

VSP One Block High-End Storage: The Latest Storage From Hitachi

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Agenda

Development Drivers

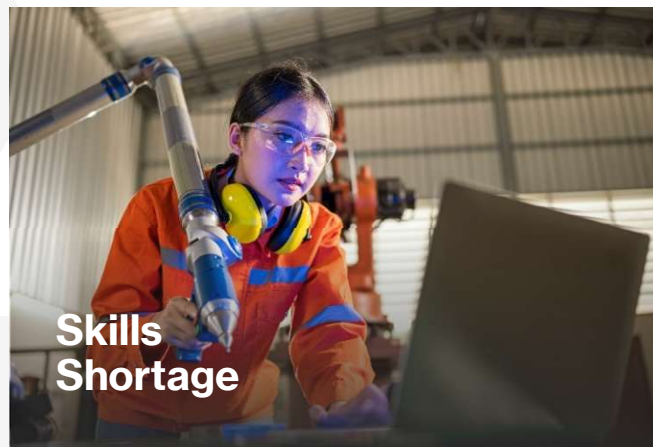
VSP One Block High-End – What's new
Eco-System





DEVELOPMENT DRIVERS

Development Drivers – Large enterprise challenges



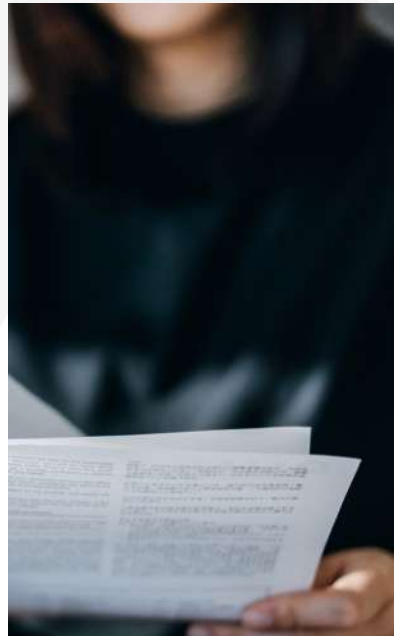
Development Drivers – Installed Base



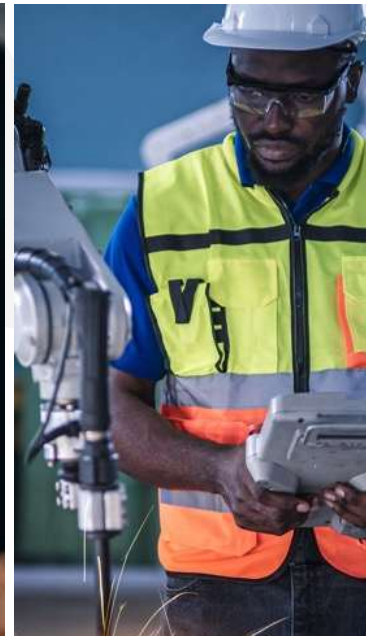
9 out of 10
Top Banks



8 out of 10
Top Health Providers



10 out of 10
Top Insurers



9 out of 10
Top Manufacturers



10 out of 10
Top Telcos



VSP ONE BLOCK HIGH-END – WHAT'S NEW

VSP One Block High-End – What's New



Massive Data Growth

- New Hardware for higher comp ratio
- **Future DC ready - 64G FC, 100G TCP, zHyperlink (Future Enhancement)**
- **Up to 50M IOPs & 36microseconds latency (Open Systems)**

Sustainability

- **Use of Recycled Material**
- **Power Saving Feature**

Data Protection

- Ransomware Solution - Immutable snapshot of TIA for cybersecurity threats
- 8-9's availability, × 4 resilient architecture

Skill Shortage

- Common VSP One Admin – Modern GUI / API for embedded management
- **Reinforce security by changing from Windows based architecture to Linux**

Regulation & Security

- **FIPS 140-3 level2, Hardware root of trust (NIST SP800-193), Secure Software Development Framework (SSDF-NIST SP800-218) for security**
- **Multi factor authentication (Future enhancement)**
- Comply with Common Criteria (US)

Replication & Compliance

- **Symmetric 4DC Solution for Open & MF**
- **Symmetric 6DC Solution for MF (Future enhancement)**

VSP One Block High-End – What's New

Massive Growth :

Third generation of full NVMe backend

SSD scaling from 3.8 to 60TB

Higher internal bandwidth :

- PCIe Gen 5 backplane
- PCIe Gen 4 I/O boards
- DDR5 cache memory
- Intel Sapphire Rapids processors

