

The right solutions for consolidating multiple applications on a single system



## IBM System p5 550 and 550Q Express servers



IBM System p5 550 or 550Q Express rack-mount and desk-side servers

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### Highlights

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- **Up to 8-core scalability using Quad-Core Module technology**
- **Point, click and consolidate for even greater levels of individual system utilization with optional low-cost virtualization features**
- **Proven 5th generation IBM POWER5™ technology ideal for branch office application and database serving**

Save time, money and space when you consolidate on System p5™ 550 and 550Q Express servers. Get up to 8-core scalability, outstanding price/performance, exceptional RAS (reliability, availability, serviceability) features, and a 3-year warranty—all standard—at an affordable price. Powered by IBM's most advanced 64-bit processor, POWER5+™, these systems have simultaneous multithreading<sup>1</sup> for increased system utilization and

improved application performance. Like all System p5 Express servers, the System p5 550 and 550Q Express can run the AIX 5L™ and Linux® operating systems simultaneously. The new browser-based Integrated Virtualization Manager makes it easier than ever before to achieve increased utilization when adding low-cost Advanced POWER™ Virtualization features to your system.

The System p5 550Q Express platform is a new breed of 8-core scalable database and application server designed to meet the rigors of transaction-intensive and analytical applications. Powered by IBM's latest Quad-Core Module (QCM) 1.5 or 1.65 GHz POWER5+ processors, the p5-550Q Express delivers outstanding price/performance and high system throughput and is ideally suited for compute-intensive business intelligence (BI), scientific and engineering analytical applications, database applications or server consolidation.

The System p5 550 Express platform is a 2- or 4-core database server with 1.65, 1.9 or 2.1 GHz POWER5+ dual-core processor modules. It can function as a scalable database or versatile departmental or regional server for businesses of all sizes. The performance, reliability and affordability features of the p5-550 Express can make it a strategic platform for scalable database servers, e-commerce application servers, Web servers, operations systems, and for BI and high performance computing (HPC) workloads.

#### **Extensive configurability**

Built for attachability, the 550 and 550Q Express servers offer tremendous configuration flexibility to meet most capacity and growth requirements. Clients have extensive growth potential in a choice of 19-inch rack-mount or desk-side packages with up to 64GB of DDR2 memory, up to eight optional I/O drawers resulting in 31.2TB of disk storage and up to 59 hot-plug PCI-X slots. In addition, as many as 64 systems may be included in a single HPC

cluster. For the ultimate in IBM server availability, the systems can be clustered with High Availability Cluster Multiprocessing (HACMP™) software designed to provide near continuous availability.

#### **Virtualization improves productivity**

The 550 and 550Q Express servers utilize 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 increased application availability. Dynamic LPAR allows clients to dynamically allocate many system resources to application partitions without rebooting, enhancing availability.

These servers optionally offer Advanced POWER Virtualization, including Micro-Partitioning™ technology and Virtual I/O



*IBM System p5 550 or 550Q Express rack-mount drawer*

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 Integrated Virtualization Manager (IVM) included with 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.

**Flexibility, reliability, security features**

The System p5 550 and 550Q Express servers are 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 (OS), is built on a tradition of reliability, availability, security and open standards for business-critical applications. It is available on the 550 and 550Q Express servers via the new AIX 5L Edition. 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 and SUSE Linux are supported via the new OpenPower™ Edition.

The 550 and 550Q Express servers include many of the same RAS features as larger IBM System p5 systems, helping keep the system up and running around the clock. They extend 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.

Security is no longer just desirable; it is an absolute requirement. The 550 and 550Q Express servers can ease the worry associated with providing a secure operating environment. The systems are designed to prevent applications running in logical partitions from violating the security and privacy policies across partitions. They also come with enhanced network filtering for better network security and intrusion detection.

**Express offerings deliver price advantage**

The 550 and 550Q Express platforms are available in specially priced packages—Express Editions—designed to meet the needs of many mission-critical applications while delivering outstanding business value to smaller and mid-sized businesses. The System p5 550 Express, AIX 5L Edition and the

System p5 550 Express, OpenPower Edition include popular, easy to order configurations with financial incentives on the hardware as well as the ability to order a discounted AIX 5L or Linux OS. Additional memory, disk drives or adapters—or displays and external storage—can be easily added to the package without impacting the original savings.

