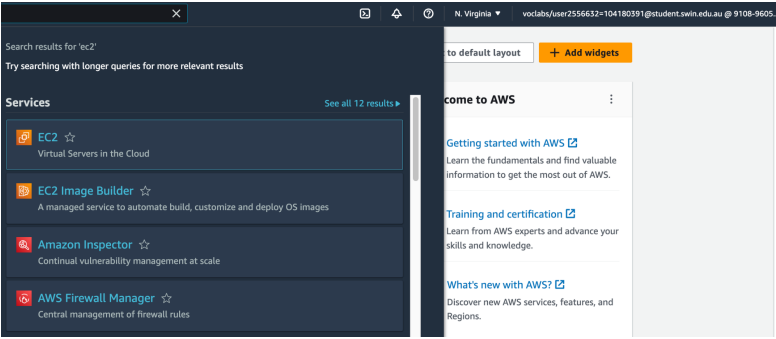
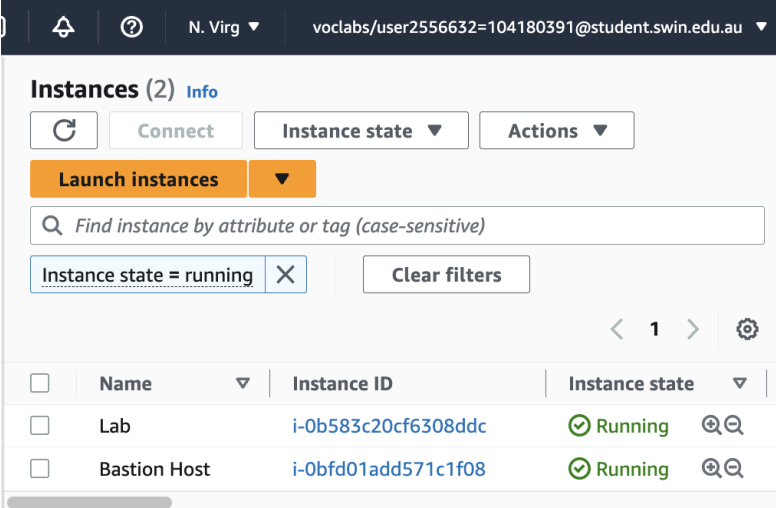
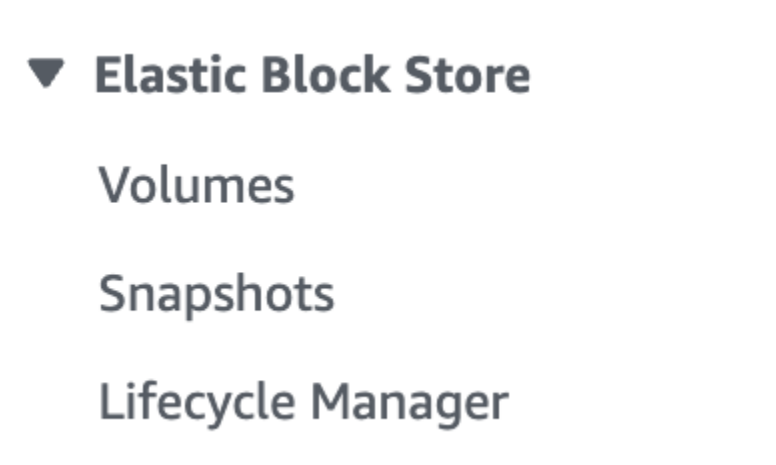
