A Robust, Flexible Platform for Expanding Your Storage without Limits

FUJITSU | SUSE

Unlimited Scalability That's Cost-Effective Too

Staying ahead in business today means collecting and using more data more intelligently. But storing that rapidly growing data is straining IT resources across industries. By 2020, the average Internet user could be creating 1.5 GB of traffic per day. Connected airplanes could generate up to 5 TB daily, and a smart factory might produce a full petabyte of data every day.[1]

Yesterday's storage solutions just aren't up to the task of handling this massive onslaught of data—we need a whole new kind of storage.

You need software-defined storage (SDS), a solution that delivers a full suite of persistent storage services via software running on an industry-standard hardware platform. Whether you're looking for archival storage, disaster recovery, storage for video streaming or storage for private cloud environments, SDS offers the only real way to keep up with demand.

Now, Fujitsu and SUSE are working together to provide robust SDS with unlimited scalability on a highly flexible and cost-effective platform using SUSE® Enterprise Storage and Fujitsu PRIMERGY and PRIMEFLEX platforms.

Solving Enterprise Challenges Together

SUSE and Fujitsu have been working together for 15 years to offer organizations innovative, reliable and open solutions that can simplify complex enterprise IT management and reduce IT expenses. Fujitsu offers on-premises, hosted and cloud-based solutions—featuring SUSE Linux Enterprise Server, SUSE OpenStack and SUSE Enterprise Storage—that you can count on for high performance, efficiency and reliability.
The partnership includes joining forces to offer SUSE Business Critical Linux Service, a unique premium support package available worldwide and jointly launching and improving world-class SAP HANA systems since 2011.

Now the two companies bring their expertise to the world of software-defined storage with SUSE Enterprise Storage and Fujitsu Server PRIMERGY or Fujitsu PRIMEFLEX. Both SUSE and Fujitsu are closely involved in the Ceph open source project and are members of the Ceph advisory board.
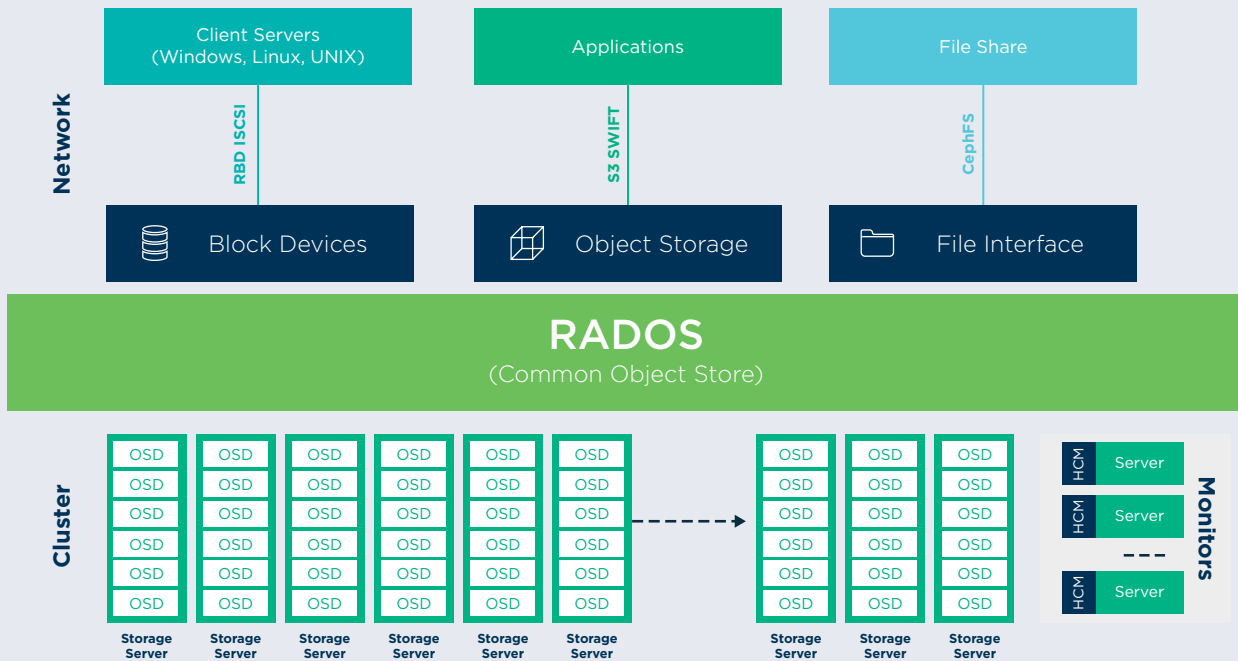
Together, the combined solutions give you an enterprise-ready version of Ceph; cost-effective scaling; unified file, block and object storage; and the flexibility to tackle many different storage use cases. Plus, by buying your solution through Fujitsu, you get a one-stop shop for hardware, software and services.

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

SUSE Enterprise Storage Clusters

A SUSE Enterprise Storage 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 nodes (OSDs), three monitor nodes, and one or more gateway nodes.

Figure 1.
A logical diagram of the various kinds of SUSE Enterprise Storage nodes and the ways they interact with the rest of your environment.

