HP 3000 900 Series
Computer Systems

Configuration Guide Addendum

Effective January 1994

HP 3000

HP Computer Museum
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Section 1.
900 Series Business Computers

Computer Museum

Business Systems at-a-Glance

SPU Model No.	SPU Product No.	S/W Tier	Slots per Box	Clock Speed MHz	Instr/Data Cache (KB)	Performance Relative to 917LX	OLTP (TPS)	SCSI	RS-232	LAN	# Cards Supported IB/SCSI/FL
917LX	A1770B	1	2	32	32/64	1	41 est	1	2	1	1/2/1
927LX	A1771C	1	2	32	32/64	1	41 est	1	2	1	1/2/1
937LX	A1772B	1	2	32	32/64	1	41 est	1	2	1	1/2/1
937RX	A1772B	1	4	32	32/64	1	41 est	1	2	1	2/4/2
937SX	A1772B	1	12	32	32/64	1	41 est	1	2	1	3/10/4
947LX	A1708C	2	2	32	32/64	1	41 est	1	2	1	1/2/1
947RX	A1708C	3	4	32	32/64	1	41 est	1	2	1	2/4/2
947SX	A1708C	3	12	32	32/64	1	41 est	1	2	1	3/10/4
957RX	A1709B	4	4	48	64/64	1.6	84 est	1	2	1	2/4/2
957SX	A1709B	4	12	48	64/64	1.6	84 est	1	2	1	3/10/4
967RX	A1710B	5	4	48	256/256	2	82 est	1	2	1	2/4/2
967SX	A1710B	5	12	48	256/256	2	82 est	1	2	1	3/10/4
987RX	A2317B	6	4	96	256/256	3.2	>180 est	1	2	1	2/4/2
987SX	A2317B	6	12	96	256/256	3.2	>180 est	1	2	1	3/10/4
987/150RX	A3004A	6	4	96	1024/1024	4.5		1	2	1	2/4/2
987/150SX	A3004A	6	12	96	1024/1024	4.5		1	2	1	3/12/4
987/200RX	A3045A	6	4	2×96	2* (1024/1024)	6		1	2	1	2/4/2
987/200SX	A3045A	6	12	2×96	2* (1024/1024)	6		1	2	1	3/12/4
918LX	A3096AW	1	2	34*	64	1		1	2	1	1/2/1
918RX	A3096AW	1	4	34*	64	1		1	2	1	2/4/2
928LX	2934AW	3	2	48	64	1.4		1	2	1	1/2/1
928RX	2934AW	3	4	48	64	1.4		1	2	1	2/4/2
968LX	A2933AW	5	2	64	256	2.1		1	2	1	1/2/1
968RX	A2933AW	5	4	64	256	2.1		1	2	1	2/4/2
978LX	A3129AW	6	2	80	256	2.6		1	2	1	1/2/1
978RX	A3129AW	6	4	80	256	2.6		1	2	1	2/4/2

SPU Model No.	SPU Product No.	S/W Tier	Add'l Slots	Clock Speed MHz	Cache Inst/Data	Perf. Rel. to 917LX	OLTP TPS est			Console	# Cards/ Card Cage IB/SCSI/FL
990	A1809A/A1811A	7	103	48*	2MB/2MB	2.8	145			1	2/5/5
992/100	A1809A/A1811A	7	103	60	2MB/2MB	3.5	185			1	2/5/5
992/200	A1809A/A1811A	7	103	60	2MB/2MB	6	315			1	2/5/5
992/300	A1809A/A1811A	7	103	60	2MB/2MB	8.1	420			1	2/5/5
992/400	A1809A/A1811A	7	103	60	2MB/2MB	10	500+			1	2/5/5
991	A3080A/A3079A	7	105	72*	1MB/1MB	3.3				1	2/5/5
995/100	A3080A/A3079A	7	105	90	1MB/1MB	4.2				1	2/5/5
995/200	A3080A/A3079A	7	105	90	1MB/1MB	7.1				1	2/5/5
995/300	A3080A/A3079A	7	105	90	1MB/1MB	9.6				1	2/5/5
995/400	A3080A/A3079A	7	105	90	1MB/1MB	11.8				1	2/5/5
995/500	A3080A/A3079A	7	105	90	1MB/1MB	13.9*				1	2/5/5
995/600	A3080A/A3079A	7	105	90	1MB/1MB	16.0*				1	2/5/5
995/700	A3080A/A3079A	7	105	90	1MB/1MB	18.0*				1	2/5/5
995/800	A3080A/A3079A	7	105	90	1MB/1MB	20.0*				1	2/5/5

*Effective with software.
NOTE: Relative OLTP performance is a general guideline since the factors influencing the performance of an application vary widely.
Unless otherwise stated, the OLTP performance numbers are estimated TPS numbers.
NOTE: Refer to the July 1993 Configuration Guide (Pub. # 5091-7438E) for configuration information pertaining to the HP 3000.

Business Systems at-a-Glance (cont'd)

SPU Model Number	Memory		STD Int. Disk (GB)	Max. Int. Disk (GB)	Max. Number of External Disks			Max. Supported Disk (GB)	Int. Supported DDS	Max. Optical Disk	Max. System Printers	Max. Serial Printers
	Std MB	Max MB			SCSI	HP-IB	HP-FL					
917LX	32	192	1	2	20	6	8	40	2GB	2	6	32
927LX	32	192	1	2	20	6	8	40	2GB	2	6	32
937LX	32	192	1	2	20	6	8	40	2GB	2	6	32
937RX	32	384	1	6	34	12	16	68	2GB	3	8	48
937SX	32	384	1	6	49	12	32	98	2GB	3	8	48
947LX	64	192	1	2	20	6	8	40	2GB	2	6	32
947RX	64	384	1	6	34	12	16	68	2GB	3	8	48
947SX	64	384	1	6	49	12	32	98	2GB	3	8	48
957RX	64	384	1	6	34	6	16	68	2GB	3	8	64
957SX	64	384	1	6	49	12	32	98	2GB	3	8	64
967RX	64	512	1	6	34	6	16	68	2GB	3	8	64
967SX	64	512	1	6	49	12	32	98	2GB	3	8	64
987RX	64	768	1	6	34	12	16	68	2GB	3	8	64
987SX	64	768	1	6	49	12	32	98	2GB	3	8	64
987/150RX	64	768	1	6	34	12	16	120	2GB	3	8	96
987/150SX	64	768	1	6	65	12	32	250	2GB	3	8	96
987/200RX	64	768	1	6	34	12	16	120	2GB	3	8	96
987/200SX	64	768	1	6	65	12	32	250	2GB	3	8	96
918LX	32	512*	1	4 †	20	6	8	76	2GB	2	6	64
918RX	32	512*	1	4 †	34	12	16	140	2GB	3	6	64
928LX	32	512*	1	4 †	20	6	8	76	2GB	2	6	64
928RX	32	512*	1	4 †	34	12	16	140	2GB	3	6	64
968LX	64	512*	1	4 †	20	6	8	76	2GB	2	6	64
968RX	64	512*	1	4 †	34	12	16	140	2GB	3	6	64
978LX	64	512*	1	4 †	20	6	8	76	2GB	2	6	64
978RX	64	512*	1	4 †	34	12	16	140	2GB	3	6	64

SPU Model Number	Memory		STD Int. Disk (GB)	Max. Int. Disk (GB)	Max. SCSI Cards	Max. HP-IB Cards	Max. PB-FL Cards	Max.** Supported Disk (Gb)	Max. Supported DDS/3480	Max. Optical Disk	Max. Sys. Printers SCSI/HP-IB	Max. Serial Printers
	Std MB	Max. MB										
990	128	2048	n/a	n/a	40	12	40	2040	8	3	4/8	250
992/100	128	2048	n/a	n/a	40	12	40	2040	8	3	4/8	250
992/200	128	2048	n/a	n/a	40	12	40	2040	8	3	4/8	250
992/300	128	2048	n/a	n/a	40	12	40	2040	8	3	4/8	250
992/400	128	2048	n/a	n/a	40	12	40	2040	8	3	4/8	250
991	256	2048	n/a	n/a	40	12	40	2040	8	3	4/8	250
995/100	256	2048	n/a	n/a	40	12	40	2040	8	3	4/8	250
995/200	256	2048	n/a	n/a	40	12	40	2040	8	3	4/8	250
995/300	256	2048	n/a	n/a	40	12	40	2040	8	3	4/8	250
995/400	256	2048	n/a	n/a	40	12	40	2040	8	3	4/8	250
995/500	256	2048	n/a	n/a	40	12	40	2040	8	3	4/8	250
995/600	256	2048	n/a	n/a	40	12	40	2040	8	3	4/8	250
995/700	256	2048	n/a	n/a	40	12	40	2040	8	3	4/8	250
995/800	256	2048	n/a	n/a	40	12	40	2040	8	3	4/8	250

*Only 256 MB of memory is orderable until mid April 1994.
**Configurations greater than 128 spindles require factory approval.
† Only a maximum of 2 GB is orderable until March 1994.

Business Systems at-a-Glance (cont'd)

SPU Model Number	SPU Product No.	Max. DTCs	Max. Token Ring	Max. PSI Cards	Max. 802.3 LAN Cards*	Options for FL PT.	User-based License for All Systems	Typical # Users	Max. Work-Stations
917LX	A1770B	4	1	2	3	ODT	8	4 - 8	64
927LX	A1771C	4	1	2	3	ODT	20	16 - 20	64
937LX	A1772B	6	1	2	3	ODT	32/40/64	24 - 64	152
937RX	A1772B	6	1	4	3	ODT	32/40/64	24 - 64	152
937SX	A1772B	6	1	5	3	ODT	32/40/64	24 - 64	152
947LX	A1708C	12	1	2	3	ODT	100/160/256	64 - 100	530
947RX	A1708C	12	1	4	3	ODT	100/160/256	64 - 100	530
947SX	A1708C	12	1	5	3	ODT	100/160/256	64 - 100	530
957RX	A1709B	24	1	4	3	ODU	64/100/160/256/UL	64 - 160	850
957SX	A1709B	24	1	5	3	ODU	64/100/160/256/UL	64 - 160	850
967RX	A1710B	24	1	4	3	ODV	100/160/256/UL	96 - 250	900
967SX	A1710B	24	1	5	3	ODV	100/160/256/UL	96 - 250	900
987RX	A2317B	24	1	4	3	std	100/160/256/UL	96 - 380	1200
987SX	A2317B	24	1	5	3	std	100/160/256/UL	96 - 380	1500
987/150RX	A3004A	24	1	5	3	std	100/160/256/UL	128 - 500	1700
987/150SX	A3004A	24	1	5	3	std	100/160/256/UL	128-500	1700
987/200RX	A3045A	24	1	5	3	std	100/160/256/UL	170-650	1700
987/200SX	A3045A	24	1	5	3	std	100/160/256/UL	170-650	1700
918LX	A3096AW	6	1	2	3	std	8/20/32/40/64/100	24 - 64	64
918RX	A3096AW	6	1	4	3	std	8/20/32/40/64/100	24 - 64	64
928LX	A2934AW	12	1	2	3	std	64/100/160/256/UL	64 - 160	400
928RX	A2934AW	12	1	4	3	std	64/100/160/256/UL	64 - 160	400
968LX	A2933AW	24	1	2	3	std	100/160/256/UL	100-256	600
968RX	A2933AW	24	1	4	3	std	100/160/256/UL	100-256	600
978LX	A3129AW	24	1	2	3	std	100/160/256/UL	100-380	900
978RX	A3129AW	24	1	4	3	std	100/160/256/UL	100-380	900

SPU Model Number	SPU Product No.	Max. DTCs	Max. Token Ring	Max. PSI Cards	Max. 802.3 LAN Cards*	Options for FL PT.	User-based License for All Systems	Typical # Users	Max. # Users Log-on
990	A1809A/A1811A	120	1	8	3	std	100/160/256/384/UL	200 - 580	2300
992/100	A1809A/A1811A	120	1	8	3	std	100/160/256/384/UL	200 - 580	2300
992/200	A1809A/A1811A	120	1	8	3	std	100/160/256/384/UL	325 - 775	2300
992/300	A1809A/A1811A	120	1	8	3	std	100/160/256/384/UL	425 - 945	2300
992/400	A1809A/A1811A	120	1	8	3	std	100/160/256/384/UL	500 - 1000	2300
991	A3080A/A3079A	120	1	8	3	std	100/160/256/384/UL	200 - 580	2700
995/100	A3080A/A3079A	120	1	8	3	std	100/160/256/384/UL	200 - 580	2700
995/200	A3080A/A3079A	120	1	8	3	std	100/160/256/384/UL	375 - 775	2700
995/300	A3080A/A3079A	120	1	8	3	std	100/160/256/384/UL	425 - 945	2700
995/400	A3080A/A3079A	120	1	8	3	std	100/160/256/384/UL	500 - 1050	2700
995/500	A3080A/A3079A	120	1	8	3	std	100/160/256/384/UL	500 - 1050	2700
995/600	A3080A/A3079A	120	1	8	3	std	100/160/256/384/UL	650 - 1200	2700
995/700	A3080A/A3079A	120	1	8	3	std	100/160/256/384/UL	650 - 1200	2700
995/800	A3080A/A3079A	120	1	8	3	std	100/160/256/384/UL	800 - 1300	2700

*The first 802.3/Ethernet LAN card comes standard with each system as part of either the MFIO or LAN/Console cards. To have a total of three 802.3/Ethernet LAN cards, one for DTC communication and two for system-to-system communication, requires MPE/iX release 4.0 plus patch.