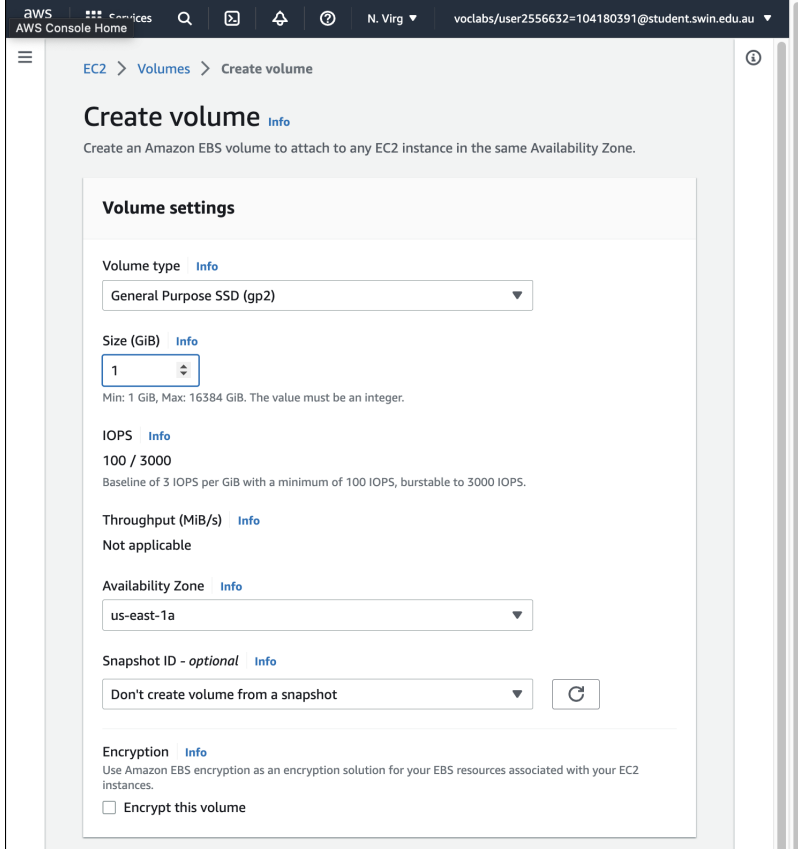
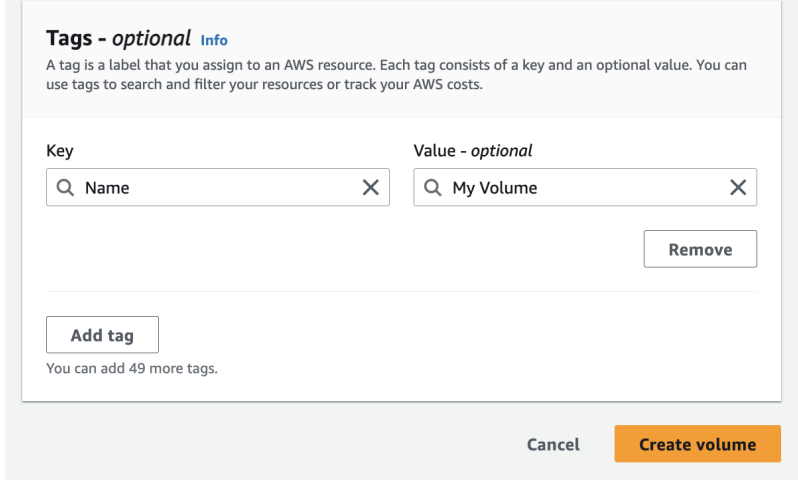


