QUESTION NO: 01

Console:

1. Create Network Interface (NIC) on Console:
- Navigate to the AWS Management Console.
- Create a new Network Interface (NIC) in a specific VPC and subnet.
- Associate the NIC with a security group.
- Note down the Private IP address assigned to the NIC.

2. Launch EC2 Instance and Associate NIC:
- Launch a new EC2 instance using the AWS Management Console.
- During the instance launch, associate the previously created NIC with the instance.
- Confirm that the instance has the expected private IP address.

3. Verify Network Interface Configuration:
- Access the EC2 instance and verify the network interface configuration.
- Use the console to check the details of the associated NIC.

Create network interface

An elastic network interface is a logical networking component in a VPC that represents a virtual network card.

Details Info

Description - *optional*

A descriptive name for the network interface.

demo interface

Subnet

The subnet in which to create the network interface.

subnet-0083395f43cbe6d66

Private IPv4 address

The private IPv4 address to assign to the network interface.

- (•) Auto-assign
- ( ) Custom

Elastic Fabric Adapter

- [ ] Enable

▸ Advanced settings

Security groups (1/5) Info

Find security groups

1

	Group ID	Group name	Description
[ ]	sg-038d5fe2d8997f799	launch-wizard-3	launch-wizard-3 created 2024...
[ ]	sg-095100de60dfade01	launch-wizard-1	launch-wizard-1 created 2024...
[ ]	sg-045463424a6349c37	launch-wizard-2	launch-wizard-2 created 2024...
[ ]	sg-01545156419f4c47e	launch-wizard-4	launch-wizard-4 created 2024...
[x]	sg-0be425e94b1ec3109	default	default VPC security group

Tags - *optional*

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.

No tags associated with the resource.

