

Lab 4: Working with EBS

Task 1: Create a New EBS Volume

The screenshot shows the AWS EBS Volumes page. A success message at the top states "Successfully created volume vol-089daec5c5ce48031." Below this is a table listing three volumes:

| Name | Volume ID | Type | Size | IOPS | Throughput | Snapshot ID | Source volume ID | Created |
|-----------|-----------------------|------|-------|------|------------|-----------------|------------------|------------|
| My Volume | vol-089daec5c5ce48031 | gp2 | 1 GiB | 100 | - | - | - | 2025/11/20 |
| | vol-09bf1205113368745 | gp3 | 9 GiB | 3000 | 125 | snap-0881c81... | - | 2025/11/20 |
| | vol-0ede54c865b16ff94 | gp3 | 8 GiB | 3000 | 125 | snap-0881c81... | - | 2025/11/20 |

Below the table, a section titled "Fault tolerance for all volumes in this Region" shows "0 / 2" volumes.

Task 2: Attach the Volume to an Instance

The screenshot shows the "Attach volume" dialog for volume [vol-089daec5c5ce48031](#). The "Basic details" section includes:

- Volume ID: [vol-089daec5c5ce48031](#) (My Volume)
- Availability Zone: us-east-1a2 (us-east-1a)
- Instance: [i-0c9e45266c84198ce](#) (Lab) (running)
- Device name: [/dev/sdf](#)

A note at the bottom states: "Newer Linux kernels may rename your devices to `/dev/xvdf` through `/dev/xvdः` internally, even when the device name entered here (and shown in the details) is `/dev/sdf` through `/dev/sdp`."

At the bottom right are "Cancel" and "Attach volume" buttons.

Task 3: Connect to Your Amazon EC2 Instance

The screenshot shows the AWS EC2 Instance Connect interface. At the top, it displays the instance ID: i-0c9e45266c84198ce (Lab). Under "Connection type", the "Public IPv4 address" option is selected, showing the IP 34.227.13.110. The "Username" field is set to "ec2-user". A note at the bottom states: "Note: In most cases, the default username, ec2-user, is correct. However, read your AMI usage instructions to check if the AMI owner has changed the default AMI username." At the bottom right are "Cancel" and "Connect" buttons.

Task 4: Create and Configure Your File System

The screenshot shows an AWS CloudShell terminal window. The user is creating a new ext3 filesystem on the device /dev/sdf. The terminal output includes:

```
Amazon Linux 2023
https://aws.amazon.com/linux/amazon-linux-2023

[ec2-user@ip-10-1-11-236 ~]$ df -h
Filesystem      Size  Used Avail Use% Mounted on
/dev           4.0M   4.0M    0% /dev
tmpfs        475M   475M    0% /dev/shm
tmpfs        190M  452K  190M  1% /run
/dev/xvda1    8.0G  1.6G  6.4G  21% /
tmpfs        475M   475M    0% /tmp
/dev/xvda128   10M  1.3M  8.7M  13% /boot/efi
tmpfs         95M   0  95M  0% /run/user/1000
[ec2-user@ip-10-1-11-236 ~]$ sudo mkfs -t ext3 /dev/sdf
mke2fs 1.46.5 (30-Dec-2021)
Creating filesystem with 262144 4k blocks and 65536 inodes
Filesystem UUID: b719f563-4cda-43da-a549-3d6faea2a6a2
Superblock backups stored on blocks:
      32768, 98304, 163840, 229376

Allocating group tables: done
Writing inode tables: done
Creating journal (8192 blocks): done
Writing superblocks and filesystem accounting information: done

[ec2-user@ip-10-1-11-236 ~]$ sudo mkdir /mnt/data-store
```

Task 5: Create an Amazon EBS Snapshot

The screenshot shows two screenshots of the AWS EC2 console. The top screenshot is the 'Create snapshot' dialog for a volume named 'vol-089daec5c5ce48031'. It includes fields for 'Description' (with placeholder 'Add a description for your snapshot'), 'Encryption Info' (set to 'Not encrypted'), and 'Tags' (with one tag 'Name: My Snapshot'). The bottom screenshot shows the 'Snapshots' list, which contains a single entry: 'My Snapshot' (Snapshot ID: snap-0c1671a8c83d1d4a0, Full snapshot size: -, Volume size: 1 GiB, Description: -, Storage tier: Standard, Snapshot status: Pending). The left sidebar shows navigation links for Launch templates, Spot Requests, Savings Plans, Reserved Instances, Dedicated Hosts, Capacity Reservations, Capacity Manager, Images, AMIs, AMI Catalog, and Elastic Block Store (selected), with sub-links for Snapshots, Lifecycle Manager, Network & Security, Security Groups, Elastic IPs, Placement Groups, Key Pairs, and Network Interfaces.

