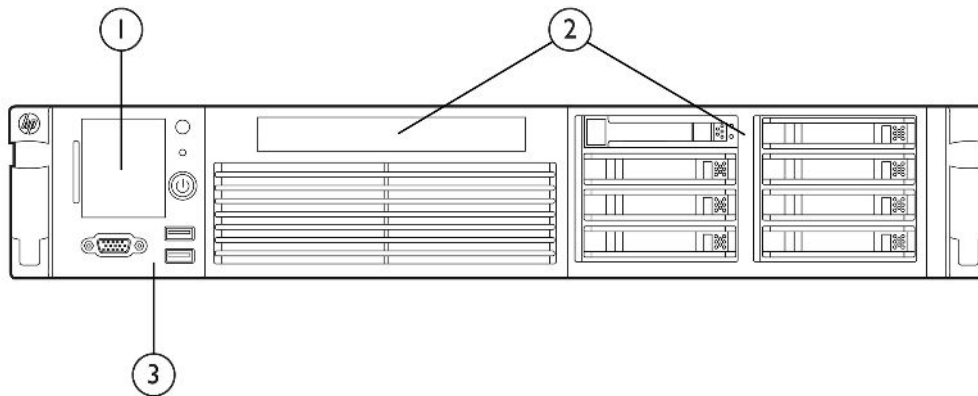


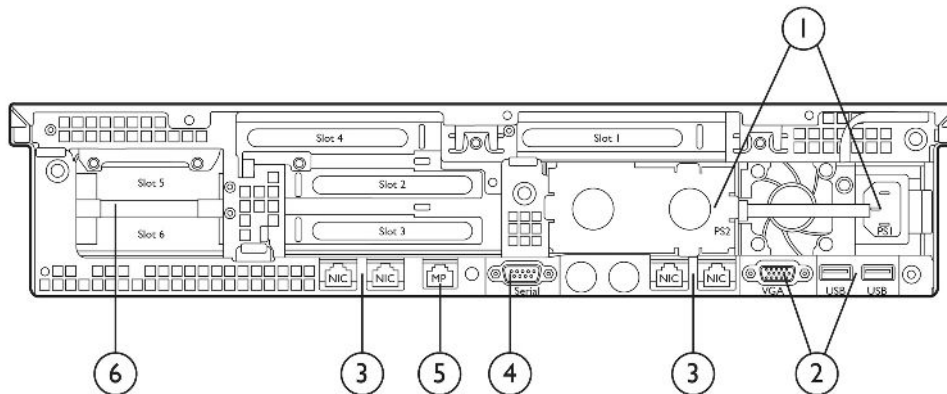
### Overview

You are under constant pressure to deliver more with less, even in the face of declining budgets and spending constraints - while your IT department requires higher performing systems for their more demanding workloads. You need an affordable UNIX server that you can install quickly and justify easily. The **HP Integrity rx2800 i2 Server** is the economical and easy way to boost performance in your mission-critical data center or remote office, compared to the previous 2U Integrity servers. With compact scaling you can run entry-class UNIX workloads with outstanding performance and scalability. Out-of-the-box savings lowers your TCO with performance, floor space and energy efficiencies. State-of-the-art management tools help you simplify administration, ease serviceability, enable remote management, and improve overall IT staff productivity-and the 2U rx2800 i2 Server integrates seamlessly into existing rack infrastructures.



**HP Integrity rx2800 i2 Server: Front View**

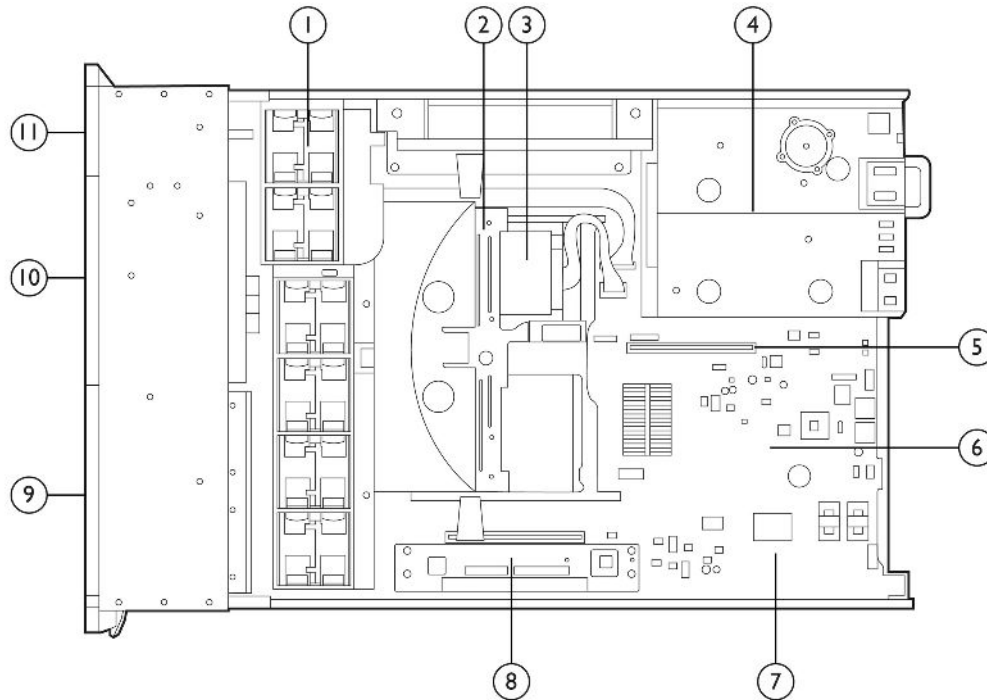
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|----------------------------|------------------------------|
| 1. Systems Insight Display | 3. Front Panel Console (KVM) |
| 2. 1 DVD & 8 HDDs          |                              |



**HP Integrity rx2800 i2 Server: Rear View**

- |                      |                 |
|----------------------|-----------------|
| 1. 2x Power Supplies | 4. RS232 port   |
| 2. Rear VGA & USB    | 5. iLO3 LAN     |
| 3. 4x 1G LANs        | 6. 6x I/O Slots |

### Overview



#### HP Integrity rx2800 i2 Server: Inside View

- |  |   |
|--|---|
| 1. 6 system fans   | 7. 2 low profile PCIe<br>[p410i RAID controller under low profile PCIe cards] |
| 2. Internal USB  | 8. 24 DDR3 Memory Modules in four Memory Expansion Boards                     |
| 3. 2 Processor Sockets   | 9. 8 Hard Drives  |
| 4. 2 PSUs<br>[ICH10, Gromit XE & RN50 video controller under PSUs]         | 10. DVD-ROM or DVD+RW   |
| 5. Chipset   | 11. Front IO & SID  |
| 6. 2 full-length PCIe cards<br>[2 half length PCIe under full-length card] |   |

