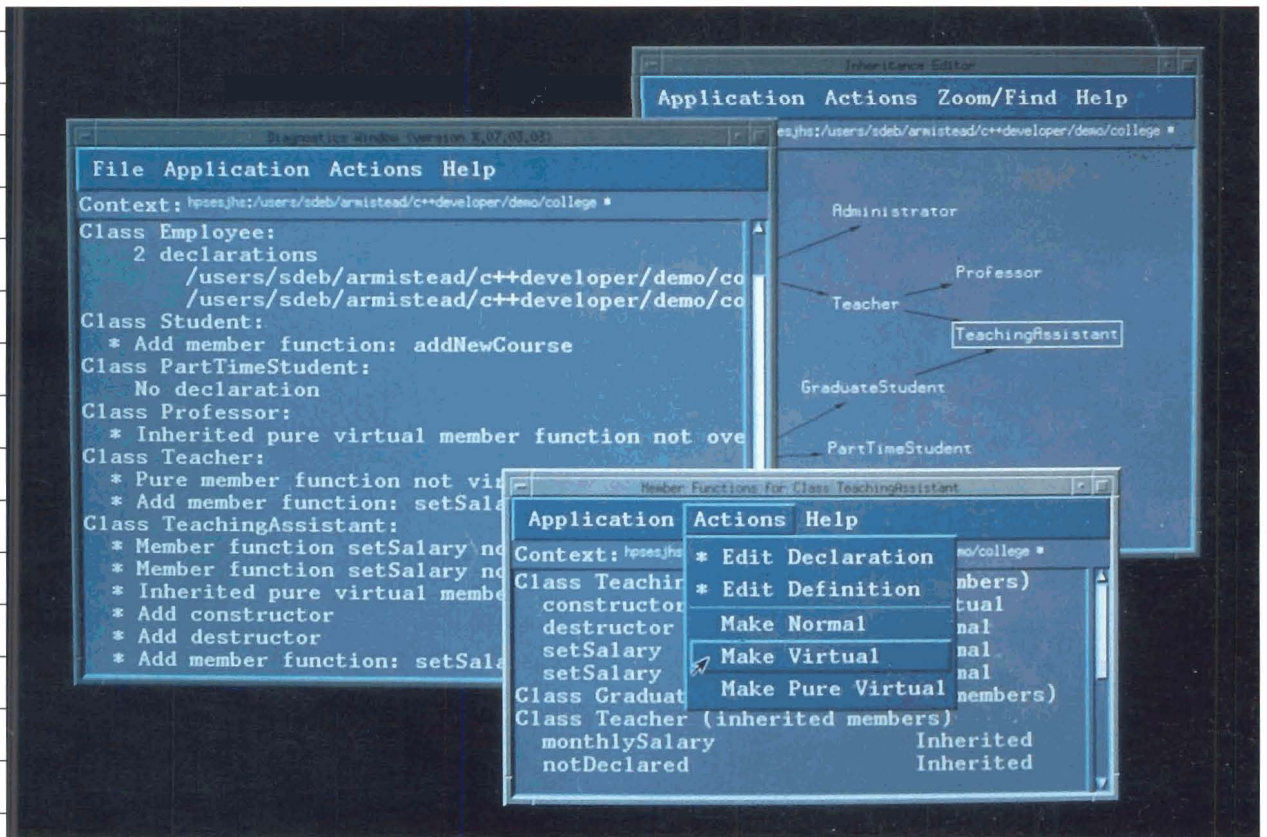


# HP CHANNELS

Information For Hewlett-Packard's Value-Added Businesses

December 1990



## Introducing HP C++ Developer

5

# HP CHANNELS

Volume II, No. 2

Editor  
Tracy Wester

*HP Channels* is published monthly for Hewlett-Packard's value-added businesses to provide you with information about HP's products and services to help you be more successful.

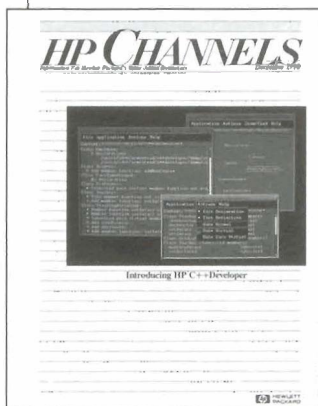
For further information on any of the products and services discussed in *HP Channels*, please contact your HP sales rep.

See back cover for subscription information.

*Note: Not all HP computer products are sold and supported in all countries. Please check with your local HP sales office.*

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On the cover



The new HP C++ Developer improves C++ programmer productivity. It provides the C++ programmer a convenient, easy-to-use functionality set that assists in the creation and maintenance of sophisticated C++ object-oriented programs. See articles beginning on page 9.

HP CHANNELS  
December 1990

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**HP Computer Museum**  
**[www.hpmuseum.net](http://www.hpmuseum.net)**

**For research and education purposes only.**

## VAB Performance Management Conference

The Hewlett-Packard Performance Technology Center announces "Building Profitability and Advantage: The 1991 Performance Management Conference" to be held Thursday, January 17, at the Performance Technology Center in Roseville, California.

This one-day conference will focus on how you can use HP's performance management tools and services to achieve greater profitability and competitive advantage. Sessions will blend marketing and relevant technical discussion to provide a thorough understanding of HP's performance technology and the opportunities for its use. The conference will include the following discussions:

- Program optimization to achieve and document competitive advantage
  - Performance tools as revenue and support opportunities
- System performance management and customer support
- Justifying and documenting system sizing and upgrades
- HP performance consulting services as your support partner

For more information or to reserve your place at the conference, please contact Mark Meihaus at Hewlett-Packard, 415-691-5379. Space is limited, so call early.

### Customer Support

Support

## Introducing HP RemoteWatch

HP RemoteWatch software, a new feature of HP contractual support, is system monitoring software for HP 9000 Series 300 and 400 HP-UX workstations. It is targeted toward HP 9000 Series 300 and 400 HP-UX department managers/system administrators with HP support contracts.

### Features

HP RemoteWatch software is a remote problem solving and local system administration tool. The program runs every night on the users' systems, gathering and archiving system configuration information, and reporting errors and changes via E-mail to the local system administrator.

### Benefits

HP RemoteWatch software is designed to improve user productivity in three ways:

- The program's archives provide information that enables HP to improve its remote support.
- The program's messages alert users to problems before they become serious.
- The program provides users with an automated, consistent means of documenting and checking configuration changes.

HP RemoteWatch software is available to all HP workstation users who have both HP SuccessLine service and either HP ResponseLine or HP TeamLine software support service.

### Modems

In the U.S., where most workstation users already have a modem, users are expected to provide their own modem. Users who do not have a modem should purchase either a Hayes-compatible or a V.32 modem. Outside the U.S., users should check with their HP representative for details of their local modem program.

For more information, contact your HP representative.

support

## HP AIMS Software Support services

HP Advanced Image Management System (HP AIMS) Software Support services bring together the resources of HP's industry-leading support organization with a comprehensive support program for the client and server environment to create a complete software support solution for HP AIMS users.

### Services

HP offers a range of software support services to HP AIMS users from personalized to economical self-maintenance support. This program provides users with a choice of three software support services on their HP AIMS server and one service on their workstation(s). Server services consist of:

HP AIMS Server TeamLine

HP AIMS Server ResponseLine

- HP AIMS Server BasicLine
- HP AIMS Server VAB BasicLine (for HP VABs only)

*continued on next page*



HP AIMS Workstation BasicLine is the only service available for clients. This service must be purchased for all clients in the AIMS computing environment.

HP AIMS Software Support services provide software assistance for all HP 9000 and supported PC software products in addition to the HP AIMS software. These services do not provide support for any customized software applications.

### User solutions

The range of services and options built into the HP AIMS Software Support program provides a tremendous amount of flexibility in developing specific solutions. Users benefit from the wide array of services available to meet various support needs. If our standard services do not sufficiently meet user requirements, a Custom Support Plan may be developed.

This program also provides a strong support solution specifically for HP VABs. VABs may purchase support directly from HP to receive software assistance with HP AIMS tools during the development process. In addition, VABs may purchase HP support for their customers. This provides the VAB with the ability to contact HP for software assistance on customer problems and the right to copy software updates to these customer systems.

### Ordering information

Product No.	Description
H2078A+T00	HP AIMS Server TeamLine
H2079A+H00	HP AIMS Server ResponseLine
H2080A+L00	HP AIMS Server BasicLine
H2081A+L00	HP AIMS Server BasicLine
<i>Processor tier options above products</i>	
Opt. OLF	For Model 870
Opt. OIA	For Models 850, 855
Opt. OIB	For Model 845
Opt. OIC	For Model 645
Opt. OJD	For Models 825, 832, 835
Opt. OJE	For Model 635
Opt. AH0	For Model 808
Opt. OKQ	For Models 360, 370, 375
Opt. OKR	For Model 815
Opt. AGA	For PC UNIX
<i>Application options for above products</i>	
Opt. OF8	For Integrated PC Office
Opt. OLT	For JukeboxManager (not required for Opt. AGA)
Opt. OIQ	ESQL/C upgrade (not required for Opt. AGA)
Opt. OLW	HP AIMS Developer Support
<i>Additional services for above products</i>	
Opt. OFH	Additional Tech Review
Opt. OFB	Additional RC Caller
Opt. OFJ	Software Update Installation
Opt. OFK	Off-Hours Update
H2082A+L00	HP AIMS Workstation BasicLine
<i>Processor tier</i>	
Opt. OJT	PC DOS

For more information, contact your HP representative to get a copy of the HP Advanced Image Management Systems Software Support data sheet (PIN 5952-2327).

### Multiuser Systems

General

## HP MM/AV Release A.09.10 now shipping

HP Materials Management/Advanced Version (HP MMIAV, PIN 32926A) Release A.09.10 includes the new orderless scheduling and tracking feature set called Detailed Scheduling. This feature set is delivered as part of the Process1 Repetitive option of HP MMIAV. Users who have already purchased and upgraded to HP Materials Management1 Advanced Version will receive this new release at no extra charge.

Detailed Scheduling is one of many new features included in this release. This new scheduling function complements Backflush by allowing users to schedule daily production without the traditional work orders and the associated material allocations. Detailed Scheduling can be used as well as standard work orders, allowing users to implement orderless operations on a gradual basis, and to operate in a mixed mode of orderless1 work-order-based processing as the needs of their operations dictate.

An on-line review and printed report show how production is faring against plan, including daily and cumulative quantity variances. MRP will accept both order-based and orderless inputs, so different products or production lines may be planned using the most appropriate method. In addition, material shortage visibility is provided for these orderless schedules without requiring allocations.

New transactions provide for scheduling of individual products to one or more production lines, and multiple products across a single line. Schedules can be created based on rate and period, or based on total production quantity along with a specified start or due date. Line schedules also can be reassigned to other production lines as requirements change.

## Additional features

*Unit-of-measure conversions for inventory* — Materials may be stored in tanks but used in gallons, or cable may be stored in spools and issued in feet.

- *Several new reports have been written using HP Business Report Writer* — Old reports are still provided, but all enhancements and fixes are implemented in the new reports.
- *HP Lot Control and Traceability applications dictionary will be incorporated into the release* — Users will now be able to add lot functionality without performing an upgrade.
- *HP MM A.09.10 release will be delivered on a Delta shared with HP Purchasing Release A.02.02* — For users with both products, an entire database restructuring can be completely eliminated.
- *Performance and quality improvements* — Over 40 service requests have been incorporated into this release.

This is the last release for HP Materials Management/Advanced Version to run on an MPE V system. All future releases of HP MM/AV will incorporate features that require HP MPE XL.

For more information on Release A.09.10 and on how users can upgrade from HP MM to HP MM/AV, please contact your HP representative.

## General

### **Power option removed on HP 3000 and 9000 systems**

Effective December 1, Option OE3, which specifies 2001240 V power, was removed from the HP Price List on the systems listed below. Manufacturing will set the power supply voltage, either 100/120 V or 2001240 V, based on the world country code of the order, so this option is no longer necessary. As a result, ordering will be simplified. Orders currently in the backlog will not be impacted by this change. The affected systems include:

Product No.	Description
A1702A	HP 3000 Series 920
A1027A	HP 3000 Series 922LX
A1046A	HP 3000 Series 922RX
A1033A	HP 3000 Series 922
A1041A	HP 3000 Series 932
A1716A	HP 9000 Model 822
A1044A	HP 9000 Model 832

## HP 3000/MPE

### **New processor switchover software**

SPU Switchover/XL (PIN 36378A) is software that detects system failures and allows application processing to be switched to a backup system. It is targeted toward users with critical on-line transaction processing applications whose business is significantly impacted by processor failures.

## Features and benefits

*Automatic detection of processor failure* — SPU switchover software automatically checks the status of the primary and backup processors. If either processor fails, the system operator is promptly informed. The operator can then initiate application switchover from the primary to the backup processor. System uptime is maximized through the automatic failure detection capability.

- *Full utilization for backup processor* — SPU switchover software works in a dual processor configuration. Both processors are fully utilized for application processing since SPU switchover software imposes no additional processing overhead. The benefit to the user is that investments in both the primary and backup processors are fully utilized.

## HP 3000 product-line positioning

SPU Switchover/XL is the latest component of CDAC/XL (continuous data access control), the high-availability product offering for the HP 3000 family. This product is designed to reduce unplanned downtime. For users with critical applications who are sensitive to downtime, SPU Switchover/XL should be purchased together with other high-availability products such as Mirrored Disk/XL and AutoRestart/XL. In order to provide an effective terminal switching capability, SPU Switchover should be purchased in conjunction with the Openview DTC Manager product.

Contact your HP representative for more information and to get a copy of the HP 3000 High-Availability Products data sheet (PIN 5952-1037).

HP 3000/MPE

## HP GlancePlus/XL — MPE XL 2.1 media options

HP GlancePlus/XL (PIN B1787A), introduced in the September 1990 issue of *HP Channels*, is available to new users on MPE XL 2.1 systems. To order HP GlancePlusIXL for MPE XL 2.1 systems, media Option AA1 or AAH (magnetic tape or DDS cartridge, respectively) must be included with the system tier option (Option 310-350) on the order. HP GlancePlusIXL will be available as part of the subsystem tape beginning with MPE XL 2.2. For more information, contact your HP representative.

### Ordering information

Product No.	Description
B1787A	HP GlancePlus/XL
Opt AA1	Magnetic tape media (MPE XL 2.1 only)
Opt AAH	DDS cartridge media (MPE XL 2.1 only)
Opt 310	HP 3000 Series 920, 922LX
Opt 315	HP 3000 Series 922RX
Opt 320	HP 3000 Series 922, 925LX, 925,932
Opt 330	HP 3000 Series 935
Opt 335	HP 3000 Series 949
Opt 340	HP 3000 Series 950, 955, 960
Opt 350	HP 3000 Series 980/100, 9801200

HP 3000/MPE

## MPE XL Release 2.2 running smoothly — Series 980 systems shipping

MPE XL Release 2.2 has been running on user test systems since mid-July, and has had a very low incidence of problem reports. We are very confident about the reliability of Release 2.2, and are sure that users will benefit from upgrading.

Below are some of the significant products and enhancements available on this new release on MPE XL.

- **Measurement Interface AIFs** — allows developer access to the MPE XL Measurement Interface performance data
- **HP Devcontrol** — New device control intrinsic
- **TurboSTORE II** — On-line and unattended backup including high-performance data compression, parallel recovery, ANSI and IBM labeled tape support
- **Openview System Manager** — provides control of networked HP 3000 systems from a single, centralized console

- **SNADS** — electronic mail exchange between HP Desk and IBM Office Vision/MVS (DISOSS)
- **DTC/X.25 network link enhancement** — greater wide area network communication capabilities
- **HP ARPA file transfer protocol** — support of the de facto ARPA FTP standard
- **ThinLAN 3000/XL link enhancement** — allows IEEE 802.3 and the de facto standard Ethernet to run concurrently over a single LAN
- **ALLBASE/TurboConnect** — transparent read access from HP ALLBASE/SQL to HP TurboIMAGE/XL databases
- **HP GLANCE Plus** — HP GLANCE/XL plus additional performance information and diagnostic capabilities.
- **HP Software Performance Tuner/XL** — an interactive tool for monitoring and reporting resource use of native mode application programs

Contact your HP representative for more information.

## Photoplot postprocessor for HP EGS/UX and MDS

The HP EGS/UX and MDS photoplot postprocessor for the HP 9000 under HP-UX converts HP EGS and MDS drawing files for hybrids, printed circuit boards, and microwave designs into the required **command/coordinate** data files for photoplotters.

Optionally, there is a Gerber-to-EGS converter available that allows the simulation of the Gerber photoplot on film by entering the simulated data into the HP EGS system.

### Functional description

The postprocessor uses HP EGS-generated files and Microwave Design System flattened archive files as its input. It produces Gerber photoplotter drawing files as its output. During this conversion, a "fast-fill" algorithm optimizes the plane-fill process by automatic selection of flash apertures and, where trace apertures are necessary, automatic selection of the maximum trace aperture size. In addition, optional "aperture sort-by-size" routine and **circular** interpolatibn can be selected. "Dimension" components in the HP EGS generate file are not converted to photoplotter code.

The Gerber-to-EGS converter translates the Gerber **commands/coordinate** file to an HP EGS generate file that can be input to the EGS graphics editor. The simulated photoplot can be stored as a drawing and directly compared to the original design on the same screen.

### Features and benefits

- "Fast-fill" algorithm for reduced Gerber file size and faster plot on the photoplotter
  - Circular interpolation support
  - User-friendly menu-driven interface
  - Layer and component type selection, scaling
  - Customizable by the user via simple changes to the postprocessor (no programming)
  - Gerber simulation on screen for saving testplots

### Requirements

- Photoplotter
  - Compatibility with Standard Gerber Word Address Formats. This is the standard for most photoplotters.
  - Photoplotter command syntax easily customizable via simple user changes to the postprocessor
- Hardware
  - HP 9000 Model 320 or higher, HP 9144 or 9145 tape cartridge drive for installation
  - The postprocessor requires 2 Mbytes of disk space for installation; further disk space required for program execution and output files
  - ID-Module 46084A (can use any module already connected to the computer)
- Operating system
  - HP-UX Version 6.2 or higher

### Delivery

- Software on 150-foot, 16-track tape cartridge
- Documentation and installation instructions on tape
- Right-to-use **codeword** for the postprocessor based on any ID-Module already connected to the computer. Optional **codeword** for the Gerber-to-EGS converter

### Installation

- User installable
- Can be installed by **Hewlett-Packard** and combined with user training, in which case, time and materials billed separately

### Ordering information

Product No.	Description
LP8370XX/UX	Photoplot postprocessor
LP8370XX/UX	Option Gerber/EGS

These products can be ordered stand-alone. Contact your HP representative for more **information**.



HP 9000/HP-UX

## New options for HP OpenSpoolUX

HP OpenSpoolUX has been in the marketplace for five months and has received considerable acceptance. It has proved to be an outstanding solution in comparison with competitors' offerings.

To tune the HP OpenSpoolUX product structure to user needs that have occurred during this time, the following options were made available effective December 1, 1990:

- **4-SPU license** (Opt. UA2) — targeted at small workstation environments1 workgroups, either using plot-intensive CAD applications or other applications involving transparent access to several output devices.
- **32-SPU license** (Opt. UA7) — targeted at medium workstation environments1 departmental and interdepartmental workgroups with heavy usage of distributed printers and plotters. Users will save \$2,000 (U.S. list) when ordering this option instead of ordering the 16-SPU option twice.

- **Single-country company license** (Opt. OAZ) — targeted at large and very large users of HP 9000 Series XXX workstations and multiuser systems in companywide LANs and sub-LANs. These users will get a bargain offer when buying this license, rather than ordering a number of site licenses and multiuser system licenses. The single-country company license covers unlimited licenses of HP OpenSpoolUX for both workstations and multiuser systems of one company in one country (the right to sublicense to subsidiaries is excluded).

For more information about HP OpenSpoolUX, contact your HP representative to get a copy of the HP OpenSpoolUX data sheet (PIN 5952-2175).

The new options are as follows:

Option	Description
AHM	HP OpenSpool/UX for HP 9000 Model 860
011	Return credit option for HP 9000 Series 860

HP 9000/HP-UX

## New memory and port options for HP 9000 Models 822S, 832S

Effective November 1, 1990, the product structures for the HP 9000 Model 822S (PIN A1716A) and Model 832S (PIN A1044A) were modified to reflect additional memory and serial port options. Now, by selecting options to the base product, the Model 822S can be ordered with up to 48 Mbytes of memory (up from 32 Mbytes) and the Model 832S can be ordered with up to 64 Mbytes of memory (up from 40 Mbytes). The Model 832S can now also be ordered with up to 64 ports (up from 56 ports) through options to the base product.

Also effective November 1, all memory options to these systems will be configured at the factory using the new 16- and 32-Mbyte Precision Bus memory cards in addition to the 8-Mbyte memory card. This will reduce the number of slots required for memory leaving these slots available for other I/O functionality.

Contact your HP representative for more information.

### Ordering information

Product No.	Description
A1716A	HP 9000 Model 822S
Opt. 505	Increase memory to 40 Mbytes by installing one 32-Mbyte card and one 8-Mbyte card
Opt. 506	Increase memory to 48 Mbytes by installing one 32-Mbyte card and one 16-Mbyte card
A1044A	HP 9000 Model 832S
Opt. 506	Increase memory to 48 Mbytes by installing one 32-Mbyte card and one 16-Mbyte card
Opt. 507	Increase memory to 56 Mbytes by installing one 32-Mbyte card, one 16-Mbyte card, and one 8-Mbyte card
Opt. 508	Increase memory to 64 Mbytes by installing two 32-Mbyte cards
Opt. 608	Add six MUX cards for a total of eight cards or 64 ports

HP 9000/HP-UX

## Disk requirements for HP BASIC/UX bundles

With better functionality and the addition of more features, the size of HP-UX keeps growing steadily and sometimes considerably from one release to the next. In the past, 80-Mbyte hard disks could be recommended for AXE users; 150-Mbyte disks for programming environment (PE) users was often quite adequate. With the HP-UX 7.0 release, these requirements have changed. 80-Mbyte disks are no longer recommended, and 150-Mbyte disks are the minimum.

Option 402 on the HP BASICIUX bundles (P/Ns 98580CX, 98581CX, 98580WX, 98581WX) — HP 7958B 152-Mbyte disk drive with system preinstalled — posed a problem. With 30 Mbytes taken up by swap, a full PE system with X Windows, networking, and BASICIUX, there was less than 1 Mbyte of space left for users on the disk. Since this is unacceptable, a script was provided to manufacturing for the removal of some of the filesets that make up HP-UX. The resulting system equals the 7.0 definition of AXE plus all ARPA/NS/NFS networking products and HP BASICIUX. Only 28 Mbytes of user space is left on the disk.

Users who wish to run a full PE system, or who have a need for greater user file space, should order Option 403, which is a preloaded 304-Mbyte disk.

A mix up in manufacturing prevented this script from being used in a number of shipments. For users who ordered Option 402 and do not have much room left on their disks, the same script could be used at the user's site. Contact your HP representative for a copy of this script.

HP 9000/HP-UX

## Introducing two MUX packages for HP 9000 CIO systems

Hewlett-Packard introduces packs of four and eight units of the recently announced 16-port multiplexers (CIO16, PIN 98190A). See article in the September issue of HP Channels. These products can be ordered for any of the HP 9000 Series 8XX CIO systems (Models 825, 835, 845, 850, 855, 870).

The first pack of four MUXes (64 users) drops the price by 15% (U.S. list) compared to the current CIO16 MUX (PIN 98190A). The second pack of eight MUXes (128 users) drops the price by 25% (U.S. list) compared to the current CIO16 MUX (PIN 98190A).

### Ordering information

Product No.	Description
320164	Pack of four units of the CIO16 MUX
Opt. AA0	¼-inch cartridge tape
Opt. AA1	Magnetic tape
Opt. 1C8	Replaces the RS-232-C interface of 16 ports by RS-422 interface
32017A	Pack of eight units of the CIO16 MUX
Opt. AA0	¼-inch cartridge tape
Opt. AA1	Magnetic tape
Opt. 1C8	Replaces the RS-232-C interface of 16 ports by RS-422 interface

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Workstations

General

**HP 9000 workstations connected to Centronics printers via HP-IB**

MicroPrint 45CH from Intelligent Interfaces is an HP-IB to Centronics converter. It is an inexpensive, easy-to-use solution for HP 9000 workstation users to print text and graphics to a Centronics printer (such as an HP LaserJet printer) via an HP-IB port.

**Features and benefits**

- **Proven product at low cost** — product was endorsed and tested by HP to be compatible with HP workstations and printers
- **No programming needed, transparent to systems** — easy to use

**Small and simple to install** — installation takes only minutes, just connect an HP-IB cable to one end of the MicroPrint, a Centronics (parallel) cable to the other end, and plug it in.

**Switch-selectable address**

**Ordering information**

Product No.	Description
92203J	HP-IB to Centronics converter (U.S.)
92203K	HP-IB to Centronics converter (international)
<i>Must order the appropriate AC adapter below for P/N 92203K:</i>	
82241A	AC adapter
Opt. ABG	For Australia
Opt. ABU	For U.K.
Opt. ABB	For Europe
Opt. ABJ	For Japan
<i>Cabling requirement:</i>	
10833A	HP-IB cable
92284A	Centronics

MicroPrint comes with a one-year warranty. Support is provided by Intelligent Interfaces, Inc., phone: 800-842-0888 (toll free in the U.S.) or 404-381-9891; fax: 404-925-1172.

For more information, contact your HP representative to get a copy of the MicroPrint 45CH data sheet (P/N 5952-3646).

General

**HP CAEE 3039  
release now available**

The CAEE 3039 release is the most significant release for EE DesignCenter products in terms of reliability, usability, supportability, and product enhancements. This release satisfies many installed base requests and provides important additional EDA capability.

This release will support the new HP Apollo 9000 Series 400 (68030 and 68040) workstations, offering major performance improvements at a lower price. It also updates the EDD products to the Team Computing Environment through support of X11 Windows, HP Visual User Environment (HP VUE) — a Motif-like user interface that is an optional replacement to the PAM manager, NFS, and Taskbroker.

The new systems environment also replaces the Design Systems Manager (DSM) with standard UNIX system services and NFS networking, and makes data management with the Design Data Controller (DDC) optional with the HP Printed Circuit Design System.

**Features and benefits**

- **HP Design Capture System (DCS) 4.0 (PIN 74210A)** — Improved usability through flexible user interface (macros, keyboard command mapping, customizable menus), higher reliability, increased performance (3X improvement in graphics and a 2X overall improvement), more efficient memory utilization, and a new EDIF 2 0 0 netlist writer.
- **HP Printed Circuit Design System (PCDS) 3.0 (PIN 74400A)** — Extensive additions to the easy-to-use interactive functions (i.e., Undo, Area Copy, and Rotate), improved usability (one-button plotting, printing, and routing).

▪ **HP DCS/PCDS Interface** —

Consolidates into a single operation per application all the steps necessary to transfer a design from HP DCS to HP PCDS. Back annotation has also been reduced to a single step.

Following the CAEE 3039 release, HP will undergo a two-year transition away from developing its proprietary EDA software in favor of strengthening relationships with third-party companies. The EDD products will continue to be available during the transition period, and will be supported by HP for five years thereafter.

HP will facilitate installed base user migration by offering a choice of EDA vendors to migrate to within a sufficiently large time window. However, migration to alternate EDA vendors will only be supported from the CAEE 3039 release because of improved reliability, supportability, and the **industry-standard** environment. Therefore, it is important that all installed base users who will want to transition to alternate EDA tools migrate to this release. Contact your HP representative for more information.

*Apollo*

## ***New HP C++ Developer improves C++ programmer productivity***

HP C++ Developer is a C++ Class Construction and Graphical Browsing Tool. It provides the C++ programmer a convenient, easy-to-use, functionality set that assists in the creation and maintenance of sophisticated C++ object-oriented programs. This tool allows the programmer to graphically browse and edit classes and class inheritance hierarchies, and does consistency and design rule **checking** on the program as it is being edited.

C++ is the object-oriented language of choice for UNIX system applications in telecommunications, CAD/CAE, user-interface design, oil industry applications, software development and text management.

### Features and benefits

HP C++ Developer is part of the integrated C++ toolset that is available for C++ programmers on Domain/OS and HP-UX. It provides HP with a strong leadership position among C++ offerings on the market. HP C++ Developer works with Versions 2.0 and 2.1 of Domain/C++ and HP C++, which are based on the AT&T C++ industry standard. It addresses an important development tool requirement from users of C++ and object-oriented programming — the **need** for a C++ Class Browsing facility. But C++ Developer offers much more for the development of C++ object-oriented applications, including automatic diagnosis and error correction of the program being edited. HP C++ Developer provides the following functionality:

- graphical representation of the C++ class inheritance hierarchy
- browsing of class definition and member function source code
- add classes, delete classes, build and modify the inheritance hierarchy — all directly from the graphical browser
- directly **editable** view of the member functions, or protocol, of a class
- consistency **checking** with diagnosis and automatic correction
- source-code template generation for classes or member functions added by the user
- customizable fonts, colors, diagnostics, and templates
- on-line help facility provides **immediate** user assistance

One of the major benefits of object-oriented programming is the reuse of code through the use of Class Libraries. However, you can reuse only what you can find. The ability to browse through class libraries is cumbersome when forced to search through source code. A graphical representation provides a more intuitive abstraction of the class inheritance structure, making it easier to locate specific classes.

HP C++ Developer provides this graphical representation but goes further to support object-oriented programmers in their task of developing software using C++. HP C++ Developer runs as a stand-alone tool in the X Window System, Version 11 environment.

*continued on next page*

## HP product-line positioning

HP C++Developer now runs on Domain/OS and HP-UX, supporting both the Domain/C++ and HP C++ products. With the addition of HP C++Developer to Domain/OS, and the 2.1 version of Domain/C++ and HP C++, in addition to HP's compiler solution for C++ on HP-UX (see following article), HP has further enhanced the strong C++ offering across DomainIOS and HP 9000 platforms.

The integrated C++ tool set now includes source code debugging (DDE on DomainIOS and XDB on HP-UX), class library support, a class construction and browsing tool (C++Developer), a portable user interface management system (Open Dialogue) and a development environment (C++/SoftBench on HP-UX).

## Specifications and configuration

HP C++Developer runs on DomainIOS Motorola-based and PRISM-based workstations. It requires Domain/OS SR10.2 or later and the X Window System, Version 11.

HP C++Developer runs on HP 9000 workstations and requires HP-UX 7.0 and X Window System, Version 11. The recommended system configuration for HP C++Developer as a standalone tool is 12 Mbytes of memory. The absolute minimum configuration is 8 Mbytes. Contact your HP representative for more information.

## Ordering information

Product No.	Description
LAB20	C++Developer Single Node License including media and documentation
Opt. BAC	Magnetic tape media (SR10.2, MC680x0)
Opt. BAD	Cartridge tape media (SR10.2, MC680x0)
Opt. BBC	Magnetic tape media (SR10.2, PRISM)
Opt. BBD	Cartridge tape media (SR10.2, PRISM)
LBB20	C++Developer corporate license
Opt. 0A0	For MC680x0-based systems 2-9 licenses 10-24 licenses 25-49 licenses 50+ licenses
Opt. 0B0	For PRISM-based systems 2-9 licenses 10-24 licenses 25-49 licenses 50+ licenses

*Apollo*

## C++ updated to 2.1 and compiler

C++ is a general-purpose programming language designed by AT&T Bell Laboratories to support object-oriented programming. Version 2.0 of DomainI C++ and HP C++ was released in mid-1990. These C++ language products are being updated to C++ 2.1, the latest AT&T release.

A true C++ compiler is also being offered on the HP-UX platforms. This true C++ compiler generates object code directly from C++ source. C++ compilers are targeted toward UNIX system applications in telecommunications, oil industry, CAD/CAE, user-interface design, software development, and text management.

## Features and benefits

offers a true C++ compiler on HP-UX

- based on AT&T version 2.1 release
- provides powerful object-oriented debuggers (DDE and XDB)

HP chairs the C++ ANSI committee and several HP personnel are active committee members. The ANSI committee has adopted the AT&T 2.1 release as its base document. While C++ is not a standard yet, vendors are looking to AT&T's latest release as the industry standard.

## Compiler solution

The HP C++ language product will become a compiler solution across our HP-UX platforms. A true C++ compiler will give users a compile time performance improvement of up to 75%. This will be a roll-out activity, where the compiler will release first on the HP 9000 Series 600 and 800 and is then planned a few months later for the HP 9000 Series 300 and 400.

The ability to generate C code will be retained as an option with this compiler product for those users requiring this functionality in addition to the true compiler functionality.

## HP product-line positioning

The HP C++ language products are highly compatible across DomainIOS and HP-UX systems; source code written in C++ Version 2.1 can be easily ported between systems. In addition, C++ is well integrated into both environments, providing superior debugging, tool integration, and interlanguage-calling capabilities. C++ Version 2.1 expands this robust language product set. HP also offers the following C++ products:

- **HP C++Developer** — a **C++** Class Construction and Browsing Tool, introduced on HP-UX in June, is now being introduced on DomainIOS (see previous article on HP C++Developer).
- **Open Dialogue** — a portable user interface management system (UIMS) is now available on DomainIOS and HP-UX. **C++/SoftBench** is a full **C++** development environment, currently available on HP-UX platforms, and soon to be available on DomainIOS.

#### Specifications and configurations

**Domain/C++** Release 2.1 runs on all **Domain/OS MC680x0**-based and **PRISM**-based workstations and requires **DomainIOS** Version **SR10.2** or later releases.

**HP C++** Release 2.1 runs on **HP 9000** Series 300, 400, 600, and 800 systems and requires **HP-UX 7.0**. The compiler solution will run initially on **HP 9000** Series 600 and 800, and will be available later on the Series 300 and 400.

#### Promotions/bundles

The **Domain/C++** 2.1 language system includes the **C++** language and the **DomainIC** compiler. **Domain/C++** 2.1 is also available as the language-only for users who already have the **DomainIC** compiler. In either case, **Domain/C++** is tightly integrated with the **Domain CASE** environment, including **Domain/DDE** (Distributed Debugging Environment) and **DPAK** (Domain Performance Analysis Kit). **Domain/C++** also provides a one-pass linker; standard **C** tools enhanced to support **C++**; support for the **AT&T** Class Libraries; and a data abstraction library.

The **HP C++** 2.1 product on **HP-UX** includes the **HP-UX** symbolic debugger, enhanced to handle the object-oriented features of the language; a one-pass linker; standard **C** tools enhanced to support **C++**; **AT&T**'s 2.0 Class Libraries; and a data abstraction library.

**HP C++** will be structured to user-based pricing; similar to the **Domain/C++** structuring. A major benefit of user-based pricing is that the user pays for the software's actual usage, rather than payment based on the power of a particular CPU.

The **HP C++** product on the Series 300 and Series 400 is currently **PIN B1691A** for the license to use and **PIN B1693A** for the media and manuals. The **HP C++** product on the Series 600 and Series 800 has P/Ns **92541A**, **92500A**, **92501A**, **92542A**, **92502A**, **92503A**, and **92543A**, depending on the processor. These will be replaced by the new **HP C++** product structures listed in the ordering information below. For information on **HP C++** on **HP-UX** or **Domain/C++** on **DomainIOS**, contact your **HP** representative.

#### Ordering information

Product No.	Description
LA120	<b>Domain/C++</b> V2.1 language-only single-node license including media and documentation
Opt. BAC	Magnetic tape media (SR10.2, MC680x0)
Opt. BAD	Cartridge tape media (SR10.2, MC680x0)
Opt. BBC	Magnetic tape media (SR10.2, PRISM)
Opt. BBD	Cartridge tape media (SR10.2, PRISM)
LBI200A0	<b>DomainIC++</b> V2.1 language-only corporate license
Opt. OAO	For <b>MC680x0</b> -based systems; number of licenses: 2-9, 10+
LBI200B0	<b>Domain/C++</b> V2.1 language-only corporate license
Opt. OBO	For <b>PRISM</b> -based systems; number of licenses: 2-9, 10+
LA130	<b>DomainIC++</b> V2.1 language system single-node license including media and documentation
Opt. BAC	Magnetic tape media (SR10.2, MC680x0)

Product No.	Description
Opt. BAD	Cartridge tape media (SR10.2, MC680x0)
Opt. BBC	Magnetic tape media (SR10.2, PRISM)
Opt. BBD	Cartridge tape media (SR10.2, PRISM)
LBI300A0	<b>Domain/C++</b> V2.1 language system corporate license
Opt. OAO	For <b>MC680x0</b> -based systems; number of licenses: 2-9, 10-24, 25-49, 50-99, 100+
LBI300B0	<b>DomainIC++</b> V2.1 language system corporate license
Opt. OBO	For <b>PRISM</b> -based systems; number of licenses: 2-9, 10-24, 25-49, 50-99, 100+
B2400A	<b>HP C++</b> LTU on the <b>HP 9000</b> Series 300 and 400
Opt. OAN	1-seat license-to-use, provides single-user license to execute <b>HP C++</b> on <b>HP 9000</b> Series 300 or 400
Opt. OAO9	10-seat license-to-use, provides a package of 10 1-seat license-to-use products
Opt. OAG	25-seat license-to-use, provides a package of 25 1-seat license-to-use products
Opt. OAA	50-seat license-to-use, provides a package of 50 1-seat license-to-use products
B2401A	<b>HP C++</b> media and manuals, for <b>HP C++</b> on <b>HP 9000</b> Series 300 or 400, requires purchase of <b>B2400A</b> LTU
Opt. AAO	%-inch cartridge tape, must order this option
B2404A	<b>HP C++</b> LTU on the <b>HP 9000</b> Series 600 and 800
Opt. OAN	1-seat license-to-use, provides single-user license to execute <b>HP C++</b> on <b>HP 9000</b> Series 600 or 800
Opt. OAO9	10-seat license-to-use, provides a package of 10 1-seat license-to-use products
Opt. OAG	25-seat license-to-use, provides a package of 25 1-seat license-to-use products
Opt. OAA	50-seat license-to-use, provides a package of 50 1-seat license-to-use products
B2405A	<b>HP C++</b> media and manuals, for <b>HP C++</b> on <b>HP 9000</b> Series 300 or 400, requires purchase of <b>B2404A</b> LTU
Opt. AAO	¼-inch cartridge tape
Opt. AAI	9-track tape
Opt. AAH	DAT tape

Apollo

### **MC68040 board upgrade for Apollo DN3500/DN3550/DN4500**

The MC68040 board upgrade (PIN A1631A) for the Apollo DN3500, DN3550, and DN4500 has some important design characteristics of which users should be aware. First, the upgrade board was designed to maintain Apollo RAM compatibility with the prior-generation DN3500/DN3550/DN4500 products. This means that any Apollo RAM a user currently has installed in a DN3500, DN3550, or DN4500 workstation/server will function when the MC68040 upgrade is installed. This backward Apollo RAM compatibility is assured regardless of whether or not interleaved RAM is used. However, the MC68040 board upgrade does not require interleaved RAM. The Apollo RAM will simply be removed from the DN3500/DN3550/DN4500 SPU board and placed into empty sockets on the MC68040 SPU board.

In addition to the backward Apollo RAM compatibility, the maximum RAM capacity of an MC68040-upgraded DN3500/DN3550/DN4500 has been increased to 64 Mbytes. This greater memory expansion will allow Domain/OS users running applications with large RAM requirements to improve application performance. Implementation details will follow when available.

Installation, which is included in the list price of the MC68040 board, must be performed by an HP/Apollo customer engineer. While the hardware upgrade is simply a CPU board assembly swap, users will be responsible for the following prerequisite software tasks:

- backing up data from their disks
- invol (formatting) of the disks
- installing the software PSK
- restoring data to the disks

All internal Apollo subsystems such as graphics, peripherals, and power supply will function as they did before the MC68040 was installed. One exception is the floating-point accelerator (FPA) board (PIN A-ADD-FPA), which will not be supported, as the MC68040 has the floating-point unit integrated onto the chip.

Contact your HP representative for more information.

HP-UX

### **Introducing Release 7.40 bundle**

To decrease the time to market for new functionality and performance improvements, the full-development HP C/ANSI C compiler for the HP 9000 Series 3001400 is being unbundled from the HP-UX operating system beginning with the 7.40 compiler release. (The full-development HP C/ANSI C compiler will be unbundled from the Series 800 operating system in a future HP-UX release.) The Series 3001400 Release 7.40 FORTRAN and Pascal compilers are also being shipped asynchronously from HP-UX, several months ahead of the next major HP-UX release.

The unbundled full-function C compiler is targeted at users who are primarily software developers and require a complete development tool environment. However, for users such as system administrators who write only occasional, short C programs, the HP C (K&R C) compiler without ANSI C, optimization, debug, other C development tools, and future enhancements will continue to be bundled with HP-UX.

The main reason for unbundling and decoupling compiler releases from HP-UX is to get performance improvements, bug fixes, and new enhancements to users as soon as possible. Since the compiler is the base upon which the rest of the system is built, we cannot be tinkering with the compiler and hope to get the next release of HP-UX out the door on time. The compiler used to build the system must be "frozen" before much of the rest of the system development can occur. As a result of having to freeze the compiler early, many compiler enhancements or performance improvements must be delayed for future HP-UX releases or simply dropped.

For example, by introducing the HP 9000 Series 300 ANSI C compiler as an unbundled product in February 1990, HP became the first workstation vendor to ship ANSI standard C and to support ANSI C development tools, such as lint and cxref. Unbundling the ANSI C compiler permitted HP to support the ANSI standard 12 to 15 months before a bundled compiler would have shipped. Thus, without C unbundling, HP would have probably been last to market with an ANSI C workstation product instead of first.

Another example is the highly competitive environment that exists for runtime performance improvements due to compiler optimization. Since competitors typically deliver compiler optimization performance improvements of 10-15% on benchmarks such as Dhrystones and SPECmark every 6 to 12 months, HP must likewise provide similar performance improvements to stay competitive. The only way to ensure that improved compiler optimization will be delivered every 6 to 12 months is to unbundle and decouple HP compilers from HP-UX releases.

Case in point: Shipping the Release 7.40 compilers several months before the next major HP-UX release enables us to introduce 68040-based systems with approximately a 25% improvement in MIPS (Dhrystones 1.1) and a 15% improvement in SPECmark. The compiler optimization of Release 7.40 also improves the performance of 68030-based systems by 15% for Dhrystones and 8% for SPECmark.

Note that performance improvements obtained through compiler optimization greatly enhance the **price/performance** bottom line of HP computer systems. This is because compiler optimization increases the performance of the system without increasing the price of the system to the user since the manufacturing cost of the system remains the same.

Unbundling the C compiler also means programmers and end users who do not need C or a complete set of C development tools no longer have to pay for the unwanted functionality in terms of system price, disk space, and support costs. For such reasons, the industry in general is moving toward unbundling full-development C compilers from the operating system.

One final compiler benefit of Release 7.40 needs to be mentioned. The HP 9000 Series 3001400 "xdb" symbolic debug format has been changed on Release 7.40 compilers to provide C++ debug support and Series 800 debug format compatibility, resulting in quicker time to market for debugger enhancements.

The change in symbolic debug format means Release 7.0 or earlier compilers can no longer be used with the symbolic debugger of Release 7.40 compilers or vice versa. Provided with each Release 7.40 compiler is an updated bundled C compiler, debugger, linker, and other development tools to support the new Release 7.40 debug format.



## Promotional bundles

To help gain quick user acceptance of HP's full-development C compiler unbundling, a promotional license price will be offered until the next major HP-UX release. At that time, the unbundled C compiler price will be increased to the price of the FORTRAN and Pascal compilers.

To encourage users to roll their compilers to Release 7.40 and hence to the new debug format, a language bundle of CIANSI C, FORTRAN, and Pascal (PIN B1699A) will be offered for a price slightly more than the price of two compilers.

The Release 7.00 FORTRAN (PIN 98598L) and Pascal (PIN 98599L) compilers will remain on the HP Price List for at least six months after the introduction of Release 7.40 compilers.

*Note: Even though this is a worldwide promotion, it may not be available in all countries. Check with your HP representative for pricing and promotion availability information.*

## Ordering information

Product No.	Description
B1690A	HP 9000 Series 3001400 Release 7.40 CIANSI C compiler
Opt. AHJ	License to use CIANSI C
Opt. 010	¼-inch media/manuals for CIANSI C
B1688A	HP 9000 Series 3001400 Release 7.40 FOFTRAN 77 compiler
Opt. AHJ	License to use FOFTRAN 77
Opt. 010	¾-inch media/manuals for FOFTRAN 77
B1689A	HP 9000 Series 3001400 Release 7.40 Pascal compiler
Opt. AHJ	License to use Pascal
Opt. 010	¼-inch media/manuals for Pascal
B1699A	HP 9000 Series 3001400 Release 7.40 C/FORTRAN/Pascal bundle
Opt. AHJ	License to use C/FORTRAN/Pascal
Opt. 010	¼-inch media/manuals for C/FORTRAN/Pascal



## Personal Computers

General

### Introducing OS/2 1.2

The U.S. English version of Microsoft® Operating System 12 1.2 from Hewlett-Packard (PIN D1302D Opt. ABA) is now available. OS/2 is the next-generation operating system for PCs based on Intel's 80286, 80386, and 80486 microprocessors. OS/2 1.2 replaces OS/2 1.1, which will be removed from the February 1, 1991, HP Price List.

The German version (PIN D1302D Opt. ABD) and the French version (PIN D1302D Opt. ABF) will be available during the first quarter of 1991.

#### Features

OS/2 features include Presentation Manager — a consistent, graphical windowing environment, multitasking capabilities that allow multiple OS/2 applications to be run concurrently, and access to 16 Mbytes of RAM.

New features in OS/2 1.2 include the High Performance File System, which improves access to data stored on hard disks yielding performance two to five times better than the MS-DOS<sup>B</sup> File Allocation Table system, enhancements to the graphical user interface, and additional PM drivers for the HP LaserJet and other popular printers.

HP, as well as most major PC vendors except IBM, delayed release of Microsoft OS/2 1.2 until version 1.21 became available. IBM has been supplying its customers version 1.20 and upgrade disks periodically. Enhancements in version 1.21, not found in version 1.20, include full compatibility with LAN Manager 2.0, improved printer driver installation, and an improved print spooler.

#### System requirements

- HP Vectra ES, QS, RS, 486, or 286112 PCs with at least 640 Kbytes base memory. Note: OS/2 1.2 is *not* supported on HP Vectra A/A+ and LS/12 PCs.
- A minimum of 2.5 Mbytes of extended memory. However, 4 Mbytes are highly recommended for **running** multiple OS/2 applications.
- 40-Mbyte or larger hard disk.  
High-density 1.2-Mbyte 5¼-inch or 1.44-Mbyte 3½-inch flexible disk drive.
- VGA or EGA display modes. Note: OS/2 1.2 is *not* supported on HP multimode monitors.

*Microsoft and MS-DOS are registered trademarks of Microsoft Corporation.*

General

### Introducing enhanced HP NewWave Developer Kit Version 3.0

HP NewWave Developer Kit Version 3.0 (PIN D1714B) is a new enhanced version of the NewWave Developer Kit Version 2.0. This advanced software **toolkit** enables developers to create their own highly integrated and easy-to-use NewWave applications. Enhancements include full Microsoft<sup>B</sup> Windows 3.0 support, updated visual interface and icon specifications, new OMF and API functions, and support of Windows Help. The NewWave Developer Kit is intended for software developers (ISVs, OEMs, VABs, and major accounts).

The **toolkit** includes software development tools, software libraries, user interface style guide, sample applications with source code, and documentation to aid in the development of NewWave applications. NewWave's integral systemwide services allow developers to significantly reduce their development time and avoid reinventing capabilities that already exist.

The NewWave environment is designed to improve the productivity of knowledge workers through the integration of systemwide information and resources. NewWave was developed to help promote and establish industrywide standards and expand the base for common applications development.

Applications developed with this kit must be tested with **NewWave 3.0** to ensure that they work properly. To create the right testing environment for your application, you need to purchase two other **NewWave** products: **HP NewWave 3.0** (PIN **D1704B** for end users) and **HP NewWave 3.0 Technical Reference Set** (PIN **D1730B**).

Users who purchased the **HP NewWave Developer Kit Version 2.0** (PIN **D1714A**) can purchase their **HP NewWave Developer Upgrade Kit Version 3.0** (PIN **D1714-60003**) through **HP DIRECT** for \$150 (U.S. List). The **HP NewWave Developer Kit Version 2.0** (PIN **D1714A**) was removed from the **HP Price List** November 1, 1990.

Product No.	Description
<b>D1714B</b>	<b>HP NewWave Developer Kit Version 3.0</b>
<b>D1714-60003</b>	<b>HP NewWave Developer Upgrade Kit Version 3.0</b>

For more details on the **HP NewWave Developer Kit**, contact your **HP representative** to get a copy of the **HP NewWave General Information Manual for Software Developers** (P/N **5952-2667**).

*General*

## *PC accessories discontinuance*

The following PC accessories were removed from the **HP Price List** effective December 1, 1990; there will be no replacement products.

Product No.	Description
<b>13242P</b>	Cable, 25/5 pin serial to <b>HP 3000</b>
<b>13242X</b>	Cable, 2513 pin serial to <b>HP 3000</b>
<b>45741A</b>	Cable, monochrome multi-mode extension
<b>45742A</b>	Cable, color multimode extension
<b>45938A</b>	Vectra PC firmware upgrade kit
<b>45981A</b>	Multimode adapter
<b>45989A</b>	Floorstand for <b>HP Vectra ES</b> and <b>CS PCs</b>
<b>CI405A</b>	Options 002, 003: Keyboard cables, 2- and 3-meter options; 3-meter cables now standard

The following PC accessories will be removed from the **HP Price List** effective January 1, 1991; there will be no replacement products.

Product No.	Description
<b>24550A</b>	Modem
<b>24551A</b>	Internal modem with software
<b>24551B</b>	Internal modem
<b>45944A</b>	Memory card, 2 Mbytes expanded for <b>HP Vectra ES/12 PC</b>

The following products were removed from the December 1, 1990, **HP Price List** and have replacement products as noted.

Product No.	Description	Replacement
<b>45951AV</b>	DOS 3.1, Arabic, 5 %-inch disk	None
<b>45951DM</b>	DOS 3.3, Latin America, 5 %-inch disk	<b>D1151A</b> , DOS 4.0, Latin America, 5 %-inch disk
<b>45951DP</b>	DOS 3.3, Swiss-German, 5 %-inch disk	<b>45951DD</b> , DOS 3.3, German, dual disk
<b>45951ED</b>	DOS 3.3, German, 3 %-inch disk	<b>45951DD</b> , DOS 3.3, German, dual disk
<b>45951EM</b>	DOS 3.3, Latin America, 3 1/2 -inch disk	<b>D1151B</b> , DOS 4.0, Latin America, 3 %-inch disk
<b>45951EP</b>	DOS 3.3, Swiss-German, 3 %-inch disk	<b>45951DD</b> , DOS 3.3, German, dual disk
<b>45951ES</b>	DOS 3.3, Swedish, 3 1/2 -inch disk	<b>45951DS</b> , DOS 3.3, Swedish, dual disk
<b>45951EX</b>	DOS 3.3, Finnish, 3 1/2 -inch disk	<b>45951DX</b> , DOS 3.3, Finnish, dual disk

*General*

## **Discontinuance of HP VGA card**

The HP VGA cards, PIN D1180A (256K) and PIN D1180A Opt. 1A7 (512K), were discontinued and removed from the HP Price List December 1, 1990. Orders will be accepted through December 31, 1990.

HP's Super VGA card (PIN D2382A) replaces these VGA cards (PIN D1180A). The HP Super VGA card's enhancements include additional colors, higher resolution, and a wider selection of video drivers for popular applications.

### **Discontinuance information**

Product No.	Description	Replacement
D1180A	HP VGA Card, 256K	HP Super VGA (PIN D2382A)
Opt. 1A7	HP VGA Card, 512K	HP Super VGA (PIN D2382A) and 256K memory upgrade (PIN D2383A)

*General*

## **AdvanceWrite Plus removed from HP Price List**

All versions of AdvanceWrite Plus F.03.00 were removed from the HP Price List on November 1, 1990.

Product No.	Description
D1712A	AdvanceWrite Plus F.03.00, U.S. English
D1712AD	AdvanceWrite Plus F.03.00, German
D1712AF	AdvanceWrite Plus F.03.00, French
D1712AH	AdvanceWrite Plus F.03.00, Dutch
D1712AN	AdvanceWrite Plus F.03.00, Norwegian
D1712AS	AdvanceWrite Plus F.03.00, Swedish
D1712AY	AdvanceWrite Plus F.03.00, Danish

AdvanceWrite is positioned as HP's full-featured PC-based word processor in the MS-DOS character-based environment. The discontinuance of AdvanceWrite is a direct result of the changing demands of the document-processing market. While no product is replacing AdvanceWrite, Samna Corporation has offered a very favorable migration price for AdvanceWrite users to Samna Word or Ami Professional.

Support for AdvanceWrite will be provided through HP Response Centers worldwide. For further information, contact your HP representative.

*Desktop*

## **HP-HIL accessory interface support for HP Vectra 286/12 PC**

Effective December 1, 1990, the HP Vectra CS PC HP-HIL accessory interface (PIN D1171A) was rolled to support the HP Vectra 286112 PC. The new version is backward-compatible with the HP Vectra CS PC (discontinued January 1990), and will provide the same functionality on the HP Vectra 286112 PC as was offered previously on the HP Vectra CS PC. However, the new HP Vectra 286112 PC version will have some limitations versus the built-in HP-HIL and EXBIOS interface found on the HP Vectra ES/12 PC. Also, the old HP Vectra CS PC version will not work correctly and therefore, it is not supported on the HP Vectra 286112 PC.

Contact your HP representative for more information.

## Peripherals

General

### New rack-mount kit solutions for HP 9000 multiplexers

Hewlett-Packard announces three products that offer racking solutions for the distribution panels of the NIO8 (PIN 40299A) and CIO16 (PIN 98190A) multiplexers of the HP 9000 systems. These rack solutions offer a full solution to users, including cable management cabinets.

Listed below are the three products for this cabinet integration of the ADPs (active distribution panels for 8 ports):

- installation kit for 20 ADPs (160 ports) in an HP 46298A cabinet or an EIA 19-inch × 1-meter cabinet (two can be put in an HP 46298C or an EIA 19-inch × 1.6-meter cabinet)
- installation kit for 10 ADPs (80 ports) to be put with a computer system in an HP 46298C or an EIA 19-inch × 1.6-meter cabinet
- installation kit for 4 ADPs (32 ports) to be put with a computer system in an HP 92211R minirack

Contact your HP representative for more information.

#### Ordering information

Product No.	Description
D2350A	ADP installation kit for 20 ADPs
D2351A	ADP installation kit for 10 ADPs
D2352A	ADP installation kit for 4 ADPs

Mass Storage

## HP introduces new data compression IC

A new integrated circuit, providing the basis for a complete data compression system, and designed for use in tape storage backup devices and other applications was recently introduced by Hewlett-Packard. The HP 1XB4 DCLZ data compression integrated circuit dramatically increases the capacity of tape storage media and the overall performance of quarter-inch cartridge (QIC) and digital data storage/digital audio tape (DDSIDAT) products by allowing larger amounts of data to be stored, in less time, on the tape media used in these systems.

The HP 1XB4 DCLZ data compression product, an application-specific integrated circuit (ASIC), was designed and is produced by HP, and is distributed solely through Advanced Hardware Architectures (AHA) as the AHA3101. It is intended for use by tape drive manufacturers, OEMs, and systems integrators. Typical examples are a new DDSIDAT drive, the HP 35480A, introduced at the November Comdex show, and high-end quarter-inch cartridge tape drives such as those complying with QIC standards. Use of the HP 1XB4 data compression ASIC can be expected to at least double data capacity over similar drives that do not employ data compression.

In addition to use on tape storage devices, the HP 1XB4 IC also has applications in optical and disk data storage systems and in communications systems. In fact, any data transfer or storage system that requires increased capacity or bandwidth may benefit from the use of data compression.

#### Features and benefits

Designed to perform data compression according to the Lempel Ziv-2 algorithm, the HP 1XB4 offers important features and benefits for data compression users:

- Typical compression ratios are 2:1 or better, with an average compression rate of 2.5 Mbytes per second.
- The data compression is "lossless," ensuring exact reconstruction of the original data.
- Dynamic monitoring of compression ratio and intelligent dictionary control provide automatic optimization of compression ratios.
- High data transfer speeds ensure that tape streaming is maintained.
- Interfacing is supported for Motorola and Intel microprocessors, ensuring compatibility with industry-standard interfaces.

For further information about the exciting capabilities of the HP DCLZ data compression IC, contact the sole supplier, Advanced Hardware Architectures, Inc. (AHA), P.O. Box 9669, Moscow, ID 83843, phone 208-883-8000; ask for complete specifications on the AHA3101 Data Compression Coprocessor IC.

Mass Storage

## Place last orders for HP 7937 now

The HP 7937H/XP/FL disk drive products were removed from the October 1 HP Price List (which is within the timeframe defined by the article in the August issue of HP Channels). These disk drives have been replaced by the new HP Series 6000 models.

Some discontinued products remain in stock and can still be ordered. Users who need an HP 7937 have a good chance of getting one. Any last-minute orders for these disk drives should be placed now. Please contact your HP representative as soon as possible for more information.

The HP 7937 upgrade kits (P/Ns 97520XP and 97522FL) remain on the price list, giving users a migration path for their installed base. Current plans are to remove these products from the February 1991 HP Price List; however, HP is considering extending this based on inputs from the field.

Contact your HP representative for more information.

Mass Storage

## HP disk drive kit discontinuance

The 304-Mbyte drive kits (PIN C2280A) used for increasing the internal disk storage in the HP 9000 Models 822S and 832S were removed from the December 1 HP Price List.

The C2280A disk drive kits will be supported for five years beginning December 1, 1990. All products using this kit are affected. A replacement product, the 335-Mbyte kit (PIN C2281A) is now fully supported by the HP 9000 Models 822S and 832S systems. Another product, the 670-Mbyte kit (PIN C2282A) is also supported by these systems and is available for users requiring large internal disk storage capacity.

The HP 9000 Models 822S and 832S integrated computer systems support up to four internal disk mechanisms (P/Ns C2281A, C2282A) for a maximum of 2.68 Gbytes of internal disk storage. Additional storage capacity is available with external disk storage systems (P/Ns C2200A, C2201A, C2203A, C2204A) which allow these systems to support a maximum disk storage of 13.4 Gbytes. This represents the 2.68-Gbyte internal maximum with 5.36 Gbytes of external storage made up of eight C2203A disk drives that are 670 Mbytes each.

Contact your HP representative for more information.

Mass Storage

## Selected HP disk drive discontinuance

The HP 7957S, 7958S, 7959S SCSI, and 7959B HP-IB disk drives will be removed from the HP Price List effective March 1, 1991.

