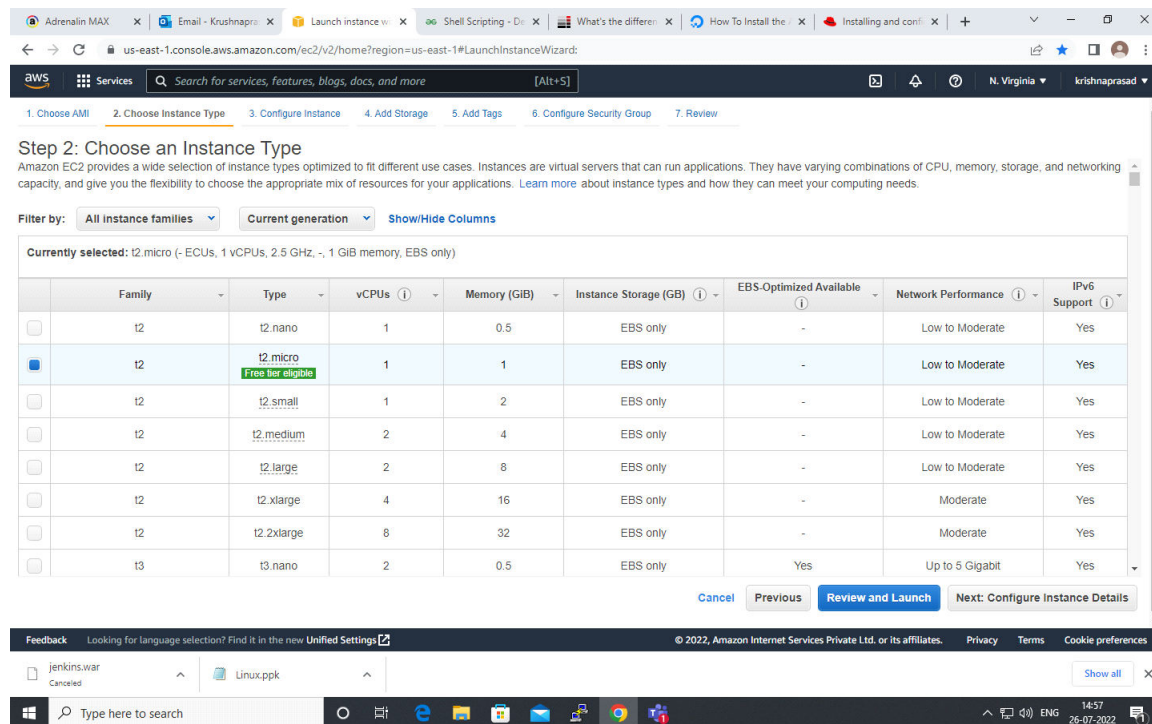


Shell Scripting

A shell script is a text file that contains a sequence of commands for a UNIX-based operating system. It is called a shell script because it combines a sequence of commands, that would otherwise have to be typed into the keyboard one at a time, into a single script. The shell is the operating system's command-line interface (CLI) and interpreter for the set of commands that are used to communicate with the system.

Step 1: Launch A EC2 Instance.



Step 2: Choose an Instance Type
Amazon EC2 provides a wide selection of instance types optimized to fit different use cases. Instances are virtual servers that can run applications. They have varying combinations of CPU, memory, storage, and networking capacity, and give you the flexibility to choose the appropriate mix of resources for your applications. [Learn more](#) about instance types and how they can meet your computing needs.

Filter by: All Instance families Current generation Show/Hide Columns

Currently selected: t2.micro (- ECUs, 1 vCPUs, 2.5 GHz, -, 1 GiB memory, EBS only)

	Family	Type	vCPUs	Memory (GiB)	Instance Storage (GB)	EBS-Optimized Available	Network Performance	IPv6 Support
<input type="checkbox"/>	t2	t2.nano	1	0.5	EBS only	-	Low to Moderate	Yes
<input checked="" type="checkbox"/>	t2	t2.micro <small>Free tier eligible</small>	1	1	EBS only	-	Low to Moderate	Yes
<input type="checkbox"/>	t2	t2.small	1	2	EBS only	-	Low to Moderate	Yes
<input type="checkbox"/>	t2	t2.medium	2	4	EBS only	-	Low to Moderate	Yes
<input type="checkbox"/>	t2	t2.large	2	8	EBS only	-	Low to Moderate	Yes
<input type="checkbox"/>	t2	t2.xlarge	4	16	EBS only	-	Moderate	Yes
<input type="checkbox"/>	t2	t2.2xlarge	8	32	EBS only	-	Moderate	Yes
<input type="checkbox"/>	t3	t3.nano	2	0.5	EBS only	Yes	Up to 5 Gigabit	Yes

