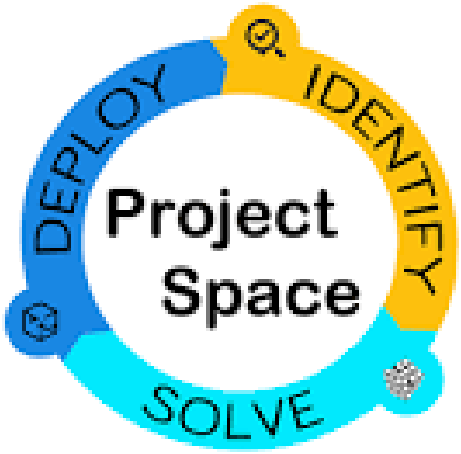
AUTOMATE APPLICATIONS USING ANSIBLE



TECHNICAL HUB

BY: Vishal Battula
20A91A0506

SCOPE:

Ansible is a popular automation tool that allows you to automate IT tasks such as configuration management, application deployment, and infrastructure management. Its scope is vast, and it can be used to automate a wide range of applications and systems.

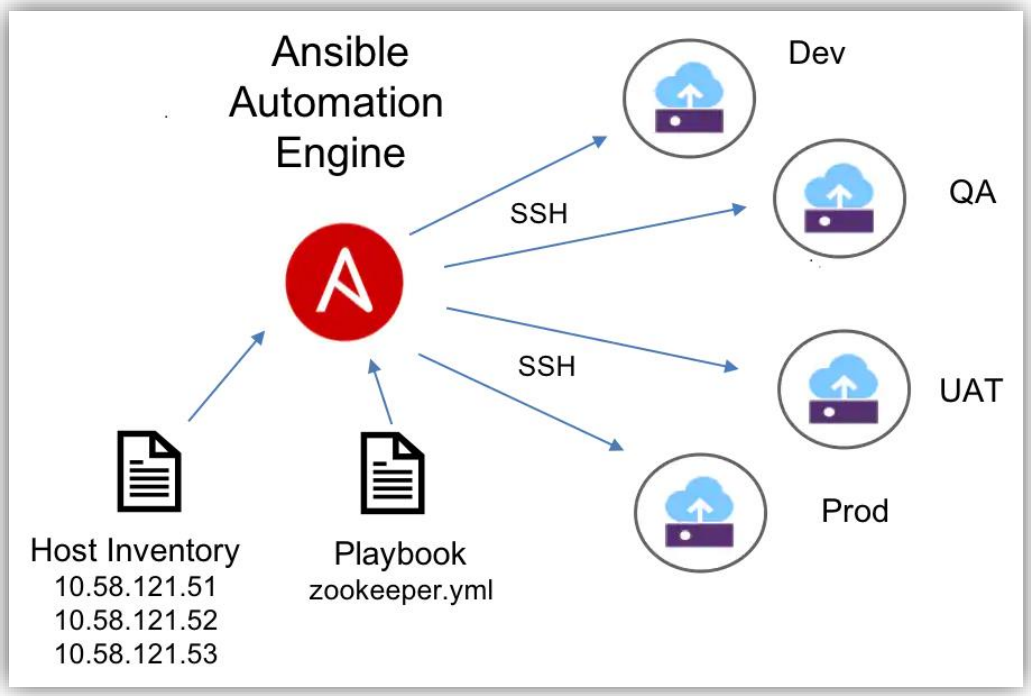
Some of the popular use cases for Ansible automation include:
Configuration management: Ansible can be used to automate the configuration of servers, networking devices, and other IT resources. This includes tasks such as setting up users and permissions, installing software and packages, and configuring services.

Application deployment: Ansible can automate the deployment of applications and their dependencies, including web servers, databases, and load balancers. This can be particularly useful in environments where frequent updates and deployments are required.

Infrastructure management: Ansible can automate the provisioning of infrastructure resources such as virtual machines, containers, and cloud instances. This includes tasks such as creating and configuring network interfaces, storage volumes, and security groups.

Security automation: Ansible can be used to automate security-related tasks such as vulnerability scanning, patch management, and compliance auditing.

Overall, Ansible's flexibility and wide range of capabilities make it a valuable tool for automating various IT tasks and applications.



PURPOSE:

The purpose of automating applications using Ansible is to simplify and streamline IT operations. By automating routine tasks, such as software installation, configuration management, and infrastructure provisioning, Ansible can save time and reduce the risk of errors that can occur with manual processes.

Some of the key benefits of automating applications with Ansible include
Improved efficiency: Ansible enables you to automate repetitive tasks, freeing up time for IT teams to focus on more strategic work.

Consistency: Automation with Ansible ensures that IT operations are standardized and consistent, reducing the risk of errors and security vulnerabilities.

Speed: Ansible can execute tasks much faster than manual processes, reducing the time it takes to deploy applications and infrastructure.

Scalability: Ansible is highly scalable and can automate tasks across large numbers of servers and devices.

Collaboration: Ansible provides a platform for collaboration between IT teams, allowing for the sharing of playbooks and roles that can be used across the organization.

Overall, the purpose of automating applications with Ansible is to improve efficiency, consistency, speed, and scalability, while reducing the risk of errors and increasing collaboration between IT teams.

TOOLS & TECHNOLOGIES USED:

Ansible:

- Ansible is an open-source automation tool.
- It uses YAML-based playbooks to define desired system state.
- Ansible is agentless, lightweight, and easy to set up.

Git & Git-Hub:

- Git is a distributed version control system.
- It allows developers to track changes to their code over time.
- Git enables collaboration among developers by allowing them to work on the same codebase simultaneously.

AWS:

- AWS (Amazon Web Services) is a cloud computing platform that provides a wide range of services and solutions for businesses and individuals.
- It offers on-demand computing resources, such as virtual machines, storage, and databases, that can be accessed over the internet.

Slack:

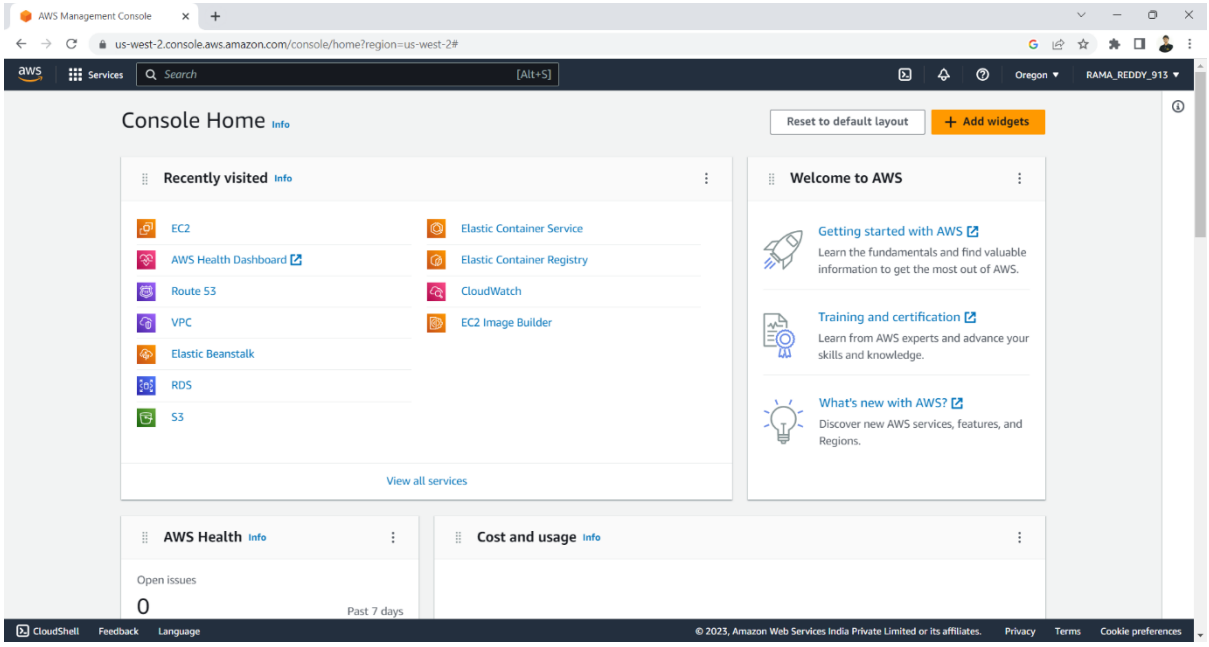
- Slack is a messaging platform that can be used to notify team members about the status of the deployment process.
- Ansible can be configured to send notifications to Slack channels when certain tasks are completed or when there are errors in the deployment process.

JIRA:

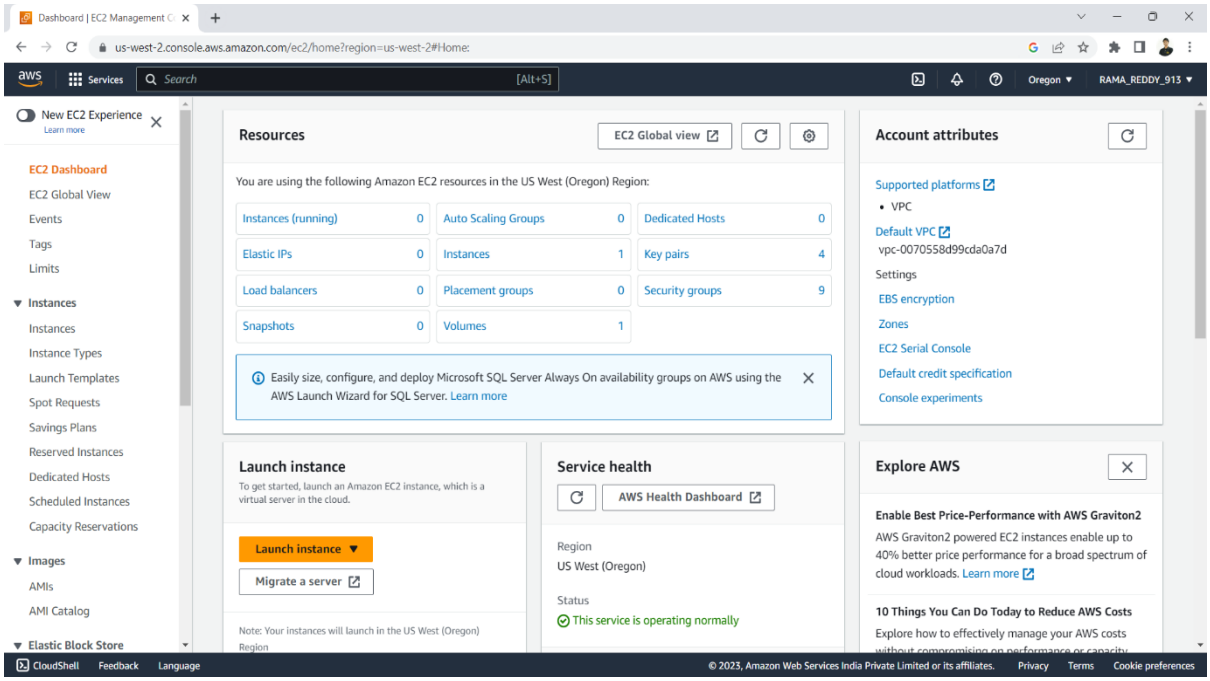
- JIRA is a project management tool that can be used to track issues and bugs during the deployment process.
- Ansible can be integrated with JIRA to create tickets automatically when there are errors in the deployment process.

PROOF OF CONCEPT:

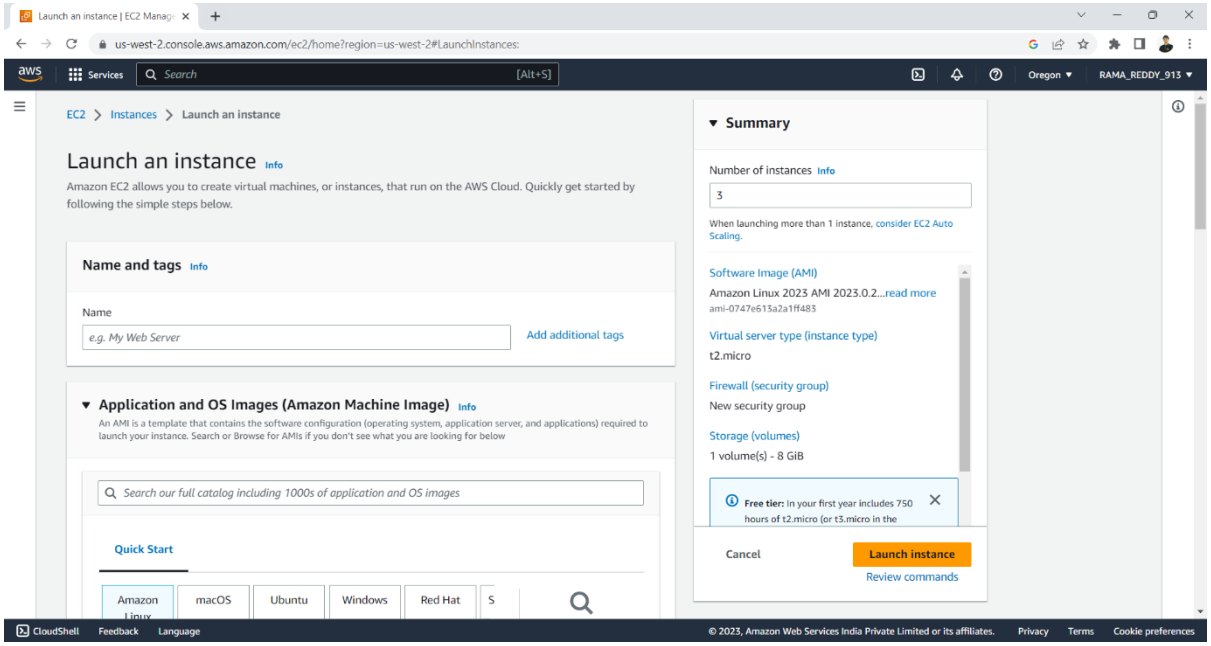
Login To aws.amazon.com with your credentials And navigate to console home



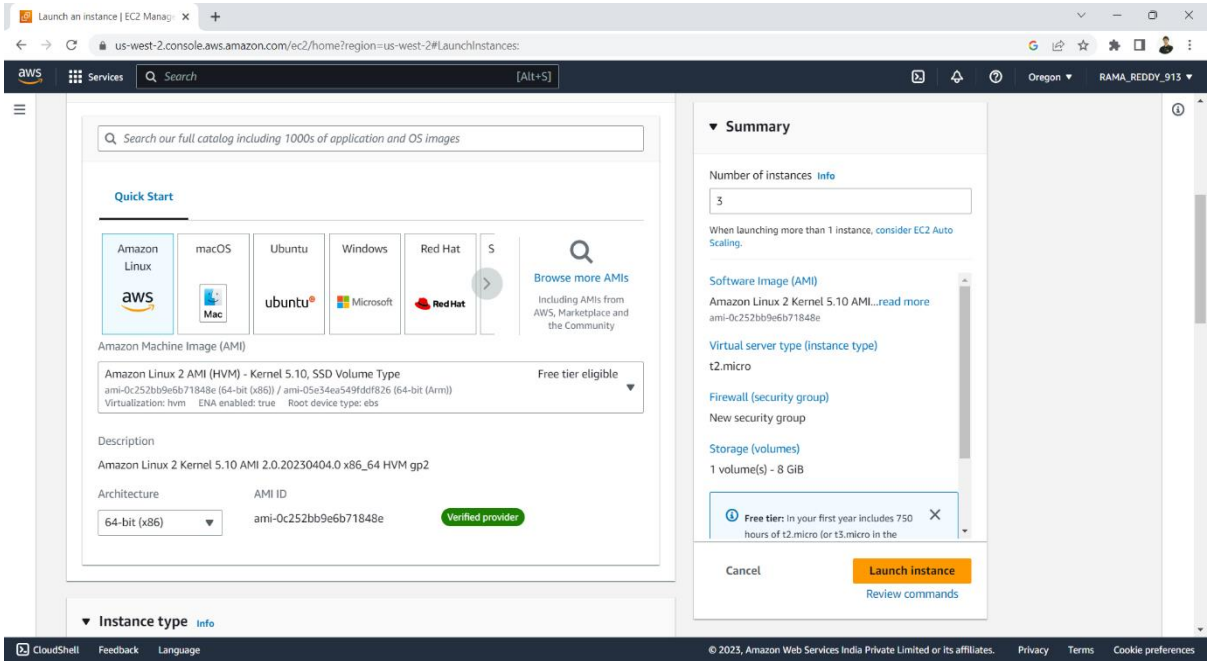
Click on Ec2 then you will be navigated to EC2 Dashboard



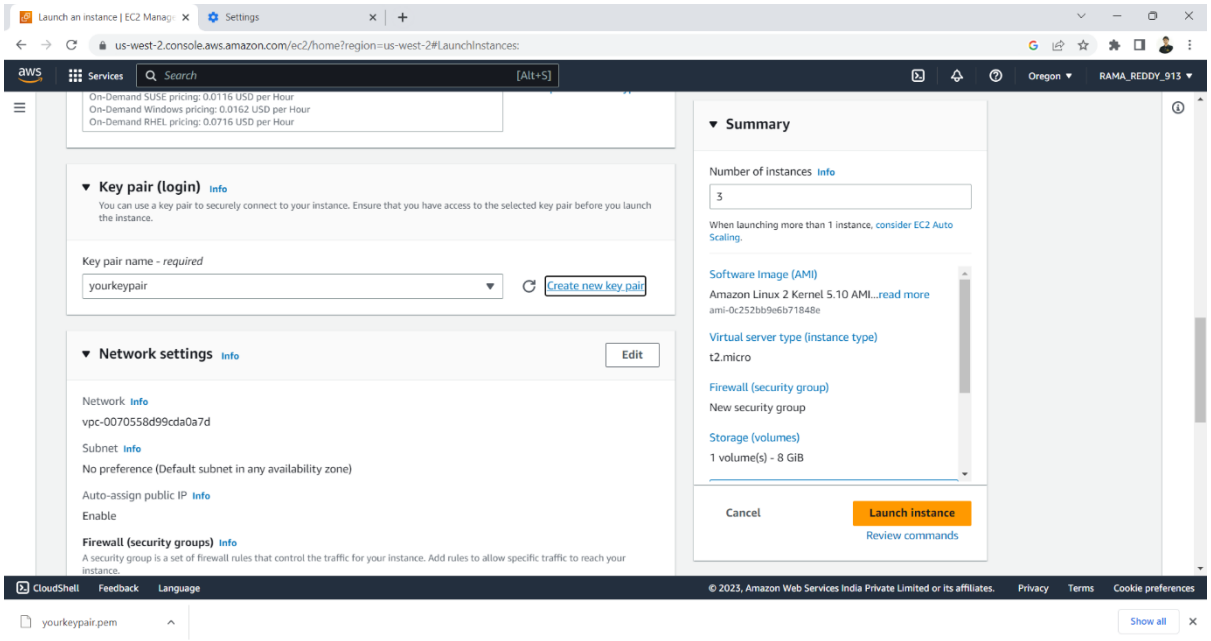
Click On Instances and Launch 3 instances at a time



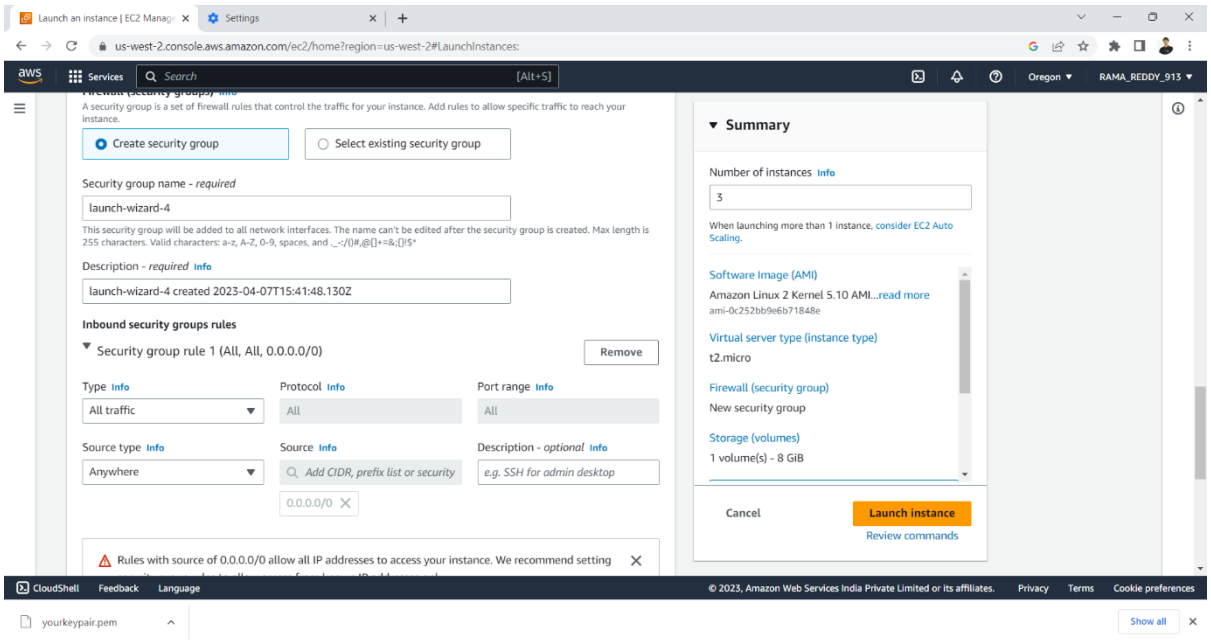
Select the AMI (Amazon Machine Image) in our case select Amazon Linux2 And select the Architecture of the operating System.



