

TINTRI

VMware Horizon View

VMware Horizon View with Tintri VMstore™

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Introduction

VMware Horizon View is a leading desktop virtualization solution that delivers users' desktops and applications to their favorite devices, whenever and wherever they are needed.

VMware Horizon View presents desktops and applications to client devices through *Desktop Pools*. Whether users are accessing lightweight mobile applications or industrial strength engineering applications, the concentrated demands on the core network, server, and storage resources necessitates a closer look at how VMware Horizon View works, and what steps must be taken to ensure a successful deployment.

Among the key pillars supporting a VMware Horizon View virtual desktop infrastructure are the vSphere Hypervisor (host) servers, and the networking and storage platforms. Storage serves as the foundation upon which the entire deployment is built. Poorly implemented, storage can cripple a VDI deployment. Consequently, many companies over-provision costly traditional storage in an attempt to mitigate risks.

This paper briefly discusses how Tintri VMstore can empower VMware Horizon View in the most demanding of VDI deployments, predictably, reliably, and cost effectively.

Before VDI and VMware Horizon View

The prevailing pre-VDI big picture largely consists of centralized servers, and “thick” clients, such as PC’s. The maturation of virtualization and VDI has turned the tables so that it is not only feasible to centralize rich computing experiences like Windows and other desktops; it is becoming an economic imperative.

For many companies, the cycle of purchasing, maintaining and upgrading PC hardware has become a costly and distressful exercise that leaves both management and workers frustrated. Properly deployed, VMware Horizon View can increase productivity for both users and administrators. Clients enjoy an improved experience, their choice of devices is expanded beyond just the PC’s on their desks, and they always have access to their data. The company saves money, and everyone sleeps better at night because the data is more secure.

Critical Success Factors

Adjusting conceptually to VDI is not difficult, but there are potential pitfalls lurking that must be factored into the planning and deployment processes.

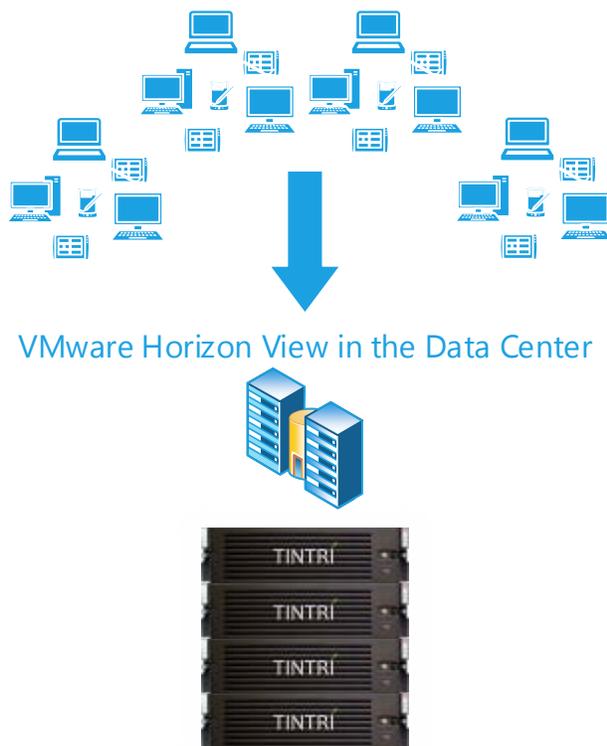
Planning for Desktops and Applications

VMware Horizon View users enjoy a broad level of supported software and options, but it pays to verify that legacy computing environments will work as expected. Along with modern operating systems like Windows 7 and Windows 8, most companies still employ a collection of legacy desktop operating systems and application software.

Server and Storage Infrastructure

Moving desktop operating environments from the physical computers at workers desks to a centralized VMware Horizon View infrastructure means that the computing and storage activity from those desktops is also centralized. The processing and I/O of hosted virtual desktops runs on the servers and storage that comprise the VMware Horizon View deployment.

