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# HP 9000 New Product Summary Guide

*January 1994*

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## Overview

On January 18, 1994 HP's CSO organization is launching several new products which will propel HP further into the commercial UNIX market. These products will build upon HP's strong relationship with corporate IT organizations that have long been using HP 9000 Series 800 products. Indeed, HP's #1 position in this market attests to our ability to first understand customer needs and then deploy solutions that meet those needs.

This product launch will do more than extend our penetration of the markets we are already serving, the new HP 9000 Series 700 and 800 products offer solutions to problems that are not adequately being met by alternatives today, from 3270 terminals to simple DOS-based Intel PC clients and servers, to proprietary AS400 servers. We have ambitious goals, including a redefinition of the terms that people use to describe their computer technology and, even more important, we intend to put expectations to rest about what their computer technology can do for them.

This HP 9000 Product Summary Guide is divided into three main sections:

- The first section provides a quick summary of the products and programs that will be announced on January 18, 1994
- The second section goes into detail about HP 9000 server products and marketing strategy and provides an outline of additional information that is available to you upon request
- And the third section gives the equivalent information focusing on workstation and X terminal products and programs

### *The Products*

Here is a list of products that will be announced on January 18, 1994

#### **Server Products**

Series 800 E-Class Servers

New Prices for Series 800

G/H/I Class Servers

New Series 800 Peripherals

New Series 800 Software

Competitive, Simplified Support  
Pricing

#### **Workstation and X Terminal Products**

Series 700 Model 712/60 and 712/80i

Ready-to-Wear

ENTRIA X Stations and ENWARE

MPower 2.0

HP Wabi 1.1

New Flat Panel Display

All of these products, with features and benefits, competitive positioning, and value propositions are described in this product guide.

Associated sales strategies and marketing programs are described in the different Sales Strategy Guides.

### *The Programs*

We realize that it takes more than just products to change a market's expectations about what to expect from their computer vendor. HP is complementing its exciting new products with the programs required to achieve our ambitious goals.

Two programs, the Enterprise Desktop Program and the Application Server Program, provide you with a complete description of the markets, competitors, and the selling strategies that you will need to be successful. Each of these programs has an associated literature kit and includes information on products, programs, and strategies, as well as customer-focused product collateral materials that will allow you to:

- Understand the Application Server or Enterprise Desktop Sales Strategies to help you sell more clients and servers
- Give you all of the details you need to effectively sell the hardware and software products which make up the Application Server and Enterprise Desktop offering
- Arm you with the most powerful story for IT managers available from anyone!

**The kits are described in the document (included in this mailing) entitled, “Sales Tool Summary Guide for Enterprise Computing - January 1994 Launch” and you must request either the easy-to-order kits or the individual product documents that you feel will best meet your needs. These documents will not be sent to you automatically.**

#### *Application Server Program*

With this introduction, HP is setting new directions for the business servers with a value proposition specifically targeted at two major segments of the overall server marketplace - the Replicated Application Servers, and the Small and Medium Business Servers.

The Replicated Application Servers Program has been established to address the service industry's (for example, Branch Banks and Retail Stores) need to provide a superior level of customer service as a market differentiator. Our goal is to focus on providing comprehensive solutions that embody a low cost, no-compromise platform, networking, network and systems management, client/server computing, professional and systems integration services.

The small/medium business market segment represents the other huge, and largely untapped, market opportunity for penetration by HP 9000 resellers, solutions implementors, and integrators. The goal here is to bring together an incredibly robust set of features designed to offer mission-critical reliability, commercial solution availability, office integration capability, and investment protection at lower open system prices; a “no compromise” value proposition previously available only with more expensive, proprietary systems, at lower, open systems prices.

#### *Enterprise Desktop Program*

The Enterprise Desktop concept will be our unique message to the commercial desktop market space. We are creating/naming this new space between the traditional DOS/Windows-based PCs serving generalized **individual needs** (called Personal Desktops) and workstations that have been serving **engineering and scientific groups needs**. HP believes that users who are struggling to choose between high-end PCs or low-end workstations would be best served by a new breed of computing technology called **the Enterprise Desktop**. With the announcement of HP's Enterprise Desktop Solution, HP will

**change the rules** of the game by resetting customers' expectations about what they should be able to do with their desktops and then dominate this new game by **delivering uncompromised solutions** to uniquely fulfill these new expectations.

If your customers:

- Need to perform mission critical tasks like customer service, brand management, or financial trading . . .

**Enterprise Desktop is the solution.**

- Need to communicate and collaborate in many ways (sharing multiple applications simultaneously; combining video, audio, images and text)...

**Enterprise Desktop is the solution.**

- If information is your customers business...

**Enterprise Desktop is the solution.**

- Needs instant access to up-to-date information from multiple data sources (databases, data feeds, etc.) simultaneously...

**Enterprise Desktop is the solution.**

- Need a highly networked environment to meet the needs of a worldwide workforce...

**Enterprise Desktop is the solution.**

- Need to administer hundreds or thousands of clients remotely...

**Enterprise Desktop is the solution.**

*Although the workstation introduction will focus almost entirely on the initiatives for the commercial marketplace during the public portion of this launch, we don't want to leave you with the impression that we are losing interest in the technical markets. Nor do we want you to ignore the many opportunities in the technical marketplace to sell the HP 9000 Model 712/60 and 712/80i products. So we will be providing you with information detailing how the products announced on January 18, 1994 will positively impact your sales efforts in the technical markets in addition to the commercial markets. Separate information on this will be available prior to the January 18, 1994 launch.*

# Series 800 Servers

## New Systems and Pricing

### E-Class Servers

#### *One-Minute Sale*

The E-Class Servers are the new low-cost entry point to the Series 800 product line and are a replacement to the current F-class servers. These products are designed to be a more attractive platform for replicated application site environments such as retail stores, branch banking and hospitality and for small to medium size business environments. The E-Class servers are a breakthrough low-end offering relative to HP's low-end competitors such as IBM, Sun, NCR and Intel based systems. Specifically the E-Class servers offer broader performance and configuration flexibility than comparably priced offerings. The E-Class servers have many capabilities (such as performance in excess of 150 tps, support of 512 MB memory and 144 GB of disk storage) which were previously only available on higher priced mid-range servers.

#### *Product Features*

- The E-Class servers are based on a new implementation of PA-RISC, the PA-7100LC. There are three performance points available (Models E25, E35, and E45) which are the 48, 64 and 80MHz versions of this processor.
- The E-Class is based on a new package which allows for a choice of 2 or 4 HP-PB slot configurations.
- The E-Class utilizes the same peripherals and HP-PB interface cards as the F, G, H, and I class servers. In addition, the E-Class has support for a 3.5" floppy drive which is a strong customer requirement in low-end system environments.
- The product structure for the E-Class has been simplified from the F-class to allow for easier ordering and improved delivery times.

#### *Product Feature/ Benefit Summary*

<b>Feature</b>	<b>Benefit</b>
Choice of 2 or 4 HP-PB I/O slots	• Greater configuration flexibility
Integrated LAN, SCSI, MUX configuration	• Lower cost and expanded personality card functionality
PA-7100LC processor	• Broad performance range at lower cost
Three performance points	• Wider product choice for different customer environments.
Security Ring	• Allows physical security in a replicated site environment where computer rooms are not available.



### *Product Positioning*

The E-Class server has been designed as a low-cost entry point for the Series 800 class of servers. Cost reduction has been achieved through the use of new PA-RISC processor design (the PA-7100LC), integration of LAN, SCSI and Multiplexer (MUX) functionality, and the use of a new generation of peripheral technology (as described in the New Peripherals section).

The E-Class server is the vehicle for entry into new market segments for the Series 800 product line. The primary focus for the new products is replicated application installations and small-to-medium businesses. Examples of replicated application installations are branch banking (for example, Wells Fargo), retail (Walmart and Sainsbury Stores), and hospitality (Sheraton). Small-to-medium businesses are those with sales up to \$50 million per year. See the Sales Strategy Guides covering replicated site and Small/Medium businesses for further information or these market segments, and how to penetrate them.

The E-Class servers will supercede the F-Class servers, which will be removed from the CPL in May, 1994.

### *Product Specifications*

The following is summary information about the key product specifications of the E-Class servers.

- 48, 64 and 80 Mhz PA7100LC Processors
- 2 or 4 HP-PB I/O Slots
- 512 MB maximum memory
- 2 internal disk drives
  - Max internal storage 4GB
  - Max external storage 70GB (SCSI-2)
  - Max storage 144GB (F/W SCSI)
- 2 removable media devices
- Built-in LAN, SCSI and 8 ports
- Supported on HP-UX 9.04

The E-Class package is visually similar to the current F-class package with some improvements – it has the same I/O configuration flexibility as the G-Class servers (for example, up to 4 HP-PB I/O slots). As with the current F, G, H, and I-Class servers, the new E-Class can be racked in standard 1.1m and 1.6m peripheral cabinets.

*When to Choose a G-Class Server  
over an E-Class Server*

The E-Class servers will have some performance overlap with the G-class servers. Specifically, in terms of OLTP TPS, the E-35 has comparable performance to the G30 and the E-45 has comparable performance to the G40. For the equivalent entry configurations, the model G30 and G40 are priced at a small premium (approx. 20%-25%) over the model E35 and E45, respectively. Sell the G30 and G40 when customers anticipate a need for:

1. Future I/O expandability beyond 4 slots.
2. Future performance growth of a G50 or higher.
3. More than 256MB of memory (until March, 1994).
4. More than 4GB internal disk capacity.
5. A simpler upgrade path.

Furthermore, due to different implementations of memory technology, an identical E and G-Class configuration that includes 128MB of memory or higher will be more cost-effective in a G-class server than in an E-Class with only 2 I/O slots.

*Competitive Product Positioning*

Relative to the competition, the E-Class servers should be sold as a breakthrough in low-end system capabilities relative to IBM, SUN, NCR and other Intel-based servers. Specifically, the E-Class servers provide superior performance, performance growth path, and expandability relative to these competitors while being competitively priced. In addition, the E-Class servers also offer a robust distributed systems management software environment and a strong database and application software portfolio.

The E-Class servers cover a much broader range of performance and configuration flexibility than the low-end IBM RS/6000 server family. The E-Class servers are priced (on the basis of U.S. reference prices) at parity to the IBM RS/6000 2XX family, while having a minimum of 15% OLTP performance advantage. In addition, the E-Class servers offer a performance level not available from IBM - the Model E45 provides 50% higher OLTP performance than the new IBM RS/6000 model 250.

The E-Class servers are field upgradeable to 4-slot versions which match both the performance and configuration flexibility of the IBM RS/6000 3XX product line at roughly 35% lower cost. The E-Class servers have a significant advantage to IBM, where a box swap upgrade is required in moving from the 2XX to 3XX product families. In addition, the E-Class servers offer support of larger main memory, internal disk and maximum disk configurations than the IBM 2XX product family.

The entry-level Model E25 has pricing competitive to the SPARCClassic, while offering substantial advantages in terms of performance growth, expandability, and configurability. Specifically, the Model E25 has 30% higher OLTP performance capability than the SPARCClassic. The Model E25 is field upgradeable to the Model E45, which has a 2.5X performance advantage over the SPARCClassic. Consequently, you should aggressively position the SPARCClassic as being a point product with no upgrade path.

The E-Class is also field upgradeable to a 4 HP-PB slot configuration - the SPARCClassic must be box-swap upgraded to the SS10 for equivalent configurability. The Model E35 has a 10% performance advantage to the SS10/40 at 25% lower cost, while the Model E45 has similar performance as the SS10/402 at 30% lower cost. The E-Class servers also offer substantially greater memory, internal disk, and external disk capacity than the SPARCClassic. The competitive advantages of the E-Class servers relative to the IBM and Sun SPARCClassic products are summarized below.

Competitive Advantage of E-Class Servers to IBM and Sun\*

	HP 9000			IBM RS/6000			Sun
	E25	E35	E45	220	230	250	SPARCclassic
Performance:							
- SPECint92	44	65	80	17	28	62	26
- SPECfp92	66	98	120	29	40	72	21
- OLTP TPS	80	125	155	34	39	105	60
Max Memory	512 MB**	512 MB**	512 MB**	64 MB	64 MB	256 MB	96 MB
Max Internal Disk	4 GB	4 GB	4 GB	2 GB	2 GB	2 GB	1 GB
Max Total Disk	144 GB	144 GB	144 GB	20 GB	30 GB	30 GB	21 GB
Base I/O Slots	2 HP-PB	2 HP-PB	2 HP-PB	2 MCA	2 MCA	2 MCA	2 S-BUS
I/O Upgradability	In-cabinet field upgrade to 4 HP-PB slots	In-cabinet field upgrade to 4 HP-PB slots	In-cabinet field upgrade to 4 HP-PB slots	Box Swap to 4 slot 3xx	Box Swap to 4 slot 3xx	Box Swap to 4 slot 3xx	Box Swap to SS10

\* HP performance results subject to small change

\*\* NOTE: 512 MB memory orderable in March, 1994

The low-end NCR product line has similar capabilities to other low-end Intel-based servers. NCR and other Intel-based servers require multiple competitive products to cover the broad performance and expandability range of the E-Class servers. Specifically, the 2-slot version of the Model E25 provides a competitive price point to the NCR 3350 (486 version). The Model E35 has performance comparable to the Pentium version of the 3410, while the Model E45 has over 20% higher performance.

In general, Intel-based server platforms do not allow for easy, convenient I/O expandability. Specifically, a box swap upgrade is required in moving from the NCR 3350 (with 4 MCA slots) to the NCR 3410 (with 7 MCA slots). Although the E-Class servers have fewer slots, they are able to accommodate larger configurations because of the higher degree of functionality which is incorporated into the base system. For example, the E-Class servers include a LAN and 8 ports (in addition to parallel and SCSI interfaces) without utilizing HP-PB I/O slots. The NCR products include a parallel and SCSI interface, but they only include 2 ports and do not have a LAN interface.

In addition, the E-Class servers allow for larger memory and disk configurations than the comparable NCR products. The table below summarizes the advantages of the E-Class relative to NCR. In general, these advantages will also apply to Intel-based servers from other vendors such as Compaq.

Competitive Advantage of E-Class Servers to NCR\*

	HP 9000			NCR 3000		
	E25	E35	E45	3350 (486)	3410 (486)	3410 (Pentium)
Performance:						
- SPECint92	44	65	80	32	32	65
- SPECfp92	66	98	120	16	16	56
- OLTP TPS	80	125	155	60	60	127
Max Memory	512 MB**	512 MB**	512 MB**	192 MB	192 MB	192 MB
Max Internal Disk	4 GB	4 GB	4 GB	4.2 GB	6.3 GB	6.3 GB
Max Total Disk	144 GB	144 GB	144 GB	37 GB	59 GB	59 GB
Total I/O Slots	4 HP-PB	4 HP-PB	4 HP-PB	4 MCA	7 MCA	7 MCA

\* HP performance results subject to small change; NCR results are estimates.

\*\* NOTE: 512 MB memory orderable in March, 1994

*Competitive Bidding  
Recommendation*

**Recommended**

HP bid	IBM	Sun	NCR
E25 (2-slot)	220, 230	SPARCClassic	3350 (486)
E35 (2-slot)	250	N.C.	N.C.
E45 (2-slot)	N.C.	N.C.	N.C.
E25 (4-slot)	34H	N.C.	3410 (486)
E35 (4-slot)	360	SS10/40	3410 (Pentium)
E45 (4-slot)	370	SS10/402	N.C.

(N.C. = No current competitive offering with equivalent performance and configuration - sell the E-Class as a more superior solution than the competition can offer.)

*Complementary Positioning*

The E-Class servers are designed to be complementary to the Model 712 workstations in client-server environments. You should sell the E-Class and Model 712 products as components of a complementary solution. Highlight the fact that, with this introduction, HP has the strongest portfolio of both workstation and server products in the industry. As a result, HP further strengthens its portfolio of binary-compatible desktop to datacenter products.

While both these products leverage many components (such as processors, memory and peripherals), the E-Class and Model 712 are optimized for use in different environments. The Model 712 workstation is recommended for desktop applications, particularly when customers require graphics and/or multimedia capabilities. The E-Class servers are recommended as compute or database/application servers to Model 712 workstations or as low-end multi-user systems.

Some of the technical differences between the E-Class servers and the Model 712 workstations are listed below.

	E-Class Server	Model 712 Workstation
Maximum memory	512 MB	128 MB
Max. Int. Disk	4 GB	1 GB
Max. Int. Removable Media Drives	2 (QIC, DAT, CD-ROM, floppy)	1 (floppy only)
Max. Ext. Disk Storage	144 GB	14 GB
I/O Slots	4 HP-PB	1 GSC & 1 Teleshare
SCSI Interfaces	SCSI-2 (5 MB/s) & F/W SCSI (20 MB/s)	SCSI-2 (5 MB/s)

### *Upgrades*

Processor upgrade products are available between the models E25, E35, and E45. These field upgrades will consist of replacement of the processor boards. Credit returns will be available for upgrades from the E-Class servers to the G/H/I-Class servers. For the F-Class, the recommended upgrade path is to the G-Class servers.