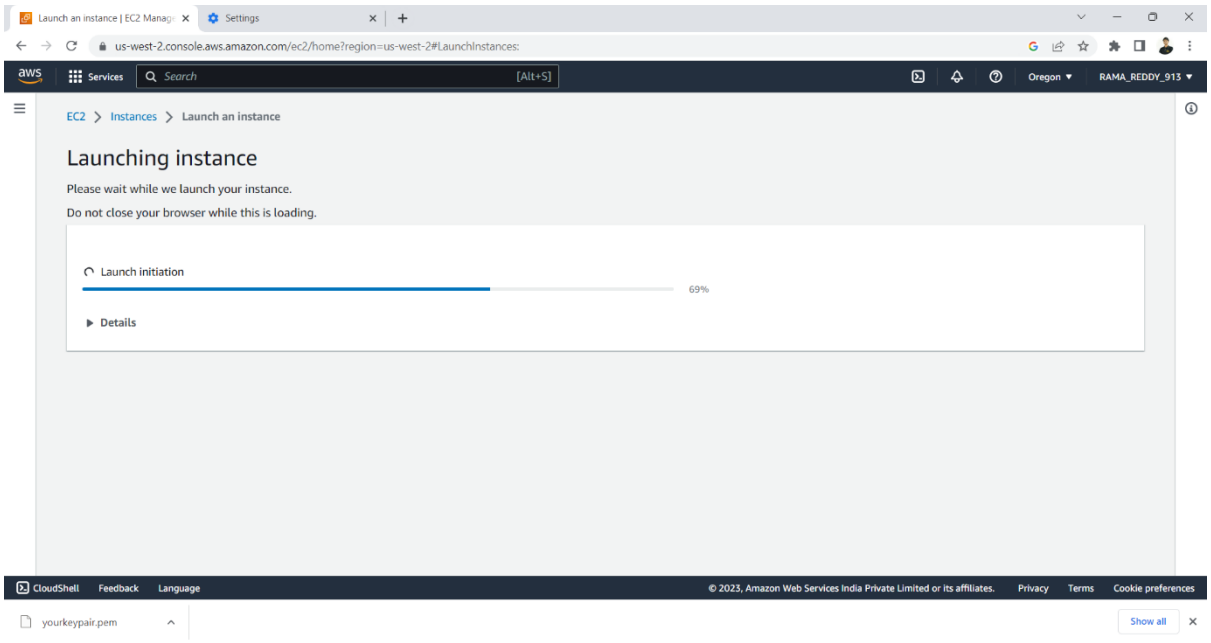
Create a keypair, keypair allows you to connect to your instance .



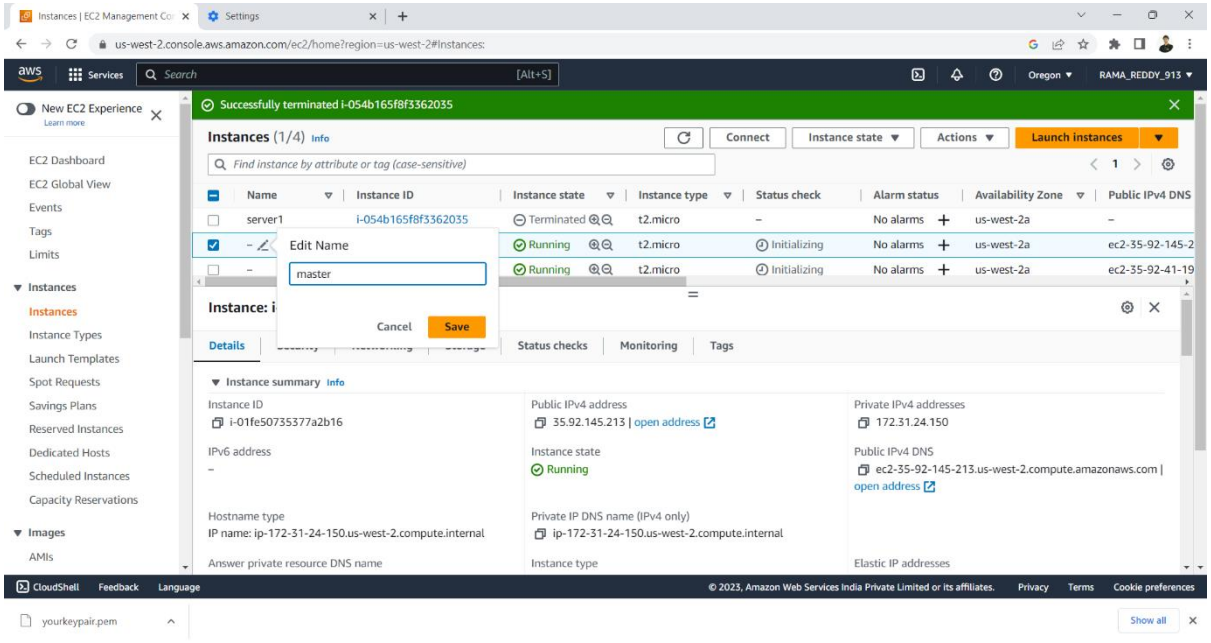
Selete your keypair and VPC, subnet and enable auto assigne public Ip

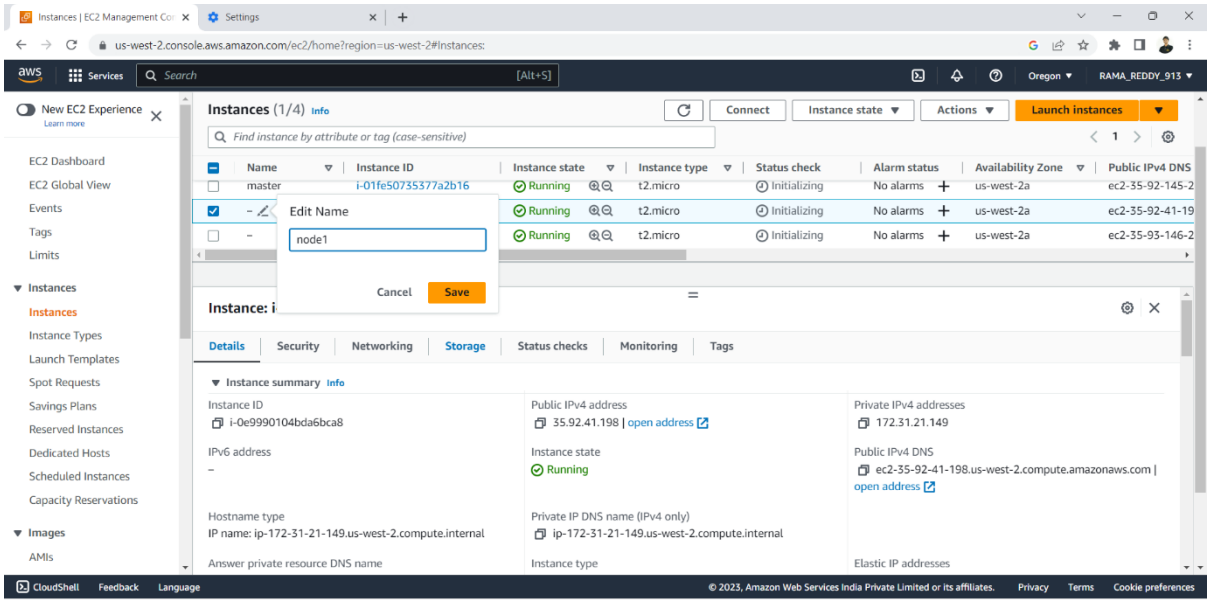


Click on create security group and select inbound security group rules. In our case select ALL Traffic, finally click on launch instance.



Instance launched. Rename as Master ,Node1,Node2.




Instances | EC2 Management Co
Settings
us-west-2.console.aws.amazon.com/ec2/home?region=us-west-2#Instances:
Services
Search
[Alt+S]
Oregon
RAMA_REDDY_913
New EC2 Experience
Learn more
EC2 Dashboard
EC2 Global View
Events
Tags
Limits
Instances
Instances
Instance Types
Launch Templates
Spot Requests
Savings Plans
Reserved Instances
Dedicated Hosts
Scheduled Instances
Capacity Reservations
Images
AMIs
Instances (1/4) Info
Connect
Instance state
Actions
Launch instances
Find instance by attribute or tag (case-sensitive)
Name
Instance ID
Instance state
Instance type
Status check
Alarm status
Availability Zone
Public IPv4 DNS
master
i-01fe50735377a2b16
Running
t2.micro
Initializing
No alarms
us-west-2a
ec2-35-92-145-2
Edit Name
node1
Cancel
Save
ec2-35-92-41-19
ec2-35-93-146-2
Instance: i
Details
Security
Networking
Storage
Status checks
Monitoring
Tags
Instance summary Info
Instance ID
i-0e9990104bda6bca8
Public IPv4 address
35.92.41.198 | open address
Private IPv4 addresses
172.31.21.149
IPv6 address
Instance state
Running
Public IPv4 DNS
ec2-35-92-41-198.us-west-2.compute.amazonaws.com | open address
Hostname type
IP name: ip-172-31-21-149.us-west-2.compute.internal
Private IP DNS name (IPv4 only)
ip-172-31-21-149.us-west-2.compute.internal
Answer private resource DNS name
Instance type
Elastic IP addresses
CloudShell
Feedback
Language
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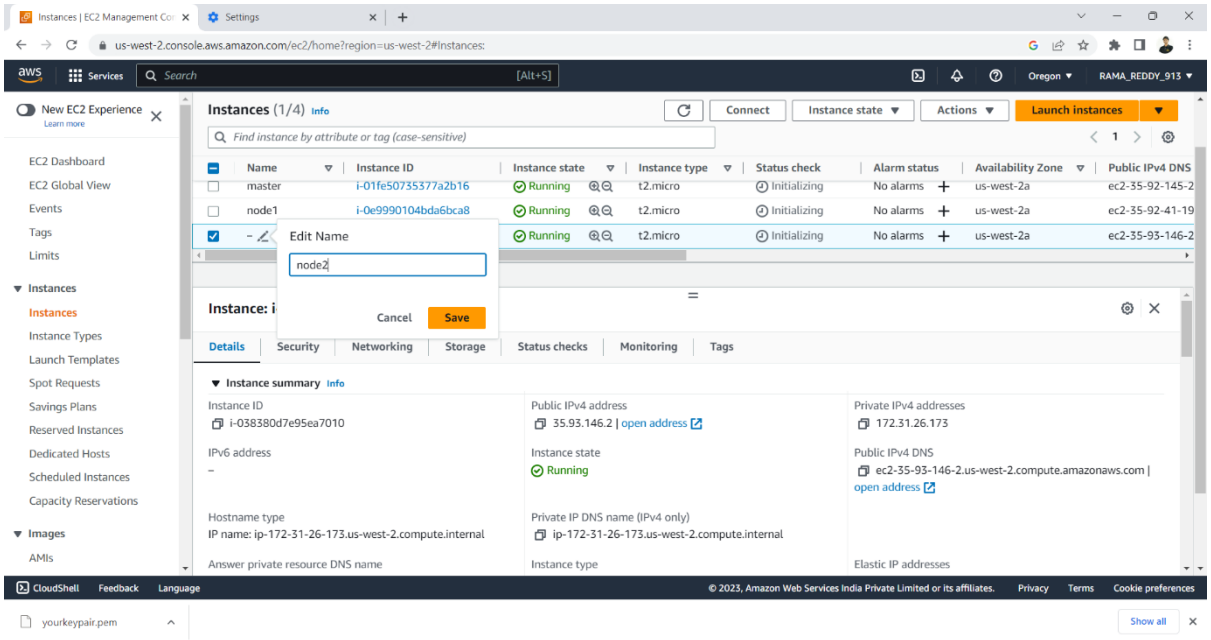
Instances | EC2 Management Co
Settings
us-west-2.console.aws.amazon.com/ec2/home?region=us-west-2#Instances:
Services
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Events
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Instances
Instances
Instance Types
Launch Templates
Spot Requests
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Reserved Instances
Dedicated Hosts
Scheduled Instances
Capacity Reservations
Images
AMIs
Instances (1/4) Info
Connect
Instance state
Actions
Launch instances
Find instance by attribute or tag (case-sensitive)
Name
Instance ID
Instance state
Instance type
Status check
Alarm status
Availability Zone
Public IPv4 DNS
master
i-01fe50735377a2b16
Running
t2.micro
Initializing
No alarms
us-west-2a
ec2-35-92-145-2
node1
i-0e9990104bda6bca8
Running
t2.micro
Initializing
No alarms
us-west-2a
ec2-35-92-41-19
Edit Name
node2
Cancel
Save
ec2-35-93-146-2
Instance: i
Details
Security
Networking
Storage
Status checks
Monitoring
Tags
Instance summary Info
Instance ID
i-038380d7e95ea7010
Public IPv4 address
35.93.146.2 | open address
Private IPv4 addresses
172.31.26.173
IPv6 address
Instance state
Running
Public IPv4 DNS
ec2-35-93-146-2.us-west-2.compute.amazonaws.com | open address
Hostname type
IP name: ip-172-31-26-173.us-west-2.compute.internal
Private IP DNS name (IPv4 only)
ip-172-31-26-173.us-west-2.compute.internal
Answer private resource DNS name
Instance type
Elastic IP addresses
CloudShell
Feedback
Language
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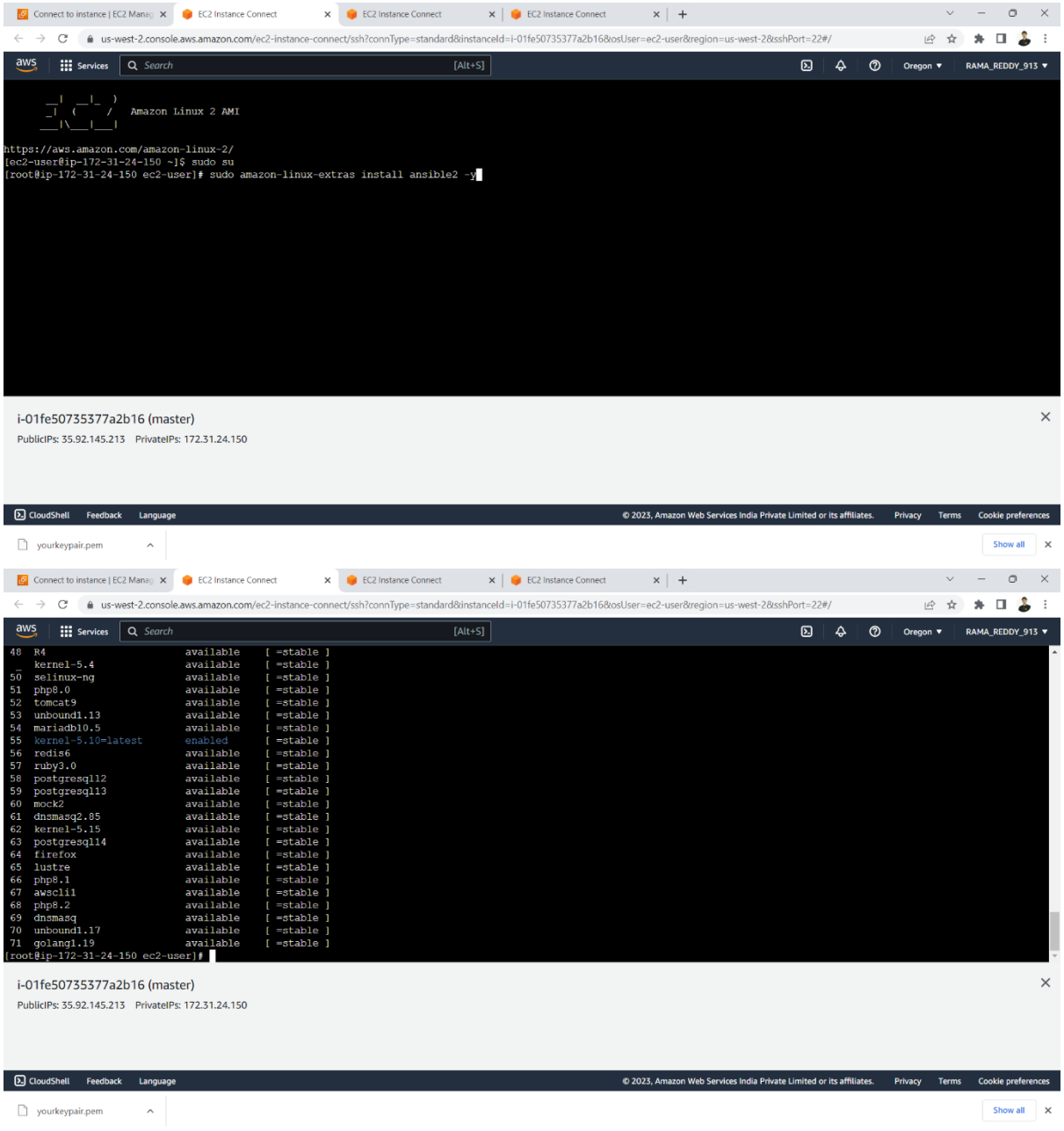
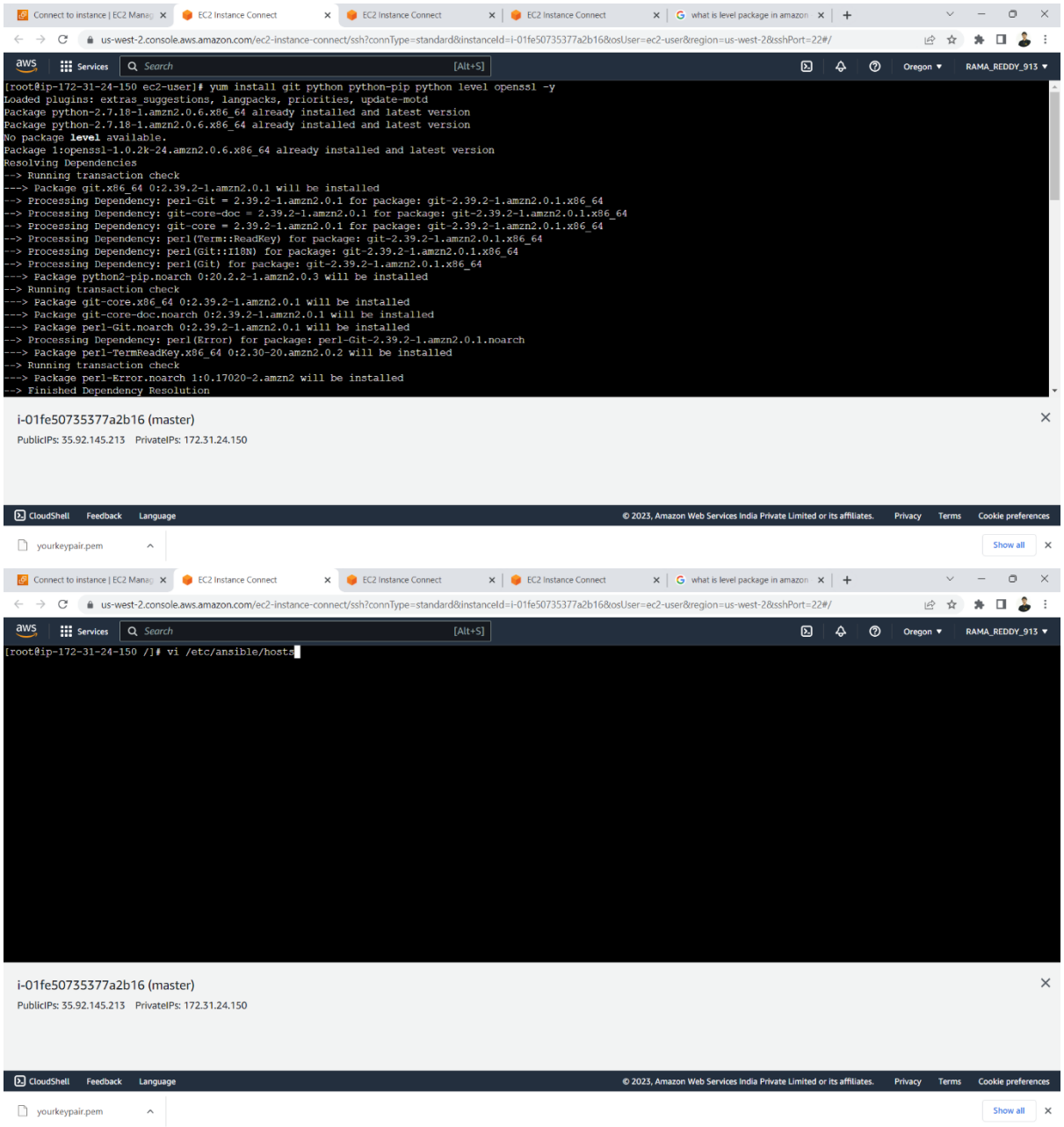
Connect to master instance and execute the following commands




