Protect your SAP HANA database

HPE Recovery Manager Central and HPE StoreOnce Catalyst Plug-in for SAP HANA
Enable fast, simple, and affordable end-to-end protection for SAP HANA®

The database protection challenge

Protecting and recovering any database environment is proving ever more challenging in the face of large and increasing data volumes, rising business demands, cost efficiency, and sustainable growth. SAP HANA is no exception. Organizations deploying large-scale SAP HANA environments struggle with protecting the rapidly growing and changing mission-critical data. According to SAP®, backup and recovery is a major pillar of data center readiness in a SAP HANA environment.

Some of the pain points in protecting SAP HANA include:

• Backing up large HANA databases with minimum complexity and within a short span of time
• Keeping data protection costs under control
• Maintaining a reasonably low recovery time objective (RTO) and recovery point objective (RPO) for an application in case of a disaster

The SAP HANA computing platform combines the database, data processing, and application platform capabilities in a single in-memory platform. This makes business analytics more powerful as the data is preloaded in memory and can be processed in parallel. The platform uses a persistent storage layer to recover to the most recent committed state after a restart or a power loss. It cannot protect against logical or user errors or even against catastrophic failures. Therefore, a backup and recovery solution needs to be in place.

Array-based snapshots within SAP HANA’s persistent storage layer offer fast, non-disruptive point-in-time copies of data. But snapshots alone cannot deliver comprehensive backup. They have retention limitations, corruption vulnerabilities, and dependence on the underlying storage system. And, snapshots are at risk if the storage system fails.

Traditional approaches to SAP HANA backup and recovery involves heavy reliance on scripts and slow backup and recovery performance. Third-party backup and recovery software supported with SAP HANA Backint interface have shortfalls such as the need for a dedicated backup media server and complex backup scheduling.

A more effective approach is to combine the benefits of backups and snapshots in an application-managed, storage-integrated data protection solution.

Hewlett Packard Enterprise offers both online backup and storage snapshot-based backup solutions for SAP HANA. A storage snapshot-based backup solution is always complemented by a third-party Backint-integrated online backup for an enterprise-level data protection solution.

The Hewlett Packard Enterprise solution

The HPE StoreOnce Catalyst Plug-in for SAP HANA is compatible with SAP HANA Backint interface and provides DBAs with a fast and efficient backup and recovery of SAP HANA databases. Installed directly on your database servers, the plug-in integrates with SAP HANA Studio to initiate backup and restore operations. The plug-in also provides the option to deduplicate the SAP HANA database backup on the SAP HANA nodes reducing backup data flow through the network. Another option is to deduplicate on the target HPE StoreOnce appliance, reducing the deduplication load on the SAP HANA application servers.
One of the key challenges of protecting multi-terabyte SAP HANA databases is to keep the backup task within an 8-hour window. Performing snapshot backups addresses this challenge. HPE StoreOnce Recovery Manager Central (HPE RMC) for SAP HANA integrates HPE 3PAR StoreServ primary storage (persistent storage) with HPE StoreOnce Systems to provide a converged availability and backup solution for SAP HANA data volumes. Combining the performance of local and remote snapshots with the protection of backups, HPE RMC for SAP HANA enables fast, efficient, reliable, and simple protection of SAP HANA data volumes on HPE 3PAR StoreServ or backups of the data volumes on HPE StoreOnce.

With HPE StoreOnce RMC for SAP HANA, database administrators can create, schedule, and manage SAP HANA-consistent snapshots of the data area on an HPE 3PAR array. Additionally, the RMC Express Protect feature enables automatic backup of SAP HANA data area from HPE 3PAR to StoreOnce, independent of backup server software. The backups are self-contained volumes that can be restored back to the original or different HPE 3PAR StoreServ array in the event of a disaster.

Storage snapshots only make a copy of the data area, not the log area. As a result, HPE RMC cannot be used to protect SAP HANA log area. Instead, HPE StoreOnce Plug-in for SAP HANA can provide this protection. Although HPE StoreOnce Catalyst Plug-in for SAP HANA can also protect the data area, HPE RMC is the preferred solution due to faster backup and recovery performance.

**Offering the features and functions you need**

**HPE RMC for SAP HANA data volume protection**

**Fast backup and recovery:** Unlike traditional backup approaches, when a multi-terabyte SAP HANA database crashes, HPE RMC backup and recovery speed for data volumes is much more efficient due to using multiple block-based streams. You can then quickly restore your data volumes and deliver on your aggressive RTO SLAs. Since only changed data blocks are sent to HPE StoreOnce, your database backup is faster and more efficient. SAP HANA log volumes, however, cannot be protected with HPE RMC because snapshots cannot be taken from them.

- **Reduced cost and complexity:** Data protection with HPE RMC is much simpler with direct backup from HPE 3PAR snapshots to HPE StoreOnce. Since the stored backups on HPE StoreOnce are deduplicated, backup storage costs are contained and in fact, you can economically store data on HPE StoreOnce for extended periods.

- **Lower risk during unplanned downtime:** With frequent recovery points, you can commit to tight RPO SLAs. If there is a failed hardware or a data center outage, the SAP HANA backups on HPE StoreOnce can be restored to the original or a different HPE 3PAR. As an added benefit, backups can also be copied to and recovered from one HPE StoreOnce to another in case of disasters.

**Application-managed data protection:** SAP HANA DBAs can monitor and manage snapshots, backup, and recovery directly and seamlessly from within RMC GUI.

**HPE StoreOnce Catalyst Plug-in for SAP HANA**

**Efficient resource consumption:** Optimal network bandwidth and efficient backup processing time using source-side deduplication enable sending only the unique data to HPE StoreOnce, thereby optimizing network utilization and significantly reducing bandwidth requirements.

**Reduced backup footprint:** By improving the deduplication ratio, backups can be stored longer with reduced storage capacity compared to file backup implementations.
Increased cost savings: By enabling direct backups to HPE StoreOnce, no third-party data protection software is required. The HPE StoreOnce Catalyst Plug-in for SAP HANA controls the backup via Backint to make a direct copy of the log backup savepoints to HPE StoreOnce, without the need to pass through a backup media server.

Control and simplicity: The HPE StoreOnce Catalyst Plug-in for SAP HANA is installed directly onto the SAP HANA nodes with only a few clicks. The SAP HANA DBAs can backup, restore, and delete their database backups from SAP HANA Studio directly. Backup is completely under the control of the application admin.

In summary

HPE Recovery Manager Central for SAP HANA is an ideal solution for protecting SAP HANA data volumes. It seamlessly integrates robust flash-optimized HPE 3PAR StoreServ primary storage and the very fast, scalable, and highly resilient HPE StoreOnce System.

HPE StoreOnce Catalyst Plug-in for SAP HANA integrates with Backint and provides optimized protection for SAP HANA databases. It enables the DBA to backup and restore directly to or from HPE StoreOnce through SAP HANA Studio and/or the SAP HANA CLI. If HPE RMC is deployed for protecting SAP HANA data volumes, the HPE StoreOnce Plug-in can be deployed for protecting SAP HANA log volumes.

HPE data protection solutions for SAP HANA simply and efficiently deliver the end-to-end availability and business continuity that your SAP HANA environment demands.

Learn more at
hpe.com/storage/rmc
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Figure 1: Best-in-class flash-optimized data protection for SAP HANA