

Module name : AWS cloud

Assignment name : L1 - Demonstrate the AWS EC2 Ubuntu Instance Creation steps and connect to EC2 Instance using Mobaxterm/putty agent

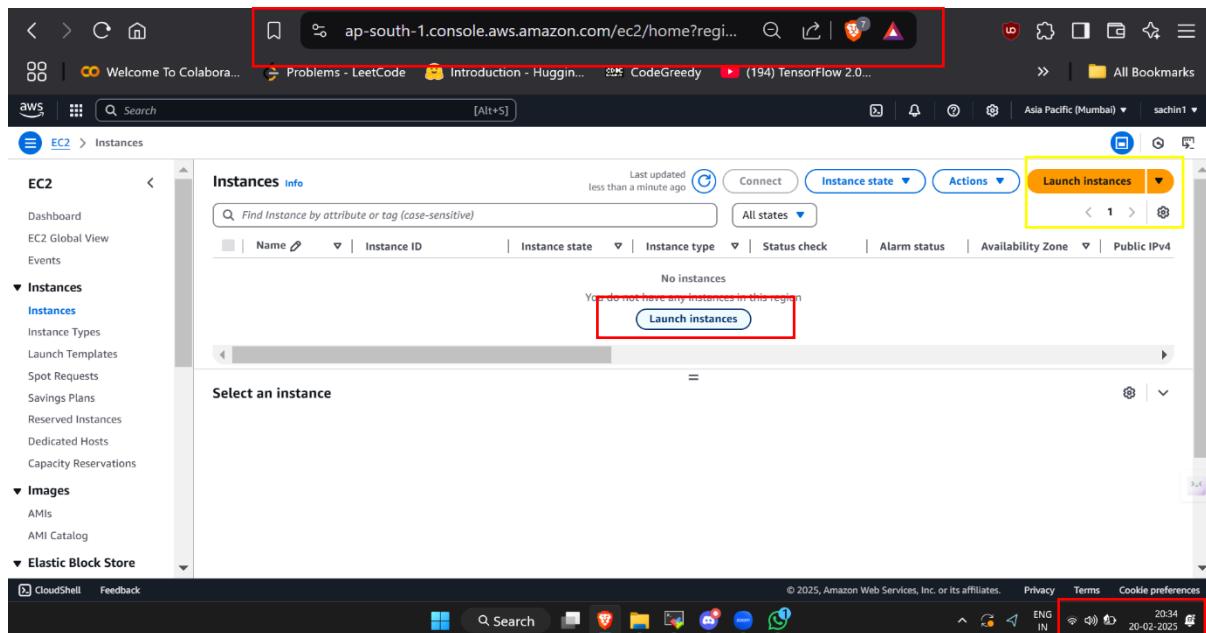
Submitted by : Sachin V Bacha

Submitted on : 06-03-2025

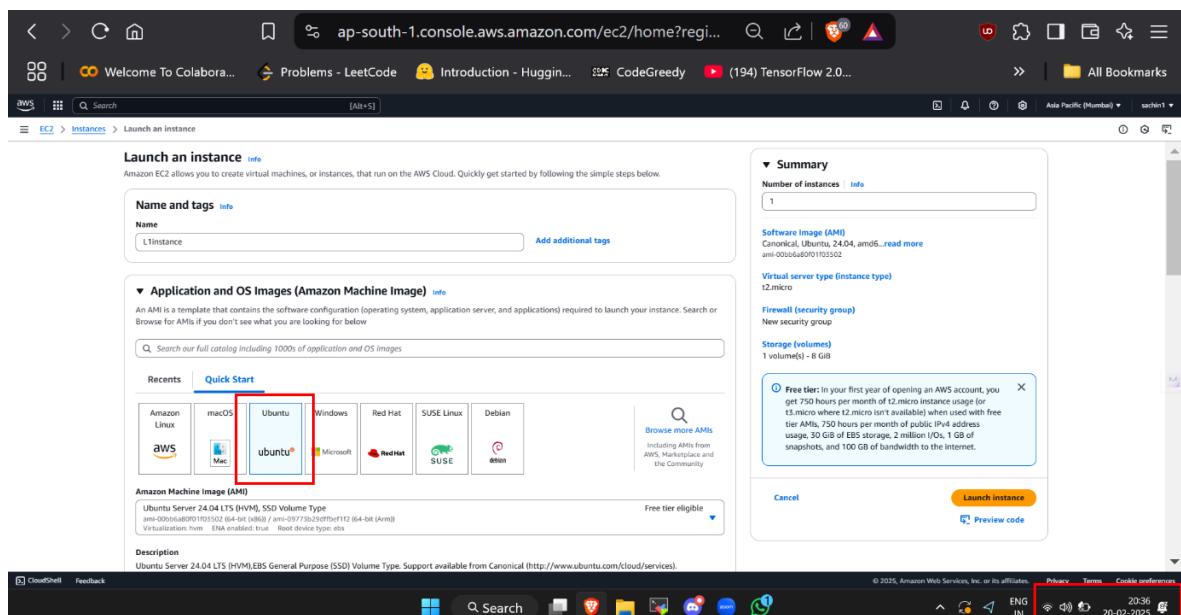
L1

Steps

Step1 : Login to the aws account and go to ec2 service then instances click launch instances



Step 2 : Give the name of the instance in my case L1instance then select OS as ubuntu



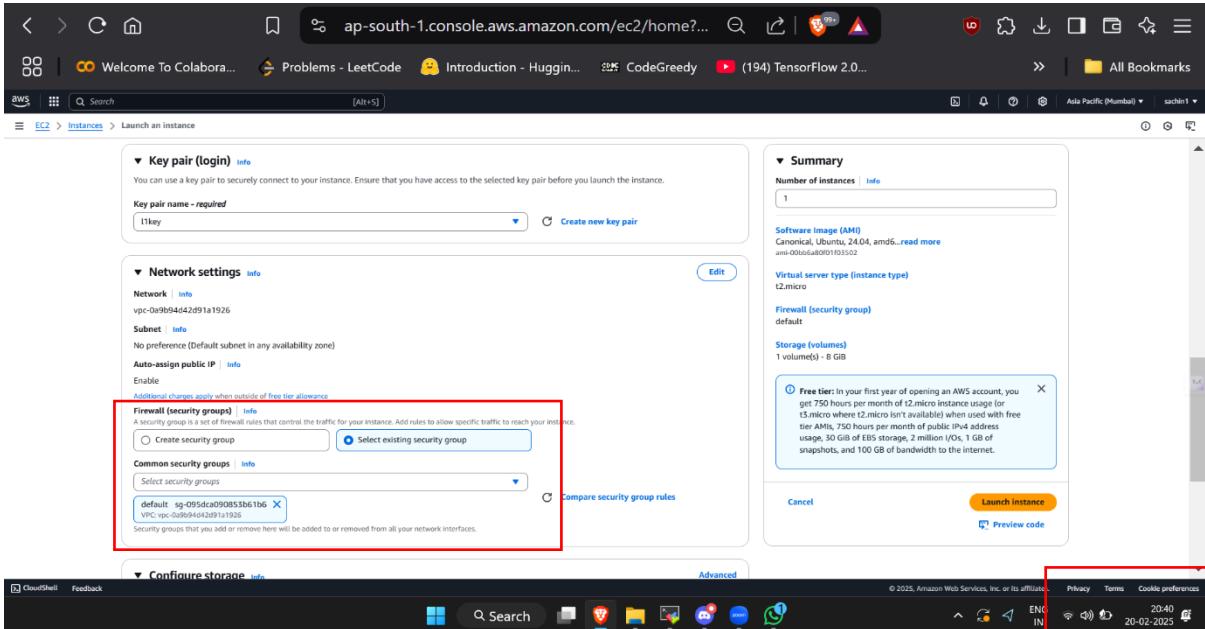
Step3 : select instance type i.e configuration of machine in my case I've selected **t2 micro**

The screenshot shows the AWS EC2 'Launch an instance' wizard. In the 'Instance type' section, the 't2.micro' option is selected, highlighted with a red box. The 'Free tier eligible' checkbox is checked. A note at the bottom states: 'Additional costs apply for AMIs with pre-installed software'. In the 'Key pair (login)' section, there is a note: '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.' In the 'Network settings' section, there is a note: 'We have detected that your account has no VPCs in this region. This will lead to an undesirable experience and you will not be able to launch instances. For an improved experience you can [create a new VPC](#) or [create a new default VPC](#)'. On the right side, there is a 'Summary' panel with fields for 'Number of instances' (set to 1) and 'Software Image (AMI)' (set to Canonical, Ubuntu, 24.04, amd64). Below it are sections for 'Virtual server type (instance type)', 'Firewall (security group)', and 'Storage (volumes)'. At the bottom right, there are 'Launch instance' and 'Preview code' buttons.

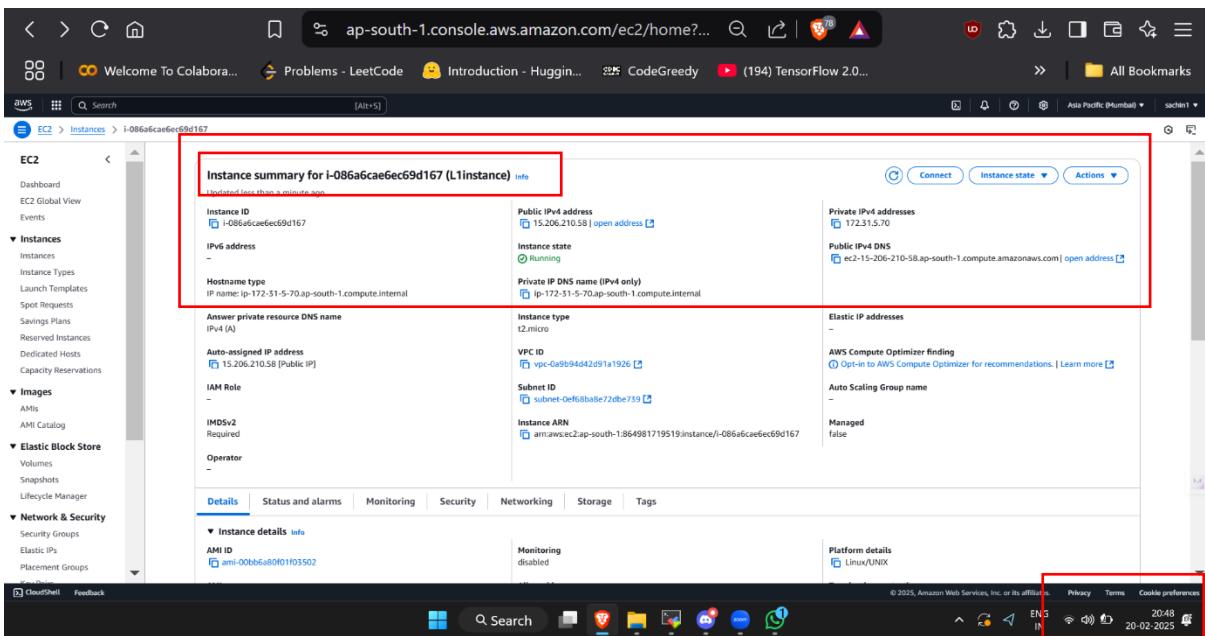
step4 : Create a key pair with RSA + pem combination in my case with name **l1key**

The screenshot shows the 'Create key pair' dialog box. The 'Key pair name' field contains 'l1key', highlighted with a red box. The 'Key pair type' section shows 'RSA' selected. A note below states: 'This same key includes up to 256 AWS Lambda functions, it can't include leading or trailing spaces.' At the bottom, there is a 'Create key pair' button.

