

A PROJECT REPORT ON

DEPLOYMENT OF WAR FILE INTO THE TOMCAT

USING ANSIBLE

COURSE

DEVOPS WITH AWS

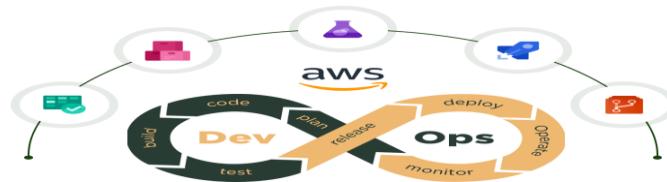
Submitted By

SIRI CHANDANA BANDA

Under The Guidance Of

VAMSI BYRAMALA (TRAINER)

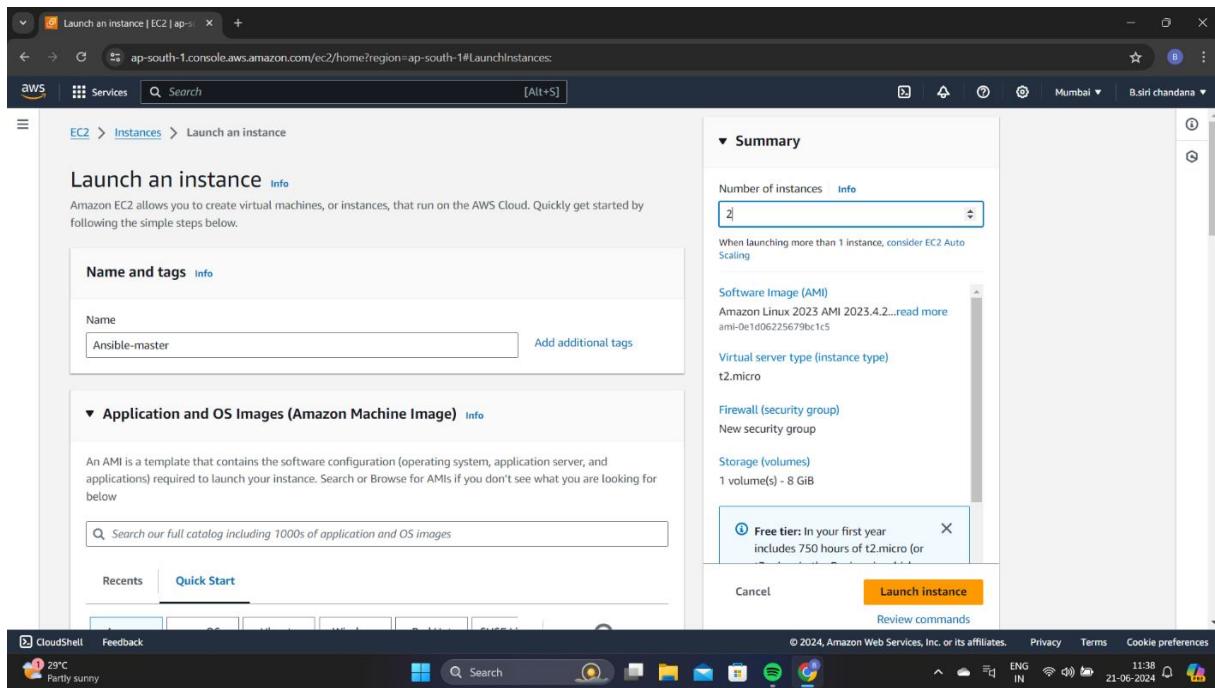
ASHOK REKHA (MENTOR)



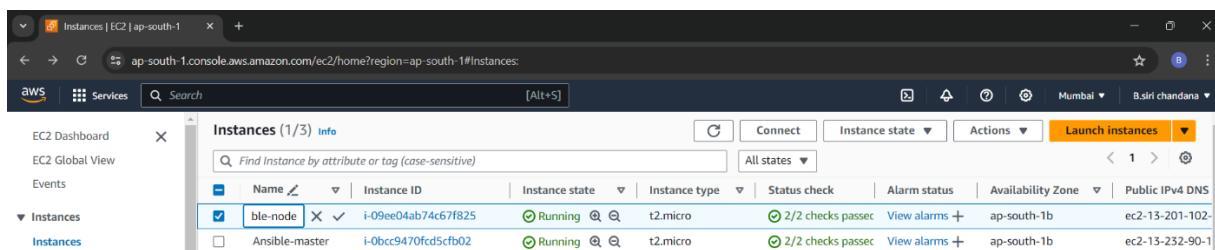
Greatcoder Training institute in Madhapur Hyderabad
#201,2nd floor,Above Ageless Building,Beside Indian Bank
Madhapur,Hyderabad-500081
Land Mark:Beside Karachi Bakery, lane, Hyderabad, Telangana
500081.

To launch an Master and Node instance:

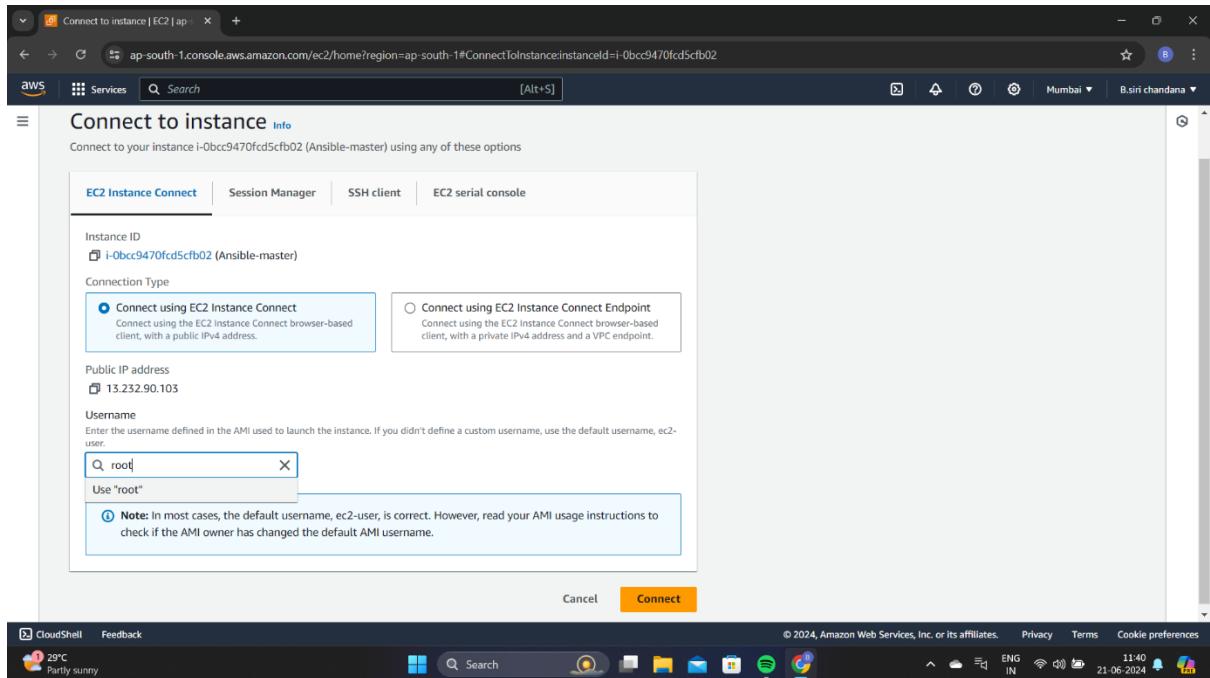
- Open the Amazon EC2 console at <https://console.aws.amazon.com/ec2/>.
- From the EC2 console dashboard
- We want to **Launch instances**
- Under **Name and tags** we want to give **Instance name**: Ansible-master
- Under **Application and OS Images** we want to select **Amazon Linux (AWS) OS**
- Under **Amazon Machine Image (AMI)** we want to select version **Amazon Linux 2023**
- Under **Instance type** want to select **t2.micro (Free tier eligible)**
- Under **Key pair (login)** we want to select Key pair
- **Number of instances: 2**
- **We want to launch 2 instances at a time**
- **In this case both Master and Node instances are launched on the same Network**
- **Click on Launch Instance**