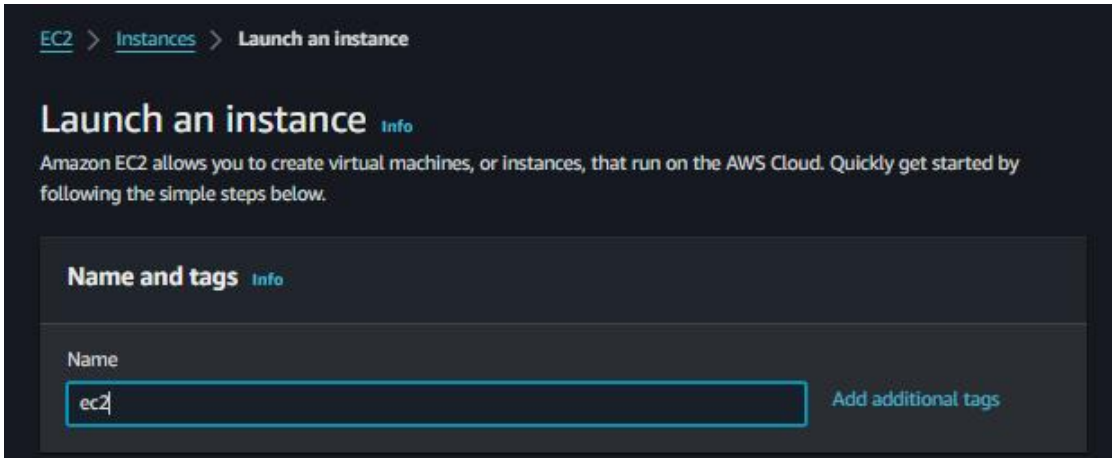
Add new tag

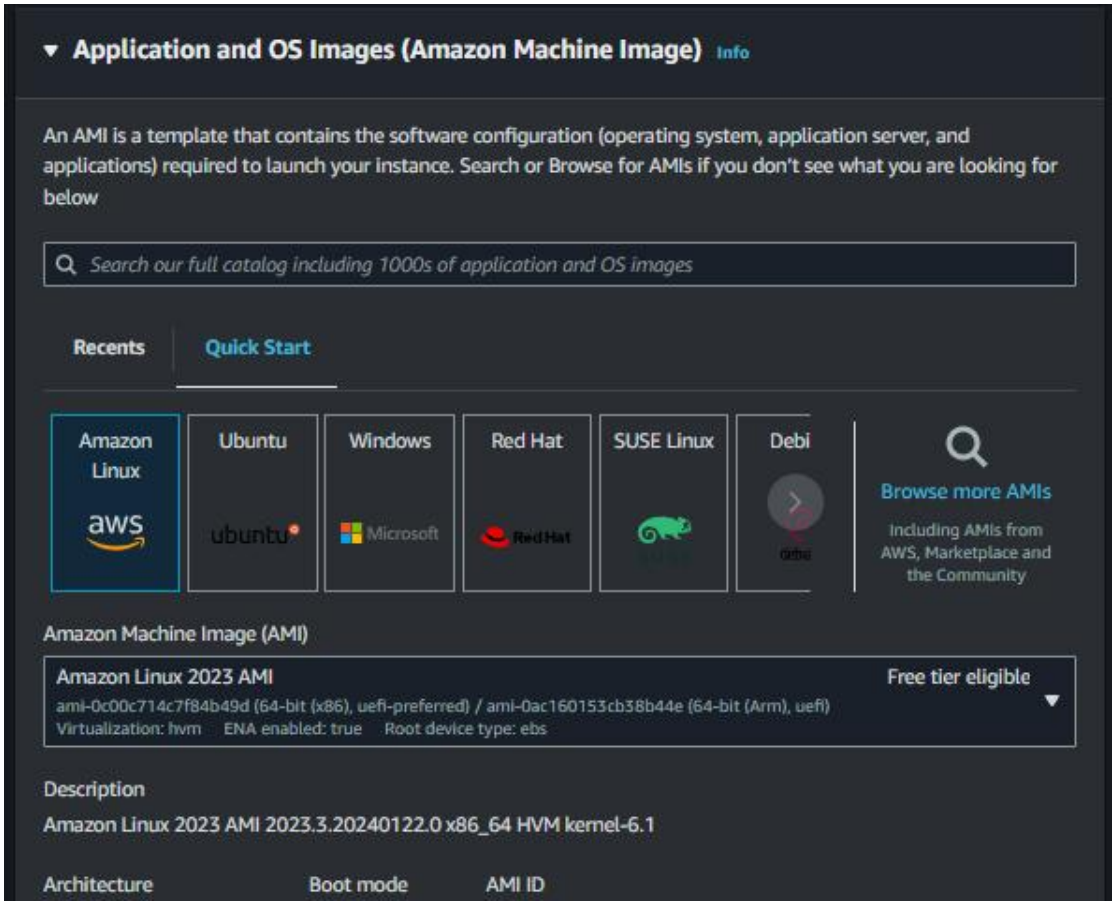
You can add 50 more tags

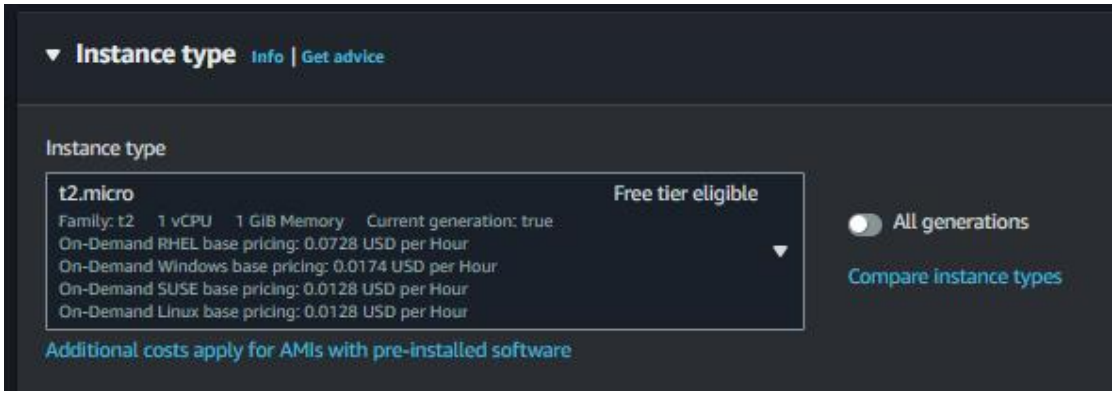
Cancel | Create network interface

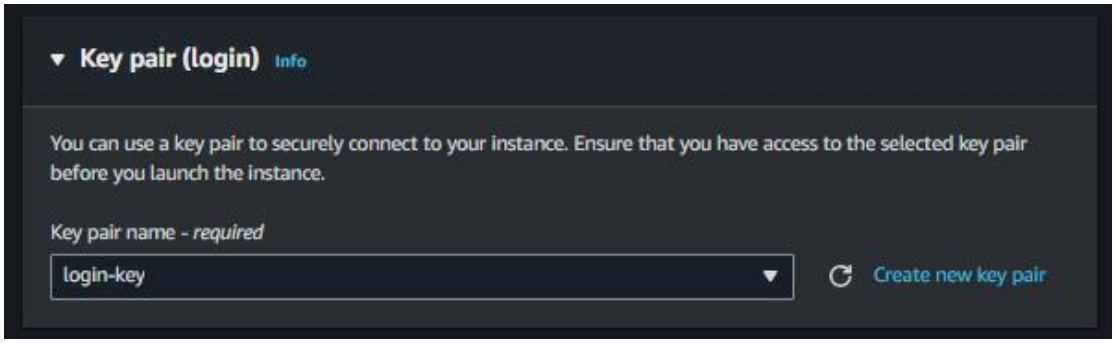

Network interfaces (2) Info
Actions
Create network interface
Search
1
Name
Network interface ID
Subnet ID
VPC ID
Availability Zone
Security group n...
Security group IDs
eni-0bba98e04c64c587a
subnet-0083395f43cbe6d66
vpc-0e9807d05719dc119
ca-central-1a
default
sg-0be425e94b1ec3...