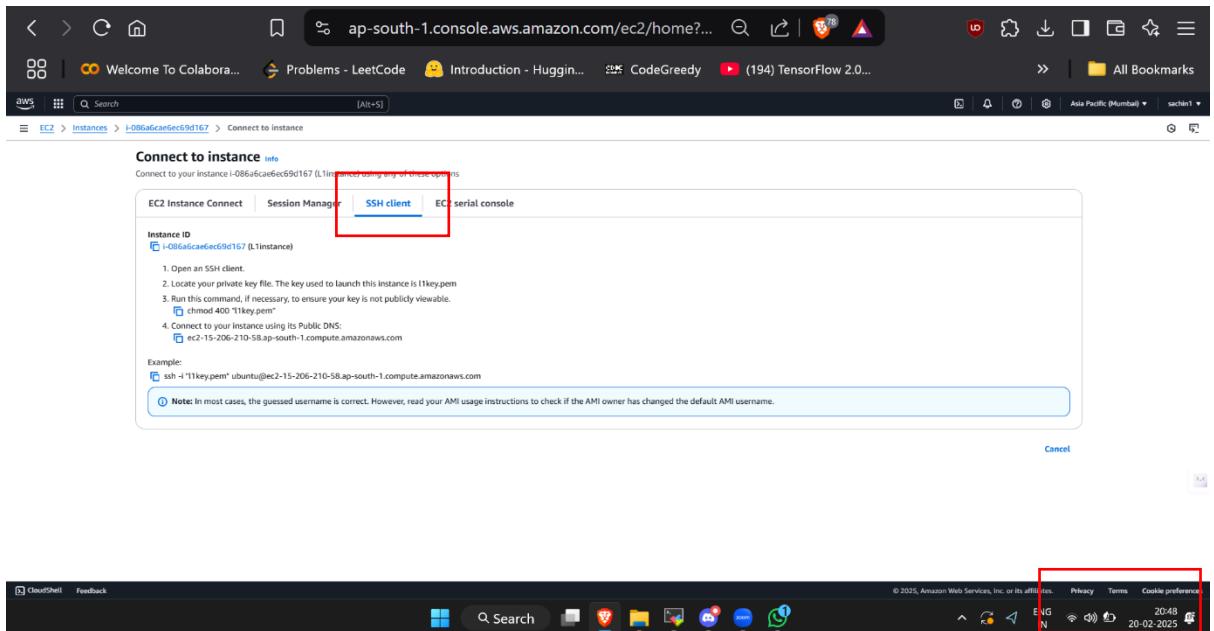
step5 : Select the security group and also check the inbound rules allow it for all traffic . Click launch instance



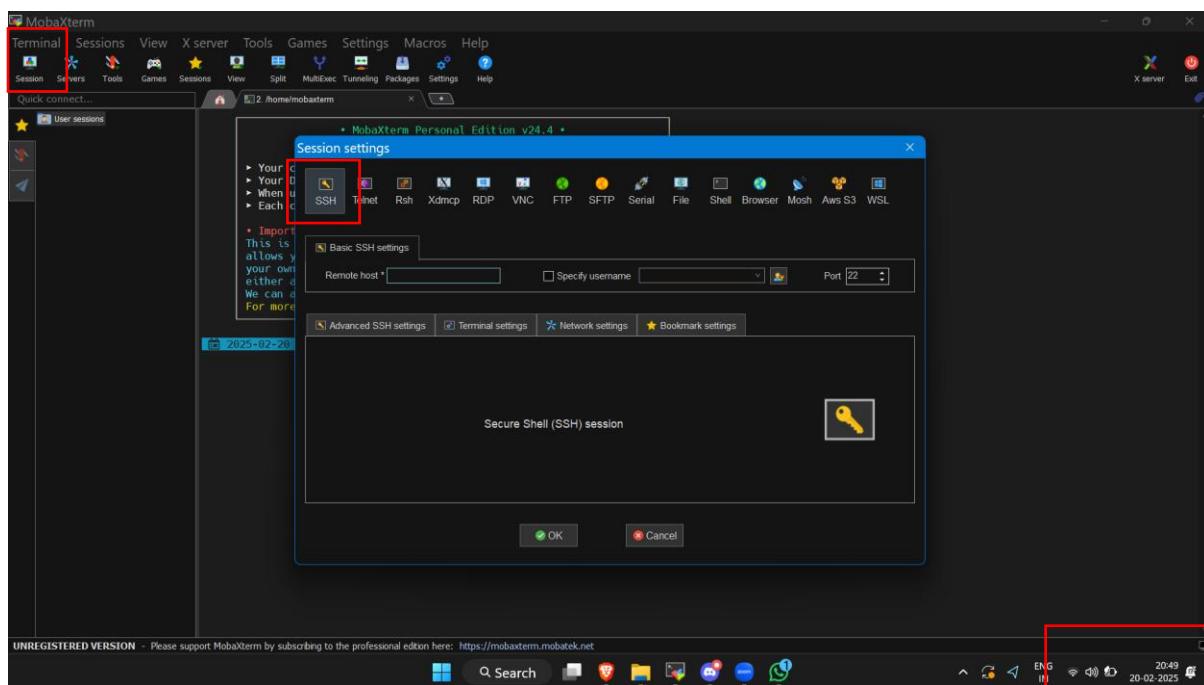
step6 : check for the instance details



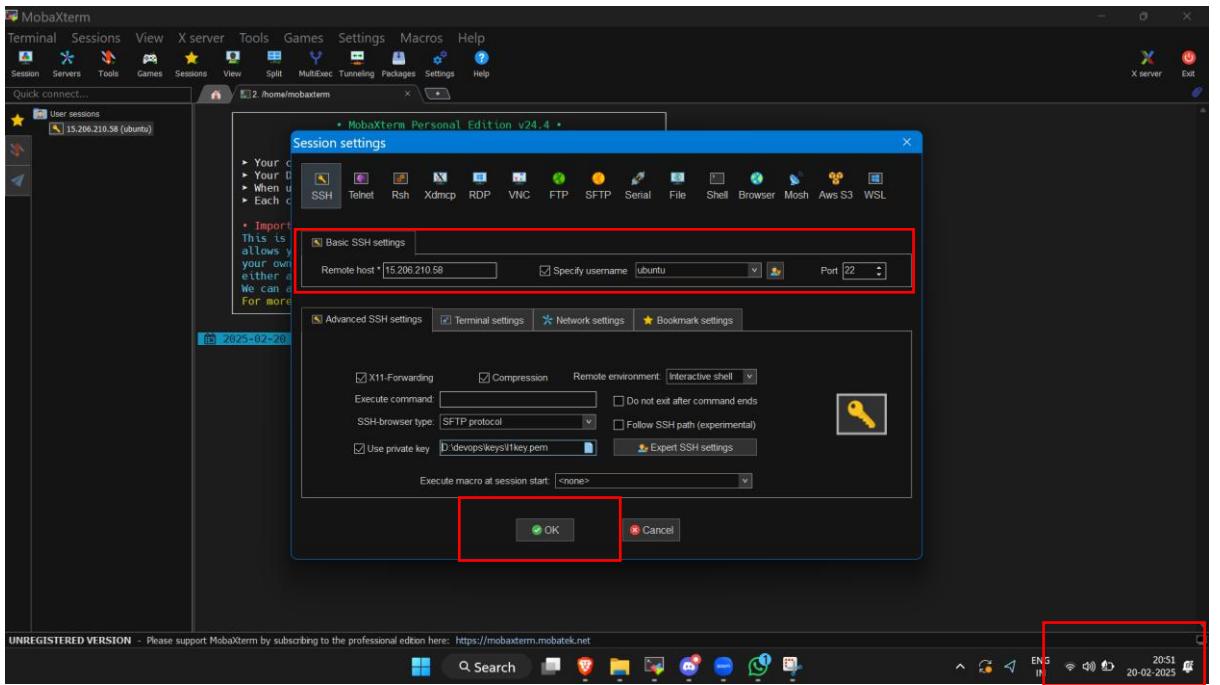
step7 : Inorder to connect with mobaxterm go to the ssh client details



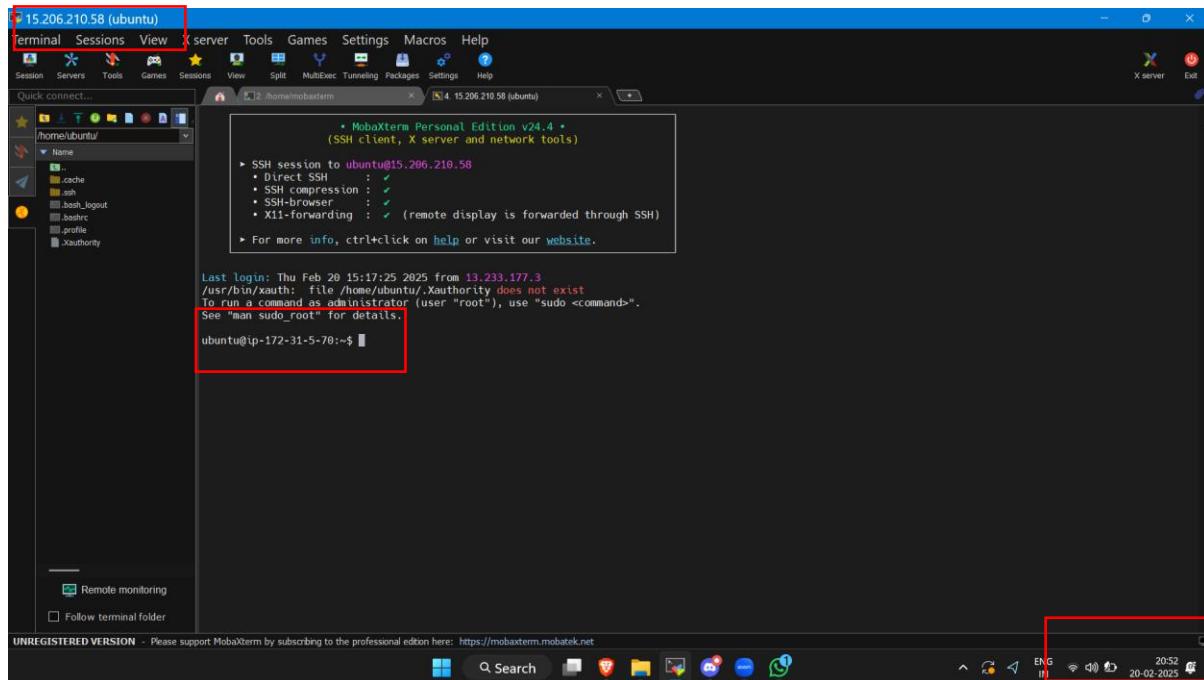
step8: Open mobaxterm click on session -> new session -> SSH



