Decrease Cost and Increase Scale:
Future-Proof Your Backup Environment with SUSE Enterprise Storage
Executive Summary

In this age of numerous data sources, unstructured data types, and business expectations of near real-time response time, a cost-effective and scalable backup environment can help you meet your business goals.

Some questions to ask are:

- What is the disk target component of your backup solution costing you?
- Are you maximizing your TCO with that storage option?
- Is your business generating more data than before? If so, what is your plan to scale your current on-premise disk-target as the business continues to grow, likely to petabyte scale?
- Are you limiting the organizations you support by storing less than 300TB on-premise?
- How can you maintain your business service-level agreements (SLAs) as demand grows?

Here’s the bottom line: the best solution for on-premise disk targets in backup environments is one that meets your needs with the optimized TCO and maximum scalability.

With SUSE Enterprise Storage as the disk target of your backup solution, you can achieve amazing levels of TCO, and scale simply and easily as you grow into petabytes of data and more.

Leveraging SUSE’s node-based subscription pricing model and open source software-defined design, you can be confident that your backup operations are running at optimized cost and prepared for future growth.
The Problem

Most enterprise disk-to-disk backup solutions on the market today fall into two categories:

- **Device-driven solutions** on proprietary hardware
- **Software-based solutions** on commodity hardware

A typical **device-driven solution** normally consists of an expensive disk array or other proprietary storage device. Another category of device-driven backup solutions centers around what is known as a deduplication appliance—a sophisticated device that is designed to reduce the overall storage volume by eliminating duplicated data (Figure 1).

**A current approach to storage**

Figure 1: A typical enterprise backup scenario
Proprietary products such as deduplication appliances and branded disk arrays are always satisfying to unwrap and plug in, but the satisfaction might not last. Device-driven backup alternatives have the following complications:

- They don't scale elegantly. To upgrade, a whole new appliance is normally required.
- They are expensive to acquire and manage, especially at large capacities.

The acquisition cost of a proprietary deduplication device can be two to three times that of equivalent commodity hardware. The cost increases further when you add the cost of licenses for management and replication. And while disk arrays may have lower acquisition costs, the amount of work needed to manage the array can be significant, especially as more data is stored. The management cost increases exponentially with scale.

Vendors often justify the high cost for proprietary hardware through elaborate performance metrics and pristine product data sheets attesting to sophisticated features – but how many of these high-end features are necessary for network backup?

The truth is that a hardware-based deduplication device is often an unnecessary expense. In today’s enterprise-ready backup solutions, backup application software is able to perform deduplication much more economically.

Software-based solutions that run on commodity hardware (so-called software-defined storage or SDS alternatives) offer the possibility of a more attractive price point. SDS delivers value by disaggregating the software and the hardware, thereby allowing you to increase the flexibility in deployment and reducing the cost of the hardware. Also because SDS is usually designed with scale in mind, it automates the basic maintenance of storage decreasing the administrative overhead.

However, software licensing fees, customer support contracts, and brand premiums mean the overall cost of ownership for many software-defined storage solutions is equal to (or not significantly under) the cost of hardware-based alternatives. And when the software pricing is capacity-based pricing, the more that you store, the more you spend on software.

Software-defined storage solutions, centered on open source software clearly offer a superior TCO and massive scalability. While there are many players in the open source software-defined storage space, most leverage a capacity-based pricing model, which often skyrockets the storage software cost point.

**SUSE Enterprise Storage**, developed on the Ceph scale out open-source storage project, has the ability to scale to petabytes with ease, and is offered with a simple, node-based pricing model, designed to deliver significant scale and significant savings to the storage customer.

And it makes SUSE Enterprise Storage the lowest-priced option for enterprise disk-to-disk backup.
First of all, the need for a separate deduplication device is eliminated through advanced backup software that provides deduplication services. SUSE is certified with partners who are leaders in the enterprise backup software space, including CommVault, Veeam and Veritas, all who feature built-in deduplication.