Object storage device nodes are the workhorses of the cluster and do the actual data storage. SUSE recommends a minimum of four OSDs 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 to 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 would 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 like Windows and VMware vSphere.*
- *For file storage, use either Ceph Filesystem (CephFS) or NFS-Ganesha.*

Admin nodes allow 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, if desired.

You can deploy SUSE Enterprise Storage using DeepSea and Salt. Guidelines are available in the SUSE Enterprise Storage documentation.

A Look at the Solution Components

SUSE Enterprise Storage

SUSE Enterprise Storage is based on Ceph, an industry-leading SDS solution and the most popular one among OpenStack users. It allows you to deploy a unified block, object and file storage environment to reduce the capital and operational costs of storage infrastructure. With Ceph, a single system administrator can manage up to 4 PB of data, six times more than an administrator in an equivalent block-storage environment. The solution can scale even further horizontally, with increasing performance results as it grows.

It is designed as a distributed storage cluster to provide unlimited scalability from tens of terabytes to petabytes. You can easily add Fujitsu hardware and extend SUSE Enterprise Storage at the rate your organization needs. Because it is self-managing, your IT burden does not grow faster than your storage.

Ceph also comes with erasure coding, which lets you define settings for data protection. The latest iteration of Ceph, available in SUSE Enterprise Storage 5, offers BlueStore, which doubles the write performance of previous releases and significantly reduces input and output latency. It can also help you free up capacity via data compression.

SUSE Enterprise Storage can help make your storage solution affordable because it is priced by node, not by amount stored. Plus it can help reduce your need for IT staff. SUSE Enterprise Storage is self-managing and self-healing. It automatically rebalances data without manual intervention.

"For IT organizations undergoing digital transformation, SDS provides a good match for the capabilities needed—flexible IT agility; easier, more intuitive administration driven by the characteristics of autonomous storage management; and lower capital costs due to the use of commodity and off-the-shelf hardware."

ERIC BURGENER
Research Director for Storage
IDC[2]

Fujitsu PRIMERGY and Fujitsu Integrated System PRIMEFLEX

Fujitsu Server PRIMERGY systems provide the most powerful and flexible data center solutions for organizations of all sizes, across all industries and for any type of workload.

The PRIMERGY family offers a broad selection of servers. For your Monitor or Admin nodes, you might select Fujitsu Server PRIMERGY RX1330 M3, RX2510 M2 or RX2530 M4 models. For your OSD nodes, the storage-dense Fujitsu PRIMERGY RX2520 M4 or RX2540 are excellent choices.

Fujitsu Server PRIMERGY systems are optimized to provide the best energy efficiency. From the mainboards developed and manufactured in Germany through to the selection of components, everything is aimed at providing minimum power consumption and simultaneously the best compute performance.

Fujitsu Integrated System PRIMEFLEX is a comprehensive and still-growing line-up of powerful systems that are predefined, pre-integrated and pretested. They are offered as an all-in-one package that combines servers, storage, network connectivity and software. PRIMEFLEX solutions are delivered ready to run, or as customizable reference architectures, which can be easily adjusted to customer-specific requirements.

Use Cases

You can use SUSE Enterprise Storage on Fujitsu Server PRIMERGY to solve many of today's hardest storage challenges. Here's a look at several common workloads supported by the solution.

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 works with archiving systems to meet these very specific requirements.

Data Archiving and Bulk Storage

Enterprises often have a lot of data that has to be stored for long periods of time—such as old emails, logs, transaction histories, reports and more. SUSE Enterprise Storage on Fujitsu servers provides an affordable way to handle all that data.

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2 *"IDC Forecasts Software-Defined Storage Solutions to Generate Worldwide Revenues of Nearly $16.2 Billion in 2021," IDC press release, October 3, 2017.*

Target for Disaster Recovery or Disk-Based Backup

Enterprises need a storage solution with costs close to tape, but with much higher performance and capacity. SUSE Enterprise Storage on Fujitsu servers provides that and more, with an affordable and scalable way to meet backup windows and recovery times. SUSE and Fujitsu also provide software-defined storage solutions certified with backup vendors such as Commvault.

Audio/Video Streaming

If you're in the content and media business, you likely need to store high quantities of very large files. These video and content files may also need to be available at all times. The combined SUSE and Fujitsu solution offers affordable, scalable storage to fulfill these essential industry demands.

"The SUSE solution immediately stood out as the right one for our needs, due to its ease of deployment, flexibility and cost-efficiency. SUSE Enterprise Storage offers us a smarter, more affordable way to keep up with surging data demands."

ISRAEL RIBOT
Systems Engineer
University of Valencia

Storage for Internal or Private Clouds (OpenStack)

Ceph is the leading solution for OpenStack storage. To support the rapid growth in storage in most private clouds, organizations are embracing software-defined storage. The combined solution provides a way to do so that smoothly integrates with your OpenStack implementation.

Robust and Cost-Effective Storage for Today's Demands

To keep up with today's growing data, you not only need storage that can scale without limits, you also need storage that can scale cost-effectively, because your IT budget definitely has limits. With SUSE Enterprise Storage and Fujitsu PRIMERGY or PRIMEFLEX systems, you can get that unlimited scalability on a highly flexible and cost-effective platform so that your data can continue to power your business for years to come.

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.

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Additional contact information and office locations:
www.suse.com

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