

# Cloud Storage for Enterprise Vault

Provided by Business Critical Services



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# **Revision History**

Version	Date	Change
1.0	June	Initial Version
	2018	

# Introduction

This document is designed to assist VERITAS customers and partners who wish to configure Enterprise Vault with cloud based primary OR secondary storage for vault store partitions, with examples of the most commonly used cloud service providers such as EMC, IBM, AWS, and Azure.

Readers of this document should already have basic knowledge of Enterprise Vault and reviewed Veritas and cloud vendor supplied documentation. This document does not cover the theoretical concepts; rather, it is a 'How to do' guide.

The steps and screenshots of this document are taken from the latest available version of Enterprise Vault (12.3.0) and cloud providers that may vary with previous OR future versions of the products. Please always review the latest compatibility guide for Enterprise Vault before implementing cloud storage in a production environment.

This presentation is provided for informational purposes only and is not intended as advertising of VERITAS or any other cloud service provider. The information in this document is subject to change without notice.

Customers who purchase Veritas or third party vendor's offerings should make their purchase decision based upon features available at the time of purchase.

If you have any feedback or questions about this document, please email them to **ii-tec@veritas.com** stating the document title.

# 1. Primary partition on Cloud Storage

Vault store partitions can be placed on different physical disks and on various types of storage medium. Following two examples shows how cloud storage can be used to store vault partition.

## 1.1 Dell EMC Elastic Cloud Storage (ECS)

Dell EMC provides streamer based Vault store partition that allows EV to write files on S3 bucket associated with Namespace created on EMC cluster.

• Access the ECS Test Drive portal at https://portal.ecstestdrive.com/account/register and complete the registration process. Once you are registered for an ECS Test Drive account, log in and click the CREDENTIALS link at the top of the page



- In AWS S3 section, copy Endpoint, Access Key, Secret key
- Use one of S3 compliant client application such as CyberDuck, cloudberry OR S3Browser to create bucket for Enterprise vault partition. Following steps shows the bucket creation using CyberDuck

- Click on **Open Connection**
- Choose Amazon S3 from the first dropdown list

8	Open Connection	
File Edit Vie	FTP (File Transfer Protocol)	~
100	WebDAV (HTTP)	100
Open Connect	pn 🖉 WebDAV (HTTPS)	
5 M A	FTP (File Transfer Protocol)	
	FTP-SSL (Explicit AUTH TLS)	
	SFTP (SSH File Transfer Protocol)	
	🔄 Windows Azure Storage	
	Backblaze B2 Cloud Storage	
	DRACOON (Email Address)	
	Google Cloud Storage	
	Amazon S3	
	🖳 Rackspace Cloud Files (US)	
	Swift (OpenStack Object Storage)	
	🖾 Dropbox	
	Google Drive	
	Microsoft OneDrive	
	DC DC	

• Use information such as **server name**, **Access Key ID**, **password (secret) key** from the credential page then click on **connect** 

🚨 Amazon S3			
Server:	object.ecstestdrive.com	Port:	443 🗘
URL:	https://131693042649205091%40ec	stestdrive.emc	
Access Key ID:	131693042649205091@ecstestdrive	.emc.com	
Password:	••••••	••••••	
	Anonymous Login		
SSH Private Key:	None	~	Choose
	Save Password		
		Connect	Cancel

• Click on **New Folder**, give an appropriate name to the bucket, eg. 'storage-ecs-part1'. The bucket name must be unique and lower case

	Action	
Refresh	Ctrl+R	
New Folder	Ctrl+Shift+N	
New Entrypted Vaul	It	
New File.	Ctrl+Shift+F	
New Symbolic Link.	**	
-		
X(-	Create new folder	
	folder	

#### **Creating Enterprise Vault Partition**

• Download and install ECS Streamer driver http://support.emc.com on EV server



(Follow the installation steps as per the wizard)

• Create a new Partition



Select Dell EMC Elastic cloud storage (ECS)

٠

	Enterprise Vault can create a Vault Store Partition on vario storage. Click Help for more information. Storage type:	us types o
	NTPS Volume	
VERITAS	Network Share - NTF5 Volume HYDRAstor Del EMC Data Domain FUJITSU ETERINUS CS8000 Crade ZFS Storage Applance Del EMC Ision OneFS Scale Out Storage IBM Storwize V7000 Unified IBM Scale Out Network Attached Storage (SONAS) Veritas InfoScale Storage (Cluster File System) Quantum StorNext Applances (Artico / Xcellis) Huawei Device Veritas Access Pilar Axiom Del EMC Celerra Unified Storage Platforms Del EMC Centera	
	Dell EMC Elastic Cloud Storage (ECS)	
	Hitachi Contant Diatform (HCD)	
	NetApp Device NetApp StorageGRID (HTTP) IBM Cloud Object Storage Storiant ITernity Compliant Archive Solution HP StoreAll Storage HPE 3PAR File Persona	

