

# Module - 1 AWS Cloud

## Assignment - 1

Date of submission -

Submitted by - Chandra Sekhar

L1 -

Demonstrate the AWS EC2 Ubuntu Instance Creation steps and connect to EC2 Instance using Mobaxterm/putty agent

Step - 1

creating ubuntu EC2 instance(sever)

The screenshot shows the AWS EC2 Instances page. The left sidebar has sections for Dashboard, EC2 Global View, Events, Instances (selected), Images, and Elastic Block Store. The main content area is titled 'Instances' and shows a search bar with 'Find Instance by attribute or tag (case-sensitive)'. It includes filters for Name, Instance ID, Instance state (set to 'Running'), Instance type, Status check, Alarm status, Availability Zone, and Public IPv4 Dl. A button for 'Launch instances' is visible. Below the filters, a message says 'No matching instances found'. At the bottom, there's a section titled 'Select an instance'.

# naming the instance and selecting the operating system as ubuntu

The screenshot shows the 'Name and tags' step of the AWS EC2 'Launch an instance' wizard. In the 'Name' field, 'ubuntu-1' is entered. Below it, there's a search bar for 'Application and OS Images (Amazon Machine Image)' and a 'Quick Start' tab selected. Under the 'Amazon Machine Image (AMI)' section, 'Ubuntu' is chosen. On the right, the 'Summary' section shows 1 instance, the software image as Canonical, Ubuntu, 24.04, amd64, and the virtual server type as t2.micro. A note indicates a free tier of 750 hours for t2.micro. At the bottom are 'Cancel', 'Launch instance', and 'Preview code' buttons.

## selecting the t2 micro cpu

The screenshot shows the 'Instance type' step of the AWS EC2 'Launch an instance' wizard. It lists the 't2.micro' instance type, which is currently selected. Other options like 'All generations' and 'Compare instance types' are also available. The summary on the right remains the same, showing 1 instance, Canonical, Ubuntu, 24.04, amd64, and t2.micro. A note about the free tier is still present. The bottom of the screen shows the standard AWS navigation bar and footer.

# selecting the key-pair

The screenshot shows the AWS EC2 'Launch an instance' wizard. In the 'Key pair (login)' section, 'keypair1' is selected from a dropdown menu. Below it, there's a note about using a key pair for secure connection. In the 'Network settings' section, the VPC and subnet are set to their defaults. The 'Summary' panel on the right shows one instance being launched with the Canonical AMI, t2.micro instance type, and a new security group. A tooltip indicates a free tier allowance of 750 hours. At the bottom right are 'Cancel', 'Launch instance', and 'Preview code' buttons.

# selecting the security group as default

This screenshot continues the 'Launch an instance' wizard. In the 'Network settings' section, the 'Select existing security group' radio button is selected. The 'Summary' panel remains the same, showing one instance launching with the 'default' security group. The 'Launch instance' button is prominently displayed at the bottom right.

# launching the instance

The screenshot shows the 'Configure storage' step of the EC2 instance launch wizard. It specifies 1x 8 GiB gp3 volume as the root volume (Not encrypted). A note indicates that free-tier eligible customers can get up to 30 GB of EBS General Purpose (SSD) or Magnetic storage. Below this, it notes that the selected AMI contains more instance store volumes than the instance allows, and only the first 0 instance store volumes from the AMI will be accessible. There is also a note about backup information and lifecycle manager policies. The summary panel on the right shows 1 instance being launched with the Canonical, Ubuntu, 24.04, amd64 AMI, t2.micro instance type, default security group, and 1 volume(s) - 8 GiB. Buttons for 'Cancel', 'Launch instance', and 'Preview code' are visible.

The screenshot shows the AWS CloudShell interface at the bottom of the browser window. It includes a search bar, a toolbar with various icons, and a status bar showing the date and time (29-11-2024), weather (73°F Haze), and location (ENG IN).

The screenshot shows the EC2 Instances page with a table of instances. One instance, 'ubuntu-1' (ID i-0c0a4b95d282ce5ff), is listed as 'Running'. The table includes columns for Name, Instance ID, Instance state, Instance type, Status check, Alarm status, Availability Zone, and Public IPv4. A sidebar on the left lists navigation options like Dashboard, EC2 Global View, Events, Instances (selected), Instance Types, Launch Templates, Spot Requests, Savings Plans, Reserved Instances, Dedicated Hosts, Capacity Reservations, Images, and Elastic Block Store. The CloudShell interface is visible at the bottom.

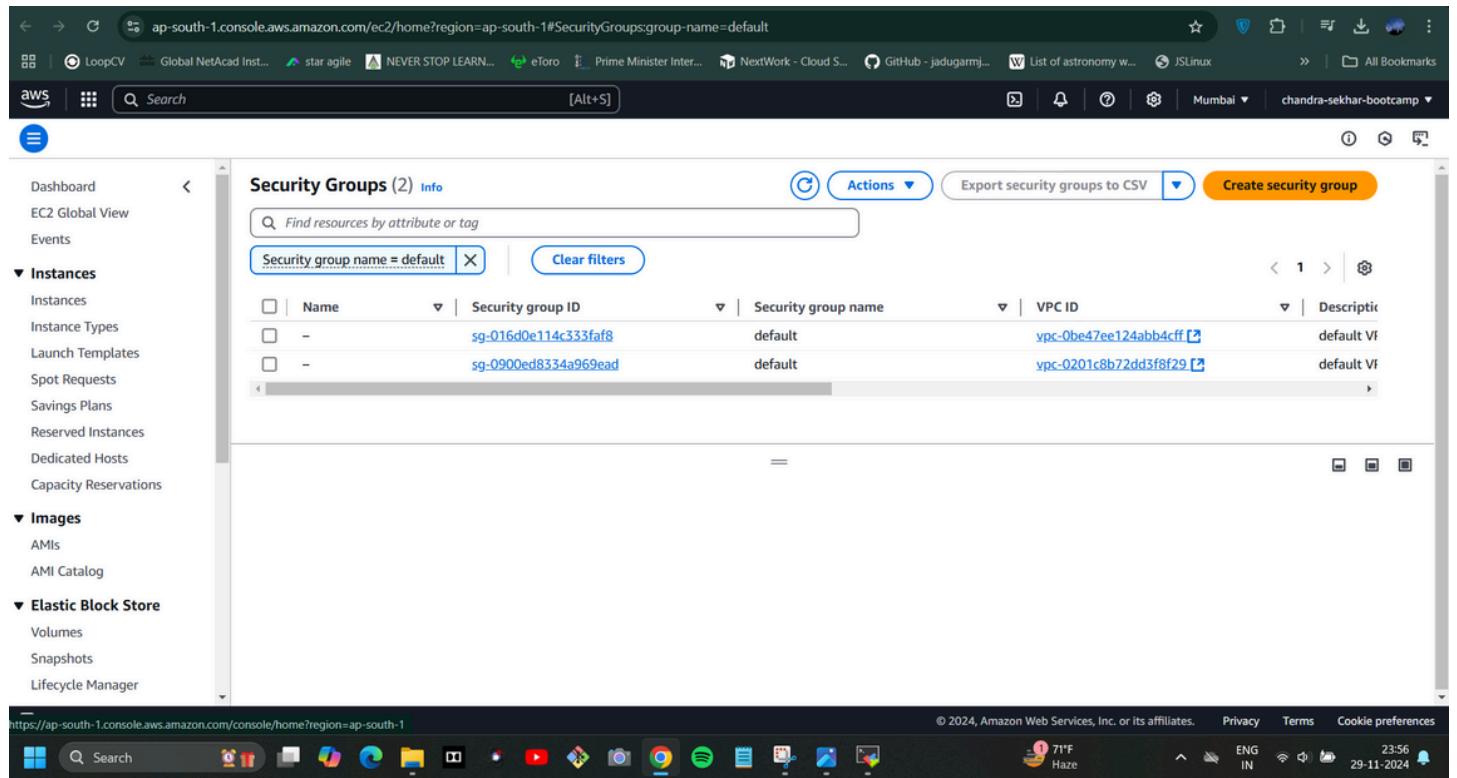
In the instance select security group and edit the inbound rules to allow traffic from everywhere.

The screenshot shows the AWS EC2 Instances page for an instance with ID i-0c0a4b95d282ce5ff. The left sidebar includes sections for Instances, Images, and Elastic Block Store. The main content area displays the instance's AMI ID (ami-0dee22c13ea7a9a67), AMI name (ubuntu/images/hvm-ssd-gp3/ubuntu-noble-24.04-amd64-server-20240927), launch time (Fri Nov 29 2024 23:10:59 GMT+0530), and other monitoring and platform details. The 'Security' tab is selected, showing the instance is associated with the default security group sg-0900ed8334a969ead.

## select inbound rules

The screenshot shows the AWS EC2 Instances page for the same instance. The 'Security' tab is selected, displaying the IAM Role (not set), Owner ID (381491876785), and Launch time (Fri Nov 29 2024 23:10:59 GMT+0530). The 'Inbound rules' section shows one rule allowing all traffic from 0.0.0.0/0 to port 80. The 'Outbound rules' section shows one rule allowing all traffic to 0.0.0.0/0. The left sidebar remains the same as the previous screenshot.

select the first one



The screenshot shows the AWS Management Console interface for the EC2 service. The left sidebar navigation bar includes links for Dashboard, EC2 Global View, Events, Instances (with sub-links for Instances, Instance Types, Launch Templates, Spot Requests, Savings Plans, Reserved Instances, Dedicated Hosts, Capacity Reservations), Images (AMIs, AMI Catalog), and Elastic Block Store (Volumes, Snapshots, Lifecycle Manager). The main content area is titled "Security Groups (2) Info". It features a search bar with the placeholder "Find resources by attribute or tag" and a filter bar with "Security group name = default" and "Clear filters" buttons. A table lists two security groups:

Name	Security group ID	Security group name	VPC ID	Description
-	sg-016d0e114c333faf8	default	vpc-0be47ee124abb4cff	default VIF
-	sg-0900ed8334a969ead	default	vpc-0201c8b72dd3f8f29	default VIF

The bottom of the screen displays the Windows taskbar with various pinned icons and the system tray showing the date and time.

select edit inbound rules

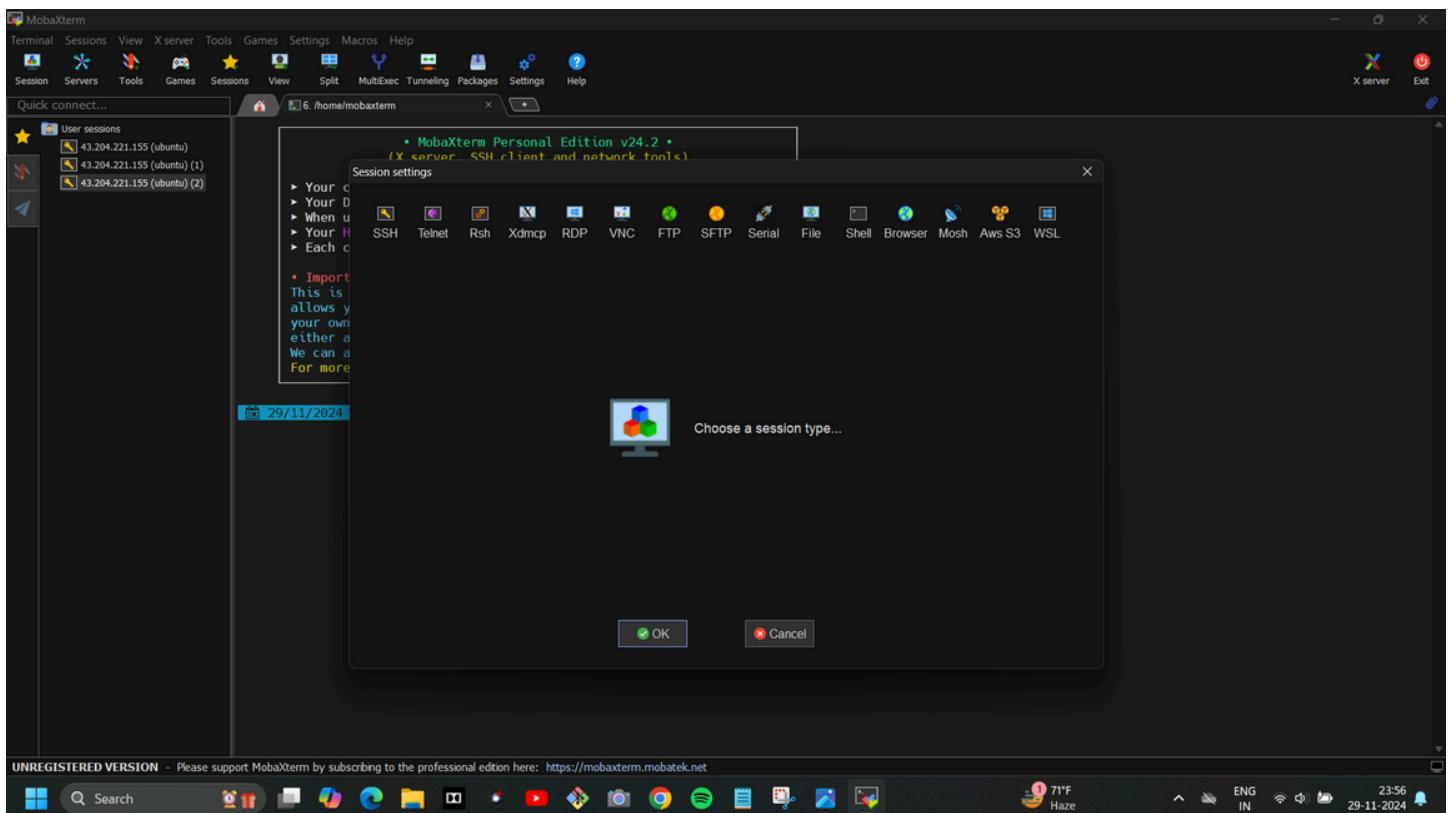
The screenshot shows the AWS EC2 Security Groups page for a default security group. The left sidebar includes links for Dashboard, EC2 Global View, Events, Instances, Images, and Elastic Block Store. The main content area displays the security group details: name (sg-016d0e114c333faf8), owner (381491876785), and VPC ID (vpc-0be47ee124abb4cff). It also shows 1 inbound rule and 1 outbound rule, both being permission entries. Below this, the 'Inbound rules' tab is selected, showing a table with one rule: sgr-07e5ee3e6caf11888, IPv4, All traffic, All traffic. The status bar at the bottom indicates it's from 29-11-2024.

