

HP Integrity rx1600 server



Demand more—more accountability, more agility, and a better return on IT—with the most affordable server based on the Intel® Itanium® 2 processor, the HP Integrity rx1600 server.

The HP Integrity rx1600 server, powered by one or two low-voltage Intel® Itanium® 2 processors, provides the industry's best combination of price/performance, ultra high-density form factor, and low total cost of ownership in enterprise HP-UX, Linux, and OpenVMS Evaluation Release. The Integrity rx1600 server offers a highly flexible, scalable, affordable entry into Itanium processor computing, offering growth potential beyond contemporary RISC architectures.

Built on low-voltage 1 GHz Intel Itanium 2 processors with 1.5 MB L3 cache and up to 16 GB of DDR SDRAM, the 2-way Integrity rx1600 server helps you achieve more performance, improve business processes, and manage your IT more efficiently—while consuming minimal real estate and power. Based on industry standards for easier integration, simplified support, and lower total cost of ownership, the Integrity rx1600 server allows both technical and commercial computing users to demand more from their systems. Technical users can perform more simulations, do more in-depth analysis, run complex models faster, and render high-quality images with increased performance.

To meet today's computing demands, a new era of high-performance computing has begun—and HP is leading the industry with affordable, high-performing second-generation Itanium® 2-based HP Integrity servers.





The Integrity rx1600 server sets new records for Integrity server price/performance and density. Using Integrity rx1600 servers, one can cluster 80 Intel Itanium 2 processors (320 GFLOPS) in a standard 19-inch rack at a highly affordable price. Commercial applications in areas like software development, Internet infrastructure, telecommunications, financial services, and Java™ applications will run with strong performance, decreased costs, and reduced complexity. The Integrity rx1600 server is equally at home as a platform for the management of complex heterogeneous networks, using advanced management tools like HP Systems Insight Manager and HP OpenView.

Co-developed by HP and Intel, the revolutionary Intel Itanium Processor Family architecture reduces platform costs, enables higher performance and scalability, and provides the flexibility you need to build an adaptive enterprise. Itanium 2-based systems from HP provide the flexible, modular, and standards-based building blocks to enable the adaptive enterprise, while easily outpacing the performance of classic RISC-based systems by providing more power, more applications, additional features, and a broader range of solutions.

Increase business agility with high-performance, low-cost HP Integrity servers

Extensive Itanium-based systems experience and co-developer insights resulted in unmatched HP system performance gains through the development of the HP Scalable Processor Chipset zx1. The HP zx1 Chipset, available only in HP Integrity servers, fully unleashes the power of Intel Itanium 2 processors by lowering memory latencies and increasing memory and I/O subsystem scalability. In addition, the HP zx1 Chipset allows the HP Integrity rx1600 server to run multiple operating systems for maximum deploy/redeploy utility. With the HP zx1 Chipset, HP Integrity servers based on Intel Itanium 2 processors achieve industry-leading performance and memory expandability.

The performance achieved through the Intel Itanium processor and the accompanying HP zx1 Chipset is further enhanced when Integrity rx1600 servers are used in a clustering solution. Because each Integrity rx1600 server is only 1U high, clustering multiple Integrity rx1600 servers packs unprecedented performance into the most densely racked, low-priced Itanium-based solution. Clusters allow the consolidation of system resources such as I/O, bandwidth, memory, mass storage, and compute capacity. The Integrity rx1600 server cluster solutions also ensure data integrity, maximize application availability, and minimize planned maintenance time. Regardless of your choice of HP-UX, Linux®, or OpenVMS Evaluation Release, HP has a powerful, flexible, highly available, and easily managed cluster solution to meet your needs.