### *Product Availability*

- January 1994
  - 48 and 64 MHz Processors
  - Up to 256 MB memory (64 MB modules)
  - All Peripherals except 2 GB Half-Height Disk
- March 1994
  - 80 MHz Processor
  - 2 GB Half-Height Disk
- May 1994
  - Up to 512 MB memory (128 MB modules)

### **Questions and Answers**

**Q. Are the E-Class servers field upgradeable to the G, H, or I-Class?**

**A.** *No, because the E-Class servers utilize a different processor and personality card technology. However, there are return credits for customers who choose to upgrade to the G/H/I-Class servers.*

**Q. With this introduction, what is the status of the F and G-Class systems?**

**A.** *The G-Class systems will continue to be actively marketed after this introduction. The G-Class servers will be attractive to customers who need slot expandability beyond four slots or who need performance expandability beyond a G40 level of performance. However, the F-Class systems will no longer be actively marketed since they have been superseded by this introduction. The F-Class will be removed from the CPL in May, 1994*

**Q. What release of HP-UX is required for the E-Class servers?**

**A.** *All E-Class servers require HP-UX release 9.04. This release of HP-UX supports new software, hardware, and peripherals.*

**Q. Do the E-Class servers utilize the same memory as the F, G, H, and I-Class?**

**A.** *The E-Class uses a different type of memory than the F, G, H, and I-Class servers which is NOT interchangeable.*

**Q. Are the F-Class servers field upgradeable to the E-Class?**

**A.** *The best upgrade path for the F-Class is to the G/H/I-Classes, because the E-Class uses a different type of processor board and memory. The G/H/I-Class servers provide better investment protection when upgrading from F-Class servers because of the similar component technology.*

**Q. What is the growth path beyond the Model E45?**

**A.** *HP plans to market a performance upgrade to the Model E45 later in 1994.*

**New Pricing for G/H/I Class Business Servers**

All existing G, H, and I-Class servers have been repriced to allow you to sell more effectively in today's intensely competitive marketplace. HP continues its commitment to provide an extremely price-competitive product line with industry-leading performance and the industry's best growth path.

*Repricing Summary\**

4-Slot System	Percent(%) Decrease	8-Slot System	Percent(%) Decrease	12 Slot System	Percent(%) Decrease
—	—	H20	11%	—	—
G30	12%	H30	13%	I30	3%
G40	5%	H40	15%	I40	9%
G50	13%	H50	17%	I50	3%
G60	9%	H60	8%	I60	4%
G70	2%	H70	4%	I70	7%

\* Price decrease percentages are based on U.S. List prices and may not be consistent on a worldwide basis.

With these new prices, the Series 800's competitive position is significantly strengthened especially compared to IBM. At every competitive point, the Series 800 offers a minimum of 7% price/performance advantage and up to a 38% price/performance advantage over comparable IBM models. For example:

*Competitive Positioning vs. IBM*

S800 Model	IBM Model	P/P% Advantage*
G30	34H	38%
G40	360	10%
G50	370	11%
H40	570	9%
H50	58H	7%
H60	590	19%
I40	97B	14%
I50	98B	25%
I60	990	18%

\* Advantage based on commercial OLTP performance and U.S. Reference prices.

When competing against Sun, all Series 800 servers are priced very competitively, offering either price/performance parity or a slight price/performance advantage. For example, the G30 server offers a 7% price/performance advantage over the SS10 model 40. In the case of the G40 and G50, a 2% and 3% price/performance advantage exists over the SS10 model 402 and model 512 respectively. In higher configurations, an I70 Business Server offers a 2% price/performance advantage over a comparable SPARCServer 1000 with eight processors.

### **New Peripherals**

#### *One-Minute Sale*

HP's system peripheral product offering is stronger than ever before. For instance, the fast/wide/differential SCSI-2 boasts the highest disk I/O performance based on an industry standard interface. New removable media like the 1 GB QIC, the microflop drive and the high performance CD-ROM provide new functionalities and higher performance to help HP to be even more competitive in the application servers market. Moreover, the low prices of the new disks and removable media make HP's overall system cost extremely attractive in all configurations. Customers now have the best variety of peripherals to choose from to complement the best UNIX servers in the industry.

#### **3.5" Half-Height 2 GB Disk**

Replacing the current 2 GB 5.25" full-height disk (P/N A2446A), the new 2 GB 3.5" half-height SCSI disks (P/N A3087A) offer higher performance, smaller form factor, and better reliability. The smaller form factor increases the internal disk capacity of the G/H/I-Classes. The maximum internal capacity is now 10 GB versus 6 GB previously. Both single-ended and fast/wide/differential SCSI versions of the new 2 GB disk are available at first release with boot support. The new disk drive is also cheaper, with a 15% (approximately) price advantage over the current 5.25" full-height drive. Volume shipment will start in March. For customers who cannot wait, recommend the current full height 2 GB drive.

<b>Feature</b>	<b>Benefit</b>
6400 RPM	• Average seek time 8.9 ms
Half-height	• More internal storage capacity
500,000 hrs. MTBF	• Leading reliability in the industry

#### **High-performance CD-ROM**

CD-ROM is becoming a popular choice for on-line documentation and software distribution. The new CD-ROM (P/N A3086A.) runs at 330KB/s, is twice as fast as the previous generation (P/N C2476SZ). HP-UX 9.04 is required to support this internal CD-ROM for the E/F/G/H/I-Class servers. Also, the new CD-ROM is priced 25% lower than the previous generation for even better price/performance. The current older CD-ROM P/N C2476SZ will be discontinued on the Server 800 platform in August, 1994. The current CD-ROM should only be offered to customers using a pre-HP-UX 9.04 environment and are not planning to migrate to release 9.04 in the near future.

### 1 GB QIC Internal Tape Drive

The new 1 GB QIC tape drive (P/N A2944A) provides twice the capacity of the current 525 MB QIC and yet is priced equivalently. This 5.25" drive presents a tremendous value for customers who desire a low-end storage solution. The new drive is fully compatible with the current 525MB QIC. HP-UX 9.04 is required to support this new QIC drive on the E/F/G/H/I-classes. HP will discontinue the 525 MB QIC in August, 1994.

### Comparing Backup Technologies

<b>Tape Technology</b>	<b>Transfer speed</b>	<b>Key reasons to purchase:</b>
1 GB QIC	240 KB/s	Absolute lowest price (<1 GB of data)
2 GB DDS	183 KB/s	State-of-the-art reliable solution for low-end systems (<2 GB of data)
2-8GB DDS	183 KB/s	Best price/performance (<20 GB of data)
8 mm tape	500 KB/s	Great price/performance and data interchangeability with SUN/IBM (<40 GB of data)
3480 tape	2.5 MB/s	Highest transfer speed and data interchangeability with IBM mainframes (<10 GB of data)

### 535 MB Internal Disk Drive

The new 535 MB SE SCSI disk (P/N A2958A) has comparable capacity to the current 566 MB disk (P/N A2444A) but at a much lower price. This presents a very attractive choice of mass storage for the price-conscious low-end server segment. The new disk drive is supported on E/F/G/H/I-class servers. HP will discontinue the 566 MB disk in August, 1994.

### 1.44 MB SCSI Internal Floppy Drive

First time available on Series 800 and supported on E-Class business servers only. The new floppy drive (P/N A2942A) provides a popular way to distribute third parties' software and, also, to interchange data with commercial clients like persons computers and workstations. This floppy drive is half-height and uses the single-ended SCSI-2 interface.

### New Software

#### HP-UX Release 9.04

HP-UX 9.04 is an update to HP-UX 9.0 for the HP 9000 Series 800 Business Servers which supports new Series 800 systems, new peripherals, and integrates HP-UX 9.0 patches. HP-UX 9.04 has been designed for backwards compatibility and is not expected to require application recertification. This new version of HP-UX will therefore replace the existing version of HP-UX 9.0.

HP-UX 9.04 has been shipping in the U.S. and Asia Pacific since November 23rd, 1993, and in Europe from November 25th. All Series 800 systems ship with the new version as the default HP-UX 9.x release. Customers on support services can ask for the new HP-UX 9.04 release as part of their support contract.

#### New Features

- HP-UX 9.04 now supports the new E-Class Business Servers as well as other existing Series 800 Business Servers, including the Model T500.



- Provides Uninterruptable Power Supply (UPS) support offering power monitoring software that supports the new HP Powertrust UPS for increased system availability. UPS support allows for graceful shutdown and automatic power-on in the event of a power failure.
- Brings support for the Fast/Wide/Differential SCSI-2 interface to the Series 800 family. This new SCSI-2 interface operating at up to 20MB/s will provide higher performance than the standard single ended SCSI-2 interface and can support up to 15 peripherals per card with a maximum total cable length of 25 meters.
- Supports the new, high performance, 2GB 3.5" disk drive through the Fast/Wide/Differential SCSI-2 interface.
- Supports new 4GB/8GB capacity disk arrays in both Independent Mode, and RAID 3 and 5 for data protection with the Fast/Wide/Differential SCSI-2 interface.
- Adds support for the HP 8mm tape drive which offers, at a 1.8GB/hr transfer rate, faster backup capability than 4mm DDS DAT devices. With data compression, storage capacity with the 8mm tape drive can reach 10GB of data.
- Adds support for IBM 3480-format tapes through the StorageTek 4220 and 4280 tape drives. Series 800 systems can now share and exchange data with mainframes via IBM 3480-format tape support.
- Integrates many patch fixes for HP-UX 9.0 improving the quality and robustness of the HP-UX operating environment even further. A list of integrated patches can be obtained through support contract services.

Since HP-UX 9.04 is replacing HP-UX 9.0 as the default HP-UX 9.x release, the existing Product Numbers B3108L/A/D/C/M for HP-UX licenses, media and documentation now ship HP-UX 9.04.

HP-UX 9.04 will not support the new Fast/Wide/Differential SCSI-2 interface, nor the new peripheral and UPS capabilities on 8X2S, 808S/815S, or any CIO based Series 800.

Even though recertification is not expected for applications moving between HP-UX 9.0 and 9.04, it will be possible for VABs and customers to purchase HP-UX 9.0 tapes until March 1st, 1994.

For information on peripheral support limitations and HP-UX 9.0 ordering restrictions and information, please refer to the Series 800 Configuration Guide and the article "HPUX904" on the GSY Hotline and Powertools.

*HP-UX 9.04 Repricing*

Price adjustments have been made to the HP-UX licensing structure to meet competitive pricing objectives for Series 800 systems solutions and to synchronise pricing with the Series 700 product line.

User License	% Price Change
2	-35%
8	-13%
16	-25%
32	-20%
64	-5%
Unlimited	-4%

- Price reductions substantially improve the Series 800's competitiveness in the 16 and 32 User License ranges against competitors including IBM, DEC, NCR and SCO.
- Adjustments to the 2 and 8 User Licenses are designed to bring Series 700 and 800 pricing into alignment from February 1994.
- Upgrade credits from 128 and 256 to the Unlimited User License are still available on the Corporate Price List

### *Competitive Positioning*

HP-UX 9.04 represents another step forward in the provision of an open operating environment for enterprise-wide business critical application deployment. No other vendor can offer the software scalability to meet the needs of both small business and department servers, on the one hand, and the requirements of replicated site and data center computing on the other.

HP-UX 9.04 excels in quality; a stable, robust and scaleable implementation of Symmetric MultiProcessing; high performance peripheral channel support and standards compliance. This is supported by the strongest array of data center and distributed site systems and performance management products available in the Open Systems market.

IBM and DEC cannot meet the robust scalability needs of the data center - they have yet to implement SMP on Unix. Neither AIX nor Digital-UX (OSF/1) support 20MB/s Fast Wide SCSI. Both companies are still struggling to catch up with our systems and performance management solutions, especially for replicated sites.

Sun showcases its quality by announcing that 3,500 bugs are fixed in Solaris between versions 2.2 and 2.3 - not even major releases! Business critical computing requires safer platforms. The consistently diminishing estimates for their SC2000/8 TPS performance - 760 ->700 - >600 TPS find them struggling to meet data center performance requirements. Commercial application availability still starves the Solaris platform.

NT - after the fanfare - does not provide the flexibility to support both client/server and multi-user operations; has not proven its SMP capability; and has acknowledged that the trumpeted systems management capabilities necessary for business critical applications is further away, and will be less capable, than previously announced. Appropriate commercial server applications remain few and far between for core customer business processes.

HP-UX remains unique in the industry; the operating system together with its supporting environment remains a key competitive advantage for the Series 800 Business Server family.

## Distributed Computing Environment (DCE)

### *One-Minute Sale*

HP is introducing an enhanced version of its industry-leading Distributed Computing Environment (DCE) products, rounding out its offering with the Distributed File Service (DFS), Global Directory Service (GDS) and a secure gateway for HP NFS clients to access DFS servers. This HP DCE/9000 release provides the industry's most comprehensive and standards based platform for developing and running DCE-based distributed applications.

### *Market Opportunity*

The information industry is changing with applications moving from running on just one machine to running across several machines. OSF announced DCE to provide a framework for data and applications to be distributed transparently across networks, machines, and people. Virtually every computer vendor (from PCs to mainframes) has endorsed DCE, making DCE a true open foundation for heterogeneous distributed computing. HP has tested interoperability of HP DCE/9000 with over 25 other DCE implementations (including AIX, Solaris, and DOS Windows).

### *HP DCE/9000 Environment*

The OSF DCE framework offers several benefits for distributed computing:

<b>Capability</b>	<b>Benefit</b>
<i>Transparent Communication.</i>	Client/server applications no longer have to be written with the physical server locations written into the application. By allowing developers to access resources using a logical name, DCE provides for dynamically changing server location through its directory services, leading to transparent communication between clients and servers.
<i>Global Operation.</i>	DCE was designed with WAN operation in mind, providing reliable communication across the entire enterprise with the added capability of a global and consistent directory and name service. Plus, client requests can be automatically routed to specialized servers in remote locations.
<i>Inherent Security.</i>	Security is integrated throughout, providing protection of critical data applications and communication links, even within a distributed environment.
<i>Resource Replication.</i>	DCE allows for increased server availability with replication of key servers with automatic routing of client requests by the directory services.

*Scaleable Framework.*

Using server replication for increased application throughput and the global directory servers for accessing all available server resources, DCE allows for incremental growth as business needs dictate. Based on OSF's latest release of DCE (1.02 and 1.03).

HP DCE/9000 provides a high-quality, fully functional, standards-based framework to develop, administer, and use distributed applications. In addition to being a reliable and comprehensive implementation of DCE, HP is also providing additional management and development tools for DCE-based applications. With these products, HP will continue its leadership in providing a robust foundation for the next step in developing client/ server and distributed applications. (A recent Gartner Group report concluded that HP's DCE strategy was the best and most comprehensive in the industry.) HP DCE/9000 products will be available both for the Series 800 Business Servers and the Series 700 Workstations.

<b>Feature</b>	<b>Benefit</b>
Remote Procedure Call (RPC)	<ul style="list-style-type: none"><li>• The communication mechanism used by clients and servers when requesting or fulfilling services</li></ul>
Threads.	<ul style="list-style-type: none"><li>• Allows applications to handle multiple requests simultaneously</li></ul>
Distributed Time Service.	<ul style="list-style-type: none"><li>• Keeps system clocks synchronized</li></ul>
Security Service.	<ul style="list-style-type: none"><li>• Verifies client and server identities, controls access to information resources, and protects messages being sent over the network</li></ul>
Naming Service.	<ul style="list-style-type: none"><li>• Provides a central database with information on resources and services available and their location in the DCE environment. There are two parts to the naming service, with a local component (Cell Directory Service, or CDS) and a global component (Global Directory Service, or GDS). GDS provides both the Domain Name Service (DNS) or X.500 for the global directory.</li></ul>

Distributed File Service.

- The Distributed File Service is a DCE application that provides transparent file access to users across an enterprise-wide network, while at the same time maintaining security. DFS also provides high performance levels by allowing multiple file servers and by using local caching of file information on the client that removes the need for repeatable network use when accessing remote files.

HP DCE/9000 version 1.2 now provides all the major DCE components.

HP DCE/9000 consists of two types of software products: DCE Core Runtime Services and DCE Application Development Tools.

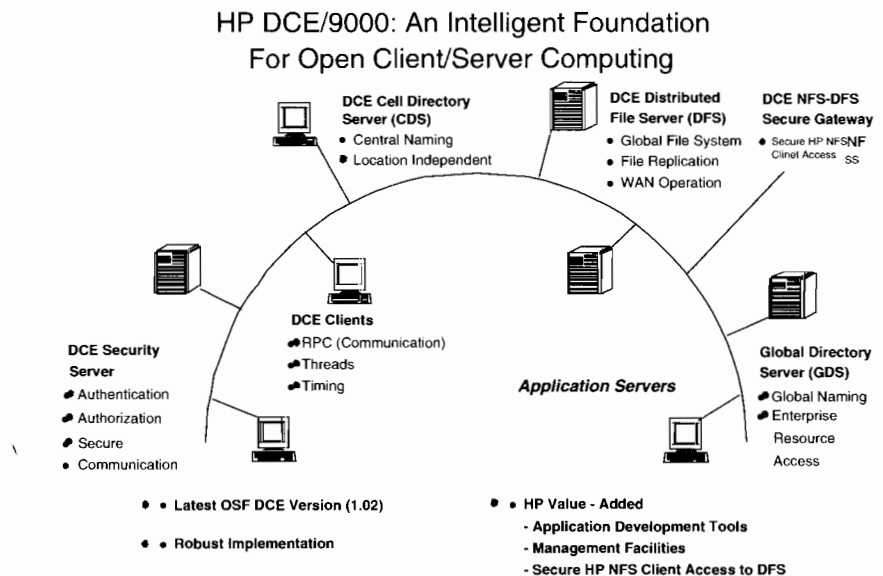


Figure 1 - showing DCE Architecture.

**HP DCE/9000 Core Runtime Services**

HP DCE/9000 Core Services are licensed under six products:

- 1) DCE Client includes the RPC, Threads and Time Service and client capability for CDS, Security and DFS
- 2) DCE Cell Directory Server (CDS)
- 3) DCE Security Server
- 4) DCE Distributed File Service (DFS)
- 5) DCE Global Directory Service (GDS)
- 6) DCE NFS-DFS Secure Gateway

Media and documentation are sold separately from the licenses. There are separate media products for US and international distribution.

The DFS functionality available today is the base DFS capability from OSF. The base DFS functionality allows for location-independent file sharing, but does not provide for replicated file servers and on-line backups. The extended DFS functionality will be available in a future release of DCE/9000 and HP-UX.

The DCE licenses are sold separately for each of the services because of the possibility that customers may take advantage of the multivendor capability of DCE and have some of the DCE services running on different platforms from other vendors.