### Overview

#### At A Glance

##### Standard System Features

- HP-UX 11i version 3 September 2010 Release
- HP p410i SAS RAID Controller integrated on system board. Supports internal RAID 0, 1, 5, and 6. Optional 512MB Cache/ Super Capacitor kit (AM252A) for RAID 0 and RAID 1; AM252A is required for RAID 5 and RAID 6.
- Quad port 10/100/1000Base-TX LAN (with auto speed sensing; RJ 45 connector, Wake On LAN support) integrated on system board
- One 6-slot Memory Expansion Board (AM246A)
- Integrity Integrated Lights Out 3 (iLO3) Management Processor and factory installed Integrity iLO3 Advanced Pack license
- Telnet and web console via 10/100/1000Base-TX management LAN (RJ 45 connector)
- One RS 232 serial port for general purpose
- Factory integration of processors, memory, disk drives, removable media, I/O cards, and HP Universal 10000 G2 series racks.
- Rackmountable into 19 inch cabinets-HP Universal 10000 Series G2 racks as well as many third party racks, including field integration into existing HP System E racks
- Optional stand alone pedestal mount
- Three year warranty with next business day on site
- ENERGY STAR® certified with 80 Plus Platinum power supplies
- NEBS Level 3 Certified (GR-63-CORE, GR-1089-CORE)

### Standard Features

#### Minimum System Capacities

- One 64 bit Intel Itanium processor: Either dual core 1.6 GHz/10 MB on-chip L3 cache 9310 processor, or quad core 1.33 GHz/16 MB on-chip L3 cache 9320 processor, or quad core 1.60 GHz/20 MB on-chip L3 cache 9340.
- One I/O Riser Board. Choice of PCIe 3-Slot Riser Board with one full-length/full-height x8 speed/x16 connector slot and two half-length/full-height x4 speed/x8 connectors slots; or PCIe 2-Slot Riser Board with one full-length/full-height x8 speed/x16 connector slot and one half-length/full-height x8speed/x16connector slots.
- 4 GB PC3 10600 Registered CAS9 memory module. Note: Memory modules are DIMM pairs. **NOTE:** Double Chip Spare is not supported when 2GB DIMMs are installed in the system.
- Six DIMM slots
- One hot swap power supply

#### Maximum Server Capacities

- Two 64 bit Intel Itanium processors: Either dual core 1.6 GHz/10 MB on-chip L3 cache 9310 processor, or quad core 1.33 GHz/16 MB on-chip L3 cache 9320 processor, or quad core 1.60 GHz/20 MB on-chip L3 cache 9340.
- 384 GB PC3 10600 Registered CAS9 memory module.  
**NOTE:** Memory modules are DIMM pairs.  
**NOTE:** Double Chip Spare is not supported when 2GB DIMMs are installed in the system.
- Twenty-four DIMM slots
- Two hot swap power supplies, providing N+N protection for power supplies and power input
- Two I/O Riser Boards. Choice of PCIe 3-Slot Riser Board with one full-length/full-height x8 speed/x16 connector slot and two half-length/full-height x4 speed/x8 connectors slots; or PCIe 2-Slot Riser Board with one full-length/full-height x8 speed/x16 connector slot and one half-length/full-height x8speed/x16connector slots.
- One internal DVD ROM or DVD+RW drive
- Eight internal hot plug Serial Attached SCSI (SAS) disks for up to 7.2 TB

#### High Availability

- N+N Hot swap cooling (not available with OFS [Office Friendly Server] system)
- One Hot swap power supply standard-optional second hot swap power supply for N+N protection (two included in OFS systems for reduction of acoustics)
- Advanced ECC protected DDR3 memory
- Memory double chip spare to overcome single DRAM chip failures.  
**NOTE:** Not supported when 2-GB DIMMs are installed in the system.
- Dynamic Processor resilience and deallocation (DPR)
- UPS power management
- Hot Plug internal disks
- Integrated HP p410i SAS RAID Controller integrated on system board. Supports internal RAID 0, 1, 5, and 6. Optional 512MB Cache/Super Capacitor kit for RAID 0, 1, and 5; required for Raid 6
- Journal file system with HP UX
- Auto reboot
- HP Serviceguard for HP UX
- HP Serviceguard Extension for RAC for HP UX
- HP Serviceguard Extension for SAP for HP UX
- Serviceguard Manager for HP UX
- HP Event Monitoring Service
- HA Monitors for HP UX
- HA Toolkits for HP UX
- HP Mirrordisk/UX

### Standard Features

- Extended Campus Cluster, HP Metrocluster, and HP Continentalclusters for HP UX
  - HP System Insight Manager (SIM) for proactive fault management
  - NEBS Level 3 Certified (GR-63-CORE, GR-1089-CORE)
- 

### Security

- TPM (Trusted Platforms Module) option available
  - Separate LAN for system management
  - Password protection on console port
  - Disablement of remote console ports
  - SSL encryption on web console
- 

### Manageability-Monitor

- Integrity Integrated Lights Out 3 (iLO3) Management Processor and factory installed Integrity iLO 3 Advanced Pack license
  - HP System Insight Manager (SIM)
  - HP Servicecontrol suite for HP-UX servers including tools for system administration, asset management, and fault management
  - HP-UX kernel configuration for easy, dynamic kernel parameter changes
- 

### Manageability-Optimize

- Process Resource Manager for HP-UX resource management
  - HP UX Workload Manager for HP-UX workload management based upon service level objectives
  - HP OpenView GlancePlus Pack
-

### Configuration

**Processor Configuration** The HP Integrity rx2800 i2 is a symmetrical multiprocessing (SMP) server supporting up to two high performance 64 bit Itanium processors. Processor speeds cannot be mixed within the same system.

#### Processor Details

Dual core series 9300 Itanium processors:

- Dual-core 1.6-GHz with 10.0-MB Level 3 Cache 9310 processor

Quad core series 9300 Itanium processor:

- Quad core 1.33 GHz with 16 MB Level 3 Cache 9320 processor
- Quad core 1.60 GHz with 20 MB Level 3 Cache 9340 processor

All processors support:

- Level 2 Cache: 512KB Instruction/256 KB Data per core
- Level 1 Cache: 32 KB per core; 16KB (I)/16KB (D)
- Single bit cache error correction
- 50 bit physical addressing
- 64 bit virtual addressing
- 4 GB maximum page size
- Error protection on all major data structures
- Intel Hyper Threading
- Intel Advanced Thermal Management (Foxton/VFM)
- Intel Cache Safe Technology

#### Memory Configuration

The HP Integrity rx2800 i2 supports DDR (double data rate) SyncDRAM (synchronous dynamic random access memory) DIMMs with ECC and chip spare protection. The HP Integrity rx2800 i2 supports a maximum of twenty-four DIMM slots. The base server comes standard with 6 DIMM slots (one 6 slot memory riser, AM246A). Up to 18 additional DIMM slots can be added by ordering up to 3 additional of the optional AM246A 6-slot memory riser. A maximum of 384 GB is supported (24×16GB DIMMs).

