Empowering your IBM Power Systems: Flexible end-to-end management for physical and virtual systems

HIGHLIGHTS

- Control costs and reduce the complexity of systems management by integrating platform management with enterprise service management.
- Optimize the use of virtual resources to drive up server utilization, and reduce energy usage and cooling.
- Validate server resource and energy usage; meet business requirements.

Server consolidation and virtualization help many businesses reduce the complexity and control the costs of their IT infrastructures. Yet small and large companies alike can face tough challenges when it comes to the enormous task of managing server platforms, resources and services. IBM delivers an end-to-end systems management solution that helps you to deploy, monitor, analyze, optimize and update IBM Power server resources in virtualized and consolidated environments running any combination of workloads on AIX, Linux and IBM i operating systems.

Are your servers meeting your business needs?

You want your servers managed in the best way possible to help you meet your important business objectives. To do so you're depending on server consolidation and virtualization to help improve operational efficiency. This can give you fewer systems to manage, agile service delivery, improved hardware resource utilization, and reduced hardware, software and facility costs.

But to increase efficiency and meet business service requirements, you need to strategically manage your virtualized, consolidated server environment to get the best return on your IT investment. And you need to manage this environment consistently with other systems across your datacenter. To accomplish this, you'll need the right tools to help you supervise and administer your Power servers. Then you can effectively meet the complex challenges associated with managing those systems, such as:

- Discovering, creating and configuring virtual resources;
- Managing moving partitions and workloads;
- Monitoring the health of physical and virtual resources for availability, performance and utilization;
- Identifying and managing IT assets;
- Monitoring and managing energy use;
- Managing software distribution and maintenance; and
- Interoperating with existing enterprise service management tools.

Managing IBM Power platform server resources and services

IBM offers systems management solutions that can help you understand what systems you have and how well they're operating. They also help you optimize and maintain those systems to meet your requirements for efficient workload performance, energy management and cost control. These modular solutions for systems management empower you by delivering:

- Integrated platform management across multiple resources;
- Advanced enterprise service management across heterogeneous, multi-vendor environments; and
- Specialized resource management tools to set up and control specific Power server functions.

