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**U.S. Army CECOM  
(Communications-Electronics Command)  
MMAD (Maxi-Minis and Databases) Program**



**Contract No. DAAB07-00-D-H252  
ECP No. MD02-019-CI  
HP 64-bit Servers and Upgrades**

**PREPARED BY:  
IBM GLOBAL SERVICES - FEDERAL  
6300 DIAGONAL HIGHWAY  
BOULDER, CO 80301-9020  
21 MARCH 2002**

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## **HP 64-bit Servers and Upgrades**

<b>1. ENGINEERING CHANGE PROPOSAL (ECP) SUMMARY .....</b>	<b>1</b>
1.1 OVERVIEW .....	1
1.2 ADDITION/ENHANCEMENT/REPLACEMENT .....	1
1.3 STATEMENT OF WORK CHANGES .....	1
<b>2. CONTRACT SCOPE .....</b>	<b>1</b>
<b>3. TECHNICAL WRITE-UP .....</b>	<b>1</b>
<b>4. CONTRACT CHANGES .....</b>	<b>2</b>
<b>5. PRICING INFORMATION .....</b>	<b>14</b>
<b>6. ISO COMPLIANCE.....</b>	<b>15</b>
<b>7. TRADE AGREEMENT CERTIFICATION .....</b>	<b>15</b>
<b>8. COMPETITIVE PRICE COMPARISONS.....</b>	<b>15</b>
<b>9. SPECIFICATIONS.....</b>	<b>16</b>
<b>10. BENCHMARKS .....</b>	<b>17</b>

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## **1. Engineering Change Proposal (ECP) Summary**

### **1.1 Overview**

The purpose of this ECP is to add new 64-bit Hewlett Packard servers to the IBM MMAD contract.

### **1.2 Addition/Enhancement/Replacement**

Add the following CLINs: 0003AA, 0003AB, 0003BA, 0003BB, 0003CA, 0003CB, 0003DA, 0003DB, 0003EA, 0003EB, 0003FA, 0003FB, 0003GA, 0003GB, 0003Z\_, 0003Y\_, 0004AA, 0004AB, 0004BA, 0004BB, and 0004Z\_, 0004Y.

Under the Performance Specification Section 37.a.(2), these products are identified as new technologies which were unavailable at the inception of the MMAD contract. This ECP proposes products within the guidelines set forth in the IBM MMAD Contract.

### **1.3 Statement of Work Changes**

None.

## **2. Contract Scope**

This ECP is within the scope of the MMAD contract.

## **3. Technical Write-up**

### **HP's New Itanium Servers**

The HP rx4610 can run any of three leading operating systems — HP-UX, Windows, or Linux— allowing the flexibility to design the most effective computing environment. Its leadership performance for floating-point and Secure Socket Layer calculations makes the HP rx4610 an outstanding choice for technical and Internet-focused applications. Thousands of applications run on the HP server rx4610 immediately, including 32-bit and 64-bit PA-RISC applications, as well as 32-bit Windows and many 32-bit Linux applications.

The HP server rx9610 is HP's most powerful Itanium processor based server. The HP rx9610 was built on cell architecture similar to HP's Superdome to ensure superior flexibility and scalability. The rx9610 server also includes such features as hot-swappable fans and power supplies, as well as extensive I/O options to provide a system that can meet the demands of high performance with high reliability-making it an outstanding choice for technical and Internet-focused applications.

*NOTE: Although Itanium processor based servers run multiple operating systems in native mode and will become the essential platform for all of them, at this time HP-UX is the only rock-solid operating system proven to scale to 16-Itanium processors.*

In addition to the Itanium offerings, MMAD will also offer the following HP RISC servers:

- A-Class low-cost, hyper-rack optimized entry-level servers
- rp5400 series (formerly the L-Class)—scalable, rack-optimized entry-level servers
- rp7400 a powerful, versatile midrange platform supporting enterprise-class applications.
- rp8400 setting the standard for midrange computing

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**Contract No. DAAB07-00-D-H252**  
**ECP No. MD02-019-C1**

The HP A-Class are low-cost, low profile servers that are ideal for Internet applications, firewalls, web hosting and branch office applications requiring high performance at an affordable price. Deployed in clusters or single, standalone units, HP entry-level UNIX servers scale to deliver reliability for any environment. The 2U (3.5 in or 8.89 cm) height, 2-way processor servers are tuned for 24x7 Internet businesses and can be configured with up to 72GB of internal disk capacity and 6.5TB of external disk capacity.

Delivering high performance in a small, rack-optimized package, HP 9000 rp5400 series (formerly the L-Class) servers are built around a super-fast PA-RISC processor for up to 4-way computing. The streamlined 7U form factor supports a combined OLTP or web-performance workload that exceeds even some of the largest and most costly systems in the industry. Architectural scalability from 2-way to 4-way is a real advantage for web-based computing solutions where scaling without trade-offs is a must. The HP 9000 rp5400 series servers are also ideal as a standalone system for use in an office environment.

The feature-rich HP Servers rp7400 and rp8400 lead the industry in the midrange UNIX server category. The HP rp7400 and rp8400 deliver unparalleled scalability, flexibility, and lasting value. The PA-8600 RISC-processor-based rp7400 and the PA-8700 RISC-processor-based rp8400 feature full integration and partitioning services along with a complete array of support options. The HP rp8400 is #1 in midrange performance across the board, which makes it an excellent choice for demanding enterprise, technical and Internet-focused applications.

NOTE: Reference for the preceding statements: HP web site: <http://www.hp.com/>

For a graphical representation of the HP UNIX family of servers see Attachment A

## **4. Contract Changes**

The following changes to the B-Tables are recommended.

Add the following CLINs: 0003AA, 0003AB, 0003BA, 0003BB, 0003CA, 0003CB, 0003DA, 0003DB, 0003EA, 0003EB, 0003FA, 0003FB, 0003GA, 0003GB, 0003Z\_, 0003Y\_, 0004AA, 0004AB, 0004BA, 0004BB, and 0004Z\_, 0004Y\_.

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**Contract No. DAAB07-00-D-H252**  
**ECP No. MD02-019-C1**

**Entry-level Servers (Itanium)**

CLIN	Previous	CLIN Description	MFG.	MFG. P/N	QTY	Parts Description	Price	Unit of Issue
0004AA		HP Server rx4610 with HP E41 Rack. Configured w/ 5 year warranty. Includes (2) 733MHz 64 bit Itaniumprocessors w/ 2MB cache, 266MHz FSB, 4 memory boards, 4GB memory, dual Ultra3 SCSI, (2) 36GB hot-plug disks, DVD-ROM and HP-UX. CLIN 0003Z_ is available for options or custom configuration of servers. Contact the MMAD-I Program Office for assistance.					\$57,854	Lot
			HP	A4902A	1	HP9000 Std Rack System E41		
			HP	A6153A	1	HP server rx4610 with 733MHz CPUs		
			HP	A6168A	4	1024MB memory quad for HP server rp4610		
			HP	option 0D1	4	Factory integrated		
			HP	A6171A	2	36GB HotPlug SCSI LP disk for rx4610		
			HP	option 0D1	2	Factory integrated		
			HP	A6383AZ	1	Factory racking kit for HP server rx4610		
			HP	B9106AA	1	HP-UX 11i OE media for IPF systems		
			HP	option AJR	1	DVD media		
			HP	option 0D1	1	Factory integrated		
			HP	option UME	1	HP-UX 11i version 1.5		
			HP	option ABA	1	U.S. - English localization		
			HP	B9429AC	2	HP-UX 11i IPF OE Per Processor LTU		
			HP	A5213AZ	1	Rear Door for Std. Rack System E41		
			HP	A5137AZ	2	Modular Power Dist. Unit for std racks		
			HP	option AW4	2	200 - 240 volts North America		