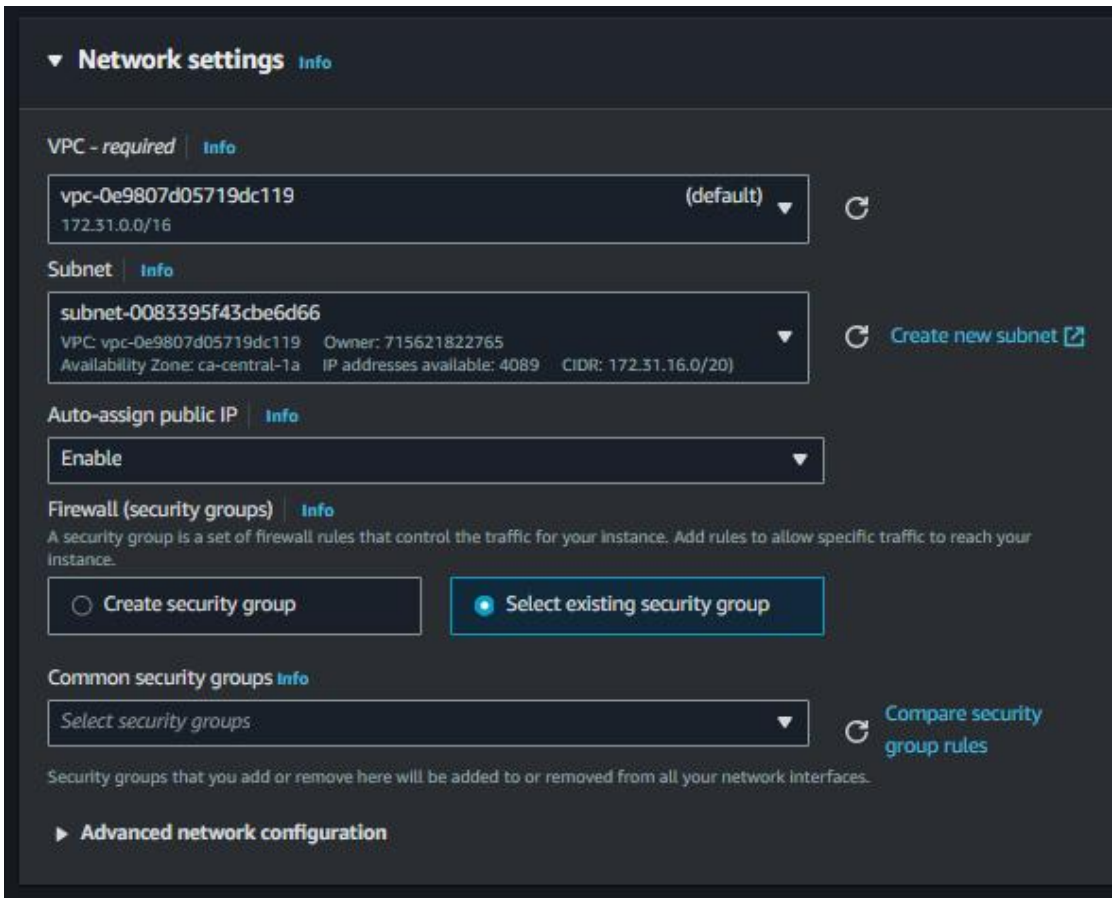
Q.2

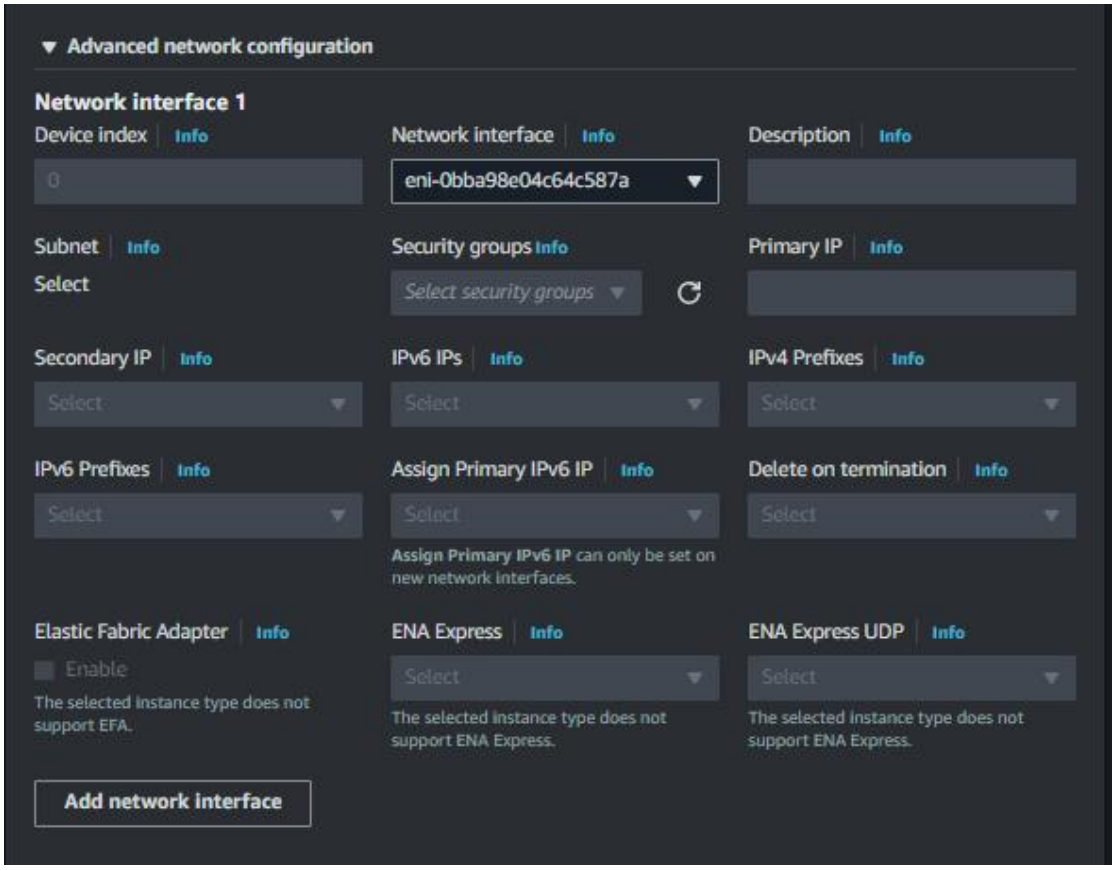

EC2 > Instances > Launch an instance
Launch an instance Info
Amazon EC2 allows you to create virtual machines, or instances, that run on the AWS Cloud. Quickly get started by following the simple steps below.
Name and tags Info
Name
ec2
Add additional tags

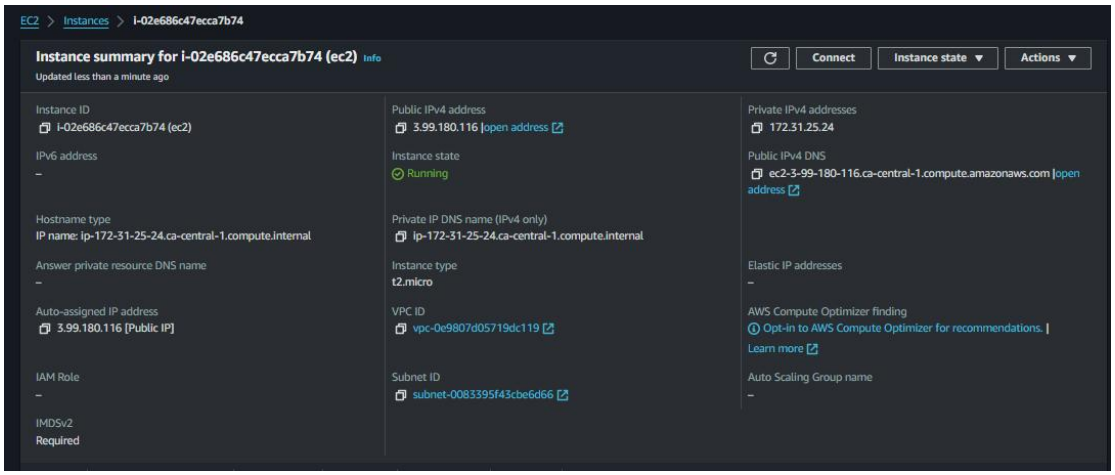

Application and OS Images (Amazon Machine Image) Info
An AMI is a template that contains the software configuration (operating system, application server, and applications) required to launch your instance. Search or Browse for AMIs if you don't see what you are looking for below
Search our full catalog including 1000s of application and OS images
Recents
Quick Start
Amazon Linux
Ubuntu
Windows
Red Hat
SUSE Linux
Debi
Browse more AMIs
Including AMIs from AWS, Marketplace and the Community
Amazon Machine Image (AMI)
Amazon Linux 2023 AMI
Free tier eligible
ami-0c00c714c7f84b49d (64-bit (x86), uefi-preferred) / ami-0ac160153cb38b44e (64-bit (Arm), uefi)
Virtualization: hvm ENA enabled: true Root device type: ebs
Description
Amazon Linux 2023 AMI 2023.3.20240122.0 x86_64 HVM kernel-6.1
Architecture
Boot mode
AMI ID


Instance type Info | Get advice
Instance type
t2.micro
Free tier eligible
Family: t2 1 vCPU 1 GiB Memory Current generation: true
On-Demand RHEL base pricing: 0.0728 USD per Hour
On-Demand Windows base pricing: 0.0174 USD per Hour
On-Demand SUSE base pricing: 0.0128 USD per Hour
On-Demand Linux base pricing: 0.0128 USD per Hour
All generations
Compare instance types
Additional costs apply for AMIs with pre-installed software

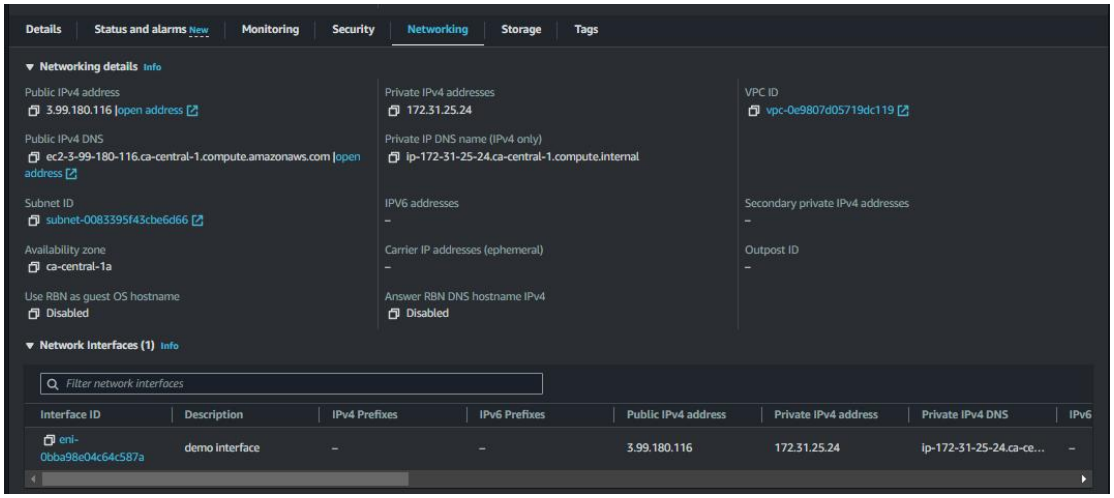

Key pair (login) Info
You can use a key pair to securely connect to your instance. Ensure that you have access to the selected key pair before you launch the instance.
Key pair name - required
login-key
Create new key pair


Network settings Info
VPC - required Info
vpc-0e9807d05719dc119
(default)
172.31.0.0/16
Subnet Info
subnet-0083395f43cbe6d66
VPC: vpc-0e9807d05719dc119 Owner: 715621822765
Availability Zone: ca-central-1a IP addresses available: 4089 CIDR: 172.31.16.0/20)
Create new subnet
Auto-assign public IP Info
Enable
Firewall (security groups) Info
A security group is a set of firewall rules that control the traffic for your instance. Add rules to allow specific traffic to reach your instance.
Create security group
Select existing security group
Common security groups Info
Select security groups
Compare security group rules
Security groups that you add or remove here will be added to or removed from all your network interfaces.
Advanced network configuration


