Name: **Lakshmi Bhargavi Nukala**

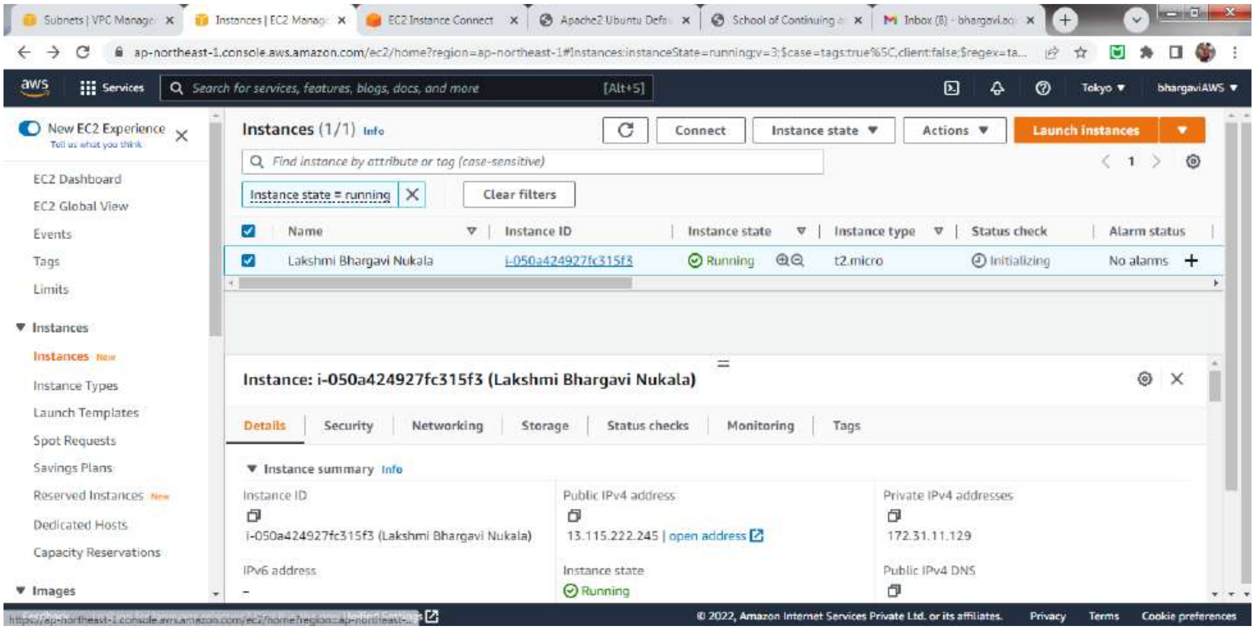
Email: **bhargavi.aqua04@gmail.com**

H.T.No: **22063CDO117**

AWS:

EC2:

1. Create an instance



Instances (1/1) Info

Instance state = running

☑	Name	Instance ID	Instance state	Instance type	Status check	Alarm status
☑	Lakshmi Bhargavi Nukala	i-050a424927fc315f3	Running	t2.micro	Initializing	No alarms

Instance: i-050a424927fc315f3 (Lakshmi Bhargavi Nukala)

▼ Instance summary Info

Instance ID
i-050a424927fc315f3 (Lakshmi Bhargavi Nukala)

Public IPv4 address
13.115.222.245 | open address

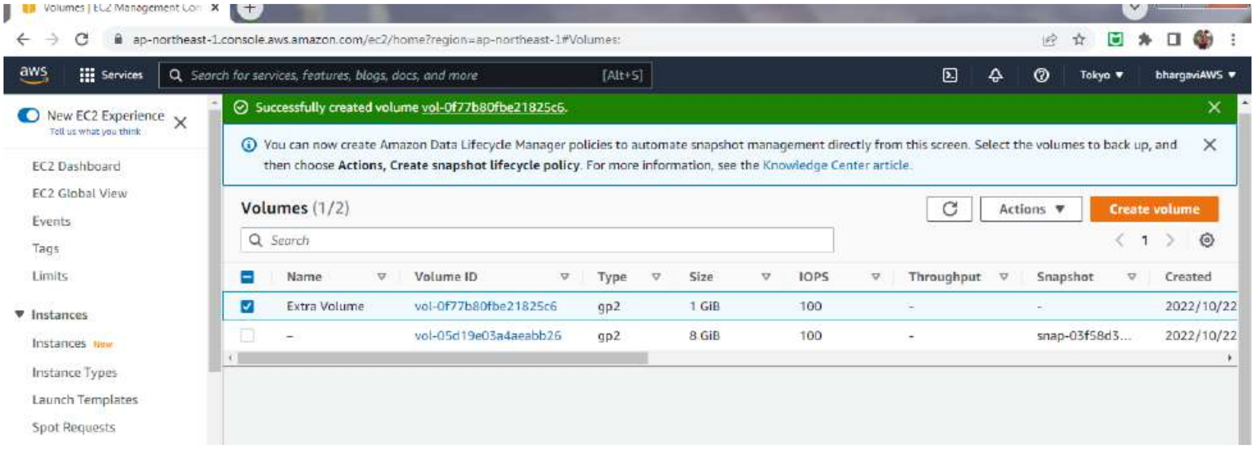
Private IPv4 addresses
172.31.11.129

IPv6 address
–

Instance state
Running

Public IPv4 DNS

2. Extra Volume of 1GB created



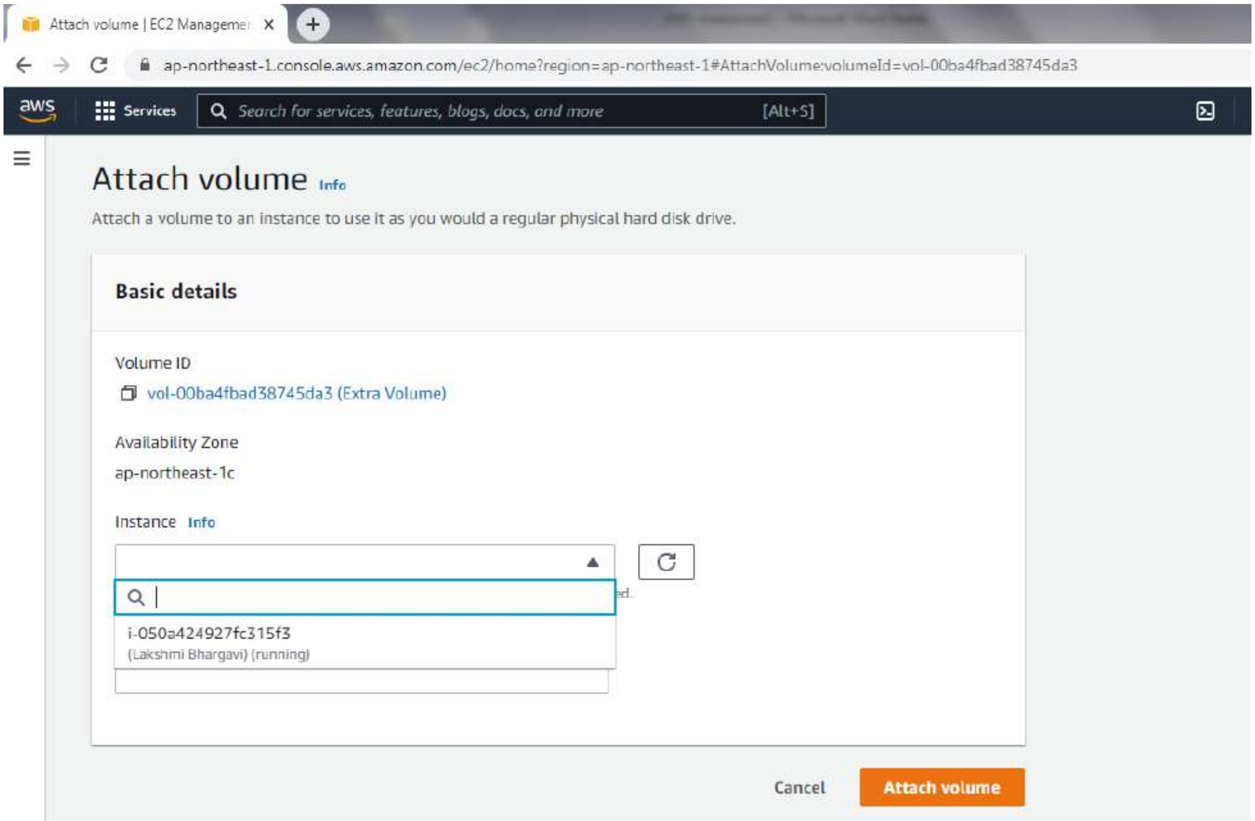
Successfully created volume vol-0f77b80fbe21825c6.

You can now create Amazon Data Lifecycle Manager policies to automate snapshot management directly from this screen. Select the volumes to back up, and then choose **Actions, Create snapshot lifecycle policy**. For more information, see the Knowledge Center article.

Volumes (1/2)

☐	Name	Volume ID	Type	Size	IOPS	Throughput	Snapshot	Created
☑	Extra Volume	vol-0f77b80fbe21825c6	gp2	1 GiB	100	-	-	2022/10/22
☐	–	vol-05d19e03a4aeabb26	gp2	8 GiB	100	-	snap-03f58d3...	2022/10/22

3. Attaching Volume to an instance



Attach volume | EC2 Manageme
ap-northeast-1.console.aws.amazon.com/ec2/home?region=ap-northeast-1#AttachVolume:volumeId=vol-00ba4fbad38745da3
aws
Services
Search for services, features, blogs, docs, and more
[Alt+S]

Attach volume Info

Attach a volume to an instance to use it as you would a regular physical hard disk drive.

Basic details

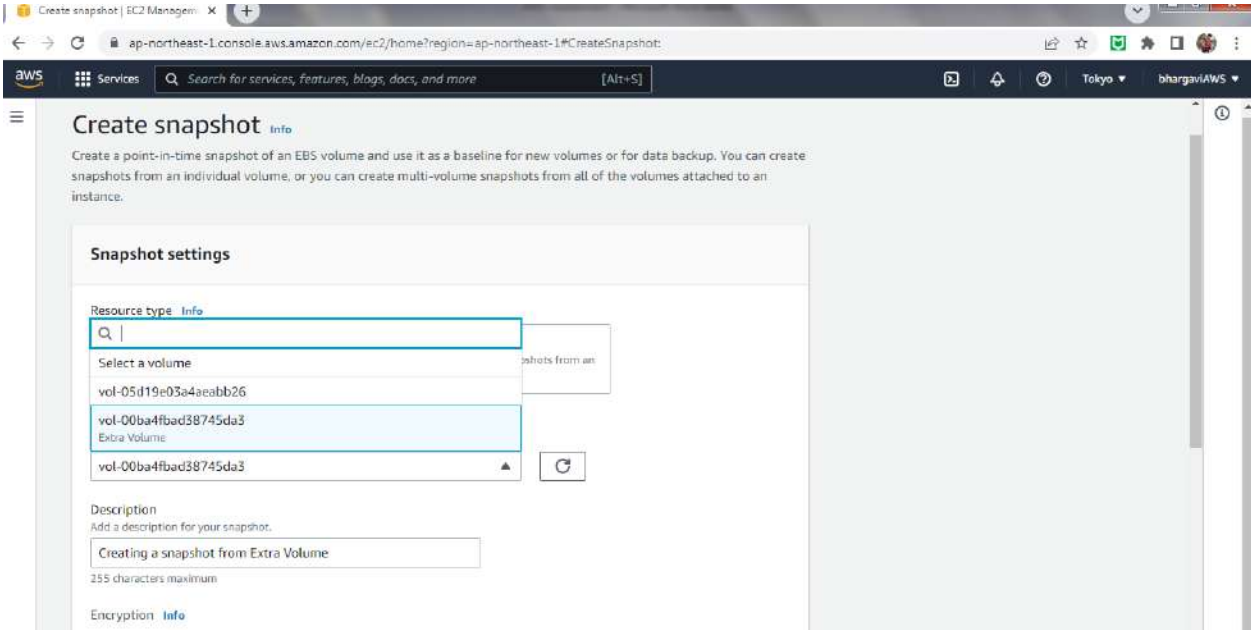
Volume ID
vol-00ba4fbad38745da3 (Extra Volume)

Availability Zone
ap-northeast-1c

Instance Info

i-050a424927fc315f3
(Lakshmi Bhargavi) (running)

4. Creating a snapshot from the above created volume



Create snapshot Info

Create a point-in-time snapshot of an EBS volume and use it as a baseline for new volumes or for data backup. You can create snapshots from an individual volume, or you can create multi-volume snapshots from all of the volumes attached to an instance.

Snapshot settings

Resource type Info

Select a volume

vol-05d19e03a4aeabb26

vol-00ba4fbad38745da3
Extra Volume

vol-00ba4fbad38745da3

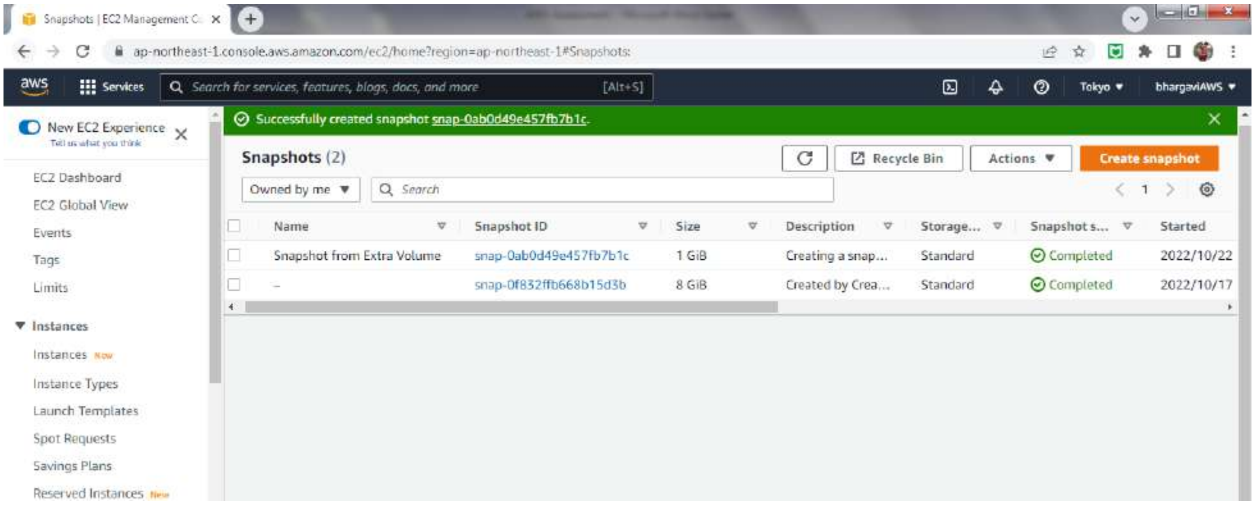
Description
Add a description for your snapshot.

Creating a snapshot from Extra Volume

255 characters maximum

Encryption Info

5. Created Snapshot

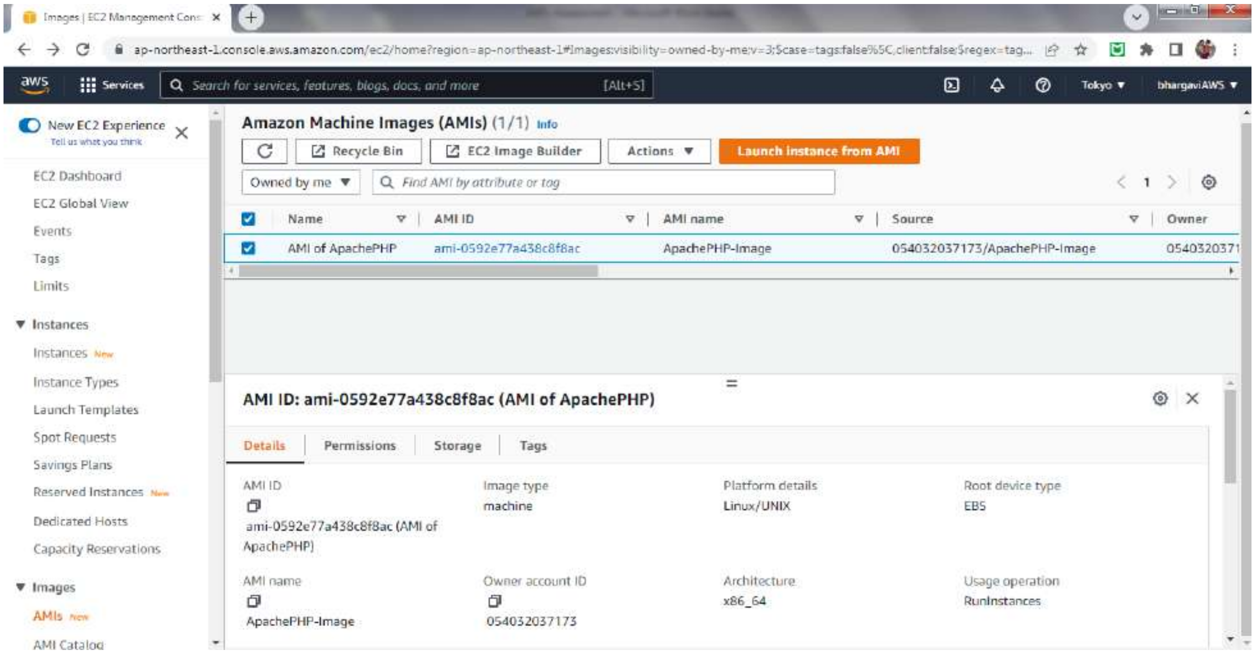


Successfully created snapshot snap-0ab0d49e457fb7b1c.

Snapshots (2)

Name	Snapshot ID	Size	Description	Storage...	Snapshot s...	Started
Snapshot from Extra Volume	snap-0ab0d49e457fb7b1c	1 GiB	Creating a snap...	Standard	Completed	2022/10/22
–	snap-0f832ffb668b15d3b	8 GiB	Created by Crea...	Standard	Completed	2022/10/17

6. Created an AMI from Apache-PHP instance:



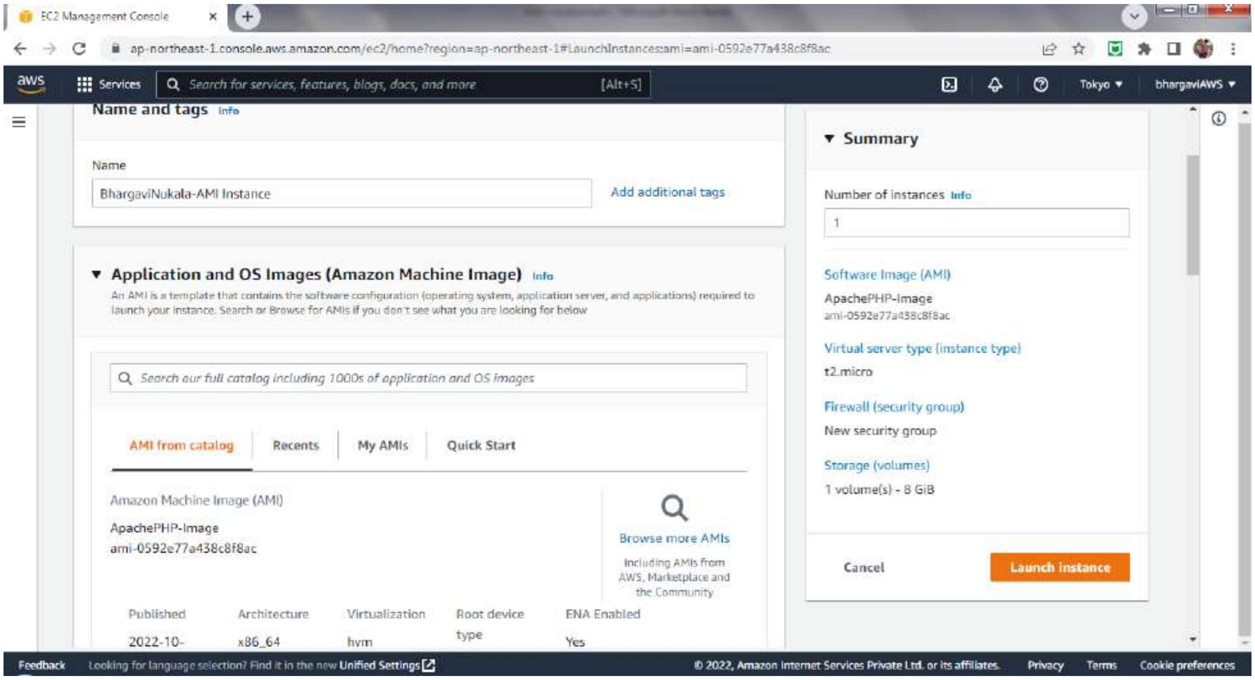
Amazon Machine Images (AMIs) (1/1) Info

☑	Name	AMI ID	AMI name	Source	Owner
☑	AMI of ApachePHP	ami-0592e77a438c8f8ac	ApachePHP-Image	054032037173/ApachePHP-Image	0540320371

AMI ID: ami-0592e77a438c8f8ac (AMI of ApachePHP)

AMI ID	Image type	Platform details	Root device type
ami-0592e77a438c8f8ac (AMI of ApachePHP)	machine	Linux/UNIX	EBS
AMI name	**Owner account ID**	**Architecture**	**Usage operation**
ApachePHP-Image	054032037173	x86_64	RunInstances

7. Launching an instance from AMI:


EC2 Management Console
ap-northeast-1.console.aws.amazon.com/ec2/home?region=ap-northeast-1#LaunchInstances:ami=ami-0592e77a438c8f8ac
aws
Services
Search for services, features, blogs, docs, and more
[Alt+S]
Tokyo ▼
bhargaviAWS ▼
Add additional tags
Search our full catalog including 1000s of application and OS images
AMI from catalog
Recents
My AMIs
Quick Start
Browse more AMIs
Including AMIs from AWS, Marketplace and the Community
Cancel
Launch instance
Feedback
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Name and tags Info

Name: BhargaviNukala-AMI Instance

▼ 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 instance. Search or Browse for AMIs if you don't see what you are looking for below

Amazon Machine Image (AMI)
ApachePHP-Image
ami-0592e77a438c8f8ac

Published	Architecture	Virtualization	Root device type	ENA Enabled
2022-10-	x86_64	hvm		Yes

▼ Summary

Number of instances Info: 1

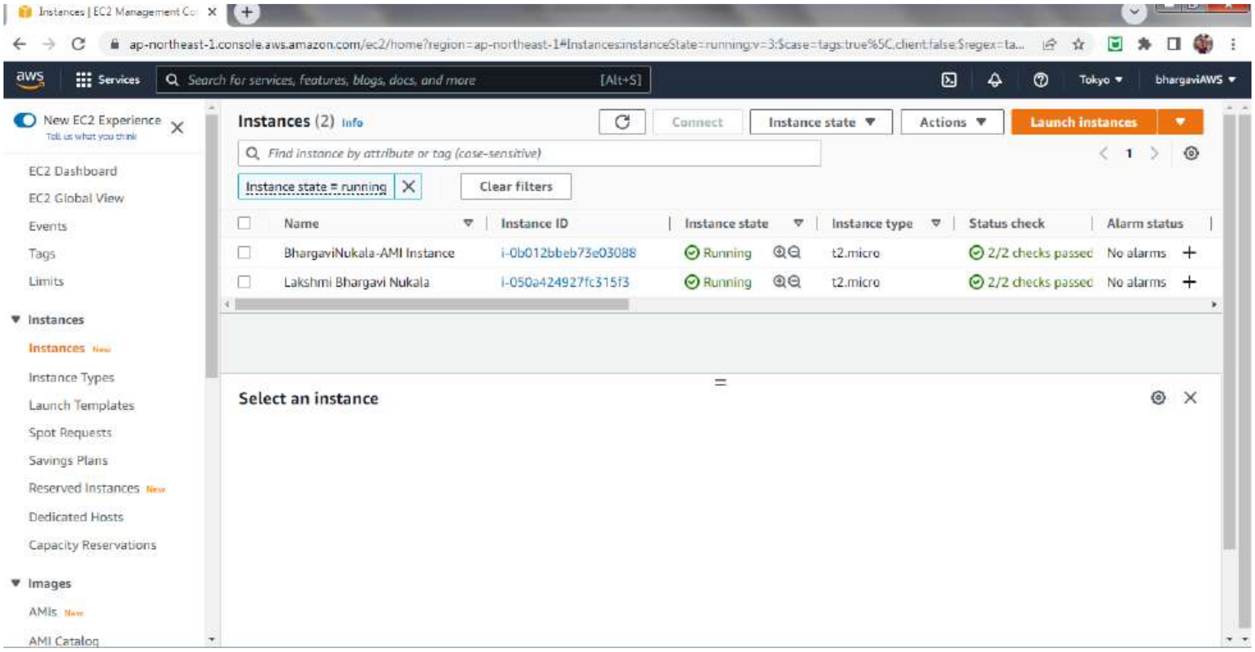
Software Image (AMI)
ApachePHP-Image
ami-0592e77a438c8f8ac

Virtual server type (instance type)
t2.micro

Firewall (security group)
New security group

Storage (volumes)
1 volume(s) - 8 GiB

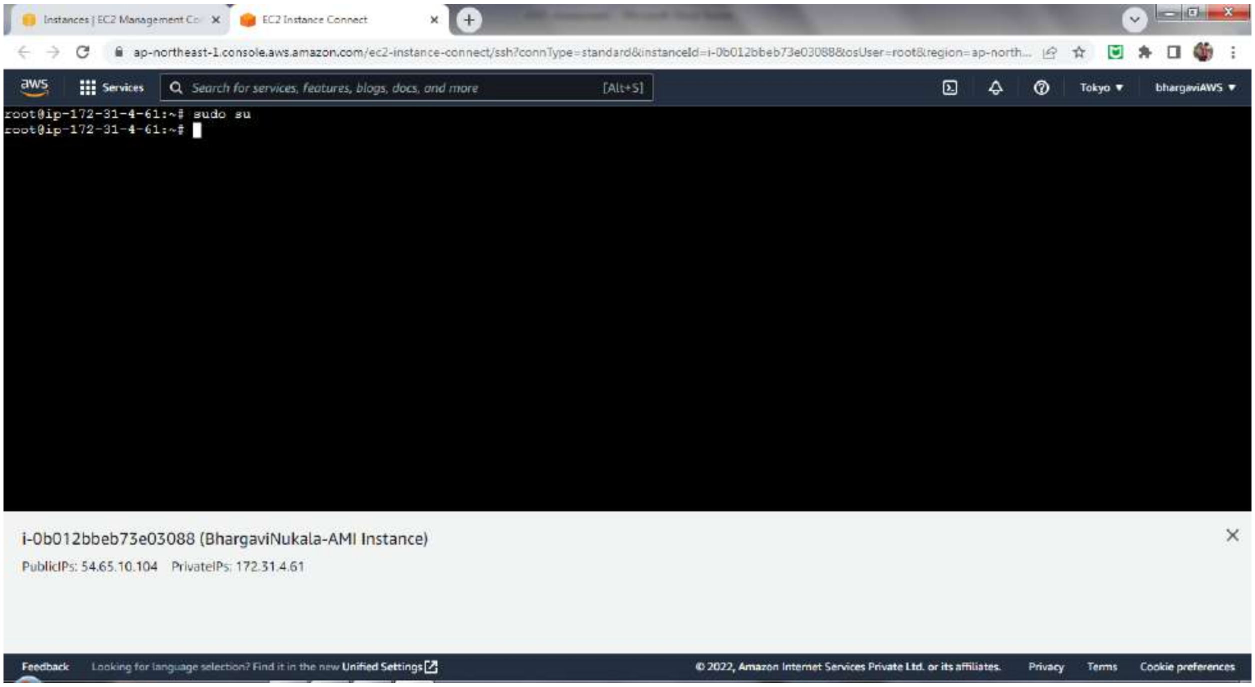
8. Instance availability



Instances (2) Info

□	Name	Instance ID	Instance state	Instance type	Status check	Alarm status
□	BhargaviNukala-AMI Instance	i-0b012bbeb73e03088	Running	t2.micro	2/2 checks passed	No alarms
□	Lakshmi Bhargavi Nukala	i-050a424927fc315f3	Running	t2.micro	2/2 checks passed	No alarms

9. Connected AMI instance from Console



```
root@ip-172-31-4-61:~# sudo su
root@ip-172-31-4-61:~# 
```

i-0b012bbeb73e03088 (BhargaviNukala-AMI Instance)

PublicIPs: 54.65.10.104 PrivateIPs: 172.31.4.61

Instances | EC2 Management Co
EC2 Instance Connect
ap-northeast-1.console.aws.amazon.com/ec2-instance-connect/ssh?connType=standard&instanceId=i-0b012bbeb73e03088&osUser=root&region=ap-north...
Services
Search for services, features, blogs, docs, and more
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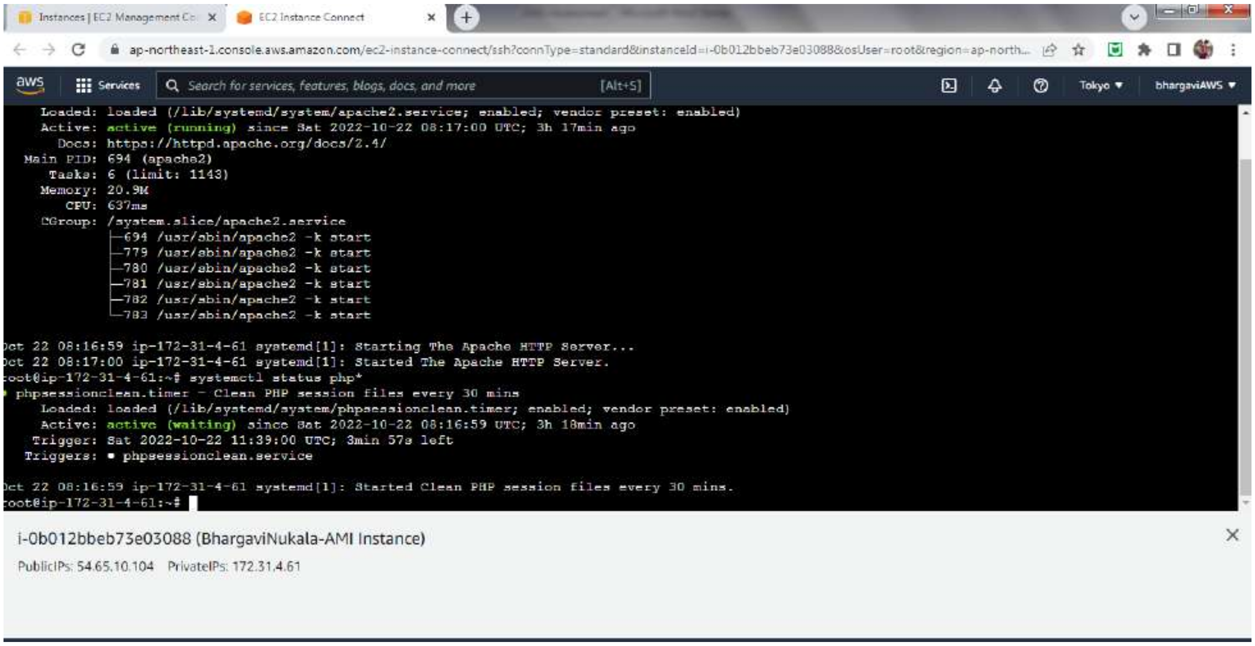
10. Apache and PHP running on AMI instance

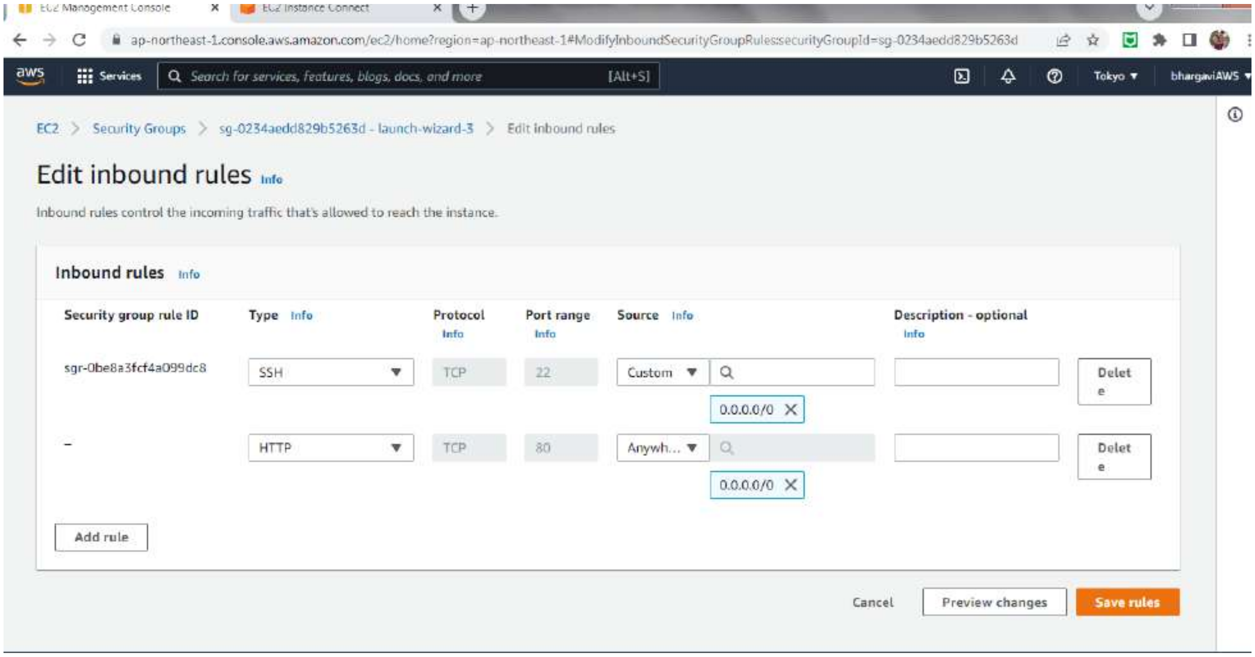


```
   Loaded: loaded (/lib/systemd/system/apache2.service; enabled; vendor preset: enabled)
   Active: active (running) since Sat 2022-10-22 08:17:00 UTC; 3h 17min ago
     Docs: https://httpd.apache.org/docs/2.4/
 Main PID: 694 (apache2)
    Tasks: 6 (limit: 1143)
   Memory: 20.9M
      CPU: 637ms
   CGroup: /system.slice/apache2.service
           ├─694 /usr/sbin/apache2 -k start
           ├─779 /usr/sbin/apache2 -k start
           ├─780 /usr/sbin/apache2 -k start
           ├─781 /usr/sbin/apache2 -k start
           ├─782 /usr/sbin/apache2 -k start
           └─783 /usr/sbin/apache2 -k start

Oct 22 08:16:59 ip-172-31-4-61 systemd[1]: Starting The Apache HTTP Server...
Oct 22 08:17:00 ip-172-31-4-61 systemd[1]: Started The Apache HTTP Server.
root@ip-172-31-4-61:~# systemctl status php*
● phpsessionclean.timer - Clean PHP session files every 30 mins
   Loaded: loaded (/lib/systemd/system/phpsessionclean.timer; enabled; vendor preset: enabled)
   Active: active (waiting) since Sat 2022-10-22 08:16:59 UTC; 3h 18min ago
  Trigger: Sat 2022-10-22 11:39:00 UTC; 3min 57s left
 Triggers: ● phpsessionclean.service

Oct 22 08:16:59 ip-172-31-4-61 systemd[1]: Started Clean PHP session files every 30 mins.
root@ip-172-31-4-61:~#
```

i-0b012bbeb73e03088 (BhargaviNukala-AMI Instance)

PublicIPs: 54.65.10.104 PrivateIPs: 172.31.4.61

11. Editing the IN-Bound Rules of Security Group to give access to HTTP port no 80



EC2 > Security Groups > sg-0234aedd829b5263d - launch-wizard-3 > Edit inbound rules

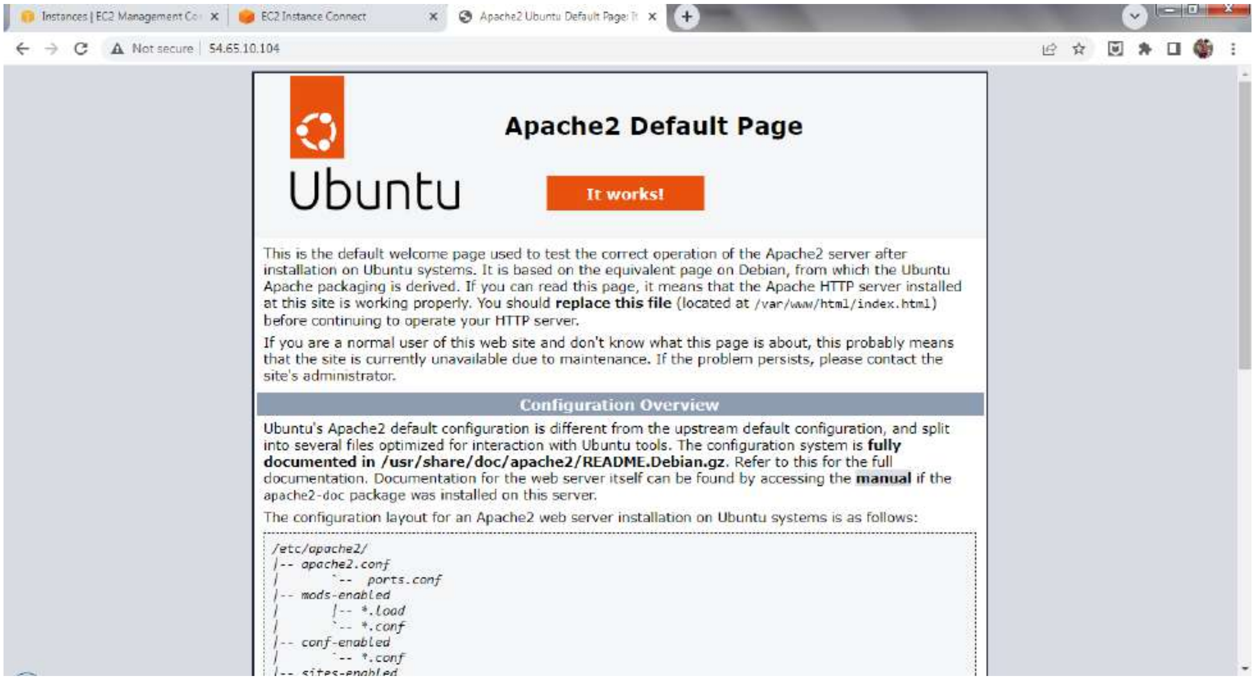
Edit inbound rules

Inbound rules control the incoming traffic that's allowed to reach the instance.

Inbound rules

Security group rule ID	Type	Protocol	Port range	Source	Description - optional
sgr-0be8a3fcf4a099dc8	SSH	TCP	22	Custom 0.0.0.0/0	
-	HTTP	TCP	80	Anywh... 0.0.0.0/0	

12. Accessing the new AMI instance from Browser


Instances | EC2 Management Co
EC2 Instance Connect
Apache2 Ubuntu Default Page: It
Not secure
54.65.10.104
Ubuntu

Apache2 Default Page

It works!

This is the default welcome page used to test the correct operation of the Apache2 server after installation on Ubuntu systems. It is based on the equivalent page on Debian, from which the Ubuntu Apache packaging is derived. If you can read this page, it means that the Apache HTTP server installed at this site is working properly. You should **replace this file** (located at `/var/www/html/index.html`) before continuing to operate your HTTP server.

If you are a normal user of this web site and don't know what this page is about, this probably means that the site is currently unavailable due to maintenance. If the problem persists, please contact the site's administrator.

Configuration Overview

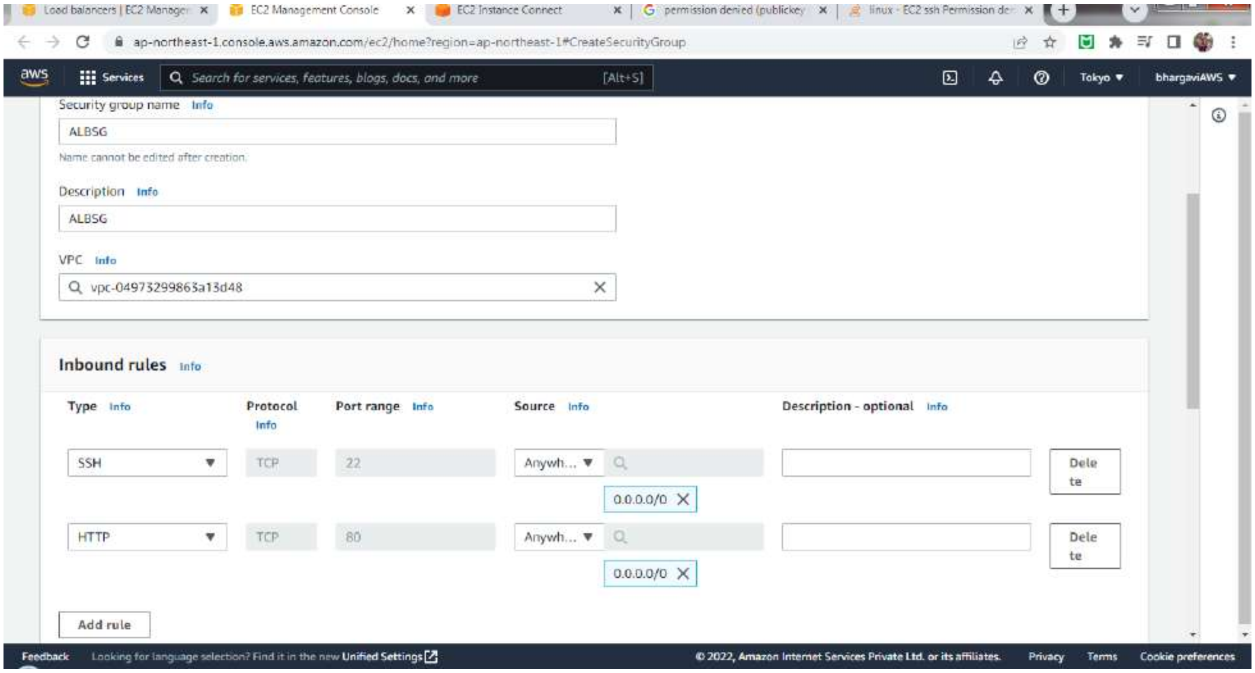
Ubuntu's Apache2 default configuration is different from the upstream default configuration, and split into several files optimized for interaction with Ubuntu tools. The configuration system is **fully documented in /usr/share/doc/apache2/README.Debian.gz**. Refer to this for the full documentation. Documentation for the web server itself can be found by accessing the **manual** if the apache2-doc package was installed on this server.

The configuration layout for an Apache2 web server installation on Ubuntu systems is as follows:

```
/etc/apache2/
|-- apache2.conf
|       `--  ports.conf
|-- mods-enabled
|       |-- *.load
|       `-- *.conf
|-- conf-enabled
|       `-- *.conf
|-- sites-enabled
```

Load Balancer:

1. Create a new Security Group with ports 22 and 80 open required to create a load balancer


Load balancers | EC2 Manager
EC2 Management Console
EC2 Instance Connect
permission denied (publickey
linux - EC2 ssh Permission de
ap-northeast-1.console.aws.amazon.com/ec2/home?region=ap-northeast-1#CreateSecurityGroup
Services
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Security group name Info

ALBSG

Name cannot be edited after creation.

Description Info

ALBSG

VPC Info

vpc-04973299863a13d48

Inbound rules Info

Type Info	Protocol Info	Port range Info	Source Info	Description - optional Info	
SSH	TCP	22	Anywh... 0.0.0.0/0		Delete
HTTP	TCP	80	Anywh... 0.0.0.0/0		Delete

Add rule

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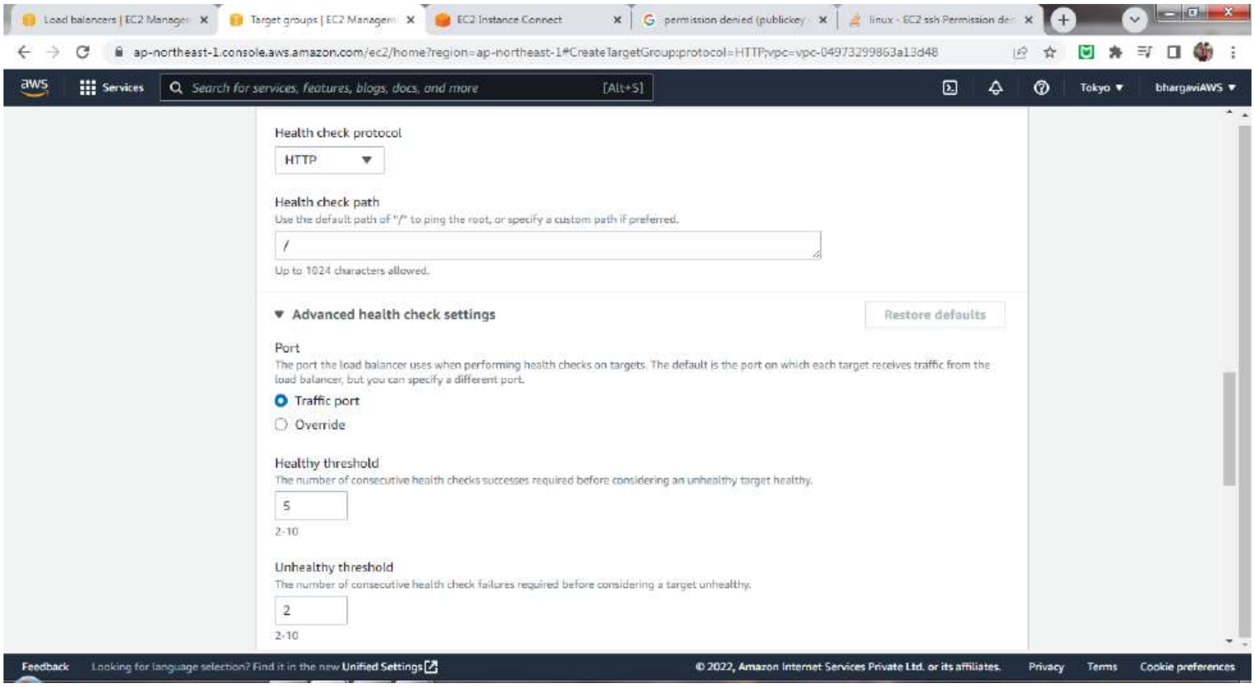
2. Create a new Target Group for the instances to be connected on load balancer. Here we specify all parameters like Healthy score, Unhealthy score, timeout etc.


Load balancers | EC2 Manager
Target groups | EC2 Managem
EC2 Instance Connect
permission denied (publickey
linux - EC2 ssh Permission de
ap-northeast-1.console.aws.amazon.com/ec2/home?region=ap-northeast-1#CreateTargetGroup:protocol=HTTP;vpc=vpc-04973299863a13d48
Services
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Health check protocol

HTTP

Health check path

Use the default path of "/" to ping the root, or specify a custom path if preferred.

/

Up to 1024 characters allowed.

▼ Advanced health check settings

Restore defaults

Port

The port the load balancer uses when performing health checks on targets. The default is the port on which each target receives traffic from the load balancer, but you can specify a different port.

● Traffic port

○ Override

Healthy threshold

The number of consecutive health checks successes required before considering an unhealthy target healthy.

5

2-10

Unhealthy threshold

The number of consecutive health check failures required before considering a target unhealthy.

2

2-10

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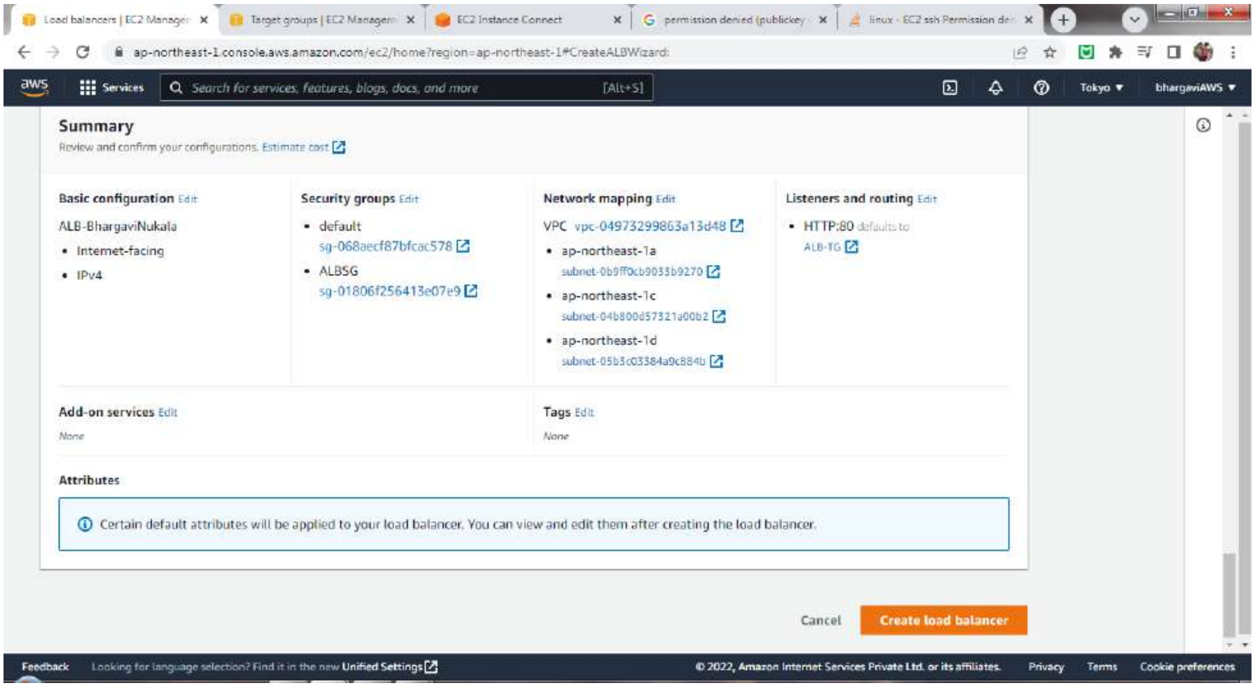
3. Create a load balancer with above created security group ALBSG and target group ALB-TG


Load balancers | EC2 Manager
Target groups | EC2 Managem
EC2 Instance Connect
permission denied (publickey
linux - EC2 ssh Permission de
ap-northeast-1.console.aws.amazon.com/ec2/home?region=ap-northeast-1#CreateALBWizard:
Services
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Tokyo ▼
bhargaviAWS ▼

Summary

Review and confirm your configurations. Estimate cost

Basic configuration Edit

ALB-BhargaviNukala
- Internet-facing
- IPv4

Security groups Edit
- default
  sg-068aecf87bfcac578
- ALBSG
  sg-01806f256413e07e9

Network mapping Edit

VPC vpc-04973299863a13d48
- ap-northeast-1a
  subnet-0b9ff0cb9033b9270
- ap-northeast-1c
  subnet-04b800d57321a00b2
- ap-northeast-1d
  subnet-05b3c03384a9c884b

Listeners and routing Edit
- HTTP:80 defaults to
  ALB-TG

Add-on services Edit

None

Tags Edit

None

Attributes

Certain default attributes will be applied to your load balancer. You can view and edit them after creating the load balancer.