• Fill in details of hostname, port no., bucket name, access key, secret key, namespace (copy from ECS credential page) of ECS configuration then click on Test. A "Dell EMC Elastic Cloud Storage (ECS) connection test succeeded" message should display

neral Rollover Backup Advanced	
st settings from: Dell EMC Ela	stic Cloud Storage (ECS) 🛛 🗸
Setting	Value
Host	object.ecstestdrive
2 Port	443
Bucket Name	storage-ecs-part1
Access key	13169304264920509
Secret key	********
Safe copy check	0
Use proxy	0
Namespace	131693042649205091
Reset All Test Description The name of the S3 bucket to use.	t Modify
Reset All Test Description The name of the S3 bucket to use.	t Modify
Reset All Test Description The name of the S3 bucket to use. OK Cancel	t Modify Apply Help
Reset All Test Description The name of the S3 bucket to use. OK Cancel Enterp	t Modify Apply Help prise Vault
Reset All Test Description The name of the S3 bucket to use. OK Cancel Enterp Dell EMC Elastic Cloud Store	t Modify Apply Help prise Vault age (ECS) connection test succes
Reset All Test Description The name of the S3 bucket to use. OK Cancel Enterp Dell EMC Elastic Cloud Stord Streamer Version:	t Modify Apply Help prise Vault age (ECS) connection test succes 1.0.12.0
Reset All Test Description The name of the S3 bucket to use. OK Cancel Enterp Dell EMC Elastic Cloud Stord Streamer Version: Storage System Version:	t Modify Apply Help brise Vault age (ECS) connection test success 1.0.12.0 1.0.0.1

Once the partition setup completes successfully you can start archiving on Dell-EMC ECS partition.

Additional reference material provided by VERITAS:

How to configure EMC Elastic Cloud Storage (ECS) as an Enterprise Vault Partition https://www.veritas.com/support/en\_US/article.100039067

Additional reference material provided by Dell-EMC: https://www.emc.com/collateral/white-papers/h15309-vertias-vault-emc-elastic-cloud-storage.pdf

# 1.2 IBM Cloud Object Storage

IBM Cloud Object Storage (COS) provide streamer based Vault store partition that allows EV to write files on S3 compliant bucket created on IBM cloud.

- Open IBM COS URL https://console.bluemix.net/catalog/
- Select Object Storage from Storage container

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-) C Q	Mtps://contole.bluemic.net/catalog/		🖻 🕲 🔹 🔇	R, Search	W\ 6
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IBM Cloud				Catalog	e Docs Lesly Seri
Il Categories	Q, Search			-	Filter
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ampute					
totaĝe.	Compute				
etwork	Build your virtual environments.				
cunty					
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Misara	Eare metal servers provide the raw horseposer you destand his your processor intervalue and	Char virtual servers de transitioneurs, poedici	Ever a higher degree of ability, and a local solution		
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• Give an appropriate name to Service name then click on Create

Cloud Object Storage	Looking for	our infrastructure or Swift Object Storage offerings?
IBM Cloud Object Strange is a highly scalable cloud strange service, designed for high sharability, resiliency and rescurity. Stres, manage and access your data via	Service name: stocage project 1	
our self-service pertai and RESTul APIs. Connect I applications directly to Cloud Object Storage use other	Select a resource group:	
IBM Cloud Services with your data.	Default	
<b>69 (m)</b>		
View Dana Terres	Features	
AUTHOR IIIH RUBLISHED 05/11/2018 TYPE Service	<ul> <li>Storage for the IBM Cloud IBM Cloud Object Monage provides unstructured data storage for cloud applications. Literates and SDKs support a common set of 53 API functions for community room applications to socialize cloud storage and magazing room applications to socialize cloud storage and magazing room plate into other socializes on the IBM Watson and Cloud Platform.</li> </ul>	LAM Policies - Bucket level access management IBM (dentity and Access Management (IAM) integration allows for granular access control at the builtet level using role-based policies.
	Encryption management	Regional and Cross Region resiliency options
Need Help? Estimate Monthly Go Contact IBM Claud Sales : Cost Calculator	el a construction de la	Cinate

• Once the service is ready, either click on **Create Bucket** OR **Create your first bucket** as highlighted below

storage /			:
Resource Group: Default			
Buckets			$\frown$
Q. Type the first 3 characters of the bucket name			Create bucket 🔘
NAME	LOCATION	CLASS	ADVANCED
Your Service Instance is empty. Create your first but	ket.		

- Give an appropriate **Name** to bucket
- Select the appropriate option for **Resiliency** and **location**. Storage Class must be Standard
- Click on Create

## Create a bucket

storagebucket1		Standard		
Resiliency: 🕚		Vault		
Cross Region	۲	Cold Vault		
Location: 0		Flex		
us-geo	*	Standard	6	
US-geo ADVANCED CONFIGURATIO	-	Standard	0	
Add Key Protect K	ays O			
Key Protect is r	not available in th	ne selected locatio	on. To enable	, choos

- Select Endpoint
- Copy the endpoint which will be used by the Enterprise vault to access bucket created on IBM cloud storage

Cancel

Create

		e project 1 <sup>Default</sup>	Storage Resource Group: D Endpoints	Buckets Reso Endpoint Reso Service credentals End Connections
			Endpoints	Service credentials End
lon:	Select location:	ndpoints O	Service er Select resilion	Usage details
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- From the Service Credential page, click on New credential
- Give an appropriate **Name** to credential
- If you already created Service ID, then click Select Service ID

8

• If not, select **Create New Service ID**, (Note: If you are creating it for the first time, then create a new Service ID (do not click on **Add**)

(one sured	Steeps 2	Add new credential	×	
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Industri	Relation Gamp	Name	<u>Î</u>	
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		Chapter Republic ID.		
		0	10	
			Cancel Add	

2

- Give an appropriate name to the **New Service ID**
- In Add inline configuration parameter paste {"HMAC":true} (this will generate Access Key ID & Secret key id for API access.)
- Click on Add
  Add new credential

Create New Service ID		÷ ^	
New Service ID Name			
appaccess		11.	
New Service ID Description (Optional)			
Enter Service ID Description			
Add Inline Configuration Parameters (Optional): 🕕			
("HMAC":true)			
	Cancel	Add	
<ul> <li>Click on View Credential then note</li> </ul>	down <b>access_key_i</b>	d & secret	access_ke

Service credentials			New crode	mtial 🕀
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#### Configuration of Enterprise Vault partition with primary location on IBM COS.



