Powerful, expandable entry systems designed for the on demand world

IBM @server p5 550 servers

@server p5 550 rack system with I/O drawer

Highlights

- ***IBM Power Architecture™ technology offers exceptional price/performance and flexibility***
- ***IBM Virtualization Engine with Micro-Partitioning functions helps increase systems utilization and productivity***
- ***Capacity on Demand features help provide cost-effective scalability***

The IBM @server® p5 550 system is a new breed of up to 4-way UNIX® or Linux® server designed to meet the rigors of the on demand world. It delivers outstanding price/performance, mainframe-inspired availability features, flexible capacity upgrades and innovative IBM Virtualization Engine™ systems technologies. Powered by IBM's most advanced 64-bit processor, POWER5™, with simultaneous multithreading to support critical enterprise software systems with exceptional price/performance—all while helping improve affordability and responsiveness.

The @server p5 550 can serve as a versatile departmental or regional server for enterprise applications running on either AIX 5L™, IBM's industrial-strength UNIX, or Linux operating environments. The performance, reliability and affordability of the p5-550 can make it a strategic platform for server consolidation, scalable database servers, e-commerce application servers, Web servers, operations systems, business intelligence (BI) and high performance computing (HPC) workloads. The p5-550 also offers flexible Capacity on Demand (CoD) features to help reduce IT costs by allowing companies to pay for resources they use when they use them.

Extensive configurability

Built for extensive attachability, the p5-550 offers tremendous configuration flexibility to meet most capacity and growth requirements. Clients have extensive growth potential in a choice of 19" rack-mount or deskside packages with up to 64GB of memory, up to eight optional I/O drawers resulting in 15.2TB of disk storage and up to 60 hot-plug PCI-X slots. In addition, as many as 64 p5-550 systems may be included in a single HPC cluster. For the ultimate in IBM server availability, the p5-550 can be clustered with HACMP™ software designed to provide near continuous availability.

IBM Virtualization Engine technologies help drive utilization and improve productivity

The **@server** p5 550 server features breakthrough technologies for a UNIX or Linux entry system. IBM Virtualization Engine systems technology options for p5-550 systems provide innovations like Micro-Partitioning™ which allows businesses to increase system utilization while helping to ensure applications continue to get the resources they need. Micro-Partitioning technology helps lower costs by allowing the system to be finely tuned to consolidate multiple independent AIX 5L and Linux workloads. Virtual servers can be defined as small as 1/10th of a processor in increments as small as 1/100th of a processor. Dynamic logical partitioning helps assign system resources (processors, memory and I/O) for faster non-disruptive response to changing workload requirements.

Innovations like the optional virtual I/O allow the sharing of expensive disk drives, communications adapters and Fibre Channel-attached disks and help drive down complexity and systems/administrative expenses. The shared processor pool allows for automatic, non-disruptive balancing of processing power between partitions assigned to the shared pool—resulting in increased throughput and utilization.

Growth on demand

The Capacity on Demand (CoD) optional features can help p5-550 systems to meet changing resource requirements in an on demand environment by using processor resources installed on the system but not activated at the time of the original systems purchase:

- ***Capacity Upgrade on Demand (CUoD)*** *allows companies to purchase additional permanent processor capacity to be activated when the resource is needed.*
- ***Trial CoD*** *offers a one-time, no-additional-charge 30-day trial to allow clients to explore the uses of inactive processor capacity on their server.*
- ***Reserve CoD*** *allows companies to purchase processor features in prepaid blocks of 30 processor days and activate them in full day increments in response to workload demand and then to automatically deactivate the processors when the demand subsides.*
- ***On/Off CoD*** *enables processors to be temporarily activated in full day increments as needed.*

Mainframe-inspired RAS features help keep on demand systems available

The **@server** p5 550 system features many of the same mainframe-inspired reliability, availability and serviceability features as larger **@server** p5 models, helping keep the system up and running around the clock. The p5-550 extends the pSeries heritage of world-class RAS to an entry system by introducing concurrent firmware updates, in which applications remain operational while IBM system firmware is updated for most operations; and finer-grained L2 cache deallocation, improved L3 cache line deletes and ECC cache for better self-healing capabilities.

IBM @server p5 550: the new standard in up to 4-way entry UNIX and Linux servers

The p5-550 system offers specially priced Value Paks that are designed to meet the needs of many mission-critical applications and deliver outstanding business value to small and medium-sized business and departments of large enterprises. The Value Paks offer popular, easy to order configurations with significant financial incentives. Additional memory, disk drives or adapters can be easily added to a p5-550 Value Pak without impacting the savings.

