

AWS Solutions Architect Certification Training

support@intellipaat.com - +91-7022374614 - US: 1-800-216-8930 (Toll Free)

DevOps Project : Capstone 2 COMPLETED by Nagesha KS

Please check the following screenshots for each question.

You are hired as a DevOps Engineer for Analytics Pvt Ltd. This company is a product based organization which uses **Docker** for their containerization needs within the company.

The final product received a lot of traction in the first few weeks of launch. Now with the increasing demand, the organization needs to have a platform for **automating deployment, scaling**

[Up until now, this organization used to follow a monolithic architecture with just 2 developers. The product is present on: https://github.com/hshar/website.git](https://github.com/hshar/website.git)

Following are the specifications of the lifecycle:

1. **Git workflow** should be implemented. Since the company follows a monolithic architecture of development, you need to take care of **version control**. The release should happen
2. **CodeBuild** should be triggered once the commits are made in the master branch.
3. The code should be containerized with the help of the **Dockerfile**. The Dockerfile should be built every time if there is a push to GitHub. Create a custom
4. As per the requirement in the production server, you need to use the **Kubernetes** cluster and the containerized code from Docker Hub should be deployed with 2 replicas. Create a NodePort
5. Create a Jenkins Pipeline script to accomplish the above task.
6. For configuration management of the infrastructure, you need to deploy the configuration on the servers to install necessary software and configurations.
7. Using **Terraform**, accomplish the task of infrastructure creation in the AWS cloud provider.

Architectural Advice:

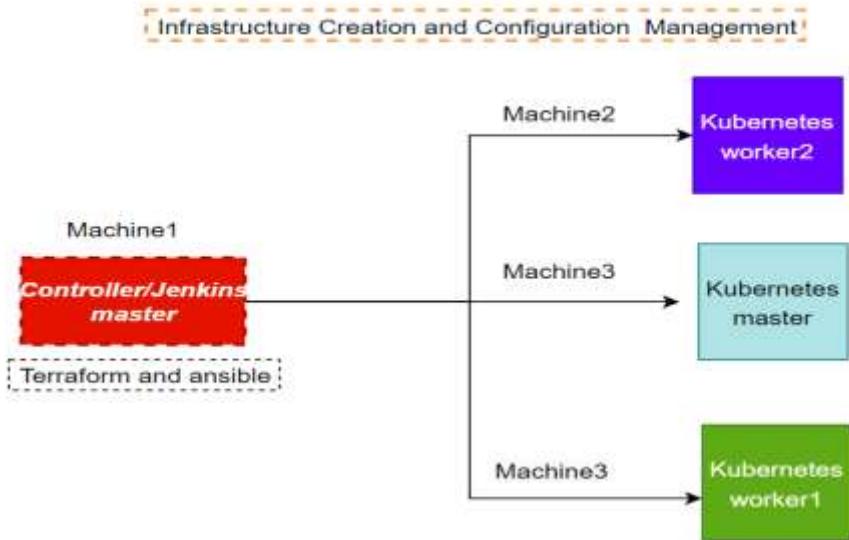
Softwares to be installed on the respective machines using configuration management.

Worker1: Jenkins, Java

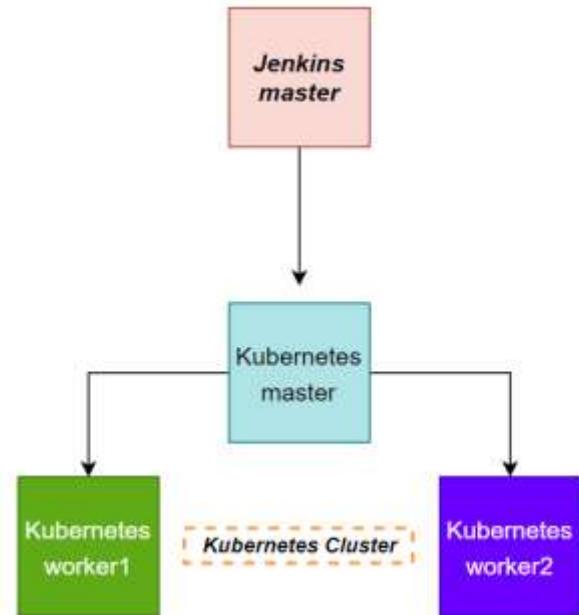
Worker2: Docker, Kubernetes

Worker3: Java, Docker, Kubernetes

Worker4: Docker, Kubernetes



Servers for jenkins and kubernetes configuration



Instances | EC2 | us-east-2

us-east-2.console.aws.amazon.com/ec2/home?region=us-east-2#Instances:v=3;\$case=true%5C;client:false;\$regex=tags:false%5C;client:false

EC2 Dashboard Services Search [Alt+S]

EC2 Global View Events Instances Instances Instance Types Launch Templates Spot Requests Savings Plans Reserved Instances Dedicated Hosts Capacity Reservations Images AMIs AMI Catalog Elastic Block Store Volumes CloudShell Feedback

Last updated less than a minute ago

Find Instance by attribute or tag (case-sensitive)

All states

Launch instances

Instances (1/3) Info

Name	Instance ID	Instance state	Instance type	Status check	Alarm status
<input checked="" type="checkbox"/> Nagesha-DevOps-Caps2-J-M	i-008355c408e4c28ce	Running	t2.micro	Initializing	View alarms
<input type="checkbox"/> Nagesha-DevOps-Caps1-Test	i-0ae4443a2dc84e9	Stopped	t2.micro	-	View alarms
<input type="checkbox"/> Nagesha-DevOps-Caps1-Prod	i-011fa76bf854d2176	Stopped	t2.micro	-	View alarms

i-008355c408e4c28ce (Nagesha-DevOps-Caps2-J-M)

Details Status and alarms Monitoring Security Networking Storage Tags

Instance summary

Instance ID i-008355c408e4c28ce (Nagesha-DevOps-Caps2-J-M)	Public IPv4 address 3.147.84.56 open address	Private IPv4 addresses 172.31.5.220
IPv6 address -	Instance state Running	Public IPv4 DNS ec2-3-147-84-56.us-east-2.compute.amazonaws.com

Activate Windows
Go to Settings to activate Windows.

© 2024, Amazon Web Services, Inc. or its affiliates. Privacy Terms Cookie preferences

17:43 30-09-2024

Instances | EC2 | us-east-2 EC2 Instance Connect

us-east-2.console.aws.amazon.com/ec2-instance-connect/ssh?addressFamily=ipv4&connType=standard&instanceId=i-008355c408e4c28ce&osUser=ubuntu®ion=us-eas... N

aws Services Search [Alt+S]

System load: 0.18 Processes: 114
Usage of /: 45.8% of 7.57GB Users logged in: 0
Memory usage: 56% IPv4 address for eth0: 172.31.5.220
Swap usage: 0%

* Ubuntu Pro delivers the most comprehensive open source security and compliance features.
<https://ubuntu.com/aws/pro>

Expanded Security Maintenance for Applications is not enabled.

0 updates can be applied immediately.

1 additional security update can be applied with ESM Apps.
Learn more about enabling ESM Apps service at <https://ubuntu.com/esm>

Last login: Sat Sep 28 15:52:09 2024 from 3.16.146.3
ubuntu@ip-172-31-5-220:~\$ sudo apt updatesudo apt upddate
E: Invalid operation updatesudo
ubuntu@ip-172-31-5-220:~\$ sudo apt upddate
E: Invalid operation upddate
ubuntu@ip-172-31-5-220:~\$ sudo apt update[]

i-008355c408e4c28ce (Nagesha-DevOps-Caps2-J-M)

PublicIPs: 3.147.84.56 PrivateIPs: 172.31.5.220

Activate Windows
Go to Settings to activate Windows.

CloudShell Feedback © 2024, Amazon Web Services, Inc. or its affiliates. Privacy Terms Cookie preferences

17:47 30-09-2024

Instances | EC2 | us-east-2 EC2 Instance Connect

us-east-2.console.aws.amazon.com/ec2-instance-connect/ssh?addressFamily=ipv4&connType=standard&instanceId=i-008355c408e4c28ce&osUser=ubuntu®ion=us-eas...

Services Search [Alt+S]

https://ubuntu.com/aws/pro

Expanded Security Maintenance for Applications is not enabled.

0 updates can be applied immediately.

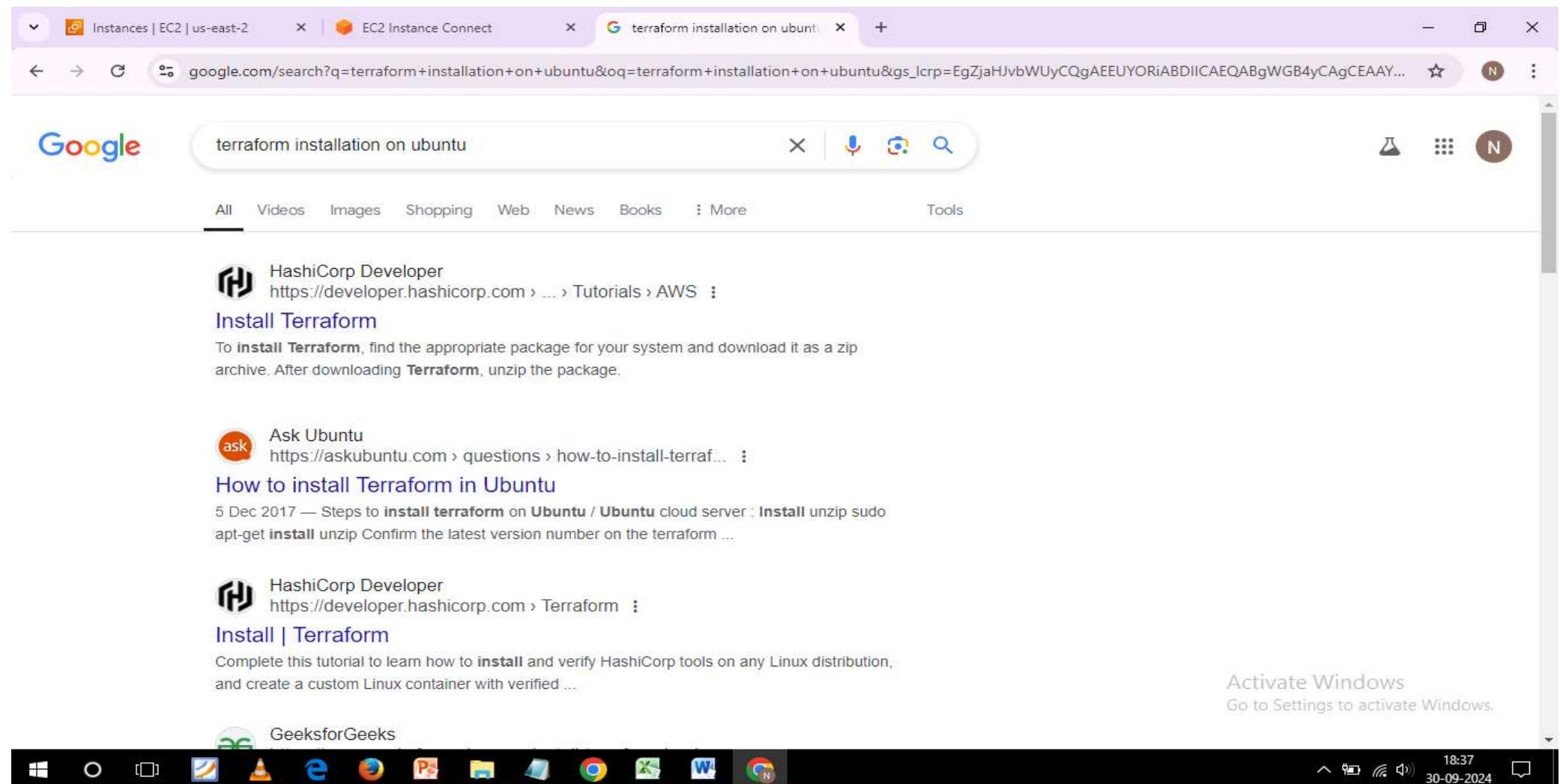
1 additional security update can be applied with ESM Apps.
Learn more about enabling ESM Apps service at <https://ubuntu.com/esm>

```
Last login: Sat Sep 28 15:52:09 2024 from 3.16.146.3
ubuntu@ip-172-31-5-220:~$ sudo apt updatesudo apt upddate
E: Invalid operation updatessudo
ubuntu@ip-172-31-5-220:~$ sudo apt upddate
E: Invalid operation upddate
ubuntu@ip-172-31-5-220:~$ sudo apt update
Hit:1 http://us-east-2.ec2.archive.ubuntu.com/ubuntu jammy InRelease
Get:2 http://us-east-2.ec2.archive.ubuntu.com/ubuntu jammy-updates InRelease [128 kB]
Hit:3 http://us-east-2.ec2.archive.ubuntu.com/ubuntu jammy-backports InRelease
Get:4 http://security.ubuntu.com/ubuntu jammy-security InRelease [129 kB]
Ign:5 https://pkg.jenkins.io/debian-stable binary/ InRelease
Hit:6 https://pkg.jenkins.io/debian-stable binary/ Release
Get:7 http://us-east-2.ec2.archive.ubuntu.com/ubuntu jammy-updates/main amd64 Packages [2066 kB]
Hit:8 https://ppa.launchpadcontent.net/ansible/ansible/ubuntu jammy InRelease
Get:9 http://us-east-2.ec2.archive.ubuntu.com/ubuntu jammy-updates/universe amd64 Packages [1128 kB]
Fetched 3451 kB in 2s (2091 kB/s)
Reading package lists... Done
Building dependency tree... Done
Reading state information... Done
All packages are up to date.
ubuntu@ip-172-31-5-220:~$
```

Activate Windows
Go to Settings to activate Windows.

CloudShell Feedback © 2024, Amazon Web Services, Inc. or its affiliates. Privacy Terms Cookie preferences

17:47 30-09-2024



Instances | EC2 | us-east-2 | EC2 Instance Connect | Install Terraform | Terraform | H

developer.hashicorp.com/terraform/tutorials/aws-get-started/install-cli

Terraform Install Tutorials Documentation Registry Try Cloud

Search ⌘/ctrl K

AWS

8 tutorials

Infrastructure as Code

Install

Build

Change

Destroy

Variables

Outputs

Remote state

Resources

Developer / Terraform / Tutorials / AWS / Install

Install Terraform

9min | Terraform ▶ Video ⓘ Interactive

Show Terminal

Reference this often? [Create an account](#) to bookmark tutorials.

On this page:

- Install Terraform
- Install Terraform
- Verify the installation
- Quick start tutorial
- Next Steps

terraform.io/downloads.html

HashiCorp Browse Products About HashiCorp

Terraform Overview Editions Registry Tutorials Docs Community GitHub Download CLI

Downloads

Download Terraform

JUMP TO SECTION

Download Terraform

Debian/Ubuntu APT Packages

Below are the available downloads for the latest version of Terraform (0.15.5). Please download the proper package for your operating system and architecture.

Terraform is distributed as a single binary. Install Terraform by extracting it and moving it to

We use cookies & other similar technology to collect data to improve your experience on our site, as described in our [Privacy Policy](#) and [Cookie Policy](#).

Activate Windows
Go to Settings to activate Windows.
Manage Preferences ACCEPT

18:37 30-09-2024

Instances | EC2 | us-east-2 EC2 Instance Connect Install Terraform | Terraform | H

developer.hashicorp.com/terraform/tutorials/aws-get-started/install-cli

Terraform Install Tutorials Documentation Registry Try Cloud

Search ⌘/ctrl K

Install Terraform

On this page:

- Install Terraform
- Install Terraform
- Verify the installation
- Quick start tutorial
- Next Steps

< AWS

8 tutorials

Infrastructure as Code

Install

Build

Change

Destroy

Variables

Outputs

Remote state

Resources

Manual installation Homebrew on macOS Chocolatey on Windows **Linux**

HashiCorp officially maintains and signs packages for the following Linux distributions.

Ubuntu/Debian CentOS/RHEL Fedora Amazon Linux

Ensure that your system is up to date and you have installed the `gnupg`, `software-properties-common`, and `curl` packages installed. You will use these packages to verify HashiCorp's GPG signature and install HashiCorp's Debian package repository.

```
$ sudo apt-get update && sudo apt-get install -y gnupg software-properties-common curl
```

Install the HashiCorp [GPG key](#).

We use cookies & other similar technology to collect data to improve your experience on our site, as described in our [Privacy Policy](#) and [Cookie Policy](#).

Activate Windows
Go to Settings to activate Windows.
Manage Preferences **ACCEPT**

18:38 30-09-2024

Instances | EC2 | us-east-2 EC2 Instance Connect Install Terraform | Terraform | Help

us-east-2.console.aws.amazon.com/ec2-instance-connect/ssh?addressFamily=ipv4&connType=standard&instanceId=i-008355c408e4c28ce&osUser=ubuntu®ion=us-eas...

AWS Services Search [Alt+S] Ohio Nagesha%20KS

```
0 updates can be applied immediately.

1 additional security update can be applied with ESM Apps.
Learn more about enabling ESM Apps service at https://ubuntu.com/esm

Last login: Sat Sep 28 15:52:09 2024 from 3.16.146.3
ubuntu@ip-172-31-5-220:~$ sudo apt updatesudo apt upddate
E: Invalid operation updatessudo
ubuntu@ip-172-31-5-220:~$ sudo apt upddate
E: Invalid operation upddate
ubuntu@ip-172-31-5-220:~$ sudo apt update
Hit:1 http://us-east-2.ec2.archive.ubuntu.com/ubuntu jammy InRelease
Get:2 http://us-east-2.ec2.archive.ubuntu.com/ubuntu jammy-updates InRelease [128 kB]
Hit:3 http://us-east-2.ec2.archive.ubuntu.com/ubuntu jammy-backports InRelease
Get:4 http://security.ubuntu.com/ubuntu jammy-security InRelease [129 kB]
Ign:5 https://pkg.jenkins.io/debian-stable binary/ InRelease
Hit:6 https://pkg.jenkins.io/debian-stable binary/ Release
Get:7 http://us-east-2.ec2.archive.ubuntu.com/ubuntu jammy-updates/main amd64 Packages [2066 kB]
Hit:8 https://ppa.launchpadcontent.net/ansible/ansible/ubuntu jammy InRelease
Get:9 http://us-east-2.ec2.archive.ubuntu.com/ubuntu jammy-updates/universe amd64 Packages [1128 kB]
Fetched 3451 kB in 2s (2091 kB/s)
Reading package lists... Done
Building dependency tree... Done
Reading state information... Done
All packages are up to date.
ubuntu@ip-172-31-5-220:~$
ubuntu@ip-172-31-5-220:~$
ubuntu@ip-172-31-5-220:~$ sudo apt-get update && sudo apt-get install -y gnupg software-properties-common
```

Activate Windows
Go to Settings to activate Windows.

CloudShell Feedback © 2024, Amazon Web Services, Inc. or its affiliates. Privacy Terms Cookie preferences

18:46 30-09-2024

Instances | EC2 | us-east-2 EC2 Instance Connect Install Terraform | Terraform | H... +

us-east-2.console.aws.amazon.com/ec2-instance-connect/ssh?addressFamily=ipv4&connType=standard&instanceId=i-008355c408e4c28ce&osUser=ubuntu®ion=us-eas...

