IBM System p5 570 server

System p5 570 server with I/O drawers

The IBM System p5™ 570 mid-range server is a powerful 19-inch rack mount system that can be used for database and application serving, as well as server consolidation. IBM's modular symmetric multiprocessor (SMP) architecture means you can start with a 2-core system and easily add additional building blocks when needed for more processing power (up to 16-cores) I/O and storage capacity. The p5-570 includes IBM mainframe-inspired reliability, availability and serviceability features.

The System p5 570 server is designed to be a cost-effective, flexible server for the on demand environment. Innovative virtualization technologies and Capacity on Demand (CoD) options help increase the responsiveness of the server to variable computing demands. These features also help increase the systems utilization of

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Highlights

- *Up to 16-core scalability with modular architecture and leadership IBM POWER5+™ technology*

- *Advanced POWER™ Virtualization features increase system utilization and reduce the number of overall systems required*

- *Capacity on Demand features enable quick response to spikes in processing requirements*

processors and system components allowing businesses to meet their computing requirements with a smaller system. By combining IBM's most advanced leading-edge technology for enterprise-class performance and flexible adaptation to changing market conditions, the p5-570 can deliver the key capabilities medium-sized companies need to survive in today's highly competitive world.

Modular building blocks provide easy scalability

The p5-570 server is packaged as building block modules. Each building block can support up to four 1.9 or 2.2 GHz processors along with cache, memory, media, disks, I/O adapters, power and cooling to create a balanced, high-performance rack-mount system. Building blocks are connected by a unique cabling system at full bus speed. Up to four modules can be integrated into a 19-inch rack as a single SMP server. Thus a fully configured p5-570 may consist of 16 processors, 512GB of DDR2 memory, eight media bays, 24 PCI-X slots and 24 internal disk bays accommodating up to 7.2TB of disk storage. In addition, up to 20 optional I/O drawers may be attached, significantly adding to the PCI-X and disk storage bay capacity.

p5-570 rack drawer

Clients can cost-effectively build systems sized specifically for their processing needs by providing the infrastructure, such as power, room cooling and rack space, to support the number of building blocks and I/O drawers required. As computing demands increase, p5-570 servers can provide tremendous capacity and flexibility for seamless application growth, because the building block architecture enables clients to scale-out not only processing power, but also cache, memory, internal storage and I/O capacity.

The p5-570 includes the advanced reliability features of the System p5 family which help deliver outstanding application availability for mission-critical workloads. For the ultimate in IBM server availability, the p5-570 can be clustered

with High Availability Cluster Multiprocessing (HACMP™) for AIX 5L™ software designed to provide near continuous availability.

Virtualization technologies drive utilization and improve productivity

The p5-570 can utilize logical partitioning (LPAR) technology implemented via IBM Virtualization Engine systems technologies and the operating system (OS). LPAR allows the processors to run separate workloads in different partitions on the same server, thereby helping lower costs. p5-570 partitions are designed to be shielded from each other to provide a high level of data security and increased application availability. The supported operating systems also implement dynamic LPAR which allows clients to dynamically allocate system resources to application partitions without rebooting, enhancing availability.

The p5-570 optionally offers Advanced POWER Virtualization including Micro-Partitioning™ and Virtual I/O Server (VIOS) capabilities which allow 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 workloads. Micro-partitions can be defined as small as 1/10th of a processor and changed in increments as small as 1/100th of a processor.

Innovations such as VIOS allow the sharing of expensive disk drives and communications and Fibre Channel adapters to help drive down complexity and systems/administrative expenses. A 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. The priority scheme used in managing the pool is designed to instantly allocate the processing power to the most critical applications to provide consistent service levels for mission-critical applications. The use of these leading-edge technologies requires a separate Hardware Management Console (HMC).

Growth on demand

Several types of Capacity on Demand (CoD) are optionally available on the p5-570 server to help meet changing resource requirements in an on demand environment by using resources installed on the system but not activated at the time of the original purchase:

- **Capacity Upgrade on Demand (CUoD)** *allows companies to purchase additional permanent processor or memory capacity to be activated when 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 pre-paid blocks of 30 processor days, 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 or memory to be activated in full day increments as needed.*

Flexibility, reliability and security features

The System p5 570 server 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® OS, is built on a tradition of reliability, availability, security and open standards for business-critical applications. The Linux OS 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 System p5 570 server features mainframe-inspired reliability, availability and serviceability (RAS) features which help keep it up and running around the clock. The p5-570 extends the IBM System p5 heritage of world-class RAS to a mid-range system by including a sophisticated, optionally redundant 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.

Security is no longer just desirable; it is an absolute requirement. The p5-570 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. It also comes with enhanced network filtering for better network security and intrusion detection.

Complementary offerings

The System p5 570 server can be enhanced to a complete systems solution by including complementary offerings from IBM and IBM Business Partners. These include System Storage™ and TotalStorage® I/O products, Licensed Program Products (LPPs), and IBM Global Services (IGS) consulting and services. A large portfolio of products from Independent Software Venders (ISVs) is also supported on the p5-570. IBM Integrated Offerings combine these products into tested, proven solutions which are easier to install, manage and operate.

