CLOUD COMPUTING AND DEVOPS

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Assignment No 6: Write an ansible-playbook to install nginx on target servers

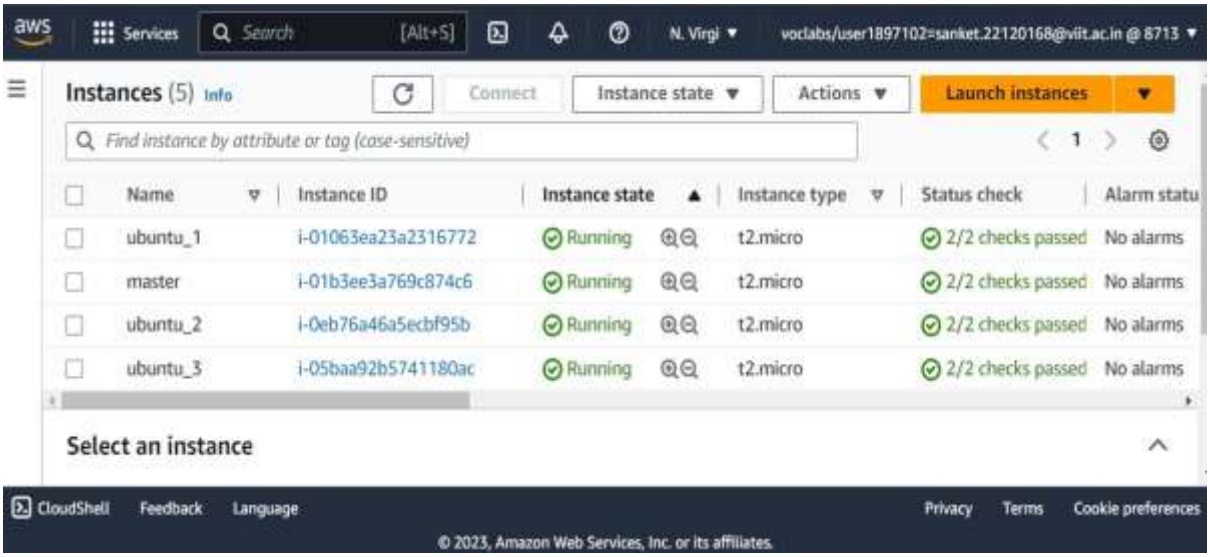
Theory:

1. What is yaml?
   Ans. YAML is a human-readable data serialization language that is often used for writing configuration files. Depending on whom you ask, YAML stands for yet another markup language or YAML ain't markup language (a recursive acronym), which emphasizes that YAML is for data, not documents.
   YAML is a popular programming language because it is designed to be easy to read and understand. It can also be used in conjunction with other programming languages. Because of its flexibility and accessibility, YAML is used by the Ansible automation tool to create automation processes, in the form of Ansible Playbooks.

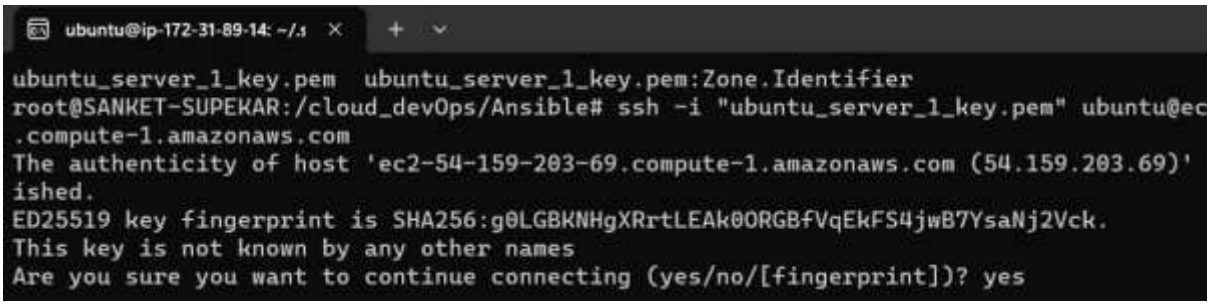
2. What is Ansible?
   Ans. Ansible is a software tool that provides simple but powerful automation for cross-platform computer support. It is primarily intended for IT professionals, who use it for application deployment, updates on workstations and servers, cloud provisioning, configuration management, intra-service orchestration, and nearly anything a systems administrator does on a weekly or daily basis. Ansible doesn't depend on agent software and has no additional security infrastructure, so it's easy to deploy.
   Ans.

Assignmet 3: write an ansible-playbook to install nginx on servers.