Cancel Previous **Review and Launch** Next: Configure Instance Details

Feedback Looking for language selection? Find it in the new Unified Settings

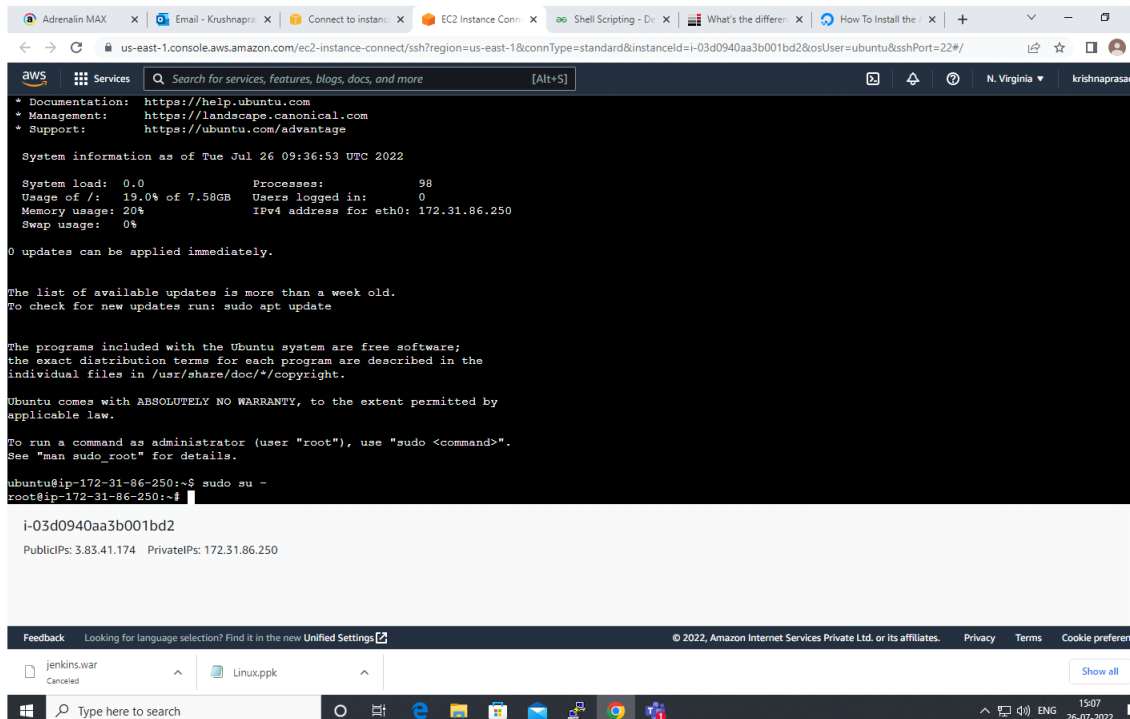
© 2022, Amazon Internet Services Private Ltd. or its affiliates. Privacy Terms Cookie preferences

jenkins.war Canceled Linux.ppk Show all X

Type here to search

14:57 26-07-2022

Step 2: Connect to the instance and switch to root user using SUDO SU- command.



