

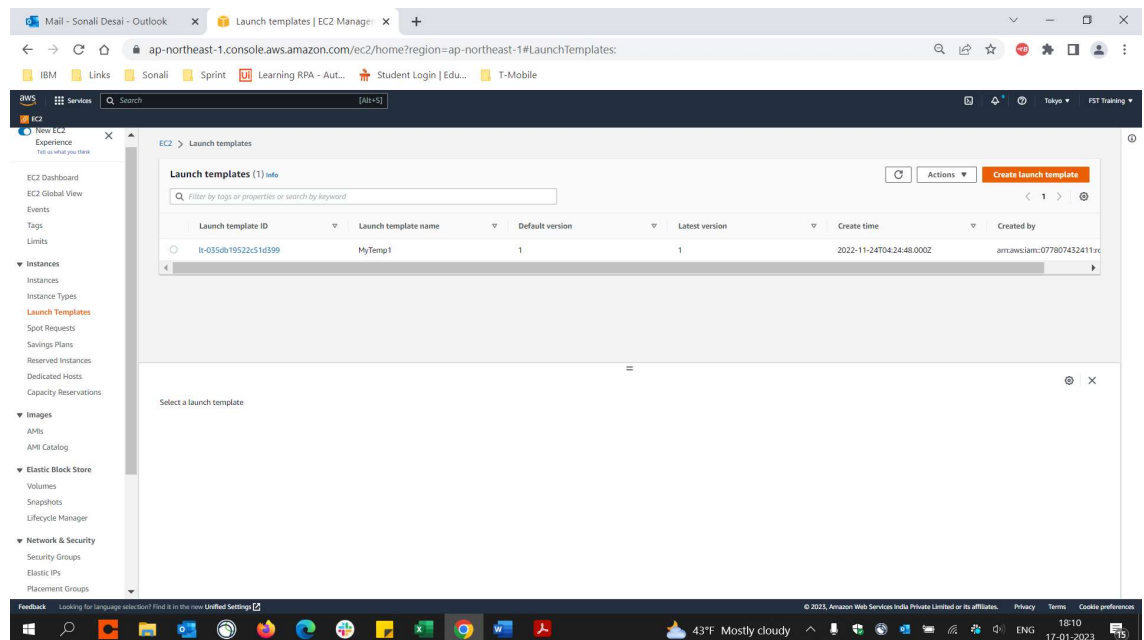
### Module-3: Cloud Testing Hands-on

#### Hands-on Assignments : (any 3 mandatory)

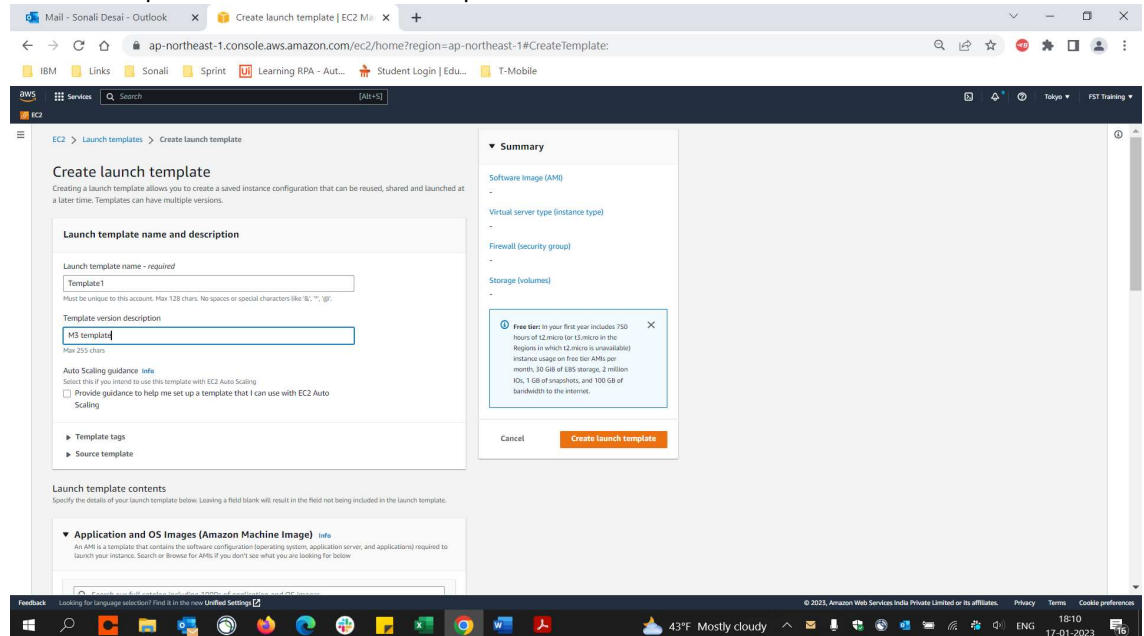
1. Create a VM and install docker and test the images inside the container with the commands
2. Install ansible and connect the nodes to master and execute the adhoc commands on ansible masternode vm and test the packages installed or not
3. Launch minikube cluster and execute the commands to test the pod, container with the kubectl commands
4. Create the poc on open shift architecture and its components and commands used on cluster