CLIN	Previous	CLIN Description	MFG.	MFG. P/N	QTY	Parts Description	Price	Unit of Issue
0004AB		HP Server rx4610 with HP E41 Rack. Configured w/ 3 year OEM warranty. Includes (2) 733MHz 64 bit Itanium processors w/ 2MB cache, 266MHz FSB, 4 memory boards, 4GB memory, dual Ultra3 SCSI, (2) 36GB hot-plug disks, DVD-ROM and HP-UX. CLIN 0003Z_ is available for options or custom configuration of servers. Contact the MMAD-I Program Office for assistance.					\$29,769	Lot
			HP	A4902A	1	HP9000 Std Rack System E41		
			HP	A6153A	1	HP server rx4610 with 733MHz CPUs		
			HP	A6168A	4	1024MB memory quad for HP server rp4610		
			HP	option 0D1	4	Factory integrated		
			HP	A6171A	2	36GB HotPlug SCSI LP disk for rx4610		
			HP	option 0D1	2	Factory integrated		
			HP	A6383AZ	1	Factory racking kit for HP server rx4610		
			HP	B9106AA	1	HP-UX 11i OE media for IPF systems		
			HP	option AJR	1	DVD media		
			HP	option 0D1	1	Factory integrated		
			HP	option UME	1	HP-UX 11i version 1.5		
			HP	option ABA	1	U.S. - English localization		
			HP	B9429AC	2	HP-UX 11i IPF OE Per Processor LTU		
			HP	A5213AZ	1	Rear Door for Std. Rack System E41		
			HP	A5137AZ	2	Modular Power Dist. Unit for std racks		
			HP	option AW4	2	200 - 240 volts North America		
			HP	H4401A	1	Next Day Sys Support, Phone/Updates		
			HP	option 6AA	1	HW Support - rx4610		

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**Contract No. DAAB07-00-D-H252**  
**ECP No. MD02-019-C1**

**Mid-level Servers (Itanium)**

CLIN	Previous	CLIN Description	MFG.	MFG. P/N	QTY	Parts Description	Price	Unit of Issue
<b>0004BA</b>		HP Server rx9610, Configured w/ 5 year warranty. Includes (4) 800MHz 64 bit Itanium processors w/ 2MB cache, (2) 18GB hot-plug disks, DVD-ROM, Internal 8-slot disk storage and HP-UX. CLIN 0003Z_ is available for options or custom configuration of servers. Contact the MMAD-I Program Office for assistance.					<b>\$198,164</b>	Lot
			HP	A6754A	1	HP rx9610 Server Solution		
			HP	A6930A	1	HP server rx9610 interface station		
			HP	A6755A	1	HP server rx9610 base config		
			HP	A5150A	1	Dual Port Ultra 2 SCSI (PCI bus) adapter		
			HP	option 0D1	1	Factory integrated		
			HP	A6930A	1	HP server rx9610 interface station		
			HP	A6760A	4	Itanium rx9610 memory set,1GB		
			HP	option 0D1	4	Factory integrated		
			HP	B9106AA	1	HP-UX 11i OE media for IPF systems		
			HP	option AJR	1	DVD media		
			HP	option 0D1	1	Factory integrated		
			HP	option UME	1	HP-UX 11i version 1.5		
			HP	option ABA	1	U.S. - English localization		
			HP	B9429AC	4	HP-UX 11i IPF OE Per Processor LTU		
			HP	A6758A	1	Itanium cell board, 4 CPUs, 800MHz, 4MB		
			HP	option 0D1	1	Factory integrated		
			HP	A6765A	1	Itanium internal 8 slot disc storage box		
			HP	option 0D1	1	Factory integrated		
			HP	A6766A	2	Itanium 18GB disk drives		
			HP	option 0D1	2	Factory integrated		

CLIN	Previous	CLIN Description	MFG.	MFG. P/N	QTY	Parts Description	Price	Unit of Issue
<b>0004BB</b>		HP Server rx9610, Configured w/ 1 year OEM warranty. Includes (4) 800MHz 64 bit Itanium processors w/ 2MB cache (2) 18GB hot-plug disks, DVD-ROM, Internal 8-slot disk storage, HP-UX. CLIN 0003Z_ is available for options or custom configuration of servers. Contact the MMAD-I Program Office for assistance.					<b>\$ 140,982</b>	Lot
			HP	A6754A	1	HP rx9610 Server Solution		
			HP	A6930A	1	HP server rx9610 interface station		
			HP	A6755A	1	HP server rx9610 base config		
			HP	A5150A	1	Dual Port Ultra 2 SCSI (PCI bus) adapter		
			HP	option 0D1	1	Factory integrated		
			HP	A6930A	1	HP server rx9610 interface station		
			HP	A6760A	4	Itanium rx9610 memory set,1GB		
			HP	option 0D1	4	Factory integrated		
			HP	B9106AA	1	HP-UX 11i OE media for IPF systems		
			HP	option AJR	1	DVD media		
			HP	option 0D1	1	Factory integrated		
			HP	option UME	1	HP-UX 11i version 1.5		
			HP	option ABA	1	U.S. - English localization		
			HP	B9429AC	4	HP-UX 11i IPF OE Per Processor LTU		
			HP	A6758A	1	Itanium cell board, 4 CPUs, 800MHz, 4MB		
			HP	option 0D1	1	Factory integrated		
			HP	A6765A	1	Itanium internal 8 slot disc storage box		
			HP	option 0D1	1	Factory integrated		
			HP	A6766A	2	Itanium 18GB disk drives		
			HP	option 0D1	2	Factory integrated		
			HP	H4401A	1	Next Day Sys Support, Phone/Updates		
			HP	option 6AE	1	HW Support - rx9610 server		
			HP	option 6AF	1	HW Support - rx9610 Cell Board		

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**Contract No. DAAB07-00-D-H252**  
**ECP No. MD02-019-C1**

**Entry-level Servers, A400 (RISC)**

CLIN	Previous	CLIN Description	MFG.	MFG. P/N	QTY	Parts Description	Price	Unit of Issue
0003AA		HP Server 9000 A400, Configured w/ 5 year warranty. Includes 440MHz RISC processor w/ 1.5MB cache; 18GB SCSI HD, ASCII Console, HP-UX 11.0, DVD-ROM. CLIN 0003Z_ is available for options or custom configuration of servers. Contact the MMAD-I Program Office for assistance.					\$10,562	Lot
			HP	A6109B	1	HP 9000 A400 Enterprise Server Solution		
			HP	A6741A	1	18GB HotPlug Ultra 160 SCSI Disk Drive		
			HP	Option 0D1	1	Factory Integration		
			HP	C1099A	1	Terminal console for HP3000/9000 systems		
			HP	Option ABA		U.S. - English localization		
			HP	B3920EA	1	HP-UX OE Media for Servers		
			HP	Option UM4	1	HP-UX version 11.0		
			HP	Option AAF	1	CD-ROM (disk only)		
			HP	Option 0D1	1	Factory Integration		
			HP	Option ASF	1	64-BIT CONFIGURATION		
			HP	Option ABA	1	U.S. - English localization		
			HP	B9088AC	1	HP-UX OE LTU with system		
			HP	A5810A	1	A-Class Server field rack kit		
			HP	C4314A	1	SMART Desktop DVD-ROM module		
			HP	C2904A	1	SCSI Terminator SE HDTS50		
			HP	C2957A	1	SCSI Cable 2m HDTS50 M/M		

