

Aim: Create Instance Using SSH Client .

Description:

- A **virtual instance** is a cloud-based virtual machine that provides computing resources like CPU, memory, and storage.
- It allows users to deploy and run applications on remote servers without physical hardware.
- **SSH (Secure Shell)** is a network protocol used to establish a secure and encrypted connection between a local machine and a remote server.
- An **SSH client** enables users to log in remotely, execute commands, transfer files, and manage configurations securely.
- SSH ensures data confidentiality and integrity during communication.
- Common platforms that use instances include **AWS, Google Cloud, Azure**, etc.
- The instance is accessed using an SSH key pair for authentication (public and private keys).
- This method is essential for developers and administrators working in **cloud computing** and **DevOps** environments.

Tools Used:

- Cloud Platform (e.g., AWS / GCP / Azure)
- SSH Client (PuTTY / Terminal)
- Key Pair File (.pem / .ppk)

Step 1 : Choose AMI Linux and Choose an instance type. Then click on configure instance details.

The screenshot shows the AWS Launch Instance Wizard interface. The top navigation bar includes tabs for '1. Choose AMI', '2. Choose Instance Type' (which is currently selected), '3. Configure Instance', '4. Add Storage', '5. Add Tags', and '6. Configure Security Group'. Below the tabs is a search bar and a 'Mumbai' region dropdown. The main content area is titled 'Step 2: Choose an Instance Type' and contains a table of instance types. The table has columns for Family, Type, vCPUs, Memory (GiB), Instance Storage (GiB), EBS-Optimized Available, Network Performance, and IPv6 Support. One row for 't2.micro' is highlighted with a green background and labeled 'Free tier eligible'. At the bottom of the table are buttons for 'Cancel', 'Previous', 'Review and Launch' (which is highlighted in blue), and 'Next: Configure Instance Details'.

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

Step 2 : Select number of instances 4 . Then click on add storage.

Step 3: Configure Instance Details

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

Number of instances 4 Launch into Auto Scaling Group

You may want to consider launching these instances into an Auto Scaling Group to help you maintain application availability and for easy scaling in the future. Learn how Auto Scaling can help your application stay healthy and cost effective.

Purchasing option Request Spot instances

Network vpc-0047725c5414cfce3 (default) Create new VPC

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

Auto-assign Public IP Use subnet setting (Enable)

Hostname type Use subnet setting (IP name)

Cancel Previous Review and Launch Next: Add Storage

Step 3 : Volume type must be root there will be no any changes in this step.Then click on add tags.

Step 4: Add Storage

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

Volume Type	Device	Snapshot	Size (GiB)	Volume Type	IOPS	Throughput (MB/s)	Delete on Termination	Encryption
Root	/dev/xvda	snap-0dee069755150f907	8	General Purpose SSD (gp2)	100 / 3000	N/A	<input checked="" type="checkbox"/>	Not Encrypt

Add New Volume

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

Cancel Previous Review and Launch Next: Add Tags

Step 4 : Click on add tags then type in value tab .e.g. webserverwin

The screenshot shows the 'Add Tags' step of the AWS Launch Instance Wizard. It displays a table where a tag named 'Name' with the value 'webserverwin' is being applied to 'Instances', 'Volumes', and 'Network Interfaces'. There is also an option to 'Add another tag'.

