

AWS Hands-On Assignment 04 (On Console and CLI)

QUESTION NO: 01

Console

1. Create Launch Template on Console:

- Navigate to the EC2 dashboard on the AWS Management Console.
- Create a launch template named "WebServerTemplate."
- Specify configurations such as instance type, key pair, and any additional settings.

2. Launch Instance Using Launch Template:

- Use the launch template "WebServerTemplate" to launch an EC2 instance.
- Verify the successful launch of the instance.

3. Modify Launch Template:

- Modify the launch template to change the instance type or any other parameter.
- Use the modified template to launch another instance.

4. Documentation:

- Provide a step-by-step guide with screenshots for creating, launching, and modifying instances using the launch template.
- Include outputs or confirmation messages from the console.

SOLUTION:-

Q1:- 1

The screenshot shows the 'Create launch template' wizard in the AWS Management Console. The top navigation bar shows 'EC2 > Launch templates > Create launch template'. The main title is 'Create launch template'. A descriptive text states: 'Creating a launch template allows you to create a saved instance configuration that can be reused, shared and launched at a later time. Templates can have multiple versions.' The first step is 'Launch template name and description'. It includes a 'Launch template name - required' field containing 'WebServerTemplate', a note that it must be unique and up to 128 characters, and a 'Template version description' field containing 'A prod webserver' with a note about character limit. Below this is an 'Auto Scaling guidance' section with an 'Info' link and a checkbox for 'Provide guidance to help me set up a template that I can use with EC2 Auto Scaling'. At the bottom are links for 'Template tags' and 'Source template'.

▼ 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

Don't include
in launch
template



Browse more AMIs

Including AMIs from
AWS, Marketplace and
the Community

Amazon Machine Image (AMI)

Amazon Linux 2023 AMI

ami-0d3f444bc76de0a79 (64-bit (x86), uefi-preferred) / ami-07b4c3e2518ee4edd (64-bit (Arm), uefi)
Virtualization: hvm ENA enabled: true Root device type: ebs

Free tier eligible

Description

Amazon Linux 2023 AMI 2023.3.20240108.0 x86_64 HVM kernel-6.1

Architecture

64-bit (x86)

Boot mode

uefi-preferred

AMI ID

ami-0d3f444bc76de0a79

Verified provider

▼ Instance type [Info](#) | [Get advice](#)

Advanced

Instance type

t2.micro

Family: t2 1 vCPU 1 GiB Memory Current generation: true
On-Demand Linux base pricing: 0.0124 USD per Hour
On-Demand Windows base pricing: 0.017 USD per Hour
On-Demand RHEL base pricing: 0.0724 USD per Hour
On-Demand SUSE base pricing: 0.0124 USD per Hour

Free tier eligible

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

data-key

 [Create new key pair](#)

▼ Network settings [Info](#)

Subnet [Info](#)

subnet-0709cc7ad6133f2a5

my-subnet

VPC: vpc-0098cadacafab2e97 Owner: 255851499496
Availability Zone: ap-south-1a IP addresses available: 4091 CIDR: 172.31.0.0/20

 Create new subnet [\[edit\]](#)

When you specify a subnet, a network interface is automatically added to your template.

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.

Select existing security group

Create security group

Common security groups [Info](#)

Select security groups

default sg-01197c3385b3ac6b4 [X](#)

VPC: vpc-0098cadacafab2e97

 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

▼ Storage (volumes) [Info](#)

EBS Volumes

[Hide details](#)

► Volume 1 (AMI Root) (8 GiB, EBS, General purpose SSD (gp3))

AMI Volumes are not included in the template unless modified

 Free tier eligible customers can get up to 30 GB of EBS General Purpose (SSD) or Magnetic storage [X](#)

Add new volume

▼ Resource tags [Info](#)

No resource tags are currently included in this template. Add a resource tag to include it in the launch template.

Add new tag

You can add up to 50 more tags.

► Advanced details [Info](#)

EC2 > Launch templates > Create launch template

Success
Successfully created WebServerTemplate(lt-06730c8ed482b18cb).

Launch Templates (1) Info						
Actions Create launch template						
<input type="text"/> Search						
Launch Template ID	Launch Template Name	Default Version	Latest Version	Create Time	Created By	⋮
lt-06730c8ed482b18cb	WebServerTemplate	1	1	2024-01-17T05:50:07.000Z	arn:aws:iam::255851499496:root	⋮

Q1:- 2

Launch Templates (1/1) [Info](#)

Search

Launch Template ID	Launch Template Name	Default Version	Latest Version	Create Time
lt-06730c8ed482b18cb	WebServerTemplate	1	1	2024-01-17T05:50:07.000Z

[Actions](#) [Create launch template](#)

- [Launch instance from template](#)
- [Modify template \(Create new version\)](#)
- [Delete template](#)
- [Delete template version](#)
- [Set default version](#)
- [Manage tags](#)
- [Create Spot Fleet](#)
- [Create Auto Scaling group](#)
- [View details](#)

EC2 > Launch templates > Launch instance from template

Launch instance from template

Launching from a template allows you to launch from an instance configuration that you would have saved in the past. These saved configurations can be reused and shared with other users to standardize launches across an organisation.

Choose a launch template

Source template

WebServerTemplate
ID: lt-06730c8ed482b18cb

1 (Default)
A prod webserver

Instance details

Your instance details are listed below. Any fields that are not specified as part of the configuration below will use the template or default values for those fields. Ensure that you have permissions to override these parameters or your instance launch will fail.

▼ 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*

[AMI from catalog](#)

[Recents](#)

[Quick Start](#)

Amazon Machine Image (AMI)

al2023-ami-2023.3.20240108.0-kernel-6.1-x86_64
ami-0d3f444bc76de0a79

Published	Architecture	Virtualization	Root device type	ENI Enabled
2024-01-05T22:19:57.000Z	x86_64	hvm	ebs	Yes



[Browse more AMIs](#)

Including AMIs from AWS, Marketplace and the Community

▼ Instance type [Info](#) | [Get advice](#)

Instance type

t2.micro 
Family: t2 1 vCPU 1 GiB Memory Current generation: true
On-Demand Linux base pricing: 0.0124 USD per Hour
On-Demand Windows base pricing: 0.017 USD per Hour
On-Demand RHEL base pricing: 0.0724 USD per Hour
On-Demand SUSE base pricing: 0.0124 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*

Template value 

 [Create new key pair](#)

▼ Network settings [Info](#)

Subnet [Info](#)

subnet-0709cc7ad6133f2a5

my-subnet

VPC: vpc-0098cadacafab2e97 Owner: 255851499496

Availability Zone: ap-south-1a IP addresses available: 4091 CIDR: 172.31.0.0/20

 Create new subnet [\[edit\]](#)

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.

Select existing security group

Create security group

Common security groups [Info](#)

Select security groups

default sg-01197c3385b3ac6b4 

VPC: vpc-0098cadacafab2e97

 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

▼ Storage (volumes) [Info](#)

EBS Volumes

[Hide details](#)

► Volume 1 (AMI Root) (8 GiB, EBS, General purpose SSD (gp3))

 Free tier eligible customers can get up to 30 GB of EBS General Purpose (SSD) or Magnetic storage 

[Add new volume](#)

▼ Resource tags [Info](#)

Currently no tags are specified and therefore the instance will launch with the default tag settings. Edit your tags if you would like to override the default settings.

[Add new tag](#)

You can add up to 50 more tags.

