

IBM System p5 520 Express server



System p5 520 Express rack-mount and deskside systems

Highlights

- ***Innovative, competitively priced and designed for a variety of applications***
- ***Designed with security, reliability and in-box scalability to meet business demands***
- ***Easy to acquire, deploy, integrate and manage***

In today's world of razor-thin profit margins, the difference between winning and losing could be determined by how efficiently a company manages its servers. The IBM System p5™ product line is a family of flexible and affordable servers built on the successful heritage of the IBM @server® p5 product line. As a member of the System p5 family,

the newest p5-520 Express server is built with IBM's most advanced microprocessor technology, IBM POWER5+™, and provides exceptional value in an entry system. It is designed for clients who want uncompromising availability, flexibility and security features and offers on demand computing at the value price of an entry-level system.

Technological and operational features, the ability to run the UNIX® and Linux® operating systems simultaneously, a three (3)-year warranty and competitive price make the p5-520 Express system an outstanding choice for smaller companies and departments/branch offices of large or mid-sized businesses. Its leadership performance and manageability position the model 520 Express for use as a small database server, a branch applications server, and for



System p5 520 Express rack drawer

highly secure e-business and business intelligence (BI) / high-performance computing (HPC) applications for enterprises of all sizes.

Flexible, expandable with reliability/security features

The System p5 520 Express server is available in either a 19" 4U (four EIA units) rack drawer or deskside unit. It is a 2-way symmetric multiprocessing (SMP) system with next generation 1.9 GHz POWER5+ processors. Memory starts at 1GB and can be upgraded to 32GB. Clients have extensive growth potential from the base six

PCI-X slots and up to 2.4TB of internal disk storage. The attachment of up to four optional I/O drawers can add 28 slots and 14.4TB of storage providing significant expandability. For the ultimate in server availability, the p5-520 Express server can be clustered with IBM High Availability Cluster Multiprocessing (HACMP™) for AIX 5L™ software designed to provide near continuous availability.

The p5-520 Express server utilizes logical partitioning (LPAR) technology implemented via optional IBM Virtualization Engine™ systems technologies and the operating system. LPAR allows the processors to run separate workloads in different partitions on the same server, thereby helping lower costs. Partitions are shielded from each other to provide a high level of data security and application availability. Dynamic LPAR allows clients to dynamically allocate system resources to application partitions without rebooting enhancing availability.

The model 520 Express server optionally offers Advanced POWER™ Virtualization including Micro-Partitioning™ technology and Virtual I/O Server (VIOS) which can result in increased 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 workloads. Micro-partitions can be defined as small as 1/10th of a processor and be changed in increments as small as 1/100th of a processor. Using the new Integrated Virtualization Manager (IVM) included with the VIOS, companies can cost-effectively consolidate multiple partitions onto a single server. With its intuitive browser-based interface, IVM is easy to use and helps reduce the time and effort required to manage virtual devices and partitions.

The p5-520 Express platform is designed to give clients the flexibility to run the AIX 5L and Linux operating systems concurrently in micro-partitions. AIX 5L, IBM's industrial-strength UNIX operating system, is built on a tradition of reliability, availability, security and open standards for business-critical applications. The Linux operating system is known for its extensive set of open source applications and ability to rapidly deploy new or customized solutions. Linux distributions from Red Hat, Inc. and SUSE LINUX are supported.

The p5-520 Express server includes many of the reliability, availability and serviceability (RAS) features of larger IBM **@server** p5 systems, helping keep the system up and running around the clock. The model 520 Express extends IBM's world-class RAS capabilities to an entry system by including a sophisticated service processor; hot-plug, hot-swappable

and redundant components; Chipkill™ ECC and bit-steering memory; and dynamic deallocation of system components. The resulting increase in system availability allows more work to be processed by the system.

Security is no longer just desirable; it is an absolute requirement. The p5-520 Express server can ease the worry associated with providing a secure operating environment. The system is designed to prevent applications running in logical partitions from violating the security and privacy policies across partitions and also comes with enhanced network filtering for better network security and intrusion detection.

Easy to acquire, deploy, integrate, manage

The cost of managing and deploying systems can be a key decision criterion for many companies. IBM and

IBM Business Partners can work with a client every step of the way from acquisition, to design, to turnkey installation and migration and even to running the systems.

The p5-520 Express platform is available in specially priced "editions" that include the hardware platform and OS and are designed to deliver outstanding business value while meeting the needs of many mission-critical applications. The System p5 520 Express, AIX 5L Edition includes a p5-520 Express server and an AIX 5L OS license; The System p5 520 Express, OpenPower™ Edition includes a p5-520 Express server and a Linux OS license. These easy to order, pre-configured packages provide financial incentives on the hardware as well as a discounted operating system. Additional memory, disk drives or adapters—or displays or external storage—can be easily added to the package without impacting the original savings.