The screenshot shows a terminal window within the AWS Management Console. The terminal output includes system information for an Ubuntu instance as of July 26, 2022. It reports a system load of 0.0, 98 processes, 19.0% disk usage, 20% memory usage, and 0% swap usage. It also indicates that 0 updates can be applied immediately and that the list of available updates is more than a week old. The terminal prompt shows the user is root@ip-172-31-86-250.

```
aws
Services
Search for services, features, blogs, docs, and more [Alt+S]
Documentation: https://help.ubuntu.com
Management: https://landscape.canonical.com
Support: https://ubuntu.com/advantage

System information as of Tue Jul 26 09:36:53 UTC 2022

System load: 0.0          Processes: 98
Usage of /: 19.0% of 7.58GB   Users logged in: 0
Memory usage: 20%          IPv4 address for eth0: 172.31.86.250
Swap usage: 0%

0 updates can be applied immediately.

The list of available updates is more than a week old.
To check for new updates run: sudo apt update

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.

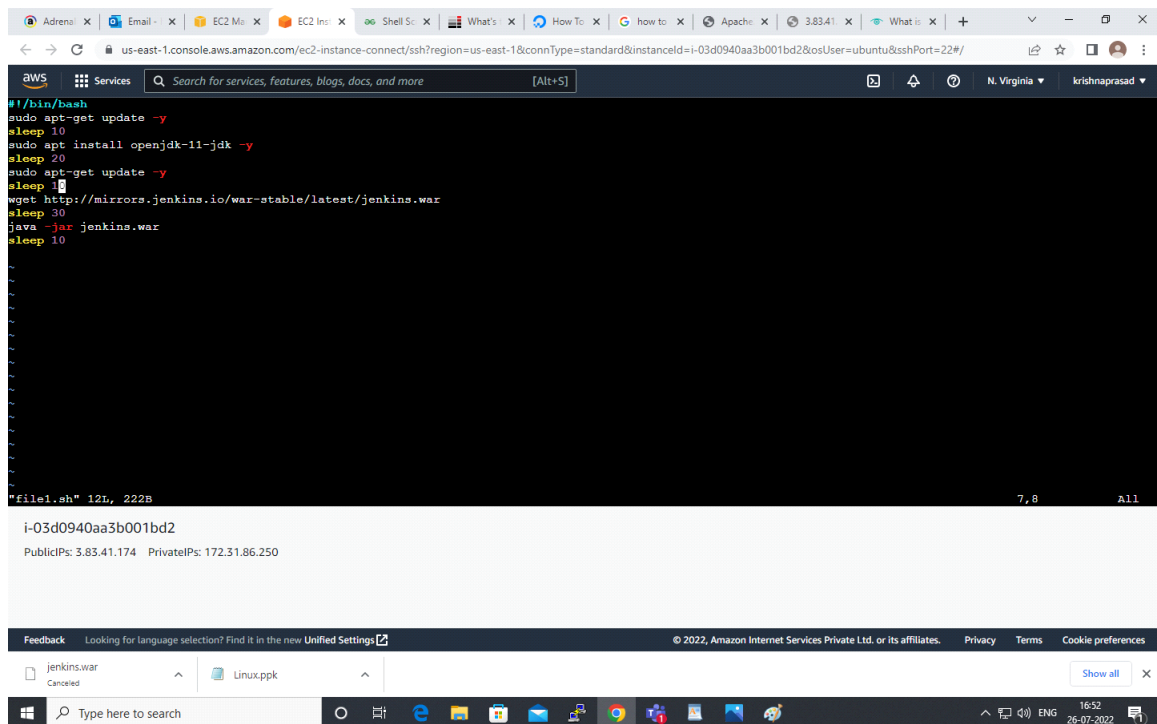
To run a command as administrator (user "root"), use "sudo <command>".
See "man sudo_root" for details.

ubuntu@ip-172-31-86-250:~$ sudo su -
root@ip-172-31-86-250:~#
```

i-03d0940aa3b001bd2
PublicIPs: 3.83.41.174 PrivateIPs: 172.31.86.250

jenkins.war Canceled Linux.ppk Show all

Step 3: Create a file using touch command and enter into the file by VIM. After that enter the commands for Jenkins Installation.



The screenshot shows a terminal window within the AWS Management Console. The terminal output displays a series of commands for installing Jenkins, including updating the package list, installing openjdk-11-jdk, and downloading the Jenkins war file from mirrors.jenkins.io. The terminal prompt shows the user is root@ip-172-31-86-250.

```
#!/bin/bash
sudo apt-get update -y
sleep 10
sudo apt install openjdk-11-jdk -y
sleep 20
sudo apt-get update -y
sleep 10
wget http://mirrors.jenkins.io/war-stable/latest/jenkins.war
sleep 30
java -jar jenkins.war
sleep 10
```

i-03d0940aa3b001bd2
PublicIPs: 3.83.41.174 PrivateIPs: 172.31.86.250

jenkins.war Canceled Linux.ppk Show all

Step 4: After executing it displays as below.

