HP Reference Architecture for VMware View 4

Outstanding ROI plus simple, flexible and secure desktop computing

Introduction

HP's Virtual Desktop Infrastructure (VDI) with VMware View™ 4 is designed to reduce the cost and risk of a traditional distributed desktop PC environment by hosting applications and desktop operating systems on servers and storage in the data center. It delivers a familiar and reliable user experience similar to that of a traditional desktop. Since the resources are centralized, as users move between work locations (home to office, central office to branch) they access the same familiar desktop environment, complete with their applications and data. IT staff can now remotely support, troubleshoot, and manage hardware, operating systems, applications, and services for a broad number of users without needing to visit an end user's desk ("IT floor walks").

Because of the benefits of a virtual desktop environment, Gartner predicts the worldwide spending for virtual hosted desktop computing software to grow from just under $100 million in 2008 to $1.9 billion in 2013—a CAGR of 92 percent.

Benefits of VDI

- **Increased security:** Data is centralized, where it can be managed and protected.
- **Business continuity:** Because users can access their desktop environments from alternate locations, enterprises can quickly react to catastrophic events that may require users to work from home.
- **Flexibility**: Because PCs no longer require individual provisioning, it is now possible to very quickly provide new desktops, as in the case of an expansion.

HP provides certified VDI solutions based on HP servers, storage, networking, thin clients, VMware View and VMware vSphere™ 4, and a wide range of HP services.

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Desktop Virtualization Challenges

The advantages of desktop virtualization are clear, but providing cost-efficient, suitable and effective infrastructure has been a challenge. It is not enough to simply bundle servers, storage and access devices and say they work with VMware View. This approach can create issues, leaving implementation and sizing questions for the customer. For instance, while VMware® provides high availability and disaster recovery features, the storage and compute infrastructure must be architected correctly to support these features.

In addition, to provide the best possible user experience, appropriately sized server, storage, and network infrastructure is a must. Over-provisioning adds unnecessary cost, while under-provisioning can put user experience at risk.

Customers deploying VDI with VMware View need to be assured of:

- Optimized acquisition cost
- Enhanced user experience
- Reduced complexity and risk

Optimized Cost:

This is the primary driver in HP's vision of virtual desktop infrastructure evolution. HP defines Optimized Cost to include acquisition, implementation and operational costs. HP's VDI solution offers an acquisition cost that is near to that of a standard desktop, while minimizing implementation costs by using a prescriptive approach; reducing operational costs by nearly eliminating "IT floor walks"; increasing service availability, and avoiding security compliance breaches. Costly, inefficient storage significantly impacts the financial justification of VDI. HP LeftHand clustered storage technology with its all inclusive software feature set including built-in thin provisioning allows purchasing just the amount of storage required today with the ability to dynamically scale storage as needs grow.

Enhanced user experience:

It's important that a VDI environment provides an end-user with a familiar environment that performs at a level they expect. In fact, improving the end-user experience in VDI environments is key in fueling widespread adoption. The right architecture will make the end-user experience equal to a traditional PC, without the risks and maintenance issues that frustrate users

Reduced complexity and risk:

Creating a VDI environment requires the integration of several individual technologies into an all-inclusive service for users. The Reference Architecture approach provides a streamlined, prescriptive process to effectively deploy VDI, using the solution for either a basic Proof of Concept or a full scale production environment. All reference architecture components, including servers, storage nodes, networking and software are scalable allowing you to start at what your business and budget dictate and seamlessly scale as needs grow and budget becomes available.

HP and VMware VDI Solution Benefits

With this VDI Reference Architecture, HP and VMware are changing the paradigm: it offers an Enterprise-class solution required in a VDI environment at a much lower cost than traditional equivalent solutions.

The new HP VMware Reference Architecture for VMware View provides a proven starting point for reduced implementation risk. It is the result of extensive and rigorous testing in real work environments with real business applications, so that the user experience is guaranteed.

Customers just need to follow the "recipe" to deploy a modular and scalable architecture. For instance, if a customer finds that they need to increase the number of available desktops, as in the case of a new branch office, then this reference architecture provides a predictable methodology by which to scale an enterprise desktop deployment.

Low performance and boot storm issues are a thing of the past. VDI brings significant benefits, and when well-tuned, it becomes a central nervous system for aligning IT resources with business objectives for efficient operations.