Screenshot 1: Snapshot details

Description
Add a description for your snapshot
255 characters maximum.

Encryption Info
Not encrypted

Tags Info
A tag is a label that you assign to an AWS resource. Each tag consists of a key and an optional value. You can use tags to search and filter your resources or track your AWS costs.

| Key | Value - optional |
|------|------------------|
| Name | My Snapshot |

Add tag
You can add 49 more tags.

Create snapshot

Screenshot 2: Snapshots (1) Info

| Name | Snapshot ID | Full snapshot size | Volume size | Description | Storage tier | Snapshot status |
|-------------|------------------------|--------------------|-------------|-------------|--------------|-----------------|
| My Snapshot | snap-0c1671a8c83d1d4a0 | - | 1 GiB | - | Standard | Pending |

Last updated less than a minute ago

Recycle Bin Actions Create snapshot

Select a snapshot above.

The screenshot shows the AWS Cloud9 interface. On the left, there's a sidebar with navigation links like Launch Templates, Spot Requests, Savings Plans, Reserved Instances, Dedicated Hosts, Capacity Reservations, Capacity Manager, Images, AMIs, AMI Catalog, Elastic Block Store, Volumes, Snapshots, Lifecycle Manager, Network & Security, Security Groups, Elastic IPs, Placement Groups, Key Pairs, and Network Interfaces. The 'Snapshots' link under 'Elastic Block Store' is highlighted.

The main content area displays a table titled 'Snapshots (1/1)'. It shows one entry: 'My Snapshot' with Snapshot ID 'snap-0c1671a8c83d1d4a0', Full snapshot size '53 MiB', Volume size '1 GiB', and a status of 'Completed'. A context menu is open over this row, with 'Create volume from snapshot' highlighted.

At the bottom of the page, there's a footer with copyright information: '© 2025, Amazon Web Services, Inc. or its affiliates.' and links for Privacy, Terms, and Cookie preferences.

Create a Volume Using Your Snapshot

This screenshot shows the same AWS Cloud9 interface after creating a volume from the snapshot. A green success message at the top says 'Successfully created volume vol-0f4415c04689e9d79.'

The main content area now shows a table titled 'Snapshots (1)'. It lists the same 'My Snapshot' entry as before, but with a status of 'Completed'. Below this table, a message says 'Select a snapshot above.'

The footer contains the URL 'https://us-east-1.console.aws.amazon.com/console/home?region=us-east-1' and standard AWS footer links for Privacy, Terms, and Cookie preferences.

Task 6: Restore the Amazon EBS Snapshot

Create a Volume Using Your Snapshot

The screenshot shows the AWS Volumes page with a list of volumes. A context menu is open over the 'Restored Volu...' volume, specifically over the 'Actions' dropdown. The 'Attach volume' option is highlighted. The volume details are shown below:

| Volume ID | Size | Type | Status check |
|---|-------------------|-------------------------|----------------------|
| vol-0f4415c04689e9d79 (Restored Volume) | 1 GiB | gp2 | Okay |
| AWS Compute Optimizer finding | Volume state | IOPS | Throughput |
| Opt-in to AWS Compute Optimizer for recommendations. Learn more | Available | 100 | - |
| Fast snapshot restored | Availability Zone | Created | Multi-Attach enabled |
| N/A | us-east-1a | 2025-12-16 10:51:50 UTC | N/A |

Attach the Restored Volume to Your EC2 Instance

The screenshot shows the 'Attach volume' dialog for an EC2 instance. The 'Basic details' section is visible, showing the selected volume and instance.

Basic details

Volume ID: vol-0f4415c04689e9d79 (Restored Volume)

Availability Zone: us-east-1a

Instance: i-0c9e45266c84198ce (Lab) (running)

Device name: /dev/sdg

Only instances in the same Availability Zone as the selected volume are displayed.

Recommended device names for Linux: /dev/xvda for root volume. /dev/sdf-f-p for data volumes.

Info: Newer Linux kernels may rename your devices to /dev/xvdf through /dev/xvdp internally, even when the device name entered here (and shown in the details) is /dev/sdf through /dev/sdp.

