Transition Your Enterprise Workloads to VMware vSphere With Next-Generation Converged Infrastructure

Increasing data center complexity and massive data growth have companies seeking new, reliable ways to deliver IT services on demand, in a rapid, flexible and scalable fashion. As IT managers face growing demands for faster delivery of business services, they are constrained by resource contentions and trade-offs between IT agility and vendor lock-in. They also face mounting complications and rising costs as they struggle to manage disparate technology resources.

To address these issues, many IT organizations have adopted virtualization, looking to service models such as a private cloud to increase efficiency, improve flexibility and reduce the cost of delivering IT services.

Overview

Hitachi Unified Compute Platform for VMware vSphere, UCP for VMware vSphere, with its unique Hitachi Unified Compute Platform Director software, represents the next generation of converged infrastructure solutions. It provides unmatched reliability, flexibility, automation and performance to support your most demanding workloads.

VMware vSphere running on a Unified Compute Platform (UCP) converged infrastructure creates unified business resource pools with multiple tiers of storage and compute resources that can dynamically allocate IT resources across business units. That means you can deploy applications quickly and scale the underlying infrastructure to meet critical needs whenever and wherever business demands change.

Hitachi Unified Compute Platform for VMware vSphere is the foundation for your evolution to the cloud. Our solution allows you to build an infrastructure validated to host any enterprise application. It is optimized for the cloud and based on a UCP robust enough to support all workloads in virtualized or nonvirtualized environments. Hitachi Unified Compute Platform Director software integrates deeply into VMware
vCenter vRealize Operations to centralize and automate the management of your server, storage and networking components. With this software, you can manage unified business resource pools across a single or multiple data centers. You can monitor and allocate virtual resources rapidly and efficiently from a single management user interface.

**Scalable, Prevalidated Solution Components**

Hitachi Unified Compute Platform for VMware vSphere is designed for maximum performance and utilization, leveraging Hitachi best-in-class hardware and software technology. It eliminates the guesswork and troubleshooting that IT organizations normally experience when rolling out a new infrastructure by eliminating the need for third-party vendors, who may lack the knowledge of all system components. With Unified Compute Platform Director, the platform also offers a single management interface for faster provisioning and easier system monitoring across the entire enterprise.

- The tightly integrated server, network, storage and management infrastructure is built using VMware-validated reference architectures with preconfigured VLANs, server clusters and storage pools.
- Every solution, optimized for each organization’s requirements, is preconfigured and pretested at the Hitachi distribution center, which dramatically reduces deployment time.
- Unlike other competitive offerings, the open platform of UCP supports multiple storage systems through industry-leading Hitachi storage virtualization technology and multiple hypervisors. Hitachi also uniquely offers converged solutions that leverage existing storage products.

UCP for VMware vSphere with Unified Compute Platform Director enables IT organizations to:

- Simplify the setup and management of physical and virtual resources.
- Increase operational efficiency and resource utilization by aligning IT to business unit computing and storage resource needs.
- Improve service availability and business continuity with a tested, reliable integrated system.

**Solution Capabilities**

With Hitachi Unified Compute Platform for VMware vSphere, you can transition your business-critical workloads to a converged infrastructure or cloud environment with confidence. Unified Compute Platform Director integrates infrastructure components with comprehensive management through a familiar VMware vCenter management interface. Tightly integrated, this Hitachi software tool and VMware vSphere software run on a robust, converged platform, providing predictable reliability that can quickly respond to fluctuating business needs.

Key solution features include the ability to:

- Start small, integrating into current environments, and grow your infrastructure quickly and easily as more workloads are transitioned to private cloud.
- Simplify the management of physical and virtual resources through tight software and hardware integration.
- Provide the right tier of resources for differing workloads.
- Choose a converged platform, allowing you to deploy the right UCP solution for the right workload.

**SOLUTION FEATURES**

- Shared pools of resources.
- Scalable and elastic.
- Continuous availability.
- Automated workflow.
- Integrated security and identity.
- Nondisruptive firmware migration.
- Predictable, multitenant platform.
- Platform choice.
- Self-service portal and services catalog.

Unified Compute Platform Director monitors all the elements of the UCP for VMware vSphere solution under a single view that provides an overall health status of all solution elements. Early alerts that indicate possible impending device failures minimize system downtime by prompting proactive maintenance. The single management view minimizes the complexity challenges associated with disjointed management of underlying infrastructures, saving time and money.

Key Unified Compute Platform Director benefits include the ability to:

- Automate and orchestrate essential infrastructure components as unified pools of business resources from directly within the VMware vCenter – Virtual Machine Manager console.
- Simplify configuration and integration of all solution components with end-to-end topology maps.
- Supply appropriate tiers of resources to meet varying workload requirements.
- Improve tiers of resources to manage and alerting.