CLIN	Previous	CLIN Description	MFG.	MFG. P/N	QTY	Parts Description	Price	Unit of Issue
0003AB		HP Server 9000 A400 CONFIGURED w/ 1 year OEM warranty. Includes 440MHz RISC processor w/ 1.5MB cache; 18GB SCSI HD, ASCII Console HP-UX 11.0, DVD-ROM. CLIN 0003Z_ is available for options or custom configuration of servers. Contact the MMAD-I Program Office for assistance.					\$5,528	Lot
			HP	A6109B	1	HP 9000 A400 Enterprise Server Solution		
			HP	A6741A	1	18GB HotPlug Ultra 160 SCSI Disk Drive		
			HP	Option 0D1	1	Factory Integration		
			HP	C1099A	1	Terminal console for HP3000/9000 systems		
			HP	Option ABA		U.S. - English localization		
			HP	B3920EA	1	HP-UX OE Media for Servers		
			HP	Option UM4	1	HP-UX version 11.0		
			HP	Option AAF	1	CD-ROM (disk only)		
			HP	Option 0D1	1	Factory Integration		
			HP	Option ASF	1	64-BIT CONFIGURATION		
			HP	Option ABA	1	U.S. - English localization		
			HP	B9088AC	1	HP-UX OE LTU with system		
			HP	A5810A	1	A-Class Server field rack kit		
			HP	C4314A	1	SMART Desktop DVD-ROM module		
			HP	C2904A	1	SCSI Terminator SE HDTS50		
			HP	C2957A	1	SCSI Cable 2m HDTS50 M/M		
			HP	H4401A	1	24x7 System Support		
			HP	Option 0BC	1	Manuals on CD-ROM		
			HP	Option 447	1	Support -SMART Intgr Module		
			HP	Option 601	1	Support - A400		
			HP	Option 636	1	Support - Terminals (New Generation)		
			HP	Option AAF	1	CD-ROM (disk only)		
			HP	Option 6M1	1	Support - Internet OE per processor		

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**Contract No. DAAB07-00-D-H252**  
**ECP No. MD02-019-C1**

**Entry-level Servers, A500 (RISC)**

CLIN	Previous	CLIN Description	MFG.	MFG. P/N	QTY	Parts Description	Price	Unit of Issue
0003BA		HP Server 9000 A500, CONFIGURED w/ 5 year warranty. Includes 440MHz RISC processor w/ 1.5MB cache; 128MB SDRAM, 18GB SCSI HD, ASCII Console, HP-UX 11.0, DVD-ROM. CLIN 0003Z_ is available for options or custom configuration of servers. Contact the MMAD-I Program Office for assistance.					<b>\$16,810</b>	Lot
			HP	A5570B	1	HP 9000 A500 Enterprise Server Solution		
			HP	A5571A	1	A-Class 440 MHz PA8500 CPU 1.5MB cache		
			HP	Option 0D1	1	Factory Integration		
			HP	A5572A	1	128MB High Density SyncDRAM, Memory Mod		
			HP	Option 0D1	1	Factory Integration		
			HP	A6741A	1	18GB HotPlug Ultra 160 SCSI Disk Drive		
			HP	Option 0D1	1	Factory Integration		
			HP	C1099A	1	Terminal console for HP3000/9000 systems		
			HP	Option ABA	1	U.S. English Localization		
			HP	B3920EA	1	HP-UX OE Media for Servers		
			HP	Option UM4	1	HP-UX version 11.0		
			HP	Option AAF	1	CD-ROM (disk only)		
			HP	Option 0D1	1	Factory Integration		
			HP	Option ASF	1	64-BIT CONFIGURATION		
			HP	Option ABA	1	U.S. - English localization		
			HP	B9088AC	1	HP-UX OE LTU with system		
			HP	Option AH0	1	System license for HP 9000		
			HP	A5810A	1	A-Class Server field rack kit		
			HP	C4314A	1	SMART Desktop DVD-ROM module		
			HP	C2904A	1	SCSI Terminator SE HDTS50		
			HP	C2957A	1	SCSI Cable 2m HDTS50 M/M		

CLIN	Previous	CLIN Description	MFG.	MFG. P/N	QTY	Parts Description	Price	Unit of Issue
0003BB		HP Server 9000 A500 CONFIGURED w/ 1 year OEM warranty. Includes 440MHz RISC processor w/ 1.5MB cache; 128MB SDRAM, 18GB SCSI HD, ASCII Console, HP-UX 11.0, DVD-ROM. CLIN 0003Z_ is available for options or custom configuration of servers. Contact the MMAD-I Program Office for assistance.					<b>\$9,782</b>	Lot
			HP	A5570B	1	HP 9000 A500 Enterprise Server Solution		
			HP	A5571A	1	A-Class 440 MHz PA8500 CPU 1.5MB cache		
			HP	Option 0D1	1	Factory Integration		
			HP	A5572A	1	128MB High Density SyncDRAM, Memory Mod		
			HP	Option 0D1	1	Factory Integration		
			HP	A6741A	1	18GB HotPlug Ultra 160 SCSI Disk Drive		
			HP	Option 0D1	1	Factory Integration		
			HP	C1099A	1	Terminal console for HP3000/9000 systems		
			HP	Option ABA	1	U.S. English Localization		
			HP	B3920EA	1	HP-UX OE Media for Servers		
			HP	Option UM4	1	HP-UX version 11.0		
			HP	Option AAF	1	CD-ROM (disk only)		
			HP	Option 0D1	1	Factory Integration		
			HP	Option ASF	1	64-BIT CONFIGURATION		
			HP	Option ABA	1	U.S. - English localization		
			HP	B9088AC	1	HP-UX OE LTU with system		
			HP	Option AH0	1	System license for HP 9000		
			HP	A5810A	1	A-Class Server field rack kit		
			HP	C4314A	1	SMART Desktop DVD-ROM module		
			HP	C2904A	1	SCSI Terminator SE HDTS50		
			HP	C2957A	1	SCSI Cable 2m HDTS50 M/M		
			HP	H4401A	1	24x7 System Support		
			HP	Option 0BC	1	Manuals on CD-ROM		
			HP	Option 447	1	Support -SMART Intgr Module		

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**Contract No. DAAB07-00-D-H252**  
**ECP No. MD02-019-C1**

HP	Option 602	1	Support - A400
HP	Option 636	1	Support - Terminals (New Generation)
HP	Option AAF	1	CD-ROM (disk only)
HP	Option 6M1	1	Support - Internet OE per processor