##### Memory Loading Rules and Performance Guidelines

- Memory must be installed in groups of two DIMMs, also known as pairs or modules
- Each memory pair must consist of DIMMs of the same type: same capacity/density, same organization, same number of ranks, and same speed
- Memory is ordered in modules (pairs) of 4 GB (2×2GB); 8 GB (2×4GB); 16GB (2×8GB); or 32GB (2×16GB)
- Minimum memory is 4 GB (2×2GB).  
**NOTE:** 2GB DIMMs do not support double chip spare. Anytime 2GB DIMMs are installed in the system, double chip sparing is not supported.
- Maximum memory is 384-GB, using twelve (12) 32 GB (2×16GB) memory pairs
- Alternate DIMM pairs between memory risers. If both processor sockets are populated, alternate DIMMs between processors.
- For best performance, all DIMM slots should be populated with the same size DIMM.

#### Supported Memory Options

### Configuration

Description	Product Number
<b>4-GB chip spare PC3 10600 Registered CAS9 memory module (2×2 GB DIMMs).</b> <b>NOTE:</b> 2GB DIMMs do not support double chip spare. Anytime 2GB DIMMs are installed in a system, double chip spare will not be supported.	<b>AM229A</b>
<b>8-GB chip spare PC3 10600 Registered CAS9 memory module (2×4 GB DIMMs)</b>	<b>AM230A</b>
<b>16-GB chip spare PC3 10600 Registered CAS9 memory module (2×8 GB DIMMs)</b>	<b>AM231A</b>
<b>32-GB chip spare PC3 10600 Registered CAS9 memory module (2×16 GB DIMMs)</b>	<b>AT067A</b>
<b>6-slot Memory DIMM Riser Card. Note: Maximum of three additional (1 in base system) supported.</b>	<b>AM246A</b>

### Server Form Factors and Rack Configuration

The HP Integrity rx2800 i2 is a 2U server. It comes in 3 form factors: Rack-Optimized, OFS (Office Friendly Server) and pedestal versions. The rack-optimized and OFS versions have different base model product numbers; the rack optimized version is AH395A; the OFS version is AH396A. The pedestal version consists of the rack-optimized version plus the pedestal foot; AM251A. The pedestal foot allows the server to be deployed in a non-rack environment. Please note that the OFS version includes the pedestal foot.

The OFS is a pedestal form factor with reduced acoustics for workstation replacement and/or office environments. Note that the OFS does not support redundant fans. The OFS does support redundant power in limited configurations; 1 processor and 12 DIMMs, or 2 processors and 8 DIMMs.

In addition, the HP Integrity rx2800 i2 server offers a NEBS Level 3 DC powered option, which enables equipment operability in network facility environments. NEBS compliance is a requirement for Telecom Carriers and their Equipment Providers that are seeking to install equipment in central offices. They view compliance as key to ensuring personnel safety, protection of property, and operational reliability. There are three distinct certification levels specified in SR-3580, Network Equipment-Building System (NEBS) Criteria Levels. All carrier-grade (CG) products released by HP are evaluated to the NEBS Level 3 criteria, which provides the maximum assurance of equipment operability in network facility environments. The Physical Components are described in GR-63-CORE, while the Electromagnetic Compatibility (EMC) and Safety components are described in GR-1089-CORE.

Please note that the pedestal version does not have the reduced acoustics of the OFS version, because it is based on the rack-optimized version. The pedestal foot is not factory installed; it comes as a kit that must be assembled on site.

The rack mounted version of the rx2800 i2 is supported in HP 10000 Series G2 cabinets. For factory integration order the Universal Rack Kit, AM227A, with OD1 feature code. Sliding mounts and a cable management arm will be installed with the server in a factory integrated rack.

The HP Integrity rx2800 i2 can be installed in the field with the Universal Rack Kit (AM227A with B01 feature code). This kit contains the slide mounts, cable management arm, and all other hardware needed to mount an rx2800 i2 into a 19 inch cabinet.

Refer to the 10000 Series G2 Rack Best Practices Guide for information on rack deployment, stabilization, and transportation. Go to <http://www.hp.com/go/rackandpower> for more information.

### Configuration

#### Non-HP Cabinets

For customers who choose to use non HP cabinets, the HP Integrity rx2800 i2 provides simple options for installation and HP field support. The HP Integrity rx2800 i2 field rack kit (AM227A) contains adjustable slide rails, allowing the server to be mounted in cabinets that use the four post EIA mounting system.

Once the server is mounted in a non HP cabinet, it must meet some simple criteria to ensure that HP field personnel can fully support the rack environment.

- **Anti Tip**-The rack/cabinet must be solidly anchored to the floor both front and rear. This is usually accomplished by anti tip feet or by direct bolting to the floor.
- **Air Flow**-The HP Integrity rx2800 i2 uses front to back airflow to cool the unit. Thus a cabinet cannot have a solid front or rear door. Solid doors may have to be removed or changed to an open perforation pattern.
- **Cable Strain Relief**-A proper method of strain relief must be used. This may force the elimination of the rear door in some cases.
- **Front and Rear Access**-For proper cooling and ease of service access, HP recommends 32 inches of unobstructed floor space in the front and rear of rack installations. This recommendation applies to both HP and third party racks and cabinets.

### I/O Architecture

#### HP Integrity rx2800 i2 Supported I/O Cards

I/O Card	Product Number	Length/Height	Boot Support	Speed/Connector	Maximum Cards	Special Notes
<b>Mass Storage Host Bus Adapters</b>						
HP1-port 8Gb PCIe FC SR QLogic HBA	AH400A	Half-Length/ Low-Profile or Full-Height	Yes	x8 speed/ x8 connector	6	6 with 2 AM228A IO Riser Cards
HP 2-port 8Gb PCIe FC SR QLogic HBA	AH401A	Half-Length/ Low-Profile or Full-Height	Yes	x8 speed/ x8 connector	6	6 with 2 AM228A IO Riser Cards
HP PCIe 1-port 8Gb FC SR Emulex HBA	AH402A	Half-Length/ Low-Profile or Full-Height	Yes	x8 speed/ x8 connector	6	6 with 2 AM228A IO Riser Cards
HP PCIe 2-port 8Gb FC SR Emulex HBA	AH403A	Half-Length/ Low-Profile or Full-Height	Yes	x8 speed/ x8 connector	6	6 with 2 AM228A IO Riser Cards



