



# VIRTUALIZATION REVIEW

FIRESIDE CHAT SOLUTIONS BRIEF

## The New Business Economics of Desktop Virtualization

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REVIEW

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**For companies seeking to meet the challenge of mobile devices, no set-up has more advantages than VDI.**

**T**ablets, smartphones and other mobile devices are changing the way we live—and the way we work. As these devices proliferate, more and more users are rushing to integrate them into their work lives. As any IT professional knows, that's a challenge for most organizations. Mobility is vastly superior and more accessible than it was just a few years ago, and it's only going to grow.

Lost in the mobile revolution is the old-fashioned, network-dependent desktop. Employees aren't asking for access to work-related applications, or even demanding it; they simply expect it. And IT has to provide it. Virtualization and cloud technologies have helped organizations slash costs and improve efficiency, but the mobile revolution is pushing IT to take virtualization to the next step, the virtual desktop.

Virtual Desktop Infrastructure (VDI) is more than just a phrase that's finding its way into more and more blogs and IT Web sites. It's a concept that can enable IT professionals to provide their users with access to critical applications from mobile devices and also to track, manage, and monitor that access. Implementing VDI is at the top of the priority list for many organizations—and if it isn't, it should be.

### **Why VDI Makes Sense**

VDI isn't simple, but for a growing number of users its benefits more than outweigh whatever complexity might be involved with implementing it. For companies seeking to meet the challenge of serving users who work on mobile devices, no set-up has more advantages than VDI. They include:

- **Flexibility and agility.** VDI is easier to manage than traditional desktops and therefore lends itself to change as necessary. Unlike some traditional desktops, it is not set in stone once implemented. Since VDI runs in a data center, making changes to an implementation from a single point is relatively simple.
- **Easier, lower-cost migration to new desktop operating systems.** As IT moves to Microsoft® Windows® 7 and eventually to Windows 8, VDI can ease the pain and lower the cost of migration by bringing

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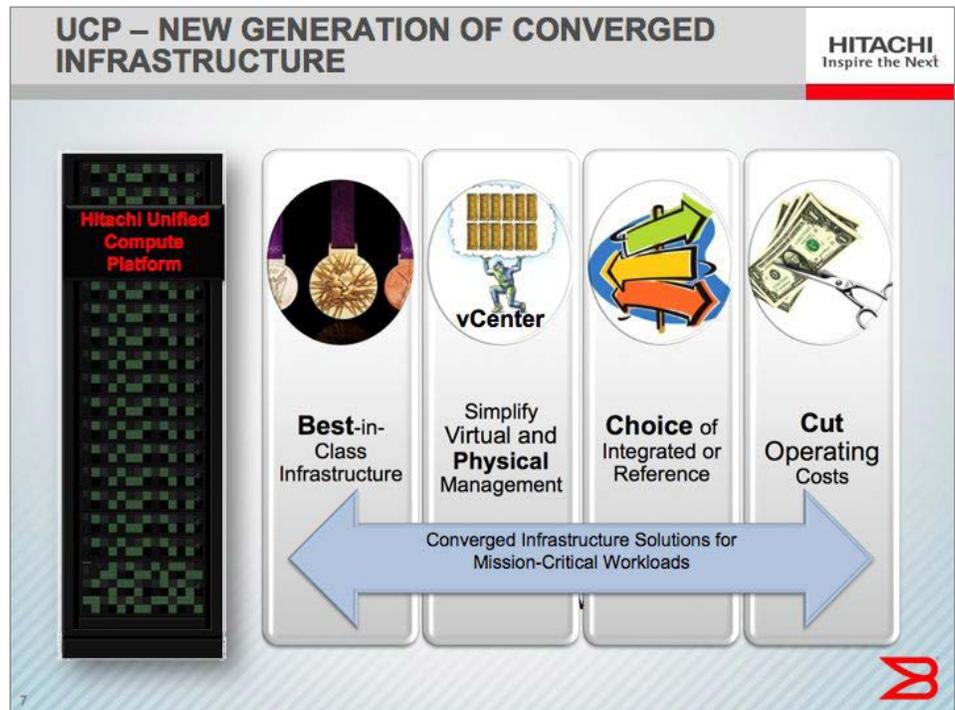
the new operating system to users in a virtual environment rather than requiring a refresh of every individual device.

- **Reduced support cost.** VDI services delivered from a central control point in a data center can lower support costs by enhancing compliance and uniformity of delivery.
- **Enhanced security.** VDI solutions enable IT professional to deliver the right level of application access to the right users. Since all desktops run in the data center in a VDI scenario, VDI can enable IT administrators to update and patch desktops with the latest versions as well as with latest in virus and malware protection. This can help reduce vulnerabilities in the environment that can occur due to unpatched or orphaned systems.