Section 2.
Series 918LX/RX, 928LX/RX, 968LX/RX, and 978LX/RX

General System Configuration Information

Table 2.1 Maximum Supported Hardware Configuration

Series	918		928		968		978	
Chassis configuration	918LX	918RX	928LX	928RX	968LX	968RX	978LX	978RX
MPE/iX Release Support	4.0							
User license: (UL = unlimited) Standard Optional	8 20/32/40/64		64 100/160/256/UL		100 160/256/UL		100 160/256/UL	
Typical users	24–64		64–160		100–256		100–380	
Maximum connected workstations/terminals	64		400		600		900	
Performance relative to 917LX	1.0		1.4		2.1		2.6	
HP-PB Slots	2	4	2	4	2	4	2	4
Memory (MB): Std/Max	32/512	32/512	32/512	32/512	64/512	64/512	64/512[4]	64/512[4]
Maximum disk storage (GB)	76	140	76	140	76	140	76	140
Maximum disks: Total HP-FL SCSI HP-IB[2]	20 8 20 6	34 16 34 12	20 8 20 6	34 16 34 12	20 8 20 6	34 16 34 12	20 8 20 6	34 16 34 12
Maximum tape drives	6	6	6	6	6	6	6	6
Maximum CD-ROM drives	1	1	1	1	1	1	1	1
Maximum printers System Serial	6 64	6 64	6 64	6 64	6 64	6 64	6 64	6 64
Maximum DTCs	6	6	12	12	24	24	24	24
Max. no. devices per I/O card SCSI PBA-IB (HP-IB)[2] PB-FL (HP-FL)	7 6 8	7 6 8	7 6 8	7 6 8	7 6 8	7 6 8	7 6 8	7 6 8
Maximum number of cards[3] SCSI PBA-IB (HP-IB)[2] PB-FL (HP-FL)	2 1 1	4 1 2	2 1 1	4 1 2	2 1 1	4 1 2	2 1 1	10 1 2
Max. network links per system 802.3 LANIC[1] 802.5 Token Ring	2 1	2 1	2 1	2 1	2 1	2 1	2 1	2 1
Floating point coprocessor	std	std	std	std	std	std	std	std
Maximum PSI cards	2	4	2	4	2	4	2	4

[1] First link standard on multi-function I/O card.
[2] Six disks are physically supported per PBA-IB. Four disks per PBA-IB are recommended for optimum performance.
[3] For I/O card combinations, use the electrical current budgeting worksheet **(Table 2.7)** to determine supportability of proposed I/O cards and internal peripherals.
[4] Only 256 MB of memory is orderable until March 1994.

Product Description

The HP 3000 Series 9x8LX/RX*
are high performance entry level
systems that take advantage of the
HP Precision Architecture-RISC
(PA-RISC) to provide low cost
solutions with competitive price/
performance. All of these systems
come standard with one processor
with on-chip floating point, a
standard amount of memory, one
multifunction I/O card, an inte-
grated 3.5-inch 1.0 GB disk
mechanism, an integrated 3.5-inch
2.0 GB digital data storage (DDS)
cartridge tape drive, an
HP PowerTrust uninterruptible
power supply (UPS) for power
protection and the MPE/iX
operating system. The Series
9x8LX/RX systems offer a range of
performance points, user license
options, and two chassis I/O slot
capabilities. This range of capabil-
ity allows for economical growth
as system performance require-
ments increase.

The chassis I/O slot selection
denotes the specific model
number suffix (9x8LX or 9x8RX).
For example, if you select a Series
928 with 100 or fewer users, you
have the option of selecting the
2-slot 928LX or the 4-slot 928RX,
both of which run at a processor
speed of 48 MHz. Alternately, for
the same number of users, you
could select a Series 968 with a
higher processor speed of 64 MHz
either as the 2-slot 968LX or the
4-slot 968RX.

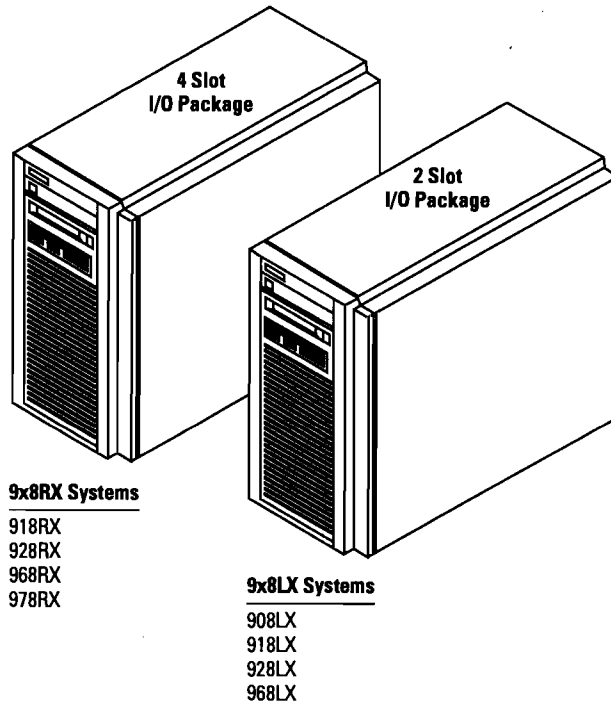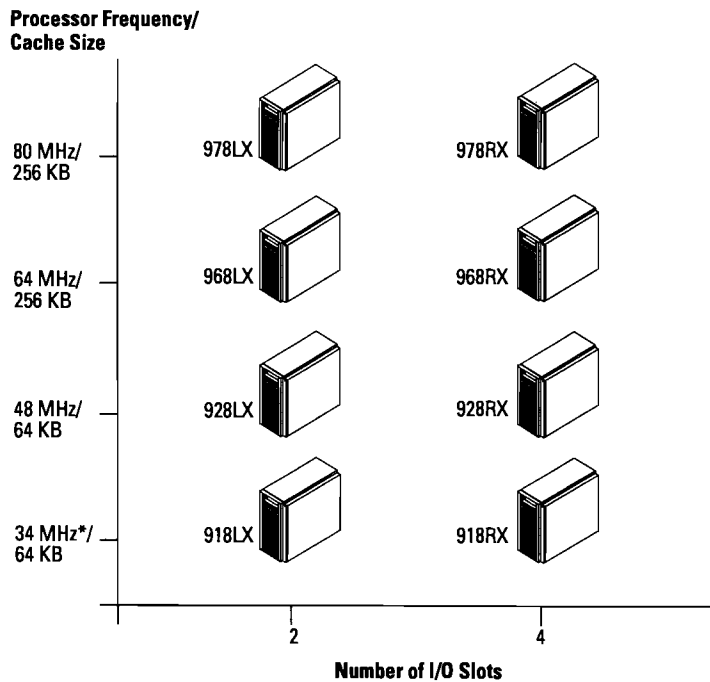**Figure 2.1 HP 3000 Series 9x8LX/RX Product Offering**

9x8RX Systems
918RX
928RX
968RX
978RX

9x8LX Systems
908LX
918LX
928LX
968LX

Figure 2.2 Series 9x8LX/RX Systems

Processor Frequency/
Cache Size

80 MHz/ 256 KB	978LX	978RX
64 MHz/ 256 KB	968LX	968RX
48 MHz/ 64 KB	928LX	928RX
34 MHz*/ 64 KB	918LX	918RX

2   4

Number of I/O Slots

*Effective with software

*The HP 3000 Series 9x8LX/RX does not
include the older HP 3000 systems, the
Series 948 and 958.

The performance levels of the HP 3000 Series 9x8LX/RX are available in eight solution choices, each of which has its own product number (see **Figure 2.2**, "Series 9x8LX/RX Systems"). Each hardware and software component (user license, software bundle, I/O slot, model number, etc.) is designated by its own order number. Refer to the end of this chapter for a detailed ordering menu.

Packaging

The Series 9x8LX/RX systems are integrated deskside systems and come in two chassis configurations (see **Figure 2.1**, "Series 9x8LX/RX Product Offering"). The 9x8LX comes with 2 chassis I/O slots and the 9x8RX comes with 4 chassis I/O slots. Refer to **Figure 2.3**, "Series 9x8LX HP-PB I/O Slots/Card Cage (2 I/O Slots)" and **Figure 2.4**, "Series 9x8RX HP-PB I/O Slots/Card Cage (4 I/O Slots)." The system package, along with external peripherals, can be rackmounted in a compact 1.1 meter or 1.6 meter cabinet. Refer to **page 2-18** for cabinet information.

Factory Preloading of Operating System and Subsystem Software

Factory preloading of HP 3000 MPE/iX FOS and standard subsystem software is available with all HP 3000 9x8LX/RX systems. This software will be factory installed on the standard integrated disk selected with each system. In order to have all HP subsystem software pre-installed at the factory, order the MPE/iX media product from the ordering menus and specify option 0D1.

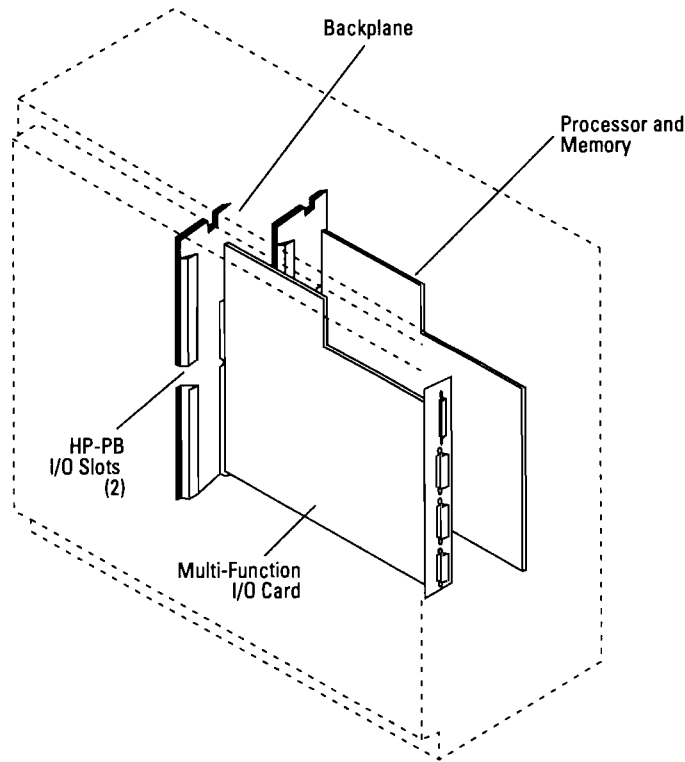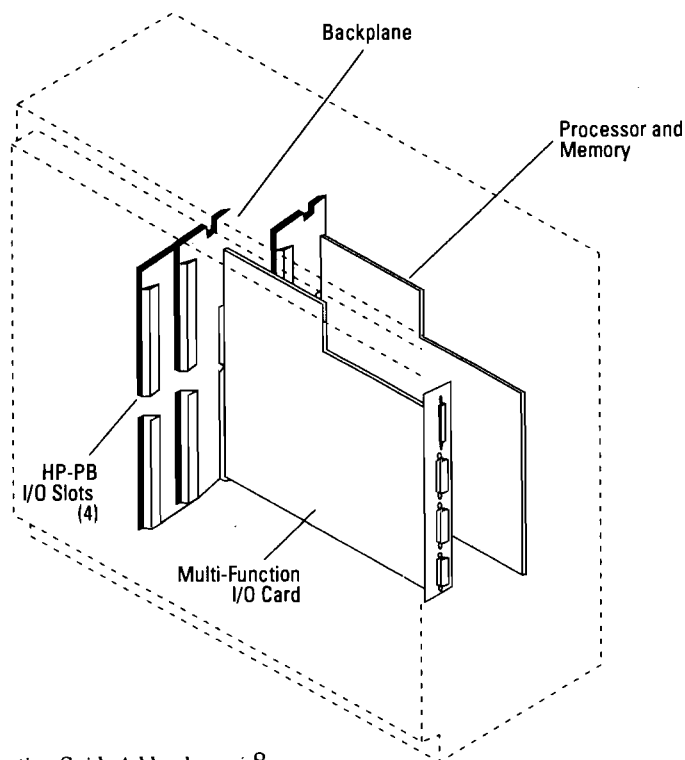**Figure 2.3 Series 9x8LX HP-PB I/O Slots/Card Cage (2 I/O Slots)**

Figure 2.4 Series 9x8RX HP-PB I/O Slots/Card Cage (4 I/O Slots)

User Licenses

All Series 9x8LX/RX systems are supplied with a software class/concurrent license specifying the maximum number of users. The practical number of concurrent users is dependent on the application mix and response time/throughput requirements.

Memory Expansion

The Series 9x8LX/RX uses industry-standard memory SIMMs that plug directly into the processor board (see **Figure 2.5**). See **Table 2.2** for the Series 9x8LX/RX systems memory product offerings. The Series 918 and 928 systems come with base memory of 32 MB while the Series 968 and 978 systems come with base memory of 64 MB. See **Table 2.2** for sample memory configurations.

When ordering the initial system, consideration should be given to the maximum memory one might want to eventually order. For systems which may add more memory, optional base memory modules of 64 (two 32 MB SIMMs) and 128 MB (two 64 MB SIMMs) are offered which maximize the number of memory slots left for future memory upgrades. Refer to **Table 2.3**, "Series 9x8LX/RX Maximum Memory," for further discussion.

Table 2.2 Sample Memory Configurations

| MB	16 MB Module A2946A	64 MB Module A2948A	128 MB* Module A3131A	Memory Slots Consumed	Memory Slots Remaining
32	2			4	4
48	3			6	2
64		1		2	6
96	2	1		6	2
128		2		4	4
192		1	1	4	4
256			2	4	4
384			3	6	2
512			4	8	0

*Orderable after mid-April 1994.
NOTE: 9x8 SIMMs are not compatible with other HP 3000 series memory.

Table 2.3 Series 9x8LX/RX Maximum Memory

Series	Base Memory	Optional Base Memory	Memory Slots Used	Memory Slots Available	Maximum Memory* (Using 128 MB Modules or 64 MB SIMMs)
918/928	32 MB		4	4	288 MB (2 × 128 MB)
		64 MB	2	6	448 MB (3 × 128 MB)
		128 MB	2	6	512 MB (3 × 128 MB)
968/978	64 MB		2	6	448 MB (3 × 128 MB)
		128 MB	2	6	512 MB (3 × 128 MB)

*128 MB module not available until mid-April 1994.

Figure 2.5

SPU Card
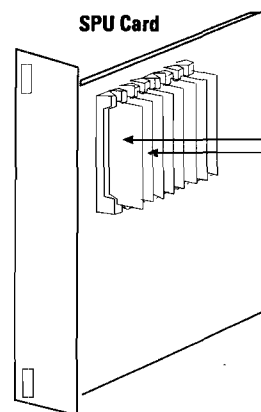
Memory Configuration:

1. Each memory module consists of a pair of memory cards, or "SIMMs," which must be installed together.
2. A total of 8 slots (4 pairs) are available.
3. Memory modules are available only in 16 MB, 64 MB, and 128 MB sizes.

NOTE: 9x8LX/RX SIMMs are not compatible with other HP 3000 series memory.

I/O Channel Configuration Information

I/O and Internal Peripheral Checklist

Care must be taken to insure that there is a proper match between the 9x8LX/RX chassis ordered and the I/O cards and internal peripherals (peripherals residing within the chassis) which have been ordered.

1. Ensure that you have ordered the correct I/O chassis (2 or 4 I/O slots) for the number of I/O cards selected. Some I/O cards require two I/O slots (see **Table 2.5**, "Series 9x8LX/RX HP-PB I/O Cards and Current Requirements").

2. Ensure that you have not exceeded the power supply capabilities of the 9x8LX/RX SPU packages. (Refer to **Table 2.7**, "Series 9x8LX/RX Current Budgeting Worksheet").