Step 1: Create 4 ubuntu ec2 instances



Step 2: Connect to “Ansible-Master” server



Step 3: Install ansible

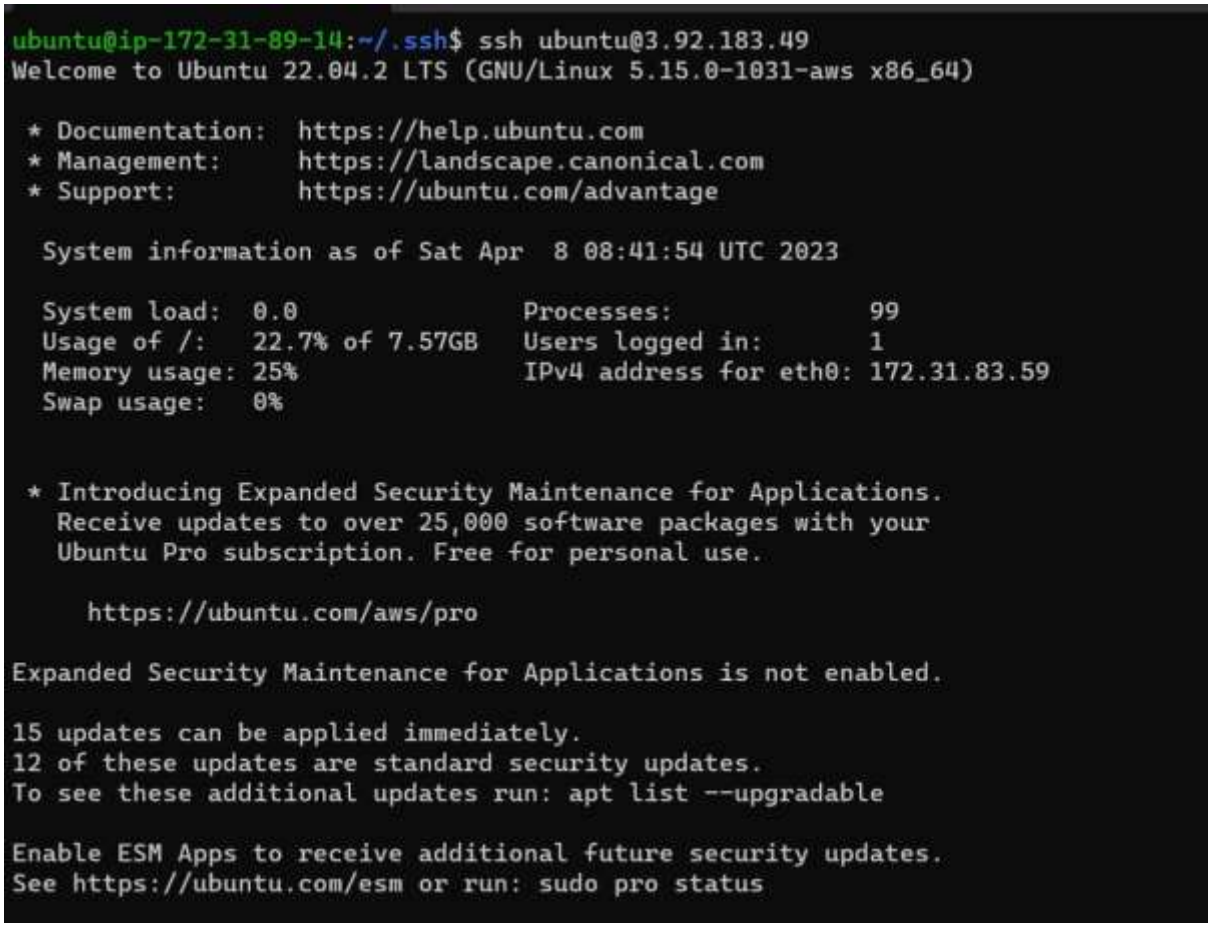
```
ubuntu@ip-172-31-89-14:~$ sudo apt install software-properties-common
Reading package lists... Done
Building dependency tree... Done
Reading state information... Done
software-properties-common is already the newest version (0.99.22.6).
software-properties-common set to manually installed.
0 upgraded, 0 newly installed, 0 to remove and 12 not upgraded.
ubuntu@ip-172-31-89-14:~$ sudo apt-add-respository ppa:ansible/ansible
sudo: apt-add-respository: command not found
ubuntu@ip-172-31-89-14:~$ sudo apt-add-repository ppa:ansible/ansible
Repository: 'deb https://ppa.launchpadcontent.net/ansible/ansible/ubuntu/ jammy main'
Description:
Ansible is a radically simple IT automation platform that makes your applications and systems easier
 to deploy. Avoid writing scripts or custom code to deploy and update your applications- automate in
 a language that approaches plain English, using SSH, with no agents to install on remote systems.

http://ansible.com/
```

```
ubuntu@ip-172-31-89-14:~$ sudo apt install ansible
Reading package lists... Done
Building dependency tree... Done
Reading state information... Done
The following additional packages will be installed:
  ansible-core python3-jmespath python3-kerberos python3-nacl
  python3-ntlm-auth python3-packaging python3-paramiko
  python3-requests-kerberos python3-requests-ntlm python3-resolvelib
  python3-winrm python3-xmltodict sshpass
Suggested packages:
  python-nacl-doc python3-gssapi python3-invoke
The following NEW packages will be installed:
Selecting previously unselected package python3-ntlm-auth.
Preparing to unpack .../07-python3-ntlm-auth_1.4.0-1_all.deb ...
Unpacking python3-ntlm-auth (1.4.0-1) ...
Selecting previously unselected package python3-paramiko.
Preparing to unpack .../08-python3-paramiko_2.9.3-0ubuntu1_all.deb ...
```

