

Experiment No: 06

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Steps to Follow:

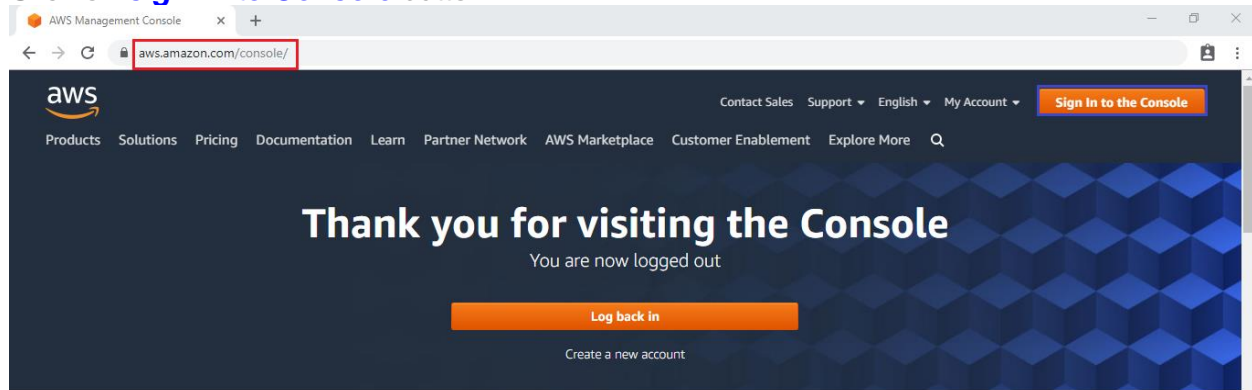
1. Logging to AWS Account
2. Create Web Server By Using Bootstrap Commands
3. Verify content of Web Server in Browser

1. Logging to AWS Account

First, we need to AWS Console page by using below link.

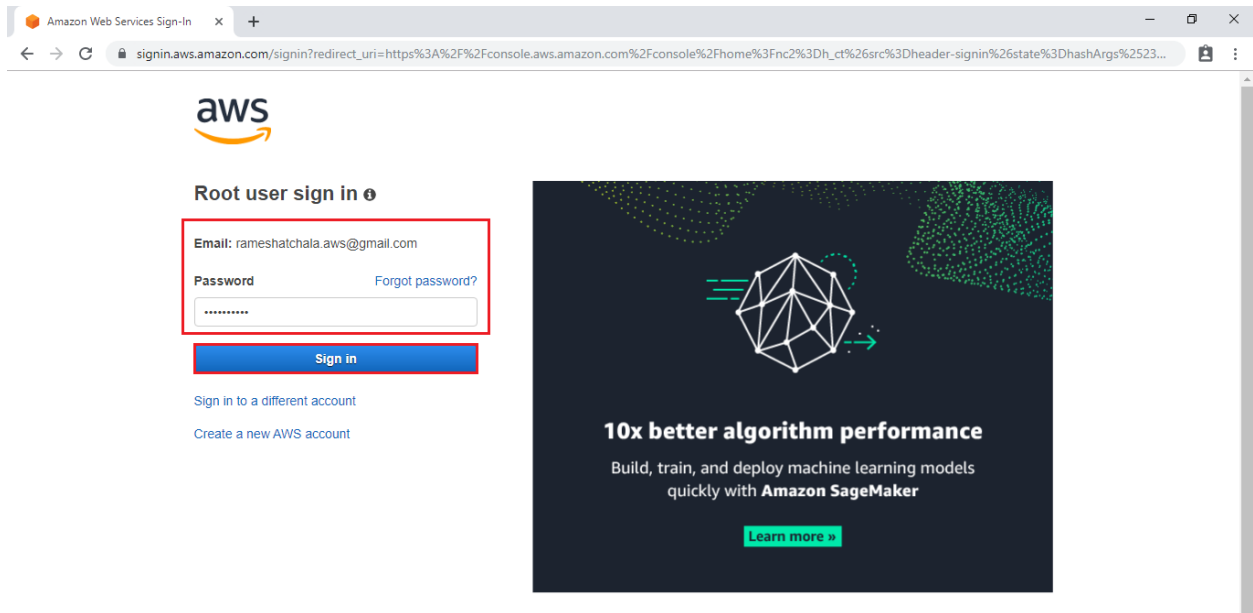
<https://aws.amazon.com/console/>

Click on **sign in to Console** button.