The screenshot shows the AWS Management Console interface for an EC2 instance. The terminal window displays the following logs:

```
2022-07-26 09:44:33.952+0000 [id=28] INFO jenkins.InitReactorRunner$1onAttained: System config loaded
2022-07-26 09:44:33.953+0000 [id=28] INFO jenkins.InitReactorRunner$1onAttained: System config adapted
2022-07-26 09:44:33.954+0000 [id=28] INFO jenkins.InitReactorRunner$1onAttained: Loaded all jobs
2022-07-26 09:44:33.956+0000 [id=28] INFO jenkins.InitReactorRunner$1onAttained: Configuration for all jobs updated
WARNING: An illegal reflective access operation has occurred
WARNING: Illegal reflective access by org.codehaus.groovy.vmplugin.v7.Jvm$1 (file:/root/.jenkins/war/WEB-INF/lib/groovy-all-2.4.21.jar) to constructor java.lang.invoke.MethodHandles$Lookup(java.lang.Class,int)
WARNING: Please consider reporting this to the maintainers of org.codehaus.groovy.vmplugin.v7.Jvm$1
WARNING: Use --illegal-access=warn to enable warnings of further illegal reflective access operations
WARNING: All illegal access operations will be denied in a future release
2022-07-26 09:44:34.957+0000 [id=43] INFO hudson.model.AsyncPeriodicWork$lambda$doRun$1: Started Download metadata
2022-07-26 09:44:34.992+0000 [id=43] INFO hudson.util.Retrier$1start: Attempt #1 to do the action check updates server
2022-07-26 09:44:35.022+0000 [id=29] INFO jenkins.install.SetupWizard$init:

*****
*****
*****

Jenkins initial setup is required. An admin user has been created and a password generated.
Please use the following password to proceed to installation:

7b7d80b1b184d6fb54b97980d9740f4

This may also be found at: /root/.jenkins/secrets/initialAdminPassword

*****
*****
*****
```

Below the logs, the instance ID is shown as `i-03d0940aa3b001bd2`. The public IP is `3.83.41.174` and the private IP is `172.31.86.250`. The bottom of the console shows the taskbar with various application icons and the system clock indicating 15:14 on 26-07-2022.

Step 5: Now, create another file for Git and Maven. Give the commands required for installation of Git and Maven.

The screenshot shows the AWS Management Console interface for the same EC2 instance. The terminal window displays the following commands and output:

```
#!/bin/bash
sudo apt-get install -y git maven
sleep 20
```

The output shows the installation progress for both Git and Maven. The instance ID is `i-03d0940aa3b001bd2`, with public IP `3.83.41.174` and private IP `172.31.86.250`. The bottom of the console shows the taskbar with various application icons and the system clock indicating 15:28 on 26-07-2022.

Step 6: To check installed versions use `Git --version` and `Mvn -version` commands.

The screenshot shows an AWS console terminal window with the following output:

```
Setting up libjansi-native-java (1.8-1) ...
Setting up libwagon-file-java (3.3.4-1) ...
Setting up libcommons-io-java (2.11.0-2) ...
Setting up libguice-java (4.2.3-2) ...
Setting up libjansi-java (1.18-1) ...
Setting up libmaven-shared-utils-java (3.3.0-1) ...
Setting up libmaven3-core-java (3.6.3-5) ...
Setting up maven (3.6.3-5) ...
update-alternatives: using /usr/share/maven/bin/mvn to provide /usr/bin/mvn (mvn) in auto mode
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.
root@ip-172-31-86-250:~# git --version
git version 2.34.1
root@ip-172-31-86-250:~# mvn -version
Apache Maven 3.6.3
Maven home: /usr/share/maven
Java version: 11.0.15, vendor: Private Build, runtime: /usr/lib/jvm/java-11-openjdk-amd64
Default locale: en, platform encoding: UTF-8
OS name: "linux", version: "5.15.0-1011-aws", arch: "amd64", family: "unix"
root@ip-172-31-86-250:~#
```

The terminal window is titled "i-03d0940aa3b001bd2" and shows public and private IP addresses. The bottom of the window displays the AWS console interface with a search bar and navigation links.

Step 7: Create another file for Mysql server. Enter, the commands for installing the mysql server.

The screenshot shows an AWS console terminal window with the following output:

```
#!/bin/bash
sudo apt install mysql-server -y
sleep 2
```

The terminal window is titled "i-03d0940aa3b001bd2" and shows public and private IP addresses. The bottom of the window displays the AWS console interface with a search bar and navigation links.