Faster FICON 32Gbit

improved throughput



VSP One Block High-End – What's New

Data Protection :

Third generation of Hitachi storage with 8*9s of Availability

Like VSP 5000 it is the only storage subsystem currently available on the market with a true 8*9s of availability (ie without the need of 2 different flavors of GDPS to reach 8*9s of availability)

Would be 10*9s of availability for selected applications with GDPS HM/MM & GDPS CA

Even during a microcode upgrade this level of availability is maintained

There is no performance impact due to loss of memory during a microcode upgrade, all cache available

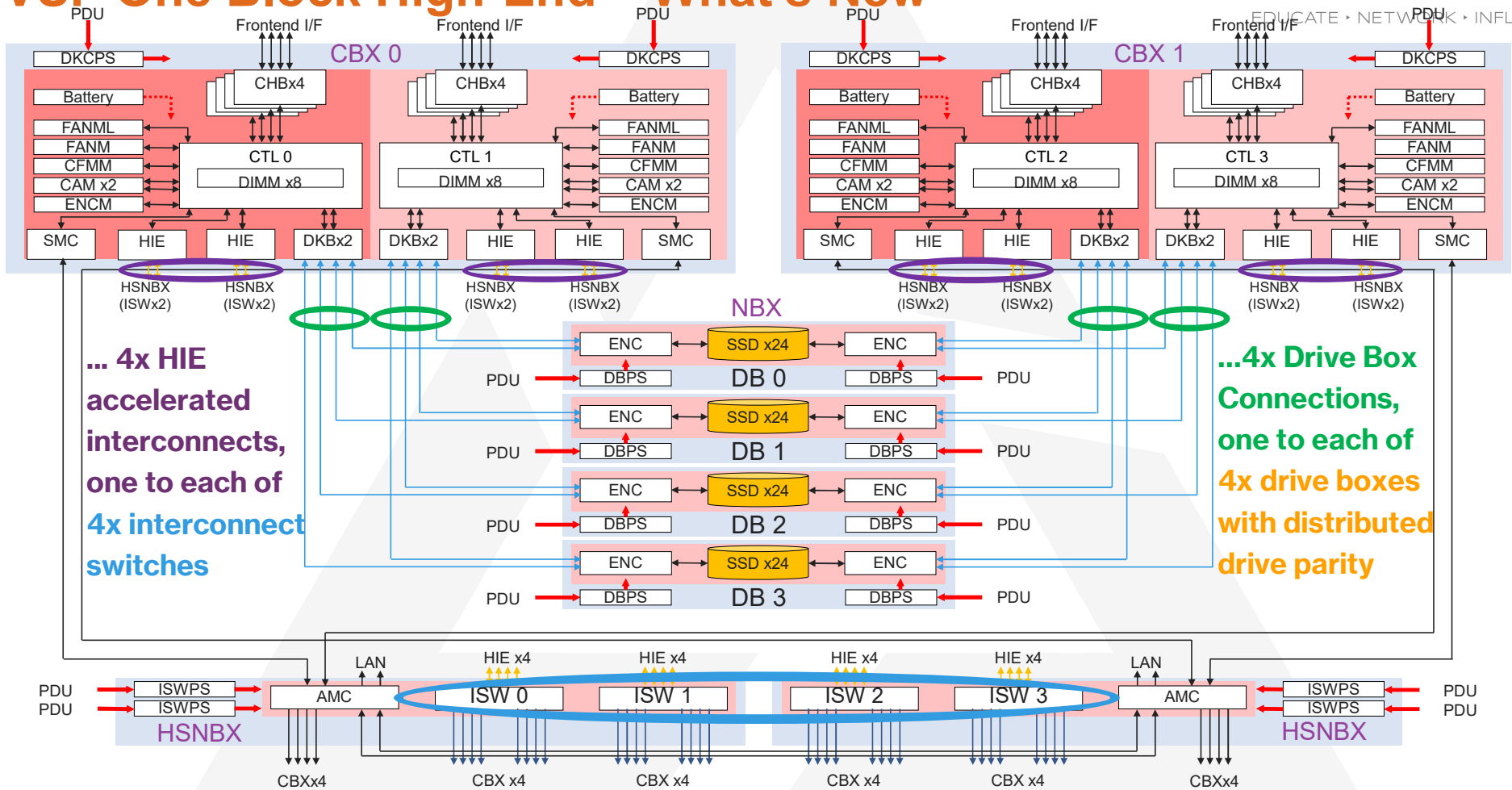
Minimum performance impact as Microcode can be loaded to up to one processor at the time