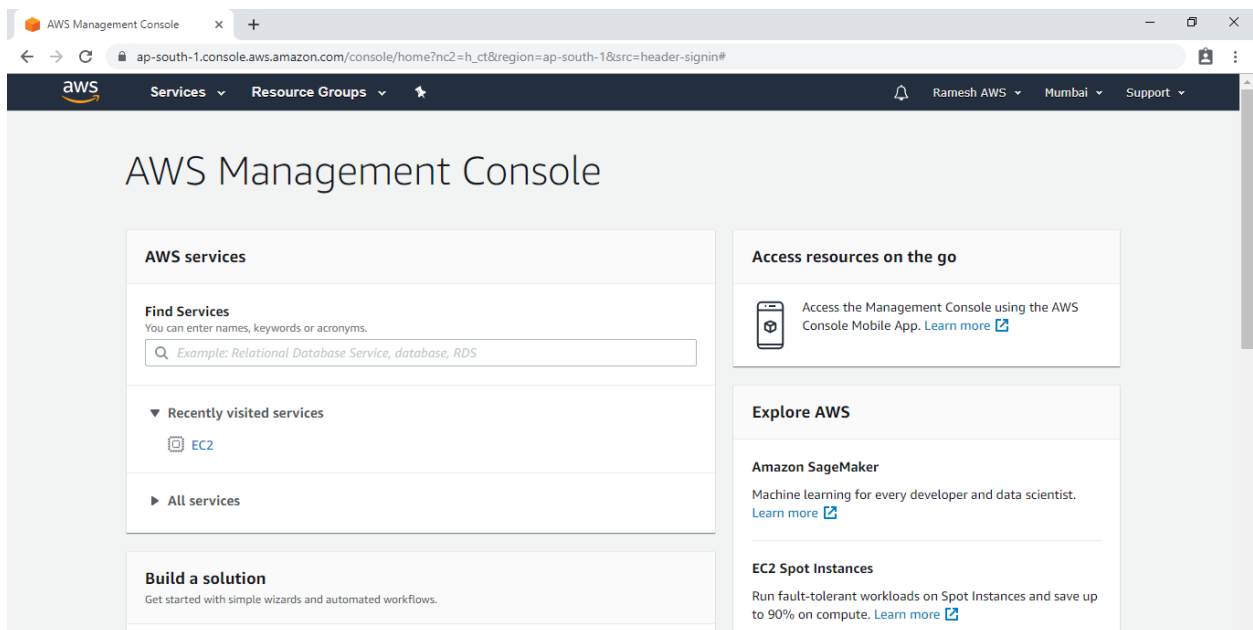
Logging to aws account

Login using username & password and click on **sign in**.

