

ECFS (Elastifile Cloud File System) 3.1.X Google Cloud Platform (GCP) Marketplace

Deployment Guide

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1. Introduction

1.1 Document Scope

This guide describes the installation process for creating ECFS (Elastifile Cloud File System) 3.1.X systems in the Google Cloud Platform (GCP) environment using Marketplace.

1.2 System Overview

There are several main types of entities in an ECFS system:

- ECFS Management System (EMS) the ECFS management instance that controls the ECFS system.
- Controller an instance that provides storage resources and client access.
- Services an instance that provides additional services such as replication for disaster recovery.



The EMS and controller entities should not be used for any other purpose.

The EMS and controllers are installed on GCP instances.

ECFS 3.1.X GCP Marketplace Deployment Guide 2. Installing the ECFS using GCP Marketplace

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Google Cloud Platform

Google Cloud Platform

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Home

Marketplace

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2. Installing the ECFS using GCP Marketplace

- 1. In the Google Cloud Platform Console, select your project.
- 2. Click Marketplace.

- 3. In the Search for solutions bar, type Elastifile.
- 4. In the results, click Elastifile Cloud File System.

	ore, launch, and manage solutions in just a few clicks aurcher lets you quickly deploy software on Google Cloud Platform
← Search	Q Elastifile
Launcher > "Elastifile"	
Filter by	1 result
CATEGORY Big data (1) Storage (1)	elastifile Elastifile Cloud File System Elastifile Scalable, shared, enterprise-grade NFS file storage

5. Click LAUNCH ON COMPUTE ENGINE.





- 6. Type a **Name** for your instance, select a **Zone** and click the **Network name** arrow and select a network.
- 7. Click Deploy.

New Elastifile Cloud File System deployment

Zone 💿 us-central1				
us-central1				
	f			
∛ More				
Networking				
Network nam	2 🕜			
default				
Subnetwork r	ame 🕐			
default				
ŏ More				
	stifile-tw	STOP	DELETE	
← ela				
	le-tw is being depl	oyed		
C elasti	ile-tw is being depl riew - elastifile-tw	oyed		
C elasti				
C elasti Over	riew - elastifile-tw file-storage elastif		ру	
C elasti Over	riew - elastifile-tw file-storage elastif	ile-storage.jinja n-tmpl vm_instance	ру	
C elasti Over	riew - elastifile-tw file-storage elastif lastifile-storage-vn	ile-storage.jinja n-tmpl vm_instance vm instance	ру	

8. Your system starts deploying.

← elastifile-tw **DELETE** × elastifile-storage When the system is deployed: 9. Elastifile Cloud File System 🔮 elastifile-tw has been deployed elastifile a. Note the Admin user, Admin password (Temporary) for Admin pass (Temporary) elastifile-storage-vm-tmpl vm_instar
 elastifile-tw-vm vm instance logging into ECFS for the first time. generated-password-0 password.py us-central1-f elastifile-tw-tcp-443 firewall 88 b. Click the Site address URL to open the ECFS 88 elastifile-tw-tcp-22 firewall Management Console. Get started with Elastifile Cloud File Syster Visit the site SSH -

The default self-signed SSL certificate requires dismissing the browser security warning to proceed. To load your own SSL certificate (optional), see Section 1 - Loading Your SSL Certificate (Optional).



10. Type the credentials you noted in Step 9 and click LOGIN.

You can find your first-time username and password under your deployment manager > deployment details page
elastifile
User name admin
Password
LOGIN

11. If this is the first time you are logging in, click I ACCEPT if yo agree with the terms of the Elastifile license agreement (EULA).

is the first time you are logging in, click I ACCEPT if you	License agreement
e with the terms of the Elastifile license agreement A).	I have read and accept the end-user license agreement
	CANCEL I ACCEPT
To download the Elastifile EULA, click end-user license ag	greement.