### **The Challenges of Implementing VDI**

As always, with big benefits come implementation challenges. That is certainly the case for VDI. Organizations implementing VDI are likely to face a host of issues. Some potential hurdles involved with setting up VDI include:

- **Performance.** Performance requirements can vary greatly between peak time (boot and log-on storm) and steady state. Proper storage, networks, and servers products and design are critical for satisfactory VDI performance.
- **Optimization.** OS images need to be optimized for VDI (for example, disabling tools and devices, and installing antivirus patches and other services). This optimization can have a major impact on storage performance and space requirements.
- **Scalability.** Most VDI systems must be capable of quickly adding new users, incorporating employees from acquired companies, new organizations and the like. Performance, complexity and cost per incremental desktop are key considerations when designing VDI systems for scalability.
- **Availability.** Because VDI systems can support upwards of a thousand of users, downtime can be costly. Therefore, system availability is a critical consideration when designing a VDI implementation.



**VDI services delivered from a central control point in a data center can lower support costs.**

- **Personalization.** Users, and in particular power users, are increasingly demanding the ability to personalize their environments. Some users require customized applications or images. Organizations must therefore design VDI systems to accommodate those users.

### **Hitachi Data Systems and Brocade Enable VDI**

Like all IT projects, the success of a VDI implementation is depends on the execution. But the tools at hand are also important. IT professionals need technologies that will provide simple and relatively cost-effective VDI solutions and deliver reliable, manageable services to users.

HDS and Brocade have merged their technologies to create just such a VDI package. Hitachi Unified Compute Platform, with Brocade's fabric-based networking products, offers organizations unmatched reliability and low TCO.

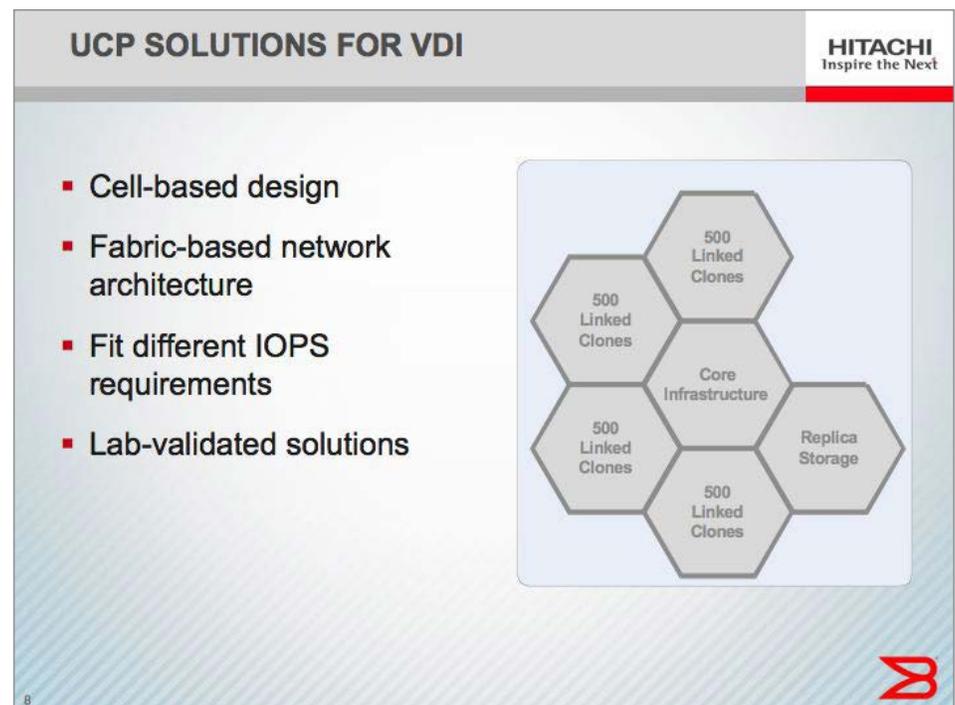
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## Hitachi Unified Compute Platform

UCP forms the foundation of the HDS-Brocade VDI implementation. It is designed to ensure low TCO while still offering superior service to users and manageability for IT professionals.