Connect to instance | EC2 Manag
EC2 Instance Connect
EC2 Instance Connect
EC2 Instance Connect
what is level package in amazon
us-west-2.console.aws.amazon.com/ec2-instance-connect/ssh?connType=standard&instanceId=i-01fe50735377a2b16&osUser=ec2-user&region=us-west-2&sshPort=22#/
aws
Services
Search
[Alt+S]
Oregon
RAMA_REDDY_913
[root@ip-172-31-24-150 ec2-user]# yum install git python python-pip python level openssl -y
Loaded plugins: extras_suggestions, langpacks, priorities, update-motd
Package python-2.7.18-1.amzn2.0.6.x86_64 already installed and latest version
Package python-2.7.18-1.amzn2.0.6.x86_64 already installed and latest version
No package level available.
Package 1:openssl-1.0.2k-24.amzn2.0.6.x86_64 already installed and latest version
Resolving Dependencies
--> Running transaction check
---> Package git.x86_64 0:2.39.2-1.amzn2.0.1 will be installed
--> Processing Dependency: perl-Git = 2.39.2-1.amzn2.0.1 for package: git-2.39.2-1.amzn2.0.1.x86_64
--> Processing Dependency: git-core-doc = 2.39.2-1.amzn2.0.1 for package: git-2.39.2-1.amzn2.0.1.x86_64
--> Processing Dependency: git-core = 2.39.2-1.amzn2.0.1 for package: git-2.39.2-1.amzn2.0.1.x86_64
--> Processing Dependency: perl(Term::ReadKey) for package: git-2.39.2-1.amzn2.0.1.x86_64
--> Processing Dependency: perl(Git::I18N) for package: git-2.39.2-1.amzn2.0.1.x86_64
--> Processing Dependency: perl(Git) for package: git-2.39.2-1.amzn2.0.1.x86_64
---> Package python2-pip.noarch 0:20.2.2-1.amzn2.0.3 will be installed
--> Running transaction check
---> Package git-core.x86_64 0:2.39.2-1.amzn2.0.1 will be installed
---> Package git-core-doc.noarch 0:2.39.2-1.amzn2.0.1 will be installed
---> Package perl-Git.noarch 0:2.39.2-1.amzn2.0.1 will be installed
--> Processing Dependency: perl(Error) for package: perl-Git-2.39.2-1.amzn2.0.1.noarch
---> Package perl-TermReadKey.x86_64 0:2.30-20.amzn2.0.2 will be installed
--> Running transaction check
---> Package perl-Error.noarch 1:0.17020-2.amzn2 will be installed
--> Finished Dependency Resolution
i-01fe50735377a2b16 (master)
PublicIPs: 35.92.145.213 PrivateIPs: 172.31.24.150
CloudShell
Feedback
Language
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Connect to instance | EC2 Manag
EC2 Instance Connect
EC2 Instance Connect
EC2 Instance Connect
what is level package in amazon
us-west-2.console.aws.amazon.com/ec2-instance-connect/ssh?connType=standard&instanceId=i-01fe50735377a2b16&osUser=ec2-user&region=us-west-2&sshPort=22#/
aws
Services
Search
[Alt+S]
Oregon
RAMA_REDDY_913
[root@ip-172-31-24-150 /]# vi /etc/ansible/hosts
i-01fe50735377a2b16 (master)
PublicIPs: 35.92.145.213 PrivateIPs: 172.31.24.150
CloudShell
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Language
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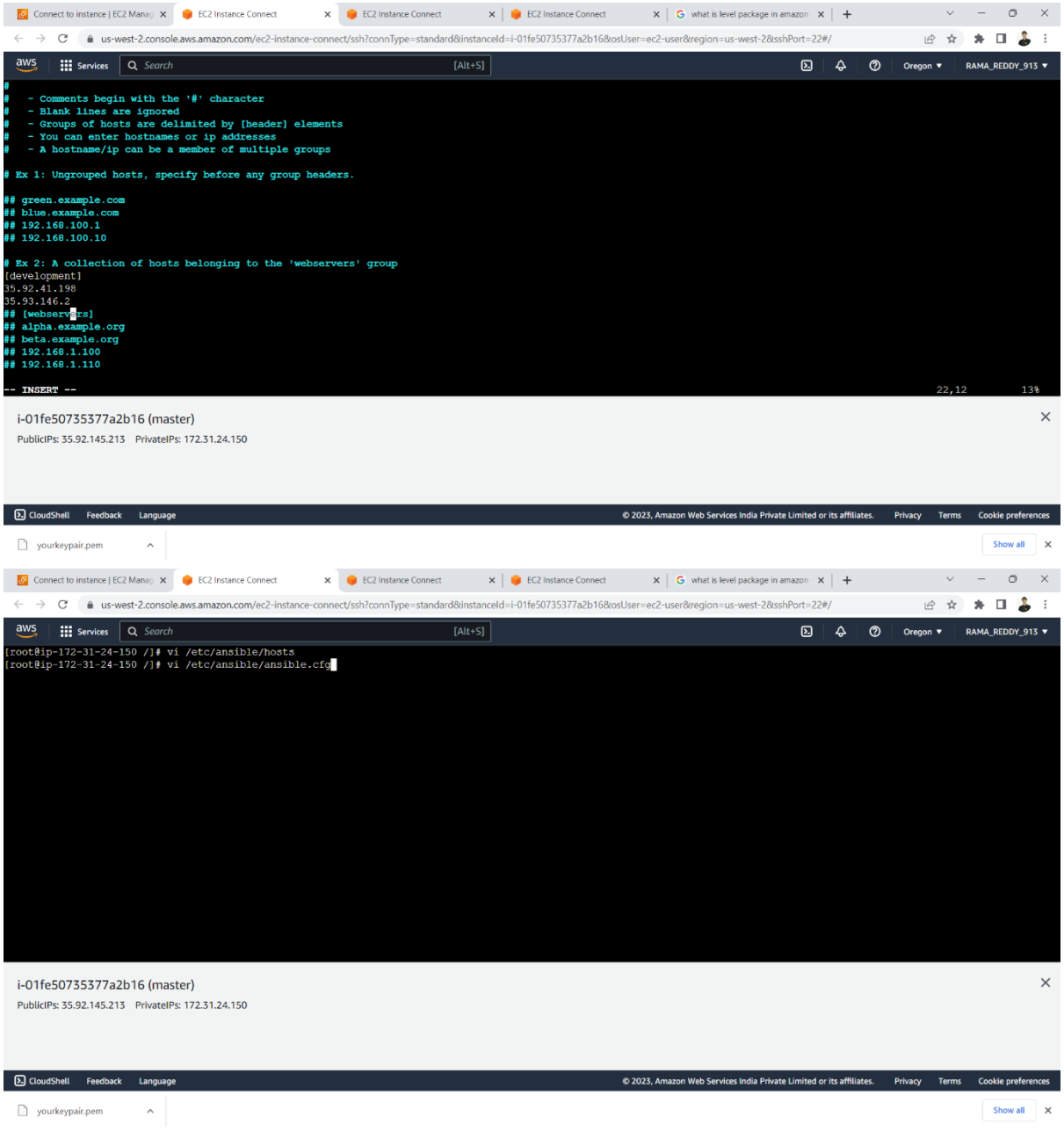
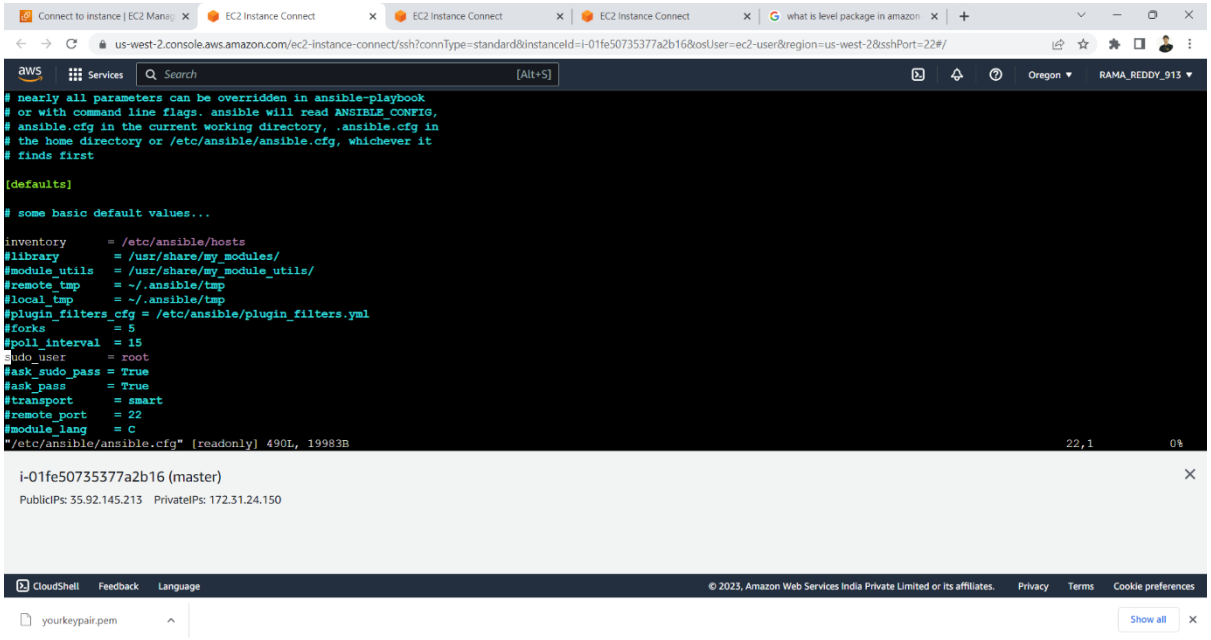
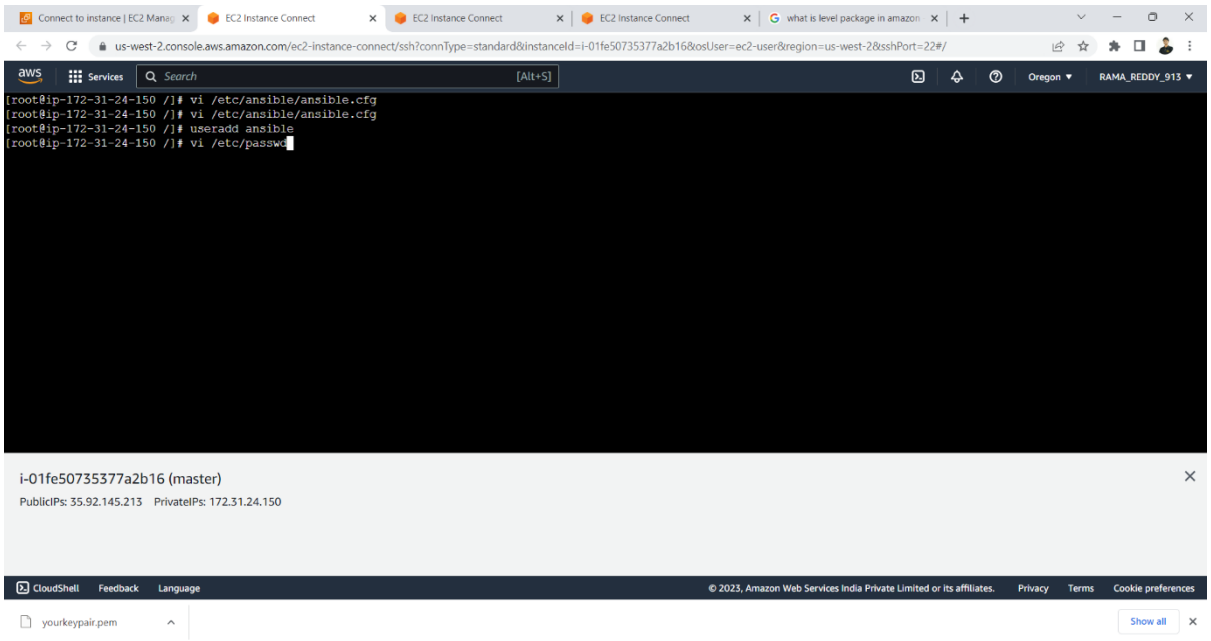
create a group and enter the public Ip of the nodes

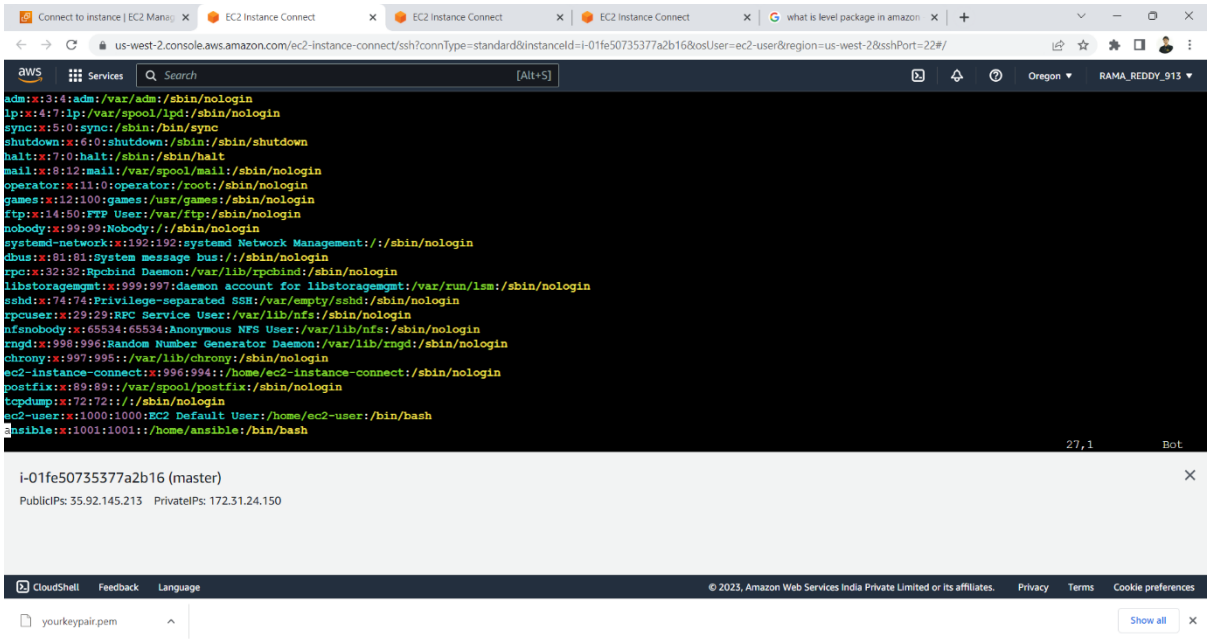


Uncomment inventory and sudo user

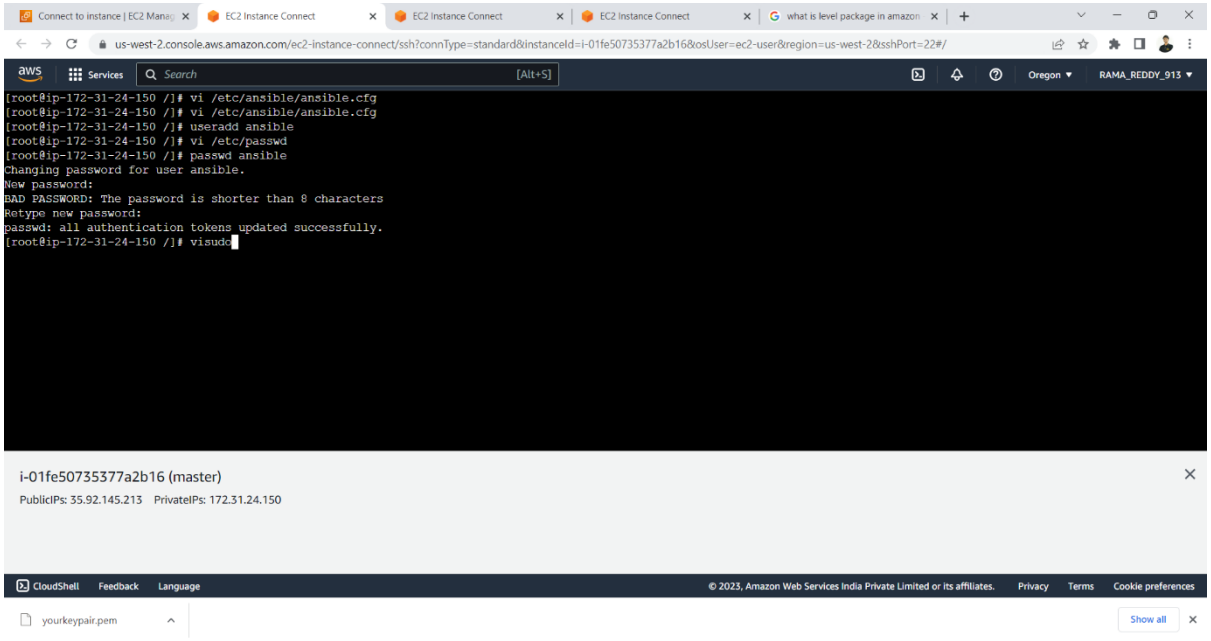


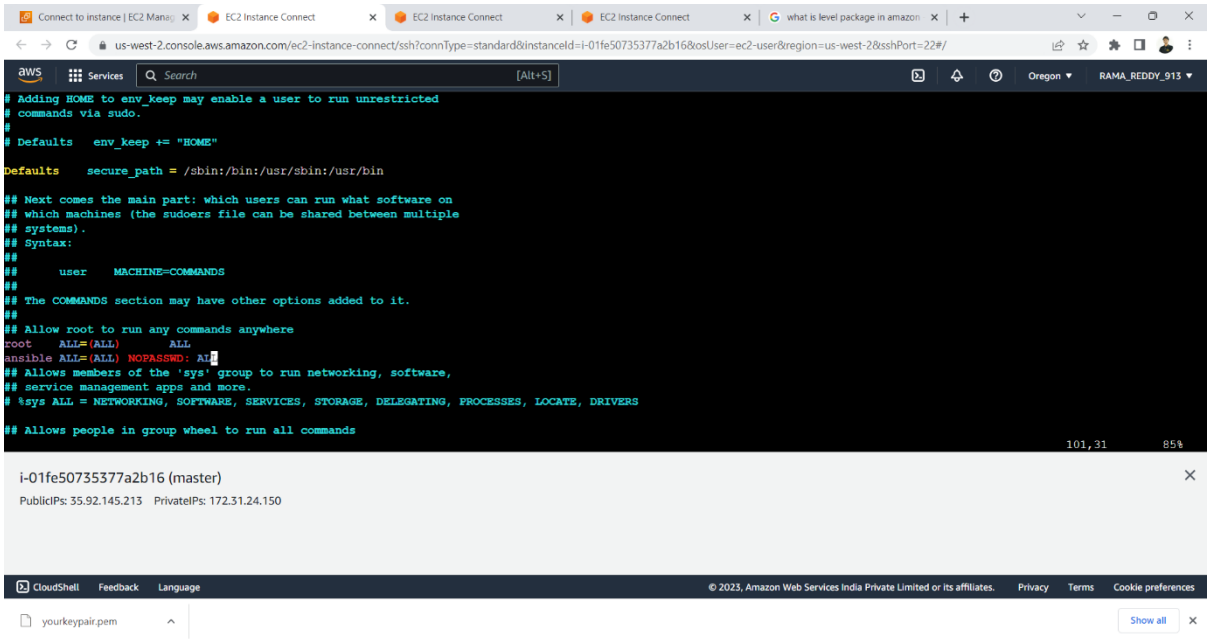
create a user named ansible to ensure user is created open /etc/passwd file



