

IBM propose à ses clients une alternative de choix aux serveurs de commodité x86

Des systèmes basés sur OpenPOWER délivrent un ratio prix/performances 20% plus efficace que celui des serveurs x86

Paris - 03 oct. 2014: IBM (NYSE : IBM) a présenté aujourd'hui une nouvelle gamme de systèmes capables de gérer une énorme quantité de données informatiques plus rapidement et à un prix / performances meilleur de près de 20% par rapport à celui de systèmes Intel Haswell comparables - IBM fournit ainsi aux clients une alternative supérieure aux serveurs de commodité propriétaires utilisés dans les centres de données.

Les serveurs de commodité utilisés aujourd'hui par la plupart des organisations s'appuient sur une technologie de processeur propriétaire poussée dans ses derniers retranchements pour gérer les charges de travail liées au Big Data, au Cloud et à la mobilité.

En revanche, l'approche orientée données d'IBM pour la conception des systèmes s'appuie sur les éléments constitutifs de la Fondation OpenPOWER. Formée fin 2013, la Fondation OpenPOWER a rapidement grandi, passant des 5 fondateurs à 59 membres actuels - ils travaillent ensemble pour exploiter l'architecture ouverte du processeur IBM POWER afin de développer l'innovation dans l'industrie.

Les nouveaux serveurs IBM Power S824L sont basés sur le processeur POWER8, le premier au monde optimisé pour traiter les charges de travail les plus exigeantes de type Big Data. Les nouveaux systèmes intègrent étroitement les technologies IBM et celles d'autres membres d'OpenPOWER, dont, pour la première fois, la technologie d'accélérateur GPU de NVIDIA. Ceci permet de dégager des performances de calcul sans précédent pour permettre aux banques de mieux analyser les risques, aux entreprises d'énergie de localiser plus précisément les réserves de pétrole, et aux scientifiques d'identifier plus rapidement des remèdes pour les maladies.

Pour tirer parti de l'accélération graphique sur Power Systems, IBM optimisera ses applications d'entreprise pour le Big Data, y compris le logiciel de base de données IBM DB2 avec BLU accélération. En outre, IBM s'efforce d'optimiser les versions Power d'applications accélérées par GPU pour la bio-informatique, la défense, la finance, la dynamique moléculaire, la modélisation météorologique, y compris SOAP3, NAMD, GROMACS, la bibliothèque FFTW et Quantum Espresso.

Les versions futures d'IBM Power Systems utiliseront la technologie NVIDIA NVLink, ce qui évite d'avoir à transférer des données entre l'unité centrale et le GPU via une carte PCI Express. Cela permettra au GPU NVIDIA d'accéder totalement à la mémoire de l'unité centrale IBM POWER, ce qui améliorera les performances pour de multiples applications d'entreprise. Ces systèmes devraient être disponibles début 2016.

- **IBM Data Engine pour NoSQL** : cette solution regroupe les innovations des membres d'OpenPOWER Redis Labs, Canonical, Altera et IBM. Elle permet de déployer des data stores NoSQL à un coût nettement inférieur.
- **IBM Data Engine for Analytics - Power Systems Edition** : combinaison de systèmes POWER8 scale-out avec la technologie Elastic Storage à base de flash et de Platform Computing, cette offre permet de n'utiliser qu'un tiers de l'infrastructure de stockage exigée par une solution de type x86.
- **Power Enterprise Systems** : Les nouveaux systèmes Power E870 et Power E880 sont les systèmes à 8 sockets les plus performants du marché, ils supportent jusqu'à 1.000 machines virtuelles. Avec au choix 32, 40 ou 48 cœurs de processeur et jusqu'à 4 To par nœud de traitement, ces systèmes sont conçus pour une efficacité et une croissance modulaire transparente, ils monteront à 192 cœurs avec plus de 1500 threads de calcul et une mémoire de 16 To.

Avec la disponibilité générale prévue pour le 31 octobre, les nouveaux systèmes Power d'IBM et les solutions se présentent sous diverses configurations et modalités de services.

Financement disponible

IBM Global Financing propose aux clients des offres de financement abordables pour acquérir les dernières technologies et solutions IBM. Des facilités de paiement à taux 0% sur, par exemple, les serveurs Power S824L, des solutions de financement sur-mesure, des programmes pour aider à la migration vers les nouveaux serveurs Power, sont notamment disponibles.

IBM Global Financing, leader mondial dans le financement informatique, accompagne la transformation des clients et facilite voire accélère leurs projets IT, Métiers ou transverses en proposant un ensemble d'options de financement flexibles et innovantes - pour les logiciels et matériels IBM et non-IBM et les services IBM. IBM Global Financing intervient dans plus de 60 pays depuis 33 ans.

IBM Provides Clients Superior Alternative to x86-Based Commodity Servers

OpenPOWER Based Systems Deliver Nearly 20 Percent Better Price Performance than x86-Based Servers

Armonk, NY – 3 October 2014 – IBM (NYSE: [IBM](#)) today introduced a [new range of systems](#) capable of handling massive amounts of computational data faster and at a nearly 20 percent better price performance^{[i], [ii]} than comparable Intel Xeon v3 Processor based systems – providing clients a superior alternative to closed, commodity-based data center servers.

The vastness of Big Data – of the 2.5 quintillion bytes of data generated on the planet every day – provides a challenge for organizations to build powerful technology infrastructures to gain actionable insights from this data. The commodity servers used today by most organizations are built on proprietary processor technology and are increasingly stretched to their limits by workloads related to Big Data, cloud and mobile demands. In contrast, IBM is designing a new data centric approach to systems that leverages the building blocks of the [OpenPOWER Foundation](#). Formed in late 2013, the OpenPOWER Foundation has grown quickly from 5 founders to 59 members – all working together to leverage the IBM POWER processor’s open architecture for broad industry innovation.

*“Our open innovation business model and approach to OpenPOWER will disrupt technology providers that offer closed, proprietary solutions produced within the walls of one company,” said **Doug Balog, General Manager, IBM Power Systems**. “Today’s announcement provides clients with a greater choice to help them gain the fastest, deepest insights to solve their business problems.”*

The new IBM Power S824L servers are built on IBM’s POWER8 processor, the world’s first processor optimized for the most demanding Big Data workloads^[iii]. The new systems tightly integrate IBM and other OpenPOWER member technologies, including NVIDIA’s GPU accelerator technology for the first time, to unleash incredible computing performance to help enable banks to better analyze risk, energy companies to more precisely locate oil reserves, and scientists to more quickly identify cures for diseases.

Built on the OpenPOWER stack^[iv], the Power S824L systems provide clients the ability to run data-intensive tasks on the POWER8 processor while offloading other compute-intensive Big Data workloads to GPU accelerators which are capable of running millions of data computations in parallel and are designed to significantly speed up compute-intensive applications.

To take advantage of GPU acceleration on Power Systems IBM will be optimizing IBM Big Data enterprise

applications, including the IBM DB2 database software with **BLU Acceleration**. Additionally, IBM is working to optimize Power versions of widely used GPU-accelerated applications for bioinformatics, defense, finance, molecular dynamics, weather modeling – including SOAP3, NAMD, GROMACS, FFTW library, and Quantum Espresso.

Future versions of IBM Power Systems will feature NVIDIA NVLink technology, eliminating the need to transfer data between the CPU and GPUs over the PCI Express interface. This will enable NVIDIA GPUs to access IBM POWER CPU memory at its full bandwidth, improving performance for numerous enterprise applications. Such systems are expected to be available beginning in 2016.

POWER8 Portfolio Expands

In addition to the GPU-accelerated Power S824L offering, other additions to IBM's POWER8 processor-based Power Systems portfolio and solutions that complement the lineup include:

- **IBM Data Engine for NoSQL:** Bringing together innovation from OpenPOWER members Redis Labs, Canonical, Altera and IBM, this solution enables a significantly lower cost basis for deploying NoSQL data stores. The solution combines Redis Labs software, Canonical's Ubuntu Linux operating system, Altera's FPGAs and IBM's unique CAPI-enabled Power System S822L with IBM's FlashSystem 840. Simplicity is achieved through server consolidation, enabling one POWER8 server to be used instead of 24 Intel-based servers for a well-sized NoSQL store.[\[v\]](#) A many-fold reduction in infrastructure cost is realized through this smaller footprint and associated energy cost reductions. Clients can realize new opportunities and grow far larger NoSQL stores by leveraging the full 40TB of Flash within a single rack.
- **IBM Data Engine for Analytics - Power Systems Edition :** Combining POWER8 Scale-out systems with IBM's flash-based Elastic Storage technology and Platform Computing software, this new analytics appliance offering can use a third of the storage infrastructure as required by an x86-based solution.[\[vi\]](#)
- **Power Enterprise Systems:** Built with the fastest performing core and fastest performing high-end server chip in the industry[\[vii\]](#), the new Power Enterprise Systems expand the line-up from the POWER8 based scale-out servers introduced in April and are designed and optimized for the demands of enterprise data and computing environments. The new Power E870 and Power E880 Systems are the highest performance 8-socket systems in the industry with support for up to 1,000 VMs per system. With choices of 32, 40 or 48 processor cores and up to 4 TB per compute node, these systems are designed for modular efficiency and seamless growth and will grow to a massive 192 cores with more than 1500 threads of compute power and 16 TB of memory, enabling them to handle the most data intensive, mission critical applications in the industry. Capable of running AIX, IBM i, and Linux operating systems, the new Power Enterprise Systems are designed for clients to confidently support the most demanding, mission-critical environments.

- **Power Enterprise Pools:** Delivering a powerful foundation for private, public, and hybrid cloud infrastructure, Enterprise Pools offer extreme flexibility and instant response to changes in workload or infrastructure. They enable clients to move resources across a pool of systems to match workload demand, help ensure system availability, improve efficiency, and protect investments while transitioning to POWER8.

With general availability planned for October 31, the new IBM Power systems and solutions come in variety of configurations and service arrangements.

Financing Available

IBM Global Financing provides clients with affordable options to acquire the latest in IBM technology and solutions. Offerings available include 0% financing for the Power S824L servers, customized financing structures, and programs to migrate to the new Power enterprise servers.

IBM Global Financing is the world's largest IT captive financier and can help enable credit-qualified clients to transform their business. IBM's flexible payment options can accelerate the acquisition of transformational projects with total solution financing, including IBM and non-IBM products and services. IBM's IT financing specialists have serviced clients in over 60 countries in 33 years.

To learn more about the IBM Power Systems launched today visit: <http://www.ibm.com/systems/power/announcement.html>

To learn more about the OpenPOWER Foundation visit www.openpowerfoundation.org

[i] Performance is based on an estimate of published SPECcpu2006 (SPECfp_rate2006) results as of September 26, 2014 <http://www.specbench.org/>.

[ii] IBM pricing based on: IBM Power Systems S824L (2x12 cores/96 threads/3.02GHz) configured with 192 GB Memory (8GB/core) with Ubuntu Advantage Linux. x86 pricing based on: HP DL380p with Intel E5-2699 v3 (2x18 cores/36 threads/2.3GHz) configured with 288 GB Memory (8GB/core) with Red Hat Enterprise Linux.

[iii] By Big Data, IBM means handling both extraordinary large volumes of structured (relational databases) and unstructured (noSQL, Map Reduce) data from which customers derive analytics and insight. The POWER8 processor is the first processor with differentiated capabilities designed to handle both structured and unstructured data. Such capabilities include: the CAPI (Coherent Accelerator Processor Interface) Architecture with key data capabilities e.g.: a). CAPI Flash Access Efficiency, b). Storage reduction via CAPI Attached Compression Accelerator, and c). Throughput and latency advantage of CAPI Attached Mellanox RDMA Fabric. DBMA (dynamic balanced memory architecture) in the form of key capabilities, e.g. a). Internal Processor Data

Flow b). Memory Bandwidth advantage c). Cache capacity advantage

[\[iv\]](#) OpenPOWER stack consists of an open set of hardware and software specifications maintained by the OpenPOWER Foundation, based on the IBM POWER architecture.

[\[v\]](#) 24:1 system consolidation ratio (12:1 rack density improvement) based on a single IBM S824, (24 cores, POWER8 3.5 GHz), 256GB RAM, AIX 7.1 with 40 TB memory based Flash replacing 24 HP DL380p, 24 cores, E5-2697 v2 2.7 GHz), 256GB RAM, SuSE Linux 11SP3 . Inbound network limits performance to 1M IOPs in both scenarios, equal capacity (#user, data) in both cases.

[\[vi\]](#) Over 3X less storage infrastructure for Power as compared to a typical Intel Hadoop based solution. Based on IBM internal testing, clients actual results may vary. The IBM POWER8 servers with GPFS file system used 116 (3.5" HDS) disk drives. The Intel servers with HDFS file system required 280 (3.5" HDS) disk drives. Additional storage savings comes from eliminating data duplication during Extraction, Transformation, and Loads (ETL) processing.

[\[vii\]](#) Based on a broad range of benchmarks.
