Simplify data protection with HPE MSA Storage and HPE GreenLake for Backup and Recovery

Customer challenges

All businesses, great and small, face common challenges. Some are as old as the process of storing data itself, while others are modern threats. By now, exponential data growth is a well-understood, unwavering, and multi-faceted trend. Data defines companies, and the ability to access current and historical information ties into business goals and legal requirements. To make matters more complicated, in recent years, companies have been under increasing threat from malicious groups aiming to extort via ransomware and other nefarious schemes, making protecting and recovering data even more critical and time-sensitive.

As companies further modernize their cloud, data can quickly find itself in multiple disparate locations without a common strategy and method to protect it. Given the complexity, it's unsurprising that many businesses do not implement or test backup solutions, and fewer simulate recovering from a disastrous event. Instead, those with a solution bear the avoidable risk of disconnected and multi-vendor solutions and processes.

Ultimately, finding a cost-effective, simple solution to understand, deploy, and maintain is critical to all organizations. Additionally, the time to recover from an unplanned outage is paramount to ensure business continuity.

HPE MSA Storage and HPE GreenLake for Backup and Recovery

Together, HPE MSA Storage and HPE GreenLake for Backup and Recovery work as a perfect solution to protect on-premises VMware® virtual machines (VMs), Microsoft SQL Server database, and cloud-native workloads (such as Amazon Elastic Block Storage [EBS] volumes, EKS namespaces, EC2 instances, and Relational Database Service [RDS]). HPE MSA Storage provides exceptional cost ratios to usable capacity and performance, making it an ideal platform for backup applications requiring predictable and consistent performance.

In case of an unintended deletion, data loss through an infrastructure outage, or a ransomware attack, HPE GreenLake for Backup and Recovery helps ensure data can be rapidly recovered to a known good point in time, in line with the service-level commitment to the organization. HPE GreenLake for Backup and Recovery is administered via a secure single cloud console that offers Global Protection Policies to help eliminate data silos and multiple administrative touchpoints and includes built-in protection from ransomware and other threats.

HPE GreenLake

A single cloud console manages all your backup and recovery operations. This is intuitive and extremely easy to use. Figure 1 provides a quick view of the dashboard that shows the protection status and the need to help ensure protection.
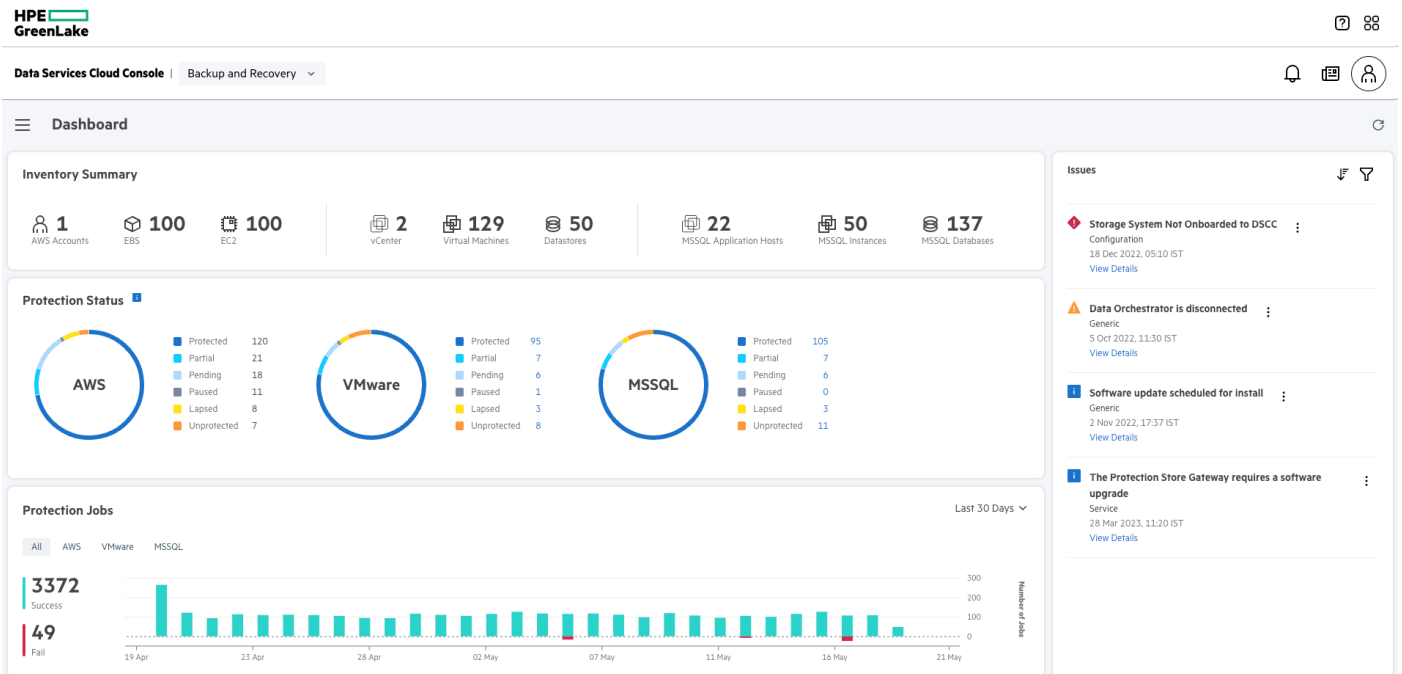
Simplifying hybrid cloud protection