**Your Converged Environment, Your Way**

The Hitachi Unified Compute Platform for VMware vSphere solution architecture is modular and flexible. It lets you move towards Business-Defined IT without disrupting your existing environment by allowing you to integrate and protect your current storage investment while you grow the level of automation at your own pace. Key converged environment deployment benefits include the ability to:
Simplify ordering, planning and implementation with a single source for infrastructure and coordinated professional services.

Lower your entry cost with an entry system option.

Work with VMware vCloud Air for resource elasticity and life-cycle management efficiency.

Integrate current and future storage infrastructure with industry-leading Hitachi virtualization.

Increase business availability and lower operating cost with nondisruptive firmware updates for compute chassis, compute blades and best-in-class networking solutions.

UCP for VMware vSphere is available in four principal configurations (see Table 1):

- UCP 4000 for VMware vSphere, for flexible converged deployment, scaling from 2 to 128 Hitachi Compute Blade 500 (CB 500) high-density blade servers per platform and Hitachi modular or enterprise storage.
- UCP 4000E for VMware vSphere, for lower-cost deployment, scaling from 2 to 16 CB 500 high-density blade servers per platform, with Hitachi modular or enterprise-modular storage.
- UCP 2000, with rackmount servers and Hitachi Virtual Storage Platform G200 (VSP G200) storage, for deploying ROBO and Tier 2 and 3 applications.
- UCP 1000 for VMware EVO:RAIL, with rackmount servers and internal storage for rapid deployment of new ROBO and Tier 2 and 3 applications.

Components
Hitachi Unified Compute Platform for VMware vSphere automates and integrates management, server, networking, storage and components.

Integrated Management
Integrated into VMware vCenter and VMware vRealize Operations, Hitachi Unified Compute Platform Director coordinates administration and task workflow for all servers, networking elements and storage across the enterprise. This software simplifies the ongoing management of large dynamic environments by orchestrating collective groups of assets as business resource pools through a unified, Web-based management interface.

AT A GLANCE: BENEFITS AND CAPABILITIES

<table>
<thead>
<tr>
<th>Components</th>
<th>Unified Computer Platform (UCP) 1000</th>
<th>UCP 2000</th>
<th>UCP 4000E</th>
<th>UCP 4000</th>
</tr>
</thead>
<tbody>
<tr>
<td>Server</td>
<td>2U4N (Rack)</td>
<td>2U4N (Rack)</td>
<td>Hitachi Compute Blade (CB) 500 (2-16 Blades)</td>
<td>CB 500 (2-128 Blades)</td>
</tr>
<tr>
<td>Storage</td>
<td>Internal Disk</td>
<td>Hitachi Virtual Storage Platform (VSP) G200</td>
<td>Hitachi Unified Storage (HUS) 130, HUS VM, VSP G200, VSP G400</td>
<td>HUS150, HUS VM, VSP G400, VSP G600, VSP G800, VSP G1000</td>
</tr>
<tr>
<td>“Bolt On”</td>
<td>No</td>
<td>No</td>
<td>HUS VM, VSP G400</td>
<td>HUS VM, VSP G400, VSP G600, VSP G1000</td>
</tr>
<tr>
<td>Networking</td>
<td>10GbE switch</td>
<td>Brocade Converged</td>
<td>Cisco Converged</td>
<td>Brocade Fibre Channel: Cisco or Brocade IP</td>
</tr>
<tr>
<td>Management</td>
<td>VMware vCenter</td>
<td>No</td>
<td>Hitachi Unified Compute Platform Director</td>
<td></td>
</tr>
</tbody>
</table>
VMware Virtualization

VMware virtualization software allows organizations to incorporate infrastructure elements into a private and public cloud environment. Multiple server roles can be consolidated as separate virtual machines on a single physical machine that runs different operating systems in parallel.

High-Density Blade-Server Platform

Hitachi Unified Compute Platform 4000 and 4000E for VMware vSphere are based on a highly reliable blade-server platform from Hitachi using the latest Intel processor technology. Hitachi Compute Blade 500 offers enterprise-class performance, high-density computing and massive throughput. Multiple RAM and CPU options are supported within the Hitachi Compute Blade 500 architecture, which is key to providing a flexible platform for changing business needs. Unique features ensure the highest levels of efficiency, application availability and uptime.

Hitachi Industry-Leading Storage Platform

Hitachi Unified Compute Platform 4000, 4000E and 2000 for VMware vSphere are based on the industry-leading Hitachi Virtual Storage Platform. The performance-leading and feature-rich VSP family spans from VSP G200 midtier storage to the market-leading VSP G1000 enterprise-class storage system. With a mature storage virtualization operating system, integrated global-active device across the entire product line, and block and file storage, VSP storage makes UCP for VMware vSphere a highly available, high-performance converged solution.

Flexible Networking

Essential to a complete infrastructure platform, standard networking components on the Hitachi Unified Compute Platform for VMware vSphere solution come fully prewired and automatically configured for simplified and automated networking. The UCP solutions offer switches and networking components from industry-leading vendors.

