Quickly Deploy Microsoft Private Cloud and SQL Server 2012 Data Warehouse on Hitachi Converged Solutions

September 25, 2013
Learn how you can virtualize and optimize your Windows applications and workloads while accommodating growth with Microsoft® Private Cloud and SQL Server 2012 running on Hitachi Unified Compute Platform.

You can create building blocks for a cloud environment that is reliable, scalable, multitenant and multi-tiered with Hitachi Unified Compute Platform Select for Microsoft Private Cloud.

Also, the Hitachi solution for a medium-sized Microsoft SQL Server data warehouse enables your enterprise to consolidate silos for enterprise-wide business intelligence and scale your data warehouse to hundreds of terabytes.

Attend this webcast and learn how to:

- Turn on solutions that "just work."
- Be up and running in days with solutions that have been pre-validated by the Microsoft Private Cloud Fast Track program.
- Allow better business decision making by consolidating silos of data onto an enterprise data warehouse of your Microsoft SQL Fast Track solution with minimal data and storage latency.
- Maximize your investment in Microsoft solutions, whether on-premises or in the cloud.
SPEAKERS

• Claude Lorenson, Ph.D.
  Senior Product Manager, Cloud OS Marketing, Microsoft

• Chris Marsh
  Sr. Solutions Marketing Manager, ERP, Data Warehousing, BI & Analytics, Hitachi Data Systems

• Julianne Raedeke
  Sr. Solutions Marketing Manager, Virtualization and Business Applications, Hitachi Data Systems
AGENDA

- Microsoft introduction
  - Cloud OS
  - Complete and Consistent Platform
  - Windows Server, System Center, SQL Server
  - Fast Track Programs

- Hitachi Unified Compute Platform for Microsoft SQL Server

- Hitachi Unified Compute Platform for Microsoft Private Cloud

- Conclusion
The Cloud OS

Transforms the datacenter
Empowers people-centric IT
Unlocks insights on any data
Enables modern business applications
Complete & Consistent Data Platform

On-Premises Data Center

Traditional
NON-VIRTUALIZED

Private
CLOUD

Microsoft Data Platform

Common Tools

Dev Ops Tools

Management Tools

Identity

Virtualization

Off-Premises

Microsoft Cloud

Windows Azure

Office 365

3rd Party
Service Provider
CLOUD

Joint-Vendor Support
Windows Server 2012: Cloud optimize your IT

- **Beyond virtualization**: Scale and secure workloads, cost-effectively build a private cloud, and securely connect to cloud services.

- **The power of many servers, the simplicity of one**: Efficiently manage infrastructure while maximizing uptime and minimizing failures and downtime.

- **Every app, any cloud**: Build on an open and scalable web platform that supports applications across premises.

- **Modern workstyle, enabled**: Support a mobile and flexible work style.
System Center 2012: Unified management for the Cloud OS

- Application Management
- Service Delivery and Automation
- Infrastructure Management

![Diagram showing the system center 2012 features and services](image-url)
SQL Server and the Data Platform

Mission Critical Performance

Faster Insights from Any Data

Platform for Hybrid Cloud
Fast Track programs

Data Warehouse Fast Track for SQL Server 2012

- Fast Track delivers balanced database system configurations for latest SQL Server and hardware capabilities.
- Customers get new and enhanced benefits with Fast Track & SQL Server 2012
- Balanced capacity and performance for SQL Server 2012
- Optimized for Column Store Index

Private Cloud Fast Track

- Fast Track delivers validated Microsoft design with rich software portfolio
- Pre-configured at Hitachi Distribution Centers
- Balanced capacity based on flexible architectures
- Integrated management for virtual machines and infrastructure deployment
- Optimized for Windows Server 2012 and System Center 2012 SP1
Why Microsoft and Hitachi Validated Reference Architectures?

Speed to Deployment

Reduce Risk

Flexibility and Choice
HITACHI UNIFIED COMPUTE PLATFORM FOR MICROSOFT SQL SERVER 2012 – MEDIUM-SIZED DATA WAREHOUSE

CHRIS MARSH
CHALLENGES & BUSINESS DRIVERS
50TB DATAWAREHOUSE

Challenges:
- Data contained in silos
- Inability to make Business Intelligence and decision making based on enterprise-wide data impacts business
- Big Data: Volume, Variety and Velocity adding to complexity of Data Warehousing

Business Impact:
- Innovation
- Operational Efficiency
- Maintain Competitiveness
70% - 75% of all systems referred to as “enterprise data warehouses” are actually single-business departments in nature.

