

# Unlimited Storage & Recovery for SAP Environments from SUSE and Micro Focus

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# Don't Let Your SAP Applications Down

Your organization relies on your SAP solutions to power operations every day. SAP is the heart of your business, particularly if you use SAP HANA. That means to keep your business operating smoothly, you need to ensure that your SAP environment has everything it needs.

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Storage is one thing modern IT environments demand more and more of. Traditional proprietary storage solutions just weren't built to handle today's volume—nor can they efficiently store data of different sources and types, from unstructured files to block and object stores.

That is why many organizations are turning to software-defined storage (SDS). SDS delivers all the storage services you need via software running on an industry-standard hardware platform.

Other crucial requirements for supporting SAP HANA and SAP applications are backup and disaster recovery systems. While SAP HANA has some failover functionality built in, you need complete, application-consistent recovery to ensure that your business can pick up right where it left off in the event of hardware failures, power outages or regional disasters.

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**“The initial implementation took only one day, and the support before, during and after has been excellent. SUSE Enterprise Storage gives us high availability, but at a much lower cost than our previous storage solution.”**

**MAREK NOGAJ**

*System Administrator*  
Jagiellonian University

Combine an SDS cluster with an efficient backup and disaster recovery solution and you have a way to give SAP environments the support they need. SUSE® Enterprise Storage, powered by Ceph technology, and Micro Focus Data Protector provide unlimited, compliance-ready storage that is uniquely suited to support your business-critical SAP systems.

## A Combination Built for SAP

SUSE Enterprise Storage is powered by Ceph, an industry-leading SDS solution and the most popular one among OpenStack users. Enterprise Storage is designed as a distributed storage cluster to provide unlimited scalability from tens of terabytes to petabytes and beyond.

Micro Focus Data Protector is a single solution that can administer backup, restore and disaster recovery processes across hybrid IT environments. The enterprise-grade solution is built on an adaptive architecture that combines security and analytics to help you meet your continuity needs reliably and cost-effectively.

Combined, SUSE Enterprise Storage and Micro Focus Data Protector provide a solution that is well matched to the task of supporting SAP environments.

SUSE has a longstanding relationship with SAP that began in 1999 in the SAP LinuxLab. Our relationship is just part of the reason why SUSE Linux Enterprise Server for SAP Applications is currently running in 90 percent of SAP HANA installations. It

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is also why SUSE is the operating system of choice for SAP's production and development environments.

Micro Focus Data Protector is certified for integration with SAP HANA via the SAP HANA-BRINT 1.1 [SAP Certified Solutions Directory](#). It provides application-consistent protection and recovery of SAP HANA and efficient data protection for multinode installations across physical, virtual and cloud instances.

SAP HANA does offer its own failover recovery, but let us look at why organizations should consider an enterprise backup solution for their SAP HANA deployments.

### Why You Need a Backup Solution for SAP HANA

The native backup tools in SAP HANA automatically save data from memory to disk at regular save points. However, this type of backup won't solve all your challenges. An enterprise backup solution is essential to complement these native tools for some important scenarios:

- *Protect against disk failures, logical damage or human error*
- *Create full backups and store them offsite on a different medium (such as SUSE Enterprise Storage) for disaster recovery*
- *Reset the database to an earlier point in time, if required*
- *Restore the underlying operating system and configuration*
- *Create additional database copies*
- *Meet legal and compliance requirements*

As your organization is likely to face one or more of these scenarios, it is wise to look beyond SAP HANA's native backup and deploy a backup and disaster recovery solution with the features you need to keep your organization safe.

### The Scalability to Keep Up with Today's Demands

The Micro Focus Data Protector and SUSE Enterprise Storage solution has no limits on its ability to scale. Simply add hardware and the cluster rebalances, enabling you to grow along with your data.

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**SUSE Enterprise Storage is priced by node rather than by capacity, so you can scale your storage without per-gigabyte software pricing weighing you down.**

You can build that cluster out of industry-standard server hardware, making scaling easy on your budget as well. Adding server capacity to the cluster also boosts performance and reduces bottlenecks, making it easy to increase throughput (terabytes per hour).

### A Cost-Effective Approach to Supporting SAP Environments

The ability to use standard server hardware is just one way the combined SUSE Enterprise Storage and Micro Focus Data Protector solution helps you control costs. In most scenarios, Micro Focus Data Protector requires a smaller footprint than competitors. Combine that with the unique per-node pricing from SUSE and you have an overall solution that is a cost-effective way to handle lots of storage.