HP Precision Bus (HP-PB)

The HP Precision-Bus (HP-PB) interfaces the processor with I/O cards. The Series 9x8LX and 9x8RX provide 2 or 4 single-high HP Precision Bus I/O slots respectively. In compliance with the Eurocard standard, the HP Precision Bus supports both single-high and double-high I/O cards. Single-high I/O cards use one HP Precision Bus slot each while double-high I/O cards use two slots each. **Table 2.5** illustrates the slot usage for the various I/O cards supported on the Series 9x8LX/RX systems.

Multi-Function I/O Card (MFIO)

One MFIO card is supplied standard with each Series 9x8LX/RX SPU package. This card provides:

* 802.3 LAN connection for use with both DTC and system-to-system LAN traffic (integrated ThinLAN Transceiver and AUI connector)

* Three RS-232-C ports for console, remote support and HP PowerTrust UPS connections

* One SCSI interface which provides connection for seven Single-Ended SCSI devices

The MFIO card is not orderable as a separate product. If a second 802.3 LAN or additional SCSI cards are needed, the HP-PB 802.3 LAN card (36923A option 002) or SCSI card (28642A) must be ordered.

The MFIO card can support a combination of internal and external SCSI devices, not to exceed a maximum of seven devices (five devices per SCSI are recommended for best performance results). The devices can be a combination of full- and half-height. Internal SCSI peripherals use 1.5 meters of SCSI cabling.

The MFIO card does not utilize any Precision Bus I/O slots, it has its own dedicated slot. Note that the physical connection for the UPS RS-232 cable resides on the system card and is connected to the MFIO port via the backplane.

NOTE: External 2.0 GB DDS tape drives are supported on the integrated SCSI interface of the MFIO card, but 1.3 GB DDS drives are not. An add-on SCSI interface card is required to support external 1.3 GB DDS tape drives. Optical Libraries are not supported on the MFIO card since Optical Libraries require a dedicated SCSI card.

SPU Internal Peripherals

The Series 9x8LX/RX SPU packages come standard with two integrated SCSI peripherals:

- One 1.0 GB capacity 3.5 inch disk mechanism (half-height)

- One 2.0 GB DDS format tape drive (half-height)

Customers may replace the integrated 1.0 GB disk with an optional 2.0 GB capacity 3.5 inch disk mechanism (half-height).* Customers may order a second integrated 1.0 or 2.0 GB disk mechanism for a maximum of two 3.5 inch, half-height disk mechanisms resulting in a maximum of 4 GB of integrated disk storage. For more disk storage, external SCSI or HP-FL disks must be ordered.

Customers may order a second integrated 2.0 GB DDS tape drive or an integrated CD-ROM device (half-height). The maximum number of integrated DDS tape drives and CD-ROM drives is two. Additional DDS tape or CD-ROM drives can be ordered as external devices.

The 4- to 8-GB DDS data compressed format tape drive is *not* supported as an integrated device into the SPU. With Operating System Release 5.0, the ability to turn data compression on or off from the host will be available. Therefore, with 5.0, HP will support the data compressed DDS tape drive.

Refer to **Figure 2.6**, "Series 9x8LX/RX SPU Package Layout," for a diagram of the SPU package layout and to chapter 6 of the July 1993 HP 3000 900 Series Computer Systems Configuration Guide (P/N 5091-7438E) for peripheral information.

*Note: 2.0 GB internal disk drives are not orderable until March 1994.

Series 9x8LX/RX SPU Package (Memory, I/O and Internal Peripherals) Current Budgeting

Since the 9x8LX/RX systems support a number of different memory cards, I/O cards and internal peripherals, the "Series 9x8LX/RX Current Budgeting Worksheet," **Table 2.7**, needs to be used to determine if a particular combination of memory, I/O cards and internal peripherals can be supported. This worksheet should be used to determine if the proposed total current consumed does not exceed the total current available.

Guidelines:

1. Memory modules can use either two or four memory SIMM slots; however, only enter the current requirement in one of the slot positions. See **Table 2.4**, "Series 9x8LX/RX Memory Modules and Current Requirements," for the current requirements of the various memory modules.

2. The worksheet can be used for both the 9x8LX (two I/O slots) systems and the 9x8RX (four I/O slots) systems.

3. When using double-high I/O cards, two single-high I/O slots are utilized; however, only enter the current requirement in one of the slot positions. See **Table 2.5**, "Series 9x8LX/RX HP-PB I/O Cards and Current Requirements," for the current requirements for the various I/O cards.

Figure 2.6 Series 9x8LX/RX Package Layout
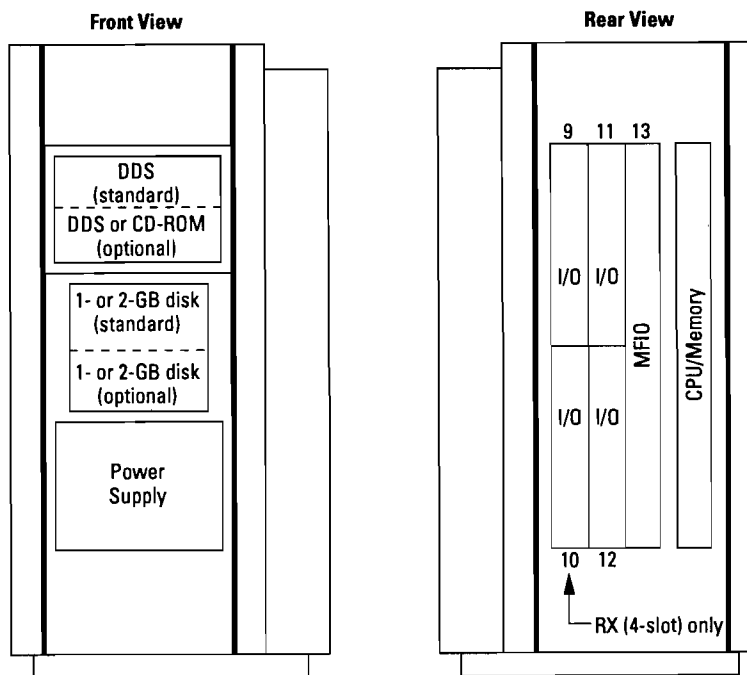
4. The internal peripherals are housed in the peripheral positions shown in **Figure 2.6**, "Series 9x8LX/RX Package Layout." See **Table 2.6** for the current requirements for the various internal peripherals.

5. The current requirements for the processor board and MFIO card have already been taken into account in the worksheet calculations.

Use the current tables and worksheet as follows:

1. Enter the current (amps) for each row corresponding to the memory module, I/O card or internal peripheral selected. Be sure and enter current values for all three voltages.

2. Sum each current column and compare the results with the current limits at the bottom of the worksheet. The total current shown already contains a 5% margin over the total current available. If the configuration exceeds the available current shown, then the configuration must be modified to be supported.

3. Combinations that should be carefully considered are large memories, at least one PBA-IB (HP-IB) I/O card, and one additional I/O card. Some of these combinations exceed the current available on the +5V supply.

Table 2.4 Series 9x8LX/RX Memory Modules and Current Requirements

Integrated Memory Module	Product Number	SIMM Slot/ Module	Current Req./Module (Amps)		
			+12V	+5V	–12V
16 MB memory (2 × 8 MB SIMMs)	A2946Ax	2	0.00	0.30	0.00
32 MB memory (4 × 8 MB SIMMs)	A2947Ax	4	0.00	0.60	0.00
64 MB memory (2 × 32 MB SIMMs)	A2948Ax	2	0.00	0.30	0.00
128 MB memory (2 × 64 MB SIMMs)	A3131Ax	2	0.00	0.60	0.00

Table 2.5 Series 9x8LX/RX HP-PB I/O Cards and Current Requirements

I/O Cards	Product/Opt. Number	Size	Slot/ Card	Current Req./Card (Amps)		
				+12V	+5V	–12V
SCSI	28642A	Single-High	1	0.00	0.90	0.00
PB-FL (HP-FL)	28616A	Double-High	2	0.04	3.93	0.05
PBA-IB (HP-IB)	A1747A opt.002	Double-High	2	0.09	5.46	0.07
802.3 LAN	36923A opt.002	Single-High	1	0.50	2.13	0.00
802.5 Token Ring LAN	J2167A	Single-High	1	0.00	1.66	0.00
PSI (NS pt.-to-pt.)	36922A opt.002	Single-High	1	0.08	2.36	0.09
PSI (SNA/SDLC)	30291A opt.002	Single-High	1	0.08	2.36	0.09
PSI (BSC)	32007A opt.002	Single-High	1	0.08	2.36	0.09

Table 2.6 Series 9x8LX/RX Internal Peripherals and Current Requirements

Internal Peripheral	Product Number	Peripheral Size	Current Req./Peripheral (Amps)		
			+12V	+5V	–12V
1 GB, 3.5-inch Disk	A2445A	Half-Height	0.85	1.03	0.00
2 GB, 3.5-inch Disk	A3087A[1]	Half-Height	1.12	1.18	0.00
2 GB DDS Tape	C2477S	Half-Height	0.58	0.90	0.00
CD-ROM	A3086A	Half-Height	0.40	0.79	0.00

[1]Note: This product is not orderable until March 1994.

Table 2.7 Series 9x8LX/RX Current Budgeting Worksheet

	Selection	Position	Current (Amps) Required		
			+12V	+5V	–12V
Memory SIMMs		0A			
		0B			
		1A			
		1B			
		2A			
		2B			
		3A			
		3B			
I/O Cards		11			
		12			
		9 (RX only)			
		10 (RX only)			
Internal	DDS tape (standard)	1			
Peripherals	Optional DDS tape or CD-ROM	2			
	Half-height disk (standard)	3			
	Optional half-height disk	4			
Total Current Used Per Voltage					
Total Current Available[1]			6.45	16.34	1.54

[1]The total current shown per voltage already contains a 5% margin over the maximum current available.

HP PowerTrust UPS Monitor/iX for the management of HP PowerTrust UPSs on the HP 3000 Series 9x8LX/RX systems. The HP PowerTrust UPS Monitor/iX detects all incoming AC power failures on the HP 3000 Series 9x8LX/RX system and reports all HP PowerTrust UPS power failure events to the HP 3000 system logs and to the system operator (HP PowerTrust UPS Monitor/iX does not manage "non-HP PowerTrust UPSs"). The HP PowerTrust UPS Monitor/iX maintains communication with the HP PowerTrust UPS via an RS-232 connection to the Series 9x8LX/RX processor card. If all components of the HP 3000 Series 9x8LX/RX system are power protected, then normal operation and/or system shutdown can be accomplished during the 15 minutes of power protection.

NOTE: The 600 VA HP PowerTrust UPS cannot be rack-mounted in the 1.1-m or the 1.6-m cabinets.

Power Protection

The HP 3000 Series 9x8LX/RX system comes standard with one deskside 600 VA HP PowerTrust Uninterruptible Power Supply (UPS), product A2941AZ. The UPS provides power protection to the SPU cabinet which includes the CPU board, all internal peripherals, memory, and the system console. The HP PowerTrust UPS provides up to 15 minutes of uninterrupted power after normal AC power has been interrupted for the HP 3000 Series 9x8LX/RX systems. This is similar to the battery backup unit on other HP 3000 systems. The HP PowerTrust UPS will work properly with the HP 3000 Series 9x8LX/RX systems and MPE/iX Release 4.0; however, MPE/iX Release 5.0 adds the

9x8LX/RX Configuration Worksheet

Table 2.8 will help in configuring a basic HP 3000 Series 9x8LX/RX system. Use it as a guideline, but note that particular customer needs (performance, etc.) may dictate different configuration choices.

STEP 1—Select a system

Select the HP 3000 that best fits the customer's performance and user needs.

STEP 2—Determine memory requirements

Memory requirements will vary depending on the specific applications running on the system. If there is not information available on the memory requirements of the customer's applications, the following rule of thumb may be used:

> Memory = 16 MB + Application Requirements + (0.5 to 1.0 MB × number of concurrent users)

1 MB per user should be used at the low end of the Series 9x8LX/RX family.

The memory sizing algorithm above was designed for systems configured with relatively more memory than our current low-end

Table 2.8

Product Number	Description*	Chassis I/O Model Number		Standard Memory	User License
		2-Slot	4-Slot		
A3096AW	Series 918	918LX	918RX	32 MB	8, 20, 32, 40, 64, 100
A2934AW	Series 928	928LX	928RX	32 MB	64, 100, 160, 256, UL
A2933AW	Series 968	968LX	968RX	64 MB	100, 160, 256, UL
A3129AW	Series 978	978LX	978RX	64 MB	100, 160, 256, UL

* All systems include 2.0 Gbytes DDS format tape drive, 1.0 Gbyte SCSI disk, standard memory, user license, and a choice of MPE/iX FOS, IMAGE/SQL, and/or ALLBASE/SQL.

systems (918LX/RX and 928LX/RX). The benchmark is still a good measurement for configuring these workloads. It is in "other" environments that the memory guidelines should be viewed critically. Systems with small amounts of memory (standard 918LX/RX and 928LX/RX configurations) are very susceptible to memory shortages caused by quick changes in workload demands. These "other" environments are:

- OLTP mixed with batch
- Application development
- Heavy serial/batch-like access of data
- Heterogeneous workloads

For these "other" environments, performance can be improved by ordering an additional 32 or 64 Mbytes of memory.

The maximum supported memory is 512 Mbytes for all Series 9x8LX/RX systems. When ordering the

initial system, consideration should be given to the maximum memory one might want to eventually order. For systems which may eventually add more memory, optional base memory modules of 64 (two 32 MB SIMMs) and 128 MB (two 64 MB SIMMs) are offered which maximize the number of memory slots left for future memory upgrades. Refer to **Table 2.3**, "Series 9x8LX/RX Maximum Memory," for further information.

STEP 3—Determine disk storage needs

Disk requirements will vary with the number of active users and the nature of the customer's application. As a general rule of thumb the following formula can be used:

Disk Storage = 500 Mbytes[1]
+ (5 Mbytes × Number of Concurrent Users) + ((Application Requirements × .25)[2] + Application Requirements) + 200 Mbytes[3]

[1] 500 MB = SLT and FOS or 930 MB = SLT, FOS, and full subsys
[2] User files—For growth and dynamic space requirements. It is suggested that 25% of the application requirement be set aside for future growth.
[3] 200 MB free space should be reserved for future installation of power patch tapes.

For disk storage beyond what is supported internal to the system package, external disks will need to be ordered as standalone products.