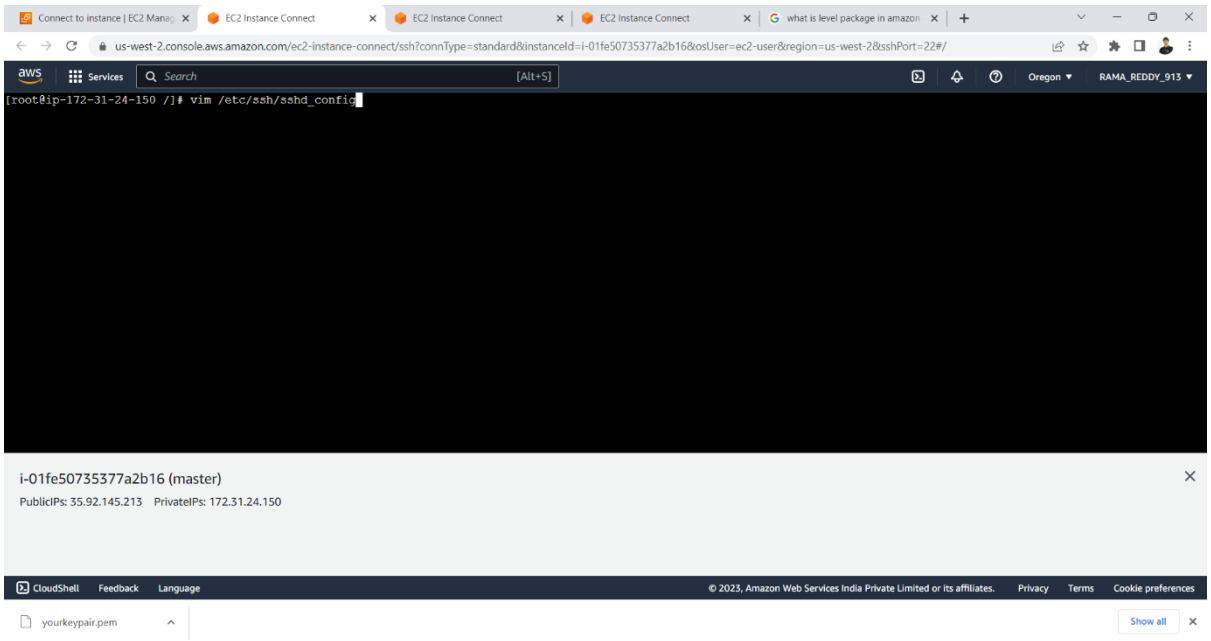


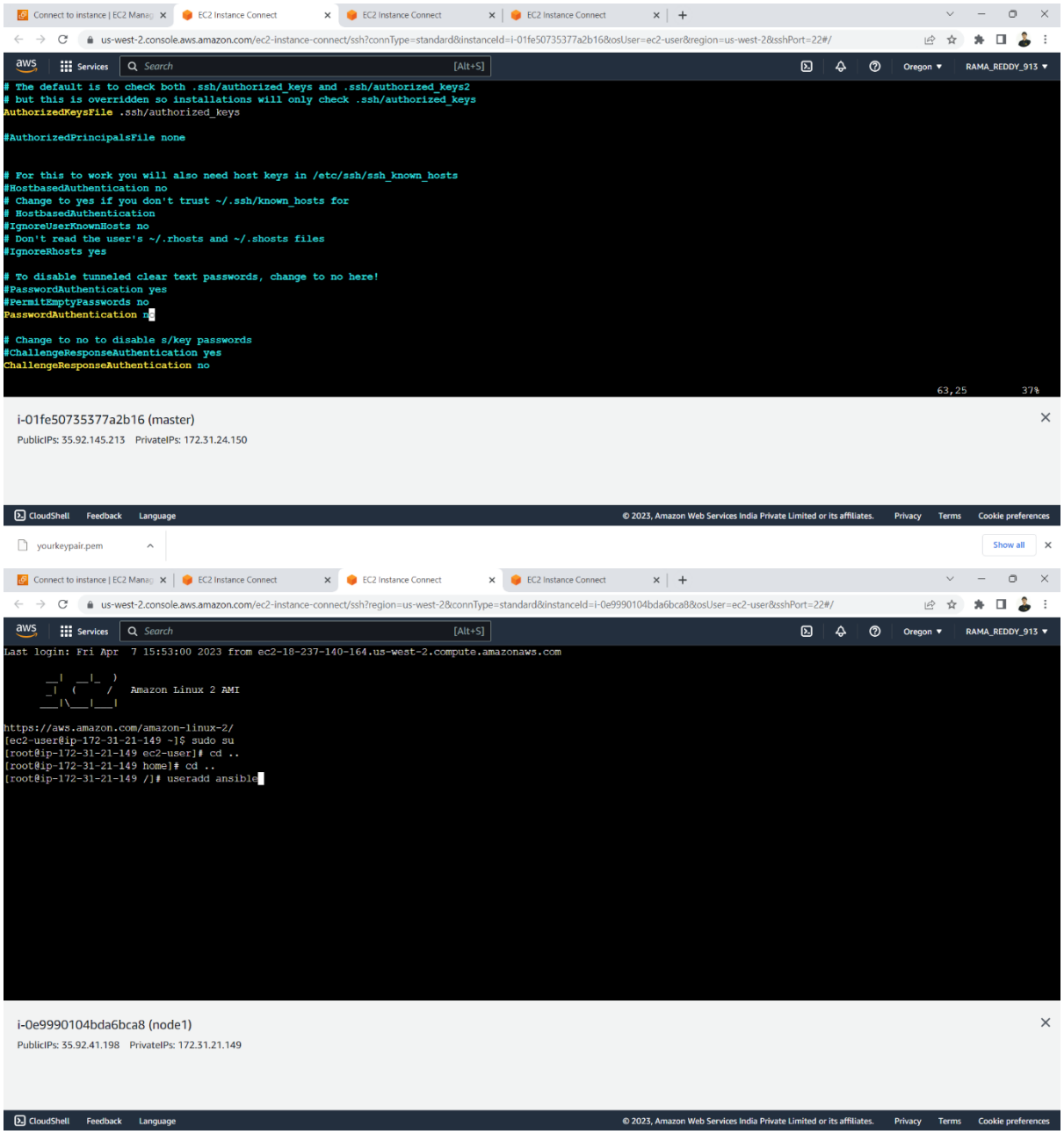
give root user prevalags to the user created





open /etc/ssh/sshd_config and change password authentication from no to yes and perform the same process for all the nodes