Install IBM COS streamer (provided by IBM support)

(Follow the installation steps as per the wizard)

• Create a New Partition



Select type as IBM Cloud object storage

	New Partition
	Enterprise Vault can create a Vault Store Partition on various types of storage. Click Help for more information. Storage type:
	NTF5 Volume
VERITAS	Network Share NTES Volume HYDRAstor Dell EMC Data Domain FUJITSU ETERNUS CS8000 Orade ZFS Storage Applance Dell EMC Islino OneFS Scale Out Storage IBM Storwize V7000 Unified IBM Scale Out Network Attached Storage (SONAS) Veritas InfoScale Storage (Cluster File System) Quantum StorNext Appliances (Artico / Xcellis) Huawe Device
	Veritas Access Pilar Axiom Del EMC Celerra Unified Storage Platforms Del EMC Centera Del EMC Catastic Cloud Storage (ECS) Hitachi Content Platform (HCP) NetApp Device NetApp Storage(RID (HTTP)
	TEM Gloud Objert Storage Storiant Ternity Compliant Archive Solution HP StoreAll Storage HPE SPAR File Persona Carinop Swarm

 Enter configuration details such as Accessor IP (Endpoint), vault name (Bucket), authentication type (AWS2 OR AWS4), access key, secrete key, disable peer authentication (true). Keep server authentication as blank

st settings from: IBM Cloud	f Object Storage	•
Setting	Value	^
Accesser IP	s3-api.us-geo.obje	
S Protocol	HTTPS	
C Port	443	
Nault Name	evpartition3	-
Authentication Type	Access Key AWS v2	
Access Key	89d1ca0ffba94c928	
Secret Access Key	**********	L
O Disable Peer Certificate Verifi	ication True	
Conver Authorities		Ľ
Reset All	est Modify	
Description		
For https only, do not verify authe	enticity of peer's certificate.	

• Click on **Test.** "*IBM Cloud Object Storage connection test succeeded*" should appear if there are no issues encountered

	Setting	Value	
	Enterprise Va	et	
0	IBM Cloud Object Storage con- Streamer Venion: Storage System Venion:	ection test succeed 4.0.0.1 IBM COS	led.
w		De c	x

Once partition setup completes successfully you can start archiving on IBM COS partition.

Additional reference material provided by IBM: https://www-01.ibm.com/common/ssi/cgi-bin/ssialias?htmlfid=KUO12405USEN

# 2. Secondary Storage (Migrator)

Where vault store partitions are held on non-WORM devices, you can configure and schedule the collection and migration of the files that are stored in the partition.

**Collection** involves collecting multiple small files into much larger collection files (.cab files). Collection may give you a significant improvement in backup times.

**Migration** involves moving the collection files onto longer term storage devices. For example, you may want to migrate older collections to cheaper, slower storage. If you choose to use collection files you can configure the collection criteria, and optionally provide details of how and when to migrate the collection files to secondary storage.

Following example will show how to setup AWS S3, Azure, Rackspace & google cloud storage that can be used as a secondary storage.

## 2.1 Common Terminology

#### Storage Server name

The name of the server used by Cloud provider.

#### Access Key ID

The secure access Key ID name that cloud vendor provides.

#### Secret key ID

The account shared secret that loud vendor provides.

#### Bucket (Container in Azure & google cloud)

The name of the bucket created on cloud storage. The bucket name must be unique across all existing bucket names in the cloud provider. To ensure that you use a unique name, you could prefix your bucket names with your company's name.

There are other requirements that you need to take care of while naming the buckets. Refer to the Storage Service provider's documentation for bucket naming requirements and guidelines.

#### **Bucket Region**

The geographical location where the bucket is created.

#### Write buffer size

The buffer size, in megabytes, Enterprise Vault uses for data uploads. Ensure this value is greater than the Maximum Collection File Size setting on the Collections tab of the vault store partitions. Set this option to zero (0) to disable the use of buffers.

#### Read buffer size

The buffer size, in megabytes, Enterprise Vault uses for data downloads.

#### Log CURL messages

Specifies whether to log cURL activity. cURL is a command line tool for sending or receiving files using URL syntax. Enterprise Vault uses the cURL library to transfer data to the cloud.

#### Log level

The amount of detail to include in the log file. You can select from the following:

No logging Errors only Errors, Warnings Errors, Warnings, Info Everything

#### Note:

*If you choose No logging, Enterprise Vault does not log cURL messages even if Log CURL Messages is set to Yes.* 

#### User wait timeout

Specify the number of seconds after a retrieval request, after which the user is presented with the message: "*The archived item is being retrieved from a slow device. Try again later.*" Enterprise Vault continues to retrieve the item in the background until the **System wait timeout** period has elapsed. Enterprise Vault then abandons the attempt to retrieve the item, and the user must submit the retrieval request again. The recommended value is 40 seconds.

