

HP OpenView virtualization solutions

Overview

- Reduce costs and increase agility
- Simplify virtual infrastructure management
- Manage IT as a service on a virtualized platform



For today's CIOs, there's a new reality: You're no longer running an IT function; you're driving a business. To succeed, you must balance multiple objectives—maximize return, mitigate risk, improve performance and increase agility. All of this has to be accomplished in the midst of an unprecedented amount of change.

To meet these objectives, IT organizations are using both virtualization technologies and IT Service Management (ITSM) solutions like those available from HP OpenView and our strategic partners, VMware® and nworks. We define virtualization as an approach to IT that pools and shares resources so utilization is optimized and supply automatically meets demand. ITSM can help transform your IT organization into a strategic, business-aligned service provider while helping you get the most value out of your IT investments.

Reducing costs and increasing agility

Around the world, forward-looking IT organizations are turning rigid datacenters into agile, virtualized environments. They recognize the opportunity to use virtualization to break down the silos that keep applications from sharing infrastructure and are the root of chronic IT over-provisioning. Virtualization saves time and money by allowing IT organizations to fully utilize their assets. Virtualization simultaneously reduces costs, increases agility and makes IT more responsive to the needs of the business. The question isn't, "Should we virtualize?" Instead, the question is, "How can we transition to a virtualized infrastructure in a predictable, cost-effective manner right now?"



Today, HP has the answer. We offer a complete, mainstream virtualization solution that puts your organization on a predictable path to the broad benefits of a virtualized IT environment.

Making the virtual real

Virtualization is a technology, enabling the pooling and sharing of resources to move from vertical silos of infrastructure to horizontal pools of resources. Our definition includes all moveable and adaptable resources, which can flex, add, and move resources, allowing supply to best meet demand. This includes not only virtual machines, but other partitioning techniques, workload or application movement, high availability, remote access through thin clients, and instant capacity on demand. Our ideal virtualized environment is designed with management and automation in mind, so you'll be able to see the full benefit of virtualization. Virtualization enables easier movement and management of resources and workloads based on service level needs.

And our customers see the benefits of virtualization immediately. Fewer servers, lower overhead (power, cooling, space), less expensive to maintain—these are a few of the hardware cost savings of virtualization. IT Operations can now handle faster deployments with less administration cost, and are more agile because of their ability to balance the workload across the server pool.

Simplify virtual infrastructure management

Whether you have 10 servers, 100 servers or 1,000 servers, the HP virtualization solution with VMware can deliver savings, simplification and scalability across your environment. HP offers a complete, mainstream virtualization solution that leverages your existing HP OpenView investment, VMware software and HP platforms, management tools and services. This proven solution puts your organization on a predictable path to the broad benefits of a virtualized IT environment. You gain an end-to-end, tightly integrated virtualization solution that incorporates everything you need—hardware, software and services, including planning, deployment and management. We deliver all the resources to put virtualization to work for your critical IT initiatives, including server consolidation, workload optimization and disaster recovery.

HP Virtualization Services can help guide you through the process of server consolidation and simplifying your infrastructure management. We take a consultative, practical approach to architecting, building, and deploying virtualization solutions that achieve your objectives. You can choose the level of service you want depending on the strategic nature of the project and the expected business value outcome for the company. With tactical element and integrated

virtualization services, you are assisted with point services that provide design, implementation, and operational expertise, including industry-leading mission critical support. With a full range of services that address people and process, as well as technology, HP can help you realize the full cost and agility benefits of virtualization.

Manage IT as a service

Moving to a virtualized environment brings a new challenge of managing a complex IT organization, containing multiple software applications and both physical and virtual machines, while still watching the bottom line. How can you capitalize on your new investment in the virtualization infrastructure and maximize your existing investment in HP OpenView?

With HP OpenView virtualization solutions, you can automate daily activities and workflows, building upon the established value of ITIL (the IT Infrastructure Library) processes and the ITSM approach. This approach enables monitoring of the complete IT landscape, to define and schedule tasks and jobs and prioritize them, to run automatic routines and to control the fulfillment of tasks and jobs. Enhanced management capabilities help reduce manual workloads, keep all activities under control, speed up IT processes and improve quality. Working together, HP, VMware and nworks have developed an end-to-end solution for managing your virtualized infrastructure.