Figure 1. Single cloud console to protect your assets with HPE GreenLake for Backup and Recovery

Effortless protection for on-premises and cloud-native workloads

Protect on-premises VMware VMs or Microsoft SQL Server databases running on any storage array or cloud-native workloads such as Amazon EBS, EKS, EC2, and RDS.

Define your backup service-level agreements (SLAs) across on-premises and cloud-native workloads for consistent protection with a single Global Protection Policy.

Secure by design

Maintain air-gapped backups and use in-built security such as configurable backup data immutability, dual authorization, and encryption (at rest and in flight) to keep your data secure. Mitigate disasters rapidly using HPE array-optimized snapshots of VMs, applications, or datastores when utilizing HPE GreenLake for Block Storage, HPE Alletra, HPE Primera, or HPE Nimble Storage Gen5 storage devices that are managed using the HPE GreenLake cloud portal.

Highly efficient data protection

Leverage HPE StoreOnce Catalyst protocol offering up to 8x better storage efficiency[1] than other similar solutions. With this service, you have the flexibility to select either a pay-as-you-go* experience — or a fixed commitment for 1–5 years to get the lowest unit price. There are no additional complex licenses, cloud infrastructure to manage, hidden data egress charges, forecasting, and lack of pricing visibility.

Simple unified management and agentless deployment

Manage both on-premises and cloud-native workloads through a single unified management console. Agentless on-premises deployment allows for automatic, timely upgrades without causing any disruption or downtime. The on-demand cloud-native service helps eliminate complexity, freeing you from the day-to-day hassles of managing your backup infrastructure.

[1] Up to 8x better storage efficiency: Based on HPE internal testing conducted in October 2022 comparing HPE GreenLake for Backup and Recovery with four competing on-prem and AWS cloud-native backup solutions.

* May be subject to minimums or reserve capacity may apply.

Cost-efficient hybrid cloud data protection

The architectural diagram in Figure 2 depicts the components that comprise HPE GreenLake for Backup and Recovery when deployed with HPE MSA Storage. There are no additional services to deploy to protect cloud-native resources such as Amazon EBS, EC2, and RDS.

Two components serve to protect on-premises workloads: **Data Orchestrator** (the connectivity between Data Services Cloud Console [DSSC] and VMware vCenter®), which is a proxy for on-premises components back to DSCC; and the **Protection Store Gateway (PSG)**, which deduplicates, compresses, and encrypts the backup data before being written to the on-premises or cloud protection storage.