Enter the number of internal
SCSI disks required   ————

Enter the number of external
SCSI disks required   ————

Enter the number of external
HP-FL disks required   ————

STEP 4—Choose a tape backup solution

Every Series 9x8LX/RX system comes standard with a 2.0 GB DDS format tape drive. A second internal DDS tape drive can be ordered along with external DDS

Table 2.9 Determine Disk Storage Needs

System	Standard Disk (SCSI)	Maximum Internal Disk (SCSI only)	Maximum External Disk
9x8LX	1.0 GB	4.0 GB	76 GB (using HP-FL)
9x8RX	1.0 GB	4.0 GB	140 GB (using HP-FL)

tape drives or other backup devices. See Chapter 6 of the July 1993 HP 3000 900 Series Computer Systems Configuration Guide (P/N 5091-7438E) for more detailed information on back-up solutions.

Enter the number of SCSI DDS drives
required (including internal)   ————

STEP 5—Select a printer

SCSI, HP-IB and serial printers are supported on the 9x8LX/RX systems. Consult Chapter 6 of the July 1993 HP 3000 900 Series Computer Systems Configuration Guide (P/N 5091-7438E) for supported printers.

Note that HP-IB system printers require a PBA-IB card (A1747A) which uses two HP-PB slots (Series 9x8LX systems have only two slots). Consequently, having an HP-IB printer may require the purchase of a Series 9x8RX system with its expanded number of slots.

Record the number of SCSI
printers required   ————

Record the number of serial
printers required   ————

Record the number of
HP-IB printers required   ————

STEP 6—Network link products

For MPE/iX systems, NS 3000 Point-to-point and IBM (SNA, BSC) communications require a PSI card. A second 802.3 LAN card and a 802.5 Token Ring LAN card may also be added.

Record the number of PSI cards
required (1 HP-PB slot each)   ————

Record if a second 802.3 LAN card
is required (1 HP-PB slot)   ————

Record if a 802.5 Token Ring LAN
card is required (1 HP-PB slot)   ————

STEP 7—I/O interface cards

I/O interface cards allow the system to communicate with peripheral devices. The number of cards required depends on the number and type of peripheral devices that will be connected to the system. Use the configuration rules in Chapter 5 of the July 1993 HP 3000 900 Series Computer Systems Configuration Guide (P/N 5091-7438E) to determine the number of SCSI, PB-FL, and PBA-IB (HP-IB) interfaces required. Also use the "Series 9x8LX/RX Current Budgeting Worksheet" (**Table 2.7**) earlier in this chapter to identify card current consumption limitations.

To verify that the number of cards required does not exceed the capacity of the system package enter the quantity of each type of interface card required in the worksheet shown in **Table 2.10**.

STEP 8—Terminal connect (DTC16, DTC16iX, DTC16MX, and DTC72MX)

DTCs are used to connect Series 9x8LX/RX systems to local terminals, remote terminals (via modems), serial printers, and provide access to X.25 and ARPA networks. The number of DTCs required will depend on the number of ports needed to connect users, printers, etc. and the mode of network distribution.

Table 2.11 illustrates the recommended solution for various port configurations. For further detail on DTC16, DTC16iX, DTC16MX, or DTC72MX or information on X.25 or Telnet connections, consult Chapter 7 of the July 1993 HP 3000 900 Series Computer Systems Configuration Guide (P/N 5091-7438E).

STEP 9—LAN cabling

A 2-meter 802.3 LAN cable is included with each Series 9x8LX/RX system for attaching the DTC. Distributed DTC configurations will need longer cables which can be ordered from HP.

Table 2.10

I/O Interface Cards	Quantity		Slots Required		Number of Slots Used
Enter number of additional SCSI interfaces (not including integrated SCSI on MFIO)	_____	×	1	=	_____
Enter number of PB-FL (HP-FL) interfaces	_____	×	2	=	_____
Enter number of PBA-IB (HP-IB) interfaces	_____	×	2	=	_____
Enter number of additional network link cards (from step 6)	_____	×	1	=	_____
Total slots required (9x8LX maximum = 2) (9x8RX maximum = 4)				=	_____

Table 2.11

	Number of DTC Ports Required	
	1-32	> than 32
9x8LX/RX		
– Unracked	2340A, J2062A, J2063A	J2070A
– Racked*	A1883A, A1884A, J2062AZ, or J2063AZ	A1883A/A1884A and J2070AZ

* Provides a factory integrated solution with SPU and external disks racked in a 1.1 or a 1.6 meter cabinet. See discussion on "Factory Integrated Expansion Cabinets" for more details on these integrated solutions.

STEP 10—Console

Each Series 9x8LX/RX system is supplied with one 700/96 terminal as the system console. All necessary console attachment hardware is included.

Step 11—System support options

Systems support options offer basic hardware and software for systems, peripherals, and stand-alone software applications. Consult Chapter 9 of the July 1993 HP 3000 900 Series Computer Systems Configuration Guide (P/N 5091-7438E) for a description of support options.

Cabinets

Product Overview

Two cabinets are available for racking HP 3000 Series 9x7LX/RX/SX and 9x8LX/RX systems as well as associated peripherals and DTCs. Both a 1.1 meter cabinet, providing 21 EIA units (1 EIA unit = 1.75 in.) of usable rack height, and a 1.6 meter cabinet, with 32 EIA units of rack space, are available.

How to Order Cabinets and Peripherals

Cabinets may be ordered as a total integrated solution assembled at the factory or as standalone products where the system and peripherals are rack mounted in the cabinet at the customer site.

Supported Racked Components

The Series 9x7LX/RX/SX and 9x8LX/RX cabinets support a variety of HP 3000 9x7LX/RX/SX and 9x8LX/RX SPUs, disk drives, tape drives, and DTCs. Combinations of supported products are limited only by space inside the cabinet and the 16-amp maximum limit. Factory Integrated Cabinets have been structured so that all orderable configurations will not exceed the 16-amp maximum current limit. When configuring cabinets to be installed in the field, the configuration should be checked to ensure it does not exceed the 16-amp maximum current limit.

Table 2.12 Cabinet Overview

Product Number	Factory Integrated	Racking Space Available (EIA units)	Power Distribution	Maximum Current	Height	Width	Depth
C2785A	No	21	100–120V/200–240V	16A	1.1 m	.48 m	.9 m
A1883A	Yes	21	100–120V/200–240V	16A	1.1 m	.48 m	.9 m
C2786A	No	32	100–120V/200–240V	16A	1.6 m	.48 m	.9 m
A1884A	Yes	32	200–240V	16A	1.6 m	.48 m	.9 m

Integrated System Solution (A1883A and A1884A)

To ease ordering and speed installation, integrated cabinet products are the preferred choice for customers desiring a racked system solution. These products contain options for disk storage and DTCs. When the system and racking options are ordered together, the entire system (including SPU package, disk, and DTC) will be pre-installed in the cabinet prior to shipment from the factory.

Customers desiring to have peripheral only configurations (DTC72MX, disk) can use these products to meet their racking needs as well. Add-on DTC72MX, Series 6000 Multi-Mechanism products, and 7980S/7980SX tape drives not in the Integrated Cabinet product structure will need to be installed at the customer site. *Refer to Table 2.13 for the necessary hardware to rack these components.*

NOTE: Customers requiring DTC configurations not provided by the Integrated Cabinet product can order a stand-alone DTC with the appropriate rack mount kit.

Use the Factory-Integrated Cabinet selection worksheet (**Table 2.14**) to choose the cabinet that best meets the customer's needs. Fill in the desired quantities of each component to determine the appropriate cabinet product for the configuration. Filler panels to cover unused space will be installed automatically at the factory and do not need to be ordered for the integrated cabinet products.

NOTE: HP-FL disk arrays with suffix "HZ" and "BZ" are only available in the 1.6 meter factory integrated cabinet. They are not available in the 1.1 meter factory integrated cabinet.

Refer to the factory integrated cabinet selection worksheet (Table 2.14) for a list of supported peripherals.

Table 2.13 Components Supported in the 1.1 and 1.6 Meter Cabinets

				Current Consumption (VAC)	
Product Number[7]	Description	EIA Units	Required Mounting Hardware	120	208–240
	Series 9x7LX	6	C2797A for standalone rack C2797AZ for factory installed rack	6.5 A	3.5 A
	Series 9x7RX/SX	10	C2798A for standalone rack C2798AZ for factory installed rack	12 A	6 A
	Series 9x8LX/RX	6	A2962A for standalone rack A2962AZ for factory installed rack	6.5 A	3.5 A

Tape Drives[1] (supported in 1.1 and 1.6 meter cabinet)

7979A	1/2-inch tape drive (HP-IB)	5+1	Opt. 1A4 and three C2790A ballasts	2.81 A	1.46 A
7980A	1/2-inch tape drive (HP-IB)	5+1	Opt. 1A4 and three C2790A ballasts	2.81 A	1.46 A
7980S[6]	1/2-inch tape drive (SCSI)	5+1	Opt. 1A4 and three C2790A ballasts	2.81 A	1.46 A
7980XC	1/2-inch tape drive (HP-IB)	5+1	Opt. 1A4 and three C2790A ballasts	2.81 A	1.46 A
7980SX[6]	1/2-inch tape drive (SCSI)	5+1	Opt. 1A4 and three C2790A ballasts	2.81 A	1.46 A

Series 6000 SCSI Multi-Mechanism Package[2] (supported in 1.1 and 1.6 meter cabinet)

C3022R	1 GB disk	4	Included	3.0 A	1.8 A
C3023R/RZ	One 2 GB 5 1/4-inch SCSI disk	4	Included	3.0 A	1.8 A
C3024R/RZ	Two 2 GB 5 1/4-inch SCSI disks	4	Included	3.0 A	1.8 A
C3025R/RZ	Three 2 GB 5 1/4-inch SCSI disks	4	Included	3.0 A	1.8 A
C3040R/RZ	One 2 GB 3 1/2-inch SCSI disk[9]	4	Included	1.08 A	0.7 A
C3041R/RZ	Two 2 GB 3 1/2-inch SCSI disks[9]	4	Included	1.52 A	0.94 A
C3042R/RZ	Three 2 GB 3 1/2-inch SCSI disks[9]	4	Included	1.96 A	1.18 A
C2464R	One 2 GB DDS	4	Included	2.6 A	1.5 A
C2465R	Two 2 GB DDS	4	Included	2.6 A	1.5 A
C2466R	Up to 8 GB DDS—DC	4	Included	2.6 A	1.5 A
C3560U	600 MB CD-ROM drive	4	Included		

HP-FL Disk Array[3, 4] (supported in 1.6 meter cabinet)

C2252HA/HZ	2.72 GB high avail disk array	6	Included	4.0 A	2.0 A
C2254HA/HZ	5.44 GB high avail disk array	6	Included	4.0 A	2.0 A
C2252B/BZ	2.72 GB disk array with 2 disks	6	Included	4.0 A	2.0 A
C2254B/BZ	5.44 GB disk array with 4 disks	6	Included	4.0 A	2.0 A
C2258HA/HZ[6]	4.0 GB high avail disk array	6	Included	4.0 A	2.0 A
C2259HA/HZ[6]	8.0 GB high avail disk array	6	Included	4.0 A	2.0 A
C2258B/BZ[6]	4.0 GB disk array with two disks	6	Included	4.0 A	2.0 A
C2259B/BZ[6]	8.0 GB disk array with four disks	6	Included	4.0 A	2.0 A

Data Terminal Connects

2340A	DTC16	6	35199E	2 A	1 A
J2062A(Z)	DTC16iX	1	E3664A[8]	0.5 A	0.25 A
J2063A(Z)	DTC16MX	1	Opt. 1AC (standalone)[8]	0.5 A	0.25 A
J2070A(Z)	DTC72MX	3–10	Opt. 1AC (standalone)[8]	1.8 A	0.9 A

Filler Panels

Package of six one-EIA-unit filler panels[5]

[1] Three anti-tip ballasts (C2790A) are required for one or more 1/2-inch tape drive mechanism. 1/2-inch tape drives require five EIA units for the mechanism, plus one EIA unit for access to the tape drive handle for a total of six EIA units.

[2] All new disks require option 002 for HP 3000 to ensure correct firmware and option 0DG for field service installation.

[3] If HP-FL disk is the bottom-most racked deviced in the cabinet, add two EIA space units. This will allow ample space for cables coming into the bottom of the cabinet.

[4] HP-FL disk arrays with suffix HZ and BZ (denote factory integrated) are **not** available in the 1.1 meter factory integrated cabinet.

[5] Use this only when ordering separate from rack. Use option 1F9 with rack.

[6] Available on 4.0 plus patches.

[7] Suffixes RZ, HZ, BZ, and AZ denote racking performed in a factory integrated cabinet at the factory. Suffixes A, S, XC, SX, R, HA, and B denote racking performed in a standalone cabinet at the customer site by a CE.

[8] Customers must order E3664A rail kit to rack J2062A in 1.1 and 1.6 meter racks. J2063A and J2070A option 1AC includes rail kit.

[9] Not orderable until March 1994.

Field-installed Cabinets

Standalone expansion cabinets are also available for customers who decide to order all peripherals separately. Care must be exercised when configuring these cabinets to ensure that all appropriate cabinet components (filler panels, peripheral mounting kits, cables, etc.) are ordered to successfully rack the system, and that the configuration does not exceed the 16-amp current limit of the cabinet. Refer to **Table 2.13** for supported racked components. Component racking for these cabinets is performed at the customer site by a Customer Engineer. Refer to **Table 2.17**, the Standalone Expansion Cabinet Configuration Worksheet, for a list of supported components, along with their EIA space units.

For each of the components that need to be racked, the appropriate racking hardware must be ordered. Order filler panels to cover unused cabinet space. See **Table 2.17** for product numbers.

Rack Mounting Information

Standalone Cabinet Racking Configuration Worksheet
Use the racking configuration worksheet (**Table 2.17**) to determine supportability of the proposed peripheral configuration. Use the worksheet as follows:

1. After entering the proposed configuration in the quantity column, multiply the quantity entered for each peripheral and card cage by the EIA number given for each component.

Table 2.15 Product Structure

Product/Option	Description
C2785A	**1.1 meter cabinet (21 EIA units)**
Opt. AW3	100–120V with U.S. power cord
Opt. AW5	200–240V with European power cord
Opt. AW4	Substitute 200–240V for U.S.
C2791A	Add six 1-unit filler panels
E4464A	Front door (can be locked for security purposes)
C2786A	**1.6 meter cabinet (32 EIA units)**
Opt. AW4	200–240V with U.S. power cord
Opt. AW5	200–240V with European power cord
Opt. AW3	100–120V with U.S. power cord
C2791A	Add six 1-unit filler panels
E4465A	Front door (can be locked for security purposes)

Table 2.16 Maximum SCSI Cable Lengths

Where	Cable Length
Inside SPU	
Series 9x7LX, Series 9x8LX/RX	1.5 meters
Series 9x7RX/SX	3.0 meters
Inside Series 6000 Multi-Mechanism Package	
Mini Tower	1.3 meters
Rackmount	1.75 meters*
Between the Series 9x8LX/RX and 9x7LX/RX/SX SPU and the first peripheral	1 or 1.5 meters

* See chapter 6 of the July 1993 HP 3000 900 Series Computer Systems Configuration Guide (P/N 5091-7438E) for further discussion on mini-tower and rackmount for Series 9x7LX, 9x7RX, and 9x7SX systems.

