



Highlights

- A high-performance, energy efficient, reliable and secure infrastructure and application server in a compact 2U package. With IBM® POWER7+™ workload-optimizing technologies, the Power® 710 Express server is designed to handle today's compute-intensive combination of business transactions along with social and mobile activity.
 - An easy-to-buy, install and manage server that can seamlessly fit into your existing infrastructure, resulting in faster deployment time and time to value for applications running on AIX®, IBM i and Linux operating systems.
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IBM Power 710 Express server

An economical, high performance, reliable, and energy efficient server

Everyone knows what “performance” meant for IT in the past. Built on the foundation of POWER7+ processor technology, our Power Systems Express servers continue to excel and extend industry leadership in the traditional benchmarks of performance.

But today we are in the midst of an important technology shift driving growth and innovation—built on the confluence of big data, cloud, mobile devices and social business. As processes become more interrelated and complex, IT is being called upon to solve challenging new problems—and implement new IT projects, delivering them with both higher service levels and in a more cost effective manner. This era presents a defining moment for IT organizations to reshape the value they deliver through the customer experience.

The emerging measures of IT performance today are around agility and the ability to help the business capitalize on new opportunities. IT is measured on providing an infrastructure that can handle rapid growth and manage business risk while meeting higher required service levels. And of course it is expected that new services will be delivered with tighter budget constraints—with IT expected to do more with less and find the lowest cost solutions possible.

Built on the leadership performance of the POWER7+ processor, the Power 710 Express is a one-socket server that supports up to eight POWER7+ cores in a dense, rack-optimized form factor. As a high-performance infrastructure or application server, the Power 710 Express



contains innovative workload-optimizing technologies that improve performance based on client computing needs. In addition, it includes **Intelligent Energy** features that help increase performance and optimize energy efficiency, resulting in one of the most cost-efficient solutions for UNIX, IBM i and Linux deployments. And, with solutions from thousands of ISVs, you can make the choices that set your business apart from the competition.

Power is the performance that delivers business advantage

The leadership performance of the POWER7+ processor makes it possible for applications to run faster with fewer processors, resulting in lower per core software licensing costs. In addition, a single system can now run more applications and reduce the number of required servers, lowering infrastructure costs. The latest model of the Power 710 Express adds increased memory capacity, higher performance POWER7+ processors, and high bandwidth Generation 2 PCI-Express slots to provide even greater performance capabilities. And with the 6-core and 8-core processors, it offers the capability to grow with your business through additional I/O and storage capacities via expansion units.

Power is effortlessly balancing workload performance

POWER7+ **Intelligent Threads** technology enables workload optimization by automatically switching between one, two and four execution threads per processor core in order to optimize application throughput. In addition, **Active Memory™ Expansion** enables the effective maximum memory capacity to be much larger than the true physical memory without the



Power 710 Express rack-mount server

complexity and cost of installing additional memory devices. The new POWER7+ hardware accelerator improves the efficiency of memory expansion even more, allowing more memory expansion or the same level of memory expansion while consuming less processor resources. These workload-optimizing capabilities can improve application performance and ROI from the server.

Power is dynamic energy optimization

IBM Systems Director Active Energy Manager™ exploits **EnergyScale™** technology, enabling **Intelligent Energy** management features, which can dramatically and dynamically conserve power and further improve energy efficiency. These Intelligent Energy features enable the POWER7+ processor to operate at a higher frequency if environmental conditions permit, for increased performance and performance per watt; or alternatively operate at a reduced frequency if user settings permit, for significant energy savings.

Power is a secure and auditable system

Security has become a major concern for all IT shops. Not only do the business systems need to be secure, the business needs the ability to know that they are secure. The Power 710 can utilize PowerSC to provide a security and compliance solution to protect data centers virtualized with PowerVM. PowerSC simplifies management by automating monitoring and providing immediate visibility to administrators when compliance profiles are altered.

Power is availability you can count on

The Power 710 Express is designed with capabilities to deliver leading-edge application availability and allow more work to be processed with less operational disruption. RAS capabilities include recovery from intermittent errors or failover to redundant components, detection and reporting of failures and impending failures, and self-healing hardware that automatically initiates actions to effect error correction, repair or component replacement. In addition, the Processor Instruction Retry feature provides for the continuous monitoring of processor status with the capability to restart a processor if certain errors are detected. If required, workloads are redirected to alternate processors, all without disruption to application execution.

The Power 710 Express implements Light Path diagnostics, which provide an obvious and intuitive means to positively identify failing components. This allows system engineers and administrators to easily and quickly diagnose hardware problems. Hardware failures that may have taken hours to locate and diagnose can now be detected in minutes, avoiding or significantly reducing costly downtime.

