DELL Technologies

Dell PowerMax vs. Hitachi VSP 5000

Dell PowerMax 2500 / 8500		Hitachi VSP 5000
Superior data protection with local protection combined with SRDF remote RAID Remote RAID with SRDF offers a mirror of the source volumes replicated to a target array, which can be locally protected with RAID 5.		**High availability pf data on Hitachi arrays require RAID 1, or 6 even with remote replication** To sustain more than a single drive failure, Hitachi arrays must use RAID 1, or 6 even when data is remotely replicated.
Highly efficient asynchronous replication SRDF/Async leverage Delta Sets in cache which do not cause performance degradation. Write-folding and native compression reduces bandwidth requirements. Replication traffic can go through native IP or FC ports and replication can switch from async to sync without having to replicate new data set. Available native 10GbE / 25GbE replication ports to connect directly to customer's to LAN/WAN.		**Unoptimized and complex asynchronous replication** Hitachi VSP 5000 uses Journal Volumes to capture updates to be replicated, causing more backend I/Os which may impact performance; write-order fidelity sends more data across the wire. No native compression for remote replication. When using FC ports for replication, customer must have FC-IP blades in SAN directors/switches, adding costs. If using iSCSI ports for remote replication, the LAN/WAN has to be set up for iSCSI trafiic. Hitachi recommends using iSCSI to connect to hosts as well or change the timeout value on the FC ports to exceed the iSCSI timeout value, adding complexity.
Superior Metro protection for high availability requirements SRDF/Metro is simple to set up, manage and operate and keeps HA protection active in more situations such as performing an online device expansion; the Witness VM reduces infrastructure costs.		**Metro protection is complex and only meets basic needs** Hitachi's Global Active Device is complex to set up, manage and operate; expanding a volume requires protection interruption. Requires a 3rd party array or an iSCSI LUN on a server to act as the quorum.
Efficient Inline Data Reduction Data reduction is hardware offloaded for compression and deduplication to avoid performance impact. 4:1 DRR guarantee for open systems, 3:1 for mainframe[1].		**Recommends running Adaptive Data Reduction post-process** Only compression is hardware-accelerated, deduplication is not and can cause impact. Hitachi recommends running Adaptive Data Reduction in post-process and requires temporary space until data has been reduced and the garbage collection process has recovered the capacity. No mainframe DRR.
Superior snapshot technology for better data protection and performance Support for up to 65M snaps using Redirect-on-Write enables many more snaps per volume without performance impact.		**Snapshot technology with limitations and performance impact** Support for 1M snaps using a combination of Copy After Write and Copy on Write allows fewer snaps per volume and can impact array performance.
World's most secure mission critical storge[2] Security includes Hardware Root of Trust, Secure Boot, Multi-factor authentication, security anomaly detection, RBAC, and FIPS 140-2 validation.		**Less Robust Security** Volumes are selectively encrypted by customer so there are no guarantees that all volumes in a pool are encrypted. FIPS 140-2 validated, but backup of encryption keys must be performed manually or planned (if using a Key Manager), increasing management complexity.
Massive workload consolidation Native file, block, vVOL, mainframe, and IBMi in a single platform without additional gateways or software.		**External hardware/software for NAS and vVOL management increases complexity** File requires external HNAS gateways; VASA provider requires external infrastructure that must be clustered for high availability. vVOL async replication not supported for SRM. ISeries support is provided only through IBM PowerVM (VIOS), and does not support the array's native local and remote replication features.
Flexible RAID Flexible RAID provides more usable storage capacity by leveraging granular storage media and the ability to add a single drive at a time to increase overall storage capacity.		**Traditional RAID groups and dedicated spares** Must grow capacity in RAID groups, LUNS from RAID groups create potential hot spots. During a drive rebuild, only drives in the affected RAID group are active; remaining drives in other RAID groups are not involved in the rebuild process.
NVMe/TCP host connectivity with auto discovery Achieve great performance with NVMe/TCP and Dell SmartFabric storage Software (SFSS) the industry's first automated end-to-end NVMe/TCP deployment[3] utility for storage resource automation and automated discovery.		**Lacks support for NVMe/TCP and auto discovery capabilities** The VSP 5000 family only supports standard protocols such as iSCSI, FC (including NVMe-FC) and Mainframe (Ficon).

[1] Storage Data Reduction Guarantee: Requires customer signature and purchase of ProSupport Plus or ProSupport with Mission Critical. Applicable products include All-Flash Storage products only. See Terms and Conditions.
[2] Based on Dell internal analysis of cybersecurity capabilities of Dell PowerMax versus cyber security capabilities of competitive mainstream arrays supporting open systems and mainframe storage, February 2022.
[3] Based on Dell analysis comparing primary PowerMax NVMe/TCP tool (SFSS) usages vs competitive storage solutions, March 2022

Comparison based on publicly available information, July 2022.