Key features and benefits

	Features	Benefits
Leading performance and agility	<ul style="list-style-type: none"> • Latest generation of low-voltage Intel Itanium 2 processors • HP zx1 Chipset • Performance clustering capabilities with manageability features 	<ul style="list-style-type: none"> • Higher performance than today's RISC and x86 platforms, with lower up-front costs, lower power consumption, and greater rack density to decrease total cost of ownership • Blazing fast application performance and unmatched memory scalability • Massively scalable systems—from low-end systems up to supercomputers—are possible
Vendor accountability	<ul style="list-style-type: none"> • HP-UX- and IA-32-based applications are binary compatible with Itanium-based platforms • Comprehensive transition services include planning, porting and migration, implementation, support, and education • Complete high-availability and business-continuity solutions to help make systems and data centers bulletproof, keeping them up and running when you need them most • Comprehensive high-availability services 	<ul style="list-style-type: none"> • Ease of transition from today's platforms to the new generation of industry-standard computing • Customer and ISV applications can run unmodified on HP Integrity servers • HP can help guide your evolution to HP Integrity servers quickly, easily, and painlessly • Data integrity is assured • Application availability is increased • Planned maintenance time is decreased • A choice of services is offered to meet whatever availability needs are required for mission-critical environments
Better return on your IT investment	<ul style="list-style-type: none"> • Architecture of the future working for you today • Easy upgrade path to future Intel Itanium processors • Choice of operating systems: HP-UX, Linux, and OpenVMS Evaluation Release • A single management tool to manage HP servers with your operating system of choice 	<ul style="list-style-type: none"> • Provides the performance you need for decades to come • Faster growth than all other microprocessor architectures • In-box upgrade from current to future Intel Itanium 2 processors • A simple transition to future performance and total cost of ownership improvements • Supports the right operating system for the right job while lowering IT costs • Easy integration of HP Integrity servers into your existing computing environment • More stability and efficiency through common and comprehensive management across HP hardware platforms and key operating systems

Evolve your infrastructure confidently with a partner that stands accountable

When you're ready to take advantage of the performance improvements Itanium-based systems offer, HP has a full range of services to help make the transition as seamless and painless as possible. We'll help you quickly and confidently introduce Itanium-based systems into your existing IT environment and maximize their potential for your business. We offer assessment services to precisely define porting requirements and chart a course to deployment, implementation services to install and configure equipment rapidly, and education services to provide your staff with the expertise required to achieve optimal system performance. Throughout the transition process, HP accepts full accountability for delivering on the service commitments we and our partners have made.

And our commitment to your satisfaction doesn't stop with the transition process itself. Our support offerings—from simple reactive to comprehensive mission-critical support—reduce the risks associated with downtime once your Itanium systems are installed. We are looking ahead to help you achieve long-term success by working with leading independent software vendors (ISVs) in both the technical and commercial markets in order to optimize their applications to the Intel Itanium 2 microarchitecture, thereby exploiting the full potential of your Itanium-based server systems.

Technical specifications

Performance/Scalability/Flexibility	<ul style="list-style-type: none">• 1–2 Intel Itanium 2 processors• Clock frequency 1.0 GHz with 1.5 MB cache• System bus bandwidth 6.4 GB/s
Operating systems	<ul style="list-style-type: none">• HP-UX 11i v2• Red Hat Linux Advanced Server for the Intel Itanium processor• SUSE Enterprise Linux 8 for Intel Itanium 2 processors• OpenVMS v8.1
Cache (on-chip)	<ul style="list-style-type: none">• Level 1 cache: 32 KB• Level 2 cache: 256 KB• Level 3 cache: 1.5 MB
Expansion slots	<ul style="list-style-type: none">• PCI-X slots: 2 slots, 1 full-length, 1 half-length 64-bit/133 MHz PCI-X• I/O bandwidth: 3.0 GB/s
Main memory	<ul style="list-style-type: none">• Bus bandwidth: 8.5 GB/s• RAM type: PC2100 ECC Registered DDR266A SDRAM• Capacity: 16 GB max• Memory slots: 8 DIMM slots• Memory latency: 80 ns
Core I/O interconnect	<ul style="list-style-type: none">• 10/100/1000BT LAN• 10/100BT LAN• 10/100BT management LAN• 2 Ultra320 SCSI• 3 RS-232 serial ports• VGA• 2 USB
Internal storage devices	<ul style="list-style-type: none">• Internal bays: 2 hot-plug SCSI disk bays• Disk offerings: 36 GB (10K rpm), 73 GB (15K rpm), 146 GB (10K rpm)• Maximum storage: 292 GB• Removable media: 1 open bay for DVD-ROM or DVD/CD+RW
Peak performance	<ul style="list-style-type: none">• Per processor: 8 GFLOPS per 2-processor system
High Performance Technical Computing capabilities	<ul style="list-style-type: none">• hptc/ClusterPack for distributed workload management• HP-UX Technical Computing Operating Environment (including HP MLIB and HP MPI)• Fully-integrated single-system-view xc6000 Linux HPTC clusters• Quadrics and Myrinet high-speed message-passing interconnects for Linux clusters• Infiniband 4X and Hyperfabric2 high-speed message passing interconnects for HP-UX clusters

