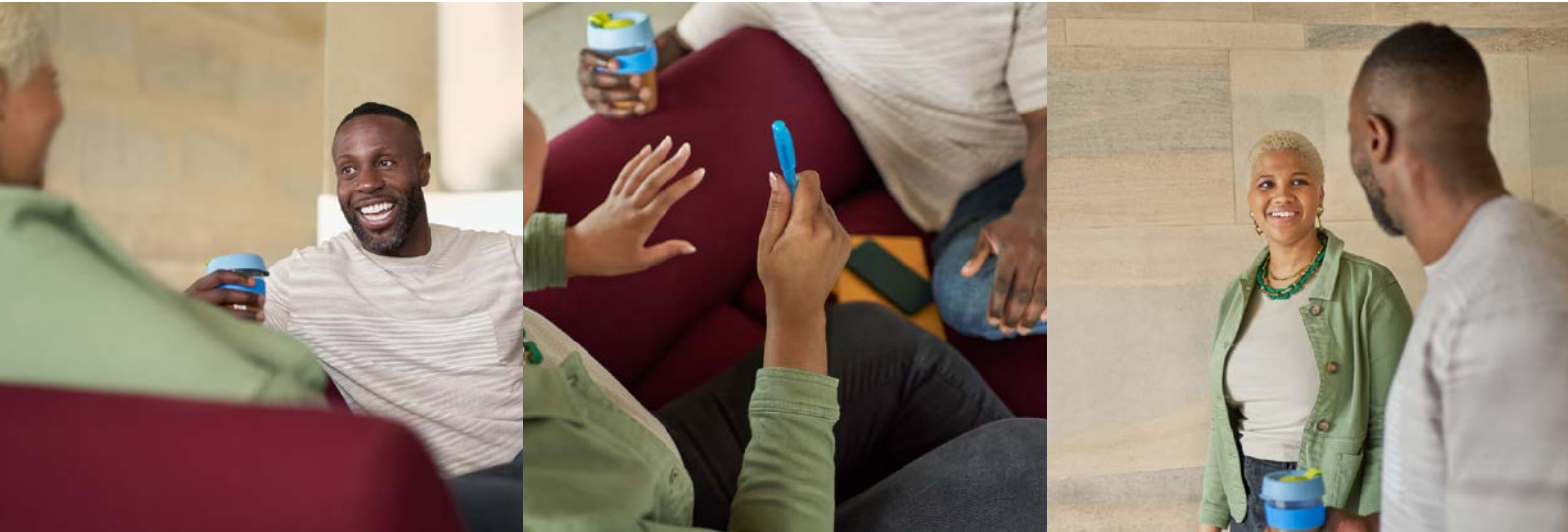# HPE GreenLake

Simplify your backup and recovery with HPE GreenLake for Backup and Recovery

Customer challenges

Enterprises running business-critical applications know the need to create and maintain a high-security posture to recover after a ransomware event; it is critical for the business to continue functioning normally. Those who have been hit by ransomware know that there is no such thing as **business as normal** once the ransomware bounty is demanded on each screen. As competitive backup software undergoes changes in its cost structure toward subscription models—not only away from maintaining today's perpetual license cost model but toward its complete abandonment—the business now must pay twice as much for coverage on the backup estate, as they did the prior year. Today's backup and recovery offerings are a fragmented mix of point solutions for backups, target storage, and long-term data retention. This makes for a complex scenario that's less than optimal, since each of these silos are designed on proprietary hardware and/or software that has its own maintenance and support contracts. In many cases, you are only able to perform backup jobs once a day, with such jobs sometimes bleeding into your production windows. The result? Performance degradation. And should recovery be necessary, it can take multiple hours, which is inefficient and can have a serious revenue impact. This is a recipe for business tragedy should disaster strike.