2. Sum all the components to ensure that the total EIA units are less than or equal to 32 for the 1.6 meter cabinet. If using the 1.1 meter cabinet, sum all the components to ensure that the total EIA units are less than or equal to 21.

3. Sum the current requirements of all components to ensure the 16-amp current limit is not exceeded. Refer to **Table 2.13** for a list of components supported and their current consumption.

The standalone expansion cabinet racking configuration worksheet (**Table 2.14**) illustrates the standalone cabinet products.

Maximum Cable Length
The maximum combined length of single ended SCSI cable is six meters. The maximum length applies to cables that interconnect each daisy-chained device and the cable lengths that are internal to each device.

The total cable length is the sum of the length of all SCSI cables (see **Table 2.16**).

Table 2.17 Standalone Expansion Cabinet Racking Configuration Worksheet

Component	Quantity	EIA Units	Vertical Space Required (EIA Units)
I. C2786A 1.6 meter racking cabinet. The C2785A 1.1 meter racking cabinet is not available for the CS 995 and CS 991 systems. Filler panels to cover unused space must be ordered separately.			

Power Cords:

AW3—Adds U.S. 100V–120V power cord
AW4—Adds U.S. 200V–240V power cord
AW5—Adds European 200V–240V power cord

Disk Products:

Component	Quantity	EIA Units	Vertical Space Required (EIA Units)
C3022R[3]—Adds 1.0 GB SCSI disk	_____	× 4	= _____
C3023R[3]—Adds 2.0 GB 5 1/4-inch SCSI disk	_____	× 4	= _____
C3024R[3]—Adds two 2.0 GB 5 1/4-inch SCSI disks	_____	× 4	= _____
C3025R[3]—Adds three 2.0 GB 5 1/4-inch SCSI disks	_____	× 4	= _____
C3040R[5, 6]—Adds 2.0 GB 3 1/2-inch SCSI disk	_____	× 4	= _____
C3041R[5, 6]—Adds two 2.0 GB 3 1/2-inch SCSI disks	_____	× 4	= _____
C3042R[5, 6]—Adds three 2.0 GB 3 1/2-inch SCSI disks	_____	× 4	= _____
C3560U—Adds 600 MB CD-ROM	_____	× 4	= _____
C2464R—Adds 2.0 GB DDS	_____	× 4	= _____
C2465R—Adds two 2.0 GB DDS	_____	× 4	= _____
C2466R—Adds up to 8 GB DDS	_____	× 4	= _____
C2252HA/B—Adds 2.7 GB HP-FL array	_____	× 6	= _____
C2254HA/B—Adds 5.4 GB HP-FL array	_____	× 6	= _____
C2258HA/B—Adds 4.0 GB HP-FL array[4]	_____	× 6	= _____
C2259HA/B—Adds 8.0 GB HP-FL array[4]	_____	× 6	= _____

Add two EIA unit panels if HP-FL disk is the bottom-most racked device in cabinet.
(Allows room for cables.) Racking hardware for ALL disks is included.

Tape Drives:[1]

Component	Quantity	EIA Units	Vertical Space Required (EIA Units)
7980A—Adds 1/2-inch HP-IB tape drive	_____	× 6	= _____
7980S[5]—Adds 1/2-inch SCSI tape drive	_____	× 6	= _____
7980XC—Adds 1/2-inch HP-IB tape drive data compression	_____	× 6	= _____
7980SX[5]—Adds 1/2-inch SCSI tape drive data compression	_____	× 6	= _____
Racking hardware for ALL 7980/7980XC tapes is 1A4.			
4280[2]—1/2-inch cartridge tape drive with stacker (racking hardware for 4280 is included)	_____	× 6	= _____

DTC Products:

Component	Quantity	EIA Units	Vertical Space Required (EIA Units)
J2070A—Add DTC72MX	_____	× 3	= _____
Option 001—Configure DTC72MX with 24 direct ports	_____	× 1	= _____
Option 002—Configure DTC72MX with 48 direct ports	_____	× 2	= _____
Option 003—Configure DTC72MX with 72 direct ports	_____	× 3	= _____
Option UG4—Configure DTC72MX with 24 RS-423 direct ports			

Option UG5—Replace eight RJ-45 direct ports with eight DB-25 modem ports on 1 modem distribution panel (MDP). Must order option 001, 002, or 003.

(Continued)

Table 2.17 Standalone Expansion Cabinet Racking Configuration Worksheet (cont'd)

Component	Quantity	EIA Units	Vertical Space Required (EIA Units)
Option UG6—Replace 24 RJ-45 local ports with 24 DB-25 modem ports, on 3 modem distribution panels (MDPs). Must order option 001, 002, or 003, such that the number of total ports is at least equal to the number of modem ports ordered.			
To mount in a 1.1 or 1.6 meter expansion cabinet, order a modem distribution panel (MDP) rack mounting hardware kit:			
C2792A for rear mounting **or**	_____ ×	6 =	_____
J2084A for front mounting for up to 5 MDPs **or**	_____ ×	7 =	_____
J2087A for front/rear mounting for up to 10 MDPs	_____ ×	7 =	_____

For example, to configure 42 modem ports and 19 direct ports, order:
One option 003 (provides 72 local ports), two option UG6 (provides 48 modem ports on six MDPs), one J2087A (provides racking for up to ten MDPs)

Option 1CW—Add X.25 card with RS-232 interface
Option 1CX—Add X.25 card with V.35 interface
Option 004—Add Telnet Access Card

NOTE: The DTC72MX is available with three open slots.
Option 001 consumes one slot, option 002 consumes two, and option 003 consumes all three.
Options 1CW, 1CX, and 004 each take one slot. The maximum number of X.25 cards per DTC72MX is three. One Telnet Access Card is allowed per DTC72MX. Requires MPE 4.0 software update; may order P/N B3780AA.

II. Filler Panels

C2791A—Adds six 1 EIA unit filler panels
A40101A–A40107A—Adds up to 7 filler panels
Racking hardware for DDS is included.

III. Total EIA units = _____

If line III is less than or equal to 21, order cabinet C2785A with appropriate power, disk, backup devices, and DTC options. If HP-FL disks are ordered, must order C2786A—1.6 meter cabinet. HP-FL disks are not supported in the 1.1 meter factory integrated cabinet.

If line III is less than or equal to 32, order cabinet C2786A with appropriate disk, backup devices, and DTC options.

If line III is greater than 32, more than one cabinet is required.

---

[1] Three anti-tip ballasts (C2790A) are required for one or more 1/2-inch tape drive mechanisms.
[2] Stacker requires ten-inch clearance above and below tape drive; therefore devices racked above or below the 4280 must not have front panel accessibility.
[3] All new disks require option 002 for HP 3000 to ensure correct firmware and option 0DG for field service installation.
[4] Must order MPE/iX 4.0 patch for the C2258/59 disk arrays. This patch can be obtained through Powerpatch or by ordering C3300A.
[5] Available on 4.0 plus patches.
[6] Not orderable until March 1994.

Figure 2.7 Factory Integrated Cabinet Ordering Example—1.1 Meter Cabinet (A1883A)

Example 1:
Series 928LX with 3 Gbyte disk, 96 ports

Series 928LX

DTC72MXs

Direct Distribution panels
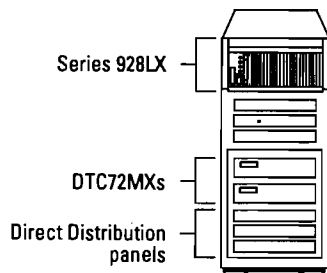
Quantity	Part Number	Description
1	A2934AW	Series 928 SPU with 1.0 GB disk
1	A2948AZ #0DT	Replace standard memory with 64 MB memory
1	A3089A #UBD	100 user license
1	A2960AW	928LX (2 single-high I/O slots)
1	A2962AZ	Add racking hardware
1	A1883A	1.1 meter cabinet
1	A3087A #0DZ	Add one 2.0 GB disk (integrated in 928LX)
2	J2070AZ #002	48 port DTC72MX

Example 2:
Peripherals only -- 4 Gbyte disk, 96 ports

2.0 Gbyte disk

2.0 Gbyte disk

DTC72MXs

Direct Distribution panels
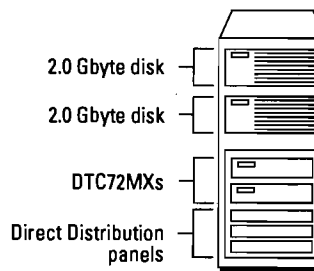
Quantity	Part Number	Description
1	A1883A	1.1 meter cabinet
2	C3040RZ	2.0 GB disk
2	J2070AZ #002	48 port DTC72MX

Figure 2.8 Factory Integrated Cabinet Ordering Example——1.6 Meter Cabinet (A1887A)

Example 3:
Series 968RX with 4 Gbyte disk, 216 ports

Series 968RX

DTC72MXs

Direct Distribution panels
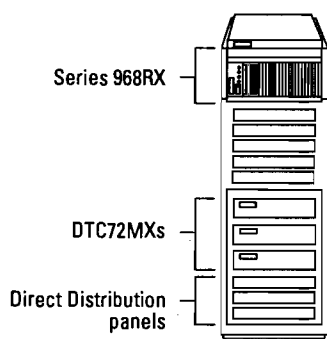
Quantity	Part Number	Description
1	A2933AW	Series 968 SPU with 64 MB memory
1	A2948AZ #0DS	64 MB memory
1	A3087A #0DU	Replace standard with 2.0 GB disk
1	A3092A #UAD	256 user license
1	A2936AW	968RX (4 single-high I/O slots)
1	A2962AZ	Add racking hardware
1	A1884A	1.6 meter cabinet
1	A2490A #0DZ	Add one 2.0 GB disk
3	J2070AZ #003	72 port DTC72MX

Example 4:
Peripherals only -- 12 Gbyte disk, 216 ports

Two 2.0 Gbyte disks

Two 2.0 Gbyte disks

Two 2.0 Gbyte disks

DTC72MXs

Direct Distribution panels
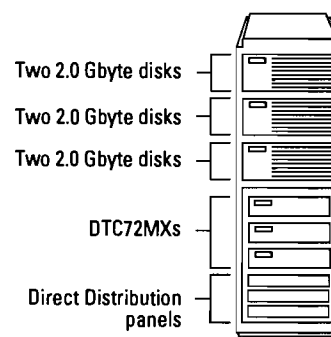
Quantity	Part Number	Description
1	A1884A	1.6 meter cabinet
3	C3044RZ	Two 2.0 GB disks
3	J2070AZ #003	72 port DTC72MXs

MPE/iX Learning Products

Table 2.18 outlines which manual sets are shipped with each 900 Series system. Additional sets may be ordered by using the corresponding product number in the table.

HP 3000 Series 9x8LX/RX Field Upgrades

Refer to the HP 3000 900 Series Computer Systems Ordering and/or Price Guides for ordering information. All 9x8LX/RX field upgrades are in a menu product structure. Therefore, in order to upgrade the chassis, you need to order both the menu product number as well as the chassis upgrade product number with the appropriate option. Similarly, to upgrade the processor along with the base user license, you must order the menu product number as well as the appropriate user license product number with the right option.

Table 2.18 9x8LX/RX System Manuals

Manual Set (order number)	918LX 928LX 968LX 978LX	918RX 928RX 968RX 978RX
Series 9x8LX System Core (B3183AA)	X	
System Management Core (36367A)		X

Table 2.19 HP 3000 Series 9x8 Field Upgrades At-a-Glance

Summary of I/O and/or processor upgrades supported.

From/To	918LX	928LX	968LX	978LX	918RX	928RX	968RX	978RX
918LX		X	X		X	X	X	
928LX			X	X		X	X	X
968LX				X			X	X
978LX								X
918RX						X	X	X
928RX							X	X
968RX								X

Section 3.
Customer Support Services

HP System Support Options

How to Order Support for the Series 900

New **Simplified Support Pricing: One Price Per Server Regardless of the System's Integrated Peripheral Configuration (excluding terminals and rackmounts)**
NOTE: Specific implementation of HP System Support Options varies from country to country. Consult with your country support manager for applicable details.

Hewlett-Packard offers a 1-year repair warranty with 72-hour on-site response time for hardware products. At the same time, the HP System Support Options program supplements the warranty with improved hardware on-site repair response time and by adding software support.

The HP System Support Options Program offers customers hardware and software maintenance and installation support, upfront at time of product purchase, as standard product options for HP systems, integrated, standalone peripherals, and standalone software applications during the first year of system ownership.

Tailor-Made for Selling
HP System Support Options fit your ordering process. If you order HP products, you already know how to order support options. Key program features include:

- Quoted and ordered as a product option
- One option gives you recommended hardware/software support
- CPL price represents total cost for first year of hardware/software support
- Options are also available for installation and network configuration

HP System Support Option Choices
Each support option represents a combination of hardware and software support for an HP product or an installation service. **Table 3.1** illustrates the deliverables of each support option.

Table 3.1

For on-going contractual support after the first year, talk to your HP Support Representative about System Support solutions which can be tailored to meet the customer's individual support needs.

Personalized System Support
Customers who purchase System Support Options 0S2, 0S3 or 0S6 can upgrade their support to Personalized System Support (P/N H5682A).

Personalized System Support provides:

- An assigned System Support engineer
- An assigned HP Response Center engineer
- Patch management assistance
- Scheduled operational reviews
- System release planning seminars
- Installation of software updates

Less Urgent	Urgent	Highly Critical
Option 0S0 – License to use software updates – Updates* – Electronic access – Next day on-site response, M–F	**Option 0S1** – License to use software updates – Updates* – Electronic access – 4-hour on-site response, M–F	**Option 0S5** – License to use software updates – Updates* – Electronic access – 24 × 7 4-hour on-site response
Option 0S2 – "Phone-in" software assistance – License to use software updates – Updates* – Electronic access – Next day on-site response, M–F	**Option 0S3** – "Phone-in" software assistance – License to use software updates – Updates* – Electronic access – 4-hour on-site response, M–F	**Option 0S6** – "Phone-in" software assistance – License to use software updates – Updates* – Electronic access – 24 × 7 4-hour on-site response

*Includes one copy of media and documentation updates for each media and documentation product ordered.

Option 0S4
– Installation and network configuration for product warranties that do not include installation.

Option 0SZ
– Network configuration only for product warranties that include installation.

Selecting the Appropriate Option

HP System Support Options are available for systems, integrated and standalone peripherals, and standalone software.