Advanced network configuration
Network interface 1
Device index Info
0
Network interface Info
eni-0bba98e04c64c587a
Description Info
Subnet Info
Select
Security groups Info
Select security groups
Primary IP Info
Secondary IP Info
Select
IPv6 IPs Info
Select
IPv4 Prefixes Info
Select
IPv6 Prefixes Info
Select
Assign Primary IPv6 IP Info
Select
Assign Primary IPv6 IP can only be set on new network interfaces.
Delete on termination Info
Select
Elastic Fabric Adapter Info
Enable
The selected instance type does not support EFA.
ENA Express Info
Select
The selected instance type does not support ENA Express.
ENA Express UDP Info
Select
The selected instance type does not support ENA Express.
Add network interface


EC2 > Instances > i-02e686c47ecca7b74
Instance summary for i-02e686c47ecca7b74 (ec2) Info
Updated less than a minute ago
Connect
Instance state
Actions
Instance ID
i-02e686c47ecca7b74 (ec2)
Public IPv4 address
3.99.180.116 |open address
Private IPv4 addresses
172.31.25.24
IPv6 address
–
Instance state
Running
Public IPv4 DNS
ec2-3-99-180-116.ca-central-1.compute.amazonaws.com |open address
Hostname type
IP name: ip-172-31-25-24.ca-central-1.compute.internal
Private IP DNS name (IPv4 only)
ip-172-31-25-24.ca-central-1.compute.internal
Answer private resource DNS name
–
Instance type
t2.micro
Elastic IP addresses
–
Auto-assigned IP address
3.99.180.116 [Public IP]
VPC ID
vpc-0e9807d05719dc119
AWS Compute Optimizer finding
Opt-in to AWS Compute Optimizer for recommendations. |
Learn more
IAM Role
–
Subnet ID
subnet-0083395f43cbe6d66
Auto Scaling Group name
–
IMDSv2
Required

Q.3



CLI:

1. Create Network Interface (NIC) using AWS CLI:

- Use the AWS CLI to create a new Network Interface (NIC) in a specific VPC and subnet.
- Associate the NIC with a security group.
- Note down the Private IP address assigned to the NIC.

2. Launch EC2 Instance and Associate NIC using AWS CLI:

- Use the AWS CLI to launch a new EC2 instance.
- During the instance launch, associate the previously created NIC with the instance.
- Confirm that the instance has the expected private IP address.

3. **Verify Network Interface Configuration using AWS CLI:**

- Use the AWS CLI to check the details of the associated NIC and the EC2 instance.
- Confirm the network interface configuration.

```
root@Nilam:~# aws ec2 create-network-interface --subnet-id subnet-0083395f43cbe6d66 --description "My NIC" --groups sg-095100de60dfad
e01
{
    "NetworkInterface": {
        "AvailabilityZone": "ca-central-1a",
        "Description": "My NIC",
        "Groups": [
            {
                "GroupName": "launch-wizard-1",
                "GroupId": "sg-095100de60dfade01"
            }
        ],
        "InterfaceType": "interface",
        "Ipv6Addresses": [],
        "MacAddress": "02:10:2c:3b:f5:fa",
        "NetworkInterfaceId": "eni-0f530a59cf9f7225c",
        "OwnerId": "715621822765",
        "PrivateDnsName": "ip-172-31-25-139.ca-central-1.compute.internal",
        "PrivateIpAddress": "172.31.25.139",
        "PrivateIpAddresses": [
            {
                "Primary": true,
                "PrivateDnsName": "ip-172-31-25-139.ca-central-1.compute.internal",
                "PrivateIpAddress": "172.31.25.139"
            }
        ],
        "RequesterId": "AIDA2NHTCOEW7GEW5TINF",
        "RequesterManaged": false,
        "SourceDestCheck": true,
        "Status": "pending",
        "SubnetId": "subnet-0083395f43cbe6d66",
        "TagSet": [],
```

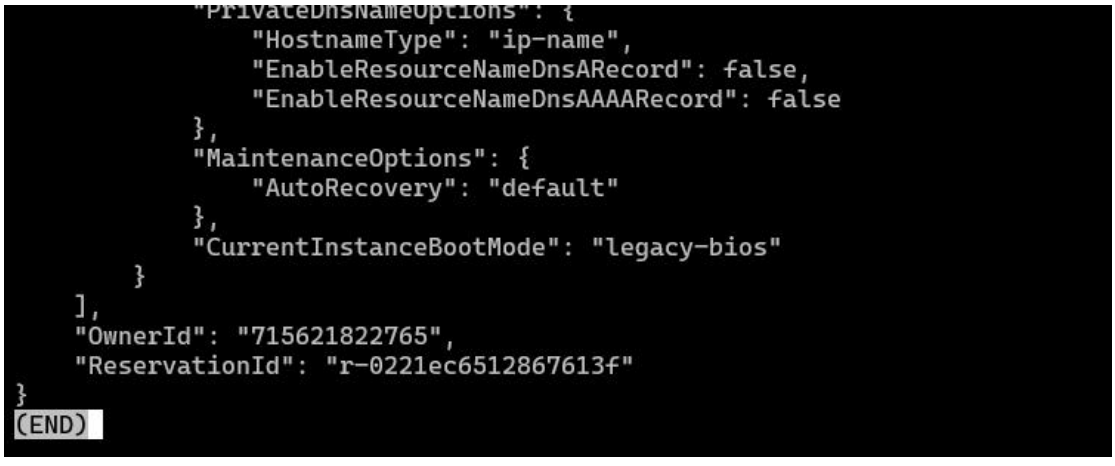
Q.2

```
root@Nilam:~# aws ec2 run-instances --image-id ami-0c00c714c7f84b49d --key-name login-key --instance-type t2.micro --security-group-i
ds sg-038d5fe2d8997f799 --associate-public-ip-address --subnet-id subnet-0083395f43cbe6d66 --private-ip-address 172.31.25.140 --tag-s
pecifications 'ResourceType=instance,Tags=[{Key=Name,Value=Instance-1}]'
{
    "Groups": [],
    "Instances": [
        {
            "AmiLaunchIndex": 0,
            "ImageId": "ami-0c00c714c7f84b49d",
            "InstanceId": "i-0f0b84c4fd28c5fcb",
            "InstanceType": "t2.micro",
            "KeyName": "login-key",
            "LaunchTime": "2024-01-23T07:09:08+00:00",
            "Monitoring": {
                "State": "disabled"
            },
            "Placement": {
                "AvailabilityZone": "ca-central-1a",
                "GroupName": "",
                "Tenancy": "default"
            },
            "PrivateDnsName": "ip-172-31-25-140.ca-central-1.compute.internal",
            "PrivateIpAddress": "172.31.25.140",
            "ProductCodes": [],
            "PublicDnsName": "",
            "State": {
                "Code": 0,
                "Name": "pending"
            },
            "StateTransitionReason": "",
```