**Entry-level Servers, rp5400 (RISC)**

CLIN	Previous	CLIN Description	MFG.	MFG. P/N	QTY	Parts Description	Price	Unit of Issue
0003CA		HP Server 9000 rp5400, CONFIGURED w/ 5 year warranty. Includes 360MHz RISC processor w/ 1.5MB cache; 256MB SDRAM, (1) 18GB SCSI HD, HP-UX 11.0, DVD-ROM. NOTE: CLIN 0003Z_ is available for options or custom configuration of servers. Contact the MMAD-I Program Office for assistance.					<b>\$37,373</b>	Lot
			HP	A5576B	1	HP server rp5400 Solution		
			HP	A4902A	1	HP9000 Std Rack System E41		
			HP	A6696B	1	Embedded I/O for HP server rp54X0 system		
			HP	Option 0D1	1	Factory integrated		
			HP	A5522A	1	PA8500 CPU 1.5MB cache, 360 MHz		
			HP	Option 0D1	1	Factory integrated		
			HP	A5796A	1	Processor Support Module for rp54X0		
			HP	Option 0D1	1	Factory integrated		
			HP	A5554A	1	256MB High Density SyncDRAM Mem Module		
			HP	Option 0D1	1	Factory integrated		
			HP	A6736A	1	18GB HotPlug Ultra2 SCSI LP disk drive		
			HP	Option 0D1	1	Factory integrated		
			HP	A5557A	1	DVD ROM Device for HPServer rp54X0 systems		
			HP	Option 0D1	1	Factory integrated		
			HP	A5159A	1	Dual Port FWD SCSI (PCI Bus) adapter		
			HP	Option 0D1	1	Factory integrated		
			HP	A5581A	1	Factory racked L-Class, HA slider rails		
			HP	B3920EA	1	HP-UX OE Media for Servers		
			HP	Option UM4	1	HP-UX version 11.0		
			HP	Option AAF	1	CD-ROM (disk only)		
			HP	Option 0D1	1	Factory integrated		
			HP	Option ASF	1	64-bit configuration		
			HP	Option ABA	1	U.S. - English localization		
			HP	B9088AC	1	HP-UX OE LTU with system		
			HP	A5213AZ	1	Rear Door for Std. Rack		
			HP	A5137AZ	1	Modular Power Dist. Unit		
			HP	Option AW4	1	200 - 240 volts North America		

CLIN	Previous	CLIN Description	MFG.	MFG. P/N	QTY	Parts Description	Price	Unit of Issue
0003CB		HP Server 9000 rp5400 CONFIGURED w/ 1 year OEM warranty. Includes 360MHz RISC processor w/ 1.5MB cache; 256MB SDRAM, (1) 18GB SCSI HD, HP-UX 11.0, DVD-ROM. NOTE: CLIN 0003Z_ is available for options or custom configuration of servers. Contact the MMAD-I Program Office for assistance.					<b>\$19,322</b>	Lot
			HP	A5576B	1	HP server rp5400 Solution		
			HP	A4902A	1	HP9000 Std Rack System E41		
			HP	A6696B	1	Embedded I/O for HP server rp54X0 system		
			HP	Option 0D1	1	Factory integrated		
			HP	A5522A	1	PA8500 CPU 1.5MB cache, 360 MHz		
			HP	Option 0D1	1	Factory integrated		
			HP	A5796A	1	Processor Support Module for rp54X0		
			HP	Option 0D1	1	Factory integrated		
			HP	A5554A	1	256MB High Density SyncDRAM Mem Module		
			HP	Option 0D1	1	Factory integrated		
			HP	A6736A	1	18GB HotPlug Ultra2 SCSI LP disk drive		
			HP	Option 0D1	1	Factory integrated		
			HP	A5557A	1	DVD ROM Device for HP Server rp54X0 systems		
			HP	Option 0D1	1	Factory integrated		

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**Contract No. DAAB07-00-D-H252**  
**ECP No. MD02-019-C1**

HP	A5159A	1	Dual Port FWD SCSI (PCI Bus) adapter
HP	Option 0D1	1	Factory integrated
HP	A5581A	1	Factory racked L-Class, HA slider rails
HP	B3920EA	1	HP-UX OE Media for Servers
HP	Option UM4	1	HP-UX version 11.0
HP	Option AAF	1	CD-ROM (disk only)
HP	Option 0D1	1	Factory integrated
HP	Option ASF	1	64-bit configuration
HP	Option ABA	1	U.S. - English localization
HP	B9088AC	1	HP-UX OE LTU with system
HP	A5213AZ	1	Rear Door for Std. Rack
HP	A5137AZ	1	Modular Power Dist. Unit
HP	Option AW4	1	200 - 240 volts North America
HP	H4401A	1	24x7 System Support, Phone/Updates
HP	Option 0BC	1	Manuals on CD-ROM
HP	Option 612	1	Support - rp5400/5430 (L1-L1500)
HP	Option 6M1	1	Support - Internet OE per processor
HP	Option AAF	1	CD-ROM (disk only)

**Entry-level Servers, rp5450 (RISC)**

CLIN	Previous	CLIN Description	MFG.	MFG. P/N	QTY	Parts Description	Price	Unit of Issue
0003DA		HP Server 9000 rp5450, CONFIGURED w/ 5 year warranty. Includes 360MHz RISC processor w/ 1.5MB cache; 256MB SDRAM, 18GB SCSI HD, HP-UX 11.0, DVD-ROM. CLIN 0003Z_ is available for options or custom configuration of servers. Contact the MMAD-I Program Office for assistance.					<b>\$49,297</b>	Lot
			HP	A4902A	1	HP9000 Std Rack System E41		
			HP	A5191B	1	HP server rp5450 Solution		
			HP	A6696B	1	Embedded I/O for HP server rp54X0 system		
			HP	option 0D1	1	Factory integrated		
			HP	A6146A	1	PA8600 CPU 1.5MB cache, 550 MHz		
			HP	option 0D1	1	Factory integrated		
			HP	A5796A	1	Processor Support Module for rp54X0		
			HP	option 0D1	1	Factory integrated		
			HP	A5554A	1	256MB High Density SyncDRAM Mem Module		
			HP	option 0D1	1	Factory integrated		
			HP	A6736A	1	18GB HotPlug Ultra160 SCSI disk, rp54X0		
			HP	option 0D1	1	Factory integrated		
			HP	A5581A	1	Factory racked L-Class, HA slider rails		
			HP	A5557A	1	DVD ROM Device for HP Svr rp54X0 systems		
			HP	option 0D1	1	Factory integrated		
			HP	A5150A	1	Dual Port Ultra 2 SCSI (PCI bus) adapter		
			HP	option 0D1	1	Factory integrated		
			HP	B3920EA	1	HP-UX OE Media for Servers		
			HP	option UM4	1	HP-UX version 11.0		
			HP	option AAF	1	CD-ROM (disk only)		
			HP	option 0D1	1	Factory integrated		
			HP	option ASF	1	64-bit configuration		
			HP	option ABA	1	U.S. - English localization		
			HP	B9088AC	1	HP-UX OE LTU 1 CPU with system		
			HP	A5213AZ	1	Rear Door for Std. Rack System E41		
			HP	A5137AZ	1	Modular Power Dist. Unit for std racks		
			HP	option AW4	1	200 - 240 volts North America		

