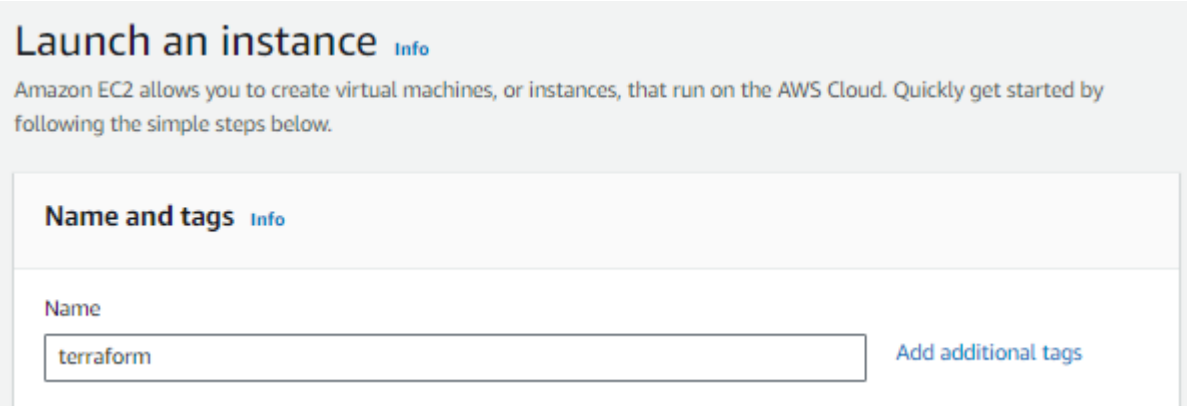
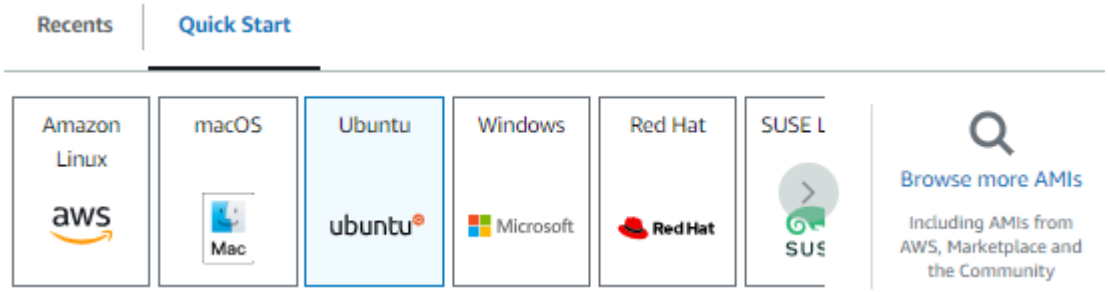
TASK-2