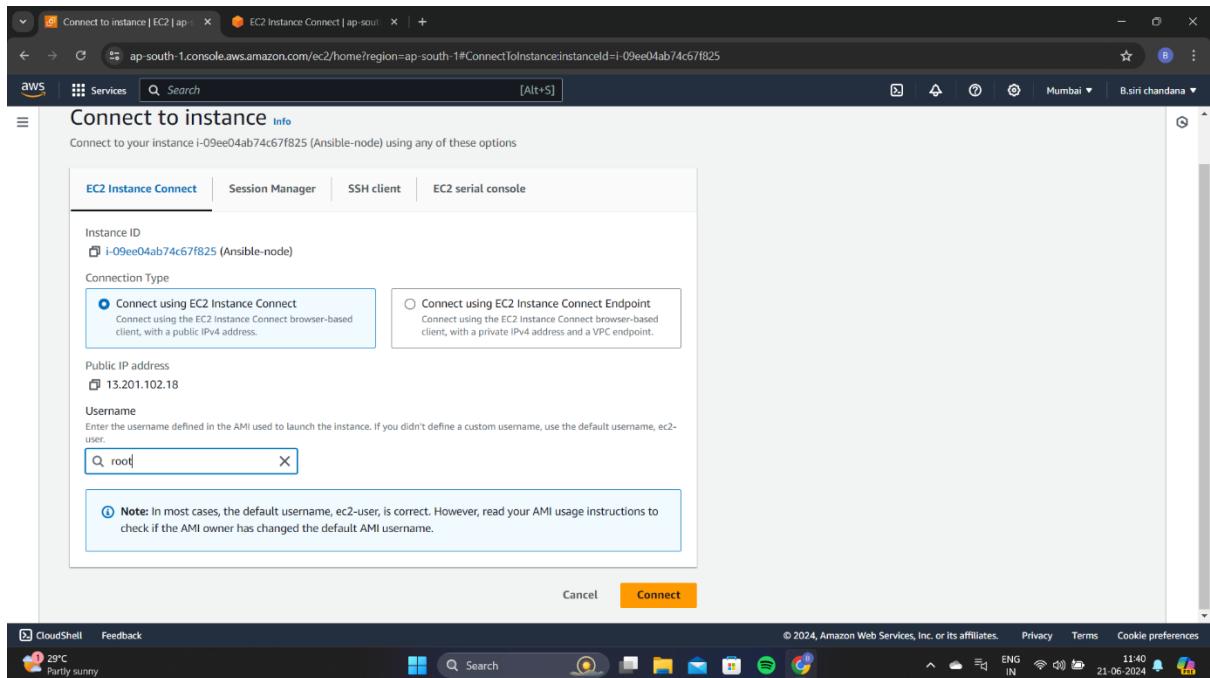
- After launching the Instance
- It will launch the same name for two instances
- Edit 2nd instance name as **Ansible-Node**



➤ Connect Ansible-Master (user=root)



➤ Connect Ansible-Node (user-root)



Configuration of Master and Node instance:

- Install Ansible on the Ansible-master (Follow the Steps)
- We want to install pip using this command `yum install pip -y`

- After installing the pip using this command to install ansible **pip install ansible**

```
[root@ip-172-31-1-115 ~]# yum install pip -y
last metadata expiration check: 0:06:07 ago on Fri Jun 21 06:05:54 2024.
Dependencies resolved.

Transaction Summary
Install 2 Packages

total download size: 1.9 M
installed size: 11 M
Downloading Packages:
(1/2): python3-pip-21.3.1-2.amzn2023.0.7.noarch.rpm           18 MB/s | 1.8 MB   00:00
(2/2): libCRYPT-compat-4.4.33-7.amzn2023.x86_64.rpm          857 kB/s |  92 kB   00:00
total                                         11 MB/s | 1.9 MB   00:00

Running transaction check
Transaction check succeeded.
Running transaction test
transaction test succeeded.
Running transaction
Preparing : 1/1

i-0bcc9470fcf5fb02 (Ansible-master)
PublicIPs: 13.232.90.103 PrivateIPs: 172.31.1.115
```

```
[root@ip-172-31-1-115 ~]# pip install ansible
Collecting ansible
  Downloading ansible-8.7.0-py3-none-any.whl (48.4 MB) 01
Collecting ansible-core==2.15.7
  Downloading ansible_core-2.15.12-py3-none-any.whl (2.3 MB) 01
Requirement already satisfied: PyYAML>=5.1 in /usr/lib64/python3.9/site-packages (from ansible-core==2.15.7->ansible) (5.4.1)
Collecting importlib-resources<5.1,>=5.0
  Downloading importlib_resources-5.0.7-py3-none-any.whl (24 kB) 01
Collecting packaging
  Downloading packaging-24.1-py3-none-any.whl (53 kB) 01
Collecting resolvelib<1.1.0,>=0.5.3
  Downloading resolvelib-1.0.1-py2.py3-none-any.whl (17 kB) 01
Collecting jinja2>=3.0.0
  Downloading jinja2-3.1.4-py3-none-any.whl (133 kB) 01
Requirement already satisfied: cryptography in /usr/lib64/python3.9/site-packages (from ansible-core==2.15.7->ansible) (36.0.1)
Collecting MarkupSafe<2.1.5,>=2.0
  Downloading MarkupSafe-2.1.5-cp39-cp39-manylinux_2_17_x86_64.manylinux2014_x86_64.whl (25 kB)
Requirement already satisfied: cffi>=1.12 in /usr/lib64/python3.9/site-packages (from cryptography->ansible-core==2.15.7->ansible) (1.14.5)
Requirement already satisfied: pycparser in /usr/lib/python3.9/site-packages (from cffi>=1.12->cryptography->ansible-core==2.15.7->ansible) (2.20)
Requirement already satisfied:ply=3.11 in /usr/lib/python3.9/site-packages (from pycparser->cffi>=1.12->cryptography->ansible-core==2.15.7->ansible) (3.11)
Installing collected packages: MarkupSafe, resolvelib, packaging, jinja2, importlib-resources, ansible-core, ansible
  Attempting uninstall: MarkupSafe
    Found existing installation: MarkupSafe 1.1.1
    Uninstalling MarkupSafe-1.1.1...
```

- After installing the Ansible Using this command to check the version **ansible --version**

```
[root@ip-172-31-1-115 ~]# ansible --version
ansible [core 2.15.12]
  configured module search path = ['/root/.ansible/plugins/modules', '/usr/share/ansible/plugins/modules']
  ansible python module location = /usr/local/lib/python3.9/site-packages/ansible
  ansible collection location = /root/.ansible/collections:/usr/share/ansible/collections
  executable location = /usr/local/bin/ansible
  python version = 3.9.16 (main, Apr 24 2024, 00:00:00) [GCC 11.4.1 20230605 (Red Hat 11.4.1-2)] (/usr/bin/python3)
  jinja version = 3.1.4
  libyaml = 7.0.1
[root@ip-172-31-1-115 ~]#
```

i-0bcc9470fcf5cfb02 (Ansible-master)
PublicIPs: 13.232.90.103 PrivateIPs: 172.31.1.115

➤ Set Up SSH Key-Based Authentication (Follow the steps)

- We have to generate key on Ansible-Master using this command **ssh-keygen**

```
[root@ip-172-31-1-115 ~]# ssh-keygen
Generating public/private rsa key pair.
Enter file in which to save the key (/root/.ssh/id_rsa):
Enter passphrase (empty for no passphrase):
Enter same passphrase again:
Your identification has been saved in /root/.ssh/id_rsa
Your public key has been saved in /root/.ssh/id_rsa.pub
The key fingerprint is:
SHA256:Yhf6U//VAODERK0Yp9PSwdnH5nChyOGHOTFhz/owmLVY root@ip-172-31-1-115.ap-south-1.compute.internal
The key's randomart image is:
+---[RSA 3072]---+
| .o++.. |
| ==++.. |
| . +.+++EO |
| . + *o..+= |
| . = =.S * + |
| . o * B .. |
| o * . . |
| . . . . |
| . . . . |
+---[SHA256]---+
[root@ip-172-31-1-115 ~]#
```

i-0bcc9470fcf5cfb02 (Ansible-master)
PublicIPs: 13.232.90.103 PrivateIPs: 172.31.1.115