Cancel
Create load balancer
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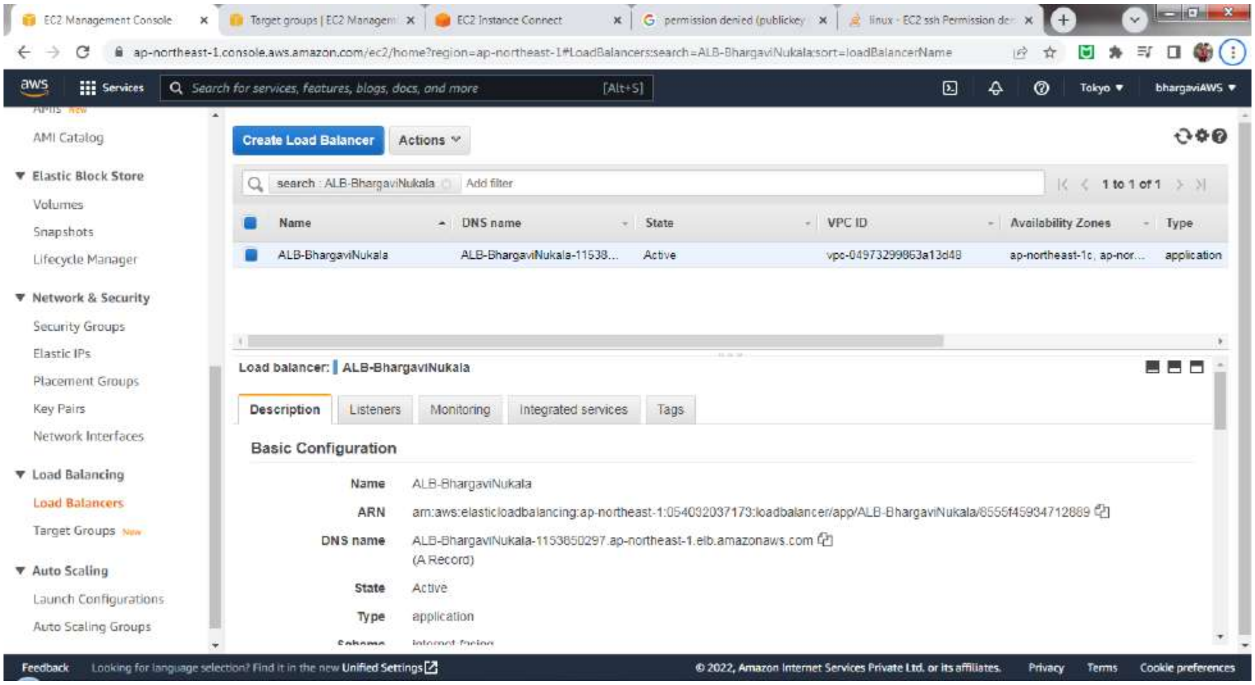
4. Created a load balancer that is in Active Status



Name	DNS name	State	VPC ID	Availability Zones	Type
ALB-BhargaviNukala	ALB-BhargaviNukala-11538...	Active	vpc-04973299863a13d48	ap-northeast-1c, ap-nor...	application

Load balancer: ALB-BhargaviNukala

Basic Configuration

Name	ALB-BhargaviNukala
ARN	arn:aws:elasticloadbalancing:ap-northeast-1:054032037173:loadbalancer/app/ALB-BhargaviNukala/8555f45934712889
DNS name	ALB-BhargaviNukala-1153850297.ap-northeast-1.elb.amazonaws.com (A Record)
State	Active
Type	application
Scheme	internet-facing

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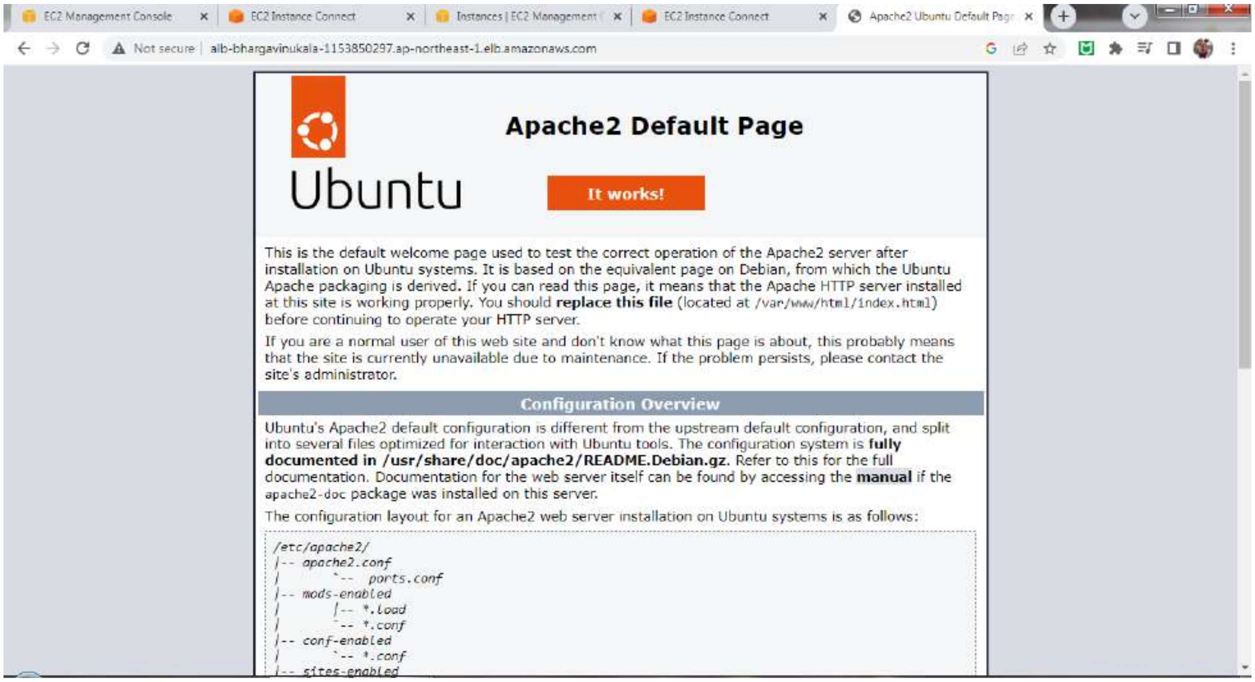
5. Connect to Load Balancer from WebPage using dns name of load balancer


EC2 Management Console
EC2 Instance Connect
Instances | EC2 Management C
EC2 Instance Connect
Apache2 Ubuntu Default Page
Not secure | alb-bhargavinukala-1153850297.ap-northeast-1.elb.amazonaws.com
Ubuntu
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Apache2 Default Page

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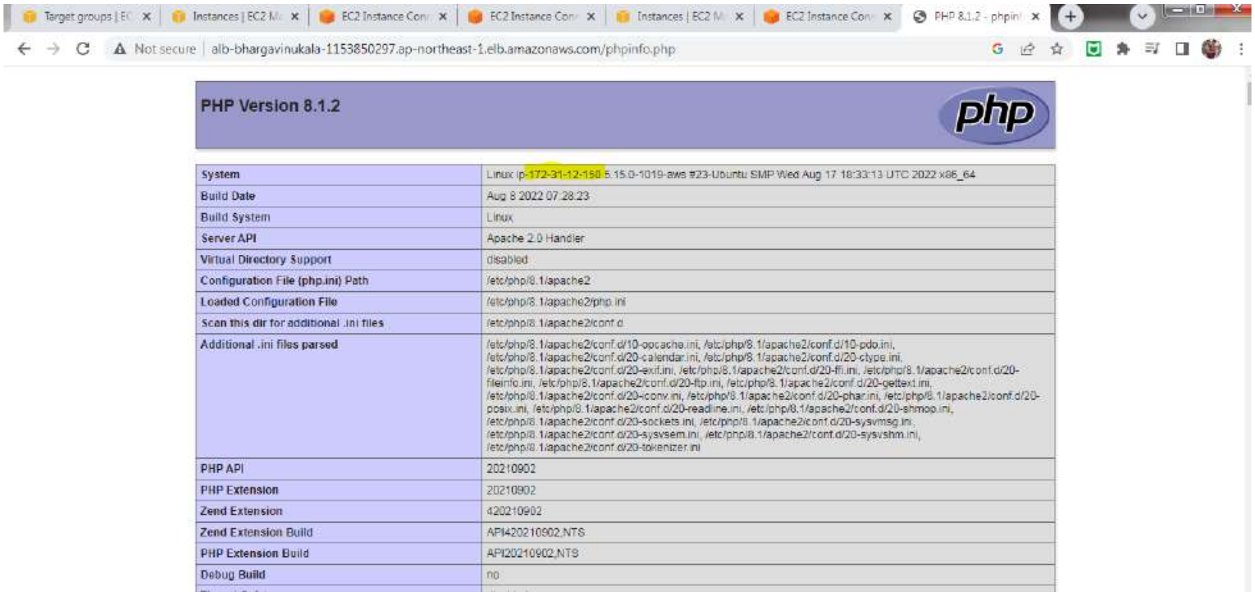
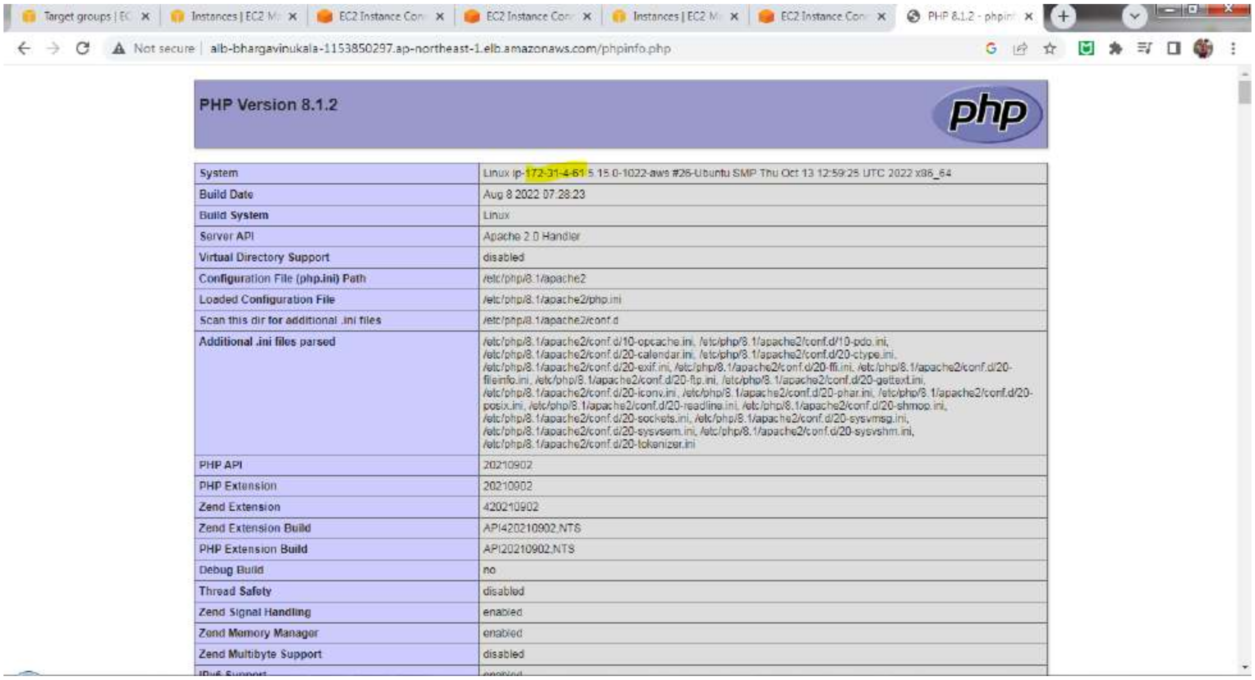
```
/etc/apache2/
|-- apache2.conf
|       `--  ports.conf
|-- mods-enabled
|       |-- *.load
|       `-- *.conf
|-- conf-enabled
|       `-- *.conf
|-- sites-enabled
```

6. Try to access phpinfo.php page from the web and we can see that two IP addresses 172.31.4.61 and 172.31.12.150 are appearing alternatively



PHP Version 8.1.2

System	Linux ip-172-31-12-150 5.15.0-1019-aws #23-Ubuntu SMP Wed Aug 17 18:33:13 UTC 2022 x86_64
Build Date	Aug 8 2022 07:28:23
Build System	Linux
Server API	Apache 2.0 Handler
Virtual Directory Support	disabled
Configuration File (php.ini) Path	/etc/php/8.1/apache2
Loaded Configuration File	/etc/php/8.1/apache2/php.ini
Scan this dir for additional .ini files	/etc/php/8.1/apache2/conf.d
Additional .ini files parsed	/etc/php/8.1/apache2/conf.d/10-opcache.ini, /etc/php/8.1/apache2/conf.d/10-pdo.ini, /etc/php/8.1/apache2/conf.d/20-calendar.ini, /etc/php/8.1/apache2/conf.d/20-ctype.ini, /etc/php/8.1/apache2/conf.d/20-exif.ini, /etc/php/8.1/apache2/conf.d/20-ffi.ini, /etc/php/8.1/apache2/conf.d/20-fileinfo.ini, /etc/php/8.1/apache2/conf.d/20-ftp.ini, /etc/php/8.1/apache2/conf.d/20-gettext.ini, /etc/php/8.1/apache2/conf.d/20-iconv.ini, /etc/php/8.1/apache2/conf.d/20-phar.ini, /etc/php/8.1/apache2/conf.d/20-posix.ini, /etc/php/8.1/apache2/conf.d/20-readline.ini, /etc/php/8.1/apache2/conf.d/20-shmop.ini, /etc/php/8.1/apache2/conf.d/20-sockets.ini, /etc/php/8.1/apache2/conf.d/20-sysvmsg.ini, /etc/php/8.1/apache2/conf.d/20-sysvsem.ini, /etc/php/8.1/apache2/conf.d/20-sysvshm.ini, /etc/php/8.1/apache2/conf.d/20-tokenizer.ini
PHP API	20210902
PHP Extension	20210902
Zend Extension	420210902
Zend Extension Build	API420210902,NTS
PHP Extension Build	API20210902,NTS
Debug Build	no



alb-bhargavinukala-1153850297.ap-northeast-1.elb.amazonaws.com/phpinfo.php

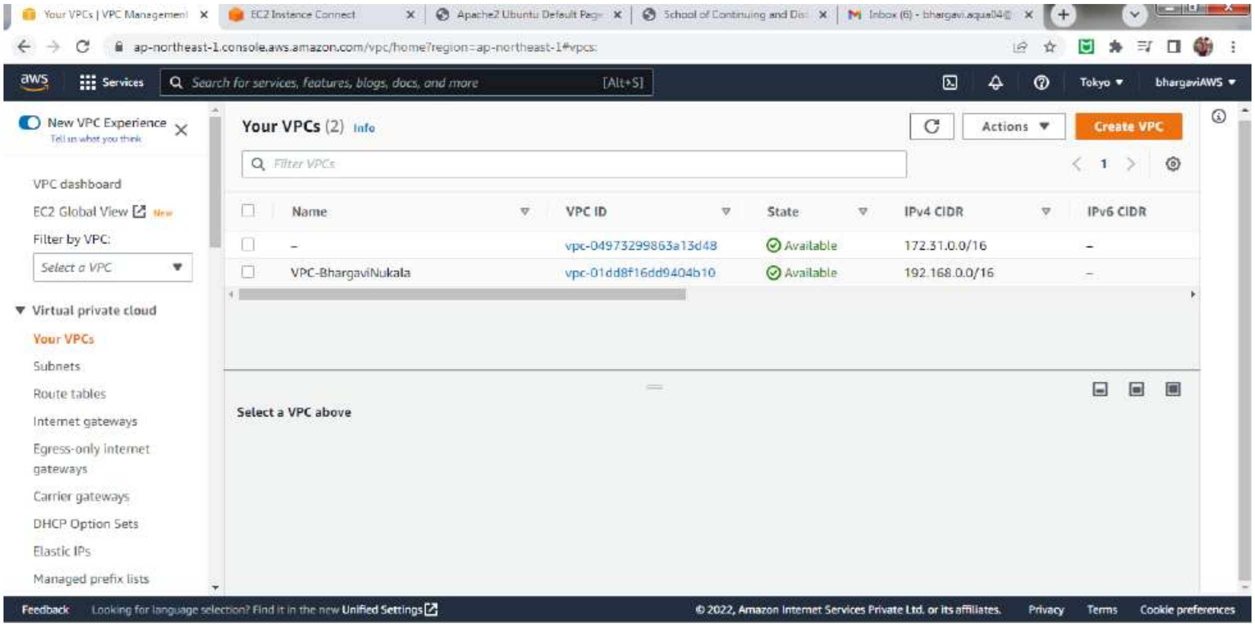
PHP Version 8.1.2

System	Linux ip-172-31-4-61 5.15.0-1022-aws #26-Ubuntu SMP Thu Oct 13 12:59:25 UTC 2022 x86_64
Build Date	Aug 8 2022 07:28:23
Build System	Linux
Server API	Apache 2.0 Handler
Virtual Directory Support	disabled
Configuration File (php.ini) Path	/etc/php/8.1/apache2
Loaded Configuration File	/etc/php/8.1/apache2/php.ini
Scan this dir for additional .ini files	/etc/php/8.1/apache2/conf.d
Additional .ini files parsed	/etc/php/8.1/apache2/conf.d/10-opcache.ini, /etc/php/8.1/apache2/conf.d/10-pdo.ini, /etc/php/8.1/apache2/conf.d/20-calendar.ini, /etc/php/8.1/apache2/conf.d/20-ctype.ini, /etc/php/8.1/apache2/conf.d/20-exif.ini, /etc/php/8.1/apache2/conf.d/20-ffi.ini, /etc/php/8.1/apache2/conf.d/20-fileinfo.ini, /etc/php/8.1/apache2/conf.d/20-ftp.ini, /etc/php/8.1/apache2/conf.d/20-gettext.ini, /etc/php/8.1/apache2/conf.d/20-iconv.ini, /etc/php/8.1/apache2/conf.d/20-phar.ini, /etc/php/8.1/apache2/conf.d/20-posix.ini, /etc/php/8.1/apache2/conf.d/20-readline.ini, /etc/php/8.1/apache2/conf.d/20-shmop.ini, /etc/php/8.1/apache2/conf.d/20-sockets.ini, /etc/php/8.1/apache2/conf.d/20-sysvmsg.ini, /etc/php/8.1/apache2/conf.d/20-sysvsem.ini, /etc/php/8.1/apache2/conf.d/20-sysvshm.ini, /etc/php/8.1/apache2/conf.d/20-tokenizer.ini
PHP API	20210902
PHP Extension	20210902
Zend Extension	420210902
Zend Extension Build	API420210902,NTS
PHP Extension Build	API20210902,NTS
Debug Build	no
Thread Safety	disabled
Zend Signal Handling	enabled
Zend Memory Manager	enabled
Zend Multibyte Support	disabled
IPv6 Support	enabled

This shows the load balancer is working between the instances.

VPC:

1. Create a new VPC and provided range of VPC as 192.168.0.0/16



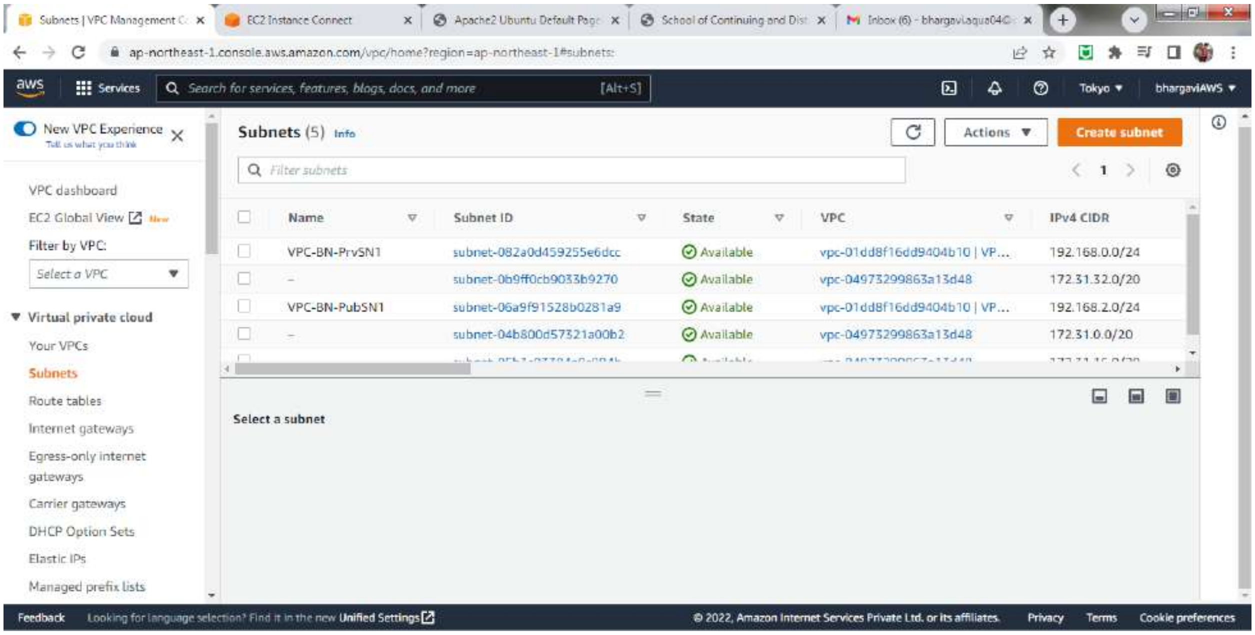
ap-northeast-1.console.aws.amazon.com/vpc/home?region=ap-northeast-1#vpcs:

Your VPCs (2) Info

	Name	VPC ID	State	IPv4 CIDR	IPv6 CIDR
□	–	vpc-04973299863a13d48	✓ Available	172.31.0.0/16	–
□	VPC-BhargaviNukala	vpc-01dd8f16dd9404b10	✓ Available	192.168.0.0/16	–

Select a VPC above

2. Create two subnets, one as Public subnet and one as Private Subnet in our VPC


Subnets | VPC Management C
EC2 Instance Connect
Apache2 Ubuntu Default Page
School of Continuing and Dist
Inbox (6) - bhargavi.aqua04@
ap-northeast-1.console.aws.amazon.com/vpc/home?region=ap-northeast-1#subnets:
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Filter by VPC:
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Your VPCs
Subnets
Route tables
Internet gateways
Egress-only internet gateways
Carrier gateways
DHCP Option Sets
Elastic IPs
Managed prefix lists
Subnets (5)
Info
Actions
Create subnet
Filter subnets
1
Select a subnet
Feedback
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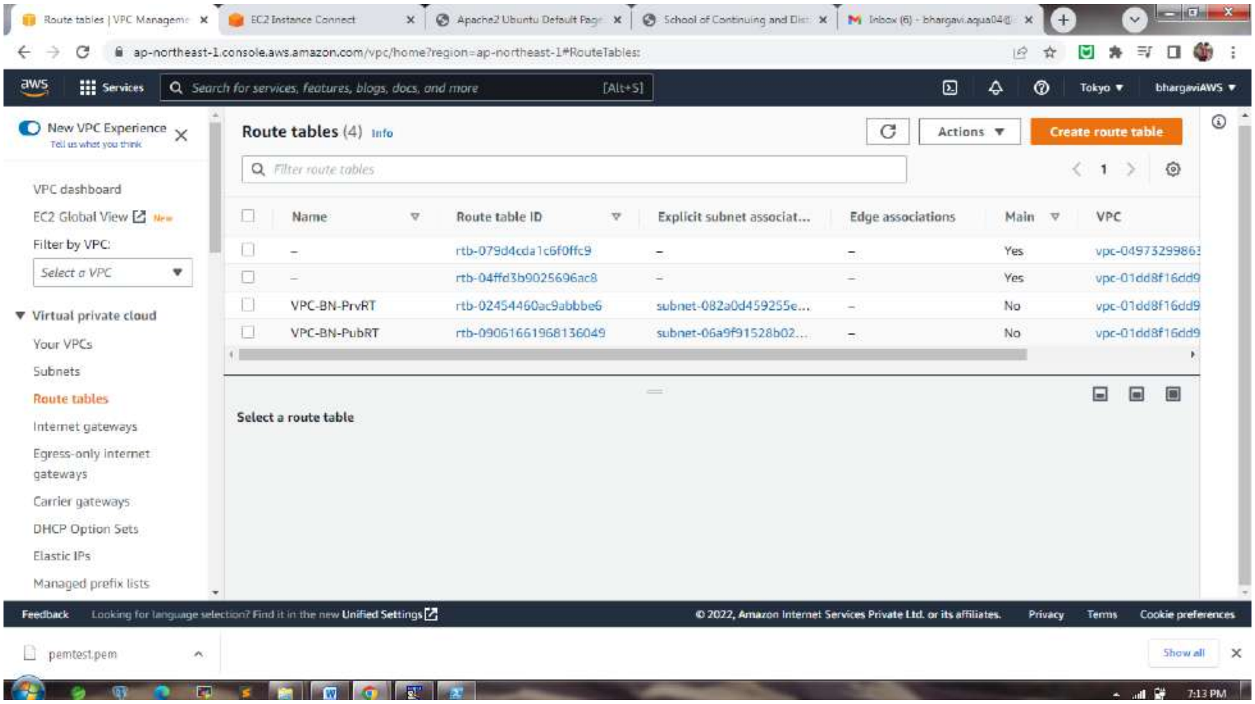
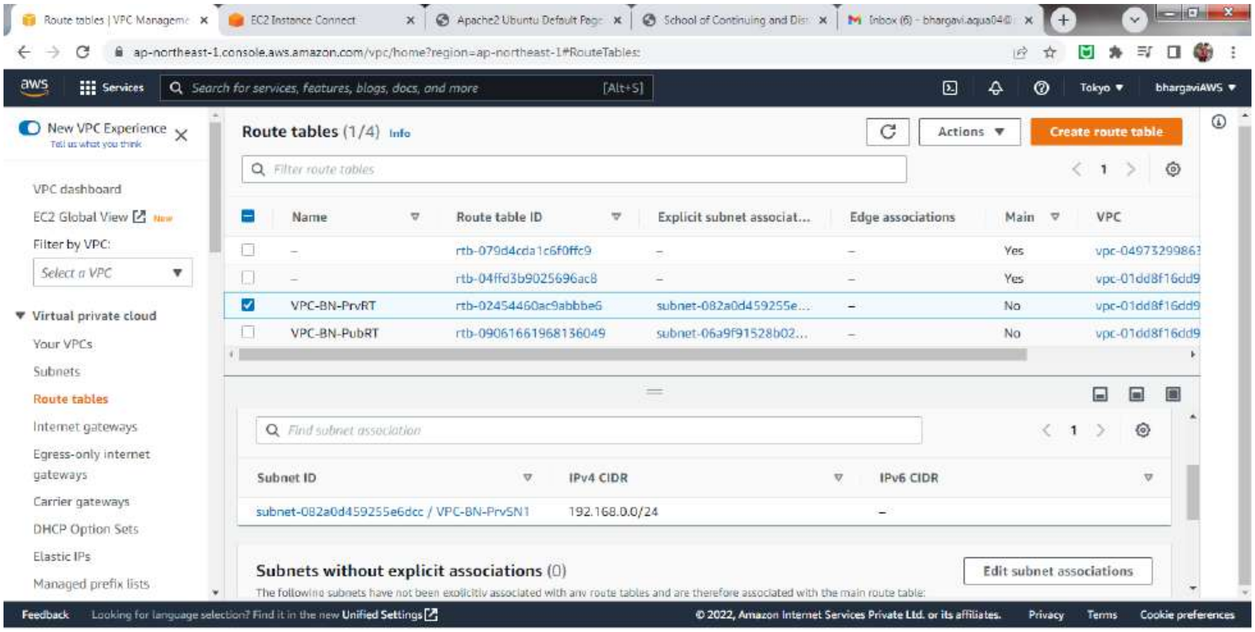
Name	Subnet ID	State	VPC	IPv4 CIDR
VPC-BN-PrvSN1	subnet-082a0d459255e6dcc	Available	vpc-01dd8f16dd9404b10 | VP...	192.168.0.0/24
–	subnet-0b9ff0cb9033b9270	Available	vpc-04973299863a13d48	172.31.32.0/20
VPC-BN-PubSN1	subnet-06a9f91528b0281a9	Available	vpc-01dd8f16dd9404b10 | VP...	192.168.2.0/24
–	subnet-04b800d57321a00b2	Available	vpc-04973299863a13d48	172.31.0.0/20

3. Create two Route Tables, one for Public Subnet and One for Private Subnet



Name	Route table ID	Explicit subnet associat...	Edge associations	Main	VPC
–	rtb-079d4cda1c6f0ffc9	–	–	Yes	vpc-04973299863
–	rtb-04ffd3b9025696ac8	–	–	Yes	vpc-01dd8f16dd9
VPC-BN-PrvRT	rtb-02454460ac9abbbe6	subnet-082a0d459255e...	–	No	vpc-01dd8f16dd9
VPC-BN-PubRT	rtb-09061661968136049	subnet-06a9f91528b02...	–	No	vpc-01dd8f16dd9

4. Associate Private Subnet to Private Route Table and Public subnet to Public Route Table


Route tables | VPC Manageme
EC2 Instance Connect
Apache2 Ubuntu Default Page
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Inbox (6) - bhargavi.aqua04@
ap-northeast-1.console.aws.amazon.com/vpc/home?region=ap-northeast-1#RouteTables:
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Egress-only internet gateways
Carrier gateways
DHCP Option Sets
Elastic IPs
Managed prefix lists
Actions
Create route table
Filter route tables
Find subnet association
Edit subnet associations
Feedback
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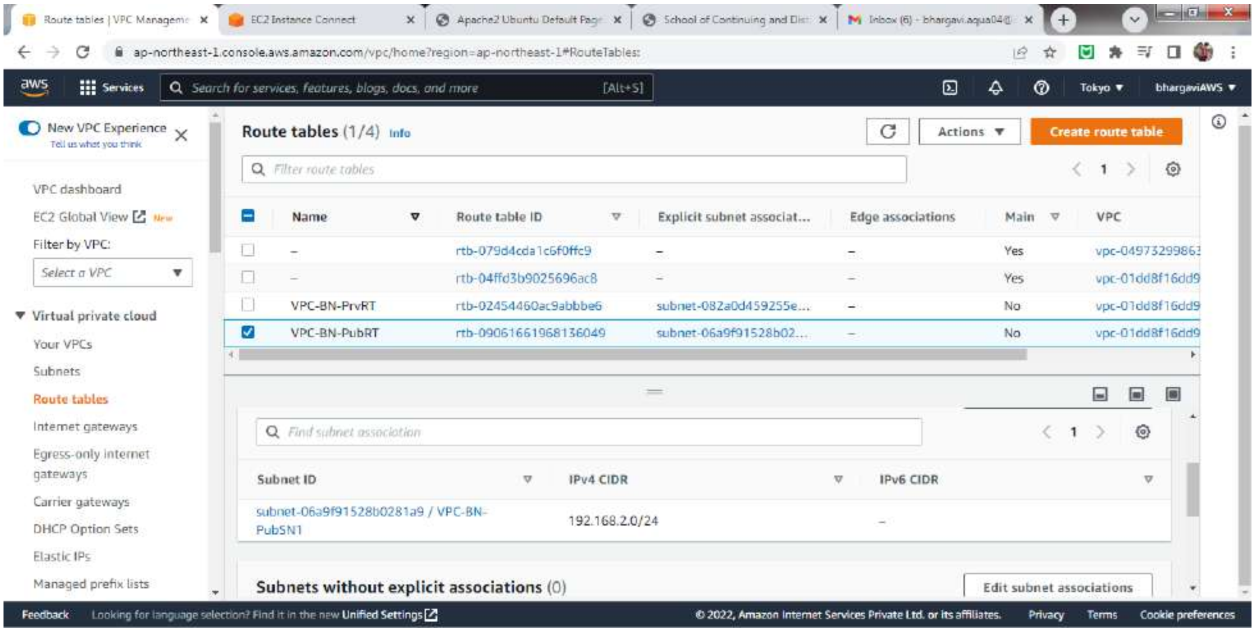
Route tables (1/4) Info

	Name	Route table ID	Explicit subnet associat...	Edge associations	Main	VPC
□	–	rtb-079d4cda1c6f0ffc9	–	–	Yes	vpc-04973299863
□	–	rtb-04ffd3b9025696ac8	–	–	Yes	vpc-01dd8f16dd9
☑	VPC-BN-PrvRT	rtb-02454460ac9abbbe6	subnet-082a0d459255e...	–	No	vpc-01dd8f16dd9
□	VPC-BN-PubRT	rtb-09061661968136049	subnet-06a9f91528b02...	–	No	vpc-01dd8f16dd9

Subnet ID	IPv4 CIDR	IPv6 CIDR
subnet-082a0d459255e6dcc / VPC-BN-PrvSN1	192.168.0.0/24	–

Subnets without explicit associations (0)

The following subnets have not been explicitly associated with any route tables and are therefore associated with the main route table:


Route tables | VPC Manageme
EC2 Instance Connect
Apache2 Ubuntu Default Page
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Inbox (6) - bhargavi.aqua04@
ap-northeast-1.console.aws.amazon.com/vpc/home?region=ap-northeast-1#RouteTables:
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DHCP Option Sets
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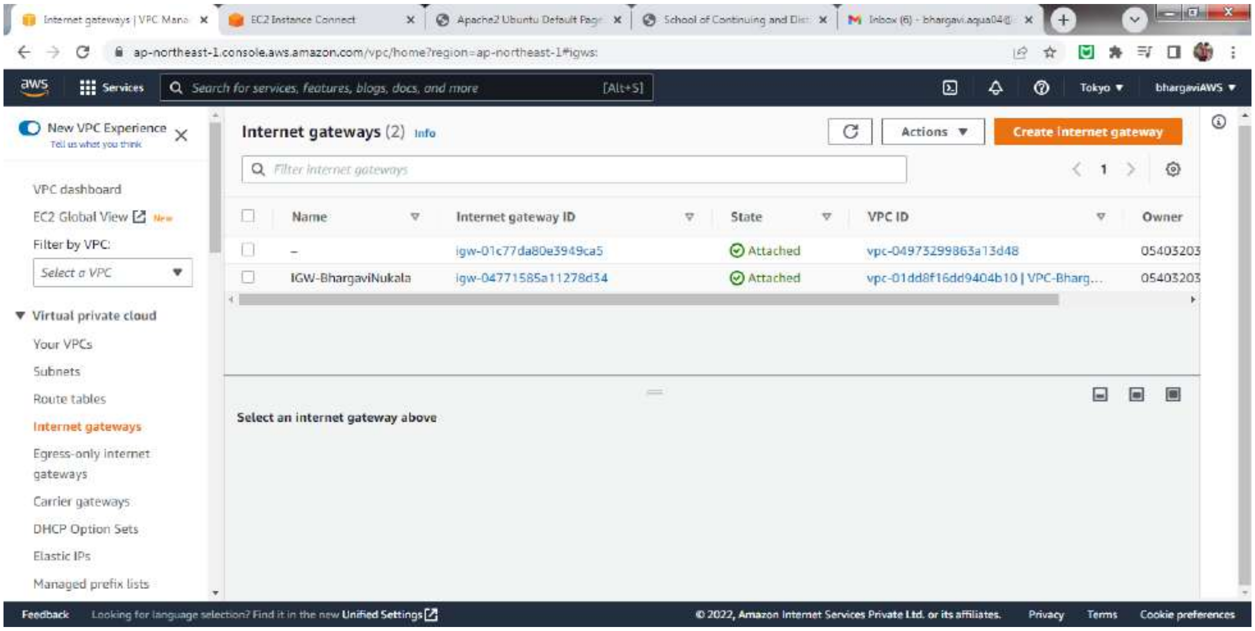
Route tables (1/4) Info

	Name	Route table ID	Explicit subnet associat...	Edge associations	Main	VPC
□	–	rtb-079d4cda1c6f0ffc9	–	–	Yes	vpc-04973299863
□	–	rtb-04ffd3b9025696ac8	–	–	Yes	vpc-01dd8f16dd9
□	VPC-BN-PrvRT	rtb-02454460ac9abbbe6	subnet-082a0d459255e...	–	No	vpc-01dd8f16dd9
☑	VPC-BN-PubRT	rtb-09061661968136049	subnet-06a9f91528b02...	–	No	vpc-01dd8f16dd9

Subnet ID	IPv4 CIDR	IPv6 CIDR
subnet-06a9f91528b0281a9 / VPC-BN-PubSN1	192.168.2.0/24	–

Subnets without explicit associations (0)

5. Create an Internet Gateway



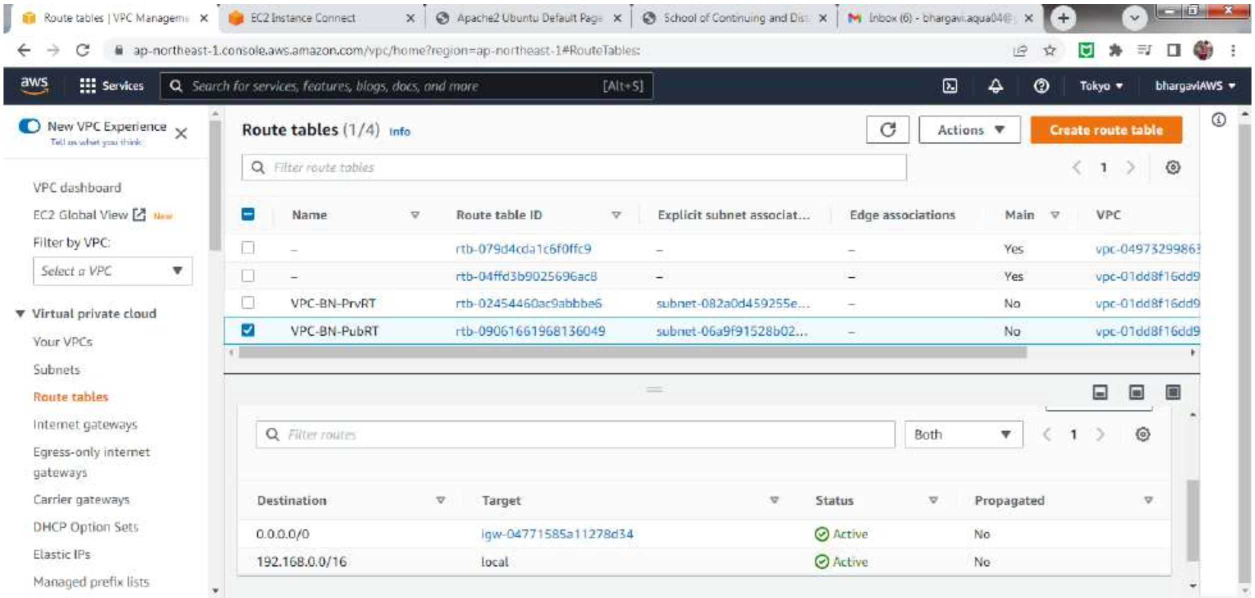
ap-northeast-1.console.aws.amazon.com/vpc/home?region=ap-northeast-1#igws:

Internet gateways (2) Info

☐	Name	Internet gateway ID	State	VPC ID	Owner
☐	–	igw-01c77da80e3949ca5	✓ Attached	vpc-04973299863a13d48	05403203
☐	IGW-BhargaviNukala	igw-04771585a11278d34	✓ Attached	vpc-01dd8f16dd9404b10 | VPC-Bharg...	05403203

Select an internet gateway above

6. Connect Public Route Table to Internet Gateway



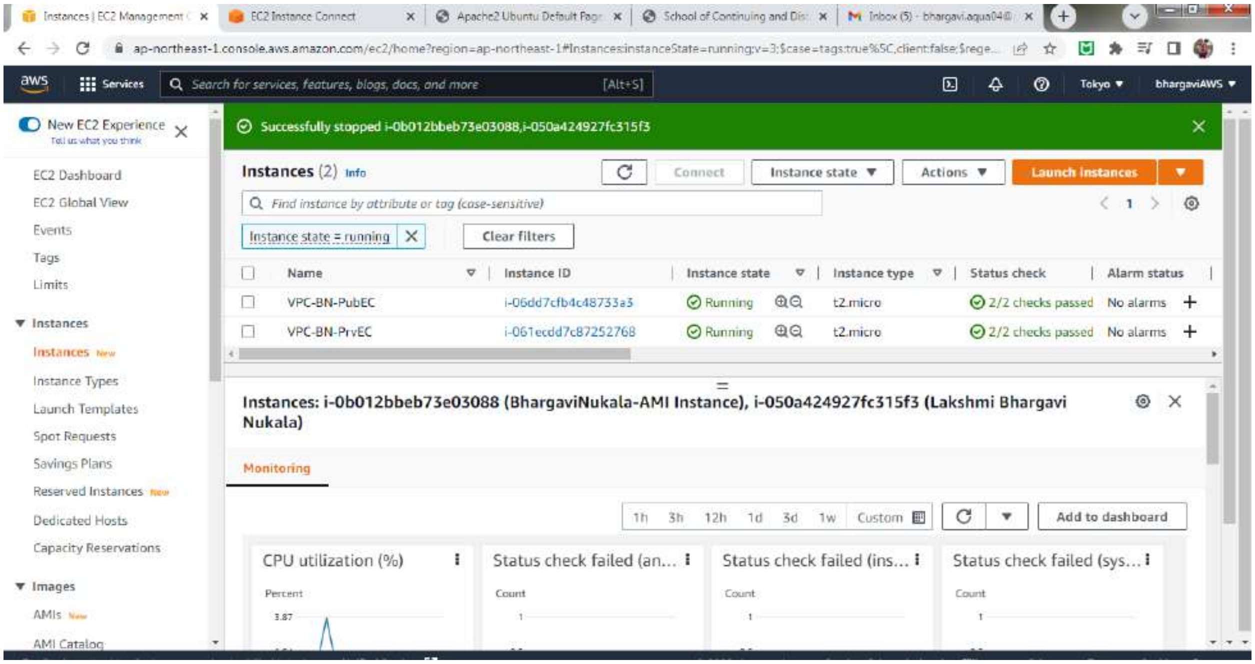
ap-northeast-1.console.aws.amazon.com/vpc/home?region=ap-northeast-1#RouteTables:

Route tables (1/4) Info

☐	Name	Route table ID	Explicit subnet associat...	Edge associations	Main	VPC
☐	–	rtb-079d4cda1c6f0ffc9	–	–	Yes	vpc-04973299863
☐	–	rtb-04ffd3b9025696ac8	–	–	Yes	vpc-01dd8f16dd9
☐	VPC-BN-PrvRT	rtb-02454460ac9abbbe6	subnet-082a0d459255e...	–	No	vpc-01dd8f16dd9
☑	VPC-BN-PubRT	rtb-09061661968136049	subnet-06a9f91528b02...	–	No	vpc-01dd8f16dd9

Destination	Target	Status	Propagated
0.0.0.0/0	igw-04771585a11278d34	✓ Active	No
192.168.0.0/16	local	✓ Active	No

7. Created two instances in VPC, one in Private Subnet and one in Public subnet


Instances | EC2 Management
EC2 Instance Connect
Apache2 Ubuntu Default Page
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Inbox (5) - bhargavi.aqua04@
ap-northeast-1.console.aws.amazon.com/ec2/home?region=ap-northeast-1#Instances:instanceState=running;v=3;$case=tags:true%5C,client:false;$rege...
Services
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Events
Tags
Limits
Instances
Instances New
Instance Types
Launch Templates
Spot Requests
Savings Plans
Reserved Instances New
Dedicated Hosts
Capacity Reservations
Images
AMIs New
AMI Catalog
Connect
Instance state
Actions
Launch instances
Find instance by attribute or tag (case-sensitive)
Clear filters
Monitoring
1h 3h 12h 1d 3d 1w Custom
Add to dashboard
Percent
3.87
Count
1

Successfully stopped i-0b012bbeb73e03088,i-050a424927fc315f3

Instances (2) Info

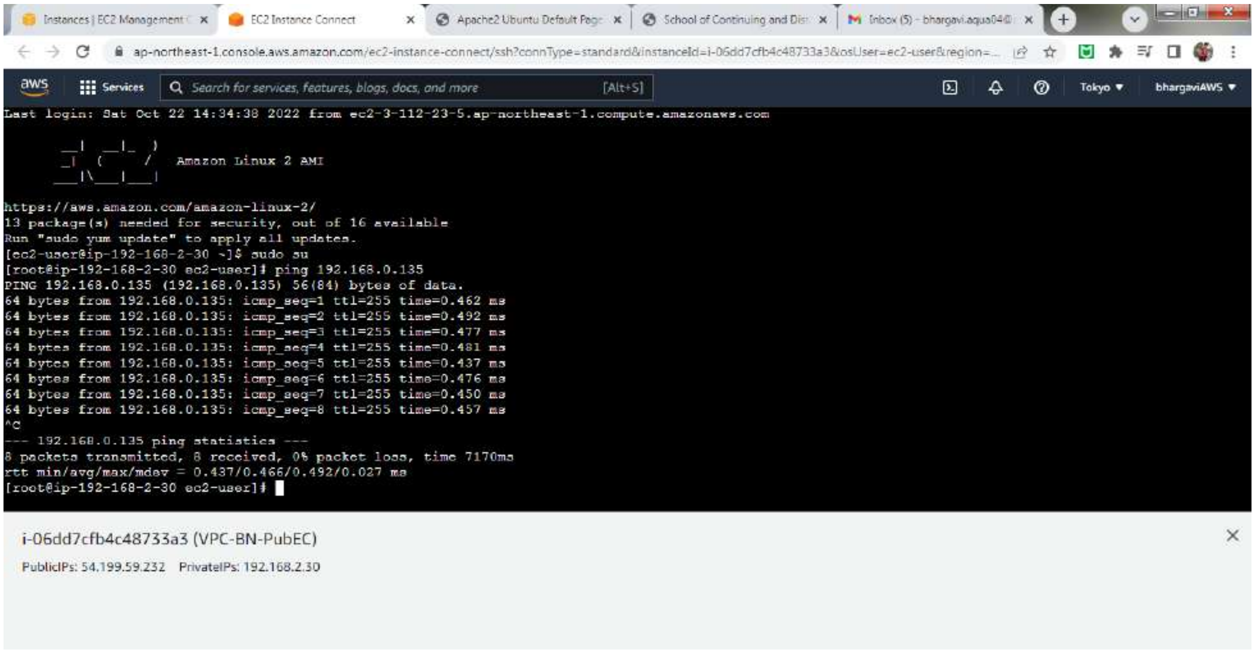
Instance state = running

Name	Instance ID	Instance state	Instance type	Status check	Alarm status
VPC-BN-PubEC	i-06dd7cfb4c48733a3	Running	t2.micro	2/2 checks passed	No alarms
VPC-BN-PrvEC	i-061ecdd7c87252768	Running	t2.micro	2/2 checks passed	No alarms

Instances: i-0b012bbeb73e03088 (BhargaviNukala-AMI Instance), i-050a424927fc315f3 (Lakshmi Bhargavi Nukala)

CPU utilization (%) | Status check failed (an... | Status check failed (ins... | Status check failed (sys...

8. Login to Instance in Public subnet and try to Ping instance in Private subnet from Instance in Public subnet


Instances | EC2 Management
EC2 Instance Connect
Apache2 Ubuntu Default Page
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Inbox (5) - bhargavi.aqua04@
ap-northeast-1.console.aws.amazon.com/ec2-instance-connect/ssh?connType=standard&instanceId=i-06dd7cfb4c48733a3&osUser=ec2-user&region=...
Services
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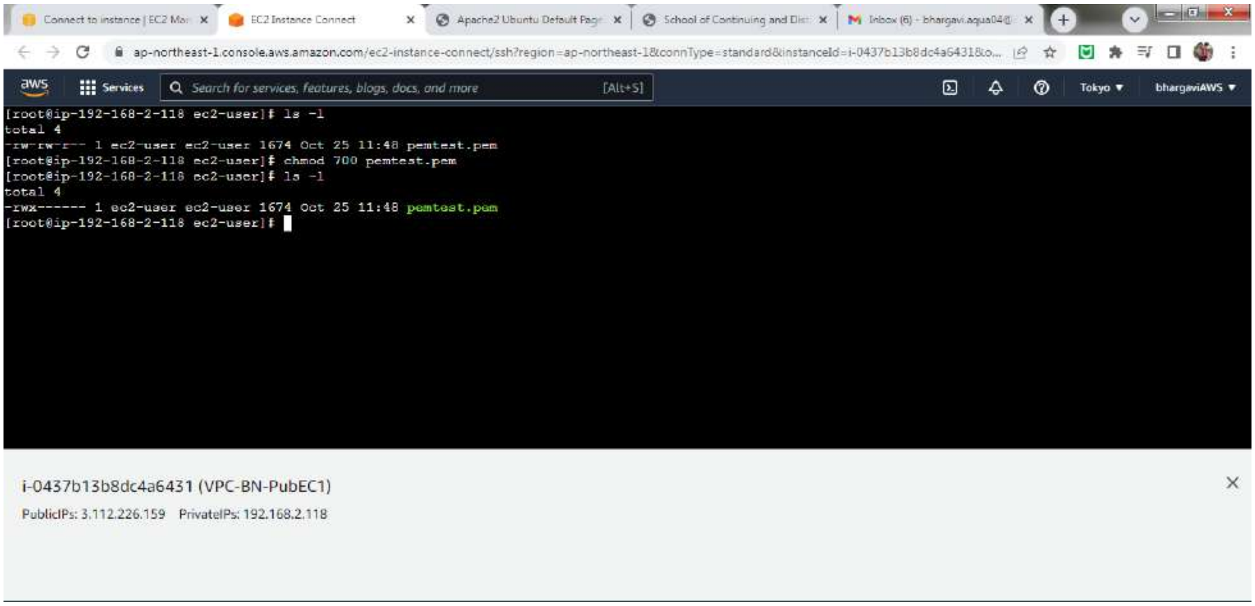
```
Last login: Sat Oct 22 14:34:38 2022 from ec2-3-112-23-5.ap-northeast-1.compute.amazonaws.com

       __|  __|_  )
       _|  (     /   Amazon Linux 2 AMI
      ___|\___|___|

https://aws.amazon.com/amazon-linux-2/
13 package(s) needed for security, out of 16 available
Run "sudo yum update" to apply all updates.
[ec2-user@ip-192-168-2-30 ~]$ sudo su
[root@ip-192-168-2-30 ec2-user]# ping 192.168.0.135
PING 192.168.0.135 (192.168.0.135) 56(84) bytes of data.
64 bytes from 192.168.0.135: icmp_seq=1 ttl=255 time=0.462 ms
64 bytes from 192.168.0.135: icmp_seq=2 ttl=255 time=0.492 ms
64 bytes from 192.168.0.135: icmp_seq=3 ttl=255 time=0.477 ms
64 bytes from 192.168.0.135: icmp_seq=4 ttl=255 time=0.481 ms
64 bytes from 192.168.0.135: icmp_seq=5 ttl=255 time=0.437 ms
64 bytes from 192.168.0.135: icmp_seq=6 ttl=255 time=0.476 ms
64 bytes from 192.168.0.135: icmp_seq=7 ttl=255 time=0.450 ms
64 bytes from 192.168.0.135: icmp_seq=8 ttl=255 time=0.457 ms
^C
--- 192.168.0.135 ping statistics ---
8 packets transmitted, 8 received, 0% packet loss, time 7170ms
rtt min/avg/max/mdev = 0.437/0.466/0.492/0.027 ms
[root@ip-192-168-2-30 ec2-user]#
```

i-06dd7cfb4c48733a3 (VPC-BN-PubEC)

PublicIPs: 54.199.59.232 PrivateIPs: 192.168.2.30

9. Ssh to private instance will fail, so Copied the pemtest.pem file onto Public EC2 instance and changed the permissions


Connect to instance | EC2 Ma
EC2 Instance Connect
Apache2 Ubuntu Default Page
School of Continuing and Dis
Inbox (6) - bhargavi.aqua04@
ap-northeast-1.console.aws.amazon.com/ec2-instance-connect/ssh?region=ap-northeast-1&connType=standard&instanceId=i-0437b13b8dc4a6431&o...
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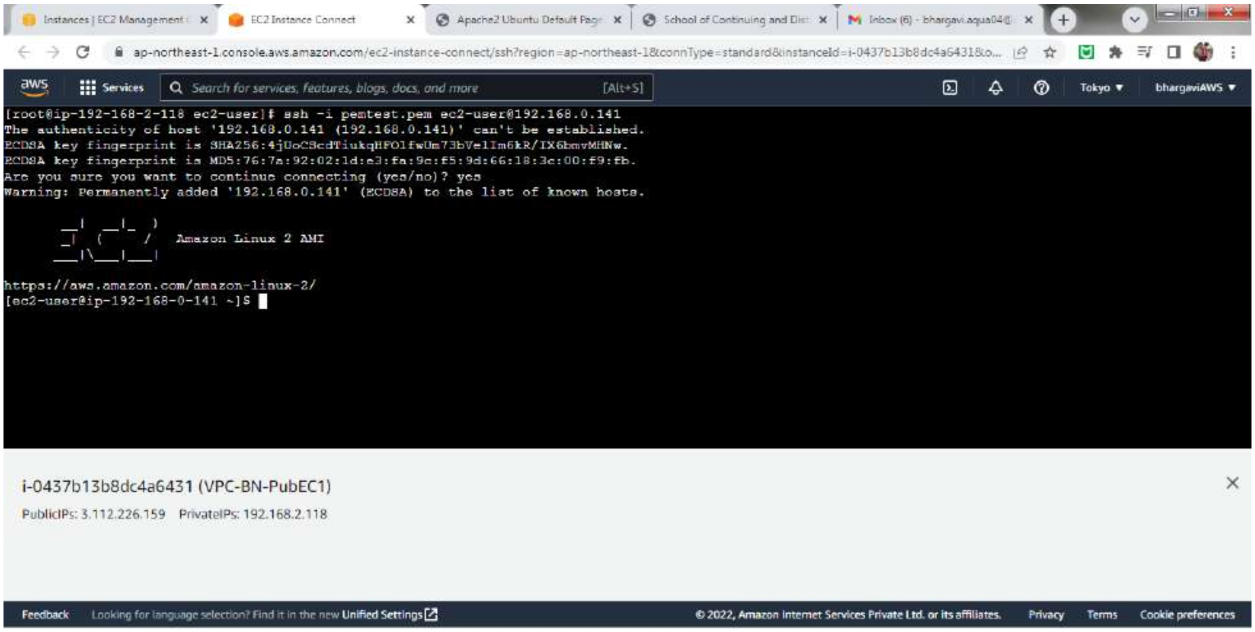
```
[root@ip-192-168-2-118 ec2-user]# ls -l
total 4
-rw-rw-r-- 1 ec2-user ec2-user 1674 Oct 25 11:48 pemtest.pem
[root@ip-192-168-2-118 ec2-user]# chmod 700 pemtest.pem
[root@ip-192-168-2-118 ec2-user]# ls -l
total 4
-rwx------ 1 ec2-user ec2-user 1674 Oct 25 11:48 pemtest.pem
[root@ip-192-168-2-118 ec2-user]#
```

i-0437b13b8dc4a6431 (VPC-BN-PubEC1)

PublicIPs: 3.112.226.159 PrivateIPs: 192.168.2.118

10. Now when we should be able to Connect to a private EC2 instance from a public EC2 instance using ssh


Instances | EC2 Management
EC2 Instance Connect
Apache2 Ubuntu Default Page
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Inbox (6) - bhargavi.aqua04@
ap-northeast-1.console.aws.amazon.com/ec2-instance-connect/ssh?region=ap-northeast-1&connType=standard&instanceId=i-0437b13b8dc4a6431&o...
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```
[root@ip-192-168-2-118 ec2-user]# ssh -i pemtest.pem ec2-user@192.168.0.141
The authenticity of host '192.168.0.141 (192.168.0.141)' can't be established.
ECDSA key fingerprint is SHA256:4jUoCScdTiukqHFOlfwUm73bVelIm6kR/IX6bmvMHNw.
ECDSA key fingerprint is MD5:76:7a:92:02:1d:e3:fa:9c:f5:9d:66:18:3c:00:f9:fb.
Are you sure you want to continue connecting (yes/no)? yes
Warning: Permanently added '192.168.0.141' (ECDSA) to the list of known hosts.

       __|  __|_  )
       _|  (     /   Amazon Linux 2 AMI
      ___|\___|___|

https://aws.amazon.com/amazon-linux-2/
[ec2-user@ip-192-168-0-141 ~]$
```

i-0437b13b8dc4a6431 (VPC-BN-PubEC1)

PublicIPs: 3.112.226.159 PrivateIPs: 192.168.2.118

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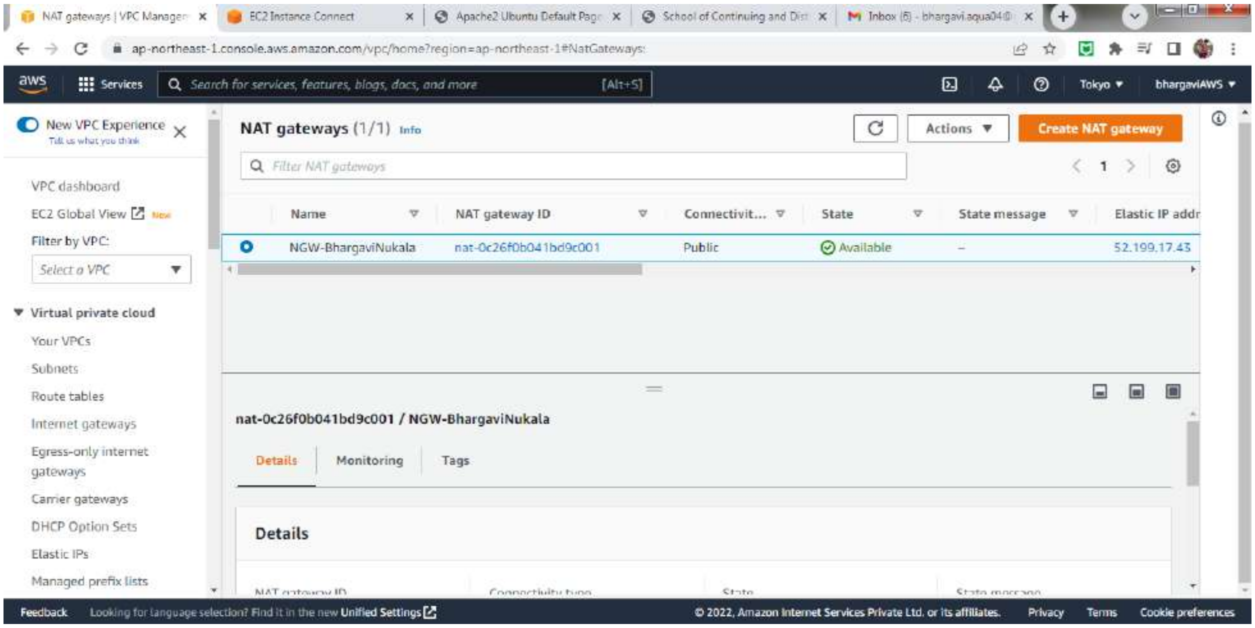
11. Create NAT GateWay to get internet connection to instances on Private Subnet


NAT gateways | VPC Managem
EC2 Instance Connect
Apache2 Ubuntu Default Page
School of Continuing and Dist
Inbox (6) - bhargavi.aqua04@
ap-northeast-1.console.aws.amazon.com/vpc/home?region=ap-northeast-1#NatGateways:
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DHCP Option Sets
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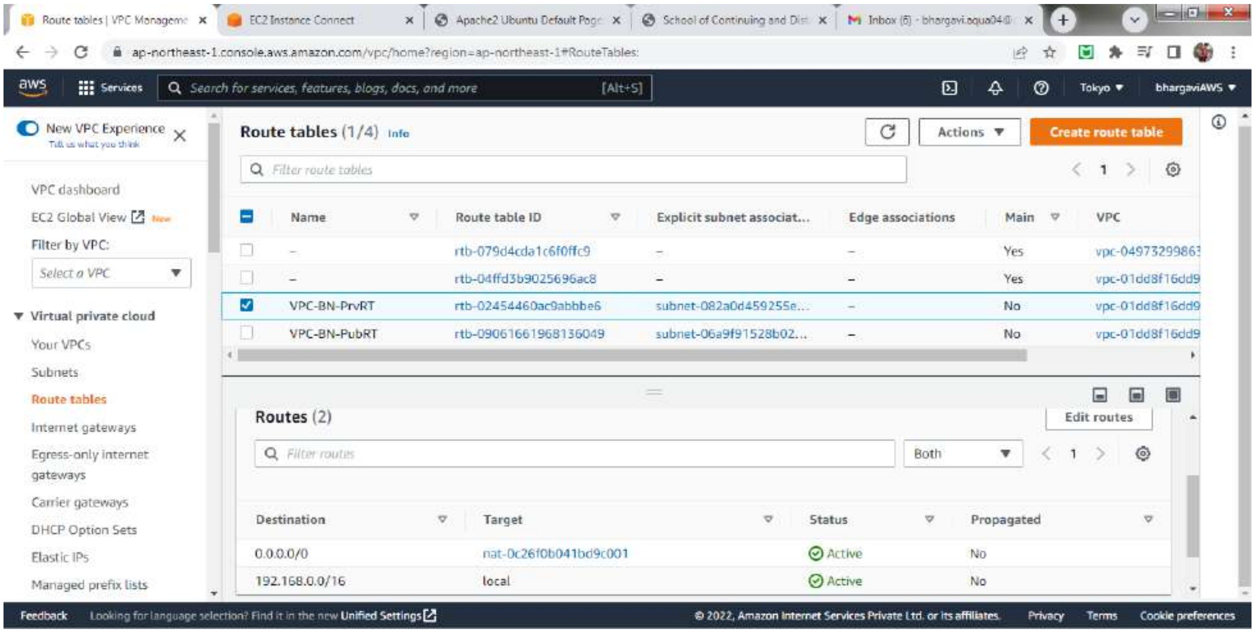
NAT gateways (1/1) Info

	Name	NAT gateway ID	Connectivit...	State	State message	Elastic IP addr
●	NGW-BhargaviNukala	nat-0c26f0b041bd9c001	Public	✓ Available	–	52.199.17.43

nat-0c26f0b041bd9c001 / NGW-BhargaviNukala

Details

12. Attaching Private RouteTable to NAT Gateway


Route tables | VPC Manageme
EC2 Instance Connect
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Filter route tables
Edit routes
Filter routes
Both
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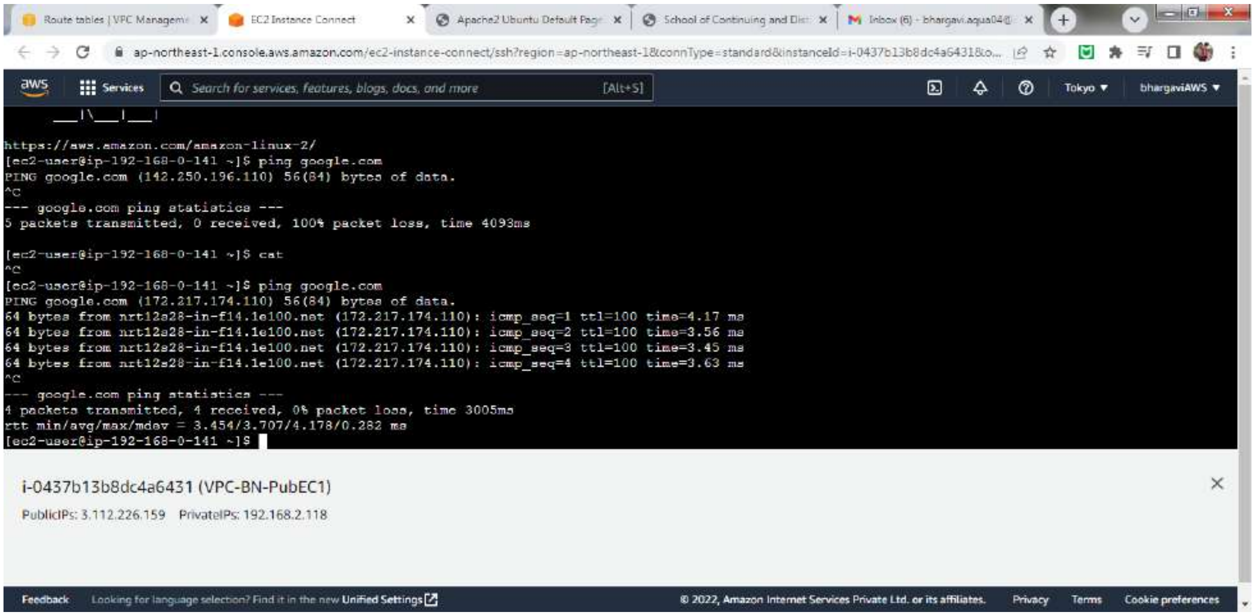
Route tables (1/4) Info

	Name	Route table ID	Explicit subnet associat...	Edge associations	Main	VPC
□	–	rtb-079d4cda1c6f0ffc9	–	–	Yes	vpc-04973299863
□	–	rtb-04ffd3b9025696ac8	–	–	Yes	vpc-01dd8f16dd9
☑	VPC-BN-PrvRT	rtb-02454460ac9abbbe6	subnet-082a0d459255e...	–	No	vpc-01dd8f16dd9
□	VPC-BN-PubRT	rtb-09061661968136049	subnet-06a9f91528b02...	–	No	vpc-01dd8f16dd9

Routes (2)

Destination	Target	Status	Propagated
0.0.0.0/0	nat-0c26f0b041bd9c001	✓ Active	No
192.168.0.0/16	local	✓ Active	No

13. Pinging google.com from instance on Private Subnet



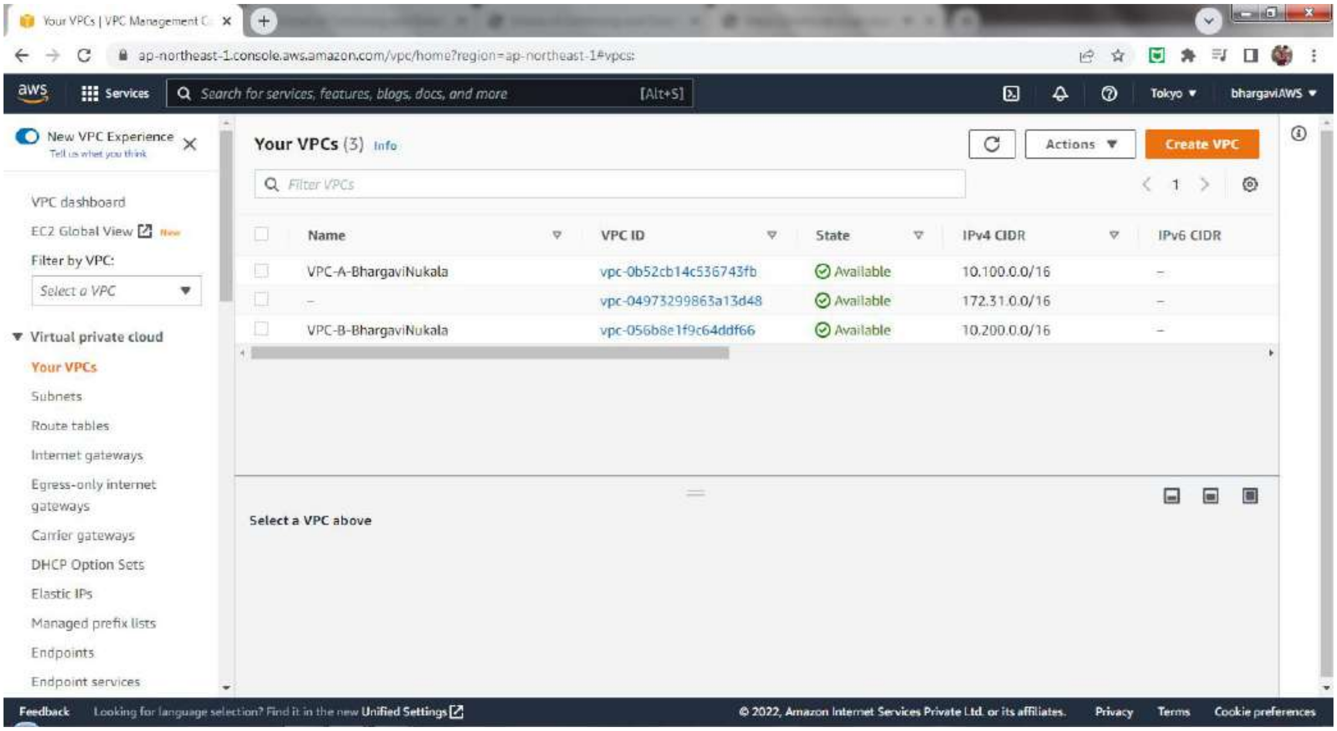
```
     ___|\___|___|

https://aws.amazon.com/amazon-linux-2/
[ec2-user@ip-192-168-0-141 ~]$ ping google.com
PING google.com (142.250.196.110) 56(84) bytes of data.
^C
--- google.com ping statistics ---
5 packets transmitted, 0 received, 100% packet loss, time 4093ms

[ec2-user@ip-192-168-0-141 ~]$ cat
^C
[ec2-user@ip-192-168-0-141 ~]$ ping google.com
PING google.com (172.217.174.110) 56(84) bytes of data.
64 bytes from nrt12s28-in-f14.1e100.net (172.217.174.110): icmp_seq=1 ttl=100 time=4.17 ms
64 bytes from nrt12s28-in-f14.1e100.net (172.217.174.110): icmp_seq=2 ttl=100 time=3.56 ms
64 bytes from nrt12s28-in-f14.1e100.net (172.217.174.110): icmp_seq=3 ttl=100 time=3.45 ms
64 bytes from nrt12s28-in-f14.1e100.net (172.217.174.110): icmp_seq=4 ttl=100 time=3.63 ms
^C
--- google.com ping statistics ---
4 packets transmitted, 4 received, 0% packet loss, time 3005ms
rtt min/avg/max/mdev = 3.454/3.707/4.178/0.282 ms
[ec2-user@ip-192-168-0-141 ~]$
```

i-0437b13b8dc4a6431 (VPC-BN-PubEC1)

PublicIPs: 3.112.226.159 PrivateIPs: 192.168.2.118

VPC Peering:

1. Create two VPCs, VPC-A and VPC-B



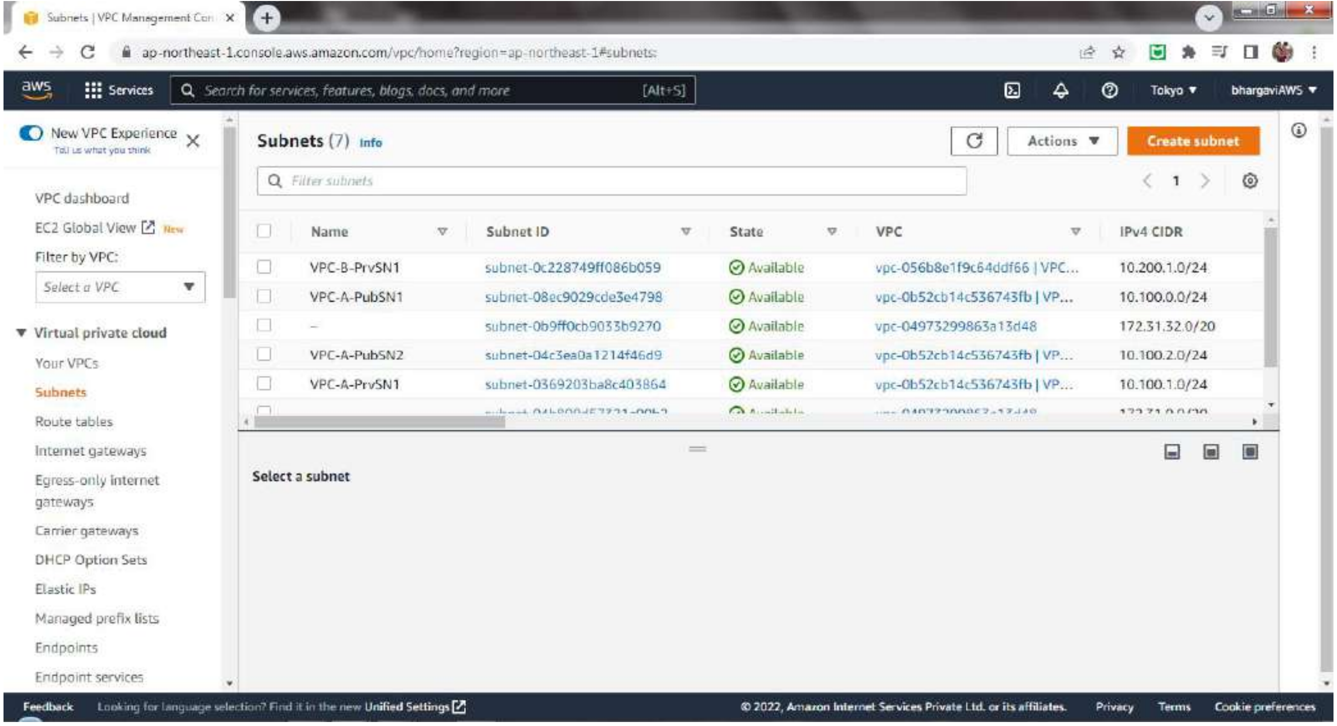
Your VPCs (3)

Name	VPC ID	State	IPv4 CIDR	IPv6 CIDR
VPC-A-BhargaviNukala	vpc-0b52cb14c536743fb	Available	10.100.0.0/16	–
–	vpc-04973299863a13d48	Available	172.31.0.0/16	–
VPC-B-BhargaviNukala	vpc-056b8e1f9c64ddf66	Available	10.200.0.0/16	–

Select a VPC above

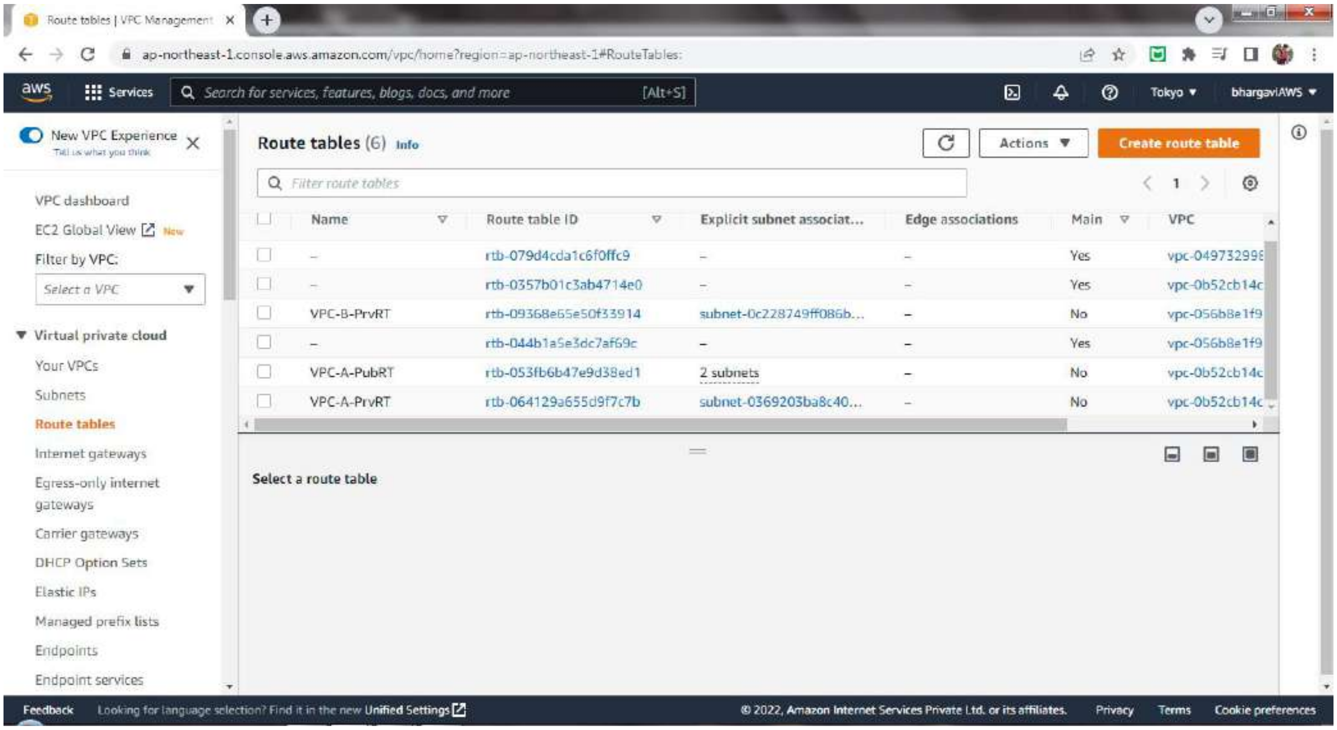
2. Create two public subnets with ranges (10.100.0.0/24) & (10.100.2.0/24) and one private

subnet with range (10.100.1.0/24) in **VPC-A**
Create one private subnet (10.200.1.0/24) in **VPC-B**



	Name	Subnet ID	State	VPC	IPv4 CIDR
□	VPC-B-PrvSN1	subnet-0c228749ff086b059	Available	vpc-056b8e1f9c64ddf66 | VPC...	10.200.1.0/24
□	VPC-A-PubSN1	subnet-08ec9029cde3e4798	Available	vpc-0b52cb14c536743fb | VP...	10.100.0.0/24
□	–	subnet-0b9ff0cb9033b9270	Available	vpc-04973299863a13d48	172.31.32.0/20
□	VPC-A-PubSN2	subnet-04c3ea0a1214f46d9	Available	vpc-0b52cb14c536743fb | VP...	10.100.2.0/24
□	VPC-A-PrvSN1	subnet-0369203ba8c403864	Available	vpc-0b52cb14c536743fb | VP...	10.100.1.0/24

3. Create a private RouteTable for private subnet and public route table for 2 public subnets in **VPC-A**
Create a private route table for private subnet in **VPC-B**
Associate the concerned subnets with the route tables.

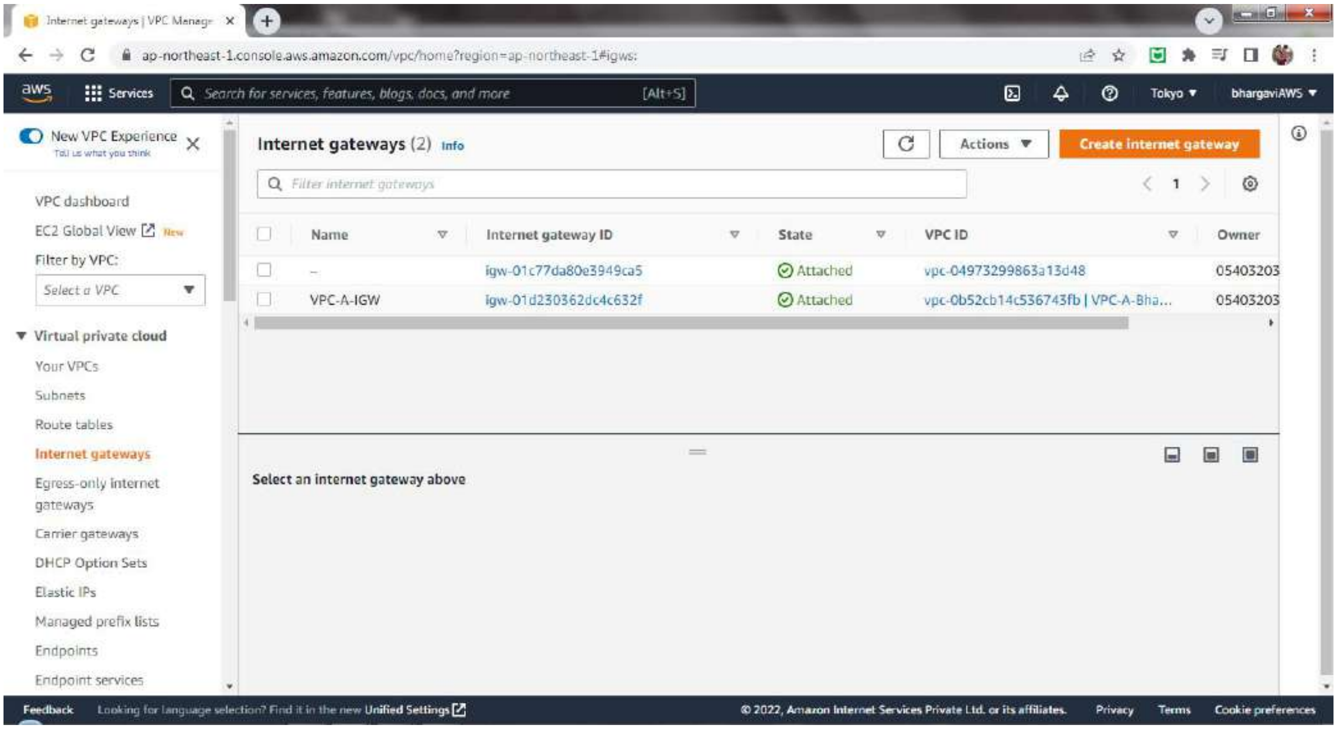


Route tables (6) Info

Name	Route table ID	Explicit subnet associat...	Edge associations	Main	VPC
–	rtb-079d4cda1c6f0ffc9	–	–	Yes	vpc-04973299Ᵹ
–	rtb-0357b01c3ab4714e0	–	–	Yes	vpc-0b52cb14c
VPC-B-PrvRT	rtb-09368e65e50f33914	subnet-0c228749ff086b...	–	No	vpc-056b8e1f9
–	rtb-044b1a5e3dc7af69c	–	–	Yes	vpc-056b8e1f9
VPC-A-PubRT	rtb-053fb6b47e9d38ed1	2 subnets	–	No	vpc-0b52cb14c
VPC-A-PrvRT	rtb-064129a655d9f7c7b	subnet-0369203ba8c40...	–	No	vpc-0b52cb14c

Select a route table

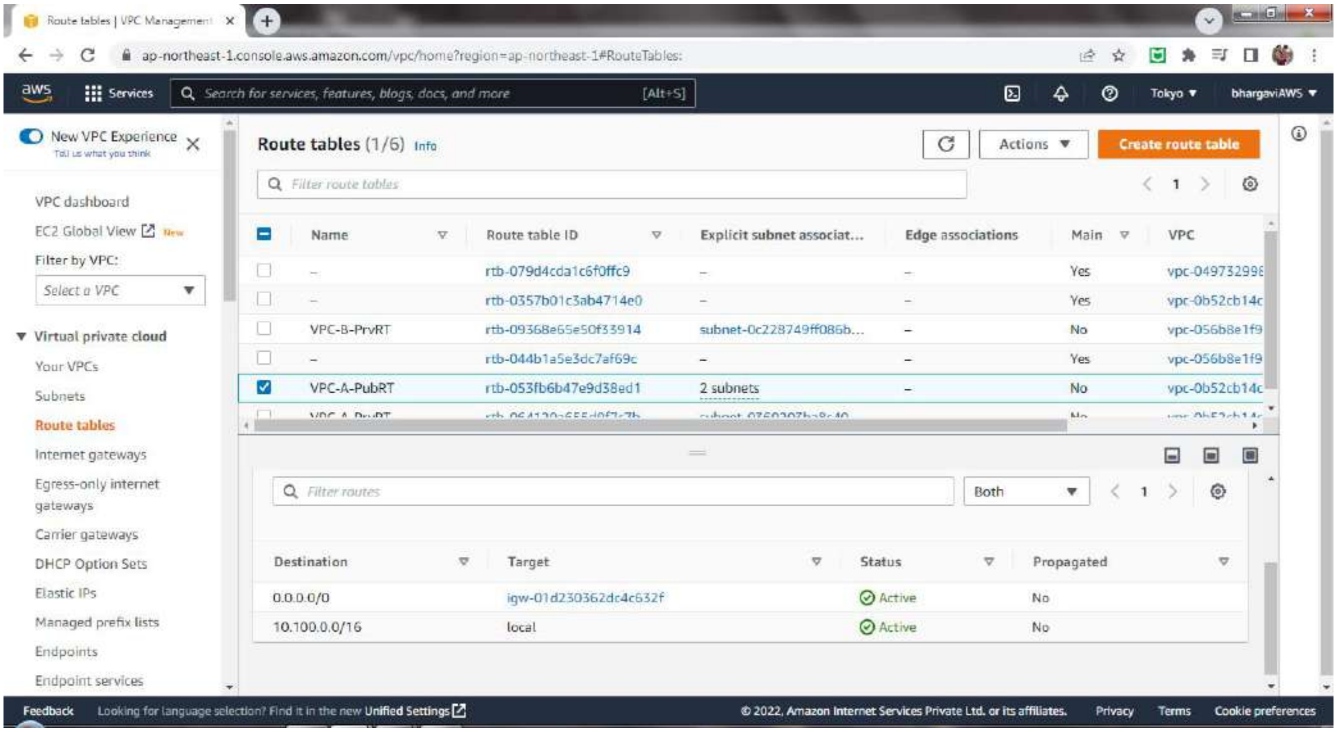
4. Create an Internet Gateway and associate public Route Table of **VPC-A** to that Internet Gateway.



Internet gateways (2) Info

Name	Internet gateway ID	State	VPC ID	Owner
–	igw-01c77da80e3949ca5	✓ Attached	vpc-04973299863a13d48	05403203
VPC-A-IGW	igw-01d230362dc4c632f	✓ Attached	vpc-0b52cb14c536743fb | VPC-A-Bha...	05403203

Select an internet gateway above

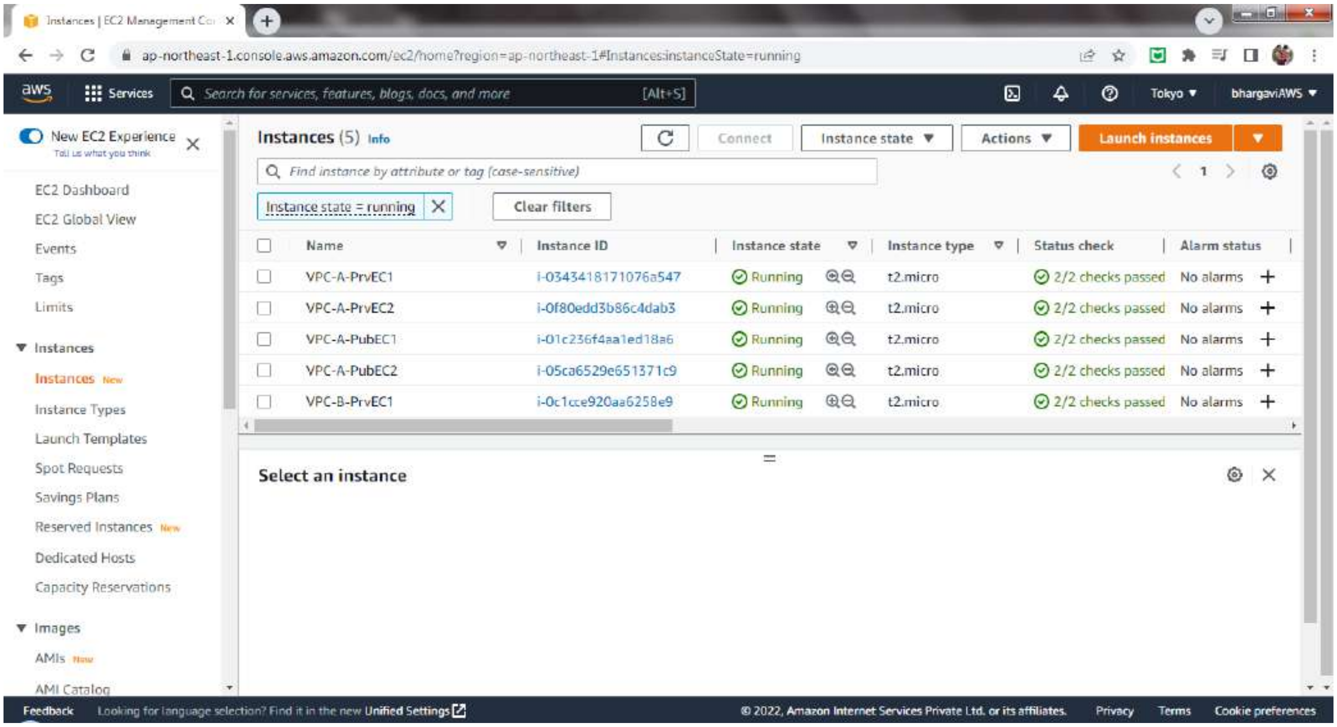


Route tables (1/6) Info

	Name	Route table ID	Explicit subnet associat...	Edge associations	Main	VPC
□	–	rtb-079d4cda1c6f0ffc9	–	–	Yes	vpc-049732998
□	–	rtb-0357b01c3ab4714e0	–	–	Yes	vpc-0b52cb14c
□	VPC-B-PrvRT	rtb-09368e65e50f33914	subnet-0c228749ff086b...	–	No	vpc-056b8e1f9
□	–	rtb-044b1a5e3dc7af69c	–	–	Yes	vpc-056b8e1f9
☑	VPC-A-PubRT	rtb-053fb6b47e9d38ed1	2 subnets	–	No	vpc-0b52cb14c

Destination	Target	Status	Propagated
0.0.0.0/0	igw-01d230362dc4c632f	Active	No
10.100.0.0/16	local	Active	No

5. Create a EC2 machine in each public subnet & private subnet should have 2 EC2 instance for **VPC-A**
create one EC2 instance in private subnetof **VPC-B**

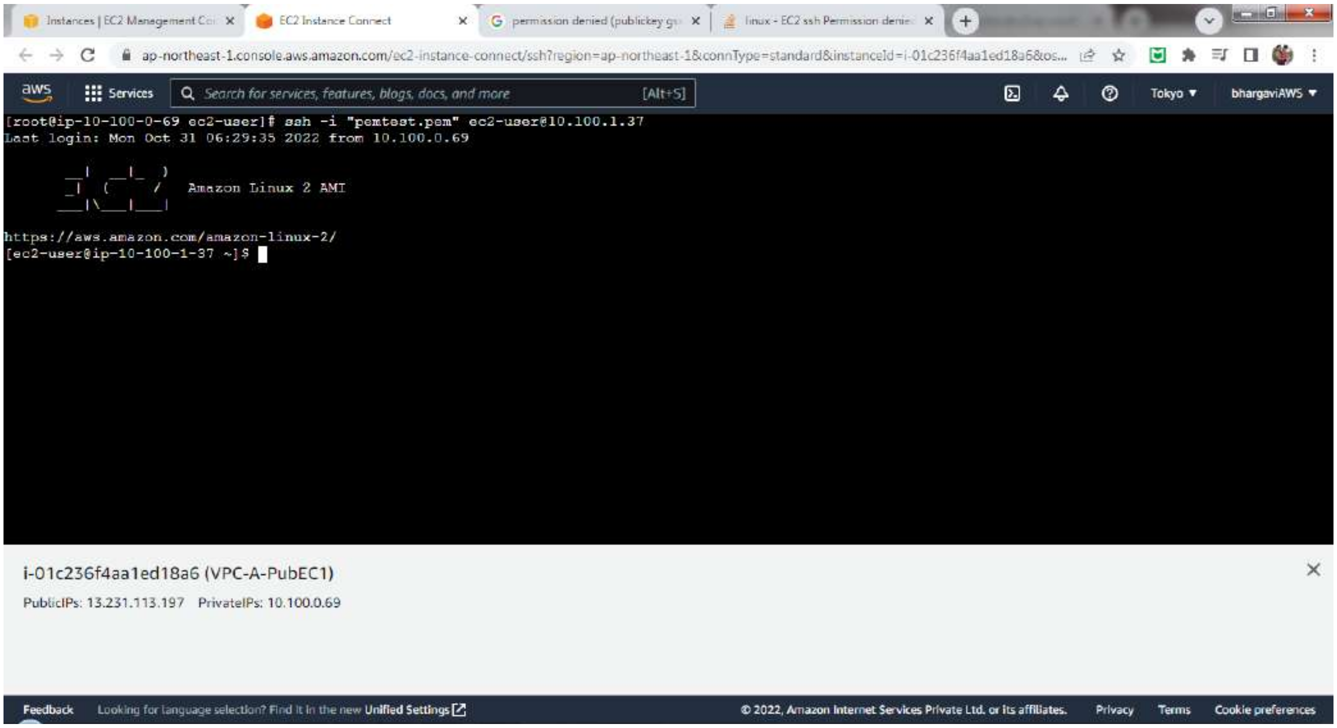


Instances (5) Info

	Name	Instance ID	Instance state	Instance type	Status check	Alarm status
□	VPC-A-PrvEC1	i-0343418171076a547	Running	t2.micro	2/2 checks passed	No alarms
□	VPC-A-PrvEC2	i-0f80edd3b86c4dab3	Running	t2.micro	2/2 checks passed	No alarms
□	VPC-A-PubEC1	i-01c236f4aa1ed18a6	Running	t2.micro	2/2 checks passed	No alarms
□	VPC-A-PubEC2	i-05ca6529e651371c9	Running	t2.micro	2/2 checks passed	No alarms
□	VPC-B-PrvEC1	i-0c1cce920aa6258e9	Running	t2.micro	2/2 checks passed	No alarms

Select an instance

6. Connect to private EC2 instance of **VPC-A** from public EC2 instance of **VPC-A**

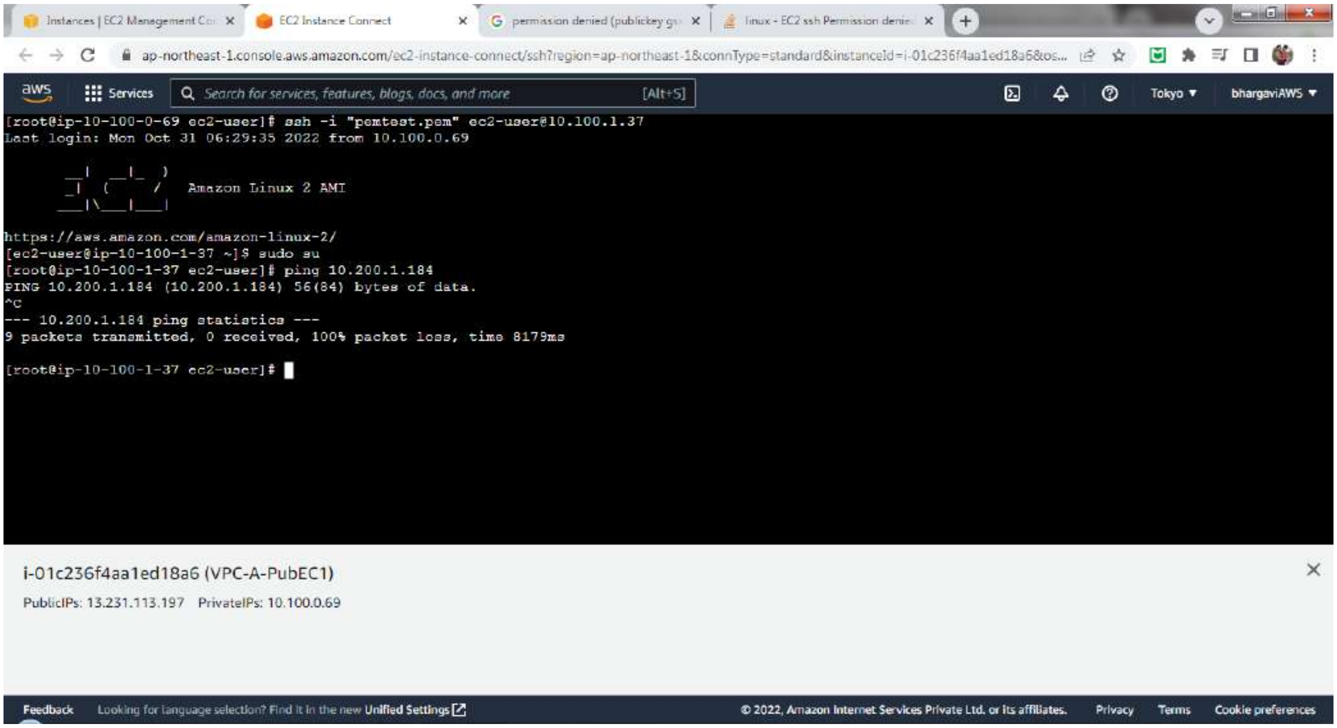


```
[root@ip-10-100-0-69 ec2-user]# ssh -i "pemtest.pem" ec2-user@10.100.1.37
Last login: Mon Oct 31 06:29:35 2022 from 10.100.0.69

       __|  __|_  )
       _|  (     /   Amazon Linux 2 AMI
      ___|\___|___|

https://aws.amazon.com/amazon-linux-2/
[ec2-user@ip-10-100-1-37 ~]$
```

i-01c236f4aa1ed18a6 (VPC-A-PubEC1)

PublicIPs: 13.231.113.197 PrivateIPs: 10.100.0.69

7. From this private instance of VPC-A, try to ping to private instance of VPC-B. It will fail as there is no internet connection to VPC-B

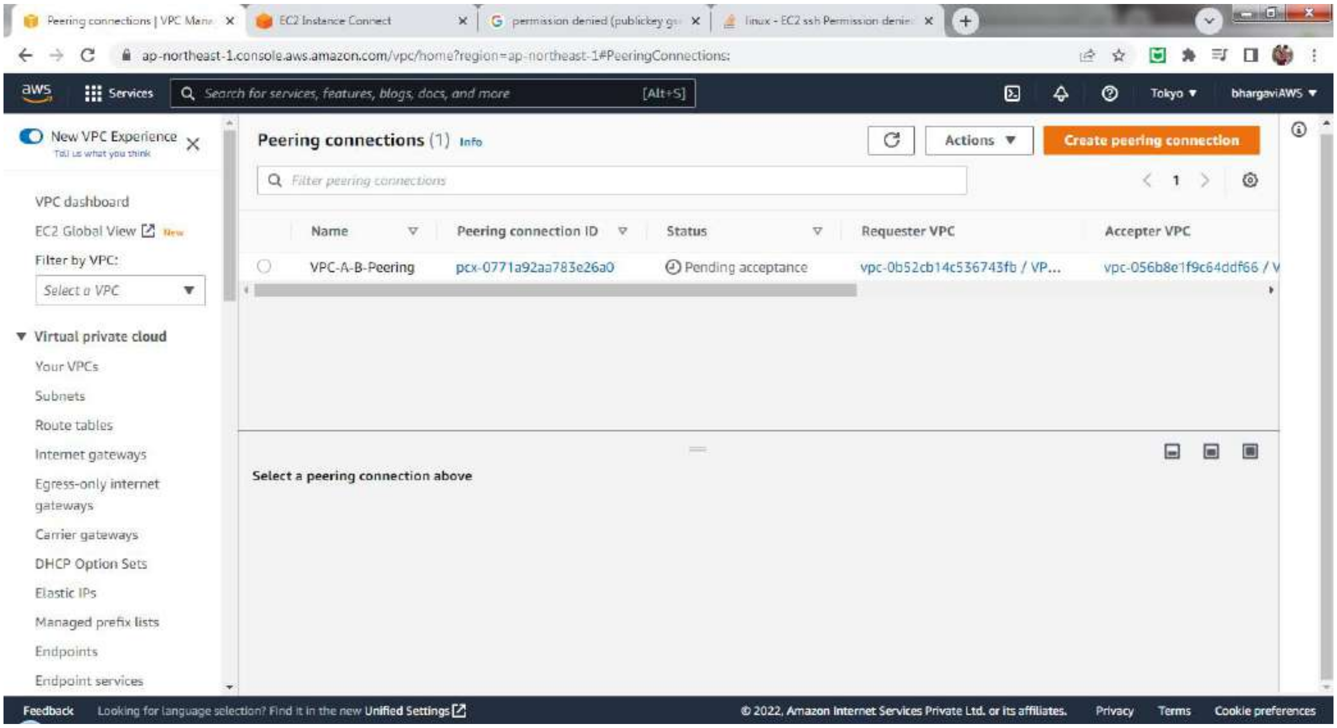


```
[root@ip-10-100-0-69 ec2-user]# ssh -i "pemtest.pem" ec2-user@10.100.1.37
Last login: Mon Oct 31 06:29:35 2022 from 10.100.0.69

       __|  __|_  )
       _|  (     /   Amazon Linux 2 AMI
      ___|\___|___|

https://aws.amazon.com/amazon-linux-2/
[ec2-user@ip-10-100-1-37 ~]$ sudo su
[root@ip-10-100-1-37 ec2-user]# ping 10.200.1.184
PING 10.200.1.184 (10.200.1.184) 56(84) bytes of data.
^C
--- 10.200.1.184 ping statistics ---
9 packets transmitted, 0 received, 100% packet loss, time 8179ms

[root@ip-10-100-1-37 ec2-user]#
```

i-01c236f4aa1ed18a6 (VPC-A-PubEC1)

PublicIPs: 13.231.113.197 PrivateIPs: 10.100.0.69

8. So for communication between two private instances of VPC-A and VPC-B, create a peer connection.


ap-northeast-1.console.aws.amazon.com/vpc/home?region=ap-northeast-1#PeeringConnections:
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Tokyo
bhargaviAWS
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VPC dashboard
EC2 Global View New
Filter by VPC:
Select a VPC
Virtual private cloud
Your VPCs
Subnets
Route tables
Internet gateways
Egress-only internet gateways
Carrier gateways
DHCP Option Sets
Elastic IPs
Managed prefix lists
Endpoints
Endpoint services
Actions
Create peering connection
Filter peering connections
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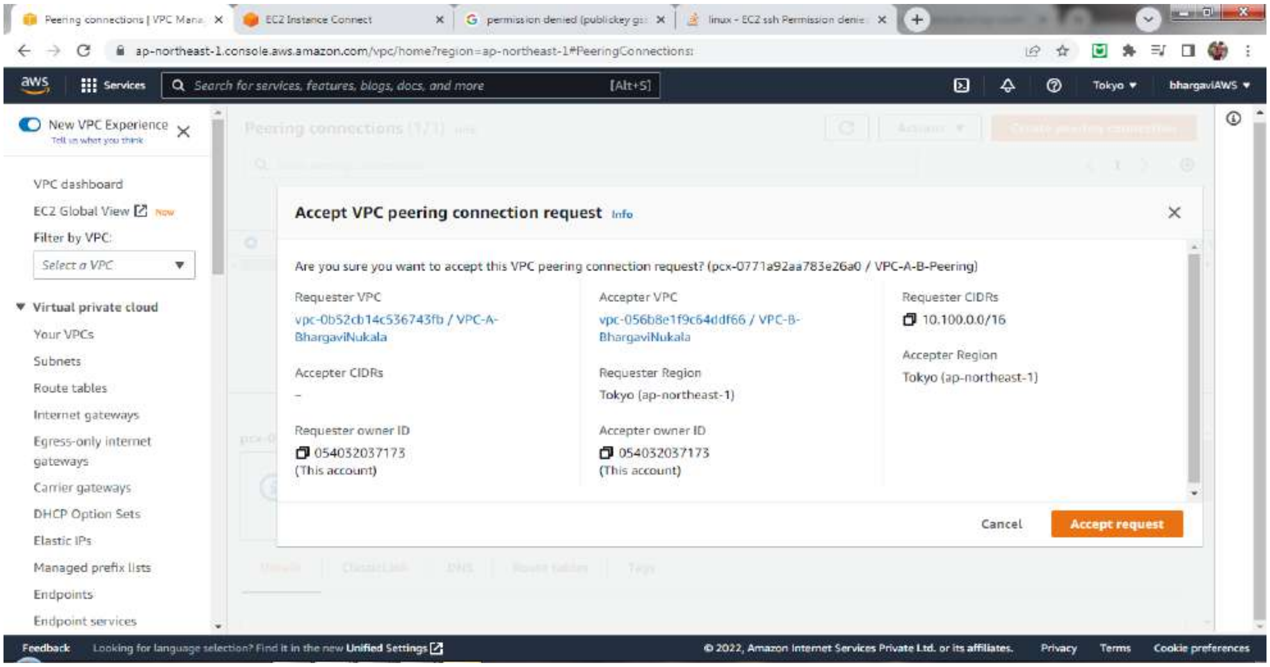
Peering connections (1) Info

	Name	Peering connection ID	Status	Requester VPC	Accepter VPC
○	VPC-A-B-Peering	pcx-0771a92aa783e26a0	Pending acceptance	vpc-0b52cb14c536743fb / VP...	vpc-056b8e1f9c64ddf66 / V

Select a peering connection above

9. Accept the peering connection request



Accept VPC peering connection request Info

Are you sure you want to accept this VPC peering connection request? (pcx-0771a92aa783e26a0 / VPC-A-B-Peering)

Requester VPC: vpc-0b52cb14c536743fb / VPC-A-BhargaviNukala

Accepter VPC: vpc-056b8e1f9c64ddf66 / VPC-B-BhargaviNukala

Requester CIDRs: 10.100.0.0/16

Accepter CIDRs: –

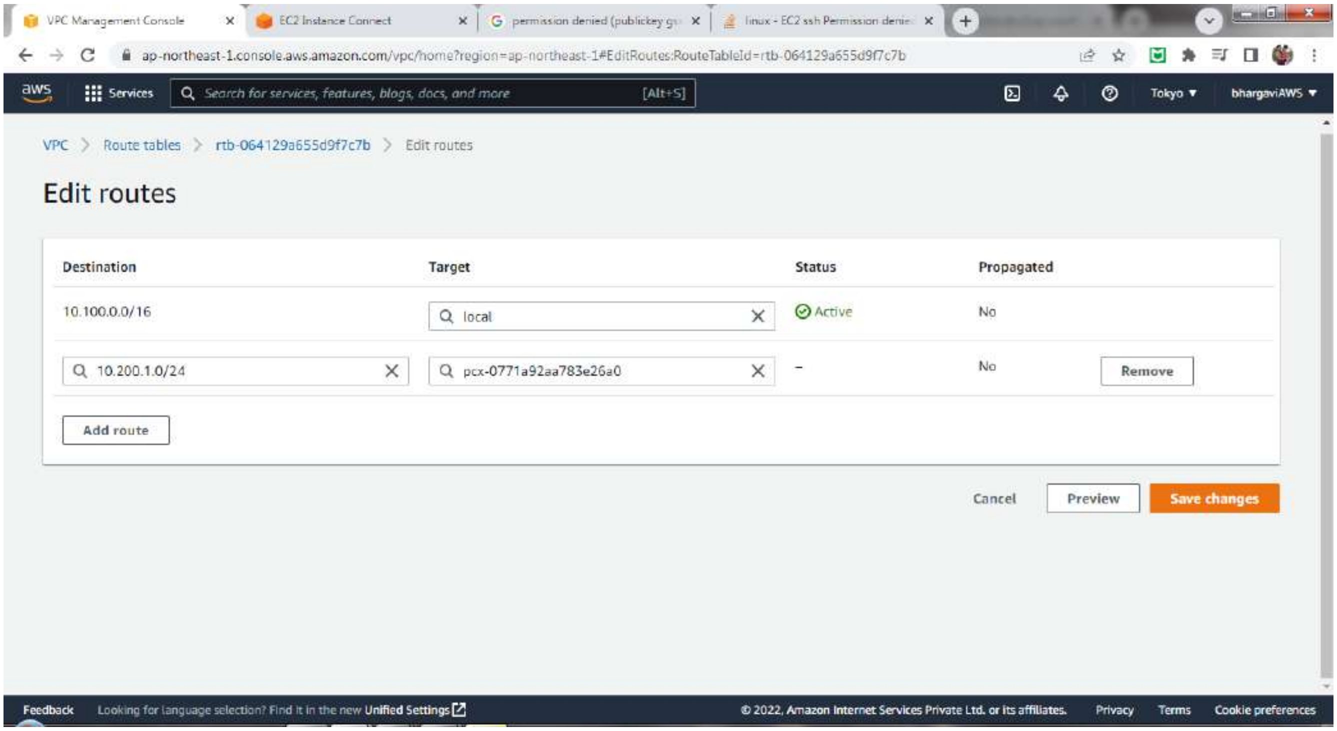
Requester Region: Tokyo (ap-northeast-1)

Accepter Region: Tokyo (ap-northeast-1)

Requester owner ID: 054032037173 (This account)

Accepter owner ID: 054032037173 (This account)

10. Update the private route tables of VPC-A and VPC-B with the newly created peering connection.


VPC Management Console
EC2 Instance Connect
permission denied (publickey gss
linux - EC2 ssh Permission denie
ap-northeast-1.console.aws.amazon.com/vpc/home?region=ap-northeast-1#EditRoutes:RouteTableId=rtb-064129a655d9f7c7b
aws
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bhargaviAWS ▾
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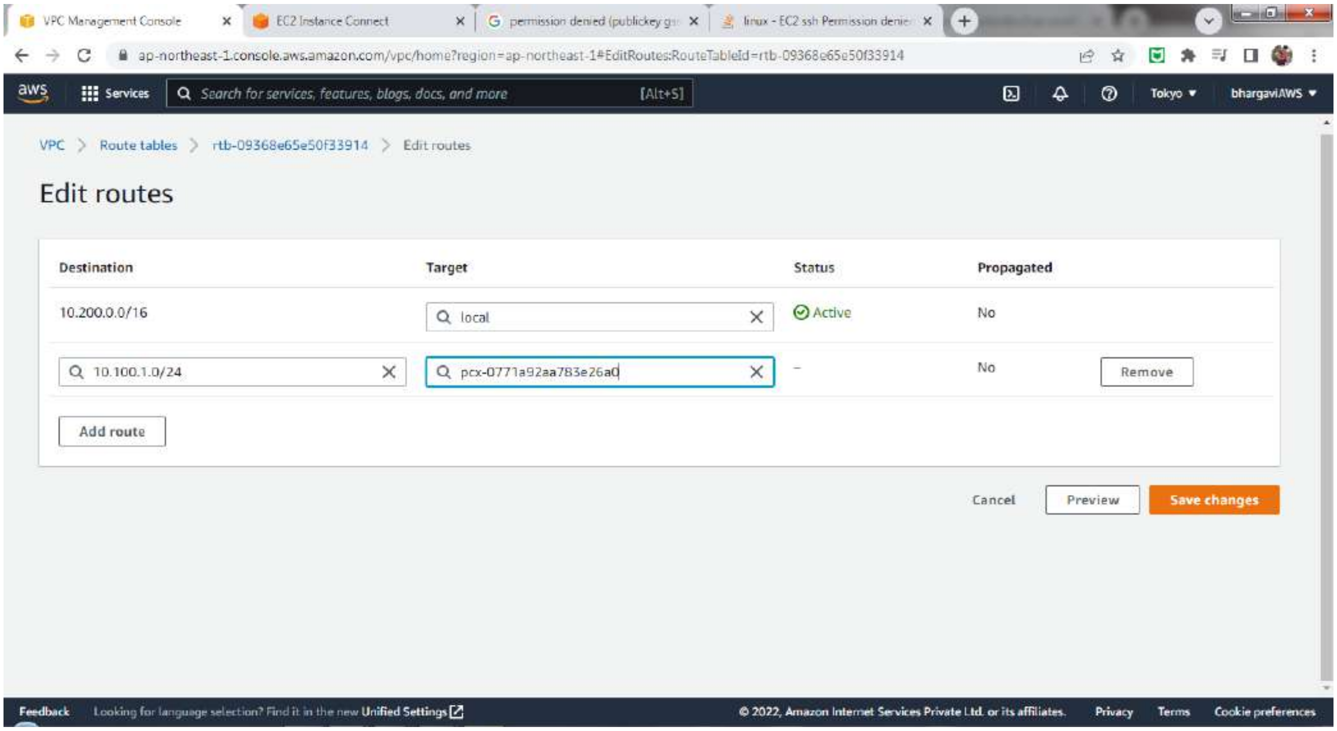
VPC > Route tables > rtb-064129a655d9f7c7b > Edit routes

Edit routes

Destination	Target	Status	Propagated	
10.100.0.0/16	local	Active	No	
10.200.1.0/24	pcx-0771a92aa783e26a0	-	No	Remove

Add route

Cancel Preview Save changes


VPC Management Console
EC2 Instance Connect
permission denied (publickey gss
linux - EC2 ssh Permission denie
ap-northeast-1.console.aws.amazon.com/vpc/home?region=ap-northeast-1#EditRoutes:RouteTableId=rtb-09368e65e50f33914
aws
Services
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VPC > Route tables > rtb-09368e65e50f33914 > Edit routes

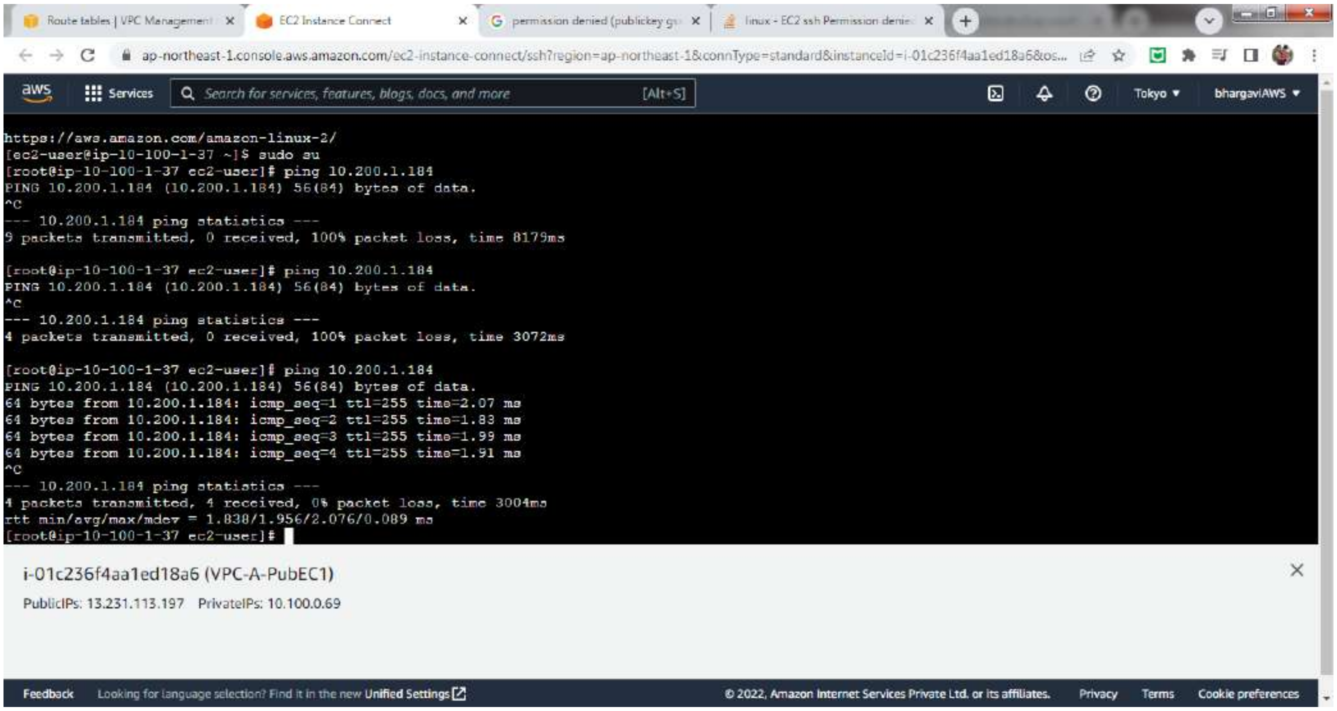
Edit routes

Destination	Target	Status	Propagated	
10.200.0.0/16	local	Active	No	
10.100.1.0/24	pcx-0771a92aa783e26a0	-	No	Remove

Add route

Cancel Preview Save changes

11. Now if we ping from private EC2 instance of VPC-A to private EC2 instance of VPC-B, ping will be successful



```
https://aws.amazon.com/amazon-linux-2/
[ec2-user@ip-10-100-1-37 ~]$ sudo su
[root@ip-10-100-1-37 ec2-user]# ping 10.200.1.184
PING 10.200.1.184 (10.200.1.184) 56(84) bytes of data.
^C
--- 10.200.1.184 ping statistics ---
9 packets transmitted, 0 received, 100% packet loss, time 8179ms

[root@ip-10-100-1-37 ec2-user]# ping 10.200.1.184
PING 10.200.1.184 (10.200.1.184) 56(84) bytes of data.
^C
--- 10.200.1.184 ping statistics ---
4 packets transmitted, 0 received, 100% packet loss, time 3072ms

[root@ip-10-100-1-37 ec2-user]# ping 10.200.1.184
PING 10.200.1.184 (10.200.1.184) 56(84) bytes of data.
64 bytes from 10.200.1.184: icmp_seq=1 ttl=255 time=2.07 ms
64 bytes from 10.200.1.184: icmp_seq=2 ttl=255 time=1.83 ms
64 bytes from 10.200.1.184: icmp_seq=3 ttl=255 time=1.99 ms
64 bytes from 10.200.1.184: icmp_seq=4 ttl=255 time=1.91 ms
^C
--- 10.200.1.184 ping statistics ---
4 packets transmitted, 4 received, 0% packet loss, time 3004ms
rtt min/avg/max/mdev = 1.838/1.956/2.076/0.089 ms
[root@ip-10-100-1-37 ec2-user]#
```

i-01c236f4aa1ed18a6 (VPC-A-PubEC1)

PublicIPs: 13.231.113.197 PrivateIPs: 10.100.0.69

Route tables | VPC Management
EC2 Instance Connect
permission denied (publickey
linux - EC2 ssh Permission denie
ap-northeast-1.console.aws.amazon.com/ec2-instance-connect/ssh?region=ap-northeast-1&connType=standard&instanceId=i-01c236f4aa1ed18a6&os...
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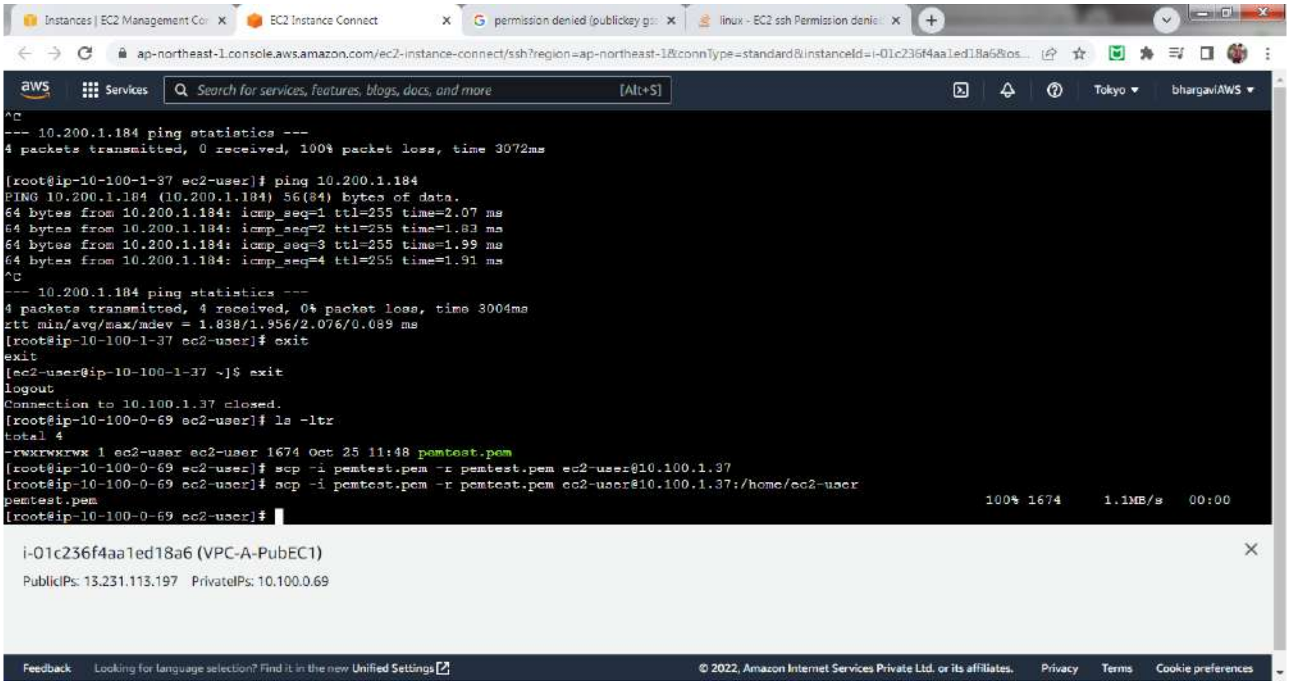
12. To connect to private EC2 instance of VPC-B, we need to copy the .pem file from public EC2 instance of VPC-A to private EC2 instance of VPC-A and then ssh to private EC2 instance of VPC-B



```
^C
--- 10.200.1.184 ping statistics ---
4 packets transmitted, 0 received, 100% packet loss, time 3072ms

[root@ip-10-100-1-37 ec2-user]# ping 10.200.1.184
PING 10.200.1.184 (10.200.1.184) 56(84) bytes of data.
64 bytes from 10.200.1.184: icmp_seq=1 ttl=255 time=2.07 ms
64 bytes from 10.200.1.184: icmp_seq=2 ttl=255 time=1.83 ms
64 bytes from 10.200.1.184: icmp_seq=3 ttl=255 time=1.99 ms
64 bytes from 10.200.1.184: icmp_seq=4 ttl=255 time=1.91 ms
^C
--- 10.200.1.184 ping statistics ---
4 packets transmitted, 4 received, 0% packet loss, time 3004ms
rtt min/avg/max/mdev = 1.838/1.956/2.076/0.089 ms
[root@ip-10-100-1-37 ec2-user]# exit
exit
[ec2-user@ip-10-100-1-37 ~]$ exit
logout
Connection to 10.100.1.37 closed.
[root@ip-10-100-0-69 ec2-user]# ls -ltr
total 4
-rwxrwxrwx 1 ec2-user ec2-user 1674 Oct 25 11:48 pemtest.pem
[root@ip-10-100-0-69 ec2-user]# scp -i pemtest.pem -r pemtest.pem ec2-user@10.100.1.37
[root@ip-10-100-0-69 ec2-user]# scp -i pemtest.pem -r pemtest.pem ec2-user@10.100.1.37:/home/ec2-user
pemtest.pem                                                                               100% 1674     1.1MB/s   00:00
[root@ip-10-100-0-69 ec2-user]#
```

i-01c236f4aa1ed18a6 (VPC-A-PubEC1)

PublicIPs: 13.231.113.197 PrivateIPs: 10.100.0.69

Instances | EC2 Management Co
EC2 Instance Connect
permission denied (publickey
linux - EC2 ssh Permission denie
ap-northeast-1.console.aws.amazon.com/ec2-instance-connect/ssh?region=ap-northeast-1&connType=standard&instanceId=i-01c236f4aa1ed18a6&os...
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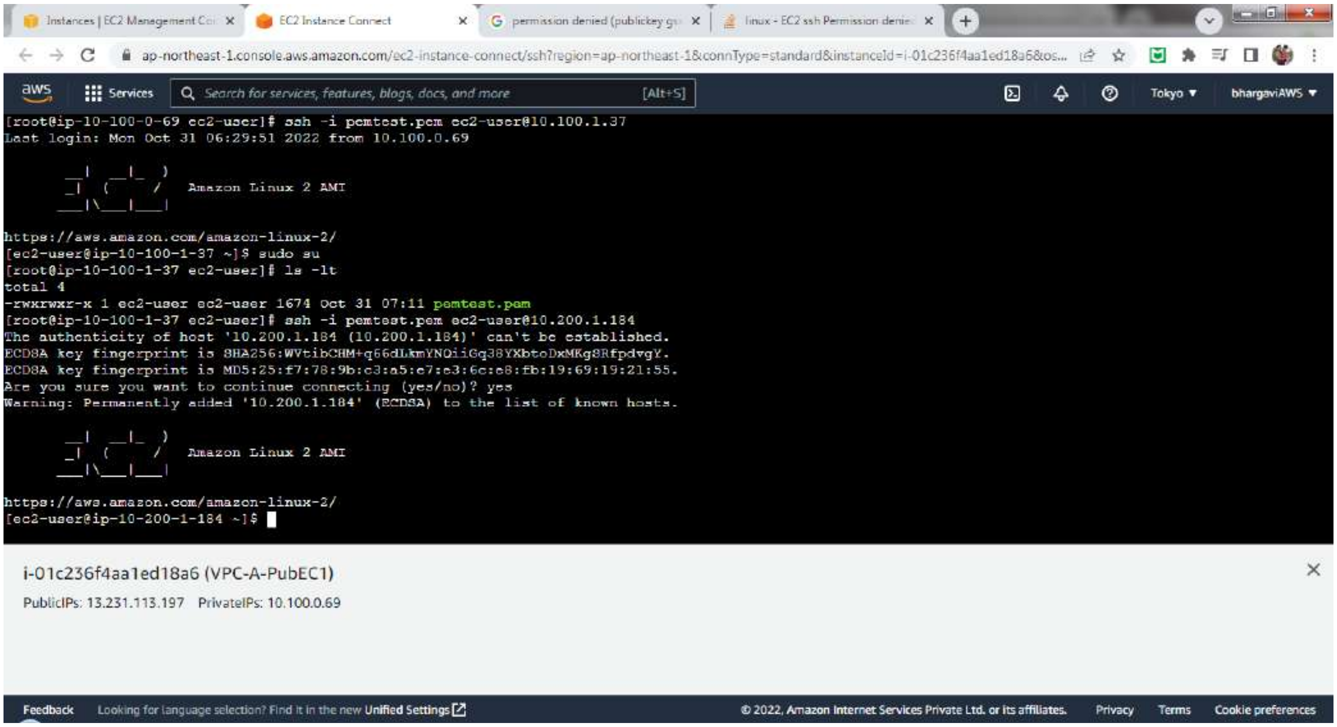
13. Now when we try to connect to private EC2 instance of VPC-B from private EC2 instance of VPC-A, both ping and ssh will succeed. We can also observe that .pem file is available in private EC2 instance of VPC-A



```
[root@ip-10-100-0-69 ec2-user]# ssh -i pemtest.pem ec2-user@10.100.1.37
Last login: Mon Oct 31 06:29:51 2022 from 10.100.0.69

       __|  __|_  )
       _|  (     /   Amazon Linux 2 AMI
      ___|\___|___|

https://aws.amazon.com/amazon-linux-2/
[ec2-user@ip-10-100-1-37 ~]$ sudo su
[root@ip-10-100-1-37 ec2-user]# ls -lt
total 4
-rwxrwxr-x 1 ec2-user ec2-user 1674 Oct 31 07:11 pemtest.pem
[root@ip-10-100-1-37 ec2-user]# ssh -i pemtest.pem ec2-user@10.200.1.184
The authenticity of host '10.200.1.184 (10.200.1.184)' can't be established.
ECDSA key fingerprint is SHA256:WVtibCHM+q66dLkmYNQiiGq38YXbtoDxMKg8RfpdvgY.
ECDSA key fingerprint is MD5:25:f7:78:9b:c3:a5:e7:e3:6c:e8:fb:19:69:19:21:55.
Are you sure you want to continue connecting (yes/no)? yes
Warning: Permanently added '10.200.1.184' (ECDSA) to the list of known hosts.