100% data availability warranty

Hitachi is providing non-disruptive storage solutions since 1995

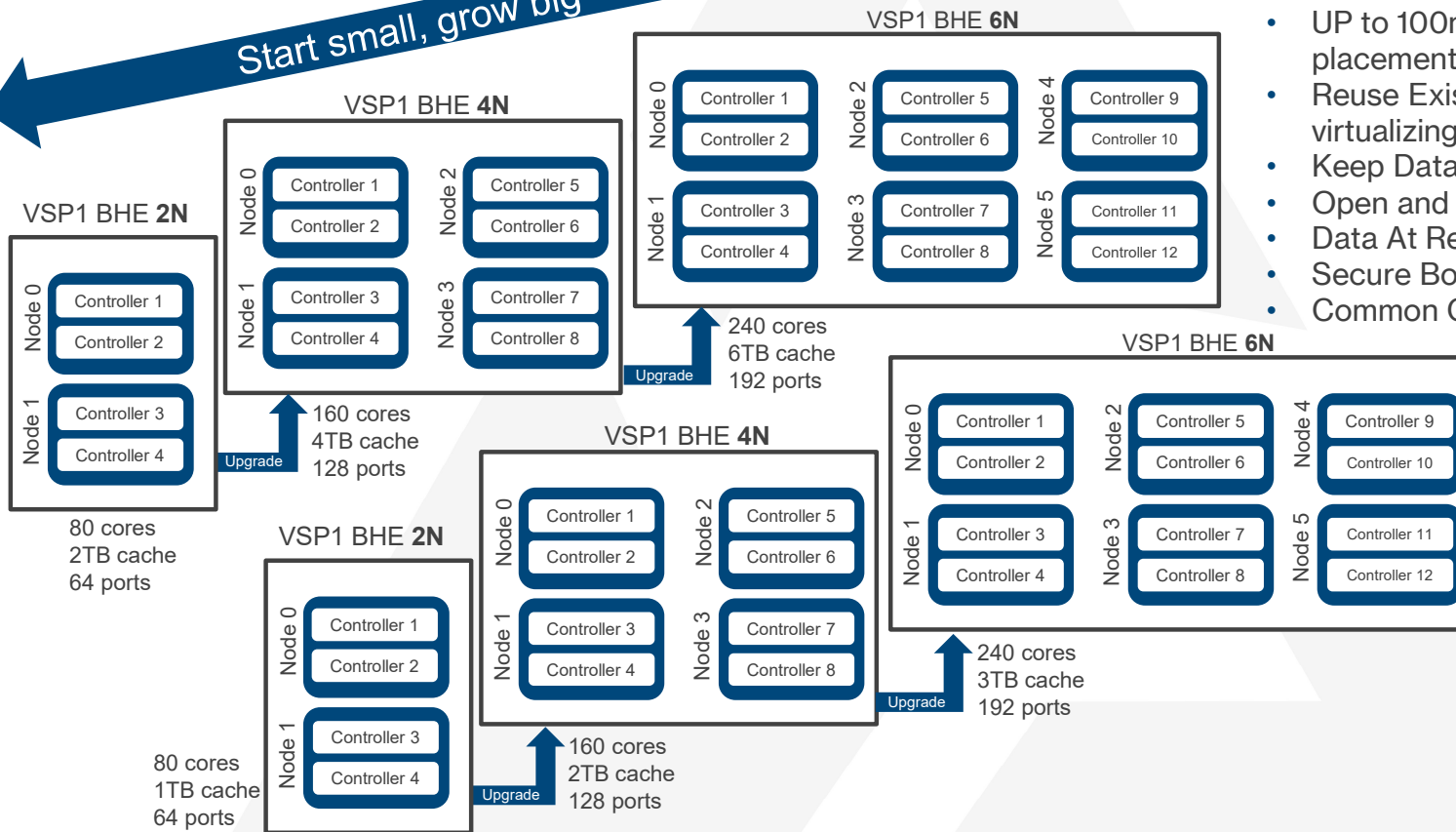


VSP One Block High-End – What's New



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VSP One Block High-End – What’s New



- UP to 100m dispersed Component placement
- Reuse Existing Storage Assets by virtualizing them with the VSP1 BHE Series
- Keep Data in Place while Modernizing
- Open and Mainframe support
- Data At Rest Encryption FIPS 140-3 level 2
- Secure Boot, Hardware root of trust
- Common Criteria (ISO 15408)

VSP One Block High-End – What's New

Regulation and Security :

Secure Software Development (NIST SP800-218)

FIPS 140-3 lvl 2

Hardware Root of trust (NIST SP800-193)

