

IBM PowerVC

Scalability for Cloud Mobility and AI Workloads

■ Highlights

- Simplified Virtualization and Self-Service Provisioning
- Automated I/O Configuration and High Availability
- Policy-Based Workload Placement and Optimization
- Centralized Virtual Image Management

Introduction

IBM® PowerVC® is a powerful virtualization and cloud management solution purpose-built for IBM Power®, compatible with IBM AIX®, IBM i, and Linux operating systems. Built on OpenStack technology, PowerVC enables modern, AI-ready infrastructure management by simplifying virtualization, optimizing resources, and enabling rapid, policy-driven workload deployments. PowerVC plays a pivotal role in enabling AI workloads and managing dynamic hybrid environments:

AI Infrastructure Enablement: PowerVC uses policy-driven dynamic resource optimization to automatically allocate CPU, memory, and I/O resources based on real-time workload demands. This ensures AI models running on IBM Power servers always receive the optimal compute performance needed to train, infer, and scale effectively.

Hybrid Cloud Flexibility: PowerVC enables seamless workload mobility by capturing virtual machine images, managing image exports and imports, and orchestrating dynamic VM relocations. This empowers organizations to efficiently execute lift-and-shift migrations, cloud bursting, and Disaster Recovery strategies between on-premises environments and IBM PowerVS®.

Intelligent Workload Placement: PowerVC uses Dynamic Resource Optimization (DRO) to continuously monitor CPU, memory, and resource usage across servers and cloud nodes. Based on administrator-defined policies, PowerVC automatically triggers live migrations of virtual machines when resource thresholds are exceeded. This proactive rebalancing prevents bottlenecks, optimizes system performance, and ensures uninterrupted availability—without requiring manual intervention.

Business Benefits

Faster Time-to-Value: Quick installation and simplified management reduce time spent on deployment and configuration.

Cost Efficiency: Lower total cost of ownership with intelligent automation, image reuse, and workload balancing.

IT Agility: Accelerate AI adoption and AIX modernization with agile provisioning and elastic resource control.

Reliability and Resilience: Ensure workload continuity with VM remote restart, high availability configurations, and optimized placement policies.

Enterprise-Ready Support and Learning: IBM offers robust support, training, and certification through the IBM PowerVC Community. Administrators can easily access learning resources to become certified PowerVC professionals.

Future-Forward Innovation: With the latest release of PowerVC 2.3, IBM delivers even greater simplification of virtualization and cloud management. Ongoing roadmap priorities include deeper hybrid cloud integrations, enhanced automation, and improved user experience

Key Capabilities

Self-Service Portal. Empower users to provision workloads into a cloud environment with ease.

Rapid Image Management. Store, catalog, and reuse VM images for consistent, fast deployments.

Automated I/O Configuration. Simplifies high availability and mobility for critical workloads.

Multi-Tenancy & Role-Based Access. Manage multiple tenant environments with clear governance.

Third-Party Driver Support. OpenStack-based APIs and third-party drivers support hybrid environments, including integration with modern AI/ML tools and frameworks.

Client Needs	IBM PowerVC
Management Simplification	Simplified virtualization and cloud management
Automation	Automated configuration of I/O automates setup for mobility and highly available I/O configurations.
Observability	Image management
Instant workload deployment	Seamlessly import workload images into PowerVC® and start deploying them immediately
Optimization	Dynamic Resource Optimizer
Workload balance	Policy-based automation balances workloads within a host group, based on CPU or memory use.

Smarter Control. Seamless Deployment. Ready to Scale.

Fast, Unified VM Deployment: Reduce VM deployment from days to minutes by unifying computing, storage, and network management in a single interface.

OpenStack-Based, IBM-Enhanced: Built on robust, community-driven OpenStack, and further enhanced by IBM for PowerVM environments.

Dynamic Resource Optimization (DRO): Continuously monitors system load and automatically redistributes workloads to optimize performance and avoid bottlenecks.

One-Click Host Evacuation: Seamlessly and non-disruptively relocate workloads during planned maintenance.

Enterprise-Grade Scalability: Supports over 100 Power hosts and 3,000–10,000+ VMs, depending on configuration.

Why IBM?

IBM is the trusted advisor for thousands of the world's leading businesses and governments. IBM offers a complete range of server, storage, application and services offerings that have been created with virtualization at the core of their designs. IBM's depth and breadth of expertise in virtualization systems management with Power Systems is virtually unmatched.

IBM also has technical consultants worldwide who have broad experience in deploying IBM virtualization and private cloud solutions to optimize IBM Systems. When working with IBM to implement PowerVC, clients can benefit from the extensive intellectual capital that the entire IBM Global Services team has accumulated, tested and proven.

For more information

To learn more about [IBM PowerVC®](#), please [contact your IBM representative](#) or your IBM Business Partner.

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New Orchard Road
Armonk, NY 10504

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