### Configuration

HP Integrity PCIe 2p P411/256MB SAS Controller	AM311A	Half-Length/ Low-Profile or Full-Height	Yes	x8 speed/ x8 connector	3	Only supported in Primary PCIe IO Riser card. 3 with 1 AM228A IO Riser Card
HP Integrity SA 812/1GB PCIe SAS Controller	AM312A	Half-Length/ Low-Profile or Full-Height	Yes	x8 speed/ x8 connector	1	Only supported in Primary PCIe IO Riser card.
HP rx2800 i2 SA 512MB Cache/Battery Kit	AM252A	N/A	N/A	N/A	1	Required for RAID 5 and RAID 6 configurations
<b>Local Area Network (LAN) Adapters</b>						
HP Integrity CN1100E PCIe 2-port Converged Network Adapter Supports FCOE and 10Gb Ethernet	AT111A	Half-Length/ Low-Profile or Full-Height	Yes	x8 speed, 8x connector	6	6 with 2 AM228A IO Riser Cards
HP Integrity NC552SFP 2P 10GbE Adapter	AT118A	Half-Length/ Low-Profile or Full-Height	Yes	x8 speed, 8x connector	6	6 with 2 AM228A IO Riser Cards
HP Integrity 10GbE -SR 2p PCIe Adapter	AM225A	Half-Length/ Low-Profile or Full-Height	Yes	x8 speed/ x8 connector	6	6 with 2 AM228A IO Riser Cards
HP Integrity 10GbE -LR 2p PCIe Adapter	AM232A	Half-Length/ Low-Profile or Full-Height	Yes	x8 speed/ x8 connector	6	6 with 2 AM228A IO Riser Cards
HP Integrity 10GbE -CR 2p PCIe Adapter	AM233A	Half-Length/ Low-Profile or Full-Height	Yes	x8 speed/ x8 connector	6	6 with 2 AM228A IO Riser Cards
HP PCIe 2 port 1000Base T card	AD337A	Half-Length/ Low-Profile or Full-Height	Yes	x4 speed/ x8 connector	6	6 with 2 AM228A IO Riser Cards
HP PCIe 2 port 1000Base SX card	AD338A	Half-Length/ Low-Profile or Full-Height	Yes	x4 speed/ x8 connector	6	6 with 2 AM228A IO Riser Cards

### Configuration

PCIe 4 port HP NC364T Gbit Adapter	AD339A	Half-Length/ Low-Profile or Full-Height	Yes	x8 speed/ x8 connector	6	6 with 2 AM228A IO Riser Cards
<b>Infiniband Host Channel Adapters</b>						
HP Integrity 4X QDR CX-2 PCI-e G2 DP HCA	AT083A	Half-Length/LP or FH	Yes	x4 speed, x4 connector	2	2 with 2 AM228A IO Riser Cards
<b>Multi function Cards (Mass Storage/LAN)</b>						
HP PCIe 2-port 8Gb FibreChannel and 2-port 1/10Gb Ethernet Adapter	AT094A	Half-Length/ Low-Profile or Full-Height	Yes	x8 speed, 8x connector	4	
HP PCIe 1-port 4Gb Fibre Channel and 1-port 1000BaseT Adapter	AD221A	Half-Length/Full-Height	Yes	x8 speed/ x8 connector	4	
HP PCIe 2p 4Gb FC AND 2p 1000BT Adapter	AD222A	Half-Length/Full-Height	Yes	x8 speed/ x8 connector	4	
HP PCIe 2p 4Gb FC AND 2p 1000BSX Adapter	AD393A	Half-Length/Full-Height	Yes	x8 speed/ x8 connector	4	
<b>Additional Interface Cards</b>						
HP Integrity rx2800 i2 2D Graphics Adapter	AH423A	Half-Length/Full-Height		x16 speed/ x16 connector	2	Must be installed in a Full-Height x16 connector slot

Accessory Products	Product Number
HP Integrity Thin-Client Bundle	AB300E
<b>NOTE:</b> AB300E includes T5550 Thin-Client console, a 17inch Display and keyboard/mouse.	
<b>Displays</b>	
HP Compaq LE1711 17-inch LCD Monitor	EM886AA
HP Compaq LE1911 19-inch LCD Monitor	EM887AA
HP Compaq LA2205wg 22-inch Widescreen LCD Monitor	NM274AA
HP Compaq LA2405wg 24-inch Widescreen LCD Monitor	NL773AA
<b>Keyboard</b>	
HP USB Standard Keyboard	DT528A
HP USB OpenVMS Keyboard and Mouse Kit	AB552A
<b>Mouse</b>	
HP USB Optical Scroll Mouse	DC172B

### Configuration

Internal Supported Storage Devices	
Device	Product Number
<b>Internal Disk Drives</b> (Optional - Maximum 8)	
72-GB 15K RPM SAS (Serial Attached SCSI) 2.5" Small Form Factor Hot Plug Disk	AD379A
146-GB 15K RPM SAS (Serial Attached SCSI) 2.5" Small Form Factor Hot Plug Disk	AM302A
300-GB 10K RPM SAS (Serial Attached SCSI) 2.5" Small Form Factor Hot Plug Disk	AM244A
300-GB 15K RPM SAS (Serial Attached SCSI) 2.5" Small Form Factor Hot Plug Disk	AT086A
450-GB 10K RPM SAS (Serial Attached SCSI) 2.5" Small Form Factor Hot Plug Disk	AM316A
600-GB 10K RPM SAS (Serial Attached SCSI) 2.5" Small Form Factor Hot Plug Disk	AM317A
900-GB 10K RPM SAS (Serial Attached SCSI) 2.5" Small Form Factor Hot Plug Disk	AT069A
<b>6G SAS Hot Plug Enterprise Performance Solid State Drives</b>	
200-GB 6G SAS (Serial Attached SCSI) SLC 2.5" Small Form Factor Solid State Drive	AT088A
400-GB 6G SAS (Serial Attached SCSI) SLC 2.5" Small Form Factor Solid State Drive	AT089A
<b>RAID</b>	
HP BL8x0c i2 factory configured RAID 0, requires 1 drive minimum, only 1 drive will be configured.	AM238A
HP BLx0c i2 factory configured RAID 1, requires 2 identical drives minimum, only 2 drives will be configured.	AM239A
HP rx2800 i2 factory configured RAID 5, requires 3 identical drives minimum, only 3 drives will be configured.	AM240A
<b>Removable Media Drive</b> (Optional - Maximum 1)*	
HP Slimline DVD-ROM Optical Drive	AM242A
HP Slimline DVD+RW Optical Drive	AM243A

**Integrated Multi-function Core I/O** The integrated multi function I/O provides core I/O functionally and includes the management processor, which provides remote management and high availability monitoring capabilities.