The per-node pricing means you can scale your storage without per-gigabyte software pricing weighing you down. In fact, in a [five-year total cost of ownership study](#), IT Brand Pulse found that SUSE Enterprise Storage outperformed every one of the competitors.

SUSE Enterprise Storage also enables you to deploy a unified block, object and file storage environment to reduce the capital and operational costs of your storage infrastructure.

### Easy Implementation and Management

When supporting mission-critical applications such as SAP HANA, managing service-level agreements (SLAs) becomes a serious consideration. Micro Focus Data Protector can predictively track SLAs, making it much easier for your IT team to ensure SLA adherence.

For its part, SUSE Enterprise Storage is self-managing and self-healing, meaning it can automatically rebalance data without manual intervention. This means an issue such as a disk failure doesn't require immediate human attention.

Most importantly, the efficiency of an SDS cluster means a single system administrator can easily manage up to 4 PB of data, much more than administrators in equivalent block-storage environments. That means you don't need a large staff simply to ensure that your SAP environment has what it needs.

You also won't need to manage disparate backup systems. Micro Focus Data Protector centralized's backup management,

reporting, and analytics enables you to incorporate SAP and SAP HANA into a single backup scheme for your organization's entire data environment.

### Compliance-Ready

Complying with modern regulations means you likely need to back up or make copies of data and keep those backups in specific locations. The SUSE Enterprise Storage and Micro Focus Data Protector solution is ideal for storing additional copies of SAP application data to meet various compliance requirements.

Micro Focus Data Protector offers automated retention and replication management across different backup media, storage tiers and locations for compliance and efficient long-term data retention. For instance, you can share data between deduplication stores created on storage appliances and those created on SUSE Enterprise Storage, enabling sites to keep a local copy of the backup while also sending a copy to the central disaster

recovery location. A local copy of the deduplicated backup data enables a faster restore of files.

### How It Works

Let us look at how the two pieces of the solution work in more detail.

### SUSE Enterprise Storage

A SUSE Enterprise Storage cluster appears to Micro Focus Data Protector as a single storage target, but behind the scenes, multiple nodes work together to provide a resilient and easily scalable storage solution.

The cluster is made up of four types of nodes. The minimum SUSE Enterprise Storage cluster consists of at least one administration server (physical or virtual), four object storage device (OSD) nodes, three monitor nodes and one or more gateway nodes.