Environmental specifications

Altitude	Operating maximum	10,000 ft. (3048 m)
	Non-operating maximum	15,000 ft. (4572 m)
Temperature	Operating maximum	+41 to 95° F (+5 to +35° C)
	Non-operating maximum	-40 to 158° F (-40 to +70° C)
Humidity	Operating	15% to 80% relative
Physical dimensions (rack form factor)	Height	1.7 in. (43 mm)/1U EIA
	Width	19 in. (482 mm)
	Depth	26.8 in. (680 mm)
	Rack-optimized design includes rackmount solution for HP racks (HP Rack System/E and HP 10000 series racks)	
	For a complete list of racks and rack accessories, refer to http://h30140.www3.hp.com/	
Power supply	Maximum output	400 W
Net weight	Maximum configuration	31 lb. (14.1 kg)
Power requirements	Input current	100–127 V ~5.5 A, 200–240 V ~2.8 A (autoranging)
	Line frequency	50–60 Hz
	Maximum power input	700 W
Regulatory model number	RSVLA-0302	

Maximize your return on investment

Itanium-based solutions have broad industry support and early lifecycle longevity. By choosing the HP Integrity rx1600 server now, you are assured of long-term performance gains and seamless upgrades to meet your changing business needs. Because HP offers you the flexibility to choose between HP-UX, Linux, and OpenVMS Evaluation Release operating systems, you can be confident you're getting outstanding investment protection. Itanium 2-based systems from HP allow you to choose the operating system that best meets your needs now and exchange operating systems as your business needs change. This is important because some applications are only available—or are more economical—on one operating system. In addition, the co-developer expertise of HP ensures a seamless transition with 32- and 64-bit application binary compatibility. For breakthrough flexibility, applications currently based on HP PA-RISC, IA-32 Windows®, and Linux are binary compatible with Itanium-based platforms from HP.

HP is the only vendor to offer a proven mission-critical, enterprise-quality UNIX® operating system for Itanium-based systems. HP-UX 11i offers unsurpassed scalability, reliability, manageability, availability, and security. HP-UX 11i for Itanium-based systems even has the ability to execute PA-RISC applications using built-in HP dynamic code translation technology. The Integrity rx1600 server based on the Intel Itanium 2 processor includes all of the management, availability, and security features you typically expect to find running HP-UX, Linux, or Windows architectures, allowing seamless integration and management into a heterogeneous IT environment, providing maximum utilization of computing resources.

High availability

- N+1 fans
- ECC on memory and caches
- Memory chip spare
- Automatic de-configuration of memory and processors
- Service processor to monitor system status

High availability and business continuity solutions (optional)

- HP Serviceguard for HP-UX
- HP Serviceguard Extension for RAC for HP-UX
- HP Serviceguard Extension for SAP for HP-UX
- HP Serviceguard Manager for HP-UX clusters
- HP Event Monitoring Service HA Monitors for HP-UX
- High Availability Toolkits for HP-UX
- HP Mirrordisk/UX
- HP Extended Campus Cluster for HP-UX
- OpenVMS high-availability and disaster-tolerant clusters (available in an upcoming release)

Manageability

Multi-OS management tools

- HP Systems Insight Manager delivers centralized fault, configuration, performance, and inventory management for all HP servers. It replaces Servicecontrol Manager and Insight Manager 7.
- Management Processor for comprehensive remote server management

Linux management tools

- HP Enablement Kit for Linux

HP-UX management tools

- HP Ignite-UX for installation and deployment of the HP-UX operating system
- HP Software Distributor-UX for HP-UX software and patch management
- HP System Administration Manager for HP-UX system administration
- HP Event Monitoring Service
- HP-UX Kernel Configuration for easy, dynamic kernel parameter changes
- Process Resource Manager for HP-UX resource management (optional)
- HP-UX Workload Manager for workload management based upon prioritized service-level objectives (optional)

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