VMware View

VMware View delivers a rich, personalized virtual desktop to any device with all the benefits of centralized enterprise desktop management. The VMware View portfolio of products lets IT run virtual desktops in the datacenter while giving end users all their applications and data in a familiar, personalized environment on any device at any location. Get greater flexibility, reliability, efficiency and security managing desktops and applications from the datacenter.

Transform IT by delivering desktops as a managed service

From any location, you can provision 1000s of users, or update all your Windows desktops and applications –in minutes rather than days. Remotely manage desktops at branch offices and eliminate the need for onsite IT resources. Make updates or upgrades to desktop images while maintaining end user personalization for a non-disruptive and seamless end user experience. Now manage desktops and applications with a few servers in the datacenter instead of 100s or 1000s of end point devices.

Lower costs and do more with less

Save time and money by centralizing and managing desktops and applications in the datacenter. Delivering desktops as a managed service reduces the total cost of desktop ownership. Using View Composer with linked clone technology for single image management reduces costs by up to 70% through reduced storage requirements. Re-using or re-purposing existing desktop hardware to access virtual desktops helps extend the life of existing desktop devices and breaks the refresh cycle protecting investments already made. Replacing those desktops after they have reached their end of life with thin clients reduces power consumption by up to 80%. Good for you and good for the environment.

Help satisfy compliance regulations and mitigate risk

Regulatory compliance and security audits require that organizations retain, protect and control information. Use log files readily available within VMware View to monitor users and activity. Since desktops and applications are centralized; data never has to leave the datacenter – except with your permission and security policies intact. This enables IT and end users to maintain control over data and intellectual property. Desktops and data can be backed up nightly in the datacenter as an automated process providing greater fault tolerance and disaster recovery capabilities. Available security patches can be current and up to date for all desktops and applications.

Increase desktop availability - reduce Help Desk calls

VMware View enables IT to deliver personalized desktops to end users as a continuously available, secure service –always on and always available. Provide higher levels of availability to end users more easily and cost effectively plus have the ability to respond quickly by provisioning new applications or desktops on the fly as business needs dictate change.

Standardize on the platform – bring the power of the datacenter to the desktop

VMware View is tightly integrated with VMware vSphere , the industry's first cloud operating system. Extend features such as VMware VMotion™, VMware High Availability, VMware Distributed Resources Scheduler and VMware Fault Tolerance to your desktops providing a built in disaster recovery and business continuity solution. As you extend virtualization across the datacenter, VMware vSphere scales to manage more than 1,000 hosts and up to 10,000 Virtual Machines from a single console providing a common platform to manage both servers and desktops from the datacenter to the cloud with unparalleled levels of scale, control and automation.

HP Virtual Desktop Infrastructure

HP VDI is offered as a tested, validated solution from HP—reducing risk and providing a single point of contact for the entire solution. HP BladeSystem, including servers and storage, provides the perfect infrastructure for a virtualized desktop solution. Imagine 720 users in one self-contained rack. These components offer simplified deployment and easy-to-manage, integrated business functions—like network infrastructure, remote access, advanced e-mail and security.

Built for specific workloads and leveraging upon HP's extensive expertise with testing and simulating real-world environments, the HP VDI reference architecture can guide customers with actual performance expectations and provide them room to grow at a budget-friendly price point.

HP BladeSystem and Thin Clients:
HP BladeSystem increases the savings by allowing you to virtualize network, storage and power infrastructure to reduce operating costs by as much as 30 percent. HP thin clients provide the perfect access device into a virtualized environment providing a 25% capital cost savings, and requiring 80% less maintenance per year than desktop PCs.

HP Storage:
HP LeftHand SAN technology provides a flexible storage architecture optimized for the availability, scalability, management and performance needs of virtual desktop environments. Predictable scalability allows additional virtual clients to be deployed without the uncertainty and cost associated with traditional storage architectures. Virtual SAN, Storage Node, or BladeSystem implementations provide the flexibility to use the technology that best matches current and future needs.

And since there is no fibre channel storage, associated IT labor, switching (everything is done on the server backplane), or external cabling requirements, HP delivers a more cost effective VDI environment.