DCE environments will be typically grouped into entities called Cells. Each Cell is defined as a group of users that share the same resources or involved in the same activity. Each DCE Cell must include at least one Cell Directory Naming (CDS) Server and one Security Server. These two servers may be on different systems, or both could reside on the same system. In addition, every system (node) in a DCE cell must also have the DCE Client/Executive software and license, this includes the Naming (CDS) and Security Servers. The DFS and GDS servers are optional capabilities.

In addition to delivering the core DCE technologies, HP has also added unique enhancements that position HP DCE/9000 as the industry's most comprehensive DCE offering. Some of the enhancements include:

<b>HP Differentiation</b>	<b>Benefit</b>
<i>Secure NFS client support with DFS.</i>	The NFS-DFS Secure Gateway allows customers to maintain their NFS environment as they migrate to DCE. HP-UX NFS clients can securely login to a DCE cell and access DFS files without compromising security.
<i>DCE Configuration Manager.</i>	Provides powerful configuration capabilities with an analyzer that checks planned DCE configurations and then automatically implements new configurations. Also can discover existing DCE configurations.
<i>DCE Cell Validation.</i>	Ensures that DCE installation and configuration have been completed successfully and that a DCE environment is ready to run.
<i>DCE Server Replication.</i>	Full DCE CDS and Security replication for increased-availability of critical DCE services.
<i>DCE Performance Improvements.</i>	Increased throughput for all DCE-based applications. CDS, Security, threads, and RPC performance have been improved significantly. Also, a new DCE IDL compiler is available that generates smaller DCE stubs in an application for further performance increases.

<i>CDS Browser.</i>	Allows for efficient management of critical DCE information in the CDS server using a graphical representation for viewing and editing entries (and their relationships) in the directory name spaces.
<i>Installation through SAM.</i>	Provides for more efficient installation and configuration of DCE software, including installation of software to all DCE systems from one central software server.
<i>HP Camera.</i>	Takes a snapshot of the DCE environment's state at the point of a failure, enabling in-depth troubleshooting by HP Support Services.

These unique enhancements are built upon a robust DCE foundation that provides a high-quality and fully interoperable environment ready for running DCE applications.

HP DCE/9000 is the foundation for a full range of distributed computing solutions from HP. As well as providing a solid platform for DCE based applications, HP is adding special enhancements needed for specific environments. For example, HP is providing the Encina/9000 and CICS™ for HP 9000 family of transaction monitoring products for ensuring data integrity in distributed OLTP applications across multivendor platforms and databases. Both Encina/9000 and CICS™/9000 are built upon the HP DCE/9000 foundation.

**HP DCE/9000 Application  
Development Tools  
(HP's Differentiation)**

In addition to the DCE Core Services products, HP is providing a suite of development tools designed to increase the productivity of the DCE application developer. These tools are unique and superior to any other vendor's offering and establish HP as the DCE development platform of choice. These tools include:

- RPC tracing, logging and error reporting facilities to help debug DCE applications. No other vendor offers a tool that keeps track of RPC communication between client and server portions of a distributed application.
- Instrumented DCE compiler to trace RPC activity in distributed applications. Provides in-depth insight to the activity of application threads and associated RPCs, along with key timing information needed for debugging and tuning of DCE based applications.
- Several DCE application examples to help developers get started. Shows how the DCE application interfaces are integrated into client/server programs and provides a template for general DCE application development. Also includes examples on migrating NCS based applications to DCE.

- Integration of the DCE compiler with the HP Softbench environment, providing the industry's only DCE CASE environment for increased programmer efficiency.

*Product Specifications*

The new HP DCE/9000 software will begin shipping in February, 1994. The enhanced version will replace the current HP offering and will ship under the product numbers of today's HP DCE/9000 products. Customers must upgrade to HP-UX 9.04 to use this new version. Customers on support contracts are licensed to receive the new DCE/9000 software as part of their support services. New customers ordering the DCE/9000 products are encouraged to also order the appropriate software support services.

The HP DCE/9000 products are orderable under seven license products and two media products for both the Series 800 and Series 700:

	<b>Series 800</b>	<b>Series 700</b>
DCE Client LTU	B3189A	B2923A
DCE CDS Server LTU	B3187A	B2924A
DCE Security Server LTU	B3188A	B2925A
DCE DFS Server LTU	B3786AA	B2919AA
DCE GDS Server LTU	J2393AA	J2392AA
DCE NFS-DFS Secure Gateway (LTU)	B3785AA	B2918AA
DCE Core Services media (US only)	B3190A	B2920A
DCE Core Services media (Intl.)	B3191A	B2921A
DCE Application Development Tools User LTU	B3192A	B2926A
DCE Application Development Tools media	B3193A	B2922A
DCE Hardcopy Documentation	B2927A	B2927A

*Starters Bundle*

Only one DCE Core media product needs to be purchased since it includes all the software needed for the DCE clients and servers. The Application Development Tools are licensed on a per-user basis, so one license needs to be purchased for each developer using the Tools.

A DCE bundle is also available for customers who are getting started with DCE. The HP DCE/9000 Quick Start bundle offers all the software, licenses, and documentation required to build and run a 5-node DCE cell for developers to use the DCE development tools (included are five client, one CDS, one Security and one DFS Server licenses). This bundle is available for both the Series 800 and Series 700, and also presents a significant savings compared to ordering the individual products (additional licenses must be purchased separately).

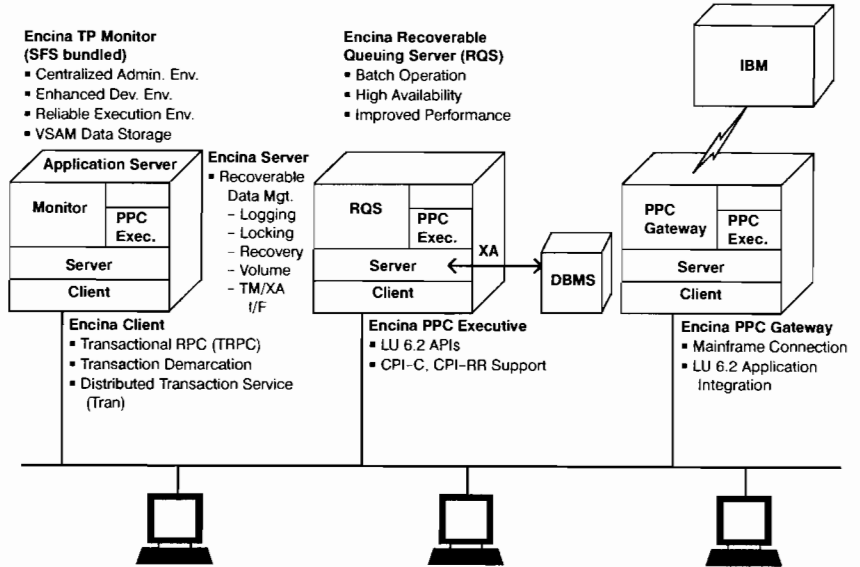


	Series 800	Series 700
DCE Quick Start	B3519AA	B2903A

More information is available on the GSY hotline SUBJECT: DCEFTM. A datasheet is also available under literature P/N: 5091-9000E.

**New Encina/9000 Features**

**Reliable Client/Server Distributed Computing  
HP Encina/9000**

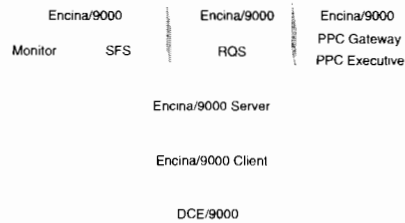


*One Minute Sale*

Encina is a modular set of software based on technology licensed from Transarc. It sits upon DCE (See Fig. 2) and extends DCE's functionality to enable design and deployment of transaction processing applications (including reliable client/server applications) with data integrity in a multi-vendor distributed environment.

Transarc has licensed Encina to Siemens-Nixdorf, Stratus, NEC, Hitachi, IBM, Sun and Hewlett-Packard. This means that Encina applications can be ported unchanged to any of these platforms and gives the customer greater freedom from hardware tie-in. Encina provides future-proofing against change of technology (hardware or software) because it is built upon OSF's DCE, can run on multivendor platforms, and follows Open Systems Standards like X/Open's Distributed Transaction Processing (DTP) Model.

This means that Encina/9000 applications will operate across multi-vendor hardware platforms and databases, enabling customers to exploit the granularity, scalability, and resiliency of a distributed environment while maintaining data integrity.



**Figure 2 - showing Encina 9000**

*New Features*

Two new components have been added to the Encina/9000 product family to enhance performance, data availability and interoperability with mainframes in distributed OLTP environments. **HP is the first and only systems vendor to offer the PPC Gateway with Sync Level 2 in its Encina product line.** HP is one of two vendors who offer RQS (Recoverable Queuing Service) today (Sun is the other one).

*Advantages*

- \* Ensures data integrity and transactional robustness
- \* Preserves customer's future investment through the openness of Encina and DCE
- \* Preserves customer's past investment by interoperating with mainframe OLTP systems like CICS™. This includes the ability to coordinate or be coordinated by a LU6.2 based mainframe OLTP system with 2-phase commit.
- \* Avoids the dependency on a single DBMS or Hardware supplier. Encina enables the choice of any XA compliant database.
- \* Enhances performance in multi-user, heterogeneous environments by increasing transaction throughput and improving resource utilization.
- \* Enhances performance, availability (increased resiliency to system crashes and media failures) by using RQS, enabling asynchronous distributed transaction processing

*PPC Gateway*

Many businesses are looking to transaction processing software such as Encina/9000 Monitor to manage their business transactions across diverse databases and hardware. The new Encina/9000 PPC Gateway provides full Sync Level 2 interoperability between HP Encina/9000 environments and mainframe OLTP applications. This allows OLTP systems which support LU6.2 (such as IBM's CICS - Customer Information Control System) to coordinate or be coordinated by Encina/9000 software on Series 700 or Series 800 systems. Encina/9000 PPC Gateway operates over an SNA protocol implementation of LU6.2. The result for customers is data integrity, coordinated by Encina/9000 across mainframe and open systems OLTP environments.

*HP's Advantage with the PPC Gateway*

By providing a PPC Gateway with full Sync Level 2 capability, HP has a competitive advantage over IBM and Sun's Encina implementations. To give mainframe alternative customers full data integrity, Encina must be able to orchestrate the rollback and recovery of file systems on the mainframe. Encina must therefore be able to coordinate 2-phase commit protocols where all databases and systems are polled prior to committing a transaction.

Mainframe participation in these 2-phase commits is only possible using a full Sync Level 2 PPC Gateway. IBM and Sun have so far only been able to provide a Sync Level 1 PPC Gateway in their Encina implementations. Unlike HP's Encina/9000, therefore, IBM and Sun's products do not bring full data integrity to mainframe customers using Encina.

*Encina/9000 Recoverable  
Queuing Service (RQS)*

The new Encina/9000 Recoverable Queuing Service (RQS) is designed to enhance performance and data availability in Encina-based OLTP environments. Encina/9000 RQS sets up transactional queues in recoverable storage. These queues can be used to recover information in the event of system crashes or media failure. In addition, as Encina/9000 orchestrates 2-phase commits across distributed systems, customers can use RQS to boost performance by enqueueing some transactions for later processing.

*Benefits of RQS*

Recoverability of queues means resiliency to system crashes and media failures. The performance advantages are gained in two ways. 1) For certain client activity, e.g. data entry, it is not important if the update actually gets done at a slightly later time but it is important to the user that the keyboard response time is fast and that the update definitely does get done. In such cases RQS enqueues tasks transactionally, for later processing thereby giving faster response time and an assurance that the work will get done. 2) Prioritizing queues enables transactions to be scheduled. This flexibility in assigning priority helps certain applications get faster service.

**As of this publication, HP is the only systems vendor to provide its own full implementation of the RQS component of Encina. Sell these new Encina/9000 features as differentiators against IBM and Sun in the leading-edge market of distributed OLTP.**

*Differentiation between our  
Encina and that from  
other vendors*

Encina/9000 from Hewlett-Packard is subjected to the very rigorous HP testing regime and is tuned and enhanced specifically for the HP 9000 Business servers and workstations. It also offers the highest level of data integrity for interoperability with the LU6.2 based mainframe systems through Sync Level 2 support for PPC Gateway. No other TP monitor, e.g. Tuxedo, VIS/TP, MTS, UniKix, CICS/6000, Top-End, etc. offer full data integrity through 2-phase commit with the mainframe. HP is one of two vendors offering RQS today. (Sun is the other one). **Lock the competition out of deals by requiring Encina functionality for mainframe interoperability with full data integrity (i.e. PPC Gateway with Sync Level 2). Also, by requiring customers to have DCE and Encina you can lock out Sequent, Pyramid, DG, ICL, etc.**

One of the chief concerns of customers of DCE, Encina and CICS is Systems Management. HP's DCE, CICS and Encina will all offer an integrated Distributed Computing Administration Facility. This will enable distributed system Administration and Management, including troubleshooting for DCE, Encina and CICS. HP leads in defining a standard for Distributed Computing Administration and it is likely that other vendors like IBM will adopt our solution for their Systems Administration needs. No other vendor offers an integrated Administration facility that spans all three products today in a coherent and consistent way.

For more information see Encina/9000 Data Sheet (P/N 5091-9001E) and the Series 800 E-Class Price/Configuration Guide (P/N 5091-9209E).

*Target customers:*

Businesses who must select an open transaction management strategy including those looking to design reliable client/server applications. This means selecting a transaction manager that conforms to X/OPEN's DTP Model. A model created to allow the interchangeability of transaction managers and resource managers through standard interoperability interfaces like XA for DBMS.

This will broadly comprise the following two groups:

1. Businesses currently relying on centralized single vendor environments and seeking competitive advantage through reengineering and heterogenous distributed processing. Such businesses would typically embark on a pilot project to investigate the feasibility of application re-engineering and interoperability between their legacy OLTP and their 'Open' OLTP.
2. The smaller group of the two, businesses currently using 'TP-Lite'\*, OLTP functionality in DBMS (eg Oracle 7.0)

\* DBMS like Oracle 7.0 which provide a degree of limited TP-Monitor-like functionality e.g. co-ordinating a distributed database update with integrity but only if all participant databases are from the same vendor.

**New Instant Ignition Service**

*One Minute Sale*

Get a fast start with your new Series 800 server. Imagine plugging in your brand new server, turning it on and getting right to work in minutes. With Instant Ignition you will waste no more time poring over manuals, initializing disk drives, and installing system software and other layered applications. HP will pre-load the HP-UX 9.04 plus other selected software and preconfigure the system hard disk while the server is still at the factory.

*Features and Benefits*

<b>Feature</b>	<b>Benefit</b>
Operating System and other software pre-loaded	<ul style="list-style-type: none"> <li>• Time savings and simplicity over digging through manuals and loading tapes.</li> <li>• Proven compatibility among all pre-installed Instantly Ignitable software</li> </ul>
One small, flat fee covers all the software pre-installation	<ul style="list-style-type: none"> <li>• Easy to quote and order</li> <li>• A total solution of software pre-loading and hard disk pre-configuration included.</li> </ul>
Beats the competition	<ul style="list-style-type: none"> <li>• Sun: Solaris and other software pre-loading not available</li> <li>• IBM: AIX and other software pre-loading expensive and complex to order</li> <li>• DEC: Only OSF/1 pre-loaded. No other software pre-loading available</li> </ul>

Flexible Disk Configurations

- A variety of hard disk default swap space and directory sizes designed and tested to meet the needs of the vast majority of customers (refer to Series 800 Configuration Guide for details)
- Custom hard disk configurations also available and are easy to order at no extra charge

*Product Structure and Availability*

The Series 800 Instant Ignition service is available for HP-UX version 9.04 only and other selected HP layered software. To order, follow these simple steps:

1. From the Series 800 product ordering menu, select the Instant Ignition option 0D1 on product number A2440A.
2. For each HP software product ordered, select the Instant Ignition option 0D1 at no additional charge from the following Instantly Ignitable software:

<b>Product</b>	<b>Product Number</b>	<b>Option</b>	<b>Available</b>
HP-UX License Product	B3108L	0D1	1 Jan 1994
C++ Compiler	B2405A	0D1	1 Jan 1994
C/ANSI-C Compiler	B2412A	0D1	1 Jan 1994
COBOL Developer's	B2433AA	0D1	1 Jan 1994
COBOL Compiler	B2434AA	0D1	1 Jan 1994
COBOL Runtime	B2435AA	0D1	1 Jan 1994
MirrorDisk/UX	B2491A	0D1	1 Jan 1994
SNAPLus3270	J2221A	0D1	1 Jan 1994
SNAPLusRJE	J2222A	0D1	1 Jan 1994
SNAPLusAPI	J2223A	0D1	1 Jan 1994
Streams/UX	J2237A	0D1	1 Jan 1994
Switchover/UX	92668A	0D1	1 Jan 1994
Glance Plus	82660AA	0D1	TBD
Glance Plus Pak	3701AA	0D1	TBD

Note: Other products will continually be added to this list

**SNA Release 3.0**

*One-Minute Sale*

The next release of the HP9000's comprehensive IBM networking products continues to enhance the Series 800's integration with host environments. Release 3.0 is focused on improving the local language support for our Asia/Pacific customers and reinforcing support for distributed on-line transaction processing involving access to mainframe systems.

New facilities for Series 800 customers include:

<b>Feature</b>	<b>Benefit</b>
16 bit NLS support in SNAPLus3270 and SNAPLus3179G terminal emulation for Japanese language.	• Allows localization of IBM terminals and graphics

ISO 8859.1 and ISO 8859.8 support in SNAPplus 3270	• Support for Western European and Hebrew right-to-left languages with 3270 terminal emulation.
Common Programming Interface in C (CPIC)	• Higher-level programming interface for distributed support in SNAPplusAPI applications using LU6.2. Assists application portability.
Permanent Virtual Circuit (PVC) support for QLLC in SNAPplus Link	• Enables customers to define the equivalent of a leased line link through an X.25 network connection.

