HP CHANNELS

Introducing SCO's XENIX for the HP Vectra PC

- A simple, low-cost solution for multiuser environments

- Ideal for developing software both for XENIX and for MS-DOS applications

HEWLETT PACKARD

On the cover
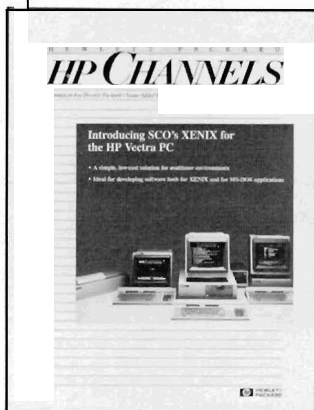
Introducing SCO's XENIX for the HP Vectra PC. Vectra/XENIX is a multi-tasking, multiuser operating system developed jointly by Microsoft Corporation and The Santa Cruz Operation. See articles beginning on pages 1 and 15.

How to get your name added to the distribution for *HP Channels*

If you work for a company that is a value-added business for Hewlett-Packard and want to receive your own copy of **HP Channels,** call Hewlett-Packard and have your sales rep send your name to Tracy Wester.

HP sales reps only: To add new US and Canadian accounts to the distribution for **HP Channels,** please send me the following information (on HPDesk 0000/53 or to the address listed at the end of this section): company name, address, phone number, contract number, contacts' name/title, HP sales rep name and employee number. For accounts outside of the US or Canada, contact Tracy Wester to get the name of the person that handles the distribution of **HP Channels** in your country.

Please address editorial correspondence to:

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HP Computer Museum
www.hpmuseum.net

For research and education purposes only.

HP Forms Strategic Alliance with The Santa Cruz Operation

HP and The Santa Cruz Operation recently announced XENIX on the Vectra PC. XENIX, a shared-processor operating system, was ported to the Vectra PC by The Santa Cruz Operation (SCO), the leading Independent Software Vendor of UNIX™/XENIX products for microcomputers. SCO will be the exclusive distributor of XENIX on the Vectra PC to OEMs, VARs, dealers, major accounts, and VEUs. SCO will also provide support to all customers, including end users.

SCO and Microsoft Corporation have a "technology exchange agreement" under which the two companies will jointly develop future enhancements to the XENIX product line. This agreement extends to the **80386** and to UNIX System V Release **3.** Microsoft supports SCO as the major distributor of packaged XENIX products to virtually all distribution channels.

SCO's commitment to systems innovation and product quality make it uniquely qualified to distribute and support XENIX on the Vectra PC. SCO will continue to maintain the consistency and quality of support that HP traditionally provides its customers. Currently, SCO has the largest team of UNIX engineers in the U.S. In addition, SCO's training programs have been acknowledged as excellent by the UNIX/XENIX community.

HP intends to foster a close relationship with SCO, and to this end, the two companies have entered into a joint marketing agreement. HP will treat SCO as a "strategic vendor" and will accord SCO the standard ISV/IHV program rights and benefits. In addition, as "strategic vendor," SCO will have access to Vectra PC systems for support/training activities, HP Personal Office Computer Division's technical support resources, and PC enhancement and product development information, to relevant HP publications. SCO will also have an HP employee appointed as an SCO account manager.

Joint marketing activities between SCO and HP will include the following:

Implementing a lead referral system for sales leads

- Joint press releases
- Joint presence at trade shows
- Joint VAR/OEM recruiting
- Joint references in sales literature.

Note: For information on SCO's XENIX for the HP Vectra PC, please see the Vectra/XENIX article entitled, "SCO's XENIX on the HP Vectra PC," beginning on page 15.

UNIX is a trademurk of AT&T Bell Laboratories.

Training

CUSTOMER SERVICE TRAINING DATA SHEETS AVAILABLE

Individual or packaged service training course data sheets are now available from HP's Customer Service Training.

The data sheets are formatted to provide the reader with a preview of the respective maintenance training course. The data sheet identifies the course objective, type of audience, course length, delivery method, prerequisites. and the main topics for each course.

To obtain individual or packaged service maintenance training data sheets, please contact Customer Service Training at 415-960-5300, or our nationwide toll free number: 800-523-0696.

Training

DTS-70 SERVICE TRAINING AT LEXICO

Lexico Enterprise of Kirkland. Washington, is currently offering a five-day HP DTS-70 system service course.

The course provides background information for the HP 1000 Series minicomputer, the TESTAID IIIIFAST-RACE III software and, in particular, the HP 9571 Digital Test Station. The students learn to perform and evaluate the system's functional tests, performance tests, and to install the test station hardware. Students are also given the opportunities to troubleshoot inserted faults on both the instruments and the circuit boards of the digital test unit. This course is a prerequisite to the advanced DTS-70 training also available from Lexico.

For additional information on the DTS-70 service course and its 1986187 training schedule, please contact the registrar's office at Lexico, 206-828-0555.

Support

HARDWARE AND SOFTWARE SUPPORT PRICING UPDATE

HP will implement price changes on selected hardware and software support products, effective February 1, 1987.

Hardware support

Commerciul systems – Because of increasing competition in the area of memory maintenance, we have substantially lowered the maintenance prices on the memory boards used in the HP 3000 Series 64, 68, 70, 52, and 58 indicated below.

- I-Mbyte board used in Series 64, 68, 70
- 2-Mbyte board used in Series 52, 58
  4-Mbyte board used in Series 64, 68. 70

At the same time, we feel that there is opportunity to increase maintenance prices of our SPUs, yet remain competitively priced in the marketplace. SPU price increases ranged from about 1 to 8 percent, with the highest increases applied to the oldest operating systems (Series 30133, 111111). Overall, users will realize system hardware contract price increases of about less than 2 percent.

Workstations – HP LaserJet printer usage options were deleted. Few competitors sell usage options on comparable models and few usage option contracts have been purchased to date. In addition, the base support price adequately recovers all costs related to usage.

Price changes were also made to about 25 percent of the workstation

STREP products in order to more accurately reflect the cost of delivery. Thirty-three STREP products received increases ranging from about 5 to 14 percent, with an average increase of about 7 percent. Even with these increases. our support prices remain competitive with those of our competitors. Key price changes include the following products:

- HP 150A/B
- HP 110 (increased to equal HP 110 + STREP)
- HP 2686 LaserJet

In addition, nine flexible disc STREP prices were decreased about 12 to 22 percent due to savings in parts costs.

Software support

Comrnerciul systems – Software Support prices for the HP 3000 operating systems were increased 10 percent. on average, to recover increasing support delivery costs and to realign support products within the HP 3000 family. In addition, the U.S. and U.K. Response Centers will be providing 5-dayl24-hour coverage for HP 3000 operating systems; this new feature will be included into the existing support products. The products with operating system changes are listed below:

- Series 37
  Series 39140142
  Series 42XP, 52
- Series 58
  Series 44148, 64168170

In particular, Series 42XP and Series 52 support prices were corrected and now equal the support prices for the Series 39140142. Also, many Series 44148 customers are upgrading to Series 58s. In order to position the Series 58 closer to the Series 44148, the Series 58 received no major price changes ($5/month increase on RCS only). The remaining systems realized about 5 to 10 percent price increases but remain competitively priced relative to our major competitors.

RCS and AMS support prices for the administration manufacturing, and office families increased 14 percent. Category support prices for the office tools category increased 10 percent. Current prices do not adequately recover expenses and represent a very low cost as a percent of software list price.

On average, HP 3000 customers will realize a 6 to 8 percent price increase on their overall software support configuration.

Technical *systems* – HP 1000 RTE-A operating system support prices were repositioned to include the new RTE-A400, to better match support price to performance and to recover increased labor and overhead expenses. The average HP 1000 customer will only realize about a 3 to 4 percent increase.

Please contact your local HP sales office with any specific questions.

HP 3000

INTRODUCING THE HP 3000 SERIES 52C AND 58C

To keep pace with advances in technology, HP is introducing the HP 3000 Series 52C and 58C. These new systems incorporate new technologies and provide higher reliability and lower support costs. Both systems will ship standard with a single 4-Mbyte memory array card and replace the "A" version which will continue to ship standard with two 2-Mbyte cards.

Users can also order an additional 4-Mbytes of memory at the time of system purchase by ordering Option 503. By purchasing this option, users can save about 40 percent compared to ordering standalone 2-Mbyte memory cards at a later date.

The following products are available January 1, 1987 with the new 4-Mbyte memory array card. Users who have a Series 52A or Series 58A system or box swap on order may wish to cancel that order and reorder the new systems with the new 4-Mbyte memory array. System pricing has not changed with the addition of the new memory board.

Ordering information

Product No.	Description
32552C	Series 52 with 4-Mbytes
015	220-240/50Hz
022	DUS on cartridge tape
502	Add-on 2-Mbytes memory
503	Add-on 4-Mbytes memory
32552CH	Series 52 box swap
015	220-240/50Hz
502	Add-on 2-Mbytes memory
503	Add-on 4-Mbytes memory
601	Pre Series II upgrade
602	Series II upgrade
603	Series III upgrade
605	Series 33A/B upgrade
606	Series 33 CIU upgrade
607	Series 30A/B upgrade
608	Series 30C/U upgrade
613	Series III upgrade with 30341A
617	Series 37 upgrade
618	Series 37XE upgrade
632	Micro 3000 with 2-Mbytes
633	Micro 3000 with 4-Mbytes
634	Micro 3000XE
635	Micro 3000XE-5 cd
636	HP 250 upgrade
637	HP 260 upgrade
32558C	Series 58 with 4-Mbytes
015	220-240/50Hz
022	DUS on cartridge tape
502	Add-on 2-Mbytes memory
503	Add-on 4-Mbytes memory
32558CH	Series 58 box swap
015	220-240/50Hz
502	Add-on 2-Mbytes
503	Add-on 4-Mbytes memory
601	Pre Series II upgrade
602	Series II upgrade
603	Series III upgrade
605	Series 33A/B upgrade
606	Series 33C/U upgrade
607	Series 30A/B upgrade
608	Series 30C/U upgrade
611	Series 40 upgrade
613	Series III upgrade with 30341A
614	Series 39 upgrade
615	Series 42 upgrade
617	Series 37 upgrade
618	Series 37XE upgrade
619	Series 42XP with 2-Mbytes
632	Micro 3000 With 2-Mbytes
633	Micro 3000 With 4-Mbytes
634	Micro 3000XE
635	Micro 3000XE-5 cd
636	HP 250 upgrade
637	HP 260 upgrade
640	Series 52 with 2-Mbytes
641	Series 52 With 4-Mbytes

A software patch will be required. Consult your HP sales rep for information.

The HP 3000 Series 52C and 58C are

another example of HP's commitment to enhancing our systems with increased reliability and lower costs.

HP 3000

CONSULTING SERVICE FOR HP 3000 900 SERIES USERS

Migration Planning Assistance (MPA) from HP is a structured, but highly customized consulting service designed to help HP 3000 users plan their migration to the 900 Series systems.

The benefit for the user is a smooth and efficient migration through good, upfront planning. Migration Planning Assistance (PIN 32480 + 42A) gives the user an understanding of the goals to be reached in a migration project and of the effort needed to do so. MPA, therefore, enhances the user's ability to meet deadlines and stay on budget.

MPA has two components: Migration Orientation and Migration Analysis and Planning. Both elements are on site and tailored to the user's specific requirements. During an on-site Migration Orientation, the members of the user's project team receive a high-level overview of the new systems and of all the stages of a migration project – from the initial planning steps to the implementation of a migration plan. During the Migration Analysis and Planning phase, a trained migration specialist guides the project team through the development of a migration plan for one of their applications. The user then uses this plan both as a guide for migrating that application, and as an example in planning the entire migration process.

Why is this service needed?

If migration is a snap, then why should HP users need this service? Because, even though migration is technically straightforward, users must be

able to deal with large numbers of applications and different options and trade offs. A smooth and efficient migration will, therefore, largely depend on planning and on how well these options are evaluated, weighed, and chosen. The objective of MPA is to make sure that our users' success is not compromised by a lack of good planning.

Successful test

The Migration Orientation component of MPA was successfully beta tested at a major account site last November. The training component was ranked at an average of 4.4 on a scale of 1 (poor) to 5 (excellent). The timing of the class, its content, and the accompanying materials were thought to be just right. Best of all, the service was perceived as adding real value to the company.

The project team generally felt that they now had a good understanding of the issues, and a common base of knowledge to prepare them for their migration. HP product developer Ann Dingwall was at the beta site that day, and summed it up: "Based on the customer comments I am getting today about the value of this service, I am confident that this product will be key to the success of customers' migration projects."

MPA can be ordered as of January 1, 1987. It is best to order this simultaneously with the HP 3000 Series 9301950 order.

HP 3000

HP 3000-TO-IBM PRODUCT LINE PRICE CHANGES

Effective on the January 1, 1987, HP Price List, the prices of most HP 3000-to-IBM products will be increased. (Due to the 30-day grace period, the new prices will become effective on February 1, 1987.)