Step 4: Generate a ssh key on Ansible-master using command

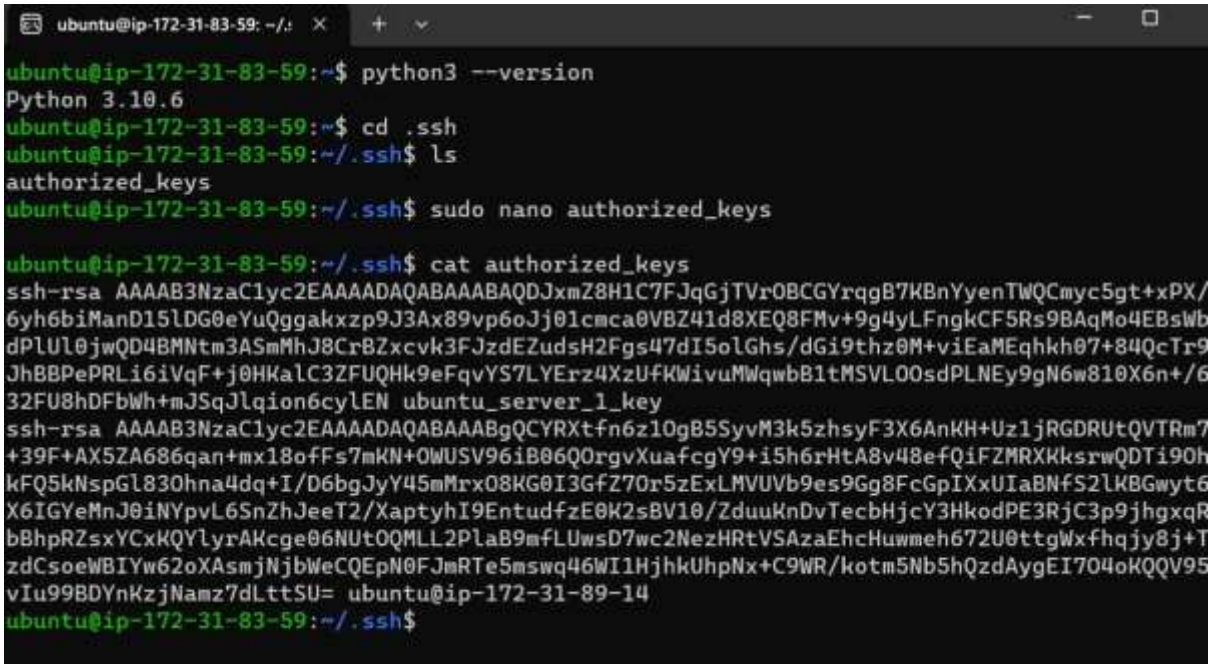
```
ubuntu@ip-172-31-89-14: ~/.s
ubuntu@ip-172-31-89-14:~$ cd .ssh
ubuntu@ip-172-31-89-14:~/.ssh$ ls
authorized_keys
ubuntu@ip-172-31-89-14:~/.ssh$ cd ..
ubuntu@ip-172-31-89-14:~$ ssh ubuntu@3.92.183.49
The authenticity of host '3.92.183.49 (3.92.183.49)' can't be established.
ED25519 key fingerprint is SHA256:iuBURHnTjfVS5V+gZe8cgSODLCMqoxFo9AAYngwzvkc.
This key is not known by any other names
Are you sure you want to continue connecting (yes/no/[fingerprint])? yes
Warning: Permanently added '3.92.183.49' (ED25519) to the list of known hosts.
ubuntu@3.92.183.49: Permission denied (publickey).
ubuntu@ip-172-31-89-14:~$ cd .ssh
ubuntu@ip-172-31-89-14:~/.ssh$ ls
authorized_keys  known_hosts
ubuntu@ip-172-31-89-14:~/.ssh$ ssh-keygen
Generating public/private rsa key pair.
Enter file in which to save the key (/home/ubuntu/.ssh/id_rsa):
```