The combination of flexible expansion and outstanding reliability/availability features and advanced virtualization technologies make the p5-550 system an outstanding choice for retail, wholesale distribution, financial services, public sector, industrial and communications environments. With a choice of deskside or rack-mount form-factors, this server is designed to be easy to install, integrate and manage. Based on these qualities, the p5-550 is designed to give small- to medium-sized businesses enterprise-class on demand computing without compromising availability, performance or security—at an affordable cost.

The IBM @server p5 550 sets a new standard for entry up to 4-way UNIX and Linux servers.

@server p5 550 deskside system

p5-550 at a glance

Available configurations	
Microprocessors	2- or 4-way 64-bit 1.65 GHz POWER5 processors
Level 2 (L2) cache	1.9MB per processor card
Level 3 (L3) cache	36MB per processor card
RAM (memory)	1GB – 64GB
Internal storage	15.2TB (with optional I/O drawers)
Processor-to-memory bandwidth	20.6GB/sec for 4-way configurations
L2-to-L3 cache bandwidth	52.8GB/sec for 4-way configurations
RIO-2 I/O subsystem bandwidth	8.8GB/second
Internal disk bays	Four standard plus four optional (36.4/73.4/146.8GB 10K rpm or 36.4GB/73.4GB 15K rpm disks)
Media bays	Two slimline and one standard
Adapter slots	Five hot-plug 64-bit PCI-X (four long and one short), 3.3 volts
Standard features	
I/O adapters	Dual ported integrated Ultra320 SCSI controller (RAID optional); two Ethernet 10/100/1000 controllers
Ports	Two serial, two USB, two HMC ports, keyboard and mouse
I/O expansion (optional)	Up to eight 7311-D20 I/O drawers, each providing seven 3.3v 64-bit PCI-X slots and up to 12 disk bays (36.4/73.4/146.8GB 10K rpm or 36.4/73.4GB 15K rpm disks)
Connectivity support	2 Gigabit Fibre Channel; 10 Gigabit Ethernet
Logical partitioning support	Dynamic LPAR*
IBM Virtualization Engine systems technologies (optional)	Micro-Partitioning Shared processor pool Virtual I/O Virtual LAN
Capacity on Demand features (optional)	Processor CUoD Reserve CoD On/Off CoD for processors Trial CoD for processors

p5-550 at a glance

RAS features	Copper and silicon-on-insulator (SOI) microprocessors Concurrent firmware updates (planned for 4Q 2004) IBM Chipkill™ ECC, bit-steering memory ECC L2 cache, L3 cache Service processor Hot-swappable disk bays Hot-plug PCI-X slots (on base system and I/O drawers) Blind-swap PCI-X slots on I/O drawers Hot-plug power supplies and cooling fans Dynamic Processor Deallocation Dynamic deallocation of logical partitions and PCI bus slots Redundant cooling fans Redundant power supply (optional)
Operating systems	AIX 5L Versions 5.2/5.3 SUSE LINUX Enterprise Server 9 for POWER™ (SLES 9) Red Hat Enterprise Linux AS 3 for POWER (RHEL 3)
Power requirements	100v to 127v; 200v to 240v AC
System dimensions	Deskside: 21.0"H x 7.9"W x 30.7"D (533mm x 201mm x 779mm); weight 41.4 kg (91 lb)** Rack drawer: 7.0"H x 17.2"W x 28.8"D (178mm x 437mm x 731mm); weight 41.4 kg (91 lb)** 7311-D20 I/O drawer: 7.0"H x 17.5" W x 24.0"D (178mm x 445mm x 610mm); weight 45.9 kg (101 lb)**
Warranty	8 A.M. to 5 P.M., next-business-day for one year (limited) at no additional cost; on-site for selected components; CRU (customer replaceable unit) for all other units (varies by country). Warranty upgrades and maintenance are available.

* Available with AIX 5L and SLES 9 operating systems

** Weight will vary when disks, adapters and other peripherals are installed.

For more information

To learn more about the IBM @server p5 550 system, please contact your IBM marketing representative or IBM Business Partner, or visit the following Web sites:

ibm.com/eserver/pseries

ibm.com/servers/aix

ibm.com/linux/power

ibm.com/common/ssi

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Many of the IBM @server p5 features described in this document are operating system-dependent and may not be available on Linux. For more information, please visit **ibm.com**/servers/eserver/pseries/linux/whitepapers/linux_pseries.html.

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