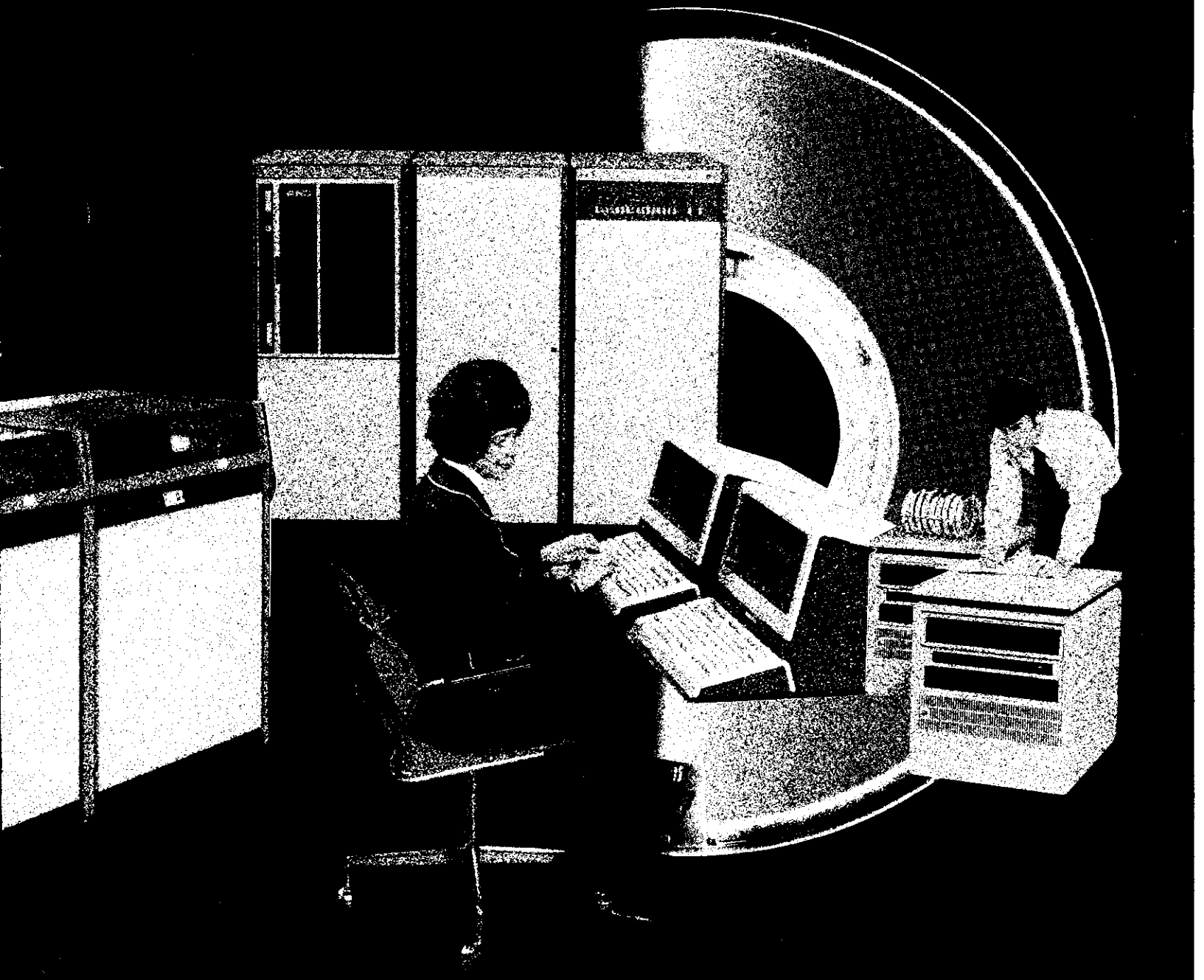
A computer advance in data processing price/performance



HP 3000 Series II Systems

The computers that give you more capabilities at less cost

Until now, many business firms, governmental agencies, scientific/engineering groups, and educational institutions found their data processing needs could be met only by large systems priced outside their budget. Not anymore.

The Hewlett-Packard 3000 Series II Systems now make large system capabilities an affordable reality for small and medium organizations.

Features like concurrent batch and interactive terminal processing, fault control memory, sophisticated data base management, virtual memory, full system security, job accounting, and processing in five languages mean you can have all the performance you need in a new, small computer.

There are three Series II configurations, each incorporating the same computing hardware. The differences between the systems are in the amount of memory, the peripheral devices and the software included—not in the system design or functional capabilities. Consequently, you can start with the smallest system, and as your organization and data processing needs grow, so can your computer system. And, just as important, you can expand the system with-

Better features for better performance

HP 3000 Series II Systems are a powerful combination of software and hardware designed to deliver optimum performance. Discover for yourself how HP 3000 system features are linked to performance capabilities to accomplish all your EDP tasks.