12. If required, change the temporary password to a password of your choice and click SAVE.

Change login password	
Your password should be at least 6 characters long.	
Current password	
New password	
Retype new password	

elastifile

SKIF

3. Configuring and Deploying ECFS

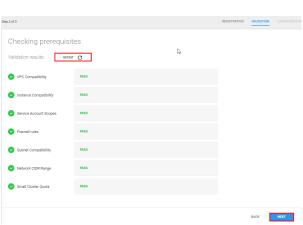
After logging into the ECFS and changing the temporary password, you can deploy your system.

To deploy the ECFS:

1. In the **Registration** window, fill in the required details and click **NEXT**.

ip 1 of 3	REGISTRATION	
Registration		
Help us help you ! By registering with Elastifile Support you get 3 critical benefits:		
 Receive swift personalized support and how-to help (via channels like Slack, chat, email, web). 		
 Get automatically notified when new versions or critical updates are released. Benefit from proactive health monitoring when the Call Home feature is enabled. Ensure outbound https (TCP port 443) connections to sendgrid.com is allowed. 		
Get started by entering your info here.		
Company name *		
AETW		
Contact person name * Bazza McKenzie		
Bazza michenzie		
Contact person email *		
bm@downunder.com		
Sign me up to occasionally hear from Elastifile		
		NEXT

2. In the **Validation** window, the prerequisites are tested automatically. If a test fails, fix the error and click **RETEST**. If all tests pass, click **NEXT**.



If the **VPC Compatibility** test fails, select and delete the installation, then try to reinstall in another VPC (legacy network is not supported).

- Deployment creates firewall rules to allow communication between the ECFS instances. If there is a policy in your project that prevents firewall rule creation, you must manually create the firewall rules as follows: Name: elastifile-storage-management source range: vpc-network cidr source tags: elastifile-storage-node, elastifile-replication-node, elastifile-clients target tags: elastifile-management-node - ICMP - TCP: 22,53,80,8080,443,10014-10018, 10028 - UDP: 53, 123, 6667 Name: elastifile-storage-service source range: vpc-network cidr source tags: elastifile-management-node, elastifile-storage-node, elastifile-replication-node, elastifileclients target tags: elastifile-storage-node, elastifile-replication-node - ICMP - TCP: 22,111,443,2049,644,4040,4045,10015-10017,8000-9224,12121,32768-60999 - UDP: 111, 2049, 644, 4040, 4045, 6667, 8000-9224, 32768-60999 Name: elastifile-clients source tags: elastifile-storage-node target tags: elastifile-clients, elastifile-replication-node
 - UDP: all
 - The firewall rules accept traffic from instances with the elastifile-clients network tag. This tag can be used on customer instances outside the VPC network to access ECFS's storage service.

		Song 3 of 3	REDISTRATION	VALIDATION	
3.	In the System Configuration window, type	System Configuration			
	a name (maximum 40 characters) that	fore and the field explore to "Darthe support" system 0			
	identifies the system.				
		Availability zones (Region: us-central1)			
		Single Zone High Availability Single Zone High Availability Creat Zone High Availability with the Zone Regulation Zones 8, 8, 6			
		Load balancer options			
		Cloud load balancer (recommended) A new virtual IP (VIP) will be credeted to support the LB routing rules			
		() I wish to specify the virtual IP address.			
		₩ atom * 10 255 255 1 ✓			
		Round ration that			
					_
				BACK	NEXT



You must change the default name (**system0**).

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- 4. In the **Availability zones** area, choose one of the following:
 - Single Zone High Availability Provides high availability within a single availability zone by leveraging the native durability of Google Cloud persistent disks. ECFS data is not replicated, thus enabling use of the entire allocated raw storage capacity.