The products that will be affected include:

Product No.	Description
HP-to-IBM Network Service Product	
30250	IMF
30248	RJE
30249	MRJE
30247	SNA IMF
30245	SNA NRJE
HP-to-IBM Link Product	
30251	BSC Link
	Modem option
	X.21 option
	Autocall option
	V.35 option
	No hardware

The price of an upgrade from a Series 37 option to a Series 39-70 option is equal to the difference between the two option prices.

HP 3000

HP 3000 NETWORKING PRICE CHANGES

The price of DS X.25 will increase by about seven percent for the Series 39-70 on January 1, 1987. Due to the 30-day grace period, the new prices will be effective on February 1, 1987.

A list of the products affected is shown below.

- PIN 32187A, Opt. 310, 320, 335, 390
- PIN 32187A, Opt. 410,420,435, 490

No change will occur for DS X.25 on the HP 3000 Series 37.

MPE VIE HP 3000 SYSTEMS SUPPORT NEW HP 7936/37 DISC DRIVES

Hewlett-Packard is pleased to announce support for the HP 7936H and HP 7937H disc drives on MPE VIE HP 3000 systems. These new fixed media disc drives provide 307 and 571 Mbytes of formatted storage capacity, and are built with state-of-the-art Winchester technology and HP-developed thin film media. In addition, since the drives have a higher capacity than the HP 7933 and HP 7935 disc drives, the maximum disc storage for HP 3000 systems has increased as follows:

HP 3000 System	Maximum disc storage with HP 7933, HP 7935 discs	Maximum disc storage with HP 7937 disc
Series 37. 37XE	1.6 Gbytes	2.2 Gbytes
Series 39, 4X, 5X	3.2 Gbytes	4.5 Gbytes
Series 6X. 70 (1 bay)	6.4 Gbytes	9.1 Gbytes
Series 6X. 70 (2 hays)	9.6 Gbytes	13.7 Gbytes

System Support

The HP 7936H and HP 7937H disc drives will be supported on MPE VIE T-Delta-6 and UB-MIT, or later, according to the following guidelines:

Disc domain	T-Delta-6	UB-MIT (or later)
System disc	Yes	Yes
Foreign disc	No	Yes
Private volumes	No	Yes

The following matrix indicates the maximum configuration of HP 7936H and HP 7937H disc drives on HP 3000 MPE systems.

HP 3000 system	HP 7936H and/ or HP 7937H
Micro 3000	4
Series 37. 37XE	4
Micro 3000XE, Series 39, 4X. 5X	8
Series 6X, 70 (1 bay)	16
Series 6X. 70 (2 bays)	24

Note: Some users with Series 44 and Series 48 will need to upgrade their firmware. Specifically, those configured with two memory controllers and the CPS-E version of firmware date coded before 2620 need to upgrade their firmware for support of the HP 7937 disc drive. The V/E installed base update kit (PIN 30090-60096) is available from the Corporate Parts Center. Complete information is available from your HP sales rep.

Users who have upgraded to the Series 58 have the correct firmware.

Compared to the HP 7933, the HP 7937 has about a 51 percent decrease in cost per megabyte and a 500 percent increase in capacity per square foot. This adds up to a better, more cost-effective solution for HP 3000 users.

HP 3000 SERIES 44-70 SYSTEMS NOW SUPPORT HP 9144A AS COLD LOAD DEVICE

In response to user requests, the certification testing for support of the HP 9144A as a "cold load" and "DUS" load device on the HP 3000 Series 44 to 70 systems has been successfully completed. This means, for the Series 37 to 70 systems, the HP 9144A can now be used:

- As a cold load device.
- As a sysdump device.
- As a system update device.

  As a memory dump device.
- To provide for removable media.

In the past, this level of support on the HP 9144A was available for only the Series 37 to 42 systems. For the Series 44 and larger systems, the HP 9144A was supported only as a peripheral tape device.

While HP fully supports the HP 9144A on the Series 37 to 70 systems, users of the HP 9144A should be aware that the current device limitations still apply. That is:

As a primary backup device, backup is limited to a maximum of 220 Mbytes. For systems with more than 220 Mbytes of disc, the HP 9144A would not be supported as the primary backup device.

- HP 3000 configuration guidelines remain unchanged except that a system can now be ordered with an HP 9144A as the primary backup and cold load device.

There are several benefits to using the HP 9144A. First, it is a convenient media for distributing software from a

central site. Second, with the added support of the HP 9144A as a cold load and system update device, MPE updates for the Series 44 to 70 systems can now be distributed using cartridge tape. A third advantage is that the media is easily handled by untrained personnel.

For these and other reasons, HP realizes that there are users with configurations that require or benefit by using an HP 9144A as a cold load and primary backup device. Extending support for the cartridge tape to the Series 44 to 70 is another indication of HP's commitment to satisfy evolving user needs.

However, as a general guideline, HP *does not recommend conjiguring a Series 48 or larger system with an HP 9144A tape drive as a primary backup device.*

We recommend that all Series 64/68/70 users read the following article entitled "How to Obtain HP 9144A Cold Load Support on HP 3000 Series 64/68/70 Systems." Depending on your system, there may be some changes required to support the HP 9144A as a cold load and DUS load device. We also recommend that everyone review the table below, which summarizes the configuration guidelines for the HP 9144A.

HP 9144A Configuration Guidelines

SYSTEM	System Req'ts	System Notes
Series 37/37XE	• MPE V/E T–MIT or later	• Maximum of 2 units per system. • Backup limit of 132mb with 1/2 mb main memory. • Backup limit of 220mb with 1 mb of main memory. • Backup above 220mb requires a 1600 cpi, 6250 cpi or 35401A tape drive.
Series 39 40/42 42XP/52	• MPE V/E T–MIT (for Series 30–42XP) ar later • MPE V/E T–Delta–5 (far Series 52) ar later • CPS–E (MPE V/E) microcode far cold load	• Maximum of 4 units per system. • Maximum of 4 units of 9144A and 35401A, in combination, per system. • Backup limit 220mb • Backup above 220mb requires 1600 cpi, 6250 cpi or 35401A tape drive.
Series 44/48/58	• MPE V/E T–MIT or later • CPS–E (MPE V/E) microcode far cold load	• Maximum of 4 units per system. • Maximum of 4 units of 9144A and 35401A, in combination, per system • Backup limit 220mb. • Backup above 220mb requires 1600 cpi. 6250 cpi or 35401A tape drive.
Series 64/68/70	• MPE V/E UB–MIT or later UB and UB–Delta–1 will need patch U005 • MPE T–Delta–1 or later T–based MITs will need patch J032. • DCU board with ROM date code of C.2641 or later	• Maximum of 4 units per system • Maximum of 4 units of 9144A and 35401A, in combination, per system • Backup limit 220mb • Backup above 220mb requires 1600 cpi, 6250 cpi or 35401A tape drive • Cannot be placed on the same GIC as the System Disc

Please note that the information in this article applies to the HP 9144A and not the HP 35401A. For information on the HP 35401A, see previously published articles and literature.

How to Obtain HP 9144A Cold Load Support on HP 3000 Series 64/68/70 Systems

In a continuing effort to help our users be successful, HP often accommodates special requests. One such request was to support the full feature set of the HP 9144A on the HP 3000 Series 44 and larger systems. In the past, the HP 9144A had been supported only as an added peripheral device.

The certification testing for the support of the HP 9144A as a "cold load" and "DUS" load device on the Series 44 to 70 systems has been successfully completed. This means that the HP 9144A can now be used:

As a cold load device.

▪ As a sysdump device.

As a system update device.

▪ As a memory dump device.

▪ To provide for removable media.

While the Series 44 to 58 systems will support the additional functionality of the HP 9144A (when running MPE T-MIT or later with the CPS-E firmware), changes may be required in order to obtain it on the Series 64/68/70 systems. This article will explain what changes, if any, are necessary to obtain the added features on the HP 9144A for the Series 64/68/70 systems.

The Series 64/68/70 systems may require two changes to support the added features of the HP 9144A. First, they may need a patch to update the microcode and MPE. Second, they may need a newer version of the DCU board.

In order to use the HP 9144A as a cold load device, the first item the Series 64/68/70 systems will require is a patch. What this patch provides is the microcode and MPE modifications

needed to recognize the HP 9144A as a cold load device. For the MPE UB and UB-Delta-1 MITs, the patch number is U005. For T-Delta-1 and later T-based versions of MPE, the patch number is J032. Naturally, post MPE UB-Delta-1 MITs will contain updated versions of MPE and microcode so that no patch is necessary.

The second item the Series 64168170 systems may require is a version of the DCU board with a ROM date code of C.2641 or later. If the system was shipped prior to October 20, 1986, chances are the system does not have the correct DCU board. If this is the case, and if users want the additional capabilities of the HP 9144A, then they will need to purchase a DCU rollover. Assuming an HP customer engineer performs the rollover, the parts needed would be as follows:

DCU version	Upgrade kit P/N
Earlier than C.2601	Board sent to SMR (Support Materials Roseville) for exchange
C.2601 to C.2627	Order P/N 30140-60189
C.2628 to C.2640	Order PIN 30140-60188

DCU rollovers will be on a time and materials basis. Please see your HP sales rep for complete pricing and other details.

This latest change to MPE VIE will benefit HP 3000 users who are moving toward centralized administration of distributed systems. However. in general terms, this is just another step in HP's effort to provide users with solutions that truly meet their needs. For more information about the new level of support for the HP 9144A, as well as a summary of the HP 9144A configuration guidelines, it is recommended that you read the previous article entitled "HP 3000 Series 44-70 Systems Now Support HP 9144A as a Cold Load Device."

Please note that the information in this article applies to the HP 9144A und not to the HP 35401A. For information on the HP 35401A, see other previously published articles and literature.

FIBER OPTICS HP-IB EXTENDER NOW SUPPORTED ON HP 3000 SYSTEMS

Do you need remote or distributed printing from distances of 250 to 1,000 meters for your HP 3000? Then the HP 37203A HP-IB extender with fiber optic capabilities is the solution.

The HP 37203A HP-IB extender with Opt. 001 and 010 provides connections via a fiber optic cable versus coax cable common on other HP-IB extenders. This fiber optic cable allows for greater protection against electrical disturbance, permitting a greater cabling distance between the extended pairs; thereby allowing users remote or distributed printing from distances of 250 to 1.000 meters.

The fiber optic HP-IB extender will be supported on the HP 3000 Series 39/4X/5X/6X and 70 with MPE VIE T-Delta-3 or later.

Each extender chain will support a maximum of four printers of which up to two printers may be non-impact (HP 2680A or HP 2688A). The following printers may be combined on a single extender chain.

Printer	Description
HP 2563A/B	300 lpm dot matrix impact
HP 2564B	600 lpm dot matrix impact
HP 2565A	600 lpm dot matrix impact
HP 2566A/B	900 lpm dot matrix impact
HP 2567B	1200 lpm dot matrix impact
HP 2680A	44 ppm non-impact
HP 2688A	12 ppm non-impact

The following guidelines must be followed when configuring the 37203A, Opt. 001:

1) A maximum of four line printers (HP 256X) per extender chain.

2) A maximum of two page printers (HP 268X) per extender chain.

3) Two sets of extenders per GIC only for combinations of CIPER printers (HP 256X).

4) A maximum of two GICs with extender per system.

5) Extenders must be on a dedicated low-speed GIC.

6) The maximum number of printers supported per system is the same with the extenders as without. *Exception:* one additional HP 2688A printer per system will be supported when using an extender; i.e. three HP 2688As will be supported on the Series 39/4X/5X when using an extender (compared to two), and five HP 2688As will be supported on Series 6X/70 when using an extender (compared to four).

7) Each HP-IB extender pair will be supported with cable lengths up to 1.000 meters.

For users needing cabling extensions up to 250 meters, the HP 37204B is the most cost-effective solution.

MPE QUICK REFERENCE GUIDE NOW AVAILABLE

The *MPE Quick Reference Guide* (PIN 32033-90023) is now available. The new version replaces the *MPE Software Pocket Guide* (PIN 30000-90049) and has been redesigned as a desktop reference book covering the Fundamental Operating System (FOS). The new design enhances the easy-to-use format of the old pocket guide.

Those of you familiar with the old pocket guide will notice many technical changes in each section of the new

guide. The first edition of the *MPE Quick Reference Guide* was written for version G.01.00 (T-MIT) of MPE V. An updated version will be published soon to introduce new MPE V Commands and Intrinsics (UB-MIT). The new commands are:

    :AUTOALLOCATE
    :SHOWALLOCATE
    :CHANGELOG
    :BBASIC
    :BBASICOMP
    :BBASICGO
    :BBASICPREP
    :FTN
    :FTNGO
    :FTNPREP

The new intrinsics are:

    DUMPPPMAP
    FINDPMAPADDR
    FINDPMAPNAME
    FLABELINFO
    FPARSE
    GETINFO
    LOGINFO
    NLCONVNUM
    NLFMTLONGCAL
    NLFMTNUM
    NLNUMSPEC
    NLSWITCHBUF

The *MPE Quick Reference Guide* will be updated periodically and published as necessary. Updates to MPE will not automatically require an update for the *MPE Quick Reference Guide.*

You can order the MPE Quick Reference Guide from HP's Direct Marketing Division.