here we need to select Type - All traffic( to allow all the traffic) and source - custom ipv4

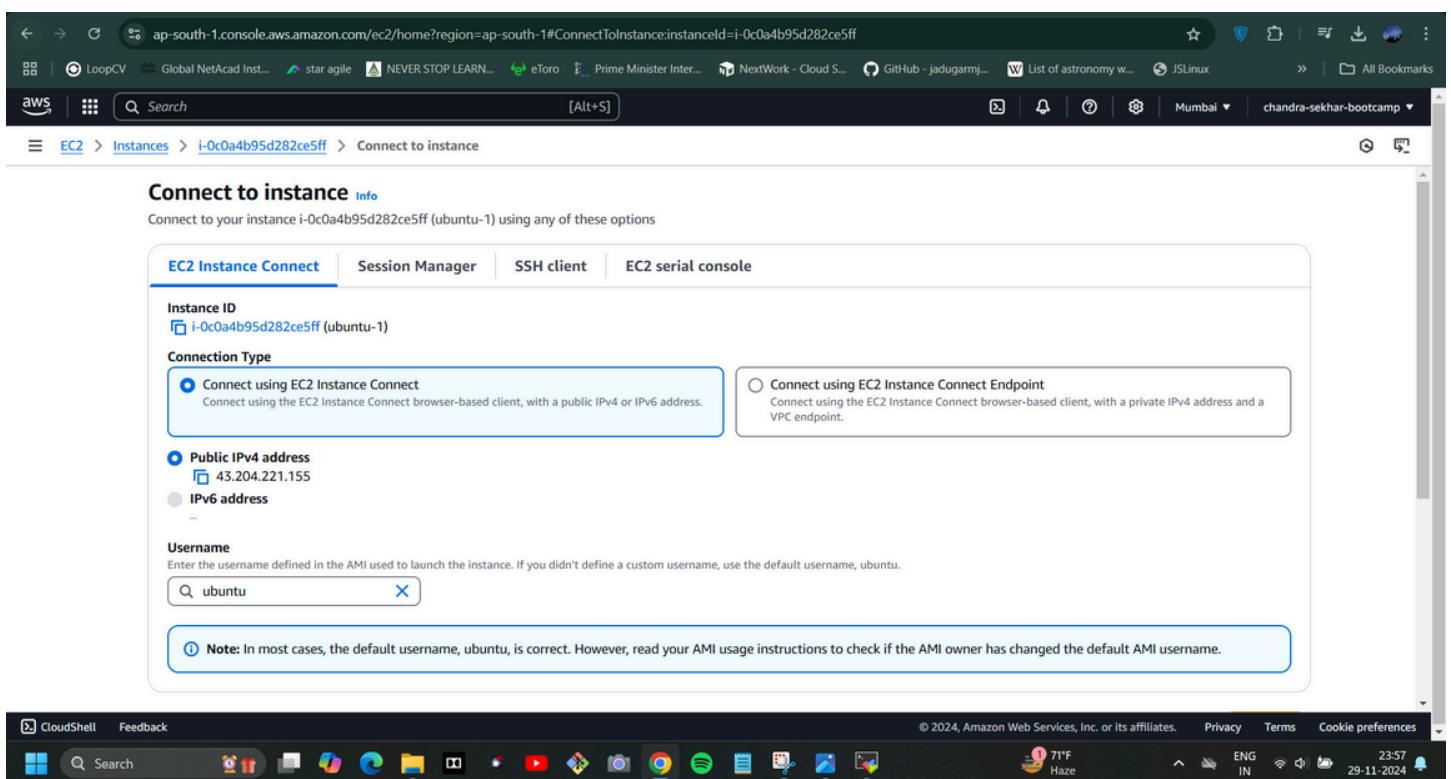
The screenshot shows the 'Edit inbound rules' dialog box. It lists a single rule: sgr-07e5ee3e6caf11888, Type: All traffic, Protocol: All, Port range: All, Source: Cus... (with 0.0.0.0/0 selected), and Description: - optional. A warning message at the bottom states: '⚠ Rules with source of 0.0.0.0/0 or ::/0 allow all IP addresses to access your instance. We recommend setting security group rules to allow access from known IP addresses only.' Buttons for Cancel, Preview changes, and Save rules are at the bottom right.



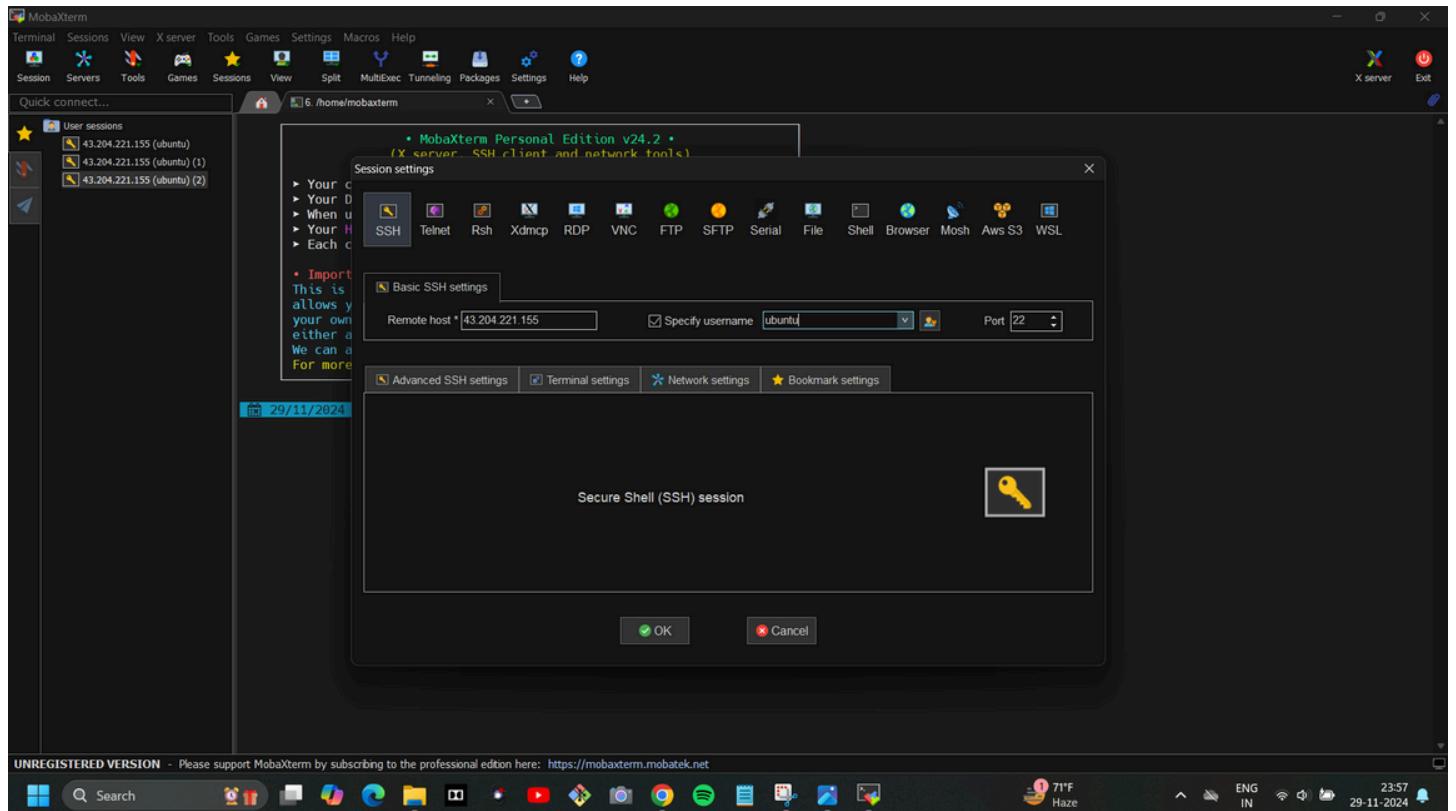
now open mobaXterm and select sessions then select ssh client to connect



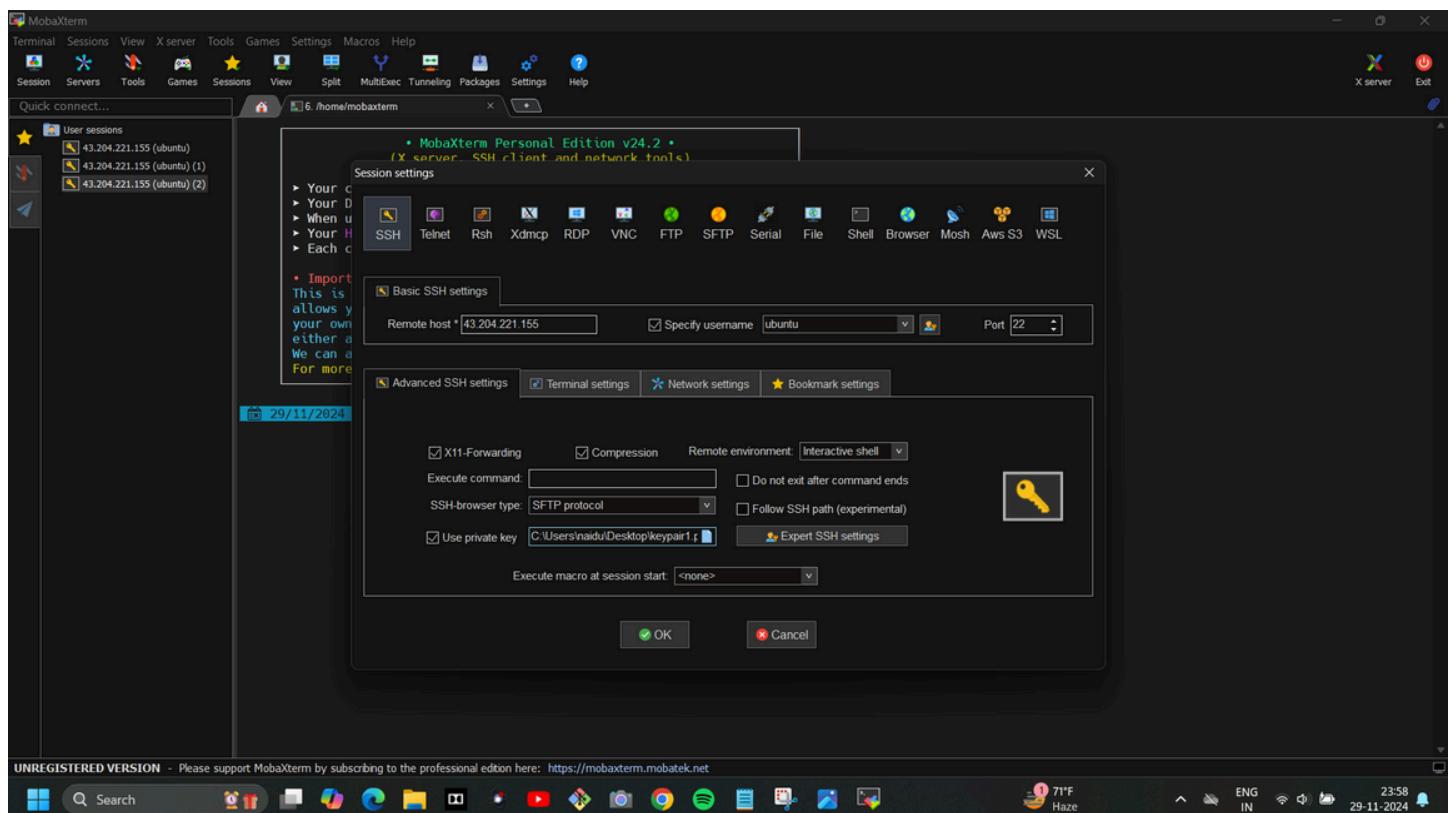
since we need public ip address and username to connect from mobaxterm we copy them from here



paste public ip address at remote host and username



select the private key



here's the output we dont need to any commands to connect in mobaxterm

43.204.221.155 (ubuntu)

Terminal Sessions View Xserver Tools Games Settings Macros Help

Session Servers Tools Games Sessions View Split MultiExec Tunneling Packages Settings Help

Quick connect...

6 /home/mobaxterm 7 43.204.221.155 (ubuntu)

MobaXterm Personal Edition v24.2 •  
(SSH client, X server and network tools)

SSH session to ubuntu@43.204.221.155  
• Direct SSH : ✓  
• SSH compression : ✓  
• SSH-browser : ✓  
• X11-forwarding : ✓ (remote display is forwarded through SSH)  
For more info, ctrl+click on help or visit our website.

Welcome to Ubuntu 24.04.1 LTS (GNU/Linux 6.8.0-1016-aws x86\_64)

\* Documentation: <https://help.ubuntu.com>  
\* Management: <https://landscape.canonical.com>  
\* Support: <https://ubuntu.com/pro>

System information as of Fri Nov 29 18:28:24 UTC 2024

System load: 0.0 Processes: 110  
Usage of /: 23.2% of 6.71GB Users logged in: 1  
Memory usage: 20% IPv4 address for enX0: 172.31.9.156  
Swap usage: 0%

Expanded Security Maintenance for Applications is not enabled.  
0 updates can be applied immediately.  
Enable ESM Apps to receive additional future security updates.  
See <https://ubuntu.com/esm> or run: sudo pro status

The list of available updates is more than a week old.  
To check for new updates run: sudo apt update

Last login: Fri Nov 29 18:24:41 2024 from 49.37.134.39  
To run a command as administrator (user "root"), use "sudo <command>".  
See "man sudo\_root" for details.

ubuntu@ip-172-31-9-156:~\$

UNREGISTERED VERSION - Please support MobaXterm by subscribing to the professional edition here: <https://mobaxterm.mobatek.net>

Search Remote monitoring Follow terminal folder

Windows Start button Search icon Taskbar icons System tray: 71°F Haze, ENG IN, 23:58, 29-11-2024

## L2 -

# Login to AWS Console and Create IAM User, Role, and Group.

### Step - 1

create a IAM user

The screenshot shows the AWS IAM Users page. The left sidebar has sections for Identity and Access Management (IAM) like Dashboard, Access management (User groups, Roles, Policies, Identity providers, Account settings), and Access reports (Access Analyzer, External access, Unused access, Analyzer settings). The main content area is titled "Users (0) Info" and contains a search bar and a table header with columns: User name, Path, Group, Last activity, MFA, Password age, and Console last sign-in. A message says "No resources to display". There are "Create user" and "Delete" buttons at the top right. The bottom of the screen shows the Windows taskbar with various icons and the date/time as 29-11-2024.

giving the user name

us-east-1.console.aws.amazon.com/iam/home?region=ap-south-1#/users/create

Global NetAcad Inst... star agile NEVER STOP LEARN... eToro Prime Minister Inter... NextWork - Cloud S... GitHub - jadugarmj... List of astronomy w... JSLinux All Bookmarks

Search [Alt+S]

IAM > Users > Create user

Step 1 Specify user details

Step 2 Set permissions

Step 3 Review and create

## Specify user details

User details

User name

The user name can have up to 64 characters. Valid characters: A-Z, a-z, 0-9, and + = , . @ \_ - (hyphen)

Provide user access to the AWS Management Console - optional  
If you're providing console access to a person, it's a best practice to manage their access in IAM Identity Center.

