

IBM Cloud Object Storage System

Veritas Enterprise Vault S3 API Migrator Configuration Guide

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Support information

For more information on the product or help with troubleshooting, contact IBM Support at IBMCloudStorageSupport@us.ibm.com or visit the [Directory of worldwide contacts](#).

Revision History

Version	Date	Description
1.0	14 Dec 2016	Configuration Guide Initial
1.1	27 Dec 2016	Update for V11 and V12 differences (Generic S3 vs. IBM COS branded)

Introduction

This guide describes the configuration steps and deployment requirements of the Veritas Enterprise Vault S3 API Migrator to an IBM Cloud Object Storage (formerly Cleversafe) as a secondary storage system. The main segments include:

- Assumptions
- Prerequisites
- Preparing the IBM Cloud Object Storage Solution
- Configuration of Enterprise Vault
- Testing the integration
- Performance Optimization

Assumptions

This guide assumes that existing IBM Cloud Object Storage and Enterprise Vault instances are operating, and with certain capabilities already configured.

IBM Cloud Object Storage

- Storage pool
- Accesser pool
- Cloud Object Storage Manager access with privileges to create accounts and administer the system including:
 - Create a vault and assign privileges

Veritas Enterprise Vault

- Minimum requirement roles
 - SQL Server
 - EV Server
 - Configured archiving deployment
 - Client volumes
- DNS resolver and internet access for public access to IBM Cloud Object Storage
- Access to EV operating system admin access desktop, and Enterprise Vault service/admin account and EV console
- Reachability from the EV server role to IBM Cloud Object Storage client IP address(es)

Prerequisites

IBM Cloud Object Storage

- Tested IBM Cloud Object Storage Versions
 - 3.8 (Mainline versions validated)
 - IBM Public Cloud Object Storage

Veritas Enterprise Vault

- Operating System
 - Windows 2012 R2
 - MS SQL 2012
- Validated Enterprise Vault 11 as **Simple Storage Service (S3) API**
- Validated Enterprise Vault 12.1 as **IBM Cloud Object Storage (S3)**

Note:

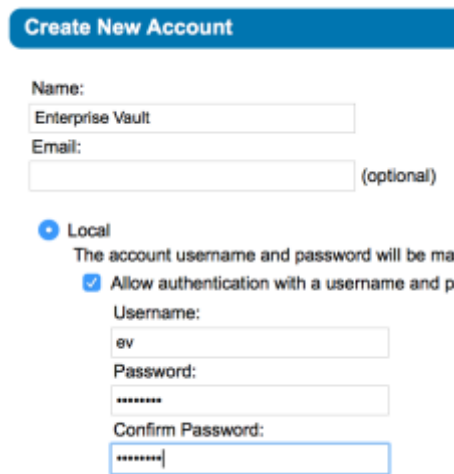
- EV 12.0.n & 12.1.n – Requires EVExtendedSettings.xml to be installed by customer.
 - EVExtendedSettings.xml and PopulateExtendedSettings guide can be acquired from IBM Cloud Object Storage Support Team.
- EV 12.2 or later – IBM Cloud Object Storage (S3) entry will be included in this release, so after installation of this version or later, no special steps are required.

Prepare the IBM Cloud Object Storage Solution

NOTE: If using public IBM Cloud Object Storage, skip this step.

Create the Cloud Object Storage Account

- Log into Cloud Object Storage Manager as an administrator
- Navigate to the **Security** functional tab
- Select the **Create Account** button
- Configure the following fields
 - Account name/Display name
 - Enable **Allow authentication with a username and password maintained within the Cloud Object Storage Manager** option
 - Assign a **Username** and **Password**



Create New Account

Name:
Enterprise Vault

Email:
 (optional)

Local
The account username and password will be maintained within the Cloud Object Storage Manager

Allow authentication with a username and password

Username:
ev

Password:

Confirm Password:

- Select the **Save** button
- Return to the newly created account by clicking on any part of the name
- From the **Access Key Authentication** section, select the **Change Keys** button
- Select the **Generate New Access Key** button
- Click the **Click to Show Secret Access Key** mask
- Record the Key ID and Secret Key



Created	Access Key ID	Secret Access Key
2016-06-22 15:23:29 GMT	a6t10uW8H2jj5FumKEEE	zGqkxQ4dSrPM98okalcqsWlcDjPFDObnbPCiBysS

Create a Vault

- Navigate to the **Configure** functional tab
- Within the **System** navigation tree, select the **Vaults** branch
- Within the **Vault Summary** ribbon, select the **Create Vault** button
- Toggle an appropriate template for a template-based creation, otherwise select to create a **Custom Vault from Storage Pool** pool, then select the **Continue** button