#### System wait timeout

If an attempt to retrieve an archived item from the Amazon S3 storage server takes an excessively long time, specifies the number of seconds after which to abandon the attempt and remove the requested item from the retrieval queue. The recommended value is 900 seconds.

#### **Recalled file cache period**

The number of days, since the last accessed date, that Enterprise Vault should retain recalled files in the cache. The collection process deletes the recalled files when the cache period has elapsed.

#### Migrate all files

If the value is set to Yes, Enterprise Vault forces all eligible files to be collected and migrated. Setting this value to Yes may cause Enterprise Vault to create a large number of collection files. If the value is set to No, Enterprise Vault may leave some saveset files uncollected and un-migrated.

# 2.2 Amazon Web Service S3 (Simple Storage Service)

The Enterprise Vault Amazon S3 storage migrator lets you migrate archived data to and retrieve it from Amazon Simple Storage Service (Amazon S3). You can use Amazon S3 as a secondary storage location in the cloud to store infrequently accessed data. The Enterprise Vault Amazon S3 storage migrator is installed as part of the Enterprise Vault 10.0.1 or later installation. It moves CAB files, created by the Enterprise Vault file collection software, to the Amazon S3 storage.

Following steps shows the configuration of S3 Bucket using AWS console and then use it as migrator for vault store partition.

- Root user sign in e

  Email: papnal.pradeepe

  Password

  Forgot password?

  ......

  Sign in to a different account

  Create a new AWS account
- Sign in with root a/c credential to AWS console https://console.aws.amazon.com/console/home

Select IAM under Security, identity and compliance container

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0	Security, Identity & Compliance
	IAM
_	Cognito
	Secrets Manager
	GuardDuty
	Inspector
	Amazon Macie 🗷
	AWS Single Sign-On
	Certificate Manager
	CloudHSM
	Directory Service
	WAF & Shield
	Artifact

• Click on Add user under Users



- Give appropriate User name
- Select Access Type

**Please note**: selection of both access types is not recommended for production use.

Add user

You can add multiple users at once with the same access type and per	nissions. Learn more
User name*	Appliser
	O Add another user
Select AWS access type	
Select how these users will access AWS. Access keys and autogenerat	ed passwords are provided in the last step. Learn more
Access type*	<ul> <li>Programmatic access</li> <li>Enables an access key ID and secret access key for the AWS API, CLI, SDK, and other development tools.</li> </ul>
	<ul> <li>AWS Management Console access</li> <li>Enables a password that allows users to sign-in to the AWS Management Console.</li> </ul>
Console password*	Autogenerated password     Custom password
	Show password
Require password reset	User must create a new password at next sign-in

- Select Attach existing policies directly
- Search for **S3**
- Attach AmazonS3FullAccess

Add permissions to evuser

Grant	permissions				
Use WM p	ofcies to grant perressions	You can assign an existing policy or create	e a new one.		
2	Add user to group	Lapy permissions from	Attach esisting policies allectly		
Attach on Create	e or more existing policies d policy C Refresh	rectly to the users or create a new policy L			
Filter: )	Policy type - Q s1	1			
	Policy name +		Туре	Attachmenta +	Description
	AnazonOV/SRedunit	834ple	ANS nareged	.0	Provides access to nurage 53 settings for Redshift enquores for DNS
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υ.	Anazon53ReadOnly	Access	ANS nanaged		Provides read only access to all bockets via the AVIS Management Console.
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Refer Tech Note to grant granular permission to IAM User. Required permissions for an IAM user to work properly with AWS (S3) with Enterprise Vault. https://www.veritas.com/support/en\_US/article.100032260 • Review the setting and then click on **Create user** 

Review					
Review your choices	After you create the user, you can view and downlo	bad the autogenerated password and access key.			
User details					
	Username	AppUser			
	AWS access type	Programmatic access and AWS Management Console access			
	Console password type	Custom			
	Require password reset	No			
Permissions sun The following policies	nmary s will be attached to the user shown above.				
Туре	Name				
Managed policy	AmazonS3FullAccess				
			Cancel	Provious	Crosto unor

• Note down details of the user name, access Key ID, Secret Access Key and Sign-in URL. You can additionally download this information in CSV format

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Success	We refer the star least taken before free the tensors in the ANN Decadement Property. This is first free free free moderable of the contribute to the	what lines at
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Users with KVIS Useagement Conside access can age-in at https://picaoxeppagnal.agemi.aes.anu	n contramient	
Usern with KWI Useagoment Conside access can sign-in at https://pradosppagnik.signin.aea.am	nconficuence	
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Close

• Go to S3 Service page. Select S3 from Storage section



- Click on Create Bucket
- Give an appropriate name to Bucket
- Select Region (note the bucket name should be unique in your AWS infrastructure)
- Click Create

Please note remaining criteria such as version, permission and website related items have been skipped as they are not required for EV configuration.