If you are creating programmatic access through access keys or service-specific credentials for AWS CodeCommit or Amazon Keypairs, you can generate them after you create this IAM user. [Learn more](#)

Cancel Next

CloudShell Feedback © 2024, Amazon Web Services, Inc. or its affiliates. Privacy Terms Cookie preferences

Search ENG IN 22:38 29-11-2024

## Giving Administrator access

us-east-1.console.aws.amazon.com/iam/home?region=ap-south-1#/users/create

Global NetAcad Inst... star agile NEVER STOP LEARN... eToro Prime Minister Inter... NextWork - Cloud S... GitHub - jadugarmj... List of astronomy w... JSLinux All Bookmarks

Search [Alt+S]

IAM > Users > Create user

Set permissions

Step 3 Review and create

## Permissions options

Add user to group  
Add user to an existing group, or create a new group. We recommend using groups to manage user permissions by job function.

Copy permissions  
Copy all group memberships, attached managed policies, and inline policies from an existing user.

Attach policies directly  
Attach a managed policy directly to a user. As a best practice, we recommend attaching policies to a group instead. Then, add the user to the appropriate group.

## Permissions policies (1/1293)

Choose one or more policies to attach to your new user.

Filter by Type

Policy name	Type	Attached entities
<input type="checkbox"/> AccessAnalyzerServiceRolePol...	AWS managed	0
<input checked="" type="checkbox"/> AdministratorAccess	AWS managed - job function	0
<input type="checkbox"/> AdministratorAccess-Amplify	AWS managed	0
<input type="checkbox"/> AdministratorAccess-AWSElas...	AWS managed	0
<input type="checkbox"/> AlexaForBusinessDeviceSetup	AWS managed	0

Create policy

CloudShell Feedback © 2024, Amazon Web Services, Inc. or its affiliates. Privacy Terms Cookie preferences

Search ENG IN 22:39 29-11-2024

User details

User name	charlie123	Console password type	None
			Require password reset No

Permissions summary

Name	Type	Used as
AdministratorAccess	AWS managed - job function	Permissions policy

Tags - optional

Tags are key-value pairs you can add to AWS resources to help identify, organize, or search for resources. Choose any tags you want to associate with this user.

No tags associated with the resource.

Add new tag

You can add up to 50 more tags.

Cancel Previous Create user

Successfully created the user

User created successfully

You can view and download the user's password and email instructions for signing in to the AWS Management Console.

View user

Users (2) Info

An IAM user is an identity with long-term credentials that is used to interact with AWS in an account.

User name	Path	Group	Last activity	MFA	Password age	Console last sign-in
Charlie123	/	0	-	-	-	-
maya123	/	0	-	-	-	-

CloudShell Feedback Search 74°F Haze ENG IN 29-11-2024

## Step - 2

creating group for the users

The screenshot shows the AWS IAM User Groups page. The left sidebar is titled "Identity and Access Management (IAM)" and includes sections for "User groups", "Users", "Roles", "Policies", "Identity providers", "Account settings", and "Root access management". The main content area is titled "User groups (0) Info" and contains a search bar and a table header with columns for "Group name", "Users", "Permissions", and "Creation time". A message at the top states: "A user group is a collection of IAM users. Use groups to specify permissions for a collection of users." Below the table, it says "No resources to display". On the right, there are "Delete" and "Create group" buttons.

## naming the group name

The screenshot shows the "Create user group" wizard. The first step, "Name the group", is active. It has a "User group name" input field containing "group-1". Below it is a note: "Enter a meaningful name to identify this group." and a character limit note: "Maximum 128 characters. Use alphanumeric and '+@\_-' characters." The left sidebar is identical to the previous screenshot. The bottom navigation bar shows the progress: "CloudShell Feedback Search [Alt+S] Global IAM User groups Create user group Step 1 of 3".

Adding the both the users

Screenshot of the AWS IAM 'Create user group' page.

**Name the group**

**User group name**  
Enter a meaningful name to identify this group.

Maximum 128 characters. Use alphanumeric and '+,-,\_-' characters.

**Add users to the group - Optional (2/2)** Info

An IAM user is an entity that you create in AWS to represent the person or application that uses it to interact with AWS.

User name	Groups	Last activity	Creation time
charlie123	0	None	3 minutes ago
maya123	0	None	Now

**Attach permissions policies - Optional (1002)** Info

You can attach up to 10 policies to this user group. All the users in this group will have permissions that are defined in the selected policies.

[AmazonS3FullAccess](#)

© 2024, Amazon Web Services, Inc. or its affiliates. Privacy Terms Cookie preferences 74°F Haze ENG IN 22:44 29-11-2024

## Giving them S3 Full Access

Screenshot of the AWS IAM 'Create user group' page showing the selection of the 'AmazonS3FullAccess' policy.

**Identity and Access Management (IAM)**

**User groups**

[AmazonS3FullAccess](#)

Provides full access to all buckets via t...

© 2024, Amazon Web Services, Inc. or its affiliates. Privacy Terms Cookie preferences 74°F Haze ENG IN 22:44 29-11-2024

Group - 1 created

The screenshot shows the AWS IAM User groups page. A green success message at the top says "group-1 user group created." Below it, a table lists one user group: "group-1". The table has columns for Group name, Users, Permissions, and Creation time. The "group-1" entry shows 0 users, defined permissions, and was created "Now". The left sidebar shows navigation options like Dashboard, Access management (User groups, Roles, Policies, Identity providers, Account settings, Root access management), and Access reports (Access Analyzer, External access, Unused access, Analyzer settings). The bottom status bar shows system information including the date (29-11-2024) and time (22:44).

## Step - 3

creating a role

The screenshot shows the AWS IAM Roles page. A green success message at the top says "Role created successfully." Below it, a table lists 13 roles. The table has columns for Role name, Trusted entities, and Last activity. The roles listed include "aws-elasticbeanstalk-ec2-role", "aws-elasticbeanstalk-service-role", "AWSRoleForApplicationAutoScaling\_DynamoDBTable", "AWSRoleForAutoScaling", "AWSRoleForElasticLoadBalancing", "AWSRoleForRDS", "AWSRoleForSupport", "AWSRoleForTrustedAdvisor", "demo-lambda-role-9fjw67fd", "Demoec2roleforssm", and "DemoRoleforEC2". The last activity column shows various times from 12 minutes ago to 137 days ago. The left sidebar shows navigation options like Dashboard, Access management (User groups, Roles, Policies, Identity providers, Account settings, Root access management), and Access reports (Access Analyzer, External access, Unused access, Analyzer settings). The bottom status bar shows system information including the date (29-11-2024) and time (22:45).

Selecting the service

Screenshot of the AWS IAM 'Create role' wizard, Step 1: Service or use case.

The 'Service or use case' dropdown is set to 'EC2'. Below it, a list of use cases is shown:

- EC2: Allows EC2 instances to call AWS services on your behalf.
- EC2 Role for AWS Systems Manager: Allows EC2 instances to call AWS services like CloudWatch and Systems Manager on your behalf.
- EC2 Spot Fleet Role: Allows EC2 Spot Fleet to request and terminate Spot Instances on your behalf.
- EC2 - Spot Fleet Auto Scaling: Allows Auto Scaling to access and update EC2 spot fleets on your behalf.
- EC2 - Spot Fleet Tagging: Allows EC2 to launch spot instances and attach tags to the launched instances on your behalf.
- EC2 - Spot Instances: Allows EC2 Spot Instances to launch and manage spot instances on your behalf.
- EC2 - Spot Fleet: Allows EC2 Spot Fleet to launch and manage spot fleet instances on your behalf.
- EC2 - Scheduled Instances: Allows EC2 Scheduled Instances to manage instances on your behalf.

At the bottom right are 'Cancel' and 'Next' buttons.

## Adding permissions

Screenshot of the AWS IAM 'Create role' wizard, Step 2: Add permissions.

The 'Add permissions' step is selected. On the left, a navigation pane shows 'Step 1: Select trusted entity' (disabled), 'Step 2: Add permissions' (selected), and 'Step 3: Name, review, and create'.

The main area is titled 'Add permissions' and shows the 'Permissions policies (1/1002)' section. A search bar contains 'ec2'. A table lists available policies:

Policy name	Type	Description
AmazonEC2ContainerRegistryFullAccess	AWS managed	Provides administrative access to Amazon ECR
AmazonEC2ContainerRegistryPowerUser	AWS managed	Provides full access to Amazon EC2 Container Registry
AmazonEC2ContainerRegistryPullOnly	AWS managed	Provides access to pull images from Amazon ECR
AmazonEC2ContainerRegistryReadOnly	AWS managed	Provides read-only access to Amazon ECR
AmazonEC2ContainerServiceAutoscaleRole	AWS managed	Policy to enable Task Autoscaling for Amazon ECS
AmazonEC2ContainerServiceEventsRole	AWS managed	Policy to enable CloudWatch Events for Amazon ECS
AmazonEC2ContainerServiceforEC2Role	AWS managed	Default policy for the Amazon EC2 Role
AmazonEC2ContainerServiceRole	AWS managed	Default policy for Amazon ECS service
AmazonEC2FullAccess	AWS managed	Provides full access to Amazon EC2 via the AWS Management Console

The 'AmazonEC2FullAccess' policy is selected and highlighted with a blue border. At the bottom right are 'Next Step' and 'Cancel' buttons.

us-east-1.console.aws.amazon.com/iam/home?region=ap-south-1#roles/create?trustedEntityType=AWS\_SERVICE&selectedService=EC2&selectedUseCase=EC2

LoopCV Global NetAcad Inst... star agile NEVER STOP LEARN... eToro Prime Minister Inter... NextWork - Cloud S... GitHub - jadugarmj... List of astronomy w... JSLinux All Bookmarks

aws Search [Alt+S]

IAM > Roles > Create role

		AWS managed	
<input type="checkbox"/>	<a href="#">AmazonEC2ReadonlyAccess</a>	AWS managed	Provides read only access to Amazon EC2
<input type="checkbox"/>	<a href="#">AmazonEC2RoleforAWSCodeDeploy</a>	AWS managed	Provides EC2 access to S3 bucket to do...
<input type="checkbox"/>	<a href="#">AmazonEC2RoleforAWSCodeDeployLimited</a>	AWS managed	Provides EC2 limited access to S3 buck...
<input type="checkbox"/>	<a href="#">AmazonEC2RoleforDataPipelineRole</a>	AWS managed	Default policy for the Amazon EC2 Rol...
<input type="checkbox"/>	<a href="#">AmazonEC2RoleforSSM</a>	AWS managed	This policy will soon be deprecated. Pl...
<input type="checkbox"/>	<a href="#">AmazonEC2RolePolicyForLaunchWizard</a>	AWS managed	Managed policy for the Amazon Launc...
<input type="checkbox"/>	<a href="#">AmazonEC2SpotFleetAutoscaleRole</a>	AWS managed	Policy to enable Autoscaling for Amaz...
<input type="checkbox"/>	<a href="#">AmazonEC2SpotFleetTaggingRole</a>	AWS managed	Allows EC2 Spot Fleet to request, term...
<input type="checkbox"/>	<a href="#">AmazonElasticMapReduceforEC2Role</a>	AWS managed	Default policy for the Amazon Elastic ...
<input type="checkbox"/>	<a href="#">AmazonSSMManagedEC2InstanceDefaultPolicy</a>	AWS managed	This policy enables AWS Systems Man...
<input type="checkbox"/>	<a href="#">AWSApplicationMigrationEC2Access</a>	AWS managed	This policy provides Amazon EC2 oper...

▶ Set permissions boundary - optional

Cancel Previous Next

CloudShell Feedback © 2024, Amazon Web Services, Inc. or its affiliates. Privacy Terms Cookie preferences

Search ENG IN 22:46 29-11-2024

## Naming the role name

us-east-1.console.aws.amazon.com/iam/home?region=ap-south-1#roles/create?trustedEntityType=AWS\_SERVICE&policies=arn...

LoopCV Global NetAcad Inst... star agile NEVER STOP LEARN... eToro Prime Minister Inter... NextWork - Cloud S... GitHub - jadugarmj... List of astronomy w... JSLinux All Bookmarks

aws Search [Alt+S]

IAM > Roles > Create role

Step 1  
Select trusted entity  
Step 2  
Add permissions  
Step 3  
Name, review, and create

### Name, review, and create

**Role details**

**Role name**  
Enter a meaningful name to identify this role.  
  
Maximum 64 characters. Use alphanumeric and '+-\_@-' characters.

**Description**  
Add a short explanation for this role.  
  
Maximum 1000 characters. Use letters (A-Z and a-z), numbers (0-9), tabs, new lines, or any of the following characters: '\_+=,. @~\[\]!#\$%^&\*(){}~`^`'

### Step 1: Select trusted entities

**Trust policy**

```
1+ [
2+   "Version": "2012-10-17",
3+   "Statement": [
4+     {
5+       "Effect": "Allow",
6+       "Action": [
7+         "sts:AssumeRole"
8+       ]
9+     }
10+   ]
11+ ]
```

CloudShell Feedback © 2024, Amazon Web Services, Inc. or its affiliates. Privacy Terms Cookie preferences

Search ENG IN 22:46 29-11-2024

The screenshot shows the 'Create role' wizard in the AWS IAM console. Step 2: Add permissions is displayed. A permissions policy summary table is shown with one item: 'AmazonEC2FullAccess' (AWS managed, Attached as Permissions policy). Step 3: Add tags is also visible, showing an optional tags section with a 'Add new tag' button and a note about adding up to 50 more tags. Navigation buttons at the bottom include 'Cancel', 'Previous', and 'Create role'.