TotalStorage I/O products include the DS family of disk products and are complemented by a full range of IBM TotalStorage capabilities like advanced copy services, management tools, and virtualization services to help protect your data. IBM TotalStorage Storage Area Network (SAN) products and solutions provide integrated SMB and enterprise SAN solutions with multi-protocol local, campus, metropolitan and global storage networking. Tape products, network attached storage and a variety of software offerings are also available.

Tivoli offers a variety of LPPs to enhance the effectiveness and efficiency of managing the p5-570 server. These products assist clients with asset management, security, data and information management, and other functions. IBM also offers leading database and Web commerce software.

IBM combines these offerings with ISV offerings and Services from IGS to help tailor your environment into tested Integrated Offerings. With support across the entire System p5 family including the p5-570, these offerings

recommend common starter configurations to cover a range of user requirements and provide blueprints on how to design, set-up, install and deploy an optimal infrastructure for common IT and industry-specific tasks.

IBM System p5 570: Pay as you grow for the ultimate in flexibility

Businesses in the financial services, insurance, healthcare, media and entertainment, transportation, industrial, distribution, public sector, retail and communications fields who only want to pay for processing capacity as they need it will want the System p5 570 server for its building block architecture and Capacity on Demand options. Optional Advanced POWER virtualization features enable organizations to process AIX 5L and Linux applications simultaneously on multiple virtual servers in each processor, reducing the total number of systems required. These optional features also enable virtual I/O capabilities as well to reduce the number of peripheral components required.

p5-570 at a glance

Standard configurations	Per building block	p5- 570 (maximum)
Microprocessors	Two or four 64-bit, 1.9 or 2.2 GHz POWER5+ processors in the first building block; four processors in all others	16 64-bit 1.9 or 2.2 GHz POWER5+
Level 3 (L3) cache	36MB (two processor building block) or 72MB (four processor building block)	288MB
RAM (memory)	2GB to 64GB of 533 MHz DDR2 or 32 to 128GB of 400 MHz DDR2 (2.2 GHz systems only)	256GB of 533 MHz DDR2 or 512GB of 400 MHz DDR2 (2.2 GHz systems only)
Processor-to-memory bandwidth (peak)	50.6 GBps	202.0 GBps
L2-to-L3 cache bandwidth (peak)	70.4 GBps	281.0 GBps
RIO-2 I/O subsystem bandwidth (peak)	9.1 GBps	36.4 GBps
Internal disk bays	Six on a split backplane (3+3)	24 (four split backplanes)
Internal disk storage	Up to 1.8TB (30.6TB with optional I/O drawers)	Up to 7.2TB (79.2TB with optional I/O drawers)
Media bays	Two hot-plug slimline	Eight hot-plug slimline
PCI-X adapter slots	Six hot-plug: five long 64- bit 133 MHz, one short 64-bit 133 MHz	24 hot- plug: 20 long 64-bit 133 MHz, four short 64- bit 133 MHz

Standard features		
Integrated I/O adapters	One 2 -port 10/100/1000 Ethernet; two Ultra320 SCSI; one 2 -port USB, two HMC ports, two system ports	Four 2-port 10/100/1000 Ethernet; eight Ultra320 SCSI; four 2-port USB, two HMC ports, two system ports

Expansion features		
I/O expansion (optional)	Up to eight I/O drawers (combination 7311 -D11 and 7311-D20)	Up to 20 I/O drawers (combination 7311-D11 and 7311-D20)
Connectivity support (optional)	2 Gigabit Fibre Channel; 10 Gigabit Ethernet; 4x InfiniBand	

Virtualization Engine system technologies		
POWER Hypervisor	Dynamic LPAR; Virtual LAN (Memory to memory inter-partition communication) [1]	
Advanced POWER Virtualization[1] (optional)	Micro- Partitioning; Shared processor pool; Virtual I/O Server; Partition Load Manager (AIX 5L only)	

Capacity on Demand features (optional)	Processor CUoD Memory CUoD Reserve CoD On/Off Processor CoD On/Off Memory CoD Trial CoD	

Operating systems	AIX 5L V5.2 or later 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	200v to 240v AC	

System dimensions	Building block: 6.85"H (4U) x 19.0"W x 31.1"D (174.1mm x 483mm x 790mm); weight 140.0 lb (63.6 kg)[2] 7311-D11 I/O drawer: 6.9"H (4U) x 17.5"W x 28.0"D (175mm x 445mm x 711mm); weight 86.0 lb (39.1kg)[2] 7311-D20 I/O drawer: 7.0"H (4U) x 19.0"W x 24.0"D (178mm x 482mm x 610mm); weight 101.0 lb (45.9 kg)[2]	

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 service upgrades and maintenance are available.	

For more information

To learn more about the
IBM System p5 570 server, please con-
tact your IBM marketing representative
or IBM Business Partner, or visit the
following Web sites:

- **ibm.com**/systems/p/
- **ibm.com**/servers/aix
- **ibm.com**/linux/power
- **ibm.com**/systems/p/solutions
- **ibm.com**/common/ssi

Information concerning non-IBM products was
obtained from the suppliers of these products.
Questions on the capabilities of the non-
IBM products should be addressed with the
suppliers.

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 visit **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