#### Core I/O

- Two 2-port Intel 82575 10/100/1000BaseTX LAN chips with RJ 45 connector-Supports LAN boot for operating system installation and wake on LAN capability
- HP 410i 6Gb SAS RAID Controller, supports up to 8 internal SAS disk drives.
- May select factory configured RAID. The maximum of eight disks can be configured for RAID 0, 1, and 5 in any combination. RAID 0 requires 1 drive, RAID 1 requires two identical HDDs, and RAID5 requires three identical HDDs. Optional AM252A SA 512MB Cache/Battery kit is available with RAID configurations; AM252A is required for RAID 5,6 configurations.
- Four USB 2.0 style A ports (USB 1.1 compatible); two front port, two rear ports
- One general purpose serial port on rear of system
- Telnet and web console via 10/100/1000Base-TX management LAN (RJ 45 connector)
- Two VGA ports; one front, one rear

### Configuration

#### **Integrity Integrated Lights Out (iLO) Management Processor Functionality**

- Dedicated 10/100/1000Base-TX LAN port for LAN console and embedded web console access
- One RS 232 serial port for local console
- Password protected console ports
- Console mirroring between all local, modem, LAN, and web consoles
- Remote power up and power down control
- Configurable remote access control
- Event notification to system console—Provides connectivity, information, and support for HP UX tools (such as STM and EMS) to notify by email, pager and/or HP response centers.
- Interface to system monitoring and diagnostic hardware via an internal IC bus
- Secure Sockets Layer security on web console
- Integrity Integrated Lights Out (iLO3) Advanced Pack. Integrity Lights Out (iLO3) Advanced Pack provides additional remote management capabilities, including LDAP directory services, Virtual Media (CD, DVD, and ISO image) for HP-UX and Windows, and Integrated Remote Console (Virtual Keyboard, Video, and Mouse) for Windows
- The RN50 integrated chip provides basic graphic capabilities. One VGA port is supported, with optional connection from front or rear of the system.

#### **System Console Configurations**

The HP Integrity rx2800 i2's integrated iLO3 Management Processor provides five methods for console connections.

- SSL secured Web console accessible through the 10/100/1000Base-TX management LAN
- Standard telnet connections accessible through the 10/100/1000Base-TX management LAN
- Local VT100 or hpterm terminal, or VT100 or hpterm emulator via local RS 232 serial connection
- Remote VT100 or hpterm terminal, or VT100 or hpterm emulator via external modem
- VGA graphics console. Keyboard and mouse connections are provided by USB.

#### **Internal Disk and Media Drives**

- The HP Integrity rx2800 i2 supports up to eight internal Serial Attached SCSI (SAS) 2.5 inch hot plug small form factor hard disk drives
- An 8 internal port host bus adapter provides 8 ports, 1 port per SAS disk, for point to point connection from the adapter to the disk. This means that each disk has its own 6 GB link.
- The maximum of eight disks can be configured for RAID 0, 1, 5 and 6 in any combination. RAID 0 requires one drive, RAID 1 requires two identical HDDs, RAID5 requires three identical HDDs, and RAID 6 requires four identical HDDs. An optional SA 512MB Cache/Battery kit (AM252A) is available for all RAID options; it is required for RAID 5 and RAID 6. Factory configuration of a RAID set is available, except for RAID 6. Please see rx2800 i2 Ordering Menu for details.
- Mirrordisk/UX is available for software mirroring on all HDDs in HP UX based systems.
- Cables required to connect the internal disk drives to the host bus adapter are shipped with the system; no need to order separately.
- 72-GB 15K, 146-GB 10K, 146-GB 15K, 300GB 10K, 300GB 15K, 450GB 10K, 600GB 10K, and 900GB 10K Serial Attached SCSI (SAS) disks are supported.
- 200-GB and 400-GB 6G Serial Attached SCSI (SAS) solid state drives (SSD) are supported.
- Optical media drives include a slimline DVD-ROM (AM242A) and a slimline DVD+RW (AM243A).

### Configuration

#### HP Integrity Trusted Platform Module

The rx2800 i2 has an accessory option for an embedded security chip - the Trusted Platforms Module (TPM) - product number AM237A. HP-UX Trusted Computing Services (HP-UX TCS) provides software support for the TPM when running HP-UX 11i v3. By providing a low-cost embedded security chip option (known as a Trusted Platform Module), HP has established a foundation for strong protection of sensitive information - including cryptographic keys. Built around industry standards, the Trusted Platform Module (TPM) provides a basis for key storage by securely generating and storing cryptographic keys. HP-UX 11i TCS takes this a step further by providing the necessary infrastructure for managing the TPM, as well as integrating it into select features such as HP-UX Encrypted Volumes and File Systems (EVFS).

Using HP-UX TCS with EVFS:

Using HP-UX TCS to make the unattended boot capability of EVFS more secure is an important example of how HP-UX TCS can be integrated with other applications to enhance security. For more information see the "Protecting EVFS Keys with HP-UX TCS" chapter in the "HP-UX Trusted Computing Services Administrators Guide" available in the HP-UX Trusted Computing Services section at:

<http://docs.hp.com/en/internet.html>

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#### HP Integrity rx2800 i2 Power Subsystem

The HP Integrity rx2800 i2 provides a high level of integrated power protection:

- N+N redundant hot swap power supplies (AC or DC)
- N+N redundant AC or DC power input protection with electrical phase isolation
- Power monitoring and control

The HP Integrity rx2800 i2 supports a second hot swap power supply for N+N protection. One AC power supply is shipped as a standard part of every AC system (AH395A and AH396A) and is required for correct operation. Two DC power supplies are shipped as a standard part of every DC system (AT112A). The hot swap design allows for the online replacement of a power supply when N+N=2 supplies are configured in the server.

The HP Integrity rx2800 i2 provides an independent power input receptacle for each power supply (c13/C14 type). The independent design provides protection against losing the connection from a power cord or breaker. The HP Integrity rx2800 i2 power cords should always be plugged into separate breakers whenever possible.

**NOTE:** It is highly recommended that the HP Power Advisor tool is run to determine configuration specific power and cooling needs. The HP Power Advisor is located at: <http://www.hp.com/go/hppoweradvisor>

### Services and Support

#### Support Services

HP Technology Services—consultants and support experts to solve your most complex infrastructure problems. We help keep your business running, no matter what. Boost availability and avoid downtime, trust our expertise to optimize your HP solution.

##### **HP Care Pack Services: Packaged server and storage services for increased uptime, productivity and ROI**

When you buy HP server and storage products and solutions, it's also a good time to think about what levels of support you may need. Our portfolio of service options reduce deployment and management worries while helping you get the most out of your server and storage investments. We take a holistic approach to your environment, bridging servers, blades, storage, software and network infrastructures with our packaged HP Care Pack Services for servers and storage. HP recommends the following support and Installation services for the Integrity rx2800i2 servers.