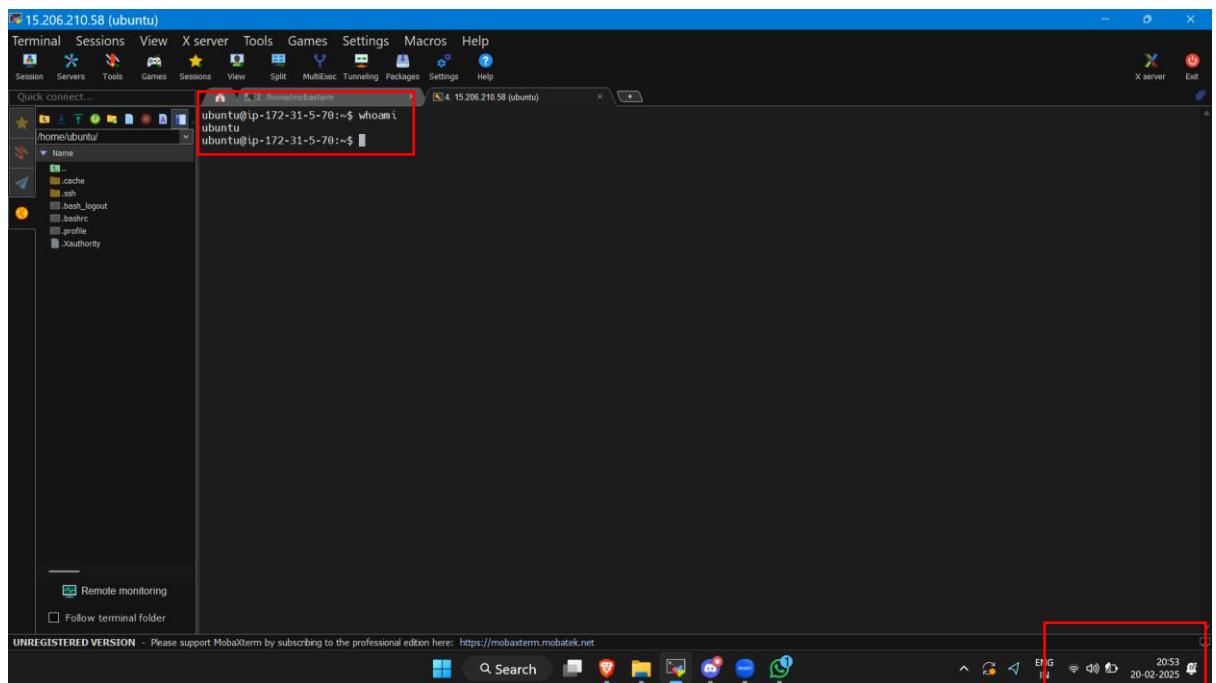
step9: Enter the required details remote host (public ip) and username and attach the private key i.e (l1key.pem in my case) -> ok



step10: Now the instance gets connected to the ubuntu ec2 instance



step11 : check for the instance by command “whoami”



Module name : AWS cloud

Assignment name : L2 - Login to AWS Console and Create IAM User, Role, and Group

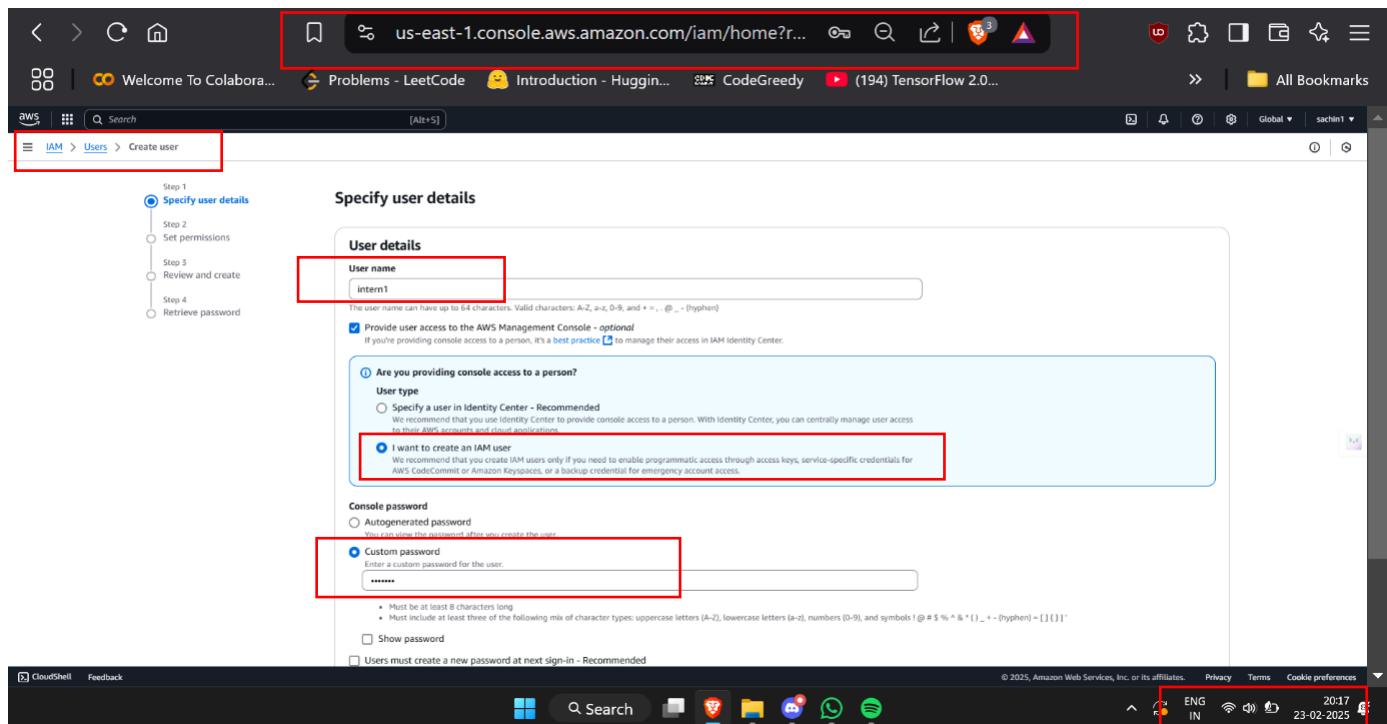
Submitted by : Sachin V Bacha

Submitted on : 06-03-2025

L2

Steps

Step 1 : Navigate to IAM service then click users -> then create new user provide user name (here : intern1) check to give console access or not then set password either custom or autogenerated.



Step 2 : then enter the new user is created with user name and custom password

The screenshot shows the AWS IAM 'Create user' success page. A green banner at the top says 'User created successfully'. Below it, a message says 'You can view and download the user's password and email instructions for signing in to the AWS Management Console.' A red box highlights the 'Console sign-in details' section, which contains the 'Console sign-in URL' (https://864981719519.signin.aws.amazon.com/console), 'User name' (intern1), and 'Console password' (*****). There is also a 'Show' link for the password. To the right of this section is a 'View user' button. At the bottom are 'Cancel', 'Download .csv file', and 'Return to users list' buttons. On the left, a sidebar shows the creation steps: Step 1 (Specify user details), Step 2 (Set permissions), Step 3 (Review and create), Step 4 (Retrieve password), and the current step, Step 5 (Retrieve password). The status for Step 5 is 'Retrieving password'. The bottom of the screen shows the AWS navigation bar and a status bar indicating 'ENG IN' and the date '23-02-2025'.

Step3 : navigate for Roles in IAM service select which type of roles should be given (here : I am giving two aws services ec2 and lambda).We can also provide role to an user to access the other account

The screenshot shows the AWS IAM 'Create role' configuration page. A red box highlights the 'Select trusted entity' step. Below it, the 'Trusted entity type' section shows several options: 'AWS service' (selected), 'AWS account', 'Web identity', 'SAML 2.0 federation', and 'Custom trust policy'. The 'AWS service' option is described as allowing AWS services like EC2, Lambda, or others to perform actions in this account. The 'Use case' section below says 'Allow an AWS service like EC2, Lambda, or others to perform actions in this account.' and has a dropdown menu set to 'EC2'. The bottom of the screen shows the AWS navigation bar and a status bar indicating 'ENG IN' and the date '23-02-2025'.

Step 4 : select the kind of policies to attach it with (here : I am providing s3 lambda access to ec2)

The screenshot shows the AWS IAM 'Create role' wizard. The current step is 'Add permissions'. In the 'Permissions policies' section, a search bar contains 'lambda'. A red box highlights the 'AmazonS3ObjectLambdaExecutionRolePolicy' entry, which is checked. Other policies listed include 'AmazonSageMakerPartnerServiceCatalogPro...', 'AmazonSageMakerServiceCatalogProductsL...', 'AWSCodeDeployRoleForLambda', 'AWSCodeDeployRoleForLambdaLimited', 'AWSDeepLensLambdaFunctionAccessPolicy', and 'AWSLambda_FullAccess'. The status bar at the bottom right shows '2021 23-02-2025'.

