

IBM System p5 Family – Highlights

IBM Virtualization Engine™

The Advanced POWER™ Virtualization feature, standard on selected IBM System p5™ servers and optionally available on others, allows businesses to increase system utilization while helping to ensure that applications get required resources in a non-disruptive fashion. As a by-product, multiple independent AIX 5L and Linux operating environments may be run simultaneously on the same system. Consolidating applications can help reduce complexity and lower operational costs. Micro-Partitioning technology allows the system to be fine tuned with logical partitions (virtual servers) as small as 1/10th of a processor, helping improve system resource utilization. The easy-to-use, Web-based Integrated Virtualization Manager (IVM), available on Express models, allows the cost-effective consolidation of multiple partitions on a single server by helping reduce the time and effort required to manage virtual devices and partitions. The need to purchase a Hardware Management Console (HMC) is eliminated when IVM is used.

Express Editions

Specially priced Express Editions (AIX 5L Edition and OpenPower™ Edition) are available for System p5 Express servers. These easy to order, pre-configured packages provide financial incentives on the hardware as well as the ability to order a discounted AIX 5L or Linux OS license. Additional memory, disk drives, adapters, displays and external storage can be easily added without impacting the original savings. Express Editions deliver outstanding business value and help companies customize systems quickly.

POWER5+ Processors

Innovative technology such as simultaneous multithreading virtualization and the cache memory subsystem have helped propel IBM POWER5+ processor-based systems to achieve performance leadership in a broad spectrum of industry and application benchmarks. See ibm.com/systems/p/benchmarks.

AIX 5L OS

The AIX 5L OS, an industrial-strength UNIX® environment, is tuned for application performance and delivers mainframe-inspired reliability, availability and serviceability (RAS) features, enhancements to Java™ technology, Linux compatibility, Web performance and scalability for managing complex clusters. Over 7000 AIX 5L applications are supported on the System p5 family.

Linux OS

By supporting the open source Linux OS, the System p5 family offers cost-saving opportunities. The Linux OS provides the freedom to use the right applications for organizations' needs. Over 2600 Linux applications are supported on the System p5 family. IBM is firmly committed to superior Linux service and support.

Capacity on Demand

IBM's innovative, optionally available Capacity on Demand (CoD) features for processors and memory help selected System p5 servers to meet changing resource and workload requirements in an on demand environment. With CoD, it is easy to respond transparently to either temporary spikes in demand or long-term increases in workloads. On the p5-570 server, Processor/Memory CUoD, Trial Processor CoD, On/Off Processor/Memory CoD and Reserve Processor CoD are available. These capabilities along with Capacity BackUp are also available on the p5-590 and p5-595 servers.

RAS

The System p5 family of servers features world-class, mainframe-inspired reliability, availability and serviceability capabilities including a sophisticated service processor; hot-plug, hot-swappable and redundant components; Chipkill ECC and bit-steering memory; and dynamic deallocation of system components. As a result, these servers are among the most resilient UNIX and Linux systems IBM offers.



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rPerf (Relative Performance) is an estimate of commercial processing performance relative to other IBM UNIX systems. It is derived from an IBM analytical model which uses characteristics from IBM internal workloads, TPC and SPEC benchmarks. The rPerf model is not intended to represent any specific public benchmark results and should not be reasonably used in that way. The model simulates some of the system operations such as CPU, cache and memory. However, the model does not simulate disk or network I/O operations.

rPerf estimates are calculated based on systems with the latest levels of AIX 5L and other pertinent software at the time of system announcement. Actual performance will vary based on application and configuration specifics. The IBM eServer™ pSeries® 640 is the baseline reference system and has a value of 1.0. Although rPerf may be used to approximate relative IBM UNIX commercial processing performance, actual system performance may vary and is dependent upon many factors including system hardware configuration and software design and configuration.

The System p5 home page on the Internet can be found at: ibm.com/systems/p/.



