IBM Power 730 Express server

A high-performance, reliable and secure infrastructure and application server

Highlights

- High-performance, dense and energy-efficient server ideal for running multiple application and infrastructure workloads in a virtualized environment.
- Consolidation of UNIX and x86 Linux workloads.

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, the IT landscape is evolving rapidly. And, 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.

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.

Organizations of all sizes are struggling with rising energy prices and limited resources. They are running out of space and exceeding power thresholds in computer rooms and data centers. And, they are increasingly being asked to do more with less. The Power® 730 Express is designed with innovative workload-optimizing and energy management

technologies to help clients get the most out of their systems; that is, running applications fast and energy efficiently to conserve energy and reduce infrastructure costs

The IBM Power 730 Express server delivers the outstanding performance of the POWER7® processor in a dense, rack-optimized form factor and is ideal for running multiple application and infrastructure workloads in a virtualized environment. Take advantage of the Power 730 Express servers' scalability and capacity by leveraging our industrial strength PowerVM™ technology to fully utilize the servers' capability. PowerVM offers this capability to dynamically adjust system resources to partitions based on workload demands, enabling a dynamic infrastructure that can dramatically reduce server sprawl via consolidation of applications and servers.

The Power 730 Express server is a two-socket high-performance, reliable and energy-efficient server supporting up to sixteen POWER7 cores and a choice of AIX®, IBM i or Linux operating systems. Combine the outstanding performance with PowerVM and the workload-optimizing capabilities of POWER7 and you are now ready to run multiple application and infrastructure workloads in a virtualized environment while driving higher utilization and reducing costs.

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 new Power 730 Express Model 8231-E2C adds increased memory capacity and high bandwidth Generation 2 PCI-Express slots to provide even greater performance capabilities. And it offers the capability to grow with your business through additional I/O and storage capacities via expansion units.

Power 730 Express rack-mount server

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** is a new POWER7 technology, which enables the effective maximum memory capacity to be much larger than the true physical memory without the complexity and cost of installing additional memory devices. These workload-optimizing capabilities can improve application performance and ROI from the server.

Power is dynamic energy optimization

EnergyScale™ Technology offers **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. The energy efficiency of the Power 730 is recognized by certain configurations being Energy Star® qualified.

Power is the ability to dynamically allocate resources

Take advantage of the scalability and capacity of the Power 730 Express by leveraging our industrial-strength PowerVM technology to fully utilize the system. PowerVM allows any individual LPAR 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.

Power is availability you can count on

The Power 730 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 730 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.

Feature	Benefits
Leadership POWER7 performance	• 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
IBM Systems Director Active Energy Manager™ with EnergyScale Technology	• Dramatically and dynamically improve energy efficiency and lower energy costs with innovative energy management capabilities • Enables businesses to continue operations when energy is limited
PowerVM Virtualization	• Easily add workloads as your business grows • Utilize the full capability of the system to reduce infrastructure costs by consolidating workloads running the AIX, IBM i or Linux operating • Provides ability to handle unexpected workload peaks by sharing resources
Intelligent Threads	• Optimize performance by selecting the suitable threading mode for your application
Active Memory Expansion	• Enables more work to be done with existing server resources
RAS Features	• Keep applications up and running so you can focus on growing your business
Light Path Diagnostics	• Easily and quickly diagnose hardware problems reducing service time.

Power 730 Express at a glance

Configuration options		
POWER7 processor modules – two per system	8-core 3.0 GHz or 8-core 3.7 GHz or 12-core 3.7 GHz or 16-core 3.55 GHz	
Sockets	2	
Level 2 (L2) cache	256 KB per core	
Level 3 (L3) cache	4 MB per core	
Memory	8 GB to 256 GB[1] of RDIMM DDR3 Active Memory Expansion	
Solid State Drives (SSD)	Up to 6 SFF drives or	
Disk drives	Up to 6 SFF SAS drives	
Disk capacity	Up to 3.6 TB	
Media bays	Slimline for DVD-RAM Half height for tape drive[2] or removable disk	
I/O	**Model 8231-E2B**	**Model 8231-E2C**
PCI Adapter slots	Four PCI Express 8x low profile	Five PCI Express 8x Generation2 low profile
Standard Ethernet	Four virtual Ethernet 10/100/1000 Mbps ports (or) Two virtual 10 Gigabit Ethernet ports	Two Ethernet 10/100/1000 Mbps ports
Integrated SAS controller	One controller for SAS DASD/SSD and DVD-RAM Optional protected 175 MB cache with RAID 5, 6	One controller for SAS DASD/SSD with RAID 10, and DVD-RAM Optional protected 175 MB cache with RAID 5, 6
High performance PCI adapters	8 Gigabit Fibre Channel 10 Gigabit Ethernet 10 Gigabit Fibre Channel over Ethernet	8 Gigabit Fibre Channel Dual port 10 Gigabit Ethernet 10 Gigabit Fibre Channel over Ethernet Dual port QDR Infiniband
Expansion features (optional)	Storage Expansion up to 102 total SFF bays	Storage Expansion up to 378 total SFF bays Up to 20 PCIe slots

Power 730 Express at a glance

Other integrated ports	Three USB, two HMC, two system ports, two SPCN
GX slots	Two GX++
PowerVM technologies	
POWER Hypervisor™	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 10 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[3]	AIX IBM i Linux for POWER®
High availability	IBM PowerHA™ family
Power requirements	200 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 65 lbs (29.5 kg)[4]
Warranty (limited)	3 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 730 Express server, please contact your IBM marketing representative or IBM Business Partner, or visit the following websites:

- **ibm.com**/systems/power/
- http://www-03.ibm.com/systems/power/software/i/
- http://www-03.ibm.com/systems/power/software/aix/
- http://www-03.ibm.com/systems/power/software/
- http://www-03.ibm.com/systems/hardware/energy_star/index.html

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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] 128 GB maximum memory for Power 730 Model 8231-E2B

[2] Tape support results in 3 SFF bays, 1 tape bay and 1 DVD

[3] See facts and features document for detailed OS level support.

[4] Weight will vary when disks, adapters and peripherals are added.

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