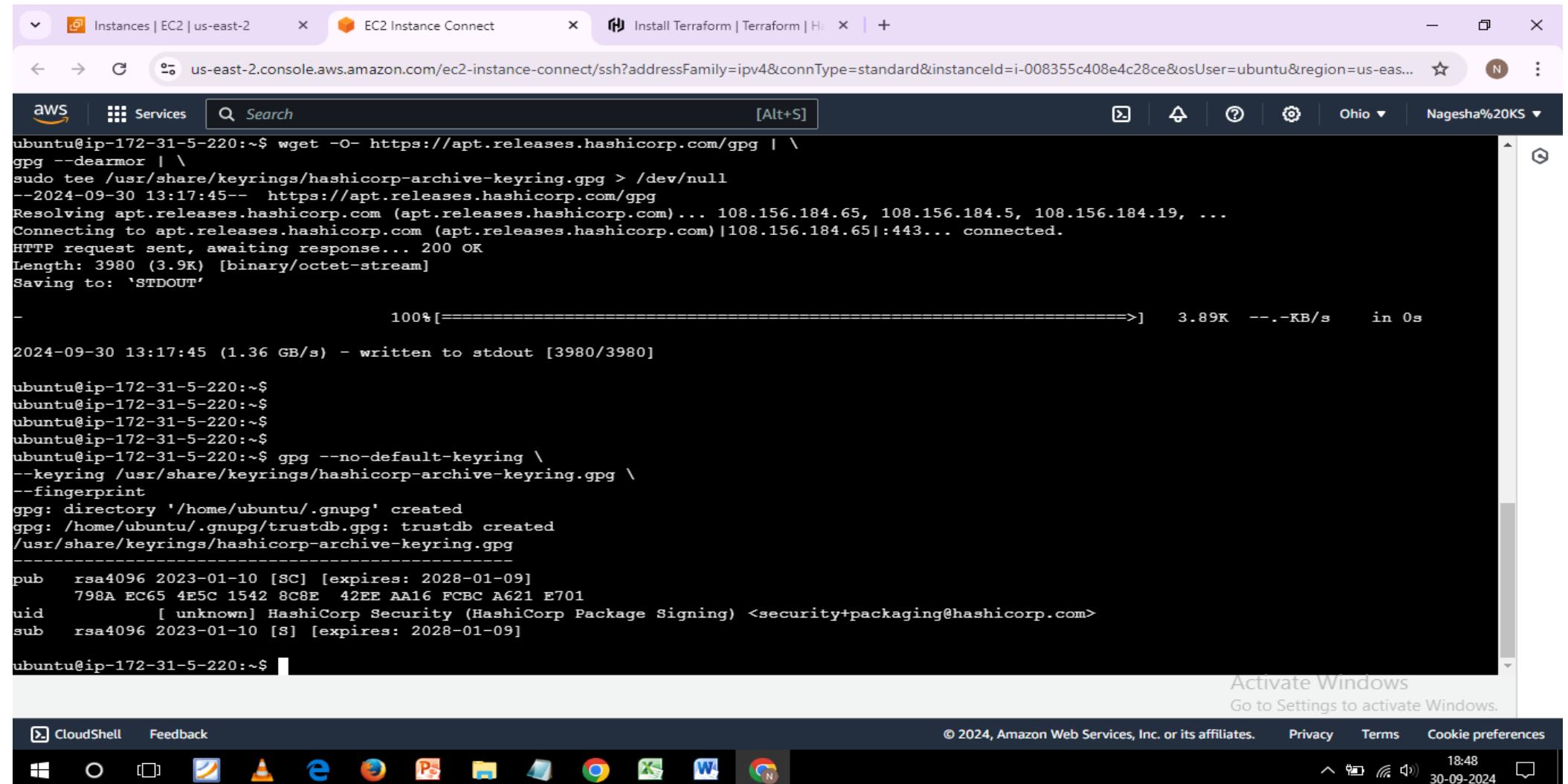
AWS Services Search [Alt+S]

Reading package lists... Done
Building dependency tree... Done
Reading state information... Done
All packages are up to date.
ubuntu@ip-172-31-5-220:~\$
ubuntu@ip-172-31-5-220:~\$
ubuntu@ip-172-31-5-220:~\$
ubuntu@ip-172-31-5-220:~\$ sudo apt-get update && sudo apt-get install -y gnupg software-properties-common
Hit:1 http://us-east-2.ec2.archive.ubuntu.com/ubuntu jammy InRelease
Hit:2 http://us-east-2.ec2.archive.ubuntu.com/ubuntu jammy-updates InRelease
Hit:3 http://us-east-2.ec2.archive.ubuntu.com/ubuntu jammy-backports InRelease
Ign:4 https://pkg.jenkins.io/debian-stable binary/ InRelease
Hit:5 https://pkg.jenkins.io/debian-stable binary/ Release
Get:6 http://security.ubuntu.com/ubuntu jammy-security InRelease [129 kB]
Hit:7 https://ppa.launchpadcontent.net/ansible/ansible/ubuntu jammy InRelease
Fetched 129 kB in 1s (134 kB/s)
Reading package lists... Done
Reading package lists... Done
Building dependency tree... Done
Reading state information... Done
gnupg is already the newest version (2.2.27-3ubuntu2.1).
gnupg set to manually installed.
software-properties-common is already the newest version (0.99.22.9).
0 upgraded, 0 newly installed, 0 to remove and 0 not upgraded.
ubuntu@ip-172-31-5-220:~\$
ubuntu@ip-172-31-5-220:~\$
ubuntu@ip-172-31-5-220:~\$
ubuntu@ip-172-31-5-220:~\$ wget -O- https://apt.releases.hashicorp.com/gpg | \
gpg --dearmor | \
sudo tee /usr/share/keyrings/hashicorp-archive-keyring.gpg > /dev/null

Activate Windows
Go to Settings to activate Windows.

CloudShell Feedback © 2024, Amazon Web Services, Inc. or its affiliates. Privacy Terms Cookie preferences

18:47 30-09-2024



Instances | EC2 | us-east-2 EC2 Instance Connect Install Terraform | Terraform | H... +

us-east-2.console.aws.amazon.com/ec2-instance-connect/ssh?addressFamily=ipv4&connType=standard&instanceId=i-008355c408e4c28ce&osUser=ubuntu®ion=us-eas... N :

AWS Services Search [Alt+S] [] [] [] Ohio Nagesha%20KS

```
Length: 3980 (3.9k) [binary/octet-stream]
Saving to: 'STDOUT'

100%[=====] 3.89K --.-KB/s in 0s

2024-09-30 13:17:45 (1.36 GB/s) - written to stdout [3980/3980]

ubuntu@ip-172-31-5-220:~$ 
ubuntu@ip-172-31-5-220:~$ 
ubuntu@ip-172-31-5-220:~$ 
ubuntu@ip-172-31-5-220:~$ 
ubuntu@ip-172-31-5-220:~$ gpg --no-default-keyring \
--keyring /usr/share/keyrings/hashicorp-archive-keyring.gpg \
--fingerprint
gpg: directory '/home/ubuntu/.gnupg' created
gpg: /home/ubuntu/.gnupg/trustdb.gpg: trustdb created
/usr/share/keyrings/hashicorp-archive-keyring.gpg
-----
pub    rsa4096 2023-01-10 [SC] [expires: 2028-01-09]
      798A EC65 4E5C 1542 8C8E 42EE AA16 FCBC A621 E701
uid          [ unknown] HashiCorp Security (HashiCorp Package Signing) <security+packaging@hashicorp.com>
sub    rsa4096 2023-01-10 [S] [expires: 2028-01-09]

ubuntu@ip-172-31-5-220:~$ 
ubuntu@ip-172-31-5-220:~$ 
ubuntu@ip-172-31-5-220:~$ 
ubuntu@ip-172-31-5-220:~$ echo "deb [signed-by=/usr/share/keyrings/hashicorp-archive-keyring.gpg] \
https://apt.releases.hashicorp.com $(lsb_release -cs) main" | \
sudo tee /etc/apt/sources.list.d/hashicorp.list
deb [signed-by=/usr/share/keyrings/hashicorp-archive-keyring.gpg] https://apt.releases.hashicorp.com jammy main
ubuntu@ip-172-31-5-220:~$ 
```

Activate Windows
Go to Settings to activate Windows.

CloudShell Feedback © 2024, Amazon Web Services, Inc. or its affiliates. Privacy Terms Cookie preferences

18:49 30-09-2024

Instances | EC2 | us-east-2 EC2 Instance Connect Install Terraform | Terraform | H... +

us-east-2.console.aws.amazon.com/ec2-instance-connect/ssh?addressFamily=ipv4&connType=standard&instanceId=i-008355c408e4c28ce&osUser=ubuntu®ion=us-eas...

aws Services Search [Alt+S] Ohio ▾ Nagesha%20KS ▾

```
gpg: /home/ubuntu/.gnupg/trustdb.gpg: trustdb created
/usr/share/keyrings/hashicorp-archive-keyring.gpg

pub    rsa4096 2023-01-10 [SC] [expires: 2028-01-09]
      798A EC65 4E5C 1542 8C8E  42EE AA16 FCBC A621 E701
uid          [ unknown] HashiCorp Security (HashiCorp Package Signing) <security+packaging@hashicorp.com>
sub    rsa4096 2023-01-10 [S] [expires: 2028-01-09]

ubuntu@ip-172-31-5-220:~$ 
ubuntu@ip-172-31-5-220:~$ 
ubuntu@ip-172-31-5-220:~$ 
ubuntu@ip-172-31-5-220:~$ echo "deb [signed-by=/usr/share/keyrings/hashicorp-archive-keyring.gpg] \
https://apt.releases.hashicorp.com \$(_lsb_release -cs) main" | \
sudo tee /etc/apt/sources.list.d/hashicorp.list
deb [signed-by=/usr/share/keyrings/hashicorp-archive-keyring.gpg] https://apt.releases.hashicorp.com jammy main
ubuntu@ip-172-31-5-220:~$ sudo apt update
Hit:1 http://us-east-2.ec2.archive.ubuntu.com/ubuntu jammy InRelease
Get:2 http://us-east-2.ec2.archive.ubuntu.com/ubuntu jammy-updates InRelease [128 kB]
Hit:3 http://us-east-2.ec2.archive.ubuntu.com/ubuntu jammy-backports InRelease
Hit:4 http://security.ubuntu.com/ubuntu jammy-security InRelease
Get:5 https://apt.releases.hashicorp.com jammy InRelease [12.9 kB]
Ign:6 https://pkg.jenkins.io/debian-stable binary/ InRelease
Hit:7 https://pkg.jenkins.io/debian-stable binary/ Release
Hit:8 https://ppa.launchpadcontent.net/ansible/ubuntu jammy InRelease
Get:9 https://apt.releases.hashicorp.com jammy/main amd64 Packages [151 kB]
Fetched 292 kB in 1s (232 kB/s)
Reading package lists... Done
Building dependency tree... Done
Reading state information... Done
All packages are up to date.
ubuntu@ip-172-31-5-220:~$ 
```

Activate Windows
Go to Settings to activate Windows.

CloudShell Feedback © 2024, Amazon Web Services, Inc. or its affiliates. Privacy Terms Cookie preferences

18:49 30-09-2024

Instances | EC2 | us-east-2 EC2 Instance Connect Install Terraform | Terraform | H... +

us-east-2.console.aws.amazon.com/ec2-instance-connect/ssh?addressFamily=ipv4&connType=standard&instanceId=i-008355c408e4c28ce&osUser=ubuntu®ion=us-eas...

AWS Services Search [Alt+S]

```
ubuntu@ip-172-31-5-220:~$  
ubuntu@ip-172-31-5-220:~$  
ubuntu@ip-172-31-5-220:~$ sudo apt-get install terraform  
Reading package lists... Done  
Building dependency tree... Done  
Reading state information... Done  
The following NEW packages will be installed:  
  terraform  
0 upgraded, 1 newly installed, 0 to remove and 0 not upgraded.  
Need to get 28.1 MB of archives.  
After this operation, 89.1 MB of additional disk space will be used.  
Get:1 https://apt.releases.hashicorp.com jammy/main amd64 terraform amd64 1.9.6-1 [28.1 MB]  
Fetched 28.1 MB in 0s (86.9 MB/s)  
Selecting previously unselected package terraform.  
(Reading database ... 106258 files and directories currently installed.)  
Preparing to unpack .../terraform_1.9.6-1_amd64.deb ...  
Unpacking terraform (1.9.6-1) ...  
Setting up terraform (1.9.6-1) ...  
Scanning processes...  
Scanning linux images...  
  
Running kernel seems to be up-to-date.  
  
No services need to be restarted.  
  
No containers need to be restarted.  
  
No user sessions are running outdated binaries.  
  
No VM guests are running outdated hypervisor (qemu) binaries on this host.  
ubuntu@ip-172-31-5-220:~$
```

Activate Windows
Go to Settings to activate Windows.

CloudShell Feedback © 2024, Amazon Web Services, Inc. or its affiliates. Privacy Terms Cookie preferences

18:50 30-09-2024

Instances | EC2 | us-east-2 EC2 Instance Connect Install Terraform | Terraform | Help +

us-east-2.console.aws.amazon.com/ec2-instance-connect/ssh?addressFamily=ipv4&connType=standard&instanceId=i-008355c408e4c28ce&osUser=ubuntu®ion=us-eas... N

AWS Services Search [Alt+S] Ohio ▾ Nagesha%20KS ▾

```
Need to get 28.1 MB of archives.  
After this operation, 89.1 MB of additional disk space will be used.  
Get:1 https://apt.releases.hashicorp.com jammy/main amd64 terraform amd64 1.9.6-1 [28.1 MB]  
Fetched 28.1 MB in 0s (86.9 MB/s)  
Selecting previously unselected package terraform.  
(Reading database ... 106258 files and directories currently installed.)  
Preparing to unpack .../terraform_1.9.6-1_amd64.deb ...  
Unpacking terraform (1.9.6-1) ...  
Setting up terraform (1.9.6-1) ...  
Scanning processes...  
Scanning linux images...  
  
Running kernel seems to be up-to-date.  
  
No services need to be restarted.  
  
No containers need to be restarted.  
  
No user sessions are running outdated binaries.  
  
No VM guests are running outdated hypervisor (qemu) binaries on this host.  
ubuntu@ip-172-31-5-220:~$  
ubuntu@ip-172-31-5-220:~$  
ubuntu@ip-172-31-5-220:~$  
ubuntu@ip-172-31-5-220:~$ terraform --version  
Terraform v1.9.6  
on linux_amd64  
ubuntu@ip-172-31-5-220:~$  
ubuntu@ip-172-31-5-220:~$  
ubuntu@ip-172-31-5-220:~$  
ubuntu@ip-172-31-5-220:~$
```

Activate Windows
Go to Settings to activate Windows.

CloudShell Feedback © 2024, Amazon Web Services, Inc. or its affiliates. Privacy Terms Cookie preferences

18:50 30-09-2024

Instances | EC2 | us-east-2 EC2 Instance Connect Install Terraform | Terraform | H ansible installation on ubuntu -

google.com/search?q=ansible+installation+on+ubuntu&oq=ansible+installation+on+ubuntu&gs_lcp=EgZjaHJvbWUyDwgAEEUYORiRAhiABBiKBTIHCAEQABiABDIHCAIQABi... N

Google ansible installation on ubuntu

All Videos Images Shopping Web News Books More Tools

A Ansible Documentation
[https://docs.ansible.com › latest › installation_distros](https://docs.ansible.com/latest/installation_distros)

Installing Ansible on specific operating systems
Installing Ansible on Ubuntu . Ubuntu builds are available in a PPA here. To configure the PPA on your system and install Ansible run these commands: \$ sudo ...

DigitalOcean
[https://www.digitalocean.com › community › tutorials](https://www.digitalocean.com/community/tutorials)

How To Install and Configure Ansible on Ubuntu 20.04
8 Oct 2022 — In this guide, we'll discuss how to install Ansible on an Ubuntu 20.04 server and go over some basics of how to use this software.

Videos :


[How to Install Ansible on Ubuntu 22.04](#)
YouTube - Roger Perkin
12 Feb 2024

Activate Windows
Go to Settings to activate Windows.

18:52 30-09-2024

Instances | EC2 | us-east-2 EC2 Instance Connect Install Terraform | Terraform | H... Installing Ansible on specific op

docs.ansible.com/ansible/latest/installation_guide/installation_distros.html

Ansible Community Documentation

BLOG ANSIBLE COMMUNITY FORUM DOCUMENTATION

Frequently Asked Questions
Glossary
Ansible Reference: Module Utilities
Special Variables
Red Hat Ansible Automation Platform
Ansible Automation Hub
Logging Ansible output

ROADMAPS
Ansible Roadmap
ansible-core Roadmaps

Red Hat
Ansible Automation Platform

Extend the power of Ansible to your entire team
[Try it free](#)

See [OpenSUSE Support Portal](#) for additional help with Ansible on OpenSUSE.

Installing Ansible on Ubuntu

Ubuntu builds are available in a [PPA here](#).

To configure the PPA on your system and install Ansible run these commands:

```
$ sudo apt update
$ sudo apt install software-properties-common
$ sudo add-apt-repository --yes --update ppa:ansible/ansible
$ sudo apt install ansible
```

Note

On older Ubuntu distributions, "software-properties-common" is called "python-software-properties". You may want to use `apt-get` rather than `apt` in older versions. Also, be aware that only newer distributions (that is, 18.04, 18.10, and later) have a `-u` or `--update` flag. Adjust your script as needed.

File any issues in [the PPA's issue tracker](#).

Installing Ansible on Debian

Activate Windows
Go to Settings to activate Windows.

Search this site

18:54 30-09-2024

Instances | EC2 | us-east-2 EC2 Instance Connect Install Terraform | Terraform | H... A Installing Ansible on specific op... +

us-east-2.console.aws.amazon.com/ec2-instance-connect/ssh?addressFamily=ipv4&connType=standard&instanceId=i-008355c408e4c28ce&osUser=ubuntu®ion=us-eas... Nagesha%20KS ▾

aaws Services Search [Alt+S] a.sh

```
GNU nano 6.2
sudo apt update
sudo apt install software-properties-common
sudo add-apt-repository --yes --update ppa:ansible/ansible
sudo apt install ansible -y
```

[Read 4 lines]

^G Help ^C Write Out ^W Where Is ^K Cut ^T Execute ^C Location M-U Undo M-A Set Mark M-] To Bracket
^X Exit ^R Read File ^V Replace ^U Paste ^J Justify ^/ Go To Line M-E Redo M-C Copy ^O Where Was

Activate Windows
Go to Settings to activate Windows.

CloudShell Feedback © 2024, Amazon Web Services, Inc. or its affiliates. Privacy Terms Cookie preferences

18:57 30-09-2024

Instances | EC2 | us-east-2 EC2 Instance Connect Install Terraform | Terraform | Hi A Installing Ansible on specific op

us-east-2.console.aws.amazon.com/ec2-instance-connect/ssh?addressFamily=ipv4&connType=standard&instanceId=i-008355c408e4c28ce&osUser=ubuntu®ion=us-eas...

Services Search [Alt+S]

No containers need to be restarted.

No user sessions are running outdated binaries.