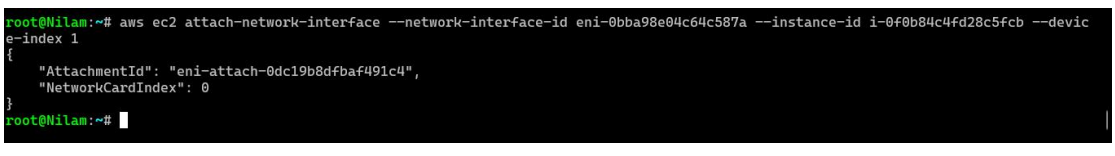
```
            "Name": "pending"
        },
        "StateTransitionReason": "",
        "SubnetId": "subnet-0083395f43cbe6d66",
        "VpcId": "vpc-0e9807d05719dc119",
        "Architecture": "x86_64",
        "BlockDeviceMappings": [],
        "ClientToken": "f077e837-4055-4e48-9ccc-fd9ebded1032",
        "EbsOptimized": false,
        "EnaSupport": true,
        "Hypervisor": "xen",
        "NetworkInterfaces": [
            {
                "Attachment": {
                    "AttachTime": "2024-01-23T07:09:08+00:00",
                    "AttachmentId": "eni-attach-0224893e46e94284e",
                    "DeleteOnTermination": true,
                    "DeviceIndex": 0,
                    "Status": "attaching",
                    "NetworkCardIndex": 0
                },
                "Description": "",
                "Groups": [
                    {
                        "GroupName": "launch-wizard-3",
                        "GroupId": "sg-038d5fe2d8997f799"
                    }
                ],
                "Ipv6Addresses": [],
                "MacAddress": "02:32:2b:b1:fa:0a",
                "NetworkInterfaceId": "eni-0307e5548df081777",
                "OwnerId": "715621822765",
:
```

```
            "MacAddress": "02:32:2b:b1:fa:0a",
            "NetworkInterfaceId": "eni-0307e5548df081777",
            "OwnerId": "715621822765",
            "PrivateDnsName": "ip-172-31-25-140.ca-central-1.compute.internal",
            "PrivateIpAddress": "172.31.25.140",
            "PrivateIpAddresses": [
                {
                    "Primary": true,
                    "PrivateDnsName": "ip-172-31-25-140.ca-central-1.compute.internal",
                    "PrivateIpAddress": "172.31.25.140"
                }
            ],
            "SourceDestCheck": true,
            "Status": "in-use",
            "SubnetId": "subnet-0083395f43cbe6d66",
            "VpcId": "vpc-0e9807d05719dc119",
            "InterfaceType": "interface"
        }
    ],
    "RootDeviceName": "/dev/xvda",
    "RootDeviceType": "ebs",
    "SecurityGroups": [
        {
            "GroupName": "launch-wizard-3",
            "GroupId": "sg-038d5fe2d8997f799"
        }
    ],
    "SourceDestCheck": true,
    "StateReason": {
        "Code": "pending",
        "Message": "pending"
    },
```

```
            "Code": "pending",
            "Message": "pending"
        },
        "Tags": [
            {
                "Key": "Name",
                "Value": "Instance-1"
            }
        ],
        "VirtualizationType": "hvm",
        "CpuOptions": {
            "CoreCount": 1,
            "ThreadsPerCore": 1
        },
        "CapacityReservationSpecification": {
            "CapacityReservationPreference": "open"
        },
        "MetadataOptions": {
            "State": "pending",
            "HttpTokens": "required",
            "HttpPutResponseHopLimit": 2,
            "HttpEndpoint": "enabled",
            "HttpProtocolIpv6": "disabled",
            "InstanceMetadataTags": "disabled"
        },
        "EnclaveOptions": {
            "Enabled": false
        },
        "BootMode": "uefi-preferred",
        "PrivateDnsNameOptions": {
            "HostnameType": "ip-name",
            "EnableResourceNameDnsARecord": false,
```

```
            "PrivateDnsNameOptions": {
                "HostnameType": "ip-name",
                "EnableResourceNameDnsARecord": false,
                "EnableResourceNameDnsAAAARecord": false
            },
            "MaintenanceOptions": {
                "AutoRecovery": "default"
            },
            "CurrentInstanceBootMode": "legacy-bios"
        }
    ],
    "OwnerId": "715621822765",
    "ReservationId": "r-0221ec6512867613f"
}
(END)
```

```
root@Nilam:~# aws ec2 attach-network-interface --network-interface-id eni-0bba98e04c64c587a --instance-id i-0f0b84c4fd28c5fcb --devic
e-index 1
{
    "AttachmentId": "eni-attach-0dc19b8dfbaf491c4",
    "NetworkCardIndex": 0
}
root@Nilam:~#
```

Q.3

```
root@Nilam:~# aws ec2 describe-network-interfaces --network-interface-ids eni-0bba98e04c64c587a
{
    "NetworkInterfaces": [
        {
            "Attachment": {
                "AttachTime": "2024-01-23T07:18:03+00:00",
                "AttachmentId": "eni-attach-0dc19b8dfbaf491c4",
                "DeleteOnTermination": false,
                "DeviceIndex": 1,
                "NetworkCardIndex": 0,
                "InstanceId": "i-0f0b84c4fd28c5fcb",
                "InstanceOwnerId": "715621822765",
                "Status": "attached"
            },
            "AvailabilityZone": "ca-central-1a",
            "Description": "demo interface",
            "Groups": [
                {
                    "GroupName": "default",
                    "GroupId": "sg-0be425e94b1ec3109"
                }
            ],
            "InterfaceType": "interface",
            "Ipv6Addresses": [],
            "MacAddress": "02:23:23:74:0d:92",
            "NetworkInterfaceId": "eni-0bba98e04c64c587a",
            "OwnerId": "715621822765",
            "PrivateDnsName": "ip-172-31-25-24.ca-central-1.compute.internal",
            "PrivateIpAddress": "172.31.25.24",
            "PrivateIpAddresses": [
                {
```

```
                "PrivateIpAddress": "172.31.25.24",
                "PrivateIpAddresses": [
                    {
                        "Primary": true,
                        "PrivateDnsName": "ip-172-31-25-24.ca-central-1.compute.internal",
                        "PrivateIpAddress": "172.31.25.24"
                    }
                ],
                "RequesterManaged": false,
                "SourceDestCheck": true,
                "Status": "in-use",
                "SubnetId": "subnet-0083395f43cbe6d66",
                "TagSet": [],
                "VpcId": "vpc-0e9807d05719dc119"
            }
    ]
}
(END)
```

QUESTION NO: 01

Hibernate Instance

Console:

1. Hibernate EC2 Instance on Console:
- Launch a new EC2 instance using the AWS Management Console.
- Access the console to hibernate the running instance.
- Confirm the status change to "hibernating."

2. Resume Hibernated EC2 Instance:
- Resume the hibernated instance using the console.
- Confirm the instance state changes to "running."

3. Verify Instance State:
- Check the instance state using the console to ensure successful hibernation and resumption.

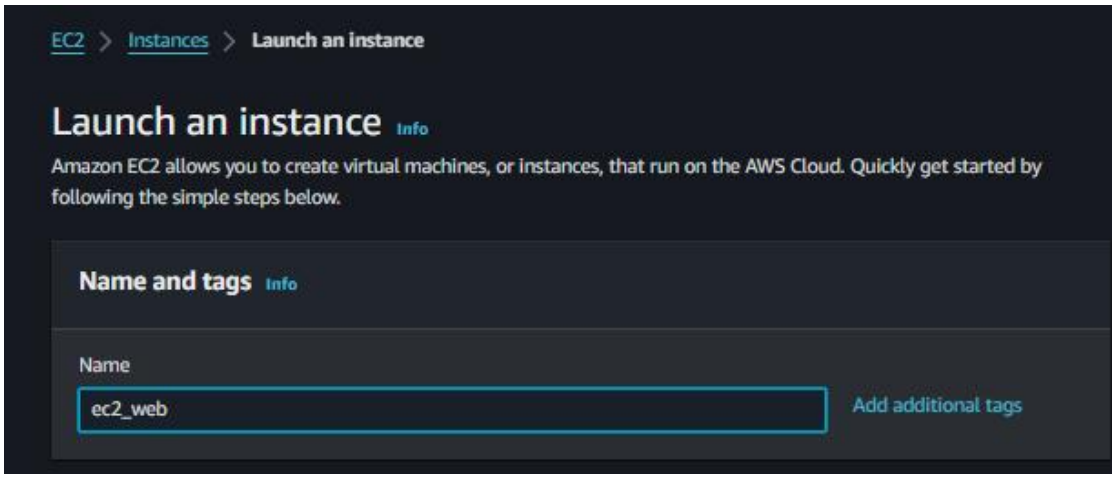
CLI:

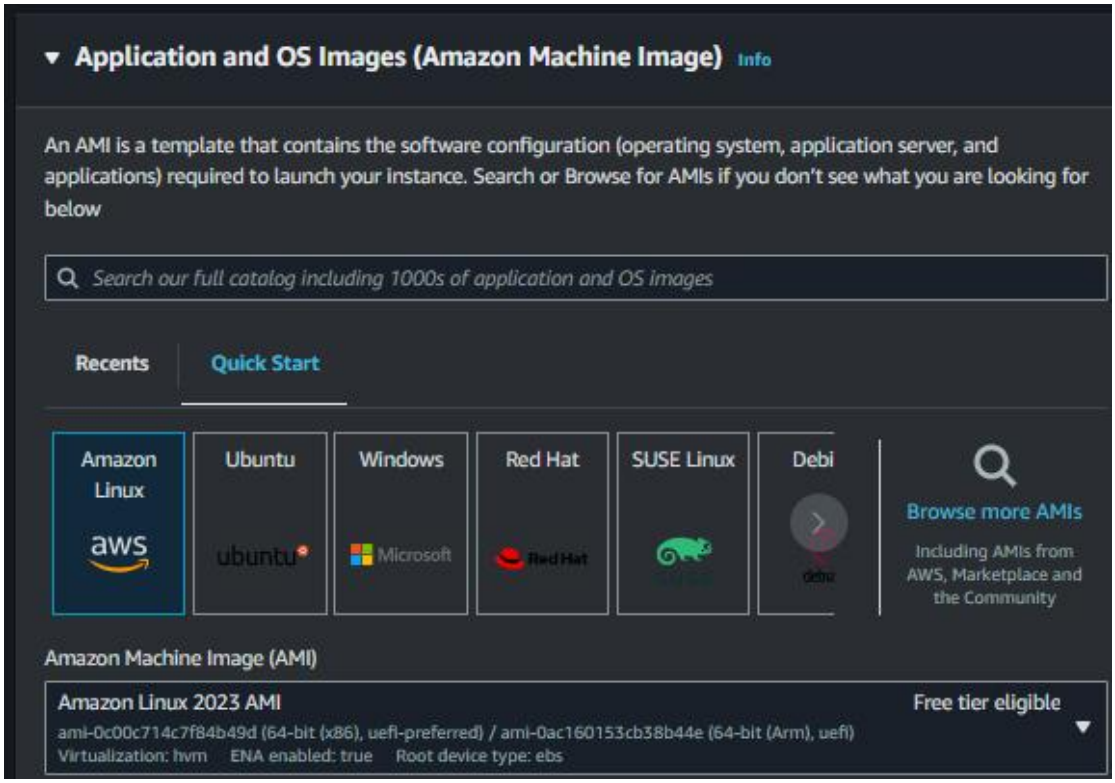
1. Hibernate EC2 Instance using AWS CLI:
- Use the AWS CLI to launch a new EC2 instance.
- Use the AWS CLI to hibernate the running instance.
- Confirm the status change to "hibernating."

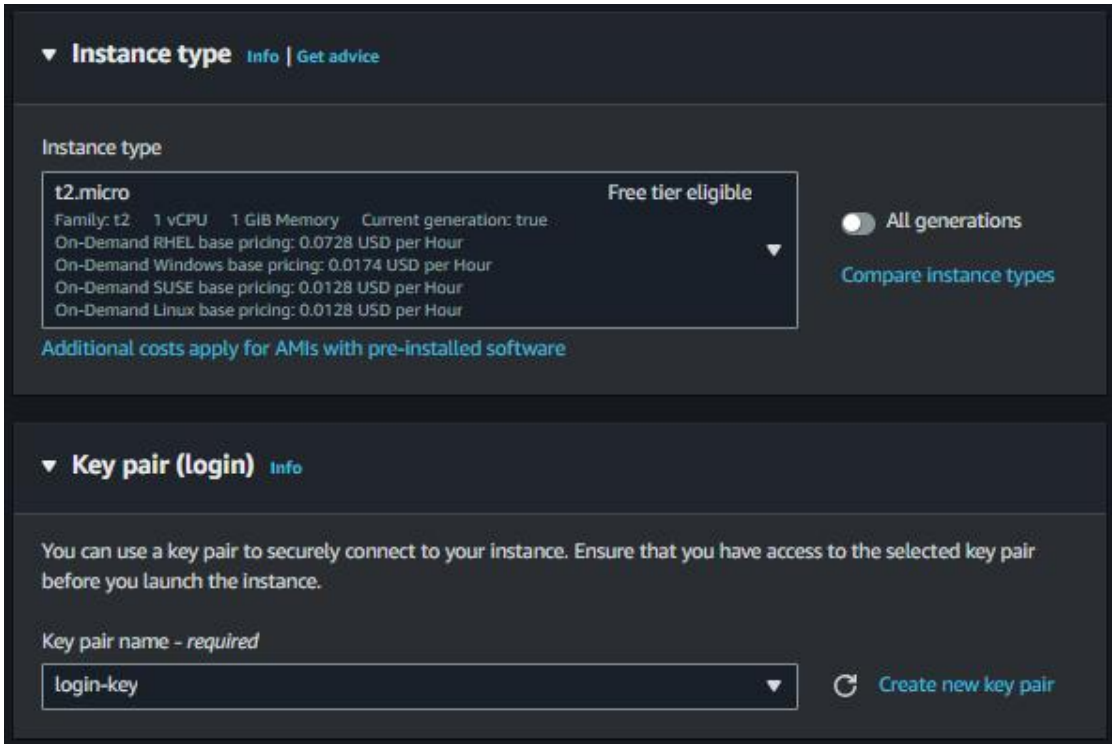
2. Resume Hibernated EC2 Instance using AWS CLI:
- Use the AWS CLI to resume the hibernated instance.
- Confirm the instance state changes to "running."