The HP 7957S, 7958S, and 7959S offer 107, 161, and 323 Mbytes of formatted disk capacity, respectively, for users of HP 9000 systems running the UNIX operating system.

The HP 7959B offers 304 Mbytes of formatted disk capacity for users of the HP 3000 system running the MPE V operating system, the HP 1000 running the RTE-A operating system, and the

HP 9000 running BASIC, Pascal, or UNIX operating systems.

Following is a description of the replacement products previously listed:

Product No.	Description
C2212A	HP Series 6000 Model 330S, 330-Mbyte capacity, SCSI interface
C2200A	HP Series 6000 Model 335H, 335-Mbyte capacity, HP-IB interface

Contact your HP representative for more information.

Product No.	Capacity/interface	Replacement products	
		SCSI	HP-IB
7957S	107-Mbyte/SCSI	HP Series 6000 Model 330S	HP Series 6000 Model 335H
7958S	161-Mbyte/SCSI	HP Series 6000 Model 330S	HP Series 6000 Model 335H
7959S	323-Mbyte/SCSI	HP Series 6000 Model 330S	HP Series 6000 Model 335H
7959B	304-Mbyte/HP-IB	HP Series 6000 Model 330S	HP Series 6000 Model 335H

## Announcing discontinuance of HP TS8

When the HP Terminal Server 8 (HP TS8) was introduced in early 1988, its objectives were: to help users migrate from HP 3000 MPE V systems to 900 Series HP 3000 systems; allow users to access multiple HP systems on the same LAN as well as non-HP systems; and to support direct CPU access to the HP-UX family via the LAN.

During the last year, we have worked to evolve the DTC from a LAN-based MUX for 900 Series HP 3000 systems to a full multivendor terminal server. The following steps were taken to achieve this:

- During mid-1989, the DTC was enhanced to provide access to multiple 900 Series HP 3000 systems.
- In February 1990, the DTC/3000 was enhanced with "Extended Switching" capabilities and has replaced the TS8 for the migration from MPE V systems. We guaranteed protection of the previous HP TS8 investment by supporting extended switching configurations in which HP TS8s and DTCs are used together. The same enhancements have also allowed the DTC/3000 to provide transparent connectivity to HP 9000 and non-HP systems (through the back-to-back configuration). The supported configurations include DEC VAXes, both via system multiplexers and DECservers, and remote system access through HP 233X PADs.

- The DTC/9000 was introduced in January 1990 to allow terminal access to multiple HP 9000 Series 800 access; shared printers and modem support were added in August 1990, thus removing the need for an HP TS8 in this environment. Again, compatibility between the HP TS8 and the DTC was guaranteed by supporting the shared printer and modem capabilities on both products.
- With the availability of the DTC16/9000, HP has created a family of scalable terminal servers that now also addresses the need for smaller portcounts in distributed environments.

### In summary

The needs that were addressed by the HP TS8 in the past are now all addressed by the DTC family, which is HP's strategic platform for identical local and remote end-user access. As a consequence, the HP TS8 and related products will be taken off the March 1, 1991, HP Price List (see table below). The standard one-month grace period will be granted. Contact your HP representative for more information.

Product No.	Description
2342A	HP Terminal Server, 8 ports
2350A	HP Local Server Manager

## Introducing ProbeView B.3.0

Hewlett-Packard announced and demonstrated the new ProbeView B.3.0 (Version B0000) software at Interop '90 in San Jose, California, October 10-12. ProbeView B.3.0 will be on the February 1991 HP Price List.

The ProbeView B.3.0 release adds extensive network planning functionality to the LanProbe System's network diagnostic tools. The new features allow the user to monitor network trends over extended periods of time, and to plan for changes before problems occur.

### New features and enhancements

- **Node Statistics** — LanProbe will collect information about total packets, bytes, utilization, broadcasts, and errors transmitted by each node on the network. The user will be able to control how and when the node statistics are gathered, view the node information in a bar chart, print the bar chart, and export the information in tabular, CSV format to a DOS file for later use in a spreadsheet.
- **Autopolling** — This feature allows users to define polling schedules that are used by ProbeView to interrogate LanProbes for Map, Log, and Statistics data. This data is automatically saved to a file, using a comma-separated variable (CSV) format, for future review and processing.
- **Global Place** — As in previous releases of ProbeView, all nodes detected by the LanProbe are made visible on a segment. Since the packets transmitted by a node can travel across several segments, the node can be displayed in more than

*continued on next page*

one segment. To make the maps reflect the actual locations of nodes, the user must "place" a node to the appropriate segment from all segments in which it is visible. This expedites the mapping of a network where many nodes appear in multiple segments.

With Global Place, a node placed onto a segment will become invisible on all other segments. Segments with many invisible nodes will repaint faster. Changes to the Segment Map display convey additional information such as location of invisible nodes, and whether a node has been placed on the current segment. Invisible nodes will no longer reappear on a segment unnecessarily.

**Multiple Alert Handling** — In the ProbeView B.3.0 release, a **LanProbe** with alert information can initiate a ProbeView connection at any time and be connected. Multiple incoming connections will be accepted, several over Ethernet and one each for the Com1 and Com2 serial ports.

The **LanProbe-initiated** connections will take place in the background mode. The user is informed about alerts through the Alert Manager software. Alert Manager provides the user interface for communicating alert information to a ProbeView user. ProbeView can initiate one connection at a time as in the previous releases.

Once the alert entries are received by ProbeView either during an alert connection or a primary connection, they are sent to the Alert Manager task. If the Alert Manager is not already running, it will be invoked by ProbeView. All alerts that have been received appear in a log format with the latest alert entry appearing at the bottom of the log.

- **Microsoft® Windows 3.0 support** — ProbeView will now run under MS-Windows<sup>®</sup> 3.0.

- **Ethernet card support** — It is our plan to support the 3Com NDIS spec for board sharing in this next release. The cards supported will include:

- HP StarLAN 10
- HP StarLAN 10 PC Link II
- HP StarLAN 10 MicroChannel Link
- HP ThinLAN (3Com 3C501)
- 3Com EtherLink II (3C503)
- 3Com EtherLink/MC (3C523)
- 3Com EtherLink Plus (3C505)
- Western Digital EtherCard PLUS
- Western Digital EtherCard PLUS/A
- Western Digital StarCard PLUS
- Western Digital StarCard PLUSIA

- **Log Dump** — Provides continuous dumping of log messages to a specified device, or to a file. The device could be a printer or a terminal connected through a communication port on the ProbeView host.

- **Database improvements** — The database has been dramatically **rearchitected** to improve database integrity in this release of ProbeView. In the event of a power failure or a crash, the ProbeView database will be saved automatically. In addition, overall database performance has been improved.

- **Export of statistics data** — All statistics data can be exported to a spreadsheet file.

- **Convenience features** — Window settings will be retained between sessions. Node names can be shown as Name, Ethernet Address, or network address in any window.

- **DECNet address tracking** — Also included in this release.

Contact your HP representative for more information.

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## Networks

### New HP Router enhancements

HP Router (PIN 27270A) was first introduced in July 1990. It is used to interconnect local **and/or** remote LANs to provide a high-performance, multi-vendor network infrastructure. As of November 1, the following new features are optionally available for the HP Router:

- Support for Token Ring (802.5) network connections.
- Expanded support for up to 14 (versus previous maximum of 8) synchronous ports for WAN connections. Each of these ports can be used for high-speed, point-to-point links operating at speeds up to 6 Mbit/sec or to support a link into an X.25 network.
- Support for **AppleTalk II** routing. (Currently, the HP Router supports TCPIIP, DECnet IV, Novell IPX, and Xerox XNS routing, as well as **Ethernet/802.3** learning bridge functionality.)
- Support for synchronous (WAN) port connection to the HP Remote Bridge (PIN 28674A) over high-speed, point-to-point lines.

The HP Router is **targeted** for technical and commercial applications where a high-performance **and/or** multivendor network connectivity solution is required. The resulting network may span a single building, a large campus, or any number of sites. (Note: the HP Remote Bridge can provide a cost-effective end-site connection into a multisite, HP Router-based network.)

HP Router also provides a solution for **Ethernet/802.3** to Token Ring (802.5) routing applications involving TCPIIP or Novell IPX. For example, applications based on LAN Manager using TCPIIP can be routed between **Ethernet/802.3** and Token Ring (802.5) networks.

Contact your HP representative for more information.

## Introducing HP PPN Model 75 — the next generation

The HP PPN Model 75 (P/Ns J2020A and J2021A) is a new high-level X.25 switching node with an integrated multiprotocol PAD. It provides state-of-the-art routing and connectivity between HP and non-HP systems using different protocols (X.25, SNAISDL, and asynchronous). It is targeted toward HP 3000 and 9000 users with multi-vendor environments and dispersed geographical sites.

### Features and benefits

**Easy to implement** — Provides high-end routing and connectivity features on a smart and cost-effective platform and drastically improves the price/performance of an X.25 HP PPN solution for medium to large networks.

**High performance and flexibility** — Based on a multiprocessor architecture, a Model 75 node can switch up to 700 packets per second. Any port on a node can be configured to handle any protocol (X.25, SNAISDL, and asynchronous).

- **Maximum network availability and reliability** — Uses a dynamic adaptive routing algorithm and allows for real-time load balancing and data rerouting across the network.
- **Complete network management** — All network management functions (configuration, monitoring, troubleshooting) are performed from a central PC-based network management processor through an easy-to-use graphical interface.
- **Product-line scalability** — Because it is based on the same hardware as a Model 45, progressive migration from an M45-based network to an M75-based network is ensured through a smooth and cost-effective manner (software and firmware upgrade only). The user's initial investment is protected.

### Product-line positioning

The Model 75 is a member of the next generation of HP's Private Packet switching equipment together with the recently introduced Model 45. It reinforces HP's position in the X.25 private network market. While the Model 45 is aimed to act as a low-cost multiprotocol X.25 concentrator or to build small networks, the Model 75 is targeted for medium to large application networks with needs for higher availability and more sophisticated dynamic routing and network management capabilities. Since the Model 75 and the Model 45 use the same platform, scalability through the product line is ensured and both products can coexist on the same network.