Step4 : Review the details again then proceed

The screenshot shows the 'Name, review, and create' step of the 'Create role' wizard. It displays 'Role details' with 'Role name' set to 'ec2-lambda' and 'Description' set to 'Allows EC2 instances to call AWS services on your behalf.'. Below this, the 'Step 1: Select trusted entities' section shows a trust policy with the following JSON code:

```
1 = [ {  
2   "Version": "2012-10-17",  
3   "Statement": [ {  
4     "Effect": "Allow",  
5     "Principal": "*",  
6     "Action": "sts:AssumeRole"  
7   } ] }]
```

The status bar at the bottom right shows '2022 23-02-2025'.

Step 5 : check the status if the role is created

The screenshot shows the AWS IAM service interface. In the top right corner, there is a green banner with the message "Role ec2-lambda created." Below this, the "Roles (3)" section is visible, listing three roles: "AWSServiceRoleForTrustedAdvisor" and "ec2-lambda". The "ec2-lambda" role is highlighted with a red box. At the bottom right of the screen, there is a red box around the system tray area showing the date and time.

Step 6 : navigate for user groups in IAM service then provide name of the group and select the users to be part of that group from the existing list of users that are created (here : I have created group of devops interns for intern 1 and intern2)

The screenshot shows the AWS IAM service interface. In the top left, the path "IAM > User groups > Create user group" is highlighted with a red box. On the left sidebar, "User groups" is selected under "Access management". The main area shows a form to "Name the group" with the input "devops-interns". Below it, a table titled "Add users to the group - Optional (2/2)" lists two users: "intern1" and "intern2", both of whom are selected (indicated by checked checkboxes). A red box highlights this table. At the bottom right of the screen, there is a red box around the system tray area showing the date and time.

step 6 : Attach the policies nothing but permission which the group members will have it will be applicable to all the users under that .

The screenshot shows the AWS IAM console with the URL `us-east-1.console.aws.amazon.com/iam/home?region=us-east-1#UserGroups/CreateUserGroup`. The left sidebar is titled 'Identity and Access Management (IAM)' and includes sections for 'Access management' (User groups, Users, Roles, Policies), 'Access reports' (Access Analyzer, External access, Unused access), and 'CloudShell' and 'Feedback' buttons. The main content area is titled 'Attach permissions policies - Optional (1/1032)'. A search bar at the top of the list says 'devops'. A table lists policies with columns: Policy name, Type, Used as, and Description. One row, 'AmazonDevOpsGuruConsoleFullAccess', has a checked checkbox and is highlighted with a red border. At the bottom right of the table are 'Cancel' and 'Create user group' buttons. The status bar at the bottom right shows 'ENG IN' and the date '23-02-2025'.

step7: Users group are created (here : devops-intern)

The screenshot shows the AWS IAM console with the URL `us-east-1.console.aws.amazon.com/iam/home?region=us-east-1#UserGroups`. The left sidebar is identical to the previous screenshot. The main content area is titled 'User groups (1)'. It displays a single group named 'devops-interns' with a green success message above it: 'devops-interns user group created.' The table below shows the group details: Group name (devops-interns), Users (2), Permissions (Defined), and Creation time (Now). At the bottom right of the table are 'View group', 'Delete', and 'Create group' buttons. The status bar at the bottom right shows 'ENG IN' and the date '23-02-2025'.

Module name : AWS cloud

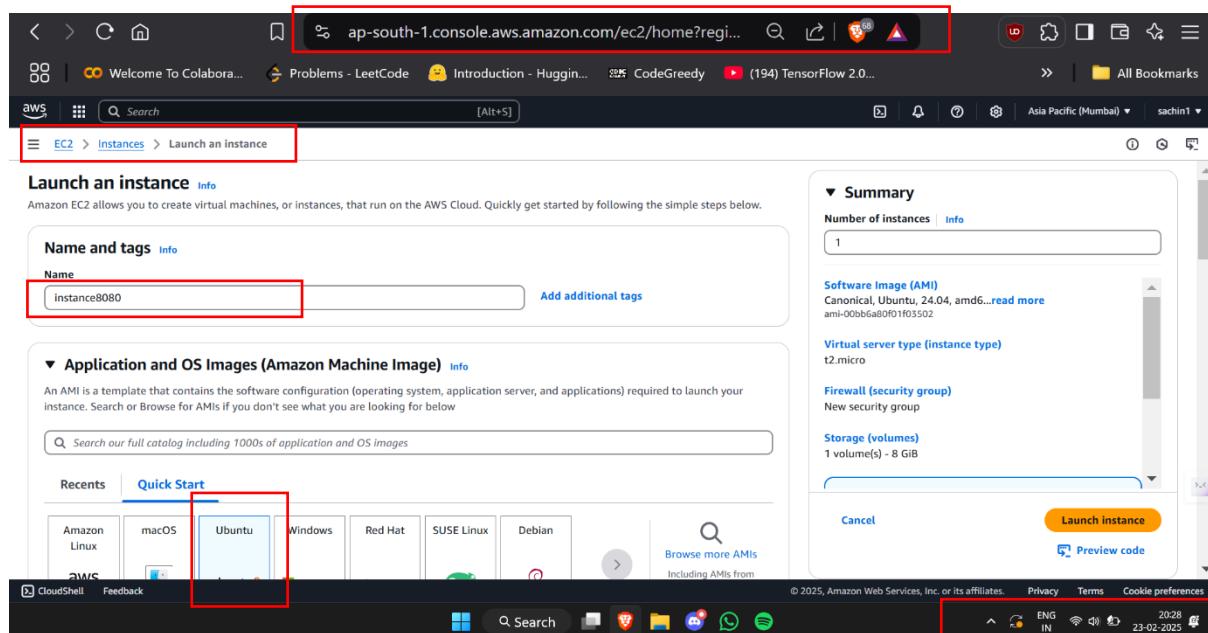
Assignment name : L3 - Launch AWS EC2 Ubuntu Instance and configure the Security Group - Inbound Rule: 8080. Justify the usage of Inbound Rules

Submitted by : Sachin V Bacha

Submitted on : 06-03-2025

L3

step 1 : Navigate to ec2 service in aws then create a new instance (here : with name : instance8080 and select ubuntu instance)



step 2 : Check the summary of the launched instance

The screenshot shows the AWS EC2 Instances page. On the left, there's a sidebar with navigation links like Dashboard, EC2 Global View, Events, Instances, Instance Types, Launch Templates, Spot Requests, Savings Plans, Reserved Instances, Dedicated Hosts, Capacity Reservations, Images, AMIs, AMI Catalog, and Elastic Block Store. The main content area is titled "Instance summary for i-0088c041cdcb16bd6 (instance8080)" and includes sections for Instance ID, IPv6 address, Hostname type, Answer private resource DNS name, Auto-assigned IP address, IAM Role, Public IPv4 address, Instance state, Private IP DNS name (IPv4 only), Instance type, VPC ID, Subnet ID, Private IPv4 addresses, Public IPv4 DNS, Elastic IP addresses, AWS Compute Optimizer finding, and Auto Scaling Group name. A red box highlights the "Public IPv4 address" section, which shows the IP 3.109.213.170. The status bar at the bottom right indicates the date as 23-02-2025.

step 3 : Edit the inbound rules for custom tcp with 8080 port number

The screenshot shows the AWS Security Groups page. The URL is ap-south-1.console.aws.amazon.com/ec2/home?regi... and the page title is "Edit inbound rules". It shows a table of inbound rules for security group sg-01d09dff587e76603. The first rule is for SSH (TCP port 22) from the source sg-01d09dff587e76603. The second rule, highlighted with a red box, is for Custom TCP (TCP port 8080) from Anywhere (0.0.0.0/0). At the bottom, there are buttons for "Cancel", "Preview changes", and "Save rules". The status bar at the bottom right indicates the date as 23-02-2025.

step 4 : connect the ec2 instance with the ssh (here : I have connected it through git bash)

```
ubuntu@ip-172-31-14-235:~$ System information as of Sun Feb 23 15:48:10 UTC 2025
System Load: 0.5          Processes:      111
Usage of /: 24.9% of 6.71GB   Users logged in: 0
Memory usage: 21%           IPv4 address for enx0: 172.31.14.235
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

The programs included with the Ubuntu system are free software;
the exact distribution terms for each program are described in the
individual files in /usr/share/doc/*copyright.

Ubuntu comes with ABSOLUTELY NO WARRANTY, to the extent permitted by
applicable law.

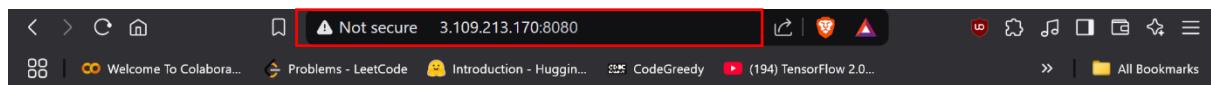
To run a command as administrator (user "root"), use "sudo <command>".
See "man sudo_root" for details.

ubuntu@ip-172-31-14-235:~$
```

step 5 : start a simple python server with the 8080 port

```
ubuntu@ip-172-31-14-235:~$ Get:50 http://security.ubuntu.com/ubuntu noble-security/multiverse amd64 c-n-f Metadata [356 B]
Fetched 32.3 MB in 20s (1576 kB/s)
Reading package lists... Done
Building dependency tree... Done
Reading state information... Done
105 packages can be upgraded. Run 'apt list --upgradable' to see them.
ubuntu@ip-172-31-14-235:~$ python3
Python 3.12.3 (main, Nov 6 2024, 18:32:19) [GCC 13.2.0] on linux
Type "help", "copyright", "credits" or "license" for more information.
>>>
KeyboardInterrupt
>>>
ubuntu@ip-172-31-14-235:~$ python3 -m http.server 8080
Serving HTTP on 0.0.0.0 port 8080 (http://0.0.0.0:8080/) ...
^C
Keyboard interrupt received, exiting.
ubuntu@ip-172-31-14-235:~$ nc -zv 3.109.213.170 8080
nc: connect to 3.109.213.170 port 8080 (tcp) failed: Connection refused
ubuntu@ip-172-31-14-235:~$ nc -zv 3.109.213.170 8080
nc: connect to 3.109.213.170 port 8080 (tcp) failed: Connection refused
ubuntu@ip-172-31-14-235:~$ python3 -m http.server 8080
Serving HTTP on 0.0.0.0 port 8080 (http://0.0.0.0:8080/) ...
^C
Keyboard interrupt received, exiting.
ubuntu@ip-172-31-14-235:~$ python3 -m http.server 8080
Serving HTTP on 0.0.0.0 port 8080 (http://0.0.0.0:8080/) ...
122.171.16.29 - - [23/Feb/2025 15:57:05] "GET / HTTP/1.1" 200 -
122.171.16.29 - - [23/Feb/2025 15:57:06] code 404, message File not found
122.171.16.29 - - [23/Feb/2025 15:57:06] "GET /favicon.ico HTTP/1.1" 404 -
```

step 6 : now access the page in the browser with public ip with the port 8080



Directory listing for /

```
• .bash_logout  
• .bashrc  
• .cache/  
• .profile  
• .python_history  
• .ssh/  
• .sudo_as_admin_successful
```



Module name : AWS cloud

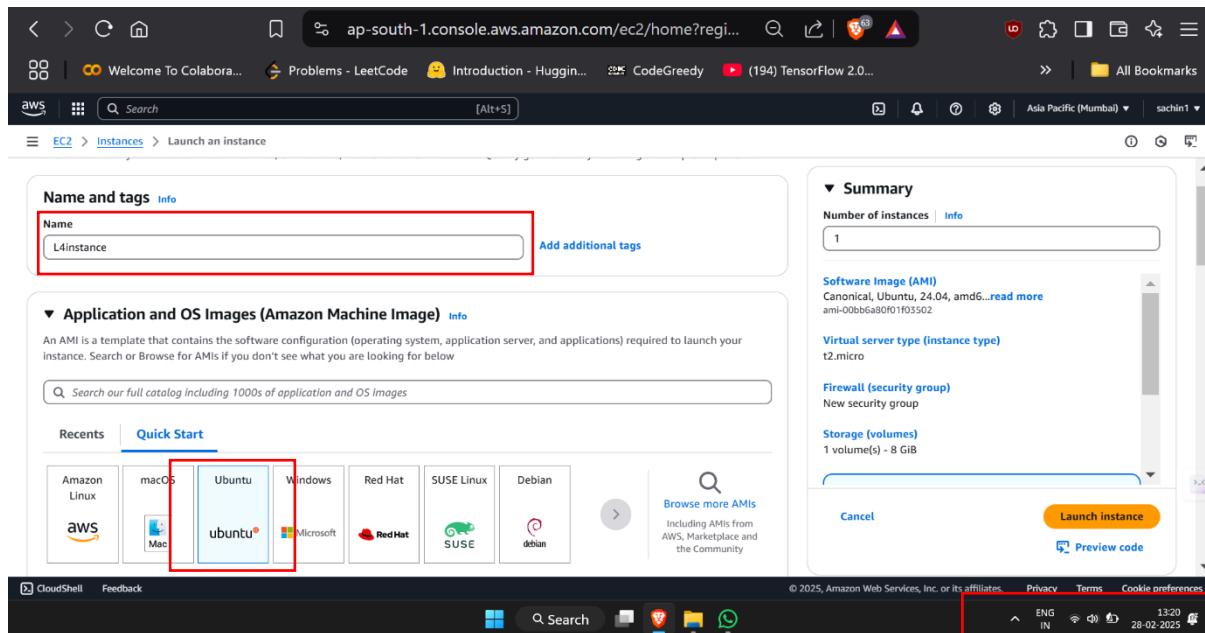
**Assignment name : L4 - Connect to the AWS EC2 Ubuntu Instance and
Update default packages, install JDK, Maven, Git, and validate the versions**

Submitted by : Sachin V Bacha

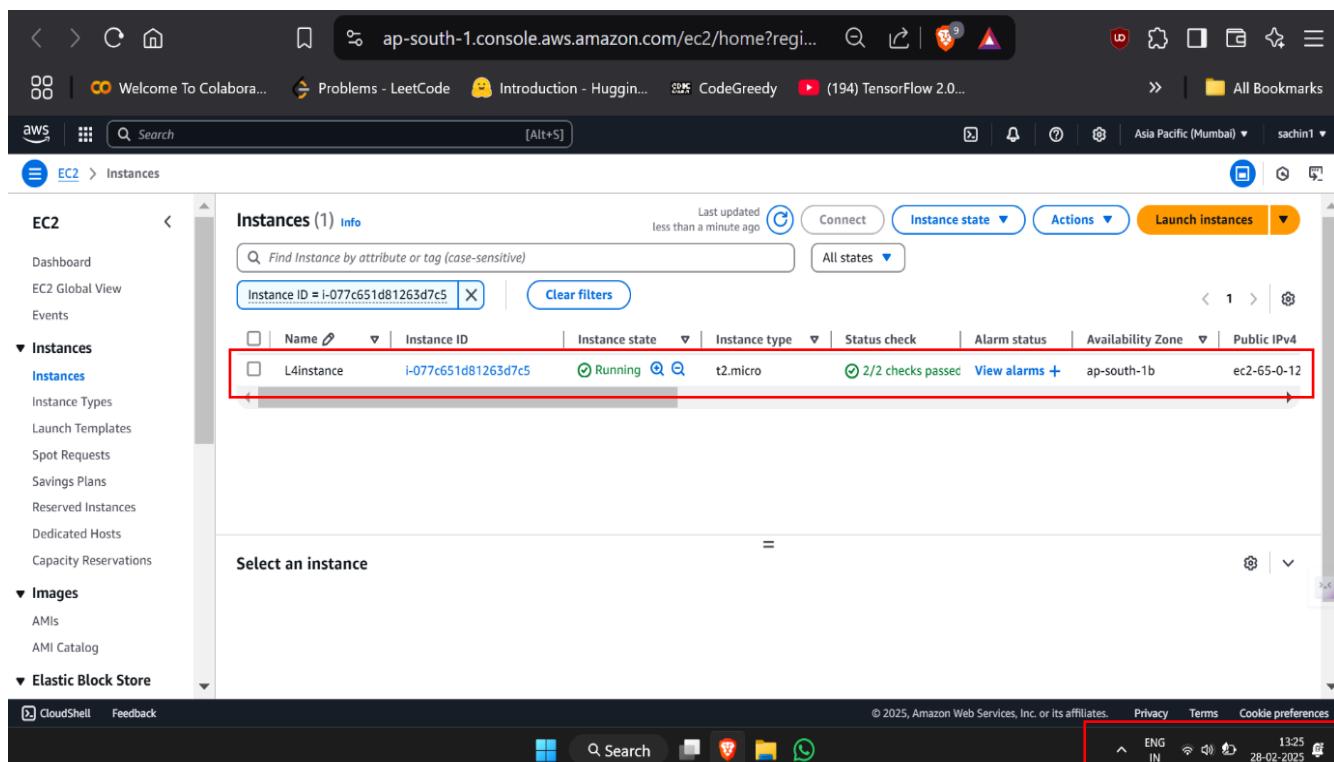
Submitted on : 06-03-2025

L4

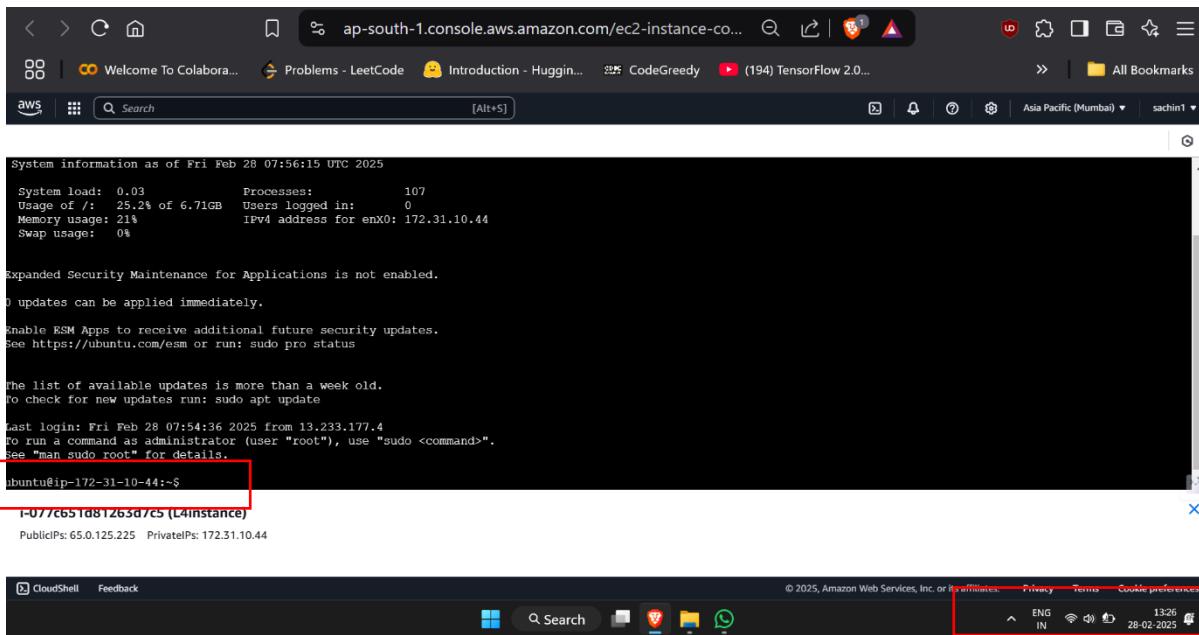
Step 1 : create an ec2 instance with ubuntu image (here : with name : L4 instance and ubuntu image)



