SUSE Enterprise Storage 6

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Agenda

• Enterprise Storage Business Challenges
• SUSE Enterprise Storage Architecture
• SUSE Enterprise Storage 6
• SUSE Enterprise Storage Use Cases
• Questions
Enterprise Storage Business Challenges
SUSE Enterprise Storage
Bridge to the Future

Today’s Data Center
• Traditional data center with storage silos
• Disparate network, compute and storage setup
• Data center disruptions because of regularly changing technologies

Tomorrow’s Data Center
• Software-defined data center
• Agile infrastructure with support for DevOps model through automation
• Simplified data center management
• Increased speed of delivery

SUSE Enterprise Storage is the first step in a software-defined future.
SUSE Enterprise Storage

Unlimited Scalability with Self Managing Technology

Increase capacity and performance by simply adding new storage or storage nodes to the cluster.
Limiting Factors of Traditional Enterprise Storage

- Difficult to Scale and Manage Data Growth
- Expensive
- Won’t Extend to the Software-defined Data Center
SUSE Enterprise Storage Architecture
Powered by Ceph Technology

SUSE Enterprise Storage Architecture

Network
- Client Servers (Windows, Linux, UNIX)
  - RBD, iSCSI
- Block Devices

Applications
- $3 SWIFT

File Share
- CephFS

RADOS
(Common Object Store)

Cluster
- OSD
- Storage Server

Monitors
- HCM Server
SUSE Enterprise Storage 6
SUSE Enterprise Storage
Last 12-month Accomplishments

- Launched SUSE Enterprise Storage 5.5
  - 8\textsuperscript{th} release
- Latest upstream release Ceph Nautilus
  - 8 out of top 20 Ceph contributors are from SUSE
- SUSE team driving Ceph Dashboard upstream project
- SUSE more than doubled Ceph customers in FY18 relative to FY17
SUSE Enterprise Storage
Development Focus Areas

- Manageability
  - Ease of Installation
  - GUI based Monitoring & Management

- Interoperability
  - Unified Block, File & Object
  - Fabric Interconnects

- Efficiency
  - Cache Tiering
  - Containerization
  - Hierarchical Storage Management

- Availability
  - Backup/Archive
  - Continuous Data Protection
  - Remote Replication
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Manageability

- Ceph Dashboard (oA replacement)
- Phone home (metrics and error analysis)
- Enhanced PG balancing
- Autonomous PG scaling**
- CephFS directory quotas
- Graceful system shutdown
- Storage enclosure disk integration

** Items are tech preview
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Interoperability

- IPv6
- RGW Elasticsearch sync module
- Node to node encryption**
- Multiple CephFS instances in one cluster**
- NFS-Ganesha active/active architecture**

** Items are tech preview
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Efficiency

- QoS for RBD
- QoS for background operations
- S3 object policy driven tiering**

** Items are tech preview
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Availability

- Unidirectional sync external cloud via S3
- CephFS snapshots
- Asynchronous file replication**

** Items are tech preview
SUSE Enterprise Storage Roadmap

Unified File, Object & Block
- CephFS
- Multisite object replication
- Acquired openATTIC

Performance and Ease of Use
- BlueStore
- Compression
- Block/File Erasure code
- NFS/S3 interface
- NFS/CephFS interface
- OpenATTIC integrated with DeepSea
- Enhanced monitoring and management

Interoperability and Security
- Integration with SUSE OpenStack Cloud
- CIFS/Samba interface
- Non SUSE Ceph clients
- Event notification
- AppArmor integration
- Security audit testing

Enhanced Management and Hybrid Cloud
- Ceph Dashboard
- Enhanced monitoring
- Public cloud product
- Sync to external cloud
- Phone home
- RBD QoS
- CephFS snapshot
- Async file replication

Containerization and Autonomous Self-Healing
- Containerization
- Enhanced intelligent data placement
- Guided troubleshooting
- Guided HW upgrade
- Guided OSD repair
- Data deduplication
- RDMA interconnect
- Windows drivers

*: These dates are indicative only, not guaranteed
Demo
### SUSE Enterprise Storage

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SUSE Enterprise Storage Use Cases
Use Case Focused Solutions
Partnership Ecosystem

- **Backup to Disk Solution**
  - Commvault
  - Veeam Data Protector
  - Barco

- **File Sync and Share**
  - ownCloud
  - Micro Focus
  - Seagate

- **HPC Storage**
  - iRODS
  - Lenovo

- **Certified Reference Architectures**
  - Hewlett Packard Enterprise
  - Supermicro
  - Lenovo
  - Dell
  - Cisco

- **Appliance**
  - Thomas Krenn

- **Custom Build**
  - DIY with COTS Servers

- **Cloud & App Delivery**
  - SUSE OpenStack Cloud

- **Analytics**
  - Data Lake

- **Cloud Native Workloads**
  - Container as a Service

- **Custom Apps**
  - SUSE Enterprise Storage