Accessibility

As a result of the fully integrated terminal access facility, HP 3000 Systems are accessible through interactive terminals as well as batch devices. And both types of processing can be performed concurrently. Terminals are especially useful for on-line program development, debugging, and for various on-line data processing applications such as:

- Order entry and processing
- Inventory control
- Financial analysis.

A comprehensive set of software tools makes multi-terminal application program development easy on the HP 3000. The software includes IMAGE, a complete data base management system with on-line inquiry command language; COBOL; RPG II; FORTRAN IV; BASIC; SPL, Hewlett-Packard's high level assembly language; on-line text editor; and numerous utilities. All the software is usable from terminals.

Operating System

Efficiency in the HP 3000 is achieved through a disc-based Multiprogramming Executive operating system. This operating system dynamically allocates resources such as main memory, processing time, and peripheral devices to each user as needed.

The state-of-the-art "working set" memory manager employs a segment trap frequency replacement algorithm to optimize main and virtual memory use.

A job control language which is syntactically identical for both batch and terminal access is supported by an advanced file system. Additionally, a comprehensive file security scheme monitors access to the data.

Concurrent use of peripheral devices (card readers, magnetic tape drives, line printers) which would otherwise be non-sharable is made possible through the automatic spooling feature of the operating system.

The computer resources required by each job are automatically determined by the job accounting feature. A job management scheme assigns execution priorities and sets the sequence in which jobs are processed.

Virtual memory provides a cost-effective method for executing programs whose total size is greater than main memory. Usually found only on large computer systems, virtual memory is a part of all HP 3000 configurations.

Hardware

The hardware architecture of the HP 3000 facilitates independent and simultaneous CPU and I/O operations. This feature combined with the high-speed semiconductor memory provides efficient multiprogramming capabilities and rapid peripheral access. The result is high overall data throughput. Two other significant hardware features are the fault control memory and microprogrammed operations.

Fault Control Memory: Main memory capacity is expandable to 512k bytes of high density dynamic MOS semiconductor storage. Along with its capacity, a significant new characteristic of the HP 3000's memory is its ability to detect and correct single-bit errors. Five checking bits determine when an error occurs in any 16-bit word, and pinpoint exactly which bit is failing (even if it's one of the checking bits). The error is corrected and the failure recorded in a logging ram. By accessing this information the HP Customer Engineer can easily spot a faulty chip and replace it.

Microprogrammed Operations: The central processing unit incorporates a microprocessor which provides additional economy and increased performance by microprogramming many complex system operations normally implemented through software routines. Microprogramming eliminates the repetitive coding and main memory overhead otherwise required. The CPU also contains decimal arithmetic and extended precision (64-bit) floating point arithmetic instructions.

Optional Equipment

A complete selection of hardware and software optic is available to help you customize your HP 3000 System to meet your require ments. Peripherals can be purchased with the system c added later as needed.

Hardware

Consoles
- CRT or 30 character/second printer with keyboard

Card Readers
- 600 cards/minute

Card Reader-Punch
- 100 cards/minute readin
- 75 cards/minute punchir

Printers
- 200 lines/minute
- 300 lines/minute
- 600 lines/minute
- 1250 lines/minute

Discs
- 15 megabyte units
- 47 megabyte units

Tape Units
- Magnetic tape, 1600 bpi, 45 ips
- Magnetic tape, 800 bpi, 45 ips
- Paper tape, read 500 cps, punch 75 cps

Terminals
- CRT units (2400 baud)
- Plotters
- Mark sense card reader
- Hard copy printer termina (30 & 120 cps)

Communications
- 2780/3780 Emulation

Programmable Controllers
- Allow for connection of devices to accumulate real time instrument da

Software

COBOL
RPG II
FORTRAN IV
BASIC interpreter and compiler
SPL (Systems Programming Language)
IMAGE data base management system
QUERY data base inquiry facility
Data entry library
Text editor
Sort/Merge
File copy utilities
Trace and debug aids
Scientific library

HP 3000 Series II System Configurations

To satisfy the whole range of data processing needs, HP 3000 Systems include three standard configurations, each designed to fulfill specific performance and applications requirements. Any of the standard models may be upgraded simply by adding line printers, card readers, terminals, and tape and disc units. All three models are completely compatible with each other.