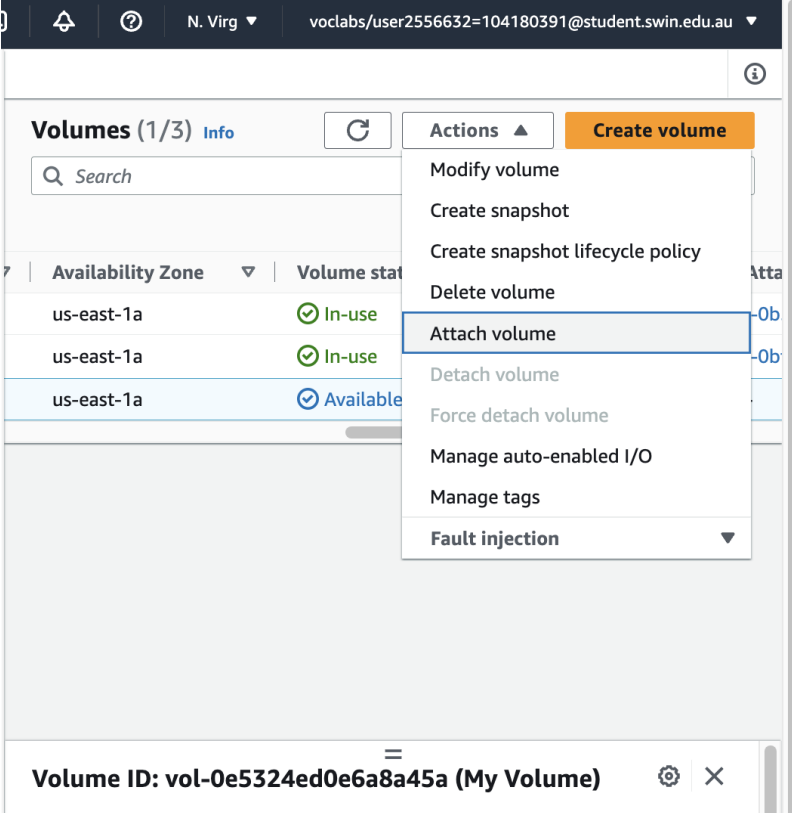
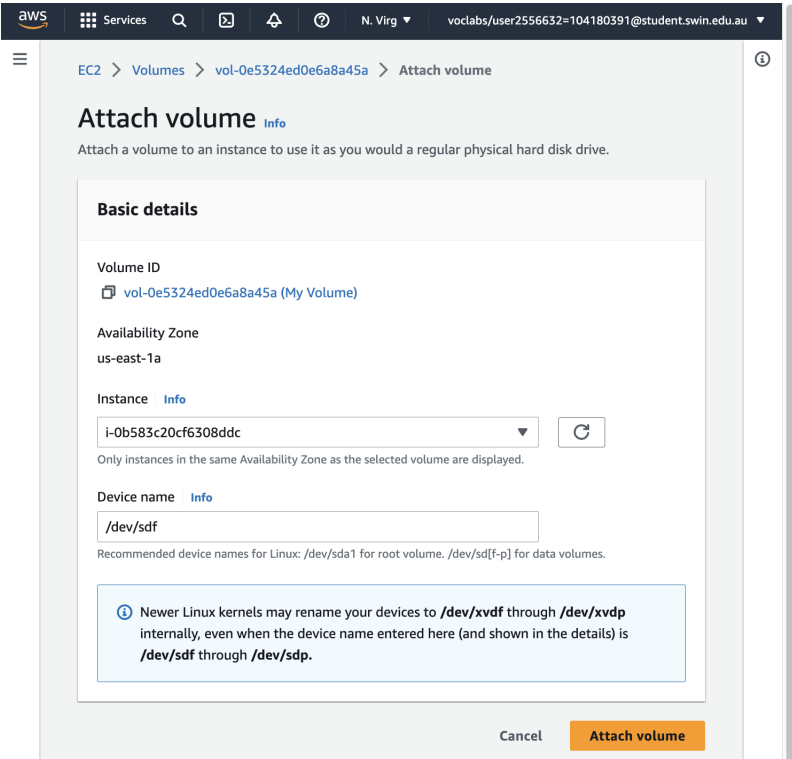
ACF Lab 4: Working with EBS

