Converged Solution Ensures High Performance for SAP HANA Platform

Hitachi Unified Compute Platform (UCP) Select for the SAP HANA Platform enables enterprises to meet the requirements for today’s SAP HANA business use cases. The solution supports SAP Business Warehouse (BW) on the SAP HANA platform, while providing the scalability required for widespread SAP HANA adoption. Mission-critical, 24/7 SAP HANA environments are made possible with SAP HANA High-Availability, SAP HANA Disaster Recovery, and backup based on enterprise-class, top-of-the-line Hitachi hardware and software. The Hitachi solution for SAP Business Warehouse and Enterprise Resource Planning on SAP HANA platform supports mission-critical environments using the leading Linux platform for SAP solutions on SUSE.

SAP HANA platform transforms business decision-making with real-time analytics, which leverages in-memory data for actionable and predictive insights. Enterprises running SAP HANA strengthen competitive advantages and can foster innovation with accelerated reporting across business areas like financials, sales, procurement, shipping and master data. They can receive immediate answers to pressing business questions.

To realize the benefits of the SAP HANA platform, a robust and reliable hardware infrastructure is required. This infrastructure must address enterprise requirements for today’s initial SAP HANA use cases and scale without affecting system performance or adding needless complexity. As SAP HANA evolves, use cases increase and its adoption spreads throughout an enterprise, requiring support for a 24/7, mission-critical environment of underlying hardware infrastructure.
To meet SAP HANA platform requirements, Hitachi Data Systems offers Hitachi Unified Compute Platform Select for the SAP HANA Platform. UCP Select for SAP HANA maximizes the SAP HANA investment. It ensures a high level of SAP HANA performance with query responses, the ability to scale easily, and enhanced system reliability that guards against unplanned downtime and system outages.

UCP Select for SAP HANA is further enhanced by using SUSE. SUSE Linux Enterprise Server for SAP Applications is a preferred platform for the majority of organizations running SAP software on Linux. It gives businesses the price-to-performance options they are currently unable to achieve. It enables the cutting of costs, reduces installation time for SAP applications from days to hours, and increases performance. SUSE Linux Enterprise Server for SAP Applications is the recommended and supported operating system for SAP HANA. It is validated and certified by SAP, and it is designed to work with SAP HANA, ensuring an optimal configuration is delivered to the end user (see Figure 1).

High Performance and Seamless Scalability

SAP HANA platform system challenges must address peak performance requirements to satisfy all end-user queries. Another consideration when planning for both short-term and long-term SAP HANA use cases is to avoid end-user dissatisfaction caused by poorly performing SAP HANA platform queries.

As the number of SAP HANA queries increases, along with system performance challenges, more end users put demand on system scalability over time. To meet performance and scalability challenges, UCP Select for SAP HANA seamlessly scales without complexity to accommodate more SAP HANA end-users and larger SAP HANA data volumes.

Hitachi scalability for SAP HANA platform is made possible with Hitachi symmetric multiprocessing (SMP). SMP in Hitachi Compute Blade 2000 allows for 2 or 4 identical Intel x86 server blades to share memory and be controlled by a single operating system. In this case, the operating system is SUSE Linux Enterprise Server for SAP Applications. The SMP scaling advantage enables UCP Select for SAP HANA to bond individual compute blades within the Hitachi Compute Blade chassis. This action supports the appearance of a single "node" to the SUSE Linux operating system and SAP HANA software.

Converged Scale-Out Solution Enables HANA to Run in 24/7, Mission-Critical Environments

SAP HANA platform is gaining traction within enterprises and most end users now expect day-to-day SAP HANA availability for mission-critical and business-critical decision-making. This demand for SAP HANA warrants strict service level agreements (SLAs) for 24/7 operations. Line-of-business executives, logistics, operations, field employees, finance, and other end users have come to expect access to SAP HANA. They rely on the platform’s availability for real-time analytics to facilitate day-to-day and strategic decisions, to the point where disaster tolerance requirements must be factored into SLAs.