Technical Computers

HP Precision Architecture/HP-UX

HP 9000 MODEL 840 SYSTEM CONSOLE REQUIREMENTS

Although all HP 239X terminals are supported for use with the HP 9000 Model 840, only the HP 2392A is supported as a system console. When ordering new HP 2392A terminals that are to serve as system consoles, be sure to order Option S12. This no-cost firmware enhancement eliminates a repeated beeping sound that will occur when the terminal is in access port control mode or if status display is enabled in console mode. It also eliminates the need for a double carriage return in these same modes. These two enhancements are the only differences in the firmware supplied with Option S12. There is no need for this option if an HP 2392A is not going to serve as a Model 840 system console.

If the user has previously ordered an HP 2392A that will be used as a system console, it will work except for the inconveniences specific to control mode and console mode described above. It is estimated that these modes will be used less than 1 percent of the time. The firmware enhancement to eliminate these inconveniences may be ordered through the Corporate Parts Center for a nominal fee. The part numbers to order are PIN 1818-3805 and 1818-3806. Contact your HP sales rep for more information.

HP 1000

DATA COMMUNICATION SOFTWARE ON THE NEW HP 1000 A400

The HP 1000 A-Series line of computers has a new processor, the A400. The A400 is a compact. low-cost minicomputer. It is excellent for a wide variety of low-end applications, especially those requiring a multitasking real-time operating system and good I/O performance. It provides effective networking solutions as a workcell controller and a network gateway.

Each of the existing HP 1000 data communication software products will have a new option number (400) that will allow the software to be purchased to run on the new member of the HP 1000 Series. The following are the product numbers for the new options:

HP 1000 data communication software products

Product No.	Description
91750A/R, Opt. 400	DS/1000-IV
91781A/R, Opt. 400	RJE/1000-II
91782A/R, Opt. 400	MRJE/1000
91784A/R. Opt. 400	PMF/1000
91790A/R, Opt. 400	NS/1000

These options will be available on the HP Price List starting January 1, 1987. The NS/1000 product is priced at a special introductory price. This special price for NS/1000 will only be available until May 1, 1987. Contact your sales rep for more information.

THE MODEL 350: NEW HIGH-END HP 9000 SERIES 300 SYSTEMS

Hewlett-Packard is pleased to announce the new high-performance member of the HP 9000 Series 300 product line. The Model 350 makes the successful Series 300 even more competitive due to greatly increased price/performance.

With computational power four times that of a VAX 111780, the new Model 350 provides enough computing horsepower to make difficult jobs – molecular modeling, complex CAE/CAD design, or AI software development – interactive and increasingly productive.

There are several features of the new Model 350 that are key contributions to the Series 300 product line:

- Performs benchmarks with equal to, or better performance than, leading systems from Sun and Apollo. DEC and IBM aren't even close.

- Has twice the computational power of the very successful Model 320.

- Has strict object code compatibility with the Model 320 and 310.

- Offers all the functionality of a Model 320U, in one small box.

- Provides an upgrade path from the Model 320 to the new, high-performance workstations

- Supports the Series 2001300 DIO interface cards, including the new DOS coprocessor interface card.

- Supports all the Series 300 peripherals.

- Continues to offer the outstanding reliability associated with HP Series 300 products. (About 14 years MTBF)

Reliability allows us to offer the lowest service contract prices in the industry.

The Model 350 system

The Model 350 looks exactly like a 310 or 320, and provides the following features in a basic four-slot SPU box:

- 25 MHz 68020 with 20 MHz 68881 and a 32-Kbyte cache (no wait states)

- 8 Mbytes RAM, with option for 16 Mbytes (option does not need a slot)

- LAN, HP-IB, RS-232, HP-HIL, 2-channel DMA, high speed disc interfaces

- System Slot for Series 300 video interface board

System performance has been improved from that of the Model 320 by redefining the system's bus architecture. A full 32-bit memory bus allows the system to perform cache fills at over 22 Mbyteslsecond, and a separate 32-bit I/O bus (DIO-II) handles disc and other I/O transactions independently with up to 6 Mbyteslsecond of available bandwidth.

The following table illustrates the system improvements that the Model 350 offers over the Model 320 system, which continues to be the system of choice for medium performance workstation needs:

Description	Model 350	Model 320
Standard RAM	8 Mbytes	4 Mbytes
Maximum RAM	32 Mhytes	7.5 Mbytes
Performance relative to VAX 111780:	3.7-4.2	1.8-2.0
Whetstones	1162 B l Dlsec	840 B l Dlsec
Linpacks (double precision)	113/sec	62/sec

Further technical details are provided in a new data sheet specific to the Model 350, and include system and component prices as well. This data sheet also contains some sample configurations of how to order a complete 350 system.

Workstation Configurations

The available configurations based on the Model 350 include high-performance equivalents of all the Model 320 bundles, and are all priced aggressively with respect to systems from our competitors.

Model	Description
350M	350 SPU plus high-resolution 17-inch display, keyboard, mouse, AXE, NS-ARPA LAN software, ID module.
350C	350 SPU plus six-plane color high-resolution 19-inch display, keyboard, mouse, AXE, NS-ARPA LAN software, ID module.
350CX	350 SPU plus eight-plane high-resolution 19-inch display, 2D/3D graphics accelerator, keyboard, mouse. AXE, NS-ARPA LAN software, ID module.
350SRX	350 SPU plus 8-plane very high-resolution 19-inch display, 3D solids graphics accelerator, keyboard, mouse, AXE, HP-UX programming environment, NS-ARPA LAN software, ID module.
350AIM	350 SPU plus high-resolution 17-inch display, keyboard, mouse, AXE, HP-UX programming environment, NS-ARPA LAN software, ID module, AI development environment, PROLOG.
350AIC	350 SPU plus six-plane color high-resolution 19-inch display, keyboard mouse, NS-ARPA LAN software, ID module, AI development environment, PROLOG.

All the workstation configurations feature an option to purchase Alis integrated office automation software at about half the price. (At press time, Opt. 301 for the HP 350SRX was in question; check with your HP sales rep for the latest status.)

Also featured with all systems is an option to convert the standard 8-Mbyte RAM in the system to 16 Mbytes. Up to 32 Mbytes of RAM can be installed in a system by purchasing a 98570A expander.

Computer Museum

Model 350 accessories

Additional products available for the Model 350 provide an ongoing growth path for the user:

Product No.	Description
98570A	HP 98570A Expander. Direct connect expander provides two additional system slots and four DIO slots for a Model 350 SPU.
Opt. 032	For the 98568A. Allows the 98568A eight-slot DIO expander to connect to the Model 350 SPU DIO-II motherboard.
982428	Two-slot DIO backplane. Converts the top system slot of the 350 SPU to two DIO slots. (Useful for a multiuser configuration.)
98258A	4-Mbyte RAM board. Installs into the system slot of the 350. with provision for adding one of either 982588 or 98258C add-on boards.
982588	4-Mbyte add-on RAM board. Adds 4-Mbytes RAM to the 98258A. Total RAM is 8-Mbytes.
98258C	12-Mbyte add-on RAM board. Adds 12-Mbytes RAM to the 98258A. Total RAM is 16-Mbytes.

Upgrading Model 320 systems

Model 320 users wishing to upgrade their systems to the performance of the new Model 350 can do so with the trade-in credit incentive. The details of this program are available from your HP sales rep. But, essentially users can get a credit toward the purchase of a 350 SPU at the time of order by returning their 320U bundled system within 30 days of shipment of the new Model 350, (The 320U included a Model 320 expander, 4-Mbytes RAM total, LAN, high-speed disc, and DMA interfaces and it is the basis of all the 320 bundled systems).

HP 9000

CONFIGURATION CONSIDERATIONS FOR NETWORKED HP 9000 SERIES 300 HP-UX COMPUTERS

There are special considerations for configuring HP 9000 Series 300 HP-UX systems with the ARPA/Berkeley networking services. First, AT&T's UNIX™ operating system license places limitations on the networking services available to anyone using computers with the UNIX operating system that are licensed for single-user usage. Users logged into a system over the network are counted the same as local users for licensing purposes. Therefore, remote login over a local area network (LAN) to a single-user Series 300 HP-UX system using the ARPA TELNET or Berkeley rlogin networking services is not allowed.

Remote rlogin is only allowed to multiuser Series 300 HP-UX systems as long as the total number of users logged in locally and remotely does not exceed the user license. A user on a single-user Series 300 system can login remotely to a multiuser system using TELNET or rlogin.

Second, the HP-UX mail facility is not included with the HP-UX Application Execution Environment (AXE). Therefore, users must purchase the HP-UX Programming Environment in order to send UNIX mail to other computers on the network. AXE is targeted for users who run programs in an application environment with minimal interaction and administration of the operating system. The other networking services – FTP, TELNET, rcp, rlogin, remsh, and Berkeley interprocess communications sockets are supported under HP-UX AXE.

The 320M, 320ML, 320C, and 320CX system bundles include the single-user HP-UX AXE operating system and, therefore, the above networking restrictions apply. If users desire mail and full two-way login capability over the network, they must order the multiuser HP-UX Programming Environment.

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HP 9000

NEW HP AI WORKSTATION

With the introduction of the HP 9000 Model 350, users can now have an even better software development system for their artificial intelligence (AI) applications. By supporting more physical RAM and a faster processor, the monochrome and color systems can offer a marked performance improvement over the previous Model 320 bundles.

In addition, the HP AI workstation now offers a software development environment that is truly unique for general-purpose engineering workstations: common LISP and HP PROLOG – two languages that are both strongly promoted for developing AI applications, both operating within a single, fully integrated environment. LISP and PROLOG code can be mixed freely, meaning that the programmer can leverage the benefits of both languages, thus producing software productively and economically. Also, the environment itself aids programmer productivity by providing a uniform method of operation for editing, debugging, interpreting, compiling, operating system access, HELP, and on-line documentation.

The new product numbers for the bundles are HP 98584B, which includes the 17-inch monochrome monitor; and HP 98585B, which includes the 19-inch color monitor. Also included in the bundles are 8 Mbytes of RAM, DMA, disc interface, mouse, ID module, HP-UX multiuser AXE and programming environment,

NS-ARPA networking, Common **LISP** Development Environment, and HP PROLOG. You can optionally add another 8 Mbytes of RAM and/or Alis office automation software and can optionally delete HP PROLOG.

Literature has been updated to emphasize the integration of LISP and PROLOG. The HP AI Development system flyer (PIN 5954-8270) has been revised, and there will soon be a new technical supplement data sheet that merges the previously separate technical supplements for the Common LISP environment and HP PROLOG. Also available is an HP AI Development System brochure (PIN 5954-8271) that presents a complete picture of the AI workstation to management.

Contact your HP sales rep for more information.

HP 9000

MORE AI SOFTWARE TOOLS

In February, "AI Contrib" – a collection of contributed and public domain AI software tools – will be available to customers of the HP AI Development System on an unsupported basis. Some of the programming tools included on the tape are:

- Three different object-oriented programming languages: Common LOOPS, Object LISP, and a FLA-VORS-like language.

- Software metric tools for LISP.

- OPS5, a rule-based programming language made famous by DEC's configurator application XCON, which it was used to develop.

- Scheme, a LISP-like language written in C.

The software tools are available for the HP 9000 Series 300 HP-UX system. Most of the software tools also require the Common LISP Development

Environment to operate. Though some, like Scheme, are written in C and run directly on HP-UX.

The part number of "AI Contrib" is 98678-19000 and it will be available through the Corporate Parts Center.

Contact your sales rep for ordering information.

HP 9000

BASIC 5.0 AND PASCAL 3.2 ON THE HP 9000 MODEL 350

BASIC and Pascal have been revised to run on the new HP 9000 Model 350; both of these products will be available in February 1987, and provide upward compatibility with BASIC 3.014.0 and Pascal 3.0/3.1. Details on these products will be available soon.

The Hierarchical File System (HFS) Binary provides access to the Series 2001300 HP-UX file system directory and is usable with or without HP-UX. HFS is compatible with LIF and SRM and provides easy switching between BASIC, Pascal, and HP-UX via soft re-boot.

BASIC 5.0 provides:

- Complex data types and complex arithmetic.

- Support for new hardware and peripherals (details to follow).

- New matrix capabilities through new MAT SEARCH and MAT SLICE statements.

- Provides human interface improvements in the form of new keywords, such as CLEAR SCREEN, CLEAR LINE, SQRT, etc.

- Extended STATUS/CONTROL keywords, such as KEYLABELS ON/OFF, etc.

- Programmable bit-mapped alpha fonts.

- Extended support for HP-HIL devices: 9-knob box, 32-button box, and the Security Pod.

- Enhanced access to BASIC operating system internals from CSUBs.