Common Criteria

IFCES compatible (IBM requirement : “All FICON connected storage systems introduced after December 31, 2024 will be required to support IFCES”)

Data at rest encryption with integrated Key management server integration



VSP One Block High-End – What's New

Regulation and Security :

Zero trust architecture cyber resiliency solution

Actions with critical impact on cyber resiliency solution requires two user acknowledgement

Cyber resiliency solution management does not need to be given to MF team

Taking consistent images is transparent to production as there is no freeze

Fortress does not rely upon source storage availability



VSP One Block High-End – What's New

Regulation and Security :

Fortress can be up to 100km away from source/verification/restore storage

Data can be restored on a different storage (up to 100km away)

Up to 1022 immutable images

Cyber security with Maintegrity FIM+

Fortress on the same storage as the data source

Linux Management Server

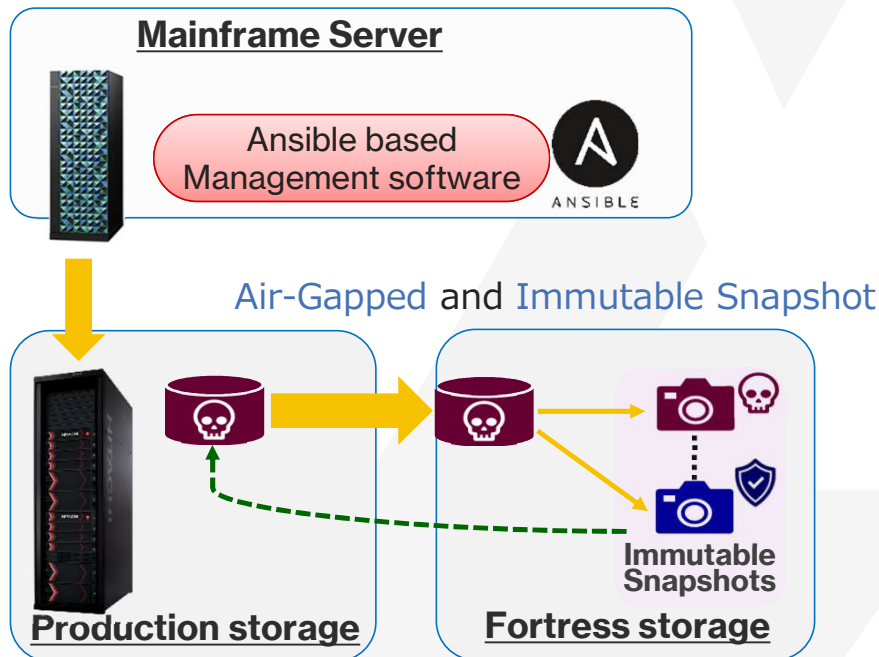
Ansible Template & GUI based scheduler engine



VSP One Block High-End – What's New

Ransomware Protection solution with simplified deployment and operation.
Ensures recovery, keeping mission critical systems operational.

Simplified Ransomware protection solution



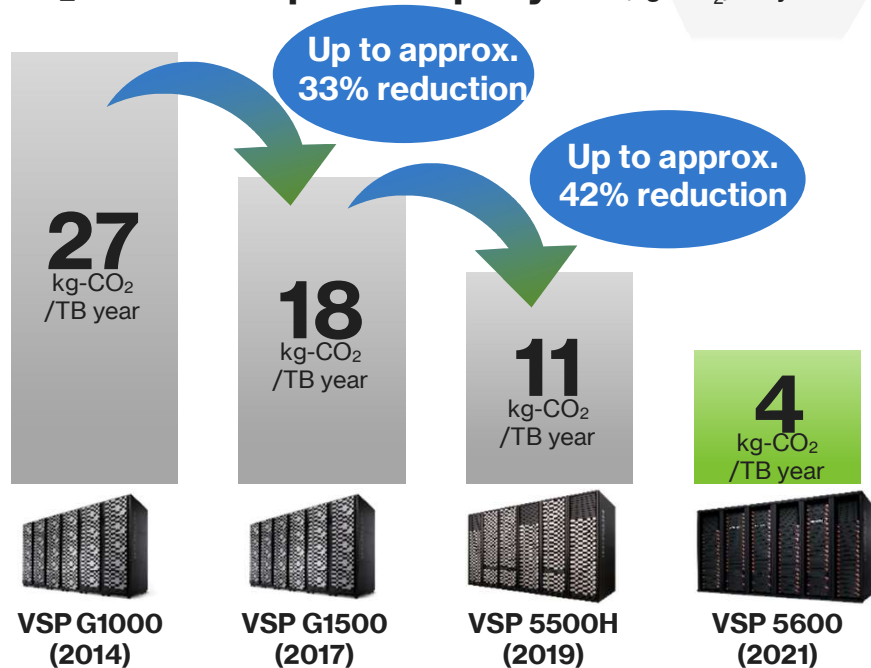
- **Provide Air-Gapped and Immutable Snapshots by ThinImage Advance**
- **More recovery points and short RPO* is enabled by rapid copy capability**
- **Simplified deployment and operation by Ansible for Easier and cost-effective deployment**