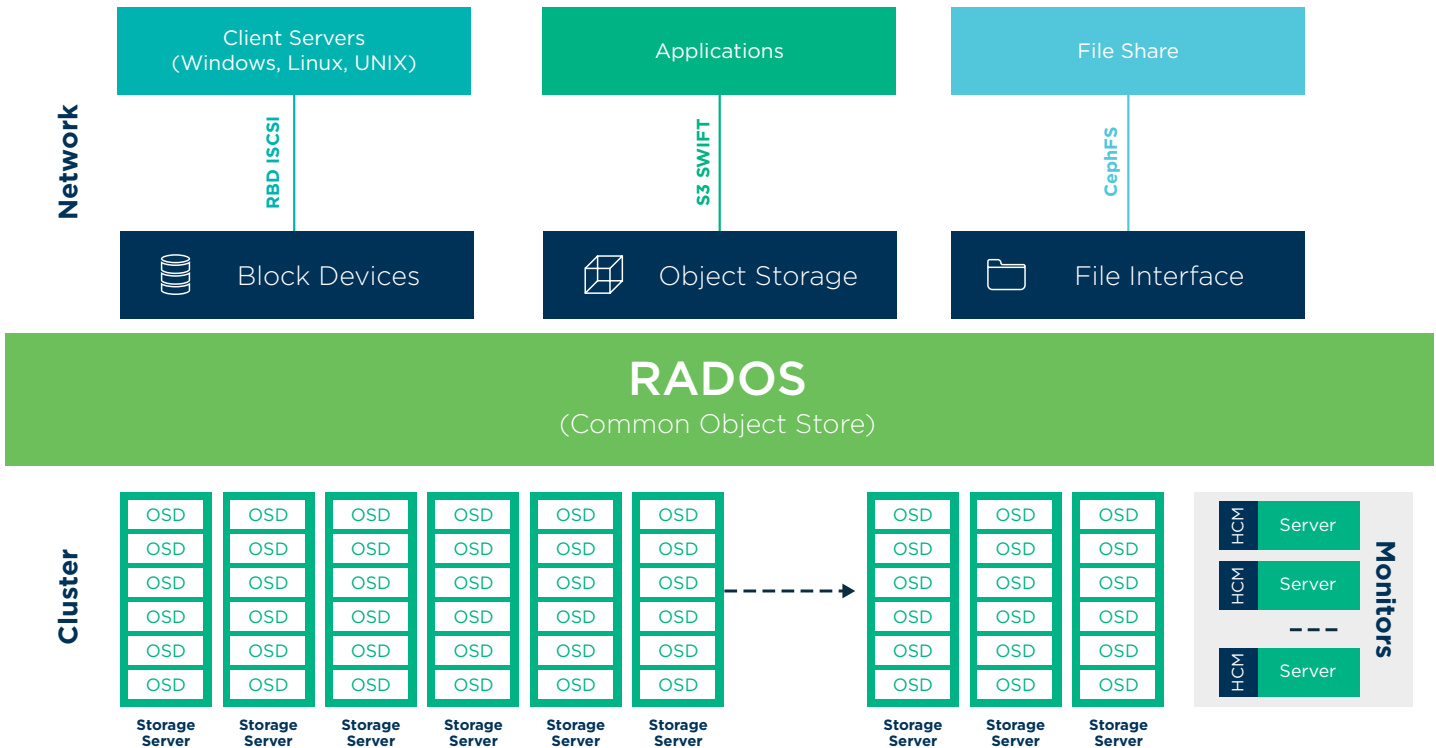


Figure 1. An architectural diagram of SUSE Enterprise Storage nodes and the ways they interact with the rest of your environment.

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**Object storage device nodes** are the workhorses of the cluster and do the actual data storage. SUSE recommends a minimum of four OSD nodes for each SUSE Enterprise Storage cluster.

**Monitor nodes** maintain information about cluster health, a map of other monitoring nodes and an overall map of the cluster. Monitor nodes also keep a history of changes performed on the cluster. SUSE recommends a minimum of three monitor nodes.

**Gateway nodes** translate between your backup server and the SUSE Enterprise Storage cluster. If you have two different backup servers or archive applications, one using object storage and one using block storage, you will need two gateway nodes.

- *For object storage (such as S3 and Swift), use a Ceph RADOS Gateway.*
- *For block storage, SUSE uses iSCSI gateways that enable block and multipathing storage to heterogeneous clients such as Windows and VMware vSphere.*
- *For file storage, use either Ceph Filesystem (CephFS) or NFS-Ganesha.*

**Admin nodes** enable you to make changes to your Ceph cluster. They have the smallest requirements of any of the nodes and can be run as a virtual machine or on repurposed existing hardware.

You can deploy SUSE Enterprise Storage using DeepSea and Salt. Guidelines are available in the [SUSE Enterprise Storage documentation](#).

### **Micro Focus Data Protector**

With mission-critical data on the line, you don't want to rely on anything to support your SAP environment that is not SAP certified. Micro Focus Data Protector 10 was recently certified for integration with SAP HANA via the SAP HANA-BRINT 1.1 [SAP Certified Solutions Directory](#).

In addition, Micro Focus Data Protector offers a number of features that help you back up and manage storage of your data with efficiency and security. Chief among them is application-consistent recovery. Micro Focus Data Protector's integrated agent for SAP BackINT helps to return SAP HANA to its previous state after an issue occurs.

The solution offers centralized, bare-metal recovery from physical to physical, physical to virtual, virtual to virtual and virtual to physical from any backup set at no additional cost. Hypervisor integrations and support offer virtual machine protection inheritance and tiered recovery options for virtual environments.

Enhanced Automated Disaster Recovery in Micro Focus Data Protector provides a single check box for backup to SUSE Enterprise Storage of application and system data—including operating system files, drivers and files required for the initial boot process. This can drastically simplify the full recovery process should a node that your SAP HANA instance relies on fail completely.

Micro Focus Data Protector also provides predictive analytics, automation and orchestration to help backup administrators efficiently manage the backup environment with key performance indicators, advanced monitoring, reporting and more.

### **Keep SAP in Top Shape**

The immense value of SAP solutions means your organization will be funneling more and more data through them. That means you need a better backup, disaster recovery and storage solution to support your SAP environments. Together, SUSE and Micro Focus can give you that with SAP-ready, cost-effective and extremely scalable storage.

Additional contact information and office locations:  
[www.suse.com](http://www.suse.com)

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