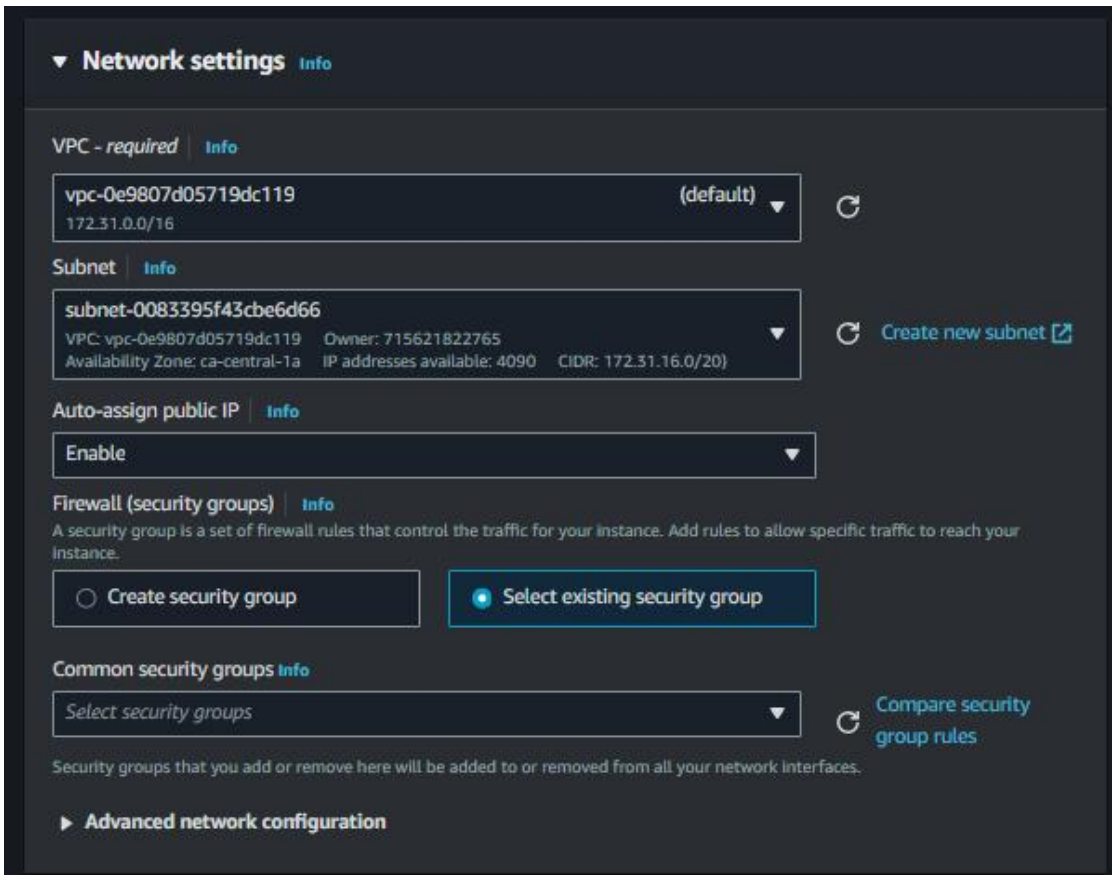
3. Verify Instance State using AWS CLI:

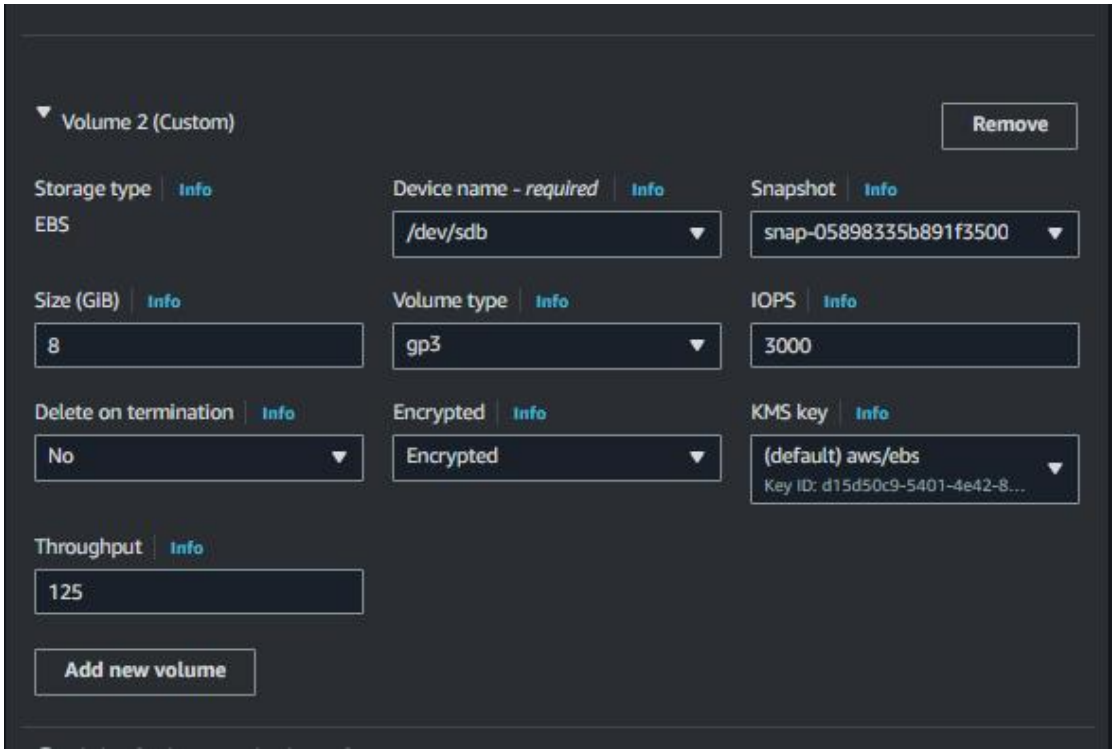
- Use the AWS CLI to check the instance state and ensure successful hibernation and resumption.

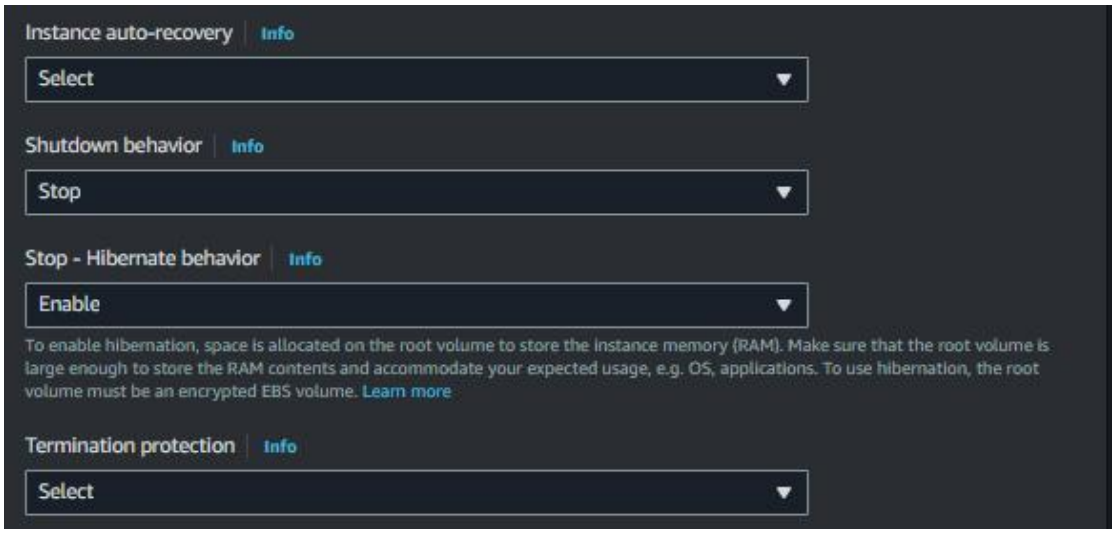





Instance type Info | Get advice
Instance type
t2.micro
Free tier eligible
Family: t2 1 vCPU 1 GiB Memory Current generation: true
On-Demand RHEL base pricing: 0.0728 USD per Hour
On-Demand Windows base pricing: 0.0174 USD per Hour
On-Demand SUSE base pricing: 0.0128 USD per Hour
On-Demand Linux base pricing: 0.0128 USD per Hour
All generations
Compare instance types
Additional costs apply for AMIs with pre-installed software
Key pair (login) Info
You can use a key pair to securely connect to your instance. Ensure that you have access to the selected key pair before you launch the instance.
Key pair name - required
login-key
Create new key pair