The automated management tools of the p5-520 Express system are designed to free the system operator from repetitive activities and potential disruptions, making it easier to manage. Features are provided for both UNIX and Linux environments to simplify the management of IT infrastructures and to help cut costs and improve application performance. Proven technology like VIOS allows the sharing of expensive disk drives, communications and Fibre Channel adapters to help drive down complexity and systems/administrative expense. This, coupled with the powerful POWER5+ processors, helps reduce complexity and cost (fewer processors, less electrical power, lower cooling requirements, less rack space).

IBM also supports the evolution of the Linux operating system on the p5-520 Express server through its Linux Technology Centers, virtual centers for expertise interconnected over the

Internet. These facilities are dedicated to improving the Linux kernel and offer unparalleled Linux on POWER training, co-marketing, technical support, porting assistance and equipment worldwide.

IT infrastructure and industry-specific solutions

IBM has committed resources and integrated testing to develop relevant IT Infrastructure and industry-specific solutions with outstanding performance and technological innovations. System p5 servers, middleware platforms, business partner and open source applications, and services are being combined to help clients quickly, easily, safely, and cost-effectively solve pressing problems. These solutions provide a set of recommended and pre-tested p5-520 Express configurations along with blueprints on how to design, set-up, install and deploy an optimal infrastructure for common IT and industry-specific tasks.

System p5 520 Express: Perfect for the bottom line

The System p5 520 Express server is complemented by a network of IBM Business Partners who provide thousands of applications that address the needs of many smaller and mid-sized companies. Solutions for the p5-520 Express span a wide range of industries including transportation, construction, wholesale and retail, distribution, light manufacturing, services and professional groups. The p5-520 Express system is also ideal as a database or application server for remote branches. It has the functions, solutions and support needed at a competitive price. And the p5-520 Express server is backed by IBM and an extensive IBM Business Partner community.

The p5-520 Express platform is also available as a part of the IBM Express Portfolio™ of offerings and has the features and functionality needed to meet technology needs of mid-sized businesses, including hardware, software, services and financing. Priced right, it delivers more value for your investment.

System p5 520 Express at a glance

Standard configurations

Microprocessors	Two 64-bit 1.9 GHz POWER5+ processors
Level 2 (L2) cache	1.9MB
Level 3 (L3) cache	36MB
RAM (memory)	1GB to 32GB of 533 MHz DDR2 SDRAM
Internal disk storage	2.4TB (16.8TB with optional disk drawers)
Processor-to-memory bandwidth (peak)	21.3 GBps
L2 to L3 cache bandwidth (peak)	30.4 GBps
RIO-2 I/O subsystem bandwidth (peak)	4.4 GBps
Internal SCSI disk bays	Four standard plus four optional (10K or 15K rpm disks)
Media bays	Two slimline and one half-high
Adapter slots	Six PCI-X (2 – 66 MHz; 3 – 133 MHz; 1 – 266 MHz (DDR))

Standard features

I/O ports	Dual channel Ultra320 SCSI controller (internal only; RAID optional) Dual ported Ethernet 10/100/1000 Mbps controller Two USB, two HMC, two system ports
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Expansion features

I/O expansion	Up to four 7311-D20 I/O drawers, each providing seven 64-bit PCI-X slots and up to 12 disk bays (10K or 15K rpm disks)
Connectivity support	2 Gigabit Fibre Channel; 10 Gigabit Ethernet; 4x InfiniBand®

Virtualization Engine system technologies

POWER Hypervisor™	Dynamic LPAR; Virtual LAN ¹
Advanced POWER Virtualization ¹ (options)	Micro-Partitioning; Shared processor pool; VIOS; IVM; Partition Load Manager (AIX 5L only)

Operating systems

AIX 5L Edition: AIX 5L Version 5.2 or later
OpenPower Edition: SUSE LINUX Enterprise Server 9 for POWER (SLES 9) or later; Red Hat Enterprise Linux AS 4 for POWER (RHEL AS 4) or later

Power requirements

100v to 127v or 200v to 240v AC

System dimensions

Deskside: 21.1"H x 7.5"W x 23.2"D; weight: 78.1 lb²
Rack drawer: 6.8"H x 17.4"W x 22.6"D; weight: 78.1 lb²
7311-D20 I/O drawer: 7.0"H x 19.0"W x 24.0"D; weight: 101 lb²

Warranty

8 A.M. to 5 P.M., next-business-day for three years (limited) at no additional cost; on-site for selected components; CRU (customer replaceable unit) for all other units (varies by country).
Warranty service upgrades and maintenance are available

For more information

To learn more about the IBM System p5 520 Express server, 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
- www.express-portfolio.com/ibm



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When referring to storage capacity, 1TB equals total GB divided by 1000; accessible capacity may be less.

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

ibm.com/servers/eserver/pseries/linux/whitepapers/linux_pseries.html.

¹ Not supported on AIX 5L V5.2

² Weight will vary when disks, adapters and peripherals are installed