Step 5: Add Tags

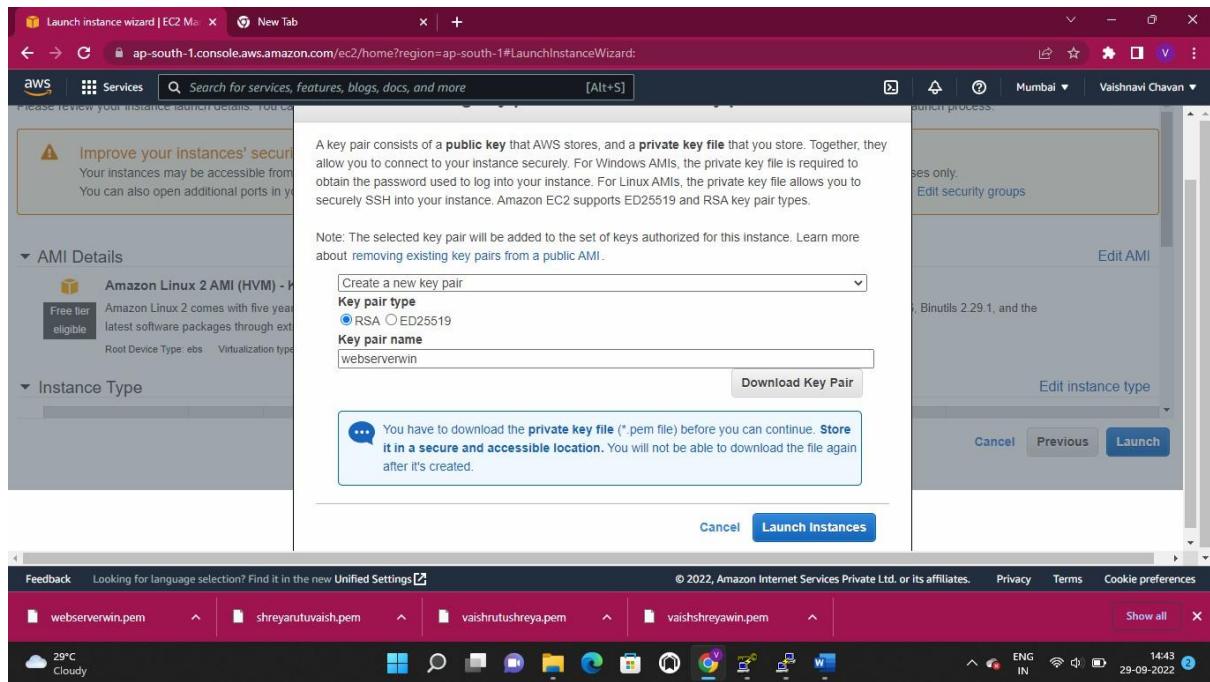
A tag consists of a case-sensitive key-value pair. For example, you could define a tag with key = Name and value = Webserver. A copy of a tag can be applied to volumes, instances or both. Tags will be applied to all instances and volumes. Learn more about tagging your Amazon EC2 resources.

The screenshot shows the 'Configure Security Group' step of the AWS Launch Instance Wizard. It is creating a new security group named 'webserverwin' with a single rule allowing SSH traffic on port 22 from any source. A warning message at the bottom advises updating security group rules to allow access from known IP addresses only.