► Advanced details [Info](#)

▼ Summary

Number of instances | [Info](#)

1

Software Image (AMI)

Amazon Linux 2023 AMI 2023.3.2...[read more](#)
ami-0d3f444bc76de0a79

Virtual server type (instance type)

t2.micro

Firewall (security group)

default

Storage (volumes)

1 volume(s) - 8 GiB

i **Free tier:** In your first year includes 750 hours of t2.micro (or t3.micro in the Regions in which t2.micro is unavailable) instance usage on free tier AMIs per month, 30 GiB of EBS storage, 2 million IOPS, 1 GB of snapshots



[Cancel](#)

[Launch instance](#)

[Review commands](#)

⌚ Success

Successfully initiated launch of instance (i-0368afa52f6392eca)

Instances (1) Info									
C Connect Instance state ▾ Actions ▾ Launch instances ▾ ?									
Instance state		Name ▾		Instance ID		Instance state ▾		Instance type ▾	
<input type="checkbox"/>	i-0368afa52f6392eca	Running	View details	t2.micro	Initializing	View alarms +	ap-south-1a	-	-

Q1:- 3

Launch Templates (1/1) Info					
C Actions Create launch template ▾ ?					
Search					
Launch Template ID	Launch Template Name	Default Version	Latest Version	Create Time	
lt-0a401f76bdefbe97d	WebServerTemplate	1	1	2024-01-17T05:55:38.0	Actions ▾

[Launch instance from template](#)
[Modify template \(Create new version\) ▾](#)
[Delete template](#)
[Delete template version](#)
[Set default version](#)
[Manage tags](#)
[Create Spot Fleet](#)
[Create Auto Scaling group](#)
[View details](#)

Modify template (Create new version)

Modifying a template allows you to create a new template version from an existing version. Using versions allows you to manage templates in a structured and controlled way. It also allows you to always use the default version of the template by rolling out updates to templates without having to change a reference to the template name or ID.

Launch template name and version description

Launch template name

WebServerTemplate (lt-0a401f76bdefbe97d)

Template version description

A prod webserver for MyApp

Max 255 chars

Auto Scaling guidance [Info](#)

Select this if you intend to use this template with EC2 Auto Scaling

Provide guidance to help me set up a template that I can use with EC2 Auto Scaling

▶ Source template

Launch template contents

Specify the details of your launch template version below. Leaving a field blank will result in the field not being included in the launch template version.

▼ Application and OS Images (Amazon Machine Image) [Info](#)

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 *Search our full catalog including 1000s of application and OS images*

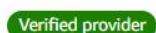
[AMI from catalog](#)

Recents

Quick Start

Amazon Machine Image (AMI)

al2023-ami-2023.3.20240108.0-kernel-6.1-
x86_64
ami-0d3f444bc76de0a79



[Browse more AMIs](#)

Including AMIs from AWS, Marketplace and the Community

Published
2024-01-
05T22:19:57.00
0Z

Architecture
x86_64

Virtualization
hvm

Root device type
ebs

ENAv Enabled
Yes

▼ Instance type [Info](#) | [Get advice](#)

[Advanced](#)

Instance type

t2.nano

Family: t2 1 vCPU 0.5 GiB Memory Current generation: true
On-Demand SUSE base pricing: 0.0062 USD per Hour
On-Demand Linux base pricing: 0.0062 USD per Hour
On-Demand Windows base pricing: 0.0085 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

MyKeyPair



 [Create new key pair](#)

▼ Network settings [Info](#)

Subnet [Info](#)

subnet-0709cc7ad6133f2a5

my-subnet

VPC: vpc-0098cadacafab2e97 Owner: 255851499496
Availability Zone: ap-south-1a IP addresses available: 4090 CIDR: 172.31.0.0/20

 Create new subnet [\[edit\]](#)

When you specify a subnet, a network interface is automatically added to your template.

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.

Select existing security group

Create security group

Common security groups [Info](#)

Select security groups

web-sg sg-043cecaa6d43a6f52 

VPC: vpc-0098cadacafab2e97

 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

Network interface 1

Device index [Info](#)

0

Network interface [Info](#)

New interface

Description [Info](#)

Subnet [Info](#)

subnet-0709cc7ad6133f2a5

IP addresses available: 4090

Security groups [Info](#)

Select security groups 

 Show all selected (1)

Auto-assign public IP [Info](#)

Enable

▼ Storage (volumes) [Info](#)

EBS Volumes

[Hide details](#)

- ▶ Volume 1 (AMI Root) (8 GiB, EBS, General purpose SSD (gp3))
AMI Volumes are not included in the template unless modified

 Free tier eligible customers can get up to 30 GB of EBS General Purpose (SSD) or Magnetic storage



[Add new volume](#)

▼ Resource tags [Info](#)

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[Add new tag](#)

You can add up to 50 more tags.

▶ Advanced details [Info](#)

▼ Summary

Software Image (AMI)

Amazon Linux 2023 AMI 2023.3.2...[read more](#)
ami-0d3f444bc76de0a79

Virtual server type (instance type)

t2.nano

Firewall (security group)

web-sg

Storage (volumes)

1 volume(s) - 8 GiB

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the Regions in which t2.micro is
unavailable) instance usage on free
tier AMIs per month, 30 GiB of EBS
storage, 2 million IOs, 1 GB of
snapshots, and 100 GB of bandwidth
to the internet.

[Cancel](#)

[Create template version](#)

⌚ Success

Successfully created WebServerTemplate(lt-0a401f76bdefbe97d).

▶ Actions log

Launch Templates (1/1) Info						
Actions Create launch template						
Launch Template ID	Launch Template Name	Default Version	Latest Version	Create Time	Created By	⋮
lt-0a401f76bdefbe97d	WebServerTemplate	1	2	2024-01-17T05:55:38.000Z	arn:aws:iam::255851499496:root	⋮

Launch Templates (1/1) Info						
Actions Create launch template						
Launch Template ID	Launch Template Name	Default Version	Latest Version	Create Time	Created By	⋮
lt-0a401f76bdefbe97d	WebServerTemplate	1	2	2024-01-17T05:55:38.000Z	arn:aws:iam::255851499496:root	⋮

Launch instance from template

Launching from a template allows you to launch from an instance configuration that you would have saved in the past. These saved configurations can be reused and shared with other users to standardize launches across an organisation.

Choose a launch template

Source template

WebServerTemplate
ID: lt-0a401f76bdefbe97d

2
-

Instance details

Your instance details are listed below. Any fields that are not specified as part of the configuration below will use the template or default values for those fields. Ensure that you have permissions to override these parameters or your instance launch will fail.

▼ Application and OS Images (Amazon Machine Image) [Info](#)

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[AMI from catalog](#)

Recents

Quick Start

Amazon Machine Image (AMI)

al2023-ami-2023.3.20240108.0-kernel-6.1-
x86_64
ami-0d3f444bc76de0a79



[Browse more AMIs](#)

Including AMIs from AWS, Marketplace and the Community

Published
2024-01-
05T22:19:57.00
0Z

Architecture
x86_64

Virtualization
hvm

Root device type
ebs

ENAv Enabled
Yes

▼ Instance type [Info](#) | [Get advice](#)

Instance type

t2.nano

Family: t2 1 vCPU 0.5 GiB Memory Current generation: true
On-Demand SUSE base pricing: 0.0062 USD per Hour
On-Demand Linux base pricing: 0.0062 USD per Hour
On-Demand Windows base pricing: 0.0085 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*

MyKeyPair

Template value ▾

 [Create new key pair](#)

▼ Network settings [Info](#)

Subnet [Info](#)

subnet-0709cc7ad6133f2a5



[Create new subnet](#)

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.