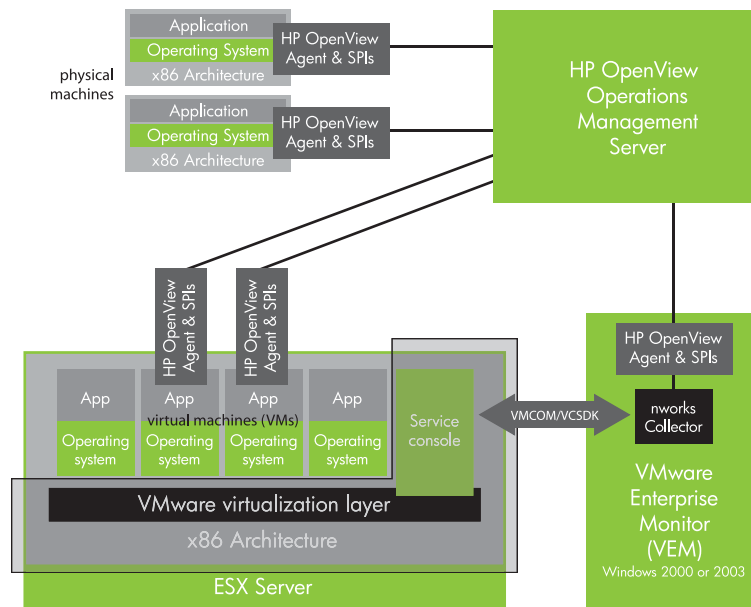
HP OpenView virtualization portfolio

The HP OpenView Operations management server is the basis on which you build your IT service management approach. Using the HP OpenView virtualization portfolio you will:

- View the consumption rates of your physical and virtual resources and their relationship to each other
- Make changes (such as patches) to configuration items based on a desired state model
- Track and control physical and virtual assets throughout the asset lifecycle
- Prioritize operational events and activities based on customer impact
- Ensure consistency with a robust configuration management database
- Improve security and user experience
- Deliver IT services at agreed-upon service levels, quality and cost targets

HP OpenView Operations for Windows® along with OpenView AssetCenter, OpenView Configuration Manager, OpenView Select Access, OpenView Service Desk, and OpenView Service Center are the key components in the virtualization portfolio.

Figure 1. The HP, VMware & nworks integration



Assets and configuration items in a virtualized environment require some specialized treatment. This type of integration has been addressed in our asset management, configuration and change management, and ITSM tools.

VMware Infrastructure 3

HP OpenView virtualization solutions work with VMware Infrastructure 3. This software allows you to consolidate your servers and create your virtualized infrastructure. VMware Infrastructure 3 is a suite of applications that deliver comprehensive virtualization, management, resource optimization, application availability and operational automation capabilities. The suite includes:

VMware ESX Server—abstracts processor, memory, storage and networking resources into multiple virtual machines, giving you greater hardware utilization and flexibility.

VMware High Availability—provides cost-effective high availability for any application running in a virtual machine, regardless of its operating system or underlying hardware configuration. VMware HA eliminates the need for dedicated stand-by hardware and additional software.

VMware Distributed Resource Scheduler—continuously monitors utilization across resource pools and intelligently allocates available resources among the virtual machines based on pre-defined rules that reflect business needs and changing priorities. When virtual machine resources are constrained, additional capacity is made available by migrating live virtual machines to a different physical server using VMware VMotion.

VMware VMotion—VMware VMotion technology, unique to VMware, leverages the complete virtualization of servers, storage and networking to move an entire running virtual machine instantaneously from one server to another. The network is also virtualized by ESX Server, so the virtual machine retains its network identity and connections, ensuring a seamless migration process.