June 4, 2023

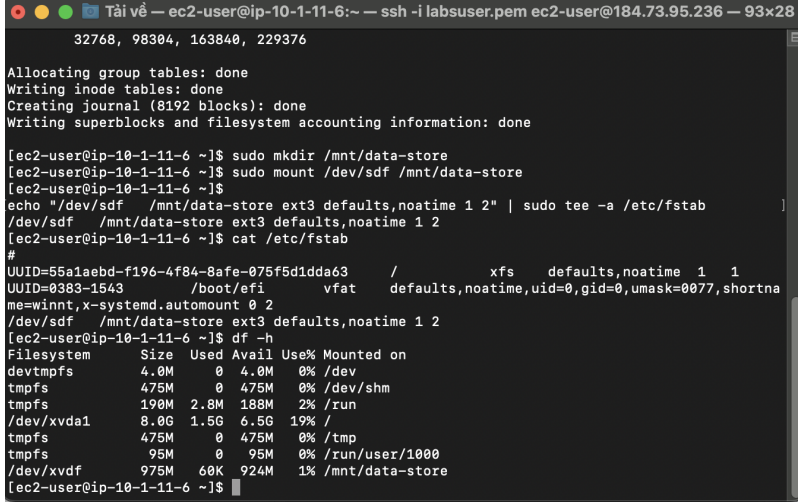
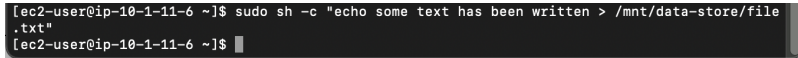
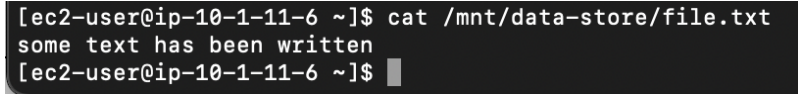
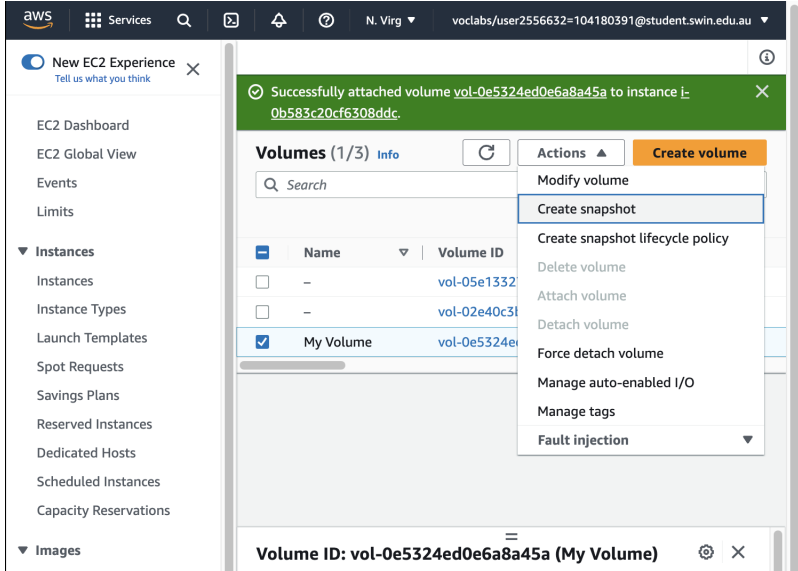
Luu Tuan Hoang
Student ID: 104180391

