SUSE Enterprise Storage™ Deployment Guide for Veritas NetBackup Using S3

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Executive Summary

SUSE Enterprise Storage™ delivers software-defined storage (SDS) that provides the comparative functionality of mid- and high-end proprietary storage arrays at a fraction of the cost and with far more flexible operational scalability. Truly unlimited scalability enables enterprise IT organizations to deliver the agility business demands by adding capacity without disrupting business, at costs they want to pay.

With SUSE Enterprise Storage, users can benefit from cost-effective, highly scalable storage. SUSE Enterprise Storage is suitable for use as a backup/archival target in the real world where enterprise customers are struggling with expensive, proprietary solutions that lack scalability.

Introduction

This document provides basic instructions for setting up the SUSE Enterprise Storage S3/Object Storage Interface with Veritas NetBackup. This document assumes the audience has some level of understanding of SUSE Enterprise Storage and is planning to set up the Veritas NetBackup interface with SUSE Enterprise Storage. Users who are familiar with Veritas NetBackup should be able to proceed as usual after setting it up for use with SUSE Enterprise Storage. For more information, please refer to the Administration documentation for Veritas NetBackup and SUSE Enterprise Storage.

Target Audience

System administrators and vendors associated with performing deployments are encouraged to use this document to take advantage of real-world knowledge gained by SUSE® employees who have performed this work in customer environments.

SUSE Enterprise Storage

A SUSE Enterprise Storage solution is:

- Simple to set up and deploy, within the documented guidelines of system hardware, networking and environmental prerequisites.
- Adaptable to the physical and logical constraints needed by the business, both initially and as needed over time for performance, security and scalability concerns.
- Resilient to changes in physical infrastructure components, caused by failure or required maintenance.
- Capable of providing optimized object, block and file services to client access nodes, either directly or through gateway services.
- Able to have data protection configured to meet the customer’s individual needs at a granular level.

Veritas NetBackup Background

Veritas NetBackup has the largest market share for enterprise backup. Most hardware and software vendors test and certify their products with it.

With the accelerating adoption of cloud in the commercial space, Veritas recently launched a series of product updates that include
cloud integration features with Amazon and Microsoft Cloud. To support these public clouds, Veritas NetBackup uses the industry-standard Amazon S3 interface. The S3 protocol is well supported with SUSE Enterprise Storage and easily deployable. This document describes the process for setting up Veritas NetBackup with SUSE Enterprise Storage using the Amazon S3 protocol.

The software used in this documentation is as follows:

- SUSE Enterprise Storage 4 and above
- Veritas NetBackup 7.7.3 and above

**Deploy and Prepare SUSE Enterprise Storage**

SUSE Enterprise Storage should be deployed as described in the Deployment Guide with roles for the Object Gateways (RGW) assigned and deployed during stage 4.

After the cluster is up and operational, an S3 user must be created for use with Veritas NetBackup. This can be done via CLI or GUI (from SUSE Enterprise Storage version 5 and above).

**Create S3 User**

1. Log in to the RADOSGW node via SSH and create an S3 user. The output below shows an example of creating a user named 's3user'. Note the “access key” and “secret key” fields from the results return. You will need these two pieces of information during the stage when you configure Veritas NetBackup to connect to SUSE Enterprise Storage.

   ```bash
   node54:~ # radosgw-admin user create --uid=s3user --display-name = "S3 User"
   node54:~ # radosgw-admin user info --uid=s3user
   {
     "user_id": "s3user",
     ...
     {
       "user": "s3user",
       "access_key": "E9I6QYS53H000DVU007M",
       "secret_key": "x6cz1Jy5oxRBDyUn1HABMXbmS8FSDEmJndvhtef...
     }
   }
   ``

   For SUSE Enterprise Storage version 5 and above, you have the option to create the user from the Openattic GUI interface.

2. After logging in to Openattic, click on **Object Gateway**, followed by **User**.
3. In the subsequent page, click **Add**.
4. In the user creation page, enter the Username & Full name. Ensure that **Generate key** is checked and then click **Submit**.
5. At the final stage, go back to list all of the User for Object storage. Click on the username that you created. View the

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user’s keys. You will need both the Access key and the Secret key. Click on to view the actual key.

2. On the Install Type screen, choose Install to this computer only for local installation and select “Typical Installation,” which uses default settings. To continue, click Next.

Deploy Veritas NetBackup System
To deploy Veritas NetBackup, perform the following steps:

Set Up Veritas NetBackup Master Server
This deployment example is on a Windows-based platform. To install Veritas NetBackup Master Server, double click on Setup and follow the wizard.

1. Select Agree with the Veritas Software License Agreement and click Next.

3. Provide the License Key, select NetBackup Master Server, and then click Next.
4. A summary of selected settings will be listed. Confirm that these are the correct settings and click **Install** to proceed.

5. Follow the wizard until the installation is complete.

### Set Up Veritas NetBackup Media Server

After installing the NetBackup Master Server, the next component to install is the NetBackup Media Server. Depending on your requirements, you can install one or multiple media servers. For this setup, follow the steps below to install a single NetBackup Media Server.

1. Accept the NetBackup Software license agreement and click **Next**.
2. For Install Type, select **Install to this computer only** for local install and **Typical Installation** to use default settings during the install.
3. Provide the NetBackup License Key and select **NetBackup Media Server**.
4. Fill out the Master Server Name to which this media server will be associated.
5. Click **Next** to install and follow the wizard until complete.

### Deploy Veritas NetBackup Cloud Connector

To deploy Veritas NetBackup Cloud Connector, perform the following steps:

#### Netbackup Master Server Version

SUSE Enterprise Storage is available as a backup target for Netbackup version 7.7.3 and above. If you are installing on Netbackup 7.7.x, you will also need to install ETrack 3881336. Contact Veritas Support to download this ETrack.

If you plan to install NetBackup version 8.x, you can start using NetBackup to SUSE Enterprise Storage.

#### Configure Cloud Storage Server

To set up Veritas NetBackup Cloud Storage Server, perform the following steps:

1. Using the NetBackup Administration Console, select Master Server on the left pane. Then choose **Configure Cloud Storage Server** on the right pane.
2. Select your provider in the list of Cloud Storage Providers:
   - Select Storage API Type as Amazon S3.
   - If you are deploying with off premises SUSE Enterprise Storage, select any of the S3 compatible Cloud Providers.
   - Click Next.

3. In the Cloud Storage Provider section on the following screen, click Add Cloud Storage.

4. In the General Settings tab of the Add Cloud Storage dialog, fill out the following fields:
   - **Service host**: Enter the fully qualified domain name or IP Address that RADOSGW of SUSE Enterprise Storage is installed
   - **Service endpoint**: Leave blank
   - **HTTP port**: 80 (Default)
   - **HTTPS port**: 443 (Default)

5. On the Cloud Storage Provider page, complete the following fields:
   a. Select the **Service host** and **Storage server name** that you just created.
   b. Choose a NetBackup **Media server name**.
   c. You will add this storage server to additional media servers later.
   d. Enter your SUSE Enterprise Storage S3 Pool user’s username in Base64-encoded format into the **Access key ID** field. This should come from the SUSE Enterprise Storage S3 user that you created.
   e. Enter your SUSE Enterprise Storage S3 Pool user’s password in MD5-hashed format into the **Secret access key** field. This should come from the SUSE Enterprise Storage S3 user that you created.
   f. Click the **Advanced Settings** button.

**NOTE**—At the time this document was created, NetBackup version 8 had no S3-Compatible Cloud Provider listed that was suitable for SUSE Enterprise Storage.
6. In the **Advanced Server Configuration** dialog:
   a. **Use SSL** is checked by default.
      i. Leave the checkbox checked if you are connecting to SUSE Enterprise Storage and you have installed a certificate signed by a trusted certificate authority on SUSE Enterprise Storage.
      ii. Uncheck the checkbox if:
         1. You are connecting to SUSE Enterprise Storage and it is using the self-signed certificate generated by the SUSE Enterprise Storage system.
   b. **Use Proxy Server** is unchecked by default:
      i. Check this checkbox only if you require a proxy to connect with SUSE Enterprise Storage.
   c. Click **OK** to continue.

7. Click **Next** to proceed to the encryption setting page of the Cloud Storage Server Configuration Wizard.

8. By default, Encryption is disabled.
   a. Check this box only if you want to encrypt data before sending it to SUSE Enterprise Storage. You might want to use encryption when SSL is disabled in the Advanced Server Configuration.
   b. If you check the box, configure your Key Management Server properties.
9. The Cloud Storage Server Configuration Summary will be listed. Verify that the settings are correct and click **Next**.

**Configure a Disk Pool**

To define a disk pool using the Disk Pool Configuration Wizard, complete the following steps:

1. On the first page of the Disk Pool Wizard (DPW), you are prompted to select a storage server volume to add to the disk pool. The list of available volumes should be empty. Click the **Add New Volume** button.
2. After the Cloud Storage Server is configured, go to Disk Pools on the right side of the navigation tree. Select the Disk Pool name and Create New Disk Pool. Click **Next** to start creating a new Volume.
3. At the next screen, select Add New Volume. Enter a name under the Bucket Name field and click on Add. This will create a new volume for use in NetBackup.
Configure Policies
In order for objects to be backed up from NetBackup to SUSE Enterprise Storage, you need to create a policy. Follow the steps below:

1. Using the NetBackup Administration Console, select Master Server at the top of the left pane. Then choose **Create a Policy**.

2. For this setup, select **File systems, databases, applications**. Then click **Next**.
3. Provide a Policy name and select the policy type. Then click Next.

4. Click Add and select the client(s) that will cover this backup policy.

Clients successfully added will be listed, including the type of hardware and operating system.

5. Define the location of data to back up. Click Add and specify the directory or files to back up. You can add multiple locations if needed.
6. Select the backup type for this policy.

7. Define the frequency of the backup.

8. Specify a schedule backup window. In this case, all day for 7 days a week.

9. After all settings have been defined, click Finish to complete.

10. Newly created policies will be listed in the All Policies list within the NetBackup Master Server.
11. Ensure that the Backup Policy points to the correct Storage STU. Click on the Backup policy and ensure that the policy storage is the one that was created previously.

12. Select Manual Backup to back up the policy.

13. Monitor the completion of the backup job from the activity screen.
Verification of Data Written to SUSE Enterprise Storage

At the time this document was created, the fastest way to verify that the backup is written to SUSE Enterprise Storage is to check on the Openattic interface on SUSE Enterprise Storage version 5.

1. After logging in to Openattic, go to Pools and select the pool default-rgw.bucket.data.
2. Below the screen, click on Statistics, followed by the Pool:default.rgw.buckets.data.

Here you will be able to view the amount of data being written to the bucket/pool that you defined during the setup of the NetBackup disk volume. Notice how the capacity changes as more data is written to SUSE Enterprise Storage.

Conclusion

Continued data growth is putting a strain on traditional backup solutions in the data center. Enterprises are looking for solutions that scale, can operate remotely using cloud native protocols, and provide a cost-effective, yet high-performance solution. SUSE Enterprise Storage satisfies these needs as a disk to disk storage option for Veritas NetBackup.

References

The following documents can be found on the SUSE and VERTAS websites:

- SUSE Enterprise Storage Administration Guide
- Veritas Administrator’s Guide

References:
