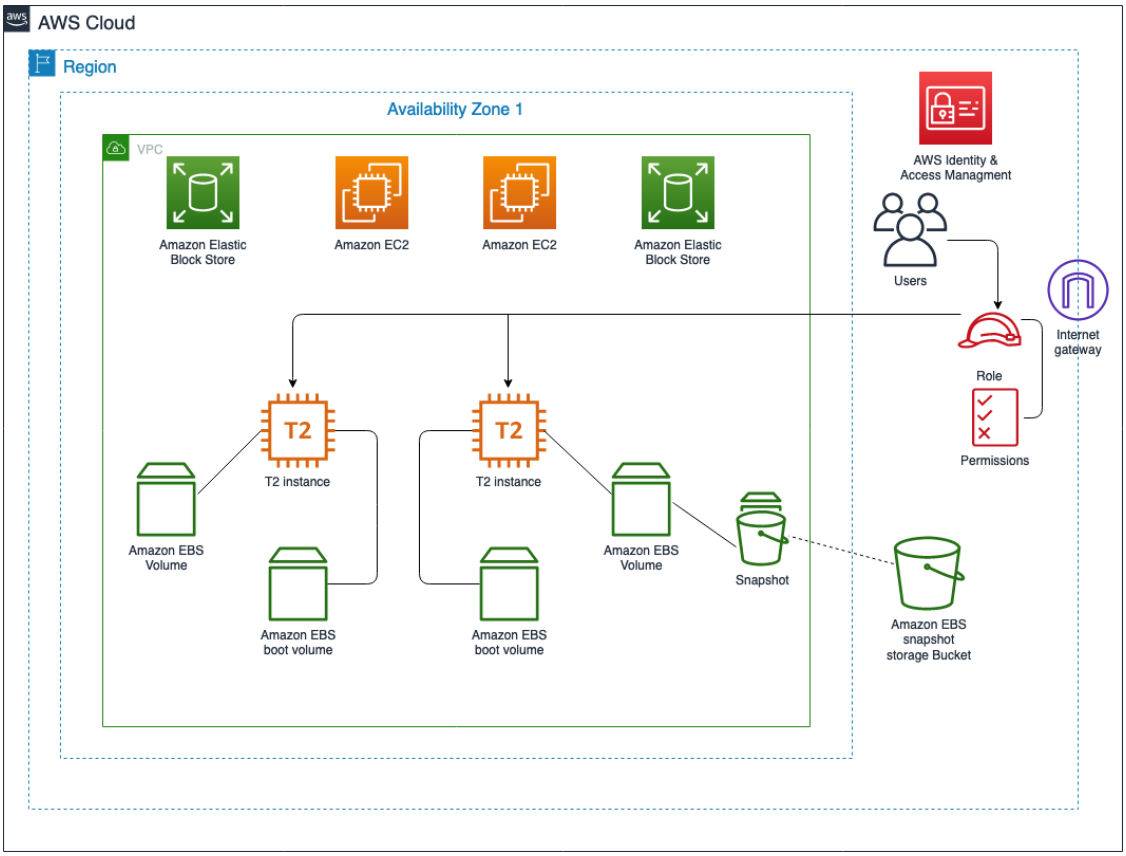
Introduction to Amazon Elastic Block Store (Amazon EBS)

This Lab introduces us to Amazon Elastic Block Store (Amazon EBS) using the AWS Management Console, explains the basics concepts of Amazon EBS in a step-by-step fashion and demonstrates how to create, attach EBS volume to Amazon EC2 instances along with creating snapshots and restoring EBS volumes from the snapshots.

Architecture diagram



Task 6: Restore an EBS Volume from an existing snapshot

In the session manager terminal we are creating a directory (mount point) for mounting the restored storage volume and mount the new volume with the following commands:

```
Session ID: awsstudent-                    Instance ID: i-021ec72829c5ca199
sh-4.2$ sudo mkdir /mnt/data-store2
sh-4.2$ sudo mount /dev/sdg /mnt/data-store2
```

After that we run the `lsblk` command to display information about the block devices attached to our instance:

```
sh-4.2$ lsblk
NAME          MAJ:MIN RM SIZE RO TYPE MOUNTPOINT
nvme0n1       259:0    0   8G  0 disk
├─nvme0n1p1   259:1    0   8G  0 part /
└─nvme0n1p128 259:2    0   1M  0 part
nvme1n1       259:3    0  50G  0 disk /mnt/data-store
nvme2n1       259:4    0  55G  0 disk /mnt/data-store2
```

With the command `df -h` we verify the size of the file system for each volume:

```
sh-4.2$ df -h
Filesystem      Size  Used Avail Use% Mounted on
devtmpfs        465M     0  465M   0% /dev
tmpfs           473M     0  473M   0% /dev/shm
tmpfs           473M  364K  472M   1% /run
tmpfs           473M     0  473M   0% /sys/fs/cgroup
/dev/nvme0n1p1  8.0G  1.5G  6.5G  19% /
/dev/nvme1n1     50G  160K   47G   1% /mnt/data-store
/dev/nvme2n1     50G  160K   47G   1% /mnt/data-store2
```

In order to extend the file system to use the additional available capacity of the volume we run the following command:

```
sh-4.2$ sudo resize2fs /dev/nvme2n1
resize2fs 1.42.9 (28-Dec-2013)
Filesystem at /dev/nvme2n1 is mounted on /mnt/data-store2; on-line resizing required
old_desc_blocks = 4, new_desc_blocks = 4
The filesystem on /dev/nvme2n1 is now 14417920 blocks long.
```

We run the `df -h` command again, in order to verify the change in the size of the file system:

```
sh-4.2$ df -h
Filesystem      Size  Used Avail Use% Mounted on
devtmpfs        465M     0  465M   0% /dev
tmpfs           473M     0  473M   0% /dev/shm
tmpfs           473M  364K  472M   1% /run
tmpfs           473M     0  473M   0% /sys/fs/cgroup
/dev/nvme0n1p1  8.0G  1.5G  6.5G  19% /
/dev/nvme1n1     50G  160K   47G   1% /mnt/data-store
/dev/nvme2n1     54G  160K   52G   1% /mnt/data-store2
```

In order to list the contents of the volume we just mounted we run the following:

```
sh-4.2$ ls /mnt/data-store2/
file.txt  lost+found
```

In the end we run the command `cat /mnt/data-store2/file.txt` to verify the contents of file.txt are intact.

```
sh-4.2$ cat /mnt/data-store2/file.txt
some text has been written
```