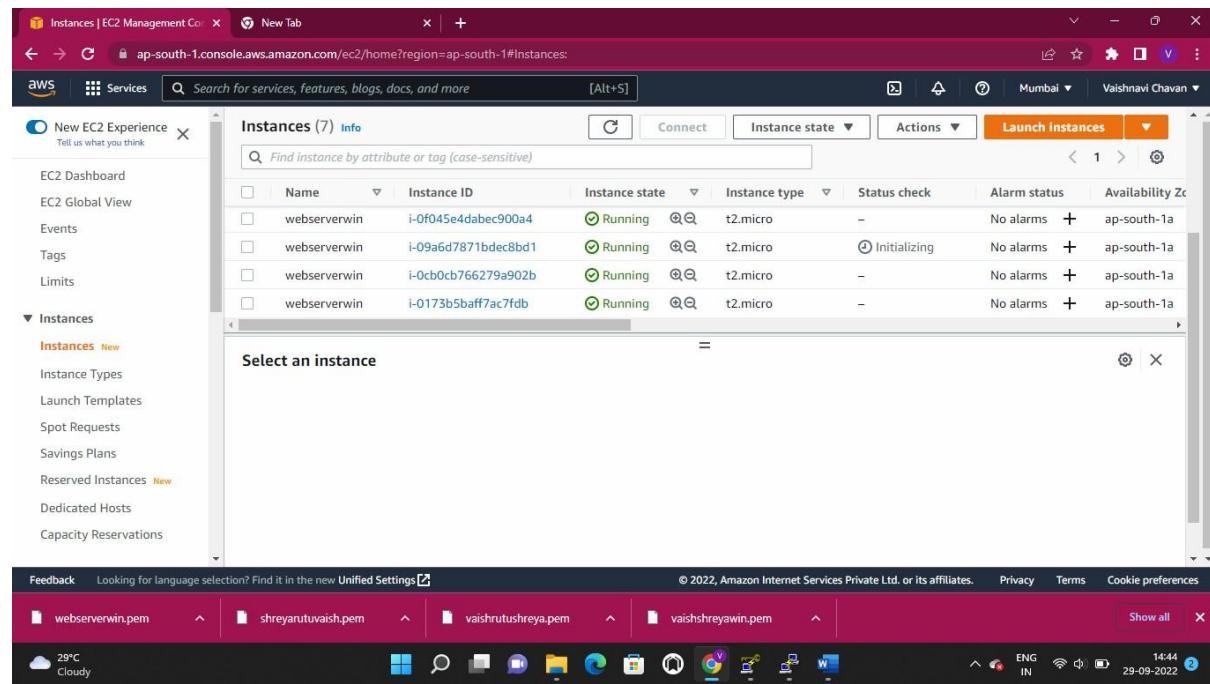
Step 6: Configure Security Group

A security group is a set of firewall rules that control the traffic for your instance. On this page, you can add rules to allow specific traffic to reach your instance. For example, if you want to set up a web server and allow Internet traffic to reach your instance, add rules that allow unrestricted access to the HTTP and HTTPS ports. You can create a new security group or select from an existing one below. Learn more about Amazon EC2 security groups.

The screenshot shows the 'Review Instance Launch' step of the AWS Launch Instance Wizard. It summarizes the configuration, including the AMI (Amazon Linux 2 AMI (HVM) - Kernel 5.10, SSD Volume Type - ami-01216e7612243e0f), instance type (t2.micro), and other settings. A summary table provides details on ECUs, vCPUs, memory, storage, EBS-Optimized Available, and Network Performance.



Step 5 : Select Instances that you have going to created. Now our four instances are running then select one out off this and connect.



The screenshot shows the AWS EC2 Management Console. The left sidebar is collapsed. The main area displays a table of instances. One instance, 'webserverwin' (i-0cb0cb766279a902b), is selected and highlighted with a blue border. A detailed view of this instance is shown in a modal window. The instance summary section shows the following details:

Instance ID	Public IPv4 address	Private IPv4 addresses
i-0cb0cb766279a902b (webserverwin)	35.154.60.254 open address	172.31.39.130
IPv6 address	Instance state	Public IPv4 DNS
-	Running	ec2-35-154-60-254.ap-south-1.compute.amazonaws.com open address

At the bottom of the main EC2 page, there is a feedback banner and a toolbar with several tabs and icons.

Step 6 : Select SSH Client then copy public DNS.