*RPO: Recovery Point Objective

VSP One Block High-End – What’s New

Eco-friendly storage achieves ongoing **30-40%** reduction of CO₂ emissions

● CO₂ emissions per 1 TB per year (kg-CO₂/TB year: CFP)



Registration numbers VSP G1000: CR-CI05-14003-B, VSP G1500: CR-CI05-17010, VSP 5500H: CR-CI06-20015, VSP 5600: JR-BF-22002C, (<https://www.cfp-japan.jp>) List of products with certified CFP declarations (<https://ecoleaf-label.jp>) List of products with certified CFP declarations. CFP certification for VSP 5600 was obtained in SSD configurations.

Adoption of high-capacity SSD in enterprise models

Adoption of more efficient power supplies “80 PLUS”



Development and Enhancement of Hitachi’s unique functions

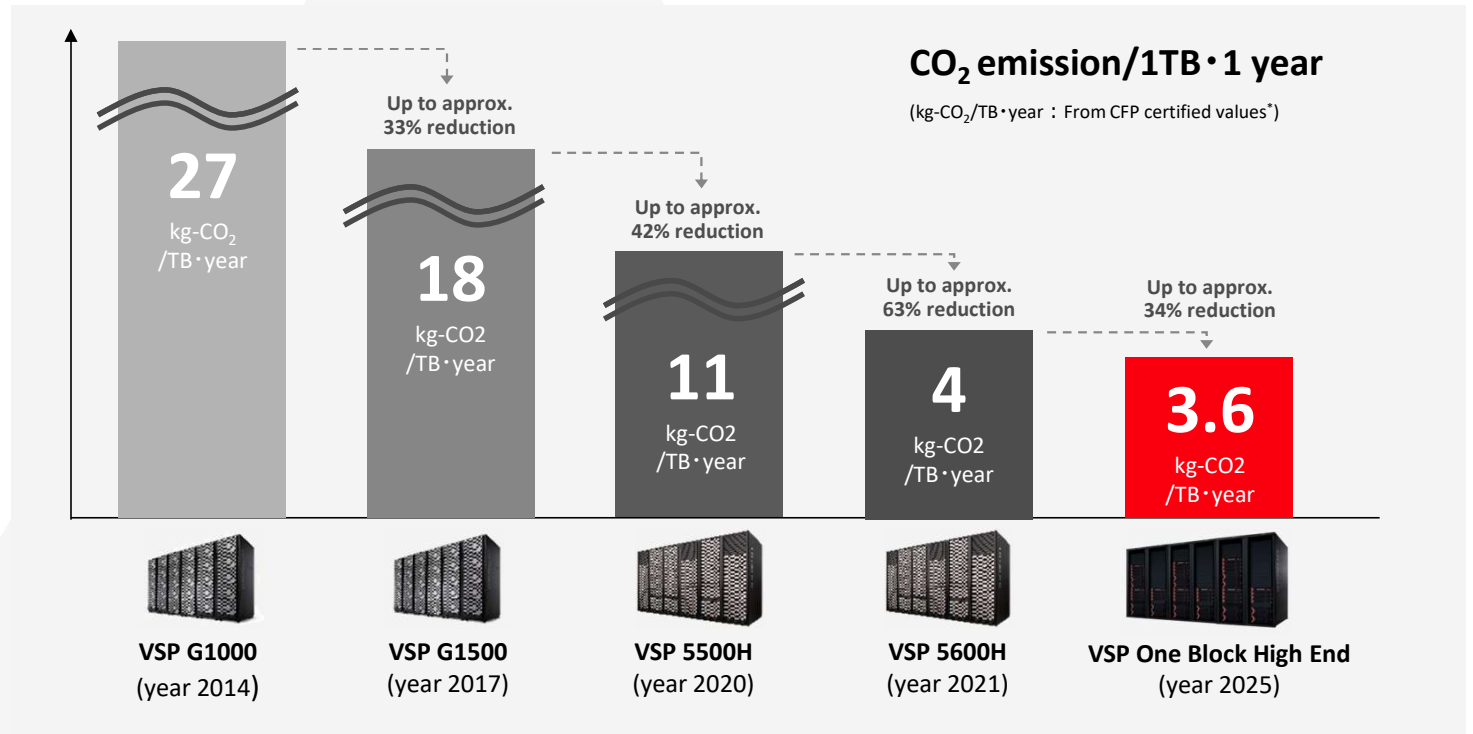
- Data Compression Feature
- Features for continued use of existing drives