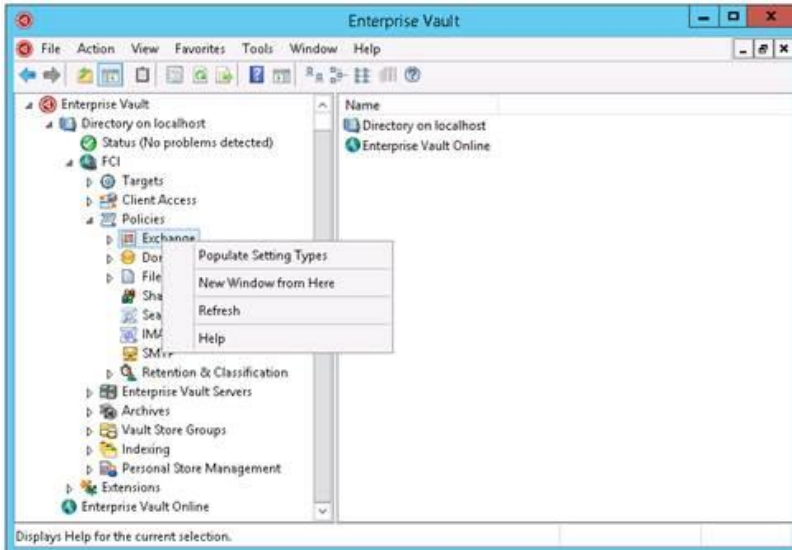
- If creating from a vault template, configure at minimum the following fields
 - General
 - Name
 - Select the **Save** button
- If creating from a custom vault, configure at minimum the following fields, and adjust to suit the environment
 - General
 - Name
 - Configuration
 - Width
 - Threshold
 - Write Threshold
 - Options
 - Name Index **Enabled**
 - Versioning **Disabled**
 - Select the **Save** button
 - Within the **Deployment** ribbon, select the **Change** button
 - Select an appropriate CSO pool
 - Select the **Update** button
 - Within the **Authorized Users** ribbon, select the **Change** button
 - Select one of, or search in the **Text Search:** for the user previously created in the [Create the Cloud Object Storage Account](#) section of this guide and toggle the selection box
 - Select the **Move to Owner** button
 - Select the **Update** button

Configure Enterprise Vault

Execute Populate Setting Types (EV 12.0.n & 12.1.n Only)

- Open Windows Explorer, and then navigate to <Program Files (x86)>\Enterprise Vault\InitialConfigurationData\en\Policies.
 - Replace Program Files directory as needed with installed environment.
- Make a copy of the EVExtendedSettings.xml file.
- Replace EVExtendedSettings.xml with one provided by IBM COS.
- Update the following registry value:
[HKEY_LOCAL_MACHINE\SOFTWARE\Wow6432Node\KVS\Enterprise Vault\Admin]
"PopulateExtendedSettingTypes"="1".
- Close and then re-launch the Enterprise Vault Administration Console.
- Navigate to Policies - Exchange.


- Right-click Exchange, and then select **Populate Setting Types**:

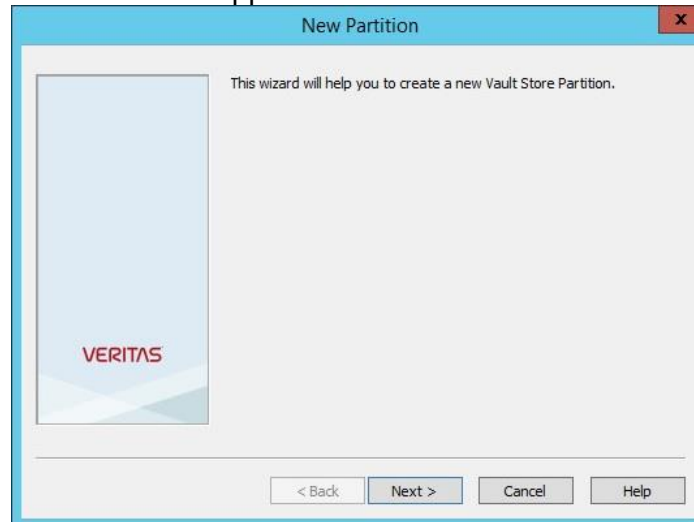


A message is displayed that indicates that the Settings Type table in the Directory database has been successfully populated.