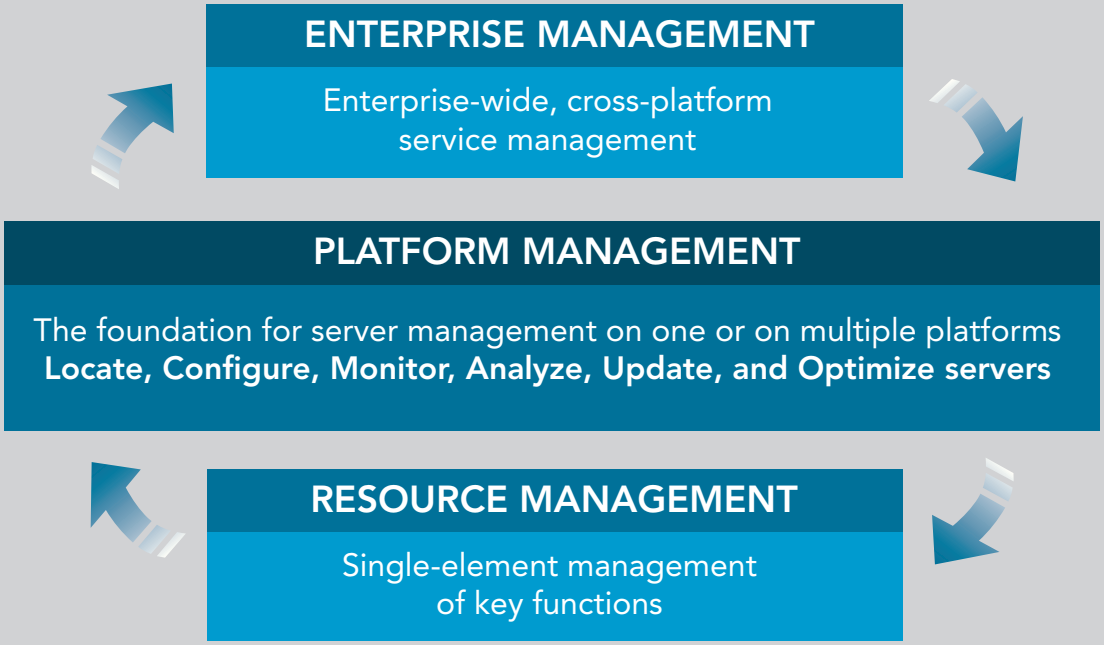

Diagram 1: Three Tiers of Power Systems Management

PLATFORM MANAGEMENT

Platform management provides the foundation for server management on one or multiple hardware elements. With the power to effectively manage cross-platform IT operations, you can:

- Locate and identify physical and virtual servers on the network;
- Configure and deploy new servers;
- Monitor and provide hardware and virtual server health and alerts;
- Analyze key performance indicators, such as cost and energy, at a server level;
- Optimize servers for availability, performance and energy policies; and
- Update and maintain software, firmware and drivers.

IBM Director

IBM Director, IBM's premier platform management solution, complements and integrates with popular enterprise service management products from IBM and other middleware vendors using upward integration modules. IBM Director brings together the tools you need to view hardware configurations, monitor usage and performance, and make adjustments across multiple Power servers from a single console. It also simplifies operational tasks for IT professionals using automatic discovery and topology visualization capabilities to get an overview of physical and virtual resources in the network for the configuration and planning of new Power servers. Furthermore, IT professionals can more easily monitor error events and conditions and receive alerts when events occur. IBM Director also has extensions if you need additional capabilities such as enhanced virtualization management or Power server energy monitoring and management.

ENTERPRISE MANAGEMENT

Managing IT operations to support business requirements demands a service management solution that allows sufficient visibility, control and automation to deliver quality service and support business growth. IBM enterprise management can help you better manage your IT infrastructure so

you can deliver IT services more effectively and efficiently through:

- Cross platform, multi-vendor service management;
- Business service management analytics;
- Advanced root cause analysis;
- Enterprise-wide application discovery, change and configuration management, monitoring and event management; and
- Advanced security management, provisioning and software distribution.

Management Edition for AIX®

Management Edition for AIX, an IBM Tivoli solution developed specifically for Power servers running the AIX operating system, integrates key systems management capabilities on a single screen. Primary functions include:

- Monitoring the health and availability of your Power servers;
- Discovery of configurations and relationships between Power server service and application components; and
- Usage and accounting of Power server IT resources.

This solution provides a foundation for enterprise service management and business application management, and interoperates with other Tivoli products.

RESOURCE MANAGEMENT

IBM offers specialized resource management solutions to complement the platform and enterprise management solutions available for Power servers. Resource management tools help IT administrators deploy and configure server resources in the data center by enabling resource-specific, single-element management of key functions on Power servers. These resource management tools help you:

- Easily size a new Power server, order it, and then deploy virtual I/O AIX and Linux partitions with a few clicks of a mouse.
- Create and manage logical partitions (LPARs) for virtualization.
- Consolidate workloads from underutilized

servers running AIX and enable Live Application Mobility, for centralized management and flexibility to quickly create, clone or delete workload partitions from one system to another.

- Get easy access to common AIX system administration tasks with reduced effort and lower costs associated with managing AIX operating systems on Power servers.
- Manage IBM i administration tasks such as database management, backups and user management.