When using this option, an unexpected
storage node failure may cause a

14/3	REDISTRATION	VALIDATION	
System Configuration			
intervene has destine system for Exectine support * system0			
Availability zones (Region: us-central1)			
Single Zours High, Analability Single Zours High, Analability Wire Sours High Analability Const. Xours High, Analability Zours A, S. C. Zours A, S. C.			
.oad balancer options			
Courd bast balancer (insommended) A new virtual (IP (VP) will be created to support the LB routing rules			
Iwish to specify the virtual IP address.			
VP admini* 10.255.255.1			
O Round robot DMG			
		BACK	

temporary interruption of service. In such instances, the storage node will be automatically restarted and reconnected to the same persistent disk, and normal service will resume. No data will be lost and the resumption of service typically occurs before timeout period expires for most applications.

- Single Zone High Availability w/ Intra-Zone Replication Provides high availability within a single availability zone by leveraging ECFS data replication, thus preventing any service interruption in the event of a storage node failure.
- Cross Zone High Availability Zones a, b, c Provides high availability by leveraging ECFS data replication across multiple availability zones, thus preventing any service interruption in the event of a storage node failure or a full availability zone failure.

If you select Cross Zone High Availability Zones a, b, c, then Select 3	System Configuration the same for Galaxies to Blandie support system
Zones appears. Select the check boxes	Availability zones (Region: us-central1)
of your required 3 zones.	Engle Zore High Australianty Eligie Zores High Australianty within Zores Rept Features 8, b, c
	Load balancer options
	Could that taken (wommented) A new virtual IP (VIP) will be created to support the LB moting rules
	I wish to specify the virtual IP address.
	10.255.255.1
	O Read real DG

5. In the **Load balancer options** area, choose either **Cloud load balancer** or **Round robin DNS** and configure as described following:

Elastifile recommends using the Cloud load balancer option. You cannot change this setting later.

Cloud load balancer:

To configure the VIP automatically:

 Select Cloud load balancer. The system will try to allocate a virtual IP address. If the message Could not automatically detect an available VIP address is displayed, skip to the next step (To configure the VIP manually).

5ep 3 of 3	REGISTRATION	VALIDATION	CONFIGURATION
System Configuration			
Enter same fast baselike separat for Elastific separat " spythem()			
Availability zones (Region: us-central1)			
Single Zone High Analability Single Zone High Analability Const Zone High Analability Zone Polycoton Zone High Analability Zone z A & C			
Load balancer options			
Cloud load salaware (recommended) A new virtual (P (VP) will be created to support the LB routing rules			
Well to specify the virtual IP address. VP answer*			
10.255.255.1			
O Round robit DNS			
		BACK	NEXT

ii. Click Next.

To configure the VIP manually:

 Click the I wish to specify the virtual IP address toggle switch and specify an unused virtual IP address.

2 at 2	REGISTRATION	VALIDATION	CONFIGU
System Configuration			
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Diter rane that identifies system for DastRife support * systemD			
Availability zones (Region: us-central1)			
Availability zones (Region: us-central)			
Single Zone High Availability Single Zone High Availability Cross Zone High Availability			
w/ Intra-Zone Replication Zones: a, b, c			
Load balancer options			
Load balancer options			
Cloud load beliencer (recommended) A new virtual IP (VIP) will be created to support the LB routing rules			
instruction of the specify the virtual IP address.			
Enter a valid IP*			
Round robin DNS			
С С			
		BACK	NEXT

- ii. Type your required virtual IP address. The IP address is validated.
- iii. Click NEXT.

ap 3 of 3	REGISTRATION	VALIDATION	
System Configuration			
Enter name die identifien system for Danzlife naugous * system©			
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Load balancer options			
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A new what is (ver) win we channel a support is to be roomly news () wish to specify the virtual IP address.			
Erter a valid (P *			
Reard robin DNS			
O Revented Dd		васк	

- Round robin DNS
 - i. Select Round robin DNS.