Connect to instance | EC2 Manag
EC2 Instance Connect
EC2 Instance Connect
EC2 Instance Connect
us-west-2.console.aws.amazon.com/ec2-instance-connect/ssh?connType=standard&instanceId=i-01fe50735377a2b16&osUser=ec2-user&region=us-west-2&sshPort=22#/
aws
Services
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The default is to check both .ssh/authorized_keys and .ssh/authorized_keys2
but this is overridden so installations will only check .ssh/authorized_keys
AuthorizedKeysFile .ssh/authorized_keys
#AuthorizedPrincipalsFile none
For this to work you will also need host keys in /etc/ssh/ssh_known_hosts
#HostbasedAuthentication no
Change to yes if you don't trust ~/.ssh/known_hosts for
HostbasedAuthentication
#IgnoreUserKnownHosts no
Don't read the user's ~/.rhosts and ~/.shosts files
#IgnoreRhosts yes
To disable tunneled clear text passwords, change to no here!
#PasswordAuthentication yes
#PermitEmptyPasswords no
PasswordAuthentication no
Change to no to disable s/key passwords
#ChallengeResponseAuthentication yes
ChallengeResponseAuthentication no
63,25
37%
i-01fe50735377a2b16 (master)
PublicIPs: 35.92.145.213 PrivateIPs: 172.31.24.150
CloudShell
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Language
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yourkeypair.pem
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Connect to instance | EC2 Manag
EC2 Instance Connect
EC2 Instance Connect
EC2 Instance Connect
us-west-2.console.aws.amazon.com/ec2-instance-connect/ssh?region=us-west-2&connType=standard&instanceId=i-0e9990104bda6bca8&osUser=ec2-user&sshPort=22#/
aws
Services
Search
[Alt+S]
Oregon
RAMA_REDDY_913
Last login: Fri Apr 7 15:53:00 2023 from ec2-18-237-140-164.us-west-2.compute.amazonaws.com
Amazon Linux 2 AMI
https://aws.amazon.com/amazon-linux-2/
[ec2-user@ip-172-31-21-149 ~]$ sudo su
[root@ip-172-31-21-149 ec2-user]# cd ..
[root@ip-172-31-21-149 home]# cd ..
[root@ip-172-31-21-149 /]# useradd ansible
i-0e9990104bda6bca8 (node1)
PublicIPs: 35.92.41.198 PrivateIPs: 172.31.21.149
CloudShell
Feedback
Language
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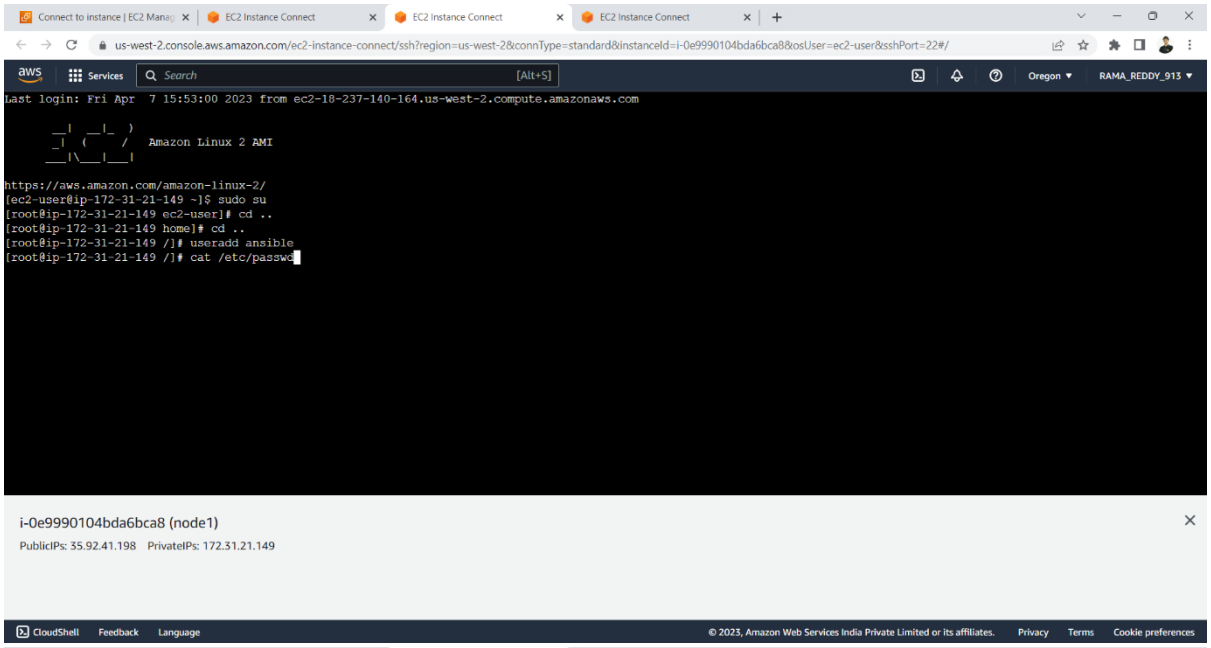
Connect to instance | EC2 Manag
EC2 Instance Connect
EC2 Instance Connect
EC2 Instance Connect
us-west-2.console.aws.amazon.com/ec2-instance-connect/ssh?region=us-west-2&connType=standard&instanceId=i-0e9990104bda6bca8&osUser=ec2-user&sshPort=22#/
aws
Services
Search
[Alt+S]
Oregon
RAMA_REDDY_913
Last login: Fri Apr 7 15:53:00 2023 from ec2-18-237-140-164.us-west-2.compute.amazonaws.com
Amazon Linux 2 AMI
https://aws.amazon.com/amazon-linux-2/
[ec2-user@ip-172-31-21-149 ~]$ sudo su
[root@ip-172-31-21-149 ec2-user]# cd ..
[root@ip-172-31-21-149 home]# cd ..
[root@ip-172-31-21-149 /]# useradd ansible
[root@ip-172-31-21-149 /]# cat /etc/passwd
i-0e9990104bda6bca8 (node1)
PublicIPs: 35.92.41.198 PrivateIPs: 172.31.21.149
CloudShell
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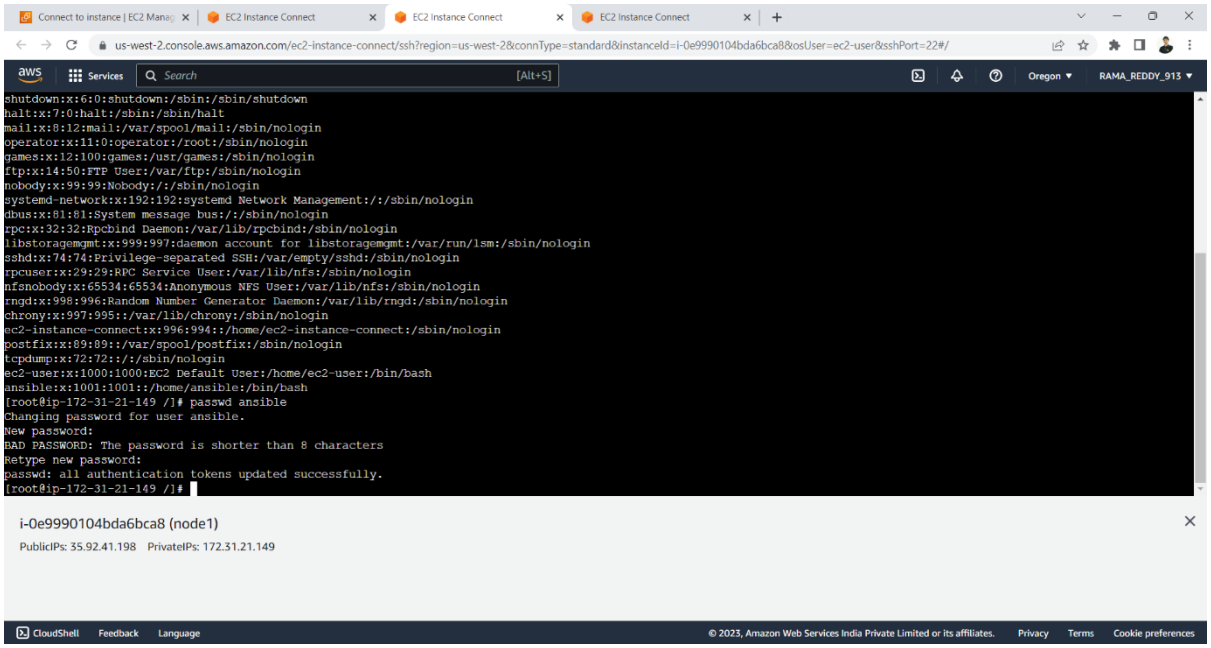
Connect to instance | EC2 Manag
EC2 Instance Connect
EC2 Instance Connect
EC2 Instance Connect
us-west-2.console.aws.amazon.com/ec2-instance-connect/ssh?region=us-west-2&connType=standard&instanceId=i-0e9990104bda6bca8&osUser=ec2-user&sshPort=22#/
aws
Services
Search
[Alt+S]
Oregon
RAMA_REDDY_913
shutdown:x:6:0:shutdown:/sbin:/sbin/shutdown
halt:x:7:0:halt:/sbin:/sbin/halt
mail:x:8:12:mail:/var/spool/mail:/sbin/nologin
operator:x:11:0:operator:/root:/sbin/nologin
games:x:12:100:games:/usr/games:/sbin/nologin
ftp:x:14:50:FTP User:/var/ftp:/sbin/nologin
nobody:x:99:99:Nobody:/:/sbin/nologin
systemd-network:x:192:192:systemd Network Management:/:/sbin/nologin
dbus:x:81:81:System message bus:/:/sbin/nologin
rpc:x:32:32:Rpcbind Daemon:/var/lib/rpcbind:/sbin/nologin
libstoragemgmt:x:999:997:daemon account for libstoragemgmt:/var/run/lsm:/sbin/nologin
sshd:x:74:74:Privilege-separated SSH:/var/empty/sshd:/sbin/nologin
rpcuser:x:29:29:RPC Service User:/var/lib/nfs:/sbin/nologin
nfsnobody:x:65534:65534:Anonymous NFS User:/var/lib/nfs:/sbin/nologin
rngd:x:998:996:Random Number Generator Daemon:/var/lib/rngd:/sbin/nologin
chrony:x:997:995::/var/lib/chrony:/sbin/nologin
ec2-instance-connect:x:996:994::/home/ec2-instance-connect:/sbin/nologin
postfix:x:89:89::/var/spool/postfix:/sbin/nologin
tcpdump:x:72:72::/:/sbin/nologin
ec2-user:x:1000:1000:EC2 Default User:/home/ec2-user:/bin/bash
ansible:x:1001:1001::/home/ansible:/bin/bash
[root@ip-172-31-21-149 /]# passwd ansible
Changing password for user ansible.
New password:
BAD PASSWORD: The password is shorter than 8 characters
Retype new password:
passwd: all authentication tokens updated successfully.
[root@ip-172-31-21-149 /]#
i-0e9990104bda6bca8 (node1)
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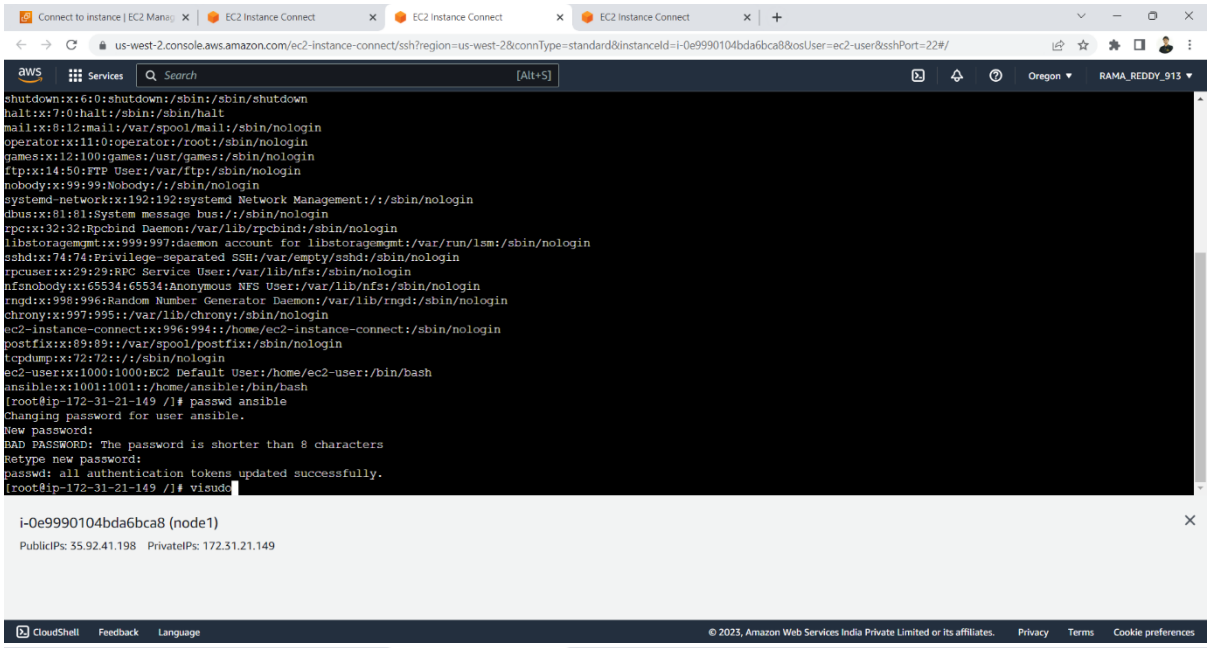
Connect to instance | EC2 Manag
EC2 Instance Connect
EC2 Instance Connect
EC2 Instance Connect
us-west-2.console.aws.amazon.com/ec2-instance-connect/ssh?region=us-west-2&connType=standard&instanceId=i-0e9990104bda6bca8&osUser=ec2-user&sshPort=22#/
aws
Services
Search
[Alt+S]
Oregon
RAMA_REDDY_913
shutdown:x:6:0:shutdown:/sbin:/sbin/shutdown
halt:x:7:0:halt:/sbin:/sbin/halt
mail:x:8:12:mail:/var/spool/mail:/sbin/nologin
operator:x:11:0:operator:/root:/sbin/nologin
games:x:12:100:games:/usr/games:/sbin/nologin
ftp:x:14:50:FTP User:/var/ftp:/sbin/nologin
nobody:x:99:99:Nobody:/:/sbin/nologin
systemd-network:x:192:192:systemd Network Management:/:/sbin/nologin
dbus:x:81:81:System message bus:/:/sbin/nologin
rpc:x:32:32:Rpcbind Daemon:/var/lib/rpcbind:/sbin/nologin
libstoragemgmt:x:999:997:daemon account for libstoragemgmt:/var/run/lsm:/sbin/nologin
sshd:x:74:74:Privilege-separated SSH:/var/empty/sshd:/sbin/nologin
rpcuser:x:29:29:RPC Service User:/var/lib/nfs:/sbin/nologin
nfsnobody:x:65534:65534:Anonymous NFS User:/var/lib/nfs:/sbin/nologin
rngd:x:998:996:Random Number Generator Daemon:/var/lib/rngd:/sbin/nologin
chrony:x:997:995::/var/lib/chrony:/sbin/nologin
ec2-instance-connect:x:996:994::/home/ec2-instance-connect:/sbin/nologin
postfix:x:89:89::/var/spool/postfix:/sbin/nologin
tcpdump:x:72:72::/:/sbin/nologin
ec2-user:x:1000:1000:EC2 Default User:/home/ec2-user:/bin/bash
ansible:x:1001:1001::/home/ansible:/bin/bash
[root@ip-172-31-21-149 /]# passwd ansible
Changing password for user ansible.
New password:
BAD PASSWORD: The password is shorter than 8 characters
Retype new password:
passwd: all authentication tokens updated successfully.
[root@ip-172-31-21-149 /]# visudo
i-0e9990104bda6bca8 (node1)
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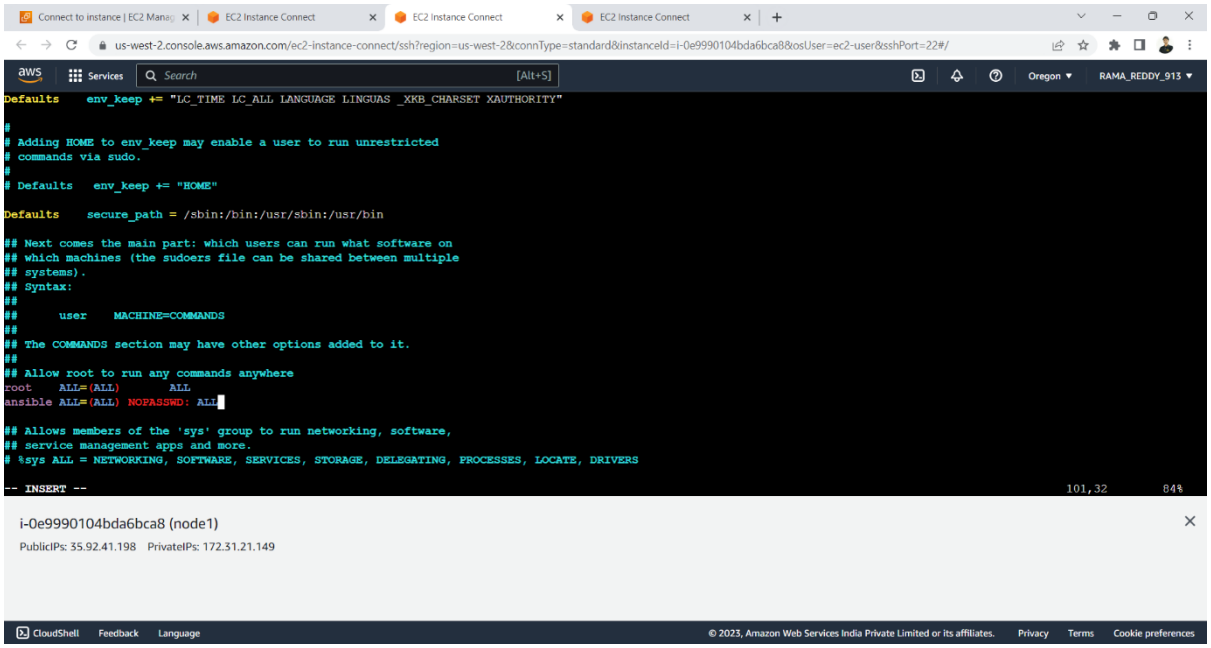
Connect to instance | EC2 Manag
EC2 Instance Connect
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EC2 Instance Connect
us-west-2.console.aws.amazon.com/ec2-instance-connect/ssh?region=us-west-2&connType=standard&instanceId=i-0e9990104bda6bca8&osUser=ec2-user&sshPort=22#/
aws
Services
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Oregon
RAMA_REDDY_913
Defaults env_keep += "LC_TIME LC_ALL LANGUAGE LINGUAS _XKB_CHARSET XAUTHORITY"
#
Adding HOME to env_keep may enable a user to run unrestricted
commands via sudo.
#
Defaults env_keep += "HOME"
Defaults secure_path = /sbin:/bin:/usr/sbin:/usr/bin
Next comes the main part: which users can run what software on
which machines (the sudoers file can be shared between multiple
systems).
Syntax:
##
user MACHINE=COMMANDS
##
The COMMANDS section may have other options added to it.
##
Allow root to run any commands anywhere
root ALL=(ALL) ALL
ansible ALL=(ALL) NOPASSWD: ALL
Allows members of the 'sys' group to run networking, software,
service management apps and more.
%sys ALL = NETWORKING, SOFTWARE, SERVICES, STORAGE, DELEGATING, PROCESSES, LOCATE, DRIVERS
-- INSERT --
101,32
84%
i-0e9990104bda6bca8 (node1)
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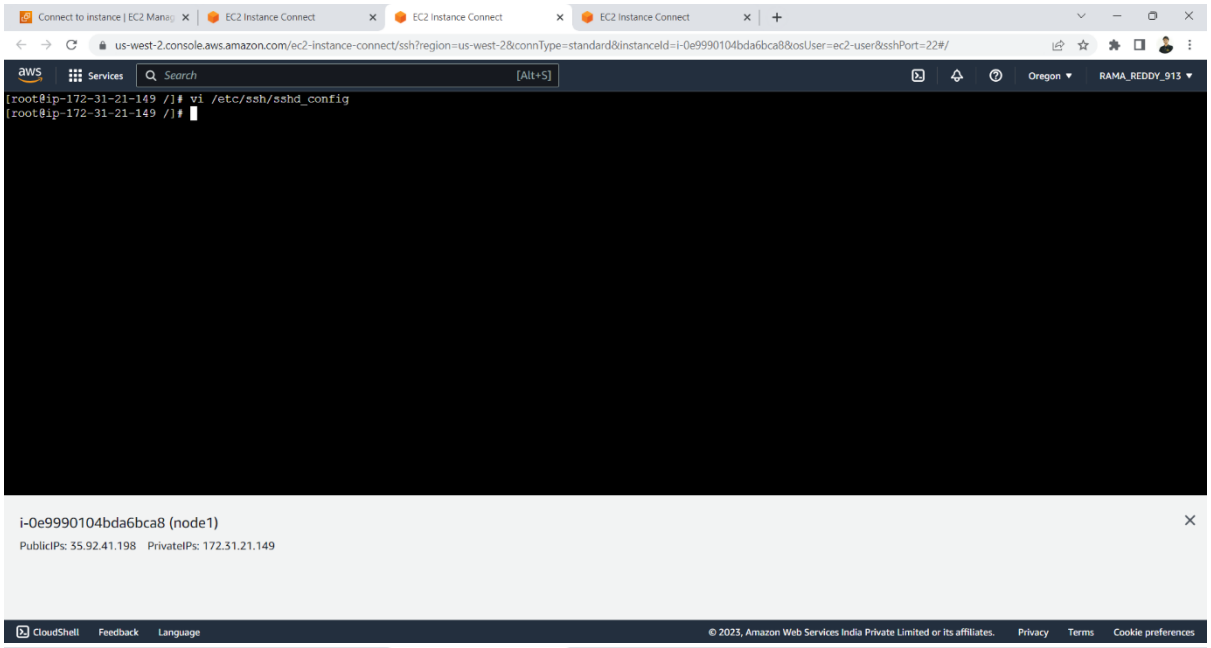
Connect to instance | EC2 Manag
EC2 Instance Connect
EC2 Instance Connect
EC2 Instance Connect
us-west-2.console.aws.amazon.com/ec2-instance-connect/ssh?region=us-west-2&connType=standard&instanceId=i-0e9990104bda6bca8&osUser=ec2-user&sshPort=22#/
aws
Services
Search
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Oregon
RAMA_REDDY_913
[root@ip-172-31-21-149 /]# vi /etc/ssh/sshd_config
[root@ip-172-31-21-149 /]#
i-0e9990104bda6bca8 (node1)
PublicIPs: 35.92.41.198 PrivateIPs: 172.31.21.149
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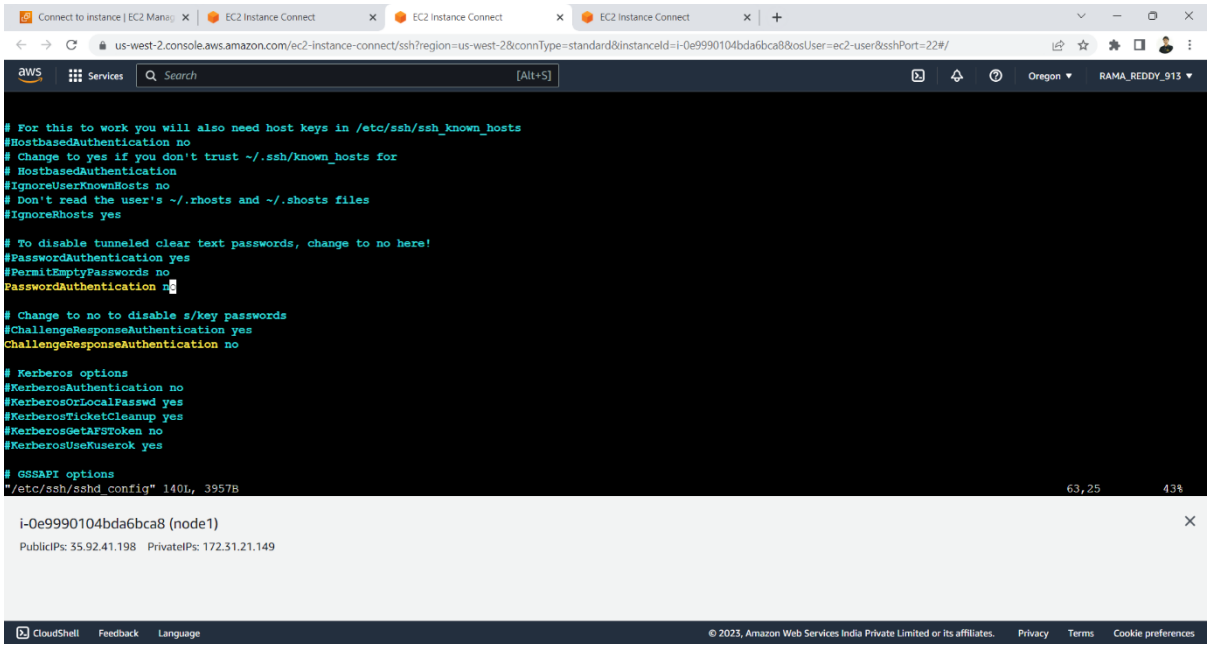
Connect to instance | EC2 Manag
EC2 Instance Connect
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EC2 Instance Connect