Policy name	Type	Attached as
<a href="#">AmazonEC2FullAccess</a>	AWS managed	Permissions policy

The screenshot shows the Windows taskbar with various pinned icons, including the AWS CloudShell icon. The system tray shows the date as 29-11-2024 and the time as 22:46. The status bar at the bottom indicates the location as 'us-east-1.console.aws.amazon.com'.

## Successfully created role with permissions

The screenshot shows the 'Roles' page in the AWS IAM console. A green success message at the top says 'Role role-1 created.' The main table lists 14 roles, including 'role-1'. The table columns are 'Role name', 'Trusted entities', and 'Last activity'. Role 'role-1' is listed under 'AWS Service: ec2' and was last active 92 days ago. Other roles listed include 'AWSServiceRoleForTrustedAdvisor', 'demo-lambda-role-9fjw67fd', 'Demoec2roleforssm', 'DemoRoleforEC2', 'rds-monitoring-role', and 's3crrole\_for\_s3-chandu-bucket-origin-v2'. A 'Roles Anywhere' section at the bottom allows non-AWS workloads to access AWS services.

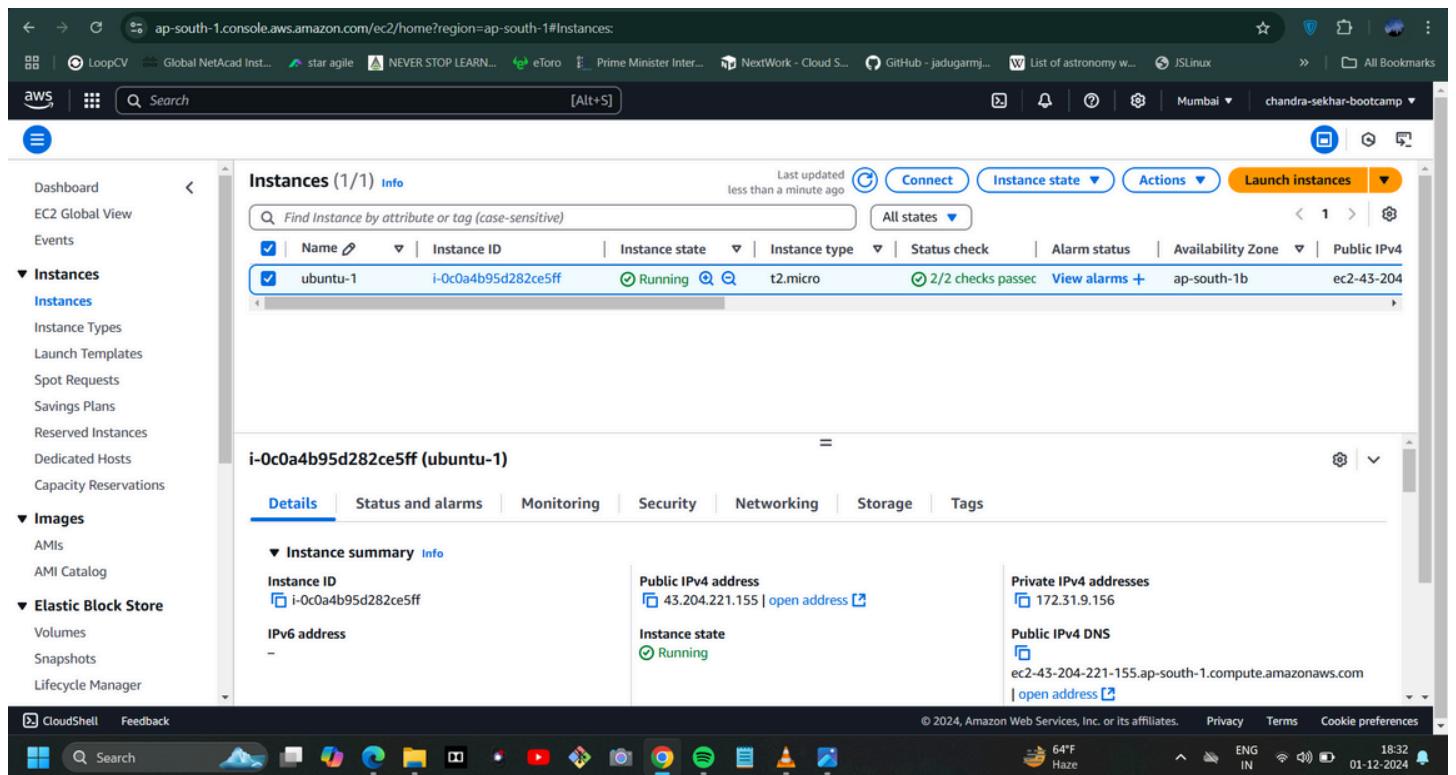
Role name	Trusted entities	Last activity
<a href="#">AWSServiceRoleForTrustedAdvisor</a>	AWS Service: trustedadvisor (Service)	-
<a href="#">demo-lambda-role-9fjw67fd</a>	AWS Service: lambda	86 days ago
<a href="#">Demoec2roleforssm</a>	AWS Service: ec2	87 days ago
<a href="#">DemoRoleforEC2</a>	AWS Service: ec2	137 days ago
<a href="#">rds-monitoring-role</a>	AWS Service: monitoring.rds	11 minutes ago
<a href="#">role-1</a>	AWS Service: ec2	-
<a href="#">s3crrole_for_s3-chandu-bucket-origin-v2</a>	AWS Service: s3	92 days ago

## L3 -

# Launch AWS EC2 Ubuntu Instance and configure the Security Group - Inbound Rule: 8080. Justify the usage of Inbound Rules.

### Step - 1

Launching the ec2 ubuntu server



The screenshot shows the AWS EC2 Instances page. On the left, there's a navigation sidebar with options like Dashboard, EC2 Global View, Events, Instances (selected), Images, and Elastic Block Store. The main area displays a table titled 'Instances (1/1)'. A single row is selected for an instance named 'ubuntu-1' with the ID 'i-0c0a4b95d282ce5ff'. The instance is listed as 'Running' with an 't2.micro' instance type, 2/2 checks passed, and located in 'ap-south-1b' availability zone. Below the table, a detailed view for 'i-0c0a4b95d282ce5ff (ubuntu-1)' is shown under the 'Details' tab. It includes sections for Instance summary, Public IPv4 address (43.204.221.155), Private IPv4 addresses (172.31.9.156), and Public IPv4 DNS (ec2-43-204-221-155.ap-south-1.compute.amazonaws.com). The bottom of the screen shows the Windows taskbar with various icons and system status.

Navigate to security group and select inbound rule.

The screenshot shows the AWS EC2 Instances page for an instance with ID i-0c0a4b95d282ce5ff. The security group sg-0900ed8334a969ead (default) is selected. The Inbound rules table shows one rule: sgr-01ed043327d8beb60, which allows all traffic from 0.0.0.0/0. The Outbound rules table shows one rule: sgr-08ee22c6926de5375, which also allows all traffic to 0.0.0.0/0. The Owner ID is listed as 381491876785.

## select edit inbound rule

The screenshot shows the AWS Security Groups page for the default security group sg-0900ed8334a969ead. The Details section shows the security group name (default), owner (381491876785), security group ID (sg-0900ed8334a969ead), description (default VPC security group), and VPC ID (vpc-0201c8b72dd3f8f29). The Inbound rules tab is selected, showing one rule: sgr-01ed043327d8beb60, which allows all traffic from 0.0.0.0/0. The Outbound rules tab is also present.

writing the port number 8080(Tomcat) and giving access to everyone having ec2 public ip address.

**Edit inbound rules** Info

Inbound rules control the incoming traffic that's allowed to reach the instance.

Security group rule ID	Type	Protocol	Port range	Source	Description - optional
sgr-01ed043327d8beb60	SSH	TCP	22	Any... ▾	0.0.0.0/0
-	Custom TCP	TCP	8080	Any... ▾	tomcat access

**Add rule** Info

**Cancel** **Preview changes** **Save rules**



successfully configured inbound rules.

**Inbound security group rules successfully modified on security group (sg-0900ed8334a969ead | default)**

**sg-0900ed8334a969ead - default**

**Details**

Security group name	Security group ID	Description	VPC ID
default	sg-0900ed8334a969ead	default VPC security group	vpc-0201c8b72dd3f8f29
Owner	381491876785	Inbound rules count	Outbound rules count
	2 Permission entries	1 Permission entry	

**Inbound rules** **Outbound rules** **Sharing - new** **VPC associations - new** **Tags**

**Inbound rules (2)**

Name	Security group rule ID	IP version	Type	Protocol	Port range
sgr-01ed043327d8beb60	ID#1	IPv4	SSH	TCP	22
-					

## Usage of Inbound rules:

1. Inbound rules control incoming traffic to an EC2 instance by specifying allowed protocols, IP ranges, and port numbers.

2.Inbound rules enable configuring access to specific port numbers (e.g., 22 for SSH, 80 for HTTP) on an EC2 instance.

## L4 -

# Connect to the AWS EC2 Ubuntu Instance and Update default packages, install JDK, Maven, Git, and validate the versions.

## Step - 1

Navigate to Ubuntu Instance and select connect option.

The screenshot shows the AWS EC2 Instances page. On the left, there's a navigation sidebar with sections like Dashboard, EC2 Global View, Events, Instances (selected), Instance Types, Launch Templates, Spot Requests, Savings Plans, Reserved Instances, Dedicated Hosts, Capacity Reservations, Images (AMIs, AMI Catalog), and Elastic Block Store (Volumes, Snapshots, Lifecycle Manager). The main content area displays a table titled "Instances (1/1) Info". The table has columns for Name, Instance ID, Instance state, Instance type, Status check, Alarm status, Availability Zone, and Public IPv4. One row is selected for "ubuntu-1" with the instance ID "i-0c0a4b95d282ce5ff". The instance is shown as "Running" (green circle), type "t2.micro", and has 2/2 checks passed. It's located in the "ap-south-1" availability zone and has a public IP "43.204.221.155". Below the table, a detailed view for "i-0c0a4b95d282ce5ff (ubuntu-1)" is shown with tabs for Details, Status and alarms, Monitoring, Security, Networking, Storage, and Tags. Under the Details tab, the "Instance summary" section shows the Instance ID "i-0c0a4b95d282ce5ff", an empty "IPv6 address" field, and the "Public IPv4 address" "43.204.221.155". The "Instance state" is listed as "Running". To the right, there are sections for "Private IPv4 addresses" (172.31.9.156), "Public IPv4 DNS" ("ec2-43-204-221-155.ap-south-1.compute.amazonaws.com"), and a link to "open address". At the bottom of the page, there's a footer with links to CloudShell, Feedback, and various AWS services, along with system information like the date (01-12-2024), time (17:37), and location (ENG IN).

connect the server

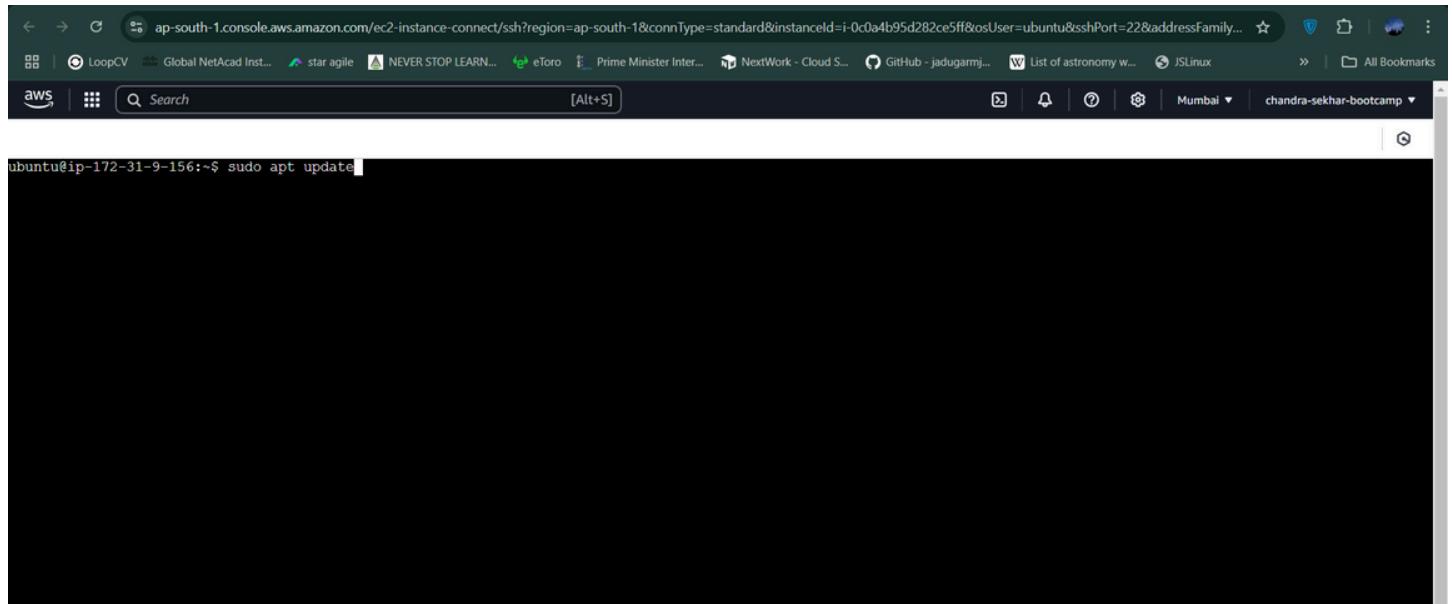
The screenshot shows the AWS EC2 Instance Connect interface. At the top, the instance ID is listed as i-0c0a4b95d282ce5ff (ubuntu-1). Below it, the 'Connection Type' section has two options: 'Connect using EC2 Instance Connect' (selected) and 'Connect using EC2 Instance Connect Endpoint'. Under 'Public IPv4 address', the IP 43.204.221.155 is shown. A note at the bottom states: 'Note: In most cases, the default username, ubuntu, is correct. However, read your AMI usage instructions to check if the AMI owner has changed the default AMI username.' On the right, there are 'Cancel' and 'Connect' buttons.