       __|  __|_  )
       _|  (     /   Amazon Linux 2 AMI
      ___|\___|___|

https://aws.amazon.com/amazon-linux-2/
[ec2-user@ip-10-200-1-184 ~]$
```

i-01c236f4aa1ed18a6 (VPC-A-PubEC1)

PublicIPs: 13.231.113.197 PrivateIPs: 10.100.0.69

Instances | EC2 Management Co
EC2 Instance Connect
permission denied (publickey,g
linux - EC2 ssh Permission denie
ap-northeast-1.console.aws.amazon.com/ec2-instance-connect/ssh?region=ap-northeast-1&connType=standard&instanceId=i-01c236f4aa1ed18a6&os...
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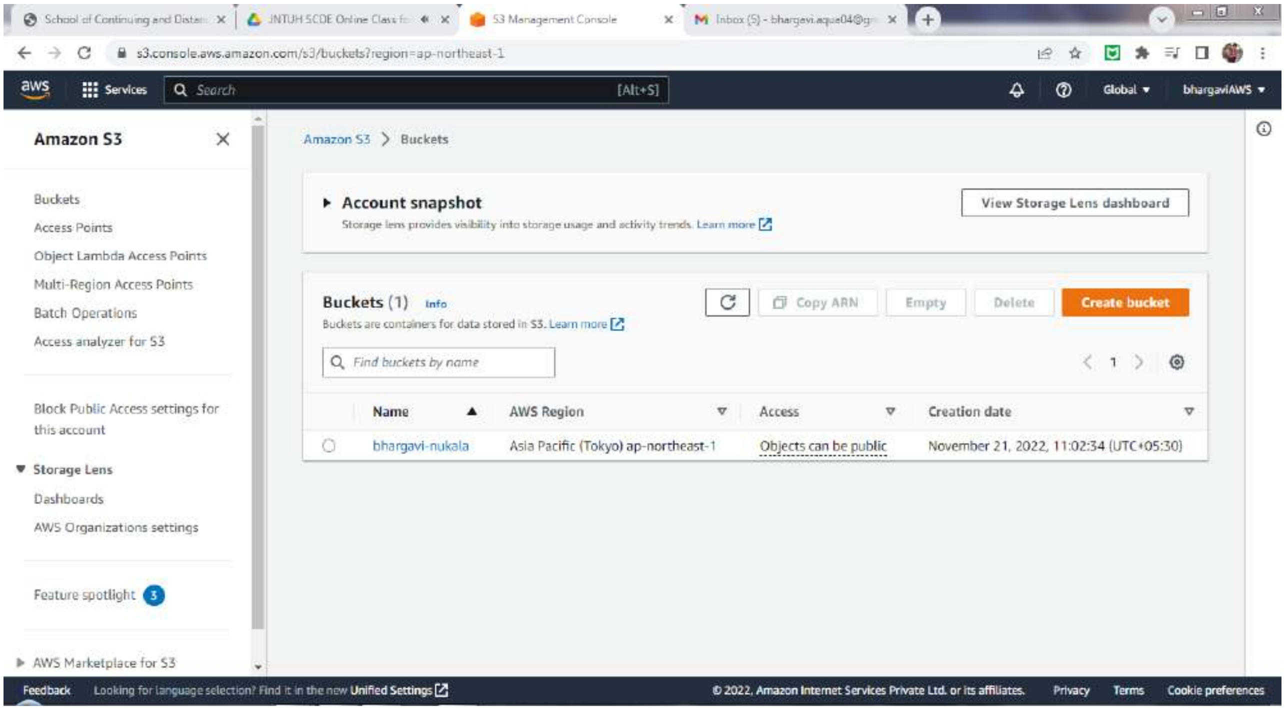
So peering connection is done and we are able to connect the private EC2 instances of both VPC-A and VPC-B.

S3:

Creation of a bucket with name “bhargavi-nukala”



Account snapshot

Storage lens provides visibility into storage usage and activity trends. Learn more

Buckets (1) Info

Buckets are containers for data stored in S3. Learn more

	Name	AWS Region	Access	Creation date
○	bhargavi-nukala	Asia Pacific (Tokyo) ap-northeast-1	Objects can be public	November 21, 2022, 11:02:34 (UTC+05:30)

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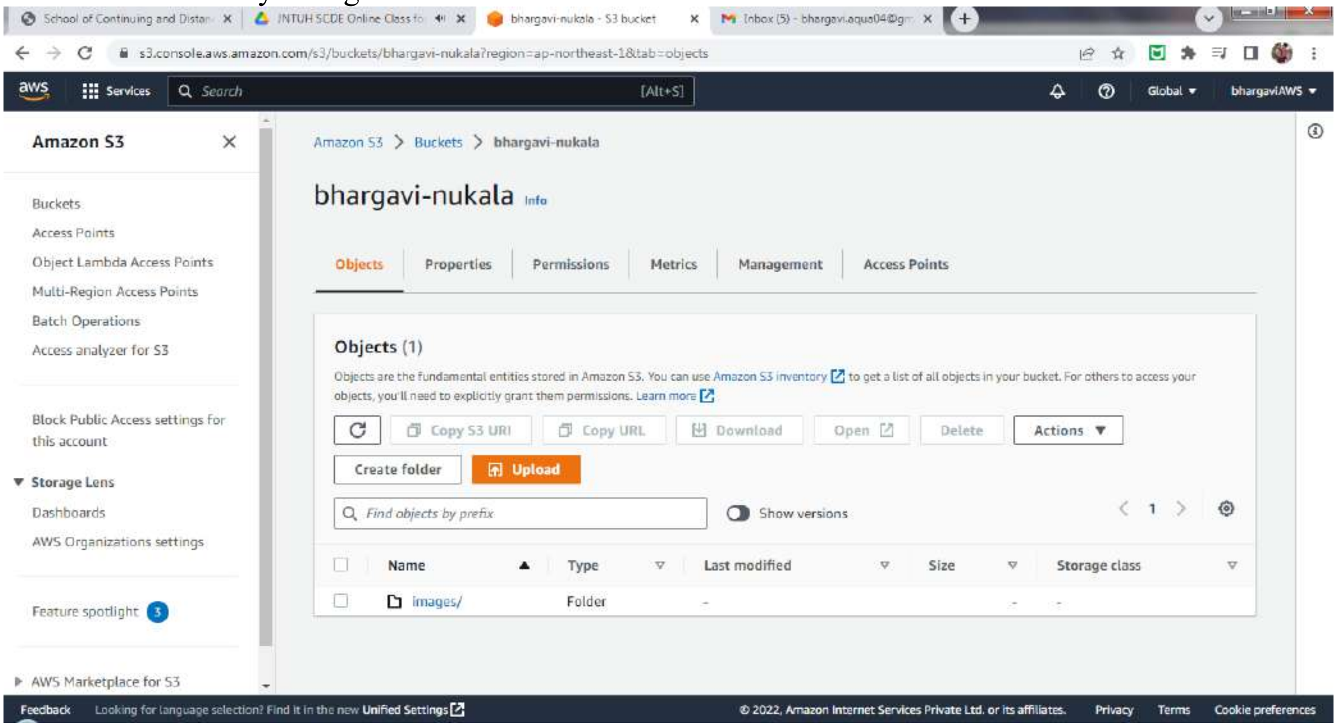
Create a directory “images” in bucket



bhargavi-nukala Info

Objects (1)

Objects are the fundamental entities stored in Amazon S3. You can use Amazon S3 inventory to get a list of all objects in your bucket. For others to access your objects, you'll need to explicitly grant them permissions. Learn more

	Name	Type	Last modified	Size	Storage class
□	images/	Folder	-	-	-

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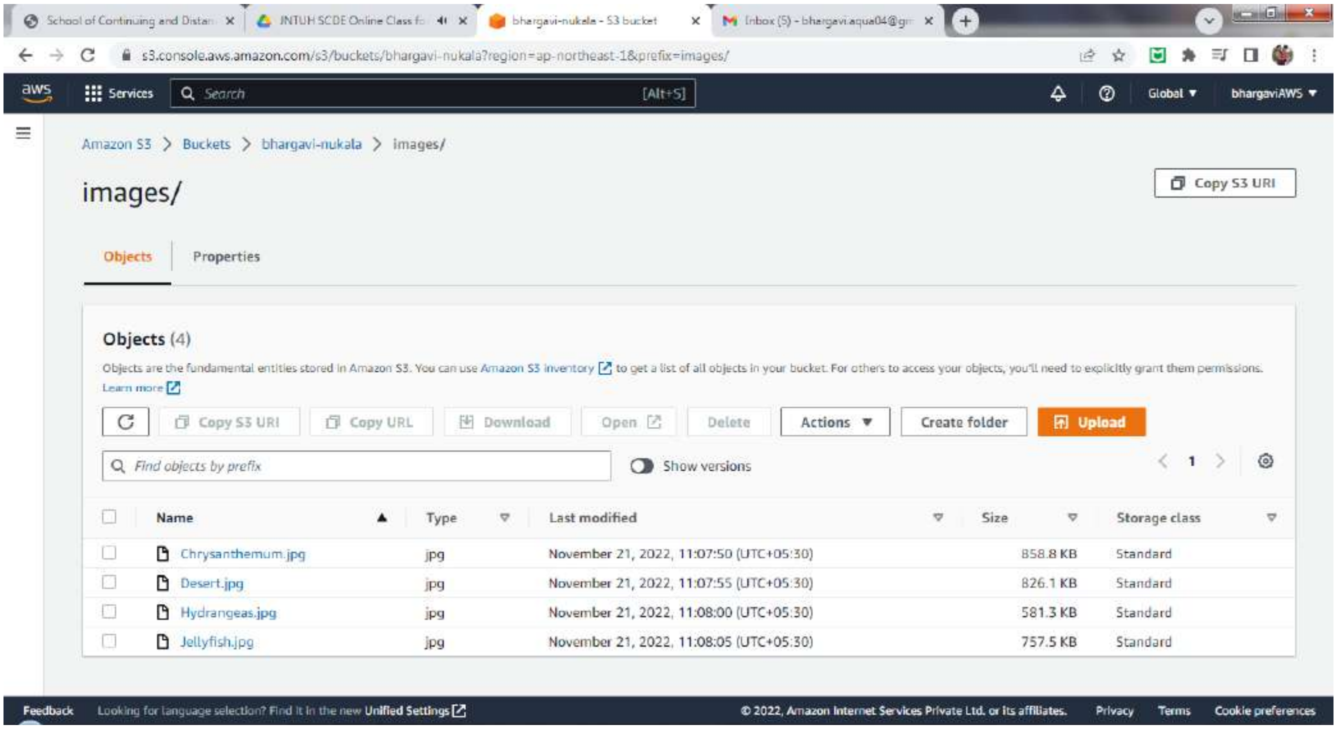
Upload some images into “images” folder



Amazon S3 > Buckets > bhargavi-nukala > images/

images/

Objects (4)

Objects are the fundamental entities stored in Amazon S3. You can use Amazon S3 inventory to get a list of all objects in your bucket. For others to access your objects, you'll need to explicitly grant them permissions. Learn more

Name	Type	Last modified	Size	Storage class
Chrysanthemum.jpg	jpg	November 21, 2022, 11:07:50 (UTC+05:30)	858.8 KB	Standard
Desert.jpg	jpg	November 21, 2022, 11:07:55 (UTC+05:30)	826.1 KB	Standard
Hydrangeas.jpg	jpg	November 21, 2022, 11:08:00 (UTC+05:30)	581.3 KB	Standard
Jellyfish.jpg	jpg	November 21, 2022, 11:08:05 (UTC+05:30)	757.5 KB	Standard

s3.console.aws.amazon.com/s3/buckets/bhargavi-nukala?region=ap-northeast-1&prefix=images/
Services
Search
Global
bhargaviAWS
Copy S3 URI
Objects
Properties
Copy S3 URI
Copy URL
Download
Open
Delete
Actions
Create folder
Upload
Find objects by prefix
Show versions
Feedback
Looking for language selection? Find it in the new Unified Settings
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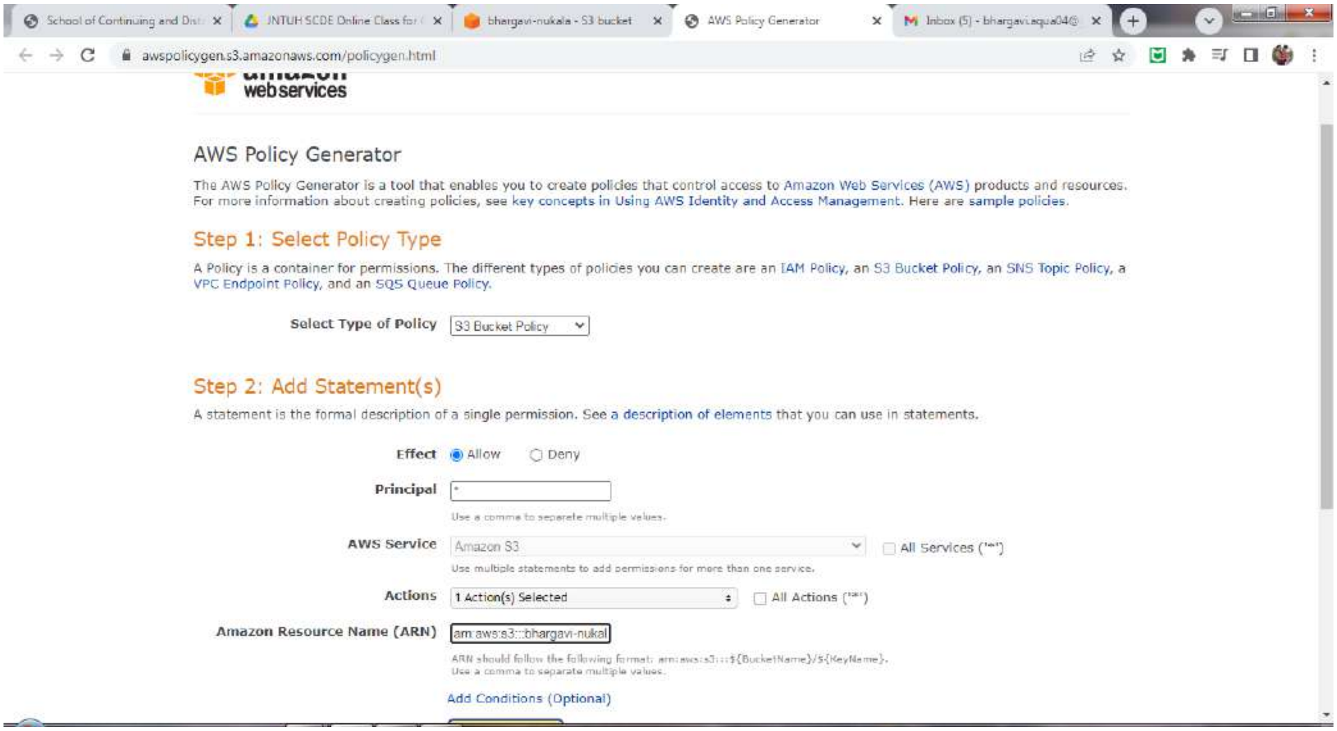
Privacy
Terms
Cookie preferences

Setting a bucket policy to make images public and accessible on web
Generating bucket policy using Policy Generator



AWS Policy Generator

The AWS Policy Generator is a tool that enables you to create policies that control access to Amazon Web Services (AWS) products and resources. For more information about creating policies, see key concepts in Using AWS Identity and Access Management. Here are sample policies.

Step 1: Select Policy Type

A Policy is a container for permissions. The different types of policies you can create are an IAM Policy, an S3 Bucket Policy, an SNS Topic Policy, a VPC Endpoint Policy, and an SQS Queue Policy.

Select Type of Policy: S3 Bucket Policy

Step 2: Add Statement(s)

A statement is the formal description of a single permission. See a description of elements that you can use in statements.

Effect: ● Allow ○ Deny

Principal: *

Use a comma to separate multiple values.

AWS Service: Amazon S3 □ All Services ('*')

Use multiple statements to add permissions for more than one service.

Actions: 1 Action(s) Selected □ All Actions ('*')

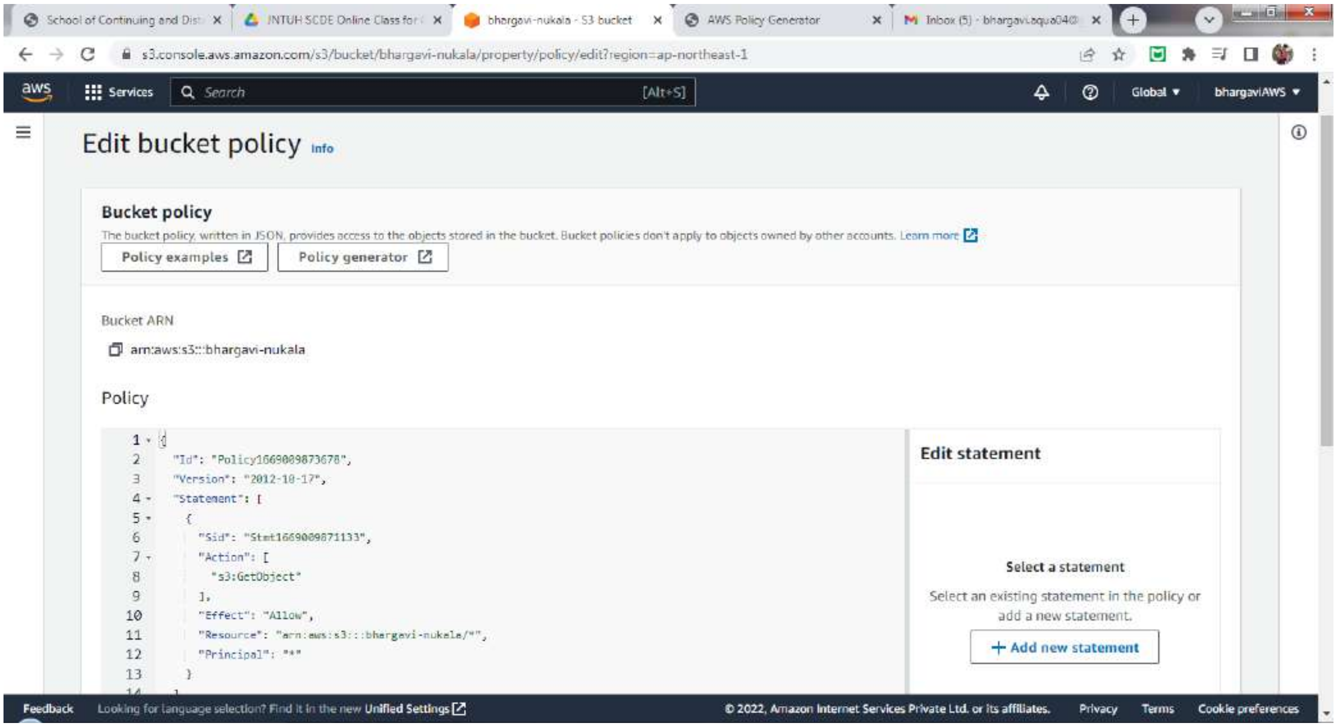
Amazon Resource Name (ARN): arn:aws:s3:::bhargavi-nukal

ARN should follow the following format: arn:aws:s3:::${BucketName}/${KeyName}.
Use a comma to separate multiple values.

Add Conditions (Optional)

After ARN name of bucket, we should add “/*” to make all objects of the bucket public.
Action should be selected as “GetObject”

Paste the generated JSON in bucket policy



s3.console.aws.amazon.com/s3/bucket/bhargavi-nukala/property/policy/edit?region=ap-northeast-1

Edit bucket policy

Bucket policy

The bucket policy, written in JSON, provides access to the objects stored in the bucket. Bucket policies don't apply to objects owned by other accounts. Learn more

Bucket ARN

arn:aws:s3:::bhargavi-nukala

Policy

```
{
  "Id": "Policy1669009873678",
  "Version": "2012-10-17",
  "Statement": [
    {
      "Sid": "Stmt1669009871133",
      "Action": [
        "s3:GetObject"
      ],
      "Effect": "Allow",
      "Resource": "arn:aws:s3:::bhargavi-nukala/*",
      "Principal": "*"
    }
```

Edit statement

Select a statement

Select an existing statement in the policy or add a new statement.

School of Continuing and Dist
JNTUH SCDE Online Class for
bhargavi-nukala - S3 bucket
AWS Policy Generator
Inbox (5) - bhargavi.aqua04@
Services
Search
[Alt+S]
Global
bhargaviAWS
Info
Policy examples
Policy generator
+ Add new statement
Feedback
Looking for language selection? Find it in the new Unified Settings
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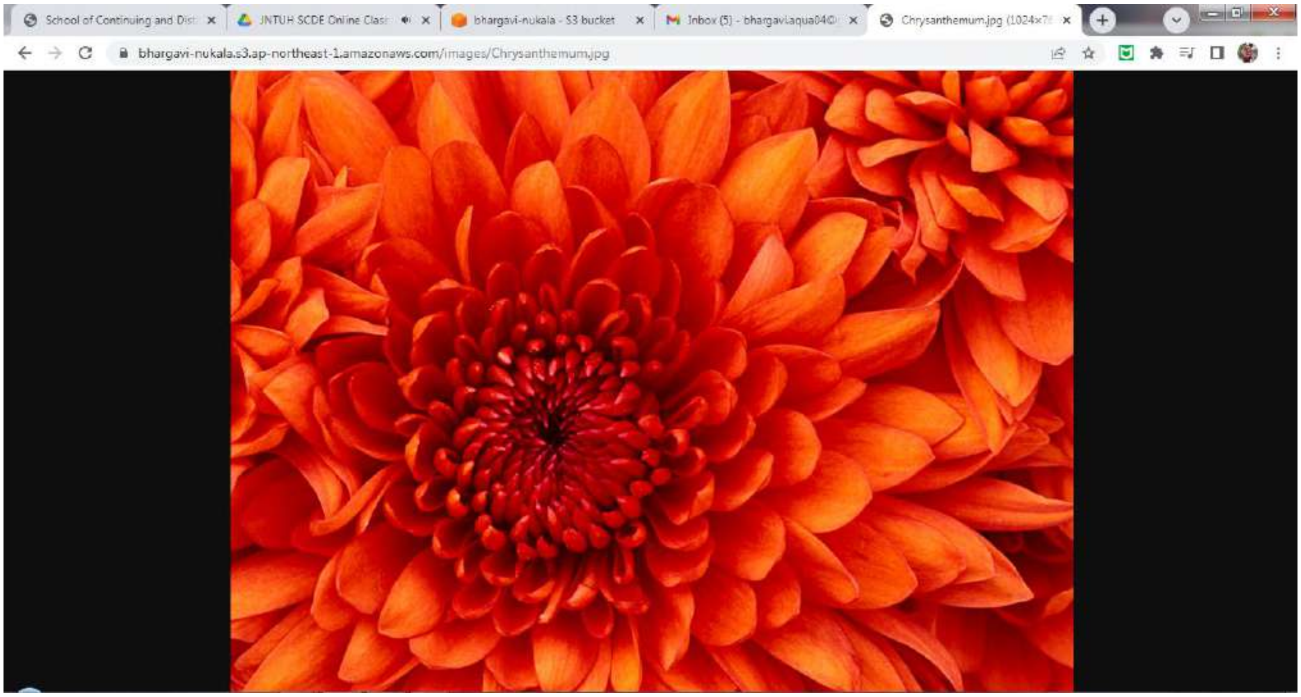
Cookie preferences

Now access a uploaded image on the web

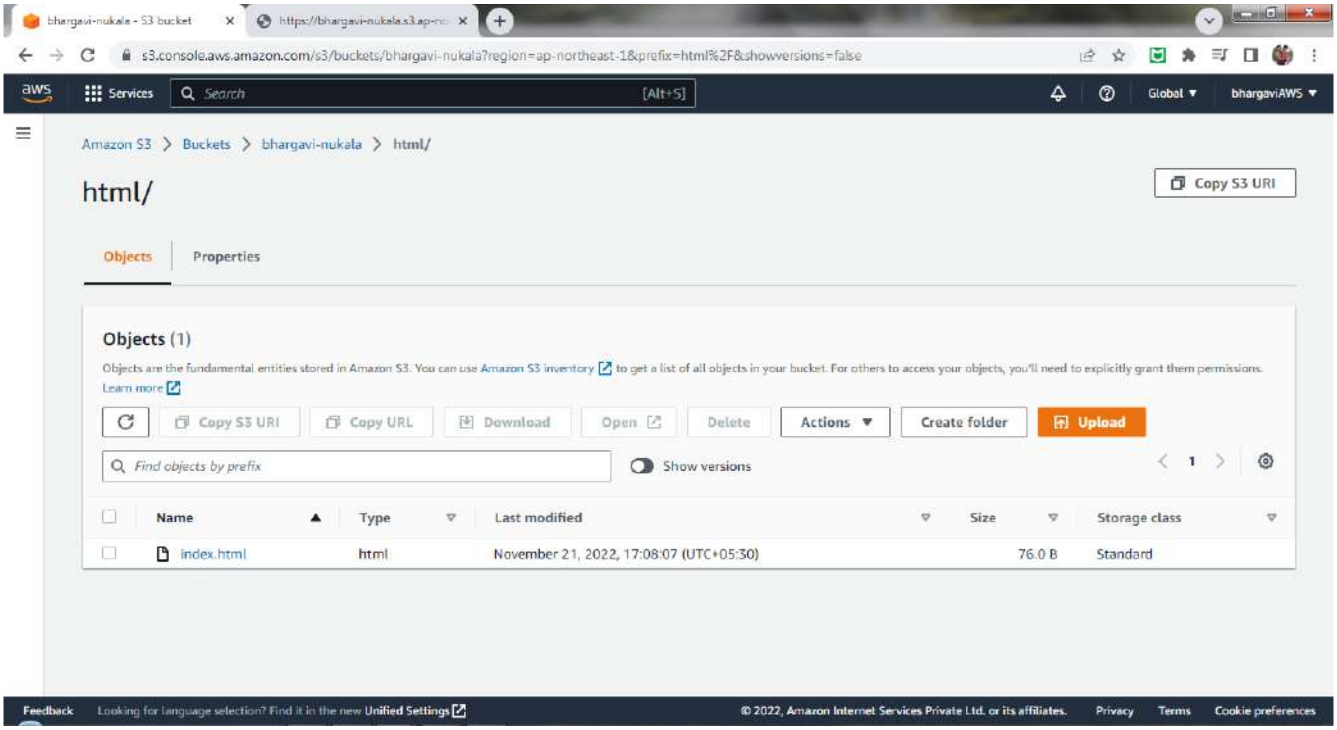


bhargavi-nukala.s3.ap-northeast-1.amazonaws.com/images/Chrysanthemum.jpg

School of Continuing and Dist
JNTUH SCDE Online Class
bhargavi-nukala - S3 bucket
Inbox (5) - bhargavi.aqua04@
Chrysanthemum.jpg (1024×7

Use Object URL of the image to access the image on web.

S3 Versioning: Upload index.html into the bucket


bhargavi-nukala - S3 bucket
https://bhargavi-nukala.s3.ap-no
s3.console.aws.amazon.com/s3/buckets/bhargavi-nukala?region=ap-northeast-1&prefix=html%2F&showversions=false
aws
Services
Search
[Alt+S]
Global ▼
bhargaviAWS ▼
Amazon S3 > Buckets > bhargavi-nukala > html/
Copy S3 URI
Objects
Properties
Copy S3 URI
Copy URL
Download
Open
Delete
Actions ▼
Create folder
Upload
Find objects by prefix
Show versions
< 1 >
Feedback
Looking for language selection? Find it in the new Unified Settings
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Terms
Cookie preferences

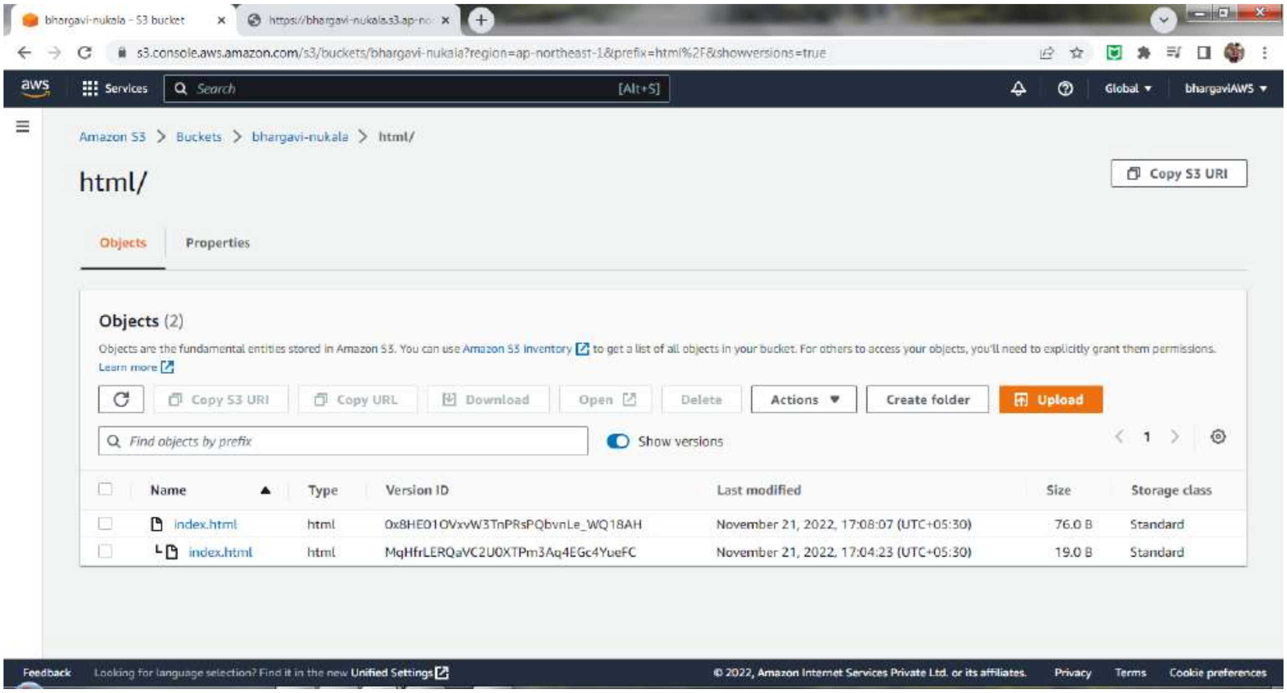
html/

Objects (1)

Objects are the fundamental entities stored in Amazon S3. You can use Amazon S3 inventory to get a list of all objects in your bucket. For others to access your objects, you'll need to explicitly grant them permissions. Learn more

□	Name	Type	Last modified	Size	Storage class
□	index.html	html	November 21, 2022, 17:08:07 (UTC+05:30)	76.0 B	Standard

Change the content of the index.html and upload a new one. We can check the versions by enabling S3 versioning.


bhargavi-nukala - S3 bucket
https://bhargavi-nukala.s3.ap-no
s3.console.aws.amazon.com/s3/buckets/bhargavi-nukala?region=ap-northeast-1&prefix=html%2F&showversions=true
aws
Services
Search
[Alt+S]
Global ▼
bhargaviAWS ▼
Amazon S3 > Buckets > bhargavi-nukala > html/
Copy S3 URI
Objects
Properties
Copy S3 URI
Copy URL
Download
Open
Delete
Actions ▼
Create folder
Upload
Find objects by prefix
Show versions
< 1 >
Feedback
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Terms
Cookie preferences

html/

Objects (2)

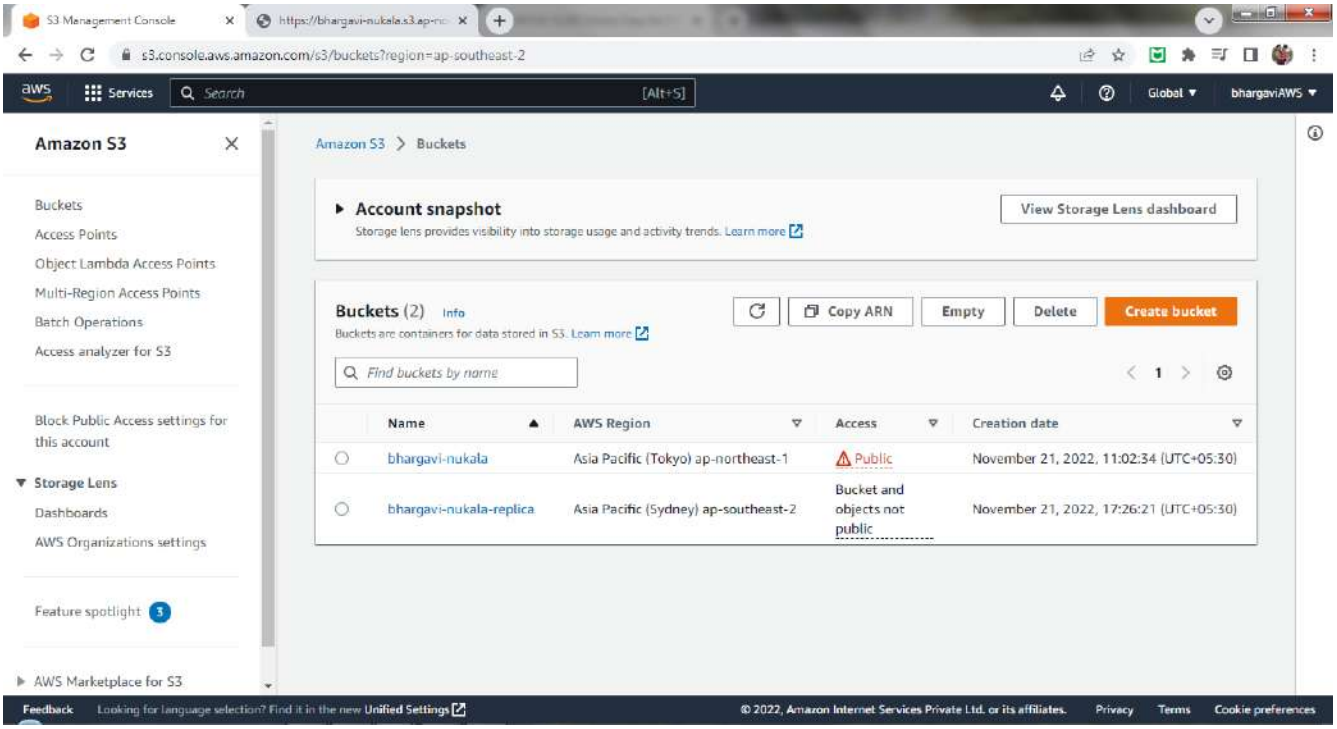
Objects are the fundamental entities stored in Amazon S3. You can use Amazon S3 inventory to get a list of all objects in your bucket. For others to access your objects, you'll need to explicitly grant them permissions. Learn more

□	Name	Type	Version ID	Last modified	Size	Storage class
□	index.html	html	0x8HE01OVxvW3TnPRsPQbvnLe_WQ18AH	November 21, 2022, 17:08:07 (UTC+05:30)	76.0 B	Standard
□	└ index.html	html	MqHfrLERQaVC2U0XTPm3Aq4EGc4YueFC	November 21, 2022, 17:04:23 (UTC+05:30)	19.0 B	Standard

Click on “Show Versions” to see the previous versions of the index.html file.

Bucket Replication:

Create another bucket that is a Replica of bucket “bhargavi-nukala” in another region. Enable “bucket versioning” for replica bucket.



S3 Management Console
https://bhargavi-nukala.s3.ap-no
s3.console.aws.amazon.com/s3/buckets?region=ap-southeast-2
aws
Services
Search
[Alt+S]
Global ▾
bhargaviAWS ▾
Amazon S3
Buckets
Access Points
Object Lambda Access Points
Multi-Region Access Points
Batch Operations
Access analyzer for S3
Block Public Access settings for this account
▼ Storage Lens
Dashboards
AWS Organizations settings
Feature spotlight 3
▶ AWS Marketplace for S3
Amazon S3 > Buckets
View Storage Lens dashboard
Copy ARN
Empty
Delete
Create bucket
Find buckets by name
Feedback
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▶ Account snapshot

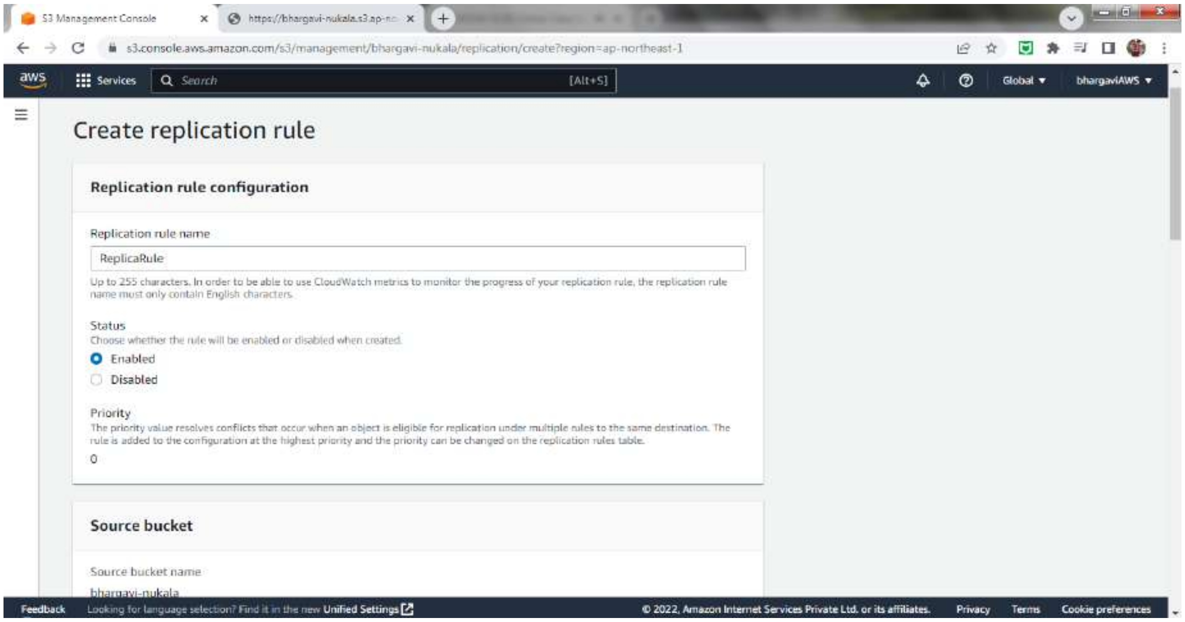
Storage lens provides visibility into storage usage and activity trends. Learn more

Buckets (2) Info

Buckets are containers for data stored in S3. Learn more

	Name	AWS Region	Access	Creation date
○	bhargavi-nukala	Asia Pacific (Tokyo) ap-northeast-1	⚠ Public	November 21, 2022, 11:02:34 (UTC+05:30)
○	bhargavi-nukala-replica	Asia Pacific (Sydney) ap-southeast-2	Bucket and objects not public	November 21, 2022, 17:26:21 (UTC+05:30)

Create a Replication rule on the Source bucket.



s3.console.aws.amazon.com/s3/management/bhargavi-nukala/replication/create?region=ap-northeast-1

Create replication rule

Replication rule configuration

Replication rule name

ReplicaRule

Up to 255 characters. In order to be able to use CloudWatch metrics to monitor the progress of your replication rule, the replication rule name must only contain English characters.

Status

Choose whether the rule will be enabled or disabled when created.

● Enabled

○ Disabled

Priority

The priority value resolves conflicts that occur when an object is eligible for replication under multiple rules to the same destination. The rule is added to the configuration at the highest priority and the priority can be changed on the replication rules table.

0

Source bucket

Source bucket name

bhargavi-nukala

S3 Management Console
aws
Services
Search
[Alt+S]
Global
bhargaviAWS
Feedback
Looking for language selection? Find it in the new Unified Settings
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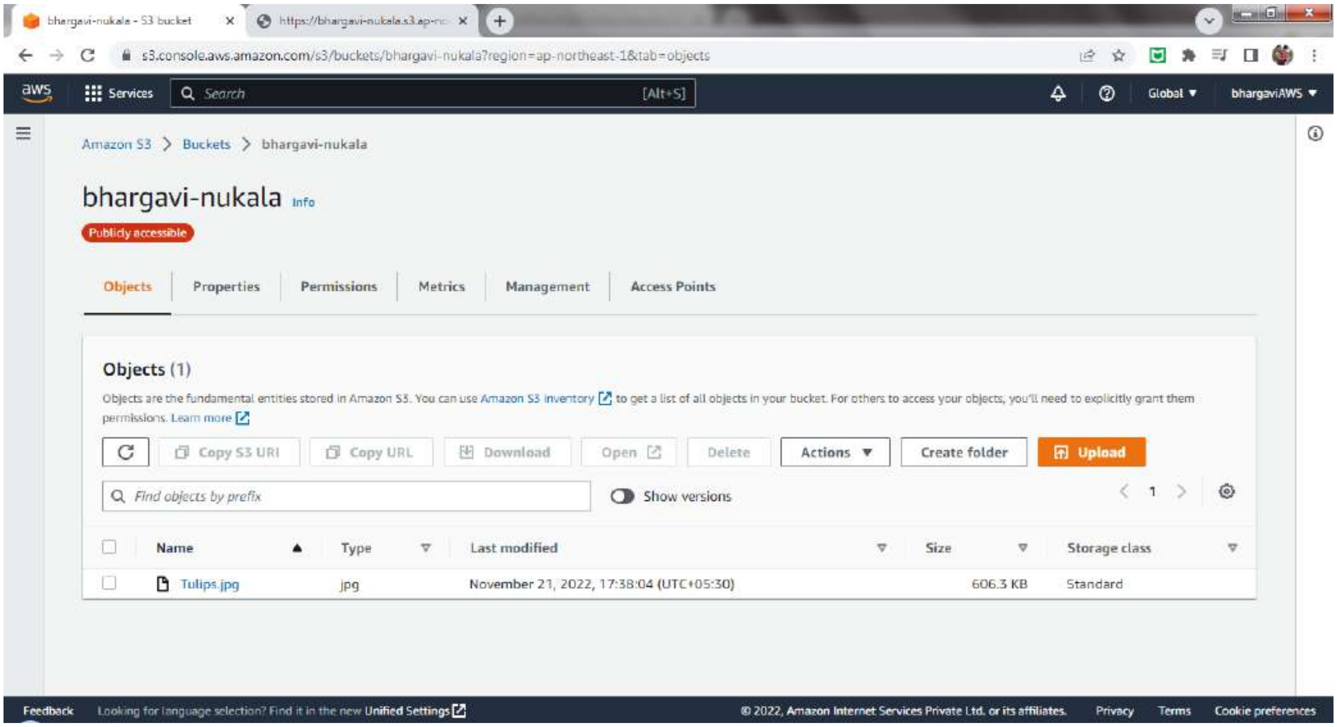
Create a new IAM role during creation of replication rule.

Now upload a file in Source bucket and it should be replicated in Replica bucket.
File uploaded in Source bucket.



s3.console.aws.amazon.com/s3/buckets/bhargavi-nukala?region=ap-northeast-1&tab=objects

Amazon S3 > Buckets > bhargavi-nukala

bhargavi-nukala Info

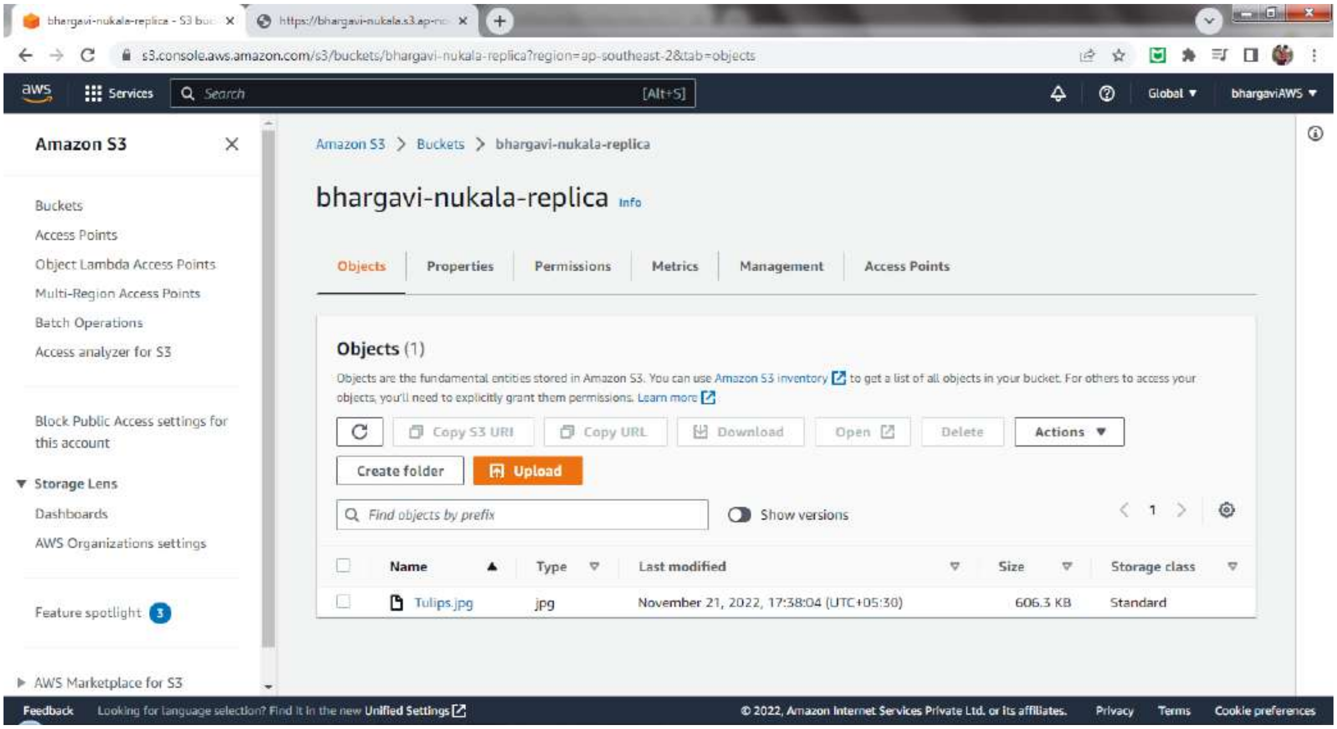
Publicly accessible

Objects (1)

Objects are the fundamental entities stored in Amazon S3. You can use Amazon S3 inventory to get a list of all objects in your bucket. For others to access your objects, you'll need to explicitly grant them permissions. Learn more

Name	Type	Last modified	Size	Storage class
Tulips.jpg	jpg	November 21, 2022, 17:38:04 (UTC+05:30)	606.3 KB	Standard

File replicated in Replica bucket.


bhargavi-nukala-replica - S3 buc
https://bhargavi-nukala.s3.ap-no
s3.console.aws.amazon.com/s3/buckets/bhargavi-nukala-replica?region=ap-southeast-2&tab=objects
Services
Search
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Global
bhargaviAWS
Amazon S3
Buckets
Access Points
Object Lambda Access Points
Multi-Region Access Points
Batch Operations
Access analyzer for S3
Block Public Access settings for this account
Storage Lens
Dashboards
AWS Organizations settings
Feature spotlight 3
AWS Marketplace for S3
Amazon S3 > Buckets > bhargavi-nukala-replica
Info
Objects
Properties
Permissions
Metrics
Management
Access Points
Copy S3 URI
Copy URL
Download
Open
Delete
Actions
Create folder
Upload
Find objects by prefix
Show versions
Feedback
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bhargavi-nukala-replica

Objects (1)

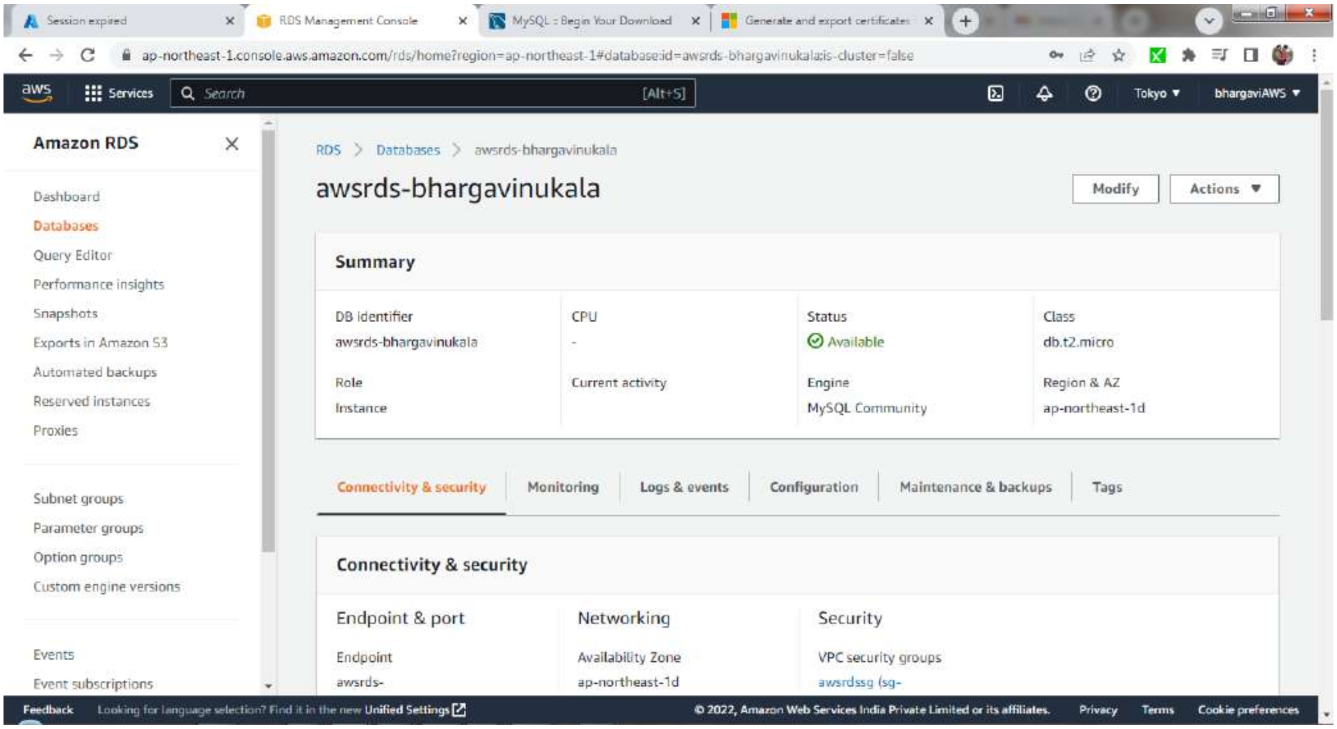
Objects are the fundamental entities stored in Amazon S3. You can use Amazon S3 inventory to get a list of all objects in your bucket. For others to access your objects, you'll need to explicitly grant them permissions. Learn more

Name	Type	Last modified	Size	Storage class
Tulips.jpg	jpg	November 21, 2022, 17:38:04 (UTC+05:30)	606.3 KB	Standard

Tulips.jpg is now seen in bhargavi-nukala-replica bucket.

RDS:

Create a database



awsrds-bhargavinukala

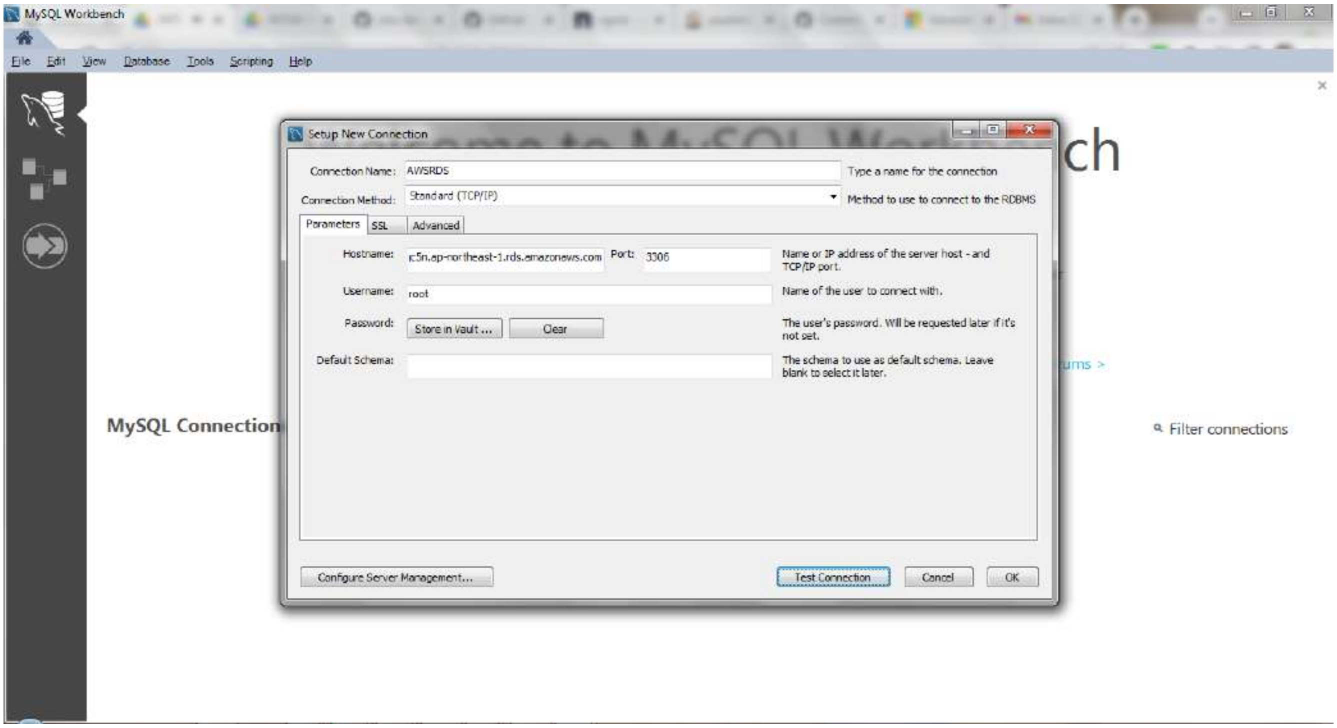
Summary

DB identifier	CPU	Status	Class
awsrds-bhargavinukala	-	Available	db.t2.micro
Role	**Current activity**	**Engine**	**Region & AZ**
Instance		MySQL Community	ap-northeast-1d

Connectivity & security

Endpoint & port	Networking	Security
Endpoint	Availability Zone	VPC security groups
awsrds-	ap-northeast-1d	awsrdssg (sg-

Connect to the database from MySQL WorkBench using EndPoint as Host



Setup New Connection

Connection Name: AWSRDS — Type a name for the connection

Connection Method: Standard (TCP/IP) — Method to use to connect to the RDBMS

Parameters

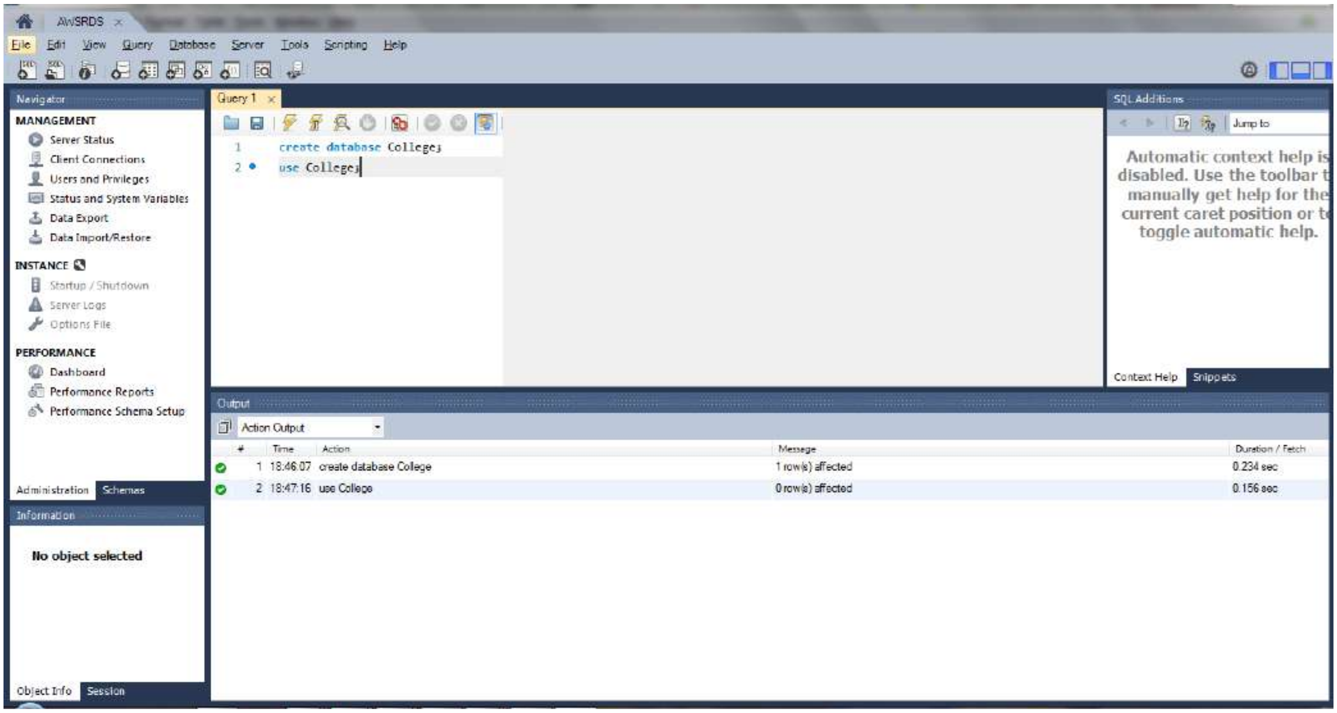
Hostname: c5n.ap-northeast-1.rds.amazonaws.com Port: 3306 — Name or IP address of the server host - and TCP/IP port.

Username: root — Name of the user to connect with.

Password: — The user's password. Will be requested later if it's not set.

Default Schema: — The schema to use as default schema. Leave blank to select it later.

Create a database and use the database

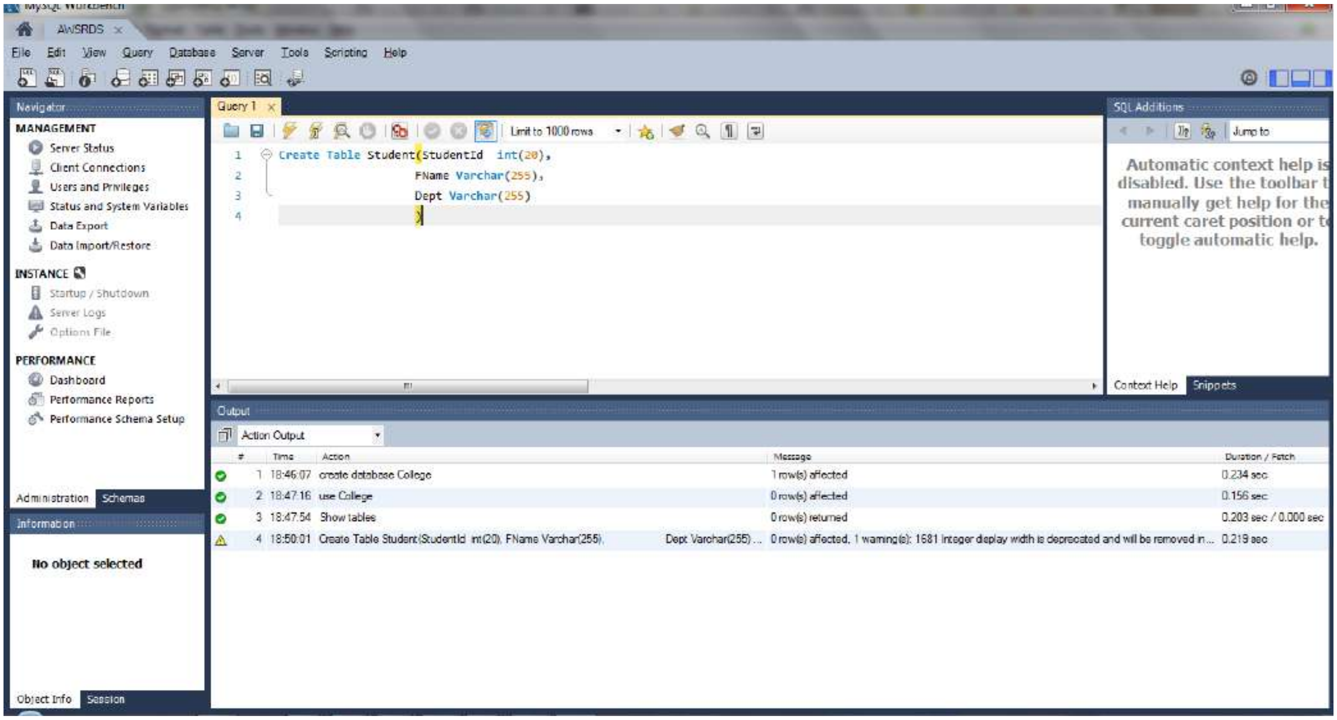