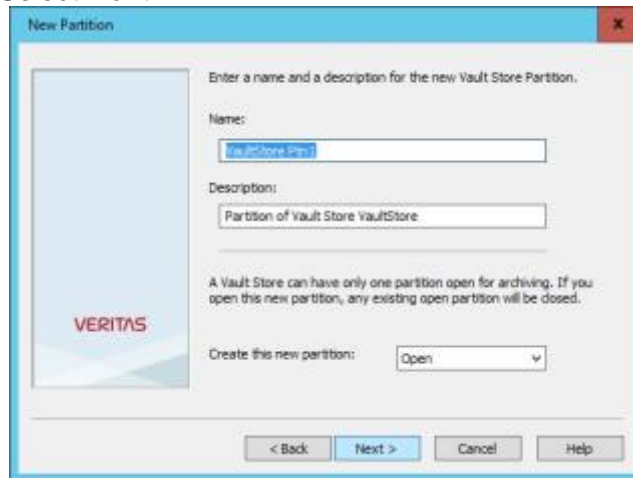
- Restart the storage service on the Enterprise Vault storage server(s).

Add a Partition to a Vault Store

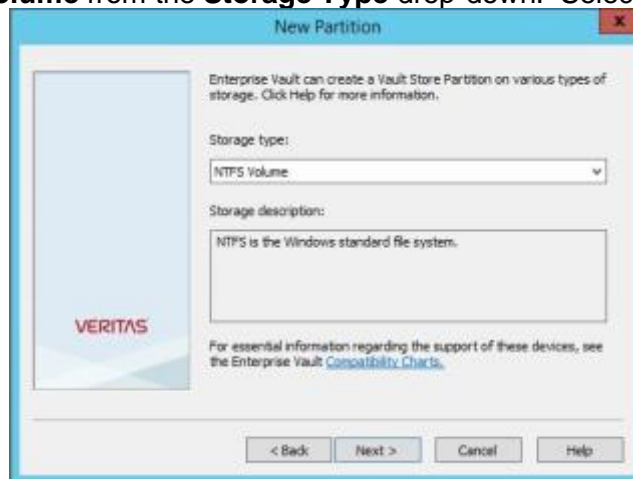
- Launch the Enterprise Vault MMC Administration Console 
- Navigate to the desired vault store group, then the vault store
- On the vault store, right click (select context menu) and choose New -> Partition
- The New Partition wizard will appear. Select the **Next** button



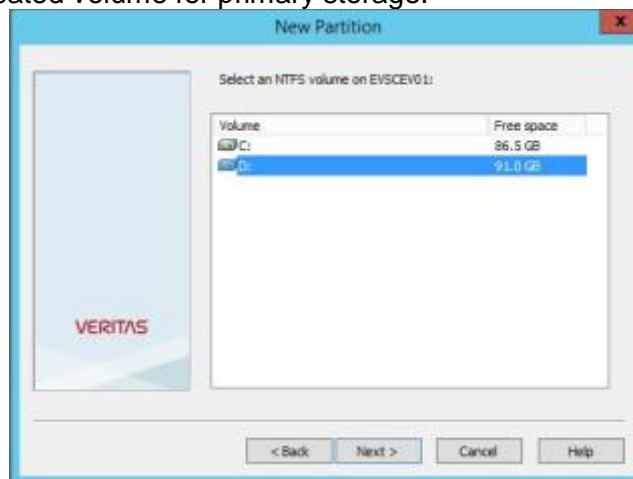
- Enter a name and description for the partition. Check that **Open** is selected from the drop-down list. Select **Next**.



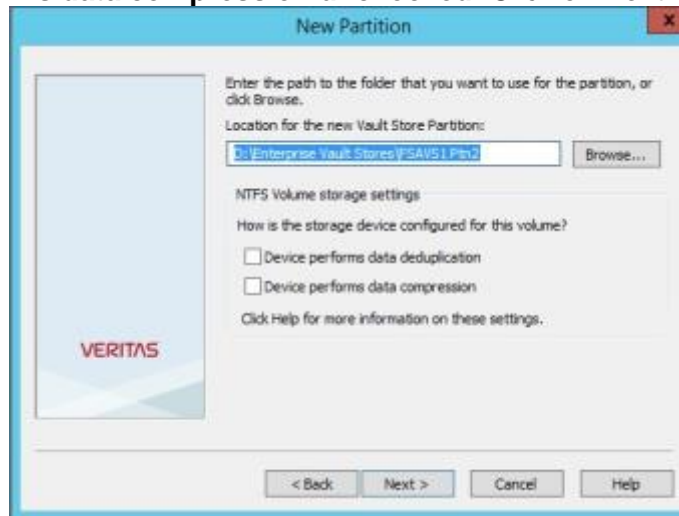
- Select **NTFS Volume** from the **Storage Type** drop-down. Select **Next**.