step 2 : check the dashboard to navigate to the created instance



step 3: Connect to the created instance

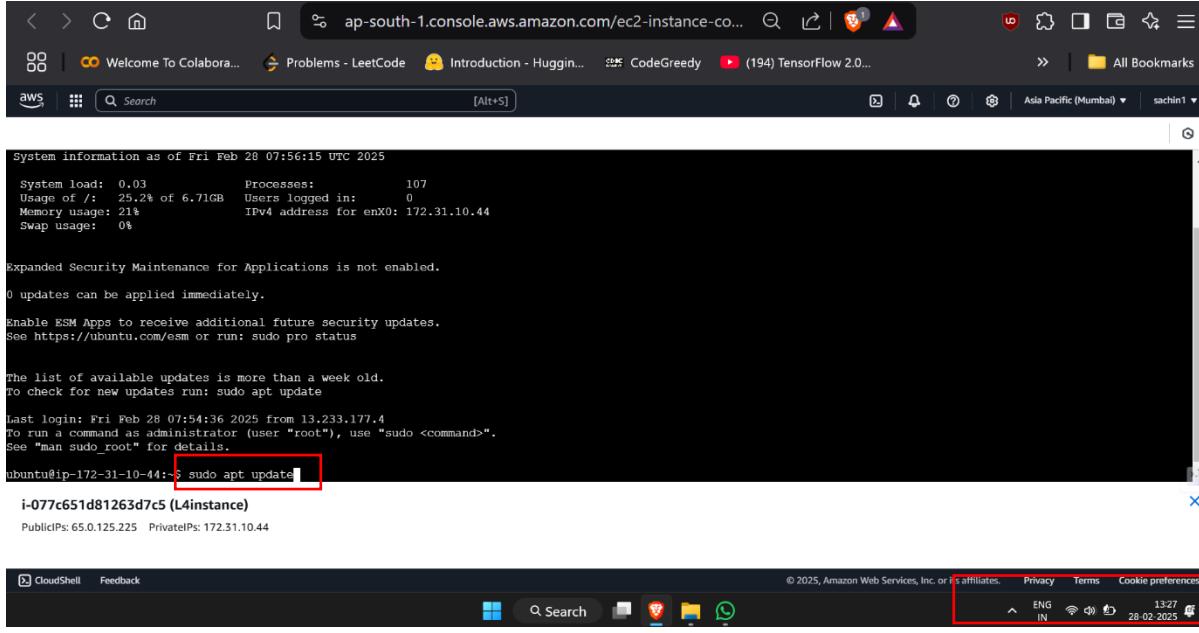


```
System information as of Fri Feb 28 07:56:15 UTC 2025
System load: 0.03      Processes:          107
Usage of /: 25.2% of 6.71GB  Users logged in: 0
Memory usage: 21%          IPv4 address for enX0: 172.31.10.44
Swap usage:  0%
Expanded Security Maintenance for Applications is not enabled.
0 updates 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 Feb 28 07:54:36 2025 from 13.233.177.4
To run a command as administrator (user "root"), use "sudo <command>".
See "man sudo_root" for details.

ubuntu@ip-172-31-10-44:~$ i-077c651d81263d7c5 (L4instance)
PublicIPs: 65.0.125.225 PrivateIPs: 172.31.10.44
```

step 4 : update the packages using command “sudo apt update”



```
System information as of Fri Feb 28 07:56:15 UTC 2025
System load: 0.03      Processes:          107
Usage of /: 25.2% of 6.71GB  Users logged in: 0
Memory usage: 21%          IPv4 address for enX0: 172.31.10.44
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.
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Last login: Fri Feb 28 07:54:36 2025 from 13.233.177.4
To run a command as administrator (user "root"), use "sudo <command>".
See "man sudo_root" for details.

ubuntu@ip-172-31-10-44:~$ sudo apt update
i-077c651d81263d7c5 (L4instance)
PublicIPs: 65.0.125.225 PrivateIPs: 172.31.10.44
```

step 5 : install the java package using command “sudo install openjdk-21-jdk”

The screenshot shows a terminal window on a web browser. The terminal output is as follows:

```
Get:42 http://security.ubuntu.com/ubuntu noble-security/universe amd64 Components [51.9 kB]
Get:43 http://security.ubuntu.com/ubuntu noble-security/universe amd64 c-n-f Metadata [13.5 kB]
Get:44 http://security.ubuntu.com/ubuntu noble-security/restricted amd64 Packages [667 kB]
Get:45 http://security.ubuntu.com/ubuntu noble-security/restricted Translation-en [131 kB]
Get:46 http://security.ubuntu.com/ubuntu noble-security/multiverse amd64 Components [208 kB]
Get:47 http://security.ubuntu.com/ubuntu noble-security/multiverse amd64 Packages [19.4 kB]
Get:48 http://security.ubuntu.com/ubuntu noble-security/multiverse Translation-en [4308 kB]
Get:49 http://security.ubuntu.com/ubuntu noble-security/multiverse amd64 Components [208 kB]
Get:50 http://security.ubuntu.com/ubuntu noble-security/multiverse amd64 c-n-f Metadata [356 kB]
Fetched 32.5 MB in 11s (2871 kB/s)
Reading package lists... Done
Building dependency tree... Done
Reading state information... Done
134 packages can be upgraded. Run 'apt list --upgradable' to see them.
ubuntu@ip-172-31-10-44:~$ sudo apt install openjdk
Reading package lists... Done
Building dependency tree... Done
Reading state information... Done
No apt package "openjdk", but there is a snap with that name.
Try "snap install openjdk"
E: Unable to locate package openjdk
ubuntu@ip-172-31-10-44:~$ sudo apt install openjdk-21-jdk
```

The command `sudo apt install openjdk-21-jdk` is highlighted with a red box.

step 6:install maven using command “sudo install maven”

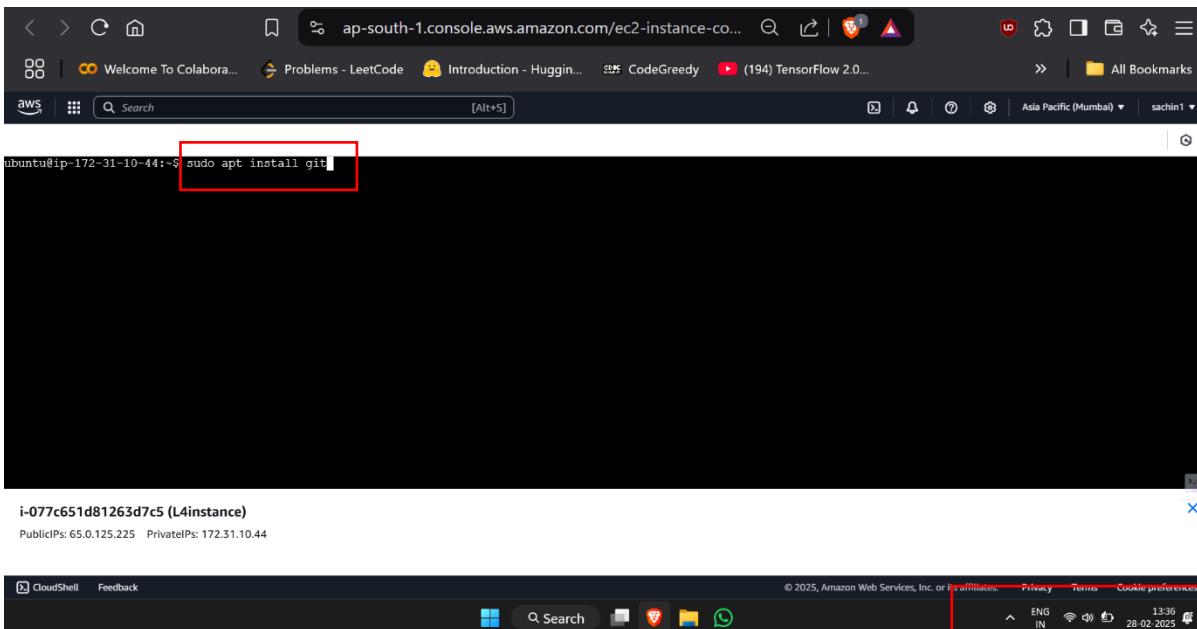
The screenshot shows a terminal window on a web browser. The terminal output is as follows:

```
ubuntu@ip-172-31-10-44:~$ java --version
openjdk 21.0.6 2025-01-21
OpenJDK Runtime Environment (build 21.0.6+7-Ubuntu-124.04.1)
OpenJDK 64-Bit Server VM (build 21.0.6+7-Ubuntu-124.04.1, mixed mode, sharing)
ubuntu@ip-172-31-10-44:~$ sudo apt install maven
```

The command `sudo apt install maven` is highlighted with a red box.



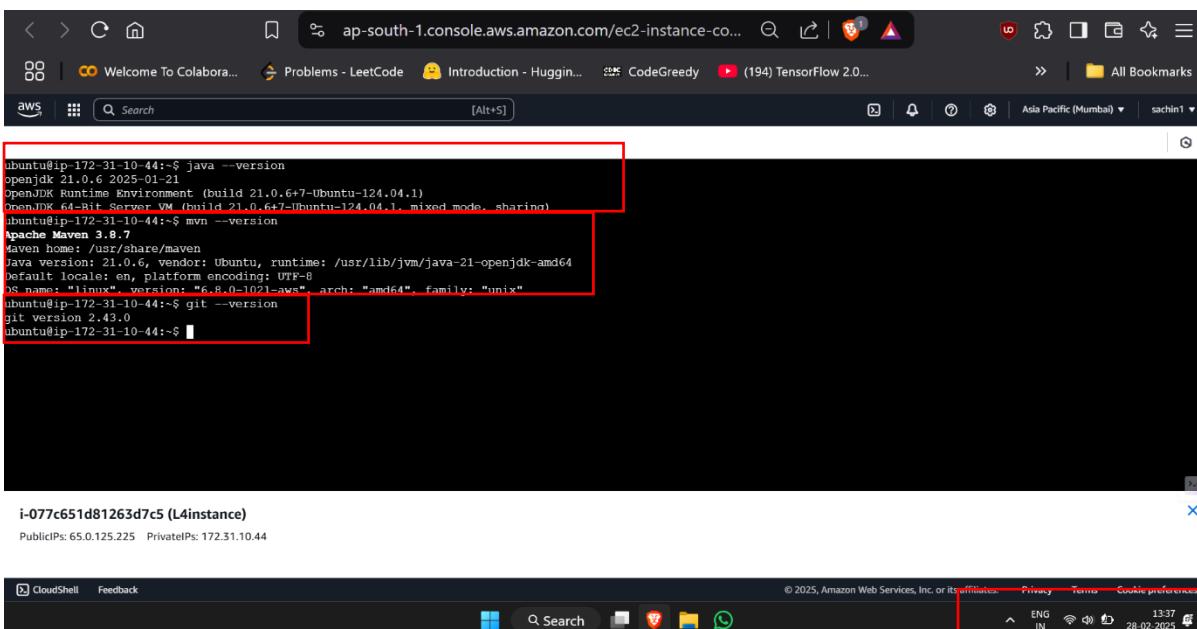
step 7 : install git using command “sudo apt install git”



ubuntu@ip-172-31-10-44:~\$ sudo apt install git

Step 8 : check all the installed packages using

- a) Java –version
- b) Mvn –version
- c) Git –version



```
ubuntu@ip-172-31-10-44:~$ java --version
openjdk 21.0.6 2025-01-21
OpenJDK Runtime Environment (build 21.0.6+7-Ubuntu-124.04.1)
OpenJDK 64-Bit Server VM (build 21.0.6+7-Ubuntu-124.04.1, mixed mode, sharing)
ubuntu@ip-172-31-10-44:~$ mvn --version
Apache Maven 3.8.7
Maven home: /usr/share/maven
Java version: 21.0.6, vendor: Ubuntu, runtime: /usr/lib/jvm/java-21-openjdk-amd64
Default locale: en, platform encoding: UTF-8
OS name: "linux", version: "6.8.0-1021-aws", arch: "amd64", family: "unix"
ubuntu@ip-172-31-10-44:~$ git --version
git version 2.43.0
ubuntu@ip-172-31-10-44:~$
```

