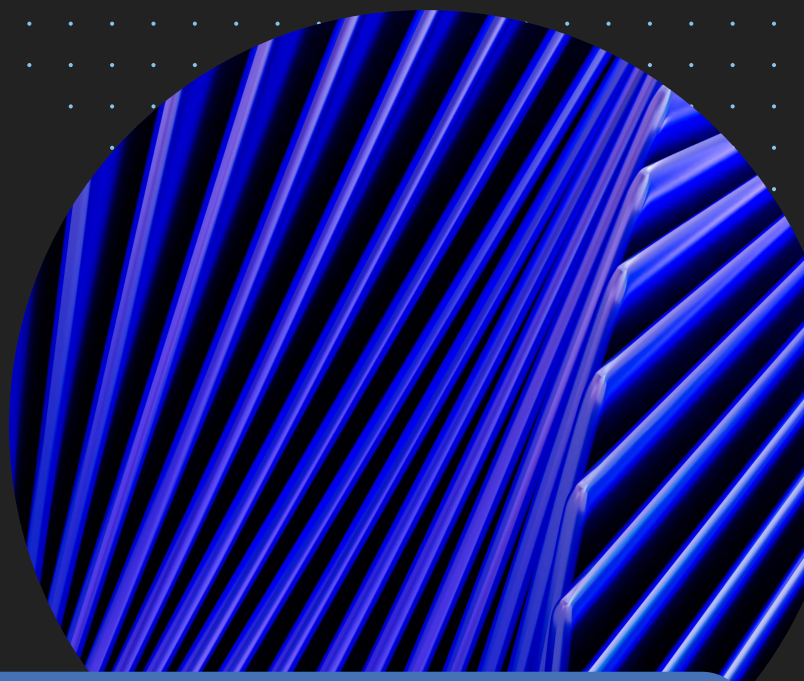*Solution Profile*

Replication and Disaster Recovery With Hitachi Vantara Virtual Storage Platform One Software-Defined Storage

Enterprises Need Resilient Data Protection in a Rapidly Evolving IT Landscape

Modern Data Protection for Hybrid Cloud

Ensure business continuity and compliance standards across diverse infrastructures with a unified, software-defined solution.

Simplified Replication and Disaster Recovery

Achieve rapid recovery and minimize downtime with integrated replication capabilities.

Unlock Data Potential and Accelerate Transformation

Simplify your hybrid cloud management, improve performance and meet governance requirements.

Companies today face a rapidly evolving IT landscape; resilient data protection is no longer a luxury but a necessity. Enterprises are increasingly creating hybrid cloud environments to gain agility and scalability; however, this choice introduces significant challenges. Managing complexity across diverse infrastructures, ensuring consistent application performance, and maintaining strict compliance standards can be difficult. Organizations need solutions that can address these challenges effectively.

Data Replication — RPO and RTO

Data replication is a key component of any data protection and business continuity strategy. Matching your application's tolerance for data loss with the recovery point objective (RPO) and recovery time objective (RTO) is crucial for effective data protection.

RPO defines the maximum acceptable amount of data loss, measured in time, from the most recent recovery point. RPO helps you determine how often you should be doing backups.

RTO, on the other hand, defines the maximum tolerable downtime after the disaster but before business suffers significant consequences. In other words, how long will it take for the application to recover.

While RPO and RTO are distinct, they are closely related. A shorter RTO often requires a shorter RPO. Creating realistic RPO and RTO targets is critical for application disaster recovery planning. Understanding your level of resilience and your business needs in the event of disruptions is often your most critical criteria.
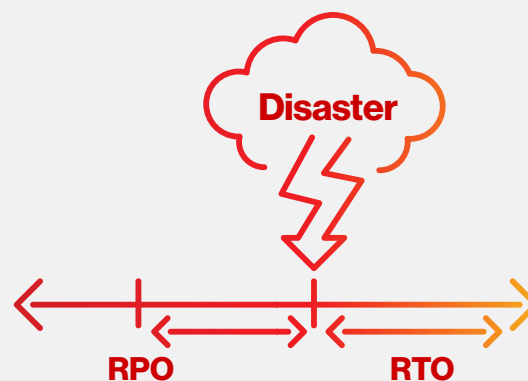

Figure 1. Realistic RPO and RTO targets are critical for application disaster recovery planning.

Achieving effective data protection involves safeguarding data and ensuring rapid recovery and long-term retention to meet compliance and operational needs. Snapshots are vital for capturing point-in-time copies, enabling quick restoration from logical errors or corruption. Unlike replication, snapshots are lightweight and cost-efficient, supporting rapid recovery within minutes and reducing downtime.

Archiving snapshots extends data retention, enabling you to store infrequently accessed data cost-effectively for regulatory compliance or audit purposes. Combining snapshots, archiving and replication helps you meet RPOs, RTOs and compliance standards, while optimizing storage costs and operational efficiency.

Virtual Storage Platform One: A Modern Approach to Replication

Hitachi Vantara Virtual Storage Platform One Software-Defined Storage (VSP One SDS) offers a modern approach to data replication: Its software-defined storage approach is designed for agility and flexibility in today's hybrid cloud environments.

