



Scale Forever with Software-Defined Storage from SUSE and HPE

Managing, protecting and accessing massive amounts of data is becoming a challenge for every enterprise. With the average Internet user expected to create 1.5 GB of traffic a day by 2020 and connected machines like airplanes up to 5 TB every day, the need for storage is obvious.¹ Traditional storage systems simply won't be able to keep up, but software-defined storage can.

SUSE Enterprise Storage and HPE at a Glance:

- **Simple:**
Sold and supported directly through HPE in proven configurations
- **Scalable:**
Cost-effective scaling with HPE hardware and SUSE's node-based subscription model
- **Protected:**
A silicon root of trust, geographic replication and erasure coding to keep data safe
- **Available and efficient:**
File, block and object storage support through a single system
- **Products:**
SUSE Enterprise Storage
HPE Apollo
HPE Cloudline
HPE ProLiant
HPE Synergy

No matter what industry you operate in, data storage is likely becoming an issue. Until recently, data storage typically meant a large file server or cloud storage. But neither option meets today's storage and access needs because they can't offer near real-time access to different kinds of data gathered from an ever-expanding number of sources.

Traditional on-premises solutions are expensive to manage and don't scale easily. And cloud storage, while attractively priced on entry, can become cost-prohibitive when accessing data at near real time or in high volume.

You need a storage solution that is flexible, with intuitive administration and an affordable total cost of ownership. That's why, like many enterprises, you're likely considering software-defined storage.

Your software-defined storage system will have to be simple to manage and deployable on the x86 hardware you already use in your data center. To keep up with today's data growth, you will need the ability

to scale linearly paired with a linear cost model. And your system will have to protect your data, keep it available and offer efficiencies for your IT team so management doesn't become a burden.

Together, SUSE Enterprise Storage™ and Hewlett Packard Enterprise (HPE) hardware provide a solution that can do all of that.

Open Source Software-Defined Storage for Today's Needs

With SUSE Enterprise Storage, you get a highly scalable, resilient, self-healing and self-managing storage solution designed for easy scalability from terabytes to petabytes. HPE hardware, from ProLiant DL, Apollo and Cloudline servers to Synergy, the industry's first composable infrastructure systems, gives you affordable ways to host storage solutions no matter what the demands of your business are.

¹ Intel, https://s21.q4cdn.com/600692695/files/doc_presentations/2017/2017_Intel_Investor_Meeting_Krzanich.pdf

SIMPLE, AVAILABLE AND EFFICIENT

SUSE Enterprise Storage is built on Ceph open source software-defined storage technology, which delivers a full suite of persistent storage services via an autonomous software stack that can run on an industry-standard hardware platform. You can avoid proprietary hardware and use something more cost-effective, such as HPE servers. HPE offers a range of server memory and storage device options, including persistent memory, to ensure that your enterprise gets the performance and efficiency it needs.



Vendor Lock-in



Flexibility

In addition to freeing yourself from hardware vendor lock-in, SUSE Enterprise Storage can handle any type of data you have. You can configure SUSE Enterprise Storage to support block, object or file storage. SUSE Enterprise Storage unifies these storage types and manages it all as object storage behind the scenes to take advantage of that method's speed and scalability.

“SUSE has been a godsend to the Town of Orchard Park when it comes to enterprise storage.”²

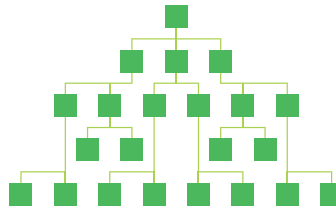
PAUL WARRINER

Network Coordinator
Town of Orchard Park Police Department

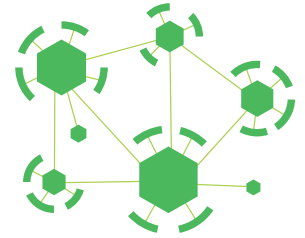
Block Storage



File Storage



Object Storage



To simplify the installation and configuration of a Ceph cluster, SUSE Enterprise Storage leverages Salt and DeepSea to help deploy and manage server infrastructure. And because the cluster includes simple and familiar interfaces, your IT team can concentrate on managing storage without having to know or oversee the details of the solution's architecture.

The entire solution is sold and supported directly by HPE and comes in certified hardware configurations.

A LOW COST OF OWNERSHIP

SUSE Enterprise Storage offers node-based pricing (as opposed to per-gigabyte pricing), making it the lowest-priced option for enterprise disk-to-disk backup, as well as other storage tasks.³ By increasing the size of your storage nodes, you can increase capacity without raising your software costs.

SUSE Enterprise Storage cluster automation allows a single person to manage 3 to 4 PB of storage. That's more than six times what a person could manage in an equivalent block storage environment.



NEAR-LINEAR SCALING TO MATCH YOUR GROWTH

The flexible, clustered design of SUSE Enterprise Storage makes upgrades easy and cost-effective, and it can scale quickly to massive proportions—making the solution a great choice for large tasks such as data center backup, video archiving, disaster recovery, streaming media and more.

Simply add or upgrade your HPE hardware, and SUSE Enterprise Storage will automatically integrate it and redistribute

² <https://suse.lookbookhq.com/suse-and-hpe-on-sds-business-view/orchard-park-success-story>

³ See exactly how SUSE Enterprise Storage stacked up against other options in IT Brand Pulse's 5 Year TCO Case Study.

workloads as necessary. HPE's diverse hardware options give you a wide variety of choices when it comes to scale-up or scale-out needs. The solution's scalability also makes it easy to increase throughput (terabytes per hour). By adding server capacity to the cluster, you boost performance and reduce bottlenecks.

PROTECTION FOR YOUR DATA

SUSE Enterprise Storage is self-healing and self-managing. That means it can automatically detect changing conditions and redistribute workloads if a node goes down. Built-in fault tolerance keeps the system working despite component failure and helps ensure that you don't lose any data.

HPE is the only vendor to provide a silicon root of trust on Gen10 servers, which ensures that the server will never boot with compromised firmware. This root of trust and other security features have garnered HPE recognition for having the "world's most secure industry-standard servers."⁴

Use Cases



Disk-based backup: With storage demand increasing, you need a solution that is as affordable as tape but offers much higher performance. SUSE Enterprise Storage and HPE systems provide that with an affordable and scalable way to meet backup window and recovery times.



High-performance computing (HPC): HPC systems demand a constant, bidirectional flow of data from storage. The SUSE Enterprise Storage and HPE solution works with HPE Data Management Framework,

leading hierarchical storage management software, to provide that. Also, because most HPC systems are Linux-based, a Linux-based storage solution will fit well into those environments.



Target for compliance archiving:

To remain compliant with various regulations, you may have to store emails, legal documents and other files for specified periods of time. SUSE Enterprise Storage can act as a target for compliance archiving systems such as iTernity to meet these very specific requirements.



Video surveillance systems and content distribution or media organizations:

Both video surveillance systems and content and media businesses need to store large numbers of potentially very large files. You may also need to access these video and content files at any time. SUSE Enterprise Storage and HPE offer an affordable, scalable storage solution to meet these demands.

Components of the Solution

SUSE ENTERPRISE STORAGE

SUSE Enterprise Storage runs as an extension on SUSE Linux Enterprise Server, a secure, open source server operating system that helps you accelerate innovation,

⁴ Based on external firm conducting cybersecurity penetration testing of a range of server products from a range of manufacturers, May 2017, www.hpe.com/us/en/solutions/infrastructure-security

improve system reliability, comply with evolving security requirements and adopt new technologies. SUSE Enterprise Storage offers:

- Fast setup and deployment, usually requiring less than 2 hours' configuration time after hardware is unpacked and ready
- Automation to save IT administrators time and effort
- Faster time to recovery in the event of disasters and unplanned downtime
- Ultimate scalability to handle massive data sets and virtually unlimited growth potential



STORAGE PRODUCT OF THE YEAR

HPE HARDWARE

You can use SUSE Enterprise storage on HPE ProLiant, Apollo, Cloudline or Synergy systems.

HPE Apollo servers provide breakthrough performance, storage density and scalability in a small footprint.

HPE Cloudline servers are built for cloud data centers and offer an open design that can reduce costs and support explosive growth.

“With SUSE Enterprise Storage on HPE ProLiant systems, we now have a modern software-defined storage solution on modern hardware, which gives us unlimited capacity and high availability, as well as lower TCO and more time for our IT team to focus on innovation instead of maintenance.”⁵

HOWARD SAMM

Head of Infrastructure

Experian Business Information Systems

www.suse.com

With HPE ProLiant DL servers, you get the perfect balance of performance, expandability and manageability.

HPE Synergy is the world's first platform architected for composable infrastructure. A composable system virtualizes the entire IT infrastructure. It creates pools of resources that are automatically composed in near real time to meet compute needs. This makes HPE Synergy systems fully adaptable and ready for everything. SUSE Enterprise Storage is the first object-based, multiprotocol storage certified on HPE Synergy.⁶

A Valuable Partnership

HPE and SUSE have 25 years of joint engineering and innovation. That is why HPE uses SUSE technologies to develop, qualify and provision ProLiant servers and as the operating system for all Superdome

benchmarks. SUSE is HPE's preferred partner for Linux, OpenStack and Cloud Foundry solutions.

SUSE Enterprise Storage integrates with popular OpenStack environments like SUSE OpenStack Cloud and Helion OpenStack. Reference architectures are available for many SUSE and HPE collaborations, including SUSE Enterprise Storage on HPE Apollo Servers⁷, at www.suse.com/hpe.

- 5 <https://suse.lookbookhq.com/suse-and-hpe-on-sds-business-view/experian-success-story>
- 6 <https://community.hpe.com/t5/Converged-Data-Center/HPE-Synergy-certifies-the-first-object-storage-offering-with/ba-p/6976500#WmJ1w66nG6J>
- 7 <https://suse.lookbookhq.com/suse-and-hpe-on-sds-technical-view/RA-ses-on-hpeapollo>

LEARN MORE

Learn more about how SUSE Enterprise Storage can save your business time and money at www.suse.com/products/suse-enterprise-storage.

Learn more at: suse.com/hpe

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