VMware Consolidated Backup—provides an easy-to-use, centralized backup facility that leverages a centralized proxy server and reduces the load on production ESX Server hosts.

nworks SPI for VMware

To manage IT as a service in a virtualized infrastructure you need a way for HP OpenView and VMware to communicate. Figure 1 shows the HP OpenView, VMware and nworks integration. The nworks Smart Plug-in (SPI) for VMware does this by providing performance, configuration, and event monitoring services that allow you to visualize your ESX server farms and their hosted virtual machines.

The nworks SPI enables a “single pane of glass” view of your IT operations by linking your virtual infrastructure with HP OpenView. The SPI monitors the state of virtual machines (on, off, suspended, stuck) and gathers configuration information, host and guest performance information, and event information used for monitoring and reporting. The SPI also gathers information concerning individual virtual machines (VMs) and their use of the physical hardware resources including CPU, disk, and memory. It then communicates this information to HP OpenView Operations, giving you a consolidated picture of your data center.

Table 1. The HP OpenView Virtualization solution.

The HP OpenView virtualization solution is comprised of the HP and nworks products summarized here. These products provide integration of the VMware Infrastructure 3 into HP OpenView.

IT Process Automation

HP OpenView Asset Center	Fully enables you to manage the financial and contractual aspects of all IT assets, both physical and virtual, helping to control costs, manage inventory and improve utilization of IT resources.
HP OpenView Configuration Manager	Provides out-of-the-box PC and virtual machine configuration management functionality for hardware and software inventory, software distribution, patch management and reporting from a single console.
HP OpenView Select Access	Identity management software for secure user access to physical and virtual IT services and resources.
HP OpenView Service Desk	Allows you to implement helpdesk, problem, change, configuration, and SLA management processes into a single workflow in a physical or virtualized environment.
HP OpenView ServiceCenter	Based on ITIL best practices, ServiceCenter is comprehensive and fully integrated consolidated service desk management software that enables you to improve service levels, balance resources and control costs in a physical or virtualized environment.

Infrastructure Optimization

nworks Smart Plug-in for VMware for HP OpenView	Provides performance monitoring and gathering, configuration, state, event monitoring, alerting, graphing, and report generation capabilities for VMware Infrastructure 3 from HP OpenView Operations.
HP OpenView Operations	Windows®-based and UNIX-based event management, proactive performance monitoring, automated alerting, reporting, and graphing for Windows, Linux, and UNIX® systems, middleware and applications.
HP OpenView Performance Insight	Using performance data gathered by the nworks SPI for VMware, OVPI provides a powerful reporting solution that gives you the insight you need for more effective service level management.
HP OpenView Performance Agent	Single interface for monitoring, analyzing, and forecasting resource utilization, both physical and virtual.

Implementing virtualization

With help from HP, a large financial services company virtualized their infrastructure and achieved a 5:1 consolidation ratio. Previously they averaged 15% server utilization and now run at much higher percentages with no wasted resources.

This financial services company was also able to leverage their existing investment in HP OpenView in a new environment. HP OpenView virtualization solutions with VMware and nworks allowed them to continue to use IT operational processes already built around HP OpenView while quickly deploying new VMware software. The nworks SPI for VMware enabled communication between the two, for maximum ROI.

The benefits for this financial services company were:

- Increased server utilization
- Reduced electrical and cooling costs
- Lower cost of IT operations
- Improved IT staff productivity

- Rapid new service deployment
- Improved IT service quality

For companies who need to reduce costs, increase agility and align IT supply with business demand, HP delivers a comprehensive portfolio of HP Virtualization solutions, a key element in the transformation to an Adaptive Infrastructure. We have the technology and expertise to help your organization achieve real business benefits from virtualization today.

To learn more

For more on HP virtualization solutions visit:

www.hp.com/go/virtualization
www.hp.com/go/vmware

For more on HP OpenView solutions and products visit:

www.hp.com/go/managementsoftware

For more on VMware and nworks visit:

www.vmware.com
www.nworks.com

To learn more, visit www.hp.com/go/vmware

© 2006 Hewlett-Packard Development Company, L.P. The information contained herein is subject to change without notice. The only warranties for HP products and services are set forth in the express warranty statements accompanying such products and services. Nothing herein should be construed as constituting an additional warranty. HP shall not be liable for technical or editorial errors or omissions contained herein.

November 2006