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**Contract No. DAAB07-00-D-H252**  
**ECP No. MD02-019-C1**

CLIN	Previous	CLIN Description	MFG.	MFG. P/N	QTY	Parts Description	Price	Unit of Issue
0003DB		HP Server 9000 rp5450 CONFIGURED w/ 1 year OEM warranty. Includes 360MHz RISC processor w/ 1.5MB cache; 256MB SDRAM, 18GB SCSI HD, HP-UX 11.0, DVD-ROM. CLIN 0003Z_ is available for options or custom configuration of servers. Contact the MMAD-I Program Office for assistance.					\$23,323	Lot
		HP	A4902A	1	HP9000 Std Rack System E41			
		HP	A5191B	1	HP server rp5450 Solution			
		HP	A6696B	1	Embedded I/O for HP server rp54X0 system			
		HP	option 0D1	1	Factory integrated			
		HP	A6146A	1	PA8600 CPU 1.5MB cache, 550 MHz			
		HP	option 0D1	1	Factory integrated			
		HP	A5796A	1	Processor Support Module for rp54X0			
		HP	option 0D1	1	Factory integrated			
		HP	A5554A	1	256MB High Density SyncDRAM Mem Module			
		HP	option 0D1	1	Factory integrated			
		HP	A6736A	1	18GB HotPlug Ultra160 SCSI disk, rp54X0			
		HP	option 0D1	1	Factory integrated			
		HP	A5581A	1	Factory racked L-Class, HA slider rails			
		HP	A5557A	1	DVD ROM Device for HP Server rp54X0 systems			
		HP	option 0D1	1	Factory integrated			
		HP	A5150A	1	Dual Port Ultra 2 SCSI (PCI bus) adapter			
		HP	option 0D1	1	Factory integrated			
		HP	B3920EA	1	HP-UX OE Media for Servers			
		HP	option UM4	1	HP-UX version 11.0			
		HP	option AAF	1	CD-ROM (disk only)			
		HP	option 0D1	1	Factory integrated			
		HP	option ASF	1	64-bit configuration			
		HP	option ABA	1	U.S. - English localization			
		HP	B9088AC	1	HP-UX OE LTU 1 CPU with system			
		HP	A5213AZ	1	Rear Door for Std. Rack System E41			
		HP	A5137AZ	1	Modular Power Dist. Unit for std racks			
		HP	option AW4	1	200 - 240 volts North America			
		HP	H4401A	1	Next Day Sys Support, Phone/Updates			
		HP	option 613	1	Support - rp5450/5470 (L2/L3000) Server			
		HP	option 614	1	Support - rp54xx CPUs (L-Class)			
		HP	option 6M1	1	Support - Internet OE per processor			
		HP	option AAF	1	CD-ROM (disk only)			
		HP	option 0BC	1	Manuals on CD-ROM			

**Entry-level Servers, rp5470 (RISC)**

CLIN	Previous	CLIN Description	MFG.	MFG. P/N	QTY	Parts Description	Price	Unit of Issue
0003EA		HP Server 9000 rp5470, CONFIGURED w/ 5 year warranty. Includes 550MHz RISC processor w/ 1.5MB cache; 256MB SDRAM, 18GB SCSI HD, HP-UX 11.0, DVD-ROM. CLIN 0003Z_ is available for options or custom configuration of servers. Contact the MMAD-I Program Office for assistance.					\$54,700	Lot
		HP	A4902A	1	HP9000 Std Rack System E41			
		HP	A6144B	1	HP server rp5470 Enterprise Solution			
		HP	A6696B	1	Embedded I/O for HP server rp54X0 system			
		HP	option 0D1	1	Factory integrated			
		HP	A6146A	1	PA8600 CPU 1.5MB cache, 550 MHz			
		HP	option 0D1	1	Factory integrated			
		HP	A5796A	1	Processor Support Module for rp54X0			
		HP	option 0D1	1	Factory integrated			
		HP	A5554A	1	256MB High Density SyncDRAM Mem Module			
		HP	option 0D1	1	Factory integrated			
		HP	A6155A	1	HP server rp5430 & rp5470 memory extender			
		HP	option 0D1	1	Factory integrated			

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**Contract No. DAAB07-00-D-H252**  
**ECP No. MD02-019-C1**

HP	A5803A	1	18GB HotPlug Ultra2 SCSI LP disk drive
HP	option 0D1	1	Factory integrated
HP	A5557A	1	DVD ROM Device for HP Server rp54X0 systems
HP	option 0D1	1	Factory integrated
HP	A5581A	1	Factory racked L-Class, HA slider rails
HP	B3920EA	1	HP-UX OE Media for Servers
HP	option UM4	1	HP-UX version 11.0
HP	option AAF	1	CD-ROM (disk only)
HP	option 0D1	1	Factory integrated
HP	option ASF	1	64-bit configuration
HP	option ABA	1	U.S. - English localization
HP	B9088AC	1	HP-UX OE LTU 1 CPU with system
HP	A5213AZ	1	Rear Door for Std. Rack System E41
HP	A5137AZ	1	Modular Power Dist. Unit for std racks
HP	option AW4	1	200 - 240 volts North America

CLIN	Previous	CLIN Description	MFG.	MFG. P/N	QTY	Parts Description	Price	Unit of Issue
0003EB		HP Server 9000 rp5470 , CONFIGURED w/ 1 year OEM warranty. Includes 550MHz RISC processor w/ 1.5MB cache; 256MB SDRAM, 18GB SCSI HD, HP-UX 11.0, DVD-ROM. CLIN 0003Z_ is available for options or custom configuration of servers. Contact the MMAD-I Program Office for assistance.					\$26,284	Lot
			HP	A4902A	1	HP9000 Std Rack System E41		
			HP	A6144B	1	HP server rp5470 Enterprise Solution		
			HP	A6696B	1	Embedded I/O for HP server rp54X0 system		
			HP	option 0D1	1	Factory integrated		
			HP	A6146A	1	PA8600 CPU 1.5MB cache, 550 MHz		
			HP	option 0D1	1	Factory integrated		
			HP	A5796A	1	Processor Support Module for rp54X0		
			HP	option 0D1	1	Factory integrated		
			HP	A5554A	1	256MB High Density SyncDRAM Mem Module		
			HP	option 0D1	1	Factory integrated		
			HP	A6155A	1	HP server rp5430 & rp5470 memory extender		
			HP	option 0D1	1	Factory integrated		
			HP	A5803A	1	18GB HotPlug Ultra2 SCSI LP disk drive		
			HP	option 0D1	1	Factory integrated		
			HP	A5557A	1	DVD ROM Device for HP Server rp54X0 systems		
			HP	option 0D1	1	Factory integrated		
			HP	A5581A	1	Factory racked L-Class, HA slider rails		
			HP	B3920EA	1	HP-UX OE Media for Servers		
			HP	option UM4	1	HP-UX version 11.0		
			HP	option AAF	1	CD-ROM (disk only)		
			HP	option 0D1	1	Factory integrated		
			HP	option ASF	1	64-bit configuration		
			HP	option ABA	1	U.S. - English localization		
			HP	B9088AC	1	HP-UX OE LTU 1 CPU with system		
			HP	A5213AZ	1	Rear Door for Std. Rack System E41		
			HP	A5137AZ	1	Modular Power Dist. Unit for std racks		
			HP	option AW4	1	200 - 240 volts North America		
			HP	H4401A	1	Next Day Sys Support, Phone/Updates		
			HP	option 0BC	1	Manuals on CD-ROM		
			HP	option 613	1	Support - rp5450/5470 (L2/L3000) Server		
			HP	option 614	1	Support - rp54xx CPUs (L-Class)		
			HP	option 699	1	For Internal Entitlement Purposes		
			HP	option 6M1	1	Support - Internet OE per processor		
			HP	option AAF	1	CD-ROM (disk only)		

