How to Mount EBS, EFS, and S3 on EC2 (2025)

Mounting Amazon EBS (NVMe-based Instances)

On Nitro-based EC2 instances, EBS volumes appear as NVMe devices (for example /dev/nvme1n1). Follow these steps to safely format, mount, and persist the volume.

1. Verify the attached EBS volume

```
lsblk
```

2. Create filesystem (FIRST TIME ONLY)

```
sudo mkfs.ext4 /dev/nvme1n1
```

3. Create mount directory

```
sudo mkdir /data
```

4. Mount the volume

```
sudo mount /dev/nvme1n1 /data
```

5. Verify mount

```
df -h | grep data
```

6. Persist after reboot (/etc/fstab)

Get UUID using: sudo blkid /dev/nvme1n1

```
UUID=ece3af7a-560a-4893-afed-da8ad40d4676 /data ext4 defaults,nofail 0 2
```

7. Test fstab

```
sudo mount -a
```

Mounting Amazon EFS (Ubuntu 22.04 / 24.04 – NFS Method)

Amazon EFS is a regional, shared file system accessed over the network using NFSv4.1. Multiple EC2 instances can mount the same EFS simultaneously. On Ubuntu 24.04, amazon-efs-utils may not be available, so native NFS is used.

Step 1: Prerequisites

• EC2 and EFS must be in the same VPC • EFS must have mount targets in the EC2 Availability Zone • EFS mount targets must NOT use the default security group

Step 2: Correct EFS Security Group Setup (IMPORTANT)

Create a dedicated security group for EFS (for example: efs-sg). Add the following inbound rule:

```
NFS | TCP | Port 2049 | Source: EC2 Security Group ID
```

Attach this security group to ALL EFS mount targets and remove the default security group. Using the default security group causes NFS connection timeouts.

Step 3: Install NFS client

```
sudo apt update && sudo apt install -y nfs-common
```

Step 4: Mount EFS

```
sudo mkdir -p /efs sudo mount -t nfs4 -o nfsvers=4.1
fs-xxxx.efs..amazonaws.com:/ /efs
```

Step 5: Verify mount

```
df -h | grep efs
```

Step 6: Persist after reboot (/etc/fstab)

```
fs-xxxx.efs..amazonaws.com:/ /efs nfs4 _netdev,nfsvers=4.1 0 0
```

If the mount command times out, it indicates that NFS port 2049 is blocked by the EFS security group or network ACL.

Mounting Amazon S3 (s3fs)

Amazon S3 is object storage and is mounted logically using s3fs. It is not recommended for databases or high-performance workloads.

```
sudo apt install -y s3fs
```

```
sudo mkdir /s3bucket
```

```
s3fs my-bucket-name /s3bucket -o iam_role=auto
```

```
s3fs#my-bucket-name /s3bucket fuse _netdev,iam_role=auto,allow_other 0 0
```