- TRANSFER support for 1024-byte sectors.

- Fixes for product defects.

Pascal 3.2 provides selective file backup and is object code compatible with Pascal 3.1. An HFS Binary also provides access to the HP-UX file system directory and can be used with or without HP-UX. Pascal 3.2 will be sold as a standalone language system.

Rocky Mountain BASIC is the instrument control, data acquisition, and data analysis language of choice for measurement automation users who want better performance and a larger feature set (than ihe IBM PC). Our version of BASIC (Rocky Mountain) is considered to be one of the most popular languages available for instrument control, lab automation, and general technical computing needs.

Pascal 3.2 workstation product is positioned as our lowest cost software development environment.

HP 9000

ENHANCEMENTS ADDED TO HP-UX 5.2

HP-UX has been updated to 5.2, adding a number of enhancements:

- Multi-user AXE – the highlight of this release, giving users a lower cost multi-user target system. Multiuser AXE is identical to its single-user counterpart, except for allowing up to 16 users. Multiuser application will no longer require a complete programming environment.

■ *Support jor Series 300 Model 350* – A common kernel across all Series 300 computers, offering growth with complete object code compatibility.

Commands parity with the Model 840 HP-UX – Compatibility is key to our success. Offering customers the same HP-UX on different architectures allows for additional growth. Yes, there are commands that are unique to each system, taking advantage of specific hardware differences. but the key HP-UX command set is shared, including the reference manuals.

■ DIL – including user interrupt, lock/unlock, and memory mapped I/O for GPIO card.

■ *Graphics* – including B-splines for the SRX, graphics dumps to a variety of printers, and a Starbase Memory Driver which allows the user to open a chunk of memory as if it were a frame buffer for fast copying to the display.

■ *HP Windows19000* – improved performance, double the number of windows, hot spots, borderless windows, and the ability to move multiple windows together.

■ *Virtual terminal* – used with Network Services allowing virtual terminal communications to Series 500 and other Series 300 computers.

HP-UX 5.2 product structure

Product/Option number		
Single-user	Multiuser	Description
98515A	98595A	HP-UX 5.2 AXE
Opt 022	Opt. 022	On ¼-inch tape cartridge
Opt 045	Opt. 045	On 3½-inch discs
Opt. 100	Opt. 100	Delete manuals
	Opt. 033	Single-user lo multiuser upgrade
98517A	98597B	HP-UX 5.2 Programming Environment
Opt 022	Opt. 022	On ¼-inch tape cartridge
Opt 045	Opt. 045	On 3½-inch discs
Opt. 100	Opt. 100	Delete manuals
	Opt. 033	Single-user to multiuser upgrade

The changes from the current structure are:

■ Addition of the multiuser AXE (PIN 98595A) – now a lower entry price for multiuser target systems.

Addition of a new multiuser programming environment.

Increase in the price of the floppy options to reflect incremental cost to manufacture.

Effective increase in the price of the multiuser programming environment. Users will be required to purchase both the multiuser AXE and the multiuser programming environment.

In order to accommodate existing multiuser installations changing over to the new product structure, we will continue to offer the 98597A multiuser programming environment through March, 1987. The content of the 98597A will be changed to include Revision 5.2 software. After March, we will remove the 98597A from the HP Price List, requiring orders to be changed to the 98595A plus the 98597B.

HP 9000

HP 9000 SERIES 300
HP-UX SOURCE
CODE AVAILABLE

Source code for the HP-UX kernel and device drivers is now available for the HP 9000 Series 300. This open system tool offers qualified users more options – the ability to tune applications to better interface to the operating system or to create and modify device drivers.

UNIX™ operating system knowledge required

HP-UX kernel source code is not intended for every user. This product will be of interest only to technical software developers who have a "need to know" the internal architecture of the HP-UX operating system in order to get maximum performance for their application.

Prior to purchasing source code from HP, users are required to have a current AT&T System V.2 Release 2 Source License from AT&T. To be successful

with the source code, users must be knowledgeable of the UNIX operating system. To help determine this, you will be required to complete a user qualification package for review prior to the sale.

Support is user's responsibility

Users must also have their own resources to support this product. All support for the modified system or any HP subsystem running on a modified operating system will be the responsibility of the party supplying/using the modified operating system. Further, HP will not provide technical assistance to implement source code changes. To assure that it is clearly understood that HP does not offer any type of support or training for this source code, a support code agreement and nondisclosure agreement must be signed by the user prior to the sale.

Documentation for the HP-UX kernel consists of an installation note and the README source code file explaining the use of the "makefile" needed to re-compile the kernel. No other documentation is available.

Available today

Because the HP-UX kernel source is a "special product" intended for qualified users, it will not be listed on the HP Price List. Trade discounts will not apply. Source code for subsystems, including commands, compilers, graphics, and LAN, are not included. Information on how to order the product is available from your sales rep.

If you are interested in HP-UX Source Code, contact your sales rep for details and a user qualification package.

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VT100 TERMINAL EMULATOR FOR HP-UX NOW AVAILABLE

Now you can have a full-feature VT100 terminal that can run inside an HP-UX Series 300 window. Long-time HP PLUS software supplier, Optimation, Inc., is now selling this VT100 terminal emulator for $450 per copy.

To get even more information on the VT100 and other terminal emulators, call Optimation, Inc. at 415-326-1824.

HP AT UNIFORUM '87

Major new product announcements and 4 of the 24 presentations are going to combine to generate an incredible presence for HP at Uniforum '87. Uniforum is the leading international UNIX™ operating system conference and trade show to be held January 20 to 23, 1987, at the Washington, D.C., Convention Center.

The theme at this year's show is "UNIX solutions in Business and Government." The HP booth should clearly establish that HP has the products, programs, and support organization to make the UNIX application creator successful in both business and government. Our booth is well situated at the entrance to all of the conferences and tutorials so that we'll be in a high trafficlvisibility location. Our high-impact mini-theatre presentation will be used to draw attendees into the booth to see the following:

- The Series 300 featuring the Motorola 68020 (25MHz).

 NFS

 Series 300 discless workstations.

- The entire HP 9000 family featuring real-time on the Model 840, AI, Alis, IPC ROM Module, Ada, PC-DOS coprocessor, the Model 320SRX, HPToday, and other software development tools.

And last but not least, our support and value-added channel programs.

Our presence at Uniforum '87 should provide more substance to the editorial by David Chandler in the November '87 *UNIX Review* entitled, "Today. Hewlett-Packard . . . Tomorrow, the World." Reprints are planned for distribution at the show.

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HP's DISTRIBUTED SYSTEM POSITION

Furthering HP's commitment to "multivendor data communications" in the technical workstation market, HP announces its intention to provide the NFS Revision 3* on the HP 9000 Series 300 Model 840 computer systems. Attendees at Uniforum '87, The International Conference of UNIX Users, in Washington, D.C.. January 20 to 23, can witness NFS product demonstrations in HP's booth. HP's NFS product will be available before the end of 1987. Future versions of NFS will be provided if they become industry standards for multivendor data communications. HP will continue tracking emerging industry standards and announce programs bringing these products to market. For example, HP is currently investigating AT&T's RFS and monitoring the progress of customer acceptance before providing it on HP computers. In an effort to support "lasting value" in its products, HP will continue supporting the Remote File Access (RFA) distributed file system available today between HP 9000 HP-UX computers.

*NFS was contributed by Sun Microsystems, Inc.

General

NEW HP OFFICE-ASSIST SERVICES

HP provides a full range of implementation support for the Personal Productivity Center (PPC). HP OFFICE-ASSIST has been enhanced to provide support for two additional services and an update for a third:

 Information Access – *New*

 Local Area Networks – *New*

- Electronic Mail – *Enhanced*

HP OFFICE-ASSIST: Electronic Mail has been updated to address the implementation issues associated with HP Desk IV. In addition. the electronic mail service may be expanded to address HP File/Library and HP Schedule through Additional Service Units or Time and Materials Consulting. This implementation support for Information Access and Local Area Networks complements the existing application areas that HP OFFICE-ASSIST supports: word processing, business graphics, and personal computers.

Primary benefits

HP OFFICE-ASSIST offers many important advantages to users:

- Using the systems engineer's and application engineer's proven implementation skills helps users save time.

- Providing step-by-step guidelines makes users self-sufficient.

- Implementing an initial pilot group first minimizes the risks associated with managing implementation expansion efforts.

- Applying a project planning approach to the implementation enhances user productivity during the implementation.

■ Using a structured approach helps users perform their jobs more efficiently and effectively during ongoing operations.

Product structure

The product structure of the two new implementation services for Local Area Networks and Information Access is consistent with the current HP OFFICE-ASSIST structure and format.

■ HP OFFICE-ASSIST consists of two phases: Implementation Analysis and Project Implementation Assistance.

■ Project Implementation Assistance includes one enrollment in one day of an HP site user education course pertaining to user's implementation.

The user selects a Project Team who manages the implementation process for an initial group of users called a Pilot Group.

■ HP OFFICE-ASSIST is a post sales service. Pre-sales activities should not be covered in it.

HP OFFICE-ASSIST: Local Area Networks

This service addresses the implementation issues users face in sharing peripherals and in using a local area network in their office environment. The primary target accounts for this service are smaller departments in, or remote sites of, Fortune 500 companies, horizontal accounts, companies who have tried unsuccessfully to implement LANs in the past. and those who desire a project management approach to implementations.

HP-OFFICE-ASSIST: Local Area Networks supports users who purchase HP ThinLAN for PCs, HP StarLAN for PCs, HP's SERIAL Networks for PCs, or Resource Sharing.

HP OFFICE-ASSIST: Information Access

HP OFFICE-ASSIST: Information Access helps users set up a pilot project that focuses on implementing a limited number of workstation users accessing data from a single host system. It covers implementation of HP's Information Access solution and a single personal computer application. Users who have the following characteristics are good candidates for HP OFFICE-ASSIST: Information Access – top management commitment, a strong need to share information, no experience in implementing office solutions, are open to change, and limited project management expertise.

New data sheets available

To better explain the features and benefits of each specific HP OFFICE-ASSIST product, separate data sheets have been developed. The previous HP OFFICE-ASSIST data sheet (PIN 5954-2835) has been obsoleted effective immediately.

Data sheet Part No.	Product
5954-8615	HP OFFICE-ASSIST: Information Access
5954-8616	HP OFFICE-ASSIST: Local Area Networks
5954-8617	HP OFFICE-ASSIST: Electronic Mail
5954-8618	HP OFFICE-ASSIST: Personal Computers
5954-8619	HP OFFICE-ASSIST: Word Processing
5954-8620	HP OFFICE-ASSIST: Business Graphics

Ordering information

HP OFFICE-ASSIST: Information Access and HP OFFICE-ASSIST: Local Area Networks are available immediately. These new services should be included as an integral part of PPC. HP OFFICE-ASSIST is not bundled with the application software so it will be quoted separately.

Product No.	Product name
HP *OFFICE-ASSIST. Information Access*	
32596A + 60A	– Implementation Analysis and Project Implementation Assistance
32596A + 61A	– Implementation Analysis
32596A + 65A	– Project Implementation Assistance
32596A + 65Z	– Additional Service Unit
HP *OFFICE-ASSIST: Local Area Networks*	
32597A + 60A	– Implementation Analysis and Project Implementation Assistance
32597A + 61A	– Implementation Analysis
32597A + 65A	– Project Implementation Assistance
32597A + 65Z	– Additional Service Unit

For additional help

For more information on PPC consulting and support products, contact your HP sales rep.

Portable

NEW SYMBOLIC MATH CALCULATOR

The new HP-28C Scientific Professional Calculator computes symbolic math as well as numeric expressions.

Just as the HP-35C made the slide rule obsolete, the HP-28C may revolutionize advanced math. Before now, you had to get equations worked out on paper before you could enter numbers in your calculator. Now you can develop equations right on the HP-28C.

You can apply calculus in symbolic form to your engineering and scientific problems. And you can solve problems conceptually before you substitute numbers to represent the problem at hand. The HP-28C even checks your equations to make sure they make sense.

You can concentrate on the principles of mathematics instead of getting bogged down writing numbers and expressions.
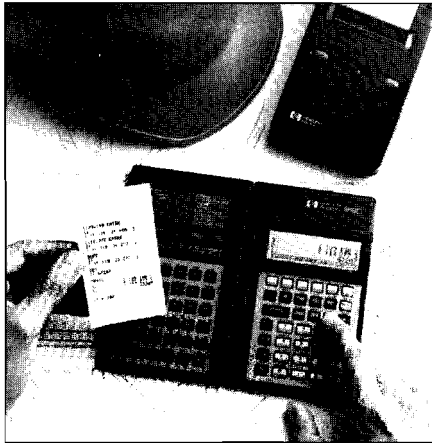
The HP-28C Scientific Professional Calculator communicates with the HP 82240A Infrared Printer via an infrared light beam. The HP-28C has over 250 programmable functions plus softkeys, menus and an equation solver.