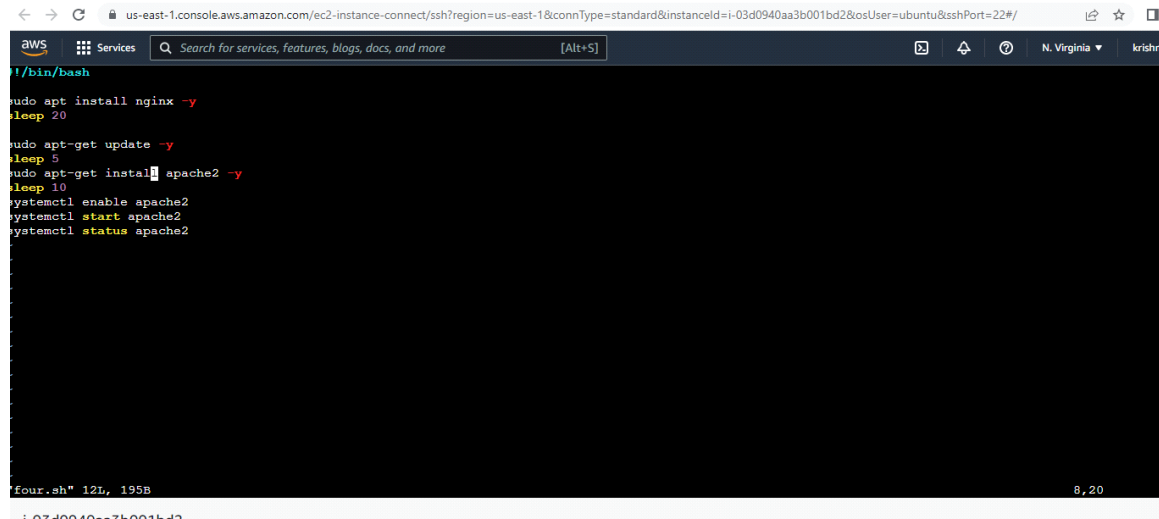
Step 8: After execution of command it appears as below.

```

root@ip-172-31-86-250:/etc/nginx/sites-enabled# systemctl restart nginx
Job for nginx.service failed because the control process exited with error code.
See "systemctl status nginx.service" and "journalctl -xeu nginx.service" for details.
root@ip-172-31-86-250:/etc/nginx/sites-enabled# vi default
root@ip-172-31-86-250:/etc/nginx/sites-enabled# systemctl restart nginx
root@ip-172-31-86-250:/etc/nginx/sites-enabled# ls
default
root@ip-172-31-86-250:/etc/nginx/sites-enabled# sudo su -
root@ip-172-31-86-250:~# ls
file1.sh file2.sh file3.sh four.sh jenkins.war snap
root@ip-172-31-86-250:~# vim file1.sh
root@ip-172-31-86-250:~# vim file2.sh
root@ip-172-31-86-250:~# vim file3.sh
root@ip-172-31-86-250:~# ./file3.sh
Reading package lists... Done
Building dependency tree... Done
Reading state information... Done
mysql-server is already the newest version (8.0.29-0ubuntu0.22.04.2).
0 upgraded, 0 newly installed, 0 to remove and 46 not upgraded.
root@ip-172-31-86-250:~#

```

Step 9: Give the commands for installation of Nginx and Apache.



```

aws
Services
Search for services, features, blogs, docs, and more [Alt+S]
N. Virginia krishna

~/bin/bash

sudo apt install nginx -y
sleep 20

sudo apt-get update -y
sleep 5

sudo apt-get install apache2 -y
sleep 10

systemctl enable apache2
systemctl start apache2
systemctl status apache2

four.sh" 12L, 195B
8,20

```

Step 10: Now, check that the Nginx webserver is installed.

```

root@ip-172-31-86-250:/etc/nginx/sites-enabled# vi default
root@ip-172-31-86-250:/etc/nginx/sites-enabled# systemctl restart nginx
Job for nginx.service failed because the control process exited with error code.
See "systemctl status nginx.service" and "journalctl -xeu nginx.service" for details.
root@ip-172-31-86-250:/etc/nginx/sites-enabled# vi default
root@ip-172-31-86-250:/etc/nginx/sites-enabled# systemctl restart nginx
root@ip-172-31-86-250:/etc/nginx/sites-enabled# ls
default
root@ip-172-31-86-250:/etc/nginx/sites-enabled# sudo su -
root@ip-172-31-86-250:~# ls
file1.sh file2.sh file3.sh four.sh jenkins.war snap
root@ip-172-31-86-250:~# vim file1.sh
root@ip-172-31-86-250:~# vim file2.sh
root@ip-172-31-86-250:~# vim file3.sh
root@ip-172-31-86-250:~# ./file3.sh
Reading package lists... Done
Building dependency tree... Done
Reading state information... Done
mysql-server is already the newest version (8.0.29-0ubuntu0.22.04.2).
0 upgraded, 0 newly installed, 0 to remove and 46 not upgraded.
root@ip-172-31-86-250:~# vim four.sh
root@ip-172-31-86-250:~# chmod +x four.sh
root@ip-172-31-86-250:~# ./four.sh
Reading package lists... Done
Building dependency tree... Done
Reading state information... Done
nginx is already the newest version (1.18.0-6ubuntu1.1).
0 upgraded, 0 newly installed, 0 to remove and 46 not upgraded.

```

Cocclusion: Installation of Jenkins, Mysql, Nginx, Git Maven and Apache through ShellScripting