HPE GreenLake for Backup and Recovery

HPE GreenLake for Backup and Recovery offers one-stop shopping as Hewlett Packard Enterprise creates and maintains the backup environment, including updates and new functionality while enabling administration through a single cloud console. It enables you to consistently protect on-premises VMware® virtual machines (VMs), Microsoft SQL Server database and cloud-native workloads (such as Amazon EBS volumes, EC2 instances and RDS) with Global Protection Policy, helping eliminate data silos, multiple administrative touch points, and point solutions delivered on a secure platform with built-in protection from ransomware and other threats. HPE GreenLake for Backup and Recovery is designed for application, storage, and backup administrators responsible for the protection of their organization's on-prem and cloud-native workloads. It provides assurance that in the event of an unintended deletion, data loss through an infrastructure outage, or a ransomware attack, data can be rapidly recovered to a known good point in time, in line with the service level commitment to the organization.

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 take action to ensure protection.
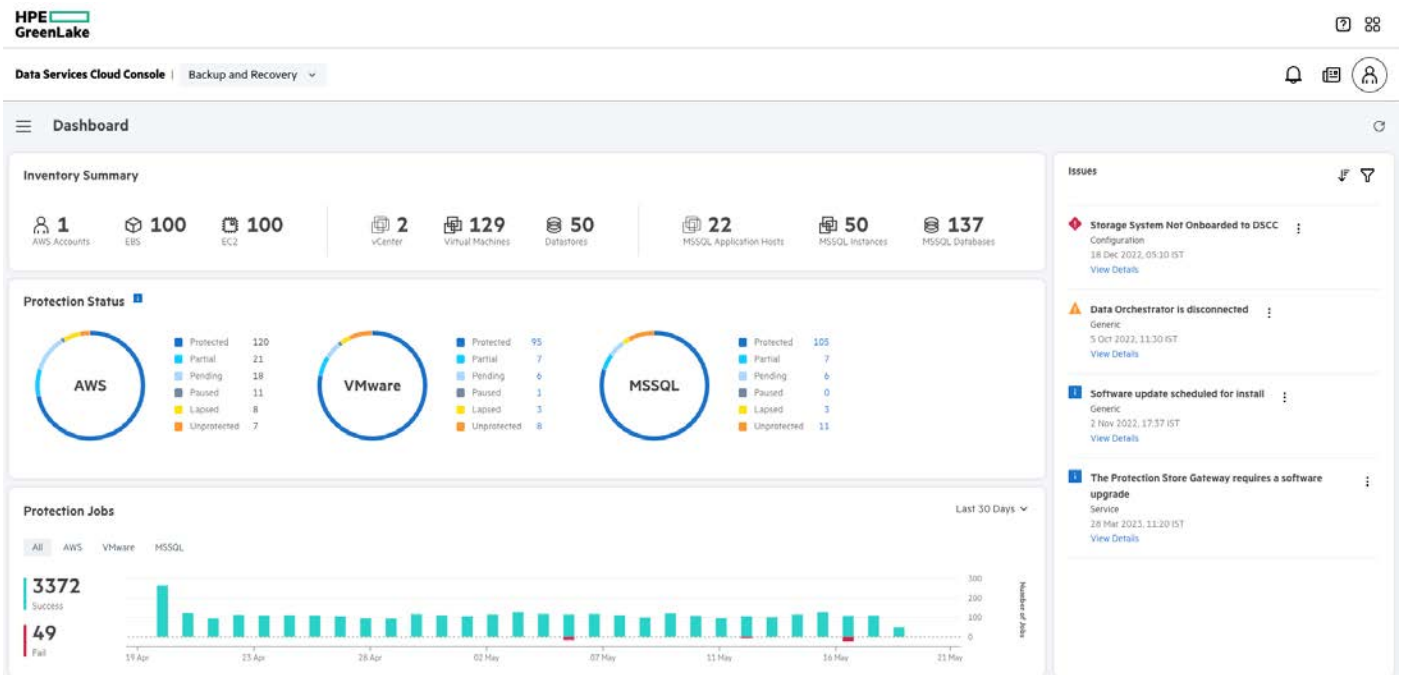
Simplifying hybrid cloud protection

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, EC2 and RDS.

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

Secure by design

Maintain an 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 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 visibility of pricing.

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. For protecting cloud-native resources such as Amazon EBS, EC2 and RDS, there are no additional services to deploy. The required roles and permissions are established through CloudFormation when the AWS account is added, and native AWS snapshots (for Amazon EBS, EC2 and RDS) as well as backup to an HPE Cloud Protection Store (for Amazon EBS, EC2) can be configured.