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**Contract No. DAAB07-00-D-H252**  
**ECP No. MD02-019-C1**

**Mid-level Servers, rp7400 (RISC)**

CLIN	Previous	CLIN Description	MFG.	MFG. P/N	QTY	Parts Description	Price	Unit of Issue
0003FA		HP Server rp7400, CONFIGURED w/ 5 year warranty. Includes 550MHz PA8600 RISC processor; 1GB SDRAM, (1) 18GB Ultra2 SCSI HD, HP-UX 11.0. CLIN 0003Z_ is available for options or custom configuration of servers. Contact the MMAD-I Program Office for assistance.					<b>\$68,924</b>	Lot
			HP	A4902A	1	HP9000 Std Rack System E41		
			HP	A3639C	1	HP server rp7400 Ent. Server Solution		
			HP	A5866A	1	HP server rp74X0 PA8600 550MHz CPU		
			HP	option 0D1	1	Factory integrated		
			HP	A5168A	1	HP server rp74X0 Processor Support Module		
			HP	option 0D1	1	Factory integrated		
			HP	A4923A	1	1024MB High Density SyncDRAM Memory Mod		
			HP	option 0D1	1	Factory integrated		
			HP	A4882A	1	HP server rp74X0 Memory Carrier Board		
			HP	option 0D1	1	Factory integrated		
			HP	A6739A	1	18GB HotPlug Ultra160 SCSI LP Disk		
			HP	option 0D1	1	Factory integrated		
			HP	A6735A	1	Racking Kit for HP server rp7400		
			HP	option 0D1	1	Factory integrated		
			HP	B3920EA	1	HP-UX OE Media for Servers		
			HP	option UM4	1	HP-UX version 11.0		
			HP	option AAF	1	CD-ROM (disk only)		
			HP	option 0D1	1	Factory integrated		
			HP	option ASF	1	64-bit configuration		
			HP	option ABA	1	U.S. - English localization		
			HP	B9088AC	1	HP-UX OE LTU 1 CPU with system		
			HP	A5543AZ	1	E41 Depth Ext. Kit, Factory Integrated		
			HP	A5213AZ	1	Rear Door for Std. Rack System E41		
			HP	A5137AZ	1	Modular Power Dist. Unit for std racks		
			HP	option AW4	1	200 - 240 volts North America		

CLIN	Previous	CLIN Description	MFG.	MFG. P/N	QTY	Parts Description	Price	Unit of Issue
0003FB		HP Server rp7400, CONFIGURED w/ 1 year OEM warranty. Includes 550MHz PA8600 RISC processor; 1GB SDRAM, (1) 18GB Ultra2 SCSI HD, HP-UX 11.0. CLIN 0003Z_ is available for options or custom configuration of servers. Contact the MMAD-I Program Office for assistance.					<b>\$37,341</b>	Lot
			HP	A4902A	1	HP9000 Std Rack System E41		
			HP	A3639C	1	HP server rp7400 Ent. Server Solution		
			HP	A5866A	1	HP server rp74X0 PA8600 550MHz CPU		
			HP	option 0D1	1	Factory integrated		
			HP	A5168A	1	HP server rp74X0 Processor Support Module		
			HP	option 0D1	1	Factory integrated		
			HP	A4923A	1	1024MB High Density SyncDRAM Memory Mod		
			HP	option 0D1	1	Factory integrated		
			HP	A4882A	1	HP server rp74X0 Memory Carrier Board		
			HP	option 0D1	1	Factory integrated		
			HP	A6739A	1	18GB HotPlug Ultra160 SCSI LP Disk		
			HP	option 0D1	1	Factory integrated		
			HP	A6735A	1	Racking Kit for HP server rp7400		
			HP	option 0D1	1	Factory integrated		
			HP	B3920EA	1	HP-UX OE Media for Servers		
			HP	option UM4	1	HP-UX version 11.0		
			HP	option AAF	1	CD-ROM (disk only)		
			HP	option 0D1	1	Factory integrated		
			HP	option ASF	1	64-bit configuration		
			HP	option ABA	1	U.S. - English localization		

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**Contract No. DAAB07-00-D-H252**  
**ECP No. MD02-019-C1**

HP	B9088AC	1	HP-UX OE LTU 1 CPU with system
HP	A5543AZ	1	E41 Depth Ext. Kit, Factory Integrated
HP	A5213AZ	1	Rear Door for Std. Rack System E41
HP	A5137AZ	1	Modular Power Dist. Unit for std racks
HP	option AW4	1	200 - 240 volts North America
HP	H4401A	1	Next Day Sys Support, Phone/Updates
HP	option 0BC	1	Manuals on CD-ROM
HP	option 615	1	Support - N4000/rp7400 Server Solution
HP	option 616	1	Support - N4000/rp7400 CPU
HP	option 699	1	For Internal Entitlement Purposes
HP	option 6M1	1	Support - Internet OE per processor
HP	option AAF	1	CD-ROM (disk only)

**Mid-level Servers, rp8400 (RISC)**

CLIN	Previous	CLIN Description	MFG.	MFG. P/N	QTY	Parts Description	Price	Unit of Issue
0003GA		HP Server rp8400, CONFIGURED w/ 5 year warranty . Includes (2) 750MHz PA8700 RISC processor; 2GB SDRAM, (1) 36GB Ultra2 SCSI HD, HP-UX 11.0. CLIN 0003Z_ is available for options or custom configuration of servers. Contact the MMAD-I Program Office for assistance.					<b>\$196,018</b>	Lot
			HP	A4901A	1	HP9000 Std Rack System E33		
			HP	A6093A	1	HP server rp8400 Solution		
			HP	A6094A	1	CPU and memory cell board		
			HP	option 0D1	1	Factory integrated		
			HP	A644A	1	750MHz PA8700 CPU, 2pack		
			HP	option 0D1	1	Factory integrated		
			HP	A6097A	1	2GB High Density SyncDRAM Memory Mod		
			HP	Option 0D1	1	Factory Integrated		
			HP	A6096A	1	Core I/O for HP server rp8400		
			HP	Option 0D1	1	Factory integrated		
			HP	A6724A	1	36GB HotPlug Ultra2 SCSI LP Disk Drive		
			HP	Option 0D1	1	Factory integrated		
			HP	A6099A	1	HotSwap Power Supply for HP server rp8400		
			HP	Option 0D1	1	Factory integrated		
			HP	J1528AZ	1	Factory Integration Rack Kit for rp8400		
			HP	Option A5N	1	250V/16Amp 2.5M PI jumper cord C19/20		
			HP	B3920EA	1	HP-UX OE Media for Servers		
			HP	Option UM9	1	HP-UX version 11i		
			HP	Option 0D1	1	Factory Integrated		
			HP	Option ABA	1	U.S. - English localization		
			HP	B9088AC	2	HP-UX OE LTU 1 CPU with System		
			HP	J1479A	1	120 lb Ballast Kit		
			HP	E7683AZ	1	PDU 60A, 200-240V N. Am Factory Install		
			HP	A5212AZ	1	Rear Door for Std Rack System E33		