Model 5: As the basic system in the Series II family, Model 5 is ideal for small commercial and interactive scientific applications. This configuration is an excellent choice for dedicated, stand-alone applications or to serve as a satellite processing system tied into a central EDP operation. Its concurrent batch and terminal access capabilities give it the flexibility and performance to adapt to a variety of tasks. Model 5 includes a 128k byte fault control memory, 15 megabyte disc, 1600 bpi magnetic tape unit, system console, and a 16-port asynchronous terminal controller.

Model 7: Configured to handle small-to-medium-scale data processing jobs, the Model 7 is suited to a broad spectrum of commercial and administrative applications. Integrated concurrent terminal and batch capabilities enhance the system's applicability for on-line processing. IMAGE data base management software plus COBOL and RPG are supplied with the system. Model 7 consists of a 192k byte fault control memory, two 47 megabyte disc units, 1600 bpi magnetic tape unit, system console, and a 16-port asynchronous terminal controller.

Model 9: The most powerful standard configuration in the Series II family, this system supports a large number of terminals performing commercial, industrial, educational, and scientific processing. It is configured to meet the demands of general purpose computing applications. Model 9 comes with five programming languages and the IMAGE data base management software. Components of the system are the 320k byte fault control memory, two 47 megabyte disc units, 1600 bpi magnetic tape unit, system console, and a 16-port asynchronous terminal controller.

Support Services

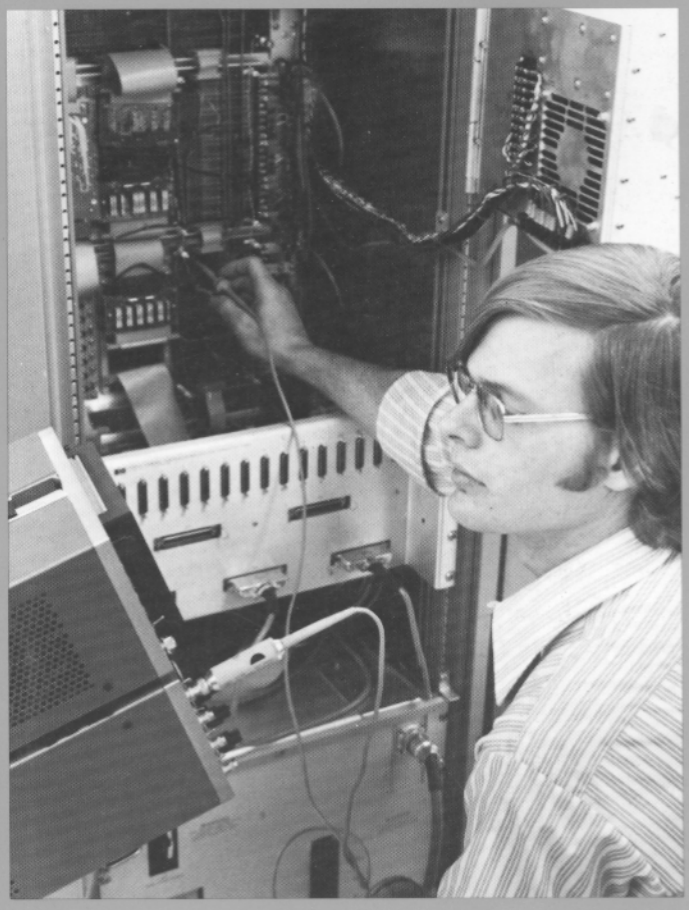
At Hewlett-Packard we want you to get the best possible performance from your HP 3000 System. That's why we provide a full program of support services ranging from site preparation consultation to long-term maintenance. The objective is to get your system installed and operational quickly, and keep it running smoothly.

System Installation: A Hewlett-Packard Customer Engineer visits your site prior to delivery of the system to advise you on how to prepare the area where the computer is to be located. After delivery, he will supervise the installation and make certain the system functions properly.

Start-up Training and Consulting: To obtain the best performance from the HP 3000, it is essential that your data processing people be adequately trained. For this purpose we provide a comprehensive start-up package which includes a formal introduction to the HP 3000, system management and operation, and three days of on-site consulting assistance. Customers may elect to take the formal courses at one of our training centers or have classes conducted on site by a Systems Engineer so that a maximum number of the staff may participate at minimum cost.

Training and Consulting Services: Along with the start-up package, other training and consulting services are available which many HP 3000 users find advantageous. These encompass on-site or training center courses on system operation, software usage, and conversion taught by professional instructors. Also offered are self-study courses which utilize audio cassettes, workbooks, and language reference manuals to assist the student in gaining experience on the system.

Service and Maintenance: With a view to keeping your system up and running, Hewlett-Packard has a worldwide field service organization. By purchasing a maintenance agreement, you are assured of timely response to emergency services needs in conjunction with regular preventive maintenance visits by a Customer Engineer.



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