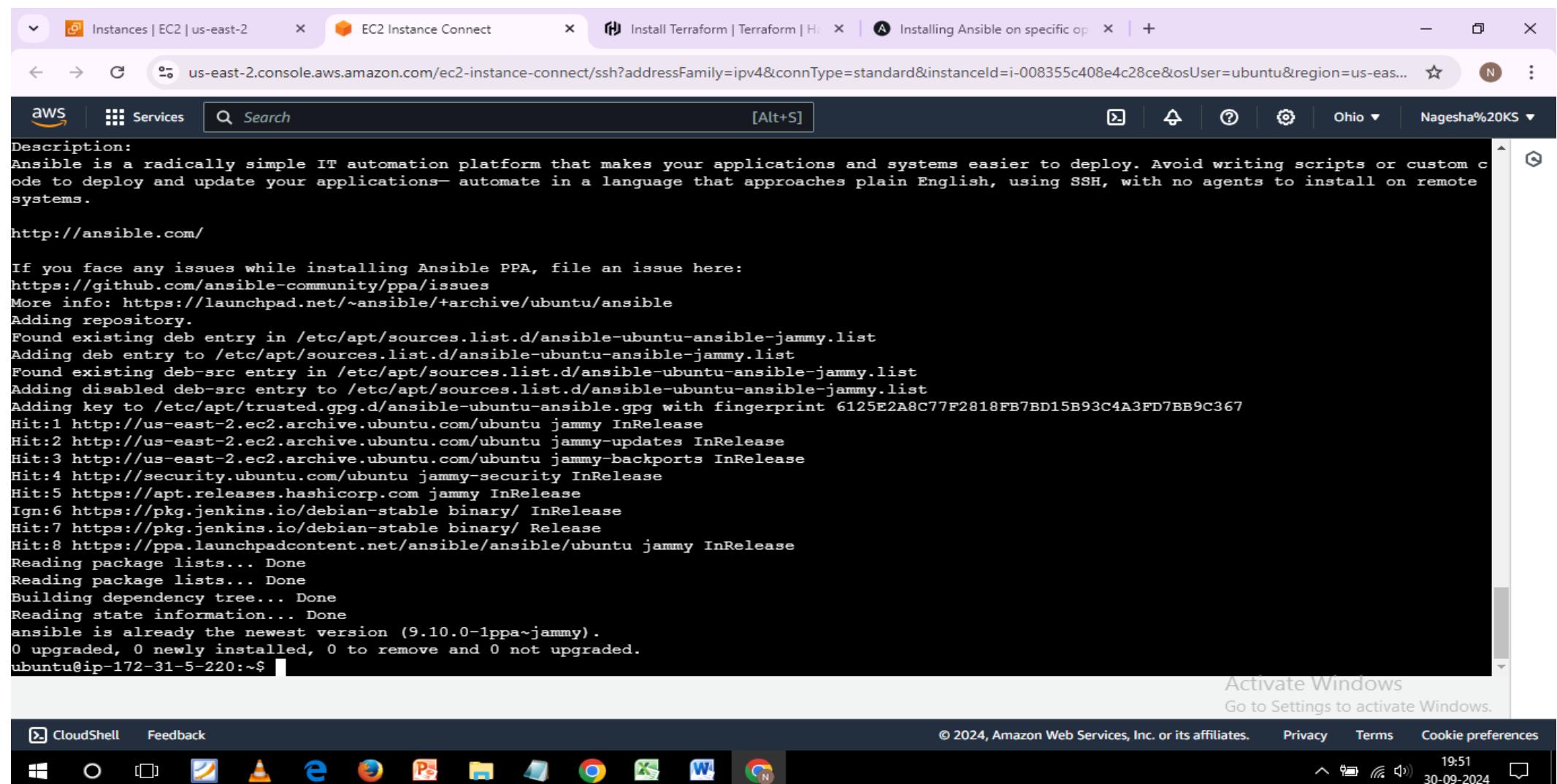
No VM guests are running outdated hypervisor (qemu) binaries on this host.

```
ubuntu@ip-172-31-5-220:~$  
ubuntu@ip-172-31-5-220:~$  
ubuntu@ip-172-31-5-220:~$  
ubuntu@ip-172-31-5-220:~$ terraform --version  
Terraform v1.9.6  
on linux_amd64  
ubuntu@ip-172-31-5-220:~$  
ubuntu@ip-172-31-5-220:~$  
ubuntu@ip-172-31-5-220:~$  
ubuntu@ip-172-31-5-220:~$  
ubuntu@ip-172-31-5-220:~$  
ubuntu@ip-172-31-5-220:~$  
ubuntu@ip-172-31-5-220:~$ sudo nano a.sh  
ubuntu@ip-172-31-5-220:~$  
ubuntu@ip-172-31-5-220:~$ sudo nano a.sh  
ubuntu@ip-172-31-5-220:~$  
ubuntu@ip-172-31-5-220:~$ bash a.sh  
Hit:1 http://us-east-2.ec2.archive.ubuntu.com/ubuntu jammy InRelease  
Hit:2 http://us-east-2.ec2.archive.ubuntu.com/ubuntu jammy-updates InRelease  
Hit:3 http://us-east-2.ec2.archive.ubuntu.com/ubuntu jammy-backports InRelease  
Hit:4 http://security.ubuntu.com/ubuntu jammy-security InRelease  
Hit:5 https://apt.releases.hashicorp.com jammy InRelease  
Ign:6 https://pkg.jenkins.io/debian-stable binary/ InRelease  
Hit:7 https://pkg.jenkins.io/debian-stable binary/ Release  
0% [Waiting for headers]
```

Activate Windows
Go to Settings to activate Windows.

CloudShell Feedback © 2024, Amazon Web Services, Inc. or its affiliates. Privacy Terms Cookie preferences

18:58 30-09-2024



Create access key | IAM | Global EC2 Instance Connect Install Terraform | Terraform | H Installing Ansible on specific op

us-east-1.console.aws.amazon.com/iam/home?region=us-east-1#/security_credentials/access-key-wizard

AWS Services Search [Alt+S] Global Nagesha%20KS

Access key created
This is the only time that the secret access key can be viewed or downloaded. You cannot recover it later. However, you can create a new access key any time.

Step 1
Alternatives to root user access keys

Step 2
Retrieve access key

Access key
If you lose or forget your secret access key, you cannot retrieve it. Instead, create a new access key and make the old key inactive.

Access key	Secret access key
AKIAUGY55HWTXHITOAGD	***** Show

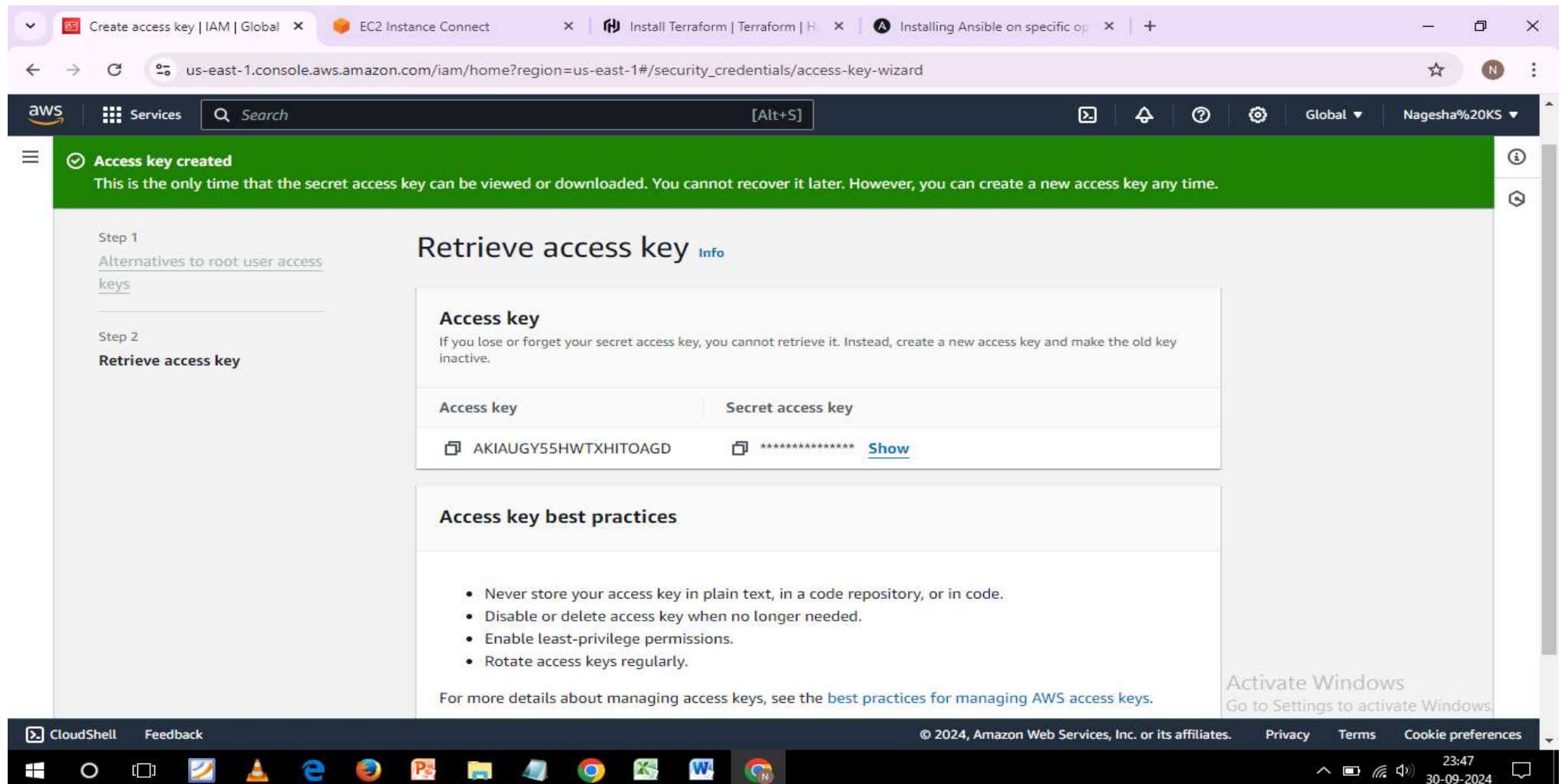
Access key best practices

- Never store your access key in plain text, in a code repository, or in code.
- Disable or delete access key when no longer needed.
- Enable least-privilege permissions.
- Rotate access keys regularly.

For more details about managing access keys, see the [best practices for managing AWS access keys](#).

Activate Windows
Go to Settings to activate Windows.

CloudShell Feedback © 2024, Amazon Web Services, Inc. or its affiliates. Privacy Terms Cookie preferences 23:47 30-09-2024



Create access key | IAM | Global EC2 Instance Connect Install Terraform | Terraform | H... Installing Ansible on specific op... +

us-east-1.console.aws.amazon.com/iam/home?region=us-east-1#/security_credentials/access-key-wizard

Services Search [Alt+S]

Identity and Access Management (IAM) X

Search IAM

Dashboard

Access management

- User groups
- Users
- Roles
- Policies
- Identity providers
- Account settings

Access reports

- Access Analyzer
- External access
- Unused access

CloudShell Feedback

© 2024, Amazon Web Services, Inc. or its affiliates. Privacy Terms Cookie preferences

Activate Windows
Go to Settings to activate Windows.

23:48 30-09-2024

Access key created

This is the only time that the secret access key can be viewed or downloaded. You cannot recover it later. However, you can create a new access key any time.

Step 1 Alternatives to root user access keys

Step 2 Retrieve access key

Retrieve access key Info

Access key

If you lose or forget your secret access key, you cannot retrieve it. Instead, create a new access key and make the old key inactive.

Access key	Secret access key
AKIAUGY55HWTXHITOAGD	i5aU/fPY//1KW4l+09c4khDbd4cSqzYE

Access key best practices

- Never store your access key in plain text, in a code repository, or in code.
- Disable or delete access key when no longer needed.

Instances | EC2 | us-east-2 EC2 Instance Connect Install Terraform | Terraform | H... Installing Ansible on specific op... +

us-east-2.console.aws.amazon.com/ec2-instance-connect/ssh?region=us-east-2&connType=standard&instanceId=i-008355c408e4c28ce&osUser=ubuntu&sshPort=22&add...

aws Services Search [Alt+S]

```
ubuntu@ip-172-31-5-220:~$ sudo cat main.tf
provider "aws" {
  secret_key = "i5aU/fPY//1Kw4l+09c4khDbd4cSqzYEkkKKx8eK"
  access_key = "AKIAUGY55HWTXHITOAGD"
  region = "us-east-2"  # Adjust the region as needed
}

# Launch EC2 instance for Kubernetes master

resource "aws_instance" "K8-M" {
  ami = "ami-00eb69d236edcfaf8"
  instance_type = "t2.medium"
  key_name = "Nagesha-Keypair"
  tags = {
    Name = "K8s-M/J-s"
  }
}

# Launch EC2 instances for Kubernetes slave nodes

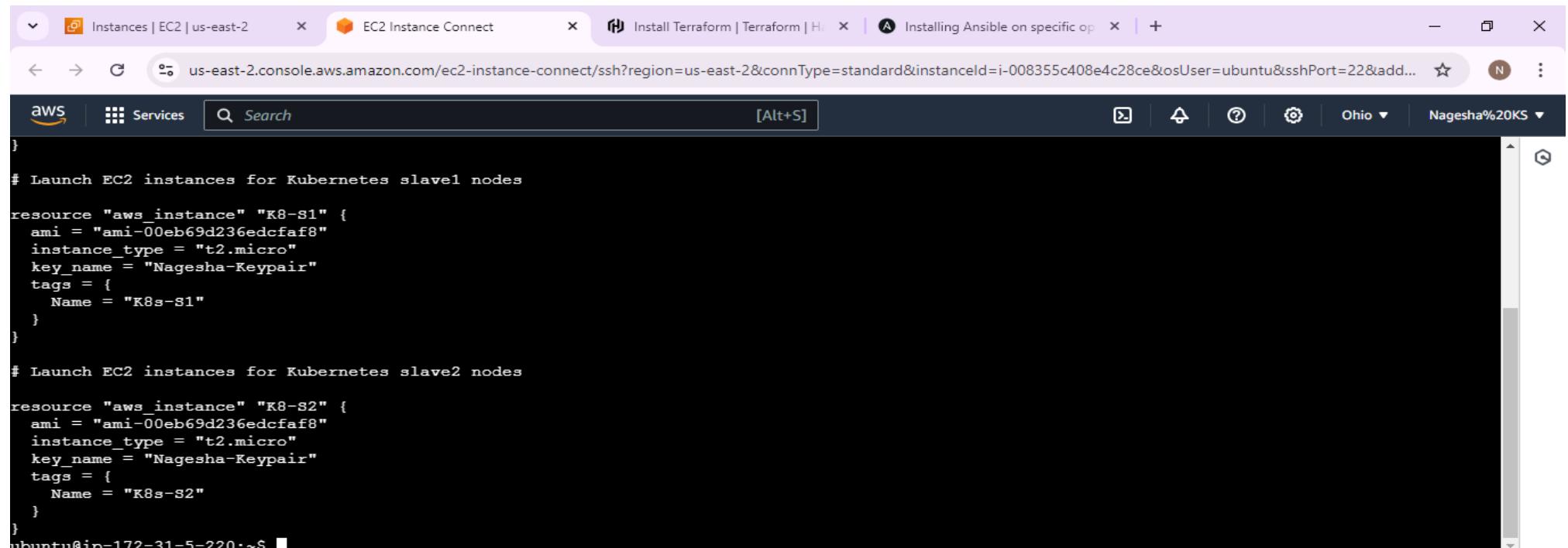
resource "aws_instance" "K8-S1" {
  ami = "ami-00eb69d236edcfaf8"
  instance_type = "t2.micro"
  key_name = "Nagesha-Keypair"
}

i-008355c408e4c28ce (Nagesha-DevOps-Caps2-J-M)
PublicIPs: 18.217.244.147 PrivateIPs: 172.31.5.220
```

Activate Windows
Go to Settings to activate Windows.

CloudShell Feedback © 2024, Amazon Web Services, Inc. or its affiliates. Privacy Terms Cookie preferences

00:29 01-10-2024



```
Instances | EC2 | us-east-2 x EC2 Instance Connect x Install Terraform | Terraform | H x A Installing Ansible on specific op x +  
us-east-2.console.aws.amazon.com/ec2-instance-connect/ssh?region=us-east-2&connType=standard&instanceId=i-008355c408e4c28ce&osUser=ubuntu&sshPort=22&add...  
AWS Services Search [Alt+S] Ohio Nagesha%20KS  
}  
# Launch EC2 instances for Kubernetes slave1 nodes  
  
resource "aws_instance" "K8-S1" {  
  ami = "ami-00eb69d236edcfaf8"  
  instance_type = "t2.micro"  
  key_name = "Nagesha-Keypair"  
  tags = {  
    Name = "K8s-S1"  
  }  
}  
# Launch EC2 instances for Kubernetes slave2 nodes  
  
resource "aws_instance" "K8-S2" {  
  ami = "ami-00eb69d236edcfaf8"  
  instance_type = "t2.micro"  
  key_name = "Nagesha-Keypair"  
  tags = {  
    Name = "K8s-S2"  
  }  
}  
ubuntu@ip-172-31-5-220:~$
```

i-008355c408e4c28ce (Nagesha-DevOps-Caps2-J-M)

Public IPs: 18.217.244.147 Private IPs: 172.31.5.220

Activate Windows
Go to Settings to activate Windows.

CloudShell Feedback

© 2024, Amazon Web Services, Inc. or its affiliates. Privacy Terms Cookie preferences



00:29 01-10-2024

Instances | EC2 | us-east-2 EC2 Instance Connect Install Terraform | Terraform | H... Installing Ansible on specific op... +

us-east-2.console.aws.amazon.com/ec2-instance-connect/ssh?region=us-east-2&connType=standard&instanceId=i-008355c408e4c28ce&osUser=ubuntu&sshPort=22&add...

aws Services Search [Alt+S]

```
resource "aws_instance" "K8-S1" {  
    ami = "ami-00eb69d236edcfaf8"  
    instance_type = "t2.micro"  
    key_name = "Nagesha-Keypair"  
    tags = {  
        Name = "K8s-S1"  
    }  
}  
  
# Launch EC2 instances for Kubernetes slave2 nodes  
  
resource "aws_instance" "K8-S2" {  
    ami = "ami-00eb69d236edcfaf8"  
    instance_type = "t2.micro"  
    key_name = "Nagesha-Keypair"  
    tags = {  
        Name = "K8s-S2"  
    }  
}  
ubuntu@ip-172-31-5-220:~$ terraform init  
Initializing the backend...  
Initializing provider plugins...  
- Reusing previous version of hashicorp/aws from the dependency lock file
```

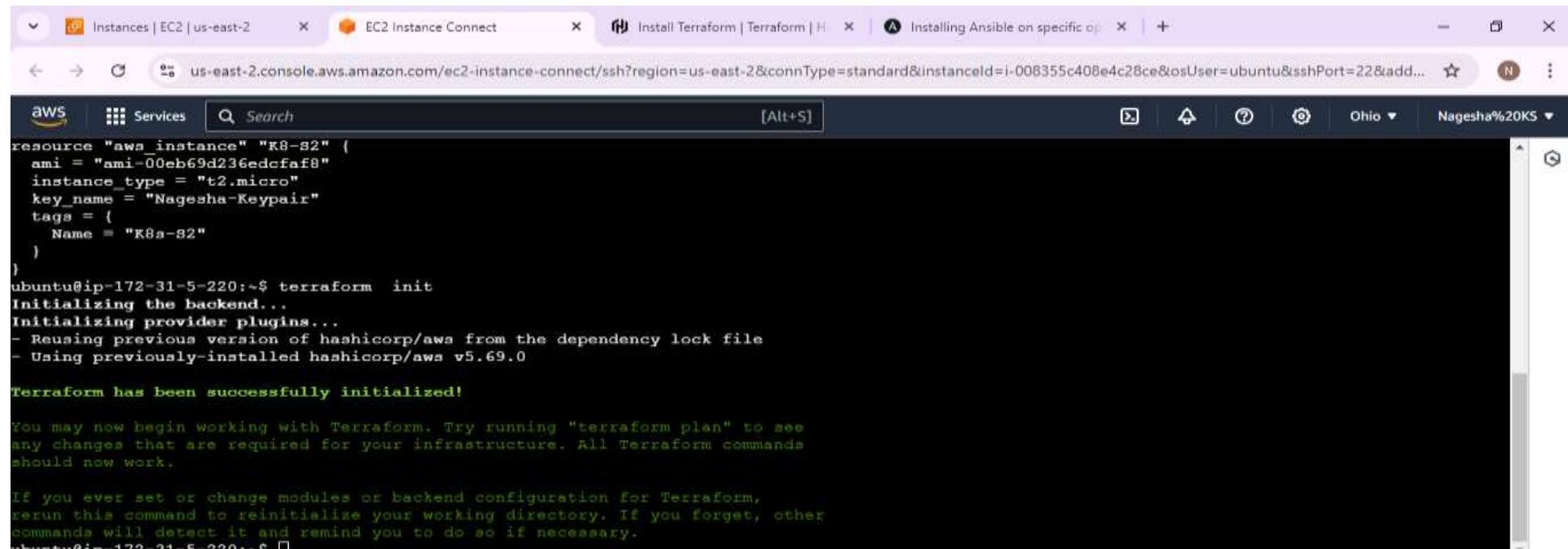
i-008355c408e4c28ce (Nagesha-DevOps-Caps2-J-M) X

Public IPs: 18.217.244.147 Private IPs: 172.31.5.220

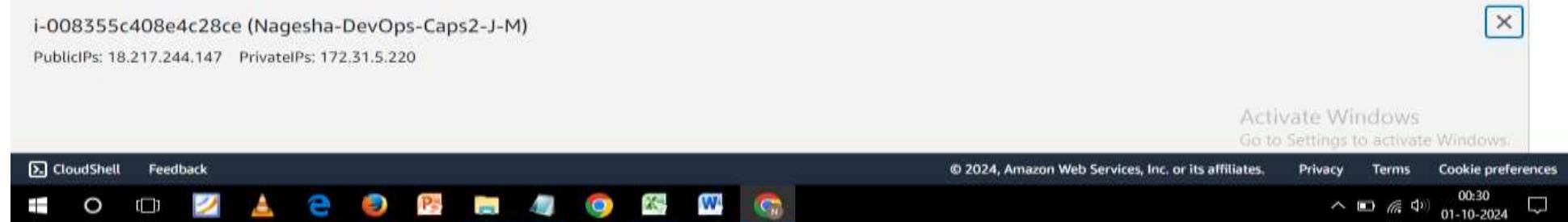
Activate Windows
Go to Settings to activate Windows.