Hitachi UCP Select for SAP HANA ensures data availability with safeguards to avoid unplanned downtime caused by hardware failure, system outage, and SAP HANA platform backup mechanisms. Integrated priority support and maintenance through SAP and Hitachi covers both SUSE and SAP and includes premium support options. These choices include 24/7 electronic and phone support with industry-leading response times and instant access to all of the latest fixes and patches through a dedicated update channel.

SAP HANA Platform High Availability: System Architecture to Protect Against System Failure

To ensure high availability for SAP HANA, the Hitachi system architecture protects against unplanned downtime caused by system failure, such as server failure or storage outages. It supports business continuity by having a standby node or system take over SAP HANA platform requests. UCP Select for SAP HANA supports SAP HANA high availability with Hitachi Compute Blade server and storage mirroring to enable enterprises to rely on uptime for mission-critical environments.

SUSE Linux Enterprise Server for SAP Applications brings the latest reliability and availability features. It is able to identify innovation proactively and bring enhanced capability to existing and new hardware and processor platforms. SUSE provides recovery solutions in situations that would normally conflict with the operating system where these features were not enabled.

Hitachi UCP Select for SAP HANA maximizes your SAP HANA investment.
SAP HANA Platform Disaster Recovery: Keep SAP HANA Access Available and Protect Data

The SAP HANA platform database holds the bulk of its data in memory. This approach ensures optimal performance, but it still uses persistent storage to provide a fallback in case of failure.

Persistent storage plays a critical role in the protection of SAP HANA data. Therefore, an SAP HANA Disaster Recovery solution must leverage storage replication. It must provide for enterprise-class requirements, such as recovery point and time objectives (RPO and RTO), which is necessary for 24/7, mission-critical environments.

The Hitachi advantage for SAP HANA Disaster Recovery is based on the Hitachi Virtual Storage Platform (VSP) as the SAP HANA persistent storage repository (see Figure 2). VSP works with Hitachi TrueCopy synchronous storage replication software to enable SAP HANA Disaster Recovery. The VSP and TrueCopy combination supports 24/7, mission-critical access of SAP HANA platform in the event the primary SAP HANA system becomes unavailable.

Hitachi Services, SAP HANA Platform “Hands-On” Lab, and Support

Hitachi maintains a “hands-on” lab at the Hitachi Global Competency Center for organizations to perform valuations and testing for SAP HANA platform use cases. Organizations can see applications running on the SUSE Linux Enterprise Server for SAP Applications.

A support request for SAP HANA opened by an organization is sent directly to SAP. At the Hitachi Global Support Center, Hitachi Compute Blade 2000 cluster and Hitachi Virtual Storage Platform maintain a direct link to the SAP support network to route support tickets to and from SAP seamlessly.

The Hitachi Difference: Decades of Experience With Enterprise-Class Hardware

Hitachi UCP Select for SAP HANA offers a scale-out solution that is a continuation of a rich Hitachi history of delivering solutions for mission-critical applications. Hitachi has decades-long experience in designing and manufacturing for mainframe computing.

n-tiered enterprise resource planning applications, and today’s solutions, which are ushering in the era of cloud and mobile computing. Hitachi blade server and storage technology, in the form of Hitachi UCP Select for SAP HANA, represents the power of Hitachi engineering experience. The solution shows the ability of Hitachi to satisfy peak performance demands without compromising high availability, disaster recovery or backup (see Table 1).

Hitachi, SAP and SUSE: A Proven Relationship

Since 1994, Hitachi, Ltd., and its subsidiaries, including Hitachi Data Systems, have had a strategic relationship with SAP that includes the sale, integration and implementation of SAP solutions. During this time, Hitachi has won numerous SAP awards for exceptional customer satisfaction. In 2011, Hitachi became an SAP Global Technology Partner: the highest level of partnership SAP offers. Hundreds of global customers run their businesses on SAP and Hitachi.

