



HP Software virtualization management solutions



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—increase return, mitigate risk, improve performance and increase agility. All of this has to be accomplished in the midst of an unprecedented amount of change.

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. IT organizations benefit from virtualization through better use of existing IT assets, flexibility in developing and deploying new environments, a significantly smaller hardware

footprint, and a reduction in the cost of IT assets. The question isn't, "Should we virtualize?" Instead, it is, "How can we transition to a virtualized infrastructure in a predictable, low-risk, cost-effective manner right now?"

While the benefits of virtualization far outweigh the risks, the traditional IT operations challenges will be amplified by moving to a shared infrastructure model. For example, how will you manage changes to a server when it may be running dozens of virtual hosts supporting a wide range of business functions? How will you understand the impact of an IT resource that fails when that resource is abstracted and shared among applications? How will you take advantage of shared resource pools to tune and optimize performance, while maintaining service levels?



While these challenges are not new, they take on a new dimension in a world where virtual servers can be created at a click of a button and moved around the data center at will. The answer: a holistic approach that blends IT service delivery and support processes, with the right virtualization and management tools for your business. HP, BearingPoint, VMware and nworks can help. We have teamed to provide you with the management tools, operational processes and services to successfully manage your virtualized IT infrastructure.

IT virtualization management

Combining HP's Management Software for large enterprise business with nworks Smart Plug-in (SPI), VMware's technology suite, and BearingPoint's Services Management methodology and approach, our IT virtualization management solution gives IT managers and CIOs a holistic framework for managing the complexities of a virtualized infrastructure.

Our solution brings together the IT services management (ITSM) processes, and the automation and technology support you need to deliver the agility provided by virtualization. You gain an end-to-end, tightly integrated virtual infrastructure that is available, optimized for performance and delivers what you need to meet your service levels.

Virtualize, operationalize, optimize

Moving to a virtual IT infrastructure requires careful planning and, after implementation, meeting the new challenge of managing a complex IT organization. Your first step is to review your existing infrastructure, taking inventory of both physical and virtual assets. This will help you develop a roadmap to guide you through your virtualization implementation and define the management tools and processes you'll need to add to your existing IT portfolio.

You will also need a mechanism to track and control the rapid changes that can occur in a virtualized infrastructure. Left unchecked, virtualization can result in proliferating "virtual servers" and an uncontrolled evolution of the IT environment—resulting in increased complexity, more operational challenges and the failure to meet virtualization's objectives. You need to have the right tools and processes to manage virtual systems performance, identify and address areas where resources are strained, and adjust your environment as necessary.

This is where HP, BearingPoint, VMware and nworks will guide you through the process of server consolidation and simplifying your infrastructure management for a complete, mainstream virtualization solution. Once virtualization is planned and deployed, we will help your enterprise realize significant benefits

in cost savings, performance, streamlined resource allocation and tighter governance.

VMware/HP Operations pack

The decision to move to a virtualized environment is easy. Knowing how, and exactly what tools and services you will need is the challenge. We've simplified this process by creating an Operations management pack, or bundle of software and services, to get you started. The management tools and technologies used to create this pack are from HP, VMware and nworks. BearingPoint provides the service component and will help you design the appropriate solution for your business.

VMware/HP Operations pack

This is the basic management pack, and where you begin to build your virtualization solution. The Operations pack focuses on IT operations and service management functions. You can't effectively manage what you can't measure, and the products and services included in this pack will help you collect and analyze measurement data to maximize IT staff efficiency. The products in the Operations pack are:

HP Systems Insight Manager—Helps maximize IT staff efficiency and hardware platform availability for small and large server deployments. Designed for end-user setup, its modular architecture enables systems administrators to plug in additional functionality as needed.

HP Operations Manager—Helps you get your business where it wants to be. It provides award-winning and comprehensive Windows-based event management, proactive performance monitoring, and automated alerting, reporting and graphing for Windows®, Linux and UNIX® systems, middleware and applications. And it does all of this from a unique Service Driven Operations perspective.