#### SOLUTION:

1. Create a VM and install docker and test the images inside the container with the commands



#### Launch Templates -> Create Launch Template



Mail - Sonali Desai - Outlook x Create launch template | EC2 M... x +

ap-northeast-1.console.aws.amazon.com/ec2/home?region=ap-northeast-1#CreateTemplate:

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Services Search [Alt+S]

Source template

Launch template contents

Specify the details of your launch template below. Leaving a field blank will result in the field not being included in the launch template.

▼ Application and OS Images (Amazon Machine Image) info

An AMI is a template that contains the software configuration (operating system, application server, and applications) required to launch your instances. Search or browse for AMIs if you don't see what you are looking for below.

Search our full catalog including 1000s of application and OS images

Recent Quick Start

Don't include in launch template Amazon Linux macOS Ubuntu Windows Browse more AMIs

Amazon Linux 2 AMI (HVM) - Kernel 5.10, SSD Volume Type Free tier eligible

ami-0b9a935579e1778

Virtualization: hvm EBS: enabled: true Root device type: ebs

Description

Amazon Linux 2 Kernel 5.10 AMI 2.0.20221210.1 x86\_64 HVM gp2

Architecture AMI ID Verified provider

64-bit (x86) ami-0b9a935579e1778

▼ Summary

Software Image (AMI)

Amazon Linux 2 Kernel 5.10 AMI...read more

ami-0b9a935579e1778

Virtual server type (instance type)

-

Firewall (security group)

-

Storage (volumes)

1 volume(s) - 8 GiB

Free tier: In your first year includes 750 hours of t2.micro (or t3.micro in the regions in which t2.micro is unavailable) instance usage on free tier AMIs per month, 30 GiB of EBS storage, 2 million I/Os, 1 GiB of snapshots, and 100 GiB of bandwidth to the internet.

Cancel Create launch template

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Services Search [Alt+S]

EC2

64-bit (x86) ami-0b9a935579e1778 Verified provider

▼ Instance type info Advanced

Instance type

t2.micro

Family: t2 1 vCPU 1 GiB Memory

On-Demand Linux pricing: 0.0152 USD per hour

On-Demand Windows pricing: 0.03188 USD per hour

Free tier eligible Compare instance types

▼ Key pair (login) info

You can use a key pair to securely connect to your instance. Ensure that you have access to the selected key pair before you launch the instance.

Key pair name

M3\_KP

Create new key pair

▼ Network settings info

Subnet info

Don't include in launch template

Create new subnet

When you specify a subnet, a network interface is automatically added to your template.

Firewall (security groups) info

A security group is a set of firewall rules that control the traffic for your instance. Add rules to allow specific traffic to reach your instance.

Select existing security group Create security group

▼ Summary

Software Image (AMI)

Amazon Linux 2 Kernel 5.10 AMI...read more

ami-0b9a935579e1778

Virtual server type (instance type)

t2.micro

Firewall (security group)

-

Storage (volumes)

1 volume(s) - 8 GiB

Free tier: In your first year includes 750 hours of t2.micro (or t3.micro in the regions in which t2.micro is unavailable) instance usage on free tier AMIs per month, 30 GiB of EBS storage, 2 million I/Os, 1 GiB of snapshots, and 100 GiB of bandwidth to the internet.