Multiple Storage Options

Hitachi Unified Compute Platform for VMware vSphere lets you choose from different, but equally capable, storage systems to address your needs with the most flexibility. Choose Hitachi Virtual Storage Platform (VSP) G1000 for enterprise storage and Hitachi VSP G200 to VSP G800 for modular storage (UCP model dependent).

The Hitachi VSP family contains a global-active device feature, which implements mirrored volumes between VSP systems that are continuously updated and available. This means that data migration and remote replication are now attributes of each virtual storage machine and can be extended across all physical storage, whether HDS or third-party systems.

Summary

Hitachi Unified Compute Platform for VMware vSphere gives data centers the enterprise scale, efficiency and agility not found in other offerings. Hitachi Data Systems helps businesses improve IT agility, lower infrastructure costs and move to the cloud with predictable reliability and exceptional flexibility.

We achieve these results by streamlining, integrating and automating a robust platform for enterprise data centers and cloud deployments. Hitachi Unified Compute Platform for VMware vSphere is a unified, predefined solution. It supports your business needs today and lets you establish a flexible foundation for the data center of the future.

For More Information

For more information regarding the capabilities of Hitachi Unified Compute Platform for VMware vSphere and how it can support your data center, please contact your Hitachi Data Systems representative.

---

**AT A GLANCE: SYSTEM COMPONENTS AND SUPPORT**

<table>
<thead>
<tr>
<th>Hitachi Unified Compute Platform 4000 for VMware vSphere: Supported Infrastructure</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Compute</strong></td>
</tr>
<tr>
<td>- Hitachi Compute Blade 500.</td>
</tr>
<tr>
<td>- Flexibility with 2-8 blades per chassis.</td>
</tr>
<tr>
<td>- Scales up to 64 or 128 blades.</td>
</tr>
<tr>
<td>- Hitachi Compute Rack 210H (1U rackmount server).</td>
</tr>
<tr>
<td>- Runs Hitachi Unified Compute Platform Director and other management software.</td>
</tr>
</tbody>
</table>

| **Storage Options** |
| - Hitachi Virtual Storage Platform G1000 (VSP G1000). |
| - Hitachi Virtual Storage Platform G600 (VSP G600). |
| - Hitachi Virtual Storage Platform G400 (VSP G400). |
| - Hitachi Unified Storage 150 (HUS 150). |
| - Hitachi Unified Storage VM (HUS VM). |
| - Bolt onto existing VSP G400, VSP G600, VSP G1000 and HUS VM. |
| - Other vendor storage virtualized through VSP family. |

| **Software (Partial List)** |
| - Hitachi Unified Compute Platform Director v4.0. |
| - Hitachi Compute Systems Manager and Hitachi Device Manager (Hitachi management suite). |
| - VMware vCenter. |
| - VMware vSphere 5.1, 5.5 or 6.0. |
| - Microsoft® SQL Server® 2012. |
| - Microsoft Windows Server® 2012 R2. |

| **Network** |
| - Brocade or Cisco Ethernet networking components. |
| - Brocade Fibre Channel SAN components. |
## Solution Profile

**Hitachi Unified Compute Platform 4000E for VMware vSphere:**

**Supported Infrastructure (System)**

<table>
<thead>
<tr>
<th>Compute</th>
<th>Storage</th>
<th>Software (Partial List)</th>
<th>Network</th>
</tr>
</thead>
</table>
| ■ Hitachi Compute Blade 500.  
■ Flexibility with 2-8 blades per chassis.  
■ Scales up to 16 blades.  
■ Hitachi Compute Rack 210H (1U rack-mount server).  
■ Runs Hitachi Unified Compute Platform Director and other management software. | ■ Hitachi Virtual Storage Platform G400 (VSP G400).  
■ Hitachi Virtual Storage Platform G200 (VSP G200).  
■ Hitachi Unified Storage 130 (HUS 130).  
■ Hitachi Unified Storage VM (HUS VM).  
■ Other vendor storage virtualized through VSP family.  
■ Bolt onto existing VSP G400 and HUS VM. | ■ Hitachi Unified Compute Platform Director v4.0.  
■ Hitachi Compute Systems Manager and Hitachi Device Manager (Hitachi management suite).  
■ VMware vCenter.  
■ VMware vSphere 5.1, 5.5 or 6.0.  
■ Microsoft® SQL Server® 2012.  

**Hitachi Unified Compute Platform 2000 for VMware vSphere:**

**Supported Infrastructure**

<table>
<thead>
<tr>
<th>Compute</th>
<th>Storage</th>
<th>Network</th>
</tr>
</thead>
</table>

**Hitachi Unified Compute Platform 1000 for VMware EVO:RAIL:**

**Supported Infrastructure**

<table>
<thead>
<tr>
<th>Compute</th>
<th>Storage</th>
</tr>
</thead>
</table>
| ■ Industry-standard 4-node server (Intel Xeon Processor E5-2620). | ■ 400GB SSD.  
■ 1.2TB 10000rpm HDD. |