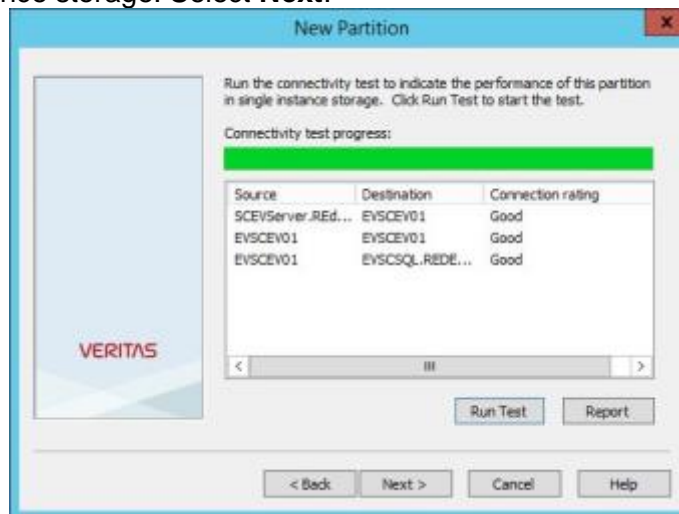
- Select the dedicated volume for primary storage.



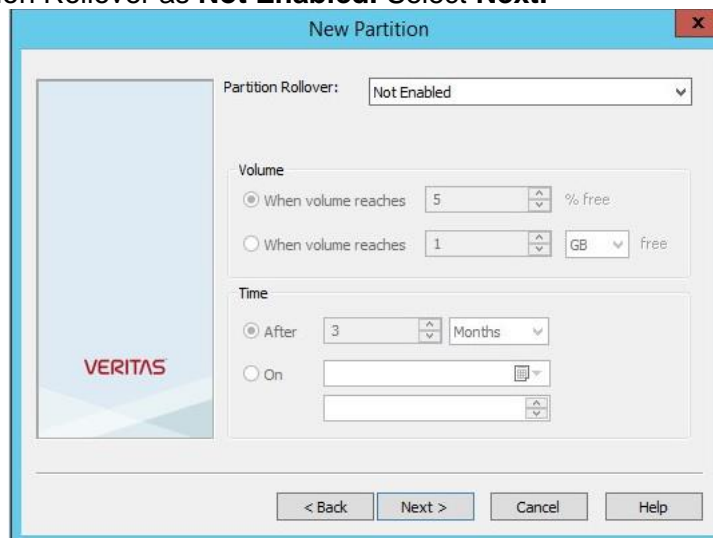
- Select a path for the partition folder. Leave **Device performs data deduplication** and **Device performs data compression** unchecked. Click on **Next**.



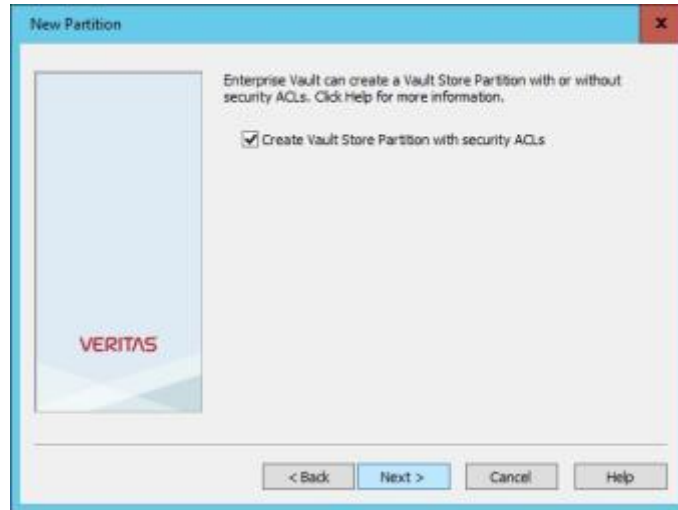
- Run the Connectivity test click on **Run Test** to determine the performance of the partition in single instance storage. Select **Next**.