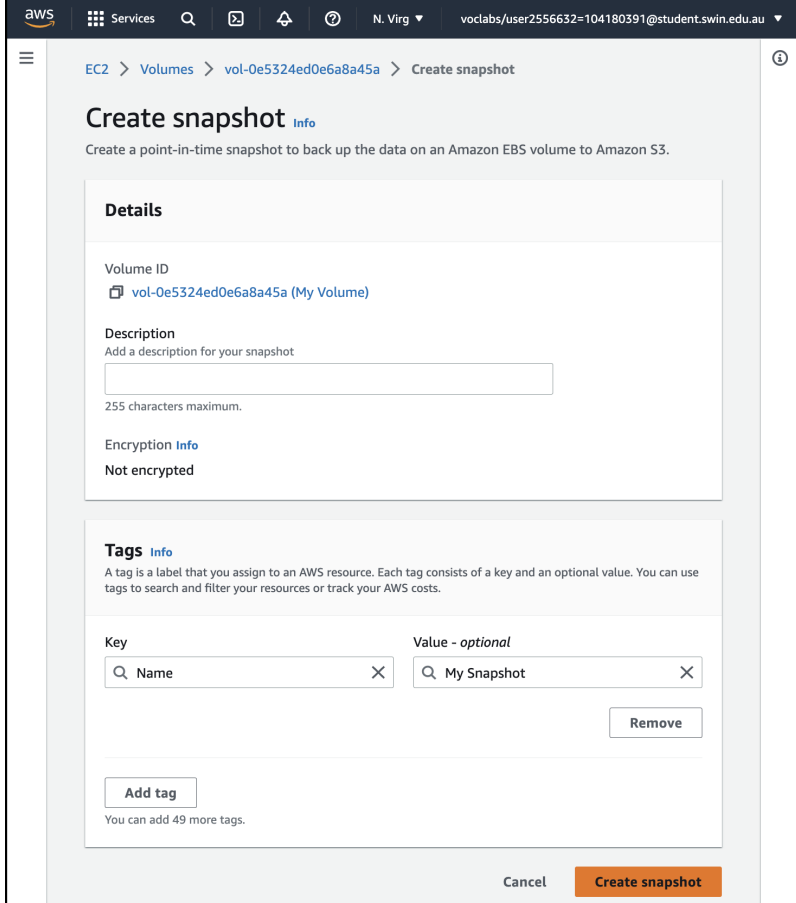
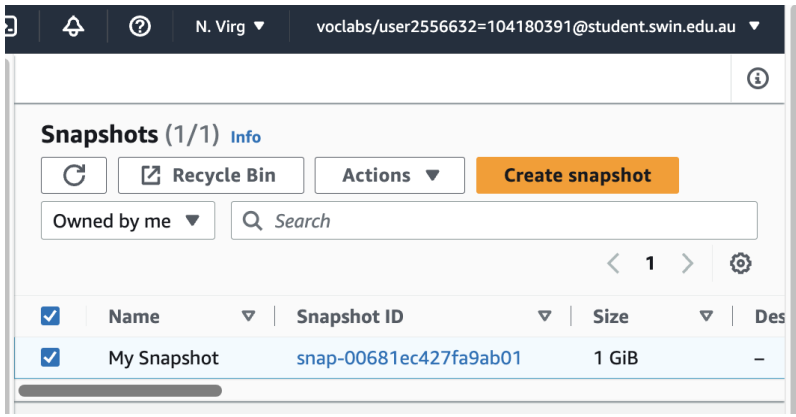
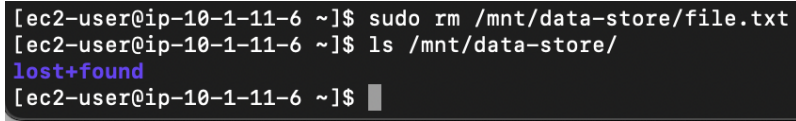
Step	Description	Screenshot
1	In the AWS Management Console, on the Services menu, click EC2 .	 A screenshot of the AWS Management Console showing search results for 'ec2'. The search bar at the top contains 'ec2'. Below the search bar, a list of services is displayed: EC2 (Virtual Servers in the Cloud), EC2 Image Builder (A managed service to automate build, customize and deploy OS images), Amazon Inspector (Continual vulnerability management at scale), and AWS Firewall Manager (Central management of firewall rules). On the right side, there is a 'Welcome to AWS' sidebar with links for 'Getting started with AWS', 'Training and certification', and 'What's new with AWS?'.
2	An Amazon EC2 instance named Lab has already been launched for the lab.	 A screenshot of the AWS Management Console 'Instances (2)' page. The page shows a list of EC2 instances. The first instance is named 'Lab' with Instance ID 'i-0b583c20cf6308ddc' and is in a 'Running' state. The second instance is named 'Bastion Host' with Instance ID 'i-0bfd01add571c1f08' and is also in a 'Running' state. The page includes a search bar, a filter for 'Instance state = running', and a 'Launch instances' button.
3	In the left navigation pane, choose Volumes .	 A screenshot of the AWS Elastic Block Store (EBS) navigation menu. The menu is displayed in a dark theme and includes the following items: Elastic Block Store, Volumes, Snapshots, and Lifecycle Manager.

