

## Hitachi Unified Compute Platform



### Bring Your Business-critical Workloads to Cloud

The relentless trends of increasing data center complexity and massive growth of data have companies seeking new and reliable ways to deliver IT services in an on-demand, rapid, flexible and scalable fashion. Many data centers now face growing demands for faster delivery of business services, serious resource contentions and trade-offs between IT agility and vendor lock-in. They also have mounting complications and rising costs in managing disparate resource islands. To address these issues, organizations have rapidly adopted virtualization and are considering service models, such as cloud, that increase efficiency, improve flexibility and reduce the cost of delivering IT.

As private cloud deployments quickly become a way for enterprises to improve flexibility and efficiency, organizations also require predictable platform reliability to move even business-critical workloads to private cloud without having to rip and replace their current infrastructure. Evolving beyond current solutions, Hitachi Data Systems offers a robust platform for quickly capitalizing on cloud benefits in addition to ensuring the consistency and level of control required for critical environments.

#### Overview

Hitachi Unified Compute Platform (UCP) centralizes and orchestrates the management of servers, storage and networking components as business resource pools. Its comprehensive and simplified management significantly reduces time to market and operational costs. Improved agility and predictability make possible dynamic and cost-effective data centers that can quickly respond to business needs. UCP is an enterprise-class platform that is designed to fit into existing “real world” data center frameworks.

UCP is an exceptionally flexible, converged solution that simplifies deployment and management of data centers and private cloud deployments. It is an integrated solution composed of storage, servers, networking tools

and software with orchestrated management. Unlike other offerings, it is an open platform that supports multiple servers and storage systems as well as providing a roadmap for multi-hypervisor support.

This solution enables organizations to:

- Have certainty with the predictable reliability of a robust private cloud platform aligned to business service levels.
- Improve agility by quickly deploying new applications and services to respond to changes in business needs and integrate into current environments.
- Reduce complexity and management cost with coordinated comprehensive provisioning and administration of private cloud.
- Increase operational efficiency and resource utilization by aligning business processes to IT execution.
- Simplify and improve service availability and business continuity.

## Capabilities

Hitachi Data Systems helps your business improve IT agility and lower costs by providing a data center infrastructure that is robust, automated, cohesive and flexible.

## Move Business-critical Workloads to Cloud

You can bring your business-critical workloads to cloud with confidence, knowing that Hitachi Unified Compute Platform integrates infrastructure components with comprehensive management. UCP provides predictable reliability in a robust, enterprise cloud platform based on business needs. Key capabilities include the ability to:

- Provide business units with the right level of resources aligned with service level agreements (SLAs); grouping of tiered resources includes user-defined tiers and intelligent assignment.
- Deploy and manage virtual machines in a repeatable fashion that can track and roll back orchestration tasks if needed.
- Make available virtual machine templates according to user and subscription assignments.
- Bring resources on board and configure tenants as well as subscription levels.
- Provide business unit administration views that allow for consumption and deployment of subscriptions.

- Employ the extreme reliability and availability of Hitachi servers and storage.

## Quick Cloud Value

Your business can capitalize on quick cloud value using Hitachi Unified Compute Platform, which supports faster deployment of cloud infrastructure and resource allocation as well as deep automation and orchestration for simplified management. Key capabilities include the ability to:

- Be ready to bring infrastructure on board quickly with faster deployment and preconfigured elements of the UCP management rack.
- Simplify ordering, planning and implementation with a single source for infrastructure as well as coordinated services.
- Automate and orchestrate the management of essential infrastructure components as unified pools of business resources.
- Intelligently manage the creation of Microsoft clusters.
- Deploy virtual machines with validation of underlying components.
- Manage virtual machine templates based on user and subscription rights.
- Perform bare metal installations of Hitachi servers.

## Your Cloud, Your Way

The exceptional flexibility of Hitachi Unified Compute Platform allows you to integrate and protect your current IT investment as well as grow the level of automation, at your pace and scale. Key capabilities include the ability to:

- Respect and integrate with current and future infrastructure.
  - No dedicated storage system is required.
  - Other vendor storage can be used through Hitachi Virtual Storage Platform.
  - Bring on board x86-based servers running Microsoft Windows Server 2008 R2 and support them from the hypervisor level up.
  - Common network components can be used.
  - A roadmap supports multiple hypervisors.
- Dynamically scale infrastructure as needed with the ability to add and manage servers in configured clusters.



- Bring newly available servers and storage on board as needed with the ability to group resources into user-defined tiers for servers and storage.
- Create and track subscriptions of available virtualized resources.
- Build on the Hitachi Data Systems portfolio with a variety of cloud entry points, which includes a roadmap for UCP orchestration to tie together various solutions over time.