- Gartner
Enterprise Data Warehouse provides insight across the entire organization for better decision making.
BIG DATA

BIG DATA: VOLUME, VELOCITY, AND VARIETY

• How do I incorporate Big Data into my Microsoft SQL Server DW strategy?

• What are some architectural approaches?

• What does Hitachi and Microsoft support for Big Data in a DW environment?
### 50 TB DATA WAREHOUSE REQUIREMENTS

**UNIQUE REQUIREMENTS COMPARED TO <10TB DATA WAREHOUSE**

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<th>PERFORMANCE</th>
<th>SCALABILITY</th>
<th>DATA AVAILABILITY</th>
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<td>- Fast query response times</td>
<td></td>
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<td>- Complex queries</td>
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<td>- More end users</td>
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<td>- Storage capacities from 100s TB to 1 Petabyte</td>
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<td>- BI and DW shifting from “Business Critical” to “Mission Critical”</td>
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<td>- Innovation, competitiveness, and operational efficiency</td>
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HITACHI UCP FOR MICROSOFT SQL SERVER

MEDIUM LEVEL DATAWAREHOUSE

- Complete reference architecture
- Microsoft FastTrack validated
- Ready to Deploy
- Highly reliable Hitachi storage and blade servers
- Built-in redundancy
- Optional blade server high availability implementation
- Add Microsoft SQL Server connector for Apache Hadoop
**HITACHI BUSINESS CONTINUITY ARCHITECTURE**

**MS SQL Server High Availability Group**

Site A  
Up to 200KM (125 miles)  
Up to 1 Petabyte Storage  
For each SMP Server

SYNCHRONOUS REPLICATION

Site B  
Up to 1 Petabyte Storage  
For each SMP Server
HITACHI 3-SITE REPLICATION WITH DELTA RESYNCH

Site A
LIVE DATABASE
Asynchronous Replication

Site B
LIVE DATABASE
Asynchronous Replication

SQL FAILOVER STANDBY SERVERS

Up to 200km (125 miles)

SYNCHRONOUS REPLICATION
ADDITIONAL RESOURCES

SOLUTION PROFILE

Hitachi Unified Compute Platform Select for Microsoft® SQL Server® 2012

No-compromise Medium Level Data Warehousing

A medium-level Microsoft SQL Server® Fast Track Data Warehouse, which provides SSD capacity for data volumes, supports enterprise-wide business intelligence for actionable decision-making. However, to address data growth in the face of unpredictable power challenges for query performance, the service available at all times, and availability for additional data sources and data growth, Hitachi Unified Compute Platform (UCP) Select, a pre-configured data warehouse infrastructure for Microsoft SQL Server 2012, has been engineered to meet medium level data warehousing requirements for low query performance, data availability and ease of scalability.

REFERENCE ARCHITECTURE

Hitachi Unified Compute Platform Select for Microsoft® SQL Server® 2012 for Medium Level Data Warehousing on Hitachi Compute Blade 2000 and Hitachi Unified Storage 150

IMPLEMENTATION GUIDE

Hitachi Unified Compute Platform Select for Microsoft® SQL Server® 2012, Medium Size

Available on hds.com
HITACHI UNIFIED COMPUTE PLATFORM FOR MICROSOFT PRIVATE CLOUD

JULIANNE RAEDEKE
YOUR WAY TO YOUR PRIVATE CLOUD

A TRANSFORMATION PROCESS

Cost Reduction and Agility

- Virtualization
- Convergence
- Automation
- Self-Service/Chargeback

With a Commitment to Continuous Improvement

Private Infrastructure Cloud

DIY or leverage HDS Services to Move You Forward

Realize Measurable Benefits at Each Stage
CHALLENGES & BUSINESS DRIVERS

“I could do more business if I had an easy way to get access to IT services faster.”

“I’d get a lot more done faster with self-service access to compute & storage resources.”

In IT, we need more flexible server & storage pools – with automation & orchestration to deliver first-rate services.”

“An infrastructure cloud looks promising but there are many challenges for us.”