The screenshot shows the AWS CloudShell interface. The title bar indicates the session is connected to an Ubuntu instance. The main area displays system information: 'System information as of Sun Dec 1 12:08:06 UTC 2024'. It includes details like system load (0.0), memory usage (26%), swap usage (0%), and network information (IPv4 address 172.31.9.156). A note about Ubuntu Pro security features is present. The terminal ends with a prompt: 'ubuntu@ip-172-31-9-156:~\$'.

Ubuntu Instance successfully created.

The screenshot shows the AWS CloudShell interface. The title bar indicates the session is connected to an Ubuntu instance. The main area displays the output of the 'sudo apt update' command. It shows 34 updates available and provides instructions for applying them. The terminal ends with a prompt: 'ubuntu@ip-172-31-9-156:~\$'.

Enter the command "sudo apt update" to update the existing packages.



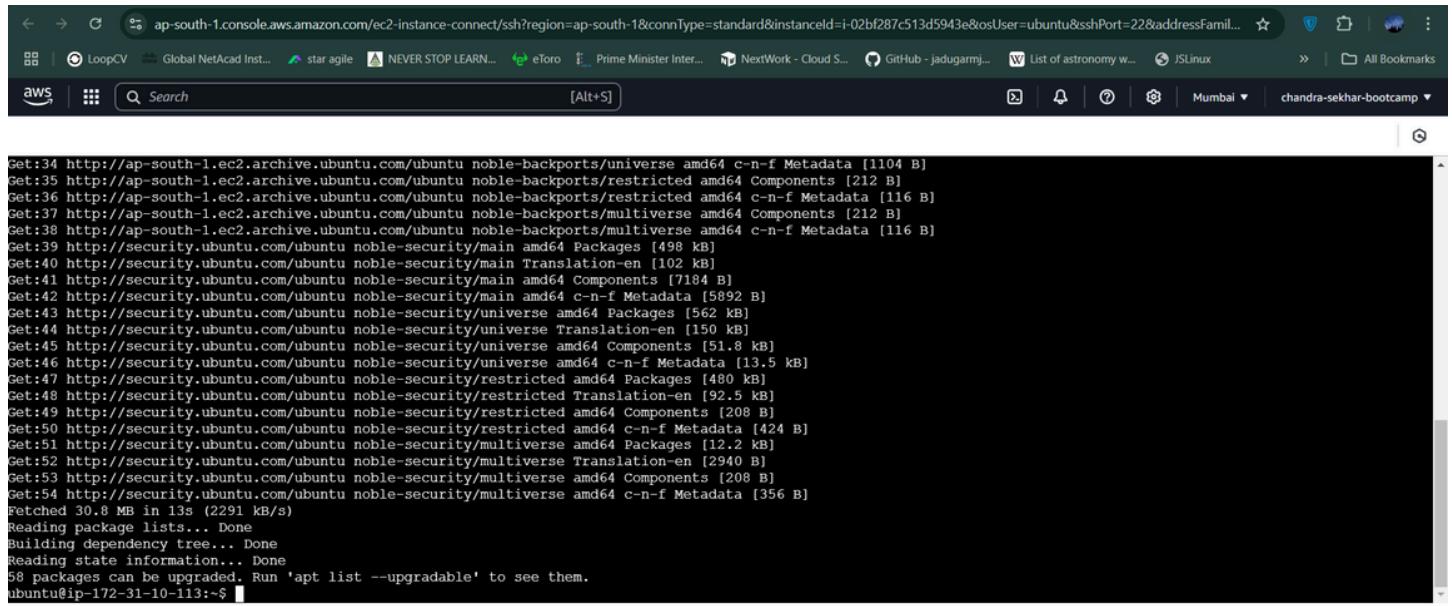
```
ubuntu@ip-172-31-9-156:~$ sudo apt update
```

i-0c0a4b95d282ce5ff (ubuntu-1)

Public IPs: 43.204.221.155 Private IPs: 172.31.9.155



Successfully updated all the existing packages.



```
Get:34 http://ap-south-1.ec2.archive.ubuntu.com/ubuntu noble-backports/universe amd64 c-n-f Metadata [1104 B]
Get:35 http://ap-south-1.ec2.archive.ubuntu.com/ubuntu noble-backports/restricted amd64 Components [212 B]
Get:36 http://ap-south-1.ec2.archive.ubuntu.com/ubuntu noble-backports/restricted amd64 c-n-f Metadata [116 B]
Get:37 http://ap-south-1.ec2.archive.ubuntu.com/ubuntu noble-backports/multiverse amd64 Components [212 B]
Get:38 http://ap-south-1.ec2.archive.ubuntu.com/ubuntu noble-backports/multiverse amd64 c-n-f Metadata [116 B]
Get:39 http://security.ubuntu.com/ubuntu noble-security/main amd64 Packages [498 kB]
Get:40 http://security.ubuntu.com/ubuntu noble-security/main Translation-en [102 kB]
Get:41 http://security.ubuntu.com/ubuntu noble-security/main amd64 Components [7184 B]
Get:42 http://security.ubuntu.com/ubuntu noble-security/main amd64 c-n-f Metadata [5892 B]
Get:43 http://security.ubuntu.com/ubuntu noble-security/universe amd64 Packages [562 kB]
Get:44 http://security.ubuntu.com/ubuntu noble-security/universe Translation-en [150 kB]
Get:45 http://security.ubuntu.com/ubuntu noble-security/universe amd64 Components [51.8 kB]
Get:46 http://security.ubuntu.com/ubuntu noble-security/universe amd64 c-n-f Metadata [13.5 kB]
Get:47 http://security.ubuntu.com/ubuntu noble-security/restricted amd64 Packages [480 kB]
Get:48 http://security.ubuntu.com/ubuntu noble-security/restricted Translation-en [92.5 kB]
Get:49 http://security.ubuntu.com/ubuntu noble-security/restricted amd64 Components [208 B]
Get:50 http://security.ubuntu.com/ubuntu noble-security/restricted amd64 c-n-f Metadata [424 B]
Get:51 http://security.ubuntu.com/ubuntu noble-security/multiverse amd64 Packages [12.2 kB]
Get:52 http://security.ubuntu.com/ubuntu noble-security/multiverse Translation-en [2940 B]
Get:53 http://security.ubuntu.com/ubuntu noble-security/multiverse amd64 Components [208 B]
Get:54 http://security.ubuntu.com/ubuntu noble-security/multiverse amd64 c-n-f Metadata [356 B]
Fetched 30.8 MB in 13s (2291 kB/s)
Reading package lists... Done
Building dependency tree... Done
Reading state information... Done
58 packages can be upgraded. Run 'apt list --upgradable' to see them.
ubuntu@ip-172-31-10-113:~$
```

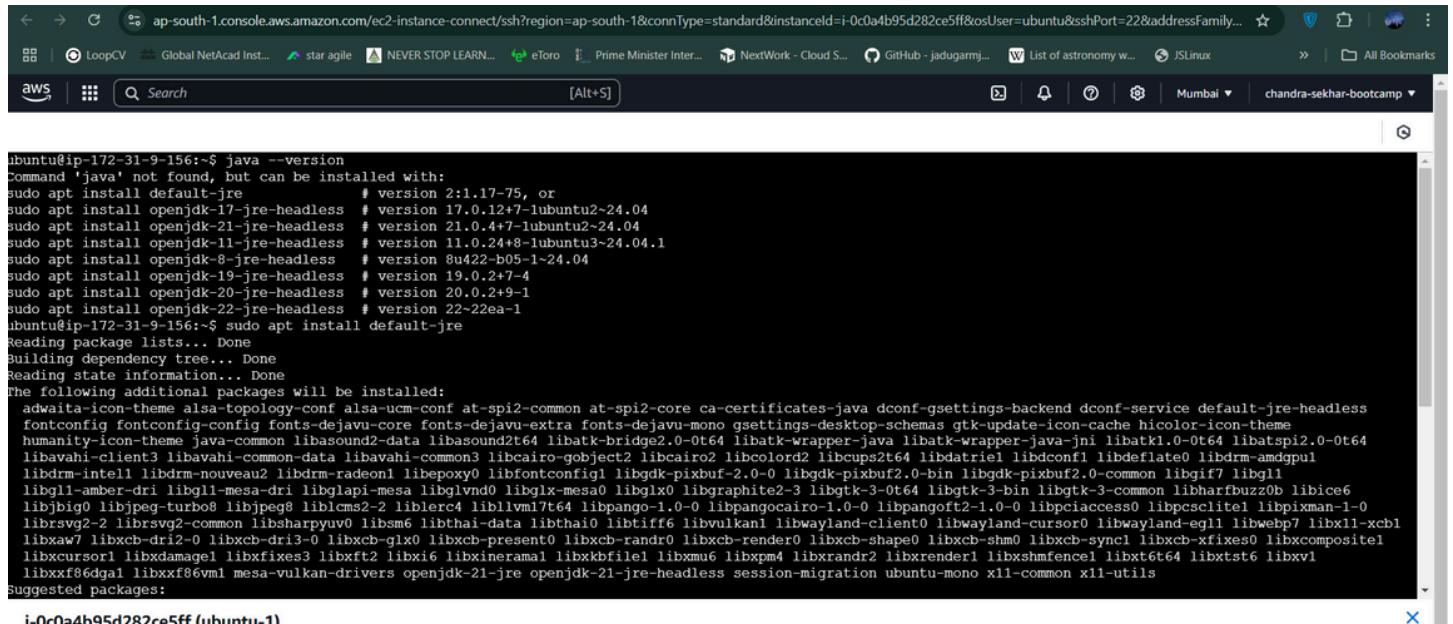
i-02bf287c513d5943e (hi-1)

Public IPs: 65.257.170 Private IPs: 172.31.10.113



## Step - 2

Installing java JDK by entering command “ sudo apt install default-jre”



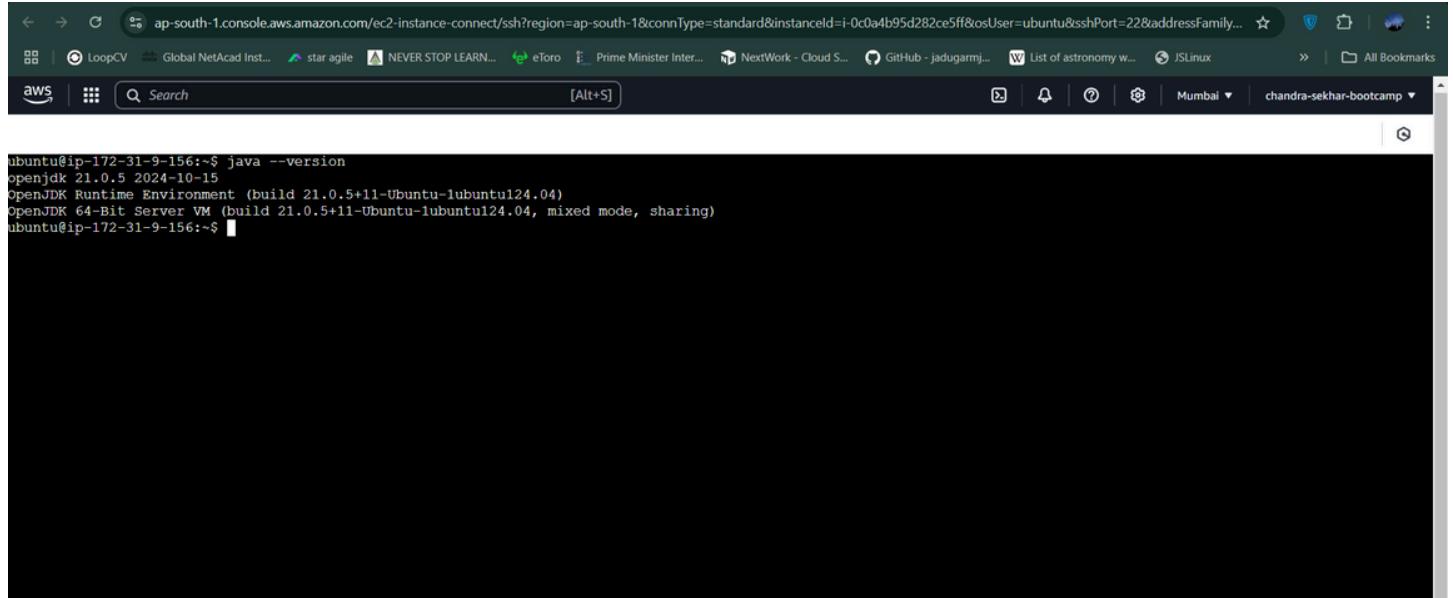
```
ubuntu@ip-172-31-9-156:~$ java --version
Command 'java' not found, but can be installed with:
sudo apt install default-jre          # version 2:1.17-75, or
sudo apt install openjdk-17-jre-headless # version 17.0.12+7-lubuntu2-24.04
sudo apt install openjdk-21-jre-headless # version 21.0.4+7-lubuntu2-24.04
sudo apt install openjdk-11-jre-headless # version 11.0.24+8-lubuntu3-24.04
sudo apt install openjdk-8-jre-headless # version 8u422-b05-1~24.04
sudo apt install openjdk-19-jre-headless # version 19.0.2+7-4
sudo apt install openjdk-20-jre-headless # version 20.0.2+9-1
sudo apt install openjdk-22-jre-headless # version 22+22ea-1
ubuntu@ip-172-31-9-156:~$ sudo apt install default-jre
Reading package lists... Done
Building dependency tree... Done
Reading state information... Done
The following additional packages will be installed:
  aqua-icon-theme alsa-topology-conf alsa-ucm-conf at-spi2-common at-spi2-core ca-certificates-java dconf-gsettings-backend dconf-service default-jre-headless
  fontconfig fontconfig-config fonts-dejavu-core fonts-dejavu-extra fonts-dejavu-mono gsettings-desktop-schemas gtk-update-icon-cache hicolor-icon-theme
  humanity-icon-theme java-common libasound2-data libasound2t64 libatk-bridge2.0-0t64 libatk-wrapper-java-jni libatk1.0-0t64 libatkpi2.0-0t64
  libavahi-client3 libavahi-common-data libavahi-common3 libcairo-gobject2 libcairo2 libcolor2 libcups2t64 libdatriel libdeflate0 libdrm-amdgpu
  libdrm-intel libdrm-nouveau2 libdrm-radeon1 libexpat0 libfontconfig1 libgbp-pixbuf2.0-0 libgbp-pixbuf2.0-bin libgbp-pixbuf2.0-common libgif7 libgl1
  libgl1-amber-dri libgl1-mesa-dri libglapi-mesa libglvnd0 libglx-mesa0 libglx0 libgraphite2-3 libgtk-3-0t64 libgtk-3-bin libgtk-3-common libharfbuzz0b libice6
  libjbig0 libjpeg-turbo0 libjpeg8 liblcms2-2 liblirc4 liblxml1t64 libpango-1.0-0 libpangocairo-1.0-0 libpangofft2-1.0-0 libpciaccess0 libpcselite1 libpixman-1-0
  librsvg2-2 librsvg2-common libsharpuyu0 libsm libthai-data libthai0 libtiff6 libvlk0 libwayland-client0 libwayland-cursor0 libwayland-egl1 libwebp7 libx11-xcb1
  libxaw7 libxcb-dr1-0 libxcb-dr3-0 libxcb-glx0 libxcb-present0 libxcb-randr0 libxcb-render0 libxcb-shape0 libxcb-shm0 libxcb-sync1 libxcb-xfixes0 libxcompositel
  libxcursor1 libxdamage1 libxfixed3 libxft2 libxi6 libxinerama1 libxkbfile1 libxmu6 libxpm4 libxrandr2 libxrender1 libxshmfence1 libxt6t64 libxtst6 libxv1
  libxxf86gal libxxf86vml mesa-vulkan-drivers openjdk-21-jre openjdk-21-jre-headless session-migration ubuntu-mono x11-common x11-utils
Suggested packages:
```