## Confidence for Cloud

Whether your organization is just getting started with a private cloud or is building upon an existing infrastructure, Hitachi Unified Compute Platform is an ideal foundation. You can bring even critical workloads to cloud with UCP providing predictable reliability, quick cloud value and the exceptional flexibility needed to integrate with current infrastructure and grow automation at your pace.

UCP eliminates the guesswork and troubleshooting organizations normally experience when rolling out a new infrastructure. Easily scalable, the comprehensive and simplified management with deep component integration allows extremely fast provisioning and “worry free” scaling to a large number of physical hosts and virtual machines.

This integrated and tested solution removes implementation burdens and reduces the complexity and cost of owning a private cloud. Your organization benefits from best-of-breed technologies with extreme reliability and performance as well as simplified procurement, implementation and management of cloud deployments.

The orchestrated management of UCP with a unified view of resources allows IT execution to be aligned with business processes. It further reduces the complexity and maintenance challenges associated with disjointed and inefficient management of underlying cloud infrastructures.

Key cloud enabling features include:

- Service-level-aware environment
- Simplified configuration and integration
- Comprehensive management with the UCP managed rack and orchestration software
- Secure partitioning through multitenancy

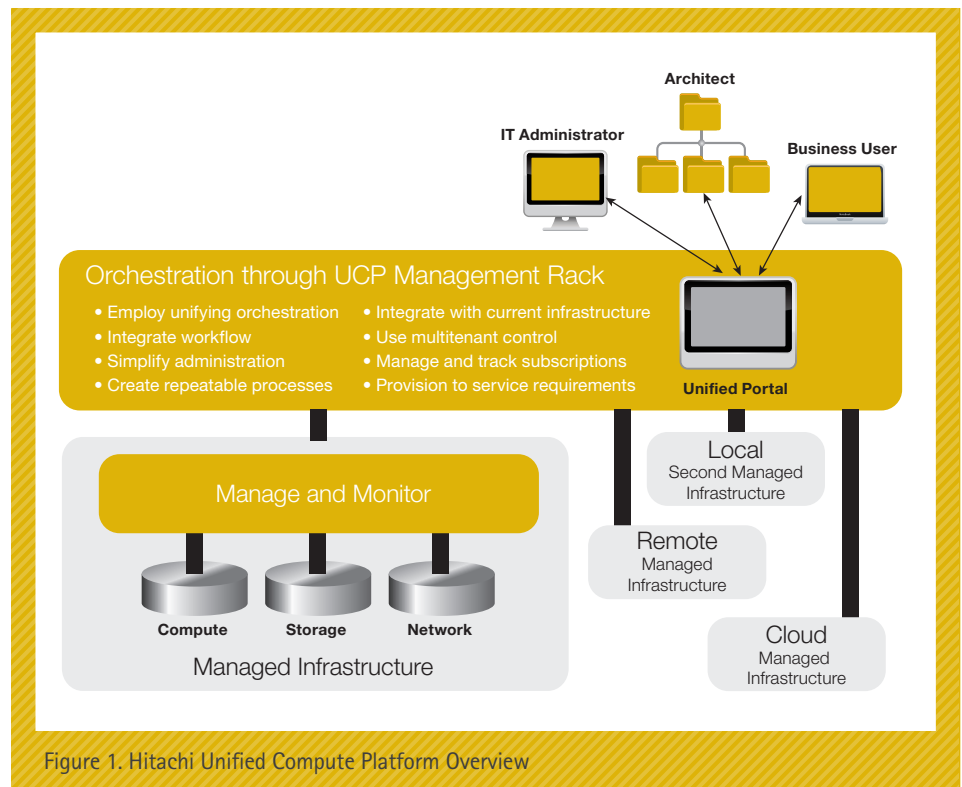


Figure 1. Hitachi Unified Compute Platform Overview

- Elastic scaling when and where needed, with on-demand storage allocation and processing

UCP architecture is modular and flexible to let you move into the cloud at your own pace, without disrupting your existing environment.

## Components

Hitachi Unified Compute Platform orchestrates and integrates management, server, storage and networking components. Its innovative software coordinates the management and task workflow for servers, storage, networking elements and operating software.

## Management

The UCP management rack provides comprehensive management and process orchestration for a collective group of assets as business resource pools. Pre-integrated, the UCP management rack arrives with essential components preconfigured and is quickly ready to bring resources on board. Using Microsoft and Hitachi Data Systems management solutions together, UCP simplifies the integration and ongoing management of large dynamic environments. At the same time, it reduces capital expenditure (CAPEX) and operating expenditure (OPEX), even while the scope and scale of these environments continue to grow.