```
create database College;
use College;
```

Output

#	Time	Action	Message	Duration / Fetch
1	18:46:07	create database College	1 row(s) affected	0.234 sec
2	18:47:16	use College	0 row(s) affected	0.156 sec

Create a Table Student



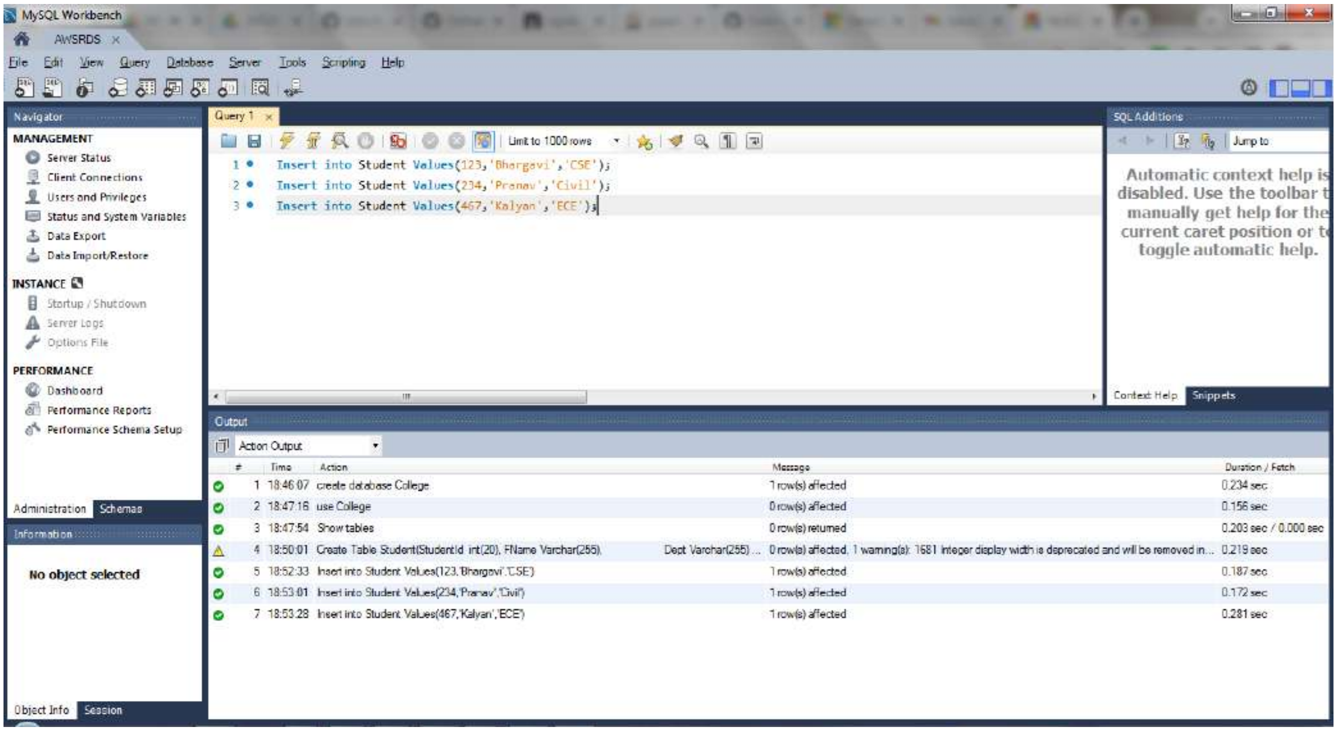
```
Create Table Student(StudentId  int(20),
                     FName Varchar(255),
                     Dept Varchar(255)
                     )
```

Automatic context help is disabled. Use the toolbar t manually get help for the current caret position or t toggle automatic help.

No object selected

```
#  Time      Action                                                                  Message                                                                           Duration / Fetch
1  18:46:07  create database College                                                 1 row(s) affected                                                                 0.234 sec
2  18:47:16  use College                                                             0 row(s) affected                                                                 0.156 sec
3  18:47:54  Show tables                                                             0 row(s) returned                                                                 0.203 sec / 0.000 sec
4  18:50:01  Create Table Student(StudentId  int(20), FName Varchar(255),   Dept Varchar(255) ...   0 row(s) affected, 1 warning(s): 1681 Integer display width is deprecated and will be removed in ...   0.219 sec
```

Insert some rows into the Student table



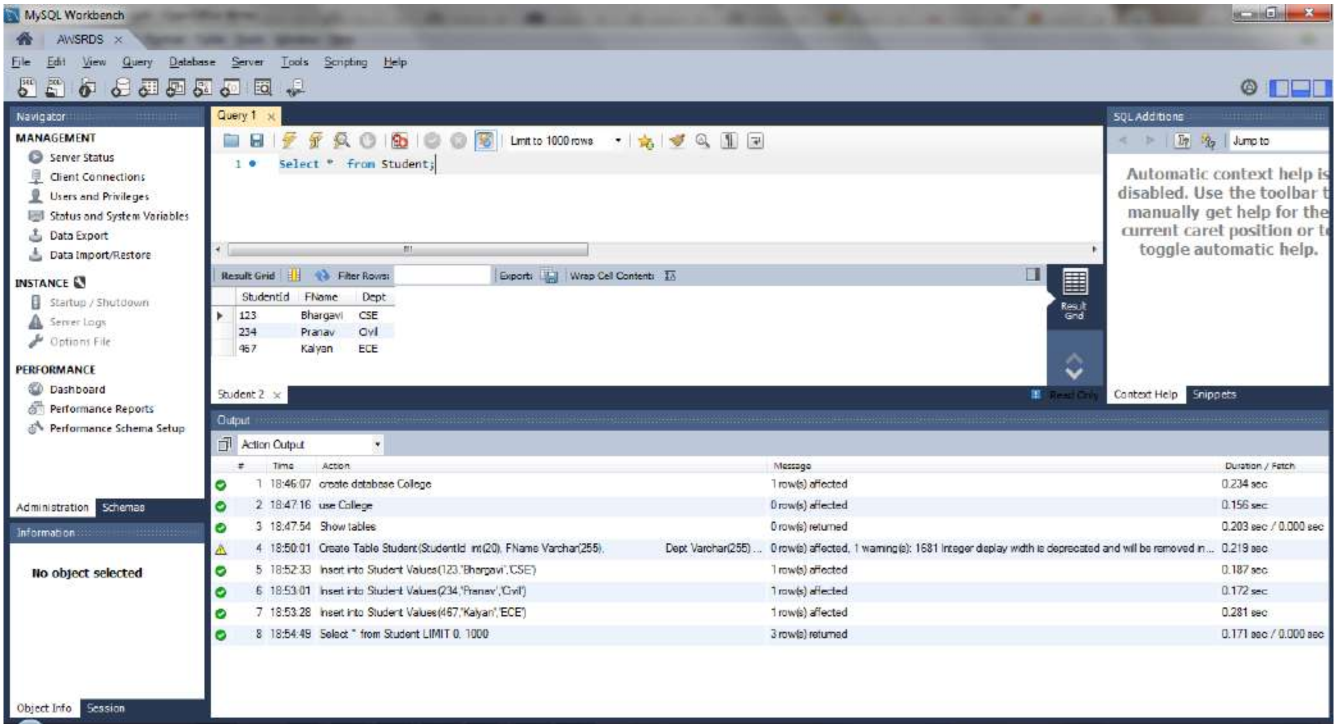
```
Insert into Student Values(123,'Bhargavi','CSE');
Insert into Student Values(234,'Pranav','Civil');
Insert into Student Values(467,'Kalyan','ECE');
```

Automatic context help is disabled. Use the toolbar t manually get help for the current caret position or t toggle automatic help.

No object selected

```
#  Time      Action                                                                  Message                                                                           Duration / Fetch
1  18:46:07  create database College                                                 1 row(s) affected                                                                 0.234 sec
2  18:47:16  use College                                                             0 row(s) affected                                                                 0.156 sec
3  18:47:54  Show tables                                                             0 row(s) returned                                                                 0.203 sec / 0.000 sec
4  18:50:01  Create Table Student(StudentId  int(20), FName Varchar(255),   Dept Varchar(255) ...   0 row(s) affected, 1 warning(s): 1681 Integer display width is deprecated and will be removed in ...   0.219 sec
5  18:52:33  Insert into Student Values(123,'Bhargavi','CSE')                        1 row(s) affected                                                                 0.187 sec
6  18:53:01  Insert into Student Values(234,'Pranav','Civil')                        1 row(s) affected                                                                 0.172 sec
7  18:53:28  Insert into Student Values(467,'Kalyan','ECE')                          1 row(s) affected                                                                 0.281 sec
```

Select rows from the Student table.



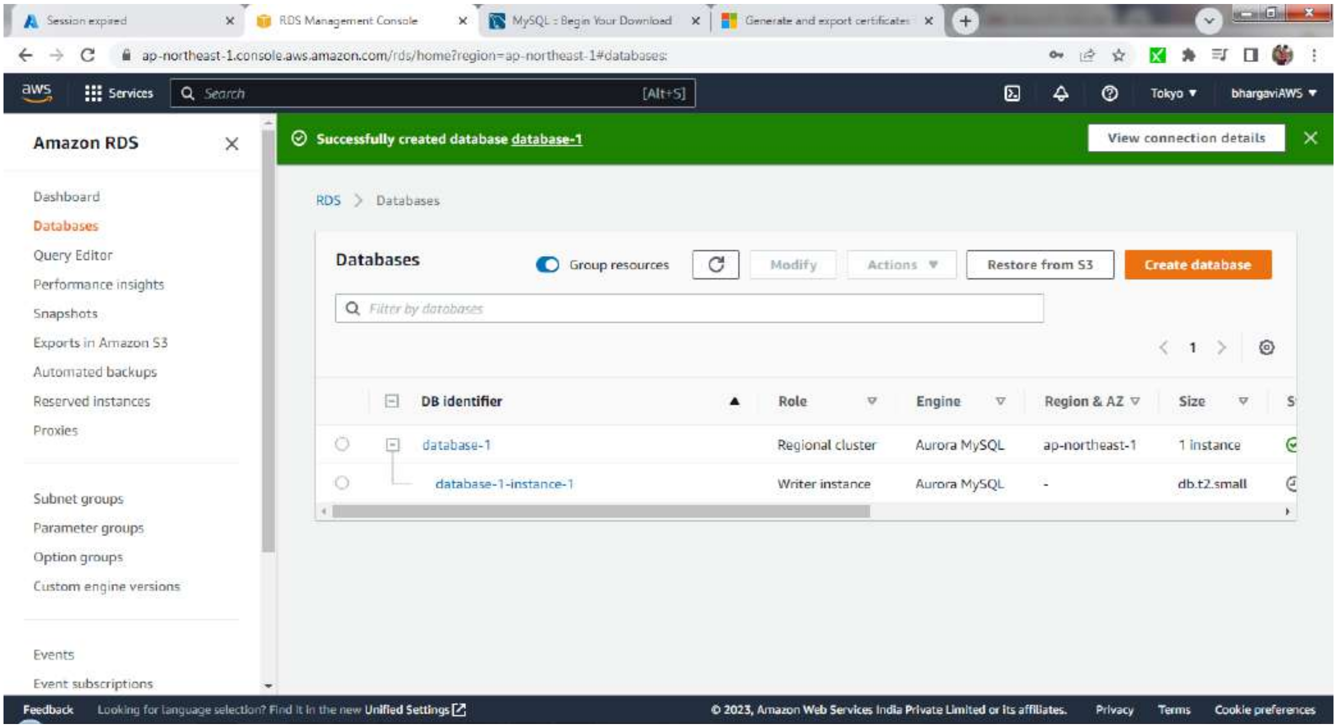
```
Select * from Student;
```

StudentId	FName	Dept
123	Bhargavi	CSE
234	Pranav	Civil
467	Kalyan	ECE

#	Time	Action	Message	Duration / Fetch
1	18:46:07	create database College	1 row(s) affected	0.234 sec
2	18:47:16	use College	0 row(s) affected	0.156 sec
3	18:47:54	Show tables	0 row(s) returned	0.203 sec / 0.000 sec
4	18:50:01	Create Table Student(StudentId int(20), FName Varchar(255), Dept Varchar(255) ...	0 row(s) affected, 1 warning(s): 1681 Integer display width is deprecated and will be removed in ...	0.219 sec
5	18:52:33	Insert into Student Values(123,'Bhargavi','CSE')	1 row(s) affected	0.187 sec
6	18:53:01	Insert into Student Values(234,'Pranav','Civil')	1 row(s) affected	0.172 sec
7	18:53:28	Insert into Student Values(467,'Kalyan','ECE')	1 row(s) affected	0.281 sec
8	18:54:49	Select * from Student LIMIT 0, 1000	3 row(s) returned	0.171 sec / 0.000 sec

Amazon Aurora:

Create an Amazon Aurora Database. Check that a Write instance is created along with Actual Database.

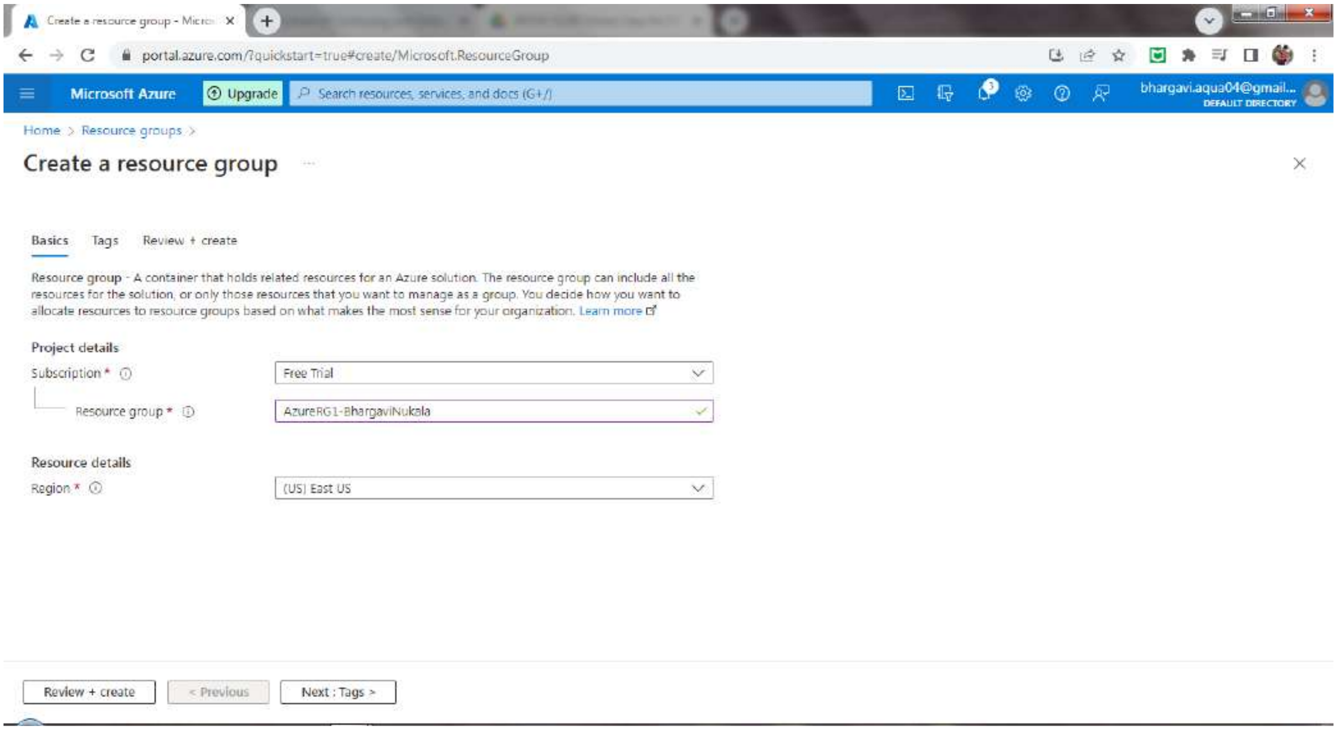


Successfully created database database-1

DB identifier	Role	Engine	Region & AZ	Size
database-1	Regional cluster	Aurora MySQL	ap-northeast-1	1 instance
database-1-instance-1	Writer instance	Aurora MySQL	-	db.t2.small

AZURE

Resource Group: Create a resource group to associate for all resources to be created in Azure



Create a resource group

Resource group - A container that holds related resources for an Azure solution. The resource group can include all the resources for the solution, or only those resources that you want to manage as a group. You decide how you want to allocate resources to resource groups based on what makes the most sense for your organization. Learn more

Project details

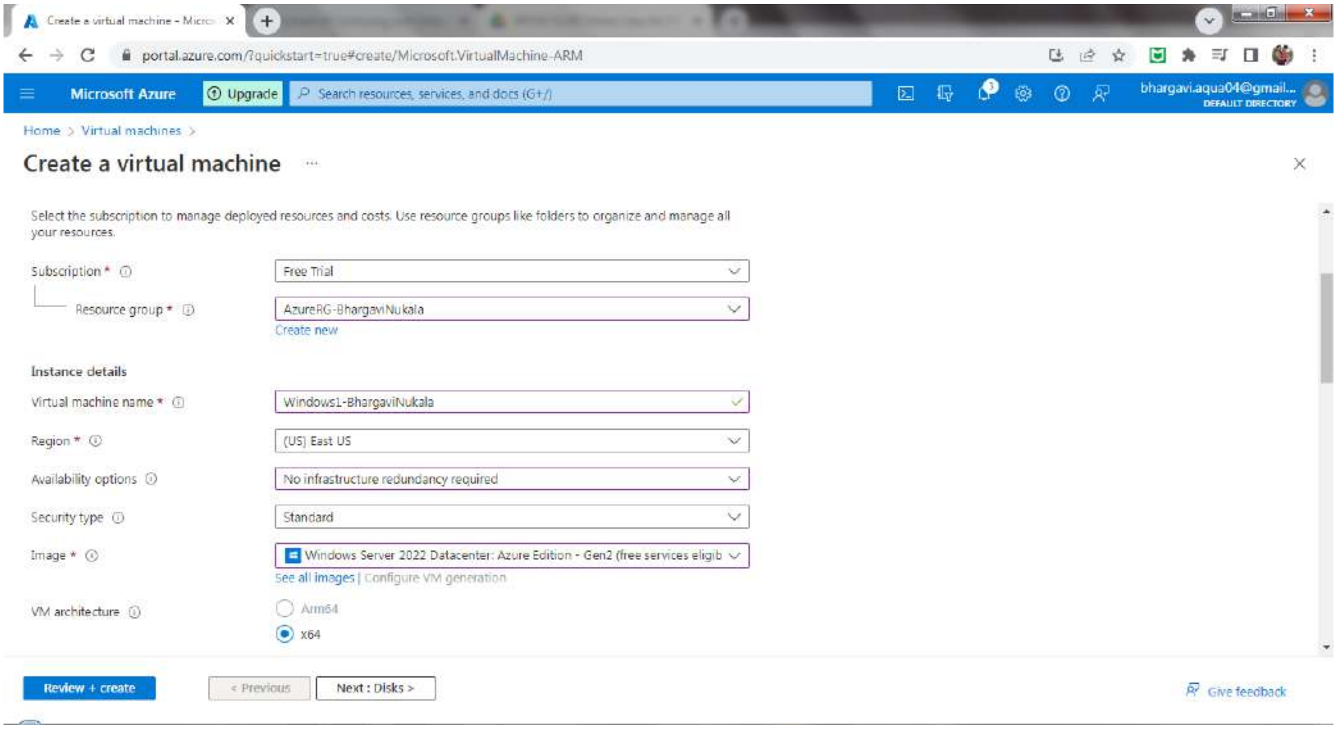
Subscription * : Free Trial

Resource group * : AzureRG1-BhargaviNukala

Resource details

Region * : (US) East US

Create a Windows Virtual Machine under above created the ResourceGroup.



Home > Virtual machines >

Create a virtual machine

Select the subscription to manage deployed resources and costs. Use resource groups like folders to organize and manage all your resources.

Subscription * : Free Trial

Resource group * : AzureRG-BhargaviNukala

Create new

Instance details

Virtual machine name * : Windows1-BhargaviNukala

Region * : (US) East US

Availability options : No infrastructure redundancy required

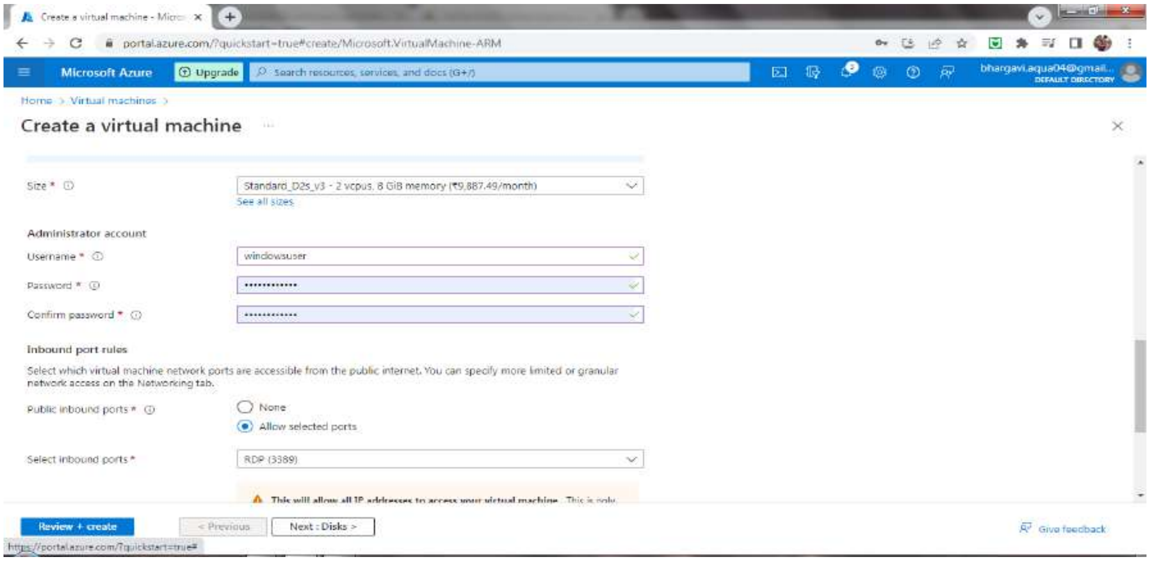
Security type : Standard

Image * : Windows Server 2022 Datacenter: Azure Edition - Gen2 (free services eligib

See all images | Configure VM generation

VM architecture : ○ Arm64 ● x64

We should mention the username and password to connect to VM while creation only.



Home > Virtual machines >

Create a virtual machine

Size * : Standard_D2s_v3 - 2 vcpus, 8 GiB memory (₹9,887.49/month)

See all sizes

Administrator account

Username * : windowsuser

Password * : •••••••••••••

Confirm password * : •••••••••••••

Inbound port rules

Select which virtual machine network ports are accessible from the public internet. You can specify more limited or granular network access on the Networking tab.

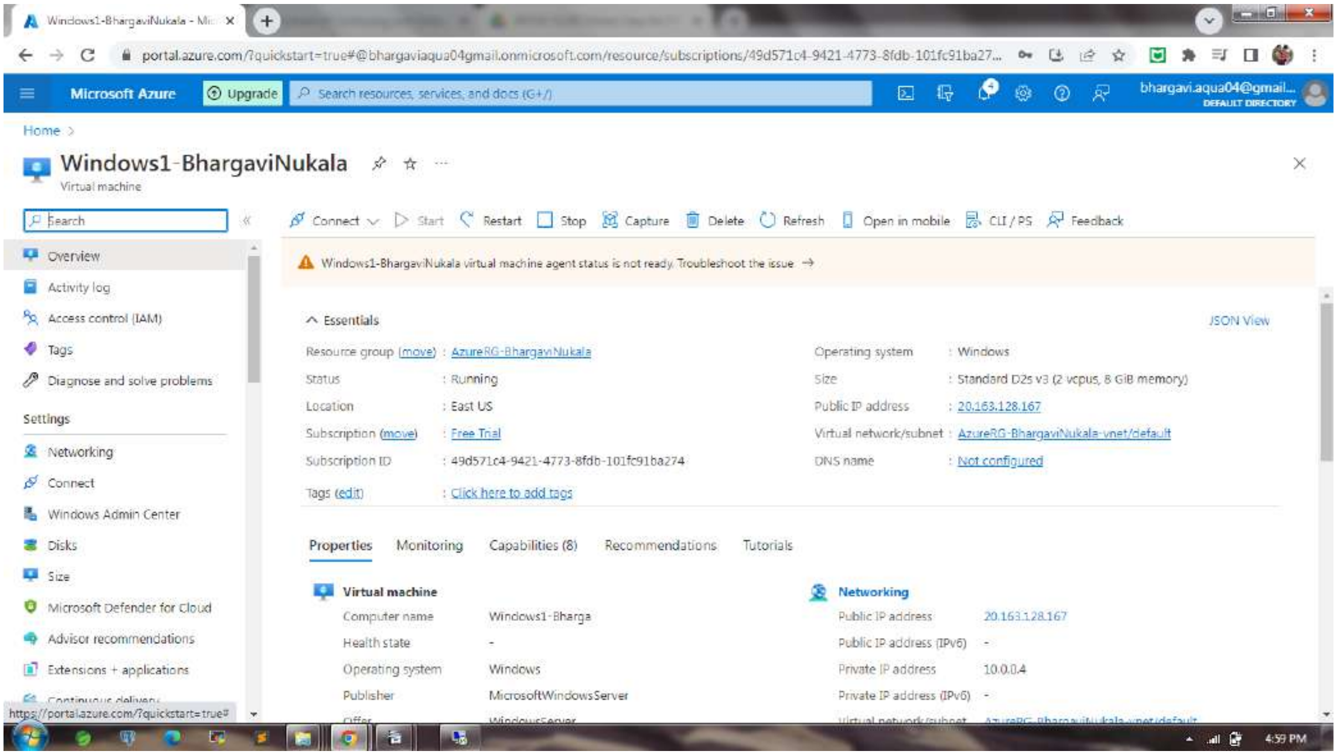
Public inbound ports * : ○ None ● Allow selected ports

Select inbound ports * : RDP (3389)

⚠ This will allow all IP addresses to access your virtual machine. This is only

In Networking tab, check the "Delete IP address when VM is deleted" check box and see that Public IP is set.

Virtual Machine is created.



Windows1-BhargaviNukala

Windows1-BhargaviNukala virtual machine agent status is not ready. Troubleshoot the issue →

Essentials

Resource group (move) : AzureRG-BhargaviNukala
Status : Running
Location : East US
Subscription (move) : Free Trial
Subscription ID : 49d571c4-9421-4773-8fdb-101fc91ba274
Tags (edit) : Click here to add tags

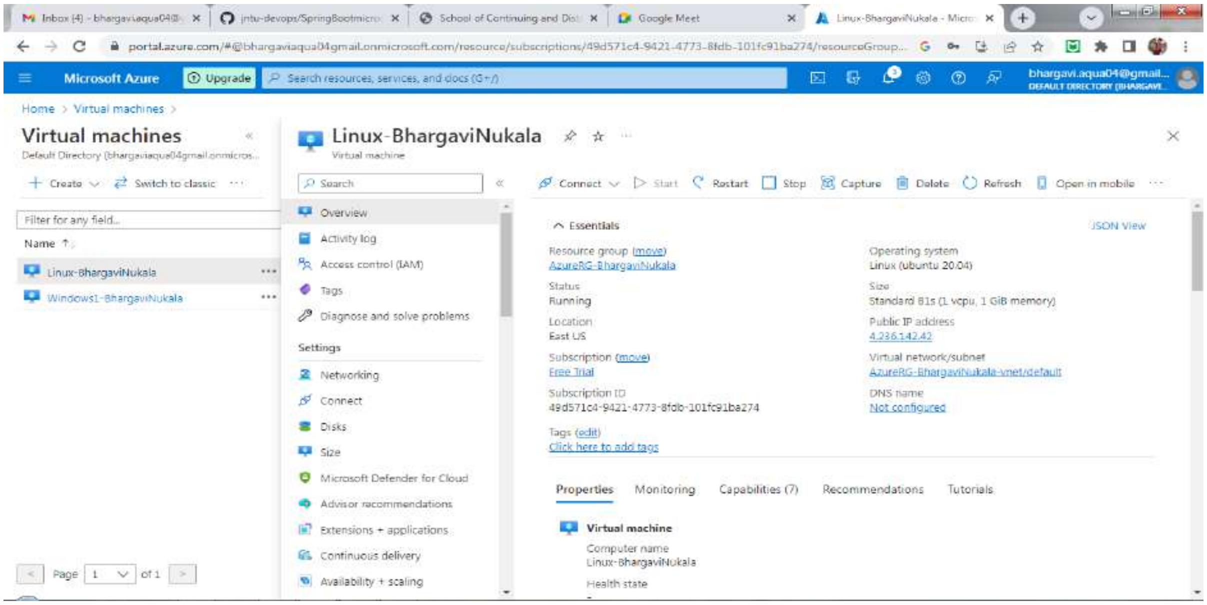
Operating system : Windows
Size : Standard D2s v3 (2 vcpus, 8 GiB memory)
Public IP address : 20.163.128.167
Virtual network/subnet : AzureRG-BhargaviNukala-vnet/default
DNS name : Not configured

Virtual machine
Computer name Windows1-Bharga
Health state -
Operating system Windows
Publisher MicrosoftWindowsServer
Offer WindowsServer

Networking
Public IP address 20.163.128.167
Public IP address (IPv6) -
Private IP address 10.0.0.4
Private IP address (IPv6) -
Virtual network/subnet AzureRG-BhargaviNukala-vnet/default

We connect to Windows machine using Remote Desktop Connection.

Creation of a Linux Virtual Machine



Inbox (4) - bhargaviaqua04@
jntu-devops/SpringBootmicro
School of Continuing and Dist
Google Meet
Linux-BhargaviNukala - Micro
portal.azure.com/#@bhargaviaqua04gmail.onmicrosoft.com/resource/subscriptions/49d571c4-9421-4773-8fdb-101fc91ba274/resourceGroup...
Microsoft Azure
Upgrade
Search resources, services, and docs (G+/)
bhargavi.aqua04@gmail...
DEFAULT DIRECTORY (BHARGAVI...
Home > Virtual machines >
Virtual machines
Default Directory (bhargaviaqua04gmail.onmicros...
Create
Switch to classic
Filter for any field...
Name ↑↓
Linux-BhargaviNukala
Windows1-BhargaviNukala
Page 1 of 1
Virtual machine
Search
Connect
Start
Restart
Stop
Capture
Delete
Refresh
Open in mobile
Overview
Activity log
Access control (IAM)
Tags
Diagnose and solve problems
Settings
Networking
Connect
Disks
Size
Microsoft Defender for Cloud
Advisor recommendations
Extensions + applications
Continuous delivery
Availability + scaling
JSON View
Properties
Monitoring
Capabilities (7)
Recommendations
Tutorials

Linux-BhargaviNukala

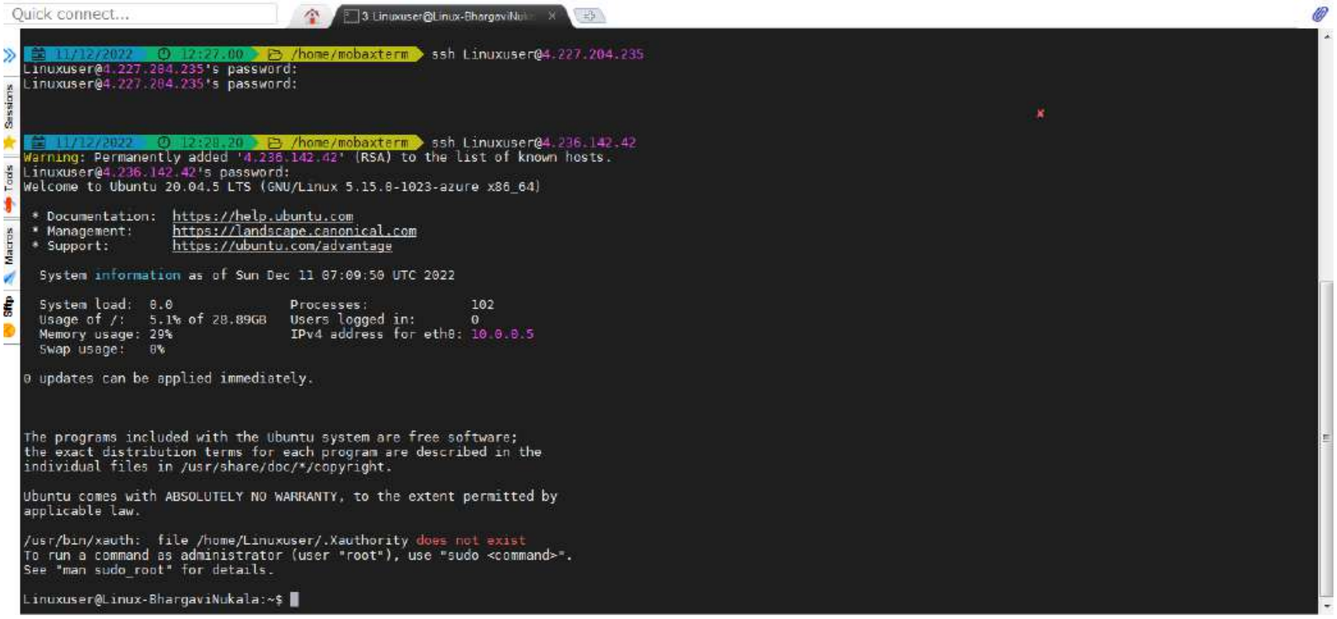
Essentials

Resource group (move)
AzureRG-BhargaviNukala
Status
Running
Location
East US
Subscription (move)
Free Trial
Subscription ID
49d571c4-9421-4773-8fdb-101fc91ba274
Tags (edit)
Click here to add tags

Operating system
Linux (ubuntu 20.04)
Size
Standard B1s (1 vcpu, 1 GiB memory)
Public IP address
4.236.142.42
Virtual network/subnet
AzureRG-BhargaviNukala-vnet/default
DNS name
Not configured

Virtual machine
Computer name
Linux-BhargaviNukala
Health state
-

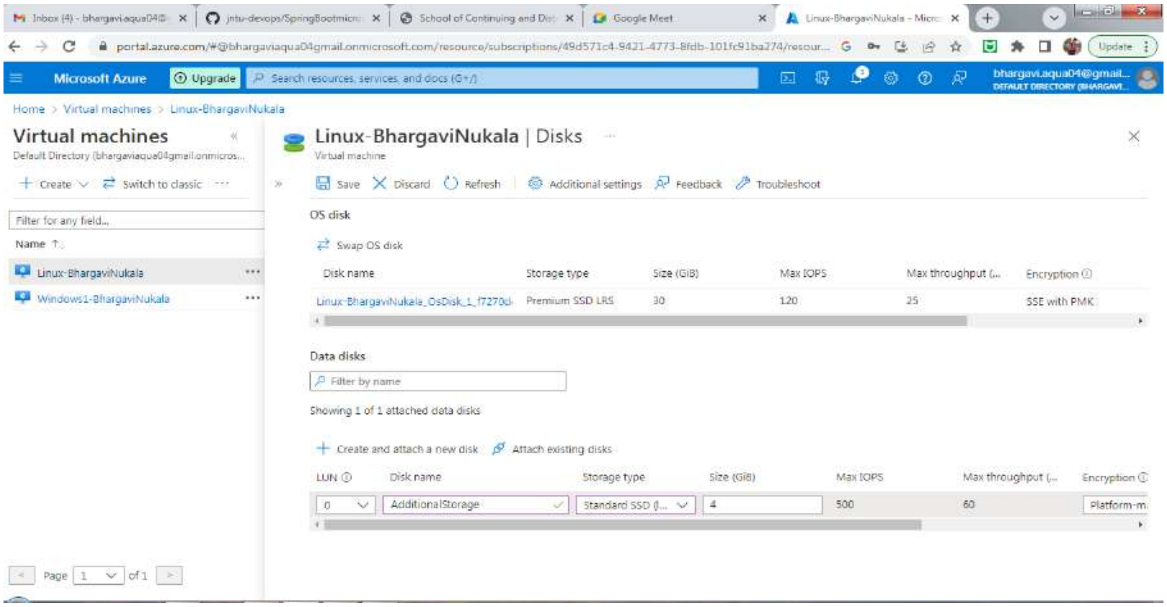
Connect to Linux machine using “ssh username@publicIP”



```
 11/12/2022  12:27.00  /home/mobaxterm  ssh Linuxuser@4.227.204.235
Linuxuser@4.227.204.235's password:
Linuxuser@4.227.204.235's password:

 11/12/2022  12:28.20  /home/mobaxterm  ssh Linuxuser@4.236.142.42
Warning: Permanently added '4.236.142.42' (RSA) to the list of known hosts.
Linuxuser@4.236.142.42's password:
Welcome to Ubuntu 20.04.5 LTS (GNU/Linux 5.15.0-1023-azure x86_64)

 * Documentation:  https://help.ubuntu.com
 * Management:     https://landscape.canonical.com
 * Support:        https://ubuntu.com/advantage

  System information as of Sun Dec 11 07:09:50 UTC 2022

  System load:  0.0               Processes:             102
  Usage of /:   5.1% of 28.89GB   Users logged in:       0
  Memory usage: 29%               IPv4 address for eth0: 10.0.0.5
  Swap usage:   0%

0 updates can be applied immediately.


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.

/usr/bin/xauth:  file /home/Linuxuser/.Xauthority does not exist
To run a command as administrator (user "root"), use "sudo <command>".
See "man sudo_root" for details.

Linuxuser@Linux-BhargaviNukala:~$ 
```

Creating extra storage disks and mount a filesystem

In VM, click on Disks, and create a additional disk. Attach it to the VM and save.


Inbox (4) - bhargaviaqua04@
jntu-devops/SpringBootmicr
School of Continuing and Dis
Google Meet
Linux-BhargaviNukala - Micro
portal.azure.com/#@bhargaviaqua04gmail.onmicrosoft.com/resource/subscriptions/49d571c4-9421-4773-8fdb-101fc91ba274/resour...
Update
Microsoft Azure
Upgrade
Search resources, services, and docs (G+/)
bhargavi.aqua04@gmail...
DEFAULT DIRECTORY (BHARGAVI...
Home > Virtual machines > Linux-BhargaviNukala
Virtual machines
Default Directory (bhargaviaqua04gmail.onmicros...
Create
Switch to classic
Filter for any field...
Name ↑
Linux-BhargaviNukala
Windows1-BhargaviNukala
Page 1 of 1
Linux-BhargaviNukala | Disks
Virtual machine
Save
Discard
Refresh
Additional settings
Feedback
Troubleshoot
Swap OS disk
Filter by name
Create and attach a new disk
Attach existing disks

OS disk

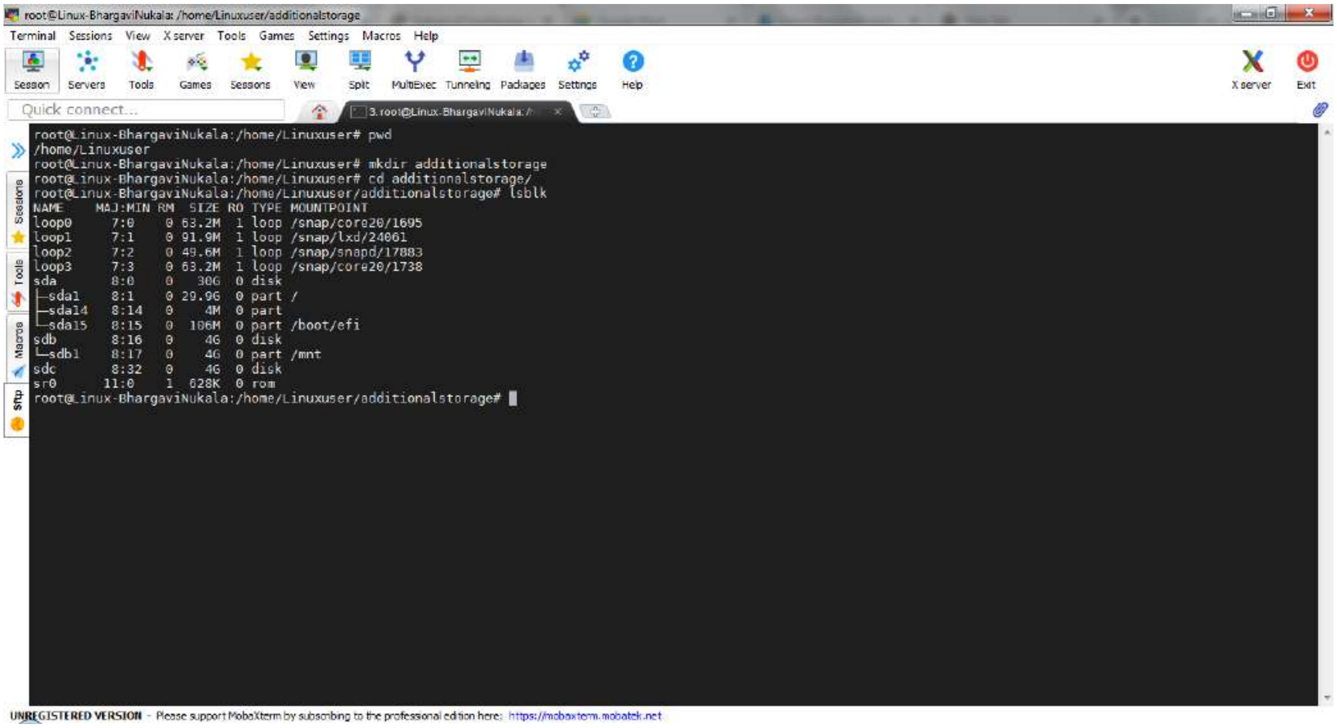
Disk name	Storage type	Size (GiB)	Max IOPS	Max throughput (...	Encryption ⓘ
Linux-BhargaviNukala_OsDisk_1_f7270cl	Premium SSD LRS	30	120	25	SSE with PMK

Data disks

Showing 1 of 1 attached data disks

LUN ⓘ	Disk name	Storage type	Size (GiB)	Max IOPS	Max throughput (...	Encryption ⓘ
0	AdditionalStorage	Standard SSD (l...	4	500	60	Platform-m.

Additional Storage “sdc” avaiable on Linux VM and shows not mounted



root@Linux-BhargaviNukala: /home/Linuxuser/additionalstorage
Terminal Sessions View X server Tools Games Settings Macros Help
Session Servers Tools Games Sessions View Split MultiExec Tunneling Packages Settings Help
X server Exit
Quick connect...
3. root@Linux-BhargaviNukala: /h
Sessions Tools Macros Sftp

```
root@Linux-BhargaviNukala:/home/Linuxuser# pwd
/home/Linuxuser
root@Linux-BhargaviNukala:/home/Linuxuser# mkdir additionalstorage
root@Linux-BhargaviNukala:/home/Linuxuser# cd additionalstorage/
root@Linux-BhargaviNukala:/home/Linuxuser/additionalstorage# lsblk
NAME    MAJ:MIN RM  SIZE RO TYPE MOUNTPOINT
loop0     7:0    0 63.2M  1 loop /snap/core20/1695
loop1     7:1    0 91.9M  1 loop /snap/lxd/24061
loop2     7:2    0 49.6M  1 loop /snap/snapd/17883
loop3     7:3    0 63.2M  1 loop /snap/core20/1738
sda       8:0    0   30G  0 disk
├─sda1    8:1    0 29.9G  0 part /
├─sda14   8:14   0    4M  0 part
└─sda15   8:15   0  106M  0 part /boot/efi
sdb       8:16   0    4G  0 disk
└─sdb1    8:17   0    4G  0 part /mnt
sdc       8:32   0    4G  0 disk
sr0      11:0    1  628K  0 rom
root@Linux-BhargaviNukala:/home/Linuxuser/additionalstorage#
```

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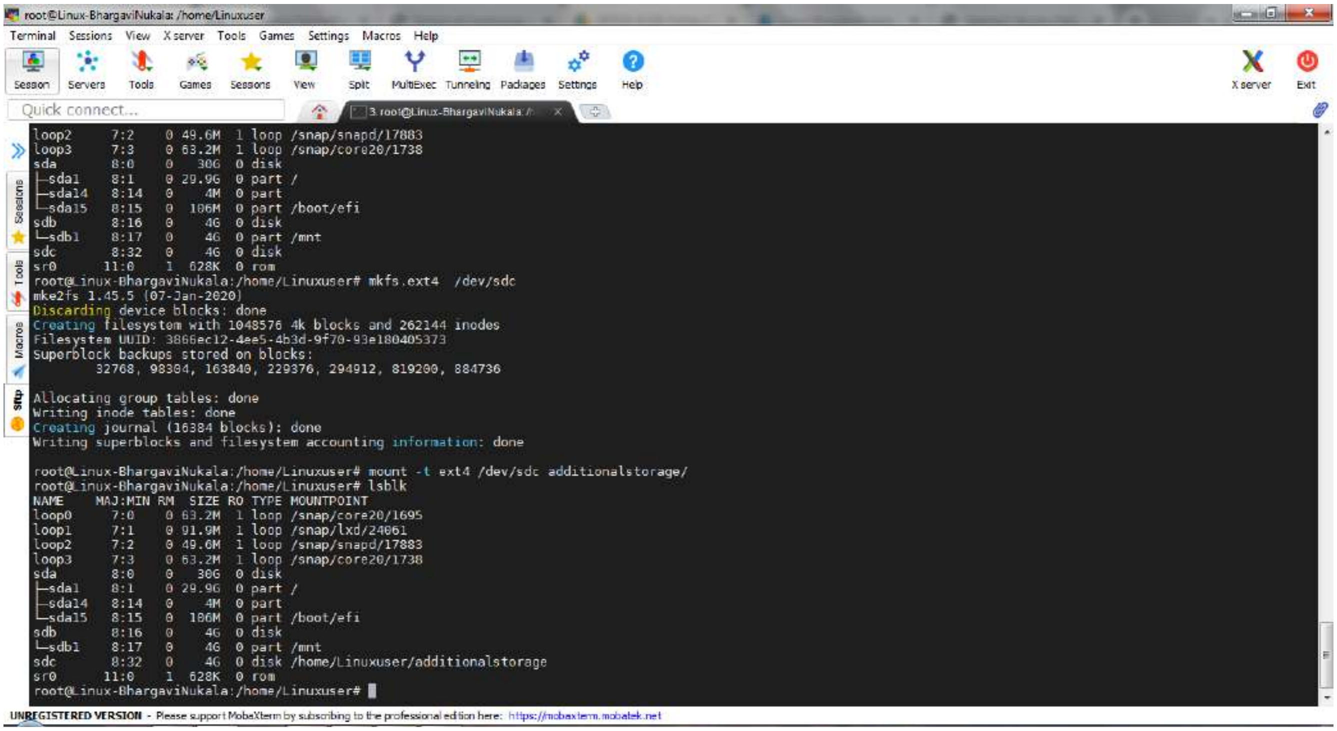
Now mount the storage using commands

$mkdir additionalstorage

$mkfs .ext4 /dev/sdc

$mount -t ext4/dev/sdc additionalstorage/


root@Linux-BhargaviNukala: /home/Linuxuser
Terminal Sessions View X server Tools Games Settings Macros Help
Session Servers Tools Games Sessions View Split MultiExec Tunneling Packages Settings Help
X server Exit
Quick connect...
3. root@Linux-BhargaviNukala: /
UNREGISTERED VERSION - Please support MobaXterm by subscribing to the professional edition here: https://mobaxterm.mobatek.net

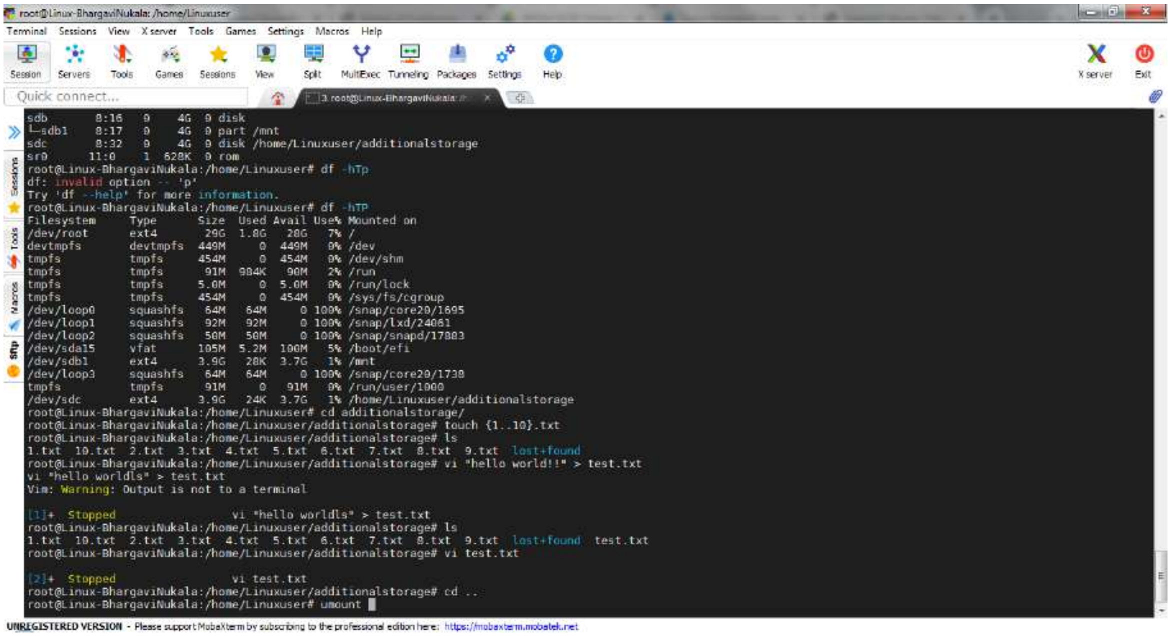
```
loop2      7:2    0 49.6M  1 loop /snap/snapd/17883
loop3      7:3    0 63.2M  1 loop /snap/core20/1738
sda        8:0    0   30G  0 disk
├─sda1     8:1    0 29.9G  0 part /
├─sda14    8:14   0    4M  0 part
└─sda15    8:15   0  106M  0 part /boot/efi
sdb        8:16   0    4G  0 disk
└─sdb1     8:17   0    4G  0 part /mnt
sdc        8:32   0    4G  0 disk
sr0       11:0    1  628K  0 rom
root@Linux-BhargaviNukala:/home/Linuxuser# mkfs.ext4  /dev/sdc
mke2fs 1.45.5 (07-Jan-2020)
Discarding device blocks: done
Creating filesystem with 1048576 4k blocks and 262144 inodes
Filesystem UUID: 3866ec12-4ee5-4b3d-9f70-93e180405373
Superblock backups stored on blocks:
        32768, 98304, 163840, 229376, 294912, 819200, 884736

Allocating group tables: done
Writing inode tables: done
Creating journal (16384 blocks): done
Writing superblocks and filesystem accounting information: done

root@Linux-BhargaviNukala:/home/Linuxuser# mount -t ext4 /dev/sdc additionalstorage/
root@Linux-BhargaviNukala:/home/Linuxuser# lsblk
NAME    MAJ:MIN RM  SIZE RO TYPE MOUNTPOINT
loop0     7:0    0 63.2M  1 loop /snap/core20/1695
loop1     7:1    0 91.9M  1 loop /snap/lxd/24061
loop2     7:2    0 49.6M  1 loop /snap/snapd/17883
loop3     7:3    0 63.2M  1 loop /snap/core20/1738
sda       8:0    0   30G  0 disk
├─sda1    8:1    0 29.9G  0 part /
├─sda14   8:14   0    4M  0 part
└─sda15   8:15   0  106M  0 part /boot/efi
sdb       8:16   0    4G  0 disk
└─sdb1    8:17   0    4G  0 part /mnt
sdc       8:32   0    4G  0 disk /home/Linuxuser/additionalstorage
sr0      11:0    1  628K  0 rom
root@Linux-BhargaviNukala:/home/Linuxuser# 
```

Create 10 files in the disk using the command

$touch {1..10}.txt


root@Linux-BhargaviNukala: /home/Linuxuser
Terminal Sessions View X server Tools Games Settings Macros Help
Session Servers Tools Games Sessions View Split MultiExec Tunneling Packages Settings Help
X server Exit
Quick connect...
3. root@Linux-BhargaviNukala: /
UNREGISTERED VERSION - Please support MobaXterm by subscribing to the professional edition here: https://mobaxterm.mobatek.net

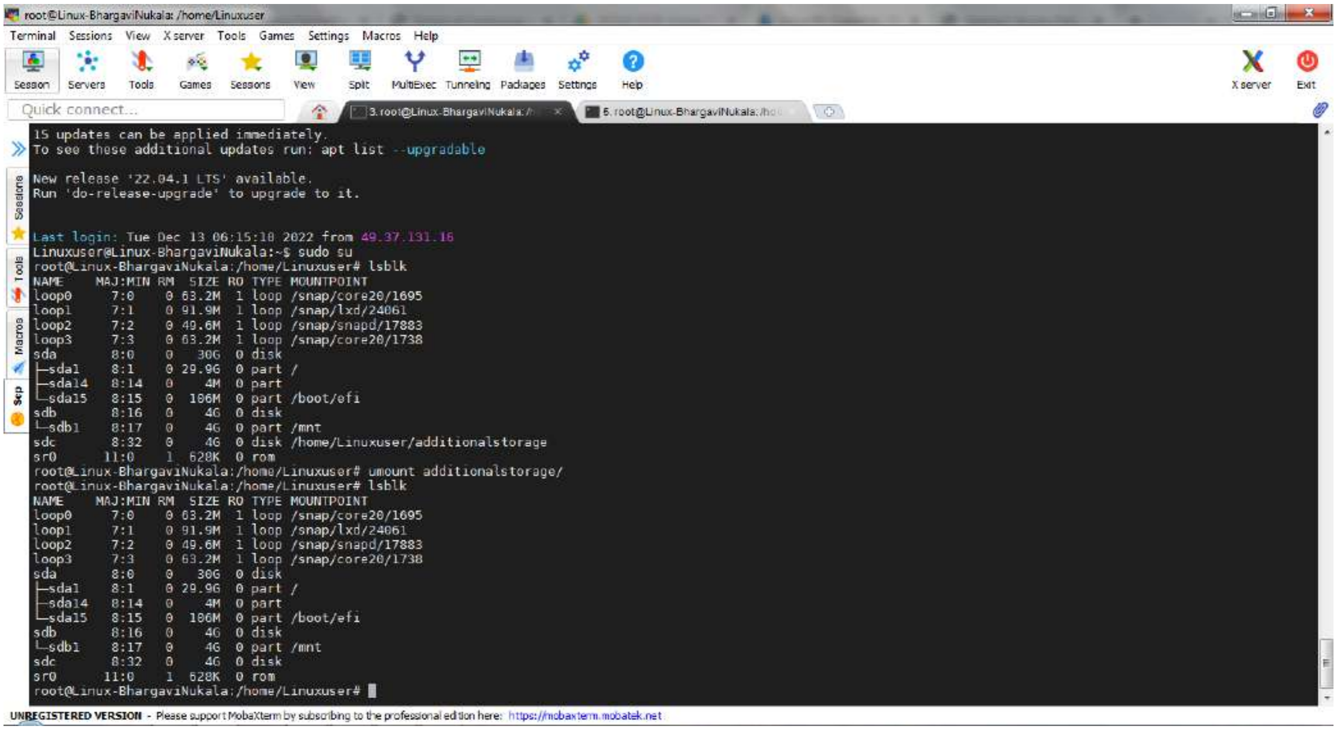
```
sdb       8:16   0    4G  0 disk
└─sdb1    8:17   0    4G  0 part /mnt
sdc       8:32   0    4G  0 disk /home/Linuxuser/additionalstorage
sr0      11:0    1  628K  0 rom
root@Linux-BhargaviNukala:/home/Linuxuser# df -hTp
df: invalid option -- 'p'
Try 'df --help' for more information.
root@Linux-BhargaviNukala:/home/Linuxuser# df -hTP
Filesystem     Type      Size  Used Avail Use% Mounted on
/dev/root      ext4       29G  1.8G   28G   7% /
devtmpfs       devtmpfs  449M     0  449M   0% /dev
tmpfs          tmpfs     454M     0  454M   0% /dev/shm
tmpfs          tmpfs      91M  984K   90M   2% /run
tmpfs          tmpfs     5.0M     0  5.0M   0% /run/lock
tmpfs          tmpfs     454M     0  454M   0% /sys/fs/cgroup
/dev/loop0     squashfs   64M   64M     0 100% /snap/core20/1695
/dev/loop1     squashfs   92M   92M     0 100% /snap/lxd/24061
/dev/loop2     squashfs   50M   50M     0 100% /snap/snapd/17883
/dev/sda15     vfat      105M  5.2M  100M   5% /boot/efi
/dev/sdb1      ext4      3.9G   28K  3.7G   1% /mnt
/dev/loop3     squashfs   64M   64M     0 100% /snap/core20/1738
tmpfs          tmpfs      91M     0   91M   0% /run/user/1000
/dev/sdc       ext4      3.9G   24K  3.7G   1% /home/Linuxuser/additionalstorage
root@Linux-BhargaviNukala:/home/Linuxuser# cd additionalstorage/
root@Linux-BhargaviNukala:/home/Linuxuser/additionalstorage# touch {1..10}.txt
root@Linux-BhargaviNukala:/home/Linuxuser/additionalstorage# ls
1.txt  10.txt  2.txt  3.txt  4.txt  5.txt  6.txt  7.txt  8.txt  9.txt  lost+found
root@Linux-BhargaviNukala:/home/Linuxuser/additionalstorage# vi "hello world!!" > test.txt
vi "hello worldls" > test.txt
Vim: Warning: Output is not to a terminal

[1]+  Stopped                 vi "hello worldls" > test.txt
root@Linux-BhargaviNukala:/home/Linuxuser/additionalstorage# ls
1.txt  10.txt  2.txt  3.txt  4.txt  5.txt  6.txt  7.txt  8.txt  9.txt  lost+found  test.txt
root@Linux-BhargaviNukala:/home/Linuxuser/additionalstorage# vi test.txt

[2]+  Stopped                 vi test.txt
root@Linux-BhargaviNukala:/home/Linuxuser/additionalstorage# cd ..
root@Linux-BhargaviNukala:/home/Linuxuser# umount 
```

Unmount the additional Storage using the command

$umount additionalstorage/



```
15 updates can be applied immediately.
To see these additional updates run: apt list --upgradable

New release '22.04.1 LTS' available.
Run 'do-release-upgrade' to upgrade to it.