Hitachi, SUSE and SAP have strong technology and engineering collaboration based at the SAP labs in the SAP Headquarters in Walldorf, Germany. Here, Hitachi Unified Compute Platform Select scale-up and scale-out configurations that are running on SUSE Linux Enterprise Server for SAP Applications software are optimized for use in the SAP data center.

This collaboration allows for joint engineering and support of SAP HANA platform solutions, which is evident when considering that over 70% of all deployments of SAP on Linux use SUSE Linux Enterprise.
SOLUTION ELEMENTS AND CAPABILITIES

- SAP HANA platform performance and scalability: based on Intel x86 blade servers and Hitachi Compute Blade 2000; leverages symmetric multiprocessing, which bonds 2 or 4 blade servers to act as a single SAP HANA node.
- Up to 16TB of SAP HANA platform memory: 16TB currently supported, with plans to support beyond 16TB.
- SAP HANA platform high availability: support provided by Intel x86 blade server architecture and Hitachi storage.
- Disaster tolerance on Hitachi Virtual Storage Platform: VSP with Hitachi TrueCopy synchronous storage replication software to meet RPO and RTO requirements of 24/7, mission-critical environments; VSP is a SAN storage solution using the Fibre Channel protocol, the most used storage protocol in today’s data centers for mission-critical applications.
- SAP HANA platform backup: supported using SAP-provided tools, 3rd-party backup software, and tape libraries.
- SUSE Linux Enterprise Server for SAP Applications: ensuring high performance of large workloads and 99.999% availability by utilizing the certified High Availability Extension.
- SUSE Linux Enterprise Server for SAP Applications: offers an SAP Installation Wizard, which allows an automated install, reduces installation complexity and decreases the time required to install SAP.
- SUSE Linux Enterprise Server for SAP Applications: features the latest kernel technology available for enterprise Linux. This technology ensures that the operating system takes advantage of the newest performance and reliability features present in the Hitachi Unified Compute Platform offerings.

Organizations can also visit a Hitachi Global Competency Center to view Hitachi Unified Compute Platform Select for the SAP HANA Platform. There, they can perform hands-on testing for evaluation of SAP HANA solutions, UCP and the SUSE Linux Enterprise Server for SAP Applications.

For More Information
Visit www.HDS.com or contact your Hitachi Data Systems representative to learn more about how the converged scale-out configuration of Hitachi UCP Select for SAP HANA can serve your 24/7, mission-critical environments.

### TABLE 1. SPECIFICATIONS FOR HITACHI UNIFIED COMPUTE PLATFORM SELECT FOR THE SAP HANA PLATFORM: A CONVERGED SCALE-OUT SOLUTION

<table>
<thead>
<tr>
<th>Server Model</th>
<th>Hitachi Compute Blade 2000</th>
</tr>
</thead>
<tbody>
<tr>
<td>SAP HANA Platform: Nodes Quantity</td>
<td>2 – 16</td>
</tr>
<tr>
<td>Processors/Cores</td>
<td>Up to 128/1280</td>
</tr>
<tr>
<td>Memory</td>
<td>Up to 16TB</td>
</tr>
<tr>
<td>Storage</td>
<td>Hitachi Virtual Storage Platform</td>
</tr>
<tr>
<td>Ethernet Networking (gigabit Ethernet: GbE)</td>
<td>Redundant and bonded 10GbE 2 x 6720-60 switches for inter-cluster and 2 x 6720-24 switches for HANA customer uplink Management: 1GbE LAN pass-through modules, 1 x 6430</td>
</tr>
<tr>
<td>SAP HANA High Availability</td>
<td>Yes</td>
</tr>
<tr>
<td>Disaster Recovery</td>
<td>Yes</td>
</tr>
<tr>
<td>High-Speed Backup</td>
<td>Yes</td>
</tr>
<tr>
<td>Operating System</td>
<td>SUSE Linux Enterprise Server for SAP Applications</td>
</tr>
</tbody>
</table>