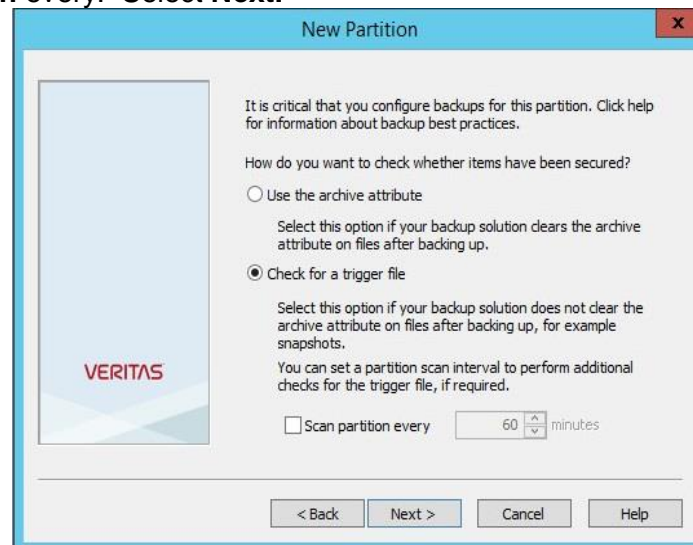
- Leave Partition Rollover as **Not Enabled**. Select **Next**.



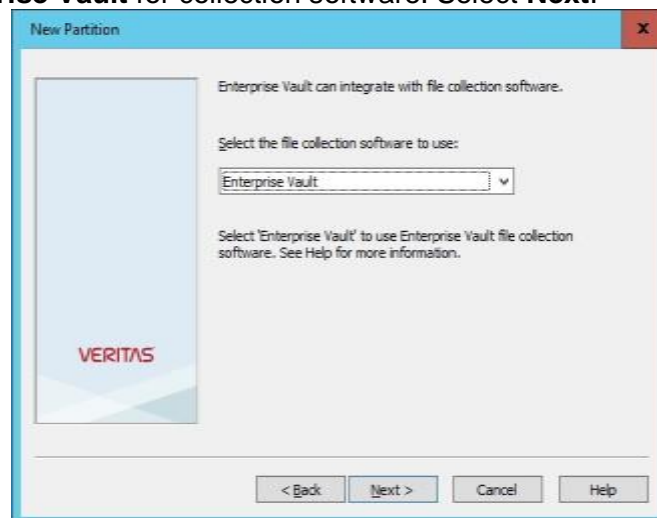
- Leave default **Create Vault Store Partition with security ACLs** checkbox checked. Select **Next**.



- Select **Check for a trigger file**, per the requirements for your storage system. Uncheck **Scan partition every**. Select **Next**.



- Select **Enterprise Vault** for collection software. Select **Next**.



- Enter a **Start at** and **End at** times. Select **Next**.

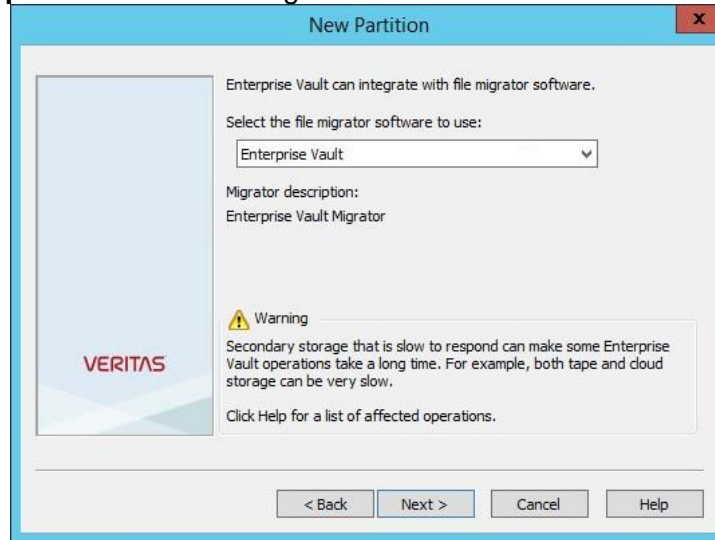
- Set a **Collect files older than value**. Check **Migrate files to secondary storage**. Select **Next**.

- From the drop-down list, select **Simple Storage Service (S3) API** for **EV 11** and **IBM Cloud Object Storage (S3)** for **EV12**. Select **Next**.

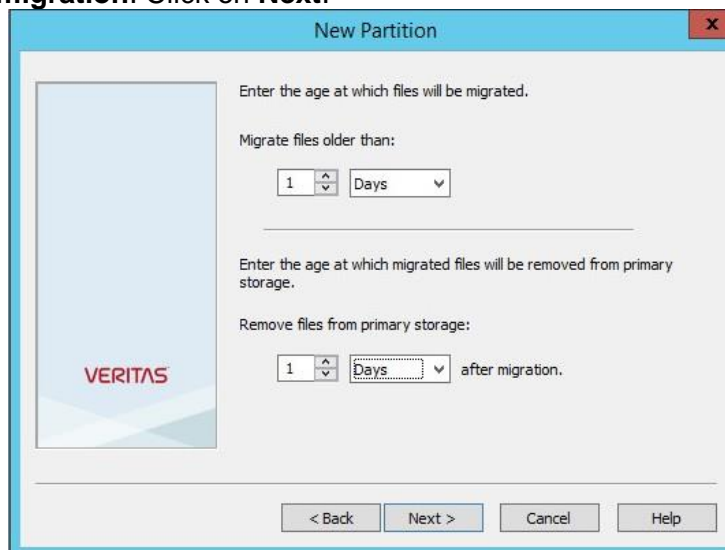
Enterprise Vault 11

Enterprise Vault 12

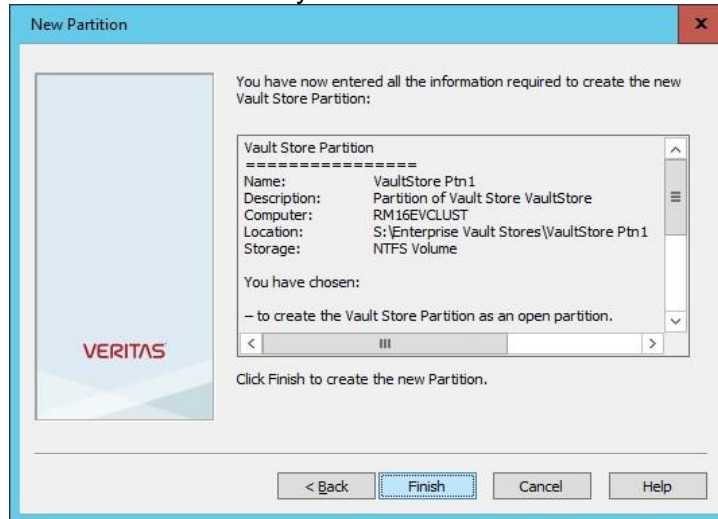
- Select **Enterprise Vault** as the migrator software.



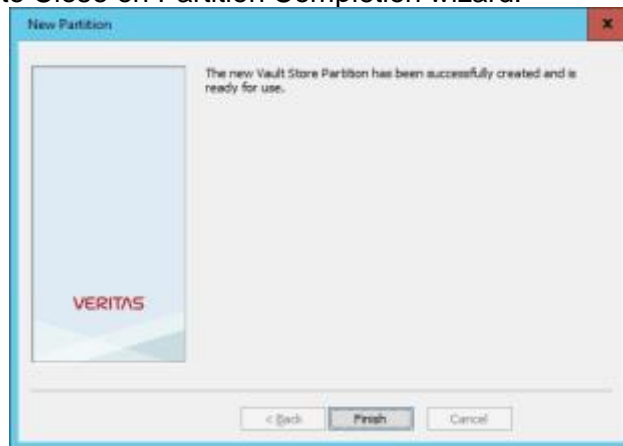
- Set a **Migrate files older than** value. Set a **Remove file from primary storage** value for **Days after migration**. Click on **Next**.



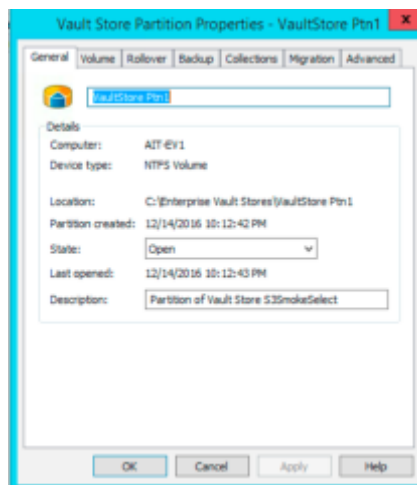
- Select **Finish** on Partition Summary.



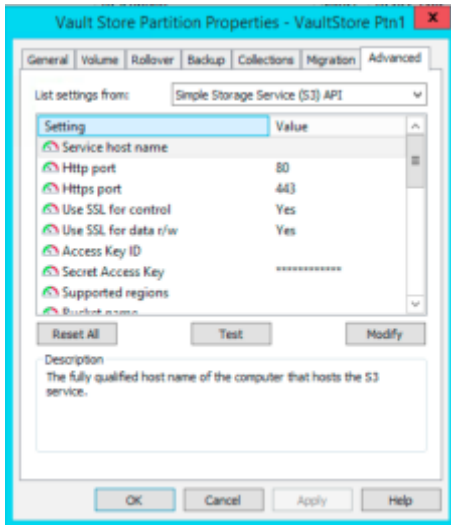
- Click on **Finish** to Close on Partition Completion wizard.