- To open the key in Ansible-Master using this command **cat .ssh/id_rsa.pub**

```
[root@ip-172-31-1-115 ~]# cat .ssh/id_rsa.pub
ssh-rsa AAAAB3NzaC1yc2EAAAQABAAABgQC8zMseGHFA5T7LZfp223A6Ba2QmFe1J1O/BMphNje5RnDvRxLp9g5+iUpmlX7rQchJy3tuAaMtubKbh9zd7iqaNm2Dl1EjdRLdS4S1GPsCr+KOMBhS8CqsCsh8Ab0WePPVxer/7rn79t5Jz79+Nv/a5tGNF21AnMyx18PkbKTvXmrQyhbn91l69nr026RE/0BDVi78j15fKNKcwYX4zB9196EWy3Im4TWtGNyg00sP8txQ1XE1ln9+n3AVG9eGbFW70Wq6sURCDUs4ObNCEQM+92WFchTS1mcCr1oNUHXZY6t0IV/bbfecbVYHn1vmi6vgKe200mbs99c9emdnWn1w0ePGlg7SReoaN0tNXIE88zR1+vzYDlc/oFBidUCQpOPZMSmc5BZUJhFaU4f+mhuJkt7pmFjug2g1M021PFMNxEVuL9r+bSKRD++FeWBQ9+4chHxVkrnmAQ3BS1KKqNQ297otuckNG3r0WS1om51UfgHt+WhprYjN5JFlIM= root@ip-172-31-1-115.ap-south-1.compute.internal
[root@ip-172-31-1-115 ~]#
```

i-0bcc9470fcdb02 (Ansible-master)
Public IPs: 13.232.90.103 Private IPs: 172.31.1.115

- Copy this Key from **Ansible-Master**
- Open the Ansible-Node instance
- Paste the Key on using this command **vi .ssh/authorized_keys**

```
[root@ip-172-31-12-221 ~]# vi .ssh/authorized_keys
```

i-09ee04ab74c67f825 (Ansible-node)
Public IPs: 13.201.102.18 Private IPs: 172.31.12.221

```

no-port-forwarding,no-agent-forwarding,no-X11-forwarding,command="echo 'Please login as the user \"ec2-user\" rather than the user \"root\".';echo;sleep 10;exit 1
42* ssh-rsa AAAAB3NzaC1yc2EAAQAC15XHZB1HsQz27tOHA7GVqvq/0T1MK/9mavKJvd9K7HkwrFsDKtexB8JCo5aiy8lFz1v/7wRQng+Bu1vnWzvB002TjMC0AMTjW6ZUQqcW0ydhbXGwDNEqq
Rhzb031b4SLDX3xmlx/Us1BG1ERQyfZu9PGoxpGltFB2K/vMvtGtmpe3NMU1jb0fT5s81r2ghCxDet+/IVpU60JK8Schn+x+jAmyWrz9KKgf7W2r9xzUD1VP3T7B4ip+45GWt7tdinQaNmmy051EUa|9RPyC1W
hdkus3CXzooYNMwyOnCX7hGULeDkP8jP8zpTTvrlEjNrBBGMuk1ba+d6mIv vignesh
ssh-rsa AAAAB3NzaC1yc2EAAQABAAAABgQC8zMsGfFA57lZfpZ23A6Ba2QmFeJ1o/BMphNje5RnDvRxLp9g5+iUFn1X7vQchJy3tuAmMtRhg9z7diqaNmdd2D11EdrlLdS4S1G9sCr-Kombhs8CqsCsh8A
h0VePVxeF/7rnT79t5ja78+Nv/a5tGNF214nMvx18PkblVxMrqybhn9L169nr0z6R8/0bDv178j5fEKNKcwvXz9186Ewy3Im4TWtGNgg0osPttxQ1xE1ln9+n3Av9eGbPw70Wg6sURCDUs4obNCEQM+92WFch
TSImcc1c1nUHZY6t01V/bbfecbVYhnmVmlvgvRe200mtSD9c9emtNwhw8erGl7sR6ao0UNXIE88zr1+vzYDlo/0tBhdueQqOp2MSmcM5BZJJvhFaU4f+mhJkt7pmfjug2g1M021PFMNxEVuL9r+bSkKD++Few
BQ9+4chHXVKTrmYAQ3ESfKkgNQ2970tuckNG3r8WE1om51Ufgrf+WhprYjN5f1lM= root@ip-172-31-1-115.ap-south-1.compute.internal

```

-- INSERT --

i-09ee04ab74c67f825 (Ansible-node)

PublicIPs: 13.201.102.18 PrivateIPs: 172.31.12.221

➤ Past the key

```

no-port-forwarding,no-agent-forwarding,no-X11-forwarding,command="echo 'Please login as the user \"ec2-user\" rather than the user \"root\".';echo;sleep 10;exit 1
42* ssh-rsa AAAAB3NzaC1yc2EAAQAC15XHZB1HsQz27tOHA7GVqvq/0T1MK/9mavKJvd9K7HkwrFsDKtexB8JCo5aiy8lFz1v/7wRQng+Bu1vnWzvB002TjMC0AMTjW6ZUQqcW0ydhbXGwDNEqq
Rhzb031b4SLDX3xmlx/Us1BG1ERQyfZu9PGoxpGltFB2K/vMvtGtmpe3NMU1jb0fT5s81r2ghCxDet+/IVpU60JK8Schn+x+jAmyWrz9KKgf7W2r9xzUD1VP3T7B4ip+45GWt7tdinQaNmmy051EUa|9RPyC1W
hdkus3CXzooYNMwyOnCX7hGULeDkP8jP8zpTTvrlEjNrBBGMuk1ba+d6mIv vignesh
ssh-rsa AAAAB3NzaC1yc2EAAQABAAAABgQC8zMsGfFA57lZfpZ23A6Ba2QmFeJ1o/BMphNje5RnDvRxLp9g5+iUFn1X7vQchJy3tuAmMtRhg9z7diqaNmdd2D11EdrlLdS4S1G9sCr-Kombhs8CqsCsh8A
h0VePVxeF/7rnT79t5ja78+Nv/a5tGNF214nMvx18PkblVxMrqybhn9L169nr0z6R8/0bDv178j5fEKNKcwvXz9186Ewy3Im4TWtGNgg0osPttxQ1xE1ln9+n3Av9eGbPw70Wg6sURCDUs4obNCEQM+92WFch
TSImcc1c1nUHZY6t01V/bbfecbVYhnmVmlvgvRe200mtSD9c9emtNwhw8erGl7sR6ao0UNXIE88zr1+vzYDlo/0tBhdueQqOp2MSmcM5BZJJvhFaU4f+mhJkt7pmfjug2g1M021PFMNxEVuL9r+bSkKD++Few
BQ9+4chHXVKTrmYAQ3ESfKkgNQ2970tuckNG3r8WE1om51Ufgrf+WhprYjN5f1lM= root@ip-172-31-1-115.ap-south-1.compute.internal

```

-- INSERT --

i-09ee04ab74c67f825 (Ansible-node)

PublicIPs: 13.201.102.18 PrivateIPs: 172.31.12.221

➤ Test SSH Connection:

- Copy the **Private IPs** from **Ansible-Node**
- Go to Ansible-Master Server
- Command to check the connection between Ansible-Master and Ansible-Node
- **ssh root@private IPs**
- We have to click **yes**
- Connection has build Between **Ansible-Master** and **Ansible-Node**

```
[root@ip-172-31-1-115 ~]# ssh root@172.31.12.221
The authenticity of host '172.31.12.221 (172.31.12.221)' can't be established.
ED25519 key fingerprint is SHA256:6KTSJXS3414CEL8kCXg8EnzZ6c583e5/+JwpIxEWh0.
This key is not known by any other names
Are you sure you want to continue connecting (yes/no/[fingerprint])? yes
Warning: Permanently added '172.31.12.221' (ED25519) to the list of known hosts.

      # Amazon Linux 2023
      # https://aws.amazon.com/linux/amazon-linux-2023
      #
      # Last login: Fri Jun 21 06:11:03 2024 from 13.233.177.3
[root@ip-172-31-12-221 ~]#
```

i-Obcc9470fcf5cfb02 (Ansible-master)
PublicIPs: 13.232.90.103 PrivateIPs: 172.31.1.115