Figure 1: Activity that was once on various PC's becomes focused on the VDI infrastructure



A VMware Horizon View VDI infrastructure should be deployed with a storage platform that has the following characteristics:

- **High availability**
Redundancy designed to withstand multiple component failures.
- **Performance for vSphere**
Read and Write from Flash with low latency, to accommodate peak VDI loads, boot storms, etc.
- **Easy to Deploy and Manage**
Simple to deploy, scale, and monitor.
- **Ultrabook Desktop VM performance**
The responsiveness of the virtual desktop VMs meets or exceeds the performance expectations normally associated with Ultrabook laptops and PCs.

Solution Architecture Overview

VMware Horizon View includes components designed to broker connections between clients and desktop VM pools, to manage provisioning, and to maintain images of desktops and applications.

Figure 2: High-level model of a VMware Horizon View deployment with VMware vSphere and Tintri VMstore

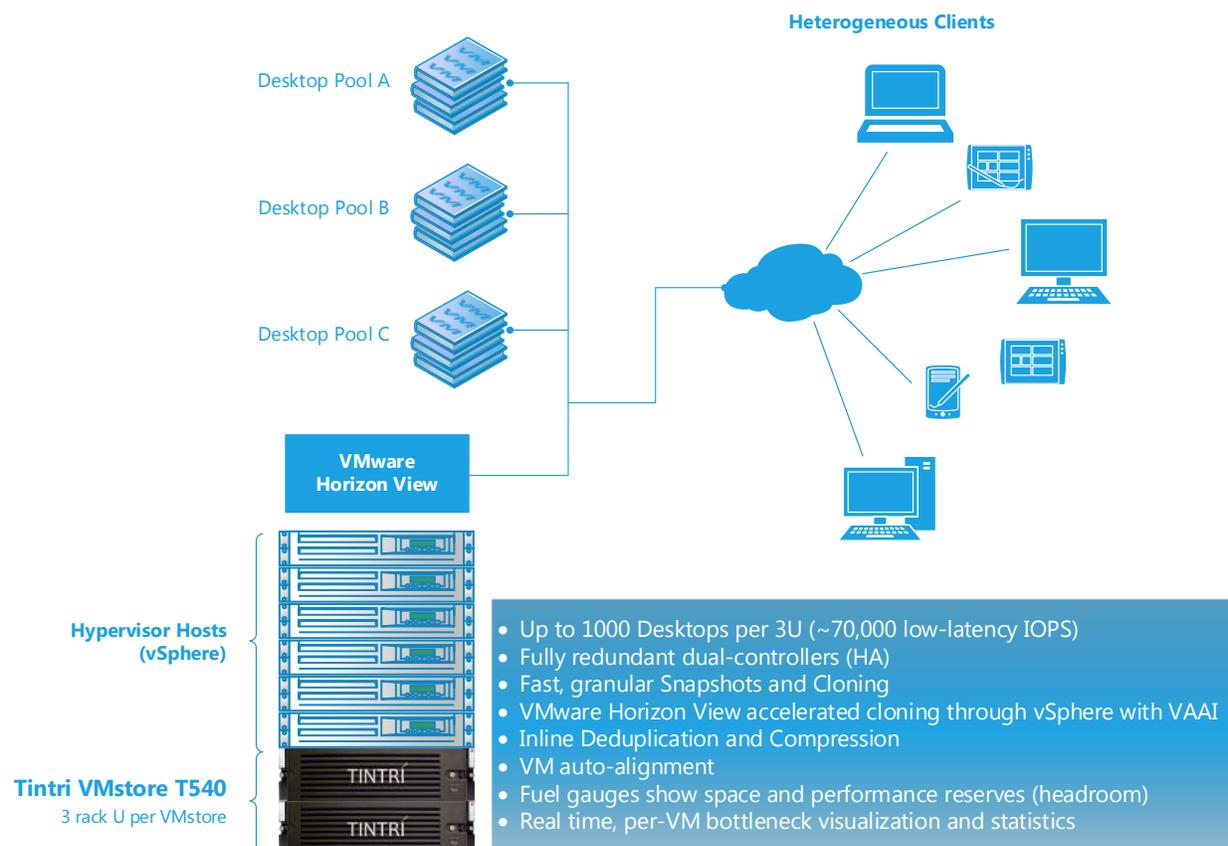


Figure 2 depicts a typical scenario with Tintri VMstore deployed with VMware vSphere servers, and VMware Horizon View. Tintri VMstore devices serve as datastores, allowing vSphere and VMware Horizon View to leverage Tintri VMstore for VM and virtual desktop deployments and operations.