Last login: Tue Dec 13 06:15:18 2022 from 49.37.131.16
Linuxuser@Linux-BhargaviNukala:~$ sudo su
root@Linux-BhargaviNukala:/home/Linuxuser# lsblk
NAME    MAJ:MIN RM  SIZE RO TYPE MOUNTPOINT
loop0     7:0    0 63.2M  1 loop /snap/core20/1695
loop1     7:1    0 91.9M  1 loop /snap/lxd/24061
loop2     7:2    0 49.6M  1 loop /snap/snapd/17883
loop3     7:3    0 63.2M  1 loop /snap/core20/1738
sda       8:0    0   30G  0 disk
├─sda1    8:1    0 29.9G  0 part /
├─sda14   8:14   0    4M  0 part
└─sda15   8:15   0  106M  0 part /boot/efi
sdb       8:16   0    4G  0 disk
└─sdb1    8:17   0    4G  0 part /mnt
sdc       8:32   0    4G  0 disk /home/Linuxuser/additionalstorage
sr0      11:0    1  628K  0 rom
root@Linux-BhargaviNukala:/home/Linuxuser# umount additionalstorage/
root@Linux-BhargaviNukala:/home/Linuxuser# lsblk
NAME    MAJ:MIN RM  SIZE RO TYPE MOUNTPOINT
loop0     7:0    0 63.2M  1 loop /snap/core20/1695
loop1     7:1    0 91.9M  1 loop /snap/lxd/24061
loop2     7:2    0 49.6M  1 loop /snap/snapd/17883
loop3     7:3    0 63.2M  1 loop /snap/core20/1738
sda       8:0    0   30G  0 disk
├─sda1    8:1    0 29.9G  0 part /
├─sda14   8:14   0    4M  0 part
└─sda15   8:15   0  106M  0 part /boot/efi
sdb       8:16   0    4G  0 disk
└─sdb1    8:17   0    4G  0 part /mnt
sdc       8:32   0    4G  0 disk
sr0      11:0    1  628K  0 rom
root@Linux-BhargaviNukala:/home/Linuxuser# 
```

root@Linux-BhargaviNukala: /home/Linuxuser
Terminal Sessions View X server Tools Games Settings Macros Help
Session Servers Tools Games Sessions View Split MultiExec Tunneling Packages Settings Help
X server Exit
Quick connect...
3. root@Linux-BhargaviNukala: /h
6. root@Linux-BhargaviNukala: /ho
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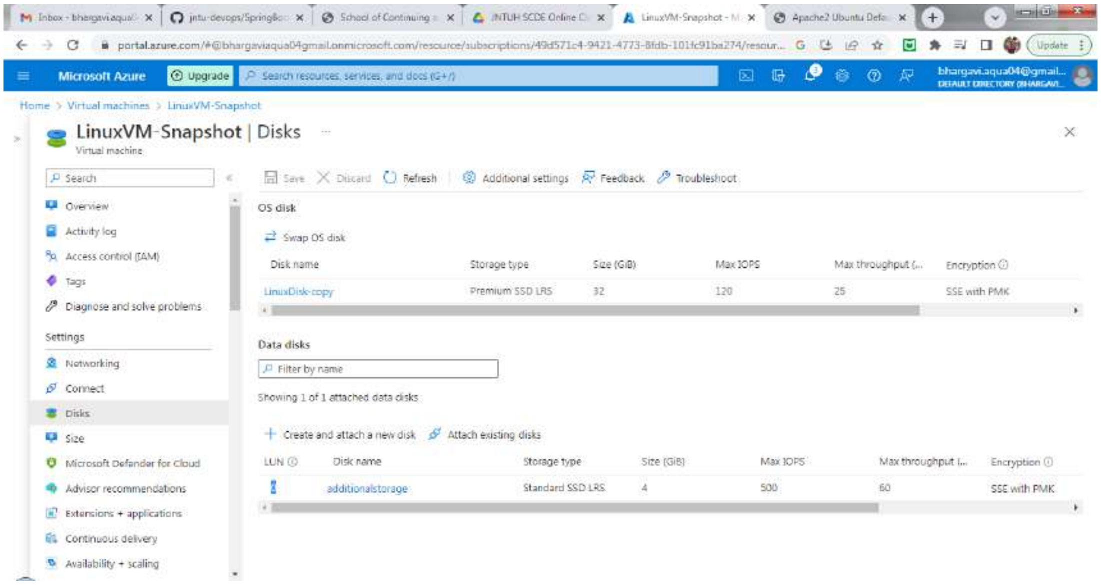
Now attach the same disk to another VM



LinuxVM-Snapshot | Disks

Virtual machine

OS disk

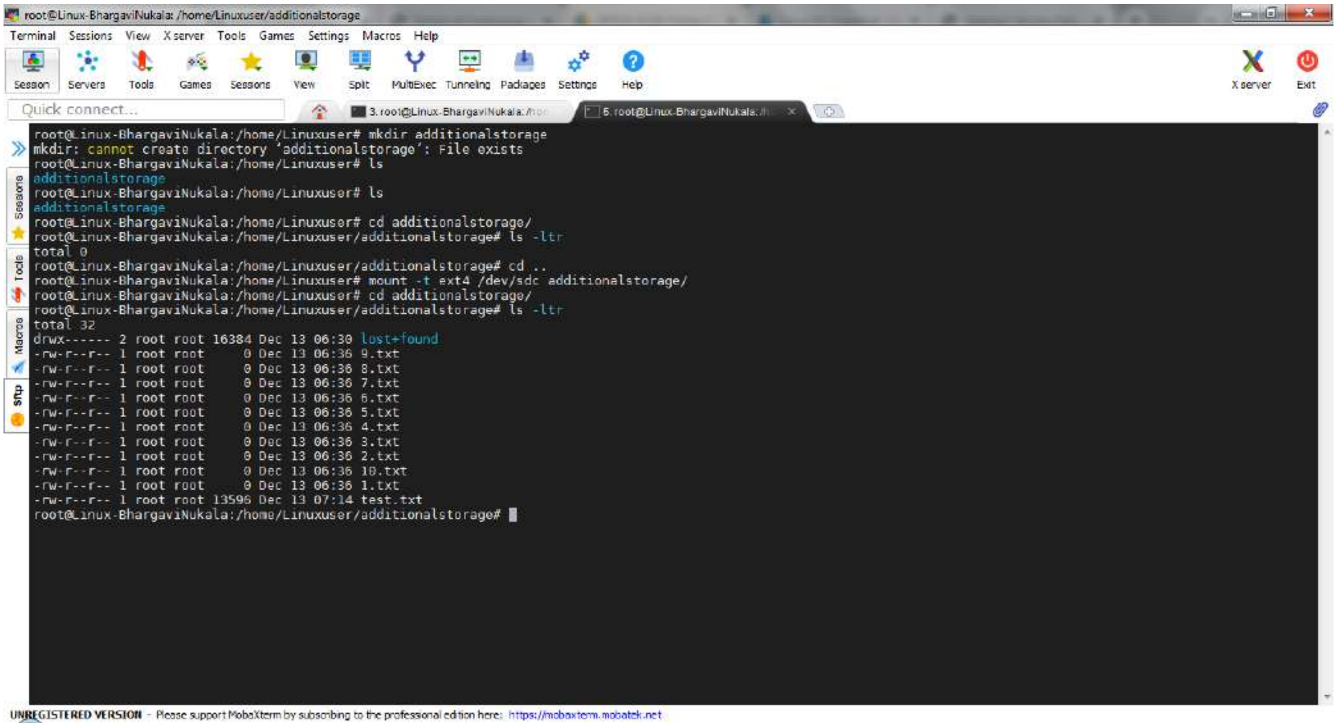
Disk name	Storage type	Size (GiB)	Max IOPS	Max throughput (...	Encryption
LinuxDisk-copy	Premium SSD LRS	32	120	25	SSE with PMK

Data disks

Showing 1 of 1 attached data disks

LUN	Disk name	Storage type	Size (GiB)	Max IOPS	Max throughput (...	Encryption
	additionalstorage	Standard SSD LRS	4	500	60	SSE with PMK

Connect to the VM and check the disk is already mounted and the additionalStorage is already available on the disk. Also the 10 files which we created in previous VM are also available in this VM.


root@Linux-BhargaviNukala: /home/Linuxuser/additionalstorage
Terminal Sessions View X server Tools Games Settings Macros Help
Session Servers Tools Games Sessions View Split MultiExec Tunneling Packages Settings Help X server Exit
Quick connect...
3. root@Linux-BhargaviNukala: /ho
6. root@Linux-BhargaviNukala: /h
Sessions Tools Macros Sftp
UNREGISTERED VERSION - Please support MobaXterm by subscribing to the professional edition here: https://mobaxterm.mobatek.net

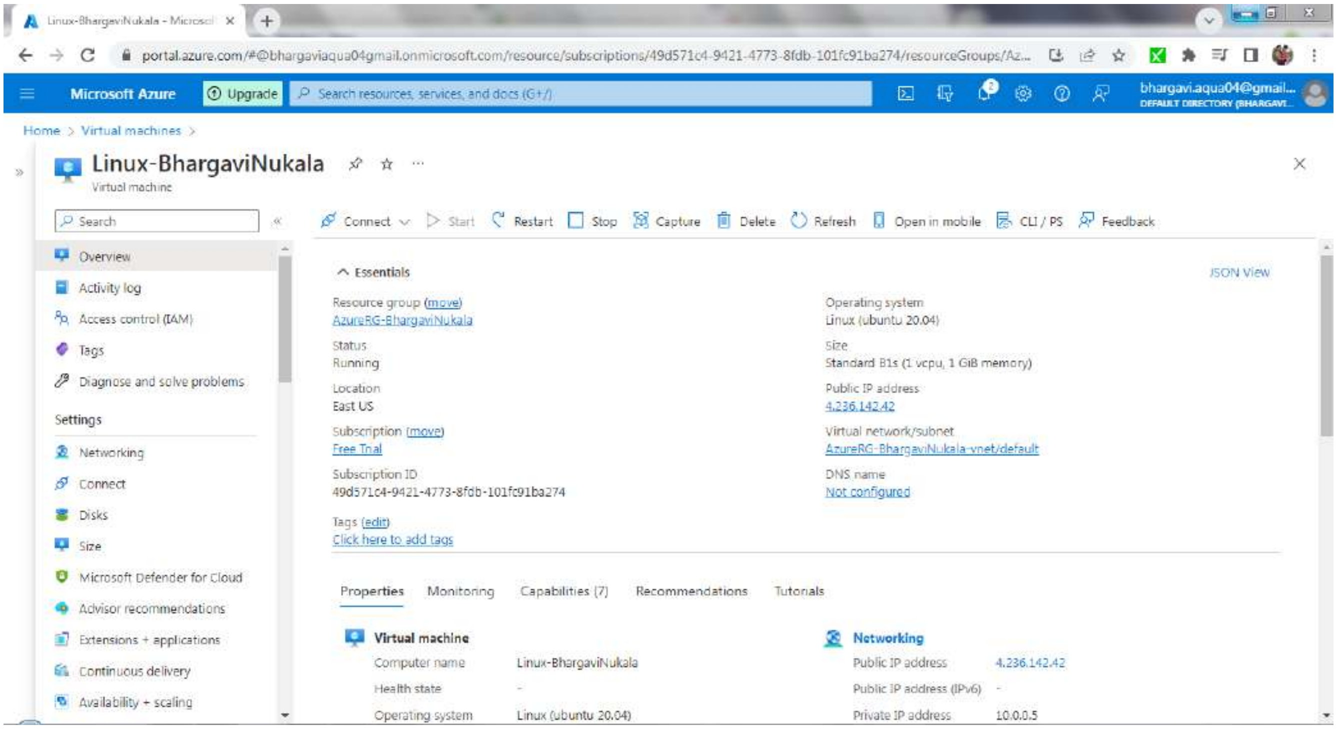
```
root@Linux-BhargaviNukala:/home/Linuxuser# mkdir additionalstorage
mkdir: cannot create directory ‘additionalstorage’: File exists
root@Linux-BhargaviNukala:/home/Linuxuser# ls
additionalstorage
root@Linux-BhargaviNukala:/home/Linuxuser# ls
additionalstorage
root@Linux-BhargaviNukala:/home/Linuxuser# cd additionalstorage/
root@Linux-BhargaviNukala:/home/Linuxuser/additionalstorage# ls -ltr
total 0
root@Linux-BhargaviNukala:/home/Linuxuser/additionalstorage# cd ..
root@Linux-BhargaviNukala:/home/Linuxuser# mount -t ext4 /dev/sdc additionalstorage/
root@Linux-BhargaviNukala:/home/Linuxuser# cd additionalstorage/
root@Linux-BhargaviNukala:/home/Linuxuser/additionalstorage# ls -ltr
total 32
drwx------ 2 root root 16384 Dec 13 06:30 lost+found
-rw-r--r-- 1 root root     0 Dec 13 06:36 9.txt
-rw-r--r-- 1 root root     0 Dec 13 06:36 8.txt
-rw-r--r-- 1 root root     0 Dec 13 06:36 7.txt
-rw-r--r-- 1 root root     0 Dec 13 06:36 6.txt
-rw-r--r-- 1 root root     0 Dec 13 06:36 5.txt
-rw-r--r-- 1 root root     0 Dec 13 06:36 4.txt
-rw-r--r-- 1 root root     0 Dec 13 06:36 3.txt
-rw-r--r-- 1 root root     0 Dec 13 06:36 2.txt
-rw-r--r-- 1 root root     0 Dec 13 06:36 10.txt
-rw-r--r-- 1 root root     0 Dec 13 06:36 1.txt
-rw-r--r-- 1 root root 13596 Dec 13 07:14 test.txt
root@Linux-BhargaviNukala:/home/Linuxuser/additionalstorage# 
```

Snapshot:

Create a Linux VM and install apache2.

$apt update

$apt install apache2



Linux-BhargaviNukala - Microsof
portal.azure.com/#@bhargaviaqua04gmail.onmicrosoft.com/resource/subscriptions/49d571c4-9421-4773-8fdb-101fc91ba274/resourceGroups/Az...
Microsoft Azure
Upgrade
Search resources, services, and docs (G+/)
bhargavi.aqua04@gmail...
DEFAULT DIRECTORY (BHARGAVI...
Home > Virtual machines >
Search
Connect
Start
Restart
Stop
Capture
Delete
Refresh
Open in mobile
CLI / PS
Feedback
Overview
Activity log
Access control (IAM)
Tags
Diagnose and solve problems
Settings
Networking
Connect
Disks
Size
Microsoft Defender for Cloud
Advisor recommendations
Extensions + applications
Continuous delivery
Availability + scaling
JSON View
Properties
Monitoring
Capabilities (7)
Recommendations
Tutorials

Linux-BhargaviNukala
Virtual machine

Essentials

Resource group (move)
AzureRG-BhargaviNukala

Status
Running

Location
East US

Subscription (move)
Free Trial

Subscription ID
49d571c4-9421-4773-8fdb-101fc91ba274

Tags (edit)
Click here to add tags

Operating system
Linux (ubuntu 20.04)

Size
Standard B1s (1 vcpu, 1 GiB memory)

Public IP address
4.236.142.42

Virtual network/subnet
AzureRG-BhargaviNukala-vnet/default

DNS name
Not configured

Virtual machine

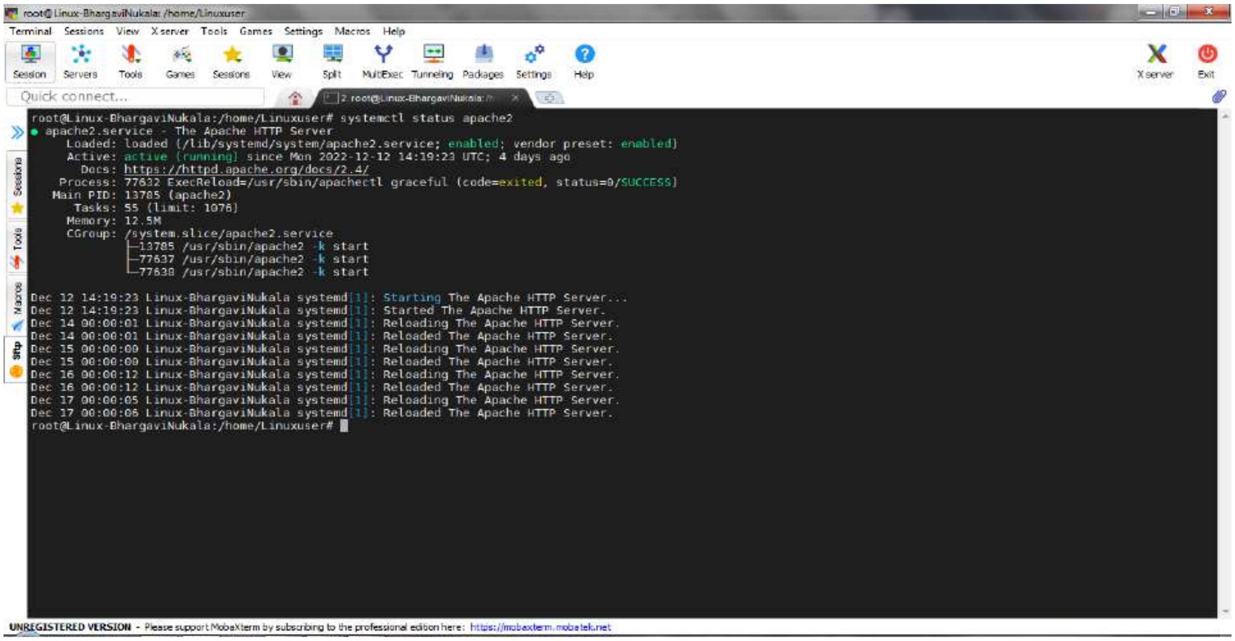
Computer name	Linux-BhargaviNukala
Health state	-
Operating system	Linux (ubuntu 20.04)

Networking

Public IP address	4.236.142.42
Public IP address (IPv6)	-
Private IP address	10.0.0.5

Check the status of apache2 running

$systemctl status apache2



```
root@Linux-BhargaviNukala:/home/Linuxuser# systemctl status apache2
● apache2.service - The Apache HTTP Server
     Loaded: loaded (/lib/systemd/system/apache2.service; enabled; vendor preset: enabled)
     Active: active (running) since Mon 2022-12-12 14:19:23 UTC; 4 days ago
       Docs: https://httpd.apache.org/docs/2.4/
    Process: 77632 ExecReload=/usr/sbin/apachectl graceful (code=exited, status=0/SUCCESS)
   Main PID: 13785 (apache2)
      Tasks: 55 (limit: 1076)
     Memory: 12.5M
     CGroup: /system.slice/apache2.service
             ├─13785 /usr/sbin/apache2 -k start
             ├─77637 /usr/sbin/apache2 -k start
             └─77638 /usr/sbin/apache2 -k start

Dec 12 14:19:23 Linux-BhargaviNukala systemd[1]: Starting The Apache HTTP Server...
Dec 12 14:19:23 Linux-BhargaviNukala systemd[1]: Started The Apache HTTP Server.
Dec 14 00:00:01 Linux-BhargaviNukala systemd[1]: Reloading The Apache HTTP Server.
Dec 14 00:00:01 Linux-BhargaviNukala systemd[1]: Reloaded The Apache HTTP Server.
Dec 15 00:00:00 Linux-BhargaviNukala systemd[1]: Reloading The Apache HTTP Server.
Dec 15 00:00:00 Linux-BhargaviNukala systemd[1]: Reloaded The Apache HTTP Server.
Dec 16 00:00:12 Linux-BhargaviNukala systemd[1]: Reloading The Apache HTTP Server.
Dec 16 00:00:12 Linux-BhargaviNukala systemd[1]: Reloaded The Apache HTTP Server.
Dec 17 00:00:05 Linux-BhargaviNukala systemd[1]: Reloading The Apache HTTP Server.
Dec 17 00:00:06 Linux-BhargaviNukala systemd[1]: Reloaded The Apache HTTP Server.
root@Linux-BhargaviNukala:/home/Linuxuser# █
```

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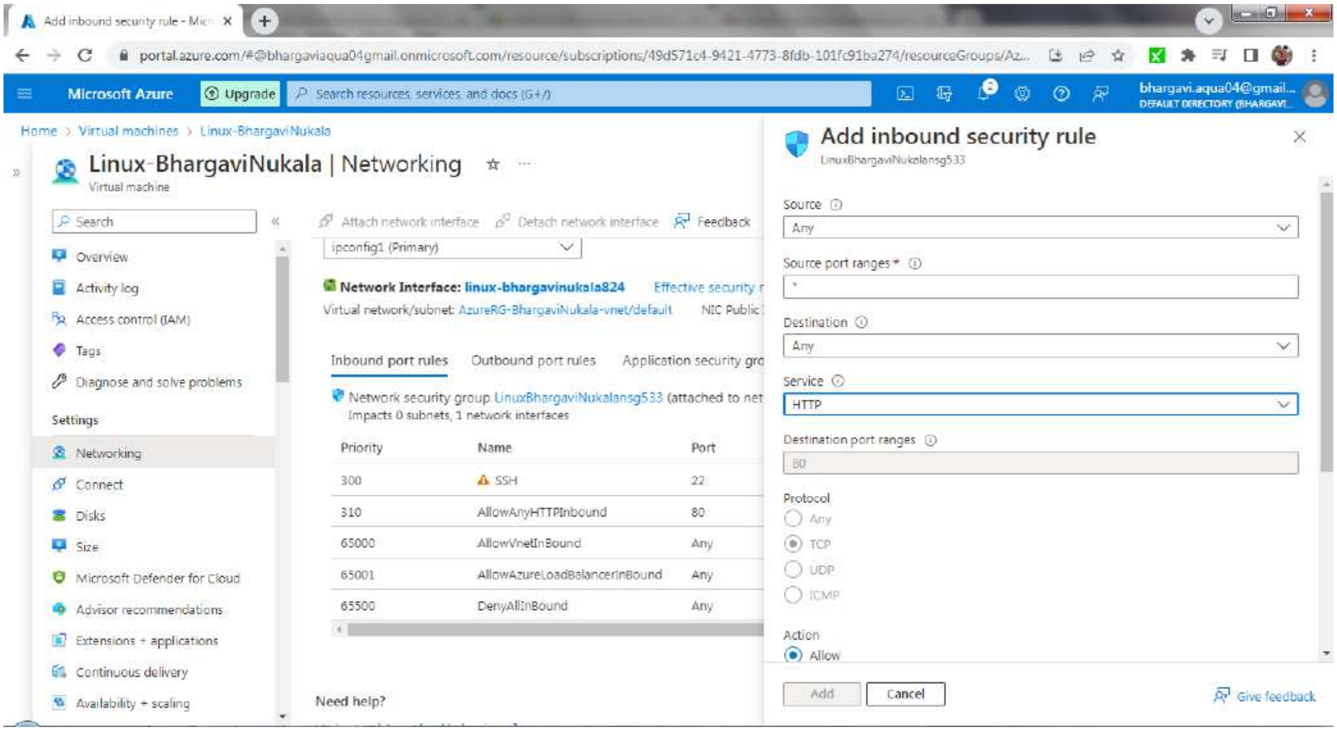
Add the Inbound rule for HTTP-80 port in Networking tab of VM


Add inbound security rule - Micr
portal.azure.com/#@bhargaviaqua04gmail.onmicrosoft.com/resource/subscriptions/49d571c4-9421-4773-8fdb-101fc91ba274/resourceGroups/Az...
Microsoft Azure
Upgrade
Search resources, services, and docs (G+/)
bhargavi.aqua04@gmail...
DEFAULT DIRECTORY (BHARGAVI...
Home > Virtual machines > Linux-BhargaviNukala
Search
Overview
Activity log
Access control (IAM)
Tags
Diagnose and solve problems
Settings
Networking
Connect
Disks
Size
Microsoft Defender for Cloud
Advisor recommendations
Extensions + applications
Continuous delivery
Availability + scaling
Attach network interface
Detach network interface
Feedback
Inbound port rules
Outbound port rules
Application security gro
Need help?
Give feedback

Linux-BhargaviNukala | Networking
Virtual machine

ipconfig1 (Primary)

Network Interface: linux-bhargavinukala824 Effective security r
Virtual network/subnet: AzureRG-BhargaviNukala-vnet/default NIC Public I

Network security group LinuxBhargaviNukalansg533 (attached to net
Impacts 0 subnets, 1 network interfaces

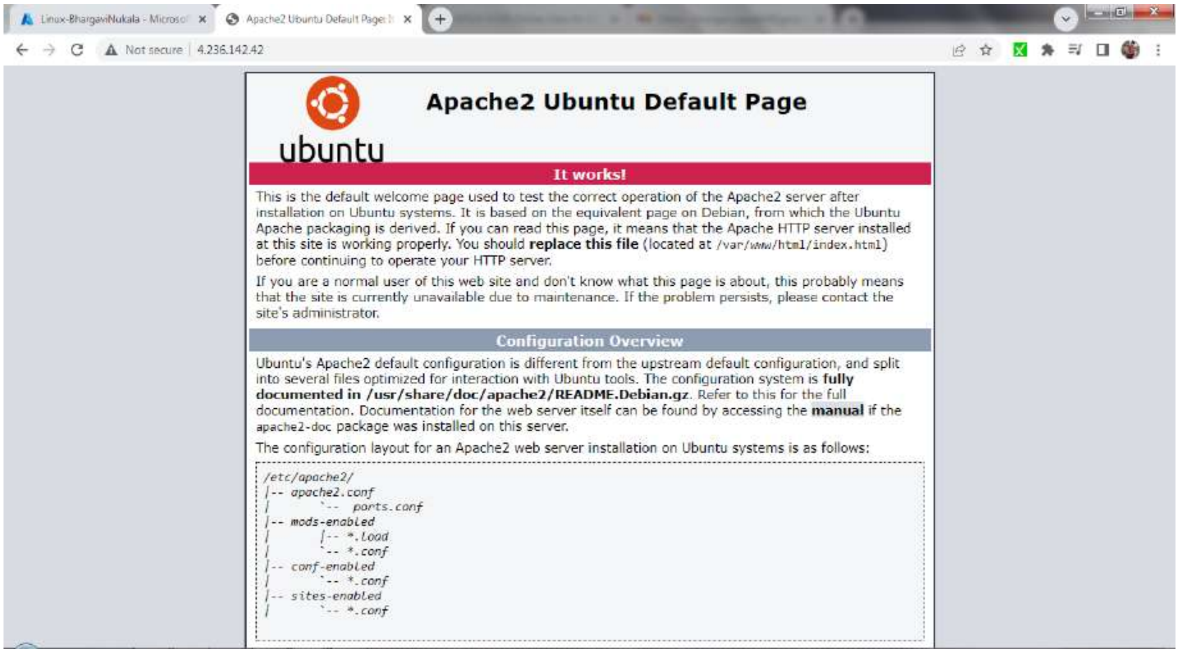
Priority	Name	Port
300	⚠ SSH	22
310	AllowAnyHTTPInbound	80
65000	AllowVnetInBound	Any
65001	AllowAzureLoadBalancerInBound	Any
65500	DenyAllInBound	Any

Add inbound security rule
LinuxBhargaviNukalansg533

Source: Any
Source port ranges *: *
Destination: Any
Service: HTTP
Destination port ranges: 80
Protocol
○ Any
● TCP
○ UDP
○ ICMP
Action
● Allow

Add Cancel

Access the webpage from browser using public IP of VM


Linux-BhargaviNukala - Microsof
Apache2 Ubuntu Default Page: I
Not secure | 4.236.142.42
ubuntu

Apache2 Ubuntu Default Page

It works!

This is the default welcome page used to test the correct operation of the Apache2 server after installation on Ubuntu systems. It is based on the equivalent page on Debian, from which the Ubuntu Apache packaging is derived. If you can read this page, it means that the Apache HTTP server installed at this site is working properly. You should **replace this file** (located at `/var/www/html/index.html`) before continuing to operate your HTTP server.

If you are a normal user of this web site and don't know what this page is about, this probably means that the site is currently unavailable due to maintenance. If the problem persists, please contact the site's administrator.

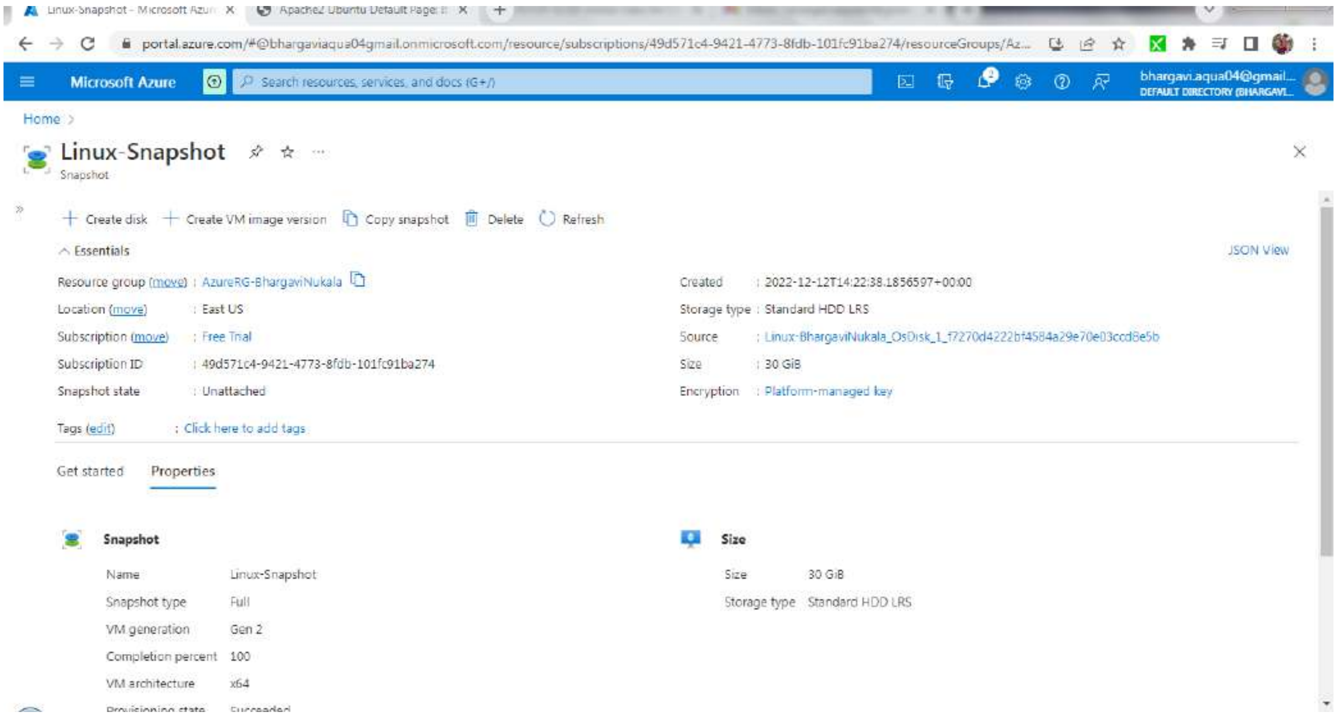
Configuration Overview

Ubuntu's Apache2 default configuration is different from the upstream default configuration, and split into several files optimized for interaction with Ubuntu tools. The configuration system is **fully documented in /usr/share/doc/apache2/README.Debian.gz**. Refer to this for the full documentation. Documentation for the web server itself can be found by accessing the **manual** if the apache2-doc package was installed on this server.

The configuration layout for an Apache2 web server installation on Ubuntu systems is as follows:

```
/etc/apache2/
|-- apache2.conf
|       `--  ports.conf
|-- mods-enabled
|       |-- *.load
|       `-- *.conf
|-- conf-enabled
|       `-- *.conf
|-- sites-enabled
|       `-- *.conf
```

Go to VM->Disks->Create Snapshot of the disk



Linux-Snapshot - Microsoft Azur
Apache2 Ubuntu Default Page: I
portal.azure.com/#@bhargaviaqua04gmail.onmicrosoft.com/resource/subscriptions/49d571c4-9421-4773-8fdb-101fc91ba274/resourceGroups/Az...
Microsoft Azure
Search resources, services, and docs (G+/)
bhargavi.aqua04@gmail...
DEFAULT DIRECTORY (BHARGAVI...
Home
Create disk
Create VM image version
Copy snapshot
Delete
Refresh
Essentials
JSON View
Get started
Properties

Linux-Snapshot
Snapshot

Resource group (move) : AzureRG-BhargaviNukala
Location (move) : East US
Subscription (move) : Free Trial
Subscription ID : 49d571c4-9421-4773-8fdb-101fc91ba274
Snapshot state : Unattached
Tags (edit) : Click here to add tags

Created : 2022-12-12T14:22:38.1856597+00:00
Storage type : Standard HDD LRS
Source : Linux-BhargaviNukala_OsDisk_1_f7270d4222bf4584a29e70e03ccd8e5b
Size : 30 GiB
Encryption : Platform-managed key

Snapshot

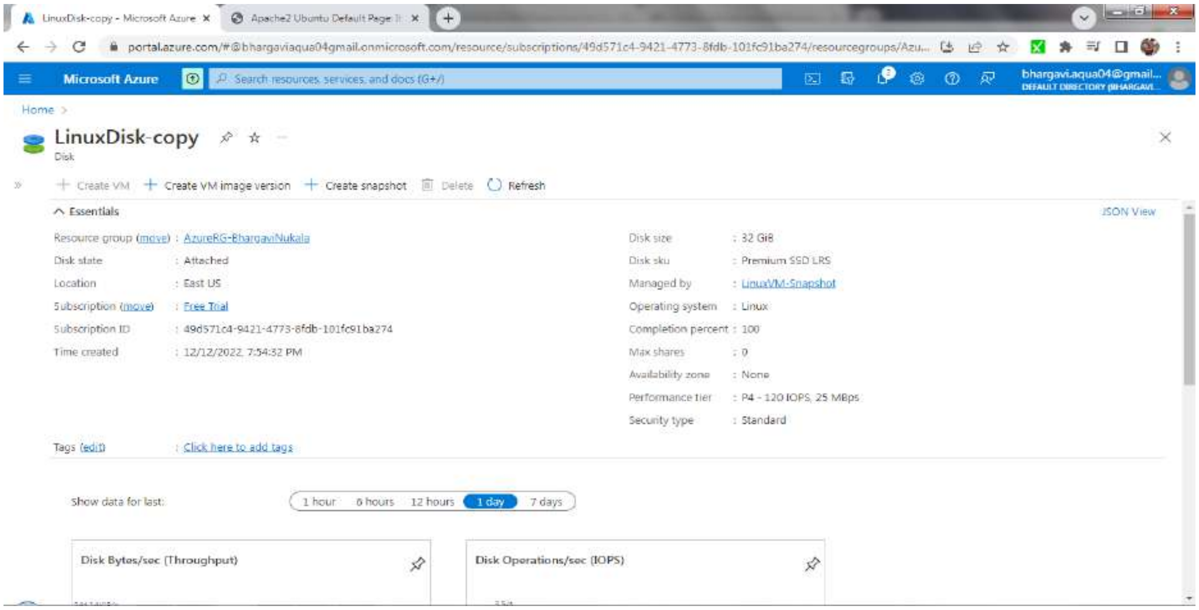
Name	Linux-Snapshot
Snapshot type	Full
VM generation	Gen 2
Completion percent	100
VM architecture	x64
Provisioning state	Succeeded

Size

Size	30 GiB
Storage type	Standard HDD LRS

Now create a disk from the created snapshot

Goto Created Snapshot->Create Disk


LinuxDisk-copy - Microsoft Azure
Apache2 Ubuntu Default Page
portal.azure.com/#@bhargaviaqua04gmail.onmicrosoft.com/resource/subscriptions/49d571c4-9421-4773-8fdb-101fc91ba274/resourcegroups/Azu...
Microsoft Azure
Search resources, services, and docs (G+/)
bhargavi.aqua04@gmail...
DEFAULT DIRECTORY (BHARGAVI...
Home
Create VM
Create VM image version
Create snapshot
Delete
Refresh
JSON View
Show data for last:
1 hour
6 hours
12 hours
1 day
7 days
Disk Bytes/sec (Throughput)
Disk Operations/sec (IOPS)

LinuxDisk-copy
Disk

Essentials

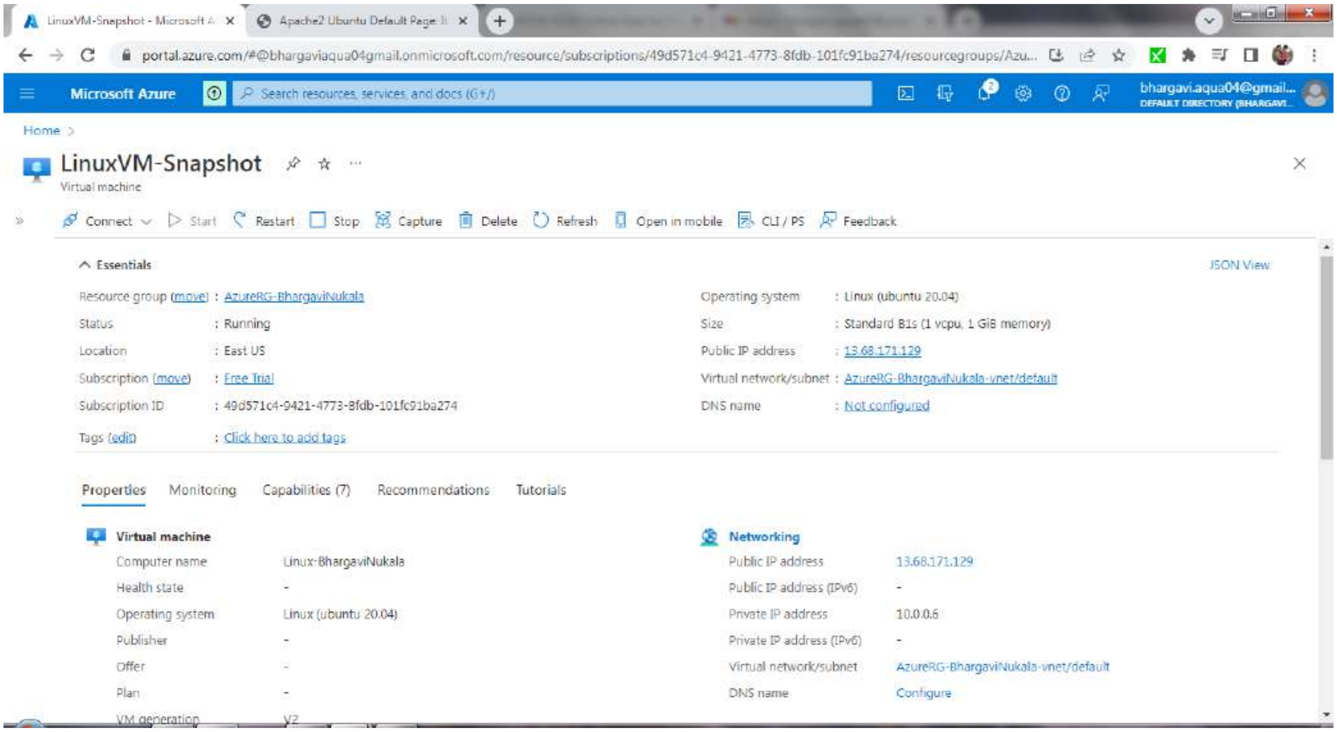
Resource group (move) : AzureRG-BhargaviNukala
Disk state : Attached
Location : East US
Subscription (move) : Free Trial
Subscription ID : 49d571c4-9421-4773-8fdb-101fc91ba274
Time created : 12/12/2022, 7:54:32 PM

Disk size : 32 GiB
Disk sku : Premium SSD LRS
Managed by : LinuxVM-Snapshot
Operating system : Linux
Completion percent : 100
Max shares : 0
Availability zone : None
Performance tier : P4 - 120 IOPS, 25 MBps
Security type : Standard

Tags (edit) : Click here to add tags

From the newly created disk-> create a VM

Select the above created disk in OS dropdown box


LinuxVM-Snapshot - Microsoft A
Apache2 Ubuntu Default Page
portal.azure.com/#@bhargaviaqua04gmail.onmicrosoft.com/resource/subscriptions/49d571c4-9421-4773-8fdb-101fc91ba274/resourcegroups/Azu...
Microsoft Azure
Search resources, services, and docs (G+/)
bhargavi.aqua04@gmail...
DEFAULT DIRECTORY (BHARGAVI...
Home
Connect
Start
Restart
Stop
Capture
Delete
Refresh
Open in mobile
CLI / PS
Feedback
JSON View
Properties
Monitoring
Capabilities (7)
Recommendations
Tutorials

LinuxVM-Snapshot
Virtual machine

Essentials

Resource group (move) : AzureRG-BhargaviNukala
Status : Running
Location : East US
Subscription (move) : Free Trial
Subscription ID : 49d571c4-9421-4773-8fdb-101fc91ba274
Tags (edit) : Click here to add tags

Operating system : Linux (ubuntu 20.04)
Size : Standard B1s (1 vcpu, 1 GiB memory)
Public IP address : 13.68.171.129
Virtual network/subnet : AzureRG-BhargaviNukala-vnet/default
DNS name : Not configured

Virtual machine

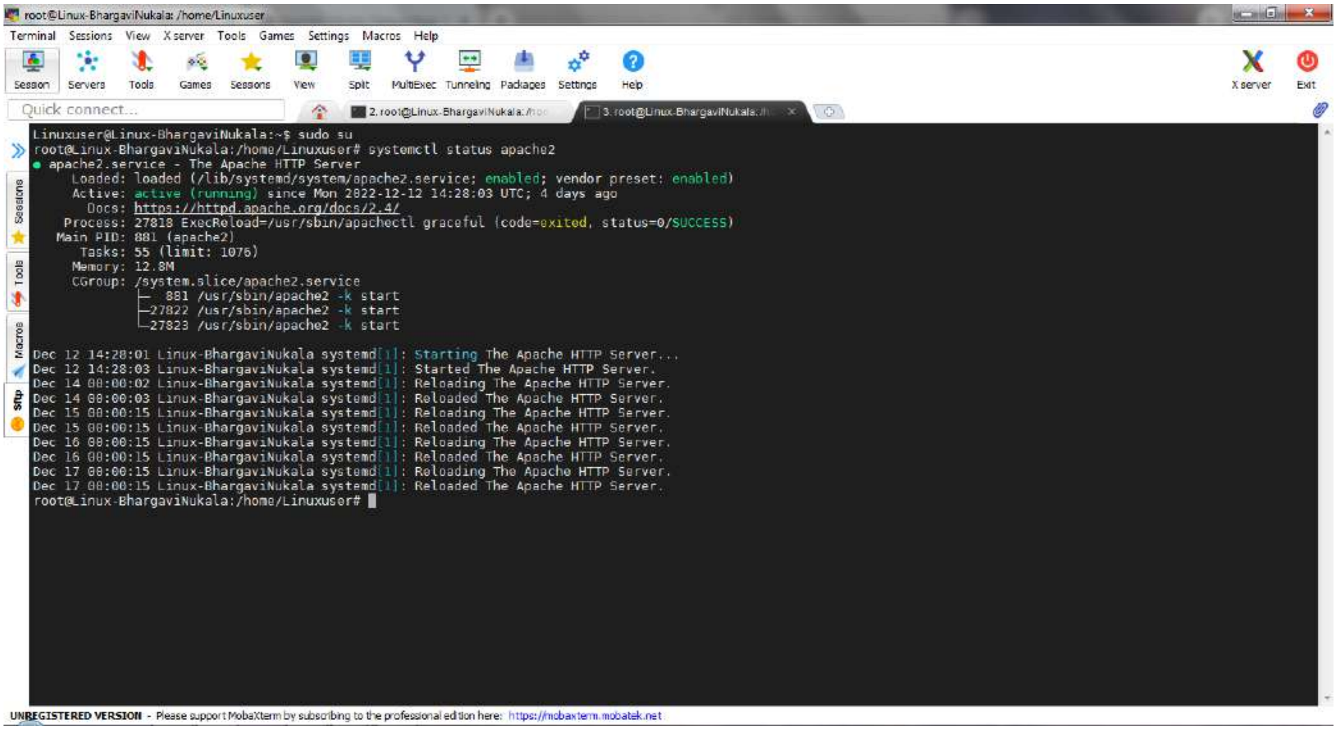
Computer name	Linux-BhargaviNukala
Health state	-
Operating system	Linux (ubuntu 20.04)
Publisher	-
Offer	-
Plan	-
VM generation	V2

Networking

Public IP address	13.68.171.129
Public IP address (IPv6)	-
Private IP address	10.0.0.6
Private IP address (IPv6)	-
Virtual network/subnet	AzureRG-BhargaviNukala-vnet/default
DNS name	Configure

After the new VM is created from the snapshot, check the status of apache2.

We can see that apache2 is already installed.

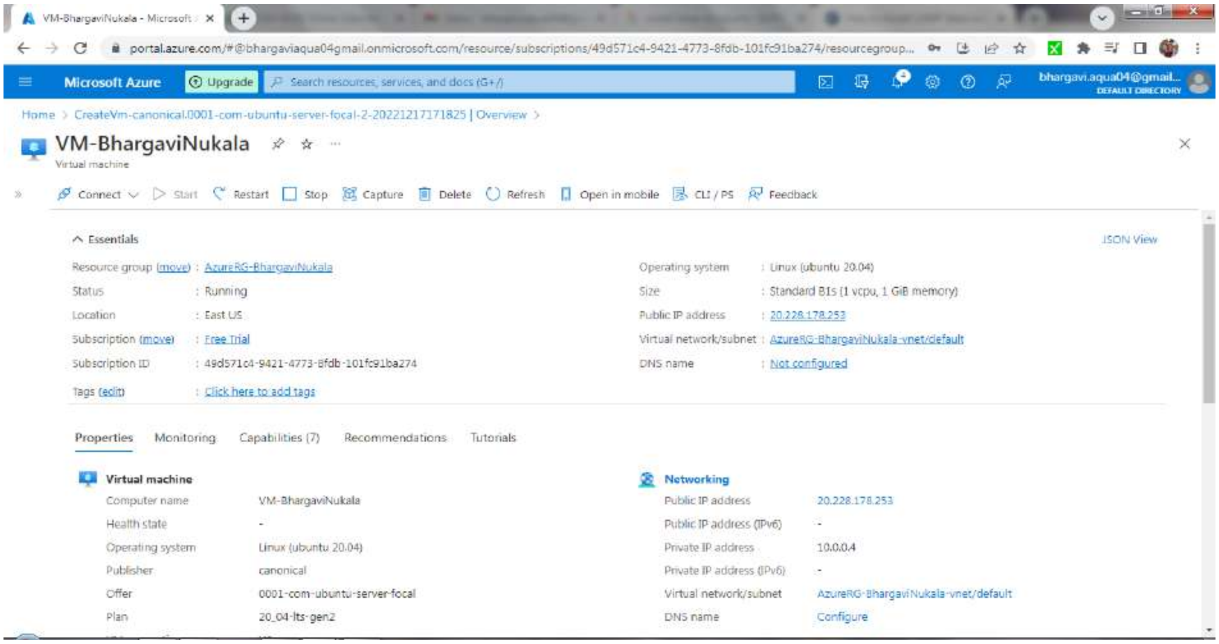

root@Linux-BhargaviNukala: /home/Linuxuser
Terminal Sessions View X server Tools Games Settings Macros Help
Session
Servers
Tools
Games
Sessions
View
Split
MultiExec
Tunneling
Packages
Settings
Help
X server
Exit
Quick connect...
2. root@Linux-BhargaviNukala: /ho
3. root@Linux-BhargaviNukala: /h
Sessions
Tools
Macros
Sftp
UNREGISTERED VERSION - Please support MobaXterm by subscribing to the professional edition here: https://mobaxterm.mobatek.net

```
Linuxuser@Linux-BhargaviNukala:~$ sudo su
root@Linux-BhargaviNukala:/home/Linuxuser# systemctl status apache2
● apache2.service - The Apache HTTP Server
     Loaded: loaded (/lib/systemd/system/apache2.service; enabled; vendor preset: enabled)
     Active: active (running) since Mon 2022-12-12 14:28:03 UTC; 4 days ago
       Docs: https://httpd.apache.org/docs/2.4/
    Process: 27818 ExecReload=/usr/sbin/apachectl graceful (code=exited, status=0/SUCCESS)
   Main PID: 881 (apache2)
      Tasks: 55 (limit: 1076)
     Memory: 12.8M
     CGroup: /system.slice/apache2.service
             ├─  881 /usr/sbin/apache2 -k start
             ├─27822 /usr/sbin/apache2 -k start
             └─27823 /usr/sbin/apache2 -k start

Dec 12 14:28:01 Linux-BhargaviNukala systemd[1]: Starting The Apache HTTP Server...
Dec 12 14:28:03 Linux-BhargaviNukala systemd[1]: Started The Apache HTTP Server.
Dec 14 00:00:02 Linux-BhargaviNukala systemd[1]: Reloading The Apache HTTP Server.
Dec 14 00:00:03 Linux-BhargaviNukala systemd[1]: Reloaded The Apache HTTP Server.
Dec 15 00:00:15 Linux-BhargaviNukala systemd[1]: Reloading The Apache HTTP Server.
Dec 15 00:00:15 Linux-BhargaviNukala systemd[1]: Reloaded The Apache HTTP Server.
Dec 16 00:00:15 Linux-BhargaviNukala systemd[1]: Reloading The Apache HTTP Server.
Dec 16 00:00:15 Linux-BhargaviNukala systemd[1]: Reloaded The Apache HTTP Server.
Dec 17 00:00:15 Linux-BhargaviNukala systemd[1]: Reloading The Apache HTTP Server.
Dec 17 00:00:15 Linux-BhargaviNukala systemd[1]: Reloaded The Apache HTTP Server.
root@Linux-BhargaviNukala:/home/Linuxuser# 
```

Machine Image:

Create an Ubuntu machine and install apache2 and php as mentioned in the link https://www.tecmint.com/install-lamp-with-phpmyadmin-in-ubuntu-18-04/


VM-BhargaviNukala - Microsoft
portal.azure.com/#@bhargaviaqua04gmail.onmicrosoft.com/resource/subscriptions/49d571c4-9421-4773-8fdb-101fc91ba274/resourcegroup...
Microsoft Azure
Upgrade
Search resources, services, and docs (G+/)
bhargavi.aqua04@gmail...
DEFAULT DIRECTORY
Home > CreateVm-canonical.0001-com-ubuntu-server-focal-2-20221217171825 | Overview >
Connect
Start
Restart
Stop
Capture
Delete
Refresh
Open in mobile
CLI / PS
Feedback
JSON View
Properties
Monitoring
Capabilities (7)
Recommendations
Tutorials

VM-BhargaviNukala

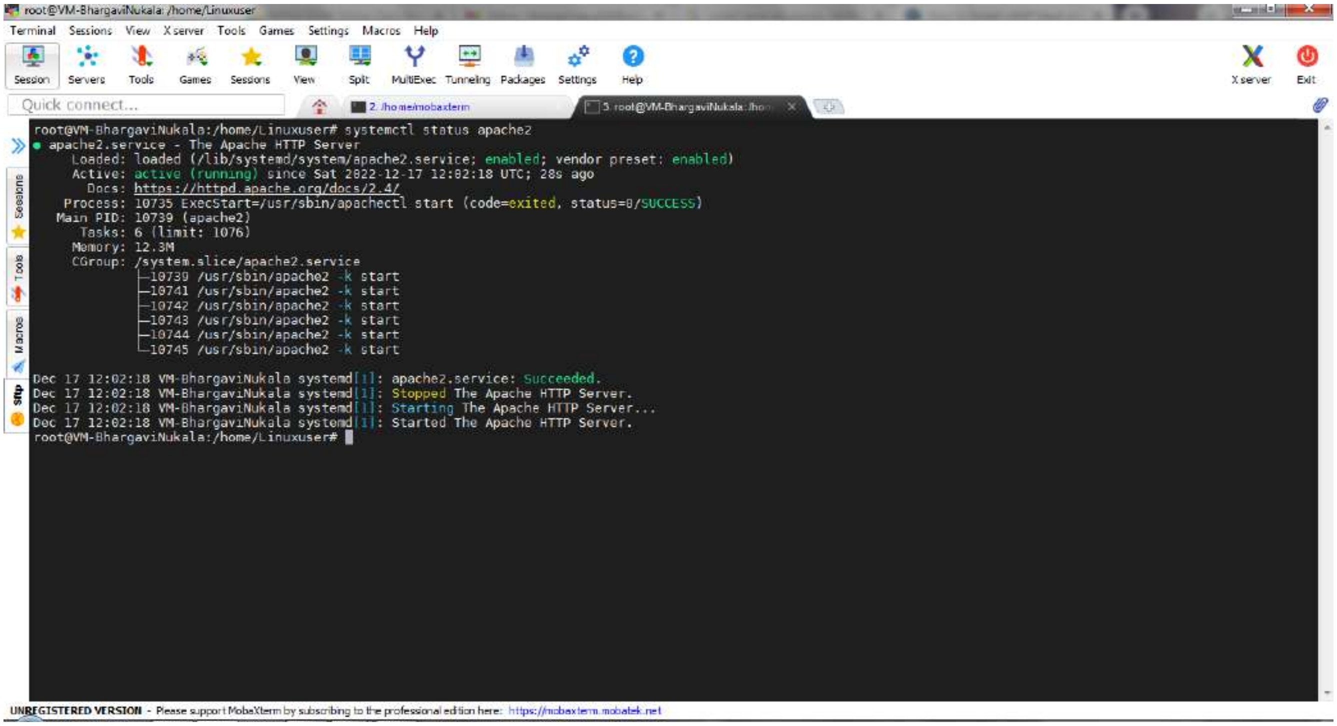
Virtual machine

Essentials

Resource group (move)	AzureRG-BhargaviNukala	Operating system	Linux (ubuntu 20.04)
Status	Running	Size	Standard B1s (1 vcpu, 1 GiB memory)
Location	East US	Public IP address	20.228.178.253
Subscription (move)	Free Trial	Virtual network/subnet	AzureRG-BhargaviNukala-vnet/default
Subscription ID	49d571c4-9421-4773-8fdb-101fc91ba274	DNS name	Not configured
Tags (edit)	Click here to add tags		

Virtual machine		Networking	
Computer name	VM-BhargaviNukala	Public IP address	20.228.178.253
Health state	-	Public IP address (IPv6)	-
Operating system	Linux (ubuntu 20.04)	Private IP address	10.0.0.4
Publisher	canonical	Private IP address (IPv6)	-
Offer	0001-com-ubuntu-server-focal	Virtual network/subnet	AzureRG-BhargaviNukala-vnet/default
Plan	20_04-lts-gen2	DNS name	Configure

Install apache2 and php