In addition, enhancements to the new SNAPplus product suite will enable Series 800 customers to improve their distributed application access to mainframe systems. Features have been added which will support “two phase commit” transactional integrity between transaction processing systems on the HP9000 and LU6.2 applications on the mainframe. This capability is accessed through the new Encina/ 9000 PPC Gateway facility. Other features will enable Sybase to provide its new NetGateway product for the HP9000, allowing customers to access mainframe data from the Series 800.

*Product Structure and Availability*

- Two new options are available with SNAPplus Release 3:
- Option 0D1 specifies “Instant Ignition” for SNAPplus3270, SNAPplusRJE and SNAPplusAPI.
  - Option ABJ requests Japanese language manuals for SNAPplusLink, SNAPplus3270, and SNAPplus3179G and SNAPplus RJE.

Products ordered on and after December 1 will be shipped with Release 3.0, though delivery of these products *will not be until after* February 11, 1994. Any customers requiring urgent shipments between December 1 and February 11 can be assessed for an early release program by contacting your Business Development Engineer.

**HP Switchover/UX and MirrorDisk/UX**

*One-Minute Sale*

HP Switchover/UX and MirrorDisk/UX continue to be enhanced. Switchover/UX and MirrorDisk/UX now support the new HP 9000 E-Class Business Servers and Fast/Wide/Differential SCSI-2 disk drives and disk arrays! The physical distance between systems in a SwitchOver/UX configuration has increased since the Fast/Wide/Differential SCSI-2 cable/bus can be 25 meters. The maximum single-ended SCSI-2 bus is six meters. Each SCSI-2 Switchover/UX configuration supports up to 4 primary systems and a designated standby system.

*Product Features*

HP Switchover/UX detects system failures and provides for automatic switchover between a primary and standby processor. It provides near continuous operation for mission-critical applications. A completely redesigned SPU switchover product with several new enhancements will be available with HP-UX release 10.0.

HP MirrorDisk/UX prevents data loss due to disk failure by maintaining up to three copies of data on separate disks so that data is still accessible after any single disk failure.

*For More Information*

Consult the HP 9000 Series 800 High Availability Computing Products Technical Data Sheet (P/N 5091-8957E) and the HP 9000 Series 800 Business Servers Configuration Guide January 1994—Section 28 System Availability (P/N 5091-9206E), or call the Sales Response Center at (408/Telnet) 447-4444.

**CD-ROM Software and Documentation Solutions**

*One Minute Sale*

CD-ROM solutions for your HP9000 Series 800 simplify installation and the operation of your system. Software and documentation on CD-ROM means you can conveniently store and retrieve software and information, and at lower cost to you—compare prices with traditional media alternatives! Spend less time handling tapes and manuals, and more time achieving results in your daily tasks. When you order support on CD, you get regular updates of software and documentation, at a price much lower than paper and traditional software media.

**Features**

**Benefits:**

Documentation for HP-UX and many applications supplied on one CD.

• No paper manuals, and updates are easy—just replace your old CD with the latest copy.

The CD includes HP LaserROM/UX documentation retrieval software—saving money!

• HP LaserROM/UX keyword search and browse features get to the information you need quickly.

Software installation is fast and easy

• No stacks of tapes and cartridges. When you buy new applications, all you need is a codeword, and your software is installed.

*Product Specifications*

CD-ROM software and documentation products are available on all HP9000 Series 800 systems. Support services on CD are also available for these systems.

*Product Structure*

**Software**

B3108C HP-UX 9.0 Server Operating System on CD-ROM. Operating system software included. For access to application software included on this CD-ROM set, order the appropriate product and its option AAU.

**Documentation**

B3108M Series 800 HP-UX Version 9.0 Documentation.  
Option 0BC; Includes HP LaserROM/UX documentation retrieval software; manuals from options OBD, OBE, OBF OBG; many application product manuals. Localized CD-ROM documentation is available.  
Option UA2; Additional four user licenses for HP LaserROM/UX.

**Simplified E/F/G/H/I Support Pricing**

*One-Minute Sale*

HP has made the quoting of support simpler for the E/F/G/H/I-Class servers. Now one support price covers the complete integrated system. No longer will separate support line items for the SPU, disk drive, tape drive, console, etc. need to be added up to come up with the total System Support Option price. The Support price is now all in the SPU base product. Simply quote support at a \$0 price for each integrated peripheral on which you want support.

<b>Features</b>	<b>Benefits:</b>
E/F/G/H/I systems total support cost is now in the SPU's System Support Option price, regardless of the system configuration.	• Ease in determining total system support cost.
Support on integrated peripherals now zero priced for E/F/G/H/I systems.	• Simple quoting of System Support Option prices for peripherals. Just select the support option on the peripherals that customer wants, but don't worry about the price.
Stand-alone peripheral support is still quoted separately.	• To keep the simplified support pricing at a good price value, stand-alone peripherals such as printers and end-user terminals are still quoted separately for their System Support Option pricing. This provides quote flexibility since the number of stand-alone peripherals may vary widely from customer to customer.

**Competitive Low-End Support Pricing**

*One-Minute Sale*

The E-Class introduction also includes more aggressive Support pricing to compete against such products as the Sun SparcClassic server. Hardware and software support prices have been cut. However, the real support advantage to HP is in multiple-unit per site deals.

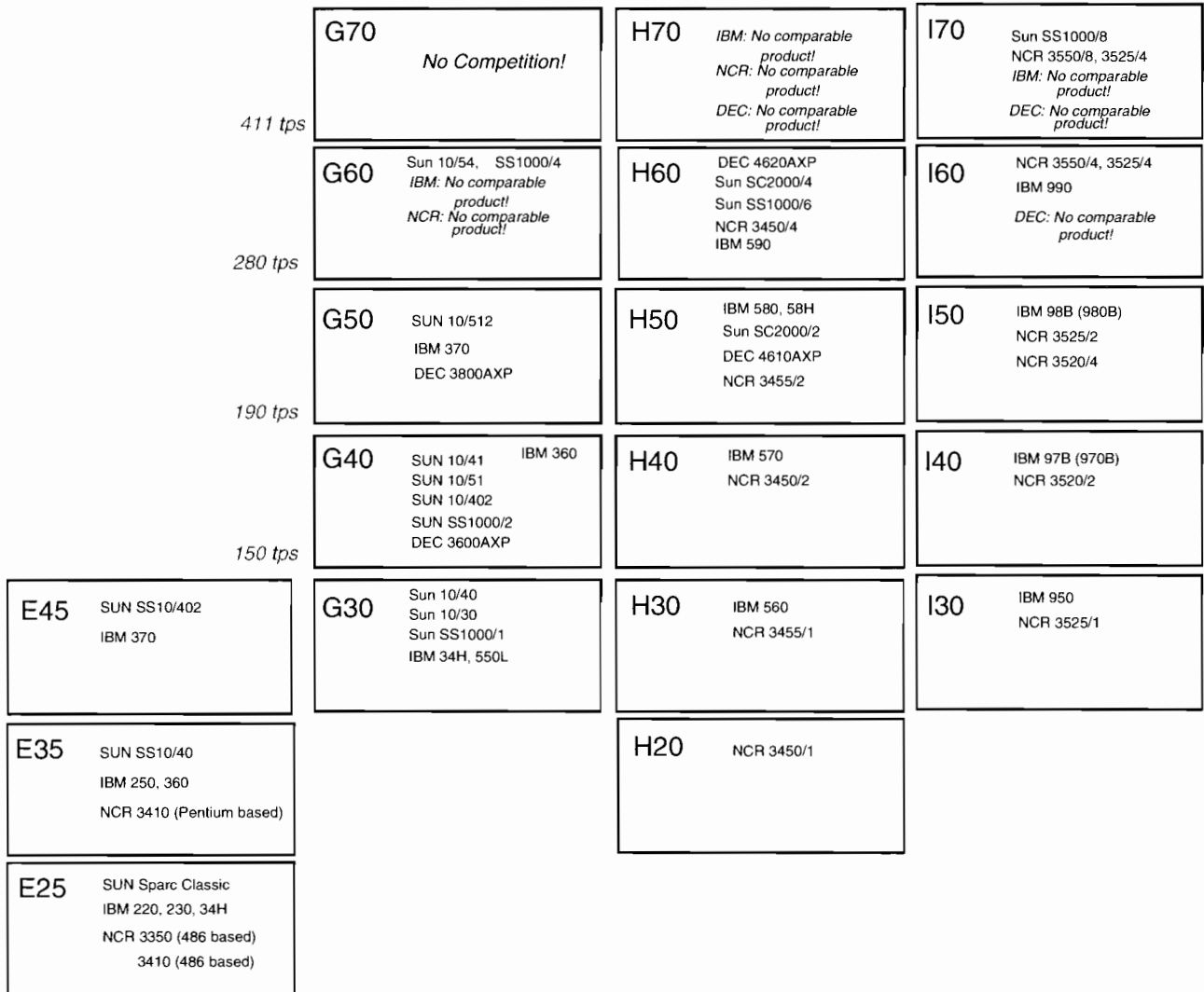
<b>Features</b>	<b>Benefits:</b>
Low-cost post-warranty hardware and software support for E25	• Significantly cheaper support than IBM M20 and 220 models.



Software support phone-in assistance contracts can continue to be leveraged across multiple servers

- A customer can buy a single phone-in support contract for multiple servers and save significantly.
- Leveraging a single phone-in contract across multiple servers allows the HP E25 to break even in total support cost against the SparcClassic at 7 units

### E, G, H, I Competitive Reference





# HP 9000 Series 800 Systems Matrix

SPU Model No.	SPU Product No.	S/W Tier	Single High Slots	I/O Bus	Clk Spd MHz	Instr/ Data Cache (KB)	Relative OLTP Performance to F10*	Ports Included On LAN-based Multifunction I/O					SPU Model No.
								SCSI	RS-232	Centronics	LAN	HP-FL	
E25	A2937AW	1	2-4	HP-BP	48	64†	1.6	1	4	1	1	0	E25
E35	A2938AW	1	2-4	HP-BP	64	256†	2.5	1	8	1	1	0	E35
E45	A3130AW	1	2-4	HP-BP	80	256†	3.1	1	8	1	1	0	E45
G30	A2434A	1	4	HP-BP	48	256/256	2.5	1	2	0	1	0	G30
G40	A2435A	1	4	HP-BP	64	256/256	3.0	1	2	0	1	0	G40
G50	A2436A	1	4	HP-BP	96	256/256	3.9	1	2	0	1	0	G50
G60	A2980A	1	4	HP-BP	96	1024/1024	5.7	1	2	0	1	0	G60
G70	A29761A	1	4	HP-BP	2 x 96	2048/2048	8.3	1	2	0	1	0	G70
H20	A2366A	2	8	HP-BP	48	64/64	1.7	1	2	0	1	0	H20
H30	A2437A	2	8	HP-BP	48	256/256	2.5	1	2	0	1	0	H30
H40	A2438A	2	8	HP-BP	64	256/256	3.0	1	2	0	1	0	H40
H50	A2439A	2	8	HP-BP	96	256/256	3.9	1	2	0	1	0	H50
H60	A2981A	2	8	HP-BP	96	1024/1024	5.7	1	2	0	1	0	H60
H70	A2970A	2	8	HP-BP	2 x 96	2048/2048	8.3	1	2	0	1	0	H70
I30	A2365A	2	12	HP-BP	48	256/256	2.5	1	2	0	1	0	I30
I40	A2364A	2	12	HP-BP	64	256/256	3.0	1	2	0	1	0	I40
I50	A2363A	2	12	HP-BP	96	256/256	3.9	1	2	0	1	0	I50
I60	A2982A	2	12	HP-BP	96	1024/1024	5.7	1	2	0	1	0	I60
I70	A2362A	2	12	HP-BP	2 x 96	2048/2048	8.3	1	2	0	1	0	I70
T500/1-CPU	A2339A	3	14-112	HP-BP	90	2048/CPU	8.0	1	16	1	1	0	T500/1-CPU
T500/2-CPU	A2339A	3	14-112	HP-BP	90	2048/CPU	10.7	1	16	1	1	0	T500/2-CPU
T500/3-CPU	A2339A	3	14-112	HP-BP	90	2048/CPU	15.0	1	16	1	1	0	T500/3-CPU
T500/4-CPU	A2339A	3	14-112	HP-BP	90	2048/CPU	19.3	1	16	1	1	0	T500/4-CPU
T500/5-CPU	A2339A	3	14-112	HP-BP	90	2048/CPU	23.2	1	16	1	1	0	T500/5-CPU
T500/6-CPU	A2339A	3	14-112	HP-BP	90	2048/CPU	26.8	1	16	1	1	0	T500/6-CPU
T500/7-CPU	A2339A	3	14-112	HP-BP	90	2048/CPU	30.0	1	16	1	1	0	T500/7-CPU
T500/8-CPU	A2339A	3	14-112	HP-BP	90	2048/CPU	32.8	1	16	1	1	0	T500/8-CPU
T500/9-CPU	A2339A	3	14-112	HP-BP	90	2048/CPU	34.6	1	16	1	1	0	T500/9-CPU
T500/10-CPU	A2339A	3	14-112	HP-BP	90	2048/CPU	36.4	1	16	1	1	0	T500/10-CPU
T500/11-CPU	A2339A	3	14-112	HP-BP	90	2048/CPU	38.3	1	16	1	1	0	T500/11-CPU
T500/12-CPU	A2339A	3	14-112	HP-BP	90	2048/CPU	40.1	1	16	1	1	0	T500/12-CPU

Product numbers for F/G/H/I servers must be ordered with appropriate Structured Solution Product (SSP) part number: E-Class A2959AW; F-Class, P/N A2428A; G-Class, P/N A2429A; H-Class, P/N A2430A;

I-Class, A2431A; T500, A3032A.

\* Note: Relative OLTP performance is a general guideline since the factors influencing the performance of an application vary widely. T500 performance beyond 4 CPUs is based on HP-UX10.0.

† 8 CPU configurations.

‡ Combined instruction and data cache.

SPU Model No.	Base Memory (MB)	Max. Memory (MB)	Base Internal Disk (MB)	Max. Disk Storage				HP-IB (GB)	FL (GB)	FL Disk Array (GB)	Max. Total Suppt'd Disk (GB)	Max. Internal Tape Capacity (GB)	SPU Model No.
				Internal Single-Ended SCSI (GB)	Total Single-Ended SCSI (GB)	Total F/W SCSI (Disks & Arrays) (GB)	F/W SCSI Array (GB)						
E25	0†	512‡	0	4‡	70	144	112	n/a	n/a	n/a	156	8-16DDS	E25
E35	0†	512‡	0	4‡	70	144	112	n/a	n/a	n/a	156	8-16DDS	E35
E45	0†	512‡	0	4‡	70	144	112	n/a	n/a	n/a	156	8-16DDS	E45
G30	32	768**	1 GB	10	70	144	112	5.4	21	86	156	4-8DDS	G30
G40	32	768**	1 GB	10	70	144	112	5.4	21	86	156	4-8DDS	G40
G50	32	768**	1 GB	10	70	144	112	5.4	21	86	156	4-8DDS	G50
G60	32	768**	1 GB	10	70	144	112	5.4	21	86	156	4-8DDS	G60
G70	32	768**	1 GB	10	70	144	112	5.4	21	86	156	4-8DDS	G70
H20	64	768**	1 GB	10	120	288	224	5.4	43	173	300	4-8DDS	H20
H30	64	768**	1 GB	10	120	288	224	5.4	43	173	300	4-8DDS	H30
H40	64	768**	1 GB	10	120	288	224	5.4	43	173	300	4-8DDS	H40
H50	64	768**	1 GB	10	120	288	224	5.4	43	173	300	4-8DDS	H50
H60	64	768**	1 GB	10	120	288	224	5.4	43	173	300	4-8DDS	H60
H70	64	768**	1 GB	10	120	288	224	5.4	43	173	300	4-8DDS	H70
I30	64	768**	2 x 2 GB	10	120	330	280	5.4	43	173	330	4-8DDS	I30
I40	64	768**	2 x 2 GB	10	120	330	280	5.4	43	173	330	4-8DDS	I40
I50	64	768**	2 x 2 GB	10	120	330	280	5.4	43	173	330	4-8DDS	I50
I60	64	768**	2 x 2 GB	10	120	330	280	5.4	43	173	330	4-8DDS	I60
I70	64	768**	2 x 2 GB	10	120	330	280	5.4	43	173	330	4-8DDS	I70
T500	256	2048	n/a	n/a	168	1900	1900	8.0	330	1300	1900	n/a	T500

\* 192 MB with HP-UX 8.02, 384 MB with HP-UX 9.0X or greater

† Using 128 MB memory modules orderable March 1, 1994

‡ 2 GB drive orderable after March 1, 1994

\*\* 384 MB with HP-UX 8.02, 768 MB with HP-UX 9.0X or greater

†† Minimum supported/orderable configuration = 16 MB

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## HP 9000 Series 800 Systems Matrix (cont'd)

SPU Model No.	Max. SCSI Tape Drives	Max. HP-IB Tape Drives	Max. Centronics Printers	Max. Serial Printers	Max. HP-IB Printers	Max. HP-IB Plotter	Max. I/O and Networking Cards (cont'd on next page)						Max. # of User DTC & MUX)†	SPU Model No.
							Max. Parallel Centronics	Max. F/W SCSI	Max. HP-IB	Max. HP-PB FL(28615A)/ PBA-FL (A1749A)	Max. MUX Ports			
890	16	8*	20	250	n/a	8*	20	40	9	40	1024	4500	890	
T500	16	8*	20	250	n/a	8*	20	40	9	40	1024	4500	T500	

SPU Model No.	Max. I/O and Networking Cards (cont'd)								SPU Model No.
	Max. 802.3 LAN	Max. 802.5 Token Ring LAN	Max. 8-Channel MUX	Max. 16-Channel MUX	Max. 32-Channel MUX	Max. FDDI	Max. X.25	Max. SNAPplusLINK	
890	10	5	64	64	64	3	12	12	890
T500	10	5	64	64	64	3	12	12	T500

SPU Model Number	Depth in mm	Width in mm	Height in mm	Weight in kg	Power Reqmnt. Watts	Heat Diss BTUs Per Hr.	First CPL Date	First Ship Date	Site Prep Included	SPU Model Number
890	905	750	1620	375	2434	8300	5/92	10/92	yes	890
T500	905	750	1620	375	2434	8300	11/93	12/93	yes	T500

1 kg = 2.2046 lbs., 1 mm = 0.03937 inch

SPU Model No.	Concurrent User Recommendations**					SPU Model No.
	SPEC rate_int92	SPEC rate_fp92	Heavy Workload	Medinm Workload	Light Workload	
T500/1	1888	3563	1-120	1-360	1-460	T500/1
T500/2	3691	6969	1-210	1-640	1-810	T500/2
T500/4	7145	13631	1-380	1-1150	1-1470	T500/4
T500/8	13697	23337	1-650	1-1940	1-2480	T500/8
T500/12	16513	34734	‡	‡	‡	T500/12

\* With 2 HP-IB interface cards

† Please contact your sales center if customer requires more than 3,000 terminal connections.