UCP is a pre-built, pre-tested and validated system. UCP accelerates time-to-value and lowers implementation risk. It also enables VDI implementations to scale efficiently. Several characteristics make UCP a system uniquely capable for delivering VDI:

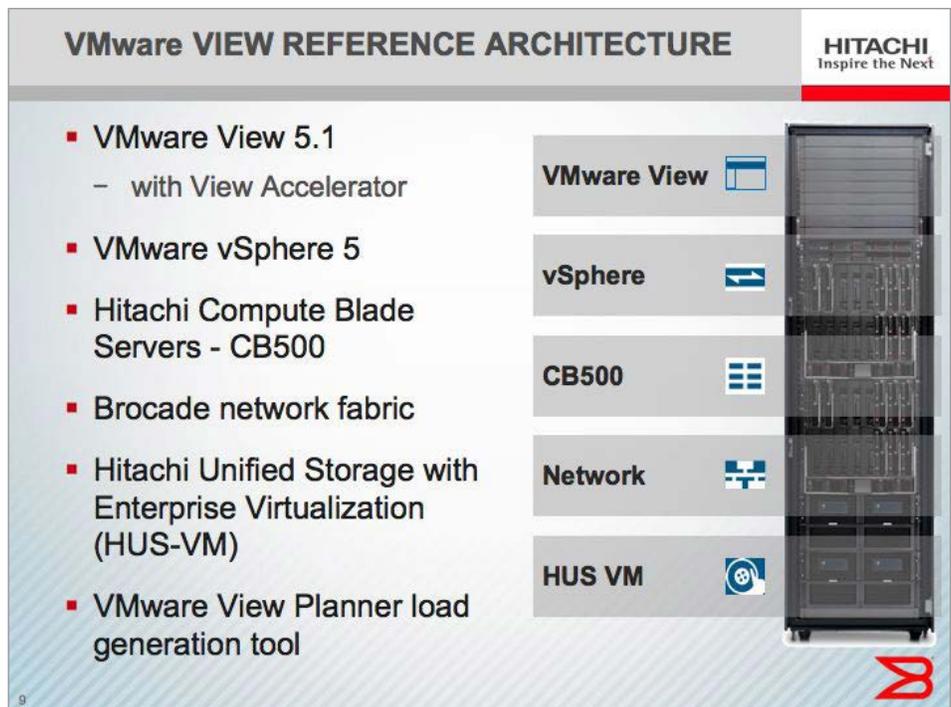
- **Extensive testing.** UCP tests realistic VDI workloads using the industry standard VDI benchmarks, including Citrix Login VSI and VMware View Planner
- **Application cell architecture.** Unique UCP cell architecture enables administrators to add resource cells as deployment needs increase; IT professionals can perform upgrades phases, and performance is predictable and reliable.
- **Storage choice.** UCP offers a choice of modular and enterprise-class storage to support implementations ranging from a few hundred desktops to tens of thousands, consistently



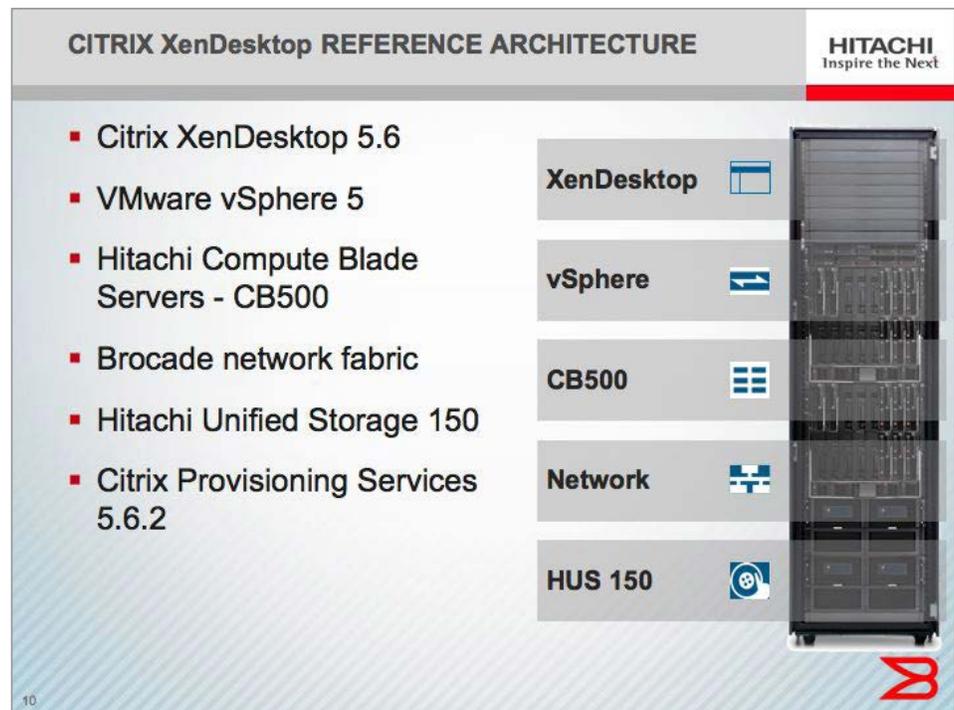
**UCP tests realistic VDI workloads using the industry standard VDI benchmarks.**

keeping average price-per-desktop low and scaling to meet an organization’s long-term goals.