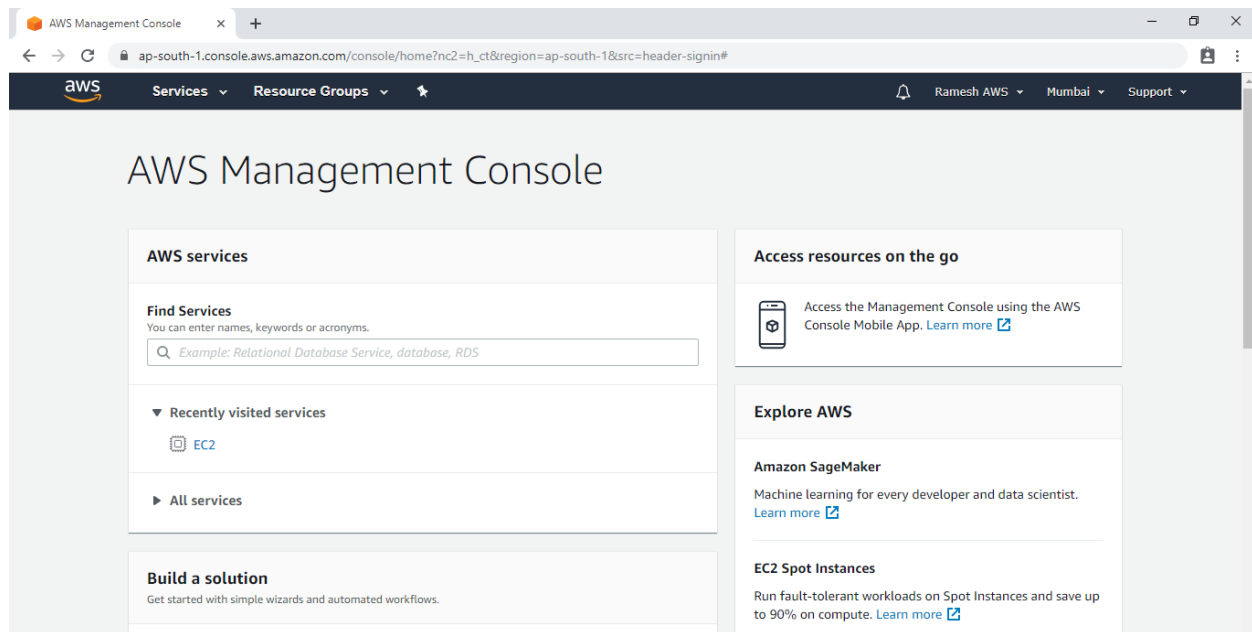


Enter to AWS Management Console

We can see the AWS Management Console Dashboard.

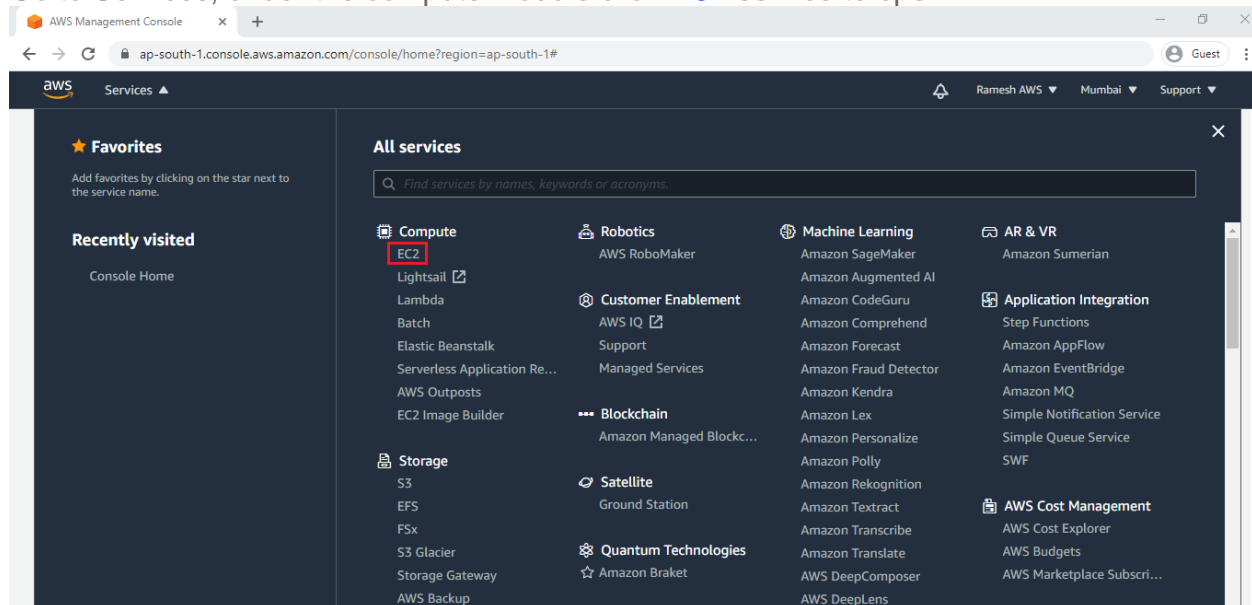


Go to Services, under the compute module click **EC2** service to open.

