SUSE Enterprise Storage 5 Administration

Section 1: Introduction to SES 5 and Ceph Architecture

- Ceph Features
- Ceph Architecture
- Core Components
 - o RADOS
 - o CRUSH
 - o Ceph Nodes and Daemons
- Storage Structure
 - o Pool
 - o Placement Group
 - o Example
- Hardware Requirements and Recommendations
 - o Minimum Requirements
 - o Minimum Disk Size
 - Using SSD for OSD Journals
 - o Maximum Recommended Number of Disks
 - Monitor Nodes
 - o RADOS Gateway Nodes
- Operating Ceph Services
 - o Starting, Stopping, and Restarting Services using Targets
 - o Starting, Stopping, and Restarting Individual Services
 - o Identifying Individual Services
 - Service Status
- Determining Cluster State
 - Checking Cluster Health
 - Watching a Cluster
 - o Checking a Cluster's Usage Stats
 - o Checking a Cluster's Status
 - o Checking OSD Status
 - Checking for Full OSDs
 - o Checking Monitor Status
 - Checking Placement Group States

- o Using the Admin Socket
- Authentication with Cephx
 - o Authentication Architecture
 - Key Management

Section 2: OpenATTIC Management Console

- OpenATTIC Deployment and Configuration
 - Deploying OpenATTIC
 - o OpenATTIC Initial Setup
- OpenATTIC Web User Interface
- Dashboard

Section 3: Configure and access Block Storage using rbd

- RADOS Block Device
 - Block Device Commands
 - o Mounting and Unmounting RBD Images
 - o Block Device Snapshots
 - o rbdmap: Map RBD Devices at Boot Time
 - o RADOS Block Device Mirroring
- Erasure Coded Pools
 - o Creating a Sample Erasure Coded Pool
 - Erasure Code Profiles
 - Erasure Coded Pool and Cache Tiering
 - o Erasure Coded Pools with RADOS Block Device

Section 4 : Configure and access Object Storage using the Ceph Object Gateway

- RADOS Gateway Manual Installation
- RADOS Gateway Configuration

Section 5 : Configure and use File Storage with CephFS

- Supported CephFS Scenarios and Guidance
- Ceph Metadata Server

- o Adding a Metadata Server
- o Configuring a Metadata Server
- CephFS
 - Creating CephFS

Section 6 : Configure access to Block Storage using iSCSI

- iSCSI Block Storage
- General Information about lrbd
- Installation and Configuration
 - o Installing the ceph_iscsi Patter
 - o Create RBD Images
 - o Export RBD Images via iSCSI

Section 7 : Configure access to Object and File Storage via NFS

- Installation
- Configuration
- Starting or Restarting NFS Ganesha
- Setting Log Level
- Verifying the Exported NFS Share
- Mounting the Exported NFS Share

Section 8 : Monitoring a SES Cluster using OpenATTIC

- Common Web UI Features
- Listing OSD Nodes
- Managing RADOS Block Devices (RBDs)
- Managing Pools
- Listing Nodes
- Managing NFS Ganesha
- Managing iSCSI Gateways
- Viewing the Cluster CRUSH Map
- Managing Object Gateway Users and Bucket