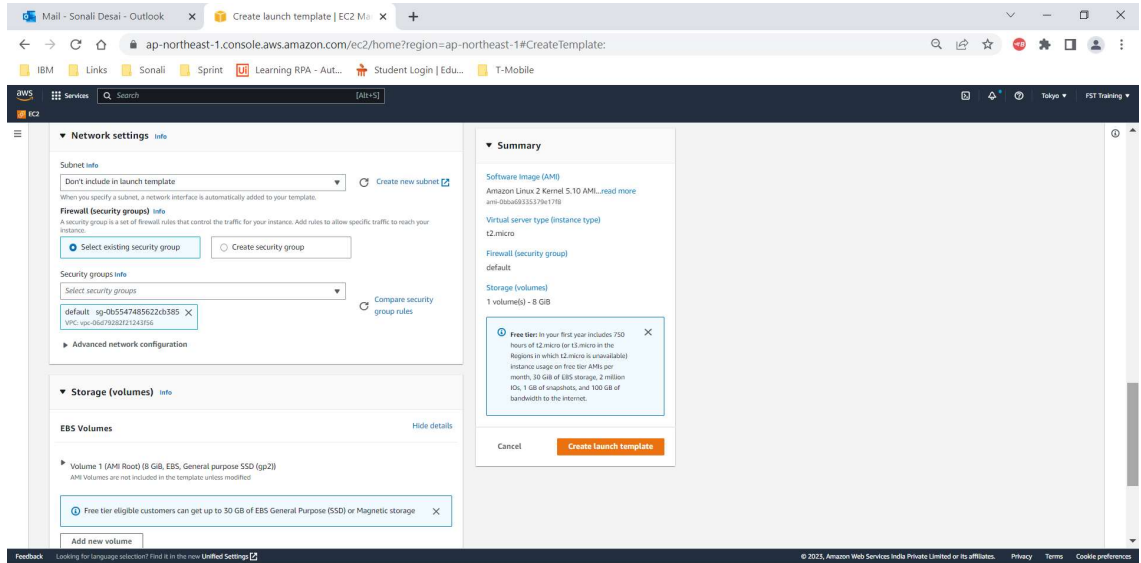
Cancel Create launch template

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

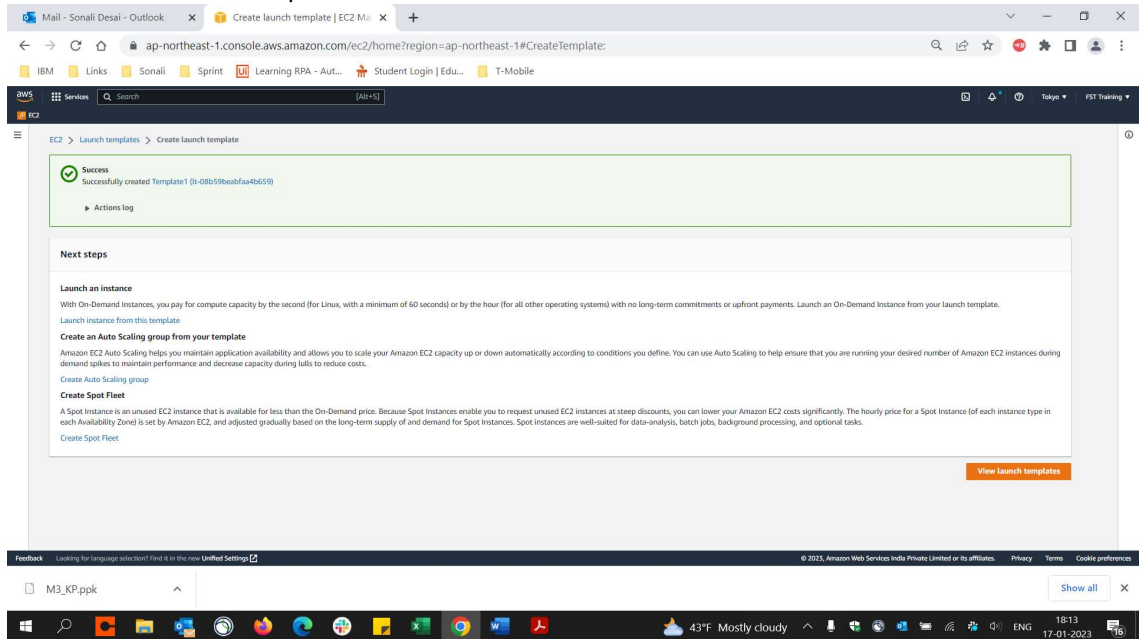
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M3\_KP.ppk Show all x

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## Click "Create Launch template"



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ap-northeast-1.console.aws.amazon.com/ec2/home?region=ap-northeast-1#LaunchTemplates:

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EC2

New EC2 Experience

EC2 Dashboard

EC2 Global View

Events

Tags

Limits

Instances

Instance Types

Launch Templates

Spot Requests

Savings Plans

Reserved Instances

Dedicated Hosts

Capacity Reservations

Images

AMIs

AMI Catalog

Elastic Block Store

Volumes

Snapshots

Lifecycle Manager

Network & Security

Security Groups

Elastic IPs

Launch templates (1/2) info

Filter by tags or properties or search by keyword

Launch template ID	Launch template name	Default version	Latest version	Create time
lt-08b59beabfaa4b659	Template1	1	1	2023-01-17T12:43:07Z
lt-035db19522c51c399	MyTemp1	1	1	2022-11-24T04:24:48Z

Actions

- Create launch template
- Launch instance from template
- Modify template (Create new version)
- Delete template
- Delete template version
- Set default version
- Manage tags
- Create Spot Fleet
- Create Auto Scaling group
- View details

Template1 (lt-08b59beabfaa4b659)

Launch template details

Launch template ID: lt-08b59beabfaa4b659

Launch template name: Template1

Default version: 1

Owner: aws:iam:077807432411:root

Details Versions Template tags

Launch template version details

Version: 1 (Default)

Description: M3 template

Date created: 2023-01-17T12:43:07Z

Created by: aws:iam:077807432411:root

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## Click "Launch instance from template"

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ap-northeast-1.console.aws.amazon.com/ec2/home?region=ap-northeast-1#LaunchInstanceFromTemplate:launchTemplateId=lt-08b59beabfaa4b659

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Services Search [Alt+Q]

EC2

Launch templates

Launch instance from template

Launch instance from template

Launching from a template allows you to launch from an instance configuration that you would have saved in the past. These saved configurations can be reused and shared with other users to standardize launches across an organisation.

Choose a launch template

Source template: Template1 (lt-08b59beabfaa4b659)

Source template version: 1 (Default)

Instance details

Your instance details are listed below. Any fields that are not specified as part of the configuration below will use the template or default values for these fields. Ensure that you have permissions to override these parameters or your instance launch will fail.

Application and OS Images (Amazon Machine Image) info

An AMI is a template that contains the software configuration (operating system, application server, and applications) required to launch your instances. Search or browse for AMIs if you don't see what you are looking for below.

Search our full catalog including 1000s of application and OS images

AMI from catalog

Amazon Linux macOS Ubuntu Windows

Template or default value

Summary

Number of instances: 1

Software Image (AMI): Amazon Linux 2 Kernel 5.10 AMI (read more)

Virtual server type (instance type): t2.micro

Firewall (security group): default

Storage (volumes): 1 volume(s) - 8 GB

Free tier: In your first year includes 750 hours of t2.micro (or t2.micro in the Regions in which t2.micro is unavailable) instance usage on free tier per AWS per month. 30 GB of EBS storage, 2 million I/Os, 1 GB of snapshots, and 100 GB of bandwidth to the internet.

