

IBM System p5 Family – Highlights

IBM Virtualization Engine™

The Advanced POWER™ Virtualization feature optionally available on selected IBM System p5™ servers 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 and POWER5+ Processors

Innovative technology such as simultaneous multithreading virtualization and the cache memory subsystem have helped propel IBM POWER5™ and 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 6200 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 1800 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 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.

RAS

The System p5 family of servers (POWER5 and POWER5+ models) 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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Information concerning non-IBM products was obtained from the suppliers of these products or other public sources. Questions on the capabilities of the non-IBM products should be addressed with the suppliers.

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 @server® 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.

All performance information was determined in a controlled environment. Actual results may vary. Performance information is provided "AS IS" and no warranties or guarantees are expressed or implied by IBM.

When referring to storage capacity, 1TB equals total GB divided by 1,000; accessible capacity may be less.

Many of the features described are operating system dependent and may not be available on Linux. For more information, please check:

ibm.com/systems/p/software/whitepapers/linux_overview.html.

The IBM home page on the Internet can be found at: ibm.com.

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

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IBM System p5 Family Quick Reference March 2006





	System p5 185 Express	System p5 505 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 package	5U, 19" rack / deskside	1U, 19" rack	2U, 19" rack	4U, 19" rack / deskside	4U, 19" rack / deskside	4U, 19" rack	4U, 19" rack	2U, 24" system frame	
Microprocessors	IBM PowerPC®	POWER5	POWER5+	POWER5+	POWER5+	POWER5+	POWER5+	POWER5/5+	
# of processors (GHz)	1, 2 (2.5)	1 (1.65), 2 (1.5, 1.65)	1, 2 (1.9), 4 (1.5)	1 (1.65), 2 (1.65, 1.9), 4 (1.5)	2, 4 (1.65, 1.9), 4, 8 (1.5)	4, 8, 16 (1.5)*	2, 4, 8, 12, 16 (1.9, 2.2)	8 (1.9, 2.2), 16 (1.5, 1.9)	
Minimum - maximum memory (GB)	0.5 - 8	1 - 32	1 - 32	1 - 32	1 - 64	2 - 128	2 - 512	1 - 256	
Max. int. disk bays/storage (TB)	4 / 1.2	2 / 0.6	4 / 1.2	8 / 2.4	8 / 2.4	12 / 3.6	24 / 7.2	2 / 0.6	
Max. int. PCI-X slot (MHz)	4 (100, 133)	2 (266)	3 (133, 266)	6 (66, 133, 266)	5 (133, 266)	12 (133)	24 (133)	2 (133)	
Max. optional I/O drawers	-	-	-	4	8	-	20	1	
Maximum disk bays/storage with I/O drawers	-	-	-	56 / 16.8	104 / 31.2	-	264 / 79.2	18 / 2.9	
Maximum PCI-X slots with I/O drawers	-	-	-	34	59	-	163	24	
Advanced POWER Virtualization (optional)	-	<ul style="list-style-type: none"> Micro-Partitioning, Shared processor pool, Virtual I/O Server with Integrated Virtualization Manager (505, 510/510Q, 520/520Q, 550/550Q, 560Q Express only), Virtual LAN Partition Load Manager for AIX 5L V5.2 and V5.3 							
Micro-Partitioning	-	Up to 10 micro-partitions per processor except 550Q which has 40 maximum (optional)							
RAS capabilities	<ul style="list-style-type: none"> Dynamic firmware updates Service processor with fault monitoring 								
Additional RAS capabilities	<ul style="list-style-type: none"> Processor and ambient temperature monitoring PCI bus parity and ECC memory System management alerts 	<ul style="list-style-type: none"> Redundant service processor with automatic failover (option on 570 only) Redundant system clocks (16-core 560Q, 570 only) First Failure Data Capture Chipkill ECC bit-steering memory ECC L2 and L3 cache Dynamic deallocation of processors (2-core and above) 	<ul style="list-style-type: none"> 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	Auto reboot on power loss	Optional				Standard		Standard in system frame	
Capacity on Demand (CoD) options	-	-	-	-	-	-	<ul style="list-style-type: none"> Proc./Mem. CUoD Trial Proc. CoD On/Off Proc./Mem. CoD Reserve Proc. CoD 	Via RPK	
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						1-year		
AIX 5L V5.3 rPerf	2.48 - 4.34	3.51 - 9.86	6.11 - 18.75	3.62 - 18.75	10.15 - 34.46	18.75 - 65.24	12.27 - 95.96	111.4 (LINPACK)	

* 16-core is not an Express system
System images are not to scale.

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