Features and benefits

The HP-28C has many of the popular, easy-to-use features of the HP-18C Business Consultant Professional Calculator such as softkeys and menus. Here are some of the features of the HP-28C that make it powerful, yet easy to use:

■ An equation solver, similar to the solver on the Business Consultant, solves equations for any unknown anywhere in the equation.

■ Softkeys and menus make commands easy to find and easy to use.

■ Entry, editing, and manipulation of matrices and vectors is easier on the HP-28C than on any other calculator. For instance, matrices can be stored as single objects and then added using just the [+] key.

■ 250 fully programmable commands and functions,60 non-programmable commands and 128 Kbytes of ROM make the HP-28C one of the most powerful handheld calculators on the market today.

■ The HP-28C has 120 unit conversion factors built in. New factors can be defined and assigned to softkeys as if they were built in. Engineers, scientists, draftsmen, and surveyors will find these conversion factors highly useful in equating different units of measure.

■ Statistical observations and single-valued functions can be plotted on the HP-28C's display or on the HP 82240A Infrared Printer. For equations with multiple roots, visual guesses can be digitized and entered into solver, where the nearest root will be calculated with 12 digit precision.

■ Expressions can be entered in RPN or algebraic form, whichever is most convenient.

Manuals

The HP-28C comes with two manuals – "Getting Started–and "Reference Manual."

The Getting Started manual opens up the power of the HP-28C to beginners and experienced calculator owners alike with plenty of easy-to-understand examples. It also uses pictures of the display to help guide owners through each example.

The Reference Manual offers two chapters on fundamental principles of HP-28C operation, plus a complete dictionary of all HP-28C functions.

Product No.	Description
HP-28C	Scientific Calculator
HP 82240A	Infrared Printer

Portable

TECHNICAL REFERENCE MANUAL UPDATE FOR THE HP PORTABLE PLUS

The Technical Reference Manual (PIN 45559K) is used primarily by software and hardware vendors developing products for the HP Portable PLUS. Because there have been a number of enhancements to the Portable PLUS hardware, the Technical Reference Manual has been updated to accommodate these changes. Increased internal memory in configurations of either 256-Kbytes or 512-Kbytes are now available. This means that with memory

expansion drawer, the Portable PLUS can now accommodate up to 1.2 Mbytes of RAM. This update will also include information specific to the newly introduced SNA Link/3270 and Software Drawer (PIN 50922A). This product emulates the IBM 3274 Control Unit Model 51C-Configuration B, manages the keyboard and display so that the Portable PLUS behaves just like the IBM 3270 Model 2 display station, supports the PC's locally attached printer as a 3287 printer Model 2, as well as other features.

Anyone that purchased the Technical Reference Manual after December 1 will receive the most current information. If you purchased the Technical Reference Manual before December 1, and would like the updated information. order PIN 45559U.

Desktop

SCO's XENIX ON THE HP VECTRA PC

XENIX V/286 is now available on the HP Vectra PC. Referenced as Vectra/XENIX, it is a multitasking, multiuser operating system developed jointly by Microsoft Corporation and The Santa Cruz Operation (SCO), the leading independent software vendor of UNIX/XENIX products for microcomputers. Vectra/XENIX is a licensed derivative of the UNIX operating system developed by AT&T and has been tested for conformance to the AT&T System V Interface Definition (SVID) which defines the hardware-independent interface between applications and the operating system. This guarantees a standard operating system environment for all users whose programs adhere to the SVID specifications. Vectra/XENIX was developed as a multiuser operating system for use in both a software development environment and in a business environment.

For software developers, the primary reason for choosing XENIX is largely a matter of standardization. Since XENIX System V is an emerging standard, it offers a high degree of compatibility between software developed on XENIX V/286 machines.

In addition, XENIX System V provides an ideal environment for developing MS-DOS applications. The facilities included as part of the product provide complete cross-development capabilities.

SCO's Vectra/XENIX is also well suited in meeting the needs of the multiuser microcomputer marketplace.

Features

■ *Multiuser/multitasking* – XENIX on the Vectra PC enables the Vectra to operate as a "central processor" with multiple terminals. The optimum number of terminals supported is eight. The terminals connected to the Vectra can share software applications, data files, and peripherals in a common environment. Thus, the investment made in the purchase of a multiuser Vectra can be distributed among multiple users. Vectra/XENIX also provides multitasking capabilities which allow the user to execute several tasks simultaneously. This substantially increases the user's productivity.

Programmable function keys – This feature supports over 50 programmable function keys on each virtual terminal. The keys can be programmed through simple escape sequences or through the "setkey" program.

■ *Setcolor utility* – Each virtual terminal can be set with foreground, background, reverse video, and border colors.

■ *Interprocess communications* – Interprocess communication is the ability for cooperating processes to share information very rapidly.

Customized installation – For single-user systems, users have the option of installing "run-time systems" using only 1½ Mbytes on the hard disc as opposed to the 5 Mbytes normally required by a full-fledged UNIX operating system. Parts of XENIX can then be selectively removed or installed as desired.

Link facilities – These allow the user to add system supported devices to the system to support third-party hardware such as tape backup units. As these link facilities are incorporated into the base system, it eliminates the need to rebuild the entire XENIX operating system.

Advanced autoboot feature – SCO's Vectra/XENIX has an autoboot mechanism which automatically restarts the system after a power failure.

Support for additional serial devices – Add-on serial port boards are supported for adding serial ports beyond the standard COM1 and COM2 ports.

Co-residency with MS-DOS – XENIX can co-reside on the same hard disc with MS-DOS. Users can switch between the two operating systems without having to reinstall either operating system.

■ *Cross development for MS-DOS applications* – Software developers can take advantage of the environment provided by XENIX to develop applications to run under MS-DOS. The XENIX software development includes complete Microsoft C language cross-development capabilities for MS-DOS-based applications. Relocatable object
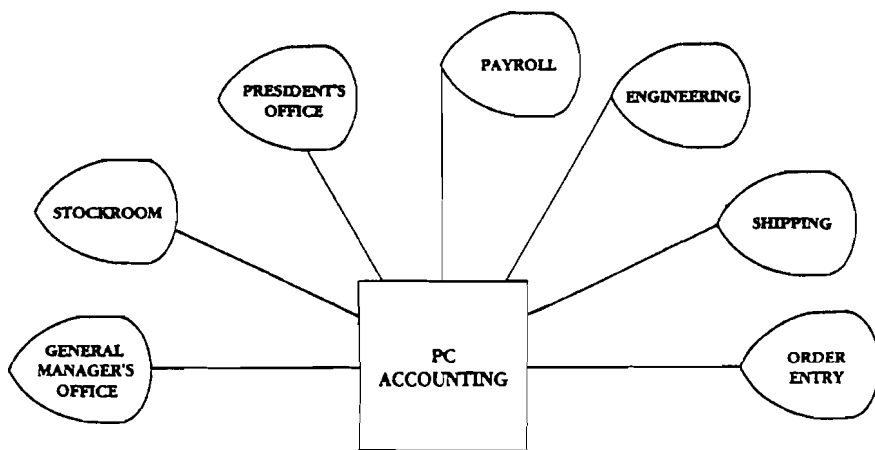
This is the configuration of a SCO XENIX eight-user PC system.

It is a simple, inexpensive solution for small businesses who wish to have multiuser environments without incurring the cost of local area networks or minicomputers. Small businesses can use low-cost terminals instead of personal computers for multiuser configurations. With XENIX, the HP 150 and the Vectra PCs can be used as terminals hooked to the Vectra host, thereby providing users with dual functionality – users can use these systems as stand-alone PCs or as terminals.

■ *File and record locking* – Critical to the multiuser environment is the need to monitor simultaneous accesses and updating of files such as databases. To maintain the integrity of data files, XENIX on Vectra provides record and file locking extensions that allow an application to lock either the file or a record.

■ *Multiscreen feature* – A single keystroke switches the console screen and keyboard from 1 log-in session to another. With just one physical screen and keyboard, the user can choose up to 10 virtual terminals. XENIX's multitasking feature allows a user to concurrently execute 10 different programs.

modules in XENIX are identical in format to those in MS-DOS and can thus be easily ported. The two operating systems also share common subroutine libraries and system calls so that executable programs can be produced under XENIX for MS-DOS.

■ *Visual Shell* – XENIX on Vectra comes with the Visual Shell which is a menu-driven command processor providing the same user interface found in Microsoft productivity tools. The Visual Shell enables users to customize their working environment.

■ *Compatibility* – Since XENIX on Vectra conforms to AT&T's system V Interfaces Definition (SVID) specifications and has been ported to several microcomputers by SCO, software developers will be able to leverage their programming resources by using existing SCO XENIX applications.

■ *Extensive applications base* – Currently, over 1,000 applications for multiuser environments run under XENIX on Vectra.

UNIX and XENIX

AT&T licenses the UNIX operating system software, but not the UNIX trademark which is retained exclusively for Bell Systems. Consequently, each licensee has its own name for UNIX.

XENIX is Microsoft's trademark for its implementation of UNIX on 16-bit computer systems. SCO implemented Microsoft's XENIX on the IBM PC/AT and compatibles. SCO's licensees for XENIX include IBM, Compaq, Wang, Altos, NCR, Tandy, ITT, Mitsubishi. Fujitsu, Olivetti. Zenith, and recently HP.

Thus XENIX is UNIX. XENIX System V is a verified UNIX System V-based product. It incorporates almost all the UNIX System V Release 2 System calls, library routines, and commands. XENIX continues to provide all the portability, flexibility, modularity and power of UNIX, while also providing enhancements like record and file locking, shared memory, and Visual Shell, to name a few.

Relationship between MS-DOS and XENIX

Both XEIVIX and MS-DOS were developed by Microsoft and can co-reside on the same hard disc on 286-based machines. The two operating systems share common utilities, file structures, and subroutine libraries.

They also share the same Microsoft languages like COBOL, FORTRAN, C, Pascal, MASM, and Basic Interpreter, and are source compatible.

File exchanges between XENIX and MS-DOS can be accomplished through the following utilities:

■ dosdir – directory command

■ doscp – copy command

■ dosmkdir – make directory command

■ dosrm – remove file command

■ doscat – viewfile command

In addition, XENIX and MS-DOS systems can also share resources and data through XENIX-Net, a XENIX local area network.

Product structure

XENIX for Vectra is available in three standard units:

1) *The XENIX Operating System* (SCO product number 012-100-09*-20, recommended U.S. list price $595). This is the base system and forms the core of the XENIX operating system. It is required to run the other two packages to convert a single-user HP Vectra PC into a multiuser system. Included in this product are the standard user interfaces (Bourne Shell, which is the default; C Shell, from Berkeley; and the Visual Shell) and utilities, some of which enable the user to access MS-DOS files. The XENIX Operating System product consists of five 1.2-Mbyte diskettes, three manuals, and Release Notes listing hardware verified to work.

2) *XENIX Software Development System* (SCO product number 014-700-00*-20, recommended U.S. list price $595) – This product contains the C

compiler, the linker, the macro assembler and utilities, and libraries for software development including cross development for MS-DOS applications. It consists of four 1.2-Mbyte diskettes and three manuals.

3) *XENIX Text Processing System* (SCO product number 016-700-00*-20, recommended U.S. list price $195) – This package contains text formatters and document and text processing utilities like "NROFF" and "TROFF". It consists of two diskettes and one manual.

This flexible product structure allows users to purchase the XENIX product exactly as their requirements dictate. All three products can be purchased for $1,295 under SCO product number 010-700-09*-20.

Sales and support information

The Santa Cruz Operation (SCO) will be the sole distributor of XENIX to all distribution channels. SCO will also provide support to all customers including end users. Customers can purchase support contracts based on their needs directly from SCO.

For ordering and support information, please call 800-626-UNIX, or write to SCO at: The Santa Cruz Operation, 400 Encinal Street, P.O. Box 1900, Santa Cruz, CA 95061-9990.

For more information on HP's relationship to The Santa Cruz Operation, please refer to the Partners with HP article entitled "HP Forms Strategic Alliance with The Santa Cruz Operation," on page 1.

Note: XENIX will be shown on the HP Vectra PC at the SCO booth (#1400) at the Uniforum '87 show on January 20 to 23, 1987, in Washington, D.C. (See articles on page 13 for more information about the Uniforum '87 show.)

MS® *is a U.S. registered trademark of Microsoft. Inc.*

UNIX *and* XENIX *are trademarks of AT&T Bell Laboratories.*

Desktop

INTRODUCING VECTRA PC FUNDAMENTALS: A COMPUTER-BASED TUTORIAL

If you are a new HP Vectra PC user or are responsible for training or supporting new users, then you should know about Vectra PC Fundamentals: A Computer-Based Tutorial. It's a comprehensive, step-by-step introduction to the basics of personal computing. It provides the solid foundation that is essential for users to become successful applications users.

This product allows users to train themselves on the Vectra PC in a timely and cost-efficient manner. The four-to-six-hour computer-based tutorial is highly interactive and its modular format permits users to learn at their own pace and at their own convenience. It simulates everyday tasks that Vectra PC users must know how to do and it allows them to learn by doing.

