



# **ECFS (Elastifile Cloud File System) 3.0.X**

## **Google Cloud Platform (GCP)**

### **Cloud Launcher**

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## Deployment Guide

**November 2018**

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# 1. Introduction

## 1.1 Document Scope

This guide describes the installation process for creating ECFS (Elastifile Cloud File System) 3.0.X systems in a Google Cloud Platform (GCP) environment using the Cloud Launcher.

## 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.

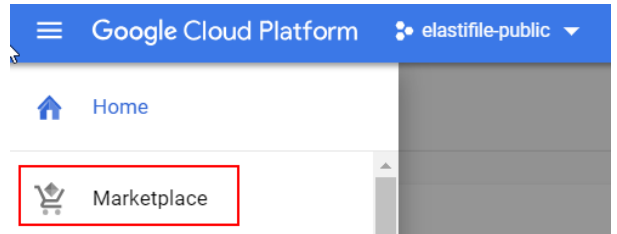
The EMS and controllers are installed on GCP instances.

## 2. Installing the ECFS using the GCP Launcher

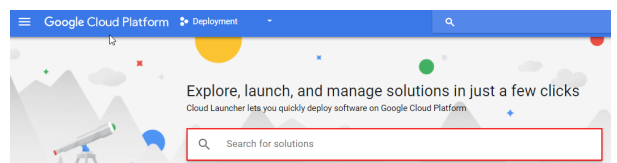
1. In the Google Cloud Platform Console, select your project.



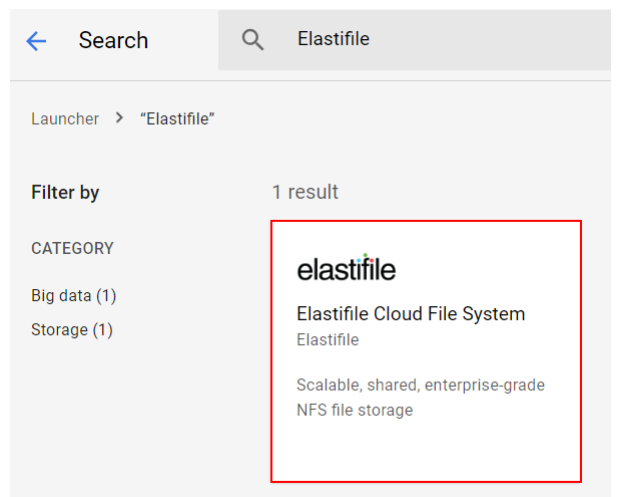
2. Click **Marketplace**.



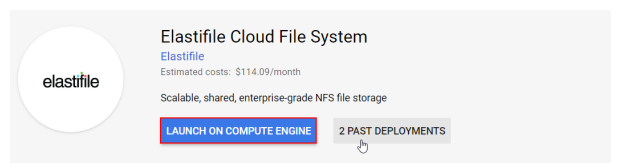
3. In the Search for solutions bar, type Elastifile.



4. In the results, click elastifile.



5. Click **LAUNCH ON COMPUTE ENGINE**.



Runs on  
Google Compute Engine

**Overview**  
The Elastifile Cloud File System (ECFS) is a scalable, enterprise-grade shared file system that provides high-

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

8. Your system starts deploying.

9. When the system is deployed:
  - a. Note the **Admin user**, **Admin password (Temporary)** for logging into ECFS for the first time.
  - b. Click the **Site address** URL to open the ECFS Management Console.

