HEWLETT PACKARD

HP Workstations: Performance Leadership, Investment Protection

For industry-leading price/performance, a long-term growth path to future computing solutions, and investment protection along the way, the choice is clear: Hewlett-Packard's family of UNIX-based workstations.

The Choice Is Yours

With HP, you can choose from among the largest family of open, easy-to-use workstations in the industry.

Hewlett-Packard offers the HP Apollo Series 400 workstations, based on the widely used industry architecture, Motorola 68000, to give you high performance at low cost.

You can also choose the HP Apollo Series 700 workstations. Based on HP's proven PA-RISC architecture, these workstations offer outstanding performance and the best price/performance in the industry.

Both of these HP Apollo workstation families offer the UNIX-based HP-UX operating system with a path to OSF/1, the industry standard operating system of the 1990s; flexible EISA options; and an outstanding library of applications that take advantage of industry-leading, integrated graphics options.

HP Computer Museum
www.hpmuseum.net

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Investment Protection with Open Systems

HP-UX provides a consistent operating system across our Series 400 and Series 700 workstation families. It offers a broad choice of applications that are used throughout the commercial and technical markets, making Hewlett-Packard the industry's #1 UNIX computer company.* First introduced in 1981, HP-UX supports all the major industry standards while offering extensive functionality, reliability, data integrity, security, and easy systems management. In addition, it supports the OSF/Motif-based graphical user interface, HP VUE, winner of the 1990 Industrial Designer's IDEA award. HP VUE makes using HP workstations very easy, and as a result, increases productivity.

The Series 400 workstations also support the Domain operating system. Domain/OS is based on UNIX BSD4.3 and adheres to all the major UNIX standards. It also provides several advanced features such as transparent file sharing, automatic concurrency control, powerful system administration features, global login capability, and a wide array of advanced distributed computing capabilities.

In the HP tradition of providing a growth path to future computing solutions while protecting your investment, both HP-UX and Domain/OS offer a path to OSF/1, the strategic operating system of the future.

In addition to a common operating system, both workstation families support several common graphics and EISA subsystems and a wide range of applications.

HP Graphics: Speed, Realism, Standards

Several graphics options are available on the Series 400 and Series 700 workstation families. From mono or grayscale to advanced 3D color graphics, HP's standards-based graphics options deliver outstanding speed and realism. The CRX option on the Series 700 has the best X Window performance in the industry. The PersonalVRX (PVRX) and TurboVRX (TVRX) options provide advanced 2D and 3D graphics, including sophisticated features such as NURBS with trimming for smoother curved surface rendering, quadrilateral mesh, sectioning for viewing cross sections, and interference checking to improve quality at the design phase. PVRX and TVRX let you produce photo-realistic 3D drawings with HP's leading-edge radiosity and ray tracing, which allow you to visualize your designs without costly prototyping.

*Source: *Unix World* Magazine, December 1990.

Compatible, Easy Plug-in Options

The Series 700 workstations and the Series 400 deskside models support the industry-standard EISA bus, which gives better performance for your peripherals. Of course EISA is an industry standard supported by many vendors, so you can take advantage of a wide variety of HP and third-party plug-in EISA boards.

The Right Performance for Your Applications

The HP Apollo Series 400 family is designed to provide economical high-performance, rich applications availability, and protection of your network investment. The HP Apollo Series 400 workstation family features a balanced system architecture and offers several graphics options for high speed and outstanding graphics performance. In addition, the Series 400 family includes desktop and deskside workstations.

The Model 425e workstation provides UNIX power at a PC price. Based on the MC68040 processor, the Model 425e is a very powerful, yet aggressively priced workstation for cost-sensitive users in areas such as CASE and desktop publishing. The Model 425e is an ideal client in the client/server environment, providing low cost-per-seat, robust windowing capabilities, integrated peripherals and storage, along with local processing power.

Series 400	400t	400s	425e	425t	425s	433s
MIPS	12	12	22.1	22.1	22.1	29
MFLOPS	0.5	0.5	2.6	2.6	2.9*	3.8*est.
SPECmarks	4.1	4.1	11	11	11.8*	15*est.
Clock Speed	50MHz	50MHz	25MHz	25MHz	25MHz	33MHz

*with optional 128Kbyte external cache

Models 400s, 425s, and 433s are expandable deskside workstations designed for graphics-intensive applications. Also available are Models 425t and 400t, which give you workstation power in a flexible desktop or deskside package. These are ideal price/performance solutions when you need to put a powerful workstation at every desk for applications such as CASE, EE design, and ME design.