Buttons: Cancel, Attach volume

Mount the Restored Volume

Superblock backups stored on blocks:
32768, 98304, 163840, 229376
Allocating group tables: done
Writing inode tables: done
Creating journal (8192 blocks): done
Writing superblocks and filesystem accounting information: done

[ec2-user@ip-10-1-11-236 ~]\$ sudo mkdir /mnt/data-store
[ec2-user@ip-10-1-11-236 ~]\$ sudo mount /dev/sdf /mnt/data-store
[ec2-user@ip-10-1-11-236 ~]\$ echo "/dev/sdf /mnt/data-store ext3 defaults,noatime 1 2" | sudo tee -a /etc/fstab
/dev/sdf /mnt/data-store ext3 defaults,noatime 1 2
[ec2-user@ip-10-1-11-236 ~]\$ cat /etc/fstab

UUID=9a57ac2f-bfe7-4e29-bf89-56caddc22c97 / xfs defaults,noatime 1 1
UUID=9682-52BE /boot/efi vfat defaults,noatime,uid=0,gid=0,umask=0077,shortname=winnt,x-systemd.automount 0 2
/dev/sdf /mnt/data-store ext3 defaults,noatime 1 2
[ec2-user@ip-10-1-11-236 ~]\$ df -h
Filesystem Size Used Avail Use% Mounted on
devtmpfs 4.0M 0 4.0M 0% /dev
tmpfs 475M 0 475M 0% /dev/shm
tmpfs 190M 448K 190M 1% /run
/dev/xvda1 8.0G 1.6G 6.4G 21% /
tmpfs 475M 0 475M 0% /tmp
/dev/xvda128 10M 1.3M 8.7M 13% /boot/efi
tmpfs 95M 0 95M 0% /run/user/1000
/dev/xvdf 975M 60K 924M 1% /mnt/data-store
[ec2-user@ip-10-1-11-236 ~]\$ sudo sh -c "echo some text has been written > /mnt/data-store/file.txt"
[ec2-user@ip-10-1-11-236 ~]\$ cat /mnt/data-store/file.txt
some text has been written
[ec2-user@ip-10-1-11-236 ~]\$ sudo rm /mnt/data-store/file.txt
[ec2-user@ip-10-1-11-236 ~]\$ ls /mnt/data-store/

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Writing superblocks and filesystem accounting information: done

[ec2-user@ip-10-1-11-236 ~]\$ sudo mkdir /mnt/data-store
[ec2-user@ip-10-1-11-236 ~]\$ sudo mount /dev/sdf /mnt/data-store
[ec2-user@ip-10-1-11-236 ~]\$ echo "/dev/sdf /mnt/data-store ext3 defaults,noatime 1 2" | sudo tee -a /etc/fstab
/dev/sdf /mnt/data-store ext3 defaults,noatime 1 2
[ec2-user@ip-10-1-11-236 ~]\$ cat /etc/fstab

UUID=9a57ac2f-bfe7-4e29-bf89-56caddc22c97 / xfs defaults,noatime 1 1
UUID=9682-52BE /boot/efi vfat defaults,noatime,uid=0,gid=0,umask=0077,shortname=winnt,x-systemd.automount 0 2
/dev/sdf /mnt/data-store ext3 defaults,noatime 1 2
[ec2-user@ip-10-1-11-236 ~]\$ df -h
Filesystem Size Used Avail Use% Mounted on
devtmpfs 4.0M 0 4.0M 0% /dev
tmpfs 475M 0 475M 0% /dev/shm
tmpfs 190M 448K 190M 1% /run
/dev/xvda1 8.0G 1.6G 6.4G 21% /
tmpfs 475M 0 475M 0% /tmp
/dev/xvda128 10M 1.3M 8.7M 13% /boot/efi
tmpfs 95M 0 95M 0% /run/user/1000
/dev/xvdf 975M 60K 924M 1% /mnt/data-store
[ec2-user@ip-10-1-11-236 ~]\$ sudo sh -c "echo some text has been written > /mnt/data-store/file.txt"
[ec2-user@ip-10-1-11-236 ~]\$ cat /mnt/data-store/file.txt
some text has been written
[ec2-user@ip-10-1-11-236 ~]\$ sudo rm /mnt/data-store/file.txt
[ec2-user@ip-10-1-11-236 ~]\$ ls /mnt/data-store/
lost+found
[ec2-user@ip-10-1-11-236 ~]\$ sudo mkdir /mnt/data-store2
[ec2-user@ip-10-1-11-236 ~]\$ sudo mount /dev/sdg /mnt/data-store2
[ec2-user@ip-10-1-11-236 ~]\$ ls /mnt/data-store2/
file.txt lost+found
[ec2-user@ip-10-1-11-236 ~]\$ ss

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