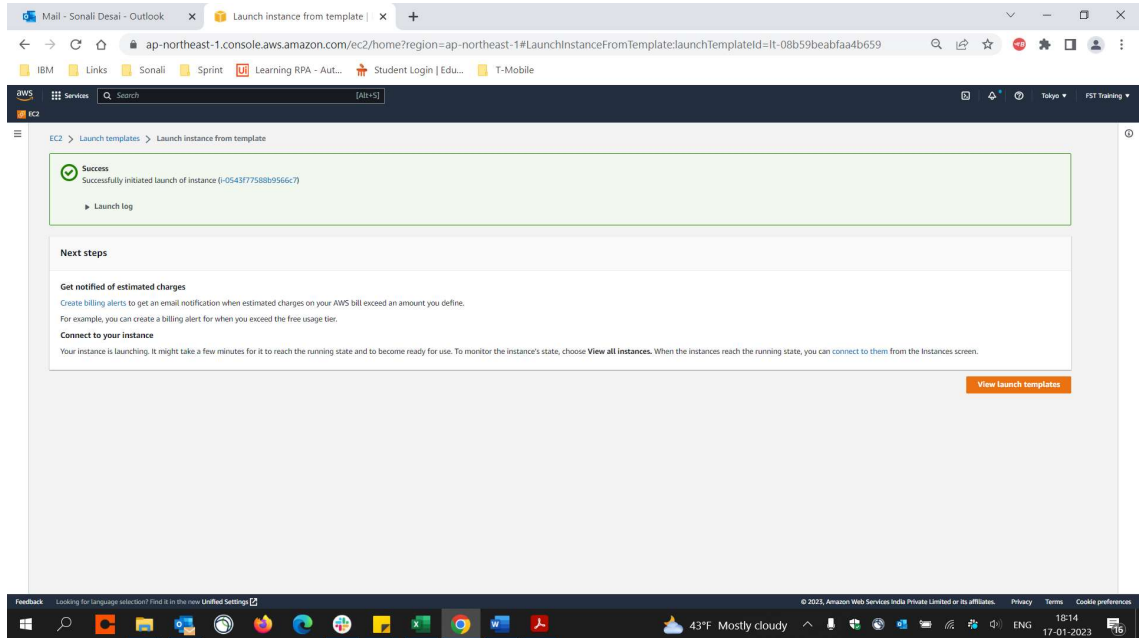
Cancel Launch Instance

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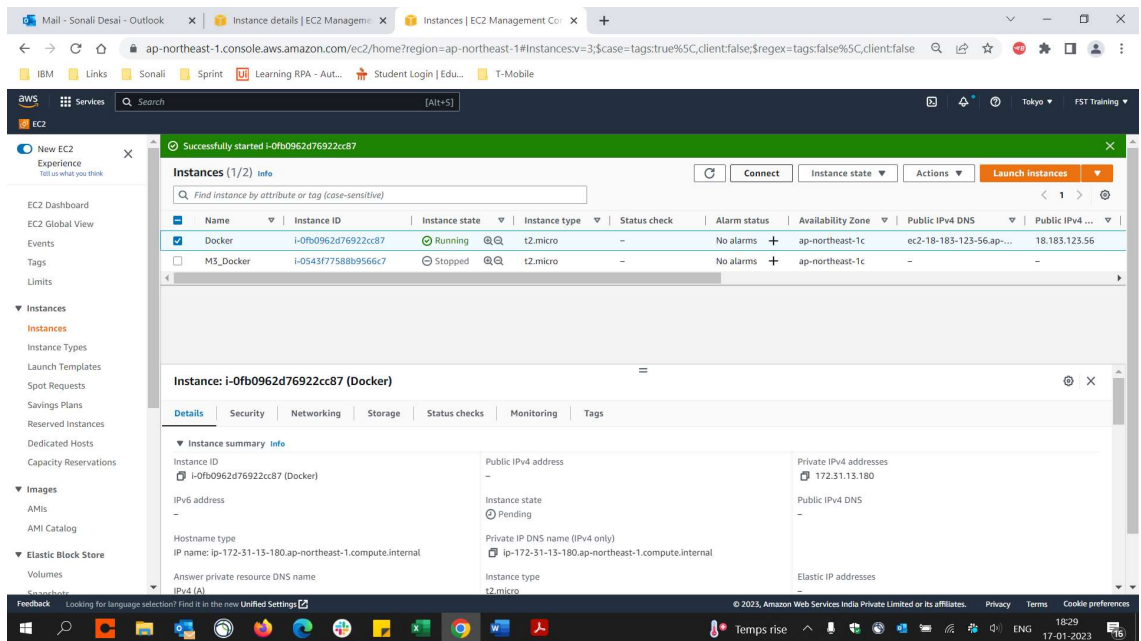
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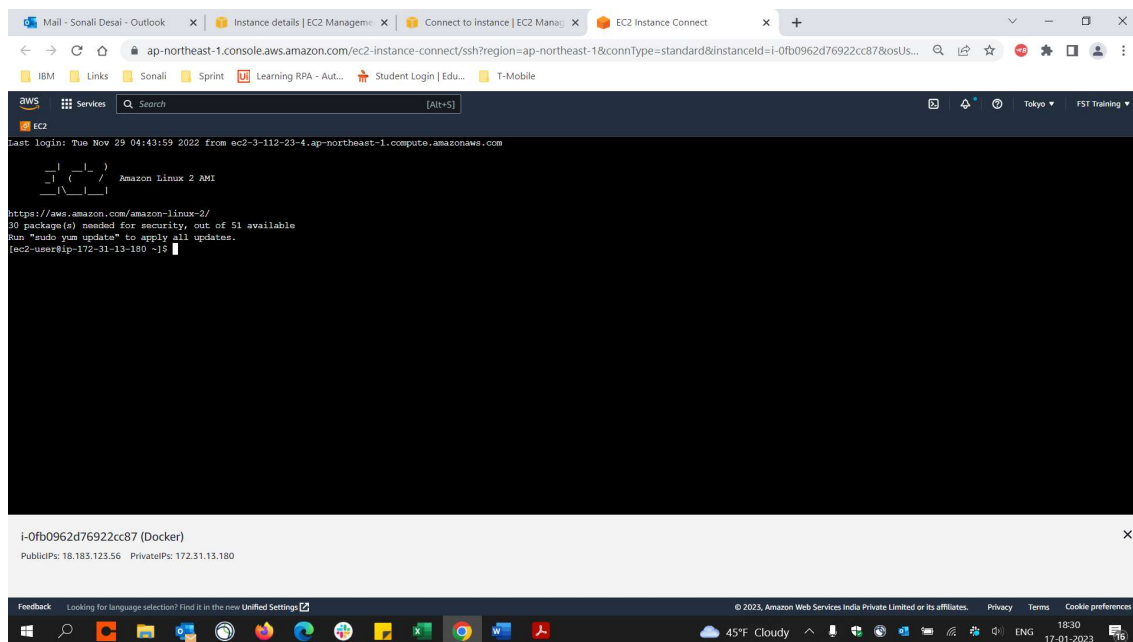
