

# HP Apollo 9000 Model 400dl

Technical Data\*



**July, 1990**

The workstation is supplied with a high-resolution 19" monochrome monitor, making it easy to view software code, large electrical circuits, and double page technical layouts.

Series 400 workstations are the first to combine the innovation of Apollo with the quality and reliability of HP. And they are the first workstations capable of running your choice of either the HP-UX system or the Domain/OS operating system. A choice of operating systems means that you can take advantage of over 3200 applications capable of running on HP Apollo 9000 workstations today.

## **An entry-level workstation in a desktop package.**

The HP Apollo 9000 Model 400dl is the lowest-cost member of the Series 400 family of workstation products. Now you can put more workstations on more desktops even if your budget is limited. Model 400dl is the workstation solution for cost-sensitive applications such as CASE and technical publishing.

The Model 400dl is based on the MC68030 processor running at 50 MHz for integer performance of 12 MIPS. Memory can be configured with either 8 or 16 Mbytes of ECC RAM. And an RS-232C port is built-in for serial devices.

Ethernet LAN capability allows you to easily network the Model 400dl. It can be run as a diskless node on the network so users can take advantage of file server storage and other network resources.

\* Data subject to change without notice.

*The lowest-cost  
Series 400.  
A perfect  
workstation  
solution for  
cost-sensitive  
applications.*

## Technical Specifications

### System Processing Unit

400dl	
<b>Central Processor</b>	MC68030
Clock	50 MHz
Wait States to Cache	0 internal, 1 external
Integer Performance	12 MIPS
<b>Floating Point</b>	MC68882
Clock Frequency	50 MHz
Performance (D.P. Linpack)	0.5 MFLOPS
<b>Memory Management Unit:</b>	
Type	On MC68030
Virtual memory (HP-UX only)	4 Gbytes/process
Contexts	84 default, user settable
<b>Cache Memory On Chip:</b>	
Size	256 Byte data/256 Byte instruction
Average cycle time	20 nsec
<b>Cache Memory External:</b>	
Size	Write through
Average cycle time	32 Kbytes
<b>Main Memory:</b>	
Type	ECC (single-bit correct; double-bit detect)
RAM Bus width	8 Mbytes standard 32b address, 32b data
System RAM Access Time	80 nsec/min 140 nsec/max
Maximum memory	16 Mbytes, in 8 Mbyte increments
<b>Internal Mass Storage</b>	None
<b>Monitor</b>	19" (98774A) Monochrome only
Monitor Screen Refresh	72 Hz
Video Signals	RS-343

### Networking Options

HP-UX and Domain/OS <sup>†</sup>	
LAN	IEEE 802.3/Ethernet interface with ThinMAU and BNC "T" connector and AUI (jumper selectable)
Protocols	X.25, SNA, RJE, TCP-IP, HP Diskless

† No Apollo Token Ring interface available

### Software

	HP-UX	Domain/OS
Operating System	HP-UX complies with the UNIX System V Interface Definition, X/Open and POSIX Specifications, and will be fully compliant with OSF.	Domain/OS is a single operating system that provides users a choice of UNIX System V Release 3, BSD 4.3, or Aegis.
Revisions	HP-UX 7.03 and on	Domain 10.2+ PSK and on
Window Systems	X Window System, Version 11 (X11), Release 4	X Window System, Version 11 (X11) Apollo Domain Display Manager
Languages	C, Pascal, FORTRAN, BASIC, Tech BASIC, Ada, Common LISP	C, Pascal, FORTRAN, Ada
User Interface	HP VUE 2.0	HP VUE 1.0, Apollo Domain Display Manager

Unix is a registered trademark of AT&T in the U.S. and other countries.

## I/O Specifications

	HP-UX	Domain/OS
<b>Graphics Bus:</b>		
Width	32 bits address; 32 data	32 bits address; 32 data
Bandwidth	6 Mbytes/sec.	6 Mbytes/sec.
DMA channels	2, dynamically assigned	2, dynamically assigned
<b>LAN Interface:</b>		
Type	IEEE 802.3, Ethernet 1.0	IEEE 802.3, Ethernet 1.0
Data rate	10 Mbits/sec.	10 Mbits/sec.
Connectors	15-pin AUI (Attachment Unit Interface) and BNC tee	15-pin AUI (Attachment Unit Interface) and BNC tee
MAUs	10BASE2 built-in 10BASE5 requires p/n 30241A 10 BASE T requires p/n 28685A	10BASE2 built-in 10BASE5 requires p/n 30241A 10 BASE T requires p/n 28685A
<b>Serial Interface:</b>		
Type	RS-232C, 9-wire DTE*	RS-232C, 9-wire DTE <sup>§</sup>
Data rate	to 38,400 bps	To 19,200 bps
Device limit	1 per interface	1 per interface
Connector	25-pin D-sub	25-pin D-sub

\* 2-additional available at HP-UX 7.05

§ 2-additional available with Domain 10.2



### Human Interface

	HP-UX	Domain/OS
<b>Keyboard</b>	109-key, low profile, HP-HIL Available in 25 local languages.	106-key, Serial interface Available in 9 local languages.
<b>Mouse</b>	3-button, roller-ball, HP-HIL	3-button, roller-ball, quadrature interface on keyboard
<b>Audio:</b>		
	Three independent time generators controllable over 30db	Piezoelectric beeper in keyboard
Frequency range	81.46 Hz to 83.3 KHz	NA
Resolution	Capable of approximate chromatic scale over five octaves	NA
Duration	.01 sec. to 2.55 second/tone	NA
<b>Interface Specifications:</b>		
Type	HP-HIL, 1.0A	Domain keyboard
Device limit	7 per interface	1 per interface
Connector	AMP SMD	7-pin DIN
Audio speaker	Built-in	Built-in

(Also available via external jack 250 mW @ 8 ohms)

### Warranty Information

The warranty covering a specific system is determined by the HP WARRANTY AND INSTALLATION TERMS in effect at the time of purchase. These terms are specified in HP Pub. No. 5954-1617(D) for the United States and in similar documents for other countries.

### Support Services

A wide range of hardware and software support services are available worldwide for all HP Apollo 9000 workstations. Contact your HP sales representative for details on available support services.

**For more information, on the HP Apollo 9000 workstations call 1-800-752-0900 for the location of your nearest HP sales office. In areas outside of the U.S., contact your local HP sales office.**