```
root@VM-BhargaviNukala:/home/Linuxuser# systemctl status apache2
● apache2.service - The Apache HTTP Server
     Loaded: loaded (/lib/systemd/system/apache2.service; enabled; vendor preset: enabled)
     Active: active (running) since Sat 2022-12-17 12:02:18 UTC; 28s ago
       Docs: https://httpd.apache.org/docs/2.4/
    Process: 10735 ExecStart=/usr/sbin/apachectl start (code=exited, status=0/SUCCESS)
   Main PID: 10739 (apache2)
      Tasks: 6 (limit: 1076)
     Memory: 12.3M
     CGroup: /system.slice/apache2.service
             ├─10739 /usr/sbin/apache2 -k start
             ├─10741 /usr/sbin/apache2 -k start
             ├─10742 /usr/sbin/apache2 -k start
             ├─10743 /usr/sbin/apache2 -k start
             ├─10744 /usr/sbin/apache2 -k start
             └─10745 /usr/sbin/apache2 -k start

Dec 17 12:02:18 VM-BhargaviNukala systemd[1]: apache2.service: Succeeded.
Dec 17 12:02:18 VM-BhargaviNukala systemd[1]: Stopped The Apache HTTP Server.
Dec 17 12:02:18 VM-BhargaviNukala systemd[1]: Starting The Apache HTTP Server...
Dec 17 12:02:18 VM-BhargaviNukala systemd[1]: Started The Apache HTTP Server.
root@VM-BhargaviNukala:/home/Linuxuser# 
```

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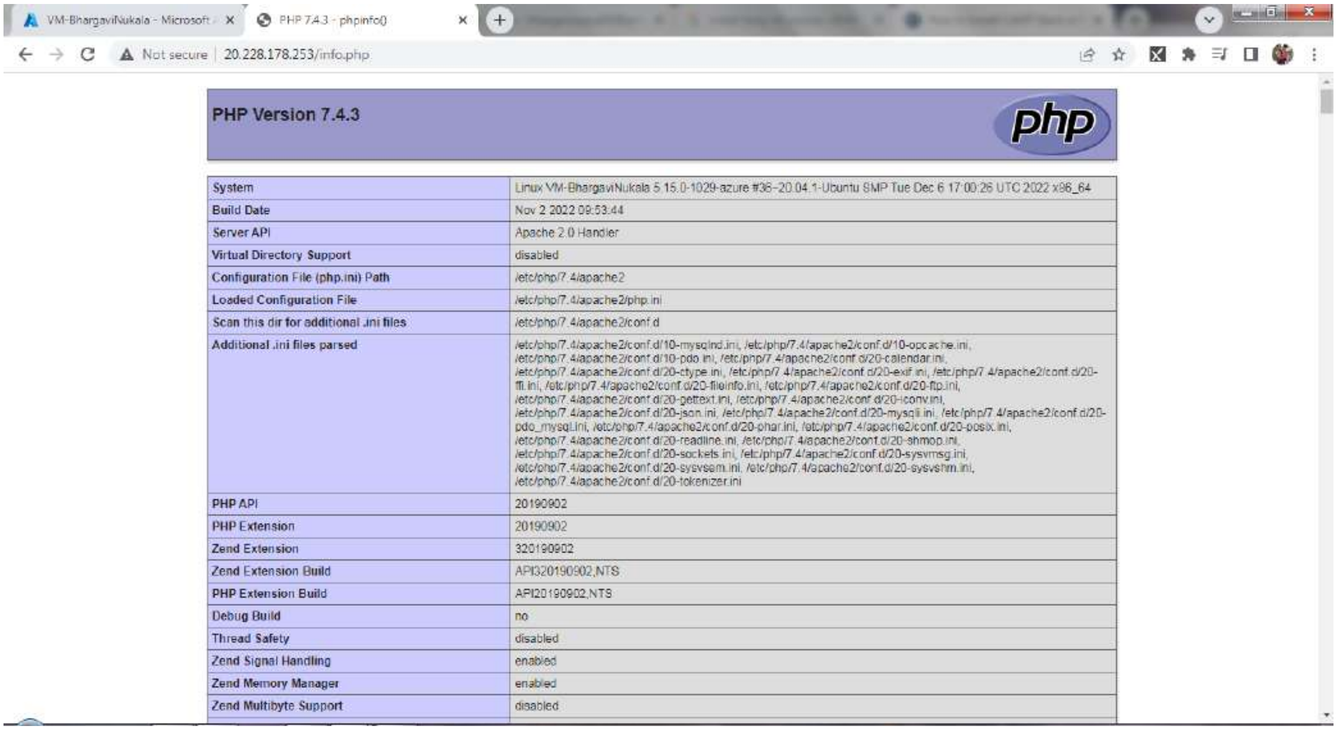
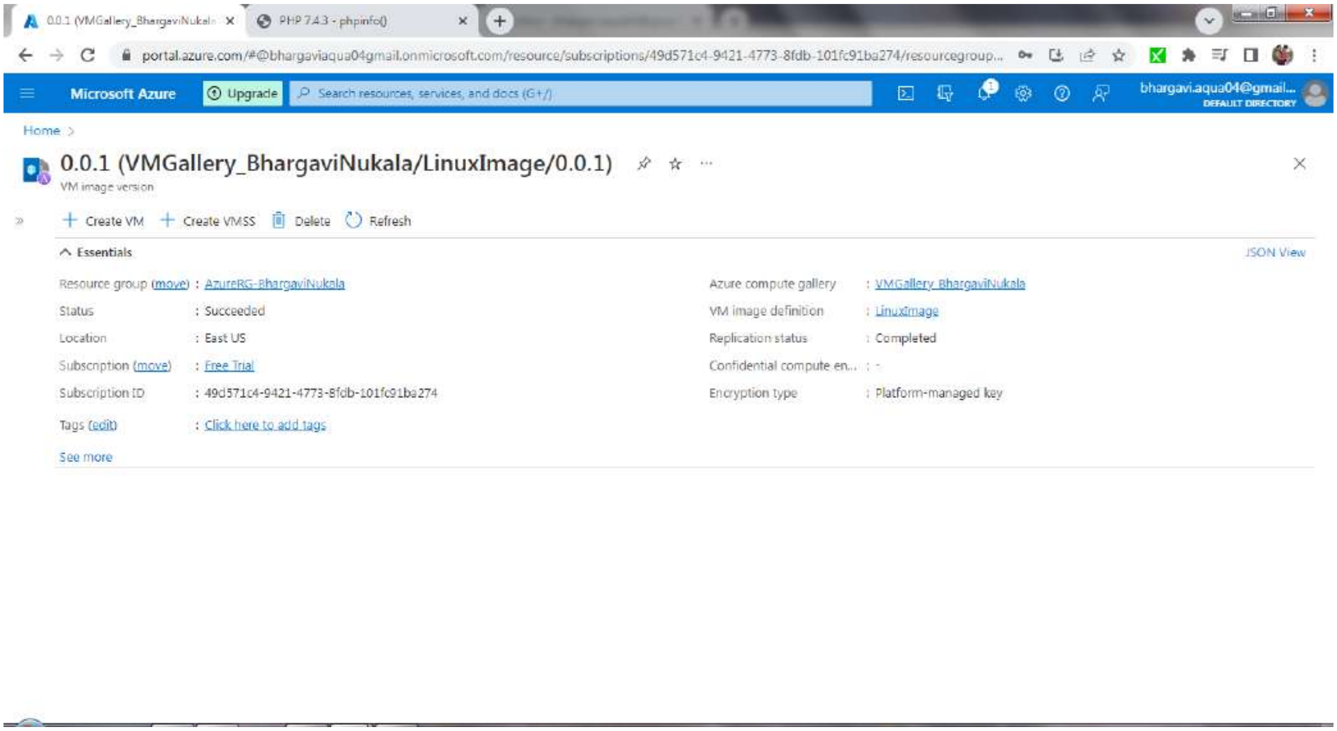
Access the webpage of VM using public IP/info.php


VM-BhargaviNukala - Microsoft
PHP 7.4.3 - phpinfo()
Not secure | 20.228.178.253/info.php

PHP Version 7.4.3

System	Linux VM-BhargaviNukala 5.15.0-1029-azure #36~20.04.1-Ubuntu SMP Tue Dec 6 17:00:26 UTC 2022 x86_64
Build Date	Nov 2 2022 09:53:44
Server API	Apache 2.0 Handler
Virtual Directory Support	disabled
Configuration File (php.ini) Path	/etc/php/7.4/apache2
Loaded Configuration File	/etc/php/7.4/apache2/php.ini
Scan this dir for additional .ini files	/etc/php/7.4/apache2/conf.d
Additional .ini files parsed	/etc/php/7.4/apache2/conf.d/10-mysqlnd.ini, /etc/php/7.4/apache2/conf.d/10-opcache.ini, /etc/php/7.4/apache2/conf.d/10-pdo.ini, /etc/php/7.4/apache2/conf.d/20-calendar.ini, /etc/php/7.4/apache2/conf.d/20-ctype.ini, /etc/php/7.4/apache2/conf.d/20-exif.ini, /etc/php/7.4/apache2/conf.d/20-ffi.ini, /etc/php/7.4/apache2/conf.d/20-fileinfo.ini, /etc/php/7.4/apache2/conf.d/20-ftp.ini, /etc/php/7.4/apache2/conf.d/20-gettext.ini, /etc/php/7.4/apache2/conf.d/20-iconv.ini, /etc/php/7.4/apache2/conf.d/20-json.ini, /etc/php/7.4/apache2/conf.d/20-mysqli.ini, /etc/php/7.4/apache2/conf.d/20-pdo_mysql.ini, /etc/php/7.4/apache2/conf.d/20-phar.ini, /etc/php/7.4/apache2/conf.d/20-posix.ini, /etc/php/7.4/apache2/conf.d/20-readline.ini, /etc/php/7.4/apache2/conf.d/20-shmop.ini, /etc/php/7.4/apache2/conf.d/20-sockets.ini, /etc/php/7.4/apache2/conf.d/20-sysvmsg.ini, /etc/php/7.4/apache2/conf.d/20-sysvsem.ini, /etc/php/7.4/apache2/conf.d/20-sysvshm.ini, /etc/php/7.4/apache2/conf.d/20-tokenizer.ini
PHP API	20190902
PHP Extension	20190902
Zend Extension	320190902
Zend Extension Build	API320190902,NTS
PHP Extension Build	API20190902,NTS
Debug Build	no
Thread Safety	disabled
Zend Signal Handling	enabled
Zend Memory Manager	enabled
Zend Multibyte Support	disabled

To create an image of the above created VM, goto VM->Capture


0.0.1 (VMGallery_BhargaviNukala
PHP 7.4.3 - phpinfo()
portal.azure.com/#@bhargaviaqua04gmail.onmicrosoft.com/resource/subscriptions/49d571c4-9421-4773-8fdb-101fc91ba274/resourcegroup...
Microsoft Azure
Upgrade
Search resources, services, and docs (G+/)
bhargavi.aqua04@gmail...
DEFAULT DIRECTORY
Home >
+ Create VM
+ Create VMSS
Delete
Refresh
JSON View

0.0.1 (VMGallery_BhargaviNukala/LinuxImage/0.0.1)

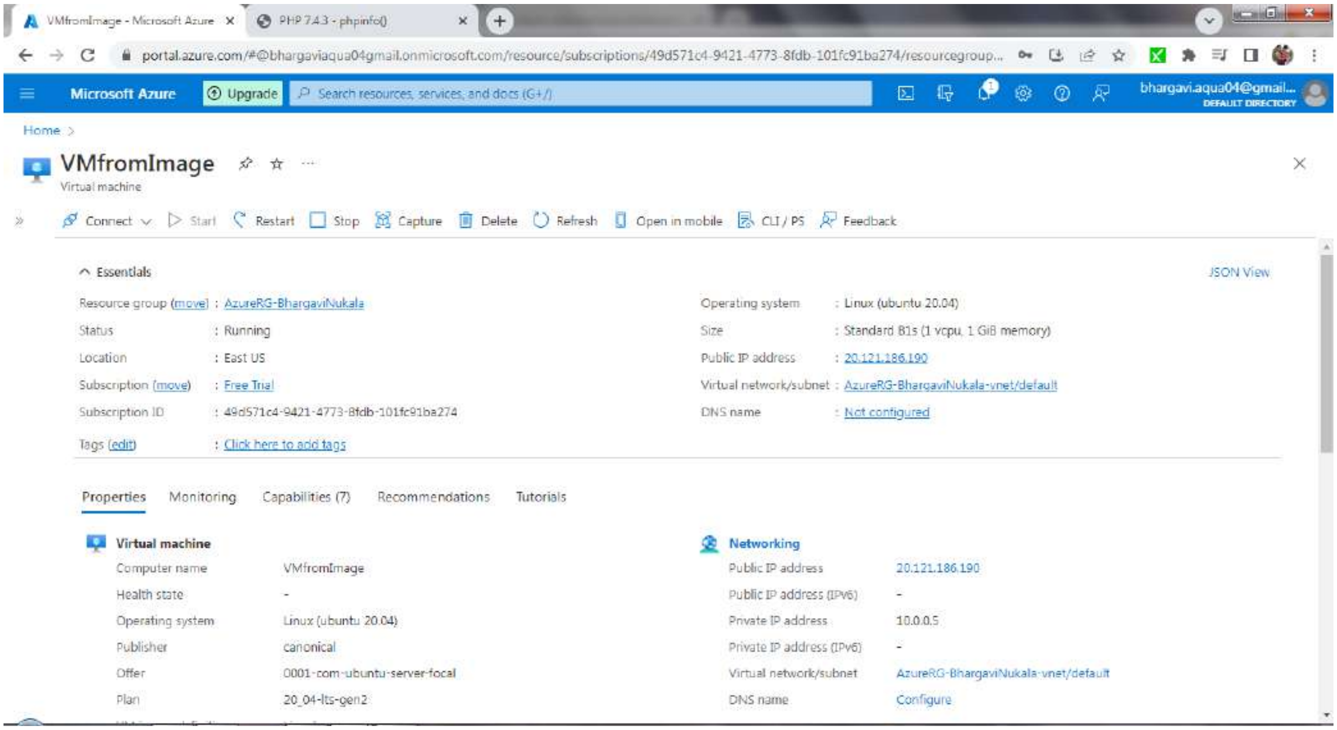
VM image version

Essentials

Resource group (move)	: AzureRG-BhargaviNukala	Azure compute gallery	: VMGallery_BhargaviNukala
Status	: Succeeded	VM image definition	: LinuxImage
Location	: East US	Replication status	: Completed
Subscription (move)	: Free Trial	Confidential compute en...	: -
Subscription ID	: 49d571c4-9421-4773-8fdb-101fc91ba274	Encryption type	: Platform-managed key
Tags (edit)	: Click here to add tags		

See more

Create a VM from this Image by selecting this image in OS section of VM.



VMfromImage
Virtual machine

Essentials

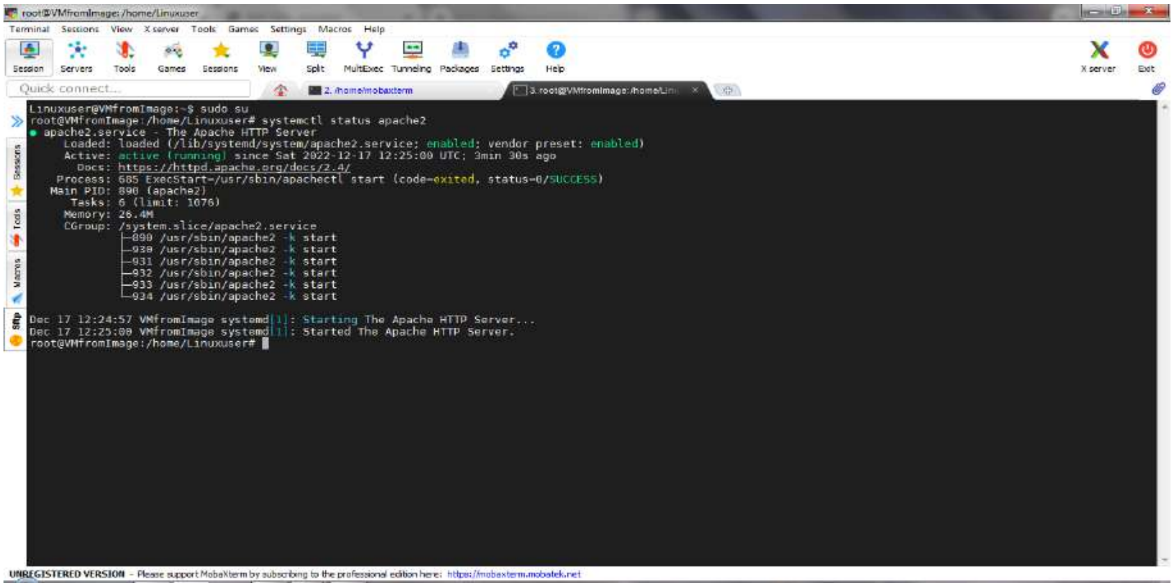
Resource group (move) : AzureRG-BhargaviNukala
Status : Running
Location : East US
Subscription (move) : Free Trial
Subscription ID : 49d571c4-9421-4773-8fdb-101fc91ba274
Tags (edit) : Click here to add tags

Operating system : Linux (ubuntu 20.04)
Size : Standard B1s (1 vcpu, 1 GiB memory)
Public IP address : 20.121.186.190
Virtual network/subnet : AzureRG-BhargaviNukala-vnet/default
DNS name : Not configured

Virtual machine	
Computer name	VMfromImage
Health state	-
Operating system	Linux (ubuntu 20.04)
Publisher	canonical
Offer	0001-com-ubuntu-server-focal
Plan	20_04-lts-gen2

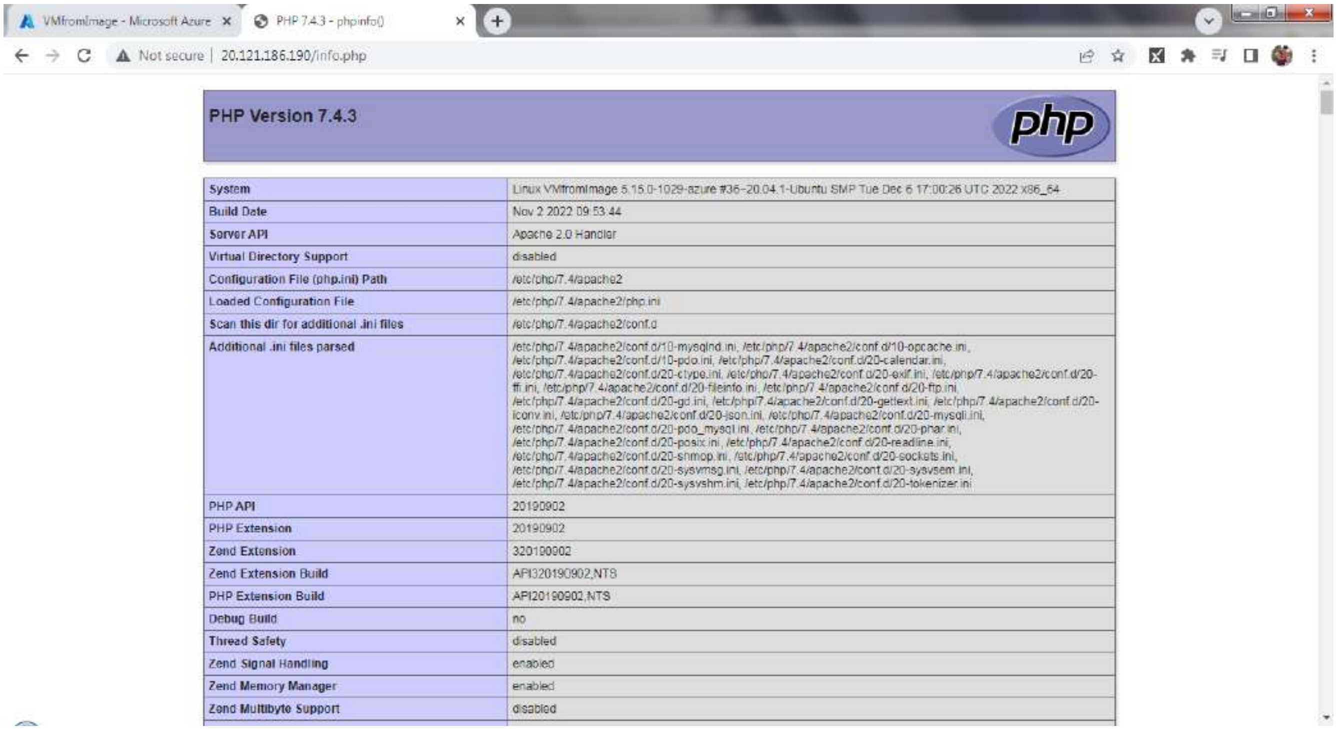
Networking	
Public IP address	20.121.186.190
Public IP address (IPv6)	-
Private IP address	10.0.0.5
Private IP address (IPv6)	-
Virtual network/subnet	AzureRG-BhargaviNukala-vnet/default
DNS name	Configure

Check that apache2 and php are already installed in this new VM



```
Linuxuser@VMfromImage:~$ sudo su
root@VMfromImage:/home/Linuxuser# systemctl status apache2
● apache2.service - The Apache HTTP Server
     Loaded: loaded (/lib/systemd/system/apache2.service; enabled; vendor preset: enabled)
     Active: active (running) since Sat 2022-12-17 12:25:00 UTC; 3min 30s ago
       Docs: https://httpd.apache.org/docs/2.4/
    Process: 685 ExecStart=/usr/sbin/apachectl start (code=exited, status=0/SUCCESS)
   Main PID: 890 (apache2)
      Tasks: 6 (limit: 1076)
     Memory: 26.4M
     CGroup: /system.slice/apache2.service
             ├─890 /usr/sbin/apache2 -k start
             ├─930 /usr/sbin/apache2 -k start
             ├─931 /usr/sbin/apache2 -k start
             ├─932 /usr/sbin/apache2 -k start
             ├─933 /usr/sbin/apache2 -k start
             └─934 /usr/sbin/apache2 -k start