Third-party verified for environmental impact by Japan’s EPD (Environmental Product Declaration) Program operated by SuMPO (Sustainable Management Promotion Organization) - <https://ecoleaf-label.jp/en/>

VSP One Block High-End – What’s New

- Over the last 12 years, each new generation of our storage products is reducing the CO2 emissions by 30-40%.
- 80% of the emissions relate to HOW the product is used
- So the power, cooling and floor spaced used in the data center.
- Data Reduction technology reduces those emissions even further by compressing data and using less arrays.
- These innovations are helping our customers meet their sustainability goals and KPIs



* CFP: Carbon Footprint of Products
VSP: Hitachi Virtual Storage Platform

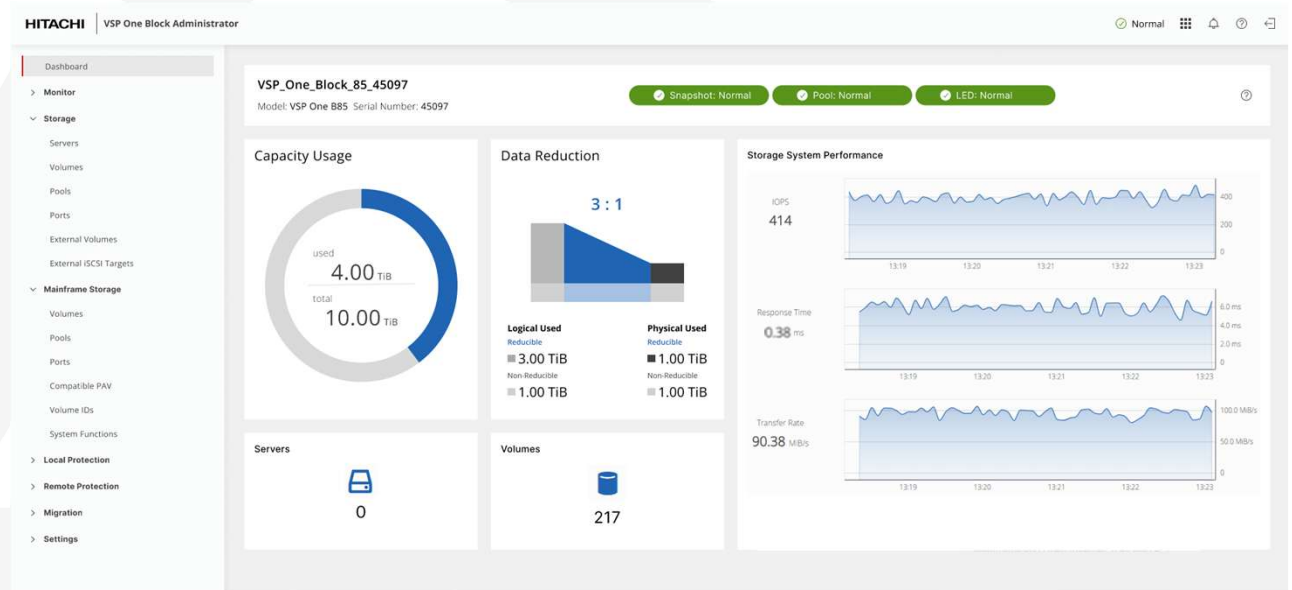
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VSP One Block High-End – What's New