➤ exit is the Command to logout from one server to another server

```
[root@ip-172-31-1-115 ~]# ssh root@172.31.12.221
The authenticity of host '172.31.12.221 (172.31.12.221)' can't be established.
ED25519 key fingerprint is SHA256:6KTSJXS3414CEL8kCXg8EnzZ6c583e5/+JwpIxEWh0.
This key is not known by any other names
Are you sure you want to continue connecting (yes/no/[fingerprint])? yes
Warning: Permanently added '172.31.12.221' (ED25519) to the list of known hosts.

      # Amazon Linux 2023
      # https://aws.amazon.com/linux/amazon-linux-2023
      #
      # Last login: Fri Jun 21 06:11:03 2024 from 13.233.177.3
[root@ip-172-31-12-221 ~]# exit
logout
Connection to 172.31.12.221 closed.
[root@ip-172-31-1-115 ~]#
```

i-Obcc9470fcf5cfb02 (Ansible-master)
PublicIPs: 13.232.90.103 PrivateIPs: 172.31.1.115

➤ Configure Ansible inventory file:

- We have to create inventory file
- First Create a file using this command vi siri
- siri is the file name
- Copy the **PrivateIPs** from **Ansible-Node**
- Paste in this siri file
- Now siri is our Ansible Inventory file

```
[root@ip-172-31-1-115 ~]# vi siric
```

i-0bcc9470fcd5cfb02 (Ansible-master)
PublicIPs: 13.232.90.103 PrivateIPs: 172.31.1.115

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29°C Partly sunny Search ENG IN 11:58 21-06-2024

```
[root@ip-172-31-12-221 ~]# vi siric
```

i-09ee04ab74c67f825 (Ansible-node)
PublicIPs: 13.201.102.18 PrivateIPs: 172.31.12.221

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29°C Partly sunny Search ENG IN 11:59 21-06-2024

```
[root@172-31-12-221 ~]# vi siric
```

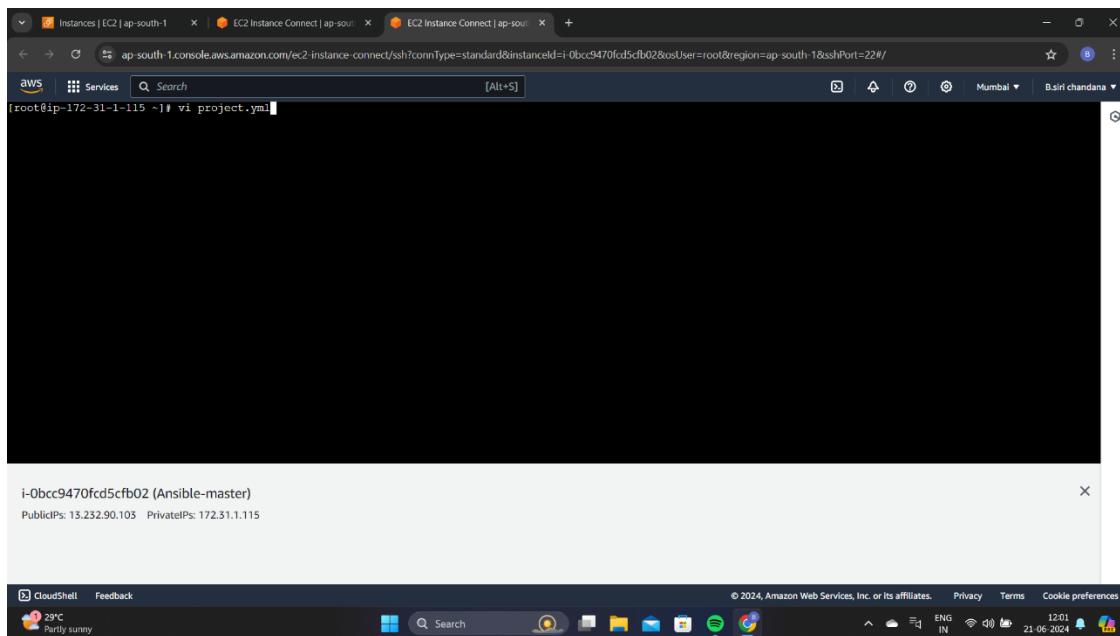
```
-- INSERT --
```

i-0bcc9470fcd5cfb02 (Ansible-master)
PublicIPs: 13.232.90.103 PrivateIPs: 172.31.1.115

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29°C Partly sunny Search ENG IN 12:00 21-06-2024

➤ Create Ansible Playbooks:

- Create file using this command **vi Project.yml**
- **Project.yml is our file**
- In this Project.yml file we have to write Playbooks
- Open Project.yml

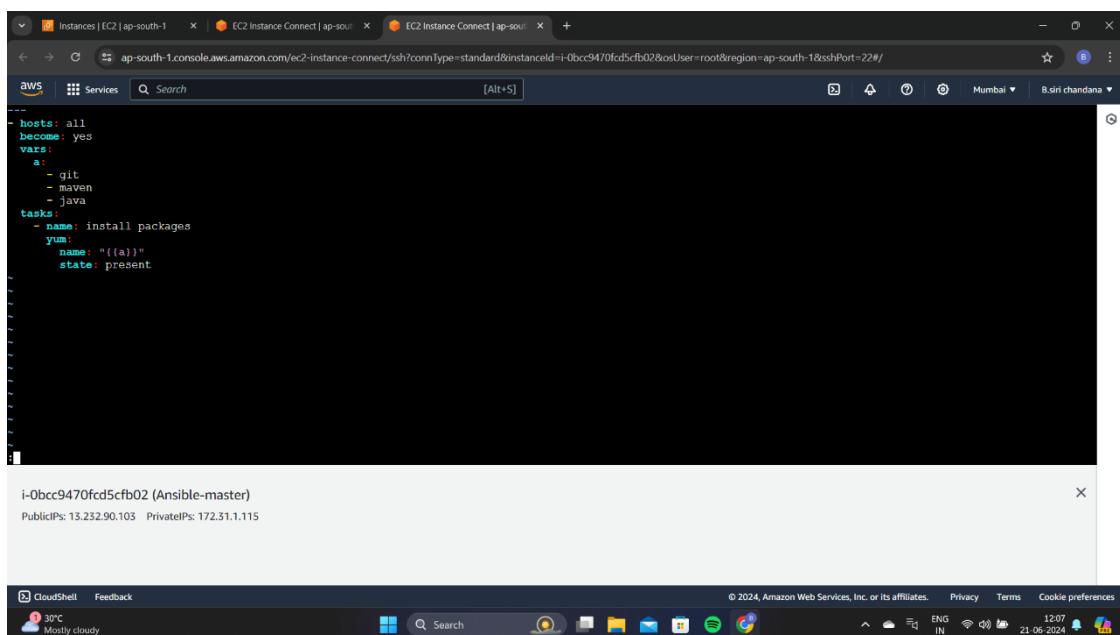


```
i-0bcc9470fcf5cfb02 (Ansible-master)
PublicIPs: 13.232.90.103 PrivateIPs: 172.31.1.115
```

The screenshot shows a terminal window on an AWS CloudShell interface. The user has run the command `vi project.yml`. The terminal window has a dark background and white text. At the bottom of the terminal, there is a status bar with information about the instance: "i-0bcc9470fcf5cfb02 (Ansible-master)", "PublicIPs: 13.232.90.103", and "PrivateIPs: 172.31.1.115". Below the terminal is a standard Windows-style taskbar with icons for File, Edit, View, Insert, Format, Tools, Help, and a search bar.

➤ Playbook 1

- We have to install the **GIT MAVEN TOMCAT AND JAVA (Follow the Steps)**
- By using **vars** we can install **GIT MAVEN AND JAVA**
- Write a task for **install packages**



```
hosts: all
become: yes
vars:
  a:
    - git
    - maven
    - java
tasks:
  - name: install packages
    yum:
      name: "{{a}}"
      state: present
```

The screenshot shows a terminal window on an AWS CloudShell interface displaying an Ansible playbook. The code defines a host group `hosts: all`, uses `become: yes` for root privileges, and sets variables `a` containing `git`, `maven`, and `java`. It then defines a task `name: install packages` using the `yum` module to install each item in `a` with the `state: present` parameter. Below the terminal is a standard Windows-style taskbar with icons for File, Edit, View, Insert, Format, Tools, Help, and a search bar.

