

### Key Pair:

- > A key pair in AWS is a set of security credentials which consists of a 'public key' & a 'private key' that are used to securely connect to an EC2 instance.
- > Public key is a cryptographic key that can be shared with anyone and it is used to encrypts data. It is stored inside the EC2 instance when it is launched.
- > Private key is downloaded & stored in the local machine.
- > Key pair consists of 1 public key & 1 private key, which is mathematically linked & data encrypted with the public key can only decrypted with its private key only.

Private key format: defines how private key is stored in a file.

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| <ul style="list-style-type: none"> <li>— .pem :</li> </ul> | <ul style="list-style-type: none"> <li>-&gt; stands for Privacy Enhanced Mail- text based format for storing keys.</li> <li>-&gt; used with SSH client(on Linux, MacOS &amp; openSSH) to connect to EC2 instance.</li> </ul> |
| <ul style="list-style-type: none"> <li>— .ppk :</li> </ul> | <ul style="list-style-type: none"> <li>-&gt; stands for Putty Private Key a format specially for Putty software, a SSH client on Windows.</li> <li>-&gt; Putty cannot use .pem file.</li> </ul>                              |

### Instance States:

1. Pending: The instance is preparing to launch.
2. Running: The instance is up & running and is fully operational.
3. Stopping: The instance is in the process of stopping.
4. Stopped: The instance is in shut down state.
5. Shutting down: The instance is in process of termination.
6. Terminated: The instance is permanently deleted.

### TASK

1. Launch an Ubuntu Linux Instance with free-eligible tier instance.
2. Connect to the Instance
3. In the instance, install git & java.
4. Check the versions of git & java.
5. Stop and then terminate the instance.

```
-- sudo apt update
-- sudo apt install git -y
-- sudo apt install openjdk-17-jdk -y
```

```
git --version
java --version
```

### Launch Types:

#### 1. Instances:

- > Displays all the EC2 instances launched in the region.
- > shows all the details like instance types, status check, AZ, IP address, etc.

AZ = me-central-1c

me -> Middle East  
central - 1 -> exact location (UAE)  
c -> AZ (3rd AZ)

#### 2. Instance Types:

- > Displays all the available & supported EC2 instances with sizes & configurations, available for the selected region.

#### 3. Launch Template:

- > We can create templates & define the configuration settings which are used for launching an instance, eg: OS, Instance Type, Security group,etc; thus automating the process of instance launch.