CloudShell Feedback © 2024, Amazon Web Services, Inc. or its affiliates. Privacy Terms Cookie preferences

00:30 01-10-2024



```
Instances | EC2 | us-east-2 X EC2 Instance Connect X Install Terraform | Terraform | H X A Installing Ansible on specific op X +  
us-east-2.console.aws.amazon.com/ec2-instance-connect/ssh?region=us-east-2&connType=standard&instanceId=i-008355c408e4c28ce&osUser=ubuntu&sshPort=22&add...  
N  
aws Services Search [Alt+S]  
[Alt+S]  
resource "aws_instance" "K8-S2" {  
    ami = "ami-00eb69d236edcfaf8"  
    instance_type = "t2.micro"  
    key_name = "Nagesha-Keypair"  
    tags = {  
        Name = "K8a-S2"  
    }  
}  
ubuntu@ip-172-31-5-220:~$ terraform init  
Initializing the backend...  
Initializing provider plugins...  
- Reusing previous version of hashicorp/aws from the dependency lock file  
- Using previously-installed hashicorp/aws v5.69.0  
  
Terraform has been successfully initialized!  
  
You may now begin working with Terraform. Try running "terraform plan" to see  
any changes that are required for your infrastructure. All Terraform commands  
should now work.  
  
If you ever set or change modules or backend configuration for Terraform,  
rerun this command to reinitialize your working directory. If you forget, other  
commands will detect it and remind you to do so if necessary.  
ubuntu@ip-172-31-5-220:~$
```



Instances | EC2 | us-east-2 EC2 Instance Connect Install Terraform | Terraform | H... Installing Ansible on specific op... +

us-east-2.console.aws.amazon.com/ec2-instance-connect/ssh?region=us-east-2&connType=standard&instanceId=i-008355c408e4c28ce&osUser=ubuntu&sshPort=22&add...

aws Services Search [Alt+S]

```
ami = "ami-00eb69d236edcfaf8"
instance_type = "t2.micro"
key_name = "Nagesha-Keypair"
tags = {
    Name = "K8s-S2"
}
ubuntu@ip-172-31-5-220:~$ terraform init
Initializing the backend...
Initializing provider plugins...
- Reusing previous version of hashicorp/aws from the dependency lock file
- Using previously-installed hashicorp/aws v5.69.0

Terraform has been successfully initialized!

You may now begin working with Terraform. Try running "terraform plan" to see
any changes that are required for your infrastructure. All Terraform commands
should now work.

If you ever set or change modules or backend configuration for Terraform,
rerun this command to reinitialize your working directory. If you forget, other
commands will detect it and remind you to do so if necessary.
ubuntu@ip-172-31-5-220:~$ terraform plan
```

i-008355c408e4c28ce (Nagesha-DevOps-Caps2-J-M)

PublicIPs: 18.217.244.147 PrivateIPs: 172.31.5.220

Activate Windows
Go to Settings to activate Windows.

CloudShell Feedback

© 2024, Amazon Web Services, Inc. or its affiliates. Privacy Terms Cookie preferences

00:30
01-10-2024

Instances | EC2 | us-east-2 EC2 Instance Connect Install Terraform | Terraform | H Installing Ansible on specific op... +

us-east-2.console.aws.amazon.com/ec2-instance-connect/ssh?region=us-east-2&connType=standard&instanceId=i-008355c408e4c28ce&osUser=ubuntu&sshPort=22&add...

AWS Services Search [Alt+S]

Run this command to reinitialize your working directory. If you forget, other commands will detect it and remind you to do so if necessary.

ubuntu@ip-172-31-5-220:~\$ terraform plan

Terraform used the selected providers to generate the following execution plan. Resource actions are indicated with the following symbols:

+ create

Terraform will perform the following actions:

```
# aws_instance.K8-M will be created
+ resource "aws_instance" "K8-M" {
    + ami
    + arn
    + associate_public_ip_address
    + availability_zone
    + cpu_core_count
    + cpu_threads_per_core
    + disable_api_stop
    + disable_api_termination
    + ebs_optimized
    + get_password_data
    + host_id
    + host_resource_group_arn
    + iam_instance_profile
        = "ami-00eb69d236edcfaf8"
        = (known after apply)
        = false
        = (known after apply)
        = (known after apply)
        = (known after apply)
```

i-008355c408e4c28ce (Nagesha-DevOps-Caps2-J-M)

Public IPs: 18.217.244.147 Private IPs: 172.31.5.220

Activate Windows
Go to Settings to activate Windows.

CloudShell Feedback

© 2024, Amazon Web Services, Inc. or its affiliates. Privacy Terms Cookie preferences

00:31 01-10-2024

Instances | EC2 | us-east-2 EC2 Instance Connect Install Terraform | Terraform | Hi! Installing Ansible on specific op... - +

us-east-2.console.aws.amazon.com/ec2-instance-connect/ssh?region=us-east-2&connType=standard&instanceId=i-008355c408e4c28ce&osUser=ubuntu&sshPort=22&add...

AWS Services Search [Alt+S]

```
+ host_resource_group_arn          = (known after apply)
+ iam_instance_profile            = (known after apply)
+ id                               = (known after apply)
+ instance_initiated_shutdown_behavior = (known after apply)
+ instance.lifecycle               = (known after apply)
+ instance.state                  = (known after apply)
+ instance.type                   = "t2.medium"
+ ipv6_address_count              = (known after apply)
+ ipv6_addresses                  = (known after apply)
+ key_name                         = "Nagesha-Keypair"
+ monitoring                       = (known after apply)
+ outpost_arn                     = (known after apply)
+ password_data                   = (known after apply)
+ placement_group                 = (known after apply)
+ placement_partition_number       = (known after apply)
+ primary_network_interface_id    = (known after apply)
+ private_dns                      = (known after apply)
+ private_ip                       = (known after apply)
+ public_dns                       = (known after apply)
+ public_ip                        = (known after apply)
+ secondary_private_ips           = (known after apply)
+ security_groups                 = (known after apply)
+ source_dest_check                = true
+ spot_instance_request_id        = (known after apply)
```

i-008355c408e4c28ce (Nagesha-DevOps-Caps2-J-M) X

Public IPs: 18.217.244.147 Private IPs: 172.31.5.220

Activate Windows
Go to Settings to activate Windows.

CloudShell Feedback © 2024, Amazon Web Services, Inc. or its affiliates. Privacy Terms Cookie preferences

00:31 01-10-2024

Instances | EC2 | us-east-2 EC2 Instance Connect Install Terraform | Terraform | Hi Installing Ansible on specific op

us-east-2.console.aws.amazon.com/ec2-instance-connect/ssh?region=us-east-2&connType=standard&instanceId=i-008355c408e4c28ce&osUser=ubuntu&sshPort=22&add...

AWS Services Search [Alt+S]

```
+ spot_instance_request_id          = (known after apply)
+ subnet_id                         = (known after apply)
+ tags                               = {
    + "Name" = "K8s-M/J-s"
}
+ tags_all                           = {
    + "Name" = "K8s-M/J-s"
}
+ tenancy                            = (known after apply)
+ user_data                          = (known after apply)
+ user_data_base64                   = (known after apply)
+ user_data_replace_on_change       = false
+ vpc_security_group_ids            = (known after apply)

+ capacity_reservation_specification (known after apply)
+ cpu_options (known after apply)
+ ebs_block_device (known after apply)
+ enclave_options (known after apply)
+ ephemeral_block_device (known after apply)
```

i-008355c408e4c28ce (Nagesha-DevOps-Caps2-J-M) X

Public IPs: 18.217.244.147 Private IPs: 172.31.5.220

Activate Windows
Go to Settings to activate Windows.

CloudShell Feedback © 2024, Amazon Web Services, Inc. or its affiliates. Privacy Terms Cookie preferences

00:31 01-10-2024

Instances | EC2 | us-east-2 EC2 Instance Connect Install Terraform | Terraform | H... Installing Ansible on specific op... +

us-east-2.console.aws.amazon.com/ec2-instance-connect/ssh?region=us-east-2&connType=standard&instanceId=i-008355c408e4c28ce&osUser=ubuntu&sshPort=22&add...

aws Services Search [Alt+S]

```
+ ebs_block_device (known after apply)
+ enclave_options (known after apply)
+ ephemeral_block_device (known after apply)
+ instance_market_options (known after apply)
+ maintenance_options (known after apply)
+ metadata_options (known after apply)
+ network_interface (known after apply)
+ private_dns_name_options (known after apply)
+ root_block_device (known after apply)
}

# aws_instance.K8-S1 will be created
+ resource "aws_instance" "K8-S1" {
    + ami
    + arn
    + associate_public_ip_address
        = "ami-00eb69d236edcfaf8"
        = (known after apply)
        = (known after apply)
```

i-008355c408e4c28ce (Nagesha-DevOps-Caps2-J-M) X

PublicIPs: 18.217.244.147 PrivateIPs: 172.31.5.220

Activate Windows
Go to Settings to activate Windows.

CloudShell Feedback © 2024, Amazon Web Services, Inc. or its affiliates. Privacy Terms Cookie preferences

00:32 01-10-2024

Instances | EC2 | us-east-2 EC2 Instance Connect Install Terraform | Terraform | Hi... Installing Ansible on specific op... - +

us-east-2.console.aws.amazon.com/ec2-instance-connect/ssh?region=us-east-2&connType=standard&instanceId=i-008355c408e4c28ce&osUser=ubuntu&sshPort=22&add...

Services Search [Alt+S]

```
# aws_instance.K8-S1 will be created
+ resource "aws_instance" "K8-S1" {
    ami                               = "ami-00eb69d236edcfaf8"
    arn                               = (known after apply)
    associate_public_ip_address      = (known after apply)
    availability_zone                = (known after apply)
    cpu_core_count                   = (known after apply)
    cpu_threads_per_core            = (known after apply)
    disable_api_stop                 = (known after apply)
    disable_api_termination          = (known after apply)
    ebs_optimized                    = (known after apply)
    get_password_data                = false
    host_id                          = (known after apply)
    host_resource_group_arn          = (known after apply)
    iam_instance_profile             = (known after apply)
    id                               = (known after apply)
    instance_initiated_shutdown_behavior = (known after apply)
    instance.lifecycle               = (known after apply)
    instance.state                  = (known after apply)
    instance.type                   = "t2.micro"
    ipv6_address_count              = (known after apply)
    ipv6_addresses                  = (known after apply)
```

i-008355c408e4c28ce (Nagesha-DevOps-Caps2-J-M) X

Public IPs: 18.217.244.147 Private IPs: 172.31.5.220

Activate Windows
Go to Settings to activate Windows.

CloudShell Feedback © 2024, Amazon Web Services, Inc. or its affiliates. Privacy Terms Cookie preferences

00:32 01-10-2024

Instances | EC2 | us-east-2 EC2 Instance Connect Install Terraform | Terraform | H... Installing Ansible on specific op... - +

us-east-2.console.aws.amazon.com/ec2-instance-connect/ssh?region=us-east-2&connType=standard&instanceId=i-008355c408e4c28ce&osUser=ubuntu&sshPort=22&add...

AWS Services Search [Alt+S] [] [] [] [] Ohio Nagesha%20KS

```
+ instance_initiated_shutdown_behavior = (known after apply)
+ instance_lifecycle               = (known after apply)
+ instance_state                  = (known after apply)
+ instance_type                   = "t2.micro"
+ ipv6_address_count              = (known after apply)
+ ipv6_addresses                 = (known after apply)
+ key_name                        = "Nagesha-Keypair"
+ monitoring                      = (known after apply)
+ outpost_arn                     = (known after apply)
+ password_data                  = (known after apply)
+ placement_group                = (known after apply)
+ placement_partition_number     = (known after apply)
+ primary_network_interface_id   = (known after apply)
+ private_dns                     = (known after apply)
+ private_ip                      = (known after apply)
+ public_dns                      = (known after apply)
+ public_ip                       = (known after apply)
+ secondary_private_ips          = (known after apply)
+ security_groups                 = (known after apply)
+ source_dest_check              = true
+ spot_instance_request_id       = (known after apply)
+ subnet_id                       = (known after apply)
+ tags                            = {
    + "Name" = "K8s-S1"
}
```

i-008355c408e4c28ce (Nagesha-DevOps-Caps2-J-M) X

PublicIPs: 18.217.244.147 PrivateIPs: 172.31.5.220

Activate Windows
Go to Settings to activate Windows.

CloudShell Feedback © 2024, Amazon Web Services, Inc. or its affiliates. Privacy Terms Cookie preferences

00:32 01-10-2024

Instances | EC2 | us-east-2 EC2 Instance Connect Install Terraform | Terraform | H... Installing Ansible on specific op... +

us-east-2.console.aws.amazon.com/ec2-instance-connect/ssh?region=us-east-2&connType=standard&instanceId=i-008355c408e4c28ce&osUser=ubuntu&sshPort=22&add...

AWS Services Search [Alt+S]

```
+ security_groups = (known after apply)
+ source_dest_check = true
+ spot_instance_request_id = (known after apply)
+ subnet_id = (known after apply)
+ tags = {
    + "Name" = "K8s-S1"
}
+ tags_all = {
    + "Name" = "K8s-S1"
}
+ tenancy = (known after apply)
+ user_data = (known after apply)
+ user_data_base64 = (known after apply)
+ user_data_replace_on_change = false
+ vpc_security_group_ids = (known after apply)

+ capacity_reservation_specification (known after apply)
+ cpu_options (known after apply)
+ ebs_block_device (known after apply)
+ enclave_options (known after apply)
```

i-008355c408e4c28ce (Nagesha-DevOps-Caps2-J-M) X

Public IPs: 18.217.244.147 Private IPs: 172.31.5.220

Activate Windows
Go to Settings to activate Windows.

CloudShell Feedback

© 2024, Amazon Web Services, Inc. or its affiliates. Privacy Terms Cookie preferences



00:32 01-10-2024

Instances | EC2 | us-east-2 EC2 Instance Connect Install Terraform | Terraform | H... Installing Ansible on specific op... +

us-east-2.console.aws.amazon.com/ec2-instance-connect/ssh?region=us-east-2&connType=standard&instanceId=i-008355c408e4c28ce&osUser=ubuntu&sshPort=22&add...

aws Services Search [Alt+S]

```
+ cpu_options (known after apply)
+ ebs_block_device (known after apply)
+ enclave_options (known after apply)
+ ephemeral_block_device (known after apply)
+ instance_market_options (known after apply)
+ maintenance_options (known after apply)
+ metadata_options (known after apply)
+ network_interface (known after apply)
+ private_dns_name_options (known after apply)
+ root_block_device (known after apply)
}

# aws_instance.K8-S2 will be created
+ resource "aws_instance" "K8-S2" {
```

i-008355c408e4c28ce (Nagesha-DevOps-Caps2-J-M)

Public IPs: 18.217.244.147 Private IPs: 172.31.5.220

Activate Windows
Go to Settings to activate Windows.

CloudShell Feedback © 2024, Amazon Web Services, Inc. or its affiliates. Privacy Terms Cookie preferences

00:32 01-10-2024

Instances | EC2 | us-east-2 EC2 Instance Connect Install Terraform | Terraform | H... Installing Ansible on specific op... - X

us-east-2.console.aws.amazon.com/ec2-instance-connect/ssh?region=us-east-2&connType=standard&instanceId=i-008355c408e4c28ce&osUser=ubuntu&sshPort=22&add...

aws Services Search [Alt+S]

```
+ root_block_device (known after apply)
}

# aws_instance.K8-S2 will be created
+ resource "aws_instance" "K8-S2" {
    + ami                                = "ami-00eb69d236edcfaf8"
    + arn                                = (known after apply)
    + associate_public_ip_address        = (known after apply)
    + availability_zone                  = (known after apply)
    + cpu_core_count                     = (known after apply)
    + cpu_threads_per_core              = (known after apply)
    + disable_api_stop                  = (known after apply)
    + disable_api_termination           = (known after apply)
    + ebs_optimized                      = (known after apply)
    + get_password_data                 = false
    + host_id                            = (known after apply)
    + host_resource_group_arn            = (known after apply)
    + iam_instance_profile               = (known after apply)
    + id                                 = (known after apply)
    + instance_initiated_shutdown_behavior = (known after apply)
    + instance.lifecycle                = (known after apply)
    + instance.state                    = (known after apply)
    + instance.type                      = "t2.micro"
```

i-008355c408e4c28ce (Nagesha-DevOps-Caps2-J-M) X

PublicIPs: 18.217.244.147 PrivateIPs: 172.31.5.220

Activate Windows
Go to Settings to activate Windows.

CloudShell Feedback © 2024, Amazon Web Services, Inc. or its affiliates. Privacy Terms Cookie preferences

00:33 01-10-2024

Instances | EC2 | us-east-2 EC2 Instance Connect Install Terraform | Terraform | H... Installing Ansible on specific op... +

us-east-2.console.aws.amazon.com/ec2-instance-connect/ssh?region=us-east-2&connType=standard&instanceId=i-008355c408e4c28ce&osUser=ubuntu&sshPort=22&add...

aws Services Search [Alt+S]

```
+ disable_api_stop = (known after apply)
+ disable_api_termination = (known after apply)
+ ebs_optimized = (known after apply)
+ get_password_data = false
+ host_id = (known after apply)
+ host_resource_group_arn = (known after apply)
+ iam_instance_profile = (known after apply)
+ id = (known after apply)
+ instance_initiated_shutdown_behavior = (known after apply)
+ instance.lifecycle = (known after apply)
+ instance.state = (known after apply)
+ instance.type = "t2.micro"
+ ipv6_address_count = (known after apply)
+ ipv6_addresses = (known after apply)
+ key_name = "Nagesha-Keypair"
+ monitoring = (known after apply)
+ outpost_arn = (known after apply)
+ password_data = (known after apply)
+ placement_group = (known after apply)
+ placement_partition_number = (known after apply)
+ primary_network_interface_id = (known after apply)
+ private_dns = (known after apply)
+ private_ip = (known after apply)
+ public_dns = (known after apply)
```

i-008355c408e4c28ce (Nagesha-DevOps-Caps2-J-M) X

Public IPs: 18.217.244.147 Private IPs: 172.31.5.220

Activate Windows
Go to Settings to activate Windows.

CloudShell Feedback © 2024, Amazon Web Services, Inc. or its affiliates. Privacy Terms Cookie preferences

00:33 01-10-2024

Instances | EC2 | us-east-2 EC2 Instance Connect Install Terraform | Terraform | H Installing Ansible on specific op

us-east-2.console.aws.amazon.com/ec2-instance-connect/ssh?region=us-east-2&connType=standard&instanceId=i-008355c408e4c28ce&osUser=ubuntu&sshPort=22&add...

AWS Services Search [Alt+S]

```
+ public_dns = (known after apply)
+ public_ip = (known after apply)
+ secondary_private_ips = (known after apply)
+ security_groups = (known after apply)
+ source_dest_check = true
+ spot_instance_request_id = (known after apply)
+ subnet_id = (known after apply)
+ tags = {
    + "Name" = "K8s-S2"
  }
+ tags_all = {
    + "Name" = "K8s-S2"
  }
+ tenancy = (known after apply)
+ user_data = (known after apply)
+ user_data_base64 = (known after apply)
+ user_data_replace_on_change = false
+ vpc_security_group_ids = (known after apply)

+ capacity_reservation_specification (known after apply)
+ cpu_options (known after apply)
+ ebs_block_device (known after apply)
```

i-008355c408e4c28ce (Nagesha-DevOps-Caps2-J-M) X

Public IPs: 18.217.244.147 Private IPs: 172.31.5.220

Activate Windows
Go to Settings to activate Windows.