4	<p>Choose Create volume then configure:</p> <ul style="list-style-type: none"> - Volume Type: General Purpose SSD (gp2) - Size (GiB): 1 - Availability Zone: Select the same availability zone as the EC2 instance. 	
5	<p>In the Tag Editor, enter:</p> <ul style="list-style-type: none"> - Key: Name - Value: My Volume <p>Choose Create Volume.</p> <p>Wait for the volume to change from the Creating state to the Available state</p>	

<p>6</p>	<p>Select My Volume. In the Actions menu, choose Attach volume.</p>	
<p>7</p>	<p>Choose the Instance field, then select the instance that appears (Lab). The Device field is set to /dev/sdf. Choose Attach volume. The volume state is now In-use.</p>	

12	<p>Create an ext3 file system on the new volume.</p> <pre>sudo mkfs -t ext3 /dev/sdf</pre>	 <pre> [ec2-user@ip-10-1-11-6 ~]\$ 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 2.8M 188M 2% /run /dev/xvda1 8.0G 1.5G 6.5G 19% / tmpfs 475M 0 475M 0% /tmp tmpfs 95M 0 95M 0% /run/user/1000 [ec2-user@ip-10-1-11-6 ~]\$ sudo mkfs -t ext3 /dev/sdf mke2fs 1.46.5 (30-Dec-2021) Creating filesystem with 262144 4k blocks and 65536 inodes Filesystem UUID: d1a0376d-4d07-4eb4-b2a1-cbf1021793e0 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-10-1-11-6 ~]\$ </pre>
13	<p>Create a directory for mounting the new storage volume.</p> <pre>sudo mkdir /mnt/data-store</pre> <p>Mount the new volume.</p> <pre>sudo mount /dev/sdf /mnt/data-store</pre> <p>To configure the Linux instance to mount this volume whenever the instance is started, add a line to /etc/fstab.</p> <pre>echo "/dev/sdf /mnt/data-store ext3 defaults,noatime 1 2" sudo tee -a /etc/fstab</pre>	 <pre> [ec2-user@ip-10-1-11-6 ~]\$ 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 2.8M 188M 2% /run /dev/xvda1 8.0G 1.5G 6.5G 19% / tmpfs 475M 0 475M 0% /tmp tmpfs 95M 0 95M 0% /run/user/1000 [ec2-user@ip-10-1-11-6 ~]\$ sudo mkdir /mnt/data-store [ec2-user@ip-10-1-11-6 ~]\$ sudo mount /dev/sdf /mnt/data-store [ec2-user@ip-10-1-11-6 ~]\$ 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-10-1-11-6 ~]\$ </pre>
14	<p>View the configuration file to see the setting on the last line.</p>	 <pre> tmpfs 190M 2.8M 188M 2% /run /dev/xvda1 8.0G 1.5G 6.5G 19% / tmpfs 475M 0 475M 0% /tmp tmpfs 95M 0 95M 0% /run/user/1000 [ec2-user@ip-10-1-11-6 ~]\$ sudo mkfs -t ext3 /dev/sdf mke2fs 1.46.5 (30-Dec-2021) Creating filesystem with 262144 4k blocks and 65536 inodes Filesystem UUID: d1a0376d-4d07-4eb4-b2a1-cbf1021793e0 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-10-1-11-6 ~]\$ sudo mkdir /mnt/data-store [ec2-user@ip-10-1-11-6 ~]\$ sudo mount /dev/sdf /mnt/data-store [ec2-user@ip-10-1-11-6 ~]\$ 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-10-1-11-6 ~]\$ cat /etc/fstab # UUID=55a1aebd-f196-4f84-8afe-075f5d1dda63 / xfs defaults,noatime 1 1 UUID=0383-1543 /boot/efi vfat defaults,noatime,uid=0,gid=0,umask=0077,shortna me=winnt,x-systemd.automount 0 2 /dev/sdf /mnt/data-store ext3 defaults,noatime 1 2 [ec2-user@ip-10-1-11-6 ~]\$ </pre>