IBM System p5 Family Quick Reference February 2007





	System p5 505 and 505Q Express	System p5 510 and 510Q Express	System p5 520 and 520Q Express	System p5 550 and 550Q Express	System p5 560Q Express*	System p5 570	System p5 575	System p5 590	System p5 595
System package	1U, 19" rack	2U, 19" rack	4U, 19" rack/deskside	4U, 19" rack/deskside	4U, 19" rack	4U, 19" rack	2U, 24" system frame	42U, 24" system frame	42U, 24" system frame
Microprocessors	POWER5+™	POWER5+	POWER5+	POWER5+	POWER5+	POWER5+	POWER5+	POWER5+	POWER5+
# of processors (GHz)	1 (1.9), 2 (1.9, 2.1), 4 (1.65)	1, 2 (2.1), 4 (1.65)	1, 2 (2.1), 4 (1.65)	2, 4 (1.9, 2.1), 4, 8 (1.65)	4, 8, 16* (1.5, 1.8)	2, 4, 8, 12, 16 (1.9, 2.2)	8 (2.2), 16 (1.9)	8 to 32 (2.1)	16 to 64 (2.1, 2.3)
Min/max. memory (GB)	1 – 32	1 – 32	1 – 32	1 – 64	2 – 128	2 – 512	2 – 256	8 – 1024	8 – 2048
Maximum internal disk bays/storage (TB)	2/0.6	4/1.2	8/2.4	8/2.4	12/3.6	24/7.2	2/0.6	-	-
Maximum PCI-X slots (MHz)	2 (266)	3 (133, 266)	6 (66, 133, 266)	5 (133, 266)	12 (133)	24 (133)	2 (133)	-	-
Max. opt. I/O drawers	-	-	4	8	8***	20	1	8 (1 standard)	12 (1 standard)
Max. disk bays/storage with I/O drawers	-	-	56/16.8	104/31.2	108/32.4***	264/79.2	18/2.9	128/18.7	192/28.1
Maximum PCI-X slots with I/O drawers	-	-	34	59	68***	163	24	160	240
Advanced POWER Virtualization (optional)	<ul style="list-style-type: none"> IBM Micro-Partitioning™, Shared processor pool, Virtual I/O Server with Integrated Virtualization Manager (505/505Q, 510/510Q, 520/520Q, 550/550Q, 560Q Express only), Virtual LAN (all standard on 590, 595) Partition Load Manager for IBM AIX 5L™ V5.2 and V5.3 (standard on 590, 595) 								
Micro-Partitioning	Up to 10 micro-partitions per processor up to a maximum of 254 per system except 550Q which has 40 maximum (optional)								
RSAS capabilities	<ul style="list-style-type: none"> Dynamic firmware updates Redundant service processor with automatic failover (option on 570 only, standard on 590, 595) Redundant system clocks (16-core 560Q, 570, 590, 595 only) First Failure Data Capture IBM Chipkill™ ECC bit-steering memory ECC L2 and L3 cache Dynamic deallocation of processors (2-core and above) Service processor with fault monitoring Dynamic deallocation of PCI-X slots with extended error handling Hot-plug PCI-X slots—servers and I/O drawers (except 505, 510) Blind-swap PCI-X slots (560Q, 570, 575) Blind-swap PCI-X slots—I/O drawers Hot-swappable disk bays (servers and I/O drawers) Hot-add I/O drawers (requires HMC) Redundant hot-plug cooling (except 575) 								
Redundant hot-plug power	Optional				Standard		Standard in system frame		
CoD options	-	-	-	-	-	Yes	Via RPQ	Yes	
OS support	AIX 5L V5.2 and V5.3, SUSE Linux® Enterprise Server 9 for POWER (SLES 9) and above, Red Hat Enterprise Linux AS 4 for POWER (RHEL AS 4) and above								
Warranty	3-year								
AIX 5L V5.3 rPerf	4.10 – 20.25	6.63 – 20.25	6.63 – 20.25	11.12 – 38.34	18.75 – 75.58	12.27 – 95.96	66.4 – 111.4**	55.74 – 202.88	108.13 – 393.55

* 16-core is not an Express system

** These values are LINPACK measurements

*** Optional I/O drawers available only on 1.8 GHz systems
System images are not to scale.

IBM System p5™: Scale-up, scale-out, scale within. The choice is yours.