The flexible, cost-effective, and multiprotocol standard-based nature of the Model 75 makes it perfect for users who need to build a global or application-oriented, wide-area network with dispersed geographical sites **and/or** multivendor environments. Based on the X.25 standard, the HP PPN Model 75 obviously adds to any networking solution the inherent features of packet switching equipment: security, reliability, state-of-the-art network management, safe and proven technology.

### Ordering information

Product No.	Description
J2020A	4-port multiprotocol node, 286 desktop package (8 synchronous plus 4 asynchronous ports maximum)
J2021A	4-port multiprotocol node, 386 tower package (20 synchronous asynchronous ports maximum)
J2024A	4-port add-on multiprotocol LP card
J2006A	4-port AE card (asynchronous only, Q-cable included)
J2008A	Q-cable, 4 DTE
J2009A	Q-cable, 2 DTE and 2 DCE
J2010A	Q-cable, 4 DCE
J2027A	Network Management Processor Package (hardware platform, node and NMP software, manuals, PIA cards for M75 connection)
Opt. OE2	110-volt power VGA display
Opt. OE3	220-volt power VGA display
Opt. 1A0	No standard VGA display (large VGA display must be ordered separately)

**Note: only one of these three options is required**

Upgrade kits for the Model 45 to Model 75 appear on the December HP Price List. Contact your HP representative for more information.



Networks

## HP PPN Network Management System

The HP PPN Network Management Processor (NMP, P/N J2027A) is the heart of the next generation of HP PPN switching equipment together with the Model 75 and Model 45 switching nodes. Based on an HP Vectra PC, it allows the configuration, control, and maintenance of HP PPN Model 75-based networks. The HP PPN Network Management Processor is targeted toward HP 3000 and 9000 users with multivendor environments and dispersed geographical sites.

### Features and benefits

- **Complete network control** — Provides, from a central site, complete network configuration, real-time monitoring, and maintenance capabilities such as alarm and event logging, performance measurements, Model 75 node software, and configuration downline load.
- **User-friendly interface** — Network Management interface based on real-time displays of network and subnetwork maps with zooming capabilities down to a specific access port. Menu-driven screens are also available to easily configure, monitor, and troubleshoot the network.
- **Maximum network availability** — Redundant Network Management Processors (NMPs) can be installed around a network for enhanced performance and backup of the primary NMP in order to permanently maintain network operation and control.
- **cost-effective solution** — Based on a standard PC-AT HP Platform running multitasking operating system for extended performance and capabilities.

- **Network security** — Call validation and accounting operations are performed by the NMP(s) for the entire network to control network resource access requests. Closed User Group facilities can be defined to restrict access among a group of network subscribers.
- **Extended device management** — Centralized access to the HP Model 45s and HP 2335As connected to the network is provided for configuration and control.

### HP product-line positioning

The HP PPN Network Management Processor is required to manage a Model 75-based network. Several NMPs can be installed around a network for enhanced call set-up performance and network operation redundancy. A line printer can be attached to the serial port of the NMP for event and alarm logging as well as configuration and billing report generation.

The Network Management Processor provides the extended network management facilities required to effectively operate wide area networks: configuration, monitoring, real-time status displays, performance measurements, call accounting, billing, fault management, software, and configuration downline load. For more information, contact your HP representative.

### Ordering information

Product No.	Description
J2027A	Network Management Processor Package (hardware platform, node and NMP software, manuals, PIA cards for M75 connection)
Opt. OE2	110-volt power VGA display
Opt. OE3	220-volt power VGA display
Opt. 1A0	No standard VGA display (large VGA display must be ordered separately)

*Note: only one of these three options is required.*

Printers

## HP PaintJet XL printer and HP 7550 Plus plotter fully networkable

The HP PaintJet XL color graphics printer and HP 7550 Plus color desktop plotter can now be used on Novell networks. Joining the HP LaserJet III and IIID printer, both the HP PaintJet XL color printer and the HP 7550 Plus A/B-size plotter have been Novell Labs tested and approved for use with the NetWare 386 and Advanced NetWare network operating systems in both parallel and serial mode. No driver modification is needed to take advantage of networked printing or plotting. Sharing a printer or plotter across a network is a great way for users to spread their investment among the members of their workgroup. Contact your HP representative for more information.

Printers

## New WordPerfect Scalable Typeface products for HP LaserJet printers

Hewlett-Packard introduces the new WordPerfect Scalable Typeface Collections for HP LaserJet printers. These products are the latest additions to the HP MasterType Library of scalable typefaces and bitmapped fonts.

The WordPerfect Scalable Typeface Collections are available in both cartridge and disk-based formats.

Note that the WordPerfect Scalable Cartridge Collection includes the same typefaces on disks. These are for creating screen fonts, should your software application support them. AutoFont Support software is also included on 5% - and 3% - inch disks.

Both the cartridge and disk-based collections feature 26 typefaces:

- Albertus Medium
  - ExtraBold
- CG Century Schoolbook
  - Italic
  - Bold
  - Bold Italic
- CG Palacio
  - Italic
  - Bold
  - Bold Italic

- Futura II
  - Book Italic
  - Bold
  - Bold Italic
- ITC Galliard
  - Italic
  - Bold
  - Bold Italic
- ITC Zapf Chancery
  - Medium Italic
- Microstyle Bold
- Park Avenue
- Univers Condensed
  - Italic
  - Bold
  - Bold Italic

The WordPerfect Scalable Typeface Collections are designed to complement WordPerfect 5.1 and other word processing documents. The collections are suitable for documents, presentation materials, reports, manuals, brochures, overhead transparencies, invitations, and announcements. In addition, several informal typefaces have been included for fun documents.

For more information, contact your HP representative.

	Cartridge collection	Disk-based collection*
Printer support	HP LaserJet III and IIID printers	Entire HP LaserJet family except the 2686A, HP LaserJet III and IIID printers
Product No.	C2050D #C90 (5% -inch disks) C2050D #C80 (3% -inch disks)	C2050A #D86 (5% -inch disks) C2050A #D85 (3% -inch disks)

\*This collection requires use of Type Director 2.0 (PIN C2057B #ABA, 3%-inch; and C2058B #ABA 5%-inch), HP's font management program.

## CROSS-LICENSING CLASSIFIEDS

### Features

multicompany-oriented financials that allow for tracking profit center activities as well as consolidation

- ability to create financial statements according to user requirements
- complete inventory reporting to assure tight control
- multiple classification of inventory to allow for pricing by customer type sales commissions tracked by item, customer, or total
- order entry processing allows for complete and timely processing of orders with inventory lookup and substitute items
- allows for work order generation of all required manufactured items with complete costing information of work-in-process
- full MRP capabilities complete with bill of materials, routing, capacity planning, and master production scheduling
- point of sale interface for city counter activity or store front with multiple tender or split tender processing
- bar-code integration on the shop floor updates the work order to provide complete results of operation and personnel time

**HP Platform:** HP 9000

**Operating System:** HP-UX

**Company Name:** On-Line Computing, Inc.

**Address:** 1 Burton Hills Blvd.  
Suite 195  
Nashville, TN 37215  
U.S.A.

**Phone:** 615-665-1661

**Contact:** Guy H. Patterson

**Type of Distributor Wanted:** Established HP 9000 resellers with in-house Informix expertise. Preferable operating in the distribution and process manufacturing arena.

**Geographical Coverage:** Worldwide

Industry: Cross industry — graphics and charting software

**Abstract:** CHART\*PRO is a new and powerful charting and graphics package that can be transparently integrated into your system. All standard graph formats are supported, along with text charting, drawings, and chart annotations. CHART\*PRO runs on PCs (MS-DOS), HP 9000 systems (HP-UX), and 900 Series HP 3000 systems (MPE XL) in native mode.

CHART\*PRO was designed for data and statistical charting and general business graphics. CHART\*PRO provides capabilities previously found only on the largest mainframe computer systems. It utilizes a straightforward command language or prompt/response menu, and outputs to the screen and to just about any plotter, printer, or laser printer.

Extremely easy to integrate and use, CHART\*PRO communicates with your system in real time or through ASCII files. Defaults and automatic settings exist for all graph parameters. Phone support and implementation assistance are included at no additional cost.

Enhance your software by giving your users high-quality graphic output "directly" from your system. Initial license set-up fee is \$1,000. Royalties are negotiable and demos are available for \$50.

### Requirements

- HP 3000 system (MPE XL)  
HP Vectra PC or IBM-compatible PC with MS-DOS 3.3 or later, 640K memory, and hard disk; EGA/VGA and math coprocessor desirable
- HP 9000 system (HP-UX)

**Company Name:** Interactive Solutions Corporation

**Address:** Route 1 Box 500  
Eastsound, WA 98245  
U.S.A.

**Phone:** 206-376-5085  
800-545-4723

**Fax:** 206-376-2151

**Contact:** Stephen T. Hance

**Type of Distributor Wanted:** Software developer/integrator or reseller

**Geographical Coverage:** Worldwide

## Software Packages Wanted

**Industry:** *Construction*

**Abstract:** Wanted: structural design/analysis software relating to the construction industry for the U.K. and European markets to run on **IBM**-compatible **PCs** or **HP Apollo UNIX** workstations. We are also interested in **CAD** products for this market sector together with any related products appropriate to the needs of consulting engineers, fabricators, and civil/structural engineers.

**HP Platform:** HP 9000

**Operating System:** HP-UX

**Company Name:** Computer Services Consultants (UK) Limited

**Address:** New Street  
Pudsey, Leeds  
West Yorkshire LS28 8AQ  
England

**Phone:** (0532) 393000

**Fax:** (0532) 553917

**Contact:** Andrew J. Beveridge, Sales Director

**Type of Distributor Wanted:** Well established company with its own sales force and support staff.

If you are an HP VAB with a current contract, 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 Channels Development  
**Attn:** Marcia Nowicky  
19091 Pruneridge Ave.  
Building 46UV  
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.

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**December 1990**

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Please address editorial correspondence to Tracy Wester at address listed below.

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