To order Vectra PC Fundamentals, users should contact their local HP sales office or dealer and request P/N 51410A. Standard software purchase agreements are applicable. Site licenses can be special-ordered through sales offices for high volume installations (PIN 51410Q includes the right to copy, and P/N 51410S includes disc replication). The product will be available January 1, 1987.

Desktop

HP MONOCHROME PLUS DISPLAY SYSTEM FOR THE HP VECTRA PC

A new monochrome video system for the Vectra PC began shipping January 1, 1987. The HP Monochrome Plus Display System (MPDS) provides compatibility with popular industry monochrome video standards. With the Monochrome Plus Display System, users have the ability to run software packages written for the IBM Monochrome Adapter and the Hercules Graphics Card. The MPDS consists of the HP Monochrome Plus Video Adapter (MPVA) and the HP Monochrome Plus Display (MPD).

The MPDS provides excellent monochrome text and graphics for applications such as word processing, database management, or decision support and analysis. HP Vectra PC users who desire access to a full range of available software will appreciate the versatility of the MPDS. When used in conjunction with the HP Enhanced Graphics Display (HP 35743A), the Monochrome Plus Video Adapter also supports users who need a color graphics solution by providing compatibility with the IBM Color Graphics Adapter. The full feature set of the MPVA, combined with an attractive and ergonomically designed display, make the HP MPDS a winning solution.

HP Monochrome Plus Video Adapter

Hewlett-Packard combines three of the industry's most popular video standards and a parallel printer port on one half-size card. The HP Monochrome Plus Video Adapter fits in either an 8-bit or 16-bit Vectra PC accessory slot and provides compatibility with software written for the IBM MDA, IBM CGA, or Hercules Graphics Card. The HP MPVA also supports the HP Mono chrome Plus Display, IBM Monochrome or Color Graphics Displays (or compatibles), as well as the HP Enhanced Graphics Display (HP 35743A).

In addition to its versatility, the HP Monochrome Plus Video Adapter is easy to use. A single configuration switch enables color or monochrome operation. Monochrome graphics and text mode changes are executed via easy-to-use software commands. The MPVA is capable of displaying both the HP and IBM International character sets.

The Monochrome Plus Display

The Monochrome Plus Display (MPD) is a 12-inch, 18 KHz, TTL monitor designed to support the HP Monochrome Plus Video Adapter. The HP MPD provides 720×350 screen resolution and is fully compatible with the Monochrome Display from IBM.

The MPD includes a number of HP quality enhancements and ergonomic features. These include user-adjustable brightness and contrast controls, integrated tilt/swivel, and the same package as the HP 35731A monochrome monitor. The Monochrome Plus Display also features an integrated video cable and switch selectable power supply for international operation. Support for the optional HP Touch Accessory (HP 35723A) is included to take advantage of software written especially for HP Touch.

Ordering information

Product No.	Description
35732A	Monochrome Plus Video Adapter
35732AN	Supports Danish/Norwegian version of the IBM 8 Character set
35731D	Monochrome Plus Display

Monitor localization

| Product No.	Country
35731D	United States
35731DA	South Africa
35731DB	Generic European
35731DG	Australia
35731DQ	Switzerland
35731DU	United Kingdom
35731DY	Denmark

NEW CHEMICAL/ PETROCHEMICAL GALLERY PORTFOLIO

The Chemical/Petrochemical Portfolio for use with Drawing Gallery is available as of December 1, 1986. This Gallery Portfolio is a collection of ready-made pictures enabling graphics users in chemical and petrochemical companies to more easily create drawings.

Included in this portfolio are chemical engineering symbols, crystal structures, petrochemical symbols, the Greek alphabet in upper and lowercase, a set of mathematical characters, and molecular shapes.

Some samples of these are shown below.
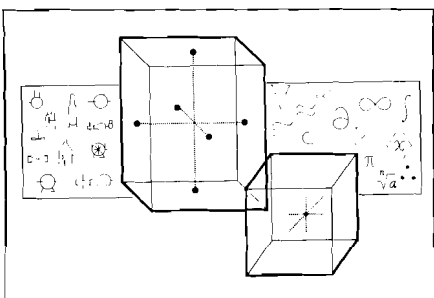
Ordering information

This Gallery Portfolio is available on 5%-inch disc for the HP Vectra PC (PIN 68325F) and 3½-inch disc for the HP Touchscreen/150 PC (PIN 45569A). Make sure to specify the appropriate product number when ordering your Chemical/Petrochemical Portfolio.

Benefits

The Gallery Portfolios enable Graphics Gallery users to add professionalism and impact to their visuals. Choosing from a wide range of ready-made, professionally designed illustrations and icons, Gallery Portfolios enables users to enhance drawings and present them with more visual impact.
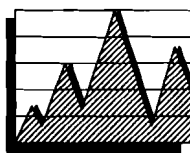
The Business Management Portfolio and the Office Activities Portfolio contain more general sets of symbols. This portfolio is designed to meet the needs of a more specific set of users.

GRAPHICS GALLERY NOW WORKS WITH PAGEMAKER FOR DESKTOP PUBLISHING

You can now use the expertise of a graphics artist in every Drawing Gallery slide you create.
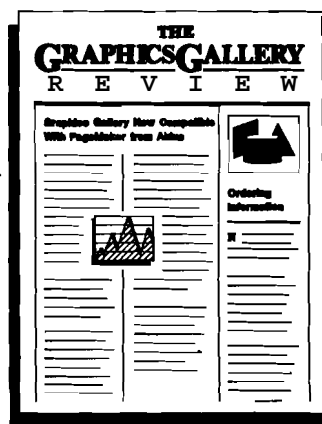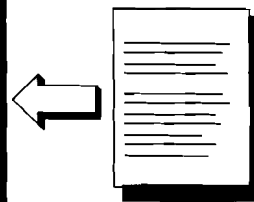
As of January 1, 1987, the Graphics Gallery/Vectra PC software products have been enhanced to integrate with PageMaker from Aldus Corporation. Specifically, we have added a new Tag Image File Format (TIFF) driver to all of the Gallery products which enables users to create high resolution raster files for use in PageMaker.

A PC Paintbrush driver has also been added to allow integration of Graphics Gallery/Vectra PC with Ventura Publisher from Xerox Corporation.

For users who have already purchased Graphics Gallery, they need only order a single Gallery Update disc from Direct Marketing Division (DMK) in order to add this capability to their Gallery software. All Graphics Gallery/ Vectra products – Drawing Gallery, Charting Gallery, and the Gallery Collection – will all begin shipping with this capability from HP's Personal Computer Distribution Operation (PCDO) on January 1. 1987.

Gallery's role in desktop publishing

As many of you are well aware, one of the great weaknesses today in desktop publishing is the low quality of graphics available to merge with high-quality text. In most cases where pictures are being used, they are of very low resolution and appear inconsistent with the high-quality page layout and text. Thus, we recognized the need for excellent quality graphics for use in desktop publishing, and have now modified Gallery to provide this capability.

Gallery quality maintained

It is important to note that we have implemented the drivers such that there is no degradation in output quality

when Gallery images are used for desktop publishing. Thus, users who have grown accustomed to Gallery's greyscale images with up to 300dpi resolution can count on having the same high-quality graphics when used with PageMaker.

Using Gallery with desktop publishing

To use Gallery pictures with page formatting software products, users simply create the pictures as normal. Once the Gallery image is designed, the user need only move into the output menu and select output to TIFF or PC Paintbrush format. This results in a 300dpi picture file which can be later used for desktop publishing with quality comparable to Gallery.

There are a few constraints to keep in mind when using this capability. First, the user needs to define the proper size for the image at the time of output from Gallery. Thus, if a 2 x 2-inch picture is needed, this will need to be defined within Gallery.

Second, once the image is read into PageMaker, we recommend not scaling the image. For best results, save the image again in Gallery with different size specifications. This way, Gallery's high-quality look can be maintained.

And third, since these are raster files, they are by definition large. For example, a half-page image at 300dpi would take up a half megabyte of disc space.

What about support?

Since PageMaker is now an HP distributed software product, Gallery integration is a fully supported feature. However, if users are interested in using Gallery images with other desktop publishing software products, there should be no problems, but this integration

would not be supported by HP. For example, we have tested the PC Paintbrush format with the Ventura Desktop Publisher, and have encountered no problems. In addition, we will be providing more information in the future on any products where the integration presents any problems.

Desktop

ORDERING GRAPHICS GALLERY/VECTRA UPDATE FOR DESKTOP PUBLISHING INTEGRATION

The Graphics Gallery/Vectra update kit, available as of January 1, 1987, is now orderable. This kit allows Graphics Gallery/Vectra users to integrate their drawings with PageMaker from Aldus Corporation and Ventura Publisher from Xerox Corporation.

Specifically, there are two new drivers, one to support the Tag Image File Format (TIFF) for integration with PageMaker and the other for the PC Paintbrush format for integration with Ventura Publisher.

How to order

The Gallery/Vectra update kit is orderable by users and dealers through Direct Marketing Division (DMK), 800-538-8787. In California, call 408-738-4133. Use P/N 68352-90049 when ordering.

Update kit contents

The kit includes one disc with the new drivers along with instructions for copying the files to your work/fixed disc.

All Graphics Gallery/Vectra products – Drawing Gallery, Charting Gallery, and the Gallery Collection – will begin shipping with this capability as of January 1, 1987.

Desktop

EXECUTIVE MEMOMAKER AND DESKTOP PUBLISHING

Executive MemoMaker plays a versatile role in desktop publishing solutions incorporating Graphics Gallery. PageMaker, and the HP LaserJet family of printers.

Merged text and graphics is one desktop publishing application. It's easy and uncomplicated using Executive MemoMaker and any charts from Charting Gallery or pictures from Drawing Gallery and the Gallery Portfolios. Pictures are placed and sized using function key commands and the resulting documents can be printed on any LaserJet printer. Business letters and reports become high-quality, professional documents, as shown in Figure 1.

Executive MemoMaker can also be an important component of page composition applications using PageMaker. A page or two of text can be quickly

generated, saved in a tile, and then included in a PageMaker document with the "Place" command. Since Executive MemoMaker files are saved in WordStar format, PageMaker is already familiar with the format. Bold and underline enhancements will be transferred intact to your PageMaker document. Additional features such as columns, hyphenation, and sophisticated fonts can be added within Page-Maker, as shown in Figure 2.

All current Executive MemoMaker users are prime candidates for desktop publishing applications. By adding the Graphics Gallery, PageMaker, and an HP LaserJet printer, polished printed output can be at their fingertips.

GRAPHICS GALLERY CONTINUES TO RECEIVE RAVE REVIEWS

Favorable industry reviews for Graphics Gallery are piling up. Here are two recent examples.

PC Magazine (November 25, 1986 issue) – begins an article; "With a couple of quick one-two punches, Hewlett-Packard Co. has the potential to send graphics software competitors to the mat with its new entry, The Gallery Collection." They continue, "It's a duo with more features and greater flexibility than Graphic Communications'* top selling Freelance." When talking about ease of use they state, "The Gallery Collection software is a pussycat." The article concludes with, "The Gallery Collection is an excellent entry in the presentation-graphics arena."

InfoWorld (September 22, 1986) – "Hewlett-Packard's programs really begin to shine when they are integrated with the rest of HP's product line." "We judge Drawing Gallery as excellent in its capabilities and documentation." The reviewer stated that Graphics Gallery will "assure businesses that the presentation graphics software they buy now will be useful in the future."

Ordering information

Vectra PC Product No.	Touchscreen Product No.	Product
68352F	45437A	The Gallery Collection
68351F	45411A	Drawing Gallery
68350F	45513A	Charting Gallery
68324F	45568A	Ofhce Activities Portfolio
68326F	45570A	Business Management Portfolio
68325F	45569A	Chemical/Petrochemical Portfolio
68327F	45571A	HP Draw Figures Portfolio

Freelance is now owned by Lotus Development Corporation.

HP 150/ TOUCHSCREEN PC MEMORY AND LANGUAGE BOARD DISCONTINUANCE

Four memory and language accessories for the HP 150/Touchscreen PC will be removed from the March 1, 1987, Corporate Price List. These boards are being discontinued because they have been superseded by larger capacity memory boards such as the newly released expanded memory board and the 384-Kbyte memory card. The boards to be discontinued are:

Product No.	Description
45630A	HP 150 128-Kbyte Card
45631A	HP 150 256-Kbyte Card
45635A	Language Card
45636A	128-Kbyte Language Card

For users who continue to need additional memory and language capabilities, the following products will remain on the Corporate Price List and are the recommended substitutes:

Product No.	Description
45632A	HP 150 384-Kbyte Card
45915A	HP-HIL/384-Kbyte Accessory
45890A	512-Kbyte Expanded Memory Card
45891A	256-Kbyte EMB upgrade
45637A	256-Khytc Language Card

Discontinuance will follow standard procedures. Quotes will be limited to the standard term of 30 days and cannot be made after February 28, 1987. Users should accept delivery of these products within 30 days of the day the order is transmitted.