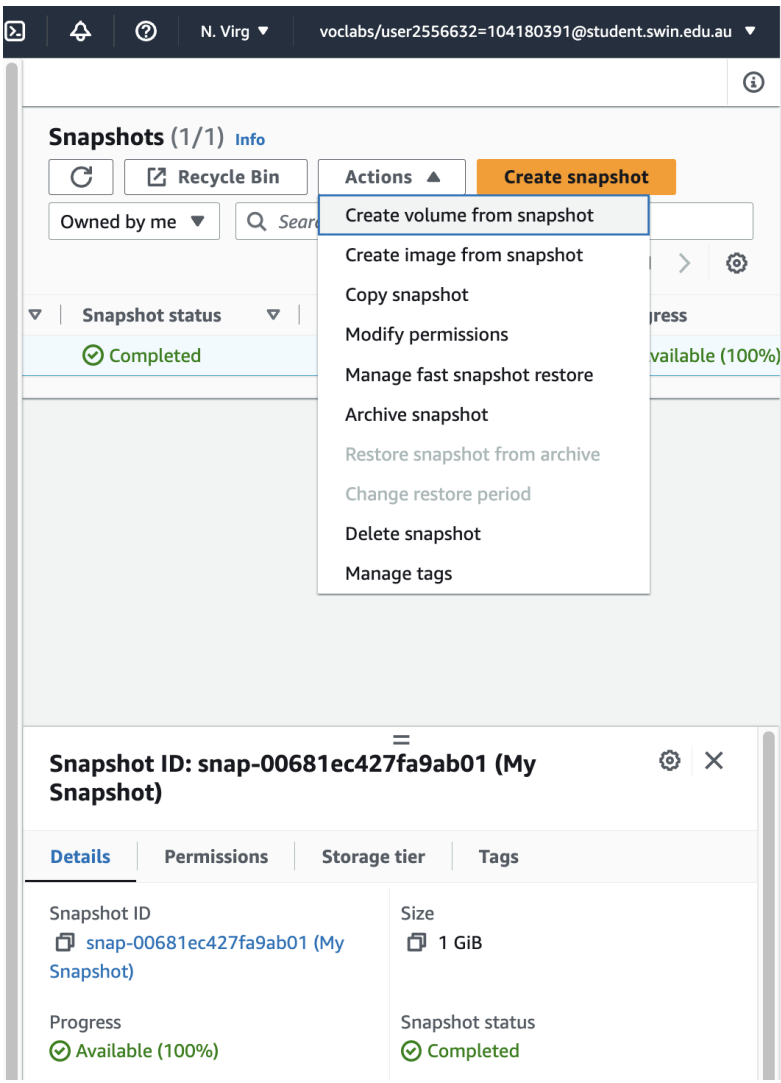
15	<p>View the available storage again.</p> <pre>df -h</pre> <p>The output will now contain an additional line - /dev/xvdf:</p>	
16	<p>On the mounted volume, create a file and add some text to it.</p> <pre>sudo sh -c "echo some text has been written > /mnt/data-store/file.txt"</pre>	
17	<p>Verify that the text has been written to the volume.</p> <pre>cat /mnt/data-store/file.txt</pre>	
18	<p>In the AWS Management Console, choose Volumes and select My Volume.</p> <p>In the Actions menu, select Create snapshot.</p>	

19	<p>Choose Add tag then configure:</p> <ul style="list-style-type: none"> - Key: Name - Value: My Snapshot - Choose Create snapshot 	
20	<p>In the left navigation pane, choose Snapshots. The snapshot is displayed. The status will first have a state of Pending, which means that the snapshot is being created. It will then change to a state of Completed.</p>	
21	<p>In your remote SSH session, delete the file that was created on the volume.</p> <pre>sudo rm /mnt/data-store/file.txt</pre> <p>Verify that the file has been deleted.</p> <pre>ls /mnt/data-store/</pre> <p>The file has been deleted.</p>	

22

In the AWS Management Console, select **My Snapshot**.

In the **Actions** menu, select **Create volume from snapshot**.



23

For the Availability Zone, select the same availability zone that was used earlier.

Choose **Add tag** then configure:

- **Key:** Name
- **Value:** Restored Volume
- Choose **Create volume**

Volume type [Info](#)

General Purpose SSD (gp2)

Size (GiB)

1

Min: 1 GiB, Max: 16384 GiB. The value must be an integer.