Select existing security group

Create security group

Common security groups [Info](#)

Select security groups



web-sg sg-043cecaa6d43a6f52

VPC: vpc-0098cadacafab2e97

[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

Network interface 1

Device index [Info](#)

0

Network interface [Info](#)

New interface

Description [Info](#)



Modify your template to edit the Device Index

Subnet [Info](#)

subnet-0709cc7ad6133f2a5

Security groups [Info](#)

Select security groups

Auto-assign public IP [Info](#)

Enable



Show all selected (1)

▼ Summary

Number of instances | [Info](#)

1

Software Image (AMI)

Amazon Linux 2023 AMI 2023.3.2...[read more](#)
ami-0d3f444bc76de0a79

Virtual server type (instance type)

t2.nano

Firewall (security group)

web-sg

Storage (volumes)

1 volume(s) - 8 GiB

i **Free tier:** In your first year includes 750 hours of t2.micro (or t3.micro in the Regions in which t2.micro is unavailable) instance usage on free tier AMIs per month, 30 GiB of EBS storage, 2 million IOPS, 1 GB of snapshots



[Cancel](#)

[Launch instance](#)

[Review commands](#)

EC2 > Launch templates > Launch instance from template

✔ Success
 Successfully initiated launch of instance (i-0bc9dcc50eba05600)

▶ Launch log

Instances (2) Info		Actions	Launch instances					
Name	Instance ID	Instance state	Instance type	Status check	Alarm status	Availability Zone	Public IPv4 DNS	Public IPv4 ...
i-0368afa52f6392eca	i-0368afa52f6392eca	Running	t2.micro	2/2 checks passed	View alarms +	ap-south-1a	-	-
i-0bc9dcc50eba05600	i-0bc9dcc50eba05600	Running	t2.nano	Initializing	View alarms +	ap-south-1a	ec2-13-235-24-220.ap-...	13.235.24.220

CLI

1. Create Launch Template using AWS CLI:
 - Use the AWS CLI to create a launch template named "WebServerTemplate" with specified configurations.
 - Confirm the creation of the launch template.
2. Launch Instance Using Launch Template:
 - Use the AWS CLI to launch an EC2 instance using the "WebServerTemplate."
 - Confirm the successful launch of the instance.
3. Modify Launch Template using AWS CLI:
 - Use the AWS CLI to modify the launch template, e.g., change the instance type.
 - Use the modified template to launch another instance.
4. Documentation:
 - Provide a document with AWS CLI commands for creating, launching, and modifying instances using the launch template.
 - Include any relevant outputs or confirmation messages.

SOLUTION:-

Q1:- 1

```
root@DESKTOP-VIDGD8F:AWS# aws ec2 create-launch-template --launch-template-name web_launch_template --version-description Webserver-template --launch-template-data '{"NetworkInterfaces": [{"AssociatePublicIpAddress":true,"DeviceIndex":0,"SubnetId ":"subnet-0b90326392310b094"}],"ImageId":"ami-0d3f444bc76de0a79","InstanceType":"t2.micro","TagSpecifications":[{"ResourceType":"instance","Tags":[{"Key":"purpose","Value":"webserver"}]}]}'
```

```
{
  "LaunchTemplate": {
    "LaunchTemplateId": "lt-055a02f4916989021",
    "LaunchTemplateName": "web_launch_template",
    "CreateTime": "2024-01-19T11:35:56.000Z",
    "CreatedBy": "arn:aws:iam::255851499496:root",
    "DefaultVersionNumber": 1,
    "LatestVersionNumber": 1
  }
}
```

Launch Templates (1) Info						
Actions Create launch template						
<input type="text"/> Search						
Launch Template ID	Launch Template Name	Default Version	Latest Version	Create Time	Created By	⋮
lt-055a02f4916989021	web_launch_template	1	1	2024-01-19T11:35:56.000Z	arn:aws:iam::255851499496:root	⋮

Q1:- 2

```
root@DESKTOP-VIDGD8F:AWS# aws ec2 run-instances --launch-template
LaunchTemplateId=lt-055a02f4916989021,Version=1
```

```
{
  "Groups": [],
  "Instances": [
    {
      "AmiLaunchIndex": 0,
      "ImageId": "ami-0d3f444bc76de0a79",
      "InstanceId": "i-0604f10b2422ee5b4",
      "InstanceType": "t2.micro",
      "LaunchTime": "2024-01-19T11:36:40.000Z",
      "Monitoring": {
        "Metrics": [
          "CPUUtilization"
        ],
        "CloudWatchMetrics": {
          "MetricName": "CPUUtilization"
        }
      }
    }
  ]
}
```

"State": "disabled"
},
 "Placement": {
 "AvailabilityZone": "ap-south-1a",
 "GroupName": "",
 "Tenancy": "default"
},
 "PrivateDnsName": "ip-172-31-20-176.ap-south-1.compute.internal",
 "PrivateIpAddress": "172.31.20.176",
 "ProductCodes": [],
 "PublicDnsName": "",
 "State": {
 "Code": 0,
 "Name": "pending"
},
 "StateTransitionReason": "",
 "SubnetId": "subnet-0b90326392310b094",
 "VpcId": "vpc-0098cadacafab2e97",
 "Architecture": "x86_64",
 "BlockDeviceMappings": [],
 "ClientToken": "4a4aabcf-01be-4eb7-8372-79620159938a",
 "EbsOptimized": false,
 "EnaSupport": true,
 "Hypervisor": "xen",
 "NetworkInterfaces": [
 {
 "DeviceIndex": 0,
 "MacAddress": "0A:1B:2C:3D:4E:5F",
 "NetworkInterface": {
 "Attachment": {
 "AttachmentId": "eni-0000000000000000",
 "DeviceIndex": 0,
 "DeviceName": "/dev/xvda",
 "NetworkInterfaceId": "eni-0000000000000000",
 "Status": "attached",
 "Type": "primary",
 "VpcId": "vpc-0098cadacafab2e97"
 },
 "Description": "Primary network interface",
 "MacAddress": "0A:1B:2C:3D:4E:5F",
 "NetworkInterfaceId": "eni-0000000000000000",
 "OwnerId": "12345678901234567890",
 "Status": "in-use",
 "Type": "primary",
 "VpcId": "vpc-0098cadacafab2e97"
 },
 "Primary": true
 }
]
}

```
{  
    "Attachment": {  
        "AttachTime": "2024-01-19T11:36:40.000Z",  
        "AttachmentId": "eni-attach-01b782ff811ad7218",  
        "DeleteOnTermination": true,  
        "DeviceIndex": 0,  
        "Status": "attaching",  
        "NetworkCardIndex": 0  
    },  
    "Description": "",  
    "Groups": [  
        {  
            "GroupName": "default",  
            "GroupId": "sg-01197c3385b3ac6b4"  
        }  
    ],  
    "Ipv6Addresses": [],  
    "MacAddress": "02:1e:e6:d5:80:59",  
    "NetworkInterfaceId": "eni-0eb99bc545661cbc5",  
    "OwnerId": "255851499496",  
    "PrivateDnsName": "ip-172-31-20-176.ap-south-1.compute.internal",  
    "PrivateIpAddress": "172.31.20.176",  
    "PrivateIpAddresses": [  
        {  
            "Primary": true,  
            "Secondary": false  
        }  
    ]  
}
```

```
        "PrivateDnsName": "ip-172-31-20-176.ap-south-  
1.compute.internal",  
        "PrivateIpAddress": "172.31.20.176"  
    },  
],  
    "SourceDestCheck": true,  
    "Status": "in-use",  
    "SubnetId": "subnet-0b90326392310b094",  
    "VpcId": "vpc-0098cadacafab2e97",  
    "InterfaceType": "interface"  
},  
],  
    "RootDeviceName": "/dev/xvda",  
    "RootDeviceType": "ebs",  
    "SecurityGroups": [  
        {  
            "GroupName": "default",  
            "GroupId": "sg-01197c3385b3ac6b4"  
        }  
],  
    "SourceDestCheck": true,  
    "StateReason": {  
        "Code": "pending",  
        "Message": "pending"  
    },  
    "Tags": [
```

```
{  
    "Key": "purpose",  
    "Value": "webserver"  
,  
{  
    "Key": "aws:ec2launchtemplate:id",  
    "Value": "lt-055a02f4916989021"  
,  
{  
    "Key": "aws:ec2launchtemplate:version",  
    "Value": "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,
        "EnableResourceNameDnsAAAARecord": false
    }
},
],
"OwnerId": "255851499496",
"ReservationId": "r-09c1833612727bbe7"
}