- **Multitenancy capabilities.** The solution offers multitenancy across the stack—for example, with Hitachi Virtual Storage Platform (VSP) and the Brocade network, with the Hitachi CB 500 compute blade server and in the hypervisor.
- **Extreme high availability.** UCP delivers services to users with 99.999% data availability with VSP.
- **Converged Infrastructure.** Converged infrastructure enables customers to deploy cloud and VMware solutions quickly and with confidence. HDS offers 2 best-of-breed converged infrastructure solutions:
  - **Unified Compute Platform Pro** for VMware vSphere is a turnkey solution designed to accelerate time to value to customers who are building internal cloud infrastructures based on VMware. Designed for virtualization, cloud computing and mission-critical data center applications where efficiency, flexibility and high availability are critical.
  - **Unified Computer Platform Select** is a powerful, pre-tested



**Converged infrastructure enables customer to deploy cloud and VMware solutions quickly and with confidence.**



converged infrastructure system, designed for optimal applications performance.

### **Brocade's Fabric-Based Architectures**

Brocade's contribution to the combined VDI solution includes the company's unique Ethernet and Fibre Channel fabric-based architectures. These architectures are designed for maximum reliability and performance and built to ensure rapid application-response times, simplified server management and ease of configuration.

Brocade's fabrics are different from standard hierarchical networks; they include properties such as self-aggregation, self-healing, transparent internal topology and Layer 2 multi-pathing, all of which help to ensure availability, optimize resources and minimize manual intervention in VDI deployments.

Fabrics are flexible network architectures and can be architected in any topology to meet the needs of any variety of workloads. They use multiple "least-cost" paths for high performance and high reliability, and easily scale up and down as needed.

**Brocade's fabrics optimize resources and minimize manual intervention in VDI deployments.**

For scale-out network architectures, Brocade fabric technology allows organizations to simplify and flatten network designs. Ultra-low latency Brocade VDX and Fibre Channel switches provide deterministic network performance and improved application response times.

Brocade VM-aware network automation simplifies virtualization server management and provides secure connectivity and full visibility to virtualized server resources with dynamic learning and activation of port profiles. Automated migration of port profiles enables VM mobility without network re-configuration.

### **The Combined UCP-Brocade VDI Solution**

Hitachi partners with Brocade to embed both Fiber Channel and Ethernet fabric technologies in Hitachi Compute Blade servers. Hitachi Unified Compute Platform solutions include both server-embedded fabric switches and external fabric switches provided by Brocade and supported by HDS.

On the technical side, the combined solution is designed to address and overcome the challenges of implementing VDI and maximize the value of the technology. UCP—either the Pro or Select—converges with the technologies of Brocade's fabric-based architecture to form the complete VDI solution. Beyond that, the combined solution delivers a critical offering: Pre-tested configurations.

HDS and Brocade have developed 2 reference architectures, unique offerings that drive ease of implementation and lower TCO by removing the burden of developing architectures from IT. These reference architectures provide administrators with pre-tested user configurations designed to meet set performance and TCO requirements and offer predictable, reliable performance.

HDS and Brocade, offer 2 reference architectures for VDI, 1 for VMware View 5.0 and 1 for Citrix XenDesktop.

**On the technical side, the combined solution is designed to address and overcome the challenges of implementing VDI.**

### **Built for Efficiency, Speed and Manageability**

VDI is the technology that organizations must adopt if they hope to meet the needs of a new breed of user, one who relies on mobile devices and remote connectivity but demands the same level of service availability on an office PC.

HDS and Brocade offer a VDI solution that delivers straightforward implementation. Reference architectures play a vital role in that scenario. Furthermore, HDS and Brocade provide a solution that is not only comprehensive but also offers a single point of contact for support.

The benefits of VDI with HDS and Brocade are many, but some of the more prominent include:

- **Confidence.** This is a concept never to be underestimated. The industry-leading technology, reliability and services offered by HDS and Brocade deliver the VDI customer experience that is required by customers with an infrastructure administrators can manage easily and from a central point.
- **Lower TCO.** The HDS and Brocade solutions offer lower TCO than other comparable solutions and deliver on the economic promise of VDI.
- **Efficient scalability.** HDS, with its industry-leading enterprise storage and x86 blade servers, along with Brocade's networking gear, delivers efficient VDI scalability. With this solid technical foundation, customers can scale new desktops easily and with confidence.

VDI is not just the future; it's the present. And HDS and Brocade are delivering right now the solution that will enable smart organizations to serve their users now and in the years to come. ■