VM's that are pre-existing or created dynamically, with or without persistent user settings, are available to VMware Horizon View clients through Desktop Pools. Tintri VMstore operates as the fast, high-density, and scalable engine that empowers VMware Horizon View to efficiently service its clients.

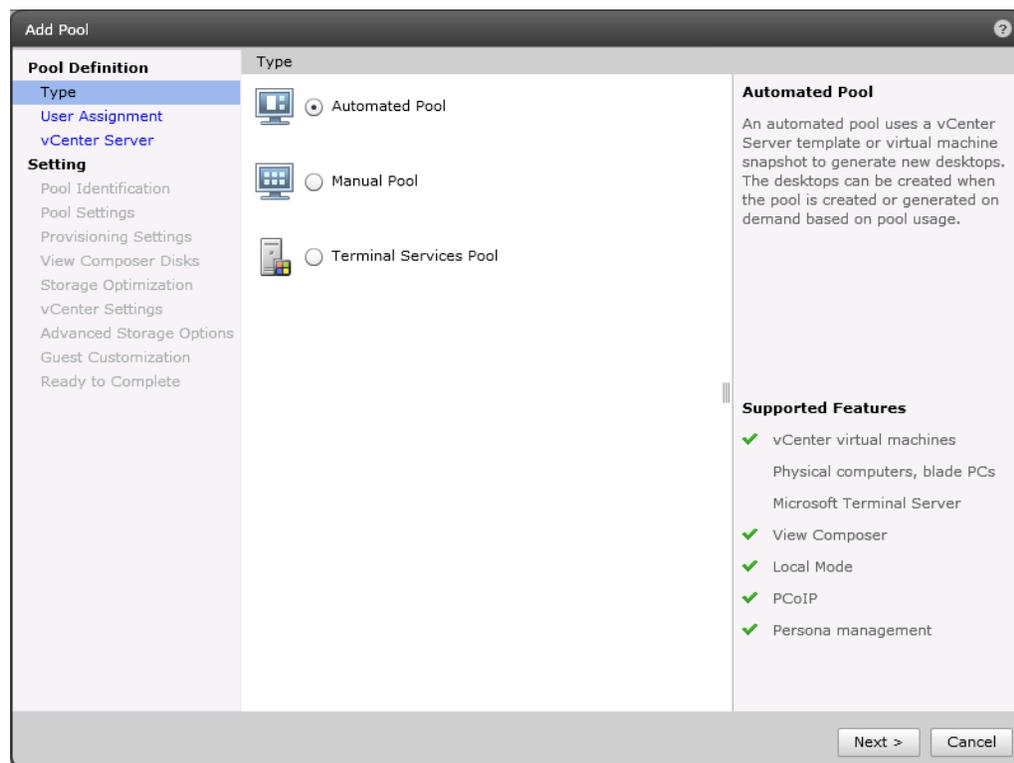
VMware Horizon View Rapid Desktop Program

Tintri is a VMware Horizon View Rapid Desktop Program (RDP) partner. Please see the "VMware Horizon View Rapid Desktop Appliances" section of the VMware Compatibility Guide for information on some of the tested configurations: <http://www.vmware.com/resources/compatibility/vcl/poc.php#Tintri,Inc>

Rapid Provisioning, Cloning and Recomposition

When creating or refreshing/recomposing desktop pools, the creation of VMs should occur quickly, and without taxing the servers and without suffering delays related to poor storage performance.

Figure 3: Creating a new VMware Horizon View Desktop Pool



Tintri VMstore has proven performance supporting 1,000 Hosted Virtual Desktops and in excess of 45,000 to 70,000 low-latency IOPS per 3-U, 13.5TB appliance. This includes the provisioning, operational, and boot storm loads associated with real world virtual desktop deployments, not just the steady state operational workloads. Factoring in the ability to handle the large “spikes” of activity that occur during provisioning and booting operations is a major consideration that cannot be overlooked.