us-west-2.console.aws.amazon.com/ec2-instance-connect/ssh?region=us-west-2&connType=standard&instanceId=i-0e9990104bda6bca8&osUser=ec2-user&sshPort=22#/
aws
Services
Search
[Alt+S]
Oregon
RAMA_REDDY_913
For this to work you will also need host keys in /etc/ssh/ssh_known_hosts
#HostbasedAuthentication no
Change to yes if you don't trust ~/.ssh/known_hosts for
HostbasedAuthentication
#IgnoreUserKnownHosts no
Don't read the user's ~/.rhosts and ~/.shosts files
#IgnoreRhosts yes
To disable tunneled clear text passwords, change to no here!
#PasswordAuthentication yes
#PermitEmptyPasswords no
PasswordAuthentication no
Change to no to disable s/key passwords
#ChallengeResponseAuthentication yes
ChallengeResponseAuthentication no
Kerberos options
#KerberosAuthentication no
#KerberosOrLocalPasswd yes
#KerberosTicketCleanup yes
#KerberosGetAFSToken no
#KerberosUseKuserok yes
GSSAPI options
"/etc/ssh/sshd_config" 140L, 3957B
63,25
43%
i-0e9990104bda6bca8 (node1)
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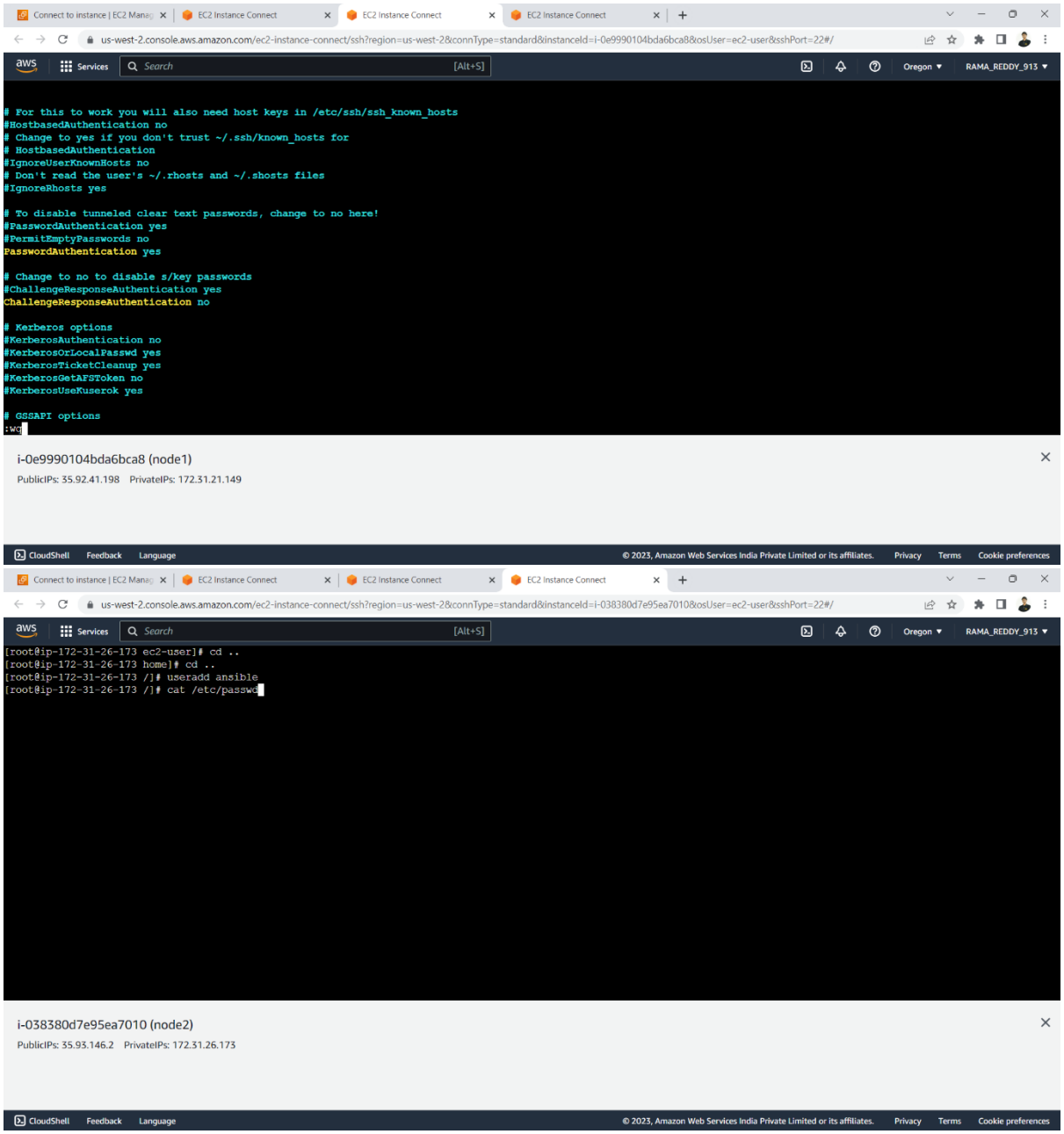
Connect to instance | EC2 Manag
EC2 Instance Connect
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EC2 Instance Connect
us-west-2.console.aws.amazon.com/ec2-instance-connect/ssh?region=us-west-2&connType=standard&instanceId=i-0e9990104bda6bca8&osUser=ec2-user&sshPort=22#/
aws
Services
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Oregon
RAMA_REDDY_913
For this to work you will also need host keys in /etc/ssh/ssh_known_hosts
#HostbasedAuthentication no
Change to yes if you don't trust ~/.ssh/known_hosts for
HostbasedAuthentication
#IgnoreUserKnownHosts no
Don't read the user's ~/.rhosts and ~/.shosts files
#IgnoreRhosts yes
To disable tunneled clear text passwords, change to no here!
#PasswordAuthentication yes
#PermitEmptyPasswords no
PasswordAuthentication yes
Change to no to disable s/key passwords
#ChallengeResponseAuthentication yes
ChallengeResponseAuthentication no
Kerberos options
#KerberosAuthentication no
#KerberosOrLocalPasswd yes
#KerberosTicketCleanup yes
#KerberosGetAFSToken no
#KerberosUseKuserok yes
GSSAPI options
:wq
i-0e9990104bda6bca8 (node1)
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EC2 Instance Connect
EC2 Instance Connect
EC2 Instance Connect
us-west-2.console.aws.amazon.com/ec2-instance-connect/ssh?region=us-west-2&connType=standard&instanceId=i-038380d7e95ea7010&osUser=ec2-user&sshPort=22#/
aws
Services
Search
[Alt+S]
Oregon
RAMA_REDDY_913
[root@ip-172-31-26-173 ec2-user]# cd ..
[root@ip-172-31-26-173 home]# cd ..
[root@ip-172-31-26-173 /]# useradd ansible
[root@ip-172-31-26-173 /]# cat /etc/passwd
i-038380d7e95ea7010 (node2)
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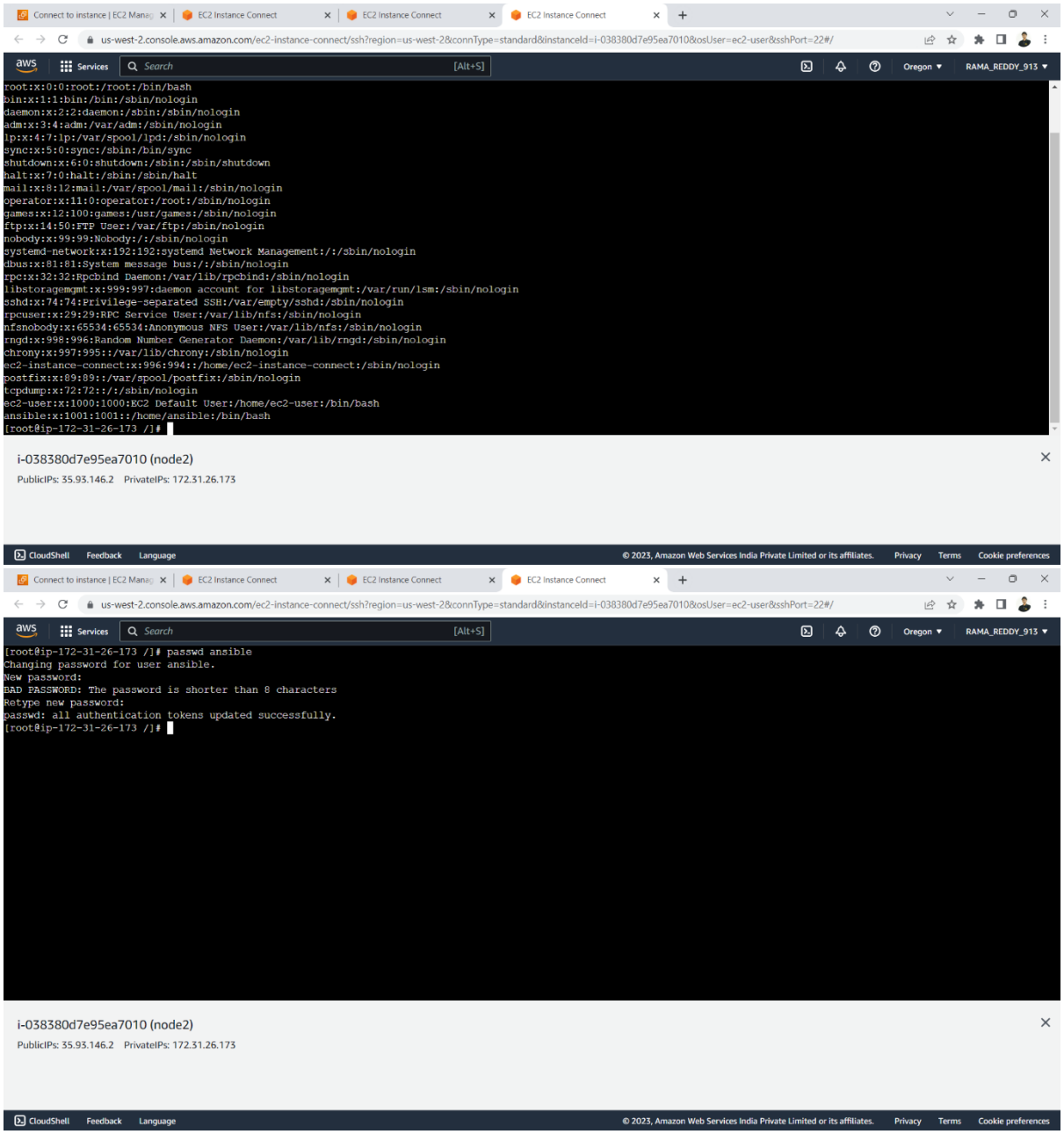
Connect to instance | EC2 Manag
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EC2 Instance Connect
us-west-2.console.aws.amazon.com/ec2-instance-connect/ssh?region=us-west-2&connType=standard&instanceId=i-038380d7e95ea7010&osUser=ec2-user&sshPort=22#/
aws
Services
Search
[Alt+S]
Oregon
RAMA_REDDY_913
root:x:0:0:root:/root:/bin/bash
bin:x:1:1:bin:/bin:/sbin/nologin
daemon:x:2:2:daemon:/sbin:/sbin/nologin
adm:x:3:4:adm:/var/adm:/sbin/nologin
lp:x:4:7:lp:/var/spool/lpd:/sbin/nologin
sync:x:5:0:sync:/sbin:/bin/sync
shutdown:x:6:0:shutdown:/sbin:/sbin/shutdown
halt:x:7:0:halt:/sbin:/sbin/halt
mail:x:8:12:mail:/var/spool/mail:/sbin/nologin
operator:x:11:0:operator:/root:/sbin/nologin
games:x:12:100:games:/usr/games:/sbin/nologin
ftp:x:14:50:FTP User:/var/ftp:/sbin/nologin
nobody:x:99:99:Nobody:/:/sbin/nologin
systemd-network:x:192:192:systemd Network Management:/:/sbin/nologin
dbus:x:81:81:System message bus:/:/sbin/nologin
rpc:x:32:32:Rpcbind Daemon:/var/lib/rpcbind:/sbin/nologin
libstoragemgmt:x:999:997:daemon account for libstoragemgmt:/var/run/lsm:/sbin/nologin
sshd:x:74:74:Privilege-separated SSH:/var/empty/sshd:/sbin/nologin
rpcuser:x:29:29:RPC Service User:/var/lib/nfs:/sbin/nologin
nfsnobody:x:65534:65534:Anonymous NFS User:/var/lib/nfs:/sbin/nologin
rngd:x:998:996:Random Number Generator Daemon:/var/lib/rngd:/sbin/nologin
chrony:x:997:995::/var/lib/chrony:/sbin/nologin
ec2-instance-connect:x:996:994::/home/ec2-instance-connect:/sbin/nologin
postfix:x:89:89::/var/spool/postfix:/sbin/nologin
tcpdump:x:72:72::/:/sbin/nologin
ec2-user:x:1000:1000:EC2 Default User:/home/ec2-user:/bin/bash
ansible:x:1001:1001::/home/ansible:/bin/bash
[root@ip-172-31-26-173 /]#
i-038380d7e95ea7010 (node2)
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EC2 Instance Connect
EC2 Instance Connect
EC2 Instance Connect
us-west-2.console.aws.amazon.com/ec2-instance-connect/ssh?region=us-west-2&connType=standard&instanceId=i-038380d7e95ea7010&osUser=ec2-user&sshPort=22#/
aws
Services
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Oregon
RAMA_REDDY_913
[root@ip-172-31-26-173 /]# passwd ansible
Changing password for user ansible.
New password:
BAD PASSWORD: The password is shorter than 8 characters
Retype new password:
passwd: all authentication tokens updated successfully.
[root@ip-172-31-26-173 /]#
i-038380d7e95ea7010 (node2)
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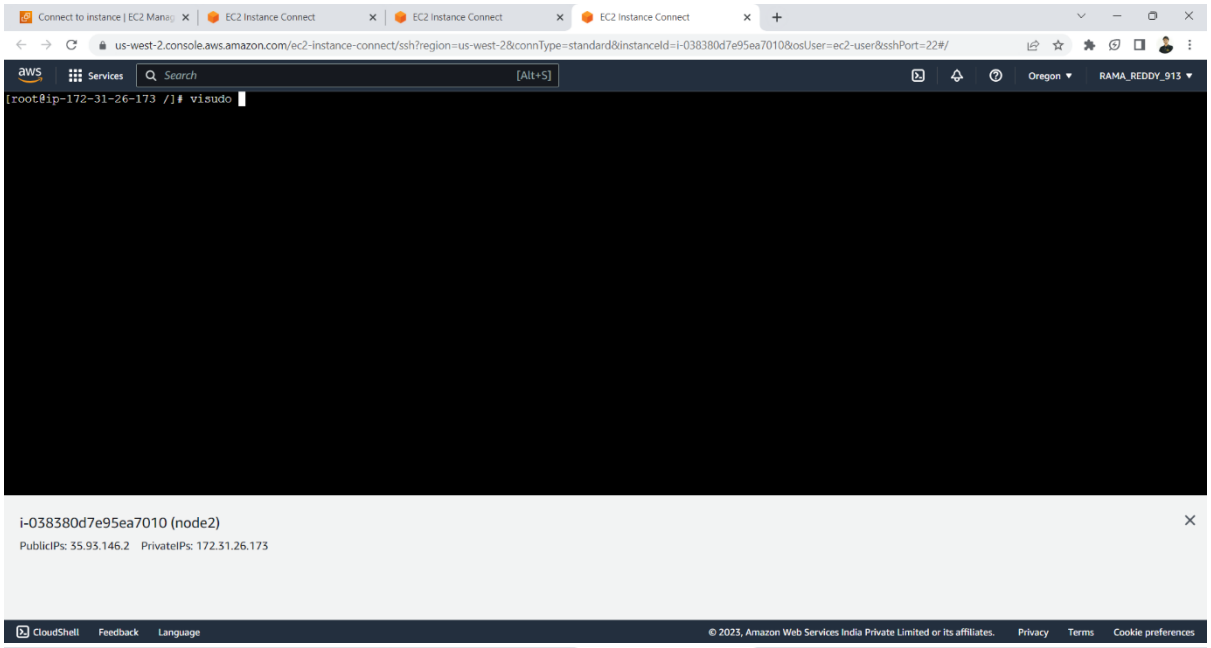
Connect to instance | EC2 Manag
EC2 Instance Connect
EC2 Instance Connect
EC2 Instance Connect
us-west-2.console.aws.amazon.com/ec2-instance-connect/ssh?region=us-west-2&connType=standard&instanceId=i-038380d7e95ea7010&osUser=ec2-user&sshPort=22#/
aws
Services
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Oregon
RAMA_REDDY_913
[root@ip-172-31-26-173 /]# visudo
i-038380d7e95ea7010 (node2)
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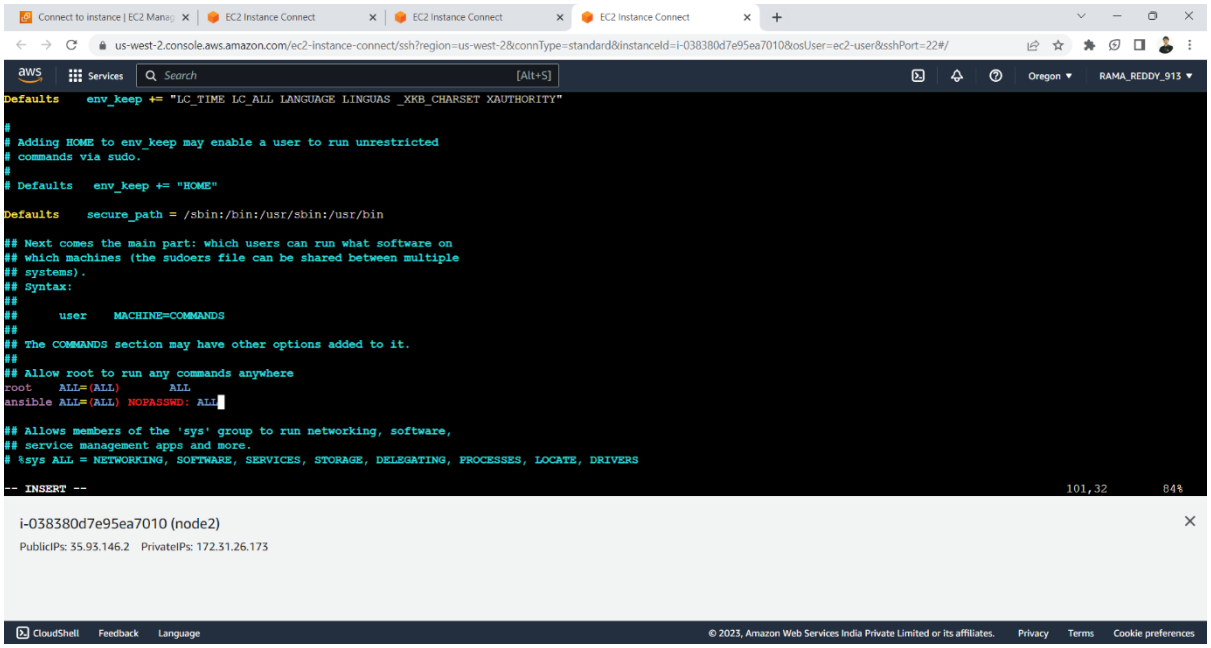
Connect to instance | EC2 Manag
EC2 Instance Connect
EC2 Instance Connect
EC2 Instance Connect
us-west-2.console.aws.amazon.com/ec2-instance-connect/ssh?region=us-west-2&connType=standard&instanceId=i-038380d7e95ea7010&osUser=ec2-user&sshPort=22#/
aws
Services
Search
[Alt+S]
Oregon
RAMA_REDDY_913
Defaults env_keep += "LC_TIME LC_ALL LANGUAGE LINGUAS _XKB_CHARSET XAUTHORITY"
#
Adding HOME to env_keep may enable a user to run unrestricted
commands via sudo.
#
Defaults env_keep += "HOME"
Defaults secure_path = /sbin:/bin:/usr/sbin:/usr/bin
Next comes the main part: which users can run what software on
which machines (the sudoers file can be shared between multiple
systems).
Syntax:
##
user MACHINE=COMMANDS
##
The COMMANDS section may have other options added to it.
##
Allow root to run any commands anywhere
root ALL=(ALL) ALL
ansible ALL=(ALL) NOPASSWD: ALL
Allows members of the 'sys' group to run networking, software,
service management apps and more.
%sys ALL = NETWORKING, SOFTWARE, SERVICES, STORAGE, DELEGATING, PROCESSES, LOCATE, DRIVERS
-- INSERT --
101,32 84%
i-038380d7e95ea7010 (node2)
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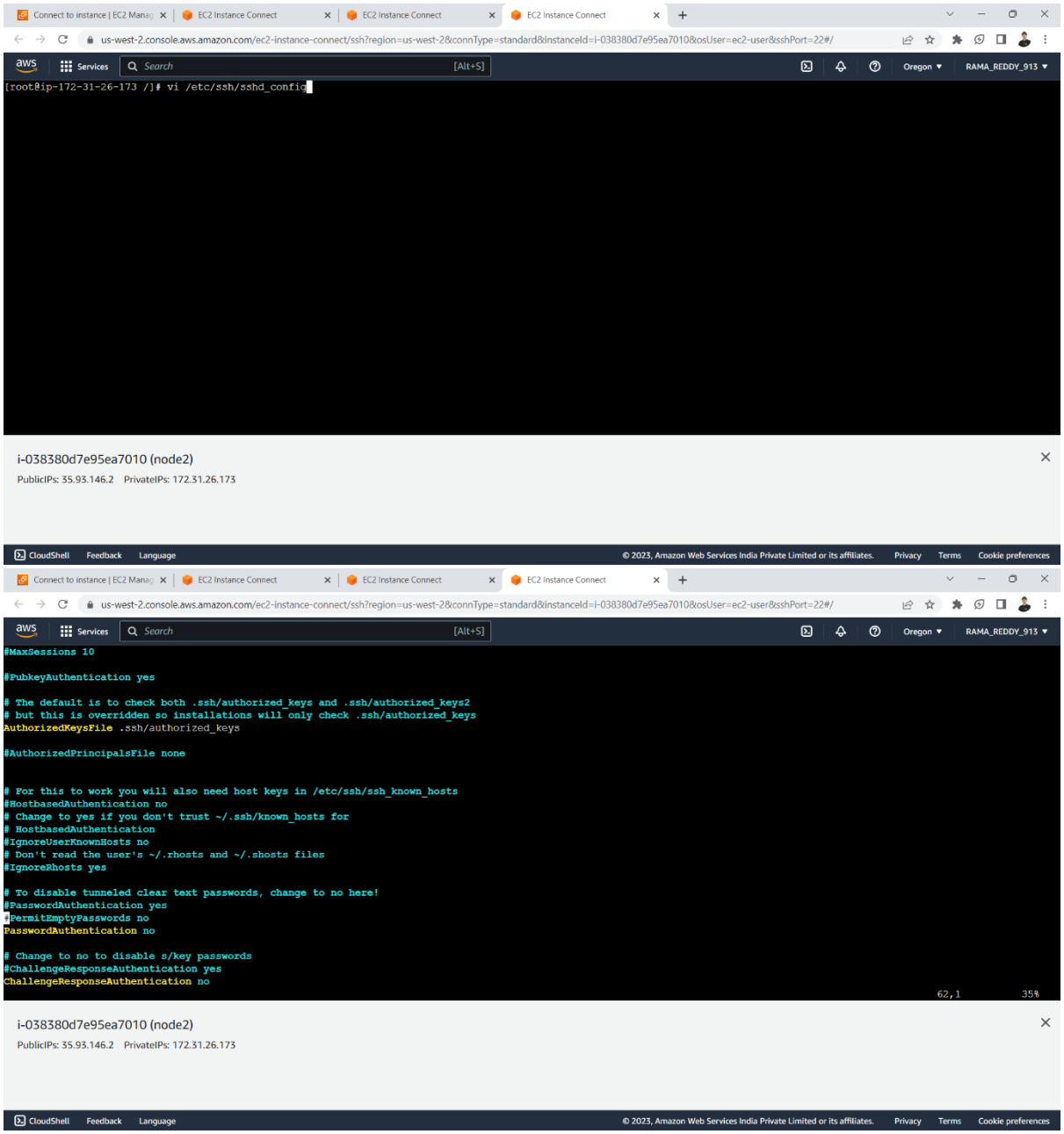
Connect to instance | EC2 Manag
EC2 Instance Connect
EC2 Instance Connect
EC2 Instance Connect
us-west-2.console.aws.amazon.com/ec2-instance-connect/ssh?region=us-west-2&connType=standard&instanceId=i-038380d7e95ea7010&osUser=ec2-user&sshPort=22#/
aws
Services
Search
[Alt+S]
Oregon
RAMA_REDDY_913
[root@ip-172-31-26-173 /]# vi /etc/ssh/sshd_config
i-038380d7e95ea7010 (node2)
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EC2 Instance Connect
EC2 Instance Connect
us-west-2.console.aws.amazon.com/ec2-instance-connect/ssh?region=us-west-2&connType=standard&instanceId=i-038380d7e95ea7010&osUser=ec2-user&sshPort=22#/
aws
Services
Search
[Alt+S]
Oregon
RAMA_REDDY_913
#MaxSessions 10
#PubkeyAuthentication yes
The default is to check both .ssh/authorized_keys and .ssh/authorized_keys2
but this is overridden so installations will only check .ssh/authorized_keys
AuthorizedKeysFile .ssh/authorized_keys
#AuthorizedPrincipalsFile none
For this to work you will also need host keys in /etc/ssh/ssh_known_hosts
#HostbasedAuthentication no
Change to yes if you don't trust ~/.ssh/known_hosts for
HostbasedAuthentication
#IgnoreUserKnownHosts no
Don't read the user's ~/.rhosts and ~/.shosts files
#IgnoreRhosts yes
To disable tunneled clear text passwords, change to no here!
#PasswordAuthentication yes
#PermitEmptyPasswords no
PasswordAuthentication no
Change to no to disable s/key passwords
#ChallengeResponseAuthentication yes
ChallengeResponseAuthentication no
62,1
35%
i-038380d7e95ea7010 (node2)
PublicIPs: 35.93.146.2 PrivateIPs: 172.31.26.173
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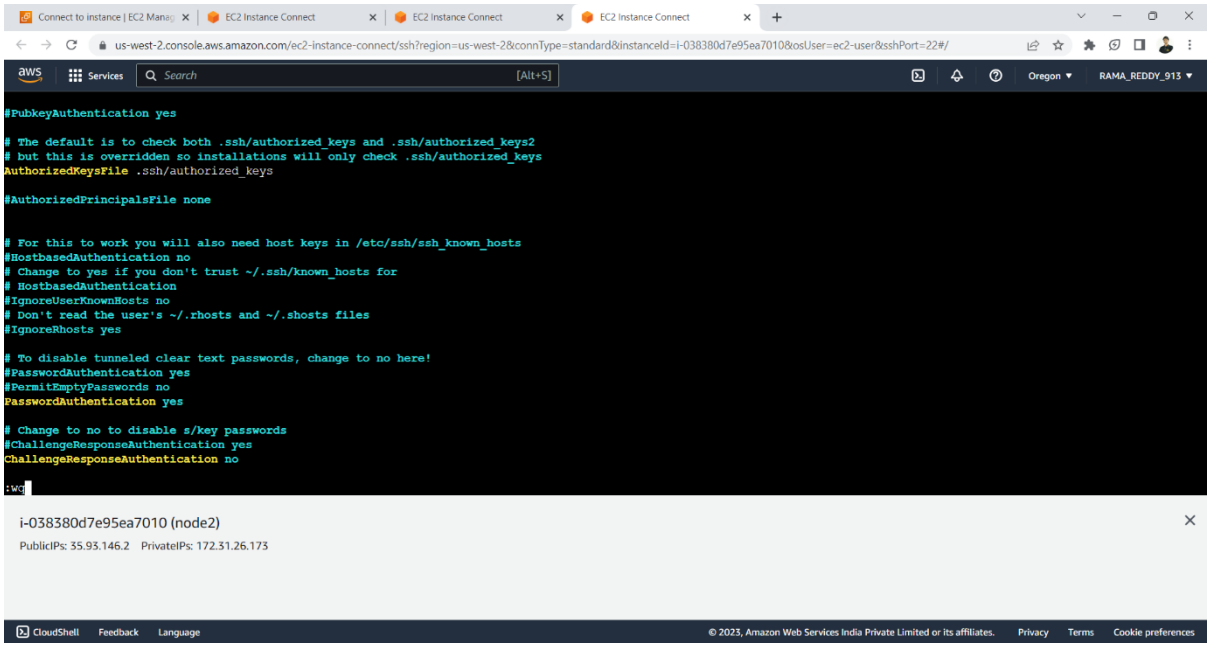
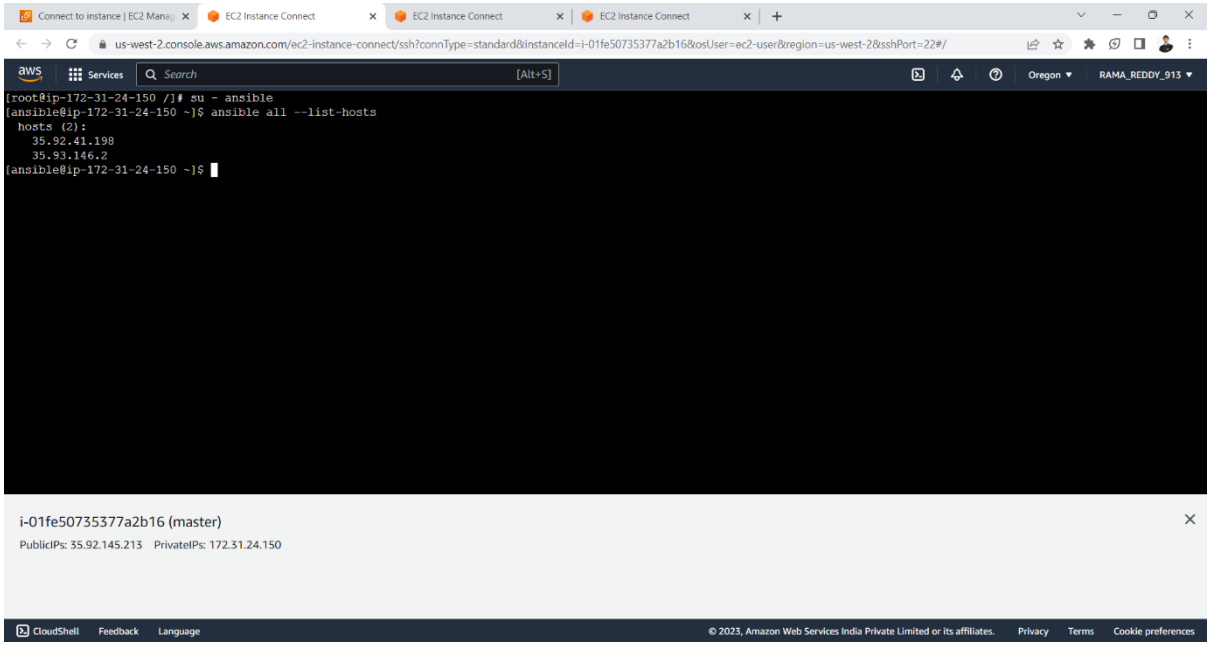
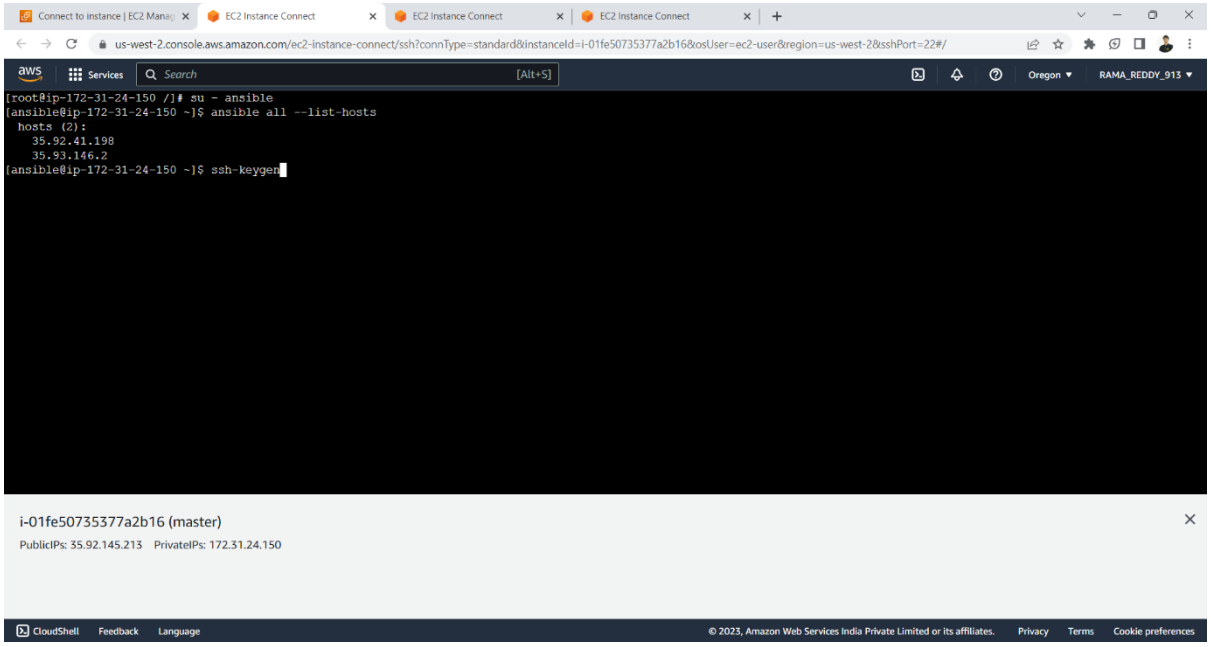
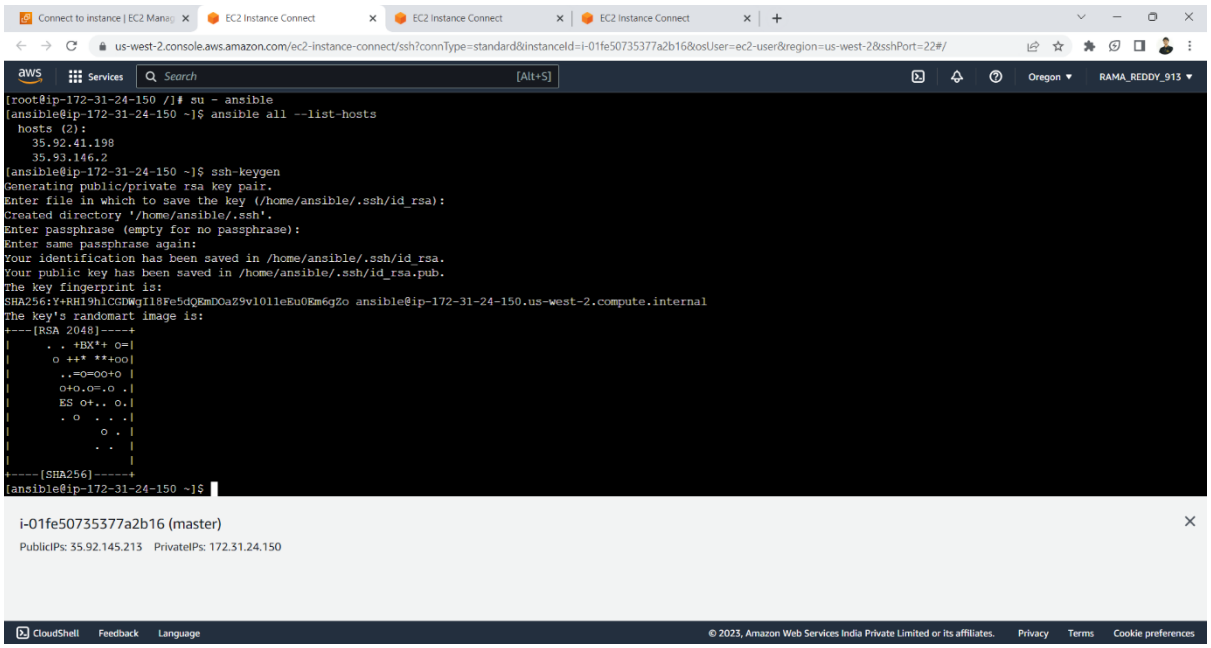