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#### Configuring AWS S3 storage as a Migrator (Secondary) storage for Enterprise Vault

• Select Amazon Simple Storage Service as migrator type

Jeneral   von	ane 1 Hos	over 15	aoup	Collection	El ingrassori	Advanced
Mgr	etor: An	nation Sir	npile Sto	rage Servi	oe	
Ente	r the age ste files o	at which iden than	collecti	ori files will	be migrated.	
	1 0	Year		•		
Ente	r the age wed from	at which primary	migrate storage	ed collectio	n files will be	
Rem	ove colles	tion files	from pr	imary stor	sge:	
	1 9	Wee	15	after n	igration.	

- Enter Access Key, Secret key, Bucket Name, Bucket Region information as specified during AWS S3 bucket creation
- Click on Test (Migrator Configuration Test succeeded message appears)

Anazon Smple :	Horage Service	×.	
	Value	~	
me	amazon.com		
00000	Standard		Enterprise Vault
rccess key ID	AKIAI3ZDRI4HGSD4	100	Criterprose Kount
lecret			1272
name	appdatatest (		Migrator Configuration Test successful.
region	20		
	20		
	Econor Miniman	¥.	OK
Test	Modify	800	
zon bucket.			
	region Test	Value Value amazon.com Standard AKIAI32DRI4H6SD4 secret appdatatest1 region US Standard 20 20 Comme Memory Memo	Value  Value  Standard  AXIAI32DR14HGSD4  Recret  Region US Standard  20 20  Come Mitanipus  Test Modify

Once AWS S3 migrator configured successfully. Enterprise vault collection process will collect then migrate EV files from primary partition to secondary AWS S3 storage.

More details can be found at:

Enterprise Vault<sup>™</sup> Migrating Data Using the Amazon S3 Storage Migrator https://www.veritas.com/content/support/en\_US/doc/67282638-129299793-0/v66079963-129299793

## 2.3 Microsoft Azure Data Blob storage

The Microsoft Azure Blob Storage migrator lets you migrate archived data to and retrieve it from Azure Blob storage. You can use Azure Blob storage as a secondary storage location to store archived data in the cloud. The Microsoft Azure Blob Storage migrator is installed automatically when you install Enterprise Vault 12.2 or later.

Following steps shows the configuration of cloud container using Azure portal and then use it as migrator for vault store partition.

• Open Azure web portal - https://portal.azure.com/



• Create a blob storage resource

- Give appropriate name for **Storage account**, remember this should be unique in AWS infrastructure, and select storage kind as **Blob Storage**
- Select New in Resource group section. (If you have already created the resource group you wish to use, select it.)
- Select Pin to dashboard to easily access it directly from console

Create storage account	×
The cost of your storage account depends on the usage and the options you choose below. Learn more	Î
* Name O	ß
appazurestorage1 🗸	Secure transfer required O
.core.windows.net	Displied Ethabled
Deployment model Ø	* Subscription
Resource manager Classic	Free Trial
Account kind 0	* Recourse arrain
Blob storage 🗸 🗸	Create new      Use existing
• Location	MyAppStorage 🗸
East US 🗸 🗸	Virtual actuador
Replication 0	Configure within insteads 0
Read-access geo-redundant storage (R., $\checkmark$	Disabled Enabled
Performance 0	
Standard Premium	
	Pin to dashboard
Access tier (default)	Create Automation options
2001	Change Pationation options

• From the dashboard, click on storage account **appazurestorage1** which was created in an earlier step



• Create a new Container, keep the access level as Private(no anonymous access)

₽ Search (Ctrl+/)	+ Container O Refresh Delete
Overview	New container
Activity log	* Name
Access control (IAM)	myappbucket 🗸
🖉 Tags	Public access level 0
X Diagnose and solve problems	Private (no anonymous access)
🗲 Events	OK Cancel
ETTINGS	P Search containers by prefix
Containers	NAME
P Access keys	You don't have any containers yet. Click '+ Container' to get started.
Configuration	

## • Click on Access key tab and note the storage account name & key

ppazurestorage1 – Access key <sup>orage account</sup>	S	×.
Ø Search (Ctrl+/)	Use access keys to authenticate your applications when making requests to this Azure storage account. Store your access key	/5
Overview	securely - for example, using Azure Key Vault - and don't share them. We recommend regenerating your access keys regularly You are provided two access keys so that you can maintain connections using one key while regenerating the other.	y.
Activity log	When you regenerate your access keys, you must update any Azure resources and applications that access this storage account or use the new keys. This action will not interrupt access to disks from your virtual machines. Learn more	Int
Access control (IAM)	Storage account name	1
Tags	appazurestorage1	ſ
X Diagnose and solve problems	key1 Č)	
Events	Key	
TTINGS	pQrvBr+rwol9psWKx73SKcrE8M0JW+ZUQeIY05CJ+PJMGSFMpXV+U9Maygbtiwtc69+aPkabmZna6hxfhuw2NA==	ľ
Containers	Connection string DefaultEndpointsProtocol=https:AccountName=appazurestorage1;AccountKey=pQrvBr+rwol9psWKx735KcrE8M0JW	r
7 Access keys	key2 ()	
Configuration	Key	
Custom domain	5VSQ4dG8LbvZm1B664n+YIqTU4N5y317LNgoPKBsz/jNirbWOaBy/DGxKU58ffdNESHkCJ1/jEM7PhbvzIQHFw==	£
Encryption	Connection string DefaultEntrointeRedocat=http://accountNime=appartmentorang1/AccountNime=50/COAd/C01 by/2m10664a_Vio11 (ANS)	ID
Azure CDN	weitamentepointen reinschentrigenzonnnnen enppaziestonage nie committeg europende bezim boben eing rokksyn.	J