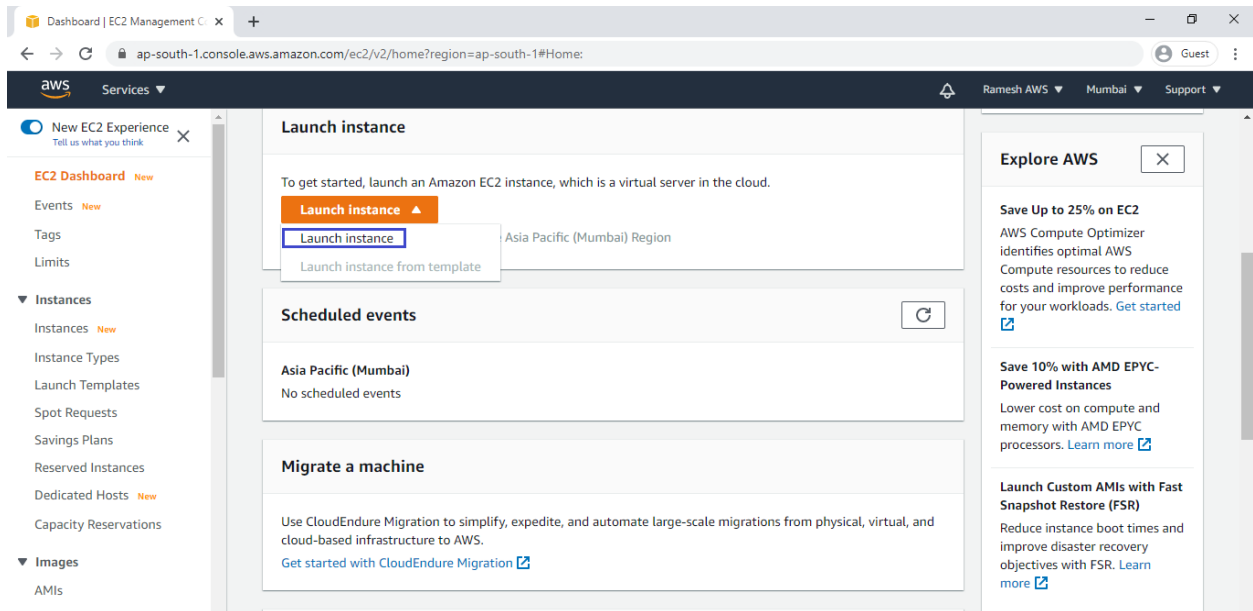


2. Create Web Server By Using Bootstrap Script

Go to Services, under the compute module click **EC2** service to open.

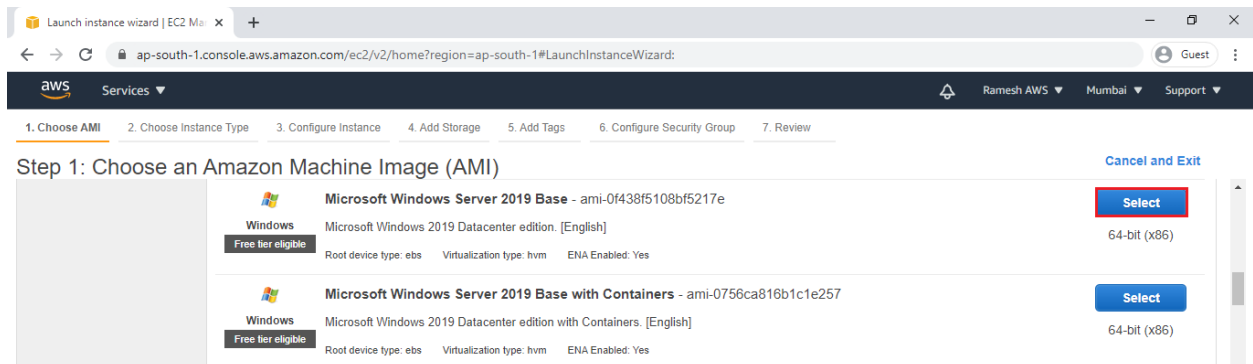


Click on **Launch Instance**.