switch to ansible and check the hosts by executing the following commands

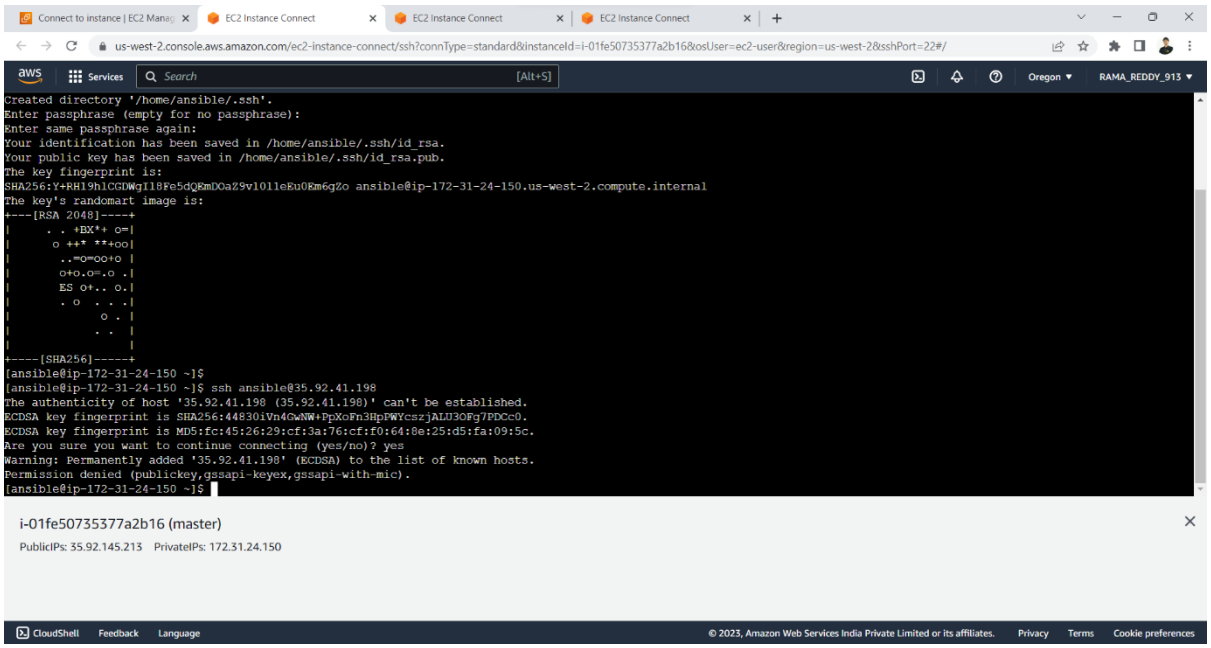


create a public key by using ssh-keygen command

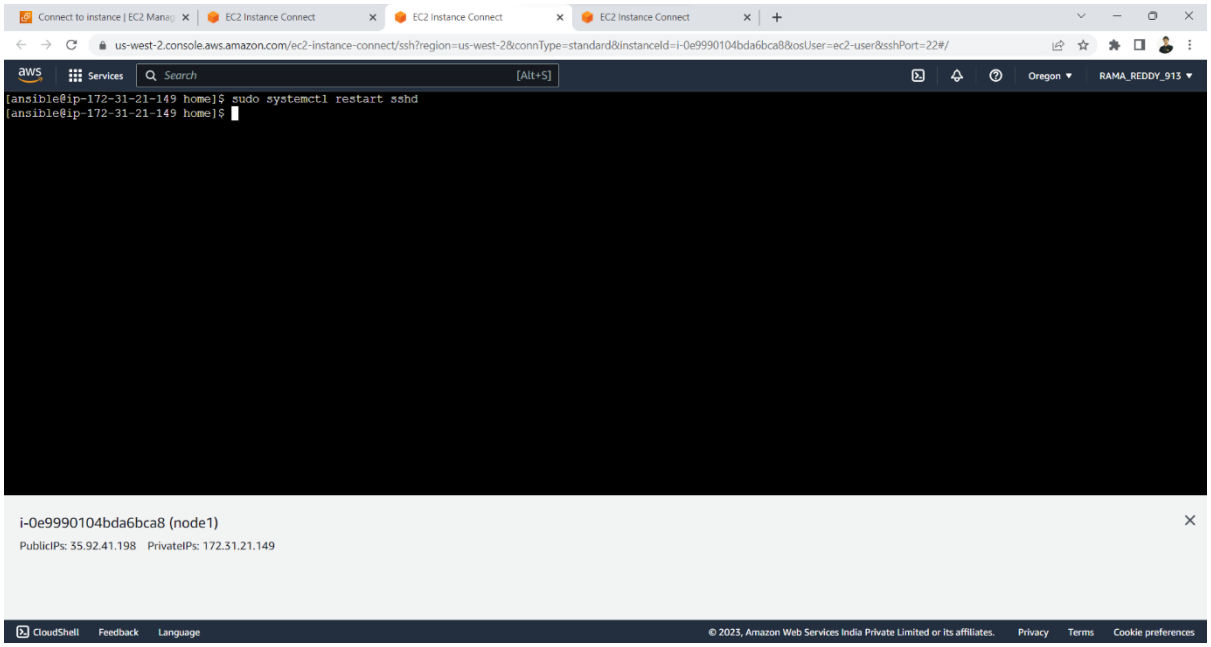




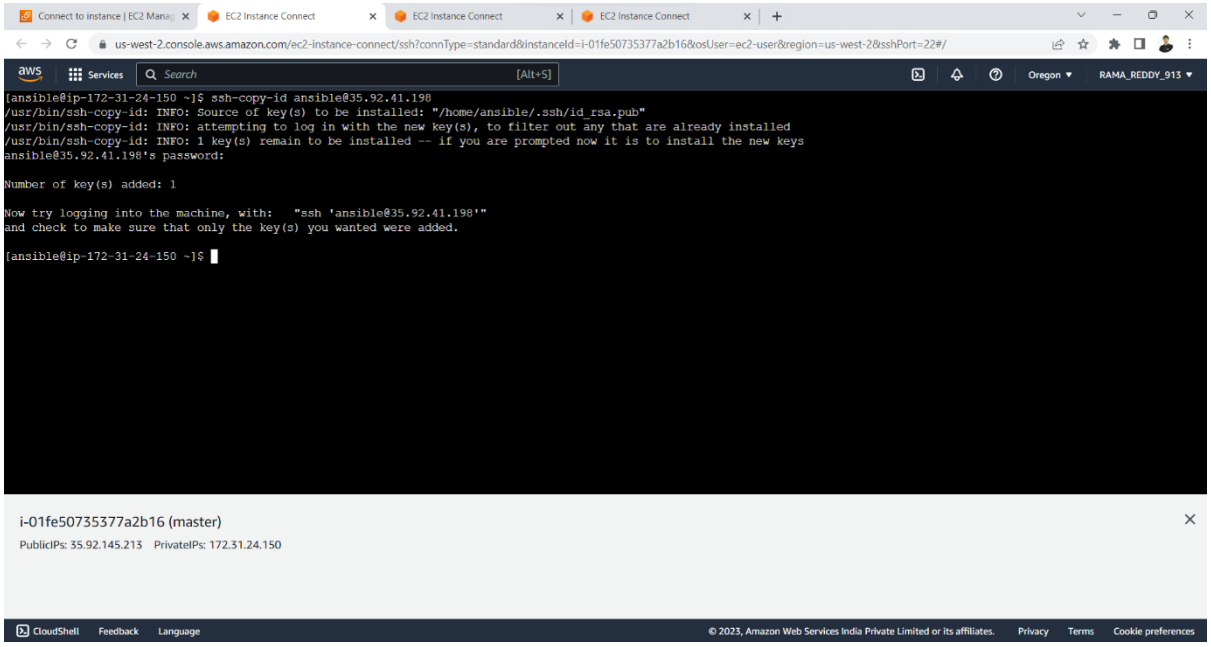
connect to the node by using ssh command here we have got an error as pemission denied because the public key is not available in the nodes

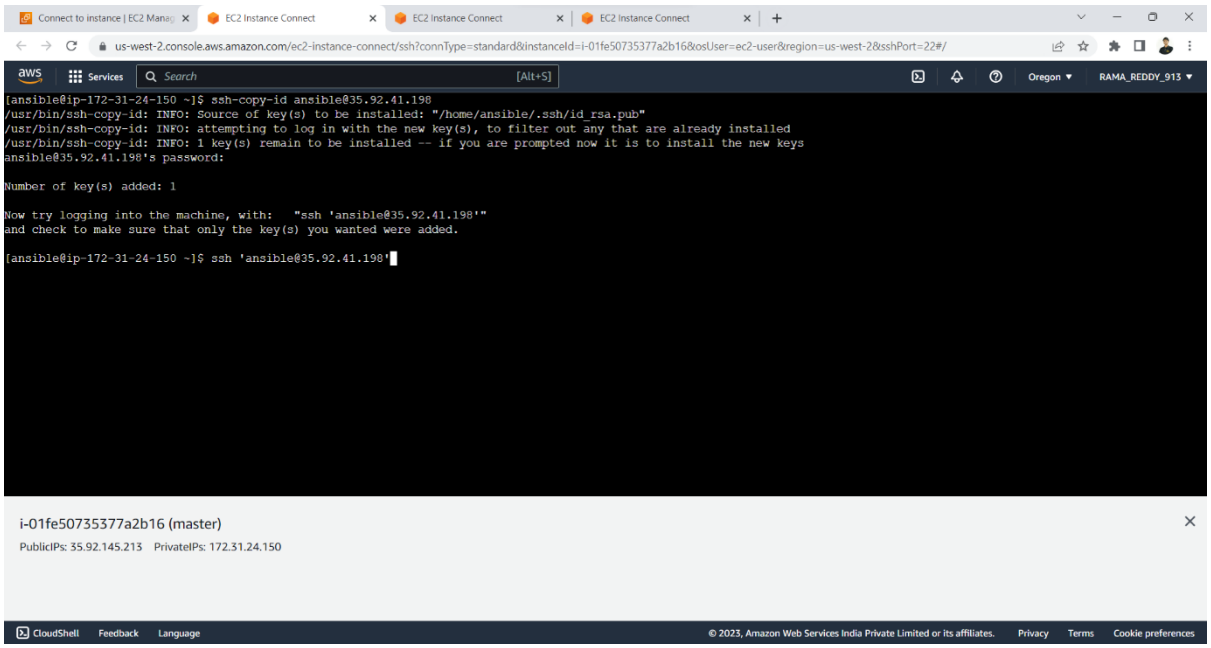


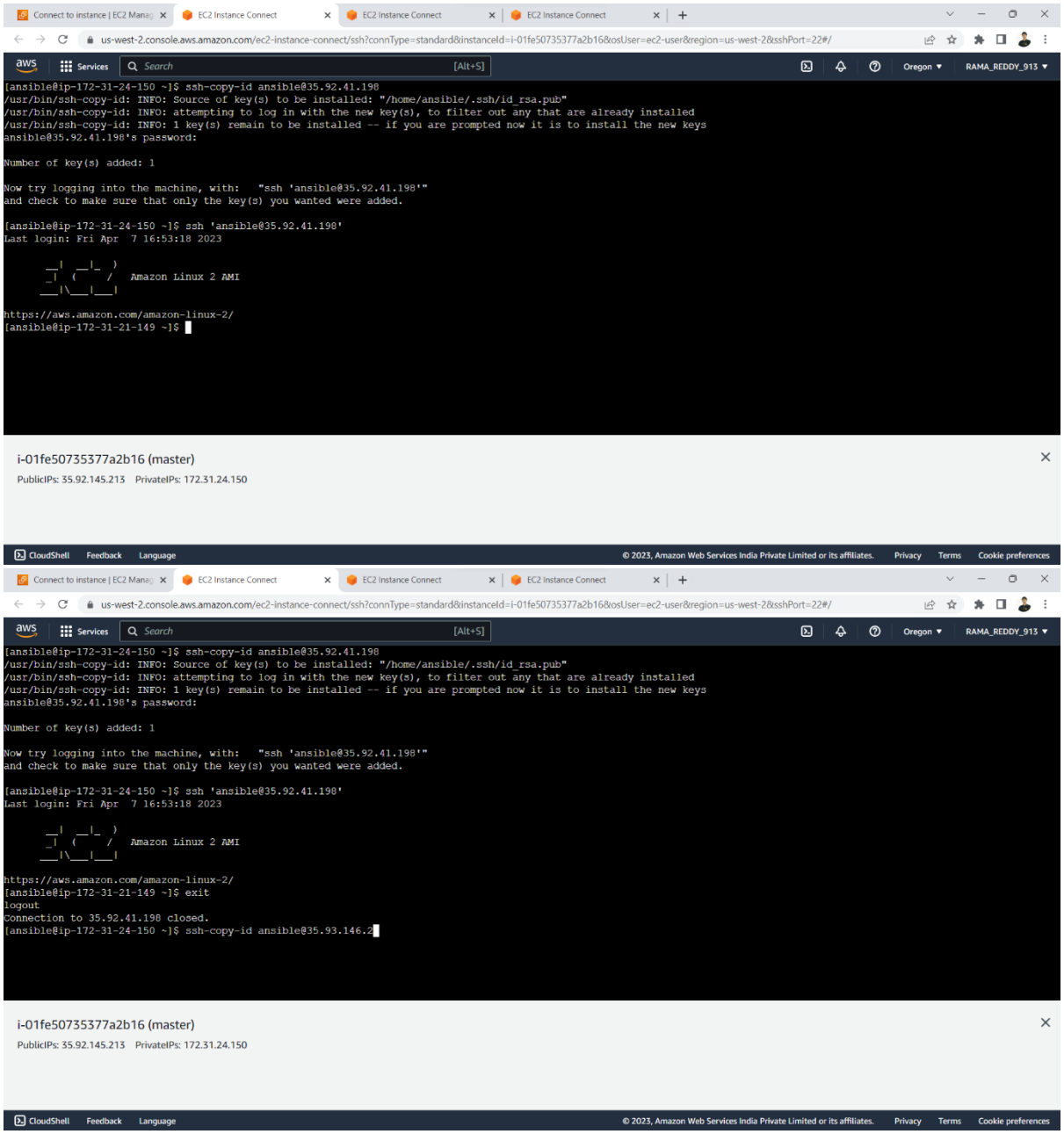
restart sshd



copy public key generated to the nodes by using following command and now we can connet to the node securely by using ssh command






Connect to instance | EC2 Manag
EC2 Instance Connect
EC2 Instance Connect
EC2 Instance Connect
us-west-2.console.aws.amazon.com/ec2-instance-connect/ssh?connType=standard&instanceId=i-01fe50735377a2b16&osUser=ec2-user&region=us-west-2&sshPort=22#/
aws
Services
Search
[Alt+S]
Oregon
RAMA_REDDY_913
[ansible@ip-172-31-24-150 ~]$ ssh-copy-id ansible@35.92.41.198
/usr/bin/ssh-copy-id: INFO: Source of key(s) to be installed: "/home/ansible/.ssh/id_rsa.pub"
/usr/bin/ssh-copy-id: INFO: attempting to log in with the new key(s), to filter out any that are already installed
/usr/bin/ssh-copy-id: INFO: 1 key(s) remain to be installed -- if you are prompted now it is to install the new keys
ansible@35.92.41.198's password:
Number of key(s) added: 1
Now try logging into the machine, with: "ssh 'ansible@35.92.41.198'"
and check to make sure that only the key(s) you wanted were added.
[ansible@ip-172-31-24-150 ~]$ ssh 'ansible@35.92.41.198'
Last login: Fri Apr 7 16:53:18 2023
Amazon Linux 2 AMI
https://aws.amazon.com/amazon-linux-2/
[ansible@ip-172-31-21-149 ~]$
i-01fe50735377a2b16 (master)
PublicIPs: 35.92.145.213 PrivateIPs: 172.31.24.150
CloudShell
Feedback
Language
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Privacy
Terms
Cookie preferences