#### Configuring Azure Data blob as secondary storage for Enterprise vault.

- In the properties of vault store partition, select Migration tab
- Select Migrate files
- Select Microsoft Azure blob storage

Seneral	Volume	Rollover	Backup	Collections	Migration	Advanced
<b>V</b> 1	ligrate file	s				
	Migrator:	Microsof	ft Azure Bl	ob Storage		
-						
	Enter the Migrate fi	age at wh	ich collect	ion files will b	e migrated.	
	rigiate ii		1911			
	1	Ye	ars	~		
-	Enter the	non at ub	ich miacht	ad collection	flor will be	
	removed	from prima	ry storage	e.	nies wii be	
	Remove of	collection fi	les from p	rimary storag	je:	
	1	÷ w	eeks	✓ after mig	ration.	
-						

- In Advanced tab, specify the storage account, primary access key & container name (bucket) information
- Click on **Test** connection. "*Migrator Configuration Test successful*" message appears if there are no errors

List settings fr	om:	Microsoft Azure B	ob Storage	~	
Setting			Value	~	
Azure st	orage serve	er name	Default		
Azure st	orage acco	unt	appazurestorage1	=	
Azure st	orage acco	unt primary ac	*****		
Azure co	ntainer na	me	myappbucket		Enterprise Vault
Mrite bu	ffer size		20		
🛆 Read bu	fer size		20		
C Log leve			Errors, Warnings		Migrator Configuration Test successful.
O Use SSL	for control		Yes	~	
Reset All		Test	Modi	fv	
Description		1			ОК
The storage	server DNS	name.			

Once Azure migrator has been configured successfully, the Enterprise Vault collection process will collect then migrate EV files from primary partition to secondary AWS S3 storage.

More information can be found at:

Enterprise Vault<sup>™</sup> Migrating Data Using the Microsoft Azure Blob Storage Migrator **https://www.veritas.com/support/en\_US/doc/125282611-125282615-0/index** 

# 2.4 Google Cloud Storage

The Google Cloud Storage migrator lets you migrate archived data to and retrieve it from Google Cloud Storage. You can use Google Cloud Storage as a secondary storage location to store archived data in the cloud. The Google Cloud Storage migrator is installed automatically when you install Enterprise Vault 12.2 or later.

Following steps shows the configuration of bucket using Google portal and then use it as migrator for vault store partition.

- Open https://cloud.google.com/
- Open console and create a new Project

New	Pro	ject

nystoragepro	ject	Q
Project ID: my	storageproject-202809. It cannot be changed later. EDIT	
Location *		
🔢 No organi	sation	BROWSE
<sup>p</sup> arent orga <mark>n</mark> is	ation or folder	

• Select the correct project if you have access to multiple projects

# Select

Q. Search projects and folders	(D) +
All	
Name	iD
imystorageproject	mystorageproject-202809
Se My First Project	uplifted agency 202613
	CANCEL OPEN



#### • Select storage from Product and Services menu

• Click on Create Bucket and populate the Name, storage class and location fields



#### Create a bucket

storage-for-local-app			
Default storage class <			
Multi-Regional			
Regional			
Nearline			
Coldline			
Location			
Loodingi			*
United States			
United States Storage cost	Retrieval cost	Class A operations 💿	Class B operations 💿
United States Storage cost \$0.026 per GB-month	Retrieval cost Free	Class A operations 💿 \$0.005 per 1,000 ops	Class B operations  \$ 0.0004 per 1,000 ops

- Click on Settings
- Select Interoperability (enable if it is not already)
- Note down cloud storage URL, access key and secret key details (If secret key is not present, click on Create a new Key)

=	Google Cloud Platform						
	Storage	Settings					
	Browser	Project Access Interoperability					
# #	Transfer Transfer Appliance	The Interoperativity API lets you use HMAC authentication and lets Cloud Storage Interoperate with tools written for other cloud storage systems. Turn on this ADI only if you require interoperable access for the current user. This API is exploied per project member, not per project. Each member can set a default					
*	Settings	project and maintain their own access keys.					
		In the tools or libraries that you use with other cloud storage systems like Amazon S3, change the request endpoint to use the Cloud Storage URI: https://storage.googleapis.com. Leam more					
		Default project for interoperable access The default project is used with the interoperability API for all create bucket and list bucket requests.					
		uplifted-agency-202613 is your default project for interoperable access.					
		Make mystorageproject-202809 my default project					
		Interoperable storage access keys Use an access key to authenticate yourself when making requests to Cloud Storage. The key is linked to your Google account. Learn more					
		Access Key Secret					
		GOOGVDTTW4K7PVCFQ7GE TItFsBeyhppPbHEjZjqjS5vCxc97g28xd+d6EDuC					
		Create a new key					

## Configuration of Google cloud as Migrator for Enterprise Vault partition.

- In the properties of the EV partition, select **Migration** tab
- Select Google Cloud storage as migrator

ieneral   V	olume R	ollover	Backup	Collection	Migration	Advanced
Mig Mig	rate files					
.15	grator: 1	Google (	Joud St	wage		
Fr	iter the ar	e at wh	ich mile	rtion files will	he minrated.	1
M	grate files	older th	ian:		and the second	
	1	A) [	-1995) 1997 -			
	1	¥ Ye	ars	•		
	the the ar	us at aib	in the second	stard collection	o files will be	
re	moved fro	m prima	ry stora	ge.	THE WE DE	
Re	emove coã	ection fi	les from	primary stor	age:	
	1	0 W	eeks	v after m	igration.	
-	<u> </u>	and a second			2	

- Select Advanced tab, based on configuration
- Specify **Storage server name** (storage.googleapis.com), **access key, secret key, Support region** (US,US,storage.googleapis.com)
- Specify Bucket Name
- Click on **Test** connection, "Migrator Configuration Test successful" message appears if there are no errors

SMTP VS Ptn7	Partition of Vault Store SMTP VS	Ready NTFS Volume	Not Ena Enterprise Vault
SMTP VS Ptn8	Partition of Vault Store SMTP VS	Ready NTFS Volume	Not Ena Enterprise Vault
		Vault Store Partition Prope	rties - SMTP VS Ptn7
e		General Volume Rollover Backup Co	lections Migration Advanced
<b>A</b>		List settings from: Google Cloud	Storage 🗸 🗸
		Setting	Value ^
Er	nterprise Vault	Use SSL for data r/w Google Storage Access Key Google Storage Secret Key	Yes GOOGVDTTW4K7P
		Supported regions	US,US,storage.goo
Migrator	Migrator Configuration Test successful.	Bucket name	storage-for-local-a
	OK	Bucket access type	Path 20
		Dead huffer size	20 ~
		Reset All Test	Modify
		Description The supported geographical regions fo region in the format identifier, displayn example: US,US,storage.googleapis.co multiple regions.	storing data. Specify the ame, servicehostname. For m. Use semicolon to separate
		OK Cancel	Apply Help

Once the Google migrator configured successfully, the Enterprise Vault collection process will collect and then migrate EV files from the primary partition to secondary Google storage.

Additional reference material provided by VERITAS: How to configure Enterprise Vault 12.1 with Google Cloud Storage https://www.veritas.com/support/en\_US/article.100039053 https://www.veritas.com/content/support/en\_US/doc/125452905-125453076-0/v125452521-125453076

## 2.5 Rackspace Cloud Files

The Enterprise Vault Rackspace Cloud Files storage migrator lets you migrate archived data to and retrieve it from Rackspace Cloud Files storage. You can use Rackspace Cloud Files as a secondary storage location in the cloud to store infrequently accessed data.

The Enterprise Vault Rackspace Cloud Files storage migrator is installed as part of Enterprise Vault 10.0.1 or later. It moves CAB files, created by the Enterprise Vault file collection software, to the Rackspace Cloud Files storage.

Following steps shows the configuration of Rackspace and then use it as migrator for vault store partition.

- Signup to Rackspace cloud http://www.rackspacecloud.com/signup
- Go to Rackspace control panel https://login.rackspace.com/
- Provide the root user account you configured during signup process

	Login to Cloud Control Panel
	Username:
C realize and	pradeeppapnai
rackspace.	Password:
	•••••
	Remember Me
	Log In
	Use your organization's credentials to log in
	Forgot Password?

- Create a new user **Account** for API access
- Go to User Management from Account tab

	TICKETS	SUPPORT	SILLING	ACCOUNT	prodeoppopnai
KUPS Y		Account #: 1102073 Service Lev Manageo	<sub>vel:</sub> d Infrast	ructure	
UICK BUILD		Account	Ootting		
	•	User Ma	nagemei	nt	
From Se	erver	Docs and	d Forms		
Tomplato		Resource	e Limits		
RODUCT NEWS		Upgrade	Service	Level	
Read upda Meltdown Security	ates on Ra remediati	Time Zo	ne		
0 0 1	11 H F	a			

• Click on Create user, this console will give you list of all users created so far

# **User Management**

Isers		
Create User	Search	users
Usemame	Name	Contact Type
THE OWNER WHEN THE OWNER	F 1 PROVIDENT	Primary

- Give user details, contact type must be **Technical**
- Select appropriate permission on Rackspace cloud

### **User Information**

First Name	Storage	Product Permission	s
Last Name	User1	Fanatical Support for AWS	Rackspace Cloud
Username	StorageUser1	Global Permissio	ins
Password	At least 8 characters with 1 uppercase, 1 kwercase, and 1 number	Product Access	<ul> <li>Full Access (All Products) (9)</li> <li>Read Only Access (All Products) (9)</li> <li>No Access (No Product Access)</li> <li>Sorters (Fig. District Access)</li> </ul>
Confirm Password	•••••		C Custom (Pie Product Access) in
Email Address	storageuser@mydomain.com	i	
Phone Number	• (201) 555-0123	Create User Cancel	
Contact Type	Technical     Administrative		

• Once user is created successfully go to the properties of user account and copy the **Rackspace API key** 

# Security Settings

Password	······ /
Multi-Factor Authentication	Disabled • Enable
Secret Question	What is the location of a dream vacation? • Reset
Rackspace API Key	368fba0be46d41d199fce07ccc2252ac Hide · Reset

#### Configuring Rackspace cloud file storage as secondary (migrator) for Enterprise vault

• In the vault store partition property, select **Rackspace cloud file storage** as migrator