Module name : AWS cloud

Assignment name : L5 - Install Tomcat web application server in AWS EC2

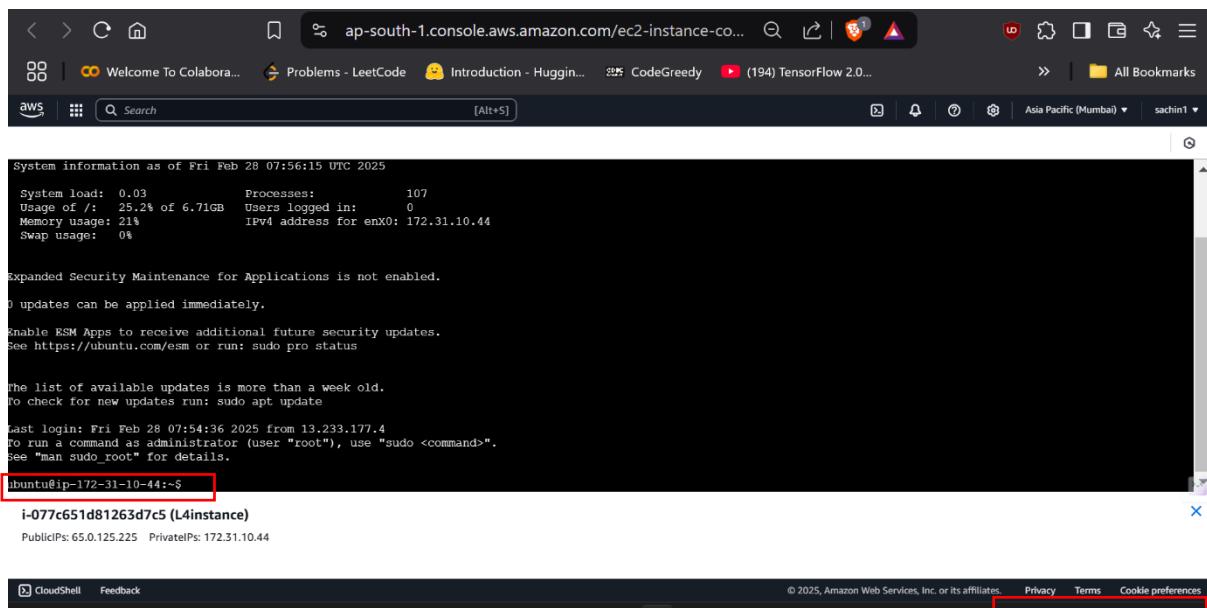
Ubuntu Instance and access Tomcat using a web browser

Submitted by : Sachin V Bacha

Submitted on : 06-03-2025

L5

step 1 : connect to an ec2 instance (here : I am using the existing instance used for L4)



```
System information as of Fri Feb 28 07:56:15 UTC 2025
System load: 0.03      Processes:          107
Usage of /: 25.2% of 6.71GB   Users logged in: 0
Memory usage: 21%          IPv4 address for enX0: 172.31.10.44
Swap usage: 0%          

Expanded Security Maintenance for Applications is not enabled.
0 updates can be applied immediately.

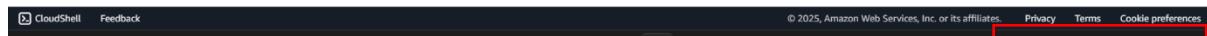
Enable ESM Apps to receive additional future security updates.
See https://ubuntu.com/esm or run: sudo pro status

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

Last login: Fri Feb 28 07:54:36 2025 from 13.233.177.4
To run a command as administrator (user "root"), use "sudo <command>".
See "man sudo_root" for details.

ubuntu@ip-172-31-10-44:~$
```

i-077c651d81263d7c5 (L4instance)
PublicIPs: 65.0.125.225 PrivateIPs: 172.31.10.44



step 2 : Go to the tomcat official documentation for downloading the package
then copy the link address of tar.gz

The screenshot shows a web browser window with the URL tomcat.apache.org/download-10.cgi. On the left, there's a sidebar with links for Tomcat versions 11.0, 10.1, 9.0, Upgrading, Connectors, Native, Wiki, Migration Guide, Presentations, and Specifications. Below that is a 'Problems?' section with links for Security Reports, Find help, FAQ, Mailing Lists, Bug Database, and IRC. Under 'Get Involved', there are links for Overview, Source code, Buildbot, and Tools. The main content area is titled '10.1.36' and contains a message to read the README file for packaging information. A 'Binary Distributions' section lists several options, with 'tar.gz (pgp, sha512)' highlighted by a red box. Other options include 'zip (pgp, sha512)', '32-bit Windows zip (pgp, sha512)', '64-bit Windows zip (pgp, sha512)', and '32-bit/64-bit Windows Service Installer (pgp, sha512)'. Below this is a 'Source Code Distributions' section. The browser's status bar at the bottom right shows 'ENG IN' and the date '28-02-2025'.

step 3 : now run the command “wget + the copied link” inorder to st

The screenshot shows an AWS CloudShell terminal window with the URL ap-south-1.console.aws.amazon.com/ec2-instan.... The terminal prompt is 'ubuntu@ip-172-31-10-44:~\$'. A red box highlights the command 'ubuntu@ip-172-31-10-44:~\$ wget https://dlcdn.apache.org/tomcat/tomcat-10/v10.1.36/bin/apache-tomcat-10.1.36.tar.gz'. The terminal output below shows the instance details: 'i-077c651d81263d7c5 (L4instance)', 'PublicIPs: 65.0.125.225 PrivateIPs: 172.31.10.44'. The browser's status bar at the bottom right shows 'ENG IN' and the date '28-02-2025'.

This screenshot is from the same AWS CloudShell session as the previous one. It shows the progress of the wget command, with a red box highlighting the progress bar. The terminal output shows the command again: 'ubuntu@ip-172-31-10-44:~\$ wget https://dlcdn.apache.org/tomcat/tomcat-10/v10.1.36/bin/apache-tomcat-10.1.36.tar.gz'. The browser's status bar at the bottom right shows 'ENG IN' and the date '28-02-2025'.

step 4 : now use command “tar -xvzf apache-tomcat-10.1.36.tar.gz” to unzip the package

```
ubuntu@ip-172-31-10-44:~$ wget https://dlcdn.apache.org/tomcat/tomcat-10/v10.1.36/bin/apache-tomcat-10.1.36.tar.gz
--2025-02-28 08:15:27 -- https://dlcdn.apache.org/tomcat/tomcat-10/v10.1.36/bin/apache-tomcat-10.1.36.tar.gz
Resolving dlcdn.apache.org (dlcdn.apache.org)... 151.101.2.132, 2a04:4642::644
Connecting to dlcdn.apache.org (dlcdn.apache.org)|151.101.2.132|:443... connected.
HTTP request sent, awaiting response... 200 OK
Length: 13863272 (1.3M) [application/x-gzip]
Saving to: 'apache-tomcat-10.1.36.tar.gz'

apache-tomcat-10.1.36.tar.gz      100%[=====] 13.22M  37.3MB/s   in 0.4s

2025-02-28 08:15:27 (37.3 MB/s) - 'apache-tomcat-10.1.36.tar.gz' saved [13863272/13863272]

ubuntu@ip-172-31-10-44:~$ tar -xvzf apache-tomcat-10.1.36.tar.gz
```

i-077c651d81263d7c5 (L4instance)
PublicIPs: 65.0.125.225 PrivateIPs: 172.31.10.44



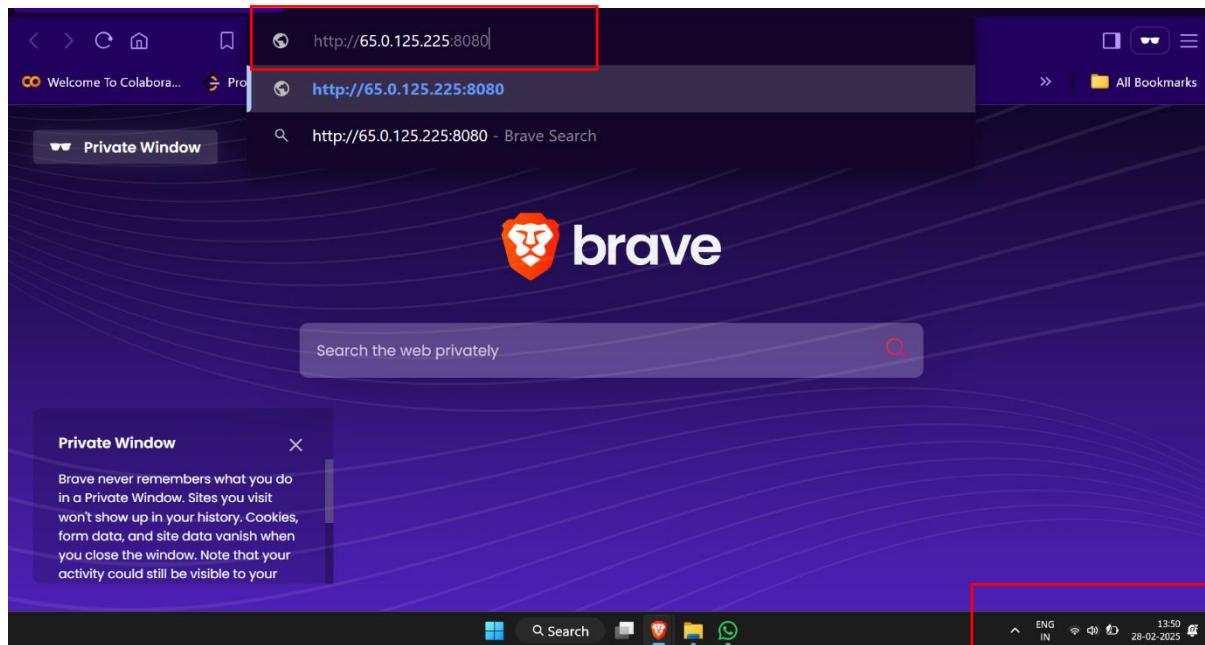
step5: now check the files using “ls” command -> now get into unzipped file using “cd” command -> now get into bin folder using “cd” command -> then run the script inside the startup.sh file using command “./startup.sh”-> now the tomcat is initialized.

```
ubuntu@ip-172-31-10-44:~/apache-tomcat-10.1.36$ ls
apache-tomcat-10.1.36/bin/startup.sh
apache-tomcat-10.1.36/bin/tool-wrapper.sh
apache-tomcat-10.1.36/bin/version.sh
ubuntu@ip-172-31-10-44:~$ cd ~
ubuntu@ip-172-31-10-44:~$ cd apache-tomcat-10.1.36
ubuntu@ip-172-31-10-44:~/apache-tomcat-10.1.36$ ls
BUILDING.txt CONTRIBUTING.md LICENSE NOTICE README.md RELEASE-NOTES RUNNING.txt bin conf lib logs temp webapps work
ubuntu@ip-172-31-10-44:~/apache-tomcat-10.1.36$ cd bin
ubuntu@ip-172-31-10-44:~/apache-tomcat-10.1.36/bin$ ls
bootstrap.jar ciphers.bat configtest.bat digest.sh migrate.sh shutdown.sh tomcat-native.tar.gz version.sh
catalina-tasks.xml ciphers.sh configtest.sh makebase.bat setclasspath.bat startup.bat tool-wrapper.bat
catalina.bat commons-daemon-native.tar.gz daemon.sh makebase.sh setclasspath.sh startup.sh tool-wrapper.sh
catalina.sh catalina.bat digest.bat migrate.bat shutdown.bat tomcat-juli.jar version.bat
ubuntu@ip-172-31-10-44:~/apache-tomcat-10.1.36/bin$ ./startup.sh
using CATALINA_BASE: /home/ubuntu/apache-tomcat-10.1.36
using CATALINA_HOME: /home/ubuntu/apache-tomcat-10.1.36
using CATALINA_TMPDIR: /home/ubuntu/apache-tomcat-10.1.36/temp
using JRE_HOME: /usr
using CLASSPATH: /home/ubuntu/apache-tomcat-10.1.36/bin/bootstrap.jar:/home/ubuntu/apache-tomcat-10.1.36/bin/tomcat-juli.jar
using CATALINA_OPTS:
tomcat started.
ubuntu@ip-172-31-10-44:~/apache-tomcat-10.1.36/bin$
```

