Overview

In this mini project, we will set up an Amazon Elastic File System (EFS) and mount it to an Amazon EC2 instance. This will enable you to create a scalable, shared file storage solution that can be accessed by multiple EC2 instances within the same Virtual Private Cloud (VPC).

NB: EFS is for Linux distributions and EFX is for Windows systems

Steps to Mount an EFS to an EC2 Instance

Step 1: Set Up Your VPC

1. **Log in to the AWS Management Console** and open the VPC dashboard.
2. **Create a new VPC** or use an existing one.
3. **Configure basic VPC components**:
    - **Internet Gateway (IGW)**
    - **Subnets** (public and private, as needed)
    - **Route Tables** (associate them with subnets)
    - **Network ACLs (NACLs)**
    - **Security Groups**

Step 2: Create Security Groups

1. **Create two security groups**: one for your EC2 instances and one for the EFS system.
    - **EC2 Security Group (EC2-SG)**:
        - Allow SSH (port 22) and any other protocols needed.
    - **EFS Security Group (EFS-SG)**:
        - Allow NFS (port 2049).

Step 3: Create an EFS File System

1. **Access the EFS dashboard**.
2. **Create a new file system**.
3. **Name your file system** and choose the VPC.
4. **Select "Regional"** for the file system type.
5. **Set your lifecycle policies** as needed.
6. **Ensure encryption is enabled** (default setting).
7. **Choose "Bursting"** for the throughput mode.
8. **Configure mount targets** for each Availability Zone (AZ):

- Set the IP address to "Automatic."
- Attach the previously created EFS-SG.

9. **Review and create** the EFS file system.

Step 4: Launch an EC2 Instance

1. **Access the EC2 dashboard**.
2. **Launch a new EC2 instance**:
   - Choose an Amazon Linux AMI (or another Linux distribution).
   - Select the VPC and subnet where your EFS is configured.
   - Attach the EC2-SG to the instance.
3. **Under "Storage"**, click on "Advanced" and add a "File system":
   - Select the EFS you created earlier.
4. **Optionally enable automatic mount** using "User data" provided by AWS or plan to mount manually from your EC2 terminal.
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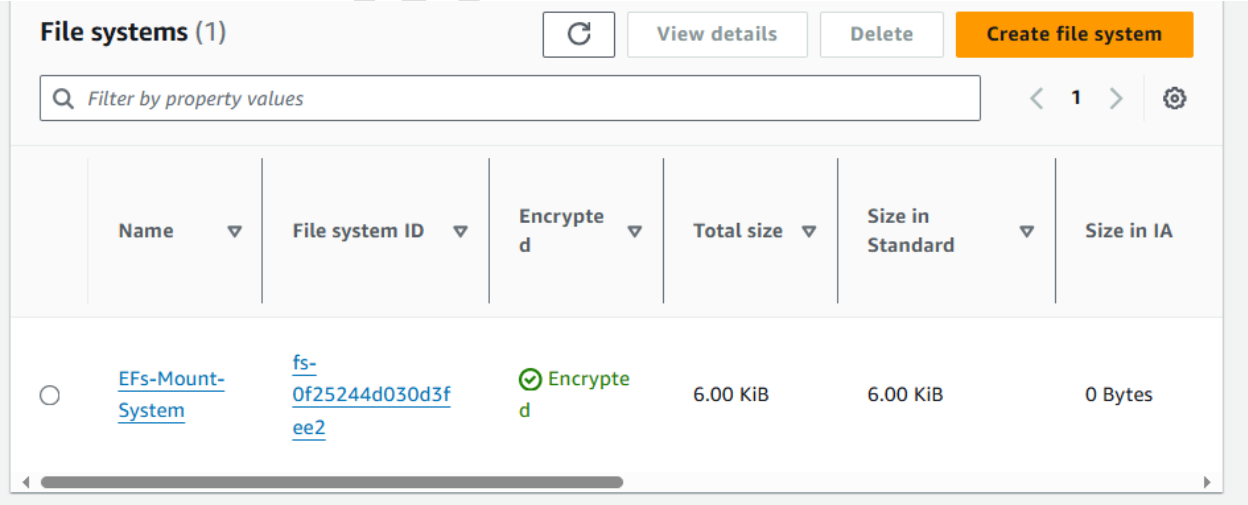
5. **Complete the instance launch** process.
6. Connect to Instance and type the following command to verify**:** *df -T -h*

   NB: You can also mount the efs manually using the commands provided in the notepad document



Session ID: root-ktma3wdh7mtxv4ehe6ksjgzmpa Instance ID: i-08812a501018474d6

```
sh-5.2$ sudo su
[root@ip-192-168-10-97 bin]# sudo update
sudo: update: command not found
[root@ip-192-168-10-97 bin]# sudo update
sudo: update: command not found
[root@ip-192-168-10-97 bin]# yum update
Last metadata expiration check: 0:06:52 ago on Thu Jul 25 11:47:17 2024.
Dependencies resolved.
Nothing to do.
Complete!
[root@ip-192-168-10-97 bin]# df -T -h
Filesystem     Type      Size  Used Avail Use% Mounted on
devtmpfs       devtmpfs  4.0M     0  4.0M   0% /dev
tmpfs          tmpfs     475M     0  475M   0% /dev/shm
tmpfs          tmpfs     190M  500K  190M   1% /run
/dev/xvda1     xfs       8.0G  1.6G  6.4G  20% /
tmpfs          tmpfs     475M     0  475M   0% /tmp
/dev/xvda128   vfat       10M  1.3M  8.7M  13% /boot/efi
127.0.0.1:/    nfs4      8.0E     0  8.0E   0% /mnt/efs/fs1
tmpfs          tmpfs      95M     0   95M   0% /run/user/0
[root@ip-192-168-10-97 bin]#
```

➢

Optional: Mount EFS on On-Premises Servers

1. **Set up a VPN or AWS Direct Connect** to link your on-premises network to your AWS VPC.
2. **Install the efs-utils tools** on your on-premises machine.
3. **Mount the EFS file system** following similar steps as for the EC2 instance.

   Link to git: https://github.com/synthetico/EC2-EFS-BASIC-MOUNT.git

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