big 3 of 3	REGISTRATION	VALIDATION	
System Configuration			
Come wave find all advantise spaces for 10 and the support * systemed			
Availability zones (Region: us-central1)			
Strugle Zono High Availability Single Zone High Availability Oreas Zone High Availability Zones 20, 6 4			
Load balancer options			
Order interface (normedia) for an and the data DNS			
Two events to be used by clients			
Add the following DNB record definitions to your DNB service Transmission of the service			
Your service name will appear here 1600 NG an4ho-201911010-alastifie-stronge-3-0-elastifi-			
		BACK	NEXT

- In Service name, type a fullyqualified domain name for the NFS endpoint.
- iii. The DNS record definitions appear.Add them to your DNS service.
- iv. Click **NEXT**.
- 6. To add capacity to the ECFS, select the storage suited to your performance requirements and set the size. Choose either:

elastifile.mydomain.com	elastifile.mydomain.com	
-------------------------	-------------------------	--

DNS

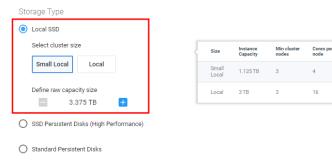
Add the following DNS record definitions to your DNS service					
Service name	TTL	Туре	Value		
elastifile.mydomain.com	1800	NS	avi-tw-20181010-elastifile-storage-3-0-x-test-1-v		

6	Add capacity
	Storage Type
	O Local SSD
	O SSD Persistent Disks (High Performance)
	O Standard Persistent Disks

pacity: 0 TB

- Local SSD
 - In Select cluster size, select either:
 - Small Local
 - Local

Ē	٨dd	capacity
÷	Auu	Capacity



System current raw capacity: 0 TB Adding 3.375 TB (3 custom nodes with a total of 12 cores)

elastifile

Total raw capacity

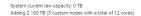
3.375 TB

9 T B

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- SSD Persistent Disks (High Performance)
 - In Select cluster size, select either:
 - Small
 - Medium
 - Large

🛱 Add capacity Storage Type O Local SSD SSD Persistent Disks (High Performance) Select cluster size Total raw Small Medium Large Instance Capacity Min cluster Size Cores per node 0.7 TB 2.100 TB Small 3 4 Define raw capacity size 2.1 TB + Medium 4TB 3 4 12 TB Large 20 TB 3 16 60 TB O Standard Persistent Disks



- Standard Persistent Disks
 - In Select cluster size, select either:
 - Small Standard
 - Standard

Add capacity					
Storage Type					
O Local SSD					
SSD Persistent Disks (High Performance)					
Standard Persistent Disks					
	Size	Instance Capacity	Min cluster nodes	Cores per node	Total raw capacity
Standard Persistent Disks Select cluster size	Size Small Standard		Min cluster nodes	Cores per node	

System current raw capacity: 0 TB Adding 3 TB (3 custom nodes with a total of 12 cores)

- 7. In **Define raw capacity size** set your required size.
- 8. Click ADD & DEPLOY.
- 9. The ECFS starts configuration and deployment.

Adding capacity

Please wait while the system is being configured and deployed.

- ✓ create instances
- ✓ update data ip for cloud
- test enodes connectivity
- set partitions

10. When the **Operation completed successfully** message appears, click **CREATE DATA CONTAINER**.

Capacity added	l and deployed	
 test endoes connectivity set partitions get cluster versions devices test system tests wait for ecs initialization create load balancer first start cluster sync file system set emanage active send call home 	Ν	
 Operation completed successfully. 	145	•

- 11. In the **New public data container** window:
 - a. Type a name for your new data container.
 - b. Set the soft and hard quotas.

242	New public data contain	er	
Allow access to ALL	the following clients		
AETW-Dev		Soft Quota (GB) *	Hard Quota (GB) *
Data tiering 🧲	•	Dedup Dedup	Compression
BACK		CANO	CEL CREATE

CREATE DATA CONTAINER

Data tiering is not applicable if installing and using ECFS on GCP Marketplace.

- c. Select a data policy with corresponding dedup and compression settings.
- d. Click **CREATE**. The data container is created.

Note the mount command to use on your client.	✓ Data container created
	In order to mount a share to a client machine, please follow this example: Note: You may need to install MSC before creating the mount. 1000 mKdlr /s 2. mount 10.255.255.11/DB-Finance-001/root /mnt/test The file system is created so anyone with foot access can change files permission, if you need tighter security please change the default user mapping in the export section. Click Yeak data container to configure access.
	CLOSE EDIT DATA CONTAINER

12. You can either click **CLOSE**, or click **EDIT DATA CONTAINER** to configure client access to the data container (for more details, see the ECFS Management Console User Guide).

Appendix A. Configuring a CentOS Client for Operation with ECFS

A.1 Creating a CentOS Instance (Optional)



The CentOS client must be in same zone (or for regional instances in the same region) as the ECFS system.

1. Create a Centos instance on a client.

The parameters in the following figure are only examples: Create an instance Name 💿 ecfs-demo Zone 💿 us-central1-a Machine type small (1 shared.. 💌 1.7 GB memory Customize Boot disk 💮 New 10 GB standard persistent disk CentOS 7 Change Identity and API access 🛞 Service account 💮 andrew-sa Access scopes ③ Use IAM roles with service accounts to control VM access Learn more Firewall (2) Add tags and frewall rules to allow specific network traffic from the Internet Allow HTTP traffic Allow HTTPS traffic X Management, disks, networking, SSH keys You will be billed for this instance. Learn more Create Cancel

A.2 Configuring the NFS Mount

1. Connect to the client VM via SSH using the following command:

gcloud compute --project "<project name>" ssh --zone "<zone name>" "<instance name>"

A.3 Add NFS

1. Add the EMS to network interface DNS:

```
$ sudo nano /etc/sysconfig/network-scripts/ifcfg-eth0
PEERDNS=no
DNS1=<EMS IP>
DNS2=8.8.8.8
sudo systemctl restart network
```



2. Verify that the NFS can access the Load Balancer IP / DNS service name specified in the EMS:

To access the DNS service name:	
a. In the ECFS Management Console, in the head	der, click 💽 (ADMINISTRATION), click System
Settings and click Client 's High Availability.	
b. Under Load balancer entions, note the VID	
b. Under Load balancer options, note the VIP	Load balancer options
address or Round robin DNS (only one of	Cloud ford balancer VP address
them is active, according to what you	10.254.255.1
selected in Step 5) of Section 3 - Configuring	O Round ration CMS
and Deploying ECFS).	
<pre>\$ showmount -e <load balancer="" dns="" ip="" name="" service=""> Export list for <load balancer="" dns="" ip="" name="" service="">:</load></load></pre>	
If showmount is not found, install nfs-utils: \$ sudo yum install nfs-utils	
3. Create a directory on which to mount the ECFS NFS:	

mkdir /mnt/<mount point>

A.4 Mounting the Elastifile Service

 Mount the ECFS NFS using the mount command you noted after the data container was created (see Section 3 -Configuring and Deploying ECFS Step).

mount <XX.XX.X.X:/DC name/root> /mnt/<mount point>

For example: mount 10.99.0.2:DC-aetw/root /mnt/finance

2. Verify NFS connectivity and I/O:

```
$ cd /mnt/<mount point
$ dd if=/dev/zero of=/mnt/<mount point>/file1 bs=1GB count=10
10+0 records in
10+0 records out
```



~			
3.	In the ECFS Management Co	onsole dashboard,	view the performance:

	150M	 	Throughput	
Time Range	100M	ſ		
30 minutes	50M -		117.8	
3 Hours	50M			0.0 B/Sec .8 MB/Sec
24 Hours	510			
		ſ	IOPS	
	340		471.0	
	170		Read Write	0.0 471.0
	0.0		 Metadata 	0.0
	6.0	1	Latency	
	4.0		1.7 ms	
/iew Data by	2.0		Read	0.0 ms
Read	0.0		 Write Metadata 	1.7 ms 0.0 ms
Write				
Total/Avg				
Metadata				