Models 433s and 425s feature the powerful new MC68040 processor, while the Model 400s is based on the MC68030 processor. The Model 425t features the significant performance boost of the MC68040 processor, while the Model 400t gives you the cost advantage of the MC68030 processor.

HP also offers the Series 300 workstations which are object-code compatible with the Series 400 workstations. Series 300 workstations are rack-mountable systems for rugged environments.

When You Need the Best Price/Performance

The HP Apollo Series 700 workstations are part of the largest family of compatible RISC-based systems in the industry. Based on HP's proven PA-RISC architecture, the Series 700 workstations offer the best performance and the best price/performance in the industry.

Since 1986, HP has continued to reduce the cost and improve the performance of this architecture at a rate that leads the industry. PA-RISC enjoys broad application support in commercial and technical markets through the widespread use of our compatible family of Series 800 business servers. As a result, you can benefit from the outstanding performance of the Series 700 workstations today.

Three models comprise the Series 700 family of workstations and, like the Series 400 workstations, they're available with a variety of graphics options, from grayscale to advanced 3D color modeling and rendering. The entry-level Model 720 delivers the best desktop price/performance in the industry, along with outstanding X11 Window performance. The Model 730 provides even faster performance, making it the industry's highest-performance desktop workstation. The Model 750 combines this leading performance with outstanding expandability, making it an ideal compute or database server for your more sophisticated and demanding applications.

The Series 700 workstations are also the first platform to provide you with access to the emerging distributed operating environment of the 1990s, OSF/1. HP's implementation of OSF/1 will allow you to build a distributed cooperative computing environment that can take advantage of the benefits offered by other emerging OSF standards.

Series 700	720	730	750
MIPS	57	76	76
MFLOPS	17	22	22
SPECmarks	55.5	72.2	72.2
PA-RISC Processor	50MHz	66MHz	66MHz

HP Systems for Every Computing Need

HP provides a complete line of open and easy-to-use client/server computer systems to meet all your needs. Surrounding these two workstation families are HP's PCs and X stations for cost-effective seats on your network, and high-performance servers and multiuser systems such as the Series 800 systems and Series 10000 server. Of course the Series 400 and Series 700 workstations can also be used as servers.

PCs

HP Vectra 486 PCs run your choice of MS-DOS, OS/2, or UNIX, so you can use HP Vectra 486 PCs to augment your team's workstation power with performance levels of up to 20 MIPS. HP Vectra 486 PCs feature Intel 25 and 33MHz i486 microprocessors.

RISC-based X Stations

HP 700/RX stations are very cost-effective seats that you can place on your network for online access to X-based applications. Interactive access and simultaneous display of multiple applications across the network, along with printer and plotter support, make the HP 700/RX stations a valuable, low-cost solution for design, industrial automation, desktop publishing, software development, and office automation. These X stations offer industry-leading X performance, and are the only X Window terminals in the industry that can be upgraded to high-performance workstations.

Servers

With HP you can also put dedicated, high performance where it's needed most and deliver power to those who need it on call. The HP-UX and PA-RISC-based Series 800 Business Servers are leaders in their class, combining open systems leadership with robust business capabilities, including tuned commercial performance and the ability to handle up to 800 logged-on users. Its advanced VLSI technology dramatically increases reliability to the point where mean-time-between-failure averages four years! Other features such as power-fail recovery, disk mirroring, and automatic processor recovery ensure high availability and data integrity.

HP also offers the Series 10000, a technically focused, symmetric multiprocessing system that supports up to four RISC processors. The Series 10000 is ideal for compute-intensive tasks such as finite element analysis.