How to create multiple instances with different names using Terraform

Launch instance with the tag name terraform

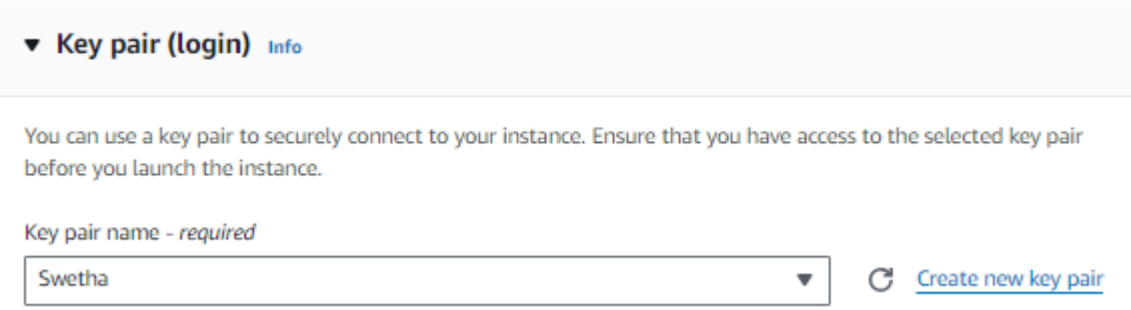


Select ubuntu

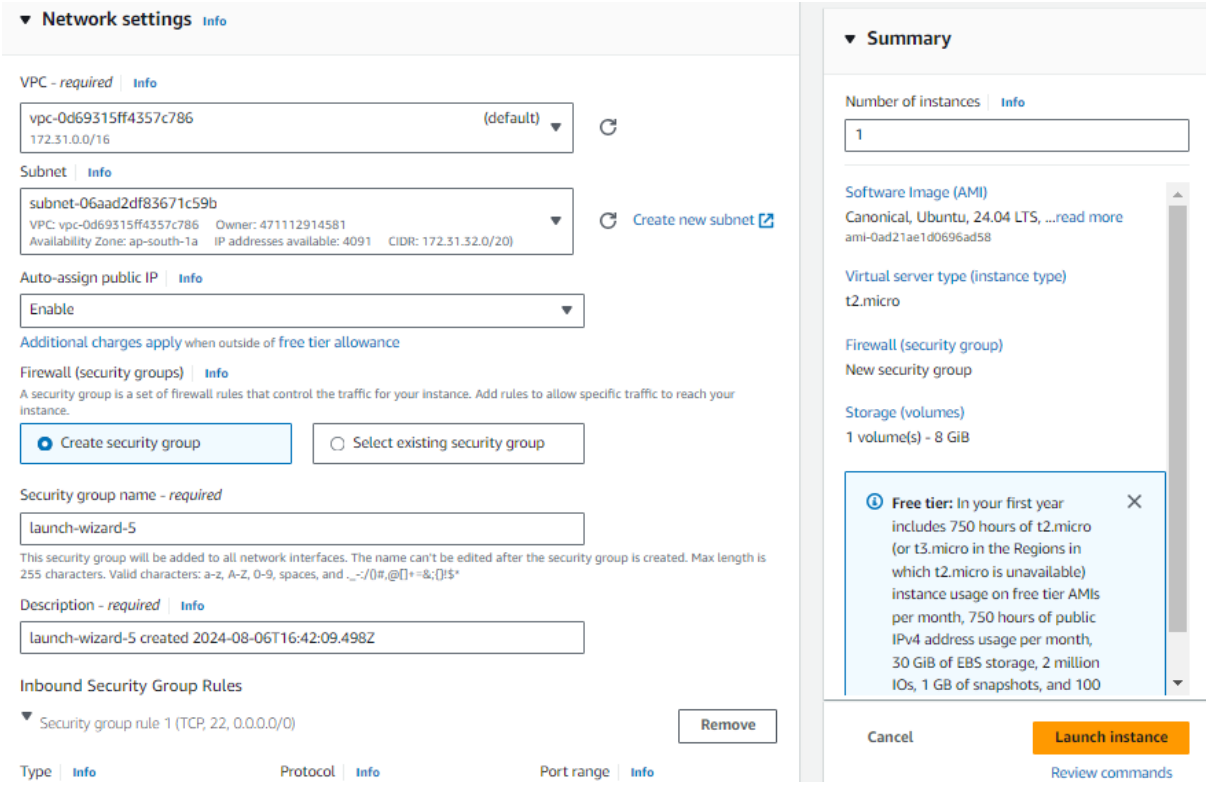


Create new key pair and the .pem file will be downloaded

Cut and paste the file from downloads to desktop



Edit network settings and launch instance



Instance will be initiated successfully

Copy the ssh client to connect to the server through gitbash

Connect to instance Info

Connect to your instance i-0e4f6768ea22356d2 (terraform) using any of these options

EC2 Instance Connect | Session Manager | SSH client | EC2 serial console

Instance ID

i-0e4f6768ea22356d2 (terraform)

1. Open an SSH client.
2. Locate your private key file. The key used to launch this instance is Swetha.pem
3. Run this command, if necessary, to ensure your key is not publicly viewable.
   chmod 400 "Swetha.pem"
4. Connect to your instance using its Public DNS:
   ec2-3-110-197-118.ap-south-1.compute.amazonaws.com

Example:

ssh -i "Swetha.pem" ubuntu@ec2-3-110-197-118.ap-south-1.compute.amazonaws.com

Note: In most cases, the guessed username is correct. However, read your AMI usage instructions to check if the AMI owner has changed the default AMI username.