Choose an Amazon Machine Image (AMI)

Select the Operating system of the EC2 instance by choosing any of the Amazon Machine Images (AMI). Select the Microsoft Windows Server.



Choose an Instance type

Choose the Type of instance depending on your requirements.

Instance types comprise of varying combinations of CPU, memory, storage, and networking capacity.

select the default option of *t2.micro* – this instance type is covered within the free tier. Then click on **Configure Instance Details**.

Launch instance wizard | EC2 Ma x +

ap-south-1.console.aws.amazon.com/ec2/v2/home?region=ap-south-1#LaunchInstanceWizard: Guest

aws Services Ramesh AWS Mumbai Support

1. Choose AMI 2. Choose Instance Type 3. Configure Instance 4. Add Storage 5. Add Tags 6. Configure Security Group 7. Review

Step 2: Choose an Instance Type

Amazon EC2 provides a wide selection of instance types optimized to fit different use cases. Instances are virtual servers that can run applications. They have varying combinations of CPU, memory, storage, and networking capacity, and give you the flexibility to choose the appropriate mix of resources for your applications. [Learn more](#) about instance types and how they can meet your computing needs.

Filter by: All Instance types Current generation Show/Hide Columns

Currently selected: t2.micro (Variable ECUs, 1 vCPUs, 2.5 GHz, Intel Xeon Family, 1 GiB memory, EBS only)

| | Family | Type | vCPUs | Memory (GiB) | Instance Storage (GB) | EBS-Optimized Available | Network Performance | IPv6 Support |
|-------------------------------------|-----------------|---|-------|--------------|-----------------------|-------------------------|---------------------|--------------|
| <input type="checkbox"/> | General purpose | t2.nano | 1 | 0.5 | EBS only | - | Low to Moderate | Yes |
| <input checked="" type="checkbox"/> | General purpose | t2.micro <small>Free tier eligible</small> | 1 | 1 | EBS only | - | Low to Moderate | Yes |
| <input type="checkbox"/> | General purpose | t2.small | 1 | 2 | EBS only | - | Low to Moderate | Yes |
| <input type="checkbox"/> | General purpose | t2.medium | 2 | 4 | EBS only | - | Low to Moderate | Yes |
| <input type="checkbox"/> | General purpose | t2.large | 2 | 8 | EBS only | - | Low to Moderate | Yes |

Cancel Previous Review and Launch Next: Configure Instance Details

Configure Instance Details

Configure EC2 instance details as per requirements of your environment and click on **Add Storage**.

Choose the Type of instance depending on your requirements.

Instance types comprise of varying combinations of CPU, memory, storage, and networking capacity so you can choose the appropriate mix for your applications.

select the default option of *t2.micro* – this instance type is covered within the free tier. Then click on Configure Instance Details.

Launch instance wizard | EC2 Ma x +

ap-south-1.console.aws.amazon.com/ec2/v2/home?region=ap-south-1#LaunchInstanceWizard: Guest

aws Services Ramesh AWS Mumbai Support

1. Choose AMI 2. Choose Instance Type 3. Configure Instance 4. Add Storage 5. Add Tags 6. Configure Security Group 7. Review

Step 3: Configure Instance Details

Configure the instance to suit your requirements. You can launch multiple instances from the same AMI, request Spot instances to take advantage of the lower pricing, assign an access management role to the instance, and more.

Number of instances 1 Launch into Auto Scaling Group

Purchasing option ☐ Request Spot instances

Network vpc-0f20c664 (default) Create new VPC

Subnet No preference (default subnet in any Availability Zone) Create new subnet

Auto-assign Public IP Use subnet setting (Enable)

Placement group ☐ Add instance to placement group

Capacity Reservation Open

Domain join directory No directory Create new directory

IAM role None Create new IAM role

Go to Advanced Details and type commands for bootstrapping in user data.