Systems

Now the HP System Support Option price on the chassis covers the complete integrated system regardless of configuration. The HP System Support Option on the SPU covers system software. To select the appropriate option, follow these steps:

1. Select the customer's hardware, software and peripherals.

2. Determine the customer's desired response time for hardware repairs (next-day, 4-hour or 24 × 7).

3. Determine whether the customer has a Response Center Software Assistance caller set up who will be calling for support of the system being purchased.

If NO, select Opt. 0S2, 0S3, or 0S6.

If YES, select Opt. 0S0, 0S1, or 0S5.

Integrated Peripherals*

The HP System Support Option prices have been reduced to $0 for peripherals that are integrated with the chassis. Their support prices have now been rolled in with the System Support Option price for the chassis.

*Note: All integrated peripherals on a given system must use the same HP System Support Options.

Table 3.2

Feature	Delivery Specifications		
Warranty upgrade	Support services are added to the product warranty to provide either next-day, 4-hour or 24 × 7 on-site response for hardware problems.		

	Next Day	4 Hour	24 × 7
Coverage Hours	8 am–5 pm Mon–Fri	8 am–9 pm* Mon–Fri	24 hours 7 days per week
Response Time	Next day	Best response; not to exceed 4 hours	Best response; not to exceed 4 hours

*If service is requested before 5:00 pm, an HP engineer will respond on-site within 4 hours, if an on-site call is necessary.

Feature	Delivery Specifications
On-site repair	An HP engineer travels to the customer site and provides all labor, parts and materials necessary to maintain hardware products in good operating condition. Product malfunctions and failures are diagnosed and corrected.
Telephone support (software assistance)	Unlimited, toll free access to the HP Response Center is provided for authorized callers. Response is immediate for critical calls and within 2 hours for all calls.
License to use software updates	Customer can use and copy updates to HP software on each system covered by HP System Support Options.
Updates	As HP releases updates to HP software, the latest revisions of the software and reference manuals are made available to the system manager. HP provides one copy of media and documentation updates for each media and documentation product ordered with HP System Support Options.
Electronic access	HP SupportLine provides electronic access to a database of current product and support information. Includes new product information, software status bulletins, engineering and application notes, etc. HP SupportLine can also be used to submit Response Center calls.
Installation/network configuration	Option 0S4 provides installation and network configuration for products whose purchase price does not include installation. Option 0SZ provides network configuration for products whose purchase price includes installation.

However, you still must select the option that provides the desired response time for repairs (next-day, 4-hour, or 24 × 7) for each of the integrated peripherals. In general, select the same option as you chose for the system with which the peripheral will be used.

Standalone Peripherals

Standalone peripherals (e.g. printers and end-user terminals) carry their own System Support Option price separate from the chassis support price. However, the selection procedure for the System Support Options is the same as for Integrated Peripherals.

Standalone Software Applications

For standalone software applications, select options as follows:

Select Option 0S2, 0S3 or 0S6 for the first copy of the application.

Select Option 0S0, 0S1 or 0S5 for additional copies.

Selecting the Right Support for Your Customer

Determine the Customer's business environment needs.

| Mission-critical individualized attention? Choose Premier Account Support | Urgent individualized attention? Choose Personalized System Support | Traditional maintenance for network, software, hardware needs? |

Choose response time for network or hardware on-site maintenance.

Choose the appropriate level of software support
(e.g., is software phone-in assistance required?)

Select the applicable upfront System Support option for getting the system up and running:

| Installation and Network Configuration | Network Configuration only |
| **OPT OS4** | **OPT OSZ** |

Select the applicable upfront System Support option for upgraded warranty support:

Less Critical	**Urgent**	**Highly Critical**
• Next Day on-site hardware support	• Same Day on-site hardware support	• 7 Day × 24 hour, 4-hour response hardware support
• Software License/ updates/electronic access	• Software License/ updates/electronic access	• Software License/ updates/electronic access
OPT OS0	**OPT OS1**	**OPT OS5**
or	or	or
Same as above but with	Same as above but with	Same as above but with
• Software phone-in assistance	• Software phone-in assistance	• Software phone-in assistance
OPT OS2	**OPT OS3**	**OPT OS6**

Select the applicable upfront System Support option for standalone peripherals.
Typically this is the same option as you choose for the system.

Select the applicable upfront System Support option for standalone software applications.
(Must be the same level throughout the system.)

| First copy Software Support | Additional copies Software Support |
| **OPT OS2, OS3, OS6** | **OPT OS0, OS1, OS5** |

Section 4.
How to Order the 9x8LX/RX
Business Systems

The HP 3000 Series 9x8LX/RX systems can be ordered via menus based on user license and processor performance. These menus are constructed using a structured solution bundle (SSP) as the main product number with system components included within the bundle as separate products. The benefit to you will be reflected in future niche-specific product offerings as well as a quicker integration of new technologies within existing product bundles. Following are menus for the Series 9x8LX/RX.

Product Description	Product #	Opt#	Price

HP 3000 Series 918LX/RX
 SPU consists of:
 — Integrated chassis
 — One Multi-function I/O card containing:
     – One SCSI interface for up to seven devices, two RS-232-C ports for console and remote support,
       802.3 LAN connection, integrated ThinLAN transceiver and AUI port, and 802.3 LAN cable (2 meters)
 — One blank 90 meter DDS cartridge tape and one DDS cleaning tape
 — System documentation
 — Pre-installation of memory, disks, back-up devices, and I/O cards
 — Standard memory (32 MB), standard disk (1 GB), standard DDS tape drive (2 GB), standard floating point co-
     processor, standard HP PowerTrust UPS, standard system console, and optional add-ons are ordered below.
	A3096AW		

Must enter the following product/options as sub-items to the SSP number: A3096AW			
1. SPU, MPE/iX FOS, and Database* (Must select only 1 SPU with only 1 user license level)			
SPU with MPE/iX FOS, IMAGE/SQL, and ALLBASE/SQL			
a. 8 user license [ ]	A3123A	#UA3	
b. 20 user license [ ]	"	#0AF	
c. 32 user license [ ]	"	#UA7	
d. 40 user license [ ]	"	#UCY	
e. 64 user license [ ]		#UA9	
SPU with MPE/iX FOS and IMAGE/SQL			
f. 8 user license [ ]	A3124A	#UA3	
g. 20 user license [ ]	"	#0AF	
h. 32 user license [ ]	"	#UA7	
i. 40 user license [ ]	"	#UCY	
j. 64 user license [ ]		#UA9	
SPU with MPE/iX FOS only			
k. 8 user license [ ]	A3125A	#UA3	
l. 20 user license [ ]	"	#0AF	
m. 32 user license [ ]	"	#UA7	
n. 40 user license [ ]		#UCY	
o. 64 user license [ ]	"	#UA9	
2. Chassis* (Minimum 1, Maximum 1)			
a. **Standard** 918LX 2-slot chassis with factory integration [ ]	A3116AW		
b. 918RX — 4-slot chassis with factory integration [ ]	A3117AW		
3. MPE/iX media and documentation* (Minimum 1, Maximum 1 media product plus required options)			
a. **Standard** HP 3000 MPE/iX Media Product (FOS tape and manuals) [ ]	51453B		
Media format option (Minimum 1, Maximum 1)			
b. 1600 bpi tape media [ ]	"	#AA1	
c. 6250 bpi tape media [ ]	"	#AA2	
d. Digital Data Storage (DDS) media [ ]	"	#AAH	
Documentation language option (Minimum 1, Maximum 1)			
e. English language version [ ]	"	#ABA	
f. German language version (Europe only) [ ]	"	#ABD	
g. Delete manuals [ ]	"	#0B0	
Pre-loaded software option (Minimum 0, Maximum 1)			
h. Loaded FOS and SUBSYS on disk — When ordering 3h (#0D1), must order 3d (#AAH) [ ]	"	#0D1	
Release Option (Minimum 1, Maximum 1)			
i. MPE/iX latest platform release [ ]	"	#200	
j. MPE/iX Release 4.0 [ ]	"	#240	
Manual documentation option (Minimum 1, Maximum 1)			
k. Series 9x8LX preconfigured (MPE/iX, IMAGE/SQL and ALLBASE/SQL) [ ]	"	#812	
l. Series 9x8LX MPE/iX FOS with IMAGE/SQL [ ]	"	#912	
m. Series 9x8LX MPE/iX FOS only [ ]	"	#90Z	
n. Series 9x8RX preconfigured (MPE/iX, IMAGE/SQL and ALLBASE/SQL) [ ]	"	#810	
o. Series 9x8RX MPE/iX FOS with IMAGE/SQL [ ]	"	#910	
p. Series 9x8RX MPE/iX FOS only [ ]	"	#900	
4. Power Protection* (Minimum 1, Maximum 1)			
a. **Standard** Small HP PowerTrust UPS (600VA deskside UPS, not rack-mountable) [ ]	A2941AZ		
5. Base memory* (Minimum 1, Maximum 1)			
a. **Standard** 32MB memory module (4 SIMMs × 8MB each) [ ]	A2947AZ	#0DS	
b. Replace standard memory with 64MB ECC module (2 SIMMs × 32MB each) [ ]	A2948AZ	#0DT	
c. Replace standard memory with 128MB ECC module (2 SIMMs × 64MB each) [ ]	A3131AZ	#0DT	
— orderable March 1, 1994			

Product Description		Product #	Opt#	Price
Additional memory* (Minimum 0, Maximum of up to either 512MB or 8 SIMM slots including base memory)				
d. 16 MB ECC memory module (2 SIMMs × 8MB each) **Quantity** ____		A2946AZ	#0DZ	
e. 64 MB ECC memory module (2 SIMMs × 32MB each) **Quantity** ____		A2948AZ	#0DZ	
f. 128 MB ECC memory module (2 SIMMs × 64MB each) — orderable March 1, 1994 **Quantity** ____		A3131AZ	#0DZ	
6. Base disk* (Minimum 1, Maximum 1)				
a. **Standard** 1.0 GB 3-1/2" disk drive (half-height)	[ ]	A2445A	#0DS	
b. Replace standard disk with 2.0 GB 3-1/2" disk drive (half-height) — orderable March 1, 1994	[ ]	A3087A	#0DU	
Additional internal disk device* (Minimum 0, Maximum 1)				
c. Add 1.0 GB disk drive (half-height)	[ ]	A2445A	#0DZ	
d. Add 2.0 GB disk drive (half-height) — orderable March 1, 1994	[ ]	A3087A	#0DZ	
7. Back-up storage device* (Minimum 1, Maximum 1)				
a. **Standard** 2.0 DDS DAT tape drive (3-1/2", half-height)	[ ]	C2477SZ	#0DS	
Additional back-up/secondary storage device* (Minimum 0, Maximum 1)				
b. Add CD-ROM (half-height 5-1/4")	[ ]	A3086A	#0DZ	
c. Add 2.0 GB DDS DAT tape drive (3-1/2", half-height)	[ ]	C2477SZ	#0DZ	
8. System console terminal* (Minimum 1, Maximum 1) - Specify appropriate keyboard localization option**				
a. 700/96 terminal with amber screen	[ ]	C1064AZ	#____ **	
b. 700/96 terminal with green screen	[ ]	C1064GZ	#____ **	
c. 700/96 terminal with white screen	[ ]	C1064WZ	#____ **	
9. I/O and networking products*				
Additional I/O cards (Minimum 0, Maximum of 2 slots for 9x8LX, 4 slots for 9x8RX chassis)				
a. PBA-IB — Chan-span/HP-IB device adapter, 2 slots **Quantity** ____		A1747A	#0DZ	
b. PB-FL — HP-FL device adapter, 2 slots **Quantity** ____		28616A	#0DZ	
c. SCSI 2 device adapter (NIO SCSI), 1 slot **Quantity** ____		28642A	#0DZ	
Optional networking software* (Minimum 0, Maximum 2)				
Must be ordered in the same section as the 51453B MPE/iX media product in order to be preloaded				
— ThinLAN user license option MUST align with MPE/iX license				
— NetWare iX user license does NOT need to align with MPE/iX license				
— User license options not shown can be ordered as standalone products				
d. ThinLAN 3000/iX Network Link 20-user license	[ ]	36923A	#0AF	
e. ThinLAN 3000/iX Network Link 40-user license	[ ]	"	#UCY	
f. NetWare iX 8-user license	[ ]	32020A	#UA3	
g. NetWare iX 20-user license	[ ]	"	#0AF	
h. NetWare iX 32-user license	[ ]	"	#UA7	
10. Rack mount kit for factory integrated 1.6m or 1.1m cabinet (Minimum 0, Maximum 1)				
Must order qty. 1 A1883A or A1884A rack on the same order section if qty. 1 rack mount kit is selected				
a. Rack mount kit to install 9x8LX/RX in factory integrated cabinet		A2962AZ		
11. Optional end-user Windows Clients* (Minimum 0, No Maximum)				
Requires NetWare iX software				
Must select appropriate keyboard localization option**				
a. No Monitor **Quantity** ____		C3411A	#____ **	
b. 14" Super VGA** **Quantity** ____		C3414A	#____ **	
c. 17" Ergo Ultra VGA** **Quantity** ____		C3417A	#____ **	
Windows Client Server Kit (Must select 1 if 11 a, b, or c is ordered above)				
— Must order at least 1 server kit per site in order to receive media and documentation.				
— Use the same product number as selected above. Select one of the following Server Kit localization				
options — #100 English, #101 German, #102 French, #103 Spanish, #104 Italian, #105 Swedish,m #106 Dutch				
d. Windows Client Server Kit **Quantity** __1__		C341xA	#____ **	
TERMINALS SOLUTION ADJUSTMENT — Enter the following optional terminals with a 28% solution adjustment (M60)				
12. Optional end-user terminals* (Minimum 4, Maximum 64)				
Must select appropriate keyboard localization option**				
a. 700/96 terminal with amber screen **Quantity** ____		C1064A	#____ **	
b. 700/96 terminal with green screen **Quantity** ____		C1064G	#____ **	
c. 700/96 terminal with white screen **Quantity** ____		C1064W	#____ **	
d. 700/96ES terminal with white screen **Quantity** ____		C1084W	#____ **	

* Optional — Select a System Support Option for the SPU, chassis, and add-on products. Refer to Table 3.1 on page 27.