CLIN	Previous	CLIN Description	MFG.	MFG. P/N	QTY	Parts Description	Price	Unit of Issue
0003GB		HP Server rp8400, CONFIGURED w/ 1 year OEM warranty. Includes (2) 750MHz PA8700 RISC processor; 2GB SDRAM, (1) 36GB Ultra2 SCSI HD, HP-UX 11.0. CLIN 0003Z_ is available for options or custom configuration of servers. Contact the MMAD-I Program Office for assistance.					<b>\$97,051</b>	Lot
			HP	A4901A	1	HP9000 Std Rack System E33		
			HP	A6093A	1	HP server rp8400 Solution		
			HP	A6094A	1	CPU and memory cell board		
			HP	option 0D1	1	Factory integrated		
			HP	A644A	1	750MHz PA8700 CPU, 2pack		
			HP	option 0D1	1	Factory integrated		
			HP	A6097A	1	2GB High Density SyncDRAM Memory Mod		
			HP	Option 0D1	1	Factory Integrated		
			HP	A6096A	1	Core I/O for HP server rp8400		

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**Contract No. DAAB07-00-D-H252**  
**ECP No. MD02-019-C1**

HP	Option 0D1	1	Factory integrated
HP	A6724A	1	36GB HotPlug Ultra2 SCSI LP Disk Drive
HP	Option 0D1	1	Factory integrated
HP	A6099A	1	HotSwap Power Supply for HP server rp8400
HP	Option 0D1	1	Factory integrated
HP	J1528AZ	1	Factory Integration Rack Kit for rp8400
HP	Option A5N	1	250V/16Amp 2.5M PI jumper cord C19/20
HP	B3920EA	1	HP-UX OE Media for Servers
HP	Option UM9	1	HP-UX version 11i
HP	Option 0D1	1	Factory Integrated
HP	Option ABA	1	U.S. - English localization
HP	B9088AC	2	HP-UX OE LTU 1 CPU with System
HP	J1479A	1	120 lb Ballast Kit
HP	E7683AZ	1	PDU 60A, 200-240V N. Am Factory Install
HP	A5212AZ	1	Rear Door for Std Rack System E33
HP	H4401	1	Next Day Support, Phone/Updates
HP	Option 0BC	1	Manuals on CD-ROM
HP	Option 699	1	For Internal Entitlement Purposes
HP	Option 6BA	1	Support rp8400 Server Solution
HP	Option 6BB	1	Support rp8400 650 MHz or 750MHz CPU
HP	Option 6M1	2	Support Internet OE per processor
HP	Option AAF	1	CD-ROM (disk only)

**Special Solution: HP Entry, Mid level and Itanium servers**

CLIN	CLIN Description	MFG.	MFG. P/N	QTY
0003Z_	Special Solution Large Scale Server w/ 5 yr warranty IAW Performance Specification Para 52. Discount off HP list price applies to the following: 11.3% to HP A400, A500 14.6% to HP rp5400, rp5450, rp5470 15.5% to HP rp7400, rp8400	HP	IAW Performance Specification Para 52	LO

CLIN	CLIN Description	MFG.	MFG. P/N	QTY
0003Y_	Special Solution Large Scale Server w/ 1 yr warranty IAW Performance Specification Para 52. Discount off HP GSA price applies to the following: 1% to HP A400, A500 3% to HP rp5400, rp5450, rp5470 2% to HP rp7400, rp8400	HP	IAW Performance Specification Para 52	LO

CLIN	CLIN Description	MFG.	MFG. P/N	QTY
0004Z_	Special Solution Large Scale Server w/ 5 yr warranty IAW Performance Specification Para 52. Discount off HP list price applies to the following: 9.4% to HP rx4610, rx9610	HP	IAW Performance Specification Para 52	LO

CLIN	CLIN Description	MFG.	MFG. P/N	QTY
0004Y_	Special Solution Large Scale Server w/ 1 yr warranty IAW Performance Specification Para 52. Discount off HP GSA price applies to the following: 1% to HP rx4610, rx9610	HP	IAW Performance Specification Para 52	LO

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## 5. Pricing Information

The prices presented in this ECP include the Government's one percent (1%) Army SCP Fee for Service (FFS). The following source contains List Price information for these products:

<https://www.e-solutions.hp.com/auth/cgi-bin/welcome.cgi?login=1>

### Single Rate Discounting

<b>HP Server Family</b>	<b>Single Rate Discount off HP List price for MMAD-I contract with 5 year warranty</b>
HP server rx4610 rx9610 Itanium Server	9.4%
HP 9000 A400/A500 Enterprise Server	11.3%
HP server rp5400, 5450, 5470 Enterprise Server	14.6%
HP server rp7400/rp8400 Enterprise Server	15.5%

**Pricing Notes:**

1. The HP servers proposed here are available under MMAD-I contract via CLINs 0003Z\_ and/or 0004Z\_.
2. IBM reserves the right to propose modified pricing.

<b>HP Server Family</b>	<b>Single Rate Discount off HP GSA price for standard OEM warranty</b>
HP server rx4610 rx9610 Itanium Server	1%
HP 9000 A400/A500 Enterprise Server	1%
HP server rp5400, 5450, 5470 Enterprise Server	3%
HP server rp7400/rp8400 Enterprise Server	2%

**Pricing Notes:**

1. The HP servers proposed here are available under MMAD-I contract when purchased with standard OEM warranty/Terms & Conditions via CLINs 0003Y\_ and/or 0004Y\_.
2. IBM reserves the right to propose modified pricing.

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## **6. ISO Compliance**

HP Servers listed in this ECP comply with one or more of the following:

FCC - Part 15, Class A
CISPR 22 3 <sup>rd</sup> Ed., Class A and CISPR 22: 1997
EN 55022 3 <sup>rd</sup> Ed., Class A and CISPR 24
CSN 13438 Class A

## **7. Trade Agreement Certification**

HP Servers listed in this ECP: Country of Origin: USA

## **8. Competitive Price Comparisons**

See attachment B

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## **9. Specifications**

### **rx4610**

Processor	Up to four Intel Itanium 733MHz, 800MHz
Cache	2MB L3 or 4MB L3 cache
Chip set	Intel 82460GX
Front-side bus	double-pumped 133MHz/sec.; 2.1GB/sec
Performance	SPECint2000=403, SPECfp2000=701, SPECf-rate2000=14.2(2-way) Linpack1000=2383.7 (All measurements using 800MHz with 4MB L3 cache unless otherwise noted)
Main memory, bus Bandwidth	up to 64GB SDRAM 4.2GB/sec bandwidth
Operating systems	HP-UX 11i; Microsoft Windows 64 bit; 64-bit Linux
Expansion slots	10-high bandwidth slots, including 8 hot-plug, 66MHz PCI
Storage	dual Ultra3 SCSI controller, two internal 36GB hot plug disks, one external LVD connector
Removable media	1 DVD ROM, 1 LS-120 floppy
Audio	stereo