VSP One SDS allows you to extend your storage infrastructure and replication services across on-prem, private cloud and public cloud environments, leveraging commodity x86 hardware and cloud native storage to reduce costs while maintaining enterprise-grade performance. This software-first approach offers deployment flexibility, so you can adapt to changing application and business needs without being held captive by traditional hardware limitations.

VSP One SDS uses asynchronous bidirectional replication to allow data to flow in both directions between storage locations with a slight delay, ensuring business continuity without sacrificing performance. This method enables each site to operate independently while maintaining near-real-time data synchronization, which makes it ideal for geographically distributed environments and hybrid cloud deployments.

The native asynchronous bidirectional replication of VSP One SDS provides data protection and disaster recovery. This feature replicates data between two sites and minimizes the impact on application performance.

VSP One SDS lets you grow your storage easily as your data and application needs change. in addition to scalability, it also allows for simplified procurement strategies and gives you the flexibility you need for cloud implementation or repatriation. This combined efficiency ensures you can adapt to changing requirements without major disruptions while keeping your environment ready for a hybrid future.

Hitachi Polyphase Erasure Coding (HPEC), a Hitachi patented feature, enhances both performance and data protection to meet the requirements for mission-critical

workloads. Its modular design supports modern and cloud applications, while also enabling storage data locality and providing linear performance and capacity scaling. Together, these features ensure fault isolation and resilience for your most important data.

Automated failover and failback capabilities streamline the disaster recovery process, minimizing manual intervention and ensuring rapid recovery. This automation reduces the risk of human error during crisis situations and significantly improves recovery time objectives.

By leveraging x86 commodity hardware and cloud native storage in addition to optimizing bandwidth usage, VSP One SDS delivers cost-effective replication without compromising on performance or reliability. This approach provides you with enterprise-grade capabilities while helping you manage your IT budget more effectively.

VSP One Integration and Management

VSP One SDS is part of Virtual Storage Platform One, designed as a simple, secure and sustainable data platform. VSP One includes support for, block, file and object data types. By supporting all three data storage architectures, you can leverage your existing infrastructure investments while extending data protection capabilities to new environments like hybrid cloud.

Hitachi offers VSP 360, a cloud-based SaaS (software-as-a-service) solution, to support VSP One by providing unified management and monitoring across diverse storage environments. VSP 360 provides centralized health reporting and risk detection for all storage assets, allowing you to proactively identify and mitigate potential issues before they impact operations. This unified approach simplifies storage management, reduces overhead and empowers your IT teams to make informed decisions, optimize resource allocation and maintain peak performance across your entire VSP One infrastructure.

Use Cases

VSP One SDS supports use cases that enable you to optimize your data infrastructure and maximize application performance. Three prominent use cases include disaster recovery, data migration and test/dev environments.

- **Disaster Recovery:** Protecting mission-critical applications and data from outages is required for ensuring application performance. VSP One SDS allows organizations to design and implement disaster recovery strategies by replicating data asynchronously between sites, minimizing data loss and downtime in the event of a disaster. Automated failover capabilities further streamline the recovery process, ensuring rapid restoration of services.

- **Data Migration:** Seamlessly moving data between environments is essential for organizations adopting hybrid cloud strategies. VSP One SDS simplifies data migration by providing a flexible and efficient platform for replicating data between on-prem and cloud environments. This enables organizations to migrate workloads to the cloud without disrupting business operations, reducing the time and cost associated with data migration projects.

- **Application Dev and Test:** Creating isolated environments for application development and testing accelerates innovation and reduces the impact on production deployments. VSP One SDS enables organizations to create isolated dev and test environments by replicating production data to separate storage volumes either on-prem or in the cloud. This allows developers to test new applications and configurations without impacting production systems. Support for APIs for CI/CD applications can further accelerate development cycles and improve the quality of software releases. CI/CD pipelines allow for automation, policies and governance of data movement, ensuring that every step of the software delivery process, from code integration to deployment, is efficient, secure and compliant with organizational and regulatory standards.

Summary

VSP One SDS offers a complete software-defined solution with integrated data protection and replication. The replication capabilities improve application performance with automated failover and streamlined disaster recovery, and simplified management through its integration with VSP 360. By simplifying hybrid cloud management, ensuring consistent application performance and facilitating governance and compliance, VSP One SDS enables organizations to unlock the full potential of their data, including AI workloads and accelerate their digital transformation.

To learn more about VSP One SDS and how it can transform your data protection strategy, please visit https://www.hitachivantara.com/en-us/products/storage-platforms/software-defined-storage or contact us to request a demo. Discover how VSP One SDS from Hitachi Vantara can help you navigate the hybrid cloud landscape with confidence and unlock the full potential of your data.

Contact us →

About Hitachi Vantara

Hitachi Vantara is transforming the way data fuels innovation. A wholly owned subsidiary of Hitachi, Ltd., we're the data foundation the world's leading innovators rely on. Through data storage, infrastructure systems, cloud management and digital expertise, we build the foundation for sustainable business growth.

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