The Script is

```

1 <powershell>
2 Install-WindowsFeature -name Web-Server -IncludeManagementTools
3 New-Item -Path C:\inetpub\wwwroot\index.html -ItemType File -Value "KTExperts is a knowledge Sharing Platform" -
4 Force
5 </powershell>

```

Click on **Add Storage**.

Launch instance wizard | EC2 Ma: x +

ap-south-1.console.aws.amazon.com/ec2/v2/home?region=ap-south-1#LaunchInstanceWizard: Guest

aws Services Ramesh AWS Mumbai Support

1. Choose AMI 2. Choose Instance Type 3. Configure Instance 4. Add Storage 5. Add Tags 6. Configure Security Group 7. Review

Step 3: Configure Instance Details

Tenancy *i Additional charges may apply.*

Shared - Run a shared hardware instance
Additional charges will apply for dedicated tenancy.

Credit specification *i* ☐ Unlimited
Additional charges may apply

Advanced Details

Metadata accessible *i* Enabled

Metadata version *i* V1 and V2 (token optional)

Metadata token response hop limit *i* 1

User data *i* ☒ As text ☐ As file ☐ Input is already base64 encoded

```

<powershell>
Install-WindowsFeature -name Web-Server -IncludeManagementTools
New-Item -Path C:\inetpub\wwwroot\index.html -ItemType File -Value
"KTExperts is a knowledge sharing platform!" -Force
</powershell>

```

Cancel Previous Review and Launch **Next: Add Storage**

Add Storage

Here, we can see root volume by default and size of 8GB

Add a new volume if required

Click on **Add Tags**.

Launch instance wizard | EC2 Ma: x +

ap-south-1.console.aws.amazon.com/ec2/v2/home?region=ap-south-1#LaunchInstanceWizard: Guest

aws Services Ramesh AWS Mumbai Support

1. Choose AMI 2. Choose Instance Type 3. Configure Instance 4. Add Storage 5. Add Tags 6. Configure Security Group 7. Review

Step 4: Add Storage

Your instance will be launched with the following storage device settings. You can attach additional EBS volumes and instance store volumes to your instance, or edit the settings of the root volume. You can also attach additional EBS volumes after launching an instance, but not instance store volumes. [Learn more](#) about storage options in Amazon EC2.

| Volume Type <i>i</i> | Device <i>i</i> | Snapshot <i>i</i> | Size (GiB) <i>i</i> | Volume Type <i>i</i> | IOPS <i>i</i> | Throughput (MB/s) <i>i</i> | Delete on Termination <i>i</i> | Encryption <i>i</i> |
|----------------------|-----------------|------------------------|---------------------|---------------------------|---------------|----------------------------|-------------------------------------|---------------------|
| Root | /dev/sda1 | snap-012ad0bed7927582e | 30 | General Purpose SSD (gp2) | 100 / 3000 | N/A | <input checked="" type="checkbox"/> | Not Encrypt |

Add New Volume

Free tier eligible customers can get up to 30 GB of EBS General Purpose (SSD) or Magnetic storage. [Learn more](#) about free usage tier eligibility and usage restrictions.

Cancel Previous Review and Launch **Next: Add Tags**

Add Tags

Tags assist in easier identification and classification of the various instances in your AWS environment.

Click on [click to add a Name tag](#) to provide name for our server.

Launch instance wizard | EC2 Ma x +

ap-south-1.console.aws.amazon.com/ec2/v2/home?region=ap-south-1#LaunchInstanceWizard: Guest

aws Services

1. Choose AMI 2. Choose Instance Type 3. Configure Instance 4. Add Storage 5. Add Tags 6. Configure Security Group 7. Review

Step 5: Add Tags

A tag consists of a case-sensitive key-value pair. For example, you could define a tag with key = Name and value = Webserver.
A copy of a tag can be applied to volumes, instances or both.
Tags will be applied to all instances and volumes. [Learn more](#) about tagging your Amazon EC2 resources.

| Key (128 characters maximum) | Value (256 characters maximum) | Instances (i) | Volumes (i) |
|--|--------------------------------|---------------|-------------|
| This resource currently has no tags | | | |
| Choose the Add tag button or click to add a Name tag Make sure your IAM policy includes permissions to create tags. | | | |
| Add Tag (Up to 50 tags maximum) | | | |

Provide the name for the ec2 instance for easier understanding and click on [Configure Security Groups](#).

