IBM Power System S824L server

Boosts workload performance by offloading highly parallel operations to GPU accelerator(s)

Highlights

- Revolutionize IT with the first server to leverage OpenPOWER Foundation technology to dramatically accelerate Java, big data and technical computing applications

- Offload highly parallel operations to a GPU accelerator and boost workload performance

- Help realize competitive advantages at a lower cost

It's no secret at this point that disruptive trends in technology are rapidly remaking how organizations do business. Technology is advancing so rapidly, in fact, that dynamic communities of collaboration are forming just to harness it all. The growing torrent of data from both within and outside your organization, from mobile employees and from customers and prospects, presents an unprecedented opportunity to gain valuable insights and apply these insights at the best point of impact to improve your business results.

Making the transition to advanced capabilities requires an integrated infrastructure that supports your key IT initiatives. IBM investments in bringing new optimized solutions in the area of advanced analytics, cloud and mobile access are designed to simplify and accelerate your journey to address today's market opportunities.

The next generation of IBM® Power Systems™, with IBM POWER8™ technology, is the first family of systems built with innovations that transform the power of big data and analytics, mobile and cloud technology into competitive advantages in ways never before possible. Our new scale-out systems provide powerful, scalable and economical means to put data to work for you.

Power Systems are at the forefront of delivering solutions to gain faster insights from analyzing both structured information and unstructured big data—such as video, images and content from sensors—and data from social networks and mobile devices. To draw insights and make better

decisions, businesses need solutions that consist of proprietary and open system software to solve their specific pain points. To drive those solutions, secure and flexible Power Systems servers are designed to keep data moving by running multiple concurrent queries that take advantage of industry-leading memory and I/O bandwidths. All of this leads to highly-supported utilization rates.

- With over twice the bandwidth as prior servers, and lower hardware and power requirements, Power Systems allow superior scale-out efficiencies. And open technologies like Linux and OpenStack bring these capabilities to you more economically than ever before.
- An innovation-ready platform based on open collaboration, the POWER8 architecture is the heart of the OpenPOWER Foundation, powering an ecosystem of community-driven innovation. This will enable future integrated hardware solutions that dramatically accelerate compute- and data-intensive tasks.

IBM Power Systems: Innovation to put data to work
Bring faster insight to the point of impact for today's data-hungry applications
Built with innovation that puts data to work, Power Systems deliver the foundation for organizations to bring insight to the point of impact more quickly. These first generation systems push the physical and virtual boundaries of data center technology with innovation designed to drive the faster, more efficient data-centric applications required by today's smarter enterprise.

With new innovations, Power Systems can help you:

- Gain faster insights with the POWER8 processor
- Deliver faster query acceleration for Java applications for with OpenPOWER member NVIDIA's GPU on the new Power System S824L scale-out Linux-based server

Revolutionizing the way IT is developed and delivered
With an architecture that is at the heart of the open server development community and the OpenPOWER Foundation, the Power Systems open technology platform presents a world of community-created innovation, applications and technology components to deliver a broader set of applications and new technologies quickly. Leveraging open standards, Power Systems provides developers with tools tuned for a platform that boosts productivity and performance by removing constraints imposed by commodity architecture. With continuous innovation built into the platform, Power Systems will enable future integrated hardware solutions that dramatically accelerate compute- and data-intensive tasks.

IBM Power System S824L server
The Power System S824L server is the first server to leverage OpenPOWER Foundation technology. It offloads highly parallel operations to a GPU accelerator and boosts workload performance to dramatically accelerate Java, big data and technical computing applications. With the Power System S824L server, clients can deliver faster query acceleration for Java applications with OpenPOWER Foundation member NVIDIA's GPU.

IBM Power System S824L server at a glance

System configurations	Model 8247-42L

Processor and Memory

Microprocessors (with GPU installed)	Two 10-core 3.42 GHz POWER8 processor cards or Two 12-core 3.02 GHz POWER8 processor cards
Microprocessors (available when no GPU installed and run on PowerVM)	One or Two 8-core 4.15 GHz POWER8 processor cards or Two 12-core 3.52 GHz POWER8 processor cards
Level 2 (L2) cache	512 KB L2 cache per core
Level 3 (L3) cache	8 MB L3 cache per core
Level 4 (L4) cache	16 MB per DIMM
Memory Min/Max	16 GB, 32 GB, 64 GB and 128 GB 1600 MHz DDR3 module, 32 GB to 2 TB
Processor-to-memory bandwidth	192 GBps per socket

Storage and I/O

Standard backplane	12 small form factor (SFF) bays for Hard Disk Drive (HDD)
With dual IOA higher function backplane (available when no GPU installed and run on PowerVM)	18 SFF bays for HDD/SSD plus 8 1.8-inch bays for SSD
Media bays	One slim line DVD
Integrated SAS Controller	Standard RAID 0, 5, 6,10
Adapter slots	Included one x8 PCIe slots must contain a 1 Gb Ethernet LAN available for client use Eleven PCIe Gen3 slots: four x16 plus seven PCIe Gen3 x 8 Up to Two NVIDIA adapters available Two CAPI adapters per processor module
I/O Bandwidth	96 GBps per socket

IBM Power System S824L server at a glance

Expansion features (Optional)

Max PCIe Gen3 I/O drawer (available when no GPU installed and run on PowerVM)	2

Power, RAS, system software and physical characteristics and warranty

Power supply	100 V to 240 V
RAS features	Processor instruction retry Chip kill memory ECC L2 cache, L3 cache Service processor with fault monitoring Hot-swappable disk bays Hot-plug and redundant power supplies and cooling fans Dynamic processor deallocation Extended error handling on PCI slots
Operating systems	Linux on POWER*
System dimensions	427.5 W x 173 H x 750.5 D mm
Warranty	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.

Why IBM?

IBM is honored to be recognized by readers of the Linux Journal as the winner of the "Best Linux Server Vendor" category in the 2013 Readers' Choice Awards—for the third year in a row. This recognition demonstrates the value of IBM's continued commitment to industry-leading collaboration and revolutionary technology.

Recently, IBM announced that it is investing USD 3 billion over the next 5 years in two broad researches and early stage development programs to push the limits of chip technology required to meet the emerging demands of cloud computing and big data systems. These investments will push IBM's semi-conductor innovations from today's breakthroughs into the advanced technology leadership required for the future.

For more information

To learn more about IBM Power Systems, please contact your IBM representative or IBM Business Partner, or visit the following website:
ibm.com/systems/power/hardware/s824l/index.html

Additionally, IBM Global Financing can help you acquire the IT solutions that your business needs in the most cost-effective and strategic way possible. We'll partner with credit-qualified clients to customize an IT financing solution to suit your business goals, enable effective cash management, and improve your total cost of ownership. IBM Global Financing is your smartest choice to fund critical IT investments and propel your business forward. For more information, visit: ibm.com/financing