Opt. 0S0	License/Next Day System Support — 1 yr.
Opt. 0S1	License/Same Day System Support — 1 yr.
Opt. 0S2	Telephone/Next Day System Support — 1 yr.
Opt. 0S3	Telephone/Same Day System Support — 1 yr.
Opt. 0S4	Installation and Network Configuration
Opt. 0S5	License/24 × 7 System Support — 1 yr.
Opt. 0S6	Telephone/24 × 7 System Support — 1 yr.
Opt. 0SZ	Network Configuration

** Refer to CPL for keyboard localization options.

Product Description	Product #	Opt#	Price
HP 3000 Series 928LX/RX	**A2934AW**		
SPU consists of:			
— Integrated chassis			
— One Multi-function I/O card containing:			
– One SCSI interface for up to seven devices, two RS-232-C ports for console and remote support, 802.3 LAN connection, integrated ThinLAN transceiver and AUI port, and 802.3 LAN cable (2 meters)			
— One blank 90 meter DDS cartridge tape and one DDS cleaning tape			
— System documentation			
— Pre-installation of memory, disks, back-up devices, and I/O cards			
— Standard memory (32 MB), standard disk (1 GB), standard DDS tape drive (2 GB), standard floating point co-processor, standard HP PowerTrust UPS, standard system console, and optional add-ons are ordered below.			

| ***Must enter the following product/options as sub-items to the SSP number: A2934AW*** |

Product Description		Product #	Opt#	Price
1. SPU, MPE/iX FOS, and Database* (Must select only 1 SPU with only 1 user license level)				
SPU with MPE/iX FOS, IMAGE/SQL, and ALLBASE/SQL				
a. 64 user license	[ ]	A3089A	#UA9	
b. 100 user license	[ ]	"	#UBD	
c. 160 user license	[ ]	"	#UCN	
SPU with MPE/iX FOS and IMAGE/SQL				
d. 64 user license	[ ]	A3090A	#UA9	
e. 100 user license	[ ]	"	#UBD	
f. 160 user license	[ ]	"	#UCN	
SPU with MPE/iX FOS only				
g. 64 user license	[ ]	A3091A	#UA9	
h. 100 user license	[ ]	"	#UBD	
i. 160 user license	[ ]	"	#UCN	
2. Chassis* (Minimum 1, Maximum 1)				
a. **Standard** 928LX 2-slot chassis with factory integration	[ ]	A2960AW		
b. 928RX — 4-slot chassis with factory integration	[ ]	A2935AW		
3. MPE/iX media and documentation* (Minimum 1, Maximum 1 media product plus required options)				
a. **Standard** HP 3000 MPE/iX Media Product (FOS tape and manuals)	[ ]	51453B		
Media format option (Minimum 1, Maximum 1)				
b. 1600 bpi tape media	[ ]	"	#AA1	
c. 6250 bpi tape media	[ ]	"	#AA2	
d. Digital Data Storage (DDS) media	[ ]	"	#AAH	
Documentation language option (Minimum 1, Maximum 1)				
e. English language version	[ ]	"	#ABA	
f. German language version (Europe only)	[ ]	"	#ABD	
g. Delete manuals	[ ]	"	#0B0	
Pre-loaded software option (Minimum 0, Maximum 1)				
h. Loaded FOS and SUBSYS on disk — When ordering 3h (#0D1), must order 3d (#AAH)	[ ]	"	#0D1	
Release Option (Minimum 1, Maximum 1)				
i. MPE/iX latest platform release	[ ]	"	#200	
j. MPE/iX Release 4.0	[ ]	"	#240	
Manual documentation option (Minimum 1, Maximum 1)				
k. Series 9x8LX preconfigured (MPE/iX, IMAGE/SQL and ALLBASE/SQL)	[ ]	"	#812	
l. Series 9x8LX MPE/iX FOS with IMAGE/SQL	[ ]	"	#912	
m. Series 9x8LX MPE/iX FOS only	[ ]	"	#902	
n. Series 9x8RX preconfigured (MPE/iX, IMAGE/SQL and ALLBASE/SQL)	[ ]	"	#810	
o. Series 9x8RX MPE/iX FOS with IMAGE/SQL	[ ]	"	#910	
p. Series 9x8RX MPE/iX FOS only	[ ]	"	#900	
4. Power Protection* (Minimum 1, Maximum 1)				
a. **Standard** Small HP PowerTrust UPS (600VA deskside UPS, not rack-mountable)	[ ]	A2941AZ		
5. Base memory* (Minimum 1, Maximum 1)				
a. **Standard** 32MB memory module (4 SIMMs × 8MB each)	[ ]	A2947AZ	#0DS	
b. Replace standard memory with 64MB ECC module (2 SIMMs × 32MB each)	[ ]	A2948AZ	#0DT	
c. Replace standard memory with 128MB ECC module (2 SIMMs × 64MB each)	[ ]	A3131AZ	#0DT	
— orderable March 1, 1994				
Additional memory* (Minimum 0, Maximum of up to either 512MB or 8 SIMM slots including base memory)				
d. 16 MB ECC memory module (2 SIMMs × 8MB each) Quantity ____		A2946AZ	#0DZ	
e. 64 MB ECC memory module (2 SIMMs × 32MB each) Quantity ____		A2948AZ	#0DZ	
f. 128 MB ECC memory module (2 SIMMs × 64MB each) — orderable March 1, 1994 Quantity ____		A3131AZ	#0DZ	

Product Description		Product #	Opt#	Price
6. Base disk* (Minimum 1, Maximum 1)				
a. Standard 1.0 GB 3-1/2" disk drive (half-height)	[ ]	A2445A	#0DS	
b. Replace standard disk with 2.0 GB 3-1/2" disk drive (half-height)—orderable March 1, 1994	[ ]	A3087A	#0DU	
Additional internal disk device* (Minimum 0, Maximum 1)				
c. Add 1.0 GB disk drive (half-height)	[ ]	A2445A	#0DZ	
d. Add 2.0 GB disk drive (half-height) — orderable March 1, 1994	[ ]	A3087A	#0DZ	
7. Back-up storage device* (Minimum 1, Maximum 1)				
a. Standard 2.0 DDS DAT tape drive (3-1/2", half-height)	[ ]	C2477SZ	#0DS	
Additional back-up/secondary storage device* (Minimum 0, Maximum 1)				
b. Add CD-ROM (half-height 5-1/4")	[ ]	A3086A	#0DZ	
c. Add 2.0 GB DDS DAT tape drive (3-1/2", half-height)	[ ]	C2477SZ	#0DZ	
8. System console terminal* (Minimum 1, Maximum 1) — Specify appropriate keyboard localization option**				
a. 700/96 terminal with amber screen	[ ]	C1064AZ	#_____ **	
b. 700/96 terminal with green screen	[ ]	C1064GZ	#_____ **	
c. 700/96 terminal with white screen	[ ]	C1064WZ	#_____ **	
9. I/O and networking products*				
Additional I/O cards (Minimum 0, Maximum of 2 slots for 9x8LX, 4 slots for 9x8RX chassis)				
a. PBA-IB - Chan-span/HP-IB device adapter, 2 slots Quantity _____		A1747A	#0DZ	
b. PB-FL - HP-FL device adapter, 2 slots Quantity _____		28616A	#0DZ	
c. SCSI 2 device adapter (NIO SCSI), 1 slot Quantity _____		28642A	#0DZ	
Optional networking software* (Minimum 0, Maximum 2)				
Must be ordered in the same section as the 51453B MPE/iX media product in order to be preloaded				
— ThinLAN user license option MUST align with MPE/iX license				
— NetWare iX user license does NOT need to align with MPE/iX license				
— User license options not shown can be ordered as standalone products				
d. ThinLAN 3000/iX Network Link 64-user license	[ ]	36923A	#UA9	
e. ThinLAN 3000/iX Network Link 100-user license	[ ]	"	#UBD	
f. ThinLAN 3000/iX Network Link 160-user license	[ ]	"	#UCN	
g. NetWare iX 8-user license	[ ]	32020A	#UA3	
h. NetWare iX 20-user license	[ ]	"	#0AF	
i. NetWare iX 32-user license	[ ]	"	#UA7	
j. NetWare iX 64-user licens	[ ]	"	#UA9	
10. Rack mount kit for factory integrated 1.6m or 1.1m cabinet (Minimum 0, Maximum 1)				
Must order qty. 1 A1883A or A1884A rack on the same order section if qty. 1 rack mount kit is selected				
a. Rack mount kit to install 9x8LX/RX in factory integrated cabinet		A2962AZ		
11. Optional end-user Windows Clients* (Minimum 0, No Maximum)				
Requires NetWare iX software				
Must select appropriate keyboard localization option**				
a. No Monitor Quantity _____		C3411A	#_____ **	
b. 14" Super VGA** Quantity _____		C3414A	#_____ **	
c. 17" Ergo Ultra VGA** Quantity _____		C3417A	#_____ **	
Windows Client Server Kit (Must select 1 if 11 a, b, or c is ordered above)				
— Must order at least 1 server kit per site in order to receive media and documentation.				
— Use the same product number as selected above. Select one of the following Server Kit localization				
options — #100 English, #101 German, #102 French, #103 Spanish, #104 Italian, #105 Swedish,m #106 Dutch				
d. Windows Client Server Kit Quantity _1_		C341xA	#_____ **	
TERMINALS SOLUTION ADJUSTMENT — Enter the following optional terminals with a 28% solution adjustment (M60)				
12. Optional end-user terminals* (Minimum 20, Maximum 64)				
Must select appropriate keyboard localization option**				
a. 700/96 terminal with amber screen Quantity _____		C1064A	#_____ **	
b. 700/96 terminal with green screen Quantity _____		C1064G	#_____ **	
c. 700/96 terminal with white screen Quantity _____		C1064W	#_____ **	
d. 700/96ES terminal with white screen Quantity _____		C1084W	#_____ **	

* Optional—Select a System Support Option for the SPU, chassis, and add-on products. Refer to Table 3.1 on page 27.

Opt. 0S0	License/Next Day System Support—1 yr.
Opt. 0S1	License/Same Day System Support—1 yr.
Opt. 0S2	Telephone/Next Day System Support—1 yr.
Opt. 0S3	Telephone/Same Day System Support—1 yr.
Opt. 0S4	Installation and Network Configuration
Opt. 0S5	License/24 × 7 System Support—1 yr.
Opt. 0S6	Telephone/24 × 7 System Support—1 yr.
Opt. 0SZ	Network Configuration

** Refer to CPL for keyboard localization options.

Product Description	Product #	Opt#	Price
HP 3000 Series 968LX/RX	A2933AW		
SPU consists of:			
— Integrated chassis			
— One Multi-function I/O card containing:			
— One SCSI interface for up to seven devices, two RS-232-C ports for console and remote support,			
802.3 LAN connection, integrated ThinLAN transceiver and AUI port, and 802.3 LAN cable (2 meters)			
— One blank 90 meter DDS cartridge tape and one DDS cleaning tape			
— System documentation			
— Pre-installation of memory, disks, back-up devices, and I/O cards			
— Standard memory (32 MB), standard disk (1 GB), standard DDS tape drive (2 GB), standard floating point co-			
processor, standard HP PowerTrust UPS, standard system console, and optional add-ons are ordered below.			

Must enter the following product/options as sub-items to the SSP number: A2933AW

Product Description		Product #	Opt#	Price
1. SPU, MPE/iX FOS, and Database* (Must select only 1 SPU with only 1 user license level)				
SPU with MPE/iX FOS, IMAGE/SQL, and ALLBASE/SQL				
a. 100 user license	[ ]	A3092A	#UBD	
b. 160 user license	[ ]	"	#UCN	
c. 256 user license	[ ]	"	#UAD	
d. Unlimited user license	[ ]	"	#UAT	
SPU with MPE/iX FOS and IMAGE/SQL				
e. 100 user license	[ ]	A3093A	#UBD	
f, 160 user license	[ ]	"	#UCN	
g. 256 user license	[ ]	"	#UAD	
h. Unlimited user license	[ ]	"	#UAT	
SPU with MPE/iX FOS only				
i. 100 user license	[ ]	A3094A	#UBD	
j. 160 user license	[ ]	"	#UCN	
k. 256 user license	[ ]	"	#UAD	
l. Unlimited user license	[ ]	"	#UAT	
2. Chassis* (Minimum 1, Maximum 1)				
a. **Standard** 968LX 2-slot chassis with factory integration	[ ]	A2961AW		
b. 968RX — 4-slot chassis with factory integration	[ ]	A2936AW		
3. MPE/iX media and documentation* (Minimum 1, Maximum 1 media product plus required options)				
a. **Standard** HP 3000 MPE/iX Media Product (FOS tape and manuals)	[ ]	51453B		
Media format option (Minimum 1, Maximum 1)				
b. 1600 bpi tape media	[ ]	"	#AA1	
c. 6250 bpi tape media	[ ]	"	#AA2	
d. Digital Data Storage (DDS) media	[ ]	"	#AAH	
Documentation language option (Minimum 1, Maximum1)				
e. English language version	[ ]	"	#ABA	
f. German language version (Europe only)	[ ]	"	#ABD	
g. Delete manuals	[ ]	"	#0B0	
Pre-loaded software option (Minimum 0, Maximum 1)				
h. Loaded FOS and SUBSYS on disk — When ordering 3h (#0D1), must order 3d (#AAH)	[ ]	"	#0D1	
Release Option (Minimum 1, Maximum 1)				
i. MPE/iX latest platform release	[ ]	"	#200	
j. MPE/iX Release 4.0	[ ]	"	#240	
Manual documentation option (Minimum 1, Maximum 1)				
k. Series 9x8LX preconfigured (MPE/iX, IMAGE/SQL and ALLBASE/SQL)	[ ]	"	#812	
l. Series 9x8LX MPE/iX FOS with IMAGE/SQL	[ ]	"	#912	
m. Series 9x8LX MPE/iX FOS only	[.]	"	#902	
n. Series 9x8RX preconfigured (MPE/iX, IMAGE/SQL and ALLBASE/SQL)	[ ]	"	#810	
o. Series 9x8RX MPE/iX FOS with IMAGE/SQL	[ ]	"	#910	
p. Series 9x8RX MPE/iX FOS only	[ ]	"	#900	
4. Power Protection* (Minimum 1, Maximum 1)				
a. **Standard** Small HP PowerTrust UPS (600VA deskside UPS, not rack-mountable)	[ ]	A2941AZ		
5. Base memory* (Minimum 1, Maximum 1)				
a. **Standard** 64MB memory module (2 SIMMs × 32MB each)	[ ]	A2948AZ	#0DS	
b. Replace standard memory with 128MB ECC module (2 SIMMs × 64MB each)	[ ]	A3131AZ	#0DU	
— orderable March 1, 1994				
Additional memory* (Minimum 0, Maximum of up to either 512MB or 8 SIMM slots including base memory)				
c. 16 MB ECC memory module (2 SIMMs × 8MB each) **Quantity** ____		A2946AZ	#0DZ	
d. 64 MB ECC memory module (2 SIMMs × 32MB each) **Quantity** ____		A2948AZ	#0DZ	
e. 128 MB ECC memory module (2 SIMMs × 64MB each) — orderable March 1, 1994 **Quantity** ____		A3131AZ	#0DZ	