CloudShell Feedback © 2024, Amazon Web Services, Inc. or its affiliates. Privacy Terms Cookie preferences

00:33 01-10-2024

A screenshot of a web browser window showing the AWS EC2 Instance Connect configuration page. The URL in the address bar is `us-east-2.console.aws.amazon.com/ec2-instance-connect/ssh?region=us-east-2&connType=standard&instanceId=i-008355c408e4c28ce&osUser=ubuntu&sshPort=22&add...`. The browser tabs include "Instances | EC2 | us-east-2", "EC2 Instance Connect", "Install Terraform | Terraform | H...", and "Installing Ansible on specific op...". The main content area shows a list of options under "Known after apply":

```
+ capacity_reservation_specification (known after apply)
+ cpu_options (known after apply)
+ ebs_block_device (known after apply)
+ enclave_options (known after apply)
+ ephemeral_block_device (known after apply)
+ instance_market_options (known after apply)
+ maintenance_options (known after apply)
+ metadata_options (known after apply)
+ network_interface (known after apply)
+ private_dns_name_options (known after apply)
+ root_block_device (known after apply)
}
```

i-008355c408e4c28ce (Nagesha-DevOps-Caps2-J-M)

PublicIPs: 18.217.244.147 PrivateIPs: 172.31.5.220

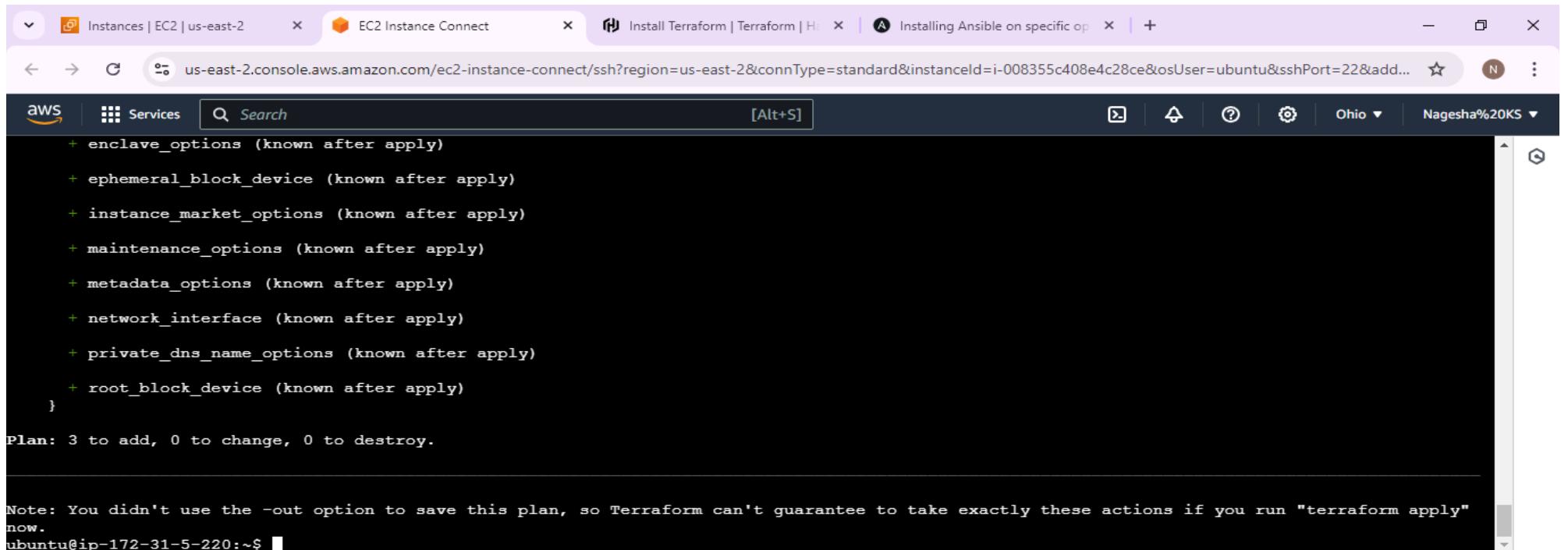
Activate Windows
Go to Settings to activate Windows.

CloudShell Feedback

© 2024, Amazon Web Services, Inc. or its affiliates. Privacy Terms Cookie preferences



00:33 01-10-2024

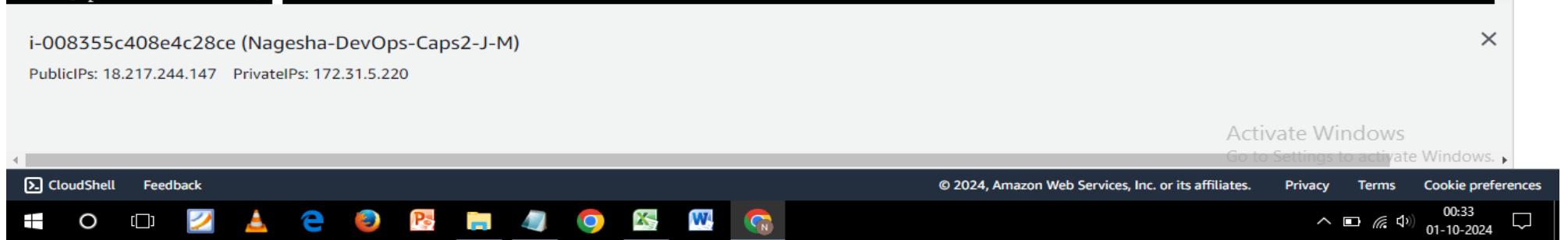


A screenshot of a Windows desktop environment. At the top, there is a taskbar with several open browser tabs. From left to right, the tabs are: "Instances | EC2 | us-east-2", "EC2 Instance Connect", "Install Terraform | Terraform | H...", "Installing Ansible on specific op...", and a partially visible tab. Below the taskbar is the AWS CloudShell interface. The interface has a dark theme with white text. It shows a command-line session for Terraform. The session starts with a list of resource types followed by a "Plan:" section, which indicates 3 resources to add. A note at the bottom states: "Note: You didn't use the -out option to save this plan, so Terraform can't guarantee to take exactly these actions if you run "terraform apply" now." The command history shows the user running "terraform plan".

```
+ enclave_options (known after apply)
+ ephemeral_block_device (known after apply)
+ instance_market_options (known after apply)
+ maintenance_options (known after apply)
+ metadata_options (known after apply)
+ network_interface (known after apply)
+ private_dns_name_options (known after apply)
+ root_block_device (known after apply)
}

Plan: 3 to add, 0 to change, 0 to destroy.

Note: You didn't use the -out option to save this plan, so Terraform can't guarantee to take exactly these actions if you run "terraform apply" now.
```



The screenshot shows the AWS CloudShell terminal window. The title bar of the window says "i-008355c408e4c28ce (Nagesha-DevOps-Caps2-J-M)". Inside the terminal, the user has run the "terraform plan" command. The output shows a plan to add three resources. A note at the bottom of the terminal window states: "Note: You didn't use the -out option to save this plan, so Terraform can't guarantee to take exactly these actions if you run "terraform apply" now." The command history shows the user running "terraform plan".

```
i-008355c408e4c28ce (Nagesha-DevOps-Caps2-J-M)

Public IPs: 18.217.244.147 Private IPs: 172.31.5.220

Activate Windows
Go to Settings to activate Windows.

CloudShell Feedback © 2024, Amazon Web Services, Inc. or its affiliates. Privacy Terms Cookie preferences
Windows Start File Explorer Microsoft Edge Firefox Photoshop Microsoft Word Microsoft Excel Microsoft Powerpoint 00:33 01-10-2024
```

Instances | EC2 | us-east-2 EC2 Instance Connect Install Terraform | Terraform | Hi... Installing Ansible on specific op... +

us-east-2.console.aws.amazon.com/ec2-instance-connect/ssh?region=us-east-2&connType=standard&instanceId=i-008355c408e4c28ce&osUser=ubuntu&sshPort=22&add...

aws Services Search [Alt+S]

```
+ ephemeral_block_device (known after apply)
+ instance_market_options (known after apply)
+ maintenance_options (known after apply)
+ metadata_options (known after apply)
+ network_interface (known after apply)
+ private_dns_name_options (known after apply)
+ root_block_device (known after apply)
}
```

Plan: 3 to add, 0 to change, 0 to destroy.

Note: You didn't use the -out option to save this plan, so Terraform can't guarantee to take exactly these actions if you run "terraform apply" now.
ubuntu@ip-172-31-5-220:~\$ terraform apply

i-008355c408e4c28ce (Nagesha-DevOps-Caps2-J-M)

PublicIPs: 18.217.244.147 PrivateIPs: 172.31.5.220

Activate Windows
Go to Settings to activate Windows.

CloudShell Feedback © 2024, Amazon Web Services, Inc. or its affiliates. Privacy Terms Cookie preferences

00:34 01-10-2024

The screenshot shows a Windows desktop environment with several open windows. In the background, there are browser tabs for 'Instances | EC2 | us-east-2', 'EC2 Instance Connect', 'Install Terraform | Terraform | H...', and 'Installing Ansible on specific op...'. The main focus is a terminal window titled 'aws' with the 'Services' tab selected. The terminal displays the following Terraform output:

```
+ enclave_options (known after apply)
+ ephemeral_block_device (known after apply)
+ instance_market_options (known after apply)
+ maintenance_options (known after apply)
+ metadata_options (known after apply)
+ network_interface (known after apply)
+ private_dns_name_options (known after apply)
+ root_block_device (known after apply)
}

Plan: 3 to add, 0 to change, 0 to destroy.

Do you want to perform these actions?
Terraform will perform the actions described above.
Only 'yes' will be accepted to approve.

Enter a value: yes
```

Below the terminal, the AWS CloudShell interface shows the instance ID 'i-008355c408e4c28ce (Nagesha-DevOps-Caps2-J-M)' and its public and private IP addresses: 'Public IPs: 18.217.244.147 Private IPs: 172.31.5.220'. At the bottom of the screen, there is an 'Activate Windows' message with a link to 'Go to Settings to activate Windows.' The system tray at the bottom right shows the date and time as '00:35 01-10-2024'.

Instances | EC2 | us-east-2 EC2 Instance Connect Install Terraform | Terraform | H Installing Ansible on specific op

us-east-2.console.aws.amazon.com/ec2-instance-connect/ssh?region=us-east-2&connType=standard&instanceId=i-008355c408e4c28ce&osUser=ubuntu&sshPort=22&add...

AWS Services Search [Alt+S]

```
+ maintenance_options (known after apply)
+ metadata_options (known after apply)
+ network_interface (known after apply)
+ private_dns_name_options (known after apply)
+ root_block_device (known after apply)
}

Plan: 3 to add, 0 to change, 0 to destroy.

Do you want to perform these actions?
Terraform will perform the actions described above.
Only 'yes' will be accepted to approve.

Enter a value: yes

aws_instance.K8-M: Creating...
aws_instance.K8-S2: Creating...
aws_instance.K8-S1: Creating...
```

i-008355c408e4c28ce (Nagesha-DevOps-Caps2-J-M)

PublicIPs: 18.217.244.147 PrivateIPs: 172.31.5.220

Activate Windows
Go to Settings to activate Windows.

CloudShell Feedback

© 2024, Amazon Web Services, Inc. or its affiliates. Privacy Terms Cookie preferences



00:35 01-10-2024

Instances | EC2 | us-east-2 EC2 Instance Connect Install Terraform | Terraform | H... Installing Ansible on specific op... +

us-east-2.console.aws.amazon.com/ec2-instance-connect/ssh?region=us-east-2&connType=standard&instanceId=i-008355c408e4c28ce&osUser=ubuntu&sshPort=22&add...

aws Services Search [Alt+S]

```
+ root_block_device (known after apply)
}

Plan: 3 to add, 0 to change, 0 to destroy.

Do you want to perform these actions?
Terraform will perform the actions described above.
Only 'yes' will be accepted to approve.

Enter a value: yes

aws_instance.K8-M: Creating...
aws_instance.K8-S2: Creating...
aws_instance.K8-S1: Creating...
aws_instance.K8-S2: Still creating... [10s elapsed]
aws_instance.K8-S1: Still creating... [10s elapsed]
aws_instance.K8-M: Still creating... [10s elapsed]
aws_instance.K8-M: Creation complete after 13s [id=i-0491c7c4c2fbe764b]
aws_instance.K8-S2: Creation complete after 13s [id=i-0a4912f0529179dd0]
aws_instance.K8-S1: Still creating... [20s elapsed]
aws_instance.K8-S1: Creation complete after 22s [id=i-019b0ee47bd447830]

Apply complete! Resources: 3 added, 0 changed, 0 destroyed.
ubuntu@ip-172-31-5-220:~$
```

i-008355c408e4c28ce (Nagesha-DevOps-Caps2-J-M)

PublicIPs: 18.217.244.147 PrivateIPs: 172.31.5.220

Activate Windows
Go to Settings to activate Windows.

CloudShell Feedback

© 2024, Amazon Web Services, Inc. or its affiliates. Privacy Terms Cookie preferences



00:36
01-10-2024

Instances | EC2 | us-east-2 EC2 Instance Connect Install Terraform | Terraform | H Installing Ansible on specific op

us-east-2.console.aws.amazon.com/ec2/home?region=us-east-2#Instances:v=3;\$case=true%5C;client:false;\$regex=tags:false%5C;client:false;sort=instanceState

aws Services Search [Alt+S]

EC2 Dashboard EC2 Global View Events

Instances

- Instances
- Instance Types
- Launch Templates
- Spot Requests
- Savings Plans
- Reserved Instances
- Dedicated Hosts
- Capacity Reservations

Images

- AMIs
- AMI Catalog

Elastic Block Store

- Volumes

Instances (1/6) Info

Last updated less than a minute ago

Name	Instance ID	Instance state	Instance type	Status check	Alarm status
K8s-S2	i-0a4912f0529179dd0	Running	t2.micro	Initializing	View alarms
K8s-S1	i-019b0ee47bd447830	Running	t2.micro	2/2 checks passed	View alarms
Nagesha-DevOps-Caps2-J-M	i-008355c408e4c28ce	Running	t2.micro	2/2 checks passed	View alarms
K8s-M/J-s	i-0491c7c4c2fbe764b	Running	t2.medium	2/2 checks passed	View alarms

i-0491c7c4c2fbe764b (K8s-M/J-s)

Details Status and alarms Monitoring Security Networking Storage Tags

Instance summary

Instance ID	Public IPv4 address	Private IPv4 addresses
i-0491c7c4c2fbe764b (K8s-M/J-s)	13.59.114.76 open address	172.31.20.222
IPv6 address	Instance state	Public IPv4 DNS
-	Running	ec2-13-59-114-76.us-east-2.compute.amazonaws.com Activate Windows Go to Settings to activate Windows.

CloudShell Feedback © 2024, Amazon Web Services, Inc. or its affiliates. Privacy Terms Cookie preferences

00:38 01-10-2024

Instances | EC2 | us-east-2 | EC2 Instance Connect | EC2 Instance Connect | EC2 Instance Connect | EC2 Instance Connect | - | | | | | Ohio | Nagesha%20KS

Usage of /: 21.1% of 7.57GB Users logged in: 0
Memory usage: 5% IPv4 address for eth0: 172.31.20.222
Swap usage: 0%

Expanded Security Maintenance for Applications is not enabled.

0 updates can be applied immediately.

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

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

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

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

ubuntu@ip-172-31-20-222:~\$

i-0491c7c4c2fbe764b (K8s-M/J-s)
PublicIPs: 13.59.114.76 PrivateIPs: 172.31.20.222

Activate Windows
Go to Settings to activate Windows.

CloudShell Feedback © 2024, Amazon Web Services, Inc. or its affiliates. Privacy Terms Cookie preferences

00:53 01-10-2024

Instances | EC2 | us-east-2 EC2 Instance Connect EC2 Instance Connect EC2 Instance Connect EC2 Instance Connect

us-east-2.console.aws.amazon.com/ec2-instance-connect/ssh?region=us-east-2&connType=standard&instanceId=i-019b0ee47bd447830&osUser=ubuntu&sshPort=22&ad...

AWS Services Search [Alt+S]

Usage of /: 21.1% of 7.57GB Users logged in: 0
Memory usage: 21% IPv4 address for eth0: 172.31.33.26
Swap usage: 0%

Expanded Security Maintenance for Applications is not enabled.

0 updates can be applied immediately.

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

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

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

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

ubuntu@ip-172-31-33-26:~\$

i-019b0ee47bd447830 (K8s-S1)

PublicIPs: 13.58.242.76 PrivateIPs: 172.31.33.26

Activate Windows
Go to Settings to activate Windows.

CloudShell Feedback

© 2024, Amazon Web Services, Inc. or its affiliates.

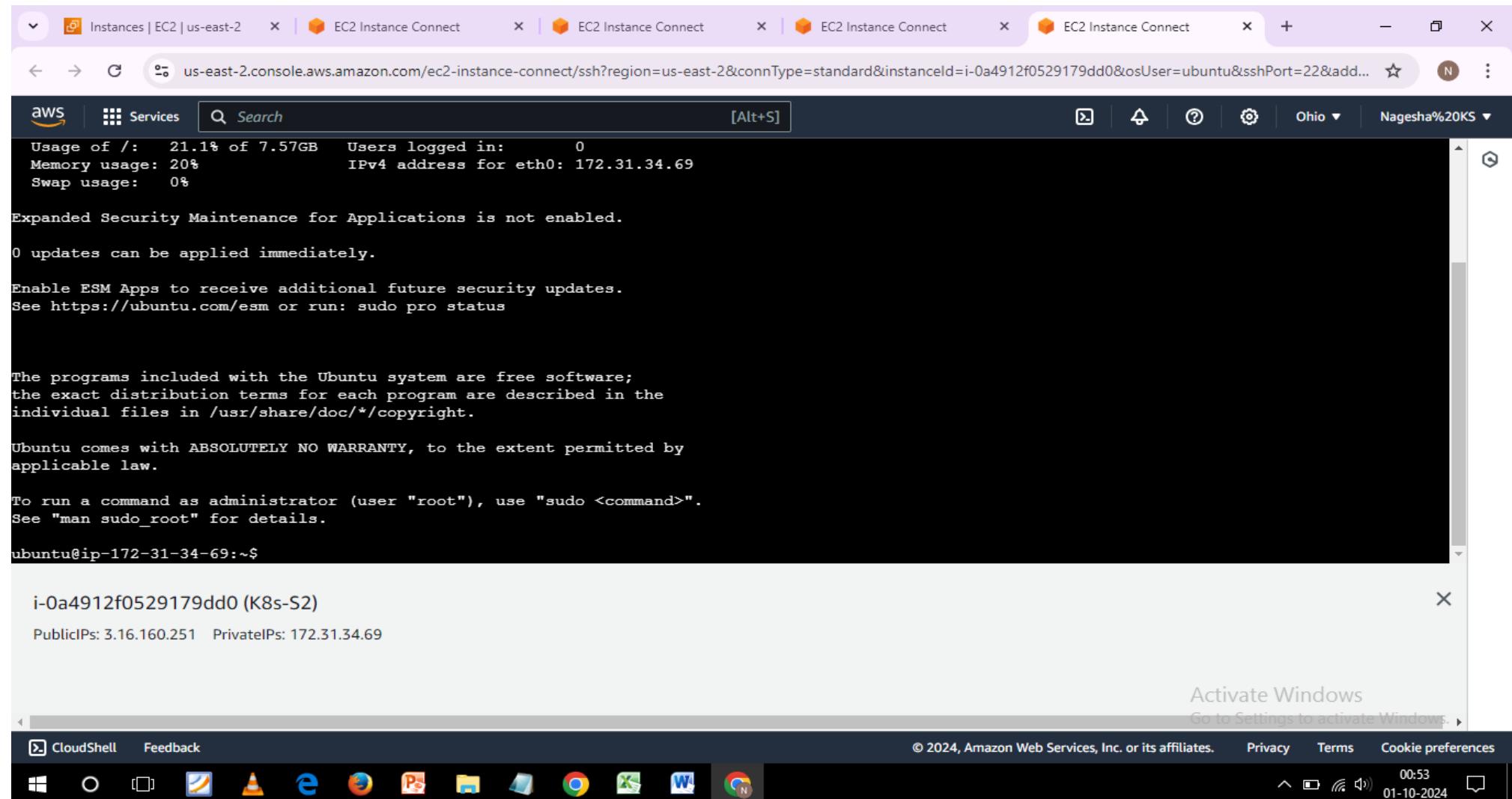
Privacy

Terms

Cookie preferences



00:53 01-10-2024



Instances | EC2 | us-east-2 EC2 Instance Connect EC2 Instance Connect EC2 Instance Connect EC2 Instance Connect EC2 Instance Connect

us-east-2.console.aws.amazon.com/ec2-instance-connect/ssh?region=us-east-2&connType=standard&instanceId=i-0491c7c4c2fbe764b&osUser=ubuntu&sshPort=22&add...

aws Services Search [Alt+S]

0 updates can be applied immediately.

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

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

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

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

```
ubuntu@ip-172-31-20-222:~$ sudo apt update
Hit:1 http://us-east-2.ec2.archive.ubuntu.com/ubuntu jammy InRelease
Get:2 http://us-east-2.ec2.archive.ubuntu.com/ubuntu jammy-updates InRelease [128 kB]
Get:3 http://us-east-2.ec2.archive.ubuntu.com/ubuntu jammy-backports InRelease [127 kB]
Get:4 http://security.ubuntu.com/ubuntu jammy-security InRelease [129 kB]
Get:5 http://us-east-2.ec2.archive.ubuntu.com/ubuntu jammy/universe amd64 Packages [14.1 MB]
0% [5 Packages 2547 kB/14.1 MB 18%]
```

i-0491c7c4c2fbe764b (K8s-M/J-s)

Public IPs: 13.59.114.76 Private IPs: 172.31.20.222

Activate Windows
Go to Settings to activate Windows.