Skill Shortage :
Simplified User Experience



VSP One Block High-End – What's New

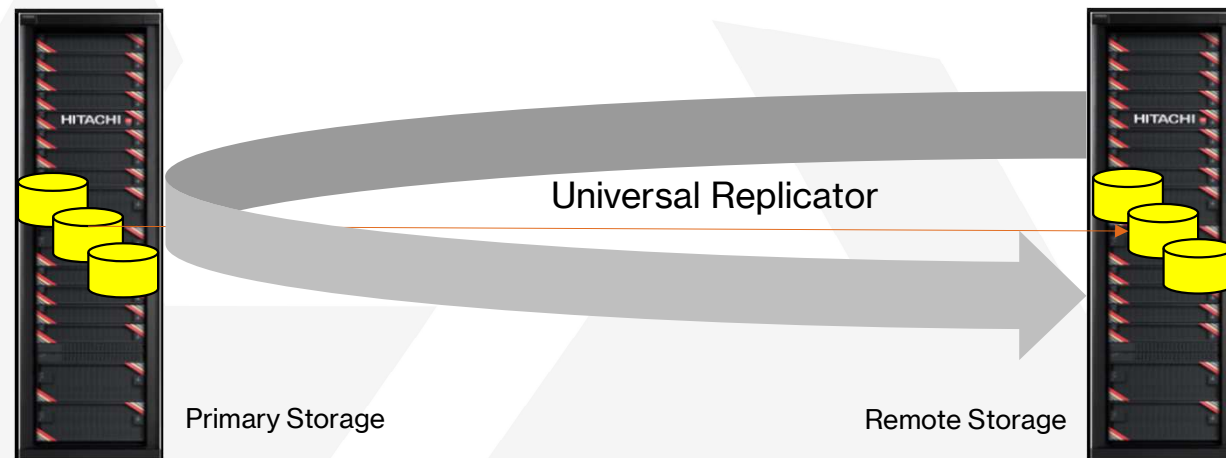
Replication & Compliance :

Internal : ShadowImage, FlashCopy & FlashCopy Space Efficient

Synchronous replication compatible to IBM MM & MTMM

Asynchronous replication : Hitachi has lowest RPO of the industry, pull technology with remote site always consistent, and no freeze needed to get a consistency point

2DC, 3DC & 4DC with Delta Resync, integration with GDPS



VSP One Block High-End – What's New

IBM GDPS Qualifications :