New Elastifile Cloud File System deployment

Deployment name  
elastifile-tw

Zone  
us-central1-f

More

Networking  
Network name  
default

Subnetwork name  
default

Firewall  
Add tags and firewall rules to allow specific network traffic from the Internet  
 Allow HTTPS traffic  
 Allow TCP port 22 traffic

More

Deploy

elastifile-tw STOP DELETE

elastifile-tw is being deployed

Overview - elastifile-tw

- elastifile-storage elastifile-storage.jinja
  - elastifile-storage-vm-tmpl vm\_instance.py
    - elastifile-tw-vm vm instance
  - generated-password-0 password.py
  - elastifile-tw-tcp-443 firewall
  - elastifile-tw-tcp-22 firewall

elastifile-tw DELETE

elastifile-tw has been deployed

Overview - elastifile-tw

- elastifile-storage elastifile-storage.jinja
  - elastifile-storage-vm-tmpl vm\_instance.py
    - elastifile-tw-vm vm instance
  - generated-password-0 password.py
  - elastifile-tw-tcp-443 firewall
  - elastifile-tw-tcp-22 firewall

elastifile Elastifile Cloud File System  
Solution provided by Elastifile

Admin user admin

Admin password (Temporary) 5H4NF57z

Site address https://55.232.136.135:443/

Instance elastifile-tw-vm

Instance zone us-central1-f

Instance machine type n1-standard-4

More about the software

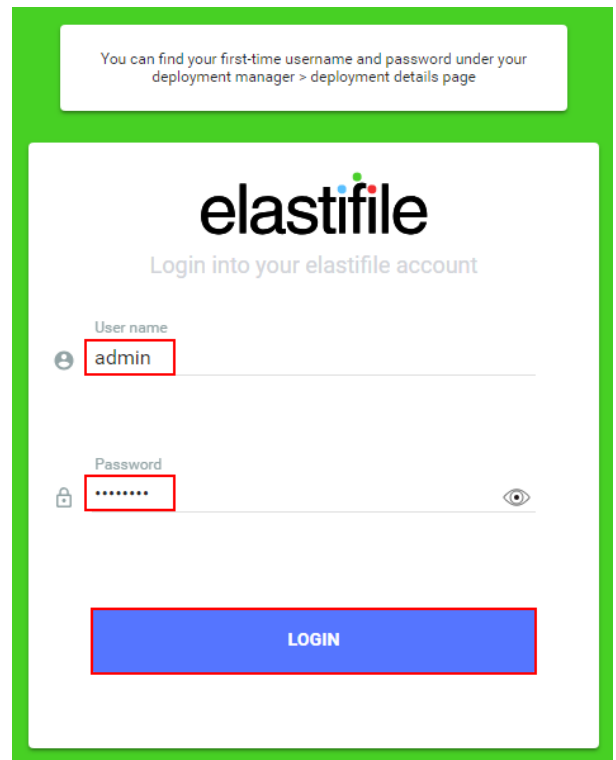
Get started with Elastifile Cloud File System

Visit the site SSH

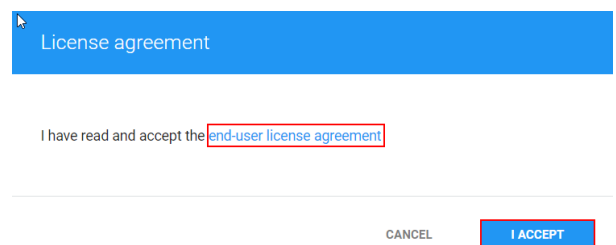


The default self-signed SSL certificate requires dismissing the browser security warning to proceed. To load your own SSL certificate (optional), see [Section 1 - Loading Your SSL Certificate \(Optional\)](#).

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

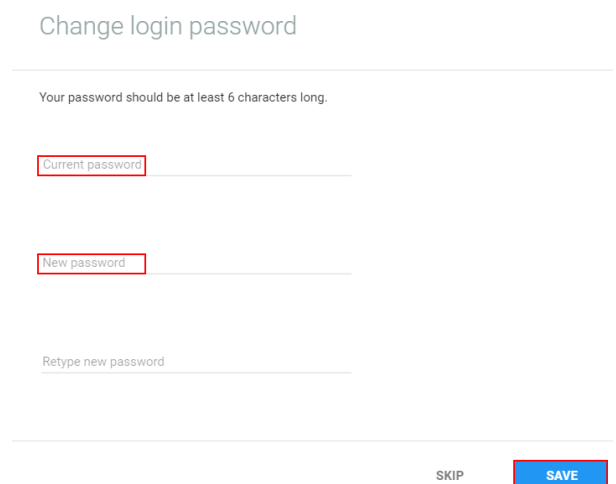


11. If this is the first time you are logging in, click I ACCEPT if you agree with the terms of the Elastifile license agreement (EULA).