Power is the ability to dynamically allocate resources

Take advantage of the scalability and capacity of the Power 710 Express by leveraging our industrial-strength PowerVM technology to fully utilize the system. PowerVM allows any individual virtual machines (VMs/LPARs) to access the maximum amount of memory and CPU cores that are available in the server. PowerVM offers this capability to dynamically adjust system resources to partitions based on workload demands, enabling a dynamic infrastructure that dramatically reduces server sprawl via massive consolidation of applications and servers. In addition, optional components in PowerVM Editions are designed to provide advanced virtualization technologies, resulting in efficiencies in resource utilization and cost savings.

Feature	Benefits
Leadership POWER7+ performance	<ul style="list-style-type: none"> • Access data faster and improve response time • Do more work with fewer servers and benefit from infrastructure cost savings from a reduction in the number of servers and software licenses
Intelligent Threads	<ul style="list-style-type: none"> • Optimize performance by selecting the suitable threading mode for your application
Active Memory Expansion	<ul style="list-style-type: none"> • Enables more work to be done with existing server resources
RAS Features	<ul style="list-style-type: none"> • Keep applications up and running so you can focus on growing your business
Light Path Diagnostics	<ul style="list-style-type: none"> • Easily and quickly diagnose hardware problems reducing service time
IBM Systems Director Active Energy Manager with EnergyScale Technology	<ul style="list-style-type: none"> • Dramatically and dynamically improve energy efficiency and lower energy costs with innovative energy management capabilities • Enables businesses to continue operations when energy is limited

Power 710 Express at a glance

Configuration options	Models 8231-E1D and 8268-E1D
POWER7+ processor modules— one per system	4-core 3.6 GHz or 6-core 4.2 GHz or 8-core 4.2 GHz
Sockets	1
Level 2 (L2) cache	256 KB per core
Level 3 (L3) cache	10 MB per core
Memory	8 GB to 256 GB of RDIMM DDR3 Active Memory Expansion
Solid-state Drives (SSD)	Up to six SFF drives or
Disk drives	Up to six SFF SAS drives
Disk capacity	Up to 5.4 TB
Media bays	Slimline for DVD-RAM Half height for tape drive ¹ or removable disk
I/O	
PCI Adapter slots	Five PCI Express Generation2 8x low profile
Standard Ethernet	Four Ethernet 10/100/1000 Mbps ports
Integrated SAS controller	One controller for SAS DASD/SSD w/ RAID 10 and DVD-RAM Optional protected 175 MB cache with RAID 5, 6
High-performance PCI adapters	8 Gigabit Fibre Channel 2-port 16 Gbps Fibre Channel 2-port 10GbE RoCE Dual port 10 Gigabit Ethernet Dual port 10 Gigabit Fibre Channel over Ethernet Dual port QDR Infiniband 6Gbps SAS RAID controller
Other integrated ports	Three USB, two HMC, two system ports
GX slots	One GX++ (not available with 4-core processor)

Power 710 Express at a glance

PowerVM® technologies

POWER Hypervisor™	Virtual Machines, LPAR, Dynamic LPAR, Virtual LAN (Memory-to-memory interpartition communication)
PowerVM Express Edition (optional)	Up to three partitions on the server; virtualized disk and optical devices (VIOS); Integrated Virtualization Manager (IVM); Shared Dedicated Capacity
PowerVM Standard Edition (optional)	PowerVM Express Edition plus Micro-Partitioning® with up to 20 micropartitions per processor; Multiple Shared Processor Pools
PowerVM Enterprise Edition (optional)	PowerVM Standard Edition plus Live Partition Mobility (LPM) and Active Memory Sharing (AMS)
RAS features	ECC memory with Chipkill Processor Instruction Retry Alternate Processor Recovery Service processor with fault monitoring Hot-plug disk bays Hot-plug and redundant power supplies and cooling fans Dynamic component Deallocation
Operating systems ²	AIX IBM i Linux for POWER®
High availability	IBM PowerHA® family
Power requirements	100 V to 240 V ac, single phase
System dimensions	Rack Drawer: 3.4 in. H × 17.6 in. W × 28.6 in. D (86 mm × 447 mm × 728 mm); weight 62 lbs (28.2 kg) ³
Warranty (limited)	Power 710 8231-E1D —Three year Limited Warranty, on site for selected components; CRU (customer-replaceable unit) for all other units (varies by country), Next Business Day 9x5 (excluding holidays), warranty service upgrades and maintenance are available Power 710 8268-E1D⁴ —One year Limited Warranty, on site for selected components; CRU (customer-replaceable unit) for all other units (varies by country), Next Business Day 9x5 (excluding holidays), warranty service upgrades and maintenance are available

For more information

To learn more about the IBM Power 710 Express server, please contact your IBM marketing representative or IBM Business Partner, or visit the following website:

ibm.com/power/

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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. Buyers should consult other sources of information, including system benchmarks, to evaluate the performance of a system they are considering buying.

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

- ¹ Tape support results in three SFF bays, one tape bay and one DVD
- ² See facts and features document for detailed OS level support.
- ³ Weight will vary when disks, adapters and peripherals are added.
- ⁴ The 8268-E1D model is available in selected countries only.



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