\*\* For definitions of workloads and concurrent users, refer to July 1993 Configuration Guide page 116.

‡ User recommendations for 9-12 CPU T500 is variable until HP-UX 10.0. Contact factory for details.

# WSG Product Update - Series 700 Workstations and X Stations

## Introduction

The HP9000 Series 700 now includes two high-performance, low-priced workstations: the Model 712/60 and Model 712/80*i*. These two new powerful systems boast outstanding performance at prices starting at under \$4000 (U.S.L.C.P.) for ready-to-run systems. The exceptional 2D and X graphics performance of these systems, combined with their configurability to fit a wide variety of customer requirements, sets a new standard for workstations in this price range.

For workstations priced this low, the performance of these two systems is outstanding. The Model 712/60 records SPECint92 measures of 58 and SPECfp92 of 79. The Model 712/80*i* uses a higher clock rate and more cache to focus on balanced performance, dramatically boosting the integer speed and resulting in SPECint92 measures of 84 and SPECfp92 measures of 79.

The performance, design, and graphics capabilities of the 712/60 and the 712/80*i* meet the needs of two key markets:

- Enterprise Desktop
- Scientific and Engineering

The workstations meet the needs of typical commercial customers who are re-engineering their business needs along the lines of client/server computing. HP's network management strengths from products like OpenView and the new RTW software are already paving the way to success with Information Technology (IT) managers and Management of Information Systems (MIS) professionals. With the new servers from GSY and the new Entria X-stations, the Series 700 now offers a portfolio of products to sell at every level.

At the same time, the performance and graphics capabilities of both 712 systems make them excellent choices for customers in the Scientific and Engineering market. By providing two entry-level high-performance workstations at bargain prices, HP is positioned to capture an even larger share of the workstation market.

## Features & Benefits Table

<b>Features</b>	<b>Benefits</b>
Incredibly Low Prices	Now customers can afford volume purchases of Enterprise Desktop or Scientific and Engineering workstations. All Model 712 prices are low, and the special 15-inch 715/60 entry-level bundle comprises a complete product at a trend-setting price.

Features	Benefits (continued)
712/60: SPECint92 = 58 SPECfp92 = 79	Superb performance at an excellent price. Outstanding speed for quick retrieval and display to multiple windows. Performance is comparable to 60 MHz Pentium systems and better than most entry workstations.
712/80i: SPECint92 = 84 SPECfp92 = 79	Great integer performance outruns 66 MHz Pentium systems.
Xmark = 5.9 (712/60) Xmark = 8.5 (712/80i)	Industry-leading graphics in entry-priced workstations. Lightning-fast display of the most complex images and windows.
1024x768 & 1280x1024 Graphics	Medium resolution graphics for economical solutions, and high resolution when multiple windows or complex images require greater display detail.
11.8-in. Flat Panel Display	Ideal when desk space is at a premium.
15-in., 17-in., and 19-in. Monitors	Choice of display sizes to suit any user's environment.
Color Recovery	All of the subtle color shades necessary to render realistic images, at the price of 8-plane graphics.
16-128 MB RAM Capacity	Usable systems are possible now with purchase of only 16 MB of memory, and enough expansion is available to meet the needs of all but the most demanding applications.
Internal Disks: 260 & 525 MB, 1 GB	Wide choice of prices and capacities.
Internal PC-compatible Floppy	PC applications are easy and inexpensive to load.
General I/O Slot	Accommodates very low-cost networking and graphics solutions. Cards available include 2nd serial, 2nd AUI LAN & 2nd serial, X.25 & 2nd serial, HP Token Ring/9000, and a port for a second graphics monitor.

Telephony Slot	Allows connection of HP's new TeleShare card, combining data, modem, and voice functions into a unified system.
Desktop HP-UX Instant Ignition	Fits on a low-cost 260 MB disk with ample user and swap space.
Soft Power-Down	Shuts the system down quickly and correctly pressing the power button.
Fast JPEG Display	Displays full-screen industry-standard still images.
Fast MPEG Display	Displays full motion video at up to 30 frames-per-second.
PC/Mac Application Compatibility	The PC and Mac emulation software products, HP Wabi 1.1™, SoftWindows™, from Insignia Solutions, Inc., and Apple's SoftMac™ allow PC/Mac applications to run directly on the workstation.
Immediate Availability	Field consignment and demo have the Model 712 on hand today, all sales channels are stocked, and manufacturing has inventory on-hand. No waiting for orders to ship!

## Positioning

The Models 712/60 and 712/80i open up new opportunities for HP in the low-cost, high-volume segment of the workstation market. By extending the product line into a lower price range, they also open up new sales opportunities for the rest of the Series 700 product line.

The Models 712/60 and 715/50 are roughly alternative products; the 712/60 is the typical lead in commercial sales, and the 715/50 is the typical lead in technical sales. The 712/80i and 715/75 are both steps up in performance, ideal when the customer needs more horsepower.

The 712/60 should be sold when price is paramount or operating system conversion is possible or desirable. When performance is paramount, or when there is competition from 66 MHz Pentium-based systems, position the 712/80i as the system of choice.

The 715/50 and 715/75 should be sold to customers who need an industry standard expansion bus, and to technical customers who need more expandability or 3D graphics.

The Model 712 workstations deliver another great first: thanks to the bi-endian design of the PA7100LC processor, virtually any operating system supported by HP can be ported to these systems. This gives customers tremendous flexibility now and into the future. If the system strategy or the user's preference shifts to a different operating system, it's a relatively simple task to convert. This 'future-proofing' capability of the Model 712 workstations means that for the first time ever, HP is offering a truly 'universal client'.

#### 712 and 715 Product Feature Detail

	<b>712/60</b>	<b>712/80i</b>	<b>715/50</b>	<b>715/75</b>
Processor	PA7100LC	PA7100LC	PA7100	PA7100
Clock Frequency	60 MHz	80 MHz	50 MHz	75 MHz
O.S. Flexibility	Bi-Endian	Bi-Endian	Big-Endian	Big-Endian
SPECint92	58	84	49.2	80.3
SPECfp92	79	79	78.8	126.8
AIM APR II	44.5	66.3	33.7	63.0
MFLOPS (DP)	12.8	15.6	13	31
Cache (Data/Instruction)	64 KB (shared)	256 KB (shared)	64KB/64KB	256KB/256KB
Memory Capacity	16-128 MB	16-128 MB	16-256 MB	16-256 MB
Cache/Memory Bus Width	64 bits	64 bits	64 bits	64 bits
Graphics	Accelerated CRX	Accelerated CRX	CRX CRX-24 CRX-24Z CRX-48Z	CRX CRX-24 CRX-24Z CRX-48Z
Grayscale/Color	Color	Color	Grayscale Color	Grayscale Color
Xmark93	5.9	8.5	5.4	7.7
X11perf	12,216	17,428	11,187	15,931
Internal Mass Storage Capacity	1 GB	1 GB	2 GB	2 GB
Total Mass Storage Capacity	14 GB	14 GB	68.6 GB	68.6 GB
Internal Removable	3.5" Floppy	3.5" Floppy	3.5" Floppy CD-ROM 2 GB DAT 4-8 GB DAT	3.5" Floppy Media CD-ROM 2 GB DAT 4-8 GB DAT
Expansion Slots	1 General 1 TeleShare	1 General 1 TeleShare	1 EISA	1 EISA
Min. HP-UX rev.	9.03	9.03	9.01	9.01



## Target Markets

### *Enterprise Desktop*

Customers choosing products to meet their Enterprise Desktop application needs, face choices not only of vendor/product, but also of the class of desktop system. Classes of system include standard alphanumeric terminals, X-stations, PCs, and workstations. All have their strengths. *The Low End Positioning* white paper available in January will help identify which class of product to sell in various situations.

Low cost, excellent price/performance, and scalability are critical requirements for workstations to compete successfully in the Enterprise Desktop market. The 712/60 and 712/80i were designed to meet requirements identified by companies who are pioneers in this arena and who deploy enterprise computing solutions today.

Four target market segments within the Enterprise Desktop market have been identified as opportunities for the 712/60 and 712/80i:

- Financial Trading
- Customer Service (in multiple industries, e.g., Telecommunications, Financial Brokers, etc.)
- Brand Management (in multiple industries)
- Commercial Application Development

Due to the mission-critical nature of commercial applications and the investment represented by volume purchases, the decision-maker in the Enterprise Desktop market will typically be an IT or MIS manager. These new customers are persuaded by much more than workstation MIPS. Use management products like OpenView and RTW for an enterprise-wide approach to the sale. The Model 712 is an excellent lead for the desktop.

The following Model 712 value proposition should be emphasized:

‘Enterprise Ready’

**Assisting timely decisions through fast, accurate, and available information (data, voice, video, etc.) via an easy-to-use, easy-to-manage desktop that provides superior application performance all at a competitive price.**

#### Lead, Competitive, Follow Analysis

Value Proposition	Lead	Competitive	Follow
Price		X	
Performance Systems	Applications	Benchmarks	
Systems Management	Management Station Managed Node		
Ease-of-Use		X	
Applications		X	
Information Integration	X		
Applications Development	X		
Desktop PL Breadth			X

In the Scientific and Engineering market, the target customers should be users of design, development, and analytical applications. The success of products such as AutoCad™ has demonstrated the existence of a vast potential market for a workstation priced as if it were a PC, but with greater power, snappier graphics, and flexible networking options. The 712/60 and 712/80i expand to 128 MB of RAM capacity, up to 1 GB of internal disk capacity, and have excellent X Windows performance. They are ideal entry 2D CAD workstations.

## Competitive Positioning

*Note: For a summary comparison of key Model 712 price points relative to selected competitive offerings, consult WSG Hot Line file EZ712PRC.*

The 712/60 and 712/80i compete in the commercial and the low-end technical and scientific markets. They provide unsurpassed functionality, ease of use, reliability, performance, and value against all our competitors. Key differentiators for all markets are:

- State-of-the-art system integration
  - Minimum footprint.
  - Single-card computer—increased reliability and extensive standards-based I/O capabilities.
  - New, patented packaging—serviceability and low support costs.
  - PA RISC—the dominant RISC architecture in the industry with seven generations of experience.
- Innovative multimedia and graphics
  - HP VUE with MPower
  - Low-cost, fast image and video integration
  - True-color graphics through HP's patented color-recovery technology; allows 25-bit images to be displayed using an 8-bit frame buffer.
- The highest quality and most robust operating, middleware, and application environments in the UNIX industry:
  - HP-UX operating system.
  - OpenView network and system management.
  - SoftBench CASE environment.
  - Over 4,000 native applications on the Series 700; over 5,000 on the Series 800.
  - Windows applications via HP Wabi 1.1, SoftWindows from Insignia, and Apple's SoftMac.
- The Ready-to-Wear Desktop Builder Kit
  - Helps create enterprise desktops that are easy to use and easy to deploy.
  - Reduces IT staff time and the need for specialization.
  - Enhances end-user productivity
  - Supports easy desktop configuration and customization.
  - Defines policies for application integration, system setup, and user interface layout.
- Simply amazing pricing for the performance and functionality

The Model 712 product is ideally suited as a client in the emerging client/server enterprise desktop market. The primary competitors in this market are DEC, IBM, and Sun, plus vendors who have traditionally competed only in the commercial marketplace, such as NCR (possibly with X terminals). Traditional PCs cannot compete with the Model 712 in situations where the customer clearly needs the power and functionality of the enterprise desktop, situations that call for:

1. Client-server capabilities beyond simple print and file serving.
2. Mission-critical applications.

3. Distributed applications, for modularity and optimization.
4. Scalability. PCs are not scalable beyond the low end of the Series 700 family. HP's enterprise desktop solutions are scalable all the way up to the data center, with one architecture and one operating environment.

The 712/60 provides a solution that uniquely meets the desktop platform requirements of this high-growth market segment. They are ideal as clients for client/server configurations. In addition to the differentiators already listed, here are some designed especially for the enterprise desktop market:

- Friendly, quick boot
- Soft power down
- Standard connectivity: PS/2 keyboard/mouse, VGA monitor connector, Ethertwist or AUI LAN, SCSI, X.25, ISDN
- Usable, small (260-MB) disk with HP-UX already installed
- System RAM efficiencies for 16-MB to 24-MB configurations
- Desktop HP-UX, slimmed down for the low-cost desktop

In the technical and scientific markets, the primary competitors are DEC, Sun, IBM, and SGI. The 712/60 and 712/80i are both strong products in this space. The 712/60 provides a new entry-level Series 700 price/performance point for technical applications. And, along with all the key differentiators listed above, the excellent CPU and graphics performance of these workstations make them strong contenders in these markets.

*General HP key differentiators when selling against DEC:*

- Better integer performance
  - The 712/60 has 26% better integer performance than the Alpha 3000 AXP, Model 300L.
  - The 712/80i has 27% better integer performance than the Alpha 3000 AXP, Model 300.
- Vastly superior graphics performance
  - The 712/60 has better than double the X11 vector performance of the 300L.
  - The 712/80i almost three times the X11 vector performance of the 300.
  - The 712 has 8 million displayable colors; 300L and 300 have only 256.
- Lower entry-level price
  - The price of an entry-level configuration of the 712/60 (15" color monitor, 16 MB of RAM, and a 207-MB disk) is about half that of an entry-level 300L; the closest 300L has a 16" color monitor, 32-MB of memory, and a 400-MB disk.
- Production-quality UNIX operating system
  - HP-UX is a robust, proven operating system with excellent functionality and performance scalability; OSF/1 is unproven with very limited scalability.
  - DEC's operating system strategy is confused; they currently support five operating systems: VMS, Ultrix, OpenVMS, OSF/1, and NT—with no announced plan to phase out any of them.
- Robust HP RISC architecture
  - The 7100 is 7th generation RISC; Alpha is 1st generation RISC, with the problems encountered with any new architecture.
  - HP RISC CPU performance translates into fast application performance;

- Alpha performance often does not; encourage your customers to test their key applications on an HP 712 and an Alpha 300 simultaneously.
- DEC still supports VAX and MIPS as well as Alpha. The mixture of three architectures and five operating systems makes it extremely difficult for DEC customers to predict what applications will be supported on which systems, under which operating systems, for how long.
- Wealth of applications
  - Over 5,000 applications run on HP-UX; over 4,000 run on the Series 700.
  - Only 1,500 applications run on OSF/1, and many key technical applications are not on the list.
- Wide range of state-of-the-art products
  - HP offers customers winning workstation and software products today; DEC pushes what it expects to have in the future because it doesn't have what's needed today! Here are some examples of DEC's selling of futures:
    - V2.0 of DEC OSF/1 with symmetrical multiprocessing is not expected until at least mid-94. (HP has it on the Series 800 today.)
    - Clusters on OSF/1 are not expected until 1996. (HP has workstation clusters today.)
- Stable, profitable company
  - HP is gaining UNIX market share; DEC is losing it.
  - HP ended the year with strong profitability; DEC continues to report quarterly losses.
  - HP has a well established management team and a winning sales team; DEC is undergoing a complete restructuring of top management and sales.
- Integrated multimedia
  - HP has MPower; DEC has no integrated multimedia—only point technologies.
- Strong, standards-based approach to PC application functionality
  - HP is a member of the Wabi consortium and a partner with Insignia for the development of SoftWindows; DEC's solution is not standards-based.
- Ease of use
  - HP offers the Ready-to-Wear Desktop Builder Kit; DEC has no equivalent.
- Stable discounting policy
  - Rewards our best customers in all channels; DEC's new discounting structure is not as generous.

*General HP key differentiators when selling against IBM:*

- Far superior entry-level offering
  - The IBM RS/6000 Model M20 is a brain-dead workstation: it has a weak CPU, limited expandability, poor graphics, and no internal mass storage.
- Investment protection
  - The 712/60 is board-upgradeable to the 712/80i.
  - The M20 CPU is integrated into the monitor so it is not board upgradeable; there are no upgrade programs available from the M20 to higher-performance RS/6000s.
- Superior CPU performance

- The 712/60 has better than three times the integer performance of the M20 and almost three times the floating-point performance.
- The 712/80i has faster integer and floating-point performance than IBM RS/6000 Model 25T. (About 35% better integer performed.)
- Lower prices and better price/performance
  - The 712/60 costs 30% less than an equivalently configured M20 for much faster performance.
  - The 712/80i costs less than an equivalently configured 25T for faster performance.
- Strong graphics performance
  - The M20 has very weak graphics performance.
  - Both the 712/60 and 712/80i have true color; the M20 and 25T have only 256 colors.
- More technical applications
  - More than 5,000 applications run on the HP 9000 Series; more than 4,000 of them run on Series 700 workstations, including a strong offering of technical applications.
  - IBM claims to support 6,000 applications on the RS/6000, but the majority of them are commercial. The RS/6000 is weak in terms of the number of technical applications it supports.