Time to Deploy
Application Complexity
Maintaining SLAs
Automating Operations
Utilizing Resources Efficiently
A FOUNDATION FOR CLOUD

- Includes server, storage, and network elements
  - Consolidated resource pools assigned to business needs
- Eliminates road blocks to private cloud
  - Related to lack of infrastructure standards, expertise and best practices
- Increases automation to significantly improve opex

PREDICTABLE, REPEATABLE, RELIABLE
HOST MICROSOFT APPLICATIONS

Pre-validated for Microsoft Applications

Microsoft System Center

Microsoft Exchange Server 2010

Microsoft Office 365

Microsoft Lync Server 2010

Microsoft SharePoint Server 2010

Microsoft SQL Server 2012
MIGRATE MICROSOFT APPS

MOVE WITH CONFIDENCE

- No single point-of-failure architectures
- Enterprise class components and scalability
  - 99.999% hardware availability
  - HDS mission critical experience service/support
  - Automated load balancing for even workload distribution
  - QoS for each layer: server, network, storage
  - Backed up with SLAs
Built for Windows Server
- Windows Server 2012/Hyper-V V3
- System Center 2012 SP1
- Includes Hitachi adapter integrations for SCOM, SCO, and VMM

Ideal compute platform for virtualization
- Uses integrated Fibre Channel networking

Storage provides excellent performance and scalability
- Virtualize 3rd-party arrays to extend investments

Scales from 60–750 VMs in medium configuration

Scales 450-1800 VMs in base configuration; can scale to over 12,000 VMs
HITACHI ADAPTERS FOR MICROSOFT SYSTEM CENTER

REDUCE OPEX – INTEGRATE WITH SYSTEM CENTER

- Hitachi Storage Adapter for Microsoft System Center Operations Manager
  - Monitor the health and performance of Hitachi storage components

- Hitachi Storage Adapter for Microsoft Windows Server PowerShell
  - Extend PowerShell commands with Hitachi storage management functions including discovery, management, and provisioning.
  - Serves as the foundation for other Hitachi and System Center integrations
HITACHI ADAPTERS FOR MICROSOFT SYSTEM CENTER

TOOLS FOR THE CLOUD

- Hitachi Storage Adapter for Microsoft System Center Orchestrator
  - Automate the creation, monitoring, and deployment of Hitachi storage resources in your environment
  - Workflows and runbook automation via PowerShell
HITACHI STORAGE ADAPTER FOR MICROSOFT VOLUME SHADOWCOPY SERVICE

BACKUP AND RECOVERY FRAMEWORK

- Integrates into the Microsoft backup and recovery framework that is part of Windows Server 2012 using Hitachi in-system replication technologies
  - Hitachi ShadowImage
  - Hitachi Copy-on-Write Snapshot

- Benefits
  - Zero impact on production systems
  - Reduced backup windows
  - Easily manage the backup and recovery of your private cloud environment

- Works effectively with backup applications such as Microsoft DPM and Hitachi Application Protector
PROVEN SUCCESS
UCP SELECT FOR MICROSOFT PRIVATE CLOUD

“Hitachi Data Systems products combine best-in-class architecture, reliability and excellent technical support, and have enabled us to have 100% availability.”

Jitendra Sangharajka, Associate Vice President & Head Enterprise Platform Management, Information Systems, Infosys

CHALLENGES
- Faster time-to-market and ability to better react to the changing needs of customers is critical
- Wanted multi-tenancy and multi-site disaster recovery
- Adding new user accounts

HDS SOLUTION
- Hitachi UCP Select for Microsoft Private Cloud V3
- Designed for Hyper-V and System Center Orchestration and Management
- Validated for Microsoft Applications

RESULTS
- Able to bring applications and users online real-time
- Improved performance, multi-tenancy and multi-site DR
- Infosys turned deployment into service model to their business practice customers
- Faster time-to-market and ability to better react to the changing needs of customers is critical
- Wanted multi-tenancy and multi-site disaster recovery
- Adding new user accounts
- Pre-configured for quick deployment
- Migrate and virtualize Microsoft applications with confidence
- Mission Critical expertise, designed for the most demanding workloads
- Predictable, repeatable and sustainable performance
- Scalable; grow as your business grows
Save up to $75,000 USD when you purchase Hitachi UCP for Microsoft Private Cloud*

*Contact your sales representative for more details
QUESTIONS AND DISCUSSION
UPCOMING WEBTECHS

- **October**
  - *Private Versus Public Cloud: Security and Privacy Do Matter*, Oct 9, 9 a.m. PT, 12 p.m. ET
  - *Build Converged Infrastructures With True Systems Management*, Oct 23, 9 a.m. PT, 12 p.m. ET

- **November**
  - Stay tuned for a focus on Hitachi Software.

Check [www.hds.com/webtech](http://www.hds.com/webtech) for
- Links to the recording, the presentation, and Q&A (available next week)
- Schedule and registration for upcoming WebTech sessions
- Questions will be posted in the HDS Community:
  - [http://community.hds.com/groups/webtech](http://community.hds.com/groups/webtech)
THANK YOU