Key Operations Dependent on Storage

- Desktop VM performance and responsiveness that meets or exceeds the performance of fast desktop PCs and laptops
- Desktop VM Pool creation and provisioning operations
- User acceptance is sure to suffer if it takes an excessive amount of time to log in and gain access to their desktops
- Desktop pool refresh or “recompose” operations require at the very least at least one reboot operation for each virtual desktop

Storage that can’t efficiently handle these loads will negatively impact the entire VMware Horizon View environment. Tintri VMstore is purpose-built for aggregated and demanding virtualization workloads.

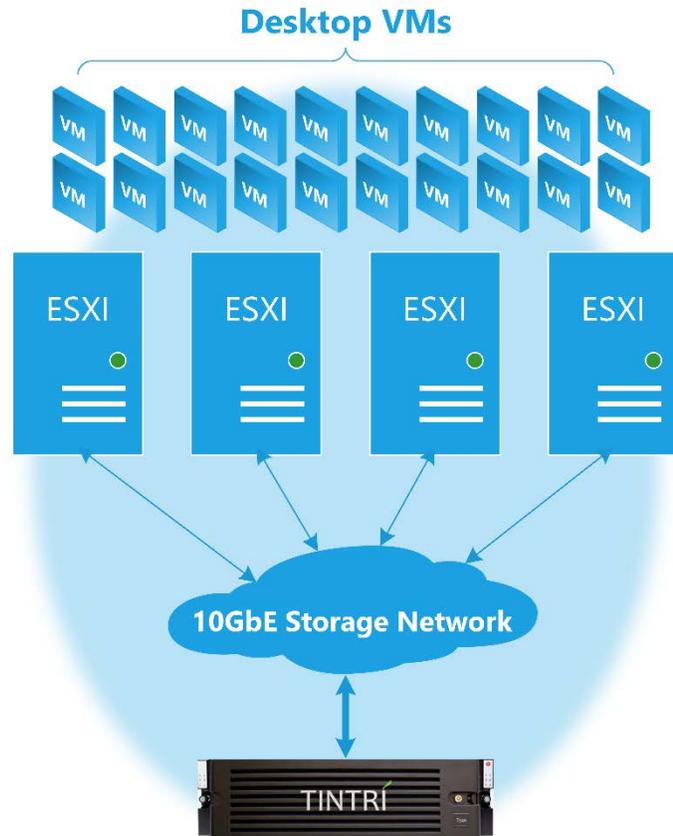
Purpose built to power virtualized infrastructures.

Tintri VMstore Features:

- Each VMstore deploys quickly as a datastore to vSphere over 10GbE Ethernet.
- Low latency performance, high storage I/O bandwidth
- High VM density (large numbers of VMs) drives down \$/VM costs
- Inline deduplication and compression
- Per VM snapshots and rapid cloning
- Unique server, network and per VM statistics and correlations (Tintri Bottleneck visualization)
- A unique, well designed and modern UI
- Tight vSphere and vCenter integration



Figure 4: Tintri VMstore powering multiple vSphere servers and their desktop VMs



Additional Information

This paper provides a quick glance at the full power of Tintri VMstore. For more detailed information, please see the following documents on Tintri's website:

Tintri VMstore Overview

An overview of Tintri VMstore and its core features and applications.

<http://info.tintri.com/vmstore-whitepaper/>

NFS and vSphere Best Practices

The best practices guide for configuring and deploying Tintri VMstore with vSphere.

<http://www.tintri.com/wp-content/uploads/2012/08/Tintri-NFS-best-practices-whitepaper-Aug-2012.pdf>

Summary

Deploying a Virtual Desktop Infrastructure (VDI) with VMware Horizon View provides numerous benefits to organizations, system administrators, and end users by delivering desktops and applications to devices whenever and wherever needed.

Two of the critical success factors that to consider in a VMware Horizon View deployment are the planning and validation of desktops and application software, and the physical infrastructure that will provide the foundation responsible for the operational success of VMware Horizon View.

Tintri VMstore is purpose-built for virtualization and offers a highly available, scalable, and easily deployable storage foundation for VDI in a tightly integrated, compact, high-performance package.