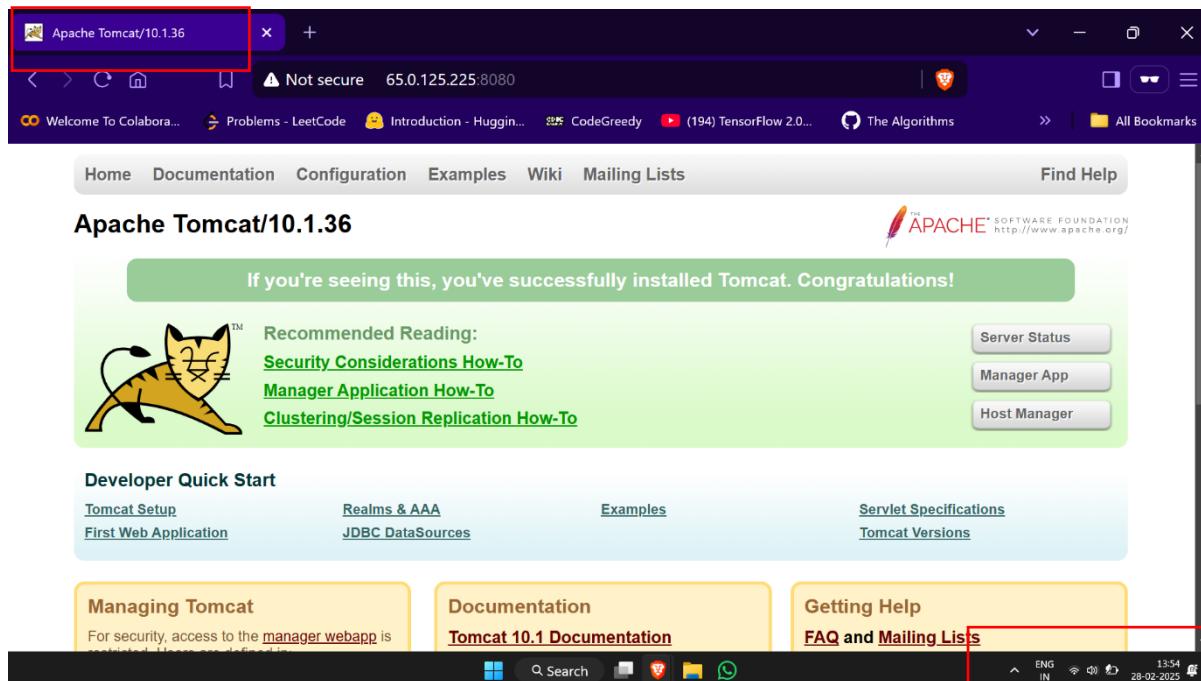
i-077c651d81263d7c5 (L4instance)
PublicIPs: 65.0.125.225 PrivateIPs: 172.31.10.44



step6 : Now run the server in local browser using public ip with the tomcat port i.e 8080



step7: now we can see the tomcat server running



Module name : AWS cloud

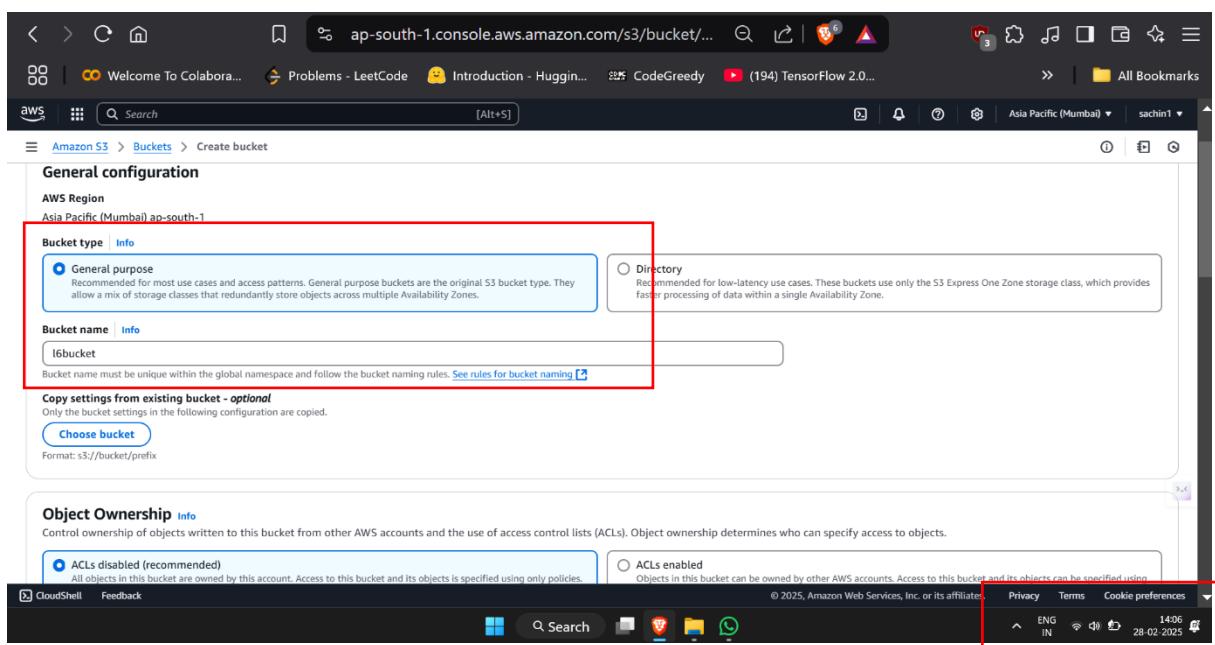
Assignment name : L6 - Create S3 Bucket and add folders and files

Submitted by : Sachin V Bacha

Submitted on : 06-03-2025

L6

Step1 : Navigate for s3 service in aws -> then click buckets -> create new bucket -> select the bucket type -> and give bucket name



step 2 : go to dashboard to check the bucket created (here l6bucket)

The screenshot shows the AWS S3 Buckets list page. At the top, there is a green success message box containing the text "Successfully created bucket 'l6bucket'". Below this, there is an "Account snapshot" section and a "General purpose buckets" table. The table has one row for the "l6bucket", which is highlighted with a red box. The table columns include Name, AWS Region, IAM Access Analyzer, and Creation date. The "l6bucket" row shows "l6bucket" in the Name column, "Asia Pacific (Mumbai) ap-south-1" in the AWS Region column, "View analyzer for ap-south-1" in the IAM Access Analyzer column, and "February 28, 2025, 14:06:20 (UTC+05:30)" in the Creation date column. The "Create bucket" button is visible at the top right of the table area.

step 3 : click on the created bucket -> then click add folder

The screenshot shows the AWS S3 Upload page for the "l6bucket". The top navigation bar shows the path "Amazon S3 > Buckets > l6bucket > Upload". The main section is titled "Upload" and contains a "Drag and drop files and folders you want to upload here, or choose Add files or Add folder." button. Below this is a "Files and folders (0)" table. The table has columns for Name, Folder, Type, and Size. A message at the bottom of the table says "No files or folders" and "You have not chosen any files or folders to upload." At the bottom right of the table, there are "Remove", "Add files", and "Add folder" buttons, with the "Add folder" button highlighted with a red box. The "Destination" section below the table also includes a "Add folder" button. The bottom navigation bar shows the AWS CloudShell and Feedback links, along with the standard AWS footer information.

step4: upload the folder from local computer (here folder with name webpage contain a file named page.html.txt in it)

The screenshot shows the AWS S3 console interface. At the top, there is a green success message box containing the text "Upload succeeded" and "For more information, see the Files and folders table." Below this, the "Summary" section shows a "Destination" of "s3://l6bucket". Under "Succeeded", it lists "1 file, 137.0 B (100.00%)" with a status of "Succeeded". Under "Failed", it shows "0 files, 0 B (0%)". The "Files and folders" tab is selected, displaying a table with one row: "page.html.txt" (web page, text/plain, 137.0 B, Succeeded). The entire "Files and folders" table is highlighted with a red box. At the bottom right of the browser window, there is a red box highlighting the date and time: "28-02-2025".

step5 : check the folder is it uploaded

The screenshot shows the AWS S3 console interface. The navigation bar indicates the user is in the "Upload" section of the "l6bucket" bucket. The "Upload" section has a "Drag and drop files and folders you want to upload here, or choose Add files or Add folder." area. Below it, the "Files and folders" table shows one item: "page.html.txt" (web page, text/plain, 137.0 B). The entire "Files and folders" table is highlighted with a red box. At the bottom right of the browser window, there is a red box highlighting the date and time: "28-02-2025".