CloudShell Feedback

© 2024, Amazon Web Services, Inc. or its affiliates. Privacy Terms Cookie preferences

00:56 01-10-2024

A screenshot of a web browser window titled "Instances | EC2 | us-east-2" showing an EC2 Instance Connect session. The URL is "us-east-2.console.aws.amazon.com/ec2-instance-connect/ssh?region=us-east-2&connType=standard&instanceId=i-019b0ee47bd447830&osUser=ubuntu&sshPort=22&ad...". The browser has multiple tabs open, all titled "EC2 Instance Connect". The main content area displays a terminal session log:

```
Get:6 http://us-east-2.ec2.archive.ubuntu.com/ubuntu jammy/universe Translation-en [5652 kB]
Get:7 http://us-east-2.ec2.archive.ubuntu.com/ubuntu jammy/universe amd64 c-n-f Metadata [286 kB]
Get:8 http://us-east-2.ec2.archive.ubuntu.com/ubuntu jammy/multiverse amd64 Packages [217 kB]
Get:9 http://us-east-2.ec2.archive.ubuntu.com/ubuntu jammy/multiverse Translation-en [112 kB]
Get:10 http://us-east-2.ec2.archive.ubuntu.com/ubuntu jammy/multiverse amd64 c-n-f Metadata [8372 B]
Get:11 http://us-east-2.ec2.archive.ubuntu.com/ubuntu jammy-updates/main amd64 Packages [2066 kB]
Get:12 http://us-east-2.ec2.archive.ubuntu.com/ubuntu jammy-updates/main Translation-en [358 kB]
Get:13 http://us-east-2.ec2.archive.ubuntu.com/ubuntu jammy-updates/main amd64 c-n-f Metadata [17.9 kB]
Get:14 http://us-east-2.ec2.archive.ubuntu.com/ubuntu jammy-updates/universe amd64 Packages [1128 kB]
Get:15 http://us-east-2.ec2.archive.ubuntu.com/ubuntu jammy-updates/universe Translation-en [263 kB]
Get:16 http://us-east-2.ec2.archive.ubuntu.com/ubuntu jammy-updates/universe amd64 c-n-f Metadata [26.3 kB]
Get:17 http://us-east-2.ec2.archive.ubuntu.com/ubuntu jammy-updates/multiverse amd64 Packages [43.3 kB]
Get:18 http://us-east-2.ec2.archive.ubuntu.com/ubuntu jammy-updates/multiverse Translation-en [10.8 kB]
Get:19 http://us-east-2.ec2.archive.ubuntu.com/ubuntu jammy-updates/multiverse amd64 c-n-f Metadata [444 B]
Get:20 http://us-east-2.ec2.archive.ubuntu.com/ubuntu jammy-backports/main amd64 Packages [67.7 kB]
Get:21 http://us-east-2.ec2.archive.ubuntu.com/ubuntu jammy-backports/main Translation-en [11.1 kB]
Get:22 http://us-east-2.ec2.archive.ubuntu.com/ubuntu jammy-backports/main amd64 c-n-f Metadata [388 B]
Get:23 http://us-east-2.ec2.archive.ubuntu.com/ubuntu jammy-backports/restricted amd64 c-n-f Metadata [116 B]
Get:24 http://us-east-2.ec2.archive.ubuntu.com/ubuntu jammy-backports/universe amd64 Packages [28.8 kB]
Get:25 http://us-east-2.ec2.archive.ubuntu.com/ubuntu jammy-backports/universe Translation-en [16.5 kB]
Get:26 http://us-east-2.ec2.archive.ubuntu.com/ubuntu jammy-backports/universe amd64 c-n-f Metadata [672 B]
Get:27 http://us-east-2.ec2.archive.ubuntu.com/ubuntu jammy-backports/multiverse amd64 c-n-f Metadata [116 B]
Get:28 http://security.ubuntu.com/ubuntu jammy-security/main amd64 Packages [1848 kB]
84% [5 Packages store 0 B] [28 Packages 208 kB/1848 kB 11%]
```

i-019b0ee47bd447830 (K8s-S1)

PublicIPs: 13.58.242.76 PrivateIPs: 172.31.33.26

Activate Windows
Go to Settings to activate Windows.

Instances | EC2 | us-east-2 EC2 Instance Connect EC2 Instance Connect EC2 Instance Connect EC2 Instance Connect

us-east-2.console.aws.amazon.com/ec2-instance-connect/ssh?region=us-east-2&connType=standard&instanceId=i-0a4912f0529179dd0&osUser=ubuntu&sshPort=22&add...

AWS Services Search [Alt+S] [] [] [] [] Ohio Nagesha%20KS

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

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

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

```
ubuntu@ip-172-31-34-69:~$ sudo apt update
Hit:1 http://us-east-2.ec2.archive.ubuntu.com/ubuntu jammy InRelease
Get:2 http://us-east-2.ec2.archive.ubuntu.com/ubuntu jammy-updates InRelease [128 kB]
Get:3 http://us-east-2.ec2.archive.ubuntu.com/ubuntu jammy-backports InRelease [127 kB]
Get:4 http://security.ubuntu.com/ubuntu jammy-security InRelease [129 kB]
Get:5 http://us-east-2.ec2.archive.ubuntu.com/ubuntu jammy/universe amd64 Packages [14.1 MB]
Get:6 http://us-east-2.ec2.archive.ubuntu.com/ubuntu jammy/universe Translation-en [5652 kB]
Get:7 http://security.ubuntu.com/ubuntu jammy-security/main amd64 Packages [1848 kB]
Get:8 http://us-east-2.ec2.archive.ubuntu.com/ubuntu jammy/universe amd64 c-n-f Metadata [286 kB]
Get:9 http://us-east-2.ec2.archive.ubuntu.com/ubuntu jammy/multiverse amd64 Packages [217 kB]
Get:10 http://us-east-2.ec2.archive.ubuntu.com/ubuntu jammy/multiverse Translation-en [112 kB]
```

i-0a4912f0529179dd0 (K8s-S2) X

PublicIPs: 3.16.160.251 PrivateIPs: 172.31.34.69

Activate Windows
Go to Settings to activate Windows. ▶

CloudShell Feedback © 2024, Amazon Web Services, Inc. or its affiliates. Privacy Terms Cookie preferences

Windows Start button, Taskbar icons (File Explorer, Edge, File Manager, Google Chrome, Microsoft Word, Microsoft Excel), Date and Time (00:59, 01-10-2024)

Instances | EC2 | us-east-2 EC2 Instance Connect EC2 Instance Connect EC2 Instance Connect EC2 Instance Connect

us-east-2.console.aws.amazon.com/ec2-instance-connect/ssh?region=us-east-2&connType=standard&instanceId=i-008355c408e4c28ce&osUser=ubuntu&sshPort=22&add...

aws Services Search [Alt+S] Ohio ▾ Nagesha%20KS ▾

```
Enter a value: yes

aws_instance.K8-M: Creating...
aws_instance.K8-S2: Creating...
aws_instance.K8-S1: Creating...
aws_instance.K8-S2: Still creating... [10s elapsed]
aws_instance.K8-S1: Still creating... [10s elapsed]
aws_instance.K8-M: Still creating... [10s elapsed]
aws_instance.K8-M: Creation complete after 13s [id=i-0491c7c4c2fbe764b]
aws_instance.K8-S2: Creation complete after 13s [id=i-0a4912f0529179dd0]
aws_instance.K8-S1: Still creating... [20s elapsed]
aws_instance.K8-S1: Creation complete after 22s [id=i-019b0ee47bd447830]

Apply complete! Resources: 3 added, 0 changed, 0 destroyed.
ubuntu@ip-172-31-5-220:~$ ssh-keygen
Generating public/private rsa key pair.
Enter file in which to save the key (/home/ubuntu/.ssh/id_rsa):
/home/ubuntu/.ssh/id_rsa already exists.
Overwrite (y/n)?
ubuntu@ip-172-31-5-220:~$ cd .ssh
ubuntu@ip-172-31-5-220:~/ssh$ ls
authorized_keys id_rsa id_rsa.pub known_hosts
ubuntu@ip-172-31-5-220:~/ssh$
```

i-008355c408e4c28ce (Nagesha-DevOps-Caps2-J-M)

PublicIPs: 18.217.244.147 PrivateIPs: 172.31.5.220

Activate Windows
Go to Settings to activate Windows.

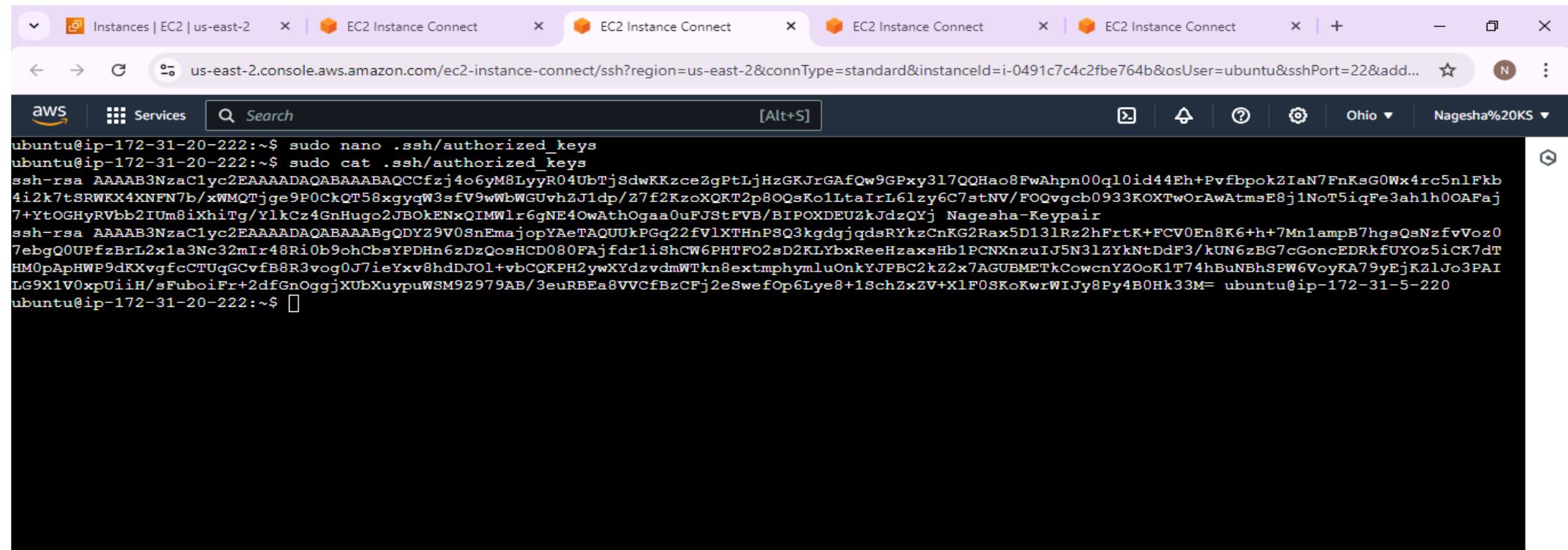
CloudShell Feedback

© 2024, Amazon Web Services, Inc. or its affiliates.

Privacy Terms Cookie preferences



01:04
01-10-2024



i-0491c7c4c2fbe764b (K8s-M/J-s)

Public IPs: 13.59.114.76 Private IPs: 172.31.20.222

Activate Windows
Go to Settings to activate Windows.

Instances | EC2 | us-east-2 EC2 Instance Connect EC2 Instance Connect EC2 Instance Connect EC2 Instance Connect EC2 Instance Connect

us-east-2.console.aws.amazon.com/ec2-instance-connect/ssh?region=us-east-2&connType=standard&instanceId=i-019b0ee47bd447830&osUser=ubuntu&sshPort=22&ad...

aws Services Search [Alt+S]

Get:27 http://us-east-2.ec2.archive.ubuntu.com/ubuntu jammy-backports/multiverse amd64 c-n-f Metadata [116 B]
Get:28 http://security.ubuntu.com/ubuntu jammy-security/main amd64 Packages [1848 kB]
Get:29 http://security.ubuntu.com/ubuntu jammy-security/main Translation-en [299 kB]
Get:30 http://security.ubuntu.com/ubuntu jammy-security/universe amd64 Packages [909 kB]
Get:31 http://security.ubuntu.com/ubuntu jammy-security/universe Translation-en [179 kB]
Get:32 http://security.ubuntu.com/ubuntu jammy-security/universe amd64 c-n-f Metadata [19.4 kB]
Get:33 http://security.ubuntu.com/ubuntu jammy-security/multiverse amd64 Packages [37.2 kB]
Get:34 http://security.ubuntu.com/ubuntu jammy-security/multiverse Translation-en [7588 B]
Get:35 http://security.ubuntu.com/ubuntu jammy-security/multiverse amd64 c-n-f Metadata [228 B]
Fetched 28.1 MB in 10s (2690 kB/s)
Reading package lists... Done
Building dependency tree... Done
Reading state information... Done
All packages are up to date.
ubuntu@ip-172-31-33-26:~\$ sudo nano .ssh/authorized_keys
ubuntu@ip-172-31-33-26:~\$ sudo cat .ssh/authorized_keys
ssh-rsa AAAAB3NzaC1yc2EAAAQABAAQCCfzj4o6yM8LyyR04UbTjSdwKKzce2gPtLjHzGKJrGAFQw9GPxy3l7QQHao8FwAhpn00q10id44Eh+PvfbpokZIa...
4i2k7tsRWKX4XNFN7b/xWMQTjge9P0CkQT58xgyqW3sfV9wWbWGUvhZJ1dp/Z7f2KzoXQKT2p8OQsKo1LtaIrL6lzy6C7stNV/FOQvgcb0933KOXTwOrAwAtmsE8j1NoT5iqFe3ah1h0OAFaj
7+YtOGHyRVbb2IUm8iXhiTg/YlkCz4GnHugo2JB0kENxQIMWlr6gNE40wAthOgaa0uFJStFVB/BIP0XDEUZkJdzQYj Nagesha-Keypair
ssh-rsa AAAAB3NzaC1yc2EAAAQABAAQgQDYZ9V0SnEmajopYaeTAQUUkPGq22fVlXThnPSQ3kgdgjqdsRYkzCnKG2Rax5D131Rz2hFrTk+FCV0En8K6+h+7Mn1ampB7hgsQsNzf...
7ebgQ0UPfzBrL2x1a3Nc32mIr48Ri0b9ohCbsYPDHn6zDzQosHCD080FAjfdr1ishCW6PHTFO2sD2KL...
HM0pApHWY9dKXvgfcCTUqGCvfb8R3vog0J7ieYxv8hdDJ01+vbCQKPH2ywXYdzvdmWTkn8extmpphymluOnkYJPBC2k22x7AGUBMETkCowcnYZOoK1T74hBuNBhSPW6VoyKA79yEjkZlJo3PAI
Lg9X1v0xpUiH/sFuboifr+2dfGnOggjXUbXupuWSM9Z979AB/3euRBEa8VVcfBzCFj2eSwefOp6Lye8+1SchZxZV+Xlf0SKoKwrWIJy8Py4B0Hk33M= ubuntu@ip-172-31-5-220
ubuntu@ip-172-31-33-26:~\$

i-019b0ee47bd447830 (K8s-S1)

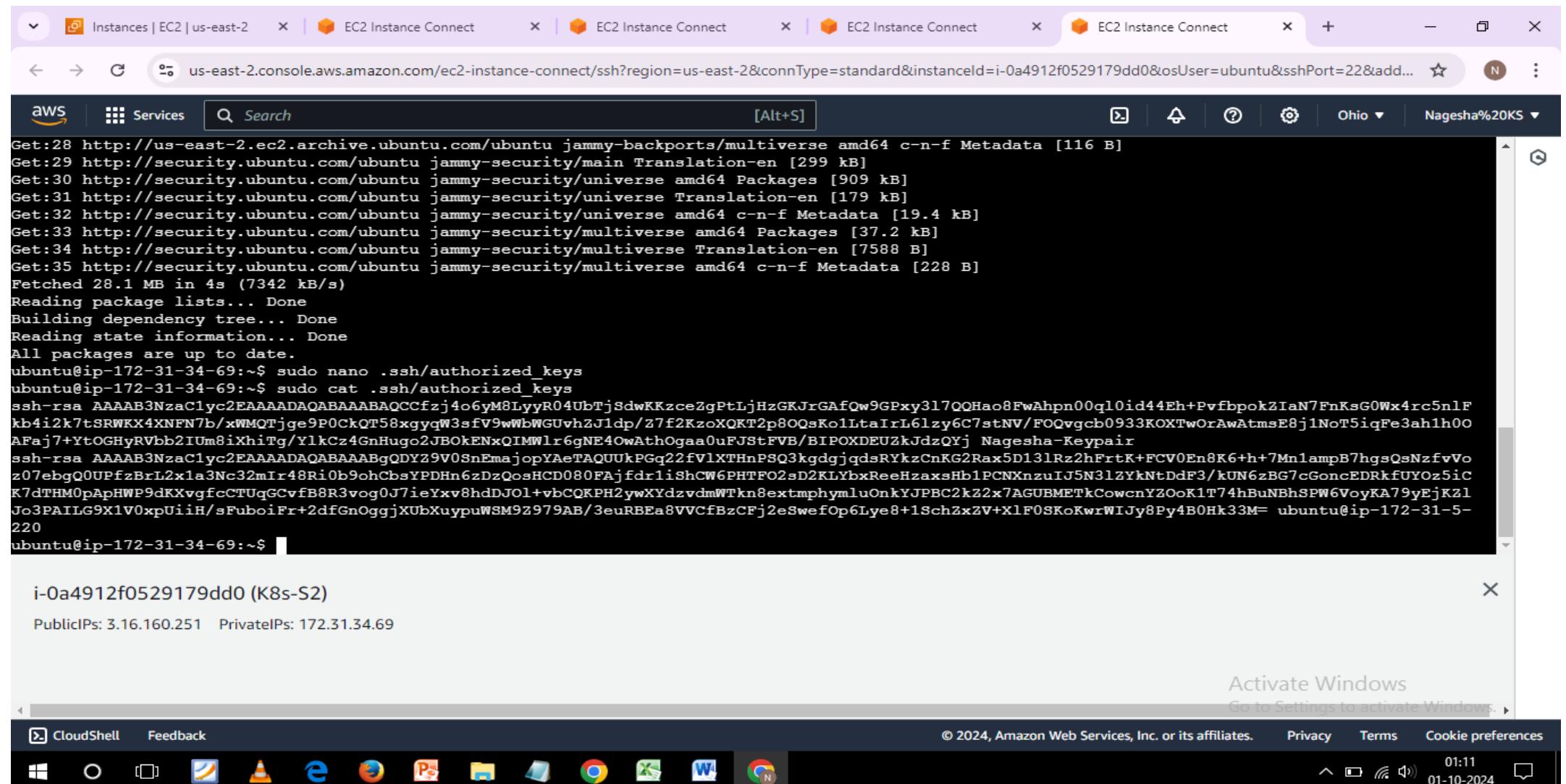
Public IPs: 13.58.242.76 Private IPs: 172.31.33.26

Activate Windows
Go to Settings to activate Windows.