Step 5: Now login to Ansible-master and try to connect to ansible server using command



Step 6: copy the public key which is in .ssh folder into “authorized keys” on ansible-server1

connect to ansible-server1 and again give command



Create a playbook on Ansible-master

Step 1:- connect to “Ansible-Master”

Step 2:-create a new folder “ansible-project” using command

Step 3:

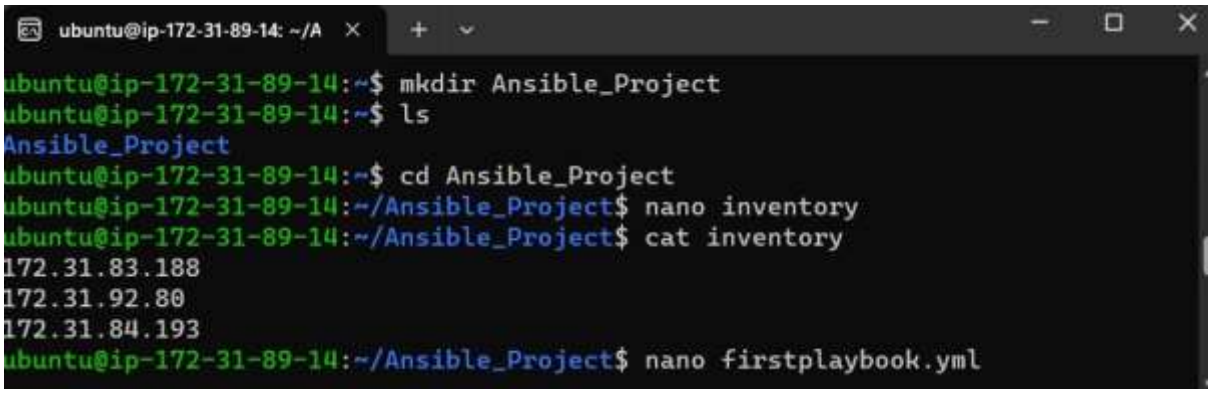
a) > cd ansible-project

b) > nano inventory

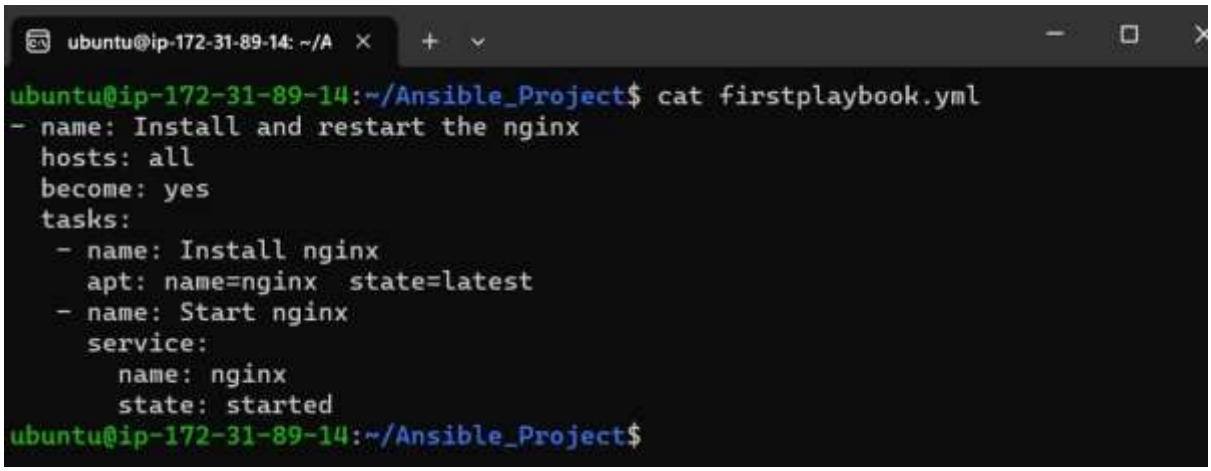
c) > write a private IP of “Ansible-server1” into inventory

d) > write a private IP of “Ansible-server2” into inventory

e) > write a private IP of “Ansible-server3” into inventory



Step 1: Create a new file called “first-playbook.yml”



Verify the output:

connect to any ansible-server1