```

Instances (1) Info										
Find Instance by attribute or tag (case-sensitive)										
Instance state = running										
Name	Instance ID	Instance state	Instance type	Status check	Alarm status	Availability Zone	Public IPv4 DNS	Public IPv4...		
i-0604f10b2422ee5b4	i-0604f10b2422ee5b4	Running	t2.micro	Initializing	View alarms +	ap-south-1a	ec2-13-232-42-204.ap...	13.232.42.204	<	>

Q1:- 3

```

root@DESKTOP-VIDGD8F:AWS# aws ec2 create-launch-template-version --
launch-template-name web_launch_template --version-description "version_02" --
source-version 1 --launch-template-data '{"InstanceType": "t2.nano"}'

```

{

```
"LaunchTemplateVersion": {  
    "LaunchTemplateId": "lt-0e6561105b77289e3",  
    "LaunchTemplateName": "web_launch_template",  
    "VersionNumber": 2,  
    "VersionDescription": "version_02",  
    "CreateTime": "2024-01-22T10:51:05.000Z",  
    "CreatedBy": "arn:aws:iam::255851499496:root",  
    "DefaultVersion": false,  
    "LaunchTemplateData": {  
        "NetworkInterfaces": [  
            {  
                "AssociatePublicIpAddress": true,  
                "DeviceIndex": 0,  
                "SubnetId": "subnet-0b90326392310b094"  
            }  
        ],  
        "ImageId": "ami-0d3f444bc76de0a79",  
        "InstanceType": "t2.nano",  
        "TagSpecifications": [  
            {  
                "ResourceType": "instance",  
                "Tags": [  
                    {  
                        "Key": "purpose",  
                        "Value": "webserver"  
                    }  
                ]  
            }  
        ]  
    }  
}
```

Launch Templates (1) Info			Actions	Create launch template		
<input type="text" value="Search"/> < 1 >						
Launch Template ID	Launch Template Name	Default Version	Latest Version	Create Time	Created By	⋮
lt-0e6561105b77289e3	web_launch_template	1	2	2024-01-22T10:50:55.000Z	arn:aws:iam::255851499496:root	

QUESTION NO: 02

Console

1. Allocate Elastic IP and Associate:
 - Using the AWS Management Console, allocate an Elastic IP address.
 - Associate the Elastic IP with an existing running EC2 instance.
 2. Verify Elastic IP Functionality:
 - Confirm the functionality of the Elastic IP by accessing the associated EC2 instance.
 - Document any observations or considerations related to Elastic IP usage.
 3. Swap Elastic IPs:
 - Allocate another Elastic IP and swap it with the original Elastic IP.
 - Document the steps taken and verify the new Elastic IP functionality.
 4. Documentation:
 - Provide a step-by-step guide, including screenshots, for allocating, associating, and swapping Elastic IPs.
 - Include evidence of the successful verification of Elastic IP functionality.

SOLUTION:-

Q2:- 1

Instances (1) Info									
<input type="button" value="Connect"/> Instance state Actions Launch instances									
<input type="text" value="Find Instance by attribute or tag (case-sensitive)"/>									
<input type="button" value="Instance state = running"/> <input type="button" value="Clear filters"/>									
<input type="checkbox"/>	Name ↗	Instance ID	Instance state	Instance type	Status check	Alarm status	Availability Zone	Public IPv4 DNS	Public IP
<input type="checkbox"/>	i-0221914335052caad	Running <input type="button" value="View details"/>	t2.micro	Initializing <input type="button" value="View details"/>	<input type="button" value="View alarms"/>	ap-south-1a	ec2-13-126-50-189.ap...	13.126.5	<input type="button" value="Launch instance"/>

EC2 > Instances > i-0221914335052caad		
Instance summary for i-0221914335052caad <input type="button" value="Info"/>		
Updated less than a minute ago	<input type="button" value="Connect"/> Instance state Actions	<input type="button" value="Launch instances"/>

Instance ID <input type="button" value="i-0221914335052caad"/>	Public IPv4 address <input type="button" value="13.126.50.189 [open address]"/>	Private IPv4 addresses <input type="button" value="172.31.7.176"/>
IPv6 address -	Instance state Running	Public IPv4 DNS <input type="button" value="ec2-13-126-50-189.ap-south-1.compute.amazonaws.com [open address]"/>

Instances (1/1) Info									
<input type="button" value="Connect"/> Instance state Actions Launch instances									
<input type="text" value="Find Instance by attribute or tag (case-sensitive)"/>									
<input type="button" value="Instance state = running"/> <input type="button" value="Clear filters"/>									
<input checked="" type="checkbox"/>	Name ↗	Instance ID	Instance state	Instance type	Status check	Alarm stat	Public IPv4 DNS	Public IP	
<input checked="" type="checkbox"/>	i-0221914335052caad	Running <input type="button" value="View details"/>	t2.micro	Initializing <input type="button" value="View details"/>	<input type="button" value="View alarm"/>	Hibernate instance	ec2-13-126-50-189.ap...	13.126.5	<input type="button" value="Terminate instance"/>

Successfully stopped i-0221914335052caad									
<input type="button" value="Connect"/> Instance state Actions Launch instances									
<input type="text" value="Find Instance by attribute or tag (case-sensitive)"/>									
<input type="button" value="Instance state = stopped"/> <input type="button" value="Clear filters"/>									
<input type="checkbox"/>	Name ↗	Instance ID	Instance state	Instance type	Status check	Alarm status	Availability Zone	Public IPv4 DNS	Public IP
<input type="checkbox"/>	i-0221914335052caad	Stopping <input type="button" value="View details"/>	t2.micro	-	<input type="button" value="View alarm"/>	ap-south-1a	ec2-13-126-50-189.ap...	13.126.5	<input type="button" value="Launch instance"/>

EC2 > Instances > i-0221914335052caad									
Instance summary for i-0221914335052caad <input type="button" value="Info"/>									
Updated less than a minute ago	<input type="button" value="Connect"/> Instance state Actions				<input type="button" value="Launch instances"/>				

Instance ID <input type="button" value="i-0221914335052caad"/>	Public IPv4 address <input type="button" value="13.126.50.189 [open address]"/>	Private IPv4 addresses <input type="button" value="172.31.7.176"/>
IPv6 address -	Instance state Stopped	Public IPv4 DNS -

Instances (1/1) Info									
<input type="button" value="Connect"/> Instance state Actions Launch instances									
<input type="text" value="Find Instance by attribute or tag (case-sensitive)"/>									
<input type="button" value="Instance state = stopped"/> <input type="button" value="Clear filters"/>									
<input checked="" type="checkbox"/>	Name ↗	Instance ID	Instance state	Instance type	Status check	Alarm stat	Public IPv4 DNS	Public IP	
<input checked="" type="checkbox"/>	i-0221914335052caad	Stopped <input type="button" value="View details"/>	t2.micro	-	<input type="button" value="View alarm"/>	Hibernate instance	-	-	<input type="button" value="Terminate instance"/>