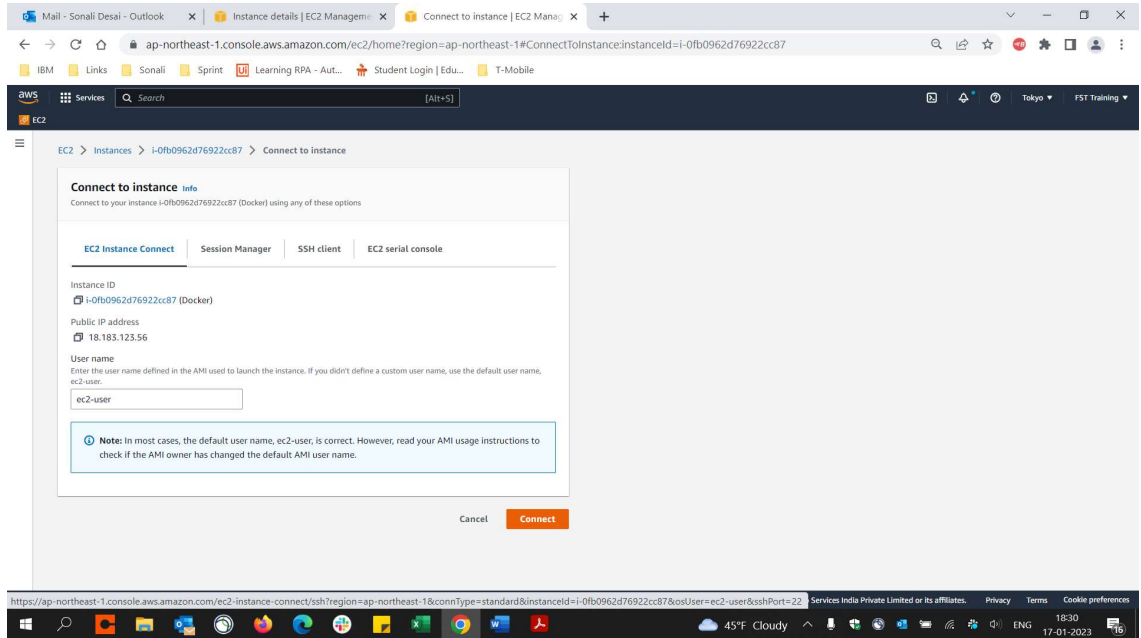
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## "Launch instance"



Select instance -> Instance state -> Start instance -> when status shows 'Running', select instance -> click 'Connect'