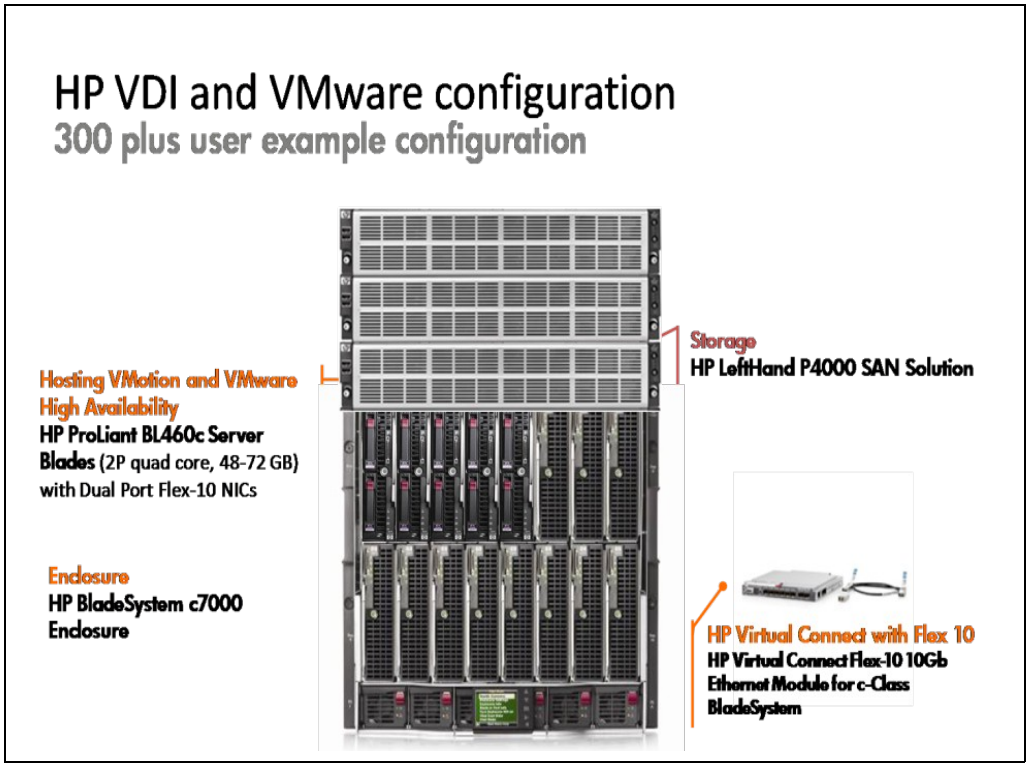
HP Client Automation:
HP Client Automation software helps IT organizations significantly reduce operational costs and improve quality of service by automating many routine tasks in managing the client environment such as patching, application deployment, and OS provisioning—including mobile PC and virtual desktop environments. It also identifies security, compliance, and vulnerability issues in the client environment - effectively and efficiently remediating against them. HP Client Automation software consolidates management of both virtual and physical environments on any platform across very large, complex, heterogeneous, and continuously changing IT environments.

HP Services:
HP also has a complete services portfolio to support the VDI infrastructure, including:

- Technical support for the entire VDI stack (VMware View , operating system, and hardware)
- Consulting services for planning, deploying and implementing
- Hosting services thru HP's Flexible Computing Services (DaaS)
- HP Factory Express

Architecture Overview

The HP VDI Reference architecture enables reuse and flexibility. It's a highly scalable solution in a rack that meets immediate requirements, spanning from Proof of Concept to large Enterprise VDI deployments, thanks to its self-contained, modular approach.



HP BladeSystem (including enclosures and blades)
HP Virtual Connect with Flex-10
HP LeftHand P4000 SAN Solution
HP Client Automation Manager
VMware View 4

The HP Reference Architecture for VMware View

HP VDI Reference Architecture is designed, tested, tuned and documented so that customers can get optimal price/performance, reduced complexity and predictable performance per user. VDI brings significant benefits, and when well-tuned, becomes a central nervous system for aligning IT resources with business objectives. HP and VMware together deliver an easy-to-implement VDI solution. The HP Reference Architectures provide a complete solution for task workers, productivity workers, and power users. Before choosing to implement the HP Reference Architecture for VMware View, customers can also engage in a proof of concept at the WW HP Solution Centers.

Support tools and resources

For the latest HP sales, marketing, and technical resources—including collateral, case studies, white papers, benchmark data, and other useful resources, go to: www.hp.com/go/vdi/vmware .

It's time to take the first step toward simple, flexible and secure desktop computing. Contact your HP sales representative. They'll meet with you to analyze your needs, and propose a configuration solution that makes sense for your organization and budget.

For more information, visit
www.hp.com/go/vdi/vmware
www.vmware.com

4AA0-0000ENW, Nov 2009