To protect on-premises workloads, two components are deployed: the **Data Orchestrator** (the connectivity between DSCC 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 it is written to the on-premises or cloud protection storage.

Users with HPE storage arrays on-premises that are managed by DSCC can opt for array-optimized backups that serve as the source for nearly instantaneous recovery. Users older HPE storage arrays or non-HPE storage can also choose to use VMware Changed Block Tracking (CBT) as an alternative. Regardless of array type, on-premises backups are there for rapid recovery while an HPE Cloud Protection Store cost-effectively protects data for the long term.

HPE GreenLake for Backup and Recovery
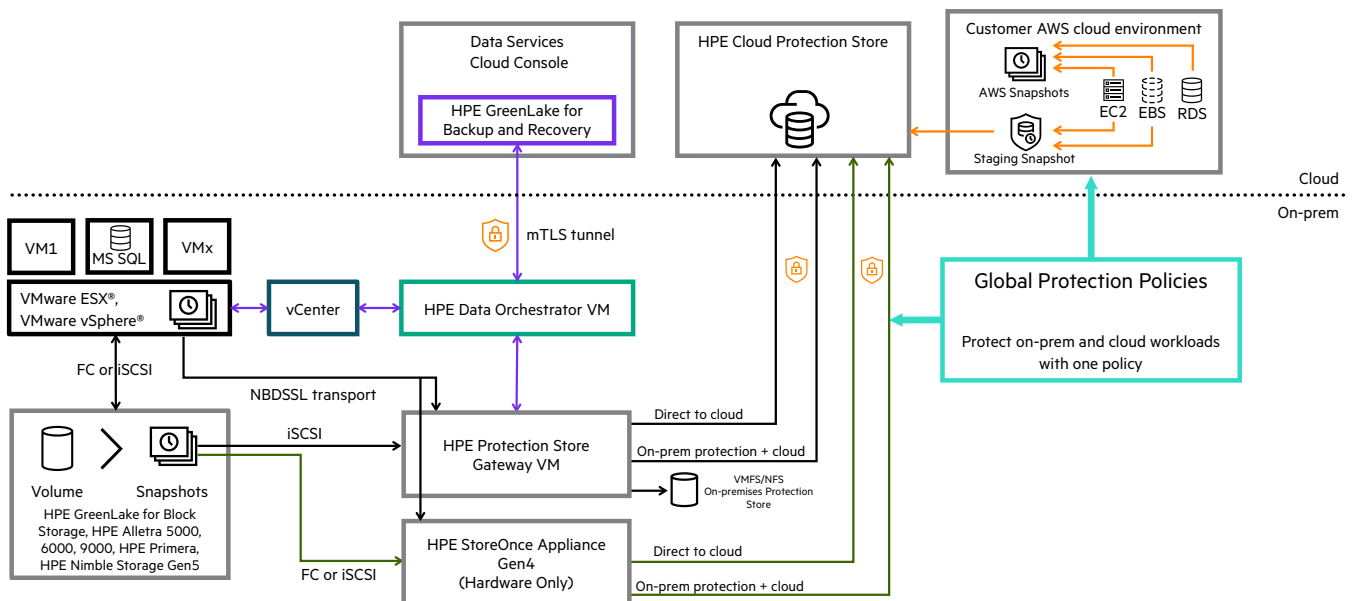### Architecture: On-prem VMware, Microsoft SQL database, and Cloud AWS Backup

Figure 2. Simple architectural diagram for HPE GreenLake for Backup and Recovery

Backup

- **Array-optimized backups:** Support for HPE GreenLake for Block Storage, HPE Alletra, HPE Primera, HPE Nimble Storage Gen5 storage arrays

- **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 and EBS volumes using native Amazon snapshots and/or HPE Cloud Protection Store. Ability to orchestrate snapshots of Amazon RDS instance 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 and Amazon EC2/EBS assets

- **Retention policies:** Up to three years of retention for local backups and up to seven years of retention 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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