CloudShell Feedback

© 2024, Amazon Web Services, Inc. or its affiliates. Privacy Terms Cookie preferences

01:10 01-10-2024



Instances | EC2 | us-east-2 EC2 Instance Connect EC2 Instance Connect EC2 Instance Connect EC2 Instance Connect EC2 Instance Connect

us-east-2.console.aws.amazon.com/ec2-instance-connect/ssh?region=us-east-2&connType=standard&instanceId=i-008355c408e4c28ce&osUser=ubuntu&sshPort=22&add...

aws Services Search [Alt+S]

```
aws_instance.K8-M: Still creating... [10s elapsed]
aws_instance.K8-M: Creation complete after 13s [id=i-0491c7c4c2fbe764b]
aws_instance.K8-S2: Creation complete after 13s [id=i-0a4912f0529179dd0]
aws_instance.K8-S1: Still creating... [20s elapsed]
aws_instance.K8-S1: Creation complete after 22s [id=i-019b0ee47bd447830]

Apply complete! Resources: 3 added, 0 changed, 0 destroyed.
ubuntu@ip-172-31-5-220:~$ ssh-keygen
Generating public/private rsa key pair.
Enter file in which to save the key (/home/ubuntu/.ssh/id_rsa):
/home/ubuntu/.ssh/id_rsa already exists.
Overwrite (y/n)?
ubuntu@ip-172-31-5-220:~$ cd .ssh
ubuntu@ip-172-31-5-220:~/ssh$ 1
authorized_keys id_rsa id_rsa.pub known_hosts
ubuntu@ip-172-31-5-220:~/ssh$ cat id_rsa.pub
ssh-rsa AAAAB3NzaC1yc2EAAAQABAAQgQDYZ9V0SnEmajopYAfTAQUUkPGq22fVlXTHnPSQ3kgdgjqdsRYkzCnKG2Rax5D131Rz2hFrtK+FCV0En8K6+h+7Mn1ampB7hgsQsNzfVvoz07ebgQ0UPfzBrL2x1a3Nc32mIr48Ri0b9ohCbsYPDHn6zdZQoHCD080FAjfdr1iShCW6PHTFO2sD2KLYbxReeHzaxsHb1PCNxzuIJ5N31ZYkNtDdF3/kUN6zBG7cGoncEDRkfUYOz5iCK7dTHM0pAphWP9dKXvgfcCTUqGCvfB8R3vog0J7ieYxv8hdDJ01+vbCQKPH2ywXYdzvdmWTkn8extmpphymluOnkYJPBC2kz2x7AGUBMETkCowcnYZOoK1T74hBuNBhSPW6VoyKA79yEjKZ1Jo3PAI LG9X1V0xpUiIh/sFuboifr+2dfGnOggjXUbXuypuWSM9Z979AB/3euRBEa8VVcfBzCFj2eSwefOp6Lyey+1SchZxZV+X1F0SKoKwrWIJy8Py4B0Hk33M= ubuntu@ip-172-31-5-220
ubuntu@ip-172-31-5-220:~/ssh$ cd /etc/ansible/
ubuntu@ip-172-31-5-220:/etc/ansible$ ls
ansible.cfg b.sh c.sh hosts jenkins.io-2023.key jenkins.io-2023.key.1 jenkins.io-2023.key.2 play.yaml roles
ubuntu@ip-172-31-5-220:/etc/ansible$
```

i-008355c408e4c28ce (Nagesha-DevOps-Caps2-J-M)

PublicIPs: 18.217.244.147 PrivateIPs: 172.31.5.220

Activate Windows
Go to Settings to activate Windows.

CloudShell Feedback

© 2024, Amazon Web Services, Inc. or its affiliates.

Privacy Terms Cookie preferences



01:18
01-10-2024

Instances | EC2 | us-east-2 EC2 Instance Connect EC2 Instance Connect EC2 Instance Connect EC2 Instance Connect EC2 Instance Connect

← → ⌂ us-east-2.console.aws.amazon.com/ec2-instance-connect/ssh?region=us-east-2&connType=standard&instanceId=i-008355c408e4c28ce&osUser=ubuntu&sshPort=22&add...

aws Services Search [Alt+S] Ohio ▾ Nagesha%20KS ▾

```
Overwrite (y/n)?  
ubuntu@ip-172-31-5-220:~$ cd .ssh  
ubuntu@ip-172-31-5-220:~/ .ssh$ 1  
authorized_keys id_rsa id_rsa.pub known_hosts  
ubuntu@ip-172-31-5-220:~/ .ssh$ cat id_rsa.pub  
ssh-rsa AAAAB3NzaC1yc2EAAAQABAAQgQDYz9V0SnEmajopYAEtAQUUkPGq22fVlXTHnPSQ3kgdgjqdsRYkzCnKG2Rax5D131Rz2hFrT+FCV0En8K6+h+7Mn1ampB7hgsQsNzfvvVoZ0  
7ebgQUPFzBrL2x1a3Nc32mIr48Ri0b9ohCbsYPDHn6zDzQosHCD080FAjfdrl1shCW6PHTFO2sD2KLbxBReefzaxsHb1PCNxzuIJ5N312YkNtDdF3/kUN6zBG7cGoncEDRkfUYOz5iCK7dT  
HM0OpApHWP9dKXvgfcCTUqGcvfB8R3vog0U7ieYxv8hdDJ01+vbCQKPH2ywXYdzvdmWTKn8extmpphymluOnkYJBC2kZ2x7AGUBMETkCowcnYZOoK1T74hBuNbhsPW6VoyKA79yEjK2lJo3PAI  
LG9X1V0xpUiH/sFuboiFr+2dfGn0ggjXUbXupuWSM92979AB/3euRB Ea8VVCFBzCFj2eSwefOp6Ly e8+1Sch2xZV+XlF0SKoKwrWIJy8Py4B0Hk33M= ubuntu@ip-172-31-5-220  
ubuntu@ip-172-31-5-220:~/ .ssh$ cd /etc/ansible/  
ubuntu@ip-172-31-5-220:/etc/ansible$ ls  
ansible.cfg b.sh c.sh hosts jenkins.io-2023.key jenkins.io-2023.key.1 jenkins.io-2023.key.2 play.yaml roles  
ubuntu@ip-172-31-5-220:/etc/ansible$ sudo nano hosts  
ubuntu@ip-172-31-5-220:/etc/ansible$ sudo cat hosts  
[k8s-m/J-s]  
# add the private ip of k8s-m/J-s  
172.31.20.222  
[k8s-S1]  
# add the private ip of k8s-S1  
172.31.33.26  
[k8s-S2]  
# add the private ip of k8s-S2  
172.31.34.69  
ubuntu@ip-172-31-5-220:/etc/ansible$
```

i-008355c408e4c28ce (Nagesha-DevOps-Caps2-J-M) X

Public IPs: 18.217.244.147 Private IPs: 172.31.5.220

Activate Windows
Go to Settings to activate Windows.

CloudShell Feedback © 2024, Amazon Web Services, Inc. or its affiliates. Privacy Terms Cookie preferences

01:29 01-10-2024

Instances | EC2 | us-east-2 EC2 Instance Connect EC2 Instance Connect EC2 Instance Connect EC2 Instance Connect EC2 Instance Connect

← → C us-east-2.console.aws.amazon.com/ec2-instance-connect/ssh?region=us-east-2&connType=standard&instanceId=i-008355c408e4c28ce&osUser=ubuntu&sshPort=22&add...

aws Services Search [Alt+S] Ohio Nagesha%20KS

```
ubuntu@ip-172-31-5-220:/etc/ansible$ ansible -m ping all
[WARNING]: Invalid characters were found in group names but not replaced, use -vvvv to see details
The authenticity of host '172.31.20.222 (172.31.20.222)' can't be established.
ED25519 key fingerprint is SHA256:37wnr3hXaGuHrZCIQhPGNYOtkKUewakk60P0JGE1ebU.
This key is not known by any other names
The authenticity of host '172.31.33.26 (172.31.33.26)' can't be established.
ED25519 key fingerprint is SHA256:FZNNdtIT/FH6kwFgCc+oiibwLBGFi+LPEF9+FGzgM8w.
This key is not known by any other names
The authenticity of host '172.31.34.69 (172.31.34.69)' can't be established.
ED25519 key fingerprint is SHA256:LwIc7ya9uRSV1FcrEFhTR+IrUM3gbd3wsyW2ntFTq6o.
This key is not known by any other names
Are you sure you want to continue connecting (yes/no/[fingerprint])? yes
Please type 'yes', 'no' or the fingerprint: yes
172.31.20.222 | SUCCESS => {
    "ansible_facts": {
        "discovered_interpreter_python": "/usr/bin/python3"
    },
    "changed": false,
    "ping": "pong"
}
yes
Please type 'yes', 'no' or the fingerprint: yes
172.31.34.69 | SUCCESS => {
    "ansible_facts": {
```

i-008355c408e4c28ce (Nagesha-DevOps-Caps2-J-M)

PublicIPs: 18.217.244.147 PrivateIPs: 172.31.5.220

Activate Windows
Go to Settings to activate Windows.

CloudShell Feedback

© 2024, Amazon Web Services, Inc. or its affiliates.

Privacy Terms Cookie preferences



01:45 01-10-2024

Instances | EC2 | us-east-2 X EC2 Instance Connect X EC2 Instance Connect X EC2 Instance Connect X EC2 Instance Connect X + - □ X

us-east-2.console.aws.amazon.com/ec2-instance-connect/ssh?region=us-east-2&connType=standard&instanceId=i-008355c408e4c28ce&osUser=ubuntu&sshPort=22&add...

aws Services Search [Alt+S] [] [] [] [] Ohio Nagesha%20KS

```
        "discovered_interpreter_python": "/usr/bin/python3"
    },
    "changed": false,
    "ping": "pong"
}
yes
Please type 'yes', 'no' or the fingerprint: yes
172.31.34.69 | SUCCESS => {
    "ansible_facts": {
        "discovered_interpreter_python": "/usr/bin/python3"
    },
    "changed": false,
    "ping": "pong"
}
yes
Please type 'yes', 'no' or the fingerprint: yes
172.31.33.26 | SUCCESS => {
    "ansible_facts": {
        "discovered_interpreter_python": "/usr/bin/python3"
    },
    "changed": false,
    "ping": "pong"
}
ubuntu@ip-172-31-5-220:/etc/ansible$ [ ]
```

i-008355c408e4c28ce (Nagesha-DevOps-Caps2-J-M) X

Public IPs: 18.217.244.147 Private IPs: 172.31.5.220

Activate Windows
Go to Settings to activate Windows.

CloudShell Feedback © 2024, Amazon Web Services, Inc. or its affiliates. Privacy Terms Cookie preferences

Windows Start Task View File Explorer Edge Firefox Power Shell Google Chrome Excel Word CloudShell 01:45 01-10-2024

Instances | EC2 | us-east-2 EC2 Instance Connect EC2 Instance Connect EC2 Instance Connect EC2 Instance Connect - X

us-east-2.console.aws.amazon.com/ec2-instance-connect/ssh?addressFamily=ipv4&connType=standard&instanceId=i-008355c408e4c28ce&osUser=ubuntu®ion=...

aws Services Search [Alt+S]

```
"ping": "pong"
}
172.31.33.26 | SUCCESS => {
  "ansible_facts": {
    "discovered_interpreter_python": "/usr/bin/python3"
  },
  "changed": false,
  "ping": "pong"
}
172.31.20.222 | SUCCESS => {
  "ansible_facts": {
    "discovered_interpreter_python": "/usr/bin/python3"
  },
  "changed": false,
  "ping": "pong"
}
ubuntu@ip-172-31-5-220:~$ sudo nano localhost.sh
ubuntu@ip-172-31-5-220:~$
ubuntu@ip-172-31-5-220:~$
ubuntu@ip-172-31-5-220:~$ sudo nano play.yaml
ubuntu@ip-172-31-5-220:~$ sudo nano localhost.sh
ubuntu@ip-172-31-5-220:~$ sudo nano master.sh
ubuntu@ip-172-31-5-220:~$ sudo nano slaves.sh
ubuntu@ip-172-31-5-220:~$ ansible-playbook play.yaml --syntax-check
```

i-008355c408e4c28ce (Nagesha-DevOps-Caps2-J-M)

Public IPs: 3.135.196.190 Private IPs: 172.31.5.220

Activate Windows
Go to Settings to activate Windows.

CloudShell Feedback © 2024, Amazon Web Services, Inc. or its affiliates. Privacy Terms Cookie preferences

14:55 01-10-2024

Instances | EC2 | us-e X EC2 Instance Connect X EC2 Instance Connect X EC2 Instance Connect X EC2 Instance Connect X Sign in [Jenkins] X +

Not secure 3.135.196.190:8080/login?from=%2F



Sign in to Jenkins

Username

Password

Keep me signed in

Sign in

Activate Windows
Go to Settings to activate Windows.

15:23 01-10-2024

Instances | EC2 | us-east-1 | EC2 Instance Connect | EC2 Instance Connect | EC2 Instance Connect | EC2 Instance Connect | Sign in [Jenkins]

Not secure 3.135.196.190:8080/login?from=%2F

Sign in to Jenkins

Username

admin

Password

.....

Keep me signed in

Sign in

Activate Windows
Go to Settings to activate Windows.

15:24 01-10-2024

Instances | EC2 | us-east-1 | EC2 Instance Connect | EC2 Instance Connect | EC2 Instance Connect | EC2 Instance Connect | Dashboard [Jenkins] | +

Not secure 3.135.196.190:8080

Jenkins

Search (CTRL+K) ? ! 1 Nagesha KS log out

Dashboard >

+ New Item Add description

All +

S	W	Name	Last Success	Last Failure	Last Duration
...	...	Prod job	N/A	N/A	N/A
...	...	Prod jobs	N/A	N/A	N/A
✓	...	sample-job	2 days 16 hr #4	N/A	0.23 sec
...	...	Test job	N/A	N/A	N/A

Icon: S M L

Build Queue (2)

- Test job
- Prod jobs

Build Executor Status

- Built-In Node
 - 1 Idle
 - 2 Idle
 - Prod Server (offline)

Activate Windows
Go to Settings to activate Windows.

15:24 01-10-2024

This screenshot shows the Jenkins dashboard. On the left, there's a sidebar with links for 'New Item', 'Build History', 'Manage Jenkins', and 'My Views'. It also displays sections for 'Build Queue' (with two items: 'Test job' and 'Prod jobs') and 'Build Executor Status' (with one 'Built-In Node' having 1 idle and 2 offline executors, including 'Prod Server'). The main area is a table listing four Jenkins jobs: 'Prod job', 'Prod jobs', 'sample-job', and 'Test job'. The 'sample-job' row is highlighted with a green checkmark icon. The table columns include 'S' (Status), 'W' (Icon), 'Name', 'Last Success', 'Last Failure', and 'Last Duration'. A search bar at the top right contains the placeholder 'Search (CTRL+K)'. The top navigation bar shows several tabs labeled 'Instances | EC2 | us-east-1 | EC2 Instance Connect' repeated multiple times, followed by 'Dashboard [Jenkins]' and a '+' button. The address bar indicates the URL is '3.135.196.190:8080' and the connection is 'Not secure'. The system tray at the bottom right shows the date and time as '15:24 01-10-2024'.

Instances | EC2 | X | EC2 Instance Co | X | Deployments | K | X | New File at / - N | X | +

kubernetes.io/docs/concepts/workloads/controllers/deployment/

kubernetes

Documentation Kubernetes Blog Training Partners Community Case Studies Versions ▾ English ▾

Creating a Deployment

The following is an example of a Deployment. It creates a ReplicaSet to bring up three `nginx` Pods:

```
controllers/nginx-deployment.yaml
```

```
apiVersion: apps/v1
kind: Deployment
metadata:
  name: nginx-deployment
  labels:
    app: nginx
spec:
  replicas: 3
  selector:
    matchLabels:
      app: nginx
  template:
    metadata:
      labels:
        app: nginx
```

[Deployment API reference](#)

[Edit this page](#)

[Create child page](#)

[Create documentation issue](#)

[Print entire section](#)

Use Case

Creating a Deployment

Pod-template-hash label

Updating a Deployment

Rollover (aka multiple updates in-flight)

Label selector updates

Rolling Back a Deployment

Checking Rollout History of a Deployment

Rolling Back to a Previous Revision

Scaling a Deployment

Activate Windows

Go to Settings to activate Windows.

16:39 01-10-2024

Instances | EC2 | EC2 Instance Co | EC2 Instance Co | EC2 Instance Co | EC2 Instance Co | Deployments | New File at / - N

github.com/Nag9516/Caps1Project1/new/master

Nag9516 / Caps1Project1

Type to search

Code Pull requests Actions Projects Wiki Security Insights Settings

Caps1Project1 / deploy.yaml in master

Cancel changes Commit changes...

Edit Preview Code 55% faster with GitHub Copilot Spaces 2 No wrap

```
1 apiVersion: apps/v1
2 kind: Deployment
3 metadata:
4   name: my-deployment
5 spec:
6   replicas: 2
7   template:
8     metadata:
9       labels:
10      app: my-deployment
11   spec:
12     containers:
13       - name: my-deployment
14         image: nag9516/proj2
15       ports:
16         - containerPort: 80
```

Activate Windows
Go to Settings to activate Windows.

Use **Control + Shift + m** to toggle the **tab** key moving focus. Alternatively, use **esc** then **tab** to move to the next interactive element on the page.

16:39 01-10-2024

A screenshot of a web browser window showing a GitHub repository page. The browser tab bar at the top has multiple tabs open, including several EC2-related tabs and a Deployments tab. The main content area shows the GitHub interface for the repository 'Caps1Project1' under the user 'Nag9516'. The 'Code' tab is selected, displaying the 'master' branch. The commit history table lists five commits:

Name	Last commit message	Last commit date
images	final	5 years ago
Dockerfile	Create Dockerfile	3 days ago
deploy.yaml	Create deploy.yaml	now
index.html	modified	5 years ago

Below the commit table, there is a message: "This branch is 2 commits ahead of hshar/website:master .". On the right side of the page, there are buttons for "Contribute" and "Sync fork". At the bottom right, there is a message: "Activate Windows Go to Settings to activate Windows." The taskbar at the bottom of the screen shows various application icons.

Instances | EC2 | EC2 Instance Co | EC2 Instance Co | EC2 Instance Co | EC2 Instance Co | k8s svc - Google | New File at / - N | + | - | X

← → × ⚙️ google.com/search?q=k8s+svc&sca_esv=8e2615eba92645e6&sca_upv=1&sxsrf=ADLYWIII-kz7NIFEvaogKuziOYZkJmPQ%3A1727780244172&ei=INX7ZtH9CYubvr0P6uTk... ☆ N :

Google

k8s svc

All Images Videos News Web Maps More Tools

Kubernetes
<https://kubernetes.io> › concepts › services-networking

Service
25 Jun 2024 — In **Kubernetes**, a **Service** is a method for exposing a network application that is running as one or more Pods in your cluster.

Services, Load Balancing, and... DNS for Services and Pods Ingress

People also ask :

What is svc in k8s?

How to create svc in Kubernetes?

What is the difference between service and deployment in k8s?

What is capi k8s?

Feedback

Activate Windows
Go to Settings to activate Windows.

16:45 01-10-2024

Instances | EC2 | EC2 Instance Co | EC2 Instance Co | EC2 Instance Co | EC2 Instance Co | Service | Kubernetes | New File at / - N | + | - | X

kubernetes.io/docs/concepts/services-networking/service/#type-nodeport

kubernetes

Documentation Kubernetes Blog Training Partners Community Case Studies Versions ▾ English ▾

Search this site

- ▶ Documentation
- ▶ Getting started
- ▼ Concepts
 - ▶ Overview
 - ▶ Cluster Architecture
 - ▶ Containers
 - ▶ Workloads
 - ▼ Services, Load Balancing, and Networking
 - Service**
 - Ingress
 - Ingress Controllers
 - Gateway API
 - EndpointSlices
 - Network Policies

type: NodePort

If you set the `type` field to `NodePort`, the Kubernetes control plane allocates a port from a range specified by `--service-node-port-range` flag (default: 30000-32767). Each node proxies that port (the same port number on every Node) into your Service. Your Service reports the allocated port in its `.spec.ports[*].nodePort` field.

Using a NodePort gives you the freedom to set up your own load balancing solution, to configure environments that are not fully supported by Kubernetes, or even to expose one or more nodes' IP addresses directly.

For a node port Service, Kubernetes additionally allocates a port (TCP, UDP or SCTP to match the protocol of the Service). Every node in the cluster configures itself to listen on that assigned port and to forward traffic to one of the ready endpoints associated with that Service. You'll be able to contact the `type: NodePort` Service, from outside the cluster, by connecting to any node using the appropriate protocol (for example: TCP), and the appropriate port (as assigned to that Service).

Choosing your own port

[Service API reference](#)
[Edit this page](#)
[Create child page](#)
[Create documentation issue](#)
[Print entire section](#)

Services in Kubernetes
Cloud-native service discovery
Defining a Service
Port definitions
Services without selectors
EndpointSlices
Endpoints
Application protocol
Multi-port Services
Service type

Activate Windows
Go to Settings to activate Windows.