Easy-to-Use Systems for Greater Productivity

Hewlett-Packard supports a wide range of industry standards to give you an easy-to-use, flexible computing environment. Among them is the OSF/Motif user environment that is consistent across HP workstations and with the Presentation Manager user interface for PCs. In addition, HP VUE, Hewlett-Packard's Visual User Environment, provides a complete user environment based on the X Window System. Comprising a suite of Motif-compliant applications, HP VUE lets you use as much or as little of UNIX as you wish. Novice users can take advantage of an easy-to-learn and easy-to-use interface and be fully productive with their workstations.

Cooperative Computing Through Open Systems

In the early 1980s, Apollo Computer Inc., now a division of HP, was the first to offer a cooperative computing environment with an object-oriented, network-wide, distributed file system that provided complete concurrency control and global login capability. Apollo also introduced the Network Computing System, a series of technologies that supported truly distributed applications and allowed developers to harness spare CPU cycles on a network. NCS is now widely licensed by competing vendors, and will form the core of OSF's Distributed Computing Environment (DCE).

DCE is a set of integrated, yet modular tools that provide a comprehensive distributed computing environment. DCE lets application programs share resources on the network, while managing the details of network programming. Users and applications can then take advantage of the network in a simple, convenient, and consistent way.

Today, HP leads the industry in providing distributed computing tools, services, and applications along with several ease-of-use products such as OmniBack, NetLS, Task Broker, and HP VUE. HP's unique standards-based networking capability reflects our cooperative computing through open systems philosophy. With HP you can benefit from the most cost-effective client/server computing systems available while building a corporate-wide, heterogeneous, cooperative computing environment.

HP: The Workstation Leader

It's not by accident that HP has the largest installed base of UNIX systems in the world. Recognizing that standards and innovation are not mutually exclusive, HP has led the industry in the conception, adoption, implementation, and delivery of standards within a UNIX environment. Couple this with Hewlett-Packard's consistent reputation for outstanding customer support and service, and you get a total workstation solution from HP that you can count on for the leadership performance you need today and the investment protection you want tomorrow.

For more information on our products and services, call your nearest HP sales office (see list on back cover). In the U.S. you can call 1-800-637-7740.

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For more information, call 1-800-637-7740. Or, call one of the regional Hewlett-Packard sales offices listed here.

United States:
Hewlett-Packard Company
4 Choke Cherry Road
Rockville, MD 20850
(301) 670 4300

Hewlett-Packard Company
5201 Tollview Drive
Rolling Meadows, IL 60008
(708) 255 9800

Hewlett-Packard Company
5161 Lankershim Blvd.
No. Hollywood, CA 91601
(818) 505 5600

Hewlett-Packard Company
2015 South Park Place
Atlanta, GA 30339
(404) 955 1500

Hewlett-Packard Company
300 Apollo Drive
Chelmsford, MA 01824
Tel: (508) 256 6600
Fax: (508) 256 1599

Canada:
Hewlett-Packard Ltd.
6877 Goreway Drive
Mississauga, Ontario L4V 1M8
(416) 678 9430

Japan:
Yokogawa-Hewlett-Packard Ltd.
15-7, Nishi Shinjuku 4 Chome
Shinjuki-ku
Tokyo 160, Japan
(03) 5371 1351

Latin America:
Hewlett-Packard
Latin American Region Headquarters
Monte Pelvoux No. 111
Lomas de Chapultepec
11000 Mexico, D.F. Mexico
(525) 202 0155

Australia/New Zealand:
Hewlett-Packard Australia Ltd.
31-41 Joseph Street
Blackburn, Victoria 3130
Melbourne, Australia
(03) 895 2895

Far East:
Hewlett-Packard Asia Ltd.
22/F Bond Centre
West Tower
89 Queensway
Central, Hong Kong
(852) 848 7777

In Europe, please call your local HP sales office or representative:

Central Europe, USSR, and Yugoslavia:
(0222) 2500 0

Belgium and Luxembourg:
Customer Information Center
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Denmark:
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(022) 780 41 11 (Suisse Romande)
(046) 05 15 05 (Customer Information Center)

South Africa:
HiPerformance Systems
(011) 802 5111

Turkey:
175 29 70

U.K.:
(0344) 369 369

Middle East and Africa:
Geneva-Switzerland
41/22 780 7111

European Headquarters
Hewlett-Packard S.A.
150, Route du Nant d'Avril
1217 Meyrin 2
Geneva-Switzerland
41/22 780 8111

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