Users needing these products, should buy these accessories now or migrate to the recommended alternatives.

Desktop

PRICE CHANGES FOR HP 150/ TOUCHSCREEN PC SOFTWARE

Effective January 1, prices will change for the following Touch-screen/150 software products:

Product No.	Description
45400D	WordStar®
45424A	MultiMate[a]
45427D	WordStar Professional
45429D	WordStar Professional Options
45462A	Picture Perfect'"
45463A	Diagraph™
45468A	dBase II®
45474D	Microsoft® Word*
45498A	Symphony[B] from Lotus
45556D	Microsoft[a] Spell
45563A	R:Base[a] 50001150
45566A	1-2-3® from Lotus[a]

Microsoft Word now includes Microsoft Spell. Microsoft Spell can be purchased separately by those users who have already purchased Microsoft Word.

Orders will be honored at old price for one month (until February 1, 1987).

R:BASE is a U.S. registered trudemark of Microrim, Inc.

MultiMate is a U.S. registered trudemark of MultiMate, International, a subsidiary of Ashton-Tare Corp.

dBase is a U.S. registered trademark of ash ton-Tare Corp.

Picture Perfect and Diagraph are trademarks of Computer Support Corp.

1-2-3, Lotus, and Symphony are U.S. registered trademarks of Lotus Development Corp.

WordStar is a U.S. registered trademark of Micropro International Corp.

Microsoft Word and Microsoft Spell are U.S. registered trademarks of Microsoft, Inc.

Desktop

DELUXE VISICALC/1S0 OBSOLESCENCE

Deluxe VisiCalc®/150 (PIN 45405A), the electronic spreadsheet for the HP Touchscreen family of personal computers, will be obsoleted and removed from the HP Price List on February 1, 1987. Users requiring additional copies should purchase them prior to this date.

Users who have standardized on ExecuDesk will want to know what spreadsheet to order. They can now use the current version of ExecuDesk (A.03.00) with 1-2-3® from Lotus[a] Release 2.01.

VisiCalc is a U.S. registered rrudemark of VisiCorp.

1-2-3 and Lotus are U.S. registered trademarks of Lotus Development Corp

Desktop

R:BASE 4000 FOR THE HP 150 TOUCHSCREEN PC OBSOLETED

Microrim's R:BASE 4000 product for the HP 150/Touchscreen computer (P/N 45545A) will be removed from the HP Price List effective January 1, 1987.

The recommended solutions for database management and file management applications on the Touchscreen are R:BASE 5000 and Executive Card Manager. The following table outlines the solutions available from HP:

Database and File Managers for the Touchscreen PC

Product No.	Product
45563A	R:BASE™ 50001150
45421A	Executive Card Manager1l50
45441D	Executive Card Manager1l50 Templates
45416A	CONDOR'" 3
45468D	dBase II®

There are also plans under development to remove CONDOR 3 from the HP Price List in the near future. More details on this will be published before the change is made.

R:BASE is a U.S. registered trudemark of Microrim, Inc.

dBase II is a U.S. registered trademark of Ashton-Tare Corp.

CONDOR is a U.S. trademark of Condor Computer Corp.

Mass Storage

Dzsc Reliability Improvements at HP

Do you have any lingering doubts about disc reliability as a result of a negative experience with the HP 7914 or HP 793317935? HP's Disc Memory Division (DMD) has an impressive message concerning the improvements in reliability of these products and the products replacing them. Even the Japanese have recognized and honored DMD for these accomplishments.

The message is such a powerful one that Jim Deane, product assurance manager for DMD, was recently invited to be the first person from the U.S. to present a qualitylreliability paper at the Annual Japanese Quality Conference. This quality conference is sponsored by the Japanese Union of Scientists and Engineers (JUSE), the organization that bestows the prestigious annual Deming Awards. At the conference, Jim Deane used a Total Quality Control (TQC) success story format to summarize the process used to achieve product reliability improvements accomplished at DMD over the last three years. Jim was further honored by personal compliments on his presentation from Dr. Kaoru Ishikawa, recognized in Japan as the leader in the field of quality.

Three years ago, DMD introduced two major disc drive families. Because of customer inputs after introduction, DMD realized the reliability of these products was unacceptable. Not only did DMD have to account for the reliability improvements of Japanese disc drive producers, but the division also had to recognize that users expected more of disc drives than they ever had in the past. One user in Japan was on the leading edge of customer expectations and was willing to work with DMD management to help us learn how to meet their expectations.

The lessons learned and the methodologies implemented as a result of this feedback greatly improved the reliability of our products and regained the respect of our users. Other results were an aggressive, ongoing reliability engineering program for new products such as the newly introduced HP 7936137 and HP 7957158.

The final results of new methodologies have been a 170 percent reliability improvement in the HP 7914 and 110 percent improvement in the HP 7933/35. In addition, the reliability of the HP 7937 at introduction exceeds that of the HP 7933 by 65 percent.

For more information on the disc reliability message, contact your HP sales rep.

Mass Storage

A New CS-80 Disc Drive Service Training Course

HP's Customer Service Training is offering a new service training course on the CS-80 disc drive in 1987. This three-day course (PIN 50041A) provides customer service personnel with the knowledge and skills to diagnose, troubleshoot, and maintain the HP 7907 and HP 794X disc drives and the HP 9144 tape drive. Course 50041A is aimed to assist self-support users with concentrated disc mass memory storage service technology and is structured as 70 percent lecturelself-paced and 30 percent lab.

The 1987 schedule for course 50041A is:

Customer Service Training – Mountain View, California
March 23-25
April 20-22
July 20-22
September 8-10

For detailed program and registration information, please contact Customer Service Training in Mountain View, California, at 415-960-5300, 800-523-0696 (Continental U.S.), or 800-882-9895 (California only).

Networks

Enhancements for SNA IMF

SNA IMF has now been enhanced with Logical Unit Type 1 (LU.T1) printer support allowing the HP 3000 to support an additional number of IBM host print applications. This need is particularly great for users with IMS software on their IBM host. Also added to this new release are Native Language support and limited support for 43-line-screen size applications.

SNA IMF with SNA Link allows an HP 3000 to emulate the major functions of an IBM 3274 cluster controller with IBM 3278 terminals and 3287 printers attached. Both interactive and programmatic access is supported to commonly used IBM host applications like CICS, IMS, and TSO.

SNA IMF enhancements

SNA IMF is a software product that works with the SNA Link product to emulate a Physical Unit Type 2 (PU.T2) SNA node. It previously provided support only for Logical Unit Types 2 and 3 (LU.T2 and LU.T3) devices such as the IBM 3278 display station and IBM 3287 printer. SNA IMF now also supports another commonly used LU type, LU.T1.

IBM printers are often configured as LU.T1 devices in SNA networks. LU.T1 devices use the SNA Character String (SCS) data stream. Since SCS

printers are commonly used by some widely installed IBM software products like CICS, IMS, and TSO, the enhanced version of SNA IMF provides a more complete solution for HP-to-IBM connectivity.

In addition to LU.T1 support, SNA IMF has also been enhanced to support Native Language Support (NLS). NLS permits a user's applications programmer to create local language applications by providing support for various foreign languages. SNA IMF provides automatic translation using NLS translation tables between the language dependent ASCII character set on the HP 3000 and the EBCDIC character set on the IBM applications program.

A limited support for 43-line-screen sizes has also been added to SNA IMF. This feature permits HP 3000 users to utilize IBM applications requiring that screen size. It must be noted, however, that HP's implementation is limited. HP terminals cannot display all 43 lines at once; instead, users scroll up and down to view all 43 lines. Because of this limitation, we recommend use of this option for users whose applications will only run with a 43-line screen.

Availability

SNA IMF Version A.53.00 supporting LU.T1 printing, Native Language Support, and 43-line application support, will be available on UB-Delta-2 MIT. It requires SNA Link Version A.52.00 which is available on UB-Delta-1 and later MITs.

These new enhancements are bundled in the SNA IMF product (PIN 30247A/R). Users on subscription service will receive the new SNA IMF version at no additional cost. New SNA IMF users will receive the enhancements as part of the SNA IMF product they purchase. No special ordering options are required.

Contact your HP sales rep for ordering and pricing information.

INTRODUCING THE *HP* NETWORK SUPPORT PROGRAM

The HP Network Support Program was introduced December 1, 1986, and includes new services to help users plan, implement, and operate their networks.

Four new support products were introduced: Network Planning and Design, Network Prepare, Network Startup, and NetAssure.

Network Planning and Design

Network Planning and Design provides users with a complete network strategy that supports their business objectives. An HP network consultant analyzes the user's communication requirements and creates a detailed network design based on these requirements. Part of the network design is a growth plan that provides flexibility for new applications, users, and technology, and protects the user's investment.

The HP Network Consultant develops a strategy that not only satisfies the user's business needs, but also highlights HP's network strengths versus the competition. By bringing in the Network Consultant early in the sales cycle, HP can be sure of presenting the best solution to the user from the beginning.

Network Prepare

Network Prepare helps your users plan for the smooth integration of their new or expanded network into their business operations. HP works with the user's organization to prepare a Network Implementation Report. The report contains a schedule of major implementation activities, such as migration of users, and recommendations for network staffing, training, and procedures. Network Prepare can be invaluable for users who are inexperienced with networks.

Network Startup

Network Startup provides users with the assistance they need to get their network up and running quickly. This increases the effectiveness of the user's staff because the activities and resources necessary for successful installation and start up of the network are identified.

HP works with the user to develop a detailed Network Startup schedule which outlines the activities to be performed. a timeframe for each activity and the responsible party – HP, the user, or a third party. We also test each network connection to verify that the network is operating properly. At the completion of Network Startup, HP provides the user with documentation of the network. This documentation is a valuable tool for successful ongoing management of the network.

NetAssure

NetAssure maximizes the uptime of the user's network. Networks are usually comprised of equipment and services from several vendors. When a problem occurs, the user spends significant time and effort coordinating the service efforts of multiple vendors to identify and fix the problem.

With NetAssure, HP simplifies this process. HP isolates problems on multi-vendor networks and then works with other vendors, either directly or through the user, to ensure that the problem is resolved quickly and the network is returned to full operation.

Availability

The availability of all the Network Support products will be determined on a local area or country basis, with a controlled rollout through 1987.

Additional information

Please watch for additional articles in upcoming issues of HP *Channels.*

Additional literature

The following HP Network Support Program literature is available:

| Product No.	Description
5954-8597	Network Support Program Brochure
5954-8601	Network Planning and Design Data Sheet
5954-8604	Network Prepare Data Sheet
5954-8599	Network Startup Data Sheet
5954-8600	NetAssure Data Sheet

Contact your sales rep for more information.

Networks

SNA OVER X.25 THIRD PARTY SOLUTION

Available in North America and Europe only

For users who want to run HP's SNA IMF or SNA NRJE products over an X.25 network, a third-party solution can provide a networking alternative. Verification testing of **XMIT**'s xGATE* 650 products has been recently completed by HP. The xGATE 650 devices act as protocol converters between the SNA SDLC products and the X.25 networks, allowing the HP 3000 running SNA IMF or SNA NRJE to communicate transparently with IBM System 370 computer systems over the X.25 network.
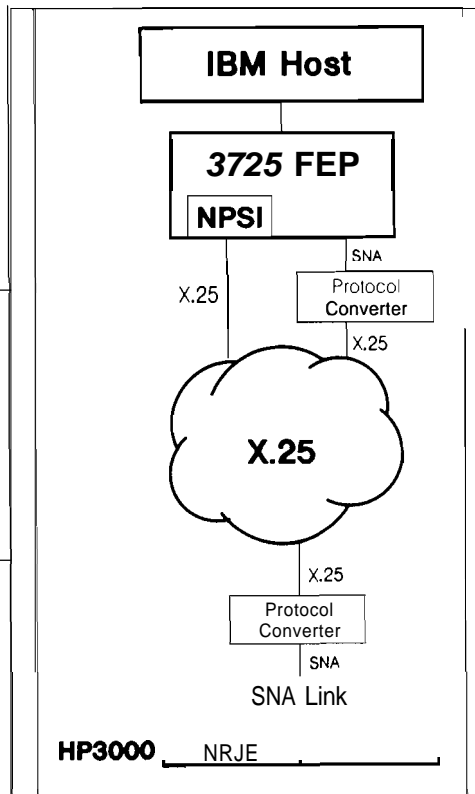
A number of HP users have developed HP-to-IBM SNA networks and have also implemented HP-to-HP communications via DS/3000 over X.25 to take advantage of its wide-area flexibility and multivendor standardization. Many of these users can benefit by consolidating the two networks into one network using the SNA-to-X.25 implementation.

HP has successfully tested the XMIT products to verify that they can functionally operate with HP's products. However, XMIT has responsibility for all sales and support of the xGATE 650 products.

XMIT AG is based in Zurich, Switzerland. It has subsidiary operations in North America and distributorships in major European countries.