IOPS

100 / 3000

Baseline of 3 IOPS per GiB with a minimum of 100 IOPS, burstable to 3000 IOPS.

Throughput (MiB/s) [Info](#)

Not applicable

Availability Zone [Info](#)

us-east-1a

Fast snapshot restore [Info](#)

☐ Not enabled for selected snapshot

Encryption [Info](#)

Use Amazon EBS encryption as an encryption solution for your EBS resources associated with your EC2 instances.

☐ Encrypt this volume

Tags - optional [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

Q Name X

Q Restored Volume X

Remove

Add tag

You can add 49 more tags.

Cancel **Create volume**

24

In the left navigation pane, choose **Volumes**.

Select **Restored Volume**.

In the **Actions** menu, select **Attach volume**.

Volumes (1/4) [Info](#)

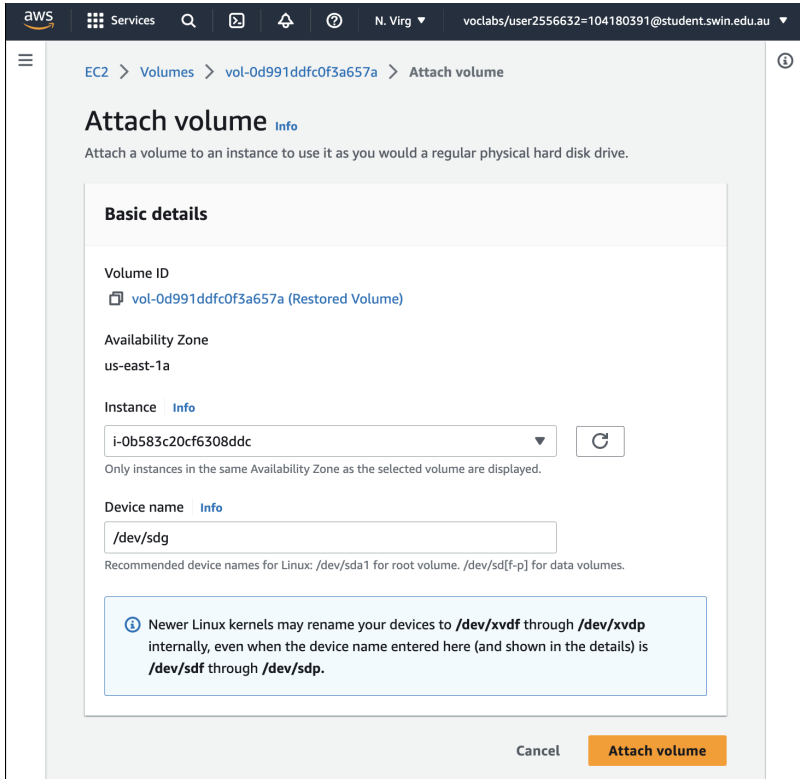
Search

	Name	Volume ID
<input type="checkbox"/>	-	vol-05e1332
<input type="checkbox"/>	-	vol-02e40c3
<input type="checkbox"/>	My Volume	vol-0e5324e
<input checked="" type="checkbox"/>	Restored Volu...	vol-0d991dd

Actions

- Modify volume
- Create snapshot
- Create snapshot lifecycle policy
- Delete volume
- Attach volume**
- Detach volume
- Force detach volume
- Manage auto-enabled I/O
- Manage tags
- Fault injection

Create volume

25	<p>Choose the Instance field, then select the (Lab) instance that appears.</p> <p>The Device field is set to /dev/sdg.</p> <p>Choose Attach volume.</p> <p>The volume state is now in-use.</p>	
26	<p>Create a directory for mounting the new storage volume.</p> <pre>sudo mkdir /mnt/data-store2</pre> <p>Mount the new volume.</p> <pre>sudo mount /dev/sdg /mnt/data-store2</pre> <p>Verify that the volume you mounted has the file that wá created earlier.</p> <pre>ls /mnt/data-store2/</pre> <p>file.txt is displayed.</p>	