Successfully started i-0221914335052caad									
<input type="button" value="Connect"/> Instance state Actions Launch instances									
<input type="text" value="Find Instance by attribute or tag (case-sensitive)"/>									
<input type="button" value="Instance state = running"/> <input type="button" value="Clear filters"/>									
<input type="checkbox"/>	Name ↗	Instance ID	Instance state	Instance type	Status check	Alarm status	Availability Zone	Public IPv4 DNS	Public IP
<input type="checkbox"/>	i-0221914335052caad	Running <input type="button" value="View details"/>	t2.micro	Initializing <input type="button" value="View details"/>	<input type="button" value="View alarm"/>	ap-south-1a	ec2-13-233-64-13.ap-s...	13.233.6	<input type="button" value="Launch instance"/>

EC2 > Instances > i-0221914335052caad									
Instance summary for i-0221914335052caad <input type="button" value="Info"/>									
Updated less than a minute ago	<input type="button" value="Connect"/> Instance state Actions				<input type="button" value="Launch instances"/>				

Instance ID <input type="button" value="i-0221914335052caad"/>	Public IPv4 address <input type="button" value="13.233.64.13 [open address]"/>	Private IPv4 addresses <input type="button" value="172.31.7.176"/>
IPv6 address -	Instance state Running	Public IPv4 DNS <input type="button" value="ec2-13-233-64-13.ap-south-1.compute.amazonaws.com [open address]"/>

EC2 > Elastic IP addresses > Allocate Elastic IP address

Allocate Elastic IP address Info

Elastic IP address settings Info

Network Border Group Info

ap-south-1

Public IPv4 address pool

- Amazon's pool of IPv4 addresses
- Public IPv4 address that you bring to your AWS account with BYOIP. (option disabled because no pools found) [Learn more](#)
- Customer-owned pool of IPv4 addresses created from your on-premises network for use with an Outpost. (option disabled because no customer owned pools found) [Learn more](#)

Global static IP addresses

AWS Global Accelerator can provide global static IP addresses that are announced worldwide using anycast from AWS edge locations. This can help improve the availability and latency for your user traffic by using the Amazon global network. [Learn more](#)

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.

Key

Name

Value - optional

web-eip

You can add up to 49 more tag

Elastic IP address allocated successfully.
Elastic IP address 13.200.184.219 / web-eip

Elastic IP addresses (1/1)

Filter Elastic IP addresses

Name

Allocated IPv4 add...

Type

Allocation ID

Reverse DNS record

Associated instance ID

Private IP address

web-eip

13.200.184.219

Public IP

eipalloc-0174add017a8cf2bc

EC2 > Elastic IP addresses > Associate Elastic IP address

Associate Elastic IP address Info

Choose the instance or network interface to associate to this Elastic IP address (13.200.184.219)

Elastic IP address: 13.200.184.219

Resource type
Choose the type of resource with which to associate the Elastic IP address.

Instance
 Network interface

⚠️ If you associate an Elastic IP address with an instance that already has an Elastic IP address associated, the previously associated Elastic IP address will be disassociated, but the address will still be allocated to your account. [Learn more](#)

If no private IP address is specified, the Elastic IP address will be associated with the primary private IP address.

Instance
 X G

Private IP address
The private IP address with which to associate the Elastic IP address.

Reassociation
Specify whether the Elastic IP address can be reassigned to a different resource if it already associated with a resource.
 Allow this Elastic IP address to be reassigned

Cancel Associate

Elastic IP address associated successfully.
Elastic IP address 13.200.184.219 has been associated with instance i-0221914335052caad

Elastic IP addresses (1/1)						
<input type="button" value="G"/> Actions ▼ Allocate Elastic IP address						
Name	Allocated IPv4 add...	Type	Allocation ID	Reverse DNS record	Associated instance ID	Private IP address
web-eip	13.200.184.219	Public IP	eipalloc-0174add017a8cf2bc	-	i-0221914335052caad	172.31.7.176

Q2:- 2

Instances (1) Info

X Clear filters

Instance state = running X Clear filters

Name	Instance ID	Instance state	Instance type	Status check	Alarm status	Availability Zone	Public IPv4 DNS	Public IP
i-0221914335052caad	Running View details View alarms	Running 2/2 checks passed	t2.micro			ap-south-1a	ec2-13-200-184-219.ap...	13.200.1

Instances (1/1) Info

X Clear filters

Instance state = running X Clear filters

Name	Instance ID	Instance state	Instance type	Status check	Alarm status	Actions	Launch instances
i-0221914335052caad	Running View details View alarms	Running 2/2 checks passed	t2.micro			Stop instance	Launch instances
						Start instance	
						Reboot instance	
						Hibernate instance	
						Terminate instance	

Stop instance?

X

Instance IDs

i-0221914335052caad

To confirm that you want to stop the instance, choose the *Stop* button below.

Cancel

Stop

Successfully stopped i-0221914335052caad

Name	Instance ID	Instance state	Instance type	Status check	Alarm status	Availability Zone	Public IPv4 DNS	Public IP
-	i-0221914335052caad	Stopped	t2.micro	-	View alarms +	ap-south-1a	ec2-13-200-184-219.ap...	13.200.1

EC2 > Instances > i-0221914335052caad

Instance summary for i-0221914335052caad [Info](#)

Updated less than a minute ago

Instance ID i-0221914335052caad	Public IPv4 address 13.200.184.219 (web-eip) Open address	Private IPv4 addresses 172.31.7.176
IPv6 address -	Instance state Stopped	Public IPv4 DNS ec2-13-200-184-219.ap-south-1.compute.amazonaws.com Open address

Instances (1/1) Info

Find Instance by attribute or tag (case-sensitive)

Instance state = stopped Clear filters

Name	Instance ID	Instance state	Instance type	Status check	Alarm status	Availability Zone	Public IPv4 DNS	Public IP
<input checked="" type="checkbox"/>	i-0221914335052caad	Stopped	t2.micro	-	View alarm	Hibernate instance	ec2-13-200-184-219.ap...	13.200.1

Successfully started i-0221914335052caad

Name	Instance ID	Instance state	Instance type	Status check	Alarm status	Availability Zone	Public IPv4 DNS	Public IP
-	i-0221914335052caad	Running	t2.micro	Initializing	View alarms +	ap-south-1a	ec2-13-200-184-219.ap...	13.200.1

EC2 > Instances > i-0221914335052caad

Instance summary for i-0221914335052caad [Info](#)

Updated less than a minute ago

Instance ID i-0221914335052caad	Public IPv4 address 13.200.184.219 (web-eip) Open address	Private IPv4 addresses 172.31.7.176
IPv6 address -	Instance state Running	Public IPv4 DNS ec2-13-200-184-219.ap-south-1.compute.amazonaws.com Open address

Q2:- 3

Allocate Elastic IP address [Info](#)

Elastic IP address settings [Info](#)

Network Border Group [Info](#)

ap-south-1 X

Public IPv4 address pool

- Amazon's pool of IPv4 addresses
- Public IPv4 address that you bring to your AWS account with BYOIP. (option disabled because no pools found) [Learn more](#)
- Customer-owned pool of IPv4 addresses created from your on-premises network for use with an Outpost. (option disabled because no customer owned pools found) [Learn more](#)

Global static IP addresses

AWS Global Accelerator can provide global static IP addresses that are announced worldwide using anycast from AWS edge locations. This can help improve the availability and latency for your user traffic by using the Amazon global network. [Learn more](#)

[Create accelerator](#) X

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.