##### **Protect your business beyond warranty**

When it comes to robustness and reliability, standard computing equipment warranties have matured along with technology. Good news that can also create problems stemming from depending on standard warranties designed to only protect against product defects and some downtime causes. Using a standard approach to warranty uplifts, such as HP Care Pack Services, helps reduce downtime risks and provides operational consistency for mission-critical and standard business computing.

##### **HP Care Pack Services: Upgrading or extending standard server and storage warranties cost effectively**

HP Care Pack Services offer a standard reactive hardware and software support services suite sold separately, or combined with our Support Plus and Support Plus 24 services. The portfolio also provides a combination of integrated proactive and reactive services, such as Proactive 24 Service and Critical Service. In addition with HP Proactive Select, you can acquire the specific proactive constancy and technical services. HP Proactive Select menu offers a broad set of service options that you can mix and match depending on your specific requirements. Proactive service options include offers for server, storage, network, SAN device, software, environment and education services.

HP server and storage lifecycle support services offers a full spectrum of customer care—from technology support to complex migrations to complete managed services. HP Factory Express provides customization, integration and deployment services for turnkey solutions. HP Education Services offer flexible, comprehensive training on to help your IT staff get the most out of your server and storage investments. HP Financial solutions extend innovative financing and cost-effective asset management programs—from purchase to equipment retirement. Depending on a customer's individual support needs, customers' can choose from three conveniently structured support solutions. The support recommendations listed below generally apply to the server and the complete system. Options should be covered at the same service level as the associated installed system.

Choose the right level of support, deployment and professional integration services for your requirements and expectations:

Learn more: [www.hp.com/services/servers](http://www.hp.com/services/servers) and [www.hp.com/services/storage](http://www.hp.com/services/storage)

**NOTE:** Care Pack Services availability may vary by product and country.

HP Care Pack Services are sold by HP and HP Authorized Service Partners:

- Services for customers purchasing from HP or an enterprise reseller are quoted using HP order configuration tools.
- Customers purchasing from a commercial reseller can find HP Care Pack Services at:  
<http://www.hp.com/go/lookuptool>

#### **Recommended HP Care Pack Services for optimal satisfaction with your HP product.**

##### **Optimized Care**



### Services and Support

#### 3-Year HP Proactive 24

HP Proactive 24 Service (P24) integrates hardware and software support to help you improve the stability and operational effectiveness of your IT environment. An HP Account Manager acts as your primary point of contact to ensure that HP meets your support needs effectively.

P24 provides the maximum value when multiple technologies in the environment (e.g. servers, storage, SAN and the network), are all covered. It provides an environment-wide view and consistent support of all of these components which affect stability of your key applications.

Choose P24 when you want to:

- enhance operational effectiveness with proactive problem identification and recommendations from HP
- partner with technical experts who help coordinate support, provide hands-on assistance, and share knowledge with your staff
- rapidly access support and expertise spanning your environment
- obtain personalized services tailored to your business environment and critical success factors
- anticipate necessary change - and execute it correctly the first time
- efficiently manage infrastructure resources to meet your performance objectives

<http://h20195.www2.hp.com/V2/GetPDF.aspx/4AA0-1614ENN.pdf>

#### Server Installation

HP will install and configure your server hardware and operating system software, matching your Business objectives and systems environment to the configuration

<http://h71028.www7.hp.com/ERC/downloads/5981-9356EN.pdf>

#### INCLUDED in each package

##### Insight Remote Support

HP Insight Remote Support software delivers secure remote monitoring and support for your HP Servers and Storage, 24 X 7, so you can spend less time solving problems and more time focused on your business. You can have your systems remotely monitored for hardware failure using secure technology that's been proven at thousands of companies around the world. In many cases, you can avoid problems before they occur. Available as part of HP Warranty, Care Pack and Service Contract offers.

##### Standard Care

#### 3-Year HP Support Plus 24

For a higher return on your server and storage investment, HP Support Plus 24 provides integrated hardware and software support services designed specifically for your technology. Available 24x7, this 3-year combined reactive support option delivers onsite hardware support and over-the-phone software support around-the-clock. Leverage the full strength of HP Technology Services - customers can trust the services professionals at HP to work collaboratively with them, putting our strategic and technical know-how to work across their entire infrastructure.

- Improve uptime with responsive hardware and software services
- Enjoy consistent service coverage across geographically dispersed sites
- Update HP software at a predictable cost
- Increase customer satisfaction-with no interoperability gaps
- <http://h20195.www2.hp.com/V2/GetPDF.aspx/5981-6638EN.pdf>

#### Server Installation



### Services and Support

HP will install and configures your server hardware and operating system software, matching your Business objectives and systems environment to the configuration

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##### **Basic Care**

##### **3-Year HP Support Plus 24**

For a higher return on your server and storage investment, HP Support Plus 24 provides integrated hardware and software support services designed specifically for your technology. Available 24x7, this 3-year combined reactive support option delivers onsite hardware support and over-the-phone software support around-the-clock. Leverage the full strength of HP Technology Services - customers can trust the services professionals at HP to work collaboratively with them, putting our strategic and technical know-how to work across their entire infrastructure.

- Improve uptime with responsive hardware and software services
- Enjoy consistent service coverage across geographically dispersed sites
- Update HP software at a predictable cost
- Increase customer satisfaction-with no interoperability gaps

<http://h20195.www2.hp.com/V2/GetPDF.aspx/5981-6638EN.pdf>

### Server Installation

HP will install and configures your server hardware and operating system software, matching your Business objectives and systems environment to the configuration

<http://h71028.www7.hp.com/ERC/downloads/5981-9356EN.pdf>

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### Related Services

##### **HP Startup Integrity 2-socket Server SVC**

The HP Installation and Startup Service for Business Critical Servers is designed for customers who need more than the hardware installation delivered with the Basic Installation Care Pack. This service provides hardware integration and racking at your site for the server. It also provides basic operating system configuration, logical volume layout, and RAID setting of internal server storage, along with configuration of server network settings to establish connectivity with your network.



### Services and Support

- Installation and startup by an HP technical specialist
- Availability of an HP service specialist to answer basic questions during the delivery of this service
- Delivery of the service at a mutually scheduled time convenient to your organization
- Verification prior to installation that all service prerequisites are met

#### HP Proactive Select Service

Provides a flexible way to purchase HP best-in-class consultancy and services. HP Proactive Select services start with a proactive delivery plan that is developed by an Account Support Manager (ASM) and you together. The proactive delivery plan will identify your IT goals and critical success factors.