**IT Infrastructure and industry-specific offerings**

IBM has committed resources and performed integration testing to develop relevant IT infrastructure and industry-specific solutions with outstanding performance and technological innovations. System p5 Express 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. With support across the entire System p5 family including the 550 and 550Q Express, these integrated offerings recommend 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.

Clients needing highly available and powerful storage to support their System p5 Express servers can realize benefits derived from using IBM System Storage™ and TotalStorage® solutions. IBM conducts comprehensive testing in System Storage laboratories under stress environments, including clustered configurations, to help ensure combined server and storage systems solutions have high reliability, interoperability and streamlined, efficient implementation. With an IBM TotalStorage, System Storage and System p5

Express server solution, you can be assured your 550 or 550Q Express IT environment will help meet today's and tomorrow's demanding needs.

#### **System p5 550 and 550Q Express: Easy to buy, install and manage**

Whether you need a reliable server consolidation platform or the best performing system for branch office applications or database serving, the System p5 550 and 550Q Express servers can fulfill your requirements now and into the future. Use them for retail, wholesale distribution, financial services, public sector, industrial and communications applications, in either deskside or rack-mount models.

Choose an AIX 5L Edition or OpenPower Edition depending on your business requirements. Select the low-cost optional Advanced POWER Virtualization features and get the browser-based Integrated Virtualization Manager included at no additional charge.

#### **For more information**

To learn more about the IBM System p5 550 and 550Q Express servers, please contact your IBM marketing representative or IBM Business Partner, or visit the following Web sites:

- [ibm.com/systems/p/](http://ibm.com/systems/p/)
- [ibm.com/servers/aix](http://ibm.com/servers/aix)
- [ibm.com/linux/power](http://ibm.com/linux/power)
- [ibm.com/systems/p/solutions](http://ibm.com/systems/p/solutions)
- [ibm.com/common/ssi](http://ibm.com/common/ssi)
- [www.express-portfolio.com/ibm](http://www.express-portfolio.com/ibm)

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## System p5 550 and 550Q Express at a glance

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### Configuration options

Microprocessors	p5-550 Express: Two or four 64-bit 1.65, 1.9 or 2.1 GHz POWER5+ processors p5-550Q Express: Four or eight 64-bit 1.5 or 1.65 GHz POWER5+ processors
Level 2 (L2) cache	1.9MB per processor pair
Level 3 (L3) cache	36MB per processor pair
RAM (memory)	1GB to 64GB of DDR2 SDRAM running at 528 MHz
Internal disk storage	Up to 2.4TB (31.2TB with optional I/O drawers)
Processor-to-memory bandwidth (peak)	p5-550 Express: 42.2 GBps; p5-550Q Express 84.4 GBps
L2 to L3 cache bandwidth (peak)	p5-550 Express: 67.2 GBps; p5-550Q Express: 105.6 GBps
I/O subsystem bandwidth (peak)	p5-550 Express; 11.2 GBps; p5-550Q Express: 8.8 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	Five PCI-X (4 – 133 MHz; 1 – 266 MHz (DDR))

### Standard features

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

I/O expansion	Up to eight 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	4 Gigabit Fibre Channel; 10 Gigabit Ethernet, 4x InfiniBand Switch

### Virtualization Engine system technologies

POWER Hypervisor	Dynamic LPAR Virtual LAN <sup>1</sup>
Advanced POWER Virtualization <sup>1</sup> (optional)	Micro-Partitioning; Shared processor pool; VIOS with IVM; Partition Load Manager (AIX 5L only)

### Operating systems

AIX 5L Edition: AIX 5L V5.2 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 7.9"W x 30.7"D (533mm x 201mm x 779mm); weight: 91.0 lb (41.4 kg)<sup>2</sup>  
Rack drawer: 7.0"H (4U) x 17.2"W x 27.0"D (178mm x 437mm x 731mm); weight: 91.0 lb (41.4 kg)<sup>2</sup>  
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)<sup>2</sup>

### 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.

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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/systems/p/software/whitepapers/linux\\_overview.html](http://ibm.com/systems/p/software/whitepapers/linux_overview.html) and [ibm.com/systems/p/hardware/factsfeatures.htm](http://ibm.com/systems/p/hardware/factsfeatures.htm).

<sup>1</sup> Not supported on AIX 5L V5.2

<sup>2</sup> Weight will vary when disks, adapters and peripherals are added.