*General HP key differentiators when selling against Sun:*

- Superior CPU performance
  - The 712/60 has twice the integer performance of the Sun SPARCstation SPARCClassic and the Sun SPARCstation SPARC LX, and almost four times the floating-point performance.
  - The 712/80i has three times the integer, and four times the floating-point performance of the SPARCClassic and SPARC LX.
- Far superior graphics
  - The 712/60 has 23 times the X11 vector performance of the SPARCClassic, and 150 times the 3D vector performance.
  - The 712/60 has more than twice the X11 vector performance of the SPARC LX, and nearly four times the 3D vector performance.
  - The 712/80i has nearly three times the X11 vector performance of the SPARC LX.
  - The 712/60 and 712/80i can display 8-million colors simultaneously; the SPARCClassic and SPARC LX are limited to 256.
  - HP offers PowerShade for 3D graphics on 712/60 and 712/80i; the SPARCClassic has no 1280x1024 monitor resolution support; the SPARC LX supports the 1280x1024 monitor but it is not available on the price list.
- Far better price/performance
  - The 712/60 costs 7% less than the SPARCClassic and 50% less than the SPARC LX—for much greater performance.
  - A technical configuration of the HP 712/80i has over three times the CPU performance and three times the X11 vectors performance of an equivalent SPARC LX configuration, at only a minimally higher cost.
- Robust operating system
  - The Solaris operating system has major problems. The current version, Solaris 2.2 has such major bugs in its print utilities that Sun won't allow the press to access the product. Sun has shipped four releases of the Solaris operating system within the past year; Sun lets its customers debug their operating system.

- Andrew Binstock, Editor-in-Chief of UNIX Review, sums up the difference between Sun and HP:  
 "HP has caught up to Sun by quietly going about its business and establishing an unassailable reputation for quality. Sun . . . should take a page from HP: develop quality products and test them thoroughly before shipping." — *UNIX Review, December 1993, page 5.*
- Continued attention to the needs of technical and scientific users
  - Sun is neglecting their technical customers as they attempt to increase their presence in the commercial marketplace.
- Strong cluster strategy
  - HP's computational cluster harnesses the power of multiple PA RISC 7100 processors, allowing it to be used as a high-performance shared computational engine; Sun's newly announced SPARCcluster is essentially an NFS file server. According to IDC, it "isn't a cluster in any accepted technical sense, but it is a competitive and inexpensive way to build relatively high-performance NFS servers."
- Integrated multimedia
  - HP offers MPower; Sun's Showme 2.0 is only available for Solaris 2.3 users.
- Ease of use
  - HP offers the Ready-To-Wear Desktop Builder Kit and OpenView; Sun has no equivalent.
- Superior CPU performance
  - The 712/60 has 70% better integer performance than the SGI Indigo IndyPC.
  - The 712/60 has more than twice the floating-point performance of the IndyPC.
  - The 712/80i has integer 45% better and performance 1/3 better floating-point performance than the SGI Indigo IndySC.
- Lower prices
  - The entry-level 712/60 is about half the cost of a similarly configured Indigo IndyPC.
  - The entry-level 712/80i costs less than a similarly configured Indigo IndySC.
- True-color graphics image quality at a lower cost through color recovery
- Open, standards-based architecture
  - HP is a COSE leader; SGI does not belong to COSE and is not active in other UNIX standards groups.
  - HP strongly supports PEX, the leading 3D API in the markets that HP is targeting with the 712/60 and 712/80i. SGI offers only weak support for PEX; their focus is on their own proprietary API, OpenGL.
  - HP is teamed with InSoft Inc. to supply a truly heterogeneous video conferencing environment that works on all standard UNIX platforms; SGI's video conferencing product works only on the Indy and can only conference to another Indy.
  - HP offers superior collaborative engineering with standards-based MPower. SGI's integrated multimedia is proprietary.

*General HP key differentiators when selling against SGI:*

The price and physical feature set of the 712s will lead them to be compared to Pentium-based PCs, the Alpha PC from DEC, and the PowerPC from IBM. Here are some of the advantages of the 712:

- *Competitive Pricing*

The 712 is priced very aggressively and is competitive, especially at net, with Pentium and RISC PSs.

- *Superior performance*

Both versions of the 712 have about 30% better floating-point performance than the 60-MHz Pentium PCs. The 712/80i also has about 30% better integer performance than the Pentium and Alpha PCs. The 712/60 has roughly equal performance integer performance with the 60-MHz Pentium-based systems.

- *Robust, multitasking, distributed environment*

The 712 runs on HP-UX, a proven, solid operating system that supports over 5,000 mission-critical applications. PC operating systems like NT that ostensibly offer the same kind of functionality are new, unproven, and lacking in mission-critical application support.

- *Scalability*

Pentium PCs are the most powerful version of their architecture available. They represent the top of the line for PC systems. The 712s, on the other hand, are based on the PA RISC architecture; the Series 700 and Series 800 systems stretch all the way from the desktop to the data center with:

- *Excellent graphics*

The 712s offer a state-of-the-art local bus graphics subsystem that provides higher performance, greater resolution, and better color clarity than standard PC graphics do.

- *More multimedia functionality*

HP VUE and MPower provide superior multimedia integration on the 712. Accelerated MPEG video decompression is built into the PA RISC 7100LC processor, providing a level of performance on the 712 that is attainable on other platforms only through expensive add-on peripheral cards.

- *Cost of ownership*

Recent studies from the Gartner Group and Nolan, Norton show that administrative costs, support, and other costs make PCs more expensive than workstations over the long haul.

## **Model 712 Features**

### *System Innovations*

The 712 has several new capabilities designed especially for users who may not be familiar with HP-UX RISC workstations. These capabilities, which make the system easier to use and less expensive, are an extension to the enterprise desktop message.

Workstation Comparison: HP 9000 Series 700 Model 712 versus the Workstation Competition										
Vendor Product Model	HP 9000 712/60	HP 9000 712/80/	DEC Alpha 3000 300L	DEC Alpha 3000 300	IBM RS/6000 M20	IBM RS/6000 025T	SGI Indigo IndyPC	SGI Indigo Indyc	SUN SPARCstation SPARCclassic	SUN SPARCstation SPARC LX
<b>Date announced</b>	Jan 94	Jan 94	April 93	April 93	Feb 93	Sept 93	July 93	July 93	Nov 92	Nov 92
<b>Performance</b>										
SPECint92	58	84	46	66	17	62	34	58	26	26
SPECfp92	79	79	64	92	29	72	35	60	21	21
MFlops (DP)	12.8	15.6	12.3	24.5	6.6	12.7	NP	16.3	4.6	4.6
<b>System Design</b>										
Type processor	PA 7100LC	PA 7100LC	Alpha 21064	Alpha 21064	POWER RSC	PowerPC	R4000 PC	R4000 SC	MicroSPARC	MicroSPARC
CPU clock speed	60	80	100	150	33.3	66	50	50	50	50
# I/O slots	2	2	0	2	1	2	2	2	2	2
Integrated MPEG video playback	yes	yes	no	no	no	no	no	no	no	no
<b>Configuration</b>										
MB RAM min/max	16/128	16/128	32/64	32/64	16/64	16/256	16/256	16/256	16/96	16/96
Disk, int max (GB)	1	1	2.1	2.1	0	2	2	2	1.1	1.1
Disk, ext max (GB)	14	14	5	20	7	30	48	48	21	21
<b>Graphics</b>										
Xmark	5.9	8.5	NP	NP	NP	10.3	NP	NP	NP	NP
X11 vectors (K)	1,100	1,420	579	579	179	1,620	1,000	1,400	48°	480
3D vectors (K)	1,200	(See *)	NP	NP	NP	691	400	480	8°	310
PLBsurf93	14.3	15.8	NP	NP	NP	12.2	NP	NP	NS	NS
Displayable colors	8 million	8 million	256	256	256	256	256**	256**	256	256

**Notes:**

DP = Double precision

\* 3D vector performance numbers were not yet available for the 712/80/ at the time this document was printed.

\*\* SGI displayable colors are expandable to 16.7 million with the purchase of 24-bit graphics board.

NP = Data not published by this competitor.

NS = Not supported on this workstation.

° = Estimated.



HP 9000 Series 700 Model 712 versus PC Competition							
Vendor Product Model	HP 9000 712/60	HP 9000 712/80i	Compaq Deskpro 5/60M	Compaq Deskpro 5/66M	AMBRA DP 60EVL	DEC DECpcXL 560	DEC DECpcAXP 150
<b>Performance</b> SPECint92 SPECfp92	58.1 79	84.1 79	60.6 59.7	67.4 61.5	60.6 59.7	60.6 59.7	66 92
<b>System Design</b> Processor type CPU clock speed(MHz) #/IO slots Integrated MPEG video Integrated network Integrated SCSI Integrated audio	PA7100LC 60 2 yes yes yes yes	PA7100LC 80 2 yes yes yes yes	Pentium P5 60 4 no no no yes	Pentium P5 66 4 no no no yes	Pentium P5 60 8 no no yes no	Pentium P5 60 6 no no yes no	Alpha 21064 150 6 (4 available) no no yes no
<b>Configuratlon</b> MB RAM min/max Mass storage bays	16/128 2	16/128 2	8/144 3	8/144 3	8/64 6	8/192 5	16/128 5

## 1. Soft Power-Down

Many commercial PC users use the power-off switch to end their PC computer sessions, a habit which can cause problems in UNIX systems. The Model 712 — unlike any other HP workstation — has a software feature which allows the power-off switch to end sessions, just like they are used to doing. The software detects when the user presses the 'power down' button, and the system automatically shuts itself down. Soft Power-Down is not automatically implemented during power failures.

## 2. Fast Boot

Most UNIX workstations take an average of two to four minutes for the initial boot process. This is longer than most PCs. On the Model 712, a "fast boot" has been designed to reduce boot time to no more than 60 seconds (even with 128 MB of RAM!). This saves the user time (and irritation) when performing an initial system boot.

## 3. Modular Design

The 712 has a compact, modular, 'snap-together' design. One screw holds in the power supply, all other components snap into place without the need for tools or fasteners. The single mother-board design is extremely clean and simple, resulting in a small footprint, high reliability, and minimal service requirements.

## Monitors

The 712 offers a full range of monitor sizes and resolutions to fit all display needs. Included in this line-up are two workstation firsts from HP: multimode and flat panel display products.

The following displays are offered standalone or bundled with the 712:

<b>Size</b>	<b>P/N</b>	<b>Resolution/Refresh Rate</b>
11.8" Flat Panel	A2882A	1024x768, 60 Hz
15"	D1196A	Multimode
17"	A4032A	Multimode
19"	A2097A	1280x1024, 72 Hz

Multimode monitors support a wide range of graphics resolutions and refresh rates. Our new 17-inch monitor has fifteen of HP's most popular settings built in and adjusted — and it has the ability to sync (with only slight display adjustments) on an infinite number of additional ones. With our multimode displays, you choose the size — not the specification — of the monitor you need for your application. To take advantage of the Model 712's 17-inch monitor multi-mode capability, video RAM is added to the Model 712; it will then run with 1280x1024 resolution.

The accelerated graphics in Model 712 systems also supports 640x480 and 800x600 resolutions. However, HP does not sell any configurations of the Model 712 with monitors of these resolutions, although our multi-mode monitors can run these if desired. Please contact your technical support resources in sales situations which require these resolutions with other monitors.

HP is excited to be the first major workstation vendor to introduce a stand-alone flat panel display in our product line! This product is offered as a direct monitor replacement with an analog sync on green signal input — which simply means plug and play functionality with any of HP's systems supporting 1024x768 resolution 75 Hz refresh rate graphics. Designed to address the space and weight constraints found in today's markets, HP's new display is 1/4 as small and 1/4 the weight of a comparable 17" CRT. It also consumes 1/2 the power and provides a sharper, clearer image than found with current CRT technologies.

The 1024x768 resolution coupled with the 11.8" diagonal screen size means that the panel is suitable for most workstation-based applications. And, unlike other integrated flat panels on the market, it is available in volume today.

## Graphics

### Graphics Performance Features

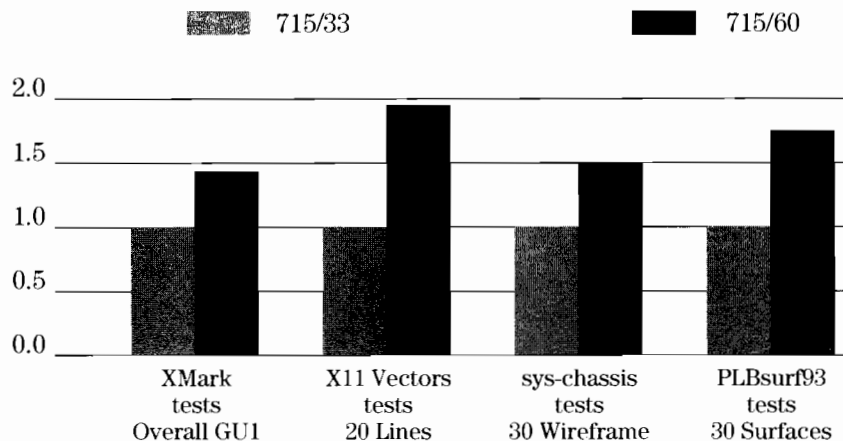
- Color
- 640x480 through 1280x1024 resolution
- 15", 17", 19", or Flat Panel monitors
- Up to 75 Hz refresh rate for ergonomic viewing
- Highly interactive performance: 1.4 million vectors/second in X Windows
- Color Recovery
- Optional second graphics subsystem doubles viewable display space
- Binary compatible with HP's industry-leading CRX family
- 2-Color Lookup Tables for independent control of GUI and application data color

### Graphics Performance Summary

	<i>Xmark</i>	<i>X11</i>	<i>PLB</i>
		<i>Vectors</i>	<i>surf93</i>
712/60	5.94	1.1 M	14.3*
712/80i	8.36	1.4 M	15.8*

\* Requires PowerShade (optional)

## Entry Graphics Performance Improvements



### *High Performance Graphics Subsystem*

Note: See the white paper: Artist Next-Generation Entry Color Graphics (pub #5962-6199E)

A high-performance graphics subsystem is included with every Model 712, integrated on the CPU motherboard for lowest possible cost. This is a GUI-acceleration system. Acceleration means performing the graphics calculations outside of the main CPU, in a custom, dedicated graphics processor. Similar to a floating point co-processor, a graphics processor delivers higher performance than a general-purpose CPU for specific, frequently-repeated operations. In addition, it reduces the demand on the main CPU, freeing up compute power.

This hot new graphics subsystem is binary code compatible with HP's current family of industry-leading CRX graphics. This means that applications which run on HP graphics today will run without change on the new graphics. This includes applications written to X Windows as well as those written to one of the 3D Application Programming Interfaces (API): PEX, PHIGS, or Starbase.

The graphics are designed for optimum GUI performance in X Windows. Opening and moving windows, as well as creating and updating the visual data in the windows, can be extremely compute-intensive. For example, 80,000 data elements must be manipulated simply to move a 200x200 pixel window.

The graphics on the Model 712 achieves its highly interactive GUI in two ways:

1. Close coupling between the CPU and graphics for high speed communication. The graphics reside on a fast local bus, ensuring that this critical link in the performance pipeline doesn't become a bottleneck. The bus is designed to run at speeds of up to 40 MHz (over 100 MB/s data transfer rate), depending on system clock rate.

2. Custom VLSI to accelerate frequently-used GUI functions. Many graphics subsystems simply provide a frame buffer (RAM) to store the screen image. The graphics on a SUN SparcClassic are typical of this type. They can be very inefficient, because many GUI commands consist of performing repetitive operations on large areas of the screen. It is common, for example, to paint a background pattern (stipple) over a large portion of the screen. The CPU could do this pixel by pixel (up to a million pixels may be involved), or — as it does on the Model 712 — it could simply ship a small sample of the pattern to the video hardware and request that it be applied.

The Model 712 uses advanced technology VLSI to accelerate:

- stippling
- generation of lines and text
- moving bit mapped images such as icons or scanned images around the screen
- tracking and displaying the mouse cursor

Model 712 also accelerates important operations for JPEG, MPEG, and H.261 video decompression.

*Innovative Technology: Color Recovery*

Model 712 includes a patented new “Color Recovery” technology which enables it to display True Color images — approximately 8 million simultaneous colors — using 1/3 the Video RAM (VRAM) of 24-bit graphics systems. This results in the lowest-cost True Color graphics available. Applications which benefit from this high level of image quality in a low-cost system include:

- Color images in Document Image Management
- Bit-mapped images in Electronic Publications or Desktop Publishing
- JPEG and MPEG images in Multimedia
- Graphical analysis models in Visualization packages
- Shaded graphs and charts in Statistical Analysis, Math, and Business Graphics
- Shaded contour maps in Geographic Information Systems
- Shaded models in MCAD

Applications written using HP's 3D APIs (PEX, PHIGS, or Starbase) will enjoy True Color image quality automatically when they purchase the optional PowerShade software (described below). These applications will perform as if a 24-bit graphics card were installed in the computer. PRO-Engineer, from Parametric Technologies (PTC), is an example of a popular MCAD application that benefits from Color Recovery in this way.

Applications written in X Windows need to be slightly modified to benefit from Color Recovery. The change must be performed by the application developer, and Color Recovery won't be available until the developer releases a version which supports it. Applications which use dithering can significantly improve their visual quality by replacing their dithering algorithm with the simple HP Color Recover algorithm. Sample C-code for inclusion in applications is available to application developers.