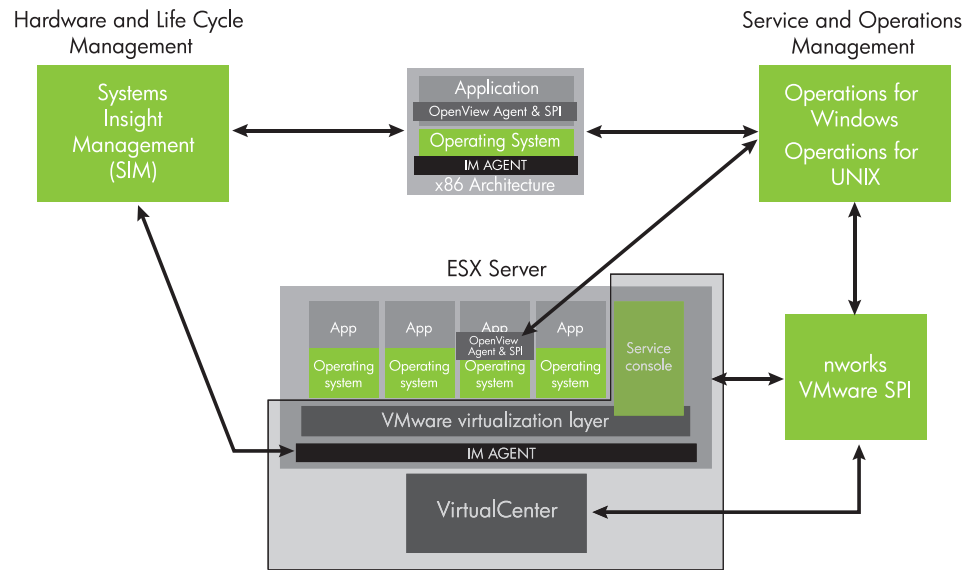
HP Performance Agent—Collects measurement data to detect exception conditions. Exception conditions can be based on individual metrics or combinations of metrics and can be defined using both thresholds and duration, allowing proactive detection of problems.

HP Performance Insight—Provides a powerful reporting solution that gives you the insight you need for more effective service level management.

BearingPoint Services Management

BearingPoint can help you better align technology with your business goals to achieve your strategic and financial objectives. BearingPoint offers assistance on improving service management—addressing systems and processes; assessing capabilities, capacity, performance, compliance and controls; and showing near- and long-term results. BearingPoint's Services Management model

Figure 1. The HP, VMware & nworks integration



leverages industry-standard approaches, such as the Information Technology Infrastructure Library (ITIL). Drawing on an extensive knowledge of established practices, BearingPoint's end-to-end, service-driven management processes can help you generate cost savings and improve performance.

Specifically, BearingPoint can help you:

- Assess the impact of server virtualization on your operating model and existing support processes
- Define and execute a plan to have the right people, with the right skills and the right processes, in place to confidently operate your new virtual environment
- Configure, build and integrate HP, nworks and VMware technologies into your existing infrastructure management tools
- Continuously improve the way you manage your virtual IT infrastructure, so your IT organization can better meet or exceed its business users' expectations.

VMware Infrastructure 3

HP virtualization solutions work with VMware® Infrastructure 3. This software allows you to consolidate your servers and create your virtualized infrastructure. VMware provides 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 (HA)—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 (DRS)—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.

VMware VMotion™—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 Operations Management and VMware to communicate. Figure 1 shows the HP Software, VMware and nworks integration. The nworks Smart Plug-in (SPI) for VMware does this by providing performance, configuration, and event monitoring

Table 1. The HP Software virtualization management solution.

The HP Software virtualization management solution is comprised of the HP, VMware, BearingPoint and nworks products summarized here.

HP 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 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 Select Access	Identity management software for secure user access to physical and virtual IT services and resources.
HP 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 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.

HP/VMware Operations Pack

Software:	Service:
HP Systems Insight Manager	BearingPoint
HP Operations for Windows	
HP Performance Agent	
HP Performance Insight	
VMware Infrastructure 3	
nworks SPI for VMware	

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 Operations Management. 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 Operations, giving you a consolidated picture of your data center.

For companies that need to reduce costs, increase agility and align IT supply with business demand, HP, BearingPoint, VMware and nworks deliver a comprehensive portfolio of IT virtualization solutions, a key element in the transformation to an Adaptive Infrastructure. We have the process and technology 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 Software solutions and products visit:

www.hp.com/go/managementsoftware

For more on BearingPoint solutions visit:

www.bearingpoint.com/servicesmanagement

For more on VMware visit:

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