- Run this Command **ansible-playbook Project.yml -i siri**

```
[root@ip-172-31-1-115 ~]# vi project.yml
[root@ip-172-31-1-115 ~]# ansible-playbook project.yml -i siri

PLAY [all] ****
TASK [Gathering Facts] ****
[WARNING]: Platform linux on host 172.31.12.221 is using the discovered Python interpreter at /usr/bin/python3.9, but future installation of another Python interpreter could change the meaning of that path. See https://docs.ansible.com/ansible-core/2.15/reference_appendices/interpreter_discovery.html for more information.
OK: [172.31.12.221]

TASK [Install packages] ****
changed: [172.31.12.221]

PLAY RECAP ****
172.31.12.221 : ok=2    changed=1    unreachable=0    failed=0    skipped=0    rescued=0    ignored=0

[root@ip-172-31-1-115 ~]#
```

i-0bcc9470fcf5fb02 (Ansible-master)
Public IPs: 13.232.90.103 Private IPs: 172.31.1.115

- Packages are **installed Successfully**
- Open Ansible-Node and **Check Versions of GIT MAVEN AND JAVA**

```
[root@ip-172-31-12-221 ~]# git -v
git version 2.40.1
[root@ip-172-31-12-221 ~]# mvn -v
Apache Maven 3.8.4 (Red Hat 3.8.4-3.amzn2023.0.5)
Maven home: /usr/share/maven
Java version: 17.0.11, vendor: Amazon.com Inc., runtime: /usr/lib/jvm/java-17-amazon-corretto.x86_64
default locale: en, platform encoding: UTF-8
OS name: "linux", version: "6.1.92-99.174.amzn2023.x86_64", arch: "amd64", family: "unix"
[root@ip-172-31-12-221 ~]# java -version
openjdk version "22.0.1" 2024-04-16
OpenJDK Runtime Environment Corretto-22.0.1.8.1 (build 22.0.1+8-FL)
OpenJDK 64-Bit Server VM Corretto-22.0.1.8.1 (build 22.0.1+8-FL, mixed mode, sharing)
[root@ip-172-31-12-221 ~]#
```

i-09ee04ab74c67f825 (Ansible-node)
Public IPs: 13.201.102.18 Private IPs: 172.31.12.221

- **GIT MAVEN JAVA** are installed Successfully on **Ansible-Node**

- Now we have to install **TOMCAT**
 - **TOMCAT** is not a Package So we have to Download TOMCAT Using **get_url Module**
 - Go to Ansible-Master Server
 - Open Project.yml file
 - Write a task for **Download Tomcat**

```
Instances | EC2 | ap-south-1 x EC2 Instance Connect | ap-south-1 x EC2 Instance Connect | ap-south-1 x New Tab x +  
ap-south-1.console.aws.amazon.com/ec2-instance-connect/ssh?connType=standard&instanceId=i-0bcc9470fcdfb02&osUser=root&region=ap-south-1&sshPort=22/#  
aws Services Search [Alt+S] Mumbai B.siri chandana  
hosts: all  
become: yes  
vars:  
  a:  
    - git  
    - maven  
    - java  
tasks:  
  - name: install packages  
    yum:  
      name: "(a|a)"  
      state: present  
  
  - name: Download Apache Tomcat  
    get_url:  
      url: "https://dlcdn.apache.org/tomcat-9/v9.0.89/bin/apache-tomcat-9.0.89.tar.gz"  
      dest: /tmp/apache-tomcat.tar.gz  
  
i-0bcc9470fcdfb02 (Ansible-master)  
Public IPs: 13.232.90.103 Private IPs: 172.31.1.115  
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30°C Mostly cloudy 12:24 21-06-2024
```

- Run this Command **ansible-playbook Project.yml -i siri**

```
Instances | EC2 | ap-south-1 | EC2 Instance Connect | ap-south-1 | EC2 Instance Connect | ap-south-1 | New Tab | - | + |   ... | AWS Services Search [Alt+S] Mumbai B.siri chandana |  Services |  Search |         PLAY [all] ****

TASK [Gathering Facts] ****
[WARNING]: Platform linux on host 172.31.12.221 is using the discovered Python interpreter at /usr/bin/python3.9, but future installation of another Python Interpreter could change the meaning of that path. See https://docs.ansible.com/ansible-core/2.15/reference_appendices/interpreter_discovery.html for more information.
ok: [172.31.12.221]

TASK [install packages] ****
ok: [172.31.12.221]

TASK [Download Apache Tomcat] ****
ok: [172.31.12.221]

PLAY RECAP ****
172.31.12.221 : ok=3    changed=0    unreachable=0    failed=0    skipped=0    rescued=0    ignored=0

[root@ip-172-31-1-115 ~]#  
```

i-0bcc9470fcf5cfb02 (Ansible-master)
PublicIPs: 13.232.90.105 PrivateIPs: 172.31.1.115

- TOMCAT is Downloaded on Ansible-Node

```
[root@ip-172-31-12-221 ~]# ls
[root@ip-172-31-12-221 ~]# cd /tmp/
[root@ip-172-31-12-221 tmp]# ls
apache-tomcat.tar.gz
```

- Now we have to Extract Tomcat Using this **unarchive Module**
- Open Project.yml
- Write task for **Extract Tomcat**

```
hosts: all
become: yes
vars:
  - git
  - maven
  - java
tasks:
  - name: install packages
    yum:
      name: "{{(a) }}"
      state: present
  - name: Download Apache Tomcat
    get_url:
      url: "https://dlcdn.apache.org/tomcat/tomcat-9/v9.0.89/bin/apache-tomcat-9.0.89.tar.gz"
      dest: /tmp/apache-tomcat.tar.gz
  - name: Extract Apache Tomcat
    unarchive:
      src: /tmp/apache-tomcat.tar.gz
      dest: /opt
      remote_src: yes
```

i-0bcc9470fc5cfb02 (Ansible-master)
Public IPs: 13.232.90.103 Private IPs: 172.31.1.115

- Run this Command **ansible-playbook Project.yml -i siri**

```

Instances | EC2 | ap-south-1 | EC2 Instance Connect | ap-south-1 | EC2 Instance Connect | ap-south-1 | New Tab
ap-south-1.console.aws.amazon.com/ec2-instance-connect/ssh?connType=standard&instanceId=i-0bcc9470fc5cfb02&osUser=root&region=ap-south-1&sshPort=22#/ [Alt+S]
AWS Services Search [Alt+S] Mumbai B.siri chandana
[root@ip-172-31-1-115 ~]# vi project.yml
[root@ip-172-31-1-115 ~]# ansible-playbook project.yml -i siri
PLAY [all] ****
TASK [Gathering Facts] ****
[WARNING]: Platform Linux on host 172.31.12.221 is using the discovered Python interpreter at /usr/bin/python3.9, but future installation of another Python interpreter could change the meaning of that path. See https://docs.ansible.com/ansible-core/2.15/reference_appendices/interpreter_discovery.html for more information.
ok: [172.31.12.221]
TASK [Install packages] ****
ok: [172.31.12.221]
TASK [Download Apache Tomcat] ****
ok: [172.31.12.221]
TASK [Extract Apache Tomcat] ****
changed: [172.31.12.221]
PLAY RECAP ****
172.31.12.221 : ok=4    changed=1    unreachable=0    failed=0    skipped=0    rescued=0    ignored=0
[root@ip-172-31-1-115 ~]#

```

i-0bcc9470fc5cfb02 (Ansible-master)
Public IPs: 13.232.90.103 Private IPs: 172.31.1.115

➤ Tomcat Extraction is Completed on Ansible-Node

```

Instances | EC2 | ap-south-1 | EC2 Instance Connect | ap-south-1 | EC2 Instance Connect | ap-south-1 | New Tab
ap-south-1.console.aws.amazon.com/ec2-instance-connect/ssh?region=ap-south-1&connType=standard&instanceId=i-09ee04ab74c67f825&osUser=root&sshPort=22#/ [Alt+S]
AWS Services Search [Alt+S] Mumbai B.siri chandana
[root@ip-172-31-12-221 ~]# cd /opt/
[root@ip-172-31-12-221 opt]# ls
apache-tomcat-9.0.89  aws
[root@ip-172-31-12-221 opt]#

```

i-09ee04ab74c67f825 (Ansible-node)
Public IPs: 13.201.102.18 Private IPs: 172.31.12.221