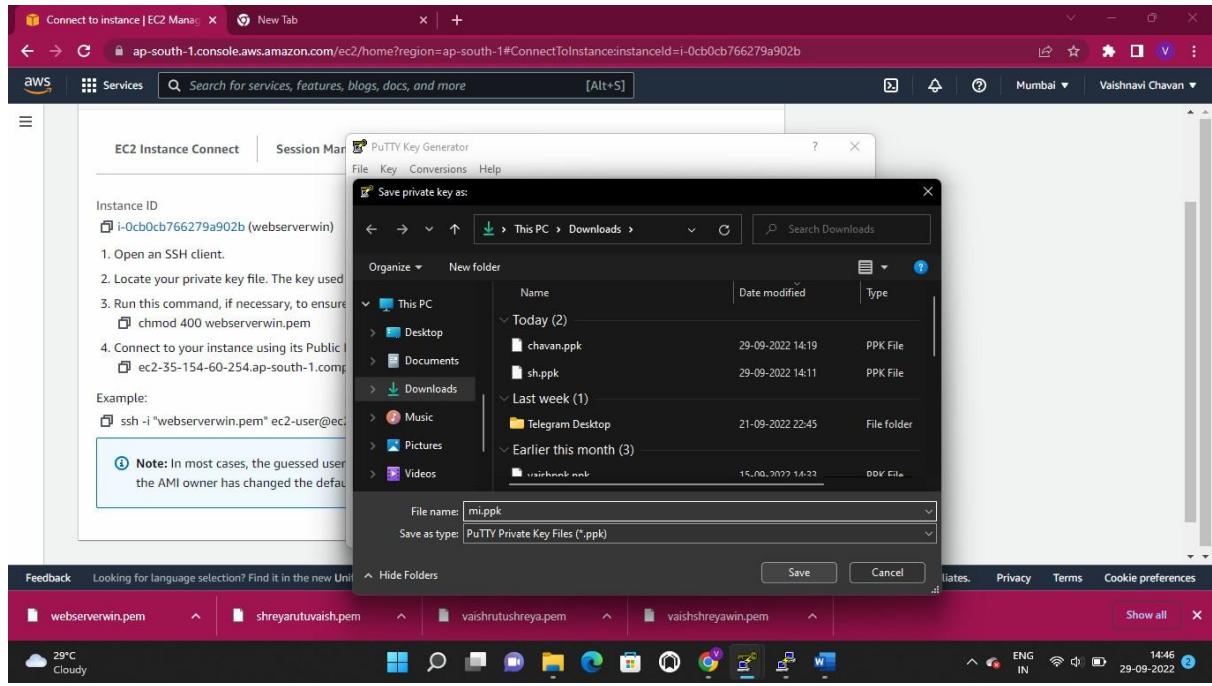
The screenshot shows the 'EC2 Instance Connect' page for the selected instance. The 'SSH client' tab is active. The page contains the following instructions:

1. Open an SSH client.
2. Locate your private key file. The key used to launch this instance is webserverwin.pem
3. Run this command, if necessary, to ensure your key is not publicly viewable.
chmod 400 webserverwin.pem
4. Connect to your instance using its Public DNS:
ec2-35-154-60-254.ap-south-1.compute.amazonaws.com

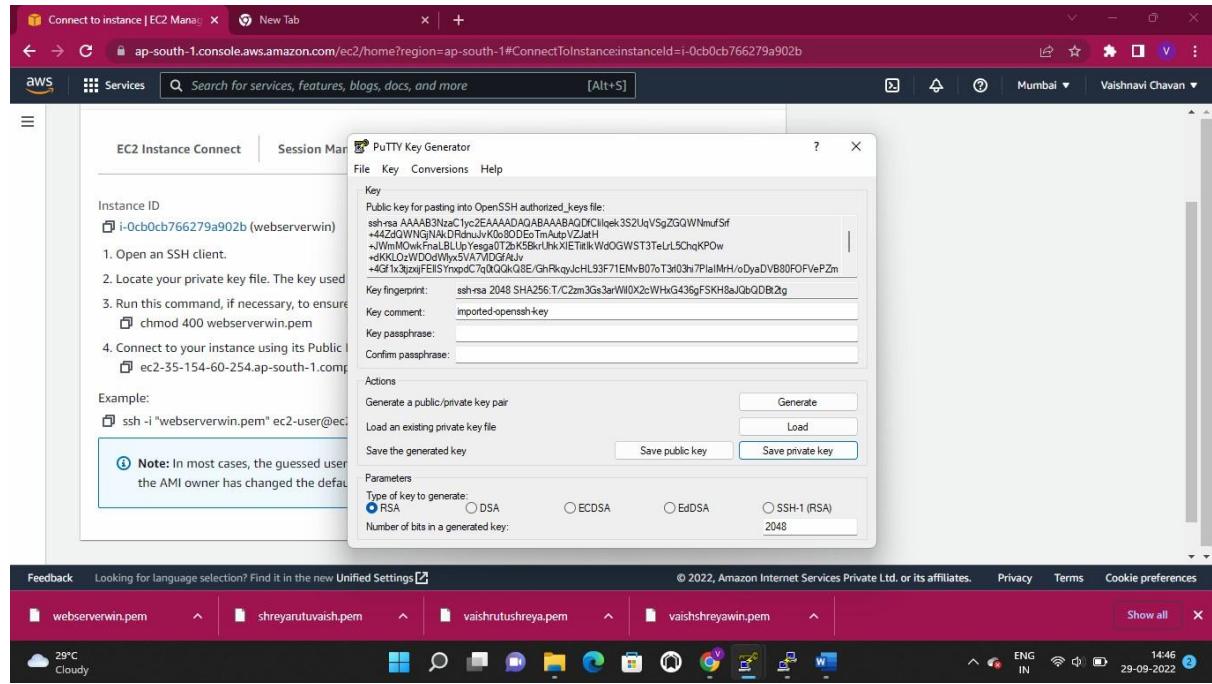
Example:
ssh -i "webserverwin.pem" ec2-user@ec2-35-154-60-254.ap-south-1.compute.amazonaws.com