Launch instance wizard | EC2 Ma x +

ap-south-1.console.aws.amazon.com/ec2/v2/home?region=ap-south-1#LaunchInstanceWizard: Guest

aws Services

1. Choose AMI 2. Choose Instance Type 3. Configure Instance 4. Add Storage 5. Add Tags 6. Configure Security Group 7. Review

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A copy of a tag can be applied to volumes, instances or both.
Tags will be applied to all instances and volumes. [Learn more](#) about tagging your Amazon EC2 resources.

| Key (128 characters maximum) | Value (256 characters maximum) | Instances (i) | Volumes (i) |
|------------------------------|--------------------------------|-------------------------------------|-------------------------------------|
| Name | Web Server | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> |

[Add another tag](#) (Up to 50 tags maximum)

Cancel Previous **Review and Launch** [Next: Configure Security Group](#)

Configure Security Group

A security group allows configuring firewall rules to allow traffic as needed.

RDP Is enough to connect to our Windows Server and HTTP is for accessing Web Server and click on [Review and Launch](#).

Launch instance wizard | EC2 Ma x +

ap-south-1.console.aws.amazon.com/ec2/v2/home?region=ap-south-1#LaunchInstanceWizard: Guest

aws Services Ramesh AWS Mumbai Support

1. Choose AMI 2. Choose Instance Type 3. Configure Instance 4. Add Storage 5. Add Tags 6. Configure Security Group 7. Review

Step 6: Configure Security Group

allow Internet traffic to reach your instance, add rules that allow unrestricted access to the HTTP and HTTPS ports. You can create a new security group or select from an existing one below. [Learn more](#) about Amazon EC2 security groups.

Assign a security group: ☒ Create a new security group
☐ Select an existing security group

Security group name:
 Description:

| Type | Protocol | Port Range | Source | Description |
|------|----------|------------|--------------------------|----------------------------|
| RDP | TCP | 3389 | Custom 0.0.0.0/0 | e.g. SSH for Admin Desktop |
| HTTP | TCP | 80 | Anywhere 0.0.0.0/0, ::/0 | e.g. SSH for Admin Desktop |

Add Rule

Warning

Rules with source of 0.0.0.0/0 allow all IP addresses to access your instance. We recommend setting security group rules to allow access from known IP addresses only.

Cancel Previous **Review and Launch**

Review Instance Launch

Review and confirm the configuration of the instance. Click on the Edit button on each configuration item to make changes and click on **Launch**.

Launch instance wizard | EC2 Ma x +

ap-south-1.console.aws.amazon.com/ec2/v2/home?region=ap-south-1#LaunchInstanceWizard: Guest

aws Services Ramesh AWS Mumbai Support

1. Choose AMI 2. Choose Instance Type 3. Configure Instance 4. Add Storage 5. Add Tags 6. Configure Security Group 7. Review

Step 7: Review Instance Launch

| | | | | | | |
|----------|----------|---|---|----------|---|-----------------|
| t2.micro | Variable | 1 | 1 | EBS only | - | Low to Moderate |
|----------|----------|---|---|----------|---|-----------------|

▼ Security Groups [Edit security groups](#)

Security group name: WS
 Description: WS

| Type | Protocol | Port Range | Source | Description |
|------|----------|------------|-----------|-------------|
| RDP | TCP | 3389 | 0.0.0.0/0 | |
| HTTP | TCP | 80 | 0.0.0.0/0 | |
| HTTP | TCP | 80 | ::/0 | |

► Instance Details [Edit instance details](#)

► Storage [Edit storage](#)

► Tags [Edit tags](#)

Cancel Previous **Launch**

Choose existing Key Pair and Launch Your Instance

To connect to your webserver, you need a key pair. A key pair is used to log into your instance and select existing key pair.