- Open Project.yml file in Ansible-Master
- Now we have to **Start Tomcat Using this shell Module**
- Write a task for to **Start Tomcat**

```

become: yes
vars:
  a:
    - git
    - maven
    - java
  tasks:
    - name: install packages
      yum:
        name: "{{a}}"
        state: present

    - name: Download Apache Tomcat
      get_url:
        url: "https://dlcdn.apache.org/tomcat/tomcat-9/v9.0.89/bin/apache-tomcat-9.0.89.tar.gz"
        dest: /tmp/apache-tomcat.tar.gz

    - name: Extract Apache Tomcat
      unarchive:
        src: /tmp/apache-tomcat.tar.gz
        dest: /opt
        remote_src: yes

    - name: Start Tomcat
      shell: nohup ./startup.sh
      args:
        chdir: /opt/apache-tomcat-9.0.89/bin
-- INSERT --

```

i-0bcc9470fcf5cfb02 (Ansible-master)
PublicIPs: 13.232.90.103 PrivateIPs: 172.31.1.115

➤ Run this Command **ansible-playbook Project.yml -i siri**

```

[root@ip-172-31-1-115 ~]# vi project.yml
[root@ip-172-31-1-115 ~]# ansible-playbook project.yml -i siri

PLAY [all] ****
TASK [Gathering Facts] ****
[WARNING]: Platform linux on host 172.31.12.221 is using the discovered Python interpreter at /usr/bin/python3.9, but future installation of another Python interpreter could change the meaning of that path. See https://docs.ansible.com/ansible-core/2.15/reference_appendices/interpreter_discovery.html for more information.
ok: [172.31.12.221]

TASK [install packages] ****
ok: [172.31.12.221]

TASK [download Apache Tomcat] ****
ok: [172.31.12.221]

TASK [Extract Apache Tomcat] ****
ok: [172.31.12.221]

TASK [Start Tomcat] ****
changed: [172.31.12.221]

PLAY RECAP ****
172.31.12.221 : ok=5    changed=1    unreachable=0   failed=0    skipped=0   rescued=0   ignored=0

[root@ip-172-31-1-115 ~]#

```

i-0bcc9470fcf5cfb02 (Ansible-master)
PublicIPs: 13.232.90.103 PrivateIPs: 172.31.1.115

➤ TOMCAT STARTED

- We want to **Edit inbound rules For Ansible-Node**
- We want to give **Port number (8080)** and **AnyWhere-IPv4**

➤ Save rules

The screenshot shows the AWS CloudShell interface. At the top, there are three tabs: 'ModifyInboundSecurityGroupRules' (active), 'EC2 Instance Connect | ap-south-1', and 'EC2 Instance Connect | ap-south-1'. Below the tabs, the URL is 'ap-south-1.console.aws.amazon.com/ec2/home?region=ap-south-1#ModifyInboundSecurityGroupRules:securityGroupId=sg-079d51e7f67eec1da'. The main content area is titled 'Edit inbound rules' with a sub-section 'Inbound rules'. It lists two rules:

Security group rule ID	Type	Protocol	Port range	Source	Description - optional
sgr-0285c8af824e07876	SSH	TCP	22	Custom	0.0.0.0/0
-	Custom TCP	TCP	8080	Anywhere	0.0.0.0/0

Below the table, a note says: '⚠ Rules with source of 0.0.0.0/0 or ::/0 allow all IP addresses to access your instance. We recommend setting security group rules to allow access from known IP addresses only.' At the bottom right are 'Cancel', 'Preview changes', and 'Save rules' buttons.

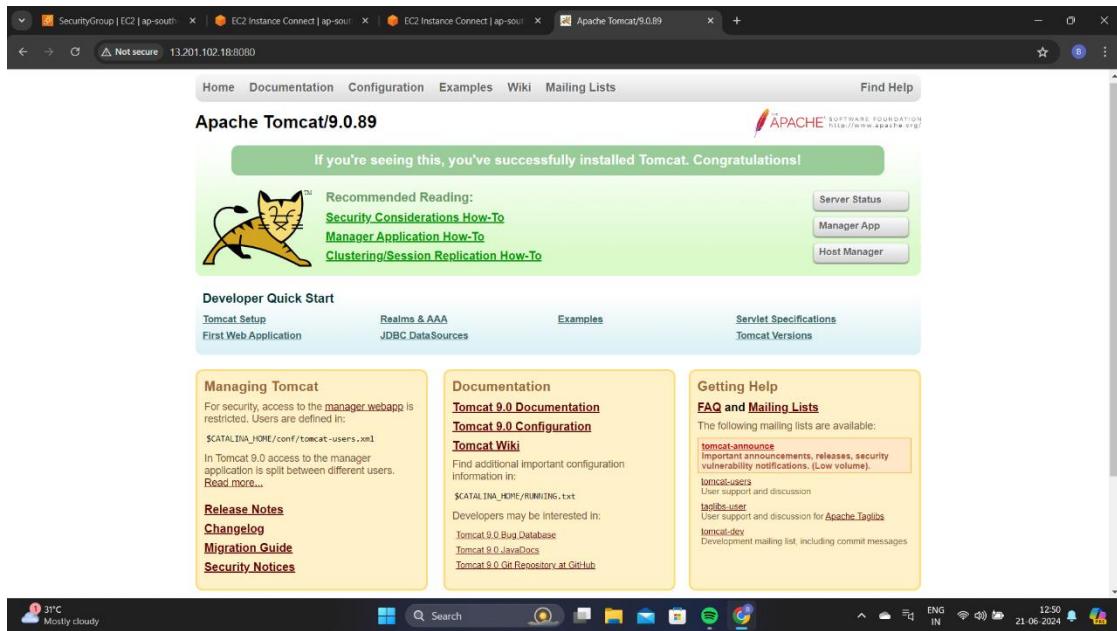
➤ Copy the PublicIPs from Ansible-Node instance

The screenshot shows the AWS CloudShell interface. The main content area displays the following information:

i-09ee04ab74c67f825 (Ansible-node)
PublicIPs: 13.201.102.18 PrivateIPs: 172.31.12.221

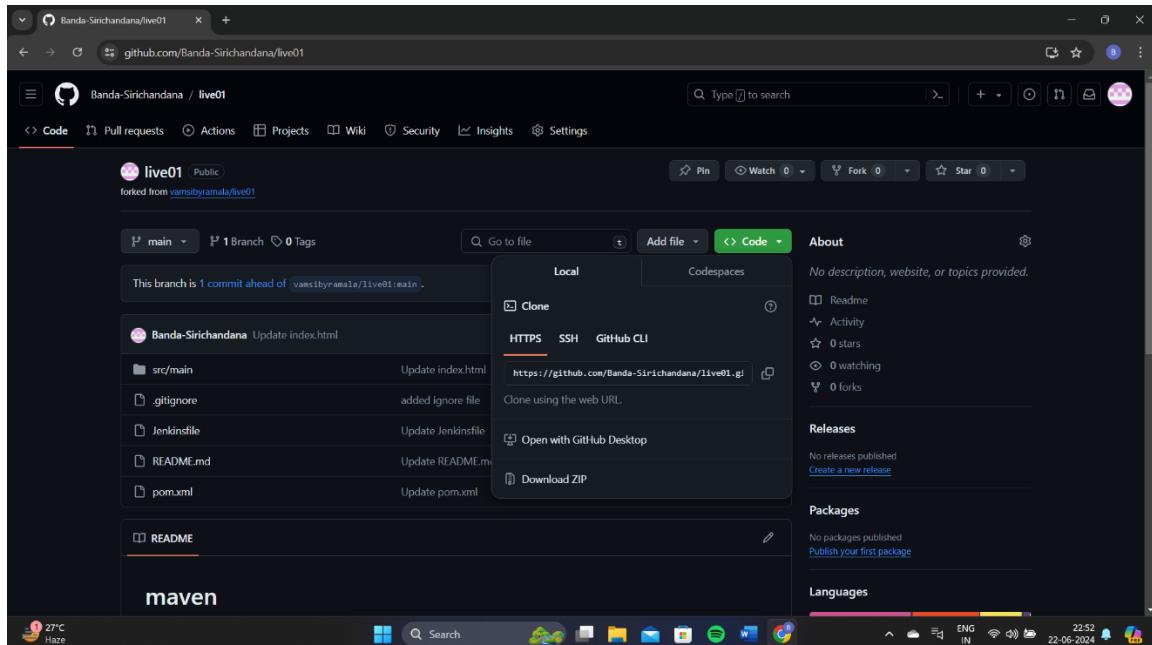
At the bottom, the CloudShell header includes 'CloudShell' and 'Feedback' buttons, a weather widget showing '31°C Mostly cloudy', and a search bar.