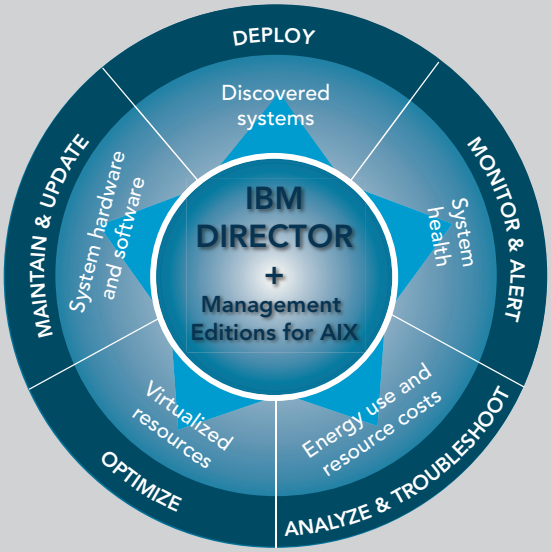

Diagram 2: Manage systems lifecycles end-to-end across physical and virtual resources

End-to-end systems management solutions

IBM offers a complete set of platform, enterprise and resource solutions for systems management so that you can deploy, monitor, analyze and troubleshoot, optimize, update and maintain your Power servers running AIX, IBM i or Linux.

DEPLOY

Discover what resources you have and set up new Power servers:

- Automatically discover Power server resources, including visualization of resource topologies and relationships across physical and virtual servers.
- Configure new systems or clone existing systems.
- Facilitate planning and deploy virtual images.
- Size, order and set up a virtualized environment at a component level, and then

install AIX and Linux partitions with just a few mouse clicks.

- Discover IT components and the relationships of those components and graphically display the component topology.
- Use installation and setup commands to create and configure clustered Power servers running AIX, IBM i and Linux.

MONITOR

Know the status of your Power servers:

- Understand the health and status of physical and virtual resources, and provide base monitoring and event management of OS metrics including CPU and memory utilization.
- Monitor the health and availability of Power server resources such as central electronics complexes (CECs), LPARs, and virtual I/O servers (VIOSs), and collect historical data to assist planning and service-level management.
- Monitor, alert and automate responses for distributed and clustered Power servers running AIX, IBM i and Linux, from a single point of control.

ANALYZE AND TROUBLESHOOT

Identify and report energy and resource usage in your operational infrastructure:

- Monitor and report on energy usage across systems within your IT infrastructure.
- Justify IT resources and expenses with the ability to measure, analyze and report system utilization on virtualized Power servers to determine the cost of an IT service or application.
- Minimize downtime of server clusters using software diagnostic tools that analyze software components and servers to quickly identify the root cause of a problem.

OPTIMIZE

Adjust Power server resource utilization, workloads and energy use to meet business requirements:

- Discover, visualize and manage both physical and virtual systems from a single console.
- Manage energy usage across systems within your IT infrastructure.

- Facilitate partitioning, LPAR management, and virtual storage and Ethernet management on a single server.
- Configure and manage partitions as well as capacity on demand processor and memory activations on Power servers.
- Centralize the creation and management of workload partitions (WPARs) across multiple systems.

MAINTAIN AND UPDATE

Keep your Power servers up to date:

- Empower your IT teams with web-based management access to common systems administration tasks on the AIX operating system—used with or without IBM Director.
- Use a Windows-based tool with a graphical interface with system navigation, configuration and planning capabilities for your IBM i environments.
- Distribute and synchronize files across nodes or node groups in a cluster.

IBM products for managing your physical and virtual systems

- *Platform management of your Power servers*
  - IBM Director 5.20.2 with extensions:
    - IBM Virtualization Manager
    - IBM Systems Active Energy Manager
  - IBM Cluster Systems Management
- *Enterprise service management of your Power servers*
  - Management Edition for AIX including IBM Tivoli Monitoring V6.2; IBM Tivoli Application Dependency Discovery Manager V7.1; and IBM Tivoli Usage and Accounting Manager, Virtualization Edition for System p V7.1
- *Resource management of your Power servers*
  - IBM System Planning and Deployment Tool
  - IBM Integrated Virtualization Manager
  - IBM Hardware Management Console
  - IBM Workload Partitions Manager for AIX
  - IBM System i Navigator
  - IBM Systems Director Console for AIX

To learn more about the Consolidation and Virtualization please contact your IBM marketing representative or IBM Business Partner, or visit the following Web sites: www.ibm.com/systems/power/news/announcement/20080402_annc.html

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