#### *Dual Graphics Support*

Users who require increased physical display space benefit from the low-cost dual subsystem feature offered on the Model 712. Dual subsystem users drive two independent graphics subsystems and monitors to double the display real estate available to them. To add a second subsystem to a Model 712, users should order an A2878A. They must also order a second monitor. Any size or resolution monitor which is supported on the primary graphics may be used on the second subsystem, with the stipulation that the two monitors be identical in size and resolution. Performance of the second graphics subsystem matches the primary subsystem, and all necessary cabling is supplied. The second graphics subsystem supports either 1024x768 or 1280x1024 resolution.

Windows may be written to either monitor. The only limitation is that a window cannot be "split" between two monitors.

#### *PowerShade*

*Note: For more information on PowerShade, see the PowerShade Questions and Answers white paper available on the Workstation Group Hotline.*

While most users will appreciate the Model 712 for its fast performance in X Windows, many users, particularly in MCAD, AEC, and Scientific Visualization areas, will also benefit from the high level of 3D performance and functionality it delivers at this low price point.

Since 3D requires different computations than GUI and 2D graphics, it has its own set of APIs: PEX, PHIGS, and Starbase from HP; GL, HOOPS, AVS, and others which are available from third parties. As a general rule, Model 712 graphics will deliver 3D wireframe functionality through any of these APIs in its native, out-of-the-box configuration. A separately available software package called PowerShade (B2156C) adds the ability to render 3D surfaces. This optional package is used to generate the lighting and shading, as well as some other features required for the modeling of solid objects in three dimensions. Key features include:

- Hidden Surface Removal
- Smooth Shading
- Light Sources
- Specular Reflections
- Backface Support

PowerShade also provides a software emulation of overlay and double-buffer planes for applications which depend on them. These applications, like most 3D applications, will typically run on higher-end systems (like the 715 CRX-24Z) which have increased hardware support for 3D graphics, but also need to be supported on low-end platforms like the Model 712 for occasional, light, or extremely price-sensitive users.

## *Multimedia*

*Note: See the MPower 2.0 Section at the end of this guide, and the data sheet on PowerTools for more information on HP's Multimedia application.*

The 712 products are perfect platforms for multimedia communications. The MPEG (Moving Picture Experts Group) decompression algorithm, which is an inherent feature of the PA-RISC 7100LC architecture lends itself to collaboration of text, images, audio, or video.

### *HP TeleShare*

*Note: The HP TeleShare product will be available on the February Corporate Price List.*

HP TeleShare is an optional 3-in-1 telecommunication tool, incorporating telephone, fax service, and data modem into Model 712 workstations. The product contains two dual-line phone ports for analog phone line (POTS) access. The Motif-based TeleShare software provides an easy-to-use, point-and-click style graphical interface to all telecommunication needs. Enterprise Desktop users in markets like Financial Trading, Customer Service, and Brand Management are busy people. Their desks are crowded, the phone is always in use, and they are moving information constantly through all kinds of media. HP TeleShare has been designed to help them. It saves space and ties all of those phone and fax and data access tasks together into one hardware/software tool. And that's what the Enterprise Desktop is all about — making people more productive!

Other HP Teleshare features include:

- 2 Dual-Line Analog Phone Ports
- Option to record audio information from phone line
- Option to play back audio information into phone line
- Adjustable volume and ring control
- Choice of Mute, hold, forward, transfer, and conference buttons
- Access to address book via 'double click'
- Last number re-dial and programmable speed-dialing keys
- High-speed (14.4 Kbaud) FAX and data modem

## *Memory*

The Model 712 has space for two pairs of RAM SIMMs. Increments available for each pair are 8 MB, 16 MB, 32 MB, and 64 MB, so the maximum RAM that can be loaded into the Model 712 is 128 MB. Unequal pairs can be used — for example, one pair totalling 8 MB and one 16 MB, for a total of 24 MB RAM. Because the Model 712 has two pairs of SIMMS, careful consideration of future memory requirements should be given when selecting the RAM increment for the first pair.

Model 712 RAM is very fast — it runs at 70 ns. The slower (80 ns) 8 and 16 RAM intended for the Model 715 should not be used, even though it appears physically identical. You must use RAM which runs at 70 ns.

### *Internal Peripherals*

The Model 712 package has two internal storage device bays. The first is dedicated to hard disk drives and the second may be used for an optional PC-compatible 3.5 inch floppy disk.

A choice of three hard disk drives is available:

- For minimum cost and adequate storage for Desktop HP-UX 9.03, the 260 MB drive. The 260 MB drive has sufficient space for this smaller operating system, with approximately 100 MB of disk space left for user files.
- For customers who need the complete Run Time HP-UX 9.03, or who need more space for swap or local files, a 525 MB drive.
- For customers running large applications or needing a great deal of local storage, a full 1.0 GB drive.

The second bay is for an optional floppy disk drive. These systems are the first PA-RISC workstations to support a flexible disk drive via the industry standard FDD bus. This maintains full PC data interchange, lowers costs (vs. prior SCSI floppy solutions), and saves space. In addition, this mechanism supports the 300 rpm 1.2 MB floppy disk format common in Japan.

### *Built-in I/O*

#### *Keyboard and Mouse*

The Model 712 is the first PA-RISC workstation to support the keyboard and pointing device via the industry standard IBM PS/2 electrical and connector specification. This is a new interface for the Series 700 and is used in place of the traditional HP-HIL port.

Keyboards for the Model 712 use a standard 101/102-key PC layout. The keyboard's unique design complements the new package style of the Model 712. The keyboard and mouse both use PS/2 connections, saving a serial port. The A4030A localization kit for the Model 712 includes the keyboard and a three-button mouse.

#### *External Interfaces*

The built-in I/O for Model 712 systems is very similar to that included in other S700 workstations. The data sheet describes the electrical and physical connections for the SCSI, serial, and parallel interfaces in detail. Please note that one serial port is standard in the Model 712; a second port is available through option cards.

One key change for the Model 712 is that in addition to the LAN AUI connector, the system has a UTP (Unshielded Twisted Pair) connector, rather than ThinLAN. This new port is compatible with the 10BaseT standard, also known as Ethertwist or StarLAN-10. Customers in the target Enterprise Desktop market are showing a preference for this inexpensive cabling technology. The Model 712 autoselects the Ethertwist port when connected to an active line.



The Model 712 has two I/O slots available. The first is called a "general I/O slot" and may be used for a variety of inexpensive expansion cards designed specifically for the pricing/functionality goals of the Model 712. The second slot is for Telephony. Currently, HP TeleShare is the only product using this slot. The two slots may not be used interchangeably.

At introduction, four cards are available for the general I/O slot. A fifth, X.25, is due to be available one month later. For detailed specifications of all of these cards, please see the Model 712 Data Sheet.

#### *Second Serial Port*

Many customers desire more than one serial port for connection to additional printers, human interface devices, terminals, etc. A very inexpensive solution is available through the second serial card. It provides a second RS-232C port identical in all ways to the internal port. No additional software is required to take advantage of this functionality.



#### *Second LAN plus Second Serial Ports*

Customers often want a second LAN port, particularly in environments typical of Enterprise Desktop users. They are accessing multiple data sources, which frequently are on more than one LAN. For these customers, an I/O card providing a second AUI port is available, again at very low cost. As a bonus, a second serial port identical to the standard one is included with this card. A MAU may be purchased to adapt the AUI to whichever LAN type is required. Once again, no additional software is required to take advantage of this card's features.

#### *Token Ring/9000*

A Token Ring/9000 adapter card is available for the Model 712s. It includes a Token Ring network adapter card, Token Ring software driver, documentation, and a media filter. The Token Ring/9000 product can also be ordered pre-installed in the Model 712 system.

The Token Ring/9000 card features include:

- Full inter-operability with IBM Token-Ring
- 4 Mbits/second or 16 Mbits/second burst transfer rate
- Supports BSD Sockets, ARPA, NFS, X.11, LM/X services over TCP/IP
- Supports multiple transports (TCP/IP and NetWare IPX) over one token ring card;
- Supports DLPI (Data Link Provider Interface)
- Can be managed by SNMP
- Supports Source Routing to remote connections through Source Routing Bridges (Source Routing is the ability to determine the routes to any reachable destination);
- STP (Shielded Twisted-Pair) and UTP (Unshielded Twisted-Pair) wiring
- 9-pin DB-type connector
- Supports HP9000 as a LAN-to-LAN router
- Administration and troubleshooting tools comparable to those provided by 802.3/Ethernet LAN
- Reconfigurable link speed using SAM;
- On-line diagnostics
- Interface card self-test

### *X.25/Serial Port*

*Note: The X.25 and second serial port product will be available on the February Corporate Price List.*

The X.25 Link/serial port product provides two additional interfaces for the Model 712 workstation. Unlike the current Series 700 EISA-based hardware solution, the Model 712 X.25 protocol relies on software. This results in a very inexpensive but flexible wide-area networking solution.

The X.25 features include:

- A cost-effective solution for connecting Model 712 workstations to single or multiple remote host computers (HP or non HP) through standard and open communication protocols
- Support for ARPA/Berkeley Services
- Support industry standard Defense Advanced Research Project Agency (DARPA) TCP/IP protocols
- The ability to write customized programs over TCP/IP via BSD programmatic interface
- Compliance with the 1980 and 1984 CCITT X.25 recommendations
- Compliance with the US Defense Data Network (DDN) TCP/IP-X.25 standard protocols (RFC 877)
- Transparent access over multiple nodes and networks
- Dynamic packet routing and gateway capabilities through the use of Arpa/Berkeley services over Internet protocol (IP), compliant with RFC 877
- Reduced installation and configuration tasks:
- A factory-installed option for hardware and software X.25 link components
- Menu-driven X.25 configuration.

*Note: The X.25 link for Model 712 requires HP STREAMS/UX for S/700, part number J2232A.*

*Note: A second serial port identical to the Model 712's internal port is also included with this card.*

### *Second Graphics Monitor*

As discussed in the graphics section of this product guide, a second monitor can be added to the Model 712 via this card for the general I/O slot. The second monitor will essentially double the display area for complex applications which require simultaneous viewing of multiple windows. The second monitor should be purchased separately and must be identical to the first. No additional software is required.

### *External Peripherals*

The introduction of the new package and low price point of the Model 712 has provided an opportunity to also introduce a complementary family of standalone peripherals. This allows the inexpensive addition of local SCSI peripherals when the internal bays of the Model 712 don't solve the customer's entire problem.

- Three peripherals are currently available in these separate packages:
- 660 MB CD ROM
  - 2 GB DDS Tape Drive
  - 1.0 GB Disk Drive

### **Structure and Pricing Summary**

*See the Series 700 Pricing and Configuration Guide for all of the Model 712 product details.*

As with the Model 715/75, all factory integrated Model 712 systems will be sold using an "a la carte" product structure. In other words, order the base SPU, then add to it your choice of graphics, RAM, disk, etc. through additional options. You must select one each of the graphics, memory, and disk options. A two-user license for HP-UX 9.03 is bundled in the system price. The 712 systems require 9.03 or a later version of HP-UX.

A new localization kit has been established for the Model 712 products. The kit contains the localized keyboard, mouse, HP-UX user documentation, and power cords; it must be ordered with the system.

For an attention-getting price point, the Model 712/60 is offered in a single bundle at a very low entry price! We are expecting excellent publicity for this — HP's lowest price ever — for a complete and usable system. Because of the low price, we cannot afford our usual discounts. Therefore, this bundle is not discountable. (Note however, the bundle can be recreated using the a la carte structure noted above. The resultant price is slightly higher but fully discountable).

### **Operating System**

#### **HP-UX 9.03**

*Note: Full details are contained in the 9.03 release notes. Also, see the HP-UX 9.0 data sheet (pub #5091-9640E).*

Version 9.03 is our latest release of HP-UX. It provides the support for all of the great new workstation products being released in January and is a fully compatible upgrade from HP-UX 9.01. It also contains changes to cluster configuration and incorporates several fixes for minor bugs that existed in previous releases.

The 9.03 release replaces the 9.01 release, and applications that were qualified on the 9.0 and 9.01 releases remain fully supported on the 9.03 release. All of these releases have the same API and ABI. Beginning in January, 1994, the 9.03 release replaces the 9.01 release as the operating system delivered when a customer orders HP-UX 9.0. This applies to both media and Instant Ignition orders.

#### **Instant Ignition**

Two different configurations of HP-UX are available and loaded right on the customers' installed disk drive:

- Desktop HP-UX Instant Ignition
- HP-UX Run-time Instant Ignition.

Desktop HP-UX Instant Ignition is designed to run X Window applications primarily in commercial client environments. It includes the following:

- Full suite of TCP/IP networking with ARPA and NFS services
- Text editors (vi, ex, etc.)
- Full X11R4 and X11R5 runtime environments, including fonts (fonts are removed automatically if a font server is specified during the bootup process, saving 10 megabytes of disk space)
- Full HP Visual User Environment (VUE)
- Spelling checker
- Network License Server runtime
- Audio support
- Message catalogs and appropriate NLIO for the localized environment (i.e., German Desktop HP-UX Instant Ignition includes German message catalogs, Japanese Desktop HP-UX Instant Ignition includes Japanese message catalogs and Japanese NLIO, etc.)
- Kernighan and Ritchie C compiler (for kernel building only; include files are not in Desktop HP-UX, therefore it cannot be used to write C programs).

Desktop HP-UX Instant Ignition is ideal for price-conscious customers because it fits comfortably on disk drives as small as 260 MB. This means big savings for customers with limited storage needs! The reduced operating system (a subset of Run-Time HP-UX) consumes 110 MB of space; 50 MB is used for swap space and 100 MB of the 260 MB disk are still available for user files. Some reference accounts have been able to reduce the amount of disk space required by Desktop HP-UX Instant Ignition to as little as 70 MB, with no impact on the usability of their systems.

The minimum supported disk size for Japanese and Korean Instant Ignition is 525 MB. European systems, including German, French, and Italian, leave approximately 70 MB of file space at this time.

HP-UX Run-Time Instant Ignition contains all the features of Desktop HP-UX Instant Ignition plus the following extra features:

- Accounting
- Auditing
- Manual pages
- Disk quotas
- Keyshell
- Netinstall (ability to act as a server to install the HP-UX operating system over the network)
- Text processing utilities
- Serial Line Internet Protocol (SLIP, UUCP, CU, CA)
- Diskless server capability (rbootd)
- C language include files.

HP-UX Run-Time is required for any Series 700 used in a software development application, any Series 700 used in serial (UUCP) communications, or any Series 700 used in a multiuser configuration. HP-UX Run-Time Instant Ignition is recommended for any Series 700 workstation used as a server or in technical applications.

## **Small RAM**

In addition to saving disk space with Desktop HP-UX Instant Ignition, HP is also implementing measures which improve the application memory utilization of HP-UX RISC workstations. With 9.0, customers will be able to use a 24 MB configuration for their applications. A white paper describing how a customer might achieve a 16 MB usable desktop configuration in certain structured application environments will also be available. Expect to see more improvements in this area in future releases.

## **Ready-to-Wear Desktop Builder Kit**

*For detailed information on the Ready-to-Wear Desktop Builder Kit, see the Sales Guide (pub #5091-8520E).*

HP's Ready-to-Wear Desktop Builder Kit (RTW DBK) makes it easier to use UNIX workstations as desktop client systems from both the end-users' perspective as well as the IT (Information Technology) departments' perspective. The RTW Desktop Builder Kit provides a standards-based, easy-to-use interface for people that don't want to have to know UNIX to be productive on workstations. The more compelling benefit is that it lowers the effort and cost for IT departments to distribute and support UNIX workstations as desktop systems. The RTW Desktop Builder Kit takes many of the policy-setting, configuration, customization, and support issues associated with supporting UNIX desktop systems, and turns them into a standard product that companies can buy for significantly less money than it would take to do all these tasks themselves. This allows IT departments to reallocate their shrinking resources to address corporate critical tasks.

## **PC and Mac Emulation**

A second generation of PC and Mac emulation software products has been introduced, bringing 486-class performance to Microsoft Windows-based applications and mid- to high-end performance to Mac-based applications. HP Wabi 1.1 and SoftWindows from Insignia Solutions, Inc., break performance barriers by eliminating the need for 'on-the-fly' translation of the Microsoft Windows libraries directly into the PA-RISC opcodes. System calls made by applications such as Microsoft Excel are completed at native PA-RISC speeds. Similarly, Apple has compiled the Mac libraries natively to PA-RISC to provide fast performance to Mac-based applications.

## **HP Wabi 1.1**

*For detailed information, see the HP-Wabi 1.1 data sheet (pub. #5091-9908E).*

HP Wabi 1.1 enables HP-UX users to run Microsoft Windows applications right out of the box. Microsoft Windows applications become an integral part of the HP VUE desktop to a degree not possible with traditional emulation technology. Users can cut and paste between the two environments, resize and move windows, and even run Microsoft Windows applications on X terminals in a distributed environment. HP Wabi supports the most popular Microsoft Windows applications on the

market, including Microsoft Word, Lotus AmiPro, WordPerfect, Lotus 1-2-3, Microsoft Excel, Borland Quattro Pro, Microsoft PowerPoint, SPC Harvard Graphics, Borland Paradox, CorelDraw!, Aldus PageMaker, ProComm Plus, and Microsoft Project.

### **SoftWindows**

SoftWindows brings the full PC environment to HP-UX. It provides the ability to run all Microsoft Windows applications, all MS-DOS applications, and support for PC networking, electronic mail, PC CD-ROMs, and much more. As a result of Insignia's close strategic relationship with Microsoft, Insignia has ported the Microsoft Windows libraries to PA-RISC. They coupled DOS compatibility with native MS-Windows source code to produce a product with both fast performance and full compatibility for PC applications under HP-UX. SoftWindows supports Novell NetWare, LAN Manager, the ODI standard, TCP/IP, and LAN Workplace. Insignia has announced availability of SoftWindows for HP-UX by the end of the year. Insignia's Boston office at (508) 682-7600, can provide detailed information.

### **SoftMac**

Apple's SoftMac allows out-of-the-box Apple Macintosh applications to run on HP-UX. The most popular Mac-based applications will run on HP workstations at mid- to high-end performance compared to a Macintosh computer. Software availability is the first-half of 1994.