Select an existing key pair or create a new key pair



A key pair consists of a **public key** that AWS stores, and a **private key file** that you store. Together, they allow you to connect to your instance securely. For Windows AMIs, the private key file is required to obtain the password used to log into your instance. For Linux AMIs, the private key file allows you to securely SSH into your instance.

Note: The selected key pair will be added to the set of keys authorized for this instance. Learn more about [removing existing key pairs from a public AMI](#).

Choose an existing key pair

Select a key pair

windows

☒ I acknowledge that I have access to the selected private key file (windows.pem), and that without this file, I won't be able to log into my instance.

Cancel

Launch Instances

click on View Instances to view the instance you have just created and see its status.

Launch Status

✓ Your instances are now launching
The following instance launches have been initiated: i-017d9c5ebdbd5964c [View launch log](#)

🔔 Get notified of estimated charges
Create billing alerts to get an email notification when estimated charges on your AWS bill exceed an amount you define (for example, if you exceed the free usage tier).

How to connect to your instances

Your instances are launching, and it may take a few minutes until they are in the running state, when they will be ready for you to use. Usage hours on your new instances will start immediately and continue to accrue until you stop or terminate your instances. Click [View Instances](#) to monitor your instances' status. Once your instances are in the running state, you can connect to them from the Instances screen. [Find out](#) how to connect to your instances.

▼ Here are some helpful resources to get you started

- [How to connect to your Windows instance](#)
- [Amazon EC2: User Guide](#)
- [Learn about AWS Free Usage Tier](#)
- [Amazon EC2: Microsoft Windows Guide](#)
- [Amazon EC2: Discussion Forum](#)

While your instances are launching you can also

- [Create status check alarms](#) to be notified when these instances fail status checks. (Additional charges may apply)
- [Create and attach additional EBS volumes](#) (Additional charges may apply)
- [Manage security groups](#)

[View Instances](#)

We can see the instance “Web Server” has been created successfully.

The screenshot shows the AWS Management Console for the 'ap-south-1' region. The 'Instances' page is active, displaying a table with one instance: 'Web Server' (ID: i-017d9c5ebdbd5964c). The instance is in a 'Running' state. Below the table, the 'Instance: i-017d9c5ebdbd5964c (Web Server)' details are shown. The 'Public IPv4 address' is 3.6.38.102, and the 'Private IPv4 addresses' are 172.31.47.248.

| Name | Instance ID | Instance state | Instance type | Status check | Alarm Status | Availability zone |
|------------|---------------------|----------------|---------------|----------------|--------------|-------------------|
| Web Server | i-017d9c5ebdbd5964c | Running | t2.micro | 2/2 checks ... | No alarms + | ap-south-1a |

Instance: i-017d9c5ebdbd5964c (Web Server)

Instance summary

| Instance ID | Public IPv4 address | Private IPv4 addresses |
|----------------------------------|---|------------------------|
| i-017d9c5ebdbd5964c (Web Server) | 3.6.38.102 open address | 172.31.47.248 |

3. Verify content of Web Server in Browser

Copy public IP of webserver as shown below.

This screenshot is identical to the one above, showing the AWS Management Console for the 'ap-south-1' region. The 'Instances' page is active, displaying a table with one instance: 'Web Server' (ID: i-017d9c5ebdbd5964c). The instance is in a 'Running' state. Below the table, the 'Instance: i-017d9c5ebdbd5964c (Web Server)' details are shown. The 'Public IPv4 address' is 3.6.38.102, and the 'Private IPv4 addresses' are 172.31.47.248.

| Name | Instance ID | Instance state | Instance type | Status check | Alarm Status | Availability zone |
|------------|---------------------|----------------|---------------|----------------|--------------|-------------------|
| Web Server | i-017d9c5ebdbd5964c | Running | t2.micro | 2/2 checks ... | No alarms + | ap-south-1a |

Instance: i-017d9c5ebdbd5964c (Web Server)

Instance summary

| Instance ID | Public IPv4 address | Private IPv4 addresses |
|----------------------------------|---|------------------------|
| i-017d9c5ebdbd5964c (Web Server) | 3.6.38.102 open address | 172.31.47.248 |

Search Public IP of Web Server which was copied.