Connect to instance | EC2 Manag
EC2 Instance Connect
EC2 Instance Connect
EC2 Instance Connect
us-west-2.console.aws.amazon.com/ec2-instance-connect/ssh?connType=standard&instanceId=i-01fe50735377a2b16&osUser=ec2-user&region=us-west-2&sshPort=22#/
aws
Services
Search
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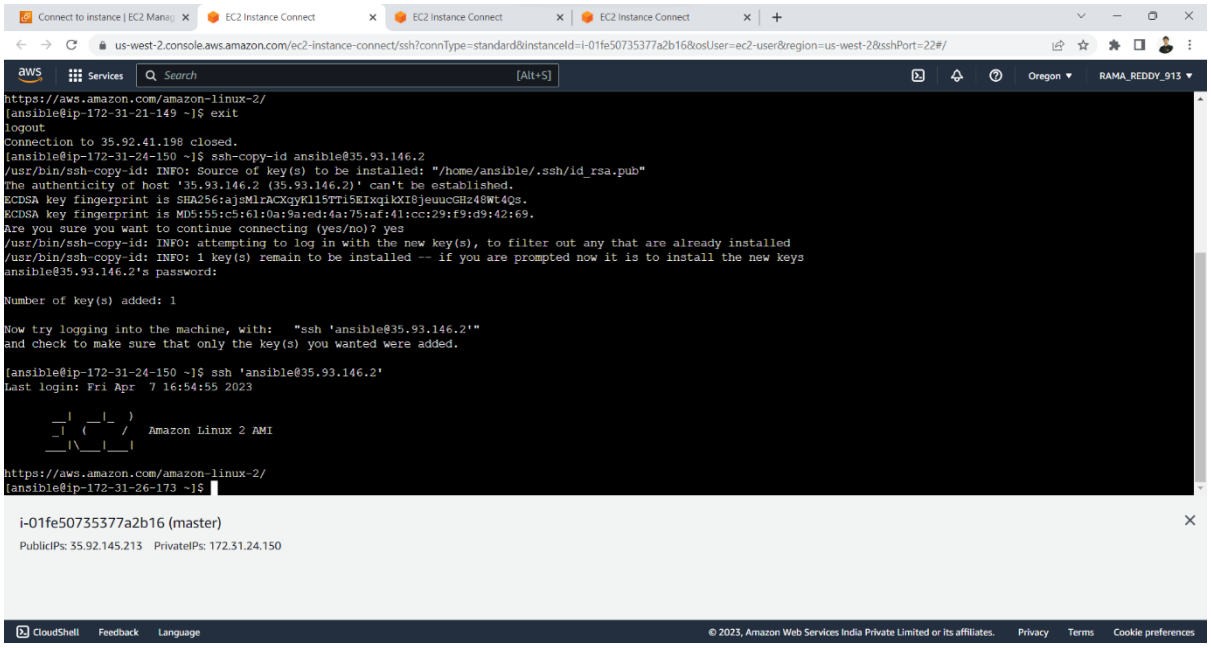
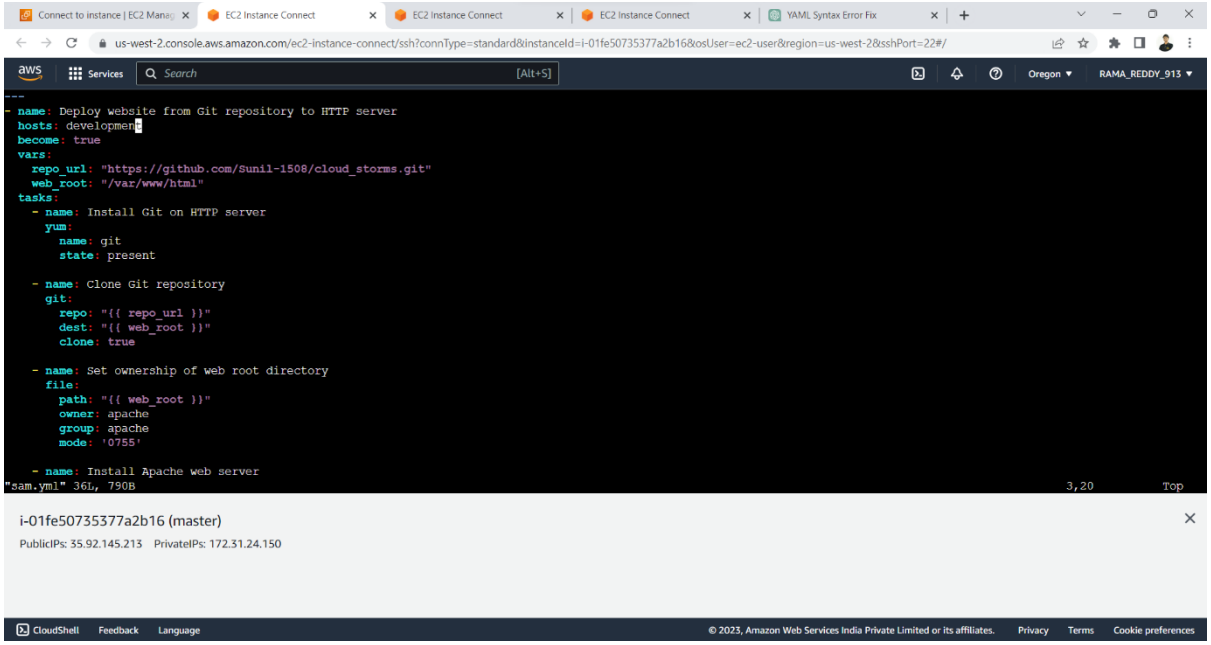
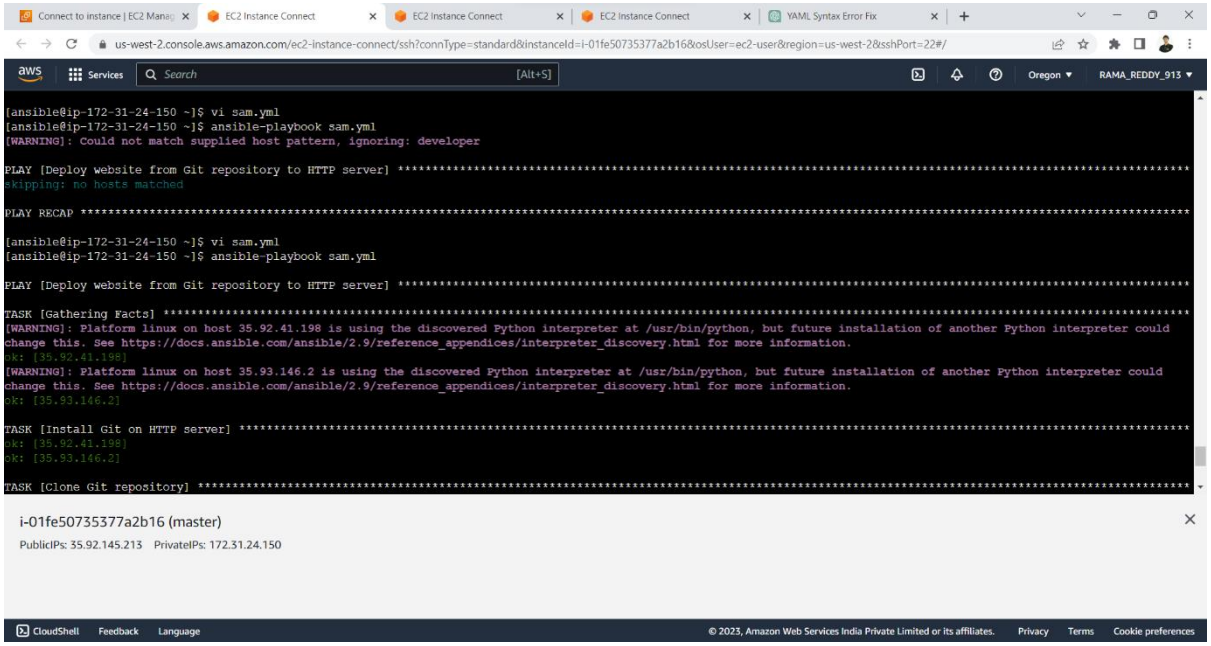
Oregon
RAMA_REDDY_913
[ansible@ip-172-31-24-150 ~]$ ssh-copy-id ansible@35.92.41.198
/usr/bin/ssh-copy-id: INFO: Source of key(s) to be installed: "/home/ansible/.ssh/id_rsa.pub"
/usr/bin/ssh-copy-id: INFO: attempting to log in with the new key(s), to filter out any that are already installed
/usr/bin/ssh-copy-id: INFO: 1 key(s) remain to be installed -- if you are prompted now it is to install the new keys
ansible@35.92.41.198's password:
Number of key(s) added: 1
Now try logging into the machine, with: "ssh 'ansible@35.92.41.198'"
and check to make sure that only the key(s) you wanted were added.
[ansible@ip-172-31-24-150 ~]$ ssh 'ansible@35.92.41.198'
Last login: Fri Apr 7 16:53:18 2023
Amazon Linux 2 AMI
https://aws.amazon.com/amazon-linux-2/
[ansible@ip-172-31-21-149 ~]$ exit
logout
Connection to 35.92.41.198 closed.
[ansible@ip-172-31-24-150 ~]$ ssh-copy-id ansible@35.93.146.2
i-01fe50735377a2b16 (master)
PublicIPs: 35.92.145.213 PrivateIPs: 172.31.24.150
CloudShell
Feedback
Language
© 2023, Amazon Web Services India Private Limited or its affiliates.
Privacy
Terms
Cookie preferences



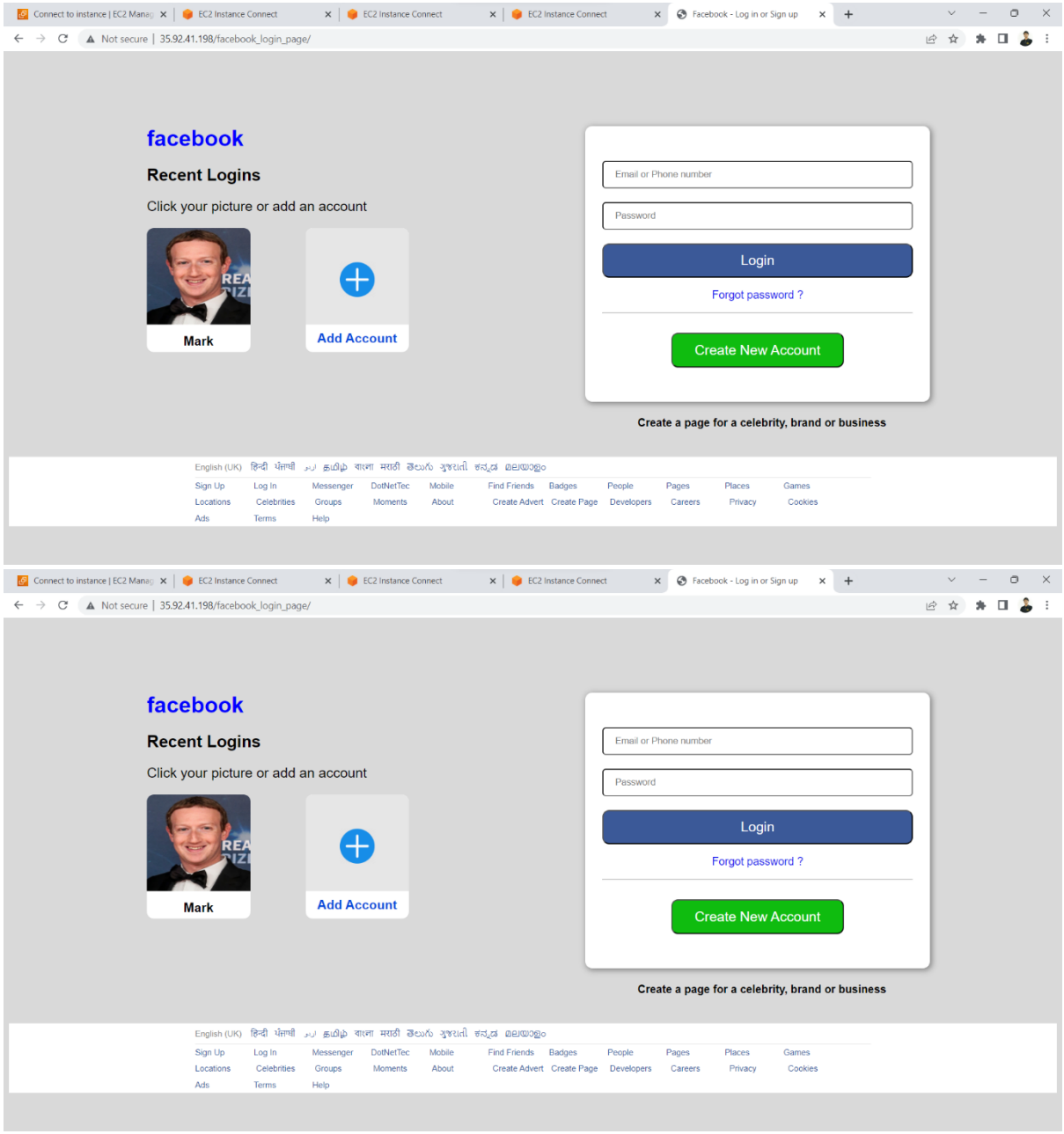
the following yaml code will install git ,http on the nodes , starts the httpd server and clones the website application and copies it to /var/www/html



run the ansible playbook by using ansible-playbook filename.yml



now we can connect ot the website by using public ip address of the hosts



Connect to instance | EC2 Mana
EC2 Instance Connect
EC2 Instance Connect
EC2 Instance Connect
Facebook - Log in or Sign up
Not secure | 35.92.41.198/facebook_login_page/
facebook
Recent Logins
Click your picture or add an account
Mark
Add Account
Email or Phone number
Password
Login
Forgot password ?
Create New Account
Create a page for a celebrity, brand or business
English (UK) हिन्दी ਪੰਜਾਬੀ اردو தமிழ் বাংলা मराठी తెలుగు ગુજરાતી ಕನ್ನಡ മലയാളം
Sign Up Log In Messenger DotNetTec Mobile Find Friends Badges People Pages Places Games
Locations Celebrities Groups Moments About Create Advert Create Page Developers Careers Privacy Cookies
Ads Terms Help

REPOSITORY DETAILS:

The frontend Facebook clone web application and YAML Playbooks we used in this project will be available in the following git hub repository

https://github.com/Sunil-1508/cloud_storms

OUTCOME:

Improved efficiency: Ansible can automate repetitive tasks, such as software installation, configuration management, and infrastructure provisioning. This can save time and reduce the risk of errors that can occur with manual processes. As a result, IT teams can be more efficient and productive, focusing on more strategic work that adds value to the organization.

Increased consistency: Automation with Ansible ensures that IT operations are standardized and consistent, reducing the risk of errors and security vulnerabilities. Ansible allows you to define playbooks and roles that can be used across your organization, ensuring that tasks are executed in a consistent manner. This can help to improve the reliability and stability of your IT environment.

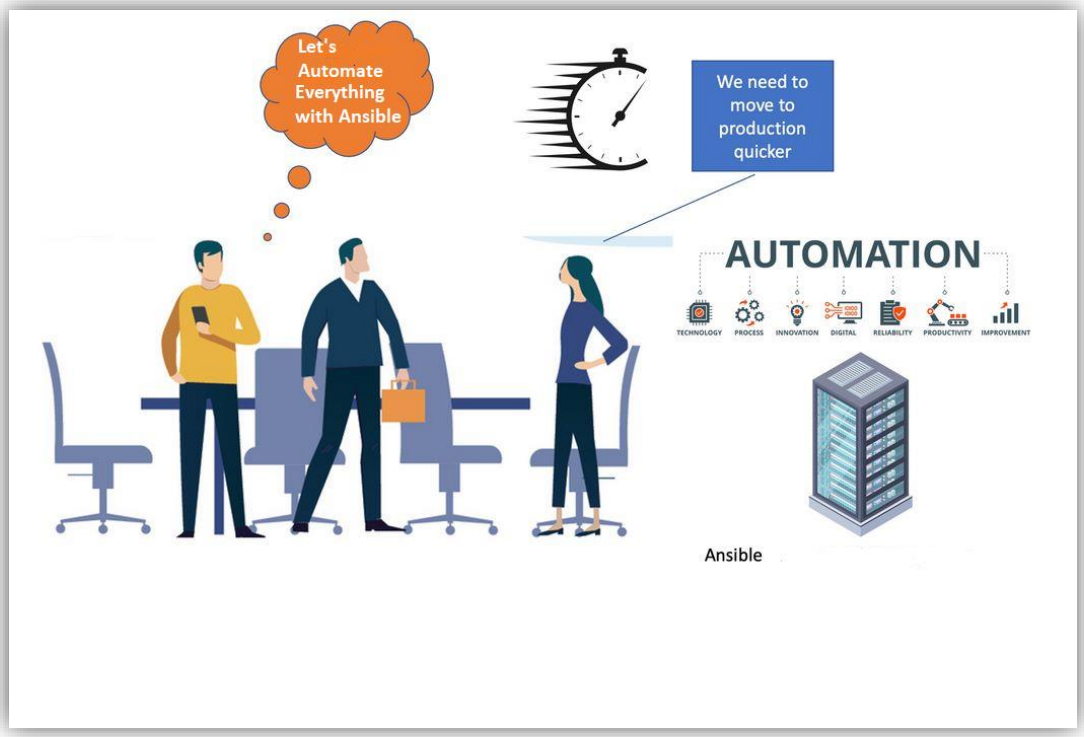
Enhanced scalability: Ansible is highly scalable and can automate tasks across large numbers of servers and devices. This makes it a valuable tool for organizations that need to manage complex IT environments. Ansible allows you to define groups of hosts and execute tasks across those groups, allowing you to easily scale your automation efforts as your environment grows.

Reduced costs: By automating routine tasks, Ansible can help organizations save time and reduce labour costs associated with manual processes. Ansible can also help organizations to avoid costly downtime by automating tasks such as system patching and updates.

Improved collaboration: Ansible provides a platform for collaboration between IT teams, allowing for the sharing of playbooks and roles that can be used across the organization. This can help to improve communication and coordination between teams, leading to a more efficient and effective IT operation.

Enhanced security: Ansible can help organizations maintain a strong security posture by automating tasks such as patch management, vulnerability scanning, and compliance auditing. Ansible can also help to enforce security policies across your environment by automating the configuration of firewalls, security groups, and other security-related tasks.

In summary, automating applications using Ansible can lead to significant improvements in efficiency, consistency, scalability, cost savings, collaboration, and security. These outcomes can help organizations to streamline their IT operations, improve productivity, and reduce the risk of downtime and security breaches.



CONCLUSION:

In conclusion, automating applications using Ansible can provide numerous benefits for organizations looking to improve their IT operations. Ansible is a powerful open-source automation tool that can be used to automate a wide range of tasks, from software installation and configuration management to infrastructure provisioning and deployment.

By automating routine tasks, organizations can improve efficiency, consistency, and scalability, while reducing the costs associated with manual processes. Ansible can also help enhance collaboration between IT teams, allowing for the sharing of playbooks and roles that can be used across the organization.

Additionally, Ansible can help organizations maintain a strong security posture by automating tasks such as patch management, vulnerability scanning, and compliance auditing. By leveraging Ansible's capabilities, organizations can achieve greater efficiency, cost savings, and security, while freeing up IT teams to focus on more strategic work.

The use cases for automating applications using Ansible are diverse and can be applied to a wide range of industries and organizations. From configuration management and continuous deployment to cloud automation and disaster recovery, Ansible can help organizations streamline their IT operations and achieve their business objectives.

Overall, the outcome of automating applications using Ansible can be significant improvements in IT operations, leading to a more streamlined and effective IT environment. By leveraging Ansible's capabilities, organizations can achieve greater efficiency, cost savings, and security, while freeing up IT teams to focus on more strategic work.

REFERENCES:

- Ansible Community Documentation(https://docs.ansible.com/)
- Git Tutorial(https://git-scm.com/docs)
- Ansible Tutorials (https://youtu.be/zw8eUSGNLq4)
- AWS Documentation (https://docs.aws.amazon.com/)

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Ph. No: 9491308212
Gmail: vishalbattula4194@gmail.com