- Past in google PublicIPs:8080
- It Will Open Tomcat Dashboard



➤ Playbook 2:

- In this Playbook 2 we have **to Clone the GIT Repository** We have to **Build the target file** Using MAVEN We have to **Deploy WAR file into Webapps Directory**
- **I am writing Playbook in Project.yml file**
- **(we can write multiple playbooks in same file)**
- **We have to Copy Git Repository url from GitHub**



- Open Project.yml in **Ansible-Master**
- Start with **new playbook**
- Write a task for Git clone Repository Using the **git Module**

```

SecurityGroup | EC2 | ap-south-1 | EC2 Instance Connect | ap-south-1 | EC2 Instance Connect | ap-south-1 | Apache Tomcat/9.0.89 | Banda-Sirichandana/live01 | + | - | X
← → C ap-south-1.console.aws.amazon.com/ec2-instance-connect/sh?connType=standard&instanceId=i-0bcc9470fc5cfb02&osUser=root&region=ap-south-1&sshPort=22#
AWS Services Search [Alt+S] Mumbai B.siri chandana
name: "{{a}}"
state: present

- name: Download Apache Tomcat
  get_url:
    url: "https://dlcdn.apache.org/tomcat/tomcat-9/v9.0.89/bin/apache-tomcat-9.0.89.tar.gz"
    dest: /tmp/apache-tomcat.tar.gz

- name: Extract Apache Tomcat
  unarchive:
    src: /tmp/apache-tomcat.tar.gz
    dest: /opt
    remote_src: yes

- name: Start Tomcat
  shell: nohup ./startup.sh
  args:
    chdir: /opt/apache-tomcat-9.0.89/bin

hosts: all
become: yes
tasks:
- name: Clone Git Repository
  git:
    repo: "https://github.com/Banda-Sirichandana/live01.git"
    dest: "live01"

38,21 Bot

```

i-0bcc9470fc5cfb02 (Ansible-master)
PublicIPs: 13.232.90.103 PrivateIPs: 172.31.1.115

➤ Run this Command **ansible-playbook Project.yml -i siri**

```

SecurityGroup | EC2 | ap-south-1 | EC2 Instance Connect | ap-south-1 | EC2 Instance Connect | ap-south-1 | Apache Tomcat/9.0.89 | Banda-Sirichandana/live01 | + | - | X
← → C ap-south-1.console.aws.amazon.com/ec2-instance-connect/sh?connType=standard&instanceId=i-0bcc9470fc5cfb02&osUser=root&region=ap-south-1&sshPort=22#
aws Services Search [Alt+S] Mumbai B.siri chandana
interpreter could change the meaning of that path. See https://docs.ansible.com/ansible-core/2.15/reference_appendices/interpreter_discovery.html for more information.
ok: [172.31.12.221]

TASK [Install packages] *****
ok: [172.31.12.221]

TASK [Download Apache Tomcat] *****
ok: [172.31.12.221]

TASK [Extract Apache Tomcat] *****
ok: [172.31.12.221]

TASK [Start Tomcat] *****
changed: [172.31.12.221]

PLAY [all] *****
ok: [172.31.12.221]

TASK [Gathering Facts] *****
ok: [172.31.12.221]

TASK [Clone Git Repository] *****
changed: [172.31.12.221]

PLAY RECAP *****
172.31.12.221 : ok=7    changed=2    unreachable=0    failed=0    skipped=0    rescued=0    ignored=0

[root@ip-172-31-1-115 ~]# i-0bcc9470fc5cfb02 (Ansible-master)
PublicIPs: 13.232.90.103 PrivateIPs: 172.31.1.115

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31°C Mostly cloudy 12:55 ENG IN 21-06-2024

```

- Git Repository Clone Successfully on Ansible-Node
- In Git Repository there is no target file

```
[root@ip-172-31-12-221 ~]# ls
live01
[root@ip-172-31-12-221 ~]# cd live01/
[root@ip-172-31-12-221 live01]# ls
Jenkinsfile  README.md  pom.xml  src
```

i-09ee04ab74c67f825 (Ansible-node)
PublicIPs: 13.201.102.18 PrivateIPs: 172.31.12.221

- Now we have to get **target file**
- Open Project.yml on Ansible-Master Server
- Write a task for Build Package using **Command Module**

```
aws Services Search [Alt+S]
url: "https://cdn.apache.org/tomcat-9/v9.0.89/bin/apache-tomcat-9.0.89.tar.gz"
dest: /tmp/apache-tomcat.tar.gz

- name: Extract Apache Tomcat
  unarchive:
    src: /tmp/apache-tomcat.tar.gz
    dest: /opt
    remote_src: yes

- name: Start Tomcat
  shell: nohup ./startup.sh
  args:
    chdir: /opt/apache-tomcat-9.0.89/bin

- hosts: all
  become: yes
  tasks:
    - name: Clone Git Repository
      git:
        repo: "https://github.com/Banda-Sirichandana/live01.git"
        dest: "live01"

    - name: build package
      command: "mvn clean package"
      args:
        chdir: "live01"
```

i-0bcc9470fd5cfb02 (Ansible-master)
PublicIPs: 3.110.27.108 PrivateIPs: 172.31.1.115

- Run this Command **ansible-playbook Project.yml -i siri**

```
Instances | EC2 | ap-south-1 | EC2 Instance Connect | ap-south-1 | EC2 Instance Connect | ap-south-1 | +  
ap-south-1.console.aws.amazon.com/ec2-instance-connect/ssh?region=ap-south-1&connType=standard&instanceId=i-0bcc9470fcf5cb02&osUser=root&sshPort=22#/
```

aws Services Search [Alt+S] Mumbai B.siri chandana

```
information.  
ok: [172.31.12.221]  
TASK [install packages] ****  
ok: [172.31.12.221]  
TASK [Download Apache Tomcat] ****  
changed: [172.31.12.221]  
TASK [Extract Apache Tomcat] ****  
ok: [172.31.12.221]  
TASK [Start Tomcat] ****  
changed: [172.31.12.221]  
PLAY [all] ****  
TASK [Gathering Facts] ****  
ok: [172.31.12.221]  
TASK [Clone Git Repository] ****  
ok: [172.31.12.221]  
TASK [build package] ****  
changed: [172.31.12.221]  
PLAY RECAP ****  
172.31.12.221 : ok=8    changed=3   unreachable=0   failed=0   skipped=0   rescued=0   ignored=0  
i-0bcc9470fcf5cb02 (Ansible-master)  
Public IPs: 3.110.27.108 Private IPs: 172.31.1.115
```

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- Build Package is Successfully Completed
- Open Ansible-Node Server
- Open Git Repository
- You can see that **target** file has Created

```
Instances | EC2 | ap-south-1 | EC2 Instance Connect | ap-south-1 | EC2 Instance Connect | ap-south-1 | +  
ap-south-1.console.aws.amazon.com/ec2-instance-connect/ssh?connType=standard&instanceId=i-09ee04ab74c67f825&osUser=root&region=ap-south-1&sshPort=22#/
```