To download the Elastifile EULA, click end-user license agreement.

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



## 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**.

The screenshot shows the 'Registration' step (Step 1 of 3) of the ECFS deployment wizard. The page title is 'Registration'. Below the title, there is a list of three critical benefits from registering with Elastifile Support. The form fields are: 'Company name' (AETW), 'Contact person name' (Avi Elav), and 'Contact person email' (avi.elav@elastifile.com). There is a checkbox for 'Sign me up to occasionally hear from Elastifile' which is currently unchecked. A 'NEXT' button is located at the bottom right of the form.

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**.

The screenshot shows the 'Validation' step (Step 2 of 3) of the ECFS deployment wizard. The page title is 'Checking prerequisites'. The 'Validation results' section shows a 'RETEST' button. Below this, there is a list of seven prerequisites, each with a green checkmark and a 'PASS' status: VPC Compatibility, Instance Compatibility, Service Account Scopes, Firewall rules, Subnet Compatibility, and Network CIDR Range. A 'BACK' button is at the bottom left and a 'NEXT' button is at the bottom right.



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:** 22,53,80,8080,443,10014-10017

- **UDP:** 53, 123

**Name:** elastifile-storage-service

**source range:** vpc-network cidr

**source tags:** elastifile-management-node, elastifile-replication-node, elastifile-clients

**target tags:** elastifile-storage-node, elastifile-replication-node

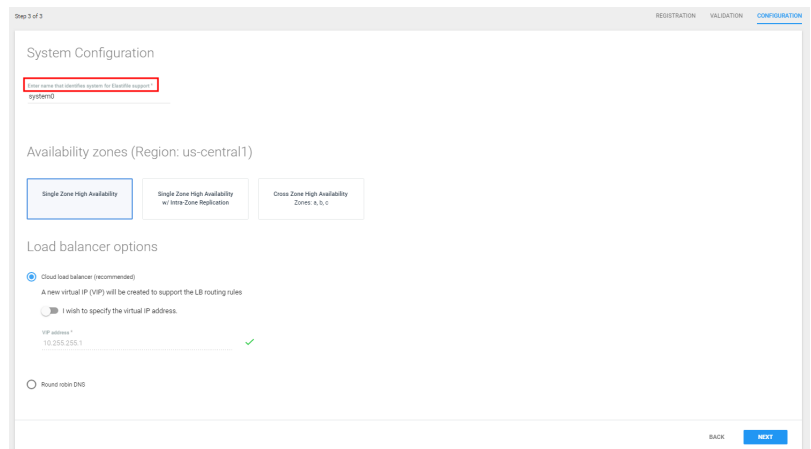
- **ICMP**

- **TCP:** 22,111,2049,644,4040,4045,10015-10017,8000-9224

- **UDP:** 111, 2049, 644, 4040, 4045, 8000-9224

- 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.

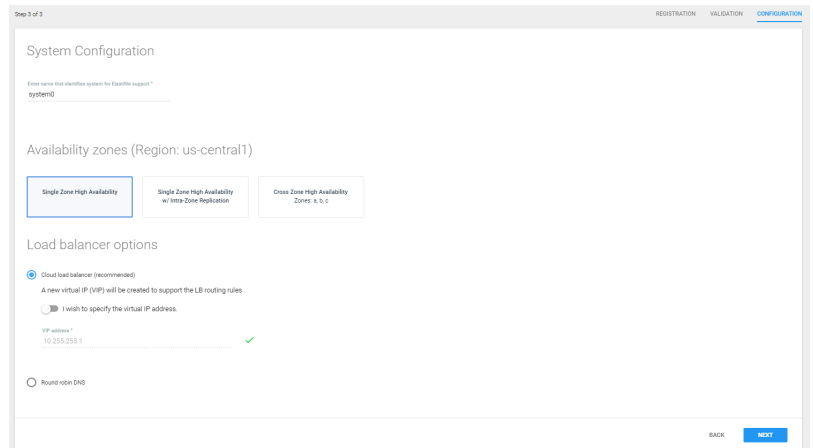
3. In the **System Configuration** window, type a name (maximum 40 characters) that identifies the system.