Secondly, SUSE Enterprise Storage simplifies the backup environment by appearing to the backup server as a simple, monolithic target, either as an iSCSI interface, an S3 gateway, or even a Linux filesystem. The operator of the backup software is not required to know the details of the storage configuration, making administration that much easier.

Next, SUSE Enterprise Storage is a self-managing, self-healing cluster. The storage system provides built-in fault tolerance, ensuring that you won’t lose data if a drive fails or a server goes offline. The self-healing, self-managing nature of SUSE Enterprise Storage further minimizes management expense. A typical SUSE Enterprise Storage cluster allows a single admin to administer up to FIVE PETABYTES of storage — over 6 times the standard rate commonly used for an equivalent block storage scenario in typical enterprises.

SUSE Enterprise Storage also keeps upgrades manageable, with improved performance as the storage subsystem grows. When there is a need to scale the disk target, simply add another server node to the cluster, and SUSE Enterprise Storage simply integrates the new server and distributes the workload. As the size of the storage cluster increases, the aggregate bandwidth of the storage solution also scales linearly. This means that you see increased performance in your backup solutions, even for very large deployments, without paying a premium.

Finally, SUSE Enterprise Storage offers your backup environment overall lower cost. Due to node-based pricing, especially when paired with storage dense servers (with a much higher disk count vs traditional servers), the overall price per GB stored rivals that of public cloud providers — including hardware costs! And because of the lower cost, backup administrators have the option to store more data on-premise, as opposed to moving it offline to tapes, allowing them to serve their end users more effectively with better SLAs.

**A simpler approach to storage**

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SUSE Enterprise Storage delivers savings for the disk-to-disk backup customer with:

- Commodity hardware for minimal hardware cost
- Open source software, for minimal software cost and maximum flexibility
- A self-managing, self-healing architecture for minimal management cost
- A flexible, cluster-based design for graceful and inexpensive upgrade
- An innovative per node licensing model that avoids per-gigabyte storage charges, so you won’t owe more for saving more data.

With minimal acquisition cost, management cost, and upgrade cost, SUSE Enterprise Storage is the lowest-price solution for enterprise archive and backup implementations. A recent study looked at 5-year total cost of ownership for eight leading archive storage alternatives. The scenario started with 250TB, growing at 25% per year for 5 years. The results offer a glimpse of the real savings that are possible with SUSE Enterprise Storage (Table 1).

<table>
<thead>
<tr>
<th>Solution</th>
<th>Type</th>
<th>5-year TCO</th>
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<tbody>
<tr>
<td>Dell EMC Unity 300</td>
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<tr>
<td>Red Hat Enterprise Storage (Ceph)</td>
<td>Software-Defined Storage</td>
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<td>VMware Virtual SAN 6</td>
<td>Software-Defined Storage</td>
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<td>DataCore SANsymphony</td>
<td>Software-Defined Storage</td>
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<td>NetApp FAS2554</td>
<td>Disk Array</td>
<td>$211,534</td>
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<td>IBM v5010</td>
<td>Disk Array</td>
<td>$195,458</td>
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<tr>
<td>Scality Ring</td>
<td>Software-Defined Storage</td>
<td>$193,384</td>
</tr>
<tr>
<td>SUSE Enterprise Storage 4</td>
<td>Software-Defined Storage</td>
<td>$149,408</td>
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</tbody>
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Table 1: 5-Year TCO for enterprise archive storage solutions. (250TB initial with 25% per year; fully redundant; next business day on-site service; excludes compression and dedup.)
Backup solutions can be your gateway to data protection, but optimizing your backup environment for in terms of cost and scale can allow you to grow gracefully as your needs evolve and your business grows. SUSE Enterprise Storage combines the economies of commodity servers and storage with open source software with lowest-in-class licensing and enterprise-grade hardware certification and support. It can help you future-proof your backup environment, and let your business move forward unfettered.

Contact your local SUSE representative to learn more about SUSE Enterprise Storage as a solution for disk-to-disk backup.

1-800-796-3700 (U.S. and Canada) or 1-801-861-4500 (worldwide).

www.suse.com