Dec 17 12:24:57 VMfromImage systemd[1]: Starting The Apache HTTP Server...
Dec 17 12:25:00 VMfromImage systemd[1]: Started The Apache HTTP Server.
root@VMfromImage:/home/Linuxuser#
```

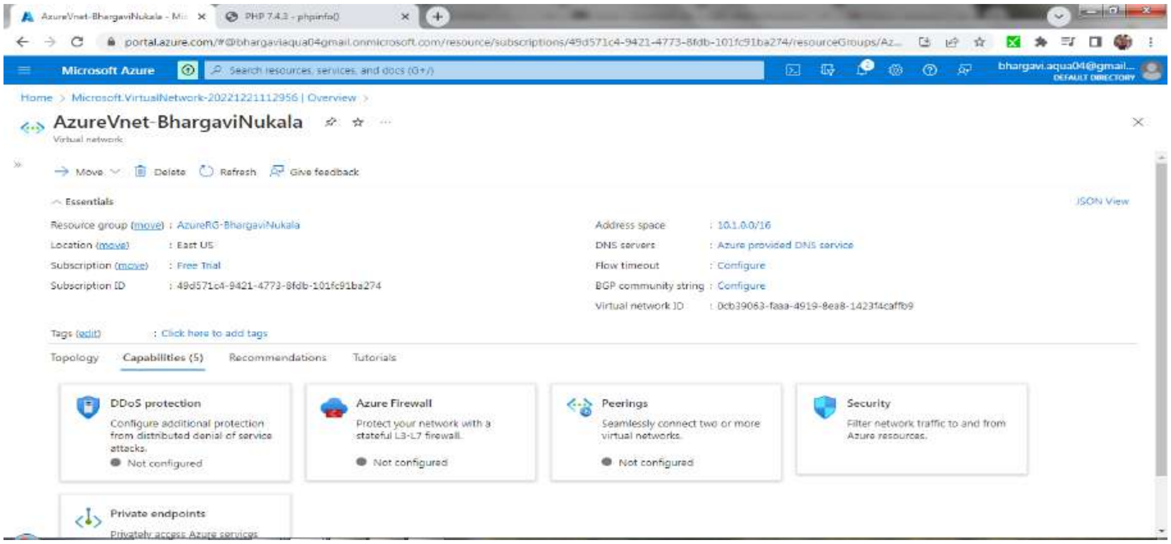


PHP Version 7.4.3

System	Linux VMfromImage 5.15.0-1029-azure #36~20.04.1-Ubuntu SMP Tue Dec 6 17:00:26 UTC 2022 x86_64
Build Date	Nov 2 2022 09:53:44
Server API	Apache 2.0 Handler
Virtual Directory Support	disabled
Configuration File (php.ini) Path	/etc/php/7.4/apache2
Loaded Configuration File	/etc/php/7.4/apache2/php.ini
Scan this dir for additional .ini files	/etc/php/7.4/apache2/conf.d
Additional .ini files parsed	/etc/php/7.4/apache2/conf.d/10-mysqlnd.ini, /etc/php/7.4/apache2/conf.d/10-opcache.ini, /etc/php/7.4/apache2/conf.d/10-pdo.ini, /etc/php/7.4/apache2/conf.d/20-calendar.ini, /etc/php/7.4/apache2/conf.d/20-ctype.ini, /etc/php/7.4/apache2/conf.d/20-exif.ini, /etc/php/7.4/apache2/conf.d/20-ffi.ini, /etc/php/7.4/apache2/conf.d/20-fileinfo.ini, /etc/php/7.4/apache2/conf.d/20-ftp.ini, /etc/php/7.4/apache2/conf.d/20-gd.ini, /etc/php/7.4/apache2/conf.d/20-gettext.ini, /etc/php/7.4/apache2/conf.d/20-iconv.ini, /etc/php/7.4/apache2/conf.d/20-json.ini, /etc/php/7.4/apache2/conf.d/20-mysqli.ini, /etc/php/7.4/apache2/conf.d/20-pdo_mysql.ini, /etc/php/7.4/apache2/conf.d/20-phar.ini, /etc/php/7.4/apache2/conf.d/20-posix.ini, /etc/php/7.4/apache2/conf.d/20-readline.ini, /etc/php/7.4/apache2/conf.d/20-shmop.ini, /etc/php/7.4/apache2/conf.d/20-sockets.ini, /etc/php/7.4/apache2/conf.d/20-sysvmsg.ini, /etc/php/7.4/apache2/conf.d/20-sysvsem.ini, /etc/php/7.4/apache2/conf.d/20-sysvshm.ini, /etc/php/7.4/apache2/conf.d/20-tokenizer.ini
PHP API	20190902
PHP Extension	20190902
Zend Extension	320190902
Zend Extension Build	API320190902,NTS
PHP Extension Build	API20190902,NTS
Debug Build	no
Thread Safety	disabled
Zend Signal Handling	enabled
Zend Memory Manager	enabled
Zend Multibyte Support	disabled

Network Security Group

Create a Vnet with two subnets—use Virtual Networks to create a Vnet.


AzureVnet-BhargaviNukala - Mi
PHP 7.4.3 - phpinfo()
portal.azure.com/#@bhargaviaqua04gmail.onmicrosoft.com/resource/subscriptions/49d571c4-9421-4773-8fdb-101fc91ba274/resourceGroups/Az...
Microsoft Azure
Search resources, services, and docs (G+/)
bhargavi.aqua04@gmail...
DEFAULT DIRECTORY
Home > Microsoft.VirtualNetwork-20221221112956 | Overview >
Move
Delete
Refresh
Give feedback
JSON View
Topology
Capabilities (5)
Recommendations
Tutorials

AzureVnet-BhargaviNukala

Virtual network

Essentials

Resource group (move) : AzureRG-BhargaviNukala

Location (move) : East US

Subscription (move) : Free Trial

Subscription ID : 49d571c4-9421-4773-8fdb-101fc91ba274

Address space : 10.1.0.0/16

DNS servers : Azure provided DNS service

Flow timeout : Configure

BGP community string : Configure

Virtual network ID : 0cb39063-faaa-4919-8ea8-1423f4caffb9

Tags (edit) : Click here to add tags

DDoS protection
Configure additional protection from distributed denial of service attacks.
● Not configured

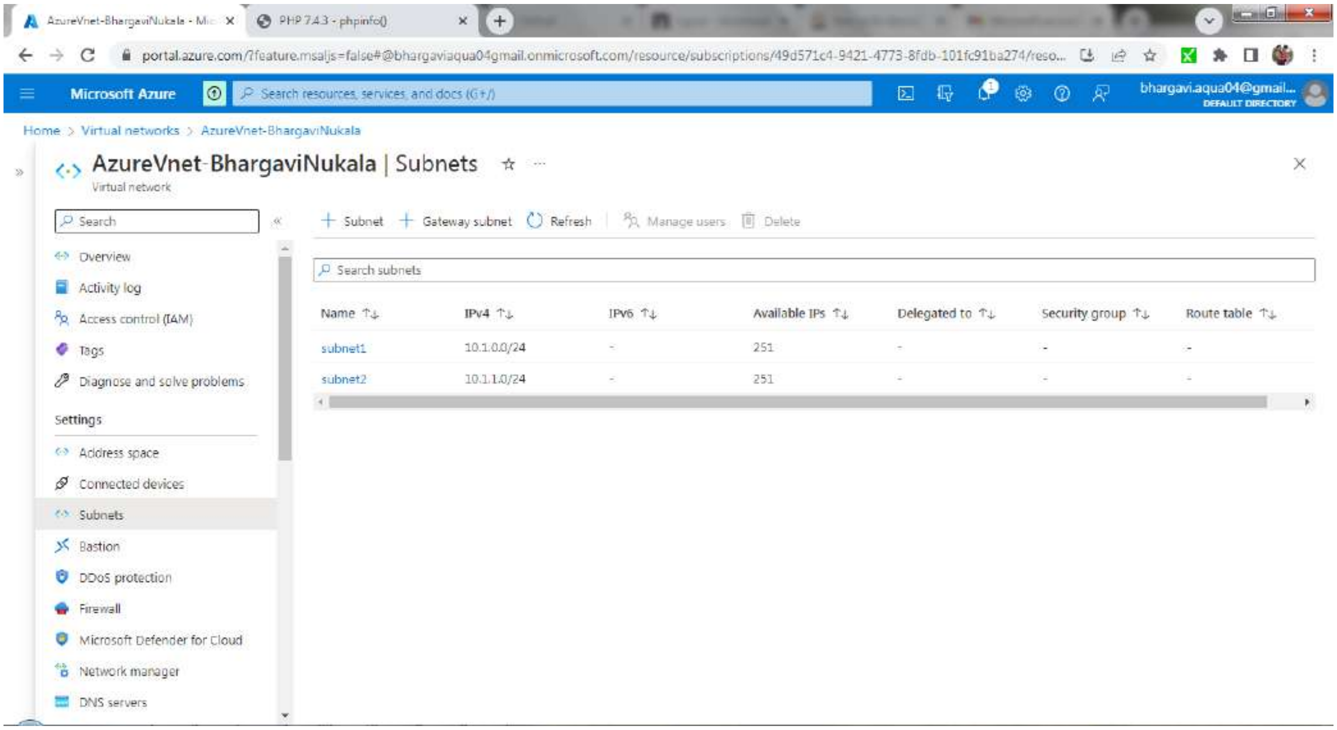
Azure Firewall
Protect your network with a stateful L3-L7 firewall.
● Not configured

Peerings
Seamlessly connect two or more virtual networks.
● Not configured

Security
Filter network traffic to and from Azure resources.

Private endpoints
Privately access Azure services

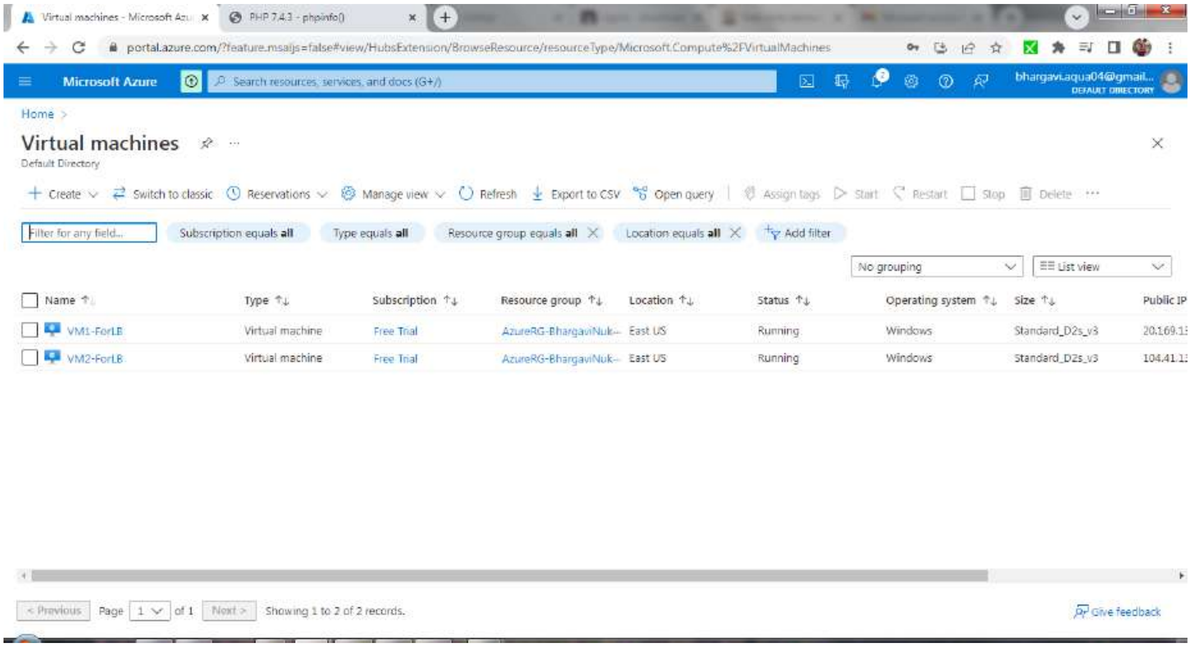
In the Vnet, create 2 subnets


AzureVnet-BhargaviNukala - Mic
PHP 7.4.3 - phpinfo()
portal.azure.com/?feature.msaljs=false#@bhargaviaqua04gmail.onmicrosoft.com/resource/subscriptions/49d571c4-9421-4773-8fdb-101fc91ba274/reso...
Microsoft Azure
Search resources, services, and docs (G+/)
bhargavi.aqua04@gmail...
DEFAULT DIRECTORY
Home > Virtual networks > AzureVnet-BhargaviNukala
Virtual network
Search
Overview
Activity log
Access control (IAM)
Tags
Diagnose and solve problems
Settings
Address space
Connected devices
Subnets
Bastion
DDoS protection
Firewall
Microsoft Defender for Cloud
Network manager
DNS servers
+ Subnet
+ Gateway subnet
Refresh
Manage users
Delete
Search subnets

AzureVnet-BhargaviNukala | Subnets

Name	IPv4	IPv6	Available IPs	Delegated to	Security group	Route table
subnet1	10.1.0.0/24	-	251	-	-	-
subnet2	10.1.1.0/24	-	251	-	-	-

Now create one VM in each subnet.



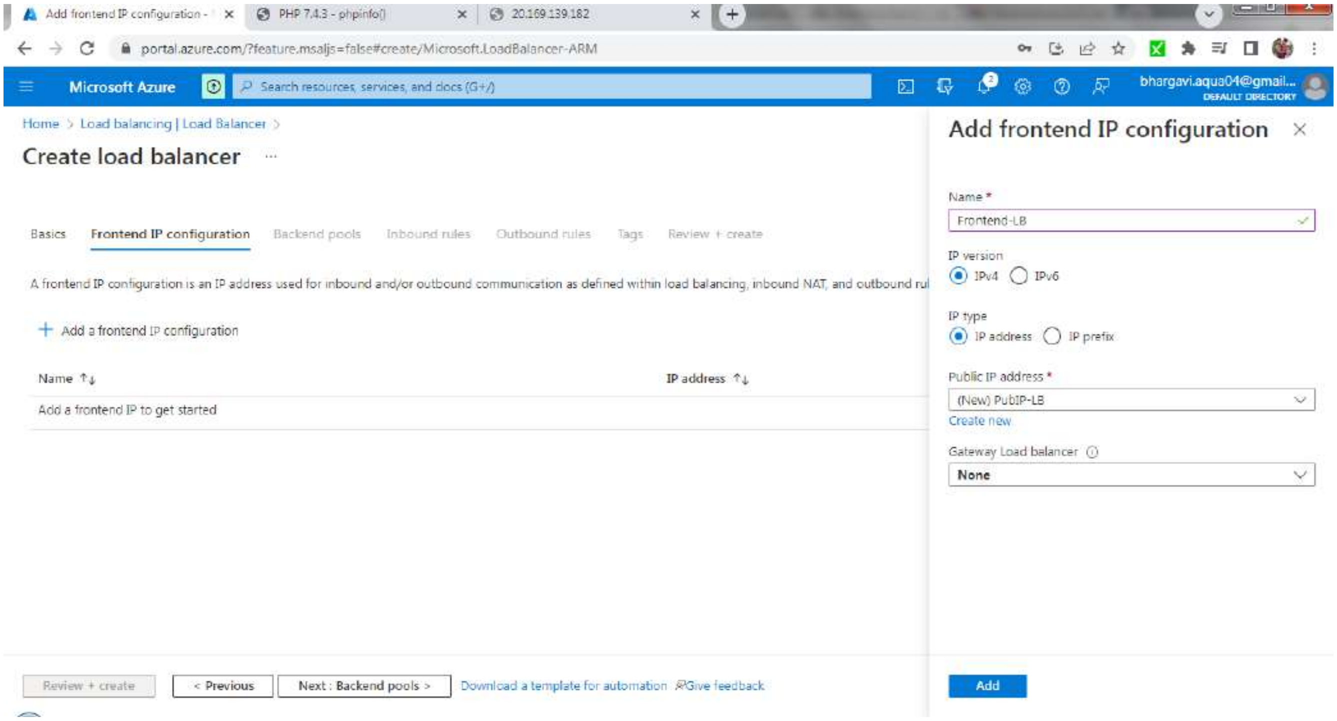
Virtual machines

Name	Type	Subscription	Resource group	Location	Status	Operating system	Size	Public IP
VM1-ForLB	Virtual machine	Free Trial	AzureRG-BhargaviNuk...	East US	Running	Windows	Standard_D2s_v3	20.169.1
VM2-ForLB	Virtual machine	Free Trial	AzureRG-BhargaviNuk...	East US	Running	Windows	Standard_D2s_v3	104.41.1

Setup IIS server on both VM s. As we have created Vnet with default Inbound and Outbound rules, with default rules, only Inbound traffic from same Vnet are allowed and from outside is not allowed.

Load Balancer:

Create a Load Balancer by adding a new Frontend Configuration and adding a new Public IP.


Add frontend IP configuration -
PHP 7.4.3 - phpinfo()
20.169.139.182
portal.azure.com/?feature.msaljs=false#create/Microsoft.LoadBalancer-ARM
Microsoft Azure
Search resources, services, and docs (G+/)
bhargavi.aqua04@gmail...
DEFAULT DIRECTORY
Home > Load balancing | Load Balancer >
Create load balancer
Basics
Frontend IP configuration
Backend pools
Inbound rules
Outbound rules
Tags
Review + create
+ Add a frontend IP configuration
Name ↑↓
IP address ↑↓
Create new
Review + create
< Previous
Next : Backend pools >
Download a template for automation
Give feedback
Add

A frontend IP configuration is an IP address used for inbound and/or outbound communication as defined within load balancing, inbound NAT, and outbound rul

Add a frontend IP to get started

Add frontend IP configuration

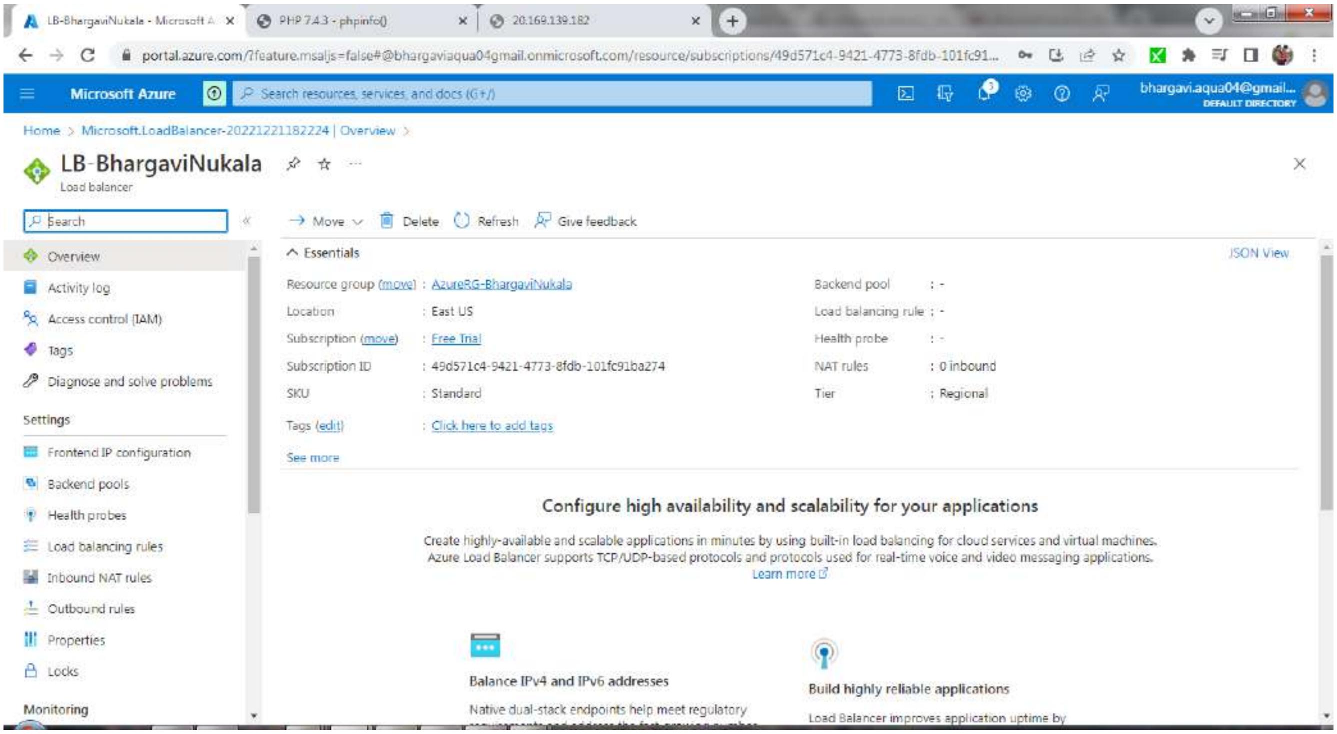
Name * Frontend-LB

IP version ● IPv4 ○ IPv6

IP type ● IP address ○ IP prefix

Public IP address * (New) PubIP-LB

Gateway Load balancer None



Home > Microsoft.LoadBalancer-20221221182224 | Overview >

LB-BhargaviNukala
Load balancer

Essentials

Resource group (move)	: AzureRG-BhargaviNukala	Backend pool	: -
Location	: East US	Load balancing rule	: -
Subscription (move)	: Free Trial	Health probe	: -
Subscription ID	: 49d571c4-9421-4773-8fdb-101fc91ba274	NAT rules	: 0 inbound
SKU	: Standard	Tier	: Regional
Tags (edit)	: Click here to add tags		

See more

Configure high availability and scalability for your applications

Create highly-available and scalable applications in minutes by using built-in load balancing for cloud services and virtual machines. Azure Load Balancer supports TCP/UDP-based protocols and protocols used for real-time voice and video messaging applications. Learn more

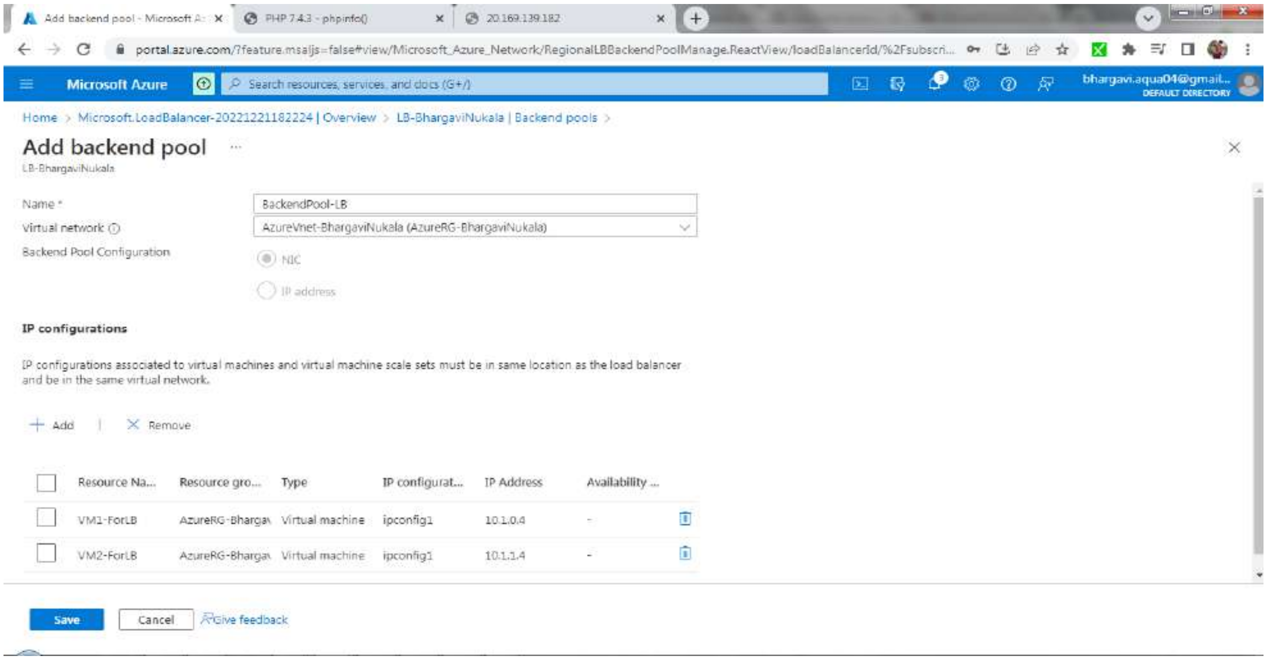
Balance IPv4 and IPv6 addresses

Native dual-stack endpoints help meet regulatory

Build highly reliable applications

Load Balancer improves application uptime by

Now add Backend pools for LB. Select the created Vnet and the machines we created in 2 subnets and add them to Backend Pool of LB.



Home > Microsoft.LoadBalancer-20221221182224 | Overview > LB-BhargaviNukala | Backend pools >

Add backend pool
LB-BhargaviNukala

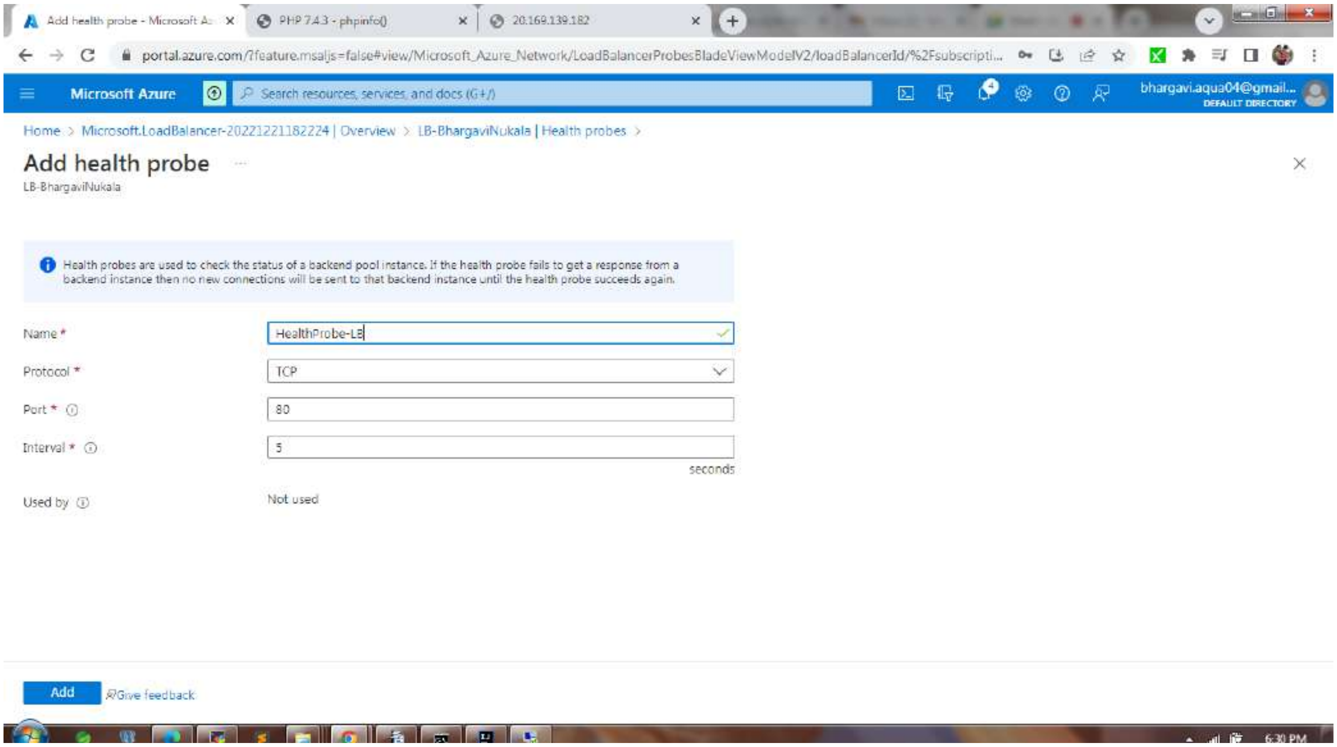
Name * : BackendPool-LB
Virtual network : AzureVnet-BhargaviNukala (AzureRG-BhargaviNukala)
Backend Pool Configuration : ● NIC ○ IP address

IP configurations

IP configurations associated to virtual machines and virtual machine scale sets must be in same location as the load balancer and be in the same virtual network.

□	Resource Na...	Resource gro...	Type	IP configurat...	IP Address	Availability ...
□	VM1-ForLB	AzureRG-Bhargav	Virtual machine	ipconfig1	10.1.0.4	-
□	VM2-ForLB	AzureRG-Bhargav	Virtual machine	ipconfig1	10.1.1.4	-

Add a health probe for LB



Home > Microsoft.LoadBalancer-20221221182224 | Overview > LB-BhargaviNukala | Health probes >

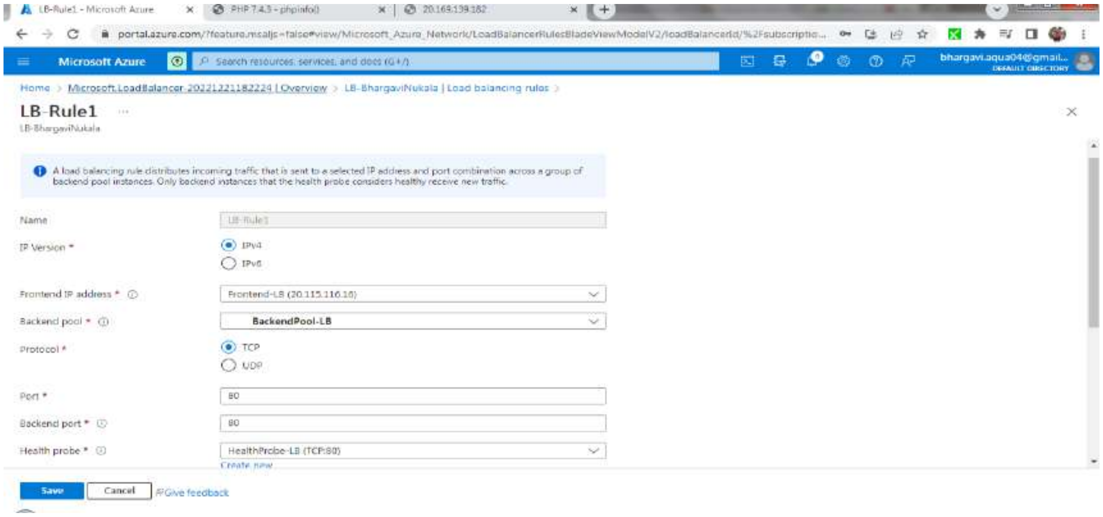
Add health probe

LB-BhargaviNukala

Health probes are used to check the status of a backend pool instance. If the health probe fails to get a response from a backend instance then no new connections will be sent to that backend instance until the health probe succeeds again.

Name *	HealthProbe-LB
Protocol *	TCP
Port *	80
Interval *	5 seconds
Used by	Not used

Add Load Balancing Rules by selecting the above created Frontend, Backend pool and health probe



Home > Microsoft.LoadBalancer-20221221182224 | Overview > LB-BhargaviNukala | Load balancing rules >

LB-Rule1

LB-BhargaviNukala

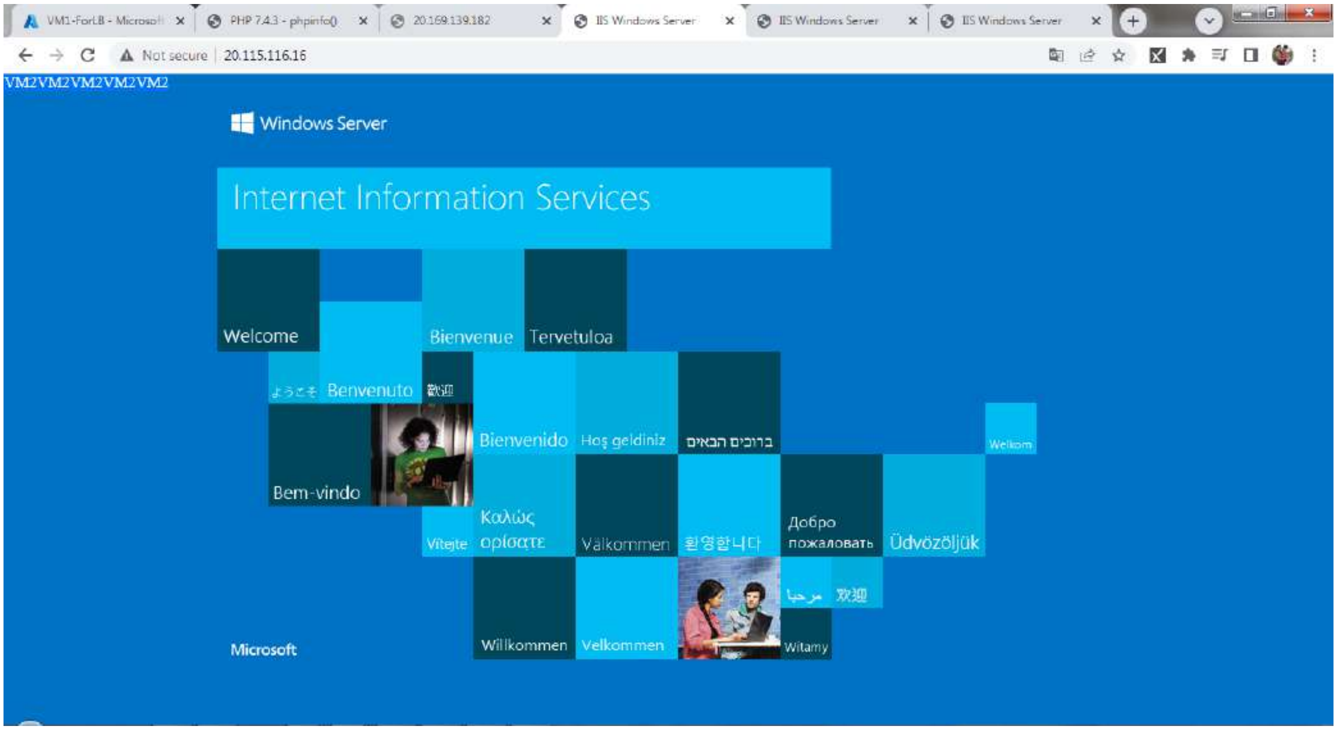
A load balancing rule distributes incoming traffic that is sent to a selected IP address and port combination across a group of backend pool instances. Only backend instances that the health probe considers healthy receive new traffic.

Name	LB-Rule1
IP Version *	● IPv4 ○ IPv6
Frontend IP address *	Frontend-LB (20.115.116.16)
Backend pool *	BackendPool-LB
Protocol *	● TCP ○ UDP
Port *	80
Backend port *	80
Health probe *	HealthProbe-LB (TCP:80) Create new

Check that IIS server is installed on two VMs. Make changes in web pages located at C:\inetpub\wwwroot to display VM1 and VM2.

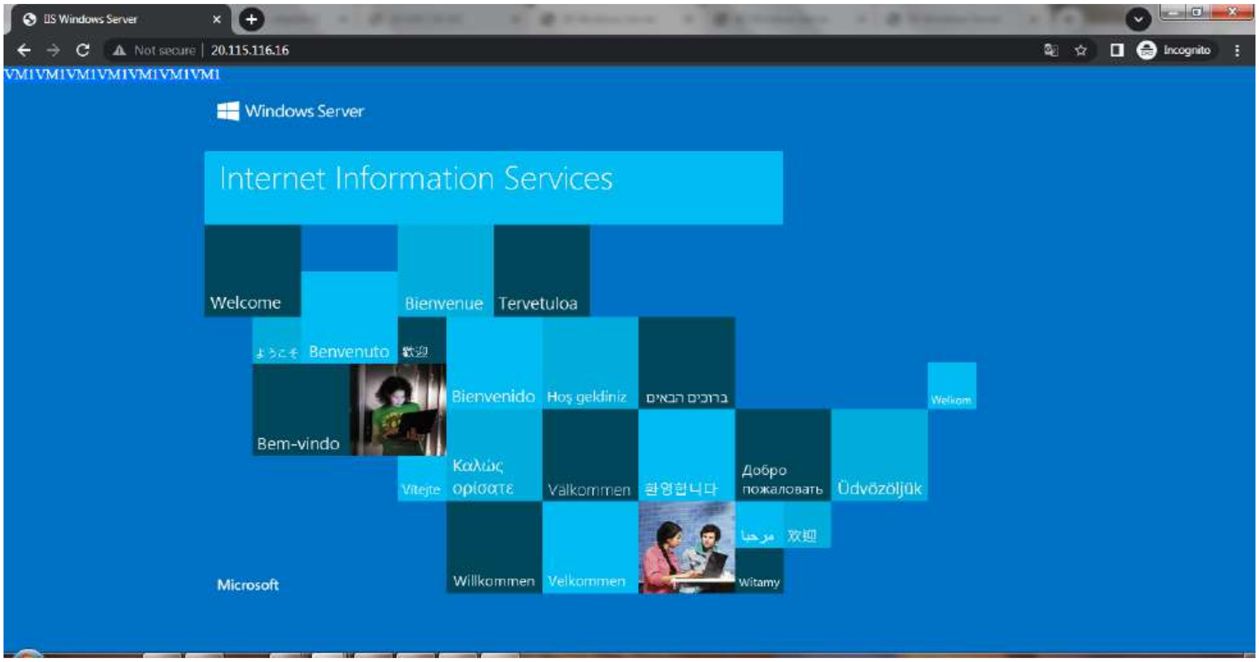
Access webpage from browser using public IP of VM.

As seen, once VM1 is called and once VM2 is called by Load Balancer.



Not secure | 20.115.116.16

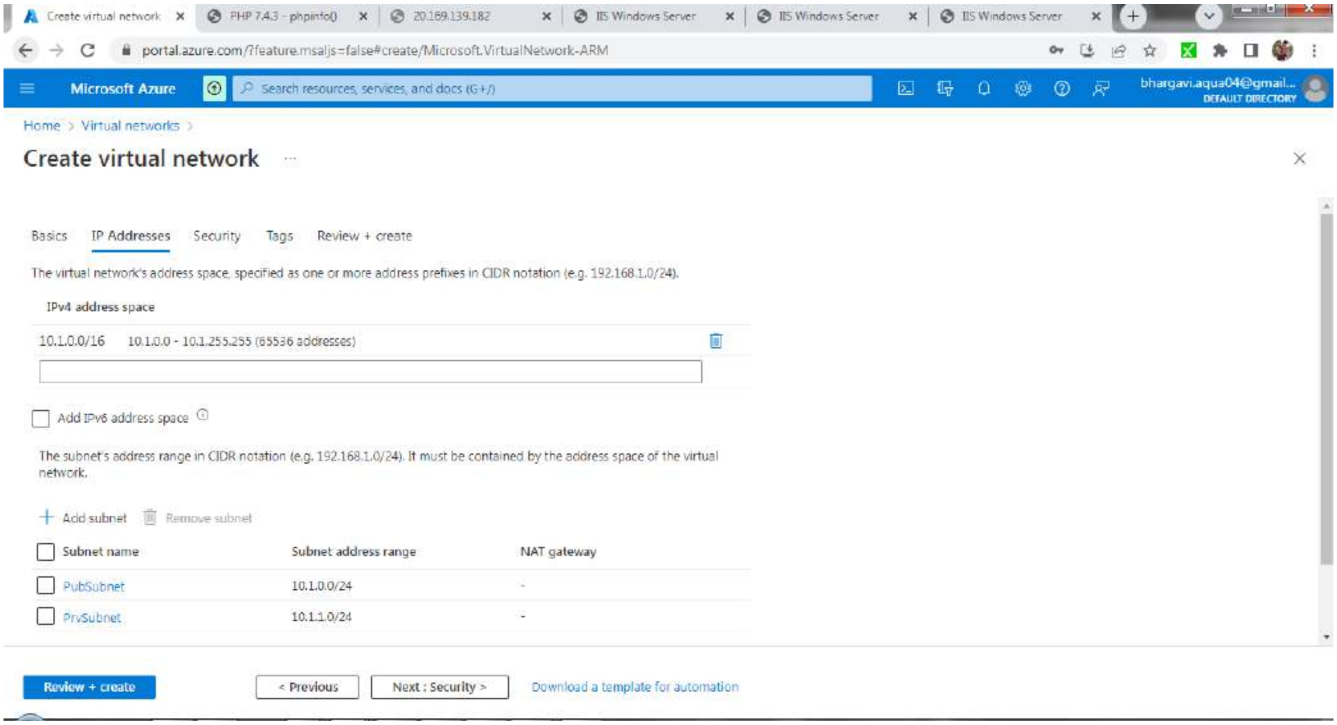
VM2VM2VM2VM2VM2



VM1VM1VM1VM1VM1VM1VM1

VPC:

Create a Virtual Network. Add 2 subnets, one public subnet and one private subnet.


Create virtual network
PHP 7.4.3 - phpinfo()
20.169.139.182
IIS Windows Server
portal.azure.com/?feature.msaljs=false#create/Microsoft.VirtualNetwork-ARM
Microsoft Azure
Search resources, services, and docs (G+/)
bhargavi.aqua04@gmail...
DEFAULT DIRECTORY
Home > Virtual networks >

Create virtual network

Basics | **IP Addresses** | Security | Tags | Review + create

The virtual network's address space, specified as one or more address prefixes in CIDR notation (e.g. 192.168.1.0/24).

IPv4 address space

10.1.0.0/16 10.1.0.0 - 10.1.255.255 (65536 addresses)

□ Add IPv6 address space

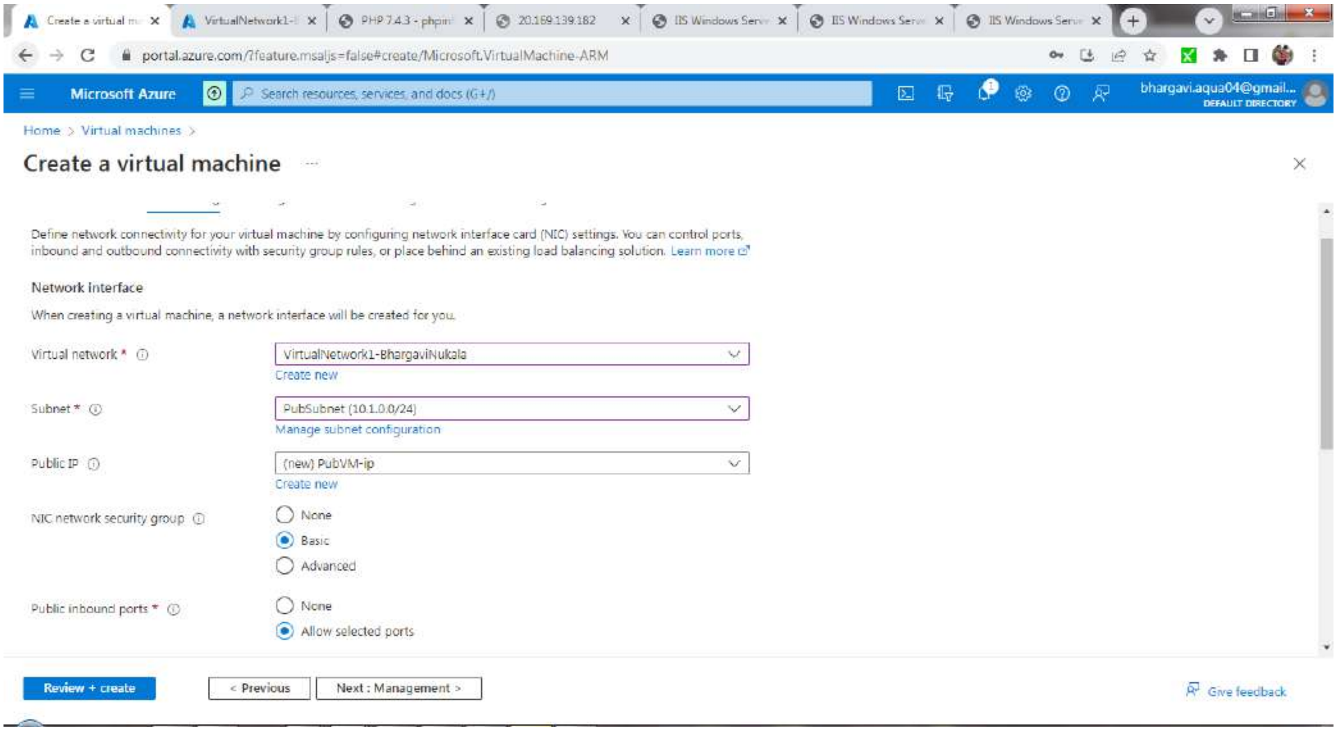
The subnet's address range in CIDR notation (e.g. 192.168.1.0/24). It must be contained by the address space of the virtual network.

+ Add subnet   Remove subnet

□ Subnet name	Subnet address range	NAT gateway
□ PubSubnet	10.1.0.0/24	-
□ PrvSubnet	10.1.1.0/24	-

Create 2 Vms, one in Public subnet and one VM in private subnet.

Public VM should be created by selecting the public IP.


portal.azure.com/?feature.msaljs=false#create/Microsoft.VirtualMachine-ARM
Microsoft Azure
Search resources, services, and docs (G+/)
bhargavi.aqua04@gmail...
DEFAULT DIRECTORY
Home > Virtual machines >

Create a virtual machine

Define network connectivity for your virtual machine by configuring network interface card (NIC) settings. You can control ports, inbound and outbound connectivity with security group rules, or place behind an existing load balancing solution. Learn more

Network interface

When creating a virtual machine, a network interface will be created for you.

Virtual network * : VirtualNetwork1-BhargaviNukala
Create new

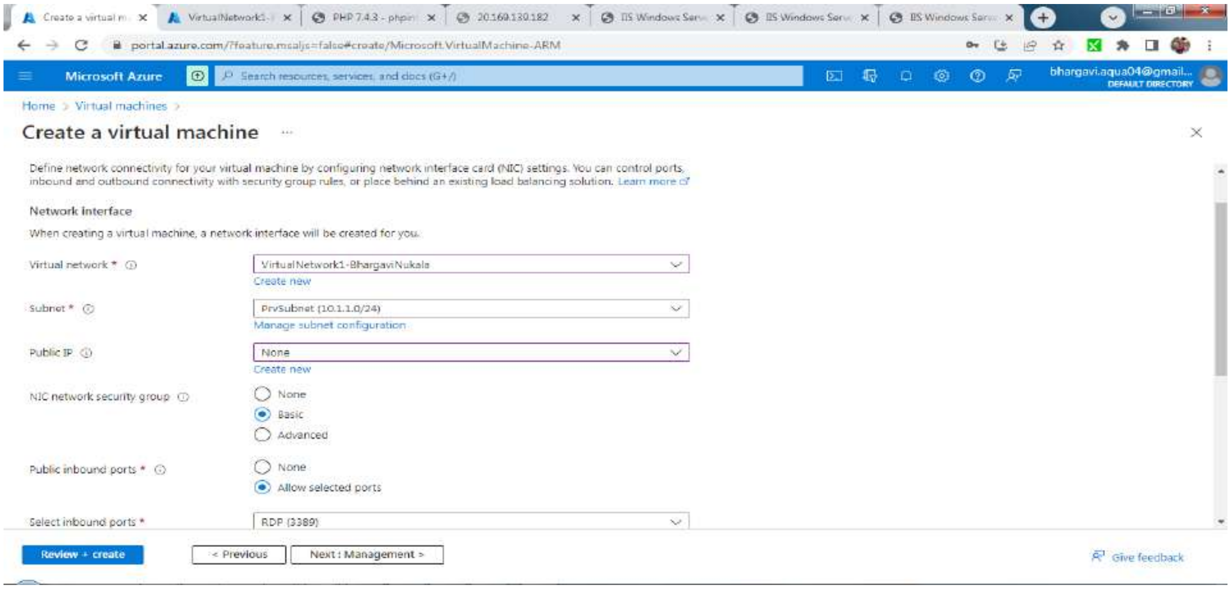
Subnet * : PubSubnet (10.1.0.0/24)
Manage subnet configuration

Public IP : (new) PubVM-ip
Create new

NIC network security group: ○ None ● Basic ○ Advanced

Public inbound ports * : ○ None ● Allow selected ports

Private VM should be created by not selecting the public IP.


portal.azure.com/?feature.msaljs=false#create/Microsoft.VirtualMachine-ARM
Microsoft Azure
Search resources, services, and docs (G+/)
bhargavi.aqua04@gmail...
DEFAULT DIRECTORY
Home > Virtual machines >

Create a virtual machine

Define network connectivity for your virtual machine by configuring network interface card (NIC) settings. You can control ports, inbound and outbound connectivity with security group rules, or place behind an existing load balancing solution. Learn more

Network interface

When creating a virtual machine, a network interface will be created for you.

Virtual network * : VirtualNetwork1-BhargaviNukala
Create new

Subnet * : PrvSubnet (10.1.1.0/24)
Manage subnet configuration

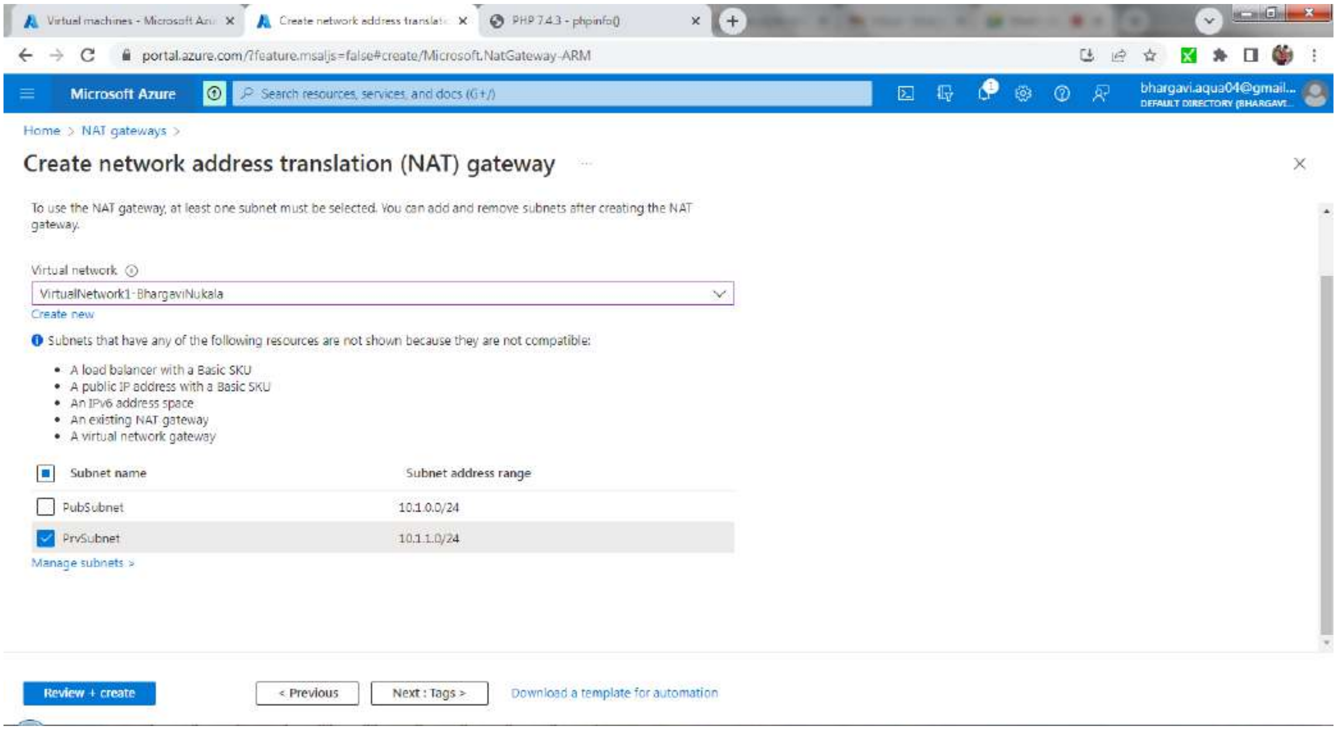
Public IP : None
Create new

NIC network security group: ○ None ● Basic ○ Advanced

Public inbound ports * : ○ None ● Allow selected ports

Select inbound ports * : RDP (3389)

Create a NAT Gateway to get Internet to Private Subnet. Select the Virtual Network and the private subnet where you want Internet.


Virtual machines - Microsoft Azu
Create network address translati
PHP 7.4.3 - phpinfo()
portal.azure.com/?feature.msaljs=false#create/Microsoft.NatGateway-ARM
Microsoft Azure
Search resources, services, and docs (G+/)
bhargavi.aqua04@gmail...
DEFAULT DIRECTORY (BHARGAVI...

Home > NAT gateways >

Create network address translation (NAT) gateway

To use the NAT gateway, at least one subnet must be selected. You can add and remove subnets after creating the NAT gateway.

Virtual network: VirtualNetwork1-BhargaviNukala

Create new

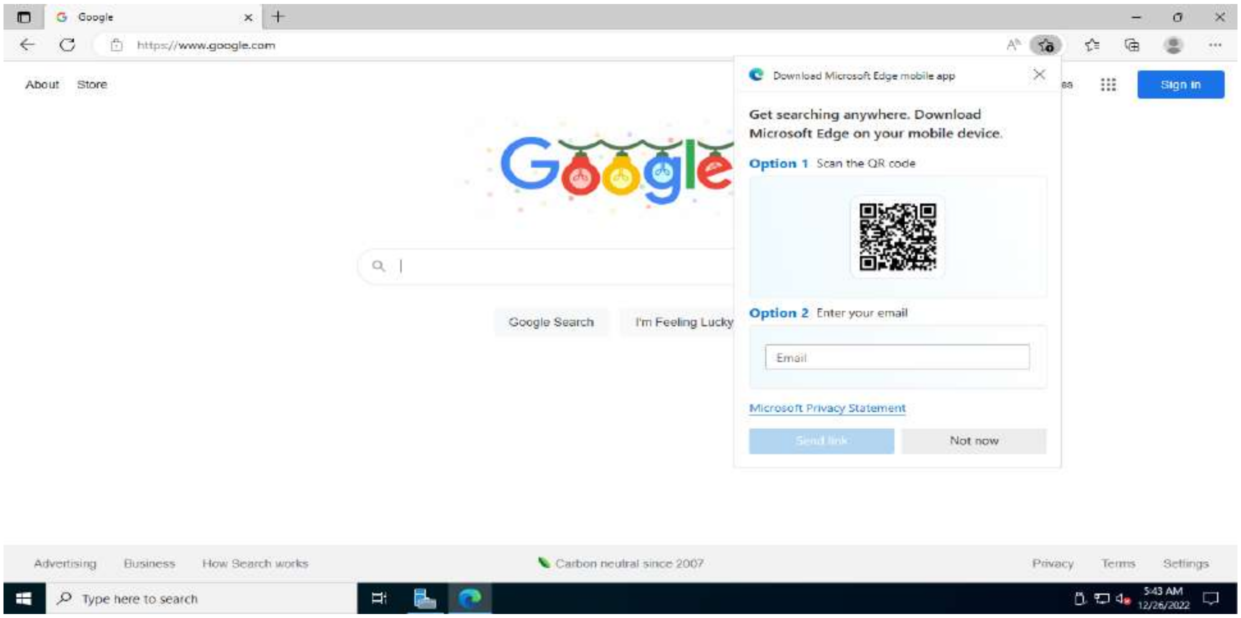
Subnets that have any of the following resources are not shown because they are not compatible:

- A load balancer with a Basic SKU
- A public IP address with a Basic SKU
- An IPv6 address space
- An existing NAT gateway
- A virtual network gateway

	Subnet name	Subnet address range
□	PubSubnet	10.1.0.0/24
☑	PrvSubnet	10.1.1.0/24

Manage subnets >

Now connect to private machine from public machine using remote desktop connection of public VM. Access google.com on private VM and the page is displayed.



Get searching anywhere. Download Microsoft Edge on your mobile device.

Option 1 Scan the QR code

Option 2 Enter your email

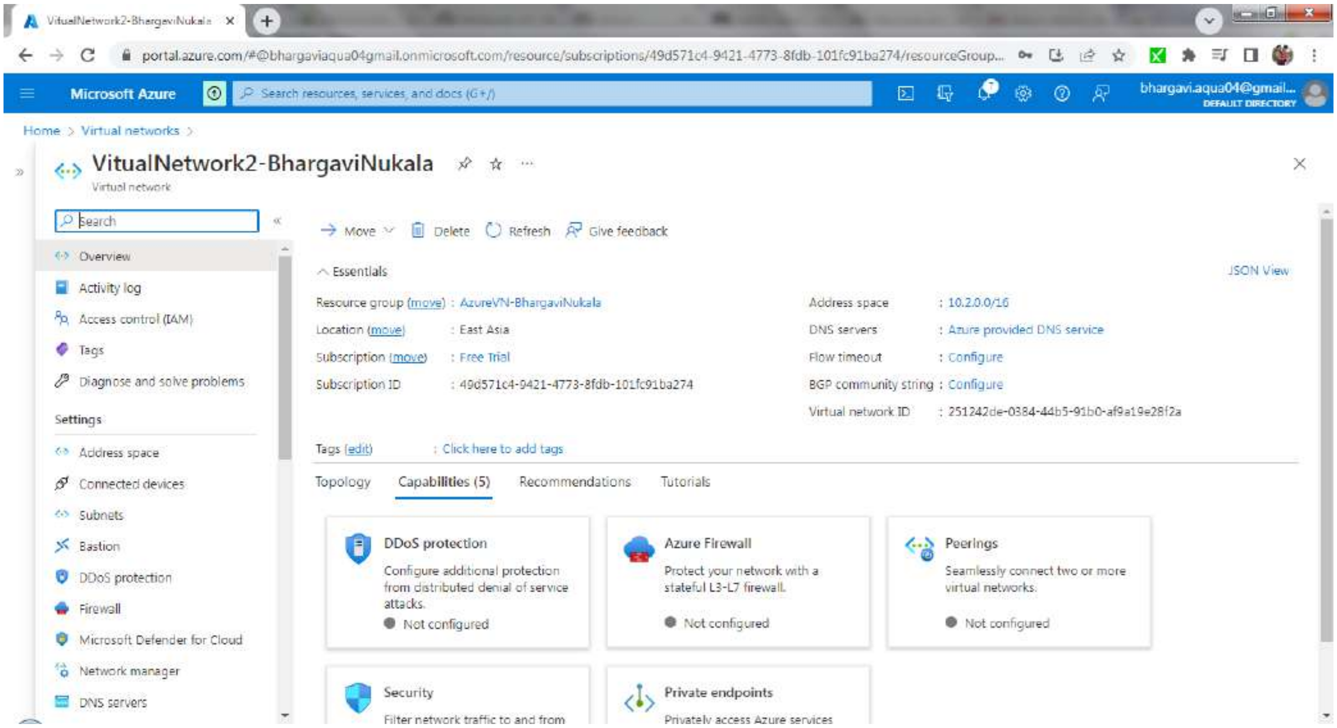
Email

Microsoft Privacy Statement

Send link   Not now

VPC Peering:

Create another Virtual Network in another region.



VitualNetwork2-BhargaviNukala

Essentials

Resource group (move) : AzureVN-BhargaviNukala

Location (move) : East Asia

Subscription (move) : Free Trial

Subscription ID : 49d571c4-9421-4773-8fdb-101fc91ba274

Address space : 10.2.0.0/16

DNS servers : Azure provided DNS service

Flow timeout : Configure

BGP community string : Configure

Virtual network ID : 251242de-0384-44b5-91b0-af9a19e28f2a

Tags (edit) : Click here to add tags

DDoS protection
Configure additional protection from distributed denial of service attacks.
● Not configured

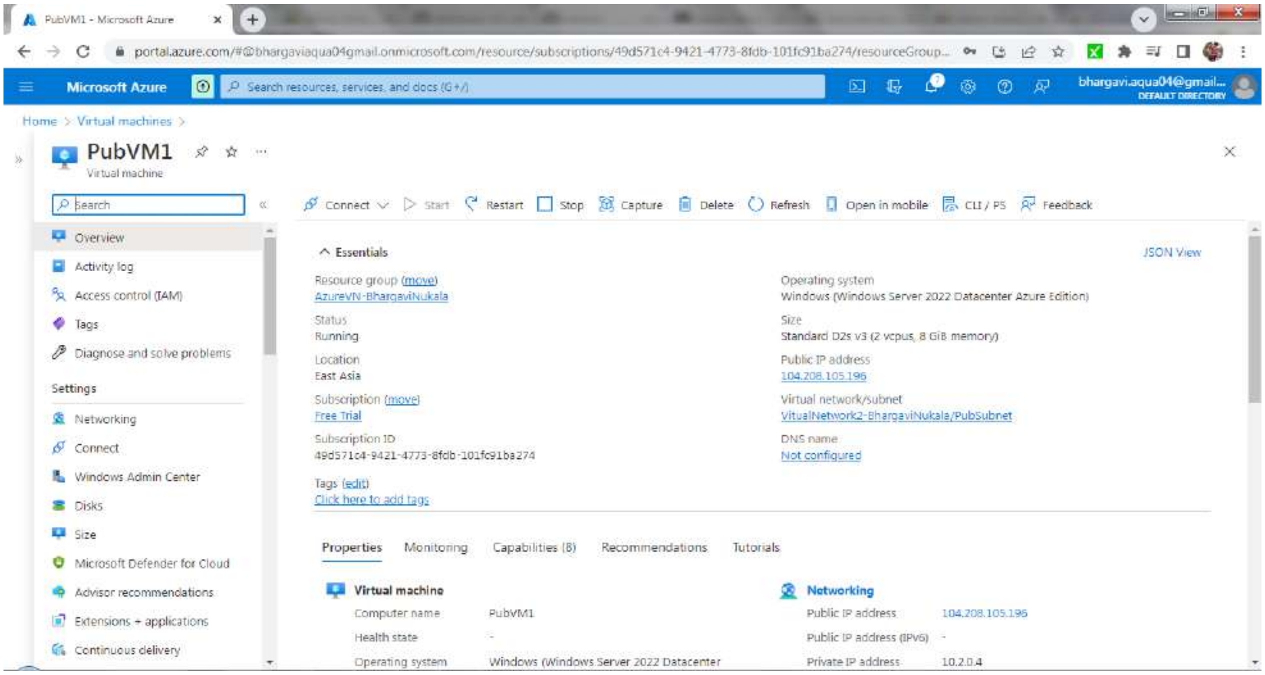
Azure Firewall
Protect your network with a stateful L3-L7 firewall.
● Not configured

Peerings
Seamlessly connect two or more virtual networks.
● Not configured

Security
Filter network traffic to and from

Private endpoints
Privately access Azure services

Now create a VM in Virtual Network2.



PubVM1

Essentials

Resource group (move)
AzureVN-BhargaviNukala

Status
Running

Location
East Asia

Subscription (move)
Free Trial

Subscription ID
49d571c4-9421-4773-8fdb-101fc91ba274

Tags (edit)
Click here to add tags

Operating system
Windows (Windows Server 2022 Datacenter Azure Edition)

Size
Standard D2s v3 (2 vcpus, 8 GiB memory)

Public IP address
104.208.105.196

Virtual network/subnet
VitualNetwork2-BhargaviNukala/PubSubnet

DNS name
Not configured

Virtual machine

Computer name PubVM1

Health state -

Operating system Windows (Windows Server 2022 Datacenter

Networking

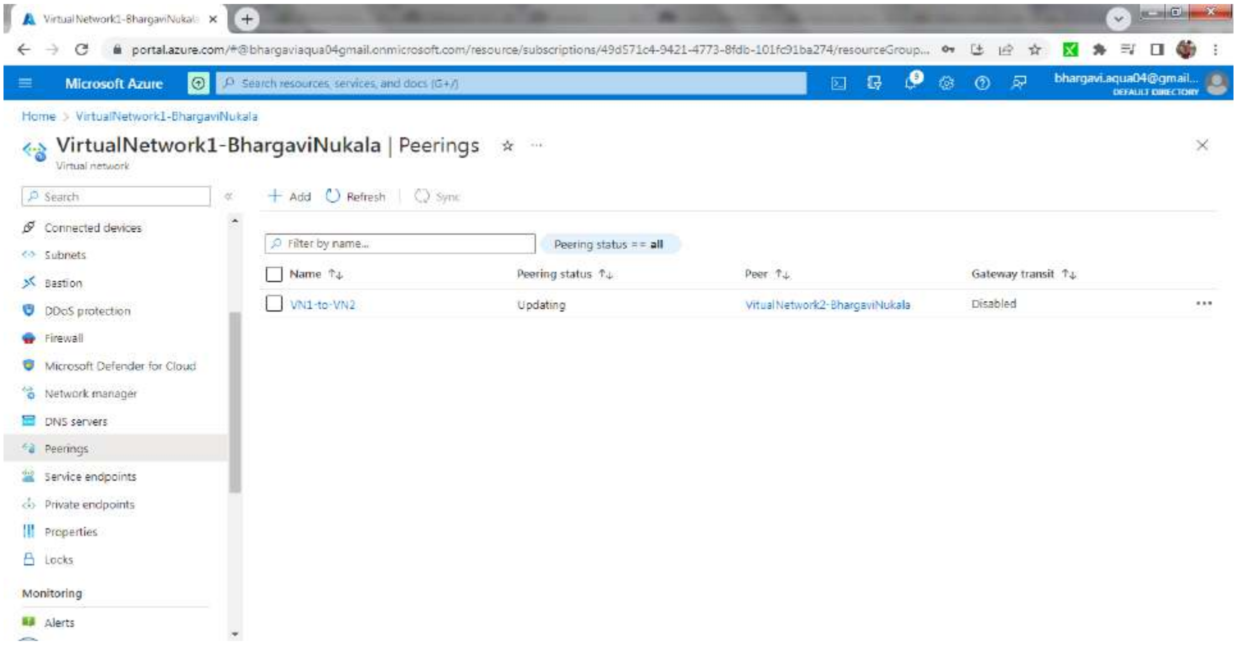
Public IP address 104.208.105.196

Public IP address (IPv6) -

Private IP address 10.2.0.4

Add Peering in Virtual Network1. Goto VirtualNetwork1 and click on Peerings. Add peering between both Vnets. As seen,Two peerings are created between 2 Vnets.

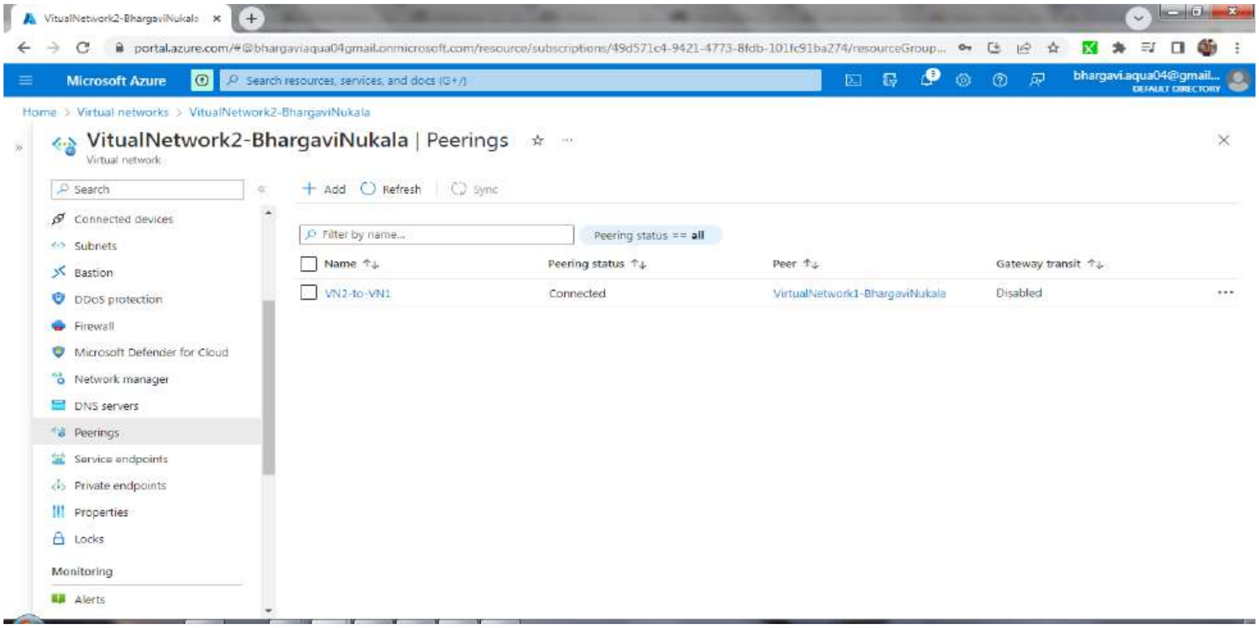
VN1->VN2



VirtualNetwork1-BhargaviNukala
portal.azure.com/#@bhargaviaqua04gmail.onmicrosoft.com/resource/subscriptions/49d571c4-9421-4773-8fdb-101fc91ba274/resourceGroup...
Microsoft Azure
Search resources, services, and docs (G+/)
bhargavi.aqua04@gmail...
DEFAULT DIRECTORY
Home > VirtualNetwork1-BhargaviNukala
VirtualNetwork1-BhargaviNukala | Peerings
Virtual network
Search
Connected devices
Subnets
Bastion
DDoS protection
Firewall
Microsoft Defender for Cloud
Network manager
DNS servers
Peerings
Service endpoints
Private endpoints
Properties
Locks
Monitoring
Alerts
+ Add
Refresh
Sync
Filter by name...
Peering status == all

Name	Peering status	Peer	Gateway transit
VN1-to-VN2	Updating	VitualNetwork2-BhargaviNukala	Disabled

VN2->VN1



portal.azure.com/#@bhargaviaqua04gmail.onmicrosoft.com/resource/subscriptions/49d571c4-9421-4773-8fdb-101fc91ba274/resourceGroup...

Home > Virtual networks > VitualNetwork2-BhargaviNukala

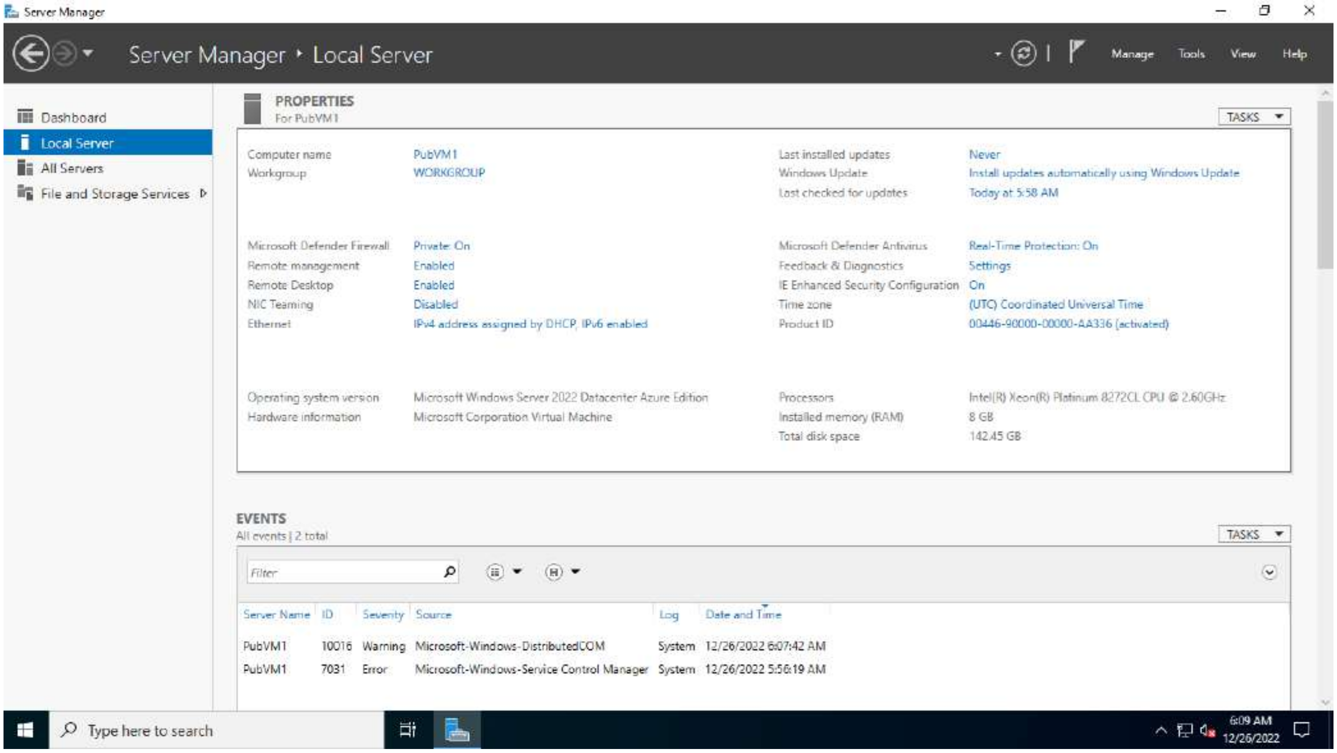
VitualNetwork2-BhargaviNukala | Peerings

Virtual network

Peering status == all

Name	Peering status	Peer	Gateway transit
VN2-to-VN1	Connected	VirtualNetwork1-BhargaviNukala	Disabled

Now a peering is established and when you use private IP of VM of VN2 to connect from VM of VN1, you should be able to connect.



Server Manager • Local Server

PROPERTIES
For PubVM1

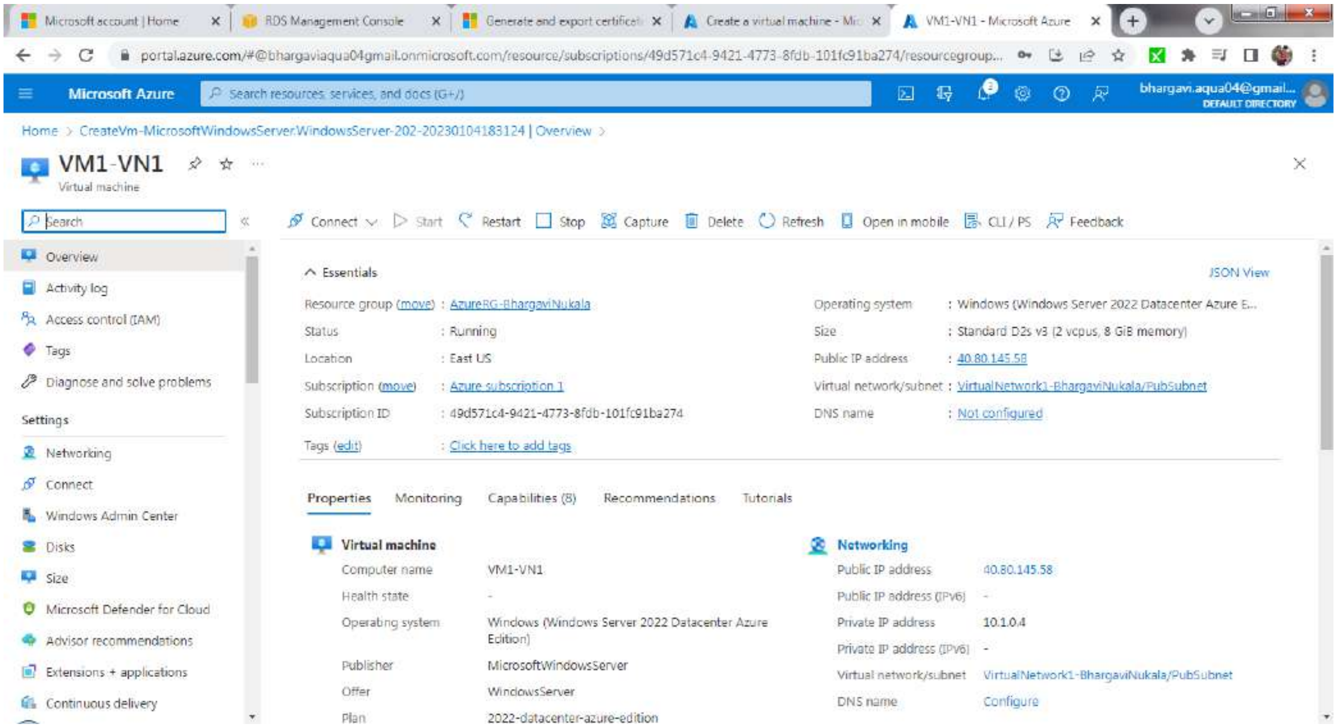
Computer name	PubVM1	Last installed updates	Never
Workgroup	WORKGROUP	Windows Update	Install updates automatically using Windows Update
		Last checked for updates	Today at 5:58 AM
Microsoft Defender Firewall	Private: On	Microsoft Defender Antivirus	Real-Time Protection: On
Remote management	Enabled	Feedback & Diagnostics	Settings
Remote Desktop	Enabled	IE Enhanced Security Configuration	On
NIC Teaming	Disabled	Time zone	(UTC) Coordinated Universal Time
Ethernet	IPv4 address assigned by DHCP, IPv6 enabled	Product ID	00446-90000-00000-AA336 (activated)
Operating system version	Microsoft Windows Server 2022 Datacenter Azure Edition	Processors	Intel(R) Xeon(R) Platinum 8272CL CPU @ 2.60GHz
Hardware information	Microsoft Corporation Virtual Machine	Installed memory (RAM)	8 GB
		Total disk space	142.45 GB

EVENTS
All events | 2 total

Server Name	ID	Severity	Source	Log	Date and Time
PubVM1	10016	Warning	Microsoft-Windows-DistributedCOM	System	12/26/2022 6:07:42 AM
PubVM1	7031	Error	Microsoft-Windows-Service Control Manager	System	12/26/2022 5:56:19 AM

DNS: Creation of a internal DNS server and Web server in 2 different subnets of same virtual network

Create a VM1 in Virtual network1->PubSubnet



portal.azure.com/#@bhargaviaqua04gmail.onmicrosoft.com/resource/subscriptions/49d571c4-9421-4773-8fdb-101fc91ba274/resourcegroup...

VM1-VN1
Virtual machine

Essentials

Resource group (move) : AzureRG-BhargaviNukala
Status : Running
Location : East US
Subscription (move) : Azure subscription 1
Subscription ID : 49d571c4-9421-4773-8fdb-101fc91ba274
Tags (edit) : Click here to add tags

Operating system : Windows (Windows Server 2022 Datacenter Azure E...
Size : Standard D2s v3 (2 vcpus, 8 GiB memory)
Public IP address : 40.80.145.58
Virtual network/subnet : VirtualNetwork1-BhargaviNukala/PubSubnet
DNS name : Not configured

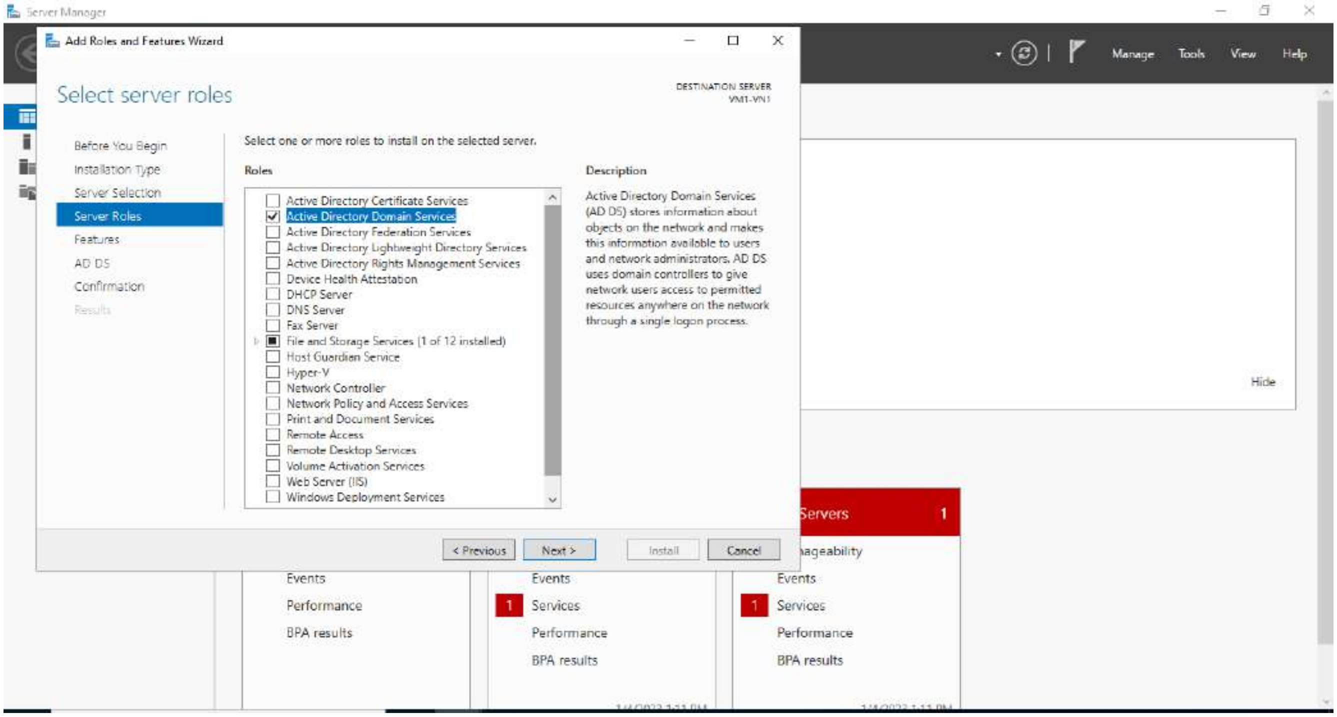
Virtual machine

Computer name	VM1-VN1
Health state	-
Operating system	Windows (Windows Server 2022 Datacenter Azure Edition)
Publisher	MicrosoftWindowsServer
Offer	WindowsServer
Plan	2022-datacenter-azure-edition

Networking

Public IP address	40.80.145.58
Public IP address (IPv6)	-
Private IP address	10.1.0.4
Private IP address (IPv6)	-
Virtual network/subnet	VirtualNetwork1-BhargaviNukala/PubSubnet
DNS name	Configure

Connect to VM using Remote Desktop Connection. In server Manager, Add roles and features->Active Directory Domain Service.



Select server roles

DESTINATION SERVER
VM1-VN1

- Before You Begin
- Installation Type
- Server Selection
- Server Roles
- Features
- AD DS
- Confirmation
- Results

Select one or more roles to install on the selected server.

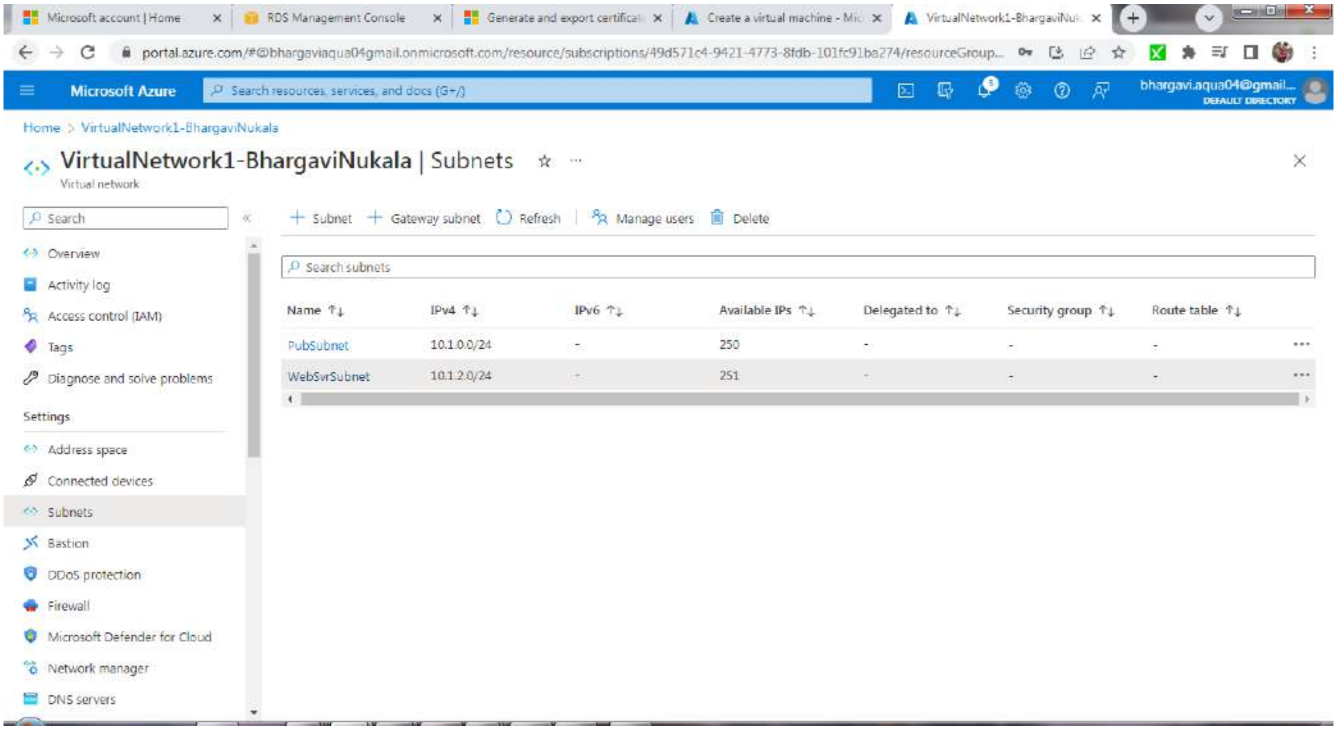
Roles

- □ Active Directory Certificate Services
- ☑ Active Directory Domain Services
- □ Active Directory Federation Services
- □ Active Directory Lightweight Directory Services
- □ Active Directory Rights Management Services
- □ Device Health Attestation
- □ DHCP Server
- □ DNS Server
- □ Fax Server
- ■ File and Storage Services (1 of 12 installed)
- □ Host Guardian Service
- □ Hyper-V
- □ Network Controller
- □ Network Policy and Access Services
- □ Print and Document Services
- □ Remote Access
- □ Remote Desktop Services
- □ Volume Activation Services
- □ Web Server (IIS)
- □ Windows Deployment Services

Description

Active Directory Domain Services (AD DS) stores information about objects on the network and makes this information available to users and network administrators. AD DS uses domain controllers to give network users access to permitted resources anywhere on the network through a single logon process.

Create another Subnet in Virtual Network1 called WebSvrSubnet.



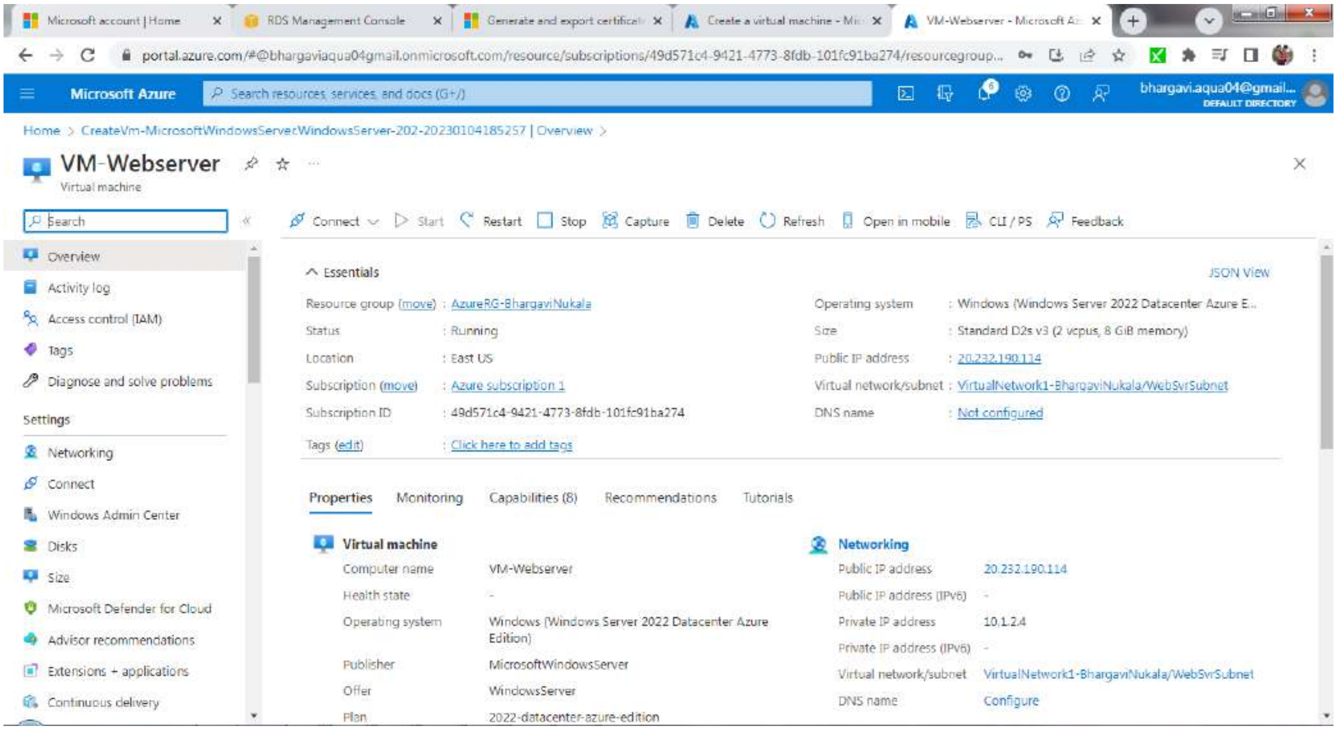
Home > VirtualNetwork1-BhargaviNukala

VirtualNetwork1-BhargaviNukala | Subnets

Virtual network

Name	IPv4	IPv6	Available IPs	Delegated to	Security group	Route table
PubSubnet	10.1.0.0/24	-	250	-	-	-
WebSvrSubnet	10.1.2.0/24	-	251	-	-	-

Create another VM in WebSvrSubnet



portal.azure.com/#@bhargaviaqua04gmail.onmicrosoft.com/resource/subscriptions/49d571c4-9421-4773-8fdb-101fc91ba274/resourcegroup...

Home > CreateVm-MicrosoftWindowsServer.WindowsServer-202-20230104185257 | Overview >

VM-Webserver
Virtual machine

Essentials

Resource group (move)	AzureRG-BhargaviNukala	Operating system	Windows (Windows Server 2022 Datacenter Azure E...
Status	Running	Size	Standard D2s v3 (2 vcpus, 8 GiB memory)
Location	East US	Public IP address	20.232.190.114
Subscription (move)	Azure subscription 1	Virtual network/subnet	VirtualNetwork1-BhargaviNukala/WebSvrSubnet
Subscription ID	49d571c4-9421-4773-8fdb-101fc91ba274	DNS name	Not configured
Tags (edit)	Click here to add tags		

Properties

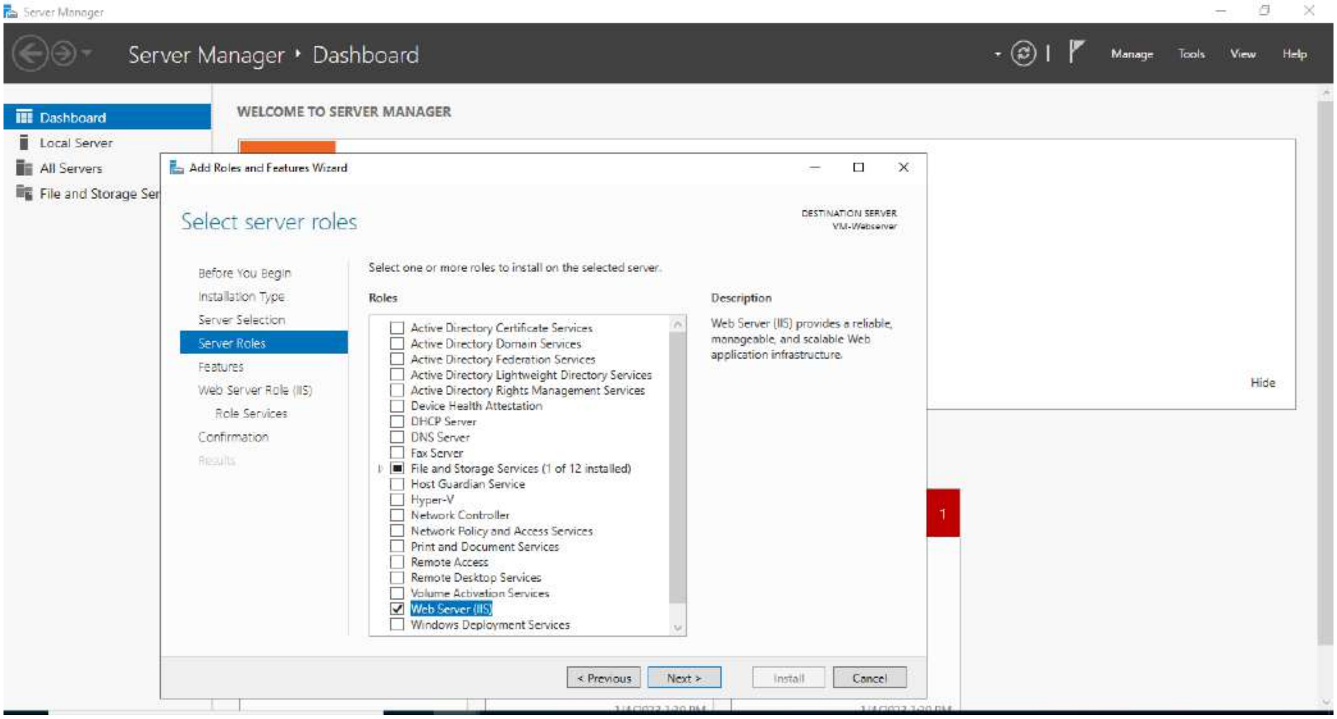
Virtual machine

Computer name	VM-Webserver
Health state	-
Operating system	Windows (Windows Server 2022 Datacenter Azure Edition)
Publisher	MicrosoftWindowsServer
Offer	WindowsServer
Plan	2022-datacenter-azure-edition

Networking

Public IP address	20.232.190.114
Public IP address (IPv6)	-
Private IP address	10.1.2.4
Private IP address (IPