

IBM Power Systems Cloud Solutions

Enabling customers to start moving mission-critical workloads to the cloud



Highlights:

- Improve performance and scalability by optimizing IT assets based on workload to ensure the ideal elasticity of your cloud.
 - Enterprise quality of service (QOS) virtualization including higher application availability, improved performance, more scalability, and enterprise-class security, which provides the best foundation for your mission-critical applications running in the cloud.
 - Automated management, provisioning and optimization of physical/virtual servers and system pools ensure that your cloud resources are automatically provisioned for optimal utilization.
 - Self-service portal and standardized service catalog leverage all the features of your cloud infrastructure to enable automated delivery of services without IT intervention.
 - Metering and billing features provide the capabilities to improve cost transparency and offer more flexible pricing schemes for your cloud services.
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The unprecedented interest and projected IT spend on cloud computing is coming from all types of organizations, businesses and governments that are seeking to transform the way they deliver IT services and improve workload optimization so they can respond to changing business demands. Cloud computing can significantly reduce IT costs and complexities while improving workload optimization and service delivery.

Today's IT Infrastructures face challenges on many levels:

- Composed of silos that lead to disconnected business and IT infrastructures
- Contain static islands of computing, which result in inefficiencies and underutilized assets
- Struggle with rapid data growth, regulatory compliance, integrity and security
- Continuous rise of IT administration costs

As a result of these challenges, organizations are demanding an IT infrastructure and service delivery model that enables growth and innovation. An effective cloud computing environment built with IBM Power Systems™ cloud solutions helps organizations transform their data centers to meet these challenges:

- Delivering integrated visibility, control, and automation across all business and IT assets
- Is highly optimized and scales IT up and down in line with business needs
- Addresses the information challenge: Delivers flexible and secure access to data and mitigates risks
- Utilizes flexible delivery models, automation and virtualization to greatly simplify IT service delivery and provide enterprise QOS capabilities



IBM Power Systems cloud solutions provide the enterprise QOS capabilities, workload-optimized systems, differentiated virtualization without limits as well as the automated management and service delivery needed to enable customers to start moving their mission-critical workloads to the cloud. Power Systems cloud solutions enable organizations to improve service delivery, enable business innovation and reduce costs.

Power is cloud optimized

IBM Power Systems is uniquely suited for cloud environments, with its industry-leading virtualization, enterprise security, elastic scalability and reliability, availability and serviceability (RAS) characteristics, enabling customers to start moving mission-critical workloads to the cloud.

Workload-optimizing systems

Workload-optimizing systems enable optimization of IT resources and increasing flexibility, key for cloud computing. Power is workload-optimizing systems, leveraging the new POWER7® processor-based systems designed to achieve maximum performance for both the system and its virtual machines. New Intelligent Threads technology dynamically switches the processor threading mode to deliver optimal performance for different workloads. TurboCore mode offers the option to optimize the system for frequency and cache utilization delivering the maximum per core performance for database and transaction workloads. Active Memory™ Expansion helps reduce memory costs by enabling physical memory to be logically expanded up to 100 percent for some workloads—such as SAP. ENERGY STAR-qualified POWER7 systems dynamically optimize energy use, which can save 83 percent on energy costs with 28 percent more performance. Power Systems with AIX® deliver the best RAS, with the fewest unscheduled outages, least amount of downtime and the fastest patch time. AIX and Power Systems hardware and virtualization technologies have been certified



Power is Cloud Optimized

to meet the stringent requirements of the EAL4+ Common Criteria certification, ensuring a secure cloud computing environment. Workload-optimized systems are the first step in building the most optimized cloud environment.

To learn more about workload optimizing systems, visit http://www-03.ibm.com/systems/power/news/announcement/20100209_systems.html

Virtualization without limits

Advanced virtualization is fundamental for cloud computing and Power is virtualization without limits, enabling unprecedented consolidation of multiple workloads onto fewer systems, increasing server utilization and reducing cost, all while providing the enterprise QOS capabilities needed for enabling mission-critical workloads to run in the cloud. IBM PowerVM™ virtualization solutions enable you to virtualize processor, memory and I/O resources to increase asset utilization and reduce infrastructure costs. Dynamically

adjust server capability to meet changing workload demands and move running workloads between servers, with Live Partition Mobility, maximizing availability and avoiding planned downtime. PowerVM is secure by design with zero common vulnerabilities exposures (CVEs) reported by US Cert or MITRE Corporation. PowerVM provides a secure and scalable virtualization environment built upon the advanced RAS features and leading performance of the Power Systems platform. The leadership virtualization provided by PowerVM as part of a cloud environment enables organizations to more efficiently utilize IT resources, reduce hardware costs through economy of scale and provide the enterprise QOS capabilities needed to support their mission-critical workloads.

To learn more about virtualization without limits, visit <http://www-03.ibm.com/systems/power/software/virtualization/index.html>

Resiliency without downtime

Dynamically respond to new business demands with continuous application availability. IBM Power HA™ System Mirror provides a unified solution for data center and geographically dispersed multisite resiliency. Ensure near-continuous application availability with the capability to monitor, detect and automatically react to events such as automatic switch over in the event a system goes down. This high-availability solution helps to minimize the impact of planned and unplanned outages, ensuring your mission-critical applications running in the cloud are always available.

To learn more about resiliency without downtime, visit <http://www-03.ibm.com/systems/power/software/availability/>

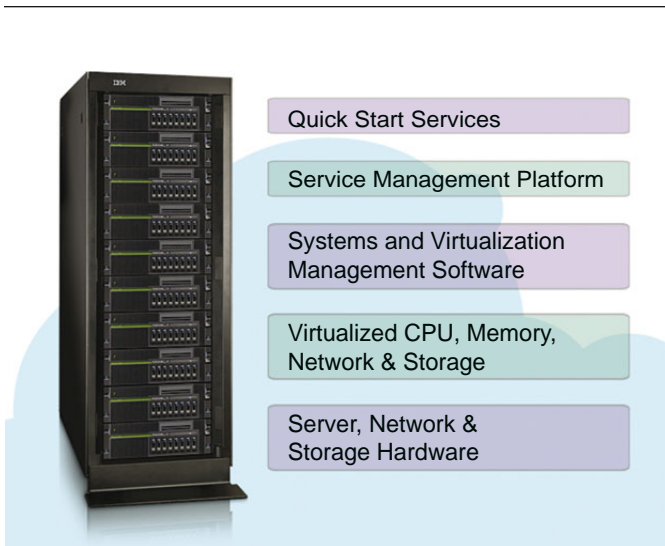
Management with automation

Automated management and provisioning of resources enable IT to reduce cycle times, improve service delivery and lower management costs. IBM Systems Director Enterprise Edition for Power Servers provides advanced physical and virtual server platform management with simple-to-use automated management tools, including the cross-platform virtualization management capability of IBM Systems Director VMControl™, and selected Tivoli® enterprise service management tools. VMControl complements PowerVM by providing automated virtualization management that minimizes time to provision virtual machine images and enables management of pools of systems. With platform management technologies on Power Systems, businesses not only get a complete picture of their systems and how well they are operating, but also the tools to automatically deploy, optimize and maintain these systems at maximum effectiveness, energy efficiency and cost control. Power is management with automation and as part of a cloud environment delivers further optimization of IT resource utilization and increased flexibility while reducing IT cycle times, improving service delivery and lowering management costs.

To learn more about management with automation, visit <http://www-03.ibm.com/systems/power/software/management/enterprise.html>

IBM Integrated Solutions

IBM CloudBurst™ is a prepackaged and self-contained service delivery platform that can be easily and quickly implemented in a data center environment. It allows the data center to accelerate the creation of a private cloud environment for a wide spectrum of workload types with a high degree of integration, flexibility, and resource optimization. All while



IBM CloudBurst - An integrated cloud solution for the fastest private cloud deployment

providing an enhanced request-driven user experience and aiding in an effort to help drive down costs and accelerating time to market for the business. As a cloud computing quick start, IBM CloudBurst can allow organizations to prove the benefits of this delivery model in a defined portion of their data center or for a specific internal project.

IBM plans to couple the industrial-strength virtualization of Power Systems with Tivoli service management capabilities such as seamless self-service, and automated provisioning, to deliver an integrated cloud environment. This offering plans to include automation templates with built-in best practices for intelligent provisioning of cloud resources. IBM CloudBurst on Power Systems intends to provide everything you need for a cloud environment including Tivoli service management software, storage, network, QuickStart services and the most efficient platform for cloud computing with Power Systems, enabling customers to rapidly realize the benefits of cloud computing.

The IBM WebSphere® CloudBurst Appliance provides access to WebSphere virtual images and patterns for easily, quickly and repeatedly creating application environments that can be securely deployed and managed in a private cloud. This solution speeds application deployment and dramatically reduces setup time for WebSphere environments from weeks to minutes with predefined patterns and virtual images. Leveraging PowerVM, the designed solution deploys WebSphere virtual images to Power Systems logical partitions with ease, increasing agility through removal of manual processes that hinder productivity. IBM WebSphere CloudBurst Appliance integrates with IBM CloudBurst and acts like the “dispenser” of software environments, while IBM CloudBurst is the “recipient” private cloud environment. Hand-in-glove, these two critical offerings complement each other to help our clients more easily, quickly and cost-effectively leverage IT function.

IBM Service Delivery Manager is a preconfigured and integrated service management software stack designed to reduce the risk associated with software integration and accelerate delivery of private cloud computing capabilities. IBM intends to deliver this solution for Power Systems and plans to provide a self-service user interface for improved responsiveness and efficiency to service requests and automate IT resource deployment to maximize efficiency and address fluctuating business requirements. IBM Service Delivery Manager for Power Systems plans to allow clients to leverage their existing infrastructure components as the basis for their cloud environment, reducing costs and improving time to value.

To learn more about IBM Integrated Solutions, visit:
<http://www-03.ibm.com/systems/power/solutions/cloud/index.html>

IBM Service Management Solutions

IBM Tivoli Service Automation Manager automates the design, deployment and management of services such as middleware, applications, hardware and networks.

This software solution not only automates the manual tasks involved, but also helps customers transform their data center organization into a cloud model. Tivoli Service Automation Manager provides capabilities to request, fulfill, and manage complete software stacks for the data center. This comprises the definition, offering, request, and automated provisioning of the stack, including integrated management of the environment. Whether it is a development, test, preproduction or production system, Tivoli Service Automation Manager can provide these capabilities for the data center. It helps efforts to lower the deployment cost of your IT service by providing adaptable and automated best practices for building and managing such an environment

IBM Tivoli Usage and Accounting Manager collects, analyzes and bills based on usage and costs of shared Power resources. Tivoli Usage and Accounting Manager provides centralized resource usage data collection from the Power Hypervisor. It provides detailed information and reports about the use of shared resources and transforms raw IT data into business information for cost allocation that spans business units, cost centers, applications and users. Tivoli Usage and Accounting Manager integrates with Tivoli Service Automation Manager to capture service usage data to enable accurate billing for services consumed and has built-in automation of daily operations for easy administration.

To learn more about IBM Service Management Solutions, visit: <http://www-01.ibm.com/software/tivoli/solutions/cloudcomputing/index.html>

IBM IT Services Solutions

To help you launch your cloud services, IBM provides different options for delivery and management. Our experts can help leverage your existing IT assets and create the foundation for a cloud-based development and test environment. Or we can help you leverage the IBM CloudBurst—hardware and software—implemented with our QuickStart service to enable a base cloud delivery platform quickly. Once the development and testing cloud environment is designed and implemented, you can operate it yourself or have IBM operate it. IBM can also comprehensively deliver and manage the cloud services from an IBM facility.

IBM Smart Business Development and Test Cloud Services are designed to help:

- Leverage your existing assets, systems and storage to transform your development and testing environment into a cloud computing model
- Implement capabilities for on-demand setup of new development and testing environments, including optional integration of the IBM CloudBurst platform
- Support automated provisioning and management of IBM WebSphere Application Server virtual images through the WebSphere CloudBurst appliance

To learn more about the IBM Power Systems cloud solutions, please contact your IBM marketing representative or IBM Business Partner, or visit the following website: <http://www-935.ibm.com/services/us/index.wss/offering/middleware/a1030965>

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For more information

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<http://www-03.ibm.com/systems/power/solutions/cloud/index.html>

Additionally, financing solutions from IBM Global Financing can enable effective cash management, protection from technology obsolescence, improved total cost of ownership and return on investment. Also, our Global Asset Recovery Services help address environmental concerns with new, more energy-efficient solutions. For more information on IBM Global Financing, visit: ibm.com/financing



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