## Server

Different from other platforms, UCP offers choice and flexibility with an open platform that supports various servers from the hypervisor level up. The first server to be qualified for bare metal installation support is the Hitachi Compute Blade 2000, which offers enterprise-class performance, high-density computing and massive throughput. Microsoft Windows Server 2008 R2 with Hyper-V will be core to this comprehensive platform that will later include support of multiple hypervisors. Multiple server support with an open architecture is key to proving a flexible platform for changing business needs.

## Storage

The first storage systems to be qualified for direct UCP management are the high-end, enterprise-level Hitachi Virtual Storage Platform, Hitachi Universal Storage Platform® V and Hitachi Universal Storage Platform VM. Each provides robust storage virtualization and dynamic provisioning. Other common storage can be brought into the UCP management framework through Hitachi Virtual Storage Platform. UCP uses unique Hitachi storage technologies and replication capabilities that are integrated with comprehensive management.

## Networking

Essential to a complete platform, standard network components are supported to provide efficient and reliable networking.

This uniquely unified platform gives data centers the enterprise scale, efficiency and agility not found in other offerings. It has the unmatched ability to reduce operational costs as well as management complexities within the most demanding data center environments and private cloud deployments.

Best-in-class technologies and deep technology integration make UCP ideal for consolidating and virtualizing business-critical and enterprise applications.

## A Unique Platform

Hitachi Unified Compute Platform enables the build out of a robust private cloud infrastructure. It provides the assurance that all the underlying server, storage and network resources are in place and aligned to the appropriate business service levels.

The innovative UCP framework efficiently and reliably coordinates the management of servers, storage, networking components and operating software as collective resources. The orchestration processes are deeply integrated with platform components at a fundamental level, to gain extreme workflow efficiencies.

Further simplification of the processes to create and manage complex environments significantly reduces the time to value as well as ongoing operational expenses. The pre-configuration of key elements of the UCP management rack and faster deployment means business can quickly capitalize on cloud benefits.

The extreme flexibility of the UCP solution offers what may be one of the most considerable benefits: IT investment protection. UCP allows your business to move to private cloud while leveraging current infrastructure. It also

## AT A GLANCE: HITACHI UNIFIED COMPUTE PLATFORM

UCP Management Rack Dedicated Components	
Hardware	Software
<ul style="list-style-type: none"> <li>■ Hitachi Compute Blade 2000</li> <li>■ Hitachi Adaptable Modular Storage 2300</li> <li>■ Brocade 10G Ethernet Switch</li> </ul>	<ul style="list-style-type: none"> <li>■ Hitachi Unified Compute Platform Management Software</li> <li>■ Microsoft Windows Server 2008 R2               <ul style="list-style-type: none"> <li>■ Hyper-V</li> <li>■ Failover clustering</li> </ul> </li> <li>■ Microsoft SQL Server 2008 R2</li> <li>■ Microsoft Virtual Machine Manager 2008 R2</li> <li>■ Hitachi UCP Management Pack for Microsoft System Center Operations Manager</li> <li>■ Hitachi Device Manager 7.01</li> </ul>
Supported Infrastructure for Orchestration	
Compute	<ul style="list-style-type: none"> <li>■ Hitachi Compute Blade 2000               <ul style="list-style-type: none"> <li>■ Support for bare metal install</li> <li>■ Windows Server 2008 R2</li> </ul> </li> <li>■ X86-based server               <ul style="list-style-type: none"> <li>■ Windows Server 2008 R2</li> </ul> </li> <li>■ Windows Server 2008 R2 with Hyper-V</li> </ul>
Storage	<ul style="list-style-type: none"> <li>■ Hitachi Virtual Storage Platform (VSP)</li> <li>■ Hitachi Universal Storage Platform® V and VM</li> <li>■ Other vendor storage through VSP</li> </ul>
Network	<ul style="list-style-type: none"> <li>■ Standard networking</li> </ul>

provides the ability to add the resources and configurations that best suit your needs in a modular manner, as you need them. This offers the freedom to choose only the resources and management needed today and the ability to extend automation and resources in the future.

The Hitachi Unified Compute Platform supports best-in-class reliability, performance, scalability and comprehensive management of enterprise data centers and cloud deployments.

## Summary

Hitachi Data Systems helps businesses improve IT agility, lower costs and move to cloud with the certainty of predictable reliability, quick cloud value and exceptional flexibility.

We do this by streamlining, integrating and orchestrating a robust platform for enterprise data centers and cloud deployments. Hitachi Unified Compute Platform is a unified as well as open solution to support your business needs today and let 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 and how it can support your data center, please contact your Hitachi Data Systems Representative or visit [www.hds.com](http://www.hds.com).



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