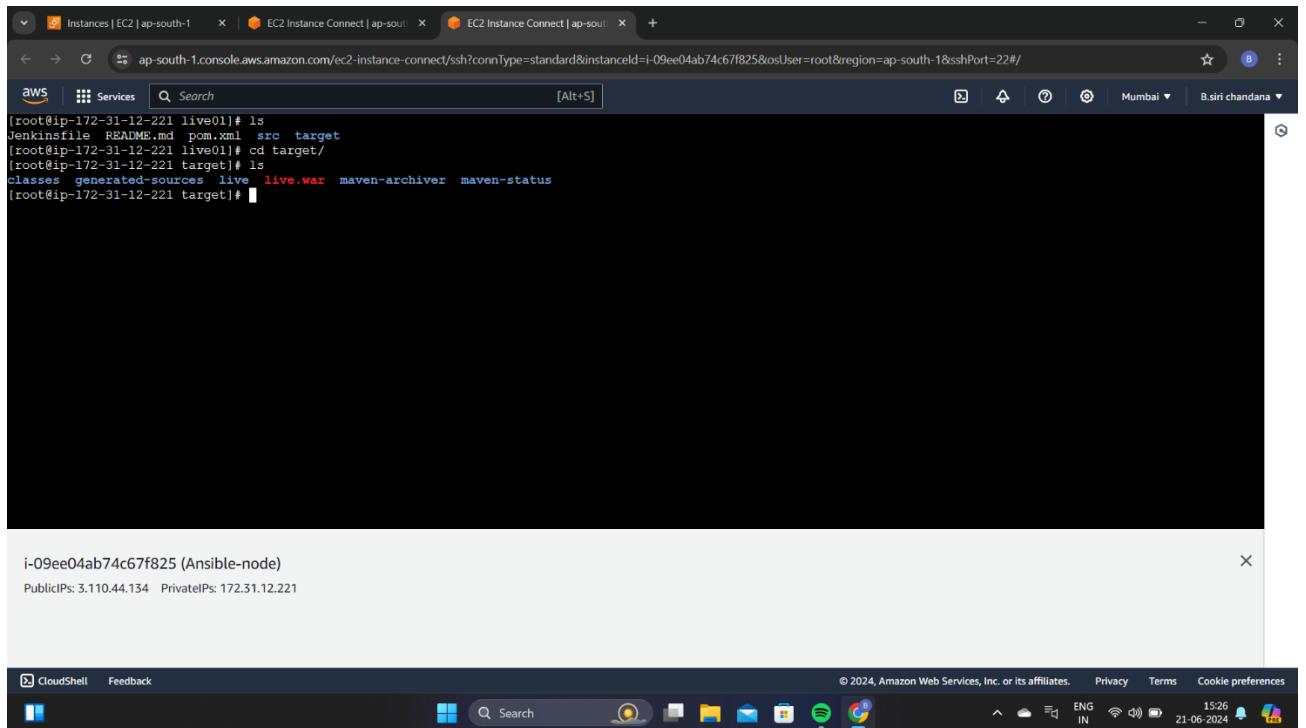
aws Services Search [Alt+S] Mumbai B.siri chandana

```
[root@ip-172-31-12-221 live01]# ls  
Jenkinsfile README.md pom.xml src target  
[root@ip-172-31-12-221 live01]#
```

i-09ee04ab74c67f825 (Ansible-node)
Public IPs: 3.110.44.134 Private IPs: 172.31.12.221

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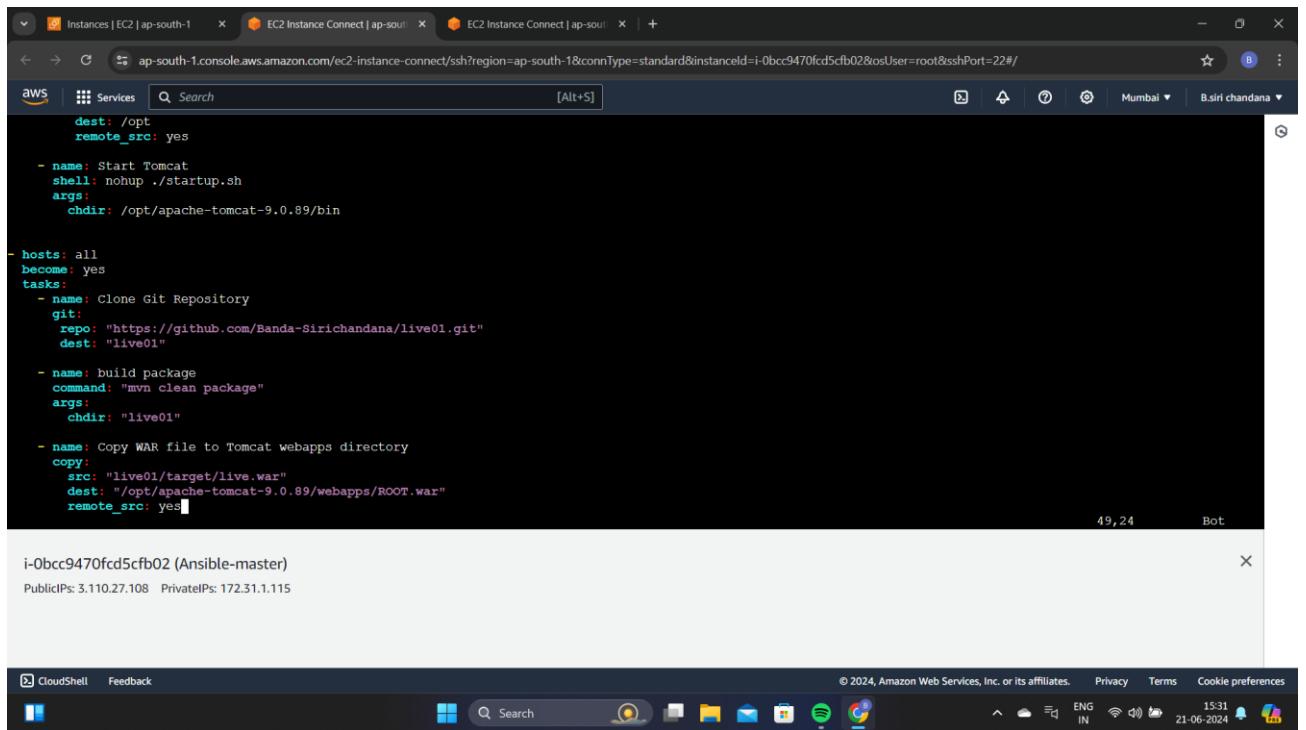
- Now open the target file you can see the **WAR** file



```
(root@ip-172-31-12-221 live01]# ls
Jenkinsfile README.md pom.xml src target
[root@ip-172-31-12-221 live01]# cd target/
[root@ip-172-31-12-221 target]# ls
classes generated-sources live live.war maven-archiver maven-status
[root@ip-172-31-12-221 target]#
```

i-09ee04ab74c67f825 (Ansible-node)
PublicIPs: 3.110.44.134 PrivateIPs: 172.31.12.221

- Now we **have Deploy the WAR file into webapps/tomcat**
- Open Project.yml on **Ansible-Master**
- Write a task for Copy WAR file to Tomcat webapps directory **using copy Module**



```
dest: /opt
remote_src: yes

- name: Start Tomcat
  shell: nohup ./startup.sh
  args:
    chdir: /opt/apache-tomcat-9.0.89/bin

hosts: all
become: yes
tasks:
- name: Clone Git Repository
  git:
    repo: "https://github.com/Banda-Sirichandana/live01.git"
    dest: "live01"

- name: build package
  command: "mvn clean package"
  args:
    chdir: "live01"

- name: Copy WAR file to Tomcat webapps directory
  copy:
    src: "live01/target/live.war"
    dest: "/opt/apache-tomcat-9.0.89/webapps ROOT.war"
    remote_src: yes
```

i-0bcc9470fc5cfb02 (Ansible-master)
PublicIPs: 3.110.27.108 PrivateIPs: 172.31.1.115

- Run this Command **ansible-playbook Project.yml -i siri**

```
Instances | EC2 | ap-south-1 x EC2 Instance Connect | ap-south-1 x EC2 Instance Connect | ap-south-1 +  
ap-south-1.console.aws.amazon.com/ec2-instance-connect/ssh?region=ap-south-1&connType=standard&instanceId=i-0bcc9470fc5cfb02&osUser=root&sshPort=22#/
```

aws Services Search [Alt+S]

Mumbai B.siri chandana

```
TASK [Download Apache Tomcat] ****  
ok: [172.31.12.221]  
  
TASK [Extract Apache Tomcat] ****  
ok: [172.31.12.221]  
  
TASK [Start Tomcat] ****  
changed: [172.31.12.221]  
  
PLAY [all] ****  
  
TASK [Gathering Facts] ****  
ok: [172.31.12.221]  
  
TASK [Clone Git Repository] ****  
ok: [172.31.12.221]  
  
TASK [Build package] ****  
changed: [172.31.12.221]  
  
TASK [Copy WAR file to Tomcat webapps directory] ****  
changed: [172.31.12.221]  
  
PLAY RECAP ****  
172.31.12.221 : ok=9    changed=3    unreachable=0    failed=0    skipped=0    rescued=0    ignored=0  
[root@ip-172-31-1-115 ~]#  
  
i-0bcc9470fc5cfb02 (Ansible-master)  
PublicIPs: 3.110.27.108 PrivatePs: 172.31.1.115
```

- **WAR file Copied into webapps**
 - Deployment of WAR file is Successfully Completed
 - Refresh the PublicIPs:8080 page

It Will open Our Application

Not secure 13.201.41.148:8080

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