sudo amazon-linux-extras install docker



```
sonalid139/FSTCloudTesting x | ubuntu - Official Image | Docker x | Connect to Instance | EC2 Manu... x | EC2 Instance Connect x | +
ap-northeast-1.console.aws.amazon.com/ec2-instance-connect/ssh?connType=standard&instanceId=i-06ff98e0464a3d6d5&osUser=ec2-user&region=ap-north...
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EC2
No packages marked for update
[ec2-user@ip-172-31-6-98 ~]$ sudo amazon-linux-extras install docker
Installing docker
Loaded plugins: extras_suggestions, langpacks, priorities, update-motd
Cleaning repos: amzn2-core amzn2extra-docker amzn2extra-kernel-5.10
17 metadata files removed
6 sqlite files removed
0 metadata files removed
Loaded plugins: extras_suggestions, langpacks, priorities, update-motd
amzn2-core | 3.7 kB 00:00:00
amzn2extra-docker | 3.0 kB 00:00:00
amzn2extra-kernel-5.10 | 3.0 kB 00:00:00
(1/7): amzn2-core/2/x86_64/group_gz | 2.5 kB 00:00:00
(2/7): amzn2-core/2/x86_64/updateinfo | 539 kB 00:00:00
(3/7): amzn2extra-docker/2/x86_64/updateinfo | 8.0 kB 00:00:00
(4/7): amzn2extra-kernel-5.10/2/x86_64/updateinfo | 22 kB 00:00:00
(5/7): amzn2extra-docker/2/x86_64/primary_db | 99 kB 00:00:00
(6/7): amzn2extra-kernel-5.10/2/x86_64/primary_db | 14 MB 00:00:00
(7/7): amzn2-core/2/x86_64/primary_db | 68 MB 00:00:01
Resolving Dependencies
--> Running transaction check
--> Package docker.x86_64 0:20.10.17-1.amzn2.0.1 will be installed
--> Processing Dependency: runc >= 1.0.0 for package: docker-20.10.17-1.amzn2.0.1.x86_64
--> Processing Dependency: libcgroupp >= 0.40.rc1-5.15 for package: docker-20.10.17-1.amzn2.0.1.x86_64
--> Processing Dependency: containerd >= 1.3.2 for package: docker-20.10.17-1.amzn2.0.1.x86_64
--> Processing Dependency: pigz for package: docker-20.10.17-1.amzn2.0.1.x86_64
--> Running transaction check
--> Package containerd.x86_64 0:1.6.8-1.amzn2 will be installed
--> Package libcgroupp.x86_64 0:0.41-21.amzn2 will be installed
--> Package pigz.x86_64 0:2.3.4-1.amzn2.0.1 will be installed
--> Package runc.x86_64 0:1.1.4-1.amzn2 will be installed
--> Running transaction check
--> Package runc.x86_64 0:1.1.4-1.amzn2 will be installed

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24°C Clear 19:18 16-01-2023
sonalid139/FSTCloudTesting x | ubuntu - Official Image | Docker x | Connect to Instance | EC2 Manu... x | EC2 Instance Connect x | +
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EC2
43 livepatch available [=stable]
44 python3.8 available [=stable]
45 haproxy2 available [=stable]
46 collectd available [=stable]
47 aws-nitro-enclaves-cli available [=stable]
48 R4 available [=stable]
49 _ kernel-5.4 available [=stable]
50 selinux-ng available [=stable]
51 php8.0 available [=stable]
52 tomcat9 available [=stable]
53 unbound1.13 available [=stable]
54 mariadb10.5 available [=stable]
55 kernel-5.10-latest enabled [=stable]
56 redis6 available [=stable]
57 ruby3.0 available [=stable]
58 postgresql12 available [=stable]
59 postgresql13 available [=stable]
60 mock2 available [=stable]
61 dnsmasq2.95 available [=stable]
62 kernel-5.15 available [=stable]
63 postgresql14 available [=stable]
64 firefox available [=stable]
65 lustre available [=stable]
66 php8.1 available [=stable]
67 awsccli available [=stable]
[ec2-user@ip-172-31-6-98 ~]$ sudo service docker start
Redirecting to /bin/systemctl start docker.service
[ec2-user@ip-172-31-6-98 ~]$ sudo systemctl start docker
[ec2-user@ip-172-31-6-98 ~]$ sudo systemctl enable docker
Created symlink from /etc/systemd/system/multi-user.target.wants/docker.service to /usr/lib/systemd/system/docker.service.
[ec2-user@ip-172-31-6-98 ~]$
```

Check version by command - docker version

```
[ec2-user@ip-172-31-13-180 ~]$ docker version
Client:
 Version:           20.10.17
 API version:       1.41
 Go version:        go1.18.6
 Git commit:        100c701
 Built:             Wed Sep 28 23:10:17 2022
 OS/Arch:           linux/amd64
 Context:           default
 Experimental:      true
```

Goto docker hub -> Select image to download -> check/copy the command

On docker instance – run the command and Download image from docker hub on VM docker e.g.