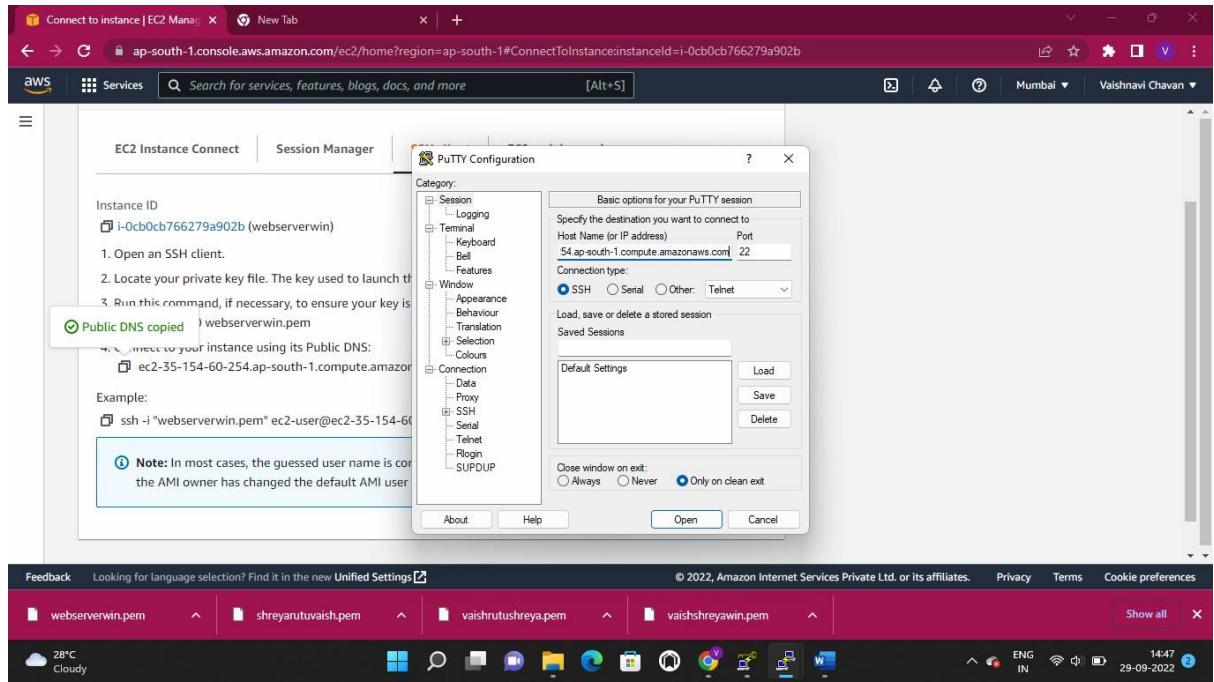
Note: In most cases, the guessed user name is correct. However, read your AMI usage instructions to check if the AMI owner has changed the default AMI user name.

At the bottom of the page, there is a feedback banner and a toolbar with several tabs and icons.