### **HP MPower 2.0**

*For more information, see the HP MPower Kit (pub #5091-9896E).*

HP MPower 2.0 is a software application that provides multimedia technologies for collaborative, dispersed teams. Information — text, images, audio, or video — can be shared via print, fax, e-mail, or real-time through HP MPower 2.0 collaborative tools. These tools bring together the strengths of the Model 712 workstation with multimedia to enable people to communicate quickly and accurately. The teams that need to do this the most are the very same as those who need an Enterprise Desktop solution. HP's ever-growing strength in multimedia is another corporate strength and selling feature when selling to commercial and technical markets.

The Model 712 is the perfect client for HP MPower 2.0. The MPEG (Moving Picture Experts Group) decompression algorithm, which is an inherent part of the PA-RISC 7100LC architecture, lets HP MPower 2.0's video player (HP Digital Video) play back video at up to the full screen resolution. This play back performance is possible at up to 30 frames per second (352x240 frames). No other system supplier can play back video faster at such a low price!

The Model 712 and MPower 2.0 are a great team for retrieval and very fast display of still images, too. MPower 2.0 even includes a utility to convert images captured using JPEG video to MPEG for display on the Model 712.

HP Digital Video (the video player of MPower) includes controls for playing, pausing, stopping, and looping video play-back in forward and reverse modes. HP Digital Video supports random frame access, which positions the player to any frame of a video sequence and lets the user specify the precise frame rate so that viewing speeds stay appropriate for the viewing context. This is all done through HP Digital Video; you don't need any other hardware devices, which makes Model 712 an excellent — and very competitive — system for video play-back.

Model 712 also has an optional telephony product which may be integrated into the HP MPower 2.0 environment.

HP TeleShare is also integrated within HP MPower 2.0\*. The facilities integrated within HP MPower 2.0 are:

- FAX software to send and receive faxes
- HP SharedX for real-time collaboration on a network
- Whiteboard for creating simple drawings or sketching on existing images
- Electronic mail of messages with embedded multimedia components
- Image viewer
- Audio editor and player
- HP SharedPrint for processing print jobs and spooling print jobs to the printer
- Digital video player for the play back of MPEG compressed digital video clips
- DeskScan/UX software to control the optional ScanJet IICx color scanner
- VideoLive software to control the optional VideoLive card
- Integration of the HP TeleShare 3-in-1 telecommunications tool for the HP 712 workstation.

#### **For more information**

For more information on the Ready-to-Wear Desktop Builder Kit, multimedia, and graphics, see the WSG Product Update section of this guide.

Competitive information changes frequently. Watch for updates on the information in this section of the HP 9000 New Product Guide via:

*For Internal sales representatives:*

HPDesk Current News Bulletins  
Power Tools  
Workstation hotline



*For HP Channel Partners:*

HPNN  
HP Computer Update  
ChanneLink

\* Teleshare is currently available only in the U.S.A. and selected regions.

## HP ENTRIA X Terminals

### One Minute Sale

Hewlett-Packard has designed a breakthrough desktop for commercial markets. HP ENTRIA X Terminals provide a competitive advantage as a new *Graphical Front-End* to HP's total system solutions. Hewlett-Packard is focused on providing customers with complete solutions; and HP ENTRIA answers the call for low cost access to enterprise computing. Imagine a fully functional, graphical desktop for under \$1000 including a monitor (US List Price). Now imagine this solution is easy to use, optimized for graphics, and provides secure, simultaneous access to multiple environments. HP ENTRIA X Terminals are based on *Open Systems Standards* which provides maximum flexibility and investment protection for the future. HP ENTRIA also leverages customers' investments in existing systems by providing seamless *Legacy System Access* through a combination of terminal emulators (including IBM 3270, DEC VT320, xterm & hpterm) and multiple keyboard support. This allows the MIS department to insulate the user during the transition to a Client/Server architecture. Along with ENTRIA, HP is introducing ENWARE X Station Software with improved and expanded features including graphical systems management tools making ENTRIA X Terminals the *Simplest To Manage* desktop in the industry. Ease of installation (plug & play), remote configuration capability, centralized administration and overall lowest cost of ownership distinguish HP ENTRIA as the preferred desktop for large installations. HP ENTRIA X Terminals are the perfect replacement for ASCII Text Terminals, IBM 3270 Terminals and PC's running terminal emulation. HP ENTRIA is the *Ultimate Terminal Upgrade!*

### Product Overview

HP ENTRIA X Terminals are a new line of low cost, RISC based X Terminals specifically designed for the mainstream commercial customer who currently uses text terminals in mission critical environments. HP's Sales Force and Channel Partners have achieved strong success in technical markets with 700/RX and HP ENVIZEX Stations as "Workstation Companions." In fact, HP is the world leader in this market. Now, HP ENTRIA X Terminals open up the large and growing commercial market for "Terminal Upgrades".

Hewlett-Packard has also introduced the HP ENWARE Family of X Station software. ENWARE provides innovative functionality, high performance and ease of system management for HP ENTRIA X Terminals, ENVIZEX Stations and 700/RX platforms. Together, HP ENTRIA and HP ENWARE will provide a powerful combination for your customers' desktop needs.



## HP ENTRIA Family Of X Terminals.

ENTRIA Model	HP ENTRIA X Terminal With Bundled Monitor and Keyboard
14M	14" Monochrome (1024 X 768)
19M	19" Hi-Res Monochrome (1280 X 1024)
14C	14" Color (1024 X 768)
15C	15" Color (1024 X 768)
17C	17" Color (1024 X 768)

### Target Customers

HP ENTRIA is a logical terminal upgrade for replicated site environments (such as branch banking and retail) and mainframe alternative situations. There are three main ways of identifying ENTRIA sales opportunities:

- 1) By Desktop Replacement Opportunities (Terminals & PCs running Emulation)
- 2) By Specific Markets (Customer Service & Financial)
- 3) By Specific Usages and Applications (Data Entry and Query & Update)

#### *1) Desktop Replacement Opportunities*

##### *ASCII & 3270 Terminals*

While ENTRIA has many of the ease of administration attributes of dumb terminals, it is a much higher functionality terminal. ENTRIA has an award winning graphical user interface, is capable of multiple terminal emulation sessions and enables cut and paste between different applications of different compute hosts.

##### *PCs running just Terminal Emulation*

ENTRIA has a much lower cost per seat than PCs running just terminal emulation; and has central administration. ENTRIA has no local hard disk or operating system to maintain or support. Refer to the *cost of ownership analysis and worksheet* available on the Panacom Hotline.

##### *PC LANs*

ENTRIA offers significantly easier administration than PC LANs. If the availability of DOS-based, local office-productivity tools is not required, ENTRIA is a better choice.

#### *2) By Specific Markets*

##### *Customer Service Departments*

The Customer Service opportunity covers all positions which require interfacing with customers either on the phone or face-to-face while having the requirement to input or retrieve information.

### *Financial Back Offices*

All financial institutions have something commonly called "The Back Office." The back office is where transactions get entered into the company's accounting system and/or corporate database. Invariably, the desktop that resides in the back office is an IBM 3270 type terminal connected to a mainframe. The financial back office provides an excellent opportunity for ENTRIA.

### *Financial Customer Service*

As financial institutions try to differentiate themselves based on customer service, ENTRIA is an excellent desktop or countertop for the teller to access legacy applications that exist in banks as well as the new customer-focused applications on the horizon. New customer-focused applications can provide a profile of the customer being served and give the opportunity to *suggestive sell* appropriate new services or products.

### *3) By Specific Usages and Applications*

#### *Data Entry*

These customers are looking to increase the productivity while decreasing the learning curve of their data entry clerks with the deployment of GUI-based forms filling. These customers are usually using single session ASCII terminals.

#### *Query & Update*

These customers are looking to increase their productivity through the ability to have access to multiple databases and new customer focused applications

## **ENTRIA Features**

### *Ease of Installation*

#### *Plug & Play*

ENTRIA will be the first DHCP (Dynamic Host Configuration Protocol) compliant X terminal. Effectively DHCP allows ENTRIA to send a signal over the network when first connected; and if the server is expecting to add new devices to the network, it will automatically assign an IP address to the new ENTRIA X Terminal! Although it is often claimed, ENTRIA will be the first truly "Plug & Play" X terminal!

#### *Smart Monitor Config*

ENTRIA is able to automatically configure itself to any standard HP monitor that is plugged into it! This is just another way that ENTRIA was able to achieve true "Plug & Play." Customers can rapidly deploy ENTRIA without the need for technically trained personnel.

### *Certifications*

#### *Energy Star Rating*

ENTRIA is an Energy Star product. Early in 1993 the Environmental Protection Agency (EPA) developed the Energy Star Program to recognize those vendors complying with specific energy consumption guidelines. Not only is ENTRIA an Energy Star product, but it has support for all the upcoming Energy Star Monitors from HP. This means that ENTRIA will automatically signal that it has not been in use for a prescribed amount of time and the Energy Star monitor will power

down. The monitor will stay in reduced power consumption mode until there is interaction with the user (i.e: mouse movement or keystroke). The 14" Color Monitor bundled in ENTRIA Model 14M is also an Energy Star product. This rating will be valued by government accounts and other customers who measure energy consumption in their cost-of-ownership equation. Energy Star products allow customers to be environmentally conscious while also delivering the benefit of cost savings.

#### *ISO 9000 Quality*

ENTRIA is built in North America to stringent HP quality standards. The Panacom Division where ENTRIA will be manufactured is actively pursuing ISO 9000 certification. Customers need not worry about the quality of ENTRIA as HP is well known when it comes to quality. Customers who are also ISO 9000 certified will very likely be looking for certified suppliers.

#### *User Friendly*

##### *Smart Power Down*

When the power is switched off, ENTRIA is smart enough to shut down all its processes on the host in an orderly fashion. By contrast, you could shut off a competitor's X terminal and its processes could continue to run on the host computer for days, wasting valuable swap space memory. Customers need not worry about certain issues beyond their control such as users powering off their desktops without logging out, because HP already has!

##### *User Friendly Start-up Screen*

ENTRIA's start-up screen is revolutionary in design! It eliminates all the "technogarble" most commonly associated with the initialization of PCs, workstations and yesterday's X terminals; and replaces it with a highly graphical, intuitive interaction. One only has to turn on any competitive X terminal side by side with ENTRIA to realize which vendor has thought more about the user: HP has! User friendly desktops do not intimidate the users and allow for quicker training.

##### *Continuous User Feedback*

The action indicator "Heart Beat" LED on the front of ENTRIA gives the user continuous feedback when the system is busy. This LED flashes whenever LAN traffic is initiated from ENTRIA onto the LAN. Users are more productive when they are given continuous feedback by their systems. There are no more "Is it Hung?" questions.

#### *Ergonomics*

##### *Quiet Operation*

ENTRIA has no fan and is completely silent! ENTRIA runs cooler due to its low power consumption. This has been a high want with many commercial accounts. This also satisfies the customer perception that a quiet workplace is a more productive one.

### *Small Footprint*

ENTRIA has a very small and low profile package design (approx. 13"x11"x2.5"). ENTRIA's footprint is just large enough to support all of ENTRIA's standard monitor's pedestals. This saves precious space on the desktop. For those workspaces where monitor height is an issue, ENTRIA also has an optional side stand. Customers need only reserve a minimum amount of desktop space for ENTRIA.

### *Anti-Theft Security*

Hardware security is a feature of ENTRIA with its built in Security Loop. When combined with locking cable and/or lock, the Security Loop effectively prevents the removal of ENTRIA from its work place. The Security Loop also protects ENTRIA's memory SIMMs from theft. This is very important to customers who plan on using their X terminal in public places; such as universities & libraries.

### *Monitors*

ENTRIA comes bundled with high quality non-interlaced HP monitors. The refresh rate on all standard monitors is 70Hz or greater.

## *Flexibility*

### *LAN Support*

ENTRIA supports both ThinLAN (BNC coax) & 10baseT (Twisted Pair) LAN ports standard. This configuration offers the user maximum flexibility in an Ethernet environment. ENTRIA will auto-sense which port is connected to the LAN. Ethernet LAN customers can seamlessly add ENTRIA to their environment without worry.

### *Parallel, Serial & PS/2 Ports*

ENTRIA will have industry standard Parallel (1), Serial (1) and PS/2 (2) connection ports. ENTRIA's X server will have local print device support on both the parallel and serial ports. Once a printer is connected to ENTRIA, it is network accessible to all users of the LAN. The PS/2 ports are used for the keyboard and mouse. This allows customers to seamlessly integrate industry standard peripherals in to their environment.

## *Options*

### *Optional Audio Support*

An optional Audio Card (which includes microphone) can be added to ENTRIA at any time. This enables the user to voice annotate Email or slide presentations with certain applications. This allows customers to use new communication/collaboration tools as they become available.

### *Optional PCMCIA Port*

An optional PCMCIA (Personal Computer Memory Card International Association) adapter card with Type-2 slot can be added to ENTRIA at any time. This slot will support the download of the Flash ROM-based X server.

### *Memory*

ENTRIA will have 4MB of DRAM on its main board and two SIMM slots which make it expandable to 68MB (2x32MB SIMMs). The standard 4MB configuration will be able to run the ENWARE X server and display several host-based sessions; local clients would require additional memory. See the Panacom Hotline for more information on local client memory requirements.

## HP ENWARE Family of X Station Software

### One Minute Sale

The ENWARE X Station Software Family provides innovative functionality that works in conjunction with HP ENTRIA X Terminals & ENVIZEX Stations. Not only does ENWARE give you leadership performance and functionality, it's designed to handle the enterprise-wide administration of X terminals with ease. ENWARE has a suite of character terminal emulators that allow legacy applications to run simultaneously beside new ones; you can even "cut & paste" between sessions on different hosts. The ENWARE X Station Software Family includes:

- HP ENWARE X Station Software 5.1  
(X Server Software required for HP ENTRIA and ENVIZEX)
- HP ENWARE X Terminal Manager 1.0  
(Graphical System Administration Tool for large groups of X Terminals)
- HP ENWARE 3270 1.0  
(Local client implementation of IBM 3270 emulation)

### Features & Benefits

#### *HP ENWARE X Station Software 5.1*

#### *Built In Legacy Access*

ENWARE includes a wide range of local terminal emulators that reduce network traffic and save host computer cycles including DEC VT320, IBM 3270 (optional), xterm & hpterm.

#### *Choice of User Environment*

Only HP gives you the choice of local user environments from the award winning HP VUE/RX, to the defacto standard Motif window manager to the memory miser twm. HP VUE/RX, built "on top of" Motif window manager, allows you to manage multiple "workspaces." Multiple workspaces help organize work and avoid "window clutter."

#### *One License for all HP X Stations*

HP ENWARE X Station Software 5.1 may be installed on multiple hosts and accommodates as many users as required. There are no per seat charges and no headaches with licensing. Only one copy of ENWARE need be purchased for ENVIZEX, ENTRIA and 700/RX X terminals (per individual customer site).

#### *Multihost CD*

ENWARE X Station Software is available on a Multi Host CD with customized installation scripts for HP, Sun, IBM and SCO host platforms.

#### *Performance*

HP ENWARE X Station Software 5.1 has been optimized to provide leading performance and functionality. HP ENTRIA X Terminals achieve 100,000 Xstones and our ENVIZEX Ca platforms achieve an industry leading 165,000 Xstones performance.

#### *Dynamic Keyboard Mapping*

Allows you to have different key maps in different windows. (i.e., PC101 keyboard map in one window, 3270 keyboard map in another).

## *HP ENWARE 3270 1.0*

### *3270 Emulation*

A Motif based 3270 emulator with mouse and windowing support that runs locally on HP's Family of X Stations. Multiple sessions and multiple screen sizes are supported. Multiple windows provide productive access to multiple applications and systems. ENWARE 3270 allows you to telnet directly to a TCP/IP mainframe, or connect through a TCP/IP to SNA gateway. (Available in April 1994)

## *HP ENWARE X Terminal Manager 1.0*

### *System Administration*

ENWARE X Terminal Manager is a Motif-based graphical utility that makes enterprise management of X terminals a snap. It is an easy to learn and easy to use product that simplifies system administration tasks, provides the simplicity of "point & click" to X terminal desktop management and boosts system administrator productivity. ENWARE X Terminal Manager is the most comprehensive suite of X Terminal network management tools available. (Available April 1994)

ENWARE X Terminal Manager performs the automatic discovery of your entire network. New X terminals (with DHCP support) will automatically be assigned network addresses, if desired.

ENWARE X Terminal Manager provides trouble shooting and help desk facilities including: remote ping, memory statistics, networks statistics and X terminal configuration. Remote management of X terminal operation is provided for the convenience of help desk operators. Alarm and diagnostic messages may be filtered and logged for statistical purposes. X terminals and hosts are checked to pinpoint the source of trouble to an individual host, X terminal or application.

## **Where To Look For More Information On HP ENTRIA & ENWARE:**

It is a good idea to check the Panacom Hotline index occasionally for a current list of X Terminal Sales Tools and Information. The Panacom Hotline contains a wide variety of items including:

- Current Promotions
- Brochures, Data Sheets, etc.
- Sales Programs
- ENTRIA Sales Guide
- ENVIZEX Sales Guide
- 3270 Alternative Sales Guide
- Cost Of Ownership Analysis
- X Terminals & TradeUp'94
- Success Stories
- Performance Papers
- Competitive Information
- Slide Sets
- Information Updates
- General Information

A list of available sales literature, as well as current sales programs and promotions, is available on the Panacom Hotline under the filename: CURRENT.

*How to request an item from the Panacom Hotline*

To get an index of all items on the Panacom Hotline:

- Send an HPDesk message,  
To: Panacom Hotline  
Subject: INDEX

To order a particular item such as CURRENT:

- Send an HPDesk message,  
To: Panacom Hotline  
Subject: CURRENT







