



Highlights

- For small-to-midsize database servers
 - Ideal for running today's compute-intensive combination of business transactions along with social and mobile activity for UNIX, IBM i and Linux operating environments
 - For consolidation of UNIX, IBM i and x86 Linux workloads and virtualized application servers
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IBM Power 740 Express server

High performance, reliable, expandable midsize database and consolidation 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.



Businesses desire systems that deliver outstanding performance and can be tomorrow-ready today, with the infrastructure that allows the business to master big data, social, mobile, analytics and the flow of critical information. But they also demand that those systems achieve higher levels of energy efficiency and utilization to help conserve energy and reduce infrastructure costs. As a small-to-midsized database server, the Power® 740 Express® server is fueled by the outstanding performance of the POWER7+ processor, making it possible for applications to run faster with fewer processors, which can result in lower per core software licensing costs. The Power 740 Express also supports innovative workload-optimizing and energy management technologies to help clients get the most out of their systems, running applications quickly and energy efficiently to reduce costs.

As a consolidation server, businesses can further reduce costs and energy consumption by combining the Power 740 Express performance, capacity and configuration flexibility with industrial-strength PowerVM® virtualization for AIX®, IBM i, and Linux. The Power 740 Express is designed with large memory and I/O capacity to satisfy even the most demanding processing environments and can deliver business advantages and higher client satisfaction.

The Power 740 Express is a one- or two-socket server that supports up to 16 POWER7+ cores in a flexible 4U rack-optimized form factor. The Power 740 offers large memory capacity, outstanding performance of the POWER7+ processor, PowerVM and workload-optimizing capabilities to enable companies to get the most out of their systems by increasing utilization and performance while helping to reduce infrastructure and energy costs. The latest model of the Power 740 Express adds increased memory capacity, higher performance POWER7+ processors, and high bandwidth Generation 2 PCI-Express slots to provide even greater performance capabilities.



Power 740 Express rack-mount server

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.

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 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 complexity and cost of installing additional memory devices. The new

POWER7+ hardware accelerator improves the efficiency of memory expansion even more effectively 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 return on investment from the server.

Power is the ability to dynamically allocate resources

Take advantage of the scalability and capacity of the Power 740 Express by leveraging the 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 on 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 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 740 utilizes 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 740 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 740 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 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 740 is recognized by certain configurations being Energy Star® qualified.

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
PowerVM Virtualization	<ul style="list-style-type: none"> • 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. Up to 20 partitions per core can be supported. • Provides ability to handle unexpected workload peaks by sharing 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.
Flexibility and choice of AIX, IBM i and Linux operating systems	<ul style="list-style-type: none"> • Choose the operating environment that best suits your application and business needs
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 740 Express at a glance

Configuration options	Model 8205-E6D
POWER7+ processor modules— one or two per system	6-core or 12-core 4.2 GHz or 8-core or 16-core 3.6 GHz or 8-core or 16-core 4.2 GHz
Sockets	1 or 2
Level 2 (L2) cache	256 KB per core
Level 3 (L3) cache	10 MB per core
Memory	8 GB to 512 GB of RDIMM DDR3 - 1 processor 8 GB to 1024 GB of RDIMM DDR3 - 2 processors Active Memory Expansion available
Solid-state Drives (SSD)	Up to eight SFF drives
Disk drives	Up to eight SFF SAS drives
Disk capacity	Up to 7.2 TB internal storage
Media bays	Slimline for DVD-RAM Half height for tape drive or removable disk

Power 740 Express at a glance

I/O	
PCI Adapter slots	Five PCI Express 8x Generation2 plus optional four PCI Express Generation2 low profile
Standard Ethernet	Four Ethernet 10/100/1000 Mbps ports
Integrated SAS controller	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 (optional)	4-port 8 Gigabit Fibre Channel 2-port 16 Gigabit Fibre Channel 2-port 10GbE RoCE 10 Gigabit Ethernet 10 Gigabit Fibre Channel over Ethernet Dual Port Quad Data Rate IB 6Gbps SAS RAID controller
Other integrated ports	Three USB, two HMC, two system ports, two SPCN
GX slots (12X)	Two GX++ ¹
I/O expansion (optional)	Up to 4 PCIe 12X I/O drawers – 40 PCIe slots Up to 8 PCI-X DDR 12X I/O drawers – 48 PCIx slots Up to 416 SFF bays
Other PCI adapters supported include	SAS, SCSI, WAN/Async, USB, Crypto, iSCSI
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)
High availability	IBM PowerHA® family
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 systems²	
	AIX IBM i Linux for POWER®
Power requirements	
	200 V to 240 V ac, single phase
System dimensions	
	Rack Drawer: 6.9 in. H × 17.3 in. W × 24.0 in. D (173 mm × 440 mm × 610 mm); weight: 87 lbs (39.5 kg) ³
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 740 Express server, please contact your IBM marketing representative or IBM Business Partner, or visit the following websites:

- ibm.com/power/
- http://www-03.ibm.com/systems/hardware/energy_star/index.html

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

- ¹ One GX slot shares space with PCI Express x8 low profile option. Available configuration options are dependent on the number of processor cores and other factors. Contact IBM or your IBM Business Partner for specific configuration restrictions.
- ² See facts and features document for detailed OS level support.
- ³ Weight will vary when disks, adapters and peripherals are added.



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Integrated Marketing Communications
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Produced in the United States
February 2013

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