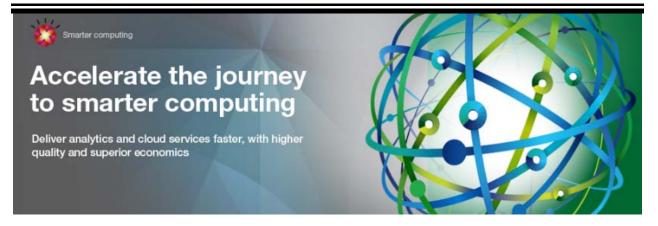# IBM Power Systems Announcement Overview

Overview

Today's announcements enable clients to implement Smarter Computing projects for analytics, cloud, and security by delivering analytics and cloud services faster, with higher quality, and with superior economics on Power Systems

Reduce the cost of cloud security and compliance in virtualized datacenters
PowerSC is a new Power Systems software offering that provides automated tools for implementing security and compliance standards on your PowerVM virtual machines. It features centrally managed compliance measurement and audit reporting.

Accelerate private cloud deployment for faster delivery of infrastructure as a service
IBM Starter Kit for Cloud on Power provides an affordable, faster-to-deploy cloud solution that enables your business to respond rapidly to changing business demands.

Deliver line-of-business analytics and reporting services faster with an affordable, integrated solution
The new entry-level IBM Smart Analytics 7710 for Power Systems is designed for rapid deployment and fast time to value for analytics project development and testing.

Achieve superior economics with flexible workload optimized systems options for projects that demand high performance and energy efficiency
   o The flexible and affordable Power Express servers and the Power 770 are enhanced with the latest industry I/O standards, delivering up to 2X I/O throughput within the same physical and energy footprint.

Power is performance redefined

o   Ideal for high performance, big data analytics projects, the enhanced Power 780 now
    offers up to 96 POWER7 processor cores, plus doubled memory and enhanced I/O.

o   Consolidate legacy applications fast onto new, more efficient servers; simply backup and
    restore your AIX V5.3 applications to POWER7 systems

o   Optimize performance for systems with internal storage through a combination of solid-
    state drives, traditional drives plus large cache SAS disk I/O adapters

Power Systems app for your mobile phone!
Access critical Power Systems information — from the convenience of your Smartphone. The
new Power Systems Quick Reference mobile app puts hardware information, success stories, and
social networks at your fingertips!
http://www.ibm.com/systems/power/resources/mobileapp/index.html

Power Systems is live on Twitter. Follow for the latest Power information
http://twitter.com/ibmpowersystems

Power is performance redefined

<u>Announcement Detail</u>

Power is performance redefined

Power Systems Solutions

IBM Starter Kit for Cloud on Power

IBM Starter Kit for Cloud on Power is an entry private cloud offering that is simple to deploy and easy to use. It works with your existing IBM Power Systems infrastructure, enabling you to quickly deploy self-service provisioning of virtualized workloads with a simple interface that provides oversight while increasing IT efficiency and lowering administration costs. IBM Starter Kit for Cloud on Power allows you to quickly and easily start the transition to a cloud-based infrastructure and prove the benefits of a cloud delivery model.

IBM Starter Kit for Cloud on Power is a solution that builds upon IBM PowerVM virtualization and IBM Systems Director VMControl, with support for virtualized AIX and Linux workloads. It enables rapid scalability by allowing additional servers or blades to be added to the cloud infrastructure. It also includes basic workload metering to support a "pay-per-use" business model. You can also progress from IBM Starter Kit for Cloud on Power to IBM's more advanced cloud offerings such as IBM Service Delivery Manager.

IBM Smart Analytics System 7710 Hardware Enhancements

The IBM Smart Analytics System 7710 is a modular-based solution, providing an entry system for the IBM Smart Analytics offerings. The modular based design offers resource optimization, autonomic security features in the IBM AIX operating system and dependable performance for data warehouse and analytics applications.

The Smart Analytics servers are rack-mount Power 740 Express servers. IBM InfoSphere Warehouse powers the data management component, and IBM Cognos reports the analytics and intelligence. Together, they form an information infrastructure supporting a variety of industries.

IBM Services provides IBM expertise to assemble and test the system, first at the IBM manufacturing facility, then at the customer installation when customer acceptance takes place. Also provided are proactive assistance and advice via an advocate, help facilitation for customer skill development, and a single point of contact.

IBM Smart Analytics System 7710 and 7700 Hardware Module Enhancements

The IBM Smart Analytics System 7710 system hardware supports workloads optimized for data warehousing, information management, and analytics. It includes the server and supporting HMC, an optional high availability server, and Remote Support Manager (RSM) hardware. Both servers come with either of two memory options, and optional storage capabilities.

The IBM Smart Analytics System 7700 (8493-SV2) is enhanced with 256 GB memory and a Dual-port Ethernet daughter card.

IBM i for Business Intelligence
- Fully integrated to deliver high-performance business intelligence
- Engineered for rapid deployment with extract , transport, and loading of data from sourced systems that can turn operational data into actionable information in days
- Built on a foundation of IBM i (includes DB2 for i) , InfoSphere data transportation software, DB2 Web Query for i and a Power 720 Express system … a fit-for-purpose combination packaged to turn your data into information
- Offers a range of business analytics capabilities including business intelligence reporting, analysis, and dashboards

IBM i for Business Intelligence is a packaged solution that is easy to order and easy to implement, a perfect choice for improving your capability to analyze data – turning it into information that can help transform your business. Demonstrate immediate results with Operational Reporting and transition into a robust Data Warehouse, based on your business demands. This solution combines the strengths of Power Systems, IBM i, DB2 for i, DB2 Web Query, and data transportation software to deliver an integrated platform that houses the extracted and transported data sourced from your production systems. IBM i for Business Intelligence provides everything you need to start-up your reporting environment and it is ready when you are as an expandable, growth platform to extend your data analytic capabilities, transforming sourced data by leveraging additional ETL tooling and services to build a Data Warehouse. This new solution is offered as three configurations (small, medium, and large) that include software and required licensing, as well as three days of services designed to get you up and running fast – no long wait times before you can show new business information to your execs.

IBM i CBU with PowerHA
- IBM solution for high availability (HA) and disaster recovery
- Protect critical business applications from outages; planned or unplanned

IBM i CBU with PowerHA is a packaged solution designed to improve and automate your High Availability(HA) and Disaster Recovery (DR) environment.The IBM i CBU with PowerHA solution combines the strengths of IBM Power Systems, IBM i, PowerHA SystemMirror for i 7.1 and CBU Editions. Whether your focus is HA in the data center, or DR via remote recovery, or both, the IBM PowerHA SystemMirror for IBM i provides you with the best of breed end to end integrated solution based on modern clustering technology. When the CBU and PowerHA are purchased together, you are entitled to a service voucher good for three days of services applied toward the architecture, setup and install of your new cluster infrastructure. For NA customers, a rebate is offered on the purchase of the new solution, up to $2,500, for the largest configurations.

Systems Software

IBM PowerSC Standard and Express editions

PowerSC provides a trusted solution to help you simplify the security and compliance administration for AIX virtual workloads running on IBM Power Systems servers. PowerSC simplifies security compliance and strengthens security by providing trusted system extensions. PowerSC also enables security and compliance automation through pre-built system profiles that simplify administration. This automation enforces compliance to various industry standards such as the Payment Card Industry Data Security Standard, the US Department of Defense Security Technical Implementation Guide, and the COBIT best practices.

PowerSC is a "virtualization aware" offering because it has embedded components in the Power Systems PowerVM virtualization technology. This enables PowerSC to harden security and simplify compliance within virtual workloads.

IBM Enhancements to PowerHA SystemMirror for AIX

PowerHA SystemMirror Standard Edition V7.1.1 is the next Technology Level of PowerHA SystemMirror V7.1. The innovations for data center high availability (HA) clustering continue with features that include:
- Federated Security for single-point-of-control, cluster-wide security management.
- SAP LiveCache Hot Standby for fast failover with IBM DS8000 and SAN Volume Controller (SVC).
- Addition of MQSeries Smart Assist to the Smart Assist portfolio for out-of-the-box middleware high availability management. Some of the Smart Assists also have been qualified for later versions of middleware products.
- Disk renaming across the cluster.
- PowerHA SystemMirror 6.1 Enterprise Edition support for XIV and Storwize V7000

IBM PowerVM Enhancements

IBM PowerVM, which delivers industrial-strength virtualization for AIX, IBM i, and Linux environments has been enhanced with the following:
- Shared Storage Pools now allows up to four systems to share a common pool of pre-allocated storage.
- Live Partition Mobility provides a 2X improvement in Live Partition Mobility concurrency.
- Network Load Balancing balances network traffic across redundant Shared Ethernet Adapters.
- Active Memory Deduplication detects and removes duplicate memory pages to optimize memory usage in Active Memory Sharing configurations.

AIX 5.3 Workload Partitions for AIX 7

AIX 5.3 Workload Partitions for AIX 7 is available for AIX 7.1 on POWER7. This program provides the capability to create a workload partition (WPAR) that provides an AIX 5.3 runtime environment for the workload running in the WPAR. This allows a simple migration path for an AIX 5.3 workload running on older hardware to move to more efficient POWER7 systems.

IBM AIX Enhancements

The AIX operating system has been enhanced to provide new capabilities in AIX 7 Technology Level 1 and AIX 6 Technology Level 7 including

Performance and scalability:
- Active System Optimizer, a new subsystem designed to autonomically improve the performance of workloads
- A 50% reduction in JFS2 memory usage for metadata, compared to earlier releases of AIX

Availability:
- A new option for the Logical Volume Manager (LVM) to retry failed I/O operations indefinitely. This can improve overall system availability by allowing recovery from transient failures of storage devices.

Security:
- AIX support for multiple Lightweight Directory Access Protocol (LDAP) servers to provide increased availability and load balancing.

Manageability:
- AIX Profile Manager application programming interfaces (APIs) to allow independent software vendors (ISVs) and clients to provide control of resources outside of AIX.

Other IBM i Announcements

Cloud Infrastucture
– Starter Kit for Cloud (statement of direction)[1]
• Cloud automation and self managing technology

Unlock Core Business Data
– DB2 for i
DB2 for i is enhanced and can improve performance, simplify administration of secure database connections,
• Security – Simplify Authentication with new keyword
• Performance
• SSD Asynchronous Table & Index Movement
• Record Locking Improvements
• Autonomic Improvements for SQE
• DB2 Monitoring Tool Improvements – Filters
• Error Cases, Client IP Addresses, Group & User Profiles
• ISV and Advanced User requests
• Smaller SQL Statements in SQL Packages
• Administration Information available through SQL
– IBM DB2 Web Query for i ..
• Standard Edition bundle to provide customers with a complete query reporting solution in a single, simplified ordering package.
• New interface allowing users to embed reports into their apps

High Availability
– PowerHA SystemMirror for i
• Support replication through V7000
• Support replication though SVC server
• Metro Mirror, Global Mirror and FlashCopy support

Deploy New Business Solutions
– Application Development
• Native archive and un-archive API supports creating and restoring archive files specifically .zip files
– Rational Application Development Enhancements
IBM Rational Developer for Power Systems Software V8.0.3 enhancements for IBM i development include:
• Secure connections to IBM i development platforms
• Usability improvements to the Screen Designer, Report Designer, and Remote Systems LPEX Editor
– Application Runtime Expert
• Automate servicing of applications using scripting, CL commands and SQL queries

– Zend Server Community Edition with Zend DBi
• PHP environment preloaded with IBM I
• New extensions and toolkit for accessing DB2 for I

• Includes distribution of Zend DBI binaries for IBM I

Virtualize and Consolidate
- – System, Storage, and Network Virtualization
  - • Virtual Partition Manager is enhanced to create IBM i partitions
    - • For POWER6 and POWER7 Express Servers that do not have an external management console.
    - • Enhancement to IBM i 7.1, the ability to create up to four IBM i partitions will be enabled in VPM.
  - • IBM i mirroring algorithms are enhanced to take into consideration any N_Port ID Virtualization (NPIV) attached disks.
  - • Thin Provisioning for DS8700 and DS8800 storage servers, and for VIOS Shared Storage Pools allows configurations set up with a smaller amount of real disk storage
- – System and I/O Support
  - • Bus level statistics for 12x loops
  - • Ethernet link aggregation improves throughput and reliability for up to 8 links
  - • Share physical Ethernet connections across partitions with Ethernet layer-2 bridging

Power Systems Hardware Announcements

IBM Power 710 Express server – leadership POWER7 performance in a compact 2U package

The Power 710 Express server is a high-performance, energy-efficient, reliable, and secure infrastructure and application server in a dense form factor with outstanding energy efficiency. It provides very cost efficient solutions for AIX (UNIX), IBM i, and Linux deployments and is easy to purchase and deploy. The Express Edition configurations simplify acquisition and deployment with servers that seamlessly fit into an existing infrastructure.

The IBM Power 710 Express server is a 2U rack-mount server with one processor socket offering 4-core 3.0 GHz, 6-core 3.7 GHz, and 8-core 3.55 GHz configurations. The new Power 710 Express model 8231-E1C provides expanded I/O capabilities using the high-performance Gen2 PCIe interfaces with support for up to five low profile PCIe Gen2 slots. The integrated SAS controller can support up to 3.6 TB of internal storage with RAID 10 protection, or optionally with RAID5 or RAID6. The maximum memory has also been increased to 128 GB.

IBM Power 720 Express server – Outstanding as a distributed application or small database server

The Power 720 provides near-continuous application availability at a compellingly low price and leadership performance with POWER7 processors. Supporting the AIX, Linux, and IBM i operating systems, it is particularly well suited as an integrated business system with the IBM i operating environment, the scalable and tested IBM operating system that allows you to deploy applications faster and maintain them with fewer staff.

The Power 720 is a 1-socket server supporting 4, 6, or 8-cores in a 4U rack or tower form factor. . The new Power 720 Express model 8202-E4C provides expanded I/O capabilities using the high-performance Gen2 PCIe interfaces with support for up to nine PCIe Gen2 slots. It has an increased maximum memory of 256 GB. It has an integrated SAS controller with RAID 10 in the base for up to 4.8TB of internal storage.

IBM Power 730 Express server – Ideal for running multiple application and infrastructure workloads in a virtualized environment

The Power 730 Express server is a high-performance, energy-efficient, reliable, and secure infrastructure and application server in a dense form factor. It allows you to consolidate your AIX (UNIX), IBM i and Linux workloads on a single system that is a compact form factor with storage and I/O expansion capabilities to fit your business needs. The workload-optimizing capabilities allow you to improve ROI with higher performance, utilization and efficiency whether you run one application or many on a single system.

The Power 730 is a rack-mounted 2-socket server supporting 8, 12 or 16-cores. The new Power 730 Express model 8231-E2C provides expanded I/O capabilities with five integrated high

performance PCIe Gen2 slots, and the capability of expansion for additional storage and I/O via a 12x loop. It has an increased maximum memory of 256 GB. It also has integrated support with RAID 10 in the base for up to six small form factor SAS disks (3.6 TB).

IBM Power 740 Express server - ideal as a mid-size database server

The performance, availability, and flexibility of the Power 740 Express server can enable companies to spend more time running their business, utilizing proven solutions from thousands of ISVs that support the AIX (UNIX), IBM i, and Linux operating systems. The new Power 740 model (8205-E6C) provides enhancements that can be particularly beneficial to customers running applications driving very high I/O or memory requirements.

Leverage PowerVM and VMControl for server consolidation of up to 160 virtual servers. Reduce energy usage, server footprints and per/core software licensing costs while taking advantage of a portfolio of over 15,000 industry proven solutions.

The Power 740 is a 1-socket or 2-socket server supporting 4, 6, 8, 12, or 16-cores in a 4U rack form factor. The new model offers an increased maximum memory of 512GB, and provides expanded I/O capabilities using the high-performance Gen2 PCIe interfaces with support for up to nine internal PCIe Gen2 slots. The Power 740's rich expansion capabilities offer a maximum of 45 PCIe I/O slots and up to 416 disk bays. This is a system which provides outstanding performance and the ability to expand to meet the needs of fast growing businesses.

IBM Power 770 POWER7 Server

The IBM Power 770 server (9117-MMC) utilizes the latest POWER7 processor and the next-generation I/O technology designed to deliver unprecedented performance, scalability, reliability, and manageability for demanding commercial workloads. Highlights of the new model MMC server are POWER7 processors available at frequencies of 3.72 GHz with six cores or 3.30 GHz with eight cores, support for 6 new PCIe Gen2 slots in each enclosure, double the total memory capacity up to 4 TB, Active Memory Mirroring (AMM) for Hypervisor which is available as an optional feature, and support for upgrades from both POWER6 570 systems and POWER7 770 systems.

IBM Power 780 Server

The new IBM Power 780 server model 9179-MHC utilizes the latest POWER7 processor and next-generation I/O technology designed to deliver unprecedented performance, scalability, reliability, and manageability for demanding commercial workloads. Featured in the new model MHC server is the capability to expand to 96 active processor cores running at 3.44 Ghz or the option to leverage the faster 64 core configuration running at 3.92 GHz with the added option of enabling TurboCore for speeds up to 4.14 GHz. Also highlighted is the ability to double the total memory capacity to 4 TB, new support for 6 PCIe Gen2 slots per enclosure, Active Memory

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Mirroring as a standard feature and support for upgrades from both POWER6 570 systems and POWER7 780 systems.

New I/O enhancements available for Power Systems servers

Multiple new I/O enhancements are available for Power Systems servers:
- The PCIe2 1.8 GB Cache RAID SAS Adapter Tri-Port 6 Gb (#5913) is a large-cache PCIe SAS adapter that provides high-performance capabilities for large quantities of SSDs or HDDS. It is the most advanced SAS controller ever offered, allowing clients to reduce the number of PCI slots required and thus help minimize the overall I/O configuration.
- New PCIe I/O adapters are announced for the Power 710, 720, 730, 740, 770, 780, and 795, including:
  - 2 Port Async EIA-232 PCIe Adapters for full-height slots and for low-profile PCIe slots. The 2-port adapter is a lower-cost option for AIX and Linux clients compared to the functionally equivalent 4-port Async EIA-232 PCIe Adapter.
  - Two new Ethernet 4-port adapters for Linux provide additional capabilities and speed options. They are supported in low-profile Gen2 slots on the Power 710, 720, 730, and 740.
  - Two new Ethernet features for full high equivalents of the existing low profile Gen2 2-port 10Gb Adapters
- The PCIe2 8x 4-port Fibre Channel Adapter is a new PCIe Gen2 adapter. It provides four 8 Gb Fibre Channel ports and doubles both the number of ports and the total bandwidth available on a Fibre Channel adapter. With the additional ports and bandwidth, clients can increase virtualization and consolidation of Fibre Channel configurations.
- 283 GB and 300 GB capacity points are added to the 15, 000 rpm SFF disk drive options, doubling the 15, 000 rpm capacity previously available for POWER7 clients with SFF bays.

Statements of Direction[1]

Systems Director Management Console and Hardware Management Console support for the new Power Systems

IBM intends to enhance the IBM Systems Director Management Console (SDMC) to support the Power 710 (8231-E1C), the Power 720 (8202-E4C), the Power 730 (8231-E2C) and the Power 740 (8205-E6C), the Power 770 (9117-MMC) and the Power 780 (9179-MHC). IBM also intends for the current Hardware Management Console (HMC) 7042-CR6 to be upgradable to an IBM SDMC when that support becomes available for the new Power Systems.

15 meter, 3Gb bandwidth SAS cable for the #5913 PCIe2 1.8GB Cache RAID SAS Adapter

IBM plans to offer a 15 meter, 3Gb bandwidth SAS cable for the #5913 PCIe2 1.8GB Cache RAID SAS Adapter when attaching the #5887 EXP24S Drawer for large configurations where the 10 meter cable is a distance limitation.

Support for IBM i image management on IBM Starter Kit for Cloud on Power

IBM intends to enhance IBM Starter Kit for Cloud on Power to allow image management support for IBM i, thus enabling image deployment for all IBM Power technology-based operating systems.

Support for IBM Systems Director Editions and IBM Systems Director VMControl for Power Systems on IBM Starter Kit for Cloud for Power

IBM intends to enhance IBM Starter Kit for Cloud to support this release of IBM Systems Director Editions and IBM Systems Director VMControl for Power Systems, expanding the capabilities needed for cloud computing on IBM Power Systems.

Translation and support for the functionality in the PowerHA SystemMirror for IBM i Enhancements PRPQ (5799-HAS) in a future release of PowerHA SystemMirror for IBM i.

IBM intends to replace the GUI for IBM PowerHA SystemMirror for IBM i. IBM also intends to provide IBM PowerHA SystemMirror for IBM i support for Storwize v7000 & SVC.

SUSE support for the IBM PCIE2 4-PORT 10Gb & 1Gb Ethernet Adapters (Feature Codes: 5279, 5280)

SUSE intends to support the IBM PCIE2 4-PORT 10Gb & 1Gb Ethernet Adapters (Feature Codes: 5279, 5280) with an upcoming SUSE Linux Enterprise Server 11 Service Pack. Their plans have a targeted availability of 1Q12. For additional questions about the availability of this release, please contact SUSE.[2]

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Photographs show engineering and design models. Changes may be incorporated in production models.

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Information concerning non-IBM products was obtained from the suppliers of these products or other public sources. Questions on the capabilities of the non-IBM products should be addressed with the suppliers.

When referring to storage capacity, total TB equals total GB divided by 1000; accessible capacity may be less.

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