docker pull nginx

```

CONTAINER ID   IMAGE      COMMAND                  CREATED        STATUS        PORTS
[ec2-user@ip-172-31-13-180 ~]$ docker pull nginx
Using default tag: latest
Got permission denied while trying to connect to the Docker daemon socket at unix:///var/run/docker.sock: Get http://localhost/v1.24/create?fromImage=nginx&tag=latest": dial unix /var/run/docker.sock: connect: permission denied
[ec2-user@ip-172-31-13-180 ~]$ sudo docker pull nginx
Using default tag: latest
latest: Pulling from library/nginx
a603fa5e3b41: Pull complete
c39e1cda007e: Pull complete
90cfefba34d7: Pull complete
a38226fb7aba: Pull complete
62583498bae6: Pull complete

```

Check images installed by command– docker images

```

[ec2-user@ip-172-31-13-180 ~]$ sudo su
[root@ip-172-31-13-180 ec2-user]# docker images
REPOSITORY    TAG       IMAGE ID       CREATED        SIZE
nginx         latest   88736fe82739   12 days ago    142MB
[root@ip-172-31-13-180 ec2-user]#

```

Installed ubuntu – docker pull ubuntu

```

[root@ip-172-31-13-180 ec2-user]# docker pull ubuntu
Using default tag: latest
latest: Pulling from library/ubuntu
e96e057aae67: Pull complete
Digest: sha256:4b1d0c4a2d2aaf63b37111f34eb9fa89fa1bf53dd6e4ca954
Status: Downloaded newer image for ubuntu:latest
docker.io/library/ubuntu:latest
[root@ip-172-31-13-180 ec2-user]# docker images
REPOSITORY    TAG       IMAGE ID       CREATED        SIZE
nginx         latest   88736fe82739   12 days ago    142MB
ubuntu        latest   a8780b506fa4   3 weeks ago    77.8MB
[root@ip-172-31-13-180 ec2-user]#

```

Installed Mongo – docker pull mongo, check images

```

[root@ip-172-31-13-180 ec2-user]# docker images
REPOSITORY    TAG       IMAGE ID       CREATED        SIZE
mongo         latest   2dd27bb6d3e6   11 days ago    695MB
nginx         latest   88736fe82739   12 days ago    142MB
ubuntu        latest   a8780b506fa4   3 weeks ago    77.8MB
[root@ip-172-31-13-180 ec2-user]#

```

Check containers installed by command – sudo docker ps

**docker ps -a** => Lists all container instances (running & exited)

**docker ps** => Lists running containers only

```

[root@ip-172-31-13-180 ec2-user]# docker ps -a
CONTAINER ID   IMAGE      COMMAND                  CREATED        STATUS        PORTS        NAMES
[root@ip-172-31-13-180 ec2-user]#

```

Container creation

**docker run -itd <image name>** e.g. docker run -itd ubuntu (docker to run in detached mode, instance will not be terminated when Ctrl+C is pressed)

**docker run -it <image name>** (docker will not run in detached mode so terminates when Ctrl+C is pressed)



```
[root@ip-172-31-13-180 ec2-user]# docker run -itd ubuntu
f47470b61d5268e60c7433e0c1734bcad881e1718d99dc13ade927cc6b4768
[root@ip-172-31-13-180 ec2-user]# docker ps
CONTAINER ID   IMAGE     COMMAND   CREATED   STATUS    PORTS   NAMES
f47470b61d52   ubuntu   "bash"    5 seconds ago    Up 4 seconds           lucid_chaum
[root@ip-172-31-13-180 ec2-user]# docker run -itd mongo
feb9e2c59a4ab8ecc11292a367dd0511f05c0fe3415c78c06d1781687ad0809e
[root@ip-172-31-13-180 ec2-user]# docker ps -a
CONTAINER ID   IMAGE     COMMAND   CREATED   STATUS    PORTS   NAMES
feb9e2c59a4a   mongo     "docker-entrypoint.s..."  7 seconds ago    Up 5 seconds           zen_mccarthy
f47470b61d52   ubuntu   "bash"    29 seconds ago    Up 28 seconds          lucid_chaum
[root@ip-172-31-13-180 ec2-user]#
```

Container instance can be terminated by command – **docker stop <container\_id>** or **docker stop <names>**

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Ubuntu is a Debian-based Linux operating system based on free software.

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Canonical and Tianon (Debian Developer)
- Where to get help:  
the Docker Community Slack, Server Fault, Unix & Linux, or Stack Overflow

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bionic 23.04 18.04 rolling lunar-20221207

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