Product Description		Product #	Opt#	Price
6. Base disk* (Minimum 1, Maximum 1)				
a. **Standard** 1.0 GB 3-1/2" disk drive (half-height)	[ ]	A2445A	#0DS	
b. Replace standard disk with 2.0 GB 3-1/2" disk drive (half-height) — orderable March 1, 1994	[ ]	A3087A	#0DU	
Additional internal disk device (Minimum 0, Maximum 1)*				
c. Add 1.0 GB disk drive (half-height)	[ ]	A2445A	#0DZ	
d. Add 2.0 GB disk drive (half-height) — orderable March 1, 1994	[ ]	A3087A	#0DZ	
7. Back-up storage device* (Minimum 1, Maximum 1)				
a. **Standard** 2.0 DDS DAT tape drive (3-1/2", half-height)	[ ]	C2477SZ	#0DS	
Additional back-up/secondary storage device (Minimum 0, Maximum 1)*				
b. Add CD-ROM (half-height 5-1/4")	[ ]	A3086A	#0DZ	
c. Add 2.0 GB DDS DAT tape drive (3-1/2", half-height)	[ ]	C2477SZ	#0DZ	
8. System console terminal* (Minimum 1, Maximum 1) - Specify appropriate keyboard localization option**				
a. 700/96 terminal with amber screen	[ ]	C1064AZ	#____ **	
b. 700/96 terminal with green screen	[ ]	C1064GZ	#____ **	
c. 700/96 terminal with white screen	[ ]	C1064WZ	#____ **	
9. I/O and networking products*				
Additional I/O cards (Minimum 0, Maximum of 2 slots for 9x8LX, 4 slots for 9x8RX chassis)				
a. PBA-IB — Chan-span/HP-IB device adapter, 2 slots Quantity ____		A1747A	#0DZ	
b. PB-FL — HP-FL device adapter, 2 slots Quantity ____		28616A	#0DZ	
c. SCSI 2 device adapter (NIO SCSI), 1 slot Quantity ____		28642A	#0DZ	
Optional networking software (Minimum 0, Maximum 2)*				
Must be ordered in the same section as the 51453B MPE/iX media product in order to be preloaded				
— ThinLAN user license option MUST align with MPE/iX license				
— NetWare iX user license does NOT need to align with MPE/iX license				
— User license options not shown can be ordered as standalone products				
d. ThinLAN 3000/iX Network Link 100-user license	[ ]	36923A	#UBD	
e. ThinLAN 3000/iX Network Link 160-user license	[ ]	"	#UCN	
f. NetWare iX 20-user license	[ ]	32020A	#0AF	
g. NetWare iX 32-user license	[ ]		#UA7	
h. NetWare iX 64-user license	[ ]	"	#UA9	
i. NetWare iX 100-user license	[ ]	"	#UBD	
10. Rack mount kit for factory integrated 1.6m or 1.1m cabinet (Minimum 0, Maximum 1)				
Must order qty. 1 A1883A or A1884A rack on the same order section if qty. 1 rack mount kit is selected				
a. Rack mount kit to install 9x8LX/RX in factory integrated cabinet		A2962AZ		
11. Optional end-user Windows Clients* (Minimum 0, No Maximum)				
Requires NetWare iX software				
*Must select appropriate keyboard localization option****				
a. No Monitor Quantity ____		C3411A	#____ **	
b. 14" Super VGA** Quantity ____		C3414A	#____ **	
c. 17" Ergo Ultra VGA** Quantity ____		C3417A	#____ **	
Windows Client Server Kit (Must select 1 if 11 a, b, or c is ordered above)				
— Must order at least 1 server kit per site in order to receive media and documentation.				
— Use the same product number as selected above. Select one of the following Server Kit localization				
options — #100 English, #101 German, #102 French, #103 Spanish, #104 Italian, #105 Swedish,m #106 Dutch				
d. Windows Client Server Kit Quantity __1__		C341xA	#____ **	
TERMINALS SOLUTION ADJUSTMENT — Enter the following optional terminals with a 28% solution adjustment (M60)				
12. Optional end-user terminals* (Minimum 20, Maximum 64)				
*Must select appropriate keyboard localization option****				
a. 700/96 terminal with amber screen Quantity ____		C1064A	#____ **	
b. 700/96 terminal with green screen Quantity ____		C1064G	#____ **	
c. 700/96 terminal with white screen Quantity ____		C1064W	#____ **	
d. 700/96ES terminal with white screen Quantity ____		C1084W	#____ **	

   * Optional — Select a System Support Option for the SPU, chassis, and add-on products. Refer to Table 3.1 on page 27.

Opt. 0S0	License/Next Day System Support — 1 yr.
Opt. 0S1	License/Same Day System Support — 1 yr.
Opt. 0S2	Telephone/Next Day System Support — 1 yr.
Opt. 0S3	Telephone/Same Day System Support — 1 yr.
Opt. 0S4	Installation and Network Configuration
Opt. 0S5	License/24 × 7 System Support — 1 yr.
Opt. 0S6	Telephone/24 × 7 System Support — 1 yr.
Opt. 0SZ	Network Configuration

   ** Refer to CPL for keyboard localization options.

Product Description	Product # Opt#	Price

HP 3000 Series 978LX/RX
SPU consists of:
— Integrated chassis
— One Multi-function I/O card containing:
   – One SCSI interface for up to seven devices, two RS-232-C ports for console and remote support,
     802.3 LAN connection, integrated ThinLAN transceiver and AUI port, and 802.3 LAN cable (2 meters)
— One blank 90 meter DDS cartridge tape and one DDS cleaning tape
— System documentation
— Pre-installation of memory, disks, back-up devices, and I/O cards
— Standard memory (32 MB), standard disk (1 GB), standard DDS tape drive (2 GB), standard floating point co-
   processor, standard HP PowerTrust UPS, standard system console, and optional add-ons are ordered below.
	A3129AW	

Must enter the following product/options as sub-items to the SSP number: A3129AW		

1. *SPU, MPE/iX FOS, and Database* (Must select only 1 SPU with only 1 user license level)*
SPU with MPE/iX FOS, IMAGE/SQL, and ALLBASE/SQL
   a. 100 user license [ ]
   b. 160 user license [ ]
   c. 256 user license [ ]
   d. Unlimited user license [ ]
SPU with MPE/iX FOS and IMAGE/SQL
   e. 100 user license [ ]
   f. 160 user license [ ]
   g. 256 user license [ ]
   h. Unlimited user license [ ]
SPU with MPE/iX FOS only
   i. 100 user license [ ]
   j. 160 user license [ ]
   k. 256 user license [ ]
   l. Unlimited user license [ ]
	A3126A #UBD
	" #UCN
	" #UAD
	" #UAT
	
	A3127A #UBD
	" #UCN
	" #UAD
	" #UAT
	
	A3128A #UBD
	" #UCN
	" #UAD
	" #UAT	

2. *Chassis* (Minimum 1, Maximum 1)*
   a. **Standard**   978LX 2-slot chassis with factory integration [ ]
   b. 978RX — 4-slot chassis with factory integration [ ]
	A3147AW
	A3119AW	

3. *MPE/iX media and documentation* (Minimum 1, Maximum 1 media product plus required options)*
   a. **Standard**   HP 3000 MPE/iX Media Product (FOS tape and manuals) [ ]
Media format option (Minimum 1, Maximum 1)
   b. 1600 bpi tape media [ ]
   c. 6250 bpi tape media [ ]
   d. Digital Data Storage (DDS) media [ ]
Documentation language option (Minimum 1, Maximum1)
   e. English language version [ ]
   f. German language version (Europe only) [ ]
   g. Delete manuals [ ]
Pre-loaded software option (Minimum 0, Maximum 1)
   h. Loaded FOS and SUBSYS on disk — When ordering 3h (#0D1), must order 3d (#AAH) [ ]
Release Option (Minimum 1, Maximum 1)
   i. MPE/iX latest platform release [ ]
   j. MPE/iX Release 4.0 [ ]
Manual documentation option (Minimum 1, Maximum 1)
   k. Series 9x8LX preconfigured (MPE/iX, IMAGE/SQL and ALLBASE/SQL) [ ]
   l. Series 9x8LX MPE/iX FOS with IMAGE/SQL [ ]
   m. Series 9x8LX MPE/iX FOS only [ ]
   n. Series 9x8RX preconfigured (MPE/iX, IMAGE/SQL and ALLBASE/SQL) [ ]
   o. Series 9x8RX MPE/iX FOS with IMAGE/SQL [ ]
   p. Series 9x8RX MPE/iX FOS only [ ]
	51453B
	
	" #AA1
	" #AA2
	" #AAH
	
	" #ABA
	" #ABD
	" #0B0
	
	" #0D1
	
	" #200
	" #240
	
	" #812
	" #912
	" #902
	" #810
	" #910
	" #900	

4. *Power Protection* (Minimum 1, Maximum 1)* a. **Standard** Small HP PowerTrust UPS (600VA deskside UPS, not rack-mountable) [ ]	A2941AZ	

5. *Base memory* (Minimum 1, Maximum 1)*
   a. **Standard**   64MB memory module (2 SIMMs × 32MB each) [ ]
   b. Replace standard memory with 128MB ECC module (2 SIMMs × 64MB each) [ ]
      — orderable March 1, 1994
Additional memory* (Minimum 0, Maximum of up to either 512MB or 8 SIMM slots including base memory)
   c. 16 MB ECC memory module (2 SIMMs × 8MB each)   **Quantity** ____
   d. 64 MB ECC memory module (2 SIMMs × 32MB each)   **Quantity** ____
   e. 128 MB ECC memory module (2 SIMMs × 64MB each) — orderable March 1, 1994   **Quantity** ____
	A2948AZ #0DS
	A3131AZ #0DU
	
	A2946AZ #0DZ
	A2948AZ #0DZ
	A3131AZ #0DZ	

Product Description		Product #	Opt#	Price
6. Base disk* (Minimum 1, Maximum 1)				
a. Standard 1.0 GB 3-1/2" disk drive (half-height)	[ ]	A2445A	#0DS	
b. Replace standard disk with 2.0 GB 3-1/2" disk drive (half-height) — orderable March 1, 1994	[ ]	A3087A	#0DU	
Additional internal disk device* (Minimum 0, Maximum 1)				
c. Add 1.0 GB disk drive (half-height)	[ ]	A2445A	#0DZ	
d. Add 2.0 GB disk drive (half-height) — orderable March 1, 1994	[ ]	A3087A	#0DZ	
7. Back-up storage device* (Minimum 1, Maximum 1)				
a. Standard 2.0 DDS DAT tape drive (3-1/2", half-height)	[ ]	C2477SZ	#0DS	
Additional back-up/secondary storage device* (Minimum 0, Maximum 1)				
b. Add CD-ROM (half-height 5-1/4")	[ ]	A3086A	#0DZ	
c. Add 2.0 GB DDS DAT tape drive (3-1/2", half-height)	[ ]	C2477SZ	#0DZ	
8. System console terminal* (Minimum 1, Maximum 1) — Specify appropriate keyboard localization option**				
a. 700/96 terminal with amber screen	[ ]	C1064AZ	#____**	
b. 700/96 terminal with green screen	[ ]	C1064GZ	#____**	
c. 700/96 terminal with white screen	[ ]	C1064WZ	#____**	
9. I/O and networking products*				
Additional I/O cards (Minimum 0, Maximum of 2 slots for 9x8LX, 4 slots for 9x8RX chassis)				
a. PBA-IB — Chan-span/HP-IB device adapter, 2 slots **Quantity** ____		A1747A	#0DZ	
b. PB-FL — HP-FL device adapter, 2 slots **Quantity** ____		28616A	#0DZ	
c. SCSI 2 device adapter (NIO SCSI), 1 slot **Quantity** ____		28642A	#0DZ	
Optional networking software* (Minimum 0, Maximum 2)				
Must be ordered in the same section as the 51453B MPE/iX media product in order to be preloaded				
— ThinLAN user license option MUST align with MPE/iX license				
— NetWare iX user license does NOT need to align with MPE/iX license				
— User license options not shown can be ordered as standalone products				
d. ThinLAN 3000/iX Network Link 100-user license	[ ]	36923A	#UBD	
e. ThinLAN 3000/iX Network Link 160-user license	[ ]	"	#UCN	
f. ThinLAN 3000/iX Network Link Unlimited user license	[ ]	"	#UAT	
g. NetWare iX 32-user license	[ ]	32020A	#UA7	
h. NetWare iX 64-user license	[ ]	"	#UA9	
i. NetWare iX 100-user licens	[ ]	"	#UBD	
10. Rack mount kit for factory integrated 1.6m or 1.1m cabinet (Minimum 0, Maximum 1)				
Must order qty. 1 A1883A or A1884A rack on the same order section if qty. 1 rack mount kit is selected				
a. Rack mount kit to install 9x8LX/RX in factory integrated cabinet		A2962AZ		
11. Optional end-user Windows Clients* (Minimum 0, No Maximum)				
Requires NetWare iX software				
Must select appropriate keyboard localization option**				
a. No Monitor **Quantity** ____		C3411A	#____**	
b. 14" Super VGA** **Quantity** ____		C3414A	#____**	
c. 17" Ergo Ultra VGA** **Quantity** ____		C3417A	#____**	
Windows Client Server Kit (Must select 1 if 11 a, b, or c is ordered above)				
— Must order at least 1 server kit per site in order to receive media and documentation.				
— Use the same product number as selected above. Select one of the following Server Kit localization				
options — #100 English, #101 German, #102 French, #103 Spanish, #104 Italian, #105 Swedish,m #106 Dutch				
d. Windows Client Server Kit **Quantity** __1__		C341xA	#____**	
TERMINALS SOLUTION ADJUSTMENT — Enter the following optional terminals with a 28% solution adjustment (M60)				
12. Optional end-user terminals* (Minimum 20, Maximum 64)				
Must select appropriate keyboard localization option**				
a. 700/96 terminal with amber screen **Quantity** ____		C1064A	#____**	
b. 700/96 terminal with green screen **Quantity** ____		C1064G	#____**	
c. 700/96 terminal with white screen **Quantity** ____		C1064W	#____**	
d. 700/96ES terminal with white screen **Quantity** ____		C1084W	#____**	

* Optional — Select a System Support Option for the SPU, chassis, and add-on products. Refer to Table 3.1 on page 27.

Opt. 0S0	License/Next Day System Support — 1 yr.
Opt. 0S1	License/Same Day System Support — 1 yr.
Opt. 0S2	Telephone/Next Day System Support — 1 yr.
Opt. 0S3	Telephone/Same Day System Support — 1 yr.
Opt. 0S4	Installation and Network Configuration
Opt. 0S5	License/24 × 7 System Support — 1 yr.
Opt. 0S6	Telephone/24 × 7 System Support — 1 yr.
Opt. 0SZ	Network Configuration

** Refer to CPL for keyboard localization options.

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