Key

Name X

Value - optional

web-eip-2 X

[Remove](#)

[Add new tag](#)

You can add up to 49 more tag

[Cancel](#)

[Allocate](#)

Elastic IP address allocated successfully.
Elastic IP address 13.200.238.68 / web-eip-2

[Associate this Elastic IP address](#) X

Elastic IP addresses (2)

Filter Elastic IP addresses

[Actions](#) Allocate Elastic IP address

< 1 > G

<input type="checkbox"/>	Name	Allocated IPv4 add...	Type	Allocation ID	Reverse DNS record	Associated instance ID	Private IP address	Association ID
<input type="checkbox"/>	web-eip	13.200.184.219	Public IP	eipalloc-0174add017a8cf2bc	-	i-0221914335052caad	172.31.7.176	eipassoc-OedC
<input type="checkbox"/>	web-eip-2	13.200.238.68	Public IP	eipalloc-065641221a29142f5	-	-	-	-

Elastic IP addresses (1/2)

Filter Elastic IP addresses

[Actions](#) Allocate Elastic IP address

1 > G

<input type="checkbox"/>	Name	Allocated IPv4 add...	Type	Allocation ID	Reverse DNS record	Associated instance ID	Association ID
<input type="checkbox"/>	web-eip	13.200.184.219	Public IP	eipalloc-0174add017a8cf2bc	-	i-0221914335052caad	eipassoc-OedC
<input checked="" type="checkbox"/>	web-eip-2	13.200.238.68	Public IP	eipalloc-065641221a29142f5	-	-	-

Associate Elastic IP address Info

Choose the instance or network interface to associate to this Elastic IP address (13.200.238.68)

Elastic IP address: 13.200.238.68

Resource type

Choose the type of resource with which to associate the Elastic IP address.

 Instance Network interface

⚠ If you associate an Elastic IP address with an instance that already has an Elastic IP address associated, the previously associated Elastic IP address will be disassociated, but the address will still be allocated to your account. [Learn more](#)

If no private IP address is specified, the Elastic IP address will be associated with the primary private IP address.

Instance i-0221914335052caad**Private IP address**

The private IP address with which to associate the Elastic IP address.

 Choose a private IP address**Reassociation**

Specify whether the Elastic IP address can be reassigned with a different resource if it already associated with a resource.

 Allow this Elastic IP address to be reassigned**Cancel****Associate****Instance summary for i-0221914335052caad** Info

Updated less than a minute ago

Instance ID
 i-0221914335052caadIPv6 address
-Hostname type
IP name: ip-172-31-7-176.ap-south-1.compute.internalAnswer private resource DNS name
-Auto-assigned IP address
-IAM Role
-IMDSv2
RequiredPublic IPv4 address
 13.200.238.68 (web-eip-2) [open address]Instance state
Private IP DNS name (IPv4 only)
 ip-172-31-7-176.ap-south-1.compute.internalInstance type
t2.microVPC ID
 vpc-0098cadcafab2e97Subnet ID
 subnet-0709cc7ad613f2a5 (my-subnet)

Private IPv4 addresses

 172.31.7.176

Public IPv4 DNS

 ec2-13-200-238-68.ap-south-1.compute.amazonaws.com [open address]

Elastic IP addresses

 13.200.238.68 (web-eip-2) [Public IP]

AWS Compute Optimizer finding

Opt-in to AWS Compute Optimizer for recommendations. | [Learn more](#)Auto Scaling Group name
-**Instances (1/1) Info** Find Instance by attribute or tag (case-sensitive) Clear filters Connect

Instance state ▲

Actions ▼

Launch instances ▼

< 1 >

 Name ↴

Instance ID

Instance state ▽

Instance type ▽

Status check

Alarm stat

 i-0221914335052caad

t2.micro

[View alarm](#)

Stop instance

Start instance

Reboot instance

Hibernate instance

Terminate instance

▼ Public IPv4 DNS ▼ Public IP

ec2-13-200-238-68.ap-... 13.200.2

Successfully stopped i-0221914335052caad

Instances (1/1) Info

Find Instance by attribute or tag (case-sensitive)		Connect	Instance state	Actions	Launch instances
Instance state = running	X	Clear filters			
<input checked="" type="checkbox"/> Name ↗	Instance ID	Instance state	Instance type	Status check	Alarm status
<input checked="" type="checkbox"/> i-0221914335052caad	i-0221914335052caad	Stopping	t2.micro	2/2 checks passed	View alarms +
				Availability Zone	Public IPv4 DNS
				ap-south-1a	ec2-13-200-238-68.ap...
					13.200.2

EC2 > Instances > i-0221914335052caad

Instance summary for i-0221914335052caad

Updated less than a minute ago

Instance ID i-0221914335052caad	Public IPv4 address 13.200.238.68 (web-eip-2) open address	Private IPv4 addresses 172.31.7.176
IPv6 address -	Instance state Stopped	Public IPv4 DNS ec2-13-200-238-68.ap-south-1.compute.amazonaws.com open address

Instances (1/1) Info

Find Instance by attribute or tag (case-sensitive)		Connect	Instance state	Actions	Launch instances
Instance state = stopped	X	Clear filters		<input checked="" type="checkbox"/> Stop instance	
<input checked="" type="checkbox"/> Name ↗	Instance ID	Instance state	Instance type	Status check	Alarm status
<input checked="" type="checkbox"/> i-0221914335052caad	i-0221914335052caad	Stopped	t2.micro	-	View alarms +
				Hibernate instance	Public IPv4 DNS
				Terminate instance	Public IP
					ec2-13-200-238-68.ap...
					13.200.2

Successfully started i-0221914335052caad

Instances (1/1) Info

Find Instance by attribute or tag (case-sensitive)		Connect	Instance state	Actions	Launch instances
<input type="checkbox"/> Name ↗	Instance ID	Instance state	Instance type	Status check	Alarm status
<input type="checkbox"/> i-0221914335052caad	i-0221914335052caad	Running	t2.micro	Initializing	View alarms +
				Availability Zone	Public IPv4 DNS
				ap-south-1a	ec2-13-200-238-68.ap...
					13.200.2

EC2 > Instances > i-0221914335052caad

Instance summary for i-0221914335052caad

Updated less than a minute ago

Instance ID i-0221914335052caad	Public IPv4 address 13.200.238.68 (web-eip-2) open address	Private IPv4 addresses 172.31.7.176
IPv6 address -	Instance state Running	Public IPv4 DNS ec2-13-200-238-68.ap-south-1.compute.amazonaws.com open address

CLI

1. Allocate Elastic IP and Associate using AWS CLI:
 - Use the AWS CLI to allocate an Elastic IP address.
 - Associate the Elastic IP with an existing running EC2 instance.
2. Verify Elastic IP Functionality using AWS CLI:
 - Use the AWS CLI to confirm the functionality of the Elastic IP by accessing the associated EC2 instance.
 - Document any observations or considerations related to Elastic IP usage.
3. Swap Elastic IPs using AWS CLI:
 - Use the AWS CLI to allocate another Elastic IP.
 - Swap the newly allocated Elastic IP with the original one.
 - Document the steps taken and verify the new Elastic IP functionality.
4. Documentation:
 - Provide a detailed document with AWS CLI commands for allocating, associating,

and swapping Elastic IPs.

- Include evidence of the successful verification of Elastic IP functionality.