Connect to the server

```
laksh@LAPTOP-8ME8B29S MINGW64 ~/OneDrive/Desktop
$ ssh -i "Swetha.pem" ubuntu@ec2-3-110-197-118.ap-south-1.compute.amazonaws.com
The authenticity of host 'ec2-3-110-197-118.ap-south-1.compute.amazonaws.com (3.110.197.118)' can't be establish
ed.
ED25519 key fingerprint is SHA256:7OViki6koRap+/a3XmqKieebM2g8otxeihx8b5QsaBk.
This key is not known by any other names.
Are you sure you want to continue connecting (yes/no/[fingerprint])? yes
```

Connect to the root user

```
ubuntu@ip-172-31-35-220:~$ sudo -i
root@ip-172-31-35-220:~#
```

Then use the following commands

- apt update -y
- apt install unzip -y

for installing aws cli---

curl "https://awscli.amazonaws.com/awscli-exe-linux-x86_64.zip" -o "awscliv2.zip"

unzip awscliv2.zip

sudo ./aws/install

```
root@ip-172-31-35-220:~# aws --version
aws-cli/2.17.23 Python/3.11.9 Linux/6.8.0-1009-aws exe/x86_64.ubuntu.24
```

For installing terraform-----

wget -O- https://apt.releases.hashicorp.com/gpg | sudo gpg --dearmor -o /usr/share/keyrings/hashicorp-archive-keyring.gpg

echo "deb [signed-by=/usr/share/keyrings/hashicorp-archive-keyring.gpg] https://apt.releases.hashicorp.com $(lsb_release -cs) main" | sudo tee /etc/apt/sources.list.d/hashicorp.list

sudo apt update && sudo apt install terraform

```
root@ip-172-31-35-220:~# terraform --version
Terraform v1.9.3
on linux_amd64
```

Create a directory named terraform and then connect to it

Create a terraformblock.tf file

```
root@ip-172-31-35-220:~# mkdir terraform
root@ip-172-31-35-220:~# cd terraform
root@ip-172-31-35-220:~/terraform# vi terraformblock.tf
root@ip-172-31-35-220:~/terraform# |
```

code for terraform block---

```
terraform {
  required_providers {
    aws = {
      source = "hashicorp/aws"
      version = "5.61.0"
```

```
    }
  }
}
```

Get access key and secret access key form user(IAM)--

```
root@ip-172-31-35-220:~/terraform# cd ..
root@ip-172-31-35-220:~# ls -a
.   .bash_history  .profile  .terraform.d  .wget-hsts  awscliv2.zip  terraform
..  .bashrc        .ssh      .viminfo      aws         snap
root@ip-172-31-35-220:~# aws configure
AWS Access Key ID [None]: AKIAW3MEES2KUSUC6LNN
AWS Secret Access Key [None]: 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
Default region name [None]: ap-south-1
Default output format [None]: table
root@ip-172-31-35-220:~# ls -a
.   .aws           .bashrc   .ssh          .viminfo    aws           snap
..  .bash_history  .profile  .terraform.d  .wget-hsts  awscliv2.zip  terraform
root@ip-172-31-35-220:~# cd .aws
root@ip-172-31-35-220:~/.aws# ls
config  credentials
root@ip-172-31-35-220:~/.aws# cat credentials
[default]
aws_access_key_id = AKIAW3MEES2KUSUC6LNN
aws_secret_access_key = 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
root@ip-172-31-35-220:~/.aws# cat config
[default]
region = ap-south-1
output = table
root@ip-172-31-35-220:~/.aws#
```