Mgrate files Mgrator: Rackspace Cloud Files Enter the age at which collection files will be migrated. Mgrate files older than:           1         Years         v           Enter the age at which migrated collection files will be removed from primary storage.         Enter the age at which migrated collection files will be removed from primary storage.           Remove collection files from primary storage:         1         Weeks         ofter migration.	Seneral	Volume 5	tollover	Badu	cole	tions	Migration	Advanced
Mgrator: Radopace Cloud Files Enter the age at which collection files will be migrated. Mgrate files older than: 1 4 Years v Enter the age at which migrated collection files will be removed from primary storage. Remove collection files from primary storage: 1 4 Weeks v ofter migration.	<b>₽</b> M	grate files						
Enter the age at which collection files will be migrated. Migrate files older than: 1 1 1 1 Years v Enter the age at which migrated collection files will be removed from primary storage. Remove collection files from primary storage: 1 1 1 Weeks v after migration.	N	Agrators	Radispa	Ke Cou	d Files			
Mgrate files older than: 1	E	Inter the a	pe at w	hich colle	ttion file	s nill be	e migrated.	
1     Years       Enter the age at which migrated collection files will be removed from primary storage.       Remove collection files from primary storage:       1     Weeks       v     ofter migration.	N	Agrate file	i older t	hanz			2010/2017	
Enter the age at which migrated collection files will be removed from primary storage. Remove collection files from primary storage: 1 👘 Weeks v ofter migration.		1	1 V	ears	¥			
Enter the age at which migrated collection files will be removed from primary storage. Remove collection files from primary storage: 1 👾 Weeks v after migration.			court 1		and and			
Ramove collection files from primary storage:	E	inter the a	pe at wh	hich mig	ated col	ection	fles will be	
$1  [n] \ [v]$ Weeks $\lor$ after migration.	8	lemove col	lection f	les from	primary	storag	e:	
( ) ( ) ( ) ( ) ( ) ( ) ( ) ( ) ( ) ( )		1	181 (W	nelia	v af	ter min	cation.	
		+	an ta	eens .	- 1 -			

- In Advanced tab, provide details such as user name, secure access key (API key), container name
- Click on **Test (Please note:** Container should not be created from Rackspace control pane. EV migrator will create it automatically. It should be a unique name in Rackspace Cloud.)

		P CONCERNS I TYPE CONT
	List settings from: Rackspi	ace Cloud Files
	Setting	Value
	Storage server name	rackspace.com
	Rackspace username     Rackspace secure access ke	StorageUser1
Enterprise Vault	Rackspace container name	EVMigration
	S Write buffer size	20
	Read buffer size	20
ator Configuration Test successful.	S Log level	Errors, Warnings
	S Log CURL messages	No
	Reset All	Test Modify
OK	Description	
	The storage server DNS name.	

- Once configured, go to the **control panel**
- Select Rackspace cloud from the product list
- Select Files from Storage list

3 rackspac	ce.	Select a Product ^		
		Amazon Web Services Dedicated Hosting Google Cloud Platform Mailgun		
		Rackspace Cloud		
NETWORKING	g 🍝	STORAGE ^ DATABASES Y		
NETWORKING	3 🛩 eltdown	STORAGE A DATABASES Y		
NETWORKING	G Y eltdown MOt	STORAGE A DATABASES ~ BLOCK STORAGE Block Storage Volumes Snapshots		
NETWORKING	G Y eltdown MOt	STORAGE AND CDN		
NETWORKING	G Y	STORAGE AND CDN BLOCK STORAGE Block Storage Volumes Snapshots OBJECT STORAGE AND CDN Files		

• After clicking on Test connection, EV process creates a bucket automatically in Rackspace cloud

# **Cloud Files** / Containers

Crea	te Container	♥ Northern	n Virginia (IAD) 🔻	
	Container N	ame Region	Files	Size
¢	EVMigration	Northern Vir	ginia (IAD) 0	0 B
¢	🗑 <del>StoragoAcc</del>	Northern Vir	ginia (IAD) 0	0 B
			Show More	

Once the Rackspace migrator has been configured successfully, the Enterprise Vault collection process will collect then migrate EV files from primary partition to secondary Rackspace cloud storage.

More information can be found at:

Enterprise Vault<sup>™</sup> Migrating Data Using the Rackspace Cloud Files Migrator **https://www.veritas.com/support/en\_US/doc/72538174-72538188-0/index** 

# Troubleshooting

The following 3<sup>rd</sup> party utilities can be used to verify connectivity and permissions issue with a bucket (or container) created on cloud storage.

- CloudBerry
- CyberDuck
- S3Browser
- TNTDrive

Additionally the cloud provider may also provide command line utilities that can be used to isolate configuration issues.

The following processes can be enabled for Enterprise Vault debugging using Dtrace utility.

- **StorageArchive** Responsible for writing EV objects to storage when primary partition is configured on cloud.
- **EVStgOfflineOpns.exe** Retrieve/Recall request to secondary storage.
- **StorageFileWatch.exe** Responsible for collection, migration to cloud, deletion of objects on cloud and validation of safety copies.
- **StorageManagement.exe** Verification of library and connection test.

#### Additional information about the Dtrace utility:

# How to run Dtrace to help diagnose issues with Enterprise Vault https://www.veritas.com/support/en\_US/article.100038975

*List of Dtrace processes and descriptions of each process responsibility* https://www.veritas.com/support/en\_US/article.100001741



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