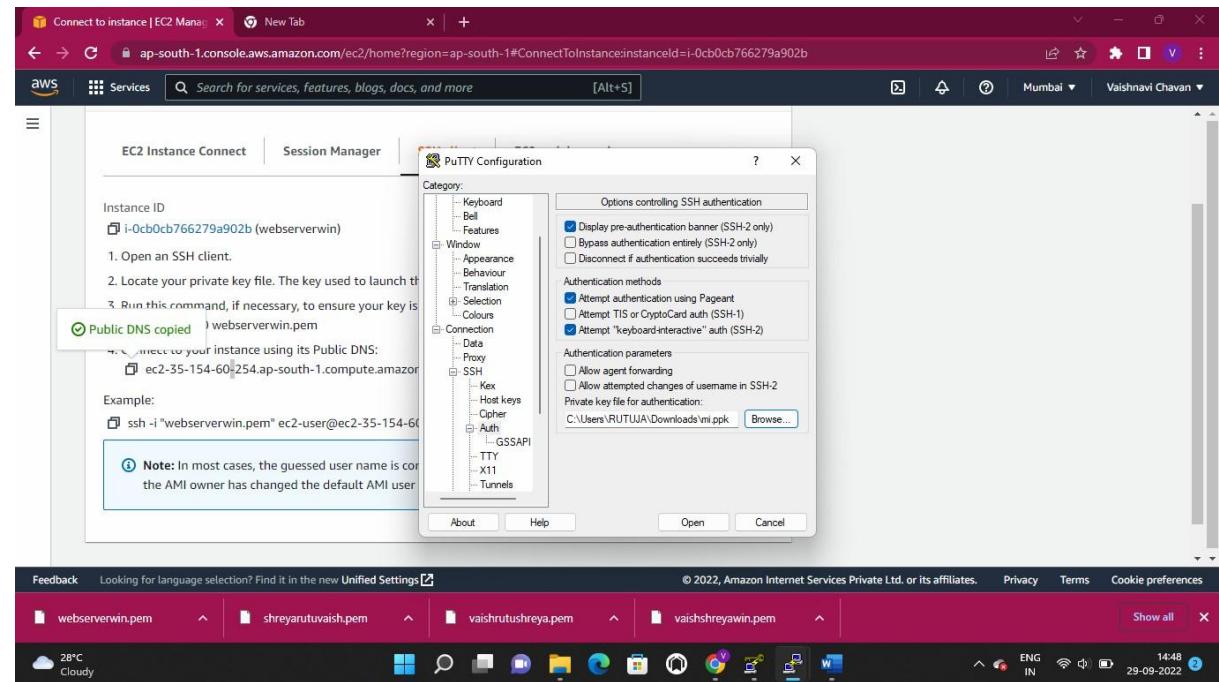


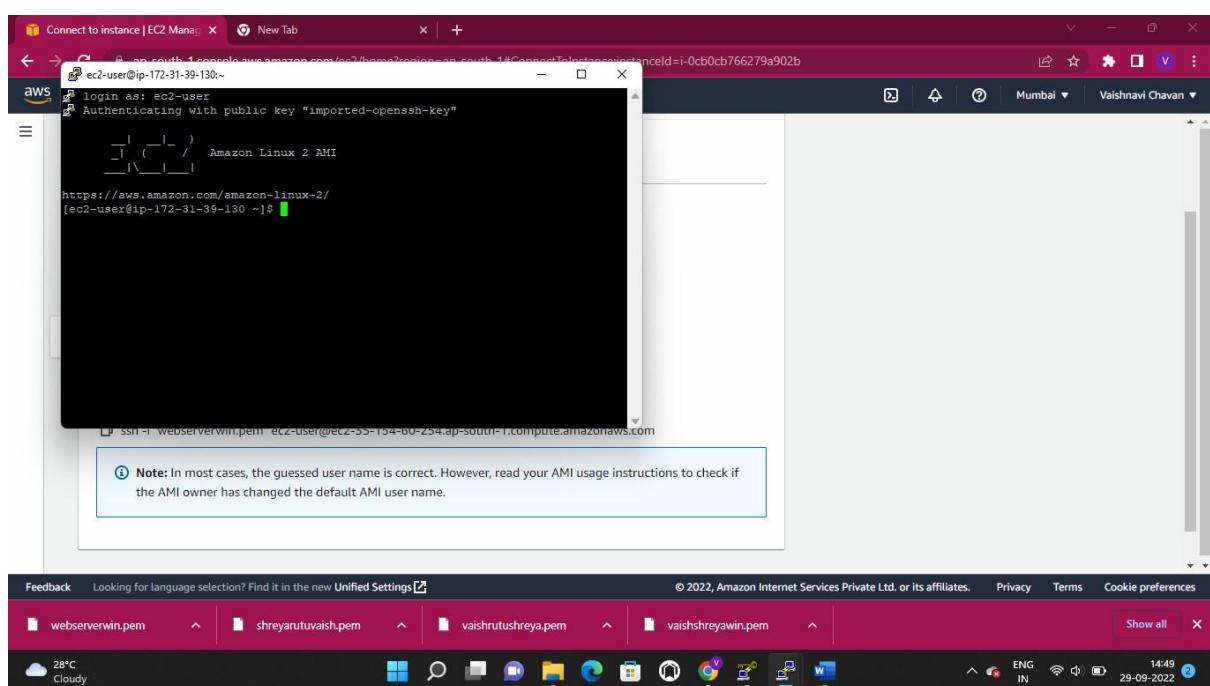
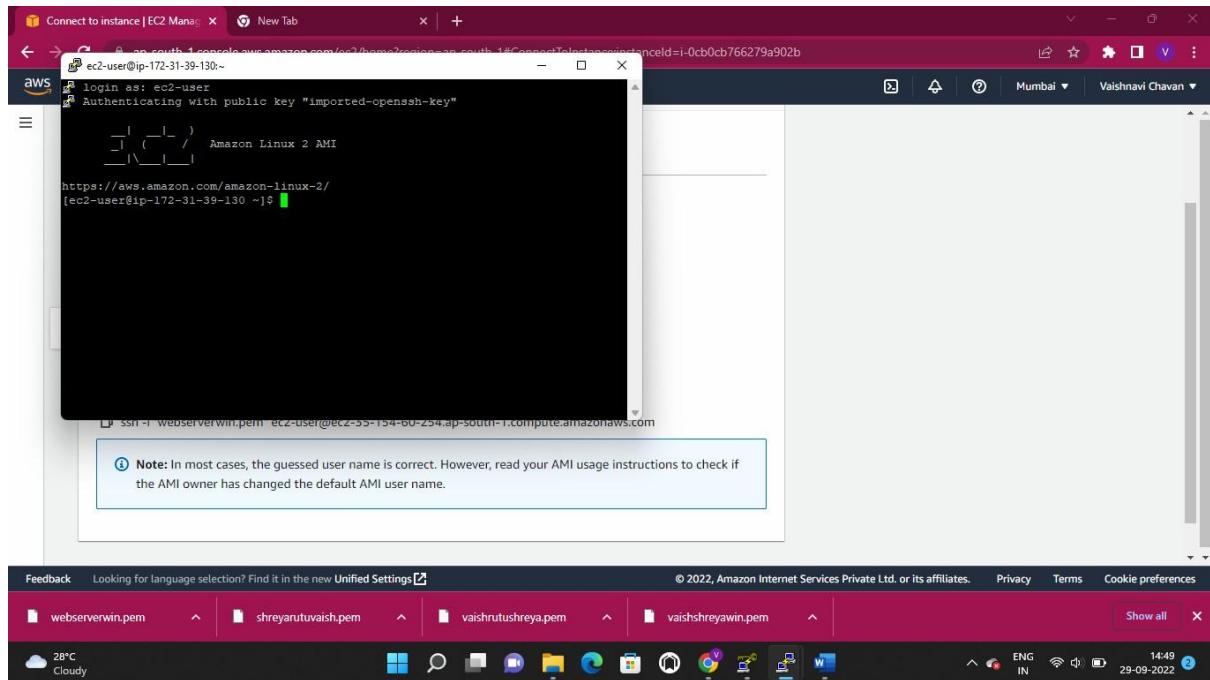
Step 7 : Then download PuttyGen and PuttyExe . Open Putty Gen then click on load then paste downloaded pem file . Then click on save private key in the form of .ppk then minimize.





Step 8 : Click on Putty exe , open it and paste public DNS .select client SSH. Click on SSH then Auth click on it. Browze PPK file here then click on open. Our Window will be open.





Conclusion: Creating and accessing a virtual instance using an SSH client ensures secure and efficient remote management of cloud resources. This process is fundamental for developers and system administrators to deploy, configure, and maintain applications in a cloud environment.