VMware Changed Block Tracking (CBT) eliminates the need for array-based snapshot integration and allows rapid backup and recovery to and from HPE MSA Storage. Hewlett Packard Enterprise recommends using a single HPE MSA Storage array for PSG. However, a single MSA can host two pools for customers with minimal budgets, each with its own disk resources. In this way, a single HPE MSA Storage system can allocate unique resources to serve the PSG role and regular application data simultaneously. When designed this way, HPE highly recommends implementing a hybrid configuration of a local protection store and HPE cloud-hosted storage.

HPE GreenLake for Backup and Recovery
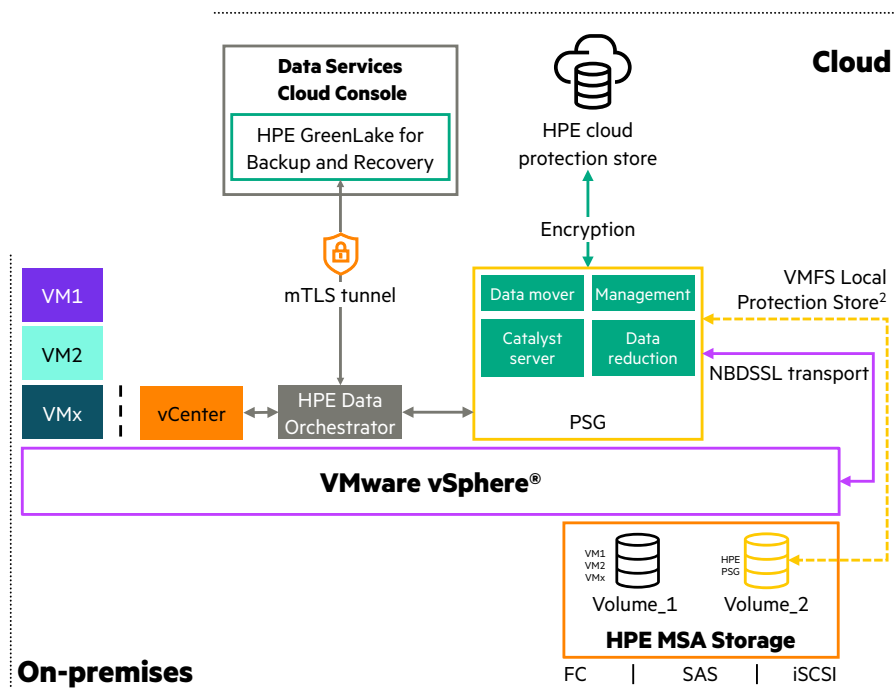### Architecture: On-prem VMware and HPE MSA Storage

Figure 2. Example architectural diagram for HPE GreenLake for Backup and Recovery with HPE MSA Storage

[2] For the PSG, HPE recommends independent storage but supports collocation with protected VMs on the same storage array.

Backup

- **VMware CBT backups:** Supports N-2 VMware versions. Default PSG is HPE StoreOnce Catalyst, offering up to 8x better data reduction in data storage and data isolation for backups

- **Cloud-native backups:** Backup AWS EC2 instances, EBS volumes, and EKS namespaces using native Amazon snapshots and/ or HPE cloud protection store. Ability to orchestrate snapshots of Amazon RDS instances within your AWS account and recover from that snapshot

Security

- **Encryption:** All data, at rest and in flight are encrypted (AES 256). Data written to HPE cloud protection store is encrypted and sent over the Transport Layer Security (TLS) link

- **Immutability:** Data copies cannot be changed by anyone during the configured retention period

- **Dual authorization:** Destructive operations require escalations and approval, providing another layer of security against bad actors

- **Air-gap approach:** Enables physical disconnection between the production environment and backup copy

- **3-2-1 backup rule:** 3 copies of data, 2 different types of media, with one copy online and off-site

Recovery and retention

- **On-premises protection store:** Restore VMs or Microsoft SQL Server database from on-premises protection store

- **HPE cloud protection store:** Cloud storage managed by HPE for cost-effective off-site recovery points for on-premises VMs, databases, and Amazon EC2/EBS/EKS assets

- **Retention policies:** Up to three years of retention for local backups and up to seven years in the HPE cloud protection store. Create protection policies that can be applied across various sets of data globally, which can include snapshots, on-prem, and cloud backups

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