#### i-0c0a4b95d282ce5ff (ubuntu-1)

Public IPs: 43.204.221.155 Private IPs: 172.31.9.156



Successfully installed java JDK. entering the command to verify the version "java --version"



```
ubuntu@ip-172-31-9-156:~$ java --version
openjdk 21.0.5 2024-10-15
OpenJDK Runtime Environment (build 21.0.5+11-Ubuntu-1ubuntu124.04)
OpenJDK 64-Bit Server VM (build 21.0.5+11-Ubuntu-1ubuntu124.04, mixed mode, sharing)
ubuntu@ip-172-31-9-156:~$
```

#### i-0c0a4b95d282ce5ff (ubuntu-1)

Public IPs: 43.204.221.155 Private IPs: 172.31.9.156



## Step - 3

Installing Maven by enetrting the command "sudo install maven -y"

```
ubuntu@ip-172-31-9-156:~$ sudo apt update
Hit:1 http://ap-south-1.ec2.archive.ubuntu.com/ubuntu noble InRelease
Hit:2 http://ap-south-1.ec2.archive.ubuntu.com/ubuntu noble-updates InRelease
Hit:3 http://ap-south-1.ec2.archive.ubuntu.com/ubuntu noble-backports InRelease
Hit:4 http://security.ubuntu.com/ubuntu noble-security InRelease
Reading package lists... Done
Building dependency tree... Done
Reading state information... Done
28 packages can be upgraded. Run 'apt list --upgradable' to see them.
ubuntu@ip-172-31-9-156:~$ sudo apt install maven -y
Reading package lists... Done
Building dependency tree... Done
Reading state information... Done
The following additional packages will be installed:
 libbaopalliance-java libapache-pom-java libatinject-jsr330-api-java libcdi-api-java libcommons-cli-java libcommons-io-java libcommons-lang3-java
 libcommons-parent-java liberror-prone-java libgeronimo-annotation-1.3-spec-java libgeronimo-interceptor-3.0-spec-java libguava-java libguice-java libjansi-java
 libjsr305-java libmaven-parent-java libmaven-resolver-java libmaven-shared-utils-java libmaven3-core-java libplexus-cipher-java libplexus-classworlds-java
 libplexus-component-annotations-java libplexus-interpolation-java libplexus-sec-dispatcher-java libplexus-utils2-java libsisu-inject-java libsisu-plexus-java
 libslf4j-java libwagon-file-java libwagon-http-shaded-java libwagon-provider-api-java
Suggested packages:
 libatinject-jsr330-api-java-doc libel-api-java libcommons-io-java-doc libasm-java libcglib-java libjsr305-java-doc libmaven-shared-utils-java-doc liblogback-java
 libplexus-utils2-java-doc junit4 testng libcommons-logging-java liblog4j1.2-java
The following NEW packages will be installed:
 libbaopalliance-java libapache-pom-java libatinject-jsr330-api-java libcdi-api-java libcommons-cli-java libcommons-io-java libcommons-lang3-java
 libcommons-parent-java liberror-prone-java libgeronimo-annotation-1.3-spec-java libgeronimo-interceptor-3.0-spec-java libguava-java libguice-java libjansi-java
 libjsr305-java libmaven-parent-java libmaven-resolver-java libmaven-shared-utils-java libmaven3-core-java libplexus-cipher-java libplexus-classworlds-java
 libplexus-component-annotations-java libplexus-interpolation-java libplexus-sec-dispatcher-java libplexus-utils2-java libsisu-inject-java libsisu-plexus-java
i-0c0a4b95d282ce5ff (ubuntu-1)
Public IPs: 43.204.221.155 Private IPs: 172.31.9.156
```

Successfully installed maven. entering the command to verify the version “mvn -version”

```
Pending kernel upgrade!
Running kernel version:
  6.8.0-1016-aws
Diagnostics:
  The currently running kernel version is not the expected kernel version 6.8.0-1019-aws.

Restarting the system to load the new kernel will not be handled automatically, so you should consider rebooting.

Restarting services...

Service restarts being deferred:
  systemctl restart networkd-dispatcher.service
  systemctl restart unattended-upgrades.service

No containers need to be restarted.

No user sessions are running outdated binaries.

No VM guests are running outdated hypervisor (qemu) binaries on this host.
ubuntu@ip-172-31-9-156:~$ mvn -version
Apache Maven 3.8.7
Maven home: /usr/share/maven
Java version: 21.0.5, vendor: Ubuntu, runtime: /usr/lib/jvm/java-21-openjdk-amd64
Default locale: en, platform encoding: UTF-8
OS name: "linux", version: "6.8.0-1016-aws", arch: "amd64", family: "unix"
ubuntu@ip-172-31-9-156:~$
```

```
i-0c0a4b95d282ce5ff (ubuntu-1)
Public IPs: 43.204.221.155 Private IPs: 172.31.9.156
```

## Step - 4

Installing git by entering command “sudo apt install git-all”

ubuntu@ip-172-31-9-156:~\$ sudo apt install git-all

i-0c0a4b95d282ce5ff (ubuntu-1)

Public IPs: 43.204.221.155 Private IPs: 172.31.9.156

libsub-quote-perl libsvn-perl libsvnl libtimage-perl libtk8.6 libtry-tiny-perl libtypes-serialiser-perl liburi-perl libutf8proc3 libvariable-magic-perl libwww-perl libwww-robotrules-perl libxssl libxstring-perl libyaml-libyaml-perl libyaml-perl perl-openssl-defaults ssl-cert tk tk8.6

Suggested packages:

apache2-doc apache2-suexec-pristine www-browser mksh rcs git-daemon-run | git-daemon-sysvinit aspell meld mediawiki subversion libgssapi-perl libmldb-perl libnet-daemon-perl libsql-statement-perl libio-compress-brotli-perl libcrypt-ssleay-perl libscalar-number-perl libtest-fatal-perl libbusiness-isbn-perl libregexp-ipv6-perl libauthen-ntlm-perl libyaml-shell-perl debhelper

The following NEW packages will be installed:

apache2 apache2-bin apache2-data apache2-utils cvs cvsps git-all git-cvs git-doc git-email git-gui git-mediawiki git-svn gitk gitweb libalgorithm-c3-perl libapr1t64 libaprutil1-db-sqlite3 libaprutil1-lap libaprutil1-lap libauthen-sasl-perl libb-hooks-endofscope-perl libb-hooks-op-check-perl libcgi-fast-perl libcgi-pm-perl libclass-c3-perl libclass-c3-xs-perl libclass-data-inheritable-perl libclass-inspector-perl libclass-method-modifiers-perl libclass-singleton-perl libclass-xaccessor-perl libclone-perl libcommon-sense-perl libdata-dump-perl libdata-optlist-perl libdate-perl libdatetime-format-builder-perl libdatetime-format-iso8601-perl libdatetime-format-strptime-perl libdatetime-local-perl libdatetime-timezone-perl libdbd-sqlite3-perl libdbi-perl libdevel-callchecker-perl libdevel-caller-perl libdevel-lexalias-perl libdevel-stacktrace-perl libdigest-bubblebabble-perl libdigest-hmac-perl libdynaloader-functions-perl libemail-valid-perl libencode-local-perl libeval-closure-perl libexception-class-perl libfcgi-bin libfcgi-perl libfcgi0t64 libfile-listing-perl libfile-sharedir-perl libfont-afm-perl libhtml-form-perl libhtml-format-perl libhtml-parser-perl libhtml-tagset-perl libhtml-tree-perl libhttp-cookies-perl libhttp-daemon-perl libhttp-date-perl libhttp-message-perl libhttp-negotiate-perl libidn12 libio-html-perl libio-socket-ssl-perl libjson-perl libjson-xs-perl liblua5.4-0 liblwp-mediatypes-perl liblwp-protocol-https-perl libmailtools-perl libmediawiki-api-perl libmodule-implementation-perl libmodule-runtime-perl libmro-compat-perl libnamespace-autoclean-perl libnamespace-clean-perl libnet-dns-perl libnet-dns-sec-perl libnet-domain-tld-perl libnet-http-perl libnet-libidn-perl libnet-smtp-ssl-perl libnet-ssleay-perl libpackage-stash-perl libpackage-stash-xs-perl libpadwalker-perl libparams-classify-perl libparams-util-perl libparams-validate-perl libparams-validationcompiler-perl libper14-corelibs-perl libreadonly-perl libref-util-perl libref-util-xs-perl librole-tiny-perl libserf-1-1 libspecio-perl libsub-exporter-perl libsub-exporter-progressive-perl libsub-identify-perl libsub-install-perl libsub-name-perl libsub-quote-perl libsvn-perl libsvnl libtimage-perl libtk8.6 libtry-tiny-perl libtypes-serialiser-perl liburi-perl libutf8proc3 libvariable-magic-perl libwww-perl libwww-robotrules-perl libxssl libxstring-perl libyaml-libyaml-perl libyaml-perl perl-openssl-defaults ssl-cert tk tk8.6

0 upgraded, 132 newly installed, 0 to remove and 28 not upgraded.

Need to get 17.5 MB of archives.

After this operation, 92.0 MB of additional disk space will be used.

Do you want to continue? [Y/n] y

i-0c0a4b95d282ce5ff (ubuntu-1)

Public IPs: 43.204.221.155 Private IPs: 172.31.9.156

https://ap-south-1.console.aws.amazon.com/console/home?region=ap-south-1

successfully installed git. now to check version enter “ git -version”

← → ⌘ ap-south-1.console.aws.amazon.com/ec2-instance-connect/ssh?region=ap-south-1&connType=standard&instanceId=i-0c0a4b95d282ce5ff&osUser=ubuntu&sshPort=22&addressFamily... ☆ 🔍 🌐 🌐 🌐

LoopCV Global NetAcad Inst... star agile NEVER STOP LEARN... eToro Prime Minister Inter... NextWork - Cloud S... GitHub - Jadugarmi... List of astronomy w... JSLinux

aws Search [Alt+S]

Processing triggers for man-db (2.12.0-4build2) ...  
Scanning processes...  
Scanning candidates...  
Scanning linux images...  
  
Pending kernel upgrade!  
Running kernel version:  
  6.8.0-1016-aws  
Diagnostics:  
  The currently running kernel version is not the expected kernel version 6.8.0-1019-aws.  
  
Restarting the system to load the new kernel will not be handled automatically, so you should consider rebooting.  
  
Restarting services...  
  
Service restarts being deferred:  
  systemctl restart networkd-dispatcher.service  
  systemctl restart unattended-upgrades.service  
  
No containers need to be restarted.  
  
No user sessions are running outdated binaries.  
  