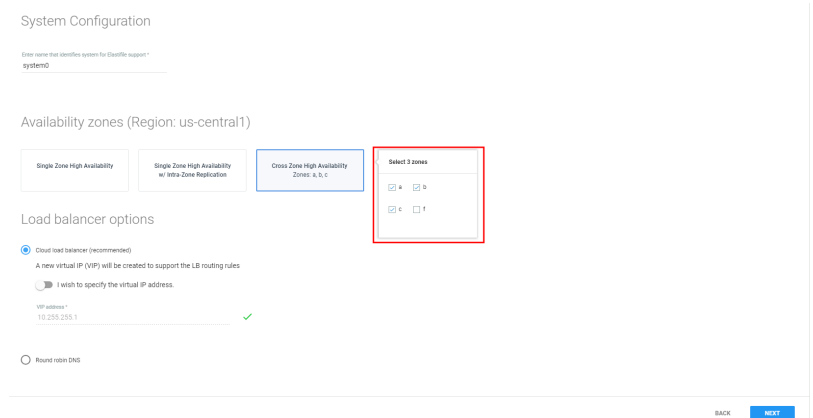
You must change the default name (**system0**).

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 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 Zones** appears. Select the check boxes of your required 3 zones.



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

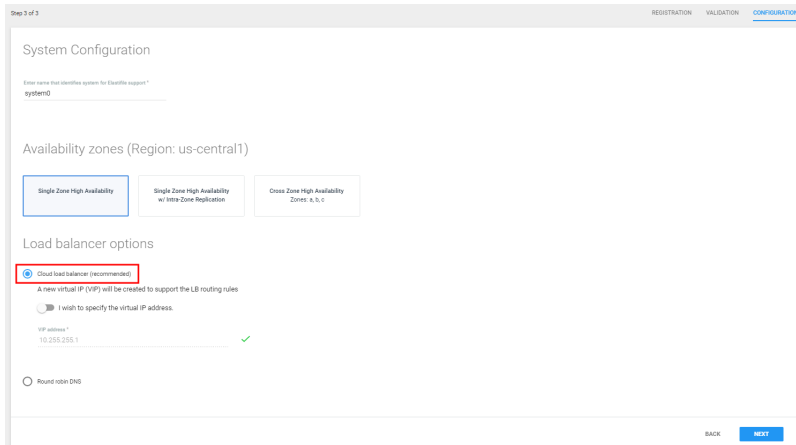


Elastifile recommends using the Cloud load balancer option. You cannot change this setting later.

- Cloud load balancer:

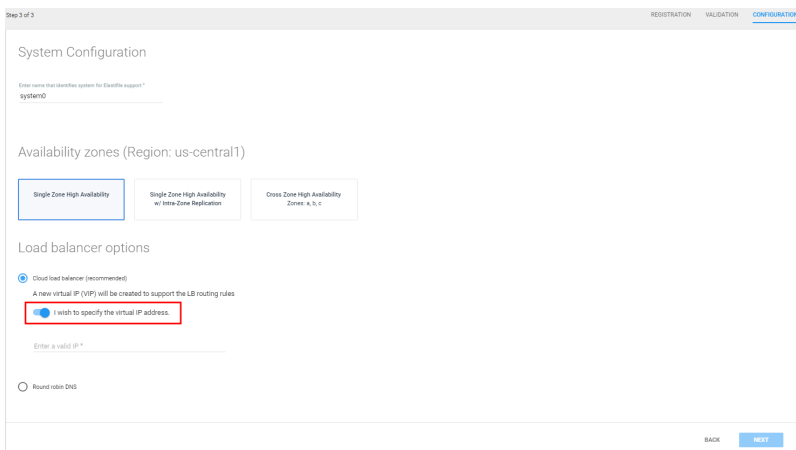
**To configure the VIP automatically:**

- 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).