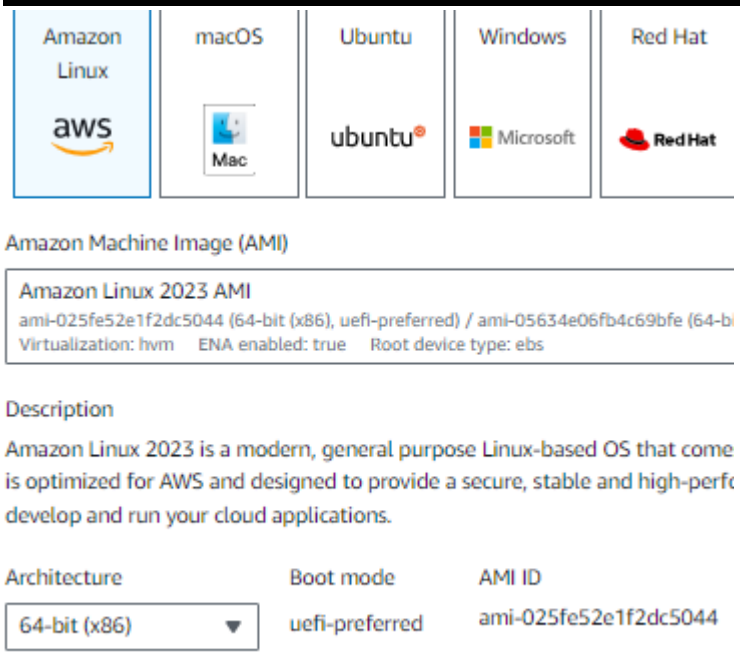
```
root@ip-172-31-35-220:~# cd terraform
root@ip-172-31-35-220:~/terraform#
```

```
root@ip-172-31-35-220:~/terraform# vi provider.tf
root@ip-172-31-35-220:~/terraform#
```

code for provider block---

```
provider "aws" {
        region = "ap-south-1"
        profile = "default"
}
```

```
root@ip-172-31-35-220:~/terraform# vi resource.tf
```



code for resource block---

```
resource "aws_instance" "example" {
  count        = length(var.instance_names)
  ami          = "ami-025fe52e1f2dc5044"
  instance_type = "t2.micro"


  tags = {
    Name = element(var.instance_names, count.index)
  }
}
```

```
root@ip-172-31-35-220:~/terraform# vi variable.tf
```

code for variable block---

```
variable "instance_names" {
  description = "List of instance names"
  type        = list(string)
  default     = ["instance1", "instance2", "instance3"]
}
```

Now the following commands

- terraform init
- terraform validate
- terraform plan
- terraform apply

```
root@ip-172-31-35-220:~/terraform# terraform init
Initializing the backend...
Initializing provider plugins...
- Finding hashicorp/aws versions matching "5.61.0"...
- Installing hashicorp/aws v5.61.0...
- Installed hashicorp/aws v5.61.0 (signed by HashiCorp)
Terraform has created a lock file .terraform.lock.hcl to record the provider
selections it made above. Include this file in your version control repository
so that Terraform can guarantee to make the same selections by default when
you run "terraform init" in the future.

Terraform has been successfully initialized!

You may now begin working with Terraform. Try running "terraform plan" to see
any changes that are required for your infrastructure. All Terraform commands
should now work.

If you ever set or change modules or backend configuration for Terraform,
rerun this command to reinitialize your working directory. If you forget, other
commands will detect it and remind you to do so if necessary.
root@ip-172-31-35-220:~/terraform#
```

```
root@ip-172-31-35-220:~/terraform# terraform validate
Success! The configuration is valid.

root@ip-172-31-35-220:~/terraform#
```

```
root@ip-172-31-35-220:~/terraform# terraform plan
```

```
Plan: 3 to add, 0 to change, 0 to destroy.

Note: You didn't use the -out option to save this plan, so Terraform can't guarantee to take exactly these
actions if you run "terraform apply" now.
root@ip-172-31-35-220:~/terraform#
```