For more information on the XMIT products, contact:

In Europe:
Hans Trosch
XMIT AG
Neumattstrasse 7
CH - 8953 Dictikon, Switzerland
Phone 01-74 14155

In North America:
Fred Gallagher
XMIT LTD
2 Sheppard Ave East
Suite 900
North York. Ontario M2N5Y7
Canada
Phone (416) 222-8666

*xGATE is an abbreviation of XMITGATE™

Networks

HP 1000/3000/9000 NETWORK TROUBLESHOOTING IN ONE BOOK

The *LAN Link Hardware Troubleshooting Manual* is a comprehensive outline of procedures for isolating hardware faults across an IEEE 802.3 Local Area Network. Step-by-step instructions teach you to troubleshoot coaxial (thick and thin) cable LANs containing HP 1000, HP 3000, and HP 9000 systems. The guide provides software diagnostic information to perform tests between dissimilar systems and describes discrete electrical tests to check the LAN hardware.

Decision-tree flowcharts are used to quickly isolate faults, thereby reducing downtime and speeding the repair process. The guide, in 8% x 11 format, may be ordered through the Direct Marketing Division using PIN 5955-7681.

Printers

A NEW HP 2686 LASERJET PRINTER TRAINING COURSE

Hewlett-Packard Customer Service Training is offering a new HP service training course on the HP 2686A/D LaserJet printer beginning in January 1987. Course 50042A was developed to train customer service personnel to diagnose, troubleshoot, and maintain the HP 2686A/D printer in an office environment. It is a five-day course which expands on the existing service technology available through the regular SMT (Self-paced Mentored Training) Course 05092A, Option 23.

Participants will be taught to service the HP LaserJet printer from the perspective that it is an integral part of an office PC network. Hardware service knowledge will be reinforced with selected PC/LaserJet printer configuration procedures. The class is structured as 40 percent lecture and 60 percent lab to ensure ample hands-on learning.

The 1987 schedule for course 50042A is as follows:

Customer Service Training Mountain View, California
January 19-23
March 9-13
May 4-8
June 15-19
August 3-7
September 21-25
December 7-11

Technical Training Center Rockville, Maryland
April 27-May 1
June 15-19
August 10-14
October 12-16
November 16-20

For detailed program and registration information, please call Customer Service Training in Mountain View, California, at 415-960-5300, 800-523-0696 (Continental U.S.), or 800-882-9595 (California only).

Printers

PRICE OF ACCESSORY KIT FOR HP QUIETJET PLUS PRINTER DECREASED

One phone call to order one product number is all it takes for HP QuietJet Plus printer owners to get off to a great start with the right products – at a savings. Direct Marketing Division (DMK) has combined five products into one convenient package for the HP QuietJet Plus printer. The 92261P Accessory Kit includes:

▪ Four printhead cartridges in four colors: blue, green, red, and black.

▪ Five sheets of microperforated fanfold paper (finished size: 8% × 11 inch).

500 sheets of perforated fanfold paper (finished size: 14% × 11 inch).

One space-saving acrylic printer stand.

▪ One waterproof cotton dust cover.

This kit will save you about 15 percent off the total price of these products when purchased individually.

Product No.	Description
92261P	HP QuietJet **Plus** Accessory Kit

For fast service, call DMK's HP direct phone order numbers.

SOFTWARE PACKAGES AVAILABLE AND WANTED

If you have a software package available for cross-licensing, or are looking for a package to cross-license, this section will help you. Your entry will appear for two months; the most recent additions are shaded. To list your company in the Cross-Licensing Classifieds (at no charge), see the address at the end of this section.

Software Packages Available

Industry: *Distribution*

Abstract: On-line, field-proven distribution system for the HP 3000 family. designed particularly for Series 37 turnkey operations.

The inventory module supports FIFO, LIFO or AVERAGE, costing, lot control and serial number, service and labor items, multiple warehouses, and stocking locations.

Telephone order processing features user-definable order types, user-definable order life cycle, immediate acknowledgement, picklist and or invoice.

Very reasonably priced for the Series 37 marketplace, the system is written in CBAS/3000, the only fourth-generation language, that executes faster than COBOL.

Company Name: Iris Computer Planning

Address: 117 Disco Road
Toronto (Rexdale), Ontario
M9W 1M3
Canada

Phone: 416-674-0034

TELEX:
06-984708

Contact Person: Paolo Illing

Type of Distributor Wanted: HP 3000 Series

Geographic Coverage: Worldwide

Industry: *Electronics industry – data acquisition software*

Abstract: The CrtCamera spectrum acquisition software is a general-purpose utility software for the HP 8566, 8567 and 8568 spectrum analyzers. CrtCamera provides users with an easy way to capture, store, retrieve, and plot or print spectrum analyzer display data. The spectrum analyzer's complete display memory, consisting of traces, annotations, and custom graphics is saved along with the instrument state. A title and time date are automatically appended to the display data.

The software is written in BASIC 3.014.0 for the HP 9000 Model 2001300 computers.

Company Name: Test Quality Company

Address: P.O. Box 710215
San Jose, CA 95171
U.S.A.

Phone: 408-629-7183

Contact Person: Jim Jenkins

Type of Distributor Wanted: Open

Geographic Coverage: Worldwide

Industry: *Cross industry – report writers*

Abstract: ASAP13000 is a menu-driven, batch report writer for the HP 3000 that provides a user-friendly, interactive report development and modification facility. Reports developed using ASAP execute in COBOLII, and COBOL source code can be generated at any time. Reports may be multiline or columnar, with unlimited sort and selection criteria, nominal items (calculated or non-calculated), headings/footings, page breaks, line controls, code expansion, etc. ASAP also provides database layouts and work sheets for the designer, plus the ability to "clone" an existing report. There is no additional charge for software developers using ASAP to develop COBOL report programs for inclusion into their software products. ASAP is equally applicable to designers and end users.

Industry: *Cross industry – sales leads tracking/marketing information*

Abstract: FASTRACK/3000 is an on-line sales leads tracking and marketing information system. It provides menu-driven, transactional access to a comprehensive leads database with complete information about each lead, multiple contact persons, product lines, follow-up schedules, in-depth follow-up history, comments, sources, sales quota, and forecasting data. The system has extensive update, inquiry, and reporting capabilities to give sales and marketing professionals accurate, timely information. It's easy to use; has on-line HELP, full data dictionary, natural language for ad-hoc inquiry, and a fourth-generation language transaction development facility. Can be used by telemarketing and/or field sales reps. Batch report writer is optional.

Company Name: Los Altos Software

Address: 289 South San Antonio Road
Suite 203
Los Altos, CA 94022
U.S.A.

Contact Person: Susan Galante

Type of Distributor Wanted: Open

Geographic Coverage: Worldwide

Industry: *Cross industry – land information.*

Abstract: BLIS is a geographical information system providing powerful mapping facilities. It runs on the HP 9000 Series 200 and 300 computers in BASIC. The system permits the creation of a geographical database of vector data (point, line, circle) and nongraphical data attributes to represent any spatially distributed data by automatic map creation. The digital data can be acquired as a result of survey, digitization, or on line to numeric or graphical precision. Rasterization facilities are provided to enable fast recovery of standard map displays.

The system is most appropriate for the creation of comprehensive, graphical ownership record systems (cadastral systems), public utilities systems. and natural resource mapping systems. Facilities to manipulate symbols and drawings enables fast creation of maps by aggregation of individual parts. The software includes a topographical mapping system to enable surface topology to **be** recorded. computed, and integrated with planimetric information. Field survey input facilities are provided and include integration with automatic data collection capabilities, running on HP 41C calculators connected to total station theodolites. Integration with portable photogrammetric analytical stereo digitizers provides a comprehensive mapping facility.

Company Name: Kingdom Pty Limited

Address: 5 Devlin Street,
Ryde. NSW. 2112.
Australia

Phone: +-2-8074822

Contact Person: Dick Lovegrove

Type of Distributor Wanted: Open

Geographic Coveruge: Worldwide

Industry: *Jobshop manufacturing*

Abstract: JOBSHOP/3000 is a cost-efficient software solution for small to mid-sized jobshops. It provides comprehensive cost analysis and standard financial functions including payroll. JOBSHOP/3000 is a fully integrated system using an HP 3000 IMAGE database. Most user interaction is through an inquiry mode. It effectively monitors and documents job performance by costs to date, estimate variance, schedule variance, and percent complete. Distributed data collection includes labor distribution from the shop floor, updating job cost in real time. JOBSHOP/3000 solves the problem of providing an acceptable solution of job cost analysis for the true jobshop. MCBA interface is available.

Company Name: Votaw Data Systems

Address: 13000 Lakeland Road
Santa Fe Springs, CA 90670
U.S.A.

Phone: 213-944-0676

Contact Person: Norm Querido

Type of Distributor Wanted: OEMs, dealers, distributors

Geographic Coverage: U.S.A

Industry: *Cross industry – software development tools*

Abstract: QCOMM/1000 is an easy-to-use, program-to-program message communication subsystem for use on HP 1000 computers. In addition, with DS/1000 it facilitates transparent program-to-program communication over DS/1000 networks.

Features include:
- Guaranteed message delivery on FIFO basis per message queue.
- Message queueing with full flow control.
Handling of as many message queues as there are class numbers on the system.
Blocking of messages for optimal throughput.
Trace facility and dynamic viewport into queue U.S.A.ge.
Multiple message queues per program.
- Variable message lengths.

Company Name: Bothma, Searle & Wilk CC

Address: P. O. Box 365
Halfway House
1685
Republic of South Africa

Phone: (27) (11) 805-1843

Telex: (SA) 4-30551

Contact Person: Neville Searle or Roland Wilk

Type of Distributor Wanted: HP 1000 OEM

Geographic Coverage: Worldwide

Industry: *Cross industry*

Abstract: Dataport/HAN is looking for a sales-service organization in France, Spain, and Italy to expand their activities throughout Europe. Dataport/HAN sells solutions on HP 9000 Series 300 workstations for mechanical, electrotechnical. and architectural applications. The CAD 200 program-family sells very successfully in Germany, Austria, and Switzerland. Since 1984, Dataport/HAN has installed more than 300 systems in these countries. More than 2,000 systems have been installed worldwide.

Company Name: Dataport GmbH

Address: Kaiserstrasse 19
Eingang Neuhausgasse 16
D-6360 Friedberg
West Germany

Phone: (06031) 6 10 21-5

Telex: 4 184971 nd d

Contact Person: J. Brinkerhoff

Geographic Coverage: France, Spain, Italy

Industry: *Manufacturing*

Abstract: MDSS (Manufacturing Decision Support System) is an online, full-function manufacturing software product package in four separate modules: Material Management, Shop Floor Control, Order Processing. and Financial Reports.

MDSS is well suited to discrete manufacturing with support for make-to-order, make-to-stock, and selective repetitive manufacturing facilities ranging from $5 million and up. MDSS is written in structured, ANSI COBOL to run on the HP 3000 series, and is professionally documented using standard HP software products. It has built-in, online "Help" screens for ease-of-use.

Company Name: Manufacturing Decision Support Systems. Inc.

Address: 300 East Ohio Building
1717 East 9th Street
Cleveland. OH 44114
U.S.A.

Phone: 216-861-8100

Contact Person: John A. Leibert, V.P.

Type of Distributor Wanted: Open

Geographic Coverage: United States, including Puerto Rico

Industry: *Cross industry – office automation*

Abstract: AUTHOR 3000 is powerful, character-oriented AUTHOR word processing software to be run on the HP 3000. This full-featured word processing package combines full-screen editing and user friendliness with system efficiency and high performance. AUTHOR 3000 is the first product in a full line of office automation products.

Features in AUTHOR 3000 include:

- Electronic filing of all documents, using Drawer. Folder, Document hierarchy.
- Incorporation of function key orientation and full screen editor.
- Introduction of COMAR'S 65,000 + word spelling dictionary, and a personalized user-specified dictionary.
- Comprehensive step-by-step on-line help screens.
- Full mail list function supporting mass mailings.
- System's management function for system access control.
- Complete update of the User Reference Manual.
- Low-cost type-ahead hardware solution for terminal buffering.

Company Name: COMAR, Inc.

Address: 9320 S.W. Barbur Blvd., Suite 140
  Portland. OR 97219-5419
  U.S.A.

Phone: 503-293-2885

Contact Person: Glenn Manley

Type of Distributor Wanted: Open

Geographic Coverage: Worldwide

You can list your company in the **Cross-Licensing Classifieds** (either Software Packages Available or Software Packages Wanted) by sending the information in the format used here to:

  Hewlett-Packard Company
  Value-Added Solutions Marketing
  Attn: Marilyn Rauchle
  10520 Ridgeview Court
  Building 49C
  Cupertino, CA 95014
  U.S.A.

Entries will run for two months. The most recent additions are shaded. Be sure to send the information in at least one month before you wish it to appear.

ADDRESS CORRECTION REQUESTED
RETURN POSTAGE GUARANTEED

HEWLETT
PACKARD