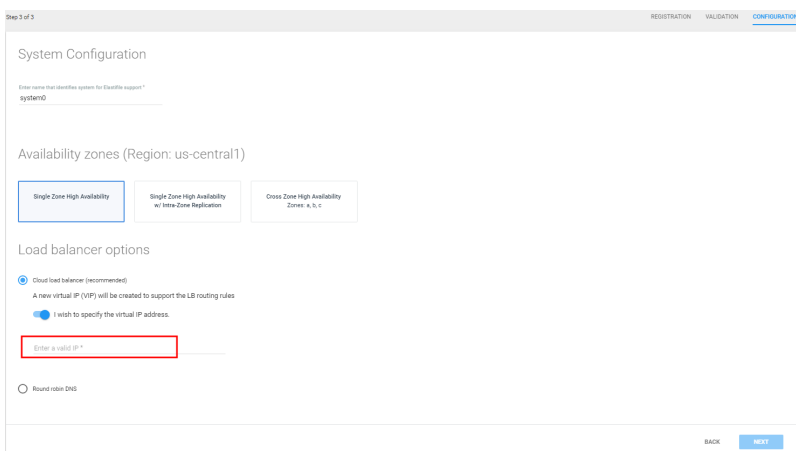
**To configure the VIP manually:**

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



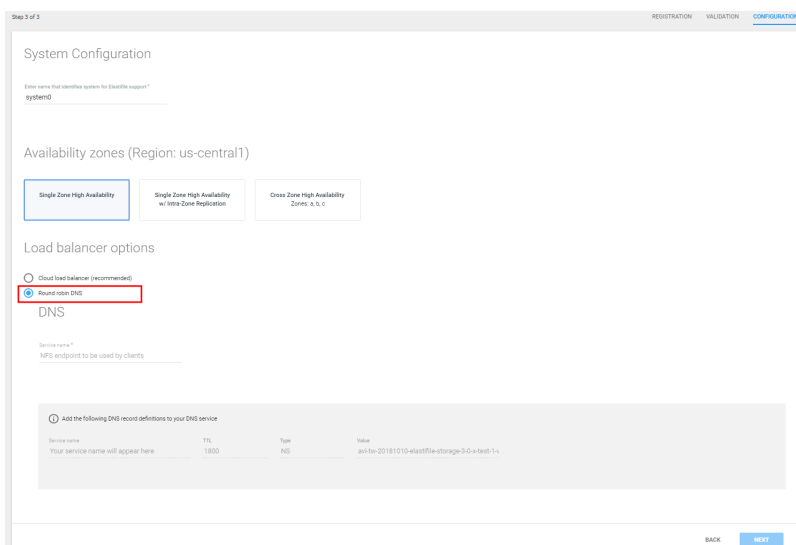
- Type your required virtual IP address. The IP address is validated.

- Click **NEXT**.



- Round robin DNS

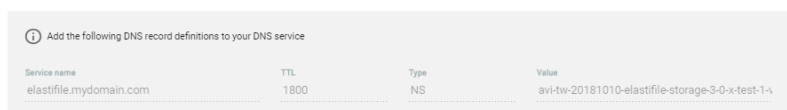
- i. Select **Round robin DNS**.



- ii. In **Service name**, type a fully-qualified domain name for the NFS endpoint.

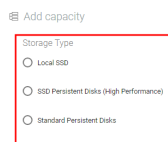


- iii. The DNS record definitions appear. Add them to your DNS service.



- iv. Click **NEXT**.