16:46 01-10-2024

Instances | EC2 | X | EC2 Instance Co | X | Service | Kuber | X | New File at / - N | X | + | - | □ | X

← → ⌂ kubernetes.io/docs/concepts/services-networking/service/#type-nodeport

star N :

kubernetes

Documentation Kubernetes Blog Training Partners Community Case Studies Versions ▾ English ▾

Search this site

- ▶ Documentation
- ▶ Getting started
- ▼ Concepts
 - ▶ Overview
 - ▶ Cluster Architecture
 - ▶ Containers
 - ▶ Workloads
 - ▼ Services, Load Balancing, and Networking
 - Service
 - Ingress
 - Ingress Controllers
 - Gateway API
 - EndpointSlices
 - Network Policies

Here is an example manifest for a Service of type: NodePort that specifies a NodePort value (30007, in this example):

```
apiVersion: v1
kind: Service
metadata:
  name: my-service
spec:
  type: NodePort
  selector:
    app.kubernetes.io/name: MyApp
  ports:
    - port: 80
      # By default and for convenience, the `targetPort` is set
      # the same value as the `port` field.
      targetPort: 80
      # Optional field
      # By default and for convenience, the Kubernetes control p
      # will allocate a port from a range (default: 30000-32767)
      nodePort: 30007
```

Service API reference
Edit this page
Create child page
Create documentation issue
Print entire section

Services in Kubernetes
Cloud-native service discovery
Defining a Service
Port definitions
Services without selectors
EndpointSlices
Endpoints
Application protocol
Multi-port Services
Service type

Activate Windows
Go to Settings to activate Windows.

16:48 01-10-2024

A screenshot of a web browser window showing a GitHub repository page. The browser tab bar has multiple tabs open, including several EC2-related pages and a Kubernetes service page. The main content area displays the GitHub interface for the repository 'Caps1Project1'.

The GitHub page shows the following details:

- Code** tab is selected.
- Branch**: master
- Commits**:
 - Nag9516 Create svc.yaml (25cc79c · now)
 - 3 commits ahead of hshar/website:master
- Last commit message**: Create svc.yaml
- Last commit date**: now
- Contributors**: Nag9516
- Sync fork** button
- File list**:
 - images (final, 5 years ago)
 - Dockerfile (Create Dockerfile, 3 days ago)
 - deploy.yaml (Create deploy.yaml, 8 minutes ago)
 - index.html (modified, 5 years ago)
 - svc.yaml (Create svc.yaml, now)

At the bottom of the page, there is a message: "Activate Windows Go to Settings to activate Windows." The system tray at the bottom right shows the date and time as 01-10-2024 16:52.

Commands

goto AWS console and launch EC2 machine

Rename it as **Nagesha-DevOps-Caps2-J-M**

connect ec2 instance dashboard to SSH

sudo apt update

infrastructure using Terraform

goto google and search for terraform installation on ubuntu

you will get Hashicorp Developer

<https://developer.hashicorp.com/terraform/tutorials/aws-get-started/install-cli>

Install Terraform

goto install terraform linux

under this select Ubuntu/Debian

-----Ensure that your system is up to date and you have installed the gnupg, software-properties-common, and curl packages installed.

'-----You will -----use these packages to verify HashiCorp's GPG signature and install HashiCorp's Debian package repos

sudo apt-get update && sudo apt-get install -y gnupg software-properties-common

-----Install the HashiCorp GPG key.

wget -O https://apt.releases.hashicorp.com/gpg | \

gpg --dearmor | \

sudo tee /usr/share/keyrings/hashicorp-archive-keyring.gpg > /dev/null

-----Verify the key's fingerprint.

gpg --no-default-keyring \

--keyring /usr/share/keyrings/HashiCorp-archive-keyring.gpg \

--fingerprint

-----Add the official HashiCorp repository to your system. the lsb_release -cs command finds the distribution release codename for your current -----system, such as buster, groovy, or sid.

echo "deb [signed-by=/usr/share/keyrings/hashicorp-archive-keyring.gpg] \

https://apt.releases.hashicorp.com \$(lsb_release -cs) main" | \

sudo tee /etc/apt/sources.list.d/hashicorp.list

=====Download the package information from HashiCorp.

```
sudo apt update
```

=====Install Terraform from the new repository.

```
sudo apt-get install terraform
```

=====once Terraform has been installed, check the version

```
terraform --version
```

Install Ansible

```
sudo nano a.sh
```

```
sudo apt update
```

```
sudo apt install software-properties-common
```

```
sudo add-apt-repository --yes --update ppa:ansible/ansible
```

```
sudo apt install ansible -y
```

```
bash a.sh
```

create access key using AWS console

goto Identity and Access Management (IAM) dashboard > security credentials > actions

click create access key

choose command Line Interface (CLI)

check Confirmation > click next

set description tag -optional

project2

click next

copy the access key and paste it on the main.tf script

copy the securitykey and paste it on the main.tf script

click done

check region as well

```
sudo nano main.tf
```

```
provider "aws" {  
  secret_key = "i5aU/fPY//1KW4l+09c4khDbd4cSqzYEkkKKx8eK"  
  access_key = "AKIAUGY55HWTXHITOAGD"  
  region = "us-east-2" # Adjust the region as needed  
}
```

```
# Launch EC2 instance for Kubernetes master
```

```
resource "aws_instance" "K8-M" {  
  ami = "ami-00eb69d236edcfaf8"  
  instance_type = "t2.medium"  
  key_name = "Nagesha-Keypair"  
  tags = {  
    Name = "K8s-M/J-s"  
  }  
}
```

```
# Launch EC2 instances for Kubernetes slave1 nodes
```

```
resource "aws_instance" "K8-S1" {  
  ami = "ami-00eb69d236edcfaf8"  
  instance_type = "t2.micro"  
  key_name = "Nagesha-Keypair"  
  tags = {  
    Name = "K8s-S1"  
  }  
}
```

```
# Launch EC2 instances for Kubernetes slave2 nodes
```

```
resource "aws_instance" "K8-S2" {  
  ami = "ami-00eb69d236edcfaf8"  
  instance_type = "t2.micro"  
  key_name = "Nagesha-Keypair"  
  tags = {  
    Name = "K8s-S2"  
  }  
}
```

----initialize Terraform

```
terraform init  
terraform plan  
terraform apply  
enter value: yes
```

next is to create Ansible so that ansible playbook is used

now connect new instances K8s master and its K8s slave1 and K8s slave to SSH

K8s-M/J-s	Kubernetes master but slave to Jenkins
K8s-S1	Kubernetes Slave1
K8s-S2	Kubernetes Slave2

sudo apt update # are done at all K82 master and its slaves too

goto J-M master this is our Jenkins master machine. we need to connect this to slaves
we need to connect through SSH password connection

```
ssh-keygen  
cd .ssh  
cat id_rsa.pub
```

```
ssh-rsa AAAAB3NzaC1yc2EAAAQABAAQgQDYZ9V0SnEmajop
YAeTAQUUkPGq22fVIXTHnPSQ3kgdgjqdsRYkzCnKG2Rax
5D13IRz2hFrtK+FCV0En8K6+h+7Mn1ampB7hgsQsNzfvVoz07e
bgQ0UPFzBrL2x1a3Nc32mlr48Ri0b9ohCbsYPDHn6zDzQosHCD080FAjfdriShCW6PHTFO2sD2KLYbxReeHzaxsHb1PCNXnzul
J5N3IZYkNtDdF3/kUN6zBG7cGoncEDRkfUYOz5iCK7dTH
M0pApHWP9dKXvgfcCTUqGCvfB8R3vog0J7ieYxv8hdDJ0I+vbCQKPH2ywXYdzvdmWTkn8extmphymluOnkYJPBC2kZ2x7
AGUBMETkCowcnYZOoK1T74hBuNBhSPW6VoyKA79yEjKZl
Jo3PAIG9X1V0xpUiI/H/sFuboiFr+2dfGnOggiXUbXuypuWSM9Z979AB/3euRBEa8VVCFBzCFj2eSwefOp6Lye8+1SchZxZV+XIF0SKoKwrWIJy8Py4B0Hk33M= ubuntu@ip-172-31-5-220
```

```
goto K8s-M/J-s
```

```
sudo nano .ssh/authorized_keys
```

```
# copy the above pulic key
```

```
sudo cat .ssh/authorized_keys
```

```
goto K8s-S1
```

```
sudo nano .ssh/authorized_keys
```

```
# copy the above pulic key
```

```
sudo cat .ssh/authorized_keys
```

```
goto K8s-S2
```

```
sudo nano .ssh/authorized_keys
```

```
# copy the above pulic key
```

```
sudo cat .ssh/authorized_keys
```

```
goto J-M master
```

```
# go to Ansible drive
```

```
cd /etc/ansible/
```

```
ls
```

```
# here we see hosts file
```

```
sudo nano hosts
```

```
# delete all the conents and add the following code
```

```
[k8s-m/J-s]
# add the private ip of k8s-m/J-s
172.31.20.222
[k8s-S1]
# add the private ip of k8s-S1
172.31.33.26
[k8s-S2]
# add the private ip of k8s-S2
172.31.34.69
ansible -m ping all
# type yes for all queries it asks. do not type y; instead type yes
you will get green colour means its connecting; if you get red means not connected
```

goto J-M master

```
sudo nano play.yaml
```

```
---
- name: Executing script for Java and Jenkins on master
  hosts: localhost
  become: true
  tasks:
    - name: Run localhost.sh script
      script: localhost.sh

- name: Executing script for installation of Java, Docker, Kubernetes on k8s-master
  hosts: k8s-m
  become: true
  tasks:
    - name: Run master.sh script
      script: master.sh

- name: Executing script for Kubernetes installation on slave1
  hosts: k8s-s1
  become: true
```

tasks:

```
- name: Run slaves.sh script on k8s-s1
  script: slaves.sh
```

```
- name: Executing script for Kubernetes installation on slave2
```

hosts: k8s-s2

become: true

tasks:

```
- name: Run slaves.sh script on k8s-s2
  script: slaves.sh
```

sudo nano localhost.sh

```
sudo apt update
sudo apt install openjdk-17-jdk -y
sudo wget -O /usr/share/keyrings/jenkins-keyring.asc \
https://pkg.jenkins.io/debian-stable/jenkins.io-2023.key
echo "deb [signed-by=/usr/share/keyrings/jenkins-keyring.asc]" \
https://pkg.jenkins.io/debian-stable binary/ sudo tee \
/etc/apt/sources.list.d/jenkins.list> /dev/null
sudo apt-get update
sudo apt-get install jenkins -y
```

sudo nano master.sh

```
sudo apt update
sudo apt install openjdk-17-jdk -y
# copy kuberntes document "Installing kuberntes cluster" has to be downloaded
## Execute on Both "Master" & "Worker Node"
# disable swap
sudo swapoff -a

# Create the .conf file to load the modules at bootup
cat <<EOF | sudo tee /etc/modules-load.d/k8s.conf
overlay
```

```
br_netfilter
EOF
```

```
sudo modprobe overlay
sudo modprobe br_netfilter
```

```
# sysctl params required by setup, params persist across reboots
cat <<EOF | sudo tee /etc/sysctl.d/k8s.conf
net.bridge.bridge-nf-call-iptables = 1
net.bridge.bridge-nf-call-ip6tables = 1
net.ipv4.ip_forward = 1
EOF
```

```
# Apply sysctl params without reboot
sudo sysctl --system
```

```
## Install CRI-O Runtime
sudo apt-get update -y
sudo apt-get install -y software-properties-common curl apt-transport-https ca-certificates gpg
```

```
sudo curl -fsSL https://pkgs.k8s.io/addons:/cri-o:/prerelease:/main/deb/Release.key | sudo gpg --dearmor -o /etc/apt/keyrings/cri-o-apt-keyring.gpg
echo "deb [signed-by=/etc/apt/keyrings/cri-o-apt-keyring.gpg] https://pkgs.k8s.io/addons:/cri-o:/prerelease:/main/deb/ /" | sudo tee /etc/apt/sources.list.d/cri-o.list
```

```
sudo apt-get update -y
sudo apt-get install -y cri-o
```

```
sudo systemctl daemon-reload
sudo systemctl enable crio --now
sudo systemctl start crio.service
```

```
echo "CRI runtime installed successfully"
```

```
# Add Kubernetes APT repository and install required packages
```

```
curl -fsSL https://pkgs.k8s.io/core:/stable:/v1.29/deb/Release.key | sudo gpg --dearmor -o /etc/apt/keyrings/kubernetes-apt-keyring.gpg
echo 'deb [signed-by=/etc/apt/keyrings/kubernetes-apt-keyring.gpg] https://pkgs.k8s.io/core:/stable:/v1.29/deb/ /' | sudo tee /etc/apt/sources.list.d/kubernetes.list
```

```
sudo apt-get update -y
sudo apt-get install -y kubelet="1.29.0-*" kubectl="1.29.0-*" kubeadm="1.29.0-*"
sudo apt-get update -y
sudo apt-get install -y jq
```

```
sudo systemctl enable --now kubelet
sudo systemctl start kubelet
```

sudo nano slaves.sh

```
## Execute on Both "Master" & "Worker Node"
# disable swap
sudo swapoff -a

# Create the .conf file to load the modules at bootup
cat <<EOF | sudo tee /etc/modules-load.d/k8s.conf
overlay
br_netfilter
EOF

sudo modprobe overlay
sudo modprobe br_netfilter

# sysctl params required by setup, params persist across reboots
cat <<EOF | sudo tee /etc/sysctl.d/k8s.conf
net.bridge.bridge-nf-call-iptables = 1
net.bridge.bridge-nf-call-ip6tables = 1
net.ipv4.ip_forward      = 1
EOF

# Apply sysctl params without reboot
```

```
sudo sysctl --system

## Install CRI-O Runtime
sudo apt-get update -y
sudo apt-get install -y software-properties-common curl apt-transport-https ca-certificates gpg

sudo curl -fsSL https://pkgs.k8s.io/addons:/cri-o:/prerelease:/main/deb/Release.key | sudo gpg --dearmor -o /etc/apt/keyrings/cri-o-apt-keyring.gpg
echo "deb [signed-by=/etc/apt/keyrings/cri-o-apt-keyring.gpg] https://pkgs.k8s.io/addons:/cri-o:/prerelease:/main/deb/ /" | sudo tee /etc/apt/sources.list.d/cri-o.list

sudo apt-get update -y
sudo apt-get install -y cri-o

sudo systemctl daemon-reload
sudo systemctl enable crio --now
sudo systemctl start crio.service

echo "CRI runtime installed successfully"

# Add Kubernetes APT repository and install required packages
curl -fsSL https://pkgs.k8s.io/core:/stable:/v1.29/deb/Release.key | sudo gpg --dearmor -o /etc/apt/keyrings/kubernetes-apt-keyring.gpg
echo 'deb [signed-by=/etc/apt/keyrings/kubernetes-apt-keyring.gpg] https://pkgs.k8s.io/core:/stable:/v1.29/deb/ /' | sudo tee /etc/apt/sources.list.d/kubernetes.list

sudo apt-get update -y
sudo apt-get install -y kubelet="1.29.0-*" kubectl="1.29.0-*" kubeadm="1.29.0-*"
sudo apt-get update -y
sudo apt-get install -y jq

sudo systemctl enable --now kubelet
sudo systemctl start kubelet

#once scripts are done, we need to check the syntax
ansible-playbook play.yaml --syntax-check
```

dry run

```
ansible-playbook play.yaml --check
```

execute

```
ansible-playbook play.yaml
```

next we need to setup the Kubernetes cluster

```
goto ec2 machine K8s-M/J-s
```

Execute ONLY on "Master Node"

```
sudo kubeadm config images pull
```

```
sudo kubeadm init
```

```
mkdir -p "$HOME"/.kube
```

```
sudo cp -i /etc/kubernetes/admin.conf "$HOME"/.kube/config
```

```
sudo chown "$(id -u)":"$(id -g)" "$HOME"/.kube/config
```

```
# Network Plugin = calico
```

```
kubectl apply -f https://raw.githubusercontent.com/projectcalico/calico/master/manifests/calico.yaml
```

login as root or super user

Execute on ALL of your Worker Node's

1. Perform pre-flight checks

```
sudo kubeadm reset pre-flight checks
```

```
xxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxx
```

```
kubeadm join 172.31.20.58:6443 --token r12e1e.18ghos7i4tle28x9 \
```

```
    --discovery-token-ca-cert-hash sha256:a0405ceabcb70961e119ed09069073d6f4bd70cd74feb98937de0cf1a94d38ee
```

```
xxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxx
```

2. Paste the join command you got from the master node and append `--v=5` at the end but first use sudo su command to become root (avoid using sudo your-token).

```
sudo su
<your-token --v=5>
sudo su
kubeadm join 172.31.20.58:6443 --token r12e1e.18ghos7i4tle28x9 \
--discovery-token-ca-cert-hash sha256:a0405ceabcb70961e119ed09069073d6f4bd70cd74feb98937de0cf1a94d38ee --v=5
```

goto ec2 machine K8s-S2

login as root or super user

Execute on ALL of your Worker Node's

1. Perform pre-flight checks

```
sudo kubeadm reset pre-flight checks
```

xx

```
kubeadm join 172.31.20.58:6443 --token r12e1e.18ghos7i4tle28x9 \
--discovery-token-ca-cert-hash sha256:a0405ceabcb70961e119ed09069073d6f4bd70cd74feb98937de0cf1a94d38ee
xxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxx
```

2. Paste the join command you got from the master node and append `--v=5` at the end but first use sudo su command to become root (avoid using sudo your-token).

```
sudo su
<your-token --v=5>
sudo su
kubeadm join 172.31.20.58:6443 --token r12e1e.18ghos7i4tle28x9 \
--discovery-token-ca-cert-hash sha256:a0405ceabcb70961e119ed09069073d6f4bd70cd74feb98937de0cf1a94d38ee --v=5
```

goto k8s-M/J-s

now the setup has been completed and check

```
kubectl get nodes
```

next we need to setup Jenkins dashboard

```
copy the public IP of Nagesha-DevOps-Caps2-J-M
public IP: 3.135.196.190 and paste on browser with port :8080
```

Jenkins Dashboard > Job > Configure

Definition

Pipeline script

```
pipeline {
```

```
    agent none
```

```
    environment {
```

```
        DOCKERHUB_CREDENTIALS = credentials("")
```

```
    stages {
```

```
        stage('git') {
```

```
            agent {
```

```
                label "k8s-Master"
```

```
            }
```

```
            steps {
```

```
                script {
```

```
                    git 'https://github.com/nag9516/project1.git'
```

```
                }
```

```
            }
```

```
        }
```

```
    }
```

```
}
```

```
}
```

save it

to build this script, we need to create Dockerhub credentials

Jenkins Dashboard>manage jenkins>credentials

configure credentials

goto global and add credentials

New credentials

username: nag9516

password: ****

create

copy the id into script job

dockerhub credentials is done
now build the job

goto console output

finished: success

goto k8s-M/J-s

ls

cd jenkins

cd workspace

ls

cd Job/

ls

Dockerfile images index.html are present here

now the code has been cloned to server node

install Docker on kubernetes master and slave1 and slave2, if docker is not installed

sudo apt install docker.io -y

goto job again

here we will build 2nd stage and pushing it

goto Jenkins Dashboard>Job>Configuration

here the stage will be docker instead of git

here the script will be

sh 'sudo docker build .-t nag9516/proj2'

sh 'sudo docker login -u \${DOCKERHUB_CREDENTIALS_USR} -p \${DOCKERHUB_CREDENTIALS_PSW}'

sh 'sudo docker push nag9516/proj2'

usr for username

psw for password

build now it has been pushed

goto hub.docker.com

goto profile here we will see one image pushed

next and last step is deployment and service

```
goto jenkins dashboard>job.configuration  
modify the script  
execute the scripts deployment and service scripts  
goto github >code and add the deploy.yaml  
go to google and search for k8s deployment  
copy the nginx deployment
```

go to google and search for k8s deployment

```
apiVersion: apps/v1
```

kind: Deployment

```
metadata:  
  name: my-deployment  
spec:  
  replicas: 2  
template:  
  metadata:  
    labels:  
      app: my-deployment  
spec:  
  containers:  
  - name: my-deployment  
    image: nag9516/proj2  
    ports:  
    - containerPort: 80  
-- commit
```

```
goto jenkins > dashboard > job > configuration  
modify the script  
script {  
sh 'kubectl create deployment my-deployment --replicas=2 --image=nag9516/proj2'
```

```
goto k8s-M/J-s  
get deployment
```

now we shall create service
goto github repository
create svc.yaml file

goto google and serach for k8s svc

goto nodeport

```
apiVersion: v1
kind: Service
metadata:
  name: my-service
spec:
  type: NodePort
  selector:
    app.kubernetes.io/name: My-deployment
  ports:
    - port: 80
      targetPort: 80
      nodePort: 30008
```

goto Jenkins Dashboard > Job > Configure

here modify the pipeline by adding a code

```
script {
  sh 'kubectl delete deployment my-deployment'
```

build now

check console output

goto k8s-M/J-s
sudo docker images
get deployment
kubectl get svc