GDPS MM qualified

GDPS MM w 3DC Delta Resync qualified

GDPS MTMM qualified

GDPS MTMM w HUR qualified

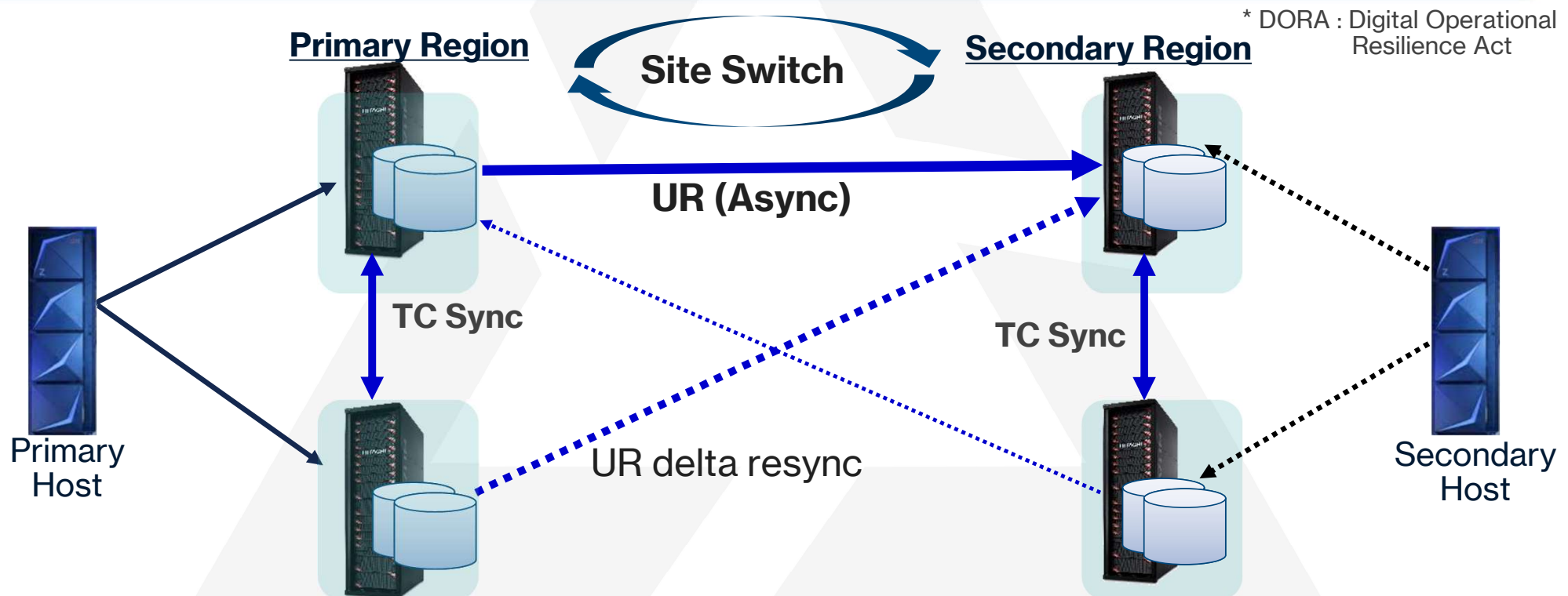
GDPS 4DC with HUR qualified

Qualification letter published and available from IBM & Hitachi



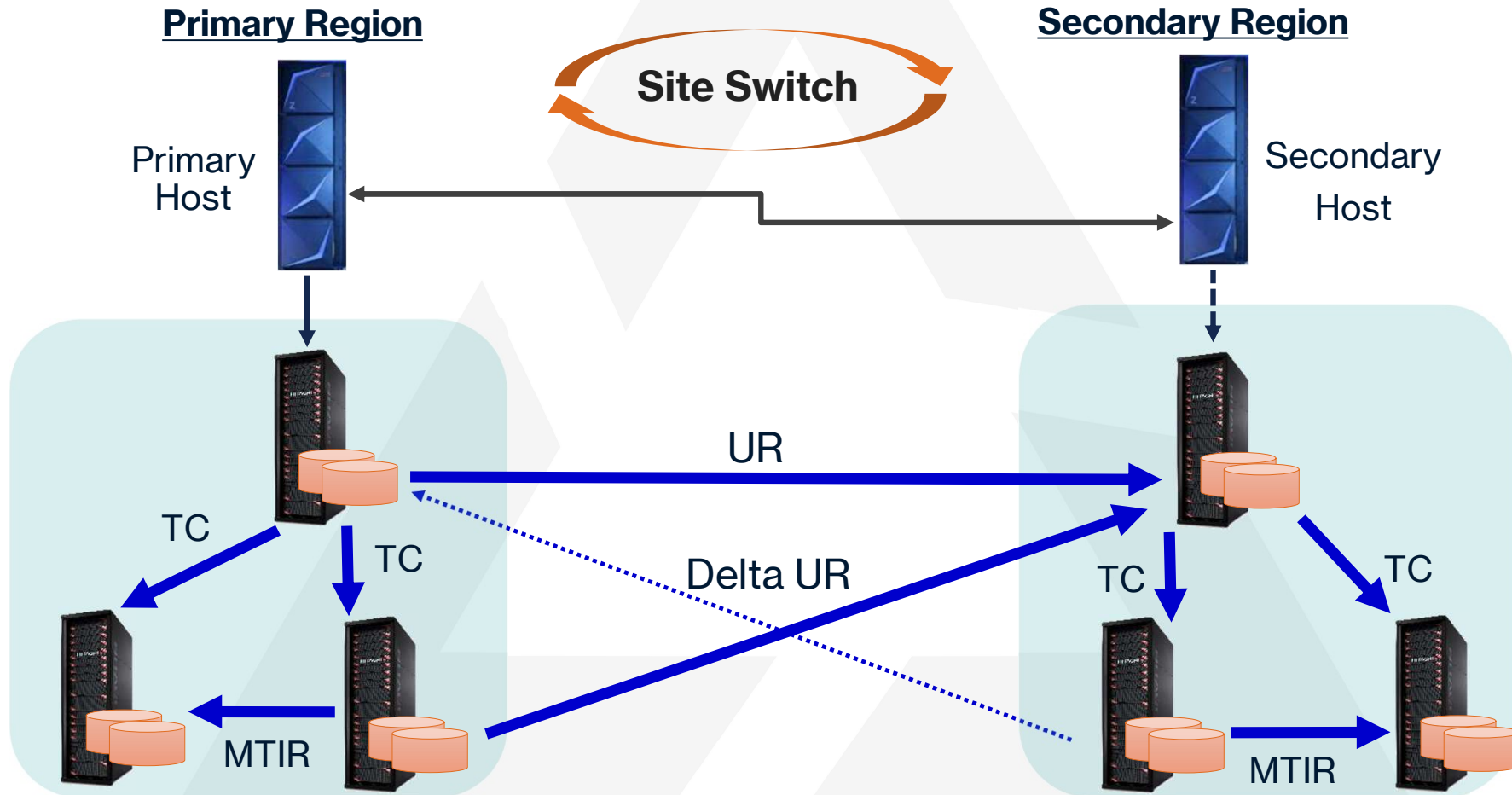
VSP One Block High-End – What's New

For DORA* regulation compliance, the 4DC solution provides High-Availability and Redundancy even if the primary site fails.



* DORA : Digital Operational Resilience Act

VSP One Block High-End – What's New



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