No VM guests are running outdated hypervisor (qemu) binaries on this host.  
ubuntu@ip-172-31-9-156:~\$ git --version  
git version 2.43.0  
ubuntu@ip-172-31-9-156:~\$ █

i-0c0a4b95d282ce5ff (ubuntu-1)  
PublicIPs: 43.204.221.155 PrivateIPs: 172.31.9.156

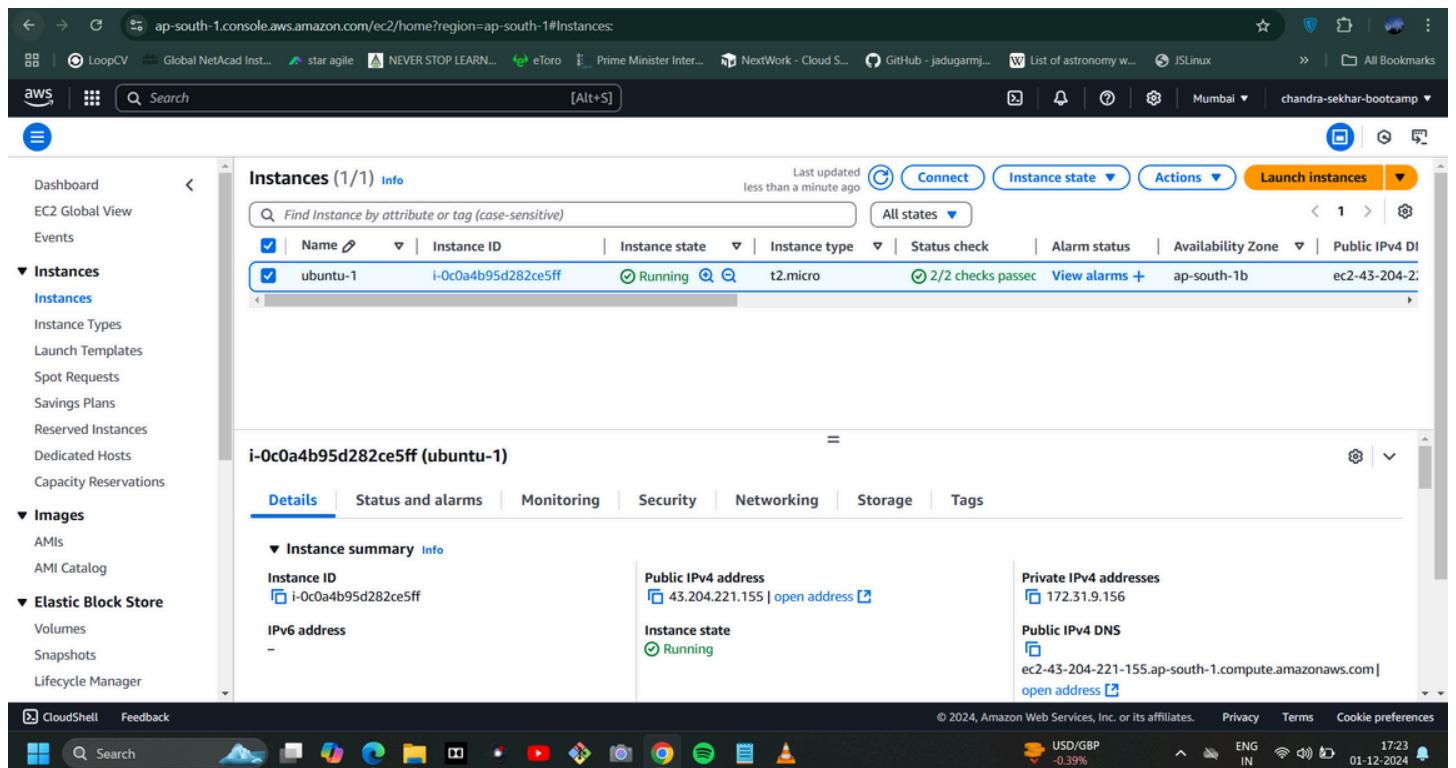


## L5 -

# Install Tomcat web application server in AWS EC2 Ubuntu Instance and access Tomcat using a web browser.

## Step - 1

Launch and connect the ubuntu instance.



The screenshot shows the AWS Management Console interface for the EC2 service. The left sidebar contains navigation links for Dashboard, EC2 Global View, Events, Instances (selected), Instance Types, Launch Templates, Spot Requests, Savings Plans, Reserved Instances, Dedicated Hosts, Capacity Reservations, Images (AMIs), and Elastic Block Store (Volumes, Snapshots, Lifecycle Manager). The main content area displays the 'Instances (1/1) Info' table with one row for 'ubuntu-1'. The table columns include Name, Instance ID, Instance state, Instance type, Status check, Alarm status, Availability Zone, and Public IPv4 DNS. The instance details page for 'i-0c0a4b95d282ce5ff (ubuntu-1)' is shown below, with tabs for Details, Status and alarms, Monitoring, Security, Networking, Storage, and Tags. The 'Details' tab is selected, showing the Instance summary with fields for Instance ID (i-0c0a4b95d282ce5ff), IPv6 address (empty), Public IPv4 address (43.204.221.155), Instance state (Running), Private IPv4 addresses (172.31.9.156), and Public IPv4 DNS (ec2-43-204-221-155.ap-south-1.compute.amazonaws.com).

The screenshot shows the AWS EC2 Instance Connect interface. At the top, the instance ID is listed as i-0c0a4b95d282ce5ff (ubuntu-1). Below it, the "Connection Type" section offers two options: "Connect using EC2 Instance Connect" (selected) and "Public IPv4 address". The "Public IPv4 address" field contains 43.204.221.155. A note below the address states: "Note: In most cases, the default username, ubuntu, is correct. However, read your AMI usage instructions to check if the AMI owner has changed the default AMI username." At the bottom right are "Cancel" and "Connect" buttons.

This screenshot shows the AWS CloudShell interface. The top navigation bar includes links like CloudShell and Feedback. The system status bar at the bottom right shows the date (01-12-2024), time (17:23), and currency exchange rates (USD/GBP -0.39%, ENG IN).

The screenshot shows the AWS CloudShell terminal window. It displays system information as of Sun Dec 1 11:54:11 UTC 2024, including:

```
System load: 0.0      Processes:          104
Usage of /: 32.4% of 6.71GB  Users logged in:    0
Memory usage: 26%          IPv4 address for enX0: 172.31.9.156
Swap usage:  0%            
```

\* Ubuntu Pro delivers the most comprehensive open source security and compliance features.  
https://ubuntu.com/aws/pro

Expanded Security Maintenance for Applications is not enabled.

34 updates can be applied immediately.  
To see these additional updates run: apt list --upgradable

Enable ESM Apps to receive additional future security updates.  
See https://ubuntu.com/esm or run: sudo pro status

\*\*\* System restart required \*\*\*  
Last login: Fri Nov 29 18:57:04 2024 from 13.233.177.3  
To run a command as administrator (user "root"), use "sudo <command>".  
See "man sudo\_root" for details.

ubuntu@ip-172-31-9-156:~\$

i-0c0a4b95d282ce5ff (ubuntu-1)  
PublicIPs: 43.204.221.155 PrivateIPs: 172.31.9.156

This screenshot shows the AWS CloudShell interface, identical to the one above, with the same AWS taskbar and system status bar.

To download enter command “wget url of the file”

```
ubuntu@ip-172-31-9-156:~$ wget https://dlcdn.apache.org/tomcat/tomcat-9/v9.0.97/bin/apache-tomcat-9.0.97.tar.gz
```

i-0c0a4b95d282ce5ff (ubuntu-1)

Public IPs: 43.204.221.155 Private IPs: 172.31.9.156



we can see the apache tar zip file after enterinf "ls" command.

```
ubuntu@ip-172-31-9-156:~$ wget https://dlcdn.apache.org/tomcat/tomcat-9/v9.0.97/bin/apache-tomcat-9.0.97.tar.gz
--2024-12-01 11:57:23-- https://dlcdn.apache.org/tomcat/tomcat-9/v9.0.97/bin/apache-tomcat-9.0.97.tar.gz
Resolving dlcdn.apache.org (dlcdn.apache.org)... 151.101.2.132, 2a04:4e42::644
Connecting to dlcdn.apache.org (dlcdn.apache.org)|151.101.2.132|:443... connected.
HTTP request sent, awaiting response... 200 OK
Length: 12749071 (12M) [application/x-gzip]
Saving to: 'apache-tomcat-9.0.97.tar.gz'

apache-tomcat-9.0.97.tar.gz          100%[=====] 12.16M  17.0MB/s  in 0.7s
2024-12-01 11:57:24 (17.0 MB/s) - 'apache-tomcat-9.0.97.tar.gz' saved [12749071/12749071]

ubuntu@ip-172-31-9-156:~$ ls
apache-tomcat-9.0.97.tar.gz
ubuntu@ip-172-31-9-156:~$
```

i-0c0a4b95d282ce5ff (ubuntu-1)

Public IPs: 43.204.221.155 Private IPs: 172.31.9.156



To unzip the tar file enter command "tar -xvzf tomcat-9.0.097.tar.gz"

```
ubuntu@ip-172-31-9-156:~$ wget https://dlcdn.apache.org/tomcat/tomcat-9/v9.0.97/bin/apache-tomcat-9.0.97.tar.gz
--2024-12-01 11:57:23-- https://dlcdn.apache.org/tomcat/tomcat-9/v9.0.97/bin/apache-tomcat-9.0.97.tar.gz
Resolving dlcdn.apache.org (dlcdn.apache.org)... 151.101.2.132, 2a04:4e42::644
Connecting to dlcdn.apache.org (dlcdn.apache.org)|151.101.2.132|:443... connected.
HTTP request sent, awaiting response... 200 OK
Length: 12749071 (12M) [application/x-gzip]
Saving to: 'apache-tomcat-9.0.97.tar.gz'

apache-tomcat-9.0.97.tar.gz          100%[=====] 12.16M 17.0MB/s   in 0.7s

2024-12-01 11:57:24 (17.0 MB/s) - 'apache-tomcat-9.0.97.tar.gz' saved [12749071/12749071]

ubuntu@ip-172-31-9-156:~$ ls
apache-tomcat-9.0.97.tar.gz
ubuntu@ip-172-31-9-156:~$ tar -xvzf apache-tomcat-9.0.97.tar.gz
```

i-0c0a4b95d282ce5ff (ubuntu-1)

Public IPs: 43.204.221.155 Private IPs: 172.31.9.156



after the above command enter ls command to see the unzip file.

```
ubuntu@ip-172-31-9-156:~$ ls
apache-tomcat-9.0.97 apache-tomcat-9.0.97.tar.gz
ubuntu@ip-172-31-9-156:~$
```

i-0c0a4b95d282ce5ff (ubuntu-1)

Public IPs: 43.204.221.155 Private IPs: 172.31.9.156



now to remove the zip file from folder enter command “ rm -rf tomcat-9.0.097.tar.gz”

```
ubuntu@ip-172-31-9-156:~$ ls
apache-tomcat-9.0.97 apache-tomcat-9.0.97.tar.gz
ubuntu@ip-172-31-9-156:~$ rm -rf apache-tomcat-9.0.97.tar.gz
ubuntu@ip-172-31-9-156:~$ ls
apache-tomcat-9.0.97
ubuntu@ip-172-31-9-156:~$
```

i-0c0a4b95d282ce5ff (ubuntu-1)

Public IPs: 43.204.221.155 Private IPs: 172.31.9.156



Enter command "cd apache-tomcat-9.0.097" to change the directory.

```
ubuntu@ip-172-31-9-156:~$ ls
apache-tomcat-9.0.97 apache-tomcat-9.0.97.tar.gz
ubuntu@ip-172-31-9-156:~$ rm -rf apache-tomcat-9.0.97.tar.gz
ubuntu@ip-172-31-9-156:~$ ls
apache-tomcat-9.0.97
ubuntu@ip-172-31-9-156:~$ cd apache-tomcat-9.0.97/
ubuntu@ip-172-31-9-156:~/apache-tomcat-9.0.97$ cd
ubuntu@ip-172-31-9-156:~/apache-tomcat-9.0.97$ pwd
/home/ubuntu/apache-tomcat-9.0.97
ubuntu@ip-172-31-9-156:~/apache-tomcat-9.0.97$
```

i-0c0a4b95d282ce5ff (ubuntu-1)

Public IPs: 43.204.221.155 Private IPs: 172.31.9.156



Enter ls to use bin folder

```
ubuntu@ip-172-31-9-156:~/apache-tomcat-9.0.97$ ls
BUILDING.txt CONTRIBUTING.md LICENSE NOTICE README.md RELEASE-NOTES RUNNING.txt bin conf lib logs temp webapps work
```

i-0c0a4b95d282ce5ff (ubuntu-1)

PublicIPs: 43.204.221.155 PrivateIPs: 172.31.9.156



Enter command “cd bin” to access bin files

```
ubuntu@ip-172-31-9-156:~/apache-tomcat-9.0.97$ ls
BUILDING.txt CONTRIBUTING.md LICENSE NOTICE README.md RELEASE-NOTES RUNNING.txt bin conf lib logs temp webapps work
ubuntu@ip-172-31-9-156:~/apache-tomcat-9.0.97$ cd bin/
ubuntu@ip-172-31-9-156:~/apache-tomcat-9.0.97/bin$ ls
bootstrap.jar catalina.sh commons-daemon-native.tar.gz configtest.sh digest.sh setclasspath.bat shutdown.sh tomcat-juli.jar tool-wrapper.sh
catalina-tasks.xml ciphers.bat commons-daemon.jar daemon.sh makebase.bat setclasspath.sh startup.bat tomcat-native.tar.gz version.bat
catalina.bat ciphers.sh configtest.bat digest.bat makebase.sh shutdown.sh startup.sh tool-wrapper.bat version.sh
ubuntu@ip-172-31-9-156:~/apache-tomcat-9.0.97/bin$
```

i-0c0a4b95d282ce5ff (ubuntu-1)

PublicIPs: 43.204.221.155 PrivateIPs: 172.31.9.156



Enter command “sh startup.sh” to startup the tomcat. we can see tomcat started successfully.

```
ubuntu@ip-172-31-9-156:~$ tomcat --version
Command 'tomcat' not found, did you mean:
  command 'topcat' from deb topcat (4.9-1)
Try: sudo apt install <deb name>
ubuntu@ip-172-31-9-156:~$ ls
apache-tomcat-9.0.97
ubuntu@ip-172-31-9-156:~$ cd apache-tomcat-9.0.97/
ubuntu@ip-172-31-9-156:~/apache-tomcat-9.0.97$ pwd
/home/ubuntu/apache-tomcat-9.0.97
ubuntu@ip-172-31-9-156:~/apache-tomcat-9.0.97$ ls
BUILDING.txt CONTRIBUTING.md LICENSE NOTICE README.md RELEASE-NOTES RUNNING.txt bin conf lib logs temp webapps work
ubuntu@ip-172-31-9-156:~/apache-tomcat-9.0.97$ cd bin/
ubuntu@ip-172-31-9-156:~/apache-tomcat-9.0.97/bin$ ls
bootstrap.jar catalina.sh commons-daemon-native.tar.gz configtest.sh digest.sh setclasspath.bat shutdown.sh tomcat-juli.jar tool-wrapper.sh
catalina-tasks.xml ciphers.bat commons-daemon.jar daemon.sh makebase.bat setclasspath.sh startup.bat tomcat-native.tar.gz version.bat
catalina.bat ciphers.sh configtest.bat digest.bat makebase.sh shutdown.bat startup.sh tool-wrapper.bat version.sh
ubuntu@ip-172-31-9-156:~/apache-tomcat-9.0.97/bin$ sh startup.sh
Using CATALINA_BASE: /home/ubuntu/apache-tomcat-9.0.97
Using CATALINA_HOME: /home/ubuntu/apache-tomcat-9.0.97
Using CATALINA_TMPDIR: /home/ubuntu/apache-tomcat-9.0.97/temp
Using JRE_HOME: /usr
Using CLASSPATH: /home/ubuntu/apache-tomcat-9.0.97/bin/bootstrap.jar:/home/ubuntu/apache-tomcat-9.0.97/bin/tomcat-juli.jar
Using CATALINA_OPTS:
Tomcat started.
ubuntu@ip-172-31-9-156:~/apache-tomcat-9.0.97/bin$
```