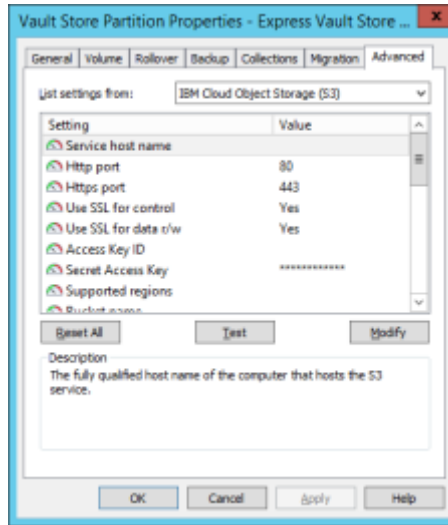
- From within the vault store, right click (select context menu) on the newly created partition and select **Properties**.



- Select the **Advanced** tab.



Enterprise Vault 11

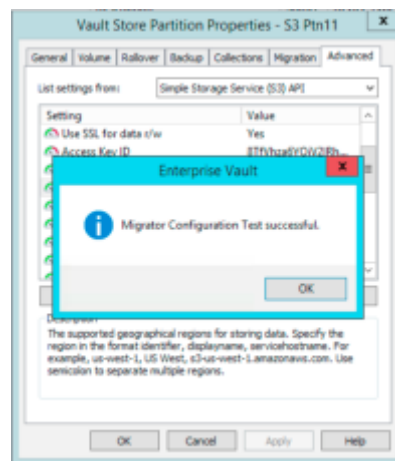
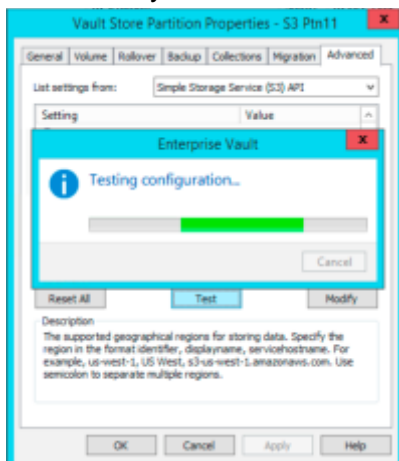


Enterprise Vault 12

- Use the modify button to adjust at minimum the following settings:
 - Service host name (Cloud Object Storage Accesser/Endpoint host/IP)
 - Use SSL for control and data/rw (For toggling HTTPS)
 - Access Key ID and Secret Access Key from either the [Create the Cloud Object Storage Account](#) section of this guide, or from the IBM Cloud Object Storage Public service
 - Bucket name (vault created on one of the Cloud Object Storage types)
 - Bucket access type
 - Typically **Path** for on premise (simple hostname)
 - Typically, **Virtual** for S3 public cloud naming
- When finished, select **Apply**

Test the Configuration

- Highlight the **Service host name** setting and select **Test** to confirm the migrator can be successfully accessed



HTTPS Certificate Importing (Optional)

NOTE: If using HTTP, skip this step.

Enterprise Vault is configured to trust several well-known public CAs for HTTPS communication. In instances where a IBM Cloud Object Storage self-signed, or other purpose requires, you can import the trusted or self-signed CA certificate. In general, Public Cloud IBM Cloud Object Storage should not require certificate importing.

Perform the steps to add a self-signed or other root CA certificate to the cloud **cacert.pem** file on each EV Server.

NOTE: This will require server operating system admin access

- Log into Cloud Object Storage Manager as an administrator
- Navigate to the **Security** functional tab
- Within the **System Fingerprint** section, select the **certificate authority** link
- Copy into a clipboard for pasting on the EV server session.
 - The first line should contain the first -----BEGIN CERTIFICATE-----
 - The last line should contain the final -----END CERTIFICATE-----
- On the EV server, open each **cacert.pem** file located in the <EnterpriseVault_Install_Path>\OST\ **and** <EnterpriseVault_Install_Path>\OST\x64 directories.
Example:
C:\Program Files (x86)\Enterprise Vault\OST
C:\Program Files (x86)\Enterprise Vault\OST\x64
- **Append** the earlier saved self-signed CA certificate **to the very bottom** of **cacert.pem**, then save the file. The entry will look similar to the following example:

Example:

```
Custom Certificate Header
=====
-----BEGIN CERTIFICATE-----
MIIDwzCCAqgAwIBAgIBATANBgkqhkiG9w0BAQsFADCBgjELMAkGA1UEBhMCREUxKzApBgNVBAoM
I1QtU3lzdGVtcyBFbnRlcnByaXNlIFNlcnZpY2VzIEdtYkgxHZAAdBgNVBAAsMF1QtU3lzdGVtcyBU
cnVzdCBDZw50ZXIxJTAjBgNVBAMMHFQctVGVsZVNlYyBhbG9iYXNlcnZpY2VzIEdtYkgxHZAAdBgNV
MDAxMTAyOTU2WhcnMzZmMxMDAxMjM1OTU5WjCBgjELMAkGA1UEBhMCREUxKzApBgNVBAoM1QtU3lzd
dGVtcyBFbnRlcnByaXNlIFNlcnZpY2VzIEdtYkgxHZAAdBgNVBAAdMF1QtU3lzdGVtcyBUcnVzdCBD
ZW50ZXIxJTAjBgNVBAMMHFQctVGVsZVNlYyBhbG9iYXNlcnZpY2VzIEdtYkgxHZAAdBgNVBAAsMF1
DgMq92og3AIVDV4Vavzjsg1xZ1kCWyJWZGhJ8cb1thdHFsQ/H3NYkQ4J7sVaE3IqKHBaUsR320
9tPPcPRStdiTBONGhnFBSiVwKiVA9ZiW$A5003yXDw/RLyTFwGrTs0NvvAgJlORH8EGoe115YU
NpDQsXuhdfsa30x+M6pCSzyU9XDFES4hqX2iys2qmVnN6chr3IhUciJFrF2blw2qAsCTz34ZF
iP0Zf3WHHx+xGwpzJFu52eAsVMhg02YXP+HMVDNzkQI6pn97djmH5a2OK61yJN0HZ65tOVgnS9W
WOHAD3bZwI18gfNycj5v/hq02V81xrJvNHy+SE/iWjnX2J14np+GPGNeGYtEotXHAqMBAAGjQjBA
MA8GA1UdEwEB/wQFMAMBaf8wDgYDVR0PAQH/BAQDAgEGMB0GA1UdDgQWBBS1A/d202GCahKqGFPr
AyGuv/70yjANBgkqhkiG9w0BAQsFAAOCAQEAUj3v1NW92noyWL6ukK2YJ5f+AbGwUgC4TeQbIXQb
fsDuXmkqJa9clh3a0nnJ85cp4Iah3gRZD/FZ1GSFS5mvJQQeyUapl96Cshwn5z2r3Ex3XsFpSzT
TZVHO8mVbaG0wey9rQPOLXiZNWlz6bb65pcmaHFCN795trV1lpFDMS3wrUU77QR/w4Vtfx128a9
P0HHRwA11fXT91Q+gtP3aSWqas+8QPebrb9HIikfLz8BM2LZGOMivgkeGj5asuRrDFR6fUNOuIm1
e9eiPzAGzPImNClqkp2aGtAw4110BLBfiyB+d8E91YLRrpo7PHi4b6HQDWSieB4pTpPdpFQUUw==
-----END CERTIFICATE-----
```

**** NOTE ****

AN UPGRADE OF THE ENTERPRISE VAULT SOFTWARE MAY REVERT ANY CHANGES MADE TO THE 'CACERT.PEM' FILE, MAKING IT NECESSARY TO REPEAT THESE STEPS AFTER THE UPGRADE.

Troubleshooting

Areas to consider when troubleshooting the integration of the vault store partition with IBM COS.

1. Connectivity between the Enterprise Vault server and the COS Accesser(s).
2. S3 Credentials and Permissions
 - a. Ensure the S3 credentials entered at configuration match that account in the COS.
 - b. The S3 credentials should belong to a user that has R/W privileges on the IBM COS.
3. Certificate authentication – The EV OST component validates web server certificates. Subject name and root CA considerations are required by the application.
4. To help determine the cause of any problems with Enterprise Vault it is possible to run Dtrace.exe. See the following Veritas knowledge base article for more details:
https://www.veritas.com/support/en_US/article.000125000

Performance Optimization

Optimizing performance is essentially a configuration or operation involving identifying and mitigating backup throughput bottleneck.

- Enterprise Vault Environment
 - Server volume IO and general network performance
 - SQL component speed and efficiency
 - Follow SQL maintenance best practices
- Client to Accesser Load Balancing (on premise)
 - Dedicated load balancers can be utilized
 - DNS load balancing can increase the throughput
- IBM Cloud Object Storage IDA
 - Depending on Cloud Object Storage deployment, commit latency may become the bottleneck in the

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