##### Service benefits

- Access to a list of flexible and customizable proactive service activities
- Choose from a variety of service activities addressing both technology and process needs
- Have the ability to change the proactive delivery plan during the review meetings
- Enhance your in-house IT team with complementary assistance from HP
- Improved time to solution
- Reduce business risk and project costs by accessing HP specialists
- Simplify IT operational procedures by leveraging HP best practices
- Assigned Account Support Manager
- Proactive delivery plan and review meeting
- Proactive service credits redeemable for specific service activities of your choice

<http://h20195.www2.hp.com/V2/GetPDF.aspx/4AA2-3842ENN>

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### eSupport

HP eSupport is a portfolio of technology-based services that assist you with managing your business environment - from the desktop to the data center.

#### Support Portal

The HP support portal provides one-stop access to the information, tools and services you need to manage the daily operations of your IT environment.

##### Features include:

- Access to self-solve tools (including search technical knowledge base)
- Efficient logging and tracking of support cases
- Collaboration with other business and IT professionals
- Download of patches and drivers
- Access to diagnostic tools
- Proactive notification of relevant information

Access to certain features of the support portal requires an HP service agreement. To access the support portal, visit:

<http://www.hp.com/support>

HP Insight Remote Support software delivers secure remote monitoring and support for your HP Servers and Storage, 24 X 7, so you can spend less time solving problems and more time focused on your business. You can have your systems remotely monitored for hardware failure using secure technology that's been proven at thousands of companies around the world. In many cases, you can avoid problems before they occur.

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### Services and Support

#### Customer Technical Training

##### HP Education Services

In today's cost-conscious business environment, IT professionals, developers, consultants and users face an interesting challenge: how to keep up with the latest technologies and expand important skills while delivering profitable results on current projects. To help address this challenge, HP offers innovative training solutions that help keep you up-to-date on virtualization, server, storage, Insight Control, Citrix, Microsoft® and open source/Linux-related topics-while spending less time away from business-critical activities.

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#### HP Services Awards

HP Technology Services continues to be recognized for service and support excellence by customers, partners, industry organizations and publications around the world. Recent honors and award reflect our services team's dedications, technical expertise, professionalism and uncompromising commitment to customer satisfaction.

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#### Additional Services Information

To learn more on HP ProLiant servers, HP BladeSystem servers and HP StorageWorks storage products, please contact your HP sales representative or HP Authorized Channel Partner. Or visit [www.hp.com/services/proliant](http://www.hp.com/services/proliant) or [www.hp.com/services/bladeSystem](http://www.hp.com/services/bladeSystem) or <http://www.hp.com/services/storage>

### Technical Specifications

<b>Server model number</b>	rx2800 i2	
<b>Server product numbers</b>	<p><b>HP Integrity rx2800 i2 Rack-Optimized Base Server.</b> Includes 4-port 1GbE LAN and 8-port SAS controller core I/O, one 6-slot memory DIMM riser card, and one power supply, Integrity iLO 3 Basic Management and iLO Advanced Management licenses, supports up to two dual or quad core Itanium processors. Minimum of one processor and one memory kit must be ordered. Processor frequencies cannot be mixed within a system. Supports High Line Power (1200W). Low Line Power (800W) are supported in limited configurations; only one processor socket and 12 memory DIMM slots, or two processor sockets and 8 memory DIMM sockets.</p> <p><b>HP Integrity rx2800 i2 Office Friendly Base Server.</b> Includes pedestal foot [AM251A], 4-port 1GbE LAN and 8-port SAS controller core I/O, one 6-slot memory DIMM riser card, and two power supplies, Integrity iLO 3 Basic Management and iLO Advanced Management licenses, supports up to two dual Itanium processors. Minimum of one processor and one memory kit must be ordered. Processor frequencies cannot be mixed within a system. Supports both High Line Power (1200W) and Low Line Power (800W). Low line power are supported in limited configurations; only one processor socket and 12 memory DIMMs or less; or two processor sockets and 8 memory DIMMs or less.</p> <p><b>HP Integrity rx2800 i2 Carrier-Grade Server with DC Power.</b> Includes 4-port 1GbE LAN and 8-port SAS controller core I/O, one 6-slot memory DIMM riser card, and two -48Volt DC power supplies; Integrity iLO 3 Basic Management and iLO Advanced Management licenses; supports up to two dual or quad core Itanium processors. Minimum of one processor and one memory kit must be ordered. Processor frequencies cannot be mixed within a system. This system has met NEBS Level 3 and ETSI Certifications: NEBS NRTL Certified to NEBS Level-3 Criteria (GR-63-CORE, GR-1089-CORE) and ETSI Certified to EN 300 019, EN 300 386, and EN 300 753.</p> <p>The following four Factory Express products are not available on the rx2800 i2 carrier-grade server: HA845A1 - 3rd party SW application load; HA846A1 - VPN access; HA851A1 - CFE; and HA853A1 option 001 to 006 - image setup services.</p> <p><b>Server Form Factor</b> Please refer to the HP 10000 Series G2 Rack Best Practices Guide for information on rack deployment, stabilization and transportation (<a href="http://www.HP.com/go/rackandpower">http://www.HP.com/go/rackandpower</a>)</p> <p><b>Universal Rack Kit. Required with each rack-optimized base server (AH395A)</b></p> <p><b>Field Rack Kit</b></p> <p>Includes rails and cable management arm.</p> <p><b>Factory Rack Integration</b></p> <p>For factory rack integration, a rack cabinet must appear in the same section of the order. The slides and cable management arm will be installed with the server in the rack cabinet when factory rack integration is ordered.</p> <p>HP rx2800 i2 Pedestal Foot</p> <p>Racking Support Shelf Kit. Required for all factory racked orders. One shelf kit is needed for every 10 servers in the rack and one for every gap left between servers.</p> <p><b>NOTE:</b> If the N+N power supply is ordered standalone the power supply will ship with two cords; one connects the system to the rack PDU and one enables connection to a</p>	<p>AH395A</p> <p>AH396A</p> <p>AT112A</p> <p>AM227A</p> <p>B01</p> <p>OD1</p> <p>AM251A</p> <p>AB469A</p>

### Technical Specifications

wall socket. The cord that connects the system power supply to the PDU has an IEC 13 end, which plugs into the system power supply's IEC 14 socket, and an IEC 14 end, which plugs into the PDU's IEC 13 socket. The localized cord that connects the system power supply directly to the wall socket has an IEC 13 end, which plugs into the system power supply's IEC 14 socket, and a country specific end, which plugs into the wall socket. This localized cord is included at the distribution site.  
If the N+N power supply is ordered with the server, the additional cords will be included.