### i-0c0a4b95d282ce5ff (ubuntu-1)

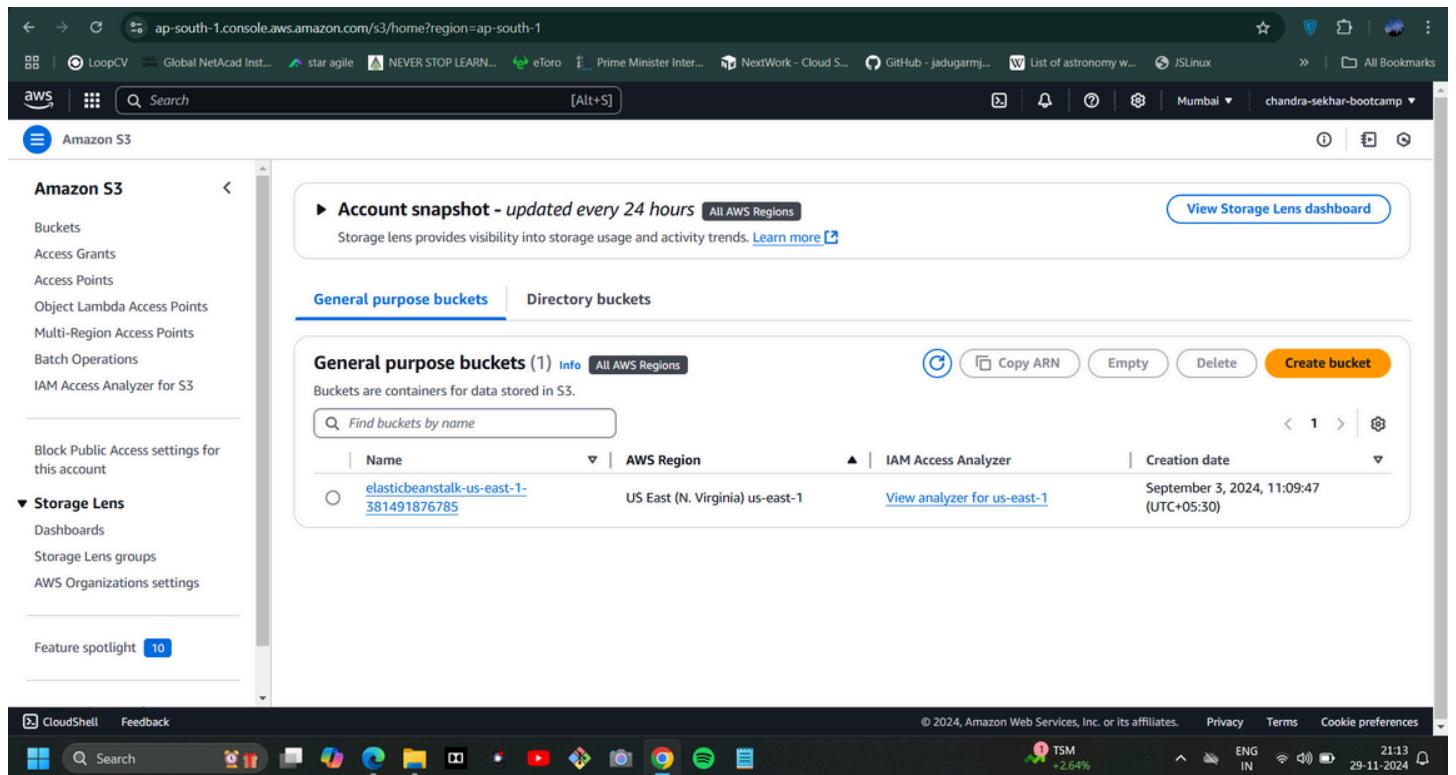
Public IPs: 43.204.221.155 Private IPs: 172.31.9.156



L6 -

## Create S3 Bucket and add folders and files

**Step-1** Click on create bucket option.



The screenshot shows the AWS S3 console interface. On the left, there's a sidebar with options like Buckets, Access Grants, Access Points, Object Lambda Access Points, Multi-Region Access Points, Batch Operations, IAM Access Analyzer for S3, Block Public Access settings, Storage Lens (Dashboards, Storage Lens groups, AWS Organizations settings), and a Feature spotlight section. The main content area has a header for 'Account snapshot - updated every 24 hours' with a link to 'All AWS Regions'. Below it, there are tabs for 'General purpose buckets' (which is selected) and 'Directory buckets'. A sub-section titled 'General purpose buckets (1)' shows one bucket named 'elasticbeanstalk-us-east-1-381491876785'. The bucket details include its name, AWS Region (US East (N. Virginia)), IAM Access Analyzer (with a link to 'View analyzer for us-east-1'), and Creation date (September 3, 2024, 11:09:47 UTC+05:30). At the top right of this section, there are buttons for 'Copy ARN', 'Empty', 'Delete', and 'Create bucket' (highlighted in orange). The bottom of the screen shows a Windows taskbar with various icons and system status information.

**Step - 2**

Leaving everything as default and then clicking on create bucket option.

ap-south-1.console.aws.amazon.com/S3/bucket/create?region=ap-south-1&bucketType=general

aws Search [Alt+S] [Alt+S]

Amazon S3 > Buckets > Create bucket

## Create bucket Info

Buckets are containers for data stored in S3.

### General configuration

**AWS Region**  
Asia Pacific (Mumbai) ap-south-1

**Bucket type** Info

General purpose  
Recommended for most use cases and access patterns. General purpose buckets are the original S3 bucket type. They allow a mix of storage classes that redundantly store objects across multiple Availability Zones.

Directory  
Recommended for low-latency use cases. These buckets use only the S3 Express One Zone storage class, which provides faster processing of data within a single Availability Zone.

**Bucket name** Info  
bucket-assing-1

Bucket name must be unique within the global namespace and follow the bucket naming rules. [See rules for bucket naming](#)

**Copy settings from existing bucket - optional**  
Only the bucket settings in the following configuration are copied.

[Choose bucket](#)

Format: s3://bucket/prefix

### Object Ownership Info

CloudShell Feedback © 2024, Amazon Web Services, Inc. or its affiliates. Privacy Terms Cookie preferences

Search ENG IN 21:15 29-11-2024

ap-south-1.console.aws.amazon.com/S3/bucket/create?region=ap-south-1&bucketType=general

aws Search [Alt+S] [Alt+S]

Amazon S3 > Buckets > Create bucket

### Default encryption Info

Server-side encryption is automatically applied to new objects stored in this bucket.

**Encryption type** Info

Server-side encryption with Amazon S3 managed keys (SSE-S3)  
 Server-side encryption with AWS Key Management Service keys (SSE-KMS)  
 Dual-layer server-side encryption with AWS Key Management Service keys (DSSE-KMS)  
Secure your objects with two separate layers of encryption. For details on pricing, see DSSE-KMS pricing on the Storage tab of the [Amazon S3 pricing page](#).

**Bucket Key**  
Using an S3 Bucket Key for SSE-KMS reduces encryption costs by lowering calls to AWS KMS. S3 Bucket Keys aren't supported for DSSE-KMS. [Learn more](#)

Enable

### Advanced settings

After creating the bucket, you can upload files and folders to the bucket, and configure additional bucket settings.

[Cancel](#) [Create bucket](#)

CloudShell Feedback © 2024, Amazon Web Services, Inc. or its affiliates. Privacy Terms Cookie preferences

Search ENG IN 21:16 29-11-2024

The screenshot shows the AWS S3 console. At the top, a green success message box says "Successfully created bucket 'bucket-assing-1'. To upload files and folders, or to configure additional bucket settings, choose View details." Below this, there's an "Account snapshot" section with a link to "View Storage Lens dashboard". Under "General purpose buckets", there are two buckets listed:

Name	AWS Region	IAM Access Analyzer	Creation date
bucket-assing-1	Asia Pacific (Mumbai) ap-south-1	<a href="#">View analyzer for ap-south-1</a>	November 29, 2024, 21:16:57 (UTC+05:30)
elasticbeanstalk-us-east-1-381491876785	US East (N. Virginia) us-east-1	<a href="#">View analyzer for us-east-1</a>	September 3, 2024, 11:09:47 (UTC+05:30)

This screenshot shows a Windows taskbar with several pinned icons, including File Explorer, Microsoft Edge, and File History. On the right side, it displays system information like battery level (ENG IN), signal strength, and the date and time (29-11-2024).

## Step - 3

now adding folders and files

The screenshot shows the "Objects" tab for the "bucket-assing-1" bucket. It displays a message stating "No objects" and "You don't have any objects in this bucket." There is a prominent blue "Upload" button at the bottom.

This screenshot shows a Windows taskbar with "CloudShell" and "Feedback" pinned. It also includes the system tray with battery level (USD/JPY -0.91%), signal strength, and the date and time (29-11-2024).

## Adding Folders

The screenshot shows a file manager window on the left titled "Select Folder to Upload" with a sidebar for navigating through the desktop. On the right, a browser window titled "Upload objects - S3 bucket buck" is open, showing a list of files and folders to be uploaded to an S3 bucket. A message at the top says "No files or folders" and "You have not chosen any files or folders to upload." Below this, there are "Remove", "Add files", and "Add folder" buttons. At the bottom, there's a "Destination Info" section with a "Destination" field set to "s3://bucket-assing-1". The browser's address bar shows the URL "ap-south-1.console.aws.amazon.com/s3/upload/bucket-assing-1?region=ap-south-1&bucketType=general". The system tray at the bottom indicates it's 21:27 on 29-11-2024.

The screenshot shows the AWS S3 console with a list of files and folders to be uploaded. The "Files and folders" section shows 7 total files with a total size of 43.3 MB. The files listed are: DSA\_CompleteNotes.pdf, Introduction-to-SQL.pdf, Python\_Complete\_Notes.pdf, SQL-Manual.pdf, beach.jpg, coffee.jpg, and index.html. The "Destination Info" section has the "Destination" field set to "s3://bucket-assing-1". The browser's address bar shows the URL "ap-south-1.console.aws.amazon.com/s3/upload/bucket-assing-1?region=ap-south-1&bucketType=general". The system tray at the bottom indicates it's 21:27 on 29-11-2024.

## Adding Files

File name: DSA\_CompleteNotes

Destination: s3://bucket-assing-1

Name	Date modified	Type	Size
s3	14-09-2024 10:32	File folder	
DSA_CompleteNotes	04-09-2024 12:31	Microsoft Edge PD...	11,182
Introduction-to-SQL	09-09-2024 12:37	Microsoft Edge PD...	296
Python_Complete_Notes	04-09-2024 12:30	Microsoft Edge PD...	26,690
SQL-Manual	09-09-2024 12:38	Microsoft Edge PD...	5,964

Type	Size
application/pdf	10.9 MB
application/pdf	295.6 KB
application/pdf	26.1 MB
application/pdf	5.8 MB
image/jpeg	85.8 KB
image/jpeg	108.4 KB
text/html	207.0 B

## Uploading all of them to S3 bucket

Files and folders (8 total, 54.2 MB)

All files and folders in this table will be uploaded.

Destination: s3://bucket-assing-1

Permissions: Grant public access and access to other AWS accounts.

Properties: Specify storage class, encryption settings, tags, and more.

Cancel Upload

← → ⌂ ap-south-1.console.aws.amazon.com/s3/upload/bucket-assing-1?region=ap-south-1&bucketType=general

LoopCV Global NetAcad Inst... star agile NEVER STOP LEARN... eToro Prime Minister Inter... NextWork - Cloud S... GitHub - Jadugarmj... List of astronomy w... JSLinux

aws Search [Alt+S]

Upload succeeded  
For more information, see the [Files and folders](#) table.

Files and folders Configuration

Files and folders (8 total, 54.2 MB)

Find by name

Name	Folder	Type	Size	Status	Error
DSA_CompleteNotes.pdf	-	application/pdf	10.9 MB	Succeeded	-
DSA_CompleteNotes.pdf	prep/	application/pdf	10.9 MB	Succeeded	-
Introduction-to-SQL.pdf	prep/	application/pdf	295.6 KB	Succeeded	-
Python_Complete_Notes.p...	prep/	application/pdf	26.1 MB	Succeeded	-
SQL-Manual.pdf	prep/	application/pdf	5.8 MB	Succeeded	-
beach.jpg	prep/s3/	image/jpeg	85.8 KB	Succeeded	-
coffee.jpg	prep/s3/	image/jpeg	108.4 KB	Succeeded	-
index.html	prep/s3/	text/html	207.0 B	Succeeded	-

https://ap-south-1.console.aws.amazon.com/console/home?region=ap-south-1

© 2024, Amazon Web Services, Inc. or its affiliates. Privacy Terms Cookie preferences

Search 74°F Haze ENG IN 29-11-2024

## final result

← → ⌂ ap-south-1.console.aws.amazon.com/s3/buckets/bucket-assing-1?region=ap-south-1&bucketType=general&tab=objects

LoopCV Global NetAcad Inst... star agile NEVER STOP LEARN... eToro Prime Minister Inter... NextWork - Cloud S... GitHub - Jadugarmj... List of astronomy w... JSLinux

aws Search [Alt+S]

Amazon S3 > Buckets > bucket-assing-1

bucket-assing-1 Info

Objects (3) Info

Actions ▾ Create folder Upload

Objects are fundamental entities stored in Amazon S3. You can use [Amazon S3 inventory](#) to get a list of all objects in your bucket. For others to access your objects, you'll need to explicitly grant them permissions. [Learn more](#)

Find objects by prefix

Name	Type	Last modified	Size	Storage class
DSA_CompleteNotes.pdf	pdf	November 29, 2024, 21:28:28 (UTC+05:30)	10.9 MB	Standard
folder-1/	Folder	-	-	-
prep/	Folder	-	-	-

CloudShell Feedback

© 2024, Amazon Web Services, Inc. or its affiliates. Privacy Terms Cookie preferences

Search 74°F Haze ENG IN 29-11-2024