### **rx9610**

Processor	4 to 16 Itanium processors—733 MHz or 800 MHz with 2MB or 4MB L3 cache 4, 8, 12 and 16 way configurations
Memory	64GB ECC SDRAM memory
Expansion slots	8 to 96 PCI slots hot swappable fans and power supplies
Operating System	HP-UX 11i
Basic system unit	<p>The basic system unit contains the shell of an rx9610 system. It has no processing capability itself but has the infrastructure to support the processors and memory in the cells and I/O in the PCI boxes. The basic system unit features include a service processor called a core box. The service processor monitors the system environment in terms of temperature, voltage and clock.</p> <p>The basic system unit features specifically include:</p> <ul style="list-style-type: none"><li>?? N+1 hot swappable DC power supplies</li><li>?? N+1 hot swappable main cabinet fan box capability</li><li>?? three fans (one redundant) in a main cabinet fan box</li><li>?? cabinet support for additional PCI-66 MHz box, PCI-33 MHz box or disk storage box</li></ul>
core box features	<p>The core box has a VGA card, mouse and keyboard connection that acts as a system console. It has a serial port and a LAN connection for a PC running Windows NT that acts as an engineering and manufacturing aid in test and debug of the system.</p> <ul style="list-style-type: none"><li>?? DVD disk</li><li>?? DAT tape (optional)</li><li>?? 10Base-T LAN</li><li>?? PS2 mouse and keyboard connection</li><li>?? VGA card</li><li>?? parallel port</li><li>?? 2 USB connections</li></ul>

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**Contract No. DAAB07-00-D-H252**  
**ECP No. MD02-019-C1**

- ?? 2 serial ports (COM)
- ?? local 10Base-T LAN for maintenance console (NT PC)
- ?? serial port for remote console
- ?? serial port for local console (NT PC)

<b>Specifications</b>	<b><u>A400</u></b>	<b><u>A500</u></b>
HP PA-RISC Processor	PA-8500 440MHz	PA-8500 440MHz / PA-8600 550MHz
Number of Processors	1 CPU	1 to 2 CPUs
Supported Operating Systems	HP-UX 11 (64-bit), Linux	HP-UX 11 (64-bit), Linux
Minimum/Maximum Memory	128MB/2GB	128MB/8GB
On-chip Cache (Data/Instr) per CPU	1MB/512KB (1.5MB total)	1MB/512KB (1.5MB total)
Total I/O Slots	2 (64-bit, 66MHz)	4 (64-bit, 66MHz)
Internal Disks	2	2
HP-UX Version	11.0	11.0
Physical Dimensions	3.5"x28"x17"	3.5"x28"x17"
Maximum Internal Disk Capacity	72GB	72GB
I/O Bandwidth	1.3GB/s	1.9GB/s
Memory Bus Bandwidth	1.8GB/s	1.8GB/s
Standard I/O Features	UltraSCSI, Ultra2 SCSI, 100Base-T LAN, RS-232 ports for console and UPS connections, 10Base-T support LAN, and web-based console	
Supported I/O Connectivity	Ultra2 SCSI LVD (single and dual port), FWD SCSI (single and dual port), Fibre Channel, Gigabit Ethernet, 100Base-TX (single and quad port), ATM 155Mbps (MMF, UTP-5), ATM 622Mbps (MMF), FDDI Dual Attach LAN, 100Mbps Token Ring, X.25/FR/SDLC (dual port), asynchronous ports (8 and 16 port), and RAID (4-channel)	

	<b><u>rp5400</u></b>	<b><u>rp5450</u></b>	<b><u>rp5470</u></b>
HP PA-RISC Processor	360MHz or 440MHz PA-8500 550MHz PA -8600	360MHz or 440MHz PA-8500 550MHz PA -8600	550MHz PA-8600
SMP Configuration	1 to 2 CPUs	1 to 4 CPUs	1 to 4 CPUs
Supported HP-UX Versions	11.0, 11i (64-bit)	11.0, 11i (64-bit)	11.0, 11i (64-bit)
Minimum/Maximum Memory	256MB/8GB	256MB/16GB	256MB/16GB
On-Chip Cache	1.5MB	1.5MB	1.5MB
Total I/O Slots	5	10	10
Internal Removable Media Bays	1	1	1

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**Contract No. DAAB07-00-D-H252**  
**ECP No. MD02-019-C1**

Maximum Internal Disk Capacity	292GB (4 disk bays)	292GB (4 disk bays)	292GB (4 disk bays)
Standard I/O Features	Ultra2 SCSI, 100Base-T LAN, RS-232 ports for console and UPS connections, 10Base-T support LAN and Web-based console		
Supported I/O Connectivity	Ultra2 SCSI LVD (single and dual port), FWD SCSI (single and dual port), Fibre Channel, Gigabit Ethernet, 100Base-TX (single and quad port), 100Base-FX, ATM 155Mbps (MMF, UTP-5), ATM 622Mbps (MMF), FDDI Dual Attach LAN, Token Ring 100Mbps; X.25/FR/SDLC (dual port), Multiplexer (8 and 16 port)		

**rp7400**

Processor	1 to 8 CPU
Minimum/Maximum Memory	1024 MB /32 GB
On-Chip Cache (Data/Instr) per CPU	1 MB /512 KB
Total I/O Slots	12
Internal Hot-Plug Disk Drives	2
Maximum Internal Disk Capacity	146 GB
Maximum External Storage Capacity	284 TB
Standard I/O Features	Ultra2 SCSI, 10/100Base-T LAN, 3x RS-232 ports for console and UPS connections, integrated Web Console
Supported I/O Connectivity	Ultra2 SCSI LVD (single and dual port); FWD SCSI (single and dual port); 10/100Base-TX (single and quad port) 100Base-FX; Gigabit Ethernet; FDDI; HyperFabric; Token Ring; ATM 622 and 155Mbps; X.25, SNAPplus, Frame Relay, SDLC (dual and quad); Serial Multiplexer (8- and 64-port), Fibre Channel, High Performance Peripheral Interface (HiPPi), Ultra2 SCSI RAID Controller, Dual Ultra2 SCSI/Dual 100Base-T Combo

**rp8400**

Processor	2 to 16 650Mhz or 750MHz PA 8700 CPU's
Memory	2 to 64GB SDRAM
Internal Peripherals	4 internal hot-plug disk bays and 2 internal removable media bays
HP-UX	HP-UX 11i
I/O	16 PCI hot-plug card slots
Connectivity	Core I/O: 10/100/1000Base-T LAN, Ultra2 SCSI, management LAN, serial ports, integrated web console. Add-in cards: ATM, Token Ring, FDDI, 1000Base-SX, 1000Base-T, 10/100Base-T, Ultra2 SCSI, Ultra3 SCSI, FW, Fibre Channel, terminal MUX, X.25, Hyperfabric

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## **9. Benchmarks**

SPEC and/or TPC data is not available for every server offered by Hewlett-Packard. HP has submitted series or class-representative configurations for benchmark testing. These configurations generally represent every series or class of server available from HP, and are intended to provide the customer with an overview of server performance within that series or class, and a baseline for comparison with servers of the same basic configuration.

See attachments for SPEC and TPC results.

TPC home page  
<http://www.tpc.org>

SPEC home page  
<http://www.spec.org>

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