#### Supported Processors for Field Upgrades

**NOTE:** Processor frequencies cannot be mixed within a system.

<b>1.6 GHz Dual core Intel Itanium 9310 Processor (AH397A)</b>		
Cache - On chip Level 1		32-KB (16-KB Instruction/16-KB Data)
Cache - On-Chip Level 2		512-KB Instruction/256-KB Data
Cache - On-Chip Level 3		10-MB
Floating point Coprocessor included		Yes
<b>1.33 GHz Quad core Intel Itanium 9320 Processor (AH398A)</b>		
Cache - On chip Level 1		32 KB (16-KB Instruction/16-KB Data)
Cache - On-Chip Level 2		512 KB instruction/256 KB Data
Cache - On-Chip Level 3		16 MB 4MB per core
Floating point Coprocessor included		Yes
<b>1.60 GHz Quad core Intel Itanium 9340 Processor (AH399A)</b>		
Cache - On chip Level 1		32 KB (16-KB Instruction/16-KB Data)
Cache - On-Chip Level 2		512 KB instruction/256 KB Data
Cache - On-Chip Level 3		20 MB (5 MB per core)
Floating point Coprocessor included		Yes

#### System Memory

<b>Minimum memory</b> (2 x 2GB DIMMs)	4 GB
<b>Maximum memory capacity</b> (24x 16GB DIMMs)	384 GB

#### Internal Disks

<b>Maximum disk mechanisms</b>	8
<b>Maximum disk capacity</b>	7.2 TB

#### Standard Integrated I/O

<b>Serial Attached SCSI (SAS)</b>	8 ports
<b>10/100/1000Base-TX</b> (RJ 45 connector)	4 port
<b>RS-232 serial port</b> (general purpose)	1
<b>10/100Base-T management port</b> (RJ 45 connector)	Included
<b>VGA graphics</b>	1 front/1 rear
<b>USB</b>	2 front/2 rear

### Technical Specifications

<b>I/O Buses and Slots</b> (Must select minimum 1 IO Riser Card/maximum 2 IO Riser Cards )	HP rx2800 i2 PCIe 3-Slot Riser Card (One full-length/full-height x8 speed/x16 connector slot, and two half-length/full-height x4 speed/x8 connector slots)	AM228A
	HP rx2800 i2 PCIe 2-Slot Riser Card (One full-length/full-height x8 speed/x16 connector slot, and one half-length/full-height x8 speed/x16connector slot)	AM245A

<b>Maximum I/O Cards</b> (See supported I/O table for product specifics)	<b>Mass Storage</b>	6
	<b>LAN</b>	6
	<b>Multi-Function</b> (Mass Storage / LAN)	4
	<b>2D Graphics Adapter</b>	2

<b>Electrical Characteristics</b>	<b>AC Input Specifications</b> (per power supply)	100-120 VAC 50/60 Hz 200-240 VAC 50/60 Hz 9.3 Amps max @ 100 VAC 6.6 Amps max @ 200VAC 1075W rated input power @ 108 VAC 1375W rated input power @ 180 VAC
	<b>Hot swap Power supplies</b>	1 included, 2nd for N+N
	<b>Redundant AC power inputs</b>	1 included, 2nd for N+N
	<b>BTU Rating</b> Maximum	4800 BTU/hr maximum @ 240 VAC 3400 BTU/hr maximum @ 120 VAC
	<b>Power Supply Output</b>	800W maximum @ 100 - 120 VAC 1200W maximum @ 200 - 240 VAC
	<b>DC Input Specifications</b> (per power supply)	-36 VDC to -72 VDC ( -48 VDC nominal) <40A max @ -36 VDC
	<b>Hot swap Power supplies</b>	2 included, 2nd for N+N
	<b>Redundant DC power inputs</b>	2 included, 2nd for N+N
	<b>BTU Rating</b> Maximum	4800 BTU/hr
	<b>Power Supply Output</b>	1200W maximum

<b>Site Preparation</b>	<b>Site planning and installation included</b>	No
	<b>NOTE:</b> System is customer installable.	
	<b>Rack depth</b> (inches/mm)	27.25 in (692 mm)
	<b>Rack width</b> (inches/mm)	19 in (482 mm)
	<b>Rack height</b> (EIA/inches/mm)	2U/ 3.5 in (89 mm)
	<b>Rack weight</b> (kg/lbs) maximum	66 lbs. (30 kg)

### Technical Specifications

<b>Environmental Characteristics</b>	<b>Regulatory Model</b>	RSVLA-RC01
	<b>Acoustics for Rackmount</b>	7.0 Bels LwA @ 25°C (77°F)
	<b>Acoustics for Office Friendly Version</b>	6.0 Bels LwA
	<b>Recommended Operating Temperature</b>	18°C - 27°C (64°F - 81°F) up to 1500m (4900ft)*
	<b>Allowable Operating Temperature</b>	5°C - 35°C (41°F - 95°F) up to 1500m (4900ft)*
	<b>Non-operating Temperature</b>	-40°C - 80°C (-40°F - 175°F)
	<b>Maximum rate of temperature change</b>	20° C/hour
	<b>Recommended Operating Humidity</b>	5.5°C (42°F) dew point minimum to 60% RH or 15°C (50°F) dew point maximum; non-condensing
	<b>Allowable Operating Humidity</b>	20% RH - 80% RH, 21°C (70°F) maximum dew point; non-condensing
	<b>Non-Operating Humidity, installed</b>	8% RH - 90% RH, 29°C (84°F) maximum dew point; non-condensing
	<b>Non-Operating Humidity, Storage</b>	8% RH - 90% RH, 32°C (90°F) maximum dew point; non-condensing
	<b>Operating altitude above sea level</b>	3000m (10,000ft) maximum
	<b>Non-operating altitude above sea level</b>	4500m (15,000 ft) maximum
	<b>Air Quality`</b>	Airborne contaminants must be at the G1 level or less as defined in ISA Standard ISA-71.04-1985
	<b>Airflow</b>	1360 CMH (800 CFM) minimum 3230 CMH (1900 CFM) maximum

\* Maximum operating temperature range up to 1500m (4900ft). For higher altitudes, de-rate the maximum temperature by 2°C/300 m (3.6°F per every 985 ft). The Recommended Operating Range is recommended for continuous operation. Operating within the Allowable Operating Range is supported but may result in a decrease in system performance.

<b>Regulatory Compliance</b>	<b>Regulatory Model Number</b>	RSVLA-RC01
	<b>Electromagnetic interference</b>	Complies with FCC Rules and Regulations, Part 15, as a Class A digital device. Manufacturer's Declaration to EN55022 Level A, VCCI Registered, Class 1, Korea RLL, BMSI Taiwan
	<b>Safety</b>	UL Listed, CSA Certified, TUV GS Mark compliant with EN 60950 and EN 41003
	<b>More detailed regulatory documents and certifications</b>	<a href="http://docs.hp.com/en/hw.html">http://docs.hp.com/en/hw.html</a>

### Technical Specifications

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