Network settings Info
VPC - required Info
vpc-0e9807d05719dc119
(default)
172.31.0.0/16
Subnet Info
subnet-0083395f43cbe6d66
VPC: vpc-0e9807d05719dc119 Owner: 715621822765
Availability Zone: ca-central-1a IP addresses available: 4090 CIDR: 172.31.16.0/20)
Create new subnet
Auto-assign public IP Info
Enable
Firewall (security groups) Info
A security group is a set of firewall rules that control the traffic for your instance. Add rules to allow specific traffic to reach your instance.
Create security group
Select existing security group
Common security groups Info
Select security groups
Compare security group rules
Security groups that you add or remove here will be added to or removed from all your network interfaces.
Advanced network configuration






```
root@Nilam:~# aws ec2 run-instances --image-id ami-0c00c714c7f84b49d --instance-type t2.micro --key-name login-key --subnet-id subnet
-0083395f43cbe6d66 --hibernation-options Configured=true --block-device-mappings '[{"DeviceName":"/dev/xvda","Ebs":{"VolumeSize":30,"
VolumeType":"gp2","Encrypted":true}}]' --tag-specifications 'ResourceType=instance,Tags=[{Key=Name,Value=MY-HIBERNATE-INSTANCE}]'
{
    "Groups": [],
    "Instances": [
        {
            "AmiLaunchIndex": 0,
            "ImageId": "ami-0c00c714c7f84b49d",
            "InstanceId": "i-034b44db7afb2e9bc",
            "InstanceType": "t2.micro",
            "KeyName": "login-key",
            "LaunchTime": "2024-01-23T06:38:06+00:00",
            "Monitoring": {
                "State": "disabled"
            },
            "Placement": {
                "AvailabilityZone": "ca-central-1a",
                "GroupName": "",
                "Tenancy": "default"
            },
            "PrivateDnsName": "ip-172-31-28-138.ca-central-1.compute.internal",
            "PrivateIpAddress": "172.31.28.138",
            "ProductCodes": [],
            "PublicDnsName": "",
            "State": {
                "Code": 0,
                "Name": "pending"
            },
            "StateTransitionReason": "",
```

```
            },
            "StateTransitionReason": "",
            "SubnetId": "subnet-0083395f43cbe6d66",
            "VpcId": "vpc-0e9807d05719dc119",
            "Architecture": "x86_64",
            "BlockDeviceMappings": [],
            "ClientToken": "0aeacb34-236c-426f-b299-ff6d4b3955d3",
            "EbsOptimized": false,
            "EnaSupport": true,
            "Hypervisor": "xen",
            "NetworkInterfaces": [
                {
                    "Attachment": {
                        "AttachTime": "2024-01-23T06:38:06+00:00",
                        "AttachmentId": "eni-attach-02c4aefd3429f8f71",
                        "DeleteOnTermination": true,
                        "DeviceIndex": 0,
                        "Status": "attaching",
                        "NetworkCardIndex": 0
                    },
                    "Description": "",
                    "Groups": [
                        {
                            "GroupName": "default",
                            "GroupId": "sg-0be425e94b1ec3109"
                        }
                    ],
                    "Ipv6Addresses": [],
                    "MacAddress": "02:b3:e8:d5:28:2e",
                    "NetworkInterfaceId": "eni-0ae2349cbfb88021b",
                    "OwnerId": "715621822765",
                    "PrivateDnsName": "ip-172-31-28-138.ca-central-1.compute.internal",
:
```



```
                        "Primary": true,
                        "PrivateDnsName": "ip-172-31-28-138.ca-central-1.compute.internal",
                        "PrivateIpAddress": "172.31.28.138"
                    }
                ],
                "SourceDestCheck": true,
                "Status": "in-use",
                "SubnetId": "subnet-0083395f43cbe6d66",
                "VpcId": "vpc-0e9807d05719dc119",
                "InterfaceType": "interface"
            }
        ],
        "RootDeviceName": "/dev/xvda",
        "RootDeviceType": "ebs",
        "SecurityGroups": [
            {
                "GroupName": "default",
                "GroupId": "sg-0be425e94b1ec3109"
            }
        ],
        "SourceDestCheck": true,
        "StateReason": {
            "Code": "pending",
            "Message": "pending"
        },
        "Tags": [
            {
                "Key": "Name",
                "Value": "MY-HIBERNATE-INSTANCE"
            }
        ],
        "VirtualizationType": "hvm",
```

```
            "VirtualizationType": "hvm",
            "CpuOptions": {
                "CoreCount": 1,
                "ThreadsPerCore": 1
            },
            "CapacityReservationSpecification": {
                "CapacityReservationPreference": "open"
            },
            "HibernationOptions": {
                "Configured": true
            },
            "MetadataOptions": {
                "State": "pending",
                "HttpTokens": "required",
                "HttpPutResponseHopLimit": 2,
                "HttpEndpoint": "enabled",
                "HttpProtocolIpv6": "disabled",
                "InstanceMetadataTags": "disabled"
            },
            "EnclaveOptions": {
                "Enabled": false
            },
            "BootMode": "uefi-preferred",
            "PrivateDnsNameOptions": {
                "HostnameType": "ip-name",
                "EnableResourceNameDnsARecord": false,
                "EnableResourceNameDnsAAAARecord": false
            },
            "MaintenanceOptions": {
                "AutoRecovery": "default"
            },
            "CurrentInstanceBootMode": "legacy-bios"
```

```
                "InstanceMetadataTags": "disabled"
            },
            "EnclaveOptions": {
                "Enabled": false
            },
            "BootMode": "uefi-preferred",
            "PrivateDnsNameOptions": {
                "HostnameType": "ip-name",
                "EnableResourceNameDnsARecord": false,
                "EnableResourceNameDnsAAAARecord": false
            },
            "MaintenanceOptions": {
                "AutoRecovery": "default"
            },
            "CurrentInstanceBootMode": "legacy-bios"
        }
    ],
    "OwnerId": "715621822765",
    "ReservationId": "r-0fa7d802f63aa2756"
}
(END)
```

```
root@Nilam:~# aws ec2 stop-instances --instance-ids i-034b44db7afb2e9bc --hibernate
{
    "StoppingInstances": [
        {
            "CurrentState": {
                "Code": 64,
                "Name": "stopping"
            },
            "InstanceId": "i-034b44db7afb2e9bc",
            "PreviousState": {
                "Code": 16,
                "Name": "running"
            }
        }
    ]
}
root@Nilam:~#
```

```
root@Nilam:~# aws ec2 start-instances --instance-ids i-034b44db7afb2e9bc
{
    "StartingInstances": [
        {
            "CurrentState": {
                "Code": 0,
                "Name": "pending"
            },
            "InstanceId": "i-034b44db7afb2e9bc",
            "PreviousState": {
                "Code": 80,
                "Name": "stopped"
            }
        }
    ]
}
root@Nilam:~#
```

```
root@Nilam:~# aws ec2 describe-instances --instance-ids i-034b44db7afb2e9bc --query 'Reservations[*].Instances[*].[InstanceId,State.N
ame]'
[
    [
        [
            "i-034b44db7afb2e9bc",
            "running"
        ]
    ]
]
root@Nilam:~#
```