

La fondation OpenPOWER révèle sa feuille de route et les premières innovations dont les nouveaux Power Systems d'IBM

Paris - 24 avr. 2014: Lors de l'Open Innovation Summit, la Fondation OpenPOWER constituée de Google, IBM, Mellanox Technologies, NVIDIA, et Tyan, a franchi une première étape dans la délivrance de nouveaux systèmes au design novateur basés sur le nouveau processeur POWER8 d'IBM. A cette occasion, IBM annonce une nouvelle ligne de serveurs qui seront les premiers à exploiter les innovations OpenPOWER.

Les nouveaux systèmes IBM analysent les données 50 fois plus rapidement que les systèmes basés sur x86 les plus récents

Conçus dès le départ pour s'adapter à l'ère du Big Data, les nouveaux serveurs scale-out IBM Power Systems sont le fruit d'un investissement de 2,4 milliards de dollars et de plus de 3 ans de développement s'appuyant sur des centaines de brevets IBM. Ils sont basés sur la technologie POWER8 d'IBM, une tranche de silicone de 6,45 cm², avec plus de 4 milliards de transistors reliés entre eux par plus de 17 kms de connexions haute vitesse en cuivre.

Les systèmes POWER8 : l'innovation pour mettre les données au travail

Afin d'adresser le déluge des données, IBM annonce également trois solutions Power Systems optimisées pour les besoins particuliers des solutions Big Data et analytiques. Les nouvelles technologies, IBM Solution for BLU Acceleration, IBM Solution for Analytics et IBM Solution for Hadoop sont optimisées pour que les nouveaux Power Systems puissent extraire des informations pertinentes des données structurées ou non structurées.

Par exemple, la nouvelle IBM Solution for Analytics permet d'extraire plus rapidement des informations pour les charges de travail de type analytique, de calculs intensifs ou cognitives, grâce à l'intégration de Cognos, de SPSS et de DB2 avec BLU Acceleration. Selon les résultats de tests, les IBM Power Systems sont capables d'analyser des données 50 fois plus rapidement que les derniers systèmes à base de x86^[1]. Certaines entreprises ont indiqué exécuter des requêtes analytiques plus de 1000 fois plus vite, réduisant les temps d'exécution de plusieurs heures à quelques secondes.

*"Cette annonce de systèmes à base de processeurs POWER8 marque un tournant important dans l'évolution de nos Power Systems." déclare **Alain Henry, Vice-Président System & Technology Group d'IBM France**, "La conception et le design totalement innovants nous permettent de proposer à nos clients des solutions qui vont les aider à adresser plus efficacement les challenges liés au Big Data et au Cloud, avec des performances inégalées."*

Développements Linux : collaboration avec Canonical, PowerKVM

L'an passé, IBM s'est engagé à consacrer 1 milliard de dollars en nouvelles technologies Linux et open source pour les serveurs Power Systems. Les investissements majeurs incluent de nouveaux produits, un réseau grandissant de 5 centres Power Systems Linux dans le monde et la Power Development Platform, un Cloud de développement gratuit pour les développeurs afin qu'ils testent et portent des applications x86 sur la plateforme Power.

Aujourd'hui, IBM annonce deux développements qui renforcent l'innovation Cloud sur des systèmes POWER8 :

- La disponibilité d'Ubuntu Server de Canonical, sur tous les systèmes POWER8
- L'introduction de PowerKVM, une version de l'outil de virtualisation KVM pour les Power Systems qui exécutent exclusivement Linux

Ces annonces complètent le support actuel d'IBM pour les distributions Red Hat et SUSE Linux sur l'ensemble de la gamme Power Systems.

Serveurs Scale-Out Power Systems : changer l'équation économique des datacenters

Les premiers systèmes basés sur POWER8 sont cinq serveurs Power Systems S-Class, conçus pour de larges déploiements d'environnements scale-out. Ces systèmes peuvent opérer à des niveaux d'efficacité extrêmes garantissant un fonctionnement régulier, y compris à 65% d'utilisation continue, un taux supérieur au niveau standard d'utilisation en environnement x86[\[2\]](#). Avec deux fois le débit d'un serveur à base de x86, les nouveaux Power Systems peuvent contribuer à réduire la taille d'un datacenter par deux[\[3\]](#). Avec les premières disponibilités à partir du 10 juin, les nouveaux serveurs S-Class incluent deux systèmes qui exécutent exclusivement Linux – les Power Systems S812L et S822L. Les trois autres offres, les serveurs Power Systems S814, S822 et S824, offrent aux clients le choix d'exécuter de multiples systèmes d'exploitation, dont Linux, AIX et IBM i. Disponibles en configurations 1 et 2 sockets, 2U et 4U, le prix de départ des nouveaux serveurs s'établit à 7973 dollars[\[4\]](#).

Les premiers projets OpenPOWER des autres membres de la fondation OpenPOWER

Lors de la conférence Open Innovation Summit, la fondation OpenPOWER a révélé les premiers détails sur les « white box » serveurs, incluant un concept de développement de Tyan, et un firmware développé par IBM, Google et Canonical. Le stack logiciel OpenPOWER inclus dans ce design doit permettre de faciliter l'implémentation de déploiements hybrides.

Google a présenté également son premier concept de système POWER white box pour explorer les capacités de l'architecture POWER. IBM a, quant à lui, indiqué qu'il déploiera des systèmes OpenPOWER dans Softlayer plus tard cette année.

Exemples de solutions innovantes

La fondation OpenPOWER a également annoncé de nouvelles façons d'utiliser des technologies à base de POWER8 pour adresser les challenges du Big Data et du Cloud qui impactent les datacenters modernes :

- **Mellanox RDMA exploitation on POWER**
- **NVIDIA GPU Accelerator Integration** : NVIDIA a détaillé la première implémentation d'accélération GPU avec technologie POWER ainsi que le premier GPU accelerator framework for Java, avec des premiers résultats montrant une amélioration de performance x8 sur les applications Hadoop Analytics.
- **Xilinx and Altera FPGA accelerators with CAPI attach**
- **Micron, Samsung Electronics et SK Hynix memory** se sont engagés à supporter la fondation OpenPOWER par la fourniture de composants mémoire et stockage pour un écosystème ouvert.

Nouveaux membres de la fondation OpenPOWER

Plus de 25 membres ont rejoint OpenPOWER, dont Micron, Hitachi, Emulex, Fusion-IO, SK Hynix, Xilinx, Jülich Supercomputer Center, Oregon State University et plusieurs autres depuis la formation d'OpenPOWER en décembre 2013.

Pour plus d'informations sur les Power Systems : <http://www-03.ibm.com/systems/fr/power>

Pour plus d'informations sur la fondation OpenPower : www.openpowerfoundation.org

OpenPOWER Foundation Unveils First Innovations and Roadmap

San Francisco, CA – Open Innovation Summit – 23 April 2014 – The [OpenPOWER Foundation](#), an open development community dedicated to accelerating data center innovation, today took its first steps to deliver transformative system designs based on [IBM's new POWER8 processor](#).

At the Open Innovation Summit today, with over 100 leading industry executives and technologists on hand, the Foundation showed the first reference board and OEM systems, and innovations including many forms of acceleration, advanced memory and networking. OpenPOWER has grown to more than two dozen members including global hardware and software thought leaders.

Formed by Google, IBM, Mellanox Technologies, NVIDIA, and Tyan, the Foundation makes POWER hardware and software available for open development, as well as POWER intellectual property licensable to other manufacturers. OpenPOWER is greatly expanding the ecosystem of innovators providing value back to the industry and end users.

*"We are very pleased with the growth of the OpenPOWER community and the progress made by the Working Group members even at this early stage," said **Gordon MacKean, Chairman, OpenPOWER Foundation**. "The projects feeding the innovation pipeline to date will greatly enhance the performance of the next generation of servers by eliminating system-level bottlenecks."*

Initial OpenPOWER Designs

At the summit, the OpenPOWER Foundation presented its first white box server details including a development and reference design from Tyan, and firmware and operating system developed by IBM, Google, and Canonical. The OpenPOWER Software stack in this white box design is targeted for ease of implementation in hybrid deployments. IBM noted it will be deploying systems leveraging this OpenPOWER hardware and software stack in Softlayer later this year. Information on OpenPOWER projects is available on the Foundation's new web site, www.openpowerfoundation.org.

Example Innovative Solutions

OpenPOWER also announced new ways to use POWER-based technologies to address critical big data, cloud, and application challenges facing modern data centers. An early live demonstration of these innovations will be performed at the IBM Impact 2014 Global Conference, Las Vegas Nevada, April 27 – May 1. These include:

- **Mellanox RDMA exploitation on POWER** – Using RDMA a 10X throughput and latency improvement of Key Value Store applications was described. These capabilities will be further accelerated with future exploitation of POWER8 capabilities.
- **NVIDIA GPU Accelerators** – NVIDIA is adding CUDA software support for NVIDIA GPUs with IBM POWER CPUs. IBM and NVIDIA are demonstrating the first GPU accelerator framework for Java, showing an order of magnitude performance improvement on Hadoop Analytics applications compared to a CPU-only implementation. NVIDIA will offer its NVLink™ high-speed GPU interconnect as a licensed technology to OpenPOWER Foundation members.
- **Xilinx and Altera FPGA accelerators with CAPI attach** – IBM described two CAPI attach accelerator solutions, a memcached Key Value Store showing a 35X power/performance improvement with an order of magnitude latency reduction, and Monte Carlo financial instruments models with a 200X speedup using Altera FPGAs with a CAPI attach.
- **Micron, Samsung Electronics, and SK Hynix memory** – Each of these innovative memory companies is committed to supporting the OpenPower Foundation through the supply of memory and storage components for an open ecosystem.

New OpenPOWER Foundation Members

Twenty-five members have joined OpenPOWER including Canonical, Samsung Electronics, Micron, Hitachi, Emulex, Fusion-IO, SK Hynix, Xilinx, Jülich Supercomputer Center, Oregon State University, and several others since OpenPOWER formed as a legal entity in December 2013.

About OpenPOWER Foundation

The goal of the OpenPOWER Foundation is to create an open ecosystem, using the POWER Architecture to share expertise, investment, and server-class intellectual property to serve the evolving needs of customers.

- OpenPOWER enables collaborative innovation for shared building blocks
- OpenPOWER supports independent innovation by members
- OpenPOWER builds on industry leading technology
- OpenPOWER thrives as an open development community

For further details, a full membership roster, and getting involved in the OpenPOWER Foundation, visit www.openpowerfoundation.org.

IBM Tackles Big Data Challenges with Open Server Innovation Model

New Systems Deliver Data Insights 50 Times Faster than Latest x86-based Systems

ARMONK, NY, April 23, 2014 ... IBM (IBM: NYSE) today debuted new Power Systems servers that allow data centers to manage staggering data requirements with unprecedented speed, all built on an open server platform. In a move that sharply contrasts other chip and server manufacturers' proprietary business models, IBM through the OpenPOWER Foundation, released detailed technical specifications for its POWER8 processor^[5], inviting collaborators and competitors alike to innovate on the processor and server platform, providing a catalyst for new innovation.

Built on IBM's POWER8 technology and designed for an era of Big Data, the new scale-out IBM Power Systems servers culminate a \$2.4 billion investment, three-plus years of development and exploit the innovation of hundreds of IBM patents -- underscoring IBM's singular commitment to providing higher-value, open technologies to clients. The systems are built from the ground up to harness Big Data with the new IBM POWER8 processor, a sliver of silicon that measures just one square inch, which is embedded with more than 4 billion microscopic transistors and more than 11 miles of high-speed copper wiring.

*"This is the first truly disruptive advancement in high-end server technology in decades, with radical technology changes and the full support of an open server ecosystem that will seamlessly lead our clients into this world of massive data volumes and complexity," said **Tom Rosamilia, Senior Vice President, IBM Systems and Technology Group**. "There no longer is a one-size-fits-all approach to scale out a data center. With our membership in the OpenPOWER Foundation, IBM's POWER8 processor will become a catalyst for emerging applications and an open innovation platform."*

IBM's POWER architecture is the cornerstone of innovation for the OpenPOWER Foundation, creating a computing platform available to all. The Foundation – representing 25 global technology providers and growing – was founded by IBM, Google (NASDAQ: GOOG), NVIDIA (NASDAQ: NVDA), Mellanox (NASDAQ: MLNX) and Tyan (NYSE: AMD). The group announced today an innovation roadmap detailing planned contributions from several of its members, with IBM's Power Systems as the first servers to exploit OpenPOWER technology.

POWER8 Systems: Delivering Open Innovation to Put Data to Work

The IBM Power Systems are designed for a new era of Big Data, helping technology leaders who are faced with managing new types of social and mobile computing and the explosion of data generated each day.

FIS, a provider of payment processing and banking solutions that manages critical financial data for thousands of companies around the world, has expressed excitement about the new POWER8 systems, especially when combined with IBM FlashSystem storage arrays.

*"FIS is excited about the anticipated capabilities and performance of the combination of IBM POWER8 and IBM FlashSystem storage arrays," said **MaryEllen Adam, FIS, Senior Vice President of Large Financial Institutions Product Management**. "We expect higher utilization and performance capabilities along with the flexible computing resources needed to meet our client's application processing and business delivery requirements. POWER8's secure-key cryptographic accelerator and cryptographic coprocessor functions combined with FlashSystems' enterprise ready extreme performance and application latency reductions capability provides an infrastructure that is critical to the success of today's core banking application environments."*

To help address this data deluge, IBM is also announcing three new Power Systems solutions optimized for the unique requirements of Big Data and analytics solutions. Leveraging the POWER8-based systems together with the company's Big Data and analytics software portfolio, the solutions enable organizations to put data to work in real time. The new technologies, IBM Solution for BLU Acceleration, IBM Solution for Analytics and IBM Solution for Hadoop, are optimized for IBM's new Power Systems to deliver quick insights on both structured and unstructured data. For example, the new IBM Solution for Analytics provides speed of insight for today's data driven analytical, computational and cognitive workloads through integration with Cognos, SPSS and DB2 with BLU Acceleration.

According to IBM test results, the IBM Power Systems are capable of analyzing data 50 times faster than the latest x86-based systems.[\[6\]](#) Certain companies have reported analytics queries running more than 1,000 times faster, reducing run times from several hours to just seconds.

Linux Developments: Collaboration with Canonical, PowerKVM

Recognizing Linux as a driving force for innovation, IBM last year [committed \\$1 billion](#) (USD) in new Linux and other open source technologies for IBM's Power Systems servers. Major investments include new products, a growing network of five [Power Systems Linux Centers](#) around the world and the [Power Development Platform](#), a no-charge development cloud for developers to test and port x86-based applications to the Power platform.

Building upon that commitment, IBM today unveiled two Linux developments that fortify rapid cloud innovation on POWER8 systems:

- availability of Ubuntu Server 14.04 LTS, Ubuntu OpenStack and Juju service orchestration tools, on all POWER8 systems; and
- introduction of [PowerKVM](#), a Power Systems-compatible version of the popular Linux-based virtualization platform KVM, on all POWER8 systems that run Linux exclusively.

IBM's collaboration with Canonical, the commercial sponsor of Ubuntu with more than 20 million users worldwide, provides easy migration for applications to Linux for cloud deployments to deliver Big Data and mobile software applications and to boost the performance of existing applications across cloud platforms. IBM is offering the latest release of Ubuntu Server, Ubuntu OpenStack and Canonical's Juju cloud orchestration tools on the new Power Systems announced today and all future POWER8-based systems.

This complements the existing support by IBM for Red Hat and SUSE Linux operating system distributions on its complete lineup of Power Systems.

Power Systems Scale-Out Servers: Changing Data Center Economics

The first POWER8-based systems to debut are five Power Systems S-Class servers designed for large, scale-out computing environments. With industry-leading server quality and utilization levels, the new line-up redefines today's data center economics – by helping to reduce floor space, power and cooling costs. IBM has designed these systems to operate at industry-leading levels of efficiency, guaranteeing the system will perform as warranted while at a sustained 65% utilization -- a rate higher than common x86 utilization levels.[\[7\]](#) With twice the data throughput compared to an x86-based server, the new Power Systems can help cut data center footprints in half.[\[8\]](#)

With availability beginning June 10, the new scale-out S Class servers include two systems that run Linux exclusively – the Power Systems S812L and S822L servers. The three additional offerings, the Power Systems S814, S822 and S824 servers, provide clients the choice of running multiple operating systems including Linux, AIX and IBM i. Available in 1 and 2 socket and 2U and 4U configurations, the starting price of the new servers is \$7973[\[9\]](#) (\$200/month for 36 months).[\[10\]](#)

Financing Available

IBM Global Financing helps clients acquire Power Systems solutions with a single financing solution to better manage their cloud and big data infrastructure, and accelerate business transformation. Financing programs and offerings help clients better match the benefits of reduced upfront costs and faster return on investment within existing budget commitments. Credit-qualified clients may obtain 0% loans or Fair Market Value leasing and loans with customized payment plans. IBM Global Asset Recovery Services provides buyback and disposal services for removal of older IT equipment.

About IBM Big Data and Analytics

Each day, we create 2.5 quintillion bytes of data generated by a variety of sources -- from climate information, to posts on social media sites, and from purchase transaction records to healthcare medical images. At IBM, we believe that data is emerging as the world's newest resource for competitive advantage, and analytics is the key to make sense of it. IBM is helping clients harness Big Data and analytics to provide insights needed to make better decisions, create value, and deliver that value to clients and society. IBM has the world's deepest and broadest portfolio of Big Data and analytics technologies and solutions, spanning services, software, research and hardware. For more information about IBM Big Data and analytics, visit <http://ibm.co/bigdataanalytics>. Follow IBM Big Data and analytics on Twitter @IBMbigdata and @IBMANalytics.

For more information, go to the Power Systems launch page at

<http://www.ibm.com/systems/power/announcement.html>. Join the conversation at #power8, #powersystems or follow @IBMPowerSystems.