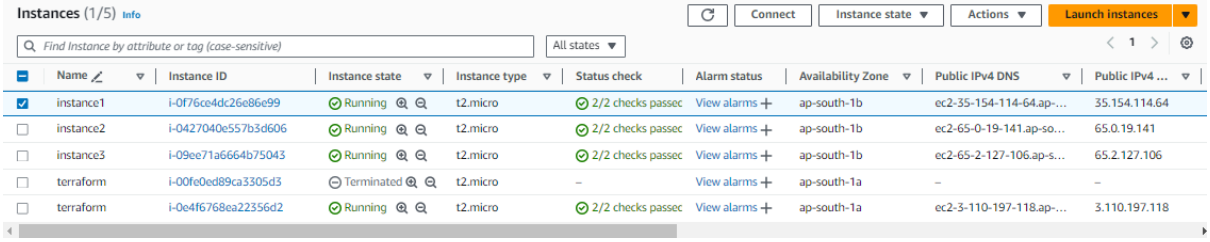
```
root@ip-172-31-35-220:~/terraform# terraform apply
```

```
Plan: 3 to add, 0 to change, 0 to destroy.

Do you want to perform these actions?
  Terraform will perform the actions described above.
  Only 'yes' will be accepted to approve.

  Enter a value:
```

```
Plan: 3 to add, 0 to change, 0 to destroy.

Do you want to perform these actions?
  Terraform will perform the actions described above.
  Only 'yes' will be accepted to approve.

  Enter a value: yes

aws_instance.example[0]: Creating...
aws_instance.example[2]: Creating...
aws_instance.example[1]: Creating...
```

```
aws_instance.example[0]: Creating...
aws_instance.example[2]: Creating...
aws_instance.example[1]: Creating...
aws_instance.example[0]: Still creating... [10s elapsed]
aws_instance.example[2]: Still creating... [10s elapsed]
aws_instance.example[1]: Still creating... [10s elapsed]
aws_instance.example[0]: Still creating... [20s elapsed]
aws_instance.example[2]: Still creating... [20s elapsed]
aws_instance.example[1]: Still creating... [20s elapsed]
aws_instance.example[2]: Creation complete after 21s [id=i-09ee71a6664b75043]
aws_instance.example[0]: Still creating... [30s elapsed]
aws_instance.example[1]: Still creating... [30s elapsed]
aws_instance.example[1]: Creation complete after 31s [id=i-0427040e557b3d606]
aws_instance.example[0]: Creation complete after 31s [id=i-0f76ce4dc26e86e99]

Apply complete! Resources: 3 added, 0 changed, 0 destroyed.
root@ip-172-31-35-220:~/terraform#
```

Instances will be created with different names as specified in the code (variable block)



Now for deleting

terraform destroy

```
root@ip-172-31-35-220:~/terraform# terraform destroy
```

```
root@ip-172-31-35-220:~/terraform# terraform destroy
aws_instance.example[1]: Refreshing state... [id=i-0427040e557b3d606]
aws_instance.example[0]: Refreshing state... [id=i-0f76ce4dc26e86e99]
aws_instance.example[2]: Refreshing state... [id=i-09ee71a6664b75043]

Terraform used the selected providers to generate the following execution plan. Resource actions ar
with the following symbols:
  - destroy

Terraform will perform the following actions:

  # aws_instance.example[0] will be destroyed
```

```
  Enter a value: yes

aws_instance.example[0]: Destroying... [id=i-0f76ce4dc26e86e99]
aws_instance.example[2]: Destroying... [id=i-09ee71a6664b75043]
aws_instance.example[1]: Destroying... [id=i-0427040e557b3d606]
aws_instance.example[0]: Still destroying... [id=i-0f76ce4dc26e86e99, 10s elapsed]
aws_instance.example[1]: Still destroying... [id=i-0427040e557b3d606, 10s elapsed]
aws_instance.example[2]: Still destroying... [id=i-09ee71a6664b75043, 10s elapsed]
aws_instance.example[0]: Still destroying... [id=i-0f76ce4dc26e86e99, 20s elapsed]
aws_instance.example[2]: Still destroying... [id=i-09ee71a6664b75043, 20s elapsed]
aws_instance.example[1]: Still destroying... [id=i-0427040e557b3d606, 20s elapsed]
aws_instance.example[0]: Still destroying... [id=i-0f76ce4dc26e86e99, 30s elapsed]
aws_instance.example[1]: Still destroying... [id=i-0427040e557b3d606, 30s elapsed]
aws_instance.example[2]: Still destroying... [id=i-09ee71a6664b75043, 30s elapsed]
aws_instance.example[2]: Destruction complete after 40s
aws_instance.example[1]: Destruction complete after 40s
aws_instance.example[0]: Still destroying... [id=i-0f76ce4dc26e86e99, 40s elapsed]
aws_instance.example[0]: Destruction complete after 41s

Destroy complete! Resources: 3 destroyed.
root@ip-172-31-35-220:~/terraform#
```