SOLUTION:-

Q2:- 1

```
root@DESKTOP-VIDGD8F:AWS# aws ec2 allocate-address
```

```
{
```

```
    "PublicIp": "43.205.31.109",  
    "AllocationId": "eipalloc-0127919c90a6c0d53",  
    "PublicIpv4Pool": "amazon",  
    "NetworkBorderGroup": "ap-south-1",  
    "Domain": "vpc"
```

```
}
```

Q2:- 2

```
root@DESKTOP-VIDGD8F:AWS# aws ec2 associate-address --instance-id i-0dbe075e111ecc29 --allocation-id eipalloc-0127919c90a6c0d53
```

```
{
```

```
    "AssociationId": "eipassoc-0315681ba3ea1df0e"  
}
```

Q2:- 3

```
root@DESKTOP-VIDGD8F:AWS# aws ec2 allocate-address
```

```
{
```

```
    "PublicIp": "13.234.85.32",  
    "AllocationId": "eipalloc-050f8812d8da18022",  
    "PublicIpv4Pool": "amazon",  
    "NetworkBorderGroup": "ap-south-1",  
    "Domain": "vpc"
```

```
}
```

```
root@DESKTOP-VIDGD8F:AWS# aws ec2 associate-address --instance-id i-0dbe075e111ecc29 --allocation-id eipalloc-050f8812d8da18022
```

```
{
```

```
    "AssociationId": "eipassoc-0877996d9eb1da1b6"
```

```
}
```

QUESTION NO: 03

Console

1. Create Partition Placement Group:

- Using the AWS Management Console, create a "Partition" placement group.
- Ensure it is associated with a specific region.

2. Launch Instances into Partition Placement Group:

- Launch multiple EC2 instances into the created "Partition" placement group with distinct partition numbers.
- Confirm that instances are distributed across partitions.

3. Test Isolation:

- Use the console to observe the network and resource isolation between instances in different partitions.
- Verify that instances in one partition do not share the underlying hardware with instances in other partitions.

4. Documentation:

- Provide a step-by-step guide + screenshots, for creating a "Partition" placement group and launching instances into it.
- Include observations related to network and resource isolation.

SOLUTION:-

Q3:- 1

Create placement group Info

Placement group settings

Name
partition_placement_group

Placement strategy
Determines how the instances are placed on the underlying hardware.
Partition

Number of partitions
Choose the number of partitions to create in this placement group.
2

Tags - optional
No tags associated with the resource.
Add new tag
You can add up to 50 more tags.

Cancel **Create group**

⌚ Placement group created successfully.	X												
Placement groups (1/1)													
<table border="1"> <thead> <tr> <th>Group name</th> <th>Group Id</th> <th>Strategy</th> <th>State</th> <th>Partition</th> <th>Group</th> </tr> </thead> <tbody> <tr> <td>partition_placement_group</td> <td>pg-0f2ed8c613d6e4af</td> <td>partition</td> <td>available</td> <td>2</td> <td>arn:aws:ec2:placement-group:partition_placement_group</td> </tr> </tbody> </table>		Group name	Group Id	Strategy	State	Partition	Group	partition_placement_group	pg-0f2ed8c613d6e4af	partition	available	2	arn:aws:ec2:placement-group:partition_placement_group
Group name	Group Id	Strategy	State	Partition	Group								
partition_placement_group	pg-0f2ed8c613d6e4af	partition	available	2	arn:aws:ec2:placement-group:partition_placement_group								

Q3:- 2

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
instance-1 | 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



[Browse more AMIs](#)

Including AMIs from AWS, Marketplace and the Community

Amazon Machine Image (AMI)

Amazon Linux 2023 AMI

ami-0d3f444bc76de0a79 (64-bit (x86), uefi-preferred) / ami-07b4c3e2518ee4edd (64-bit (Arm), uefi)
Virtualization: hvm ENA enabled: true Root device type: ebs

Free tier eligible

Description

Amazon Linux 2023 AMI 2023.3.20240108.0 x86_64 HVM kernel-6.1

Architecture

64-bit (x86)

Boot mode

uefi-preferred

AMI ID

ami-0d3f444bc76de0a79

Verified provider

▼ Instance type [Info](#) | [Get advice](#)

Instance type

t2.micro

Family: t2 1 vCPU 1 GiB Memory Current generation: true
On-Demand Linux base pricing: 0.0124 USD per Hour
On-Demand Windows base pricing: 0.017 USD per Hour
On-Demand RHEL base pricing: 0.0724 USD per Hour
On-Demand SUSE base pricing: 0.0124 USD per Hour

Free tier eligible

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*

data-key

Create new key pair

▼ Network settings [Info](#)

VPC - required | [Info](#)

vpc-0098cadacafab2e97
172.31.0.0/16

(default) ▾



Subnet | [Info](#)

subnet-0709cc7ad6133f2a5 my-subnet
VPC: vpc-0098cadacafab2e97 Owner: 255851499496
Availability Zone: ap-south-1a IP addresses available: 4091 CIDR: 172.31.0.0/20

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

Compare security group rules

Common security groups [Info](#)

Select security groups ▾

default sg-01197c3385b3ac6b4 X
VPC: vpc-0098cadacafab2e97

Security groups that you add or remove here will be added to or removed from all your network interfaces.

► Advanced network configuration

▼ Configure storage [Info](#)

[Advanced](#)

1x GiB ▾ Root volume (Not encrypted)

Free tier eligible customers can get up to 30 GB of EBS General Purpose (SSD) or Magnetic storage X

Add new volume

Click refresh to view backup information

The tags that you assign determine whether the instance will be backed up by any Data Lifecycle Manager policies.

0 x File systems

[Edit](#)

Credit specification | [Info](#)

Select ▾

Placement group | [Info](#)

partition_placement_group pg-0f2ed8c613d6e4aaf ▾
Strategy: partition Number of partitions: 2 Shared: No

 [Create new placement group](#)

Target partition | [Info](#)

1 ▾

▼ **Summary**

Number of instances | [Info](#)

2 ▾

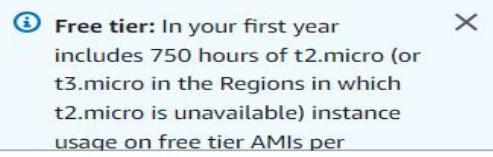
When launching more than 1 instance, consider EC2 Auto Scaling

Software Image (AMI)
Amazon Linux 2023 AMI 2023.3.2... [read more](#)
ami-0d3f444bc76de0a79

Virtual server type (instance type)
t2.micro

Firewall (security group)
default

Storage (volumes)
1 volume(s) - 8 GiB


Free tier: In your first year includes 750 hours of t2.micro (or t3.micro in the Regions in which t2.micro is unavailable) instance usage on free tier AMIs per month.

[Cancel](#) [Launch instance](#) [Review commands](#)

EC2 > Instances > Launch an instance

 **Success**
Successfully initiated launch of instances (i-056f7fc933457aafc, i-0799dc7f8abfe50f8)

 [Launch log](#)

Instances (2) Info										
C Connect Instance state ▾ Actions ▾ Launch instances ▾										
<input type="text"/> Find Instance by attribute or tag (case-sensitive)										
	Name ▾	Instance ID	Instance state ▾	Instance type ▾	Status check	Alarm status	Availability Zone ▾	Public IPv4 DNS ▾	Public IP	
<input type="checkbox"/>	instance-1	i-056f7fc93457aafc	Running	t2.micro	Initializing	View alarms +	ap-south-1a	ec2-3-110-159-153.ap-...	3.110.15	
<input type="checkbox"/>	instance-2	i-0799dc7f8abfe50f8	Running	t2.micro	Initializing	View alarms +	ap-south-1a	ec2-35-154-33-112.ap-...	35.154.3	

[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

instance-3

[Add additional tags](#)

▼ Application and OS Images (Amazon Machine Image) [Info](#)

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Amazon Machine Image (AMI)

Amazon Linux 2023 AMI

ami-0d3f444bc76de0a79 (64-bit (x86), uefi-preferred) / ami-07b4c3e2518ee4edd (64-bit (Arm), uefi)
Virtualization: hvm ENA enabled: true Root device type: ebs

Free tier eligible

Description

Amazon Linux 2023 AMI 2023.3.20240108.0 x86_64 HVM kernel-6.1

Architecture

Boot mode

AMI ID

64-bit (x86)

uefi-preferred

ami-0d3f444bc76de0a79

[Verified provider](#)

▼ Instance type [Info](#) | [Get advice](#)

Instance type

t2.micro

Free tier eligible

Family: t2 1 vCPU 1 GiB Memory Current generation: true
On-Demand Linux base pricing: 0.0124 USD per Hour
On-Demand Windows base pricing: 0.017 USD per Hour
On-Demand RHEL base pricing: 0.0724 USD per Hour
On-Demand SUSE base pricing: 0.0124 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*

data-key

[Create new key pair](#)

▼ Network settings [Info](#)

VPC - *required* [Info](#)

vpc-0098cadacafab2e97
172.31.0.0/16

(default)



[Create new VPC](#)

Subnet [Info](#)

subnet-0709cc7ad6133f2a5

my-subnet



VPC: vpc-0098cadacafab2e97 Owner: 255851499496
Availability Zone: ap-south-1a IP addresses available: 4089 CIDR: 172.31.0.0/20



[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](#)

Security group name - *required*

launch-wizard-2

This security group will be added to all network interfaces. The name can't be edited after the security group is created. Max length is 255 characters. Valid characters: a-z, A-Z, 0-9, spaces, and _-:/()#@[]+=;&{}!\$^

Description - *required* [Info](#)

launch-wizard-2 created 2024-01-17T07:15:15.836Z

Inbound Security Group Rules

▼ Security group rule 1 (TCP, 22, 0.0.0.0/0)

[Remove](#)

▼ Configure storage [Info](#)

[Advanced](#)

1x GiB Root volume (Not encrypted)

 Free tier eligible customers can get up to 30 GB of EBS General Purpose (SSD) or Magnetic storage

[X](#)[Add new volume](#)

 Click refresh to view backup information



The tags that you assign determine whether the instance will be backed up by any Data Lifecycle Manager policies.

0 x File systems

[Edit](#)

Credit specification [Info](#)

Select

Placement group [Info](#)

partition_placement_group

pg-0f2ed8c613d6e4aaf

 Create new placement group [\[+\]](#)

Strategy: partition Number of partitions: 2 Shared: No

Target partition [Info](#)

2

▼ Summary

Number of instances | [Info](#)

1

Software Image (AMI)

Amazon Linux 2023 AMI 2023.3.2...[read more](#)
ami-0d3f444bc76de0a79

Virtual server type (instance type)

t2.micro

Firewall (security group)

New security group

Storage (volumes)

1 volume(s) - 8 GiB

ⓘ Free tier: In your first year includes 750 hours of t2.micro (or t3.micro in the Regions in which t2.micro is unavailable) instance usage on free tier AMIs per month, 30 GiB of EBS storage, 2 million IOPS, 1 GB of snapshots



[Cancel](#)

[Launch instance](#)

SuccessSuccessfully initiated launch of instance ([i-0291bf6abc41d4bfe](#))

▶ Launch log

Instances (3) Info								
<input type="button" value="C"/> <input type="button" value="Connect"/> <input type="button" value="Instance state ▾"/> <input type="button" value="Actions ▾"/> <input style="background-color: orange; color: white; border: none; padding: 2px 10px; border-radius: 5px; font-weight: bold; margin-right: 5px;" type="button" value="Launch instances"/> <input type="button" value="▼"/>								
	Name	Instance ID	Instance state	Instance type	Status check	Alarm status	Availability Zone	Public IPv4 DNS
<input type="checkbox"/>	instance-3	i-0291bf6abc41d4bfe	Running	t2.micro	Initializing	<input type="button" value="View alarms"/> +	ap-south-1a	ec2-65-0-81-156.ap-so... 65.0.81.1
<input type="checkbox"/>	instance-1	i-056f7fc933457aafc	Running	t2.micro	2/2 checks passed	<input type="button" value="View alarms"/> +	ap-south-1a	ec2-3-110-159-153.ap... 3.110.15
<input type="checkbox"/>	instance-2	i-0799dc7f8abfe50f8	Running	t2.micro	2/2 checks passed	<input type="button" value="View alarms"/> +	ap-south-1a	ec2-35-154-33-112.ap... 35.154.3

```
root@DESKTOP-VIDGD8F:AWS# aws ec2 describe-instances
{
    "Reservations": [
        {
            "Groups": [],
            "Instances": [
                {
                    "AmiLaunchIndex": 0,
                    "ImageId": "ami-0d3f444bc76de0a79",
                    "InstanceId": "i-0ca2d2c96e8f5a4f2",
                    "InstanceType": "t2.micro",
                    "KeyName": "data-key",
                    "LaunchTime": "2024-01-18T08:11:56.000Z",
                    "Monitoring": {
                        "State": "disabled"
                    },
                    "Placement": {
                        "AvailabilityZone": "ap-south-1a",
                        "GroupName": "partition_placement_group",
                        "PartitionNumber": 2,
                        "Tenancy": "default"
                    }
                }
            ]
        }
    ]
}
```

```
{  
    "Groups": [],  
    "Instances": [  
        {  
            "AmiLaunchIndex": 1,  
            "ImageId": "ami-0d3f444bc76de0a79",  
            "InstanceId": "i-01e6ff3f5321619d5",  
            "InstanceType": "t2.micro",  
            "KeyName": "data-key",  
            "LaunchTime": "2024-01-18T08:11:22.000Z",  
            "Monitoring": {  
                "State": "disabled"  
            },  
            "Placement": {  
                "AvailabilityZone": "ap-south-1a",  
                "GroupName": "partition_placement_group",  
                "PartitionNumber": 1,  
                "Tenancy": "default"  
            },  
            "RootDeviceType": "Amazon EBS",  
            "State": "running",  
            "SubnetId": "subnet-00000000",  
            "VpcId": "vpc-00000000",  
            "PrivateIpAddress": "172.16.0.1",  
            "PublicIpAddress": "52.16.0.1",  
            "PublicDnsName": "ec2-52-16-0-1.ap-south-1.compute.amazonaws.com",  
            "PrivateDnsName": "ip-172-16-0-1.ap-south-1.compute.internal",  
            "NetworkInterfaces": [  
                {  
                    "Association": {  
                        "AllocationId": "eni-00000000",  
                        "IpOwnerId": "amazonaws.com",  
                        "PublicIp": "52.16.0.1",  
                        "PrivateIp": "172.16.0.1",  
                        "PrivateDnsName": "ip-172-16-0-1.ap-south-1.compute.internal",  
                        "PublicDnsName": "ec2-52-16-0-1.ap-south-1.compute.amazonaws.com",  
                        "Region": "ap-south-1",  
                        "Status": "attached",  
                        "VpcId": "vpc-00000000"  
                    },  
                    "Description": "Amazon EBS Network Interface",  
                    "MacAddress": "00:0C:29:00:00:00",  
                    "NetworkInterfaceId": "eni-00000000",  
                    "PrivateIpAddress": "172.16.0.1",  
                    "PrivateDnsName": "ip-172-16-0-1.ap-south-1.compute.internal",  
                    "Status": "in-use",  
                    "Type": "Amazon EBS"  
                }  
            ]  
        }  
    ]  
}
```