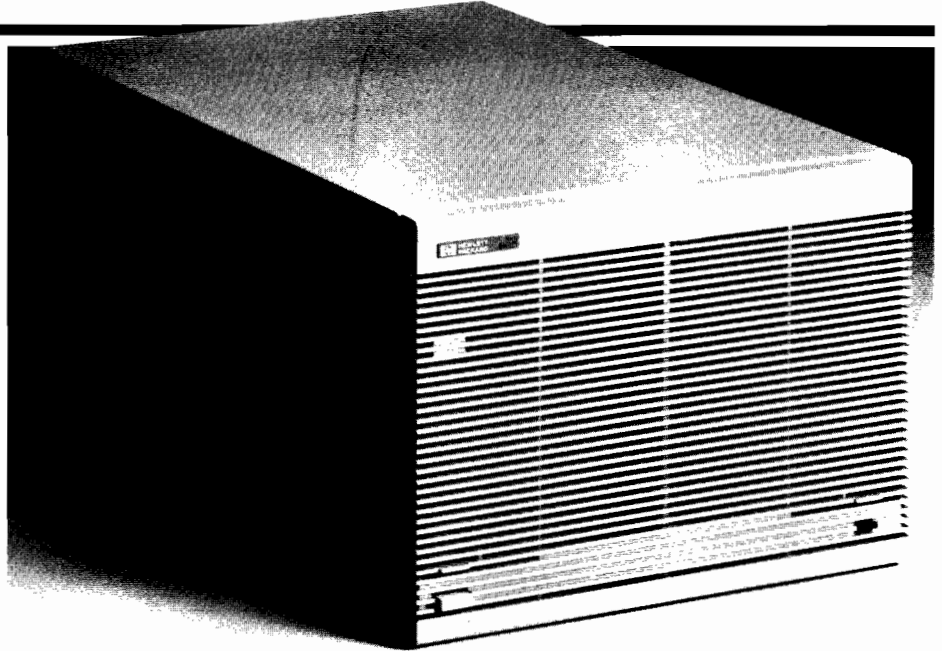
Series 925 System HP 3000 Computer Systems

Data Sheet

Description

The HP 3000 Series 925 is a midrange member of the HP 3000 family of business computers. Since it is compatible with the other HP 3000 systems, a multitude of business solutions is available for the Series 925—making it the ideal computing system for small- to medium-sized businesses, departments, and remote office locations.

The Series 925 is based upon HP Precision Architecture, a reduced instruction set computer approach that provides increased power—at a lower cost than more complex designs. Utilizing sophisticated NMOS III Very Large Scale Integration (VLSI) circuit technology, the Series 925 delivers superminiconductor performance in a surprisingly small size. The hardware performance of the Series 925 combines with the enhanced MPE XL operating system to provide excellent throughput and industry-leading price/performance—in both transaction processing and batch data processing environments. And the Series 925 enables Hewlett-Packard customers to keep pace with their computing environments, since it can be easily upgraded to higher performance by simply replacing processor cards on site. The Series 925 is available in a compact, attractive cabinet with the capacity to rack mount an entire entry level system. It can also be easily expanded to handle larger terminal and disc configurations. The Series 925 is highly reliable due to its low number of parts and does not require a special computer room



environment. And it is backed by the high standards of quality support for which the HP 3000 is known.

Features

- HP Precision Architecture
- 3.2 mips CPU performance
- 48-bit virtual addressing
- 16-Kbyte high-speed CPU cache
- Advanced-instruction pipelining techniques
- 32-Mbyte ECC memory standard, expandable to 48 Mbytes
- High-performance floating point coprocessor
- 2048-entry translation lookaside buffer for virtual-to-physical address translations
- Battery backup, auto restart
- I/O bus
- Low power and cooling requirements
- Support for up to 152 users
- Terminal connection via IEEE 802.3 local area network
- MPE XL operating system
- Network and relational database management systems standard

HP Computer Museum
www.hpmuseum.net

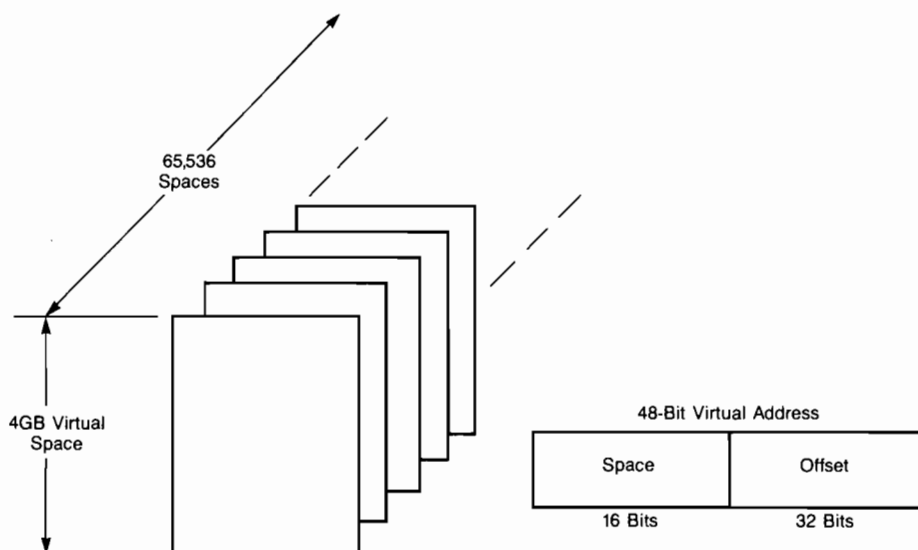
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Floating Point Coprocessor

Single-precision and double-precision floating point calculations are performed by a floating point coprocessor on the system board. The coprocessor significantly decreases the time required to perform floating point calculations. The floating point coprocessor and the CPU can operate in parallel, thus allowing for increased performance in applications that utilize floating point.

Virtual Memory Management

Virtual addresses on the Series 925 are 48 bits in length, ensuring sufficient expandability to meet evolving software needs. Virtual memory is divided into a set of 65,536 spaces, with each space being 4 Gbytes in length. Spaces are further divided into fixed-length, 2-Kbyte pages, with a given page holding either data, code, or both. A single data structure can be up to 1 Gbyte and code can span multiple spaces.



Virtual Address Translation

Virtual-to-physical address translation is done by translation lookaside buffers (TLBs), which cache recently accessed virtual page translations and convert the 48-bit virtual address into a 29-bit real address. The Series 925 TLB holds translations for 2,048 virtual pages and is split into a 1,024-entry instruction TLB and a 1,024-entry data TLB. Page-level access protection is provided on the Series 925, and the TLB hardware supports protection mechanisms to ensure that the currently executing process has sufficient authorization to perform the requested data, code, or I/O access.

Memory Subsystem

The Series 925 supports 32 Mbytes of main memory standard and is expandable to 48 Mbytes in 8 Mbyte increments. The memory subsystems use 1 Mbit, nibble-mode dynamic RAMs. Main memory has battery backup to ensure that information is

maintained for a minimum of 15 minutes in the event of an interruption in AC power. This allows the operating system to be automatically restarted and processing to continue without data loss upon resumption of power.

The internal memory word size is 72 bits, with 64 data bits plus 8 bits for error detection and correction. There are also 8 correction bits per cache line. Single-bit memory errors are automatically corrected, with automatic detection of all double-bit errors.

I/O Subsystem

I/O Buses

The channel I/O bus (CIB) supports up to seven cards for interfacing peripheral devices and providing datacommunications functions. An additional CIB can be added for a total of 12 card slots. Each CIB adapter provides DMA functions and supports up to a 5 Mbyte/second data throughput capability. The CIB adapter directly interfaces with the central bus (CTB). The CTB runs synchronously with an 8-MHz clock, and can support data transfer rates of up to 20 Mbytes/second.

Memory-Mapped I/O

Input/output operations are initiated and controlled via a memory-mapped I/O scheme, such that the processor only needs to access reserved virtual or physical memory locations to control I/O operations. Memory-mapped I/O allows for streamlined I/O operations and thus increases system performance in I/O intensive applications.

Peripheral Connections

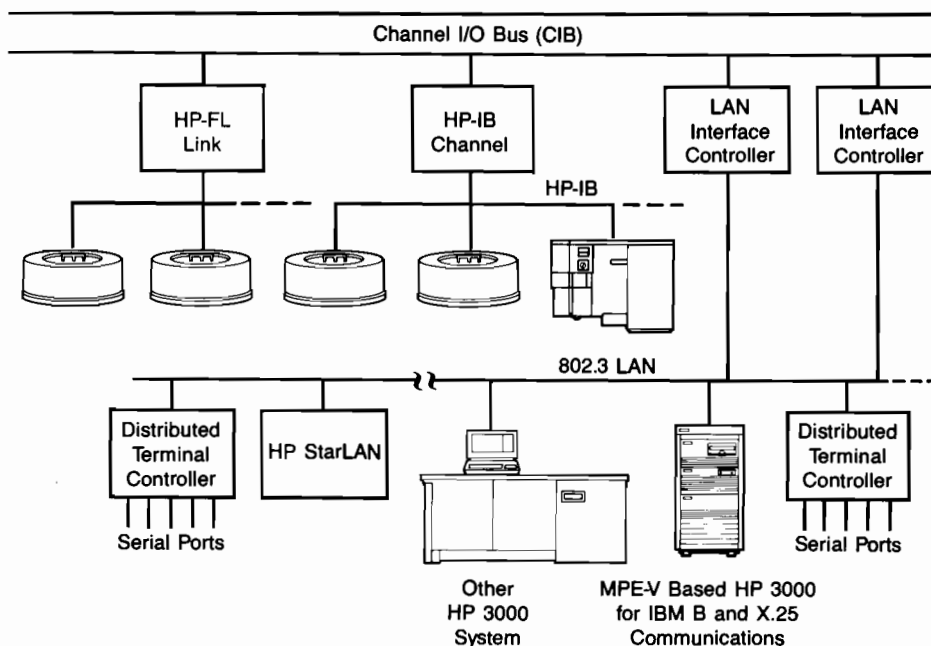
Discs, tapes, and printers are connected via an HP-IB channel that supports the 8-bit-wide, IEEE-4888 standard Hewlett-Packard Interface Bus (HP-IB). Each HP-IB card supports up to six peripheral devices. Discs are also connected via HP Fiber-optic Link Channels (HP-FL), each supporting up to 8 discs.

Workstation and Serial Printer Connection

Connections for workstations, serial printers, and other serial devices are provided via one or more distributed terminal controllers (DTCs), which are distributed over an IEEE 802.3 standard local area network (LAN). This flexible connection scheme allows DTCs to be situated in the department that they service, saving the cost and effort of running cables from each workstation back to the processor. Each DTC can support up to 48 direct connect ports, or 36 modem ports, or a combination of the two. Both RS-232C and RS-422C, interfaces are supported. PCs can also be connected to the 802.3 LAN via HP StarLAN which is a local area networking scheme using unshielded twisted pair (or phonewire).

System Packaging

The Series 925 is available in two compact, attractive cabinets; a .53-meter and a 1.6-meter cabinet. The .53-meter cabinet is capable of holding the SPU and the optional CIB expander. The 1.6-meter cabinet has been uniquely designed to hold an entire modular system in a very small amount of space, maximizing the efficiency of office or computer room space. It is capable of holding the SPU, one DTC, a magnetic tape drive, and two disc drives. If desired, the CIB expander can be installed in the cabinet in place of the second disc drive.



Environmental Specifications

Regulatory Compliance	Safety complaint with UL 478, CSA 220, and IEC 380/435.
Electromagnetic Interference	Complies with FCC Rules and Regulations, Part 15, Subpart J, as a Class A computing device. Manufacturer's declaration verifies VDE level B.

AC Power Input Voltage/Frequency:

Range	Tolerance	Maximum Current
100V	90-108 VAC, 48-66 Hz	9.5A
120V	108-132 VAC, 48-66 Hz	8.0A
240V	180-264 VAC, 48-66 Hz	5.3A

Physical Dimensions

Height: 234 mm (9.21 in.)
Width: 325 mm (12.8 in.)
Depth: 500 mm (19.7 in.)

Weight: 23 kg (51 lbs)

Operating Temperature: 0 to 55 degrees C (32 to 131 degrees F)

Nonoperating Temperature: -40 to 75 degrees C (-40 to 167 degrees F)

Relative Humidity: 5% to 95% at 0-40 degrees C, noncondensing

Altitude (operating): To 4.6 km (15,000 ft)

(non-operating): To 15.3 km (50,000 ft)

Battery Backup Time, Minimum: 15 minutes

Acoustics: 5.0 bels (A) sound power

System-to-System Datacommunications

NS3000/XL and LAN Link/XL provide virtual terminal, network file transfer, remote file and database access, network interprocess communication, and remote process management between HP 3000s on an IEEE 802.3 LAN. These same capabilities for remote communications are currently provided via an MPE V HP 3000 system. SNA IMF, SNA NRJE, and SNA Link provide HP 3000 to IBM system communications.

System Software

Listed below are software products currently available for the HP 3000 Series 925 as of MPE XL Release 1.1. This list will be expanded over time as development and testing of additional software products continues. Check with your local sales representative for more information.

Operating System

MPE XL

Datacommunications

NS3000/XL
LAN Link/XL
SNA IMF
SNA NRJE
SNA Link

Utilities

EDIT/V
FCOPY/XL
SORT-MERGE/XL

Office Automation

TDP/V
HP/Spell/V
HP Deskmanager
HP Curator
HP AdvancePrint

Languages

COBOL II/V	
COBOL II/XL	Hp Business BASIC/V
HP Pascal/V	HP BASIC/V
HP Pascal/XL	SPL/V
HP FORTRAN 66/V	RPG/V
HP FORTRAN 77/V	HP C/XL
HP FORTRAN 77/XL	

Information Management

ALLBASE	Query/V
TurboIMAGE/XL	Transact/V
Visor/XL	Transact/XL
TurboIMAGE DBchange/V	VPLUS/V
HP System Dictionary/XL	KSAM/V
Inform/V	Dictionary/V
Report/V	BRW/V
HP Toolset/XL	BRW/XL
Information Access/XL	

Application Software

A wide range of solutions available for the HP 3000 systems is in application areas that include management, manufacturing, financial and information management. Your sales representative can provide more information that is specific to your needs.

Supported Peripherals

Listed below are peripheral devices currently available for the HP 3000 Series 925 as of MPE Release 1.1. This list will be expanded over time as development and testing of additional peripherals continues. Check with your sales representative for more information.

Support Services

A wide range of hardware and software support services is available worldwide for all HP 3000 products. Contact your HP sales representative for details on available support services.

Ordering Information

The HP 3000 Series 925 SPU includes 32-Mbyte main memory, one CIB, one LAN interface, a console connection, and two HP-IB channels. Return credits are available when upgrading other HP 3000 systems to the Series 925. For more information contact your local HP sales office.

Terminals

2392	HP Vectra PC
2393	Portable Plus
2397	HP Vectra CS
2394	HP Vectra ES, ES12
700/92	Touchscreen II PC
700/94	

Disc Drives

7937H/XP	7935H/XP
7933H/XP	7936H/XP
	7937FL

Tape Drives

79798A/B	7979A
7974A	7980A

Printers

2680	2566A/B	2686	2563A/B	2567B
2688	2565A	2934	2564B	LaserJet 2000