- 6. To add capacity to the ECFS, select the storage suited to your performance requirements and set the size. Choose either:



System current raw capacity: 0 TB ADD & DISPLAY

- Local SSD

- ◆ In **Select cluster size**, select either:
    - ◆ **Small Local**
    - ◆ **Local**

Size	Instance Capacity	Min cluster nodes	Cores per node	Total raw capacity
Small Local	1.125 TB	3	4	3.375 TB
Local	3 TB	3	16	9 TB

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

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

Add capacity

Storage Type

Local SSD

**SSD Persistent Disks (High Performance)**

Select cluster size

Define raw capacity size

2.1 TB

Standard Persistent Disks

Size	Instance Capacity	Min cluster nodes	Cores per node	Total raw capacity
Small	0.7 TB	3	4	2,100 TB
Medium	4 TB	3	4	12 TB
Large	20 TB	3	16	60 TB

System current raw capacity: 0 TB  
Adding 2,100 TB (3 custom nodes with a total of 12 cores)

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

Add capacity

Storage Type

Local SSD

SSD Persistent Disks (High Performance)

**Standard Persistent Disks**

Select cluster size

Define raw capacity size

3 TB

Size	Instance Capacity	Min cluster nodes	Cores per node	Total raw capacity
Small Standard	1 TB	3	4	3 TB
Standard	4 TB	6	4	24 TB

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**.

- 11. Type a name for your new data container.
- 12. Set the soft and hard quotas.
- 13. Select a data policy with corresponding dedup and compression settings.
- 14. Click **CREATE**. The data container is created.

Capacity added and deployed

- ✓ set timezone
- ✓ start vhead service
- ✓ get cluster versions
- ✓ devices test
- ✓ system tests
- ✓ first start cluster
- ✓ sync file system
- ✓ set emanage active
- ✓ save system info in ifs
- ✓ create load balancer
- ✓ send call home
- ✓ Operation completed successfully.

**CREATE DATA CONTAINER**

New public data container

Allow access to the following clients

ALL

Data container name \* DB-Finance-001

Soft Quota (GB) \* 1000

Hard Quota (GB) \* 1500

Dedup  Compression

BACK CANCEL **CREATE**



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 NFS before creating the mount.

```
1. sudo mkdir /mnt/test
2. mount 10.255.255.1/DB-Finance-001/root /mnt/test
```

The file system is created so anyone with root access can change files permission, if you need tighter security please change the default user mapping in the export section. Click "edit data container" to configure access.

CLOSE **EDIT DATA CONTAINER**

15. You can either click **CLOSE**, or click **EDIT DATA CONTAINER** to configure client access to the data container. For more details, see the E|CFS 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 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 <sup>?</sup>  
ecfs-demo

Zone <sup>?</sup>  
us-central1-a

Machine type  
small (1 shared... 1.7 GB memory Customize

Boot disk <sup>?</sup>  
New 10 GB standard persistent disk  
Image  
CentOS 7 Change

Identity and API access <sup>?</sup>  
Service account <sup>?</sup>  
andrew-sa

Access scopes <sup>?</sup>  
Use IAM roles with service accounts to control VM access [Learn more](#)

Firewall <sup>?</sup>  
Add tags and firewall rules to allow specific network traffic from the Internet  
 Allow HTTP traffic  
 Allow HTTPS traffic  
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 DNS service name specified in the EMS.



**To access the DNS service name:**

- a. In the ECFS Management Console, in the header, click  (**ADMINISTRATION**).
- b. Click **System Settings**.
- c. Click **Client Networks**.
- d. Scroll down to **Service name**.

```
$ showmount -e <DNS service name>  
Export list for <DNS service name>:  
....
```



**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 name>
```

4. 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 name>
```

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

5. Verify NFS connectivity and throughput:

```
$ cd /mnt/<mount name>  
$ dd if=/dev/zero of=/mnt/<mount name>/file1 bs=1GB count=10  
10+0 records in  
10+0 records out  
10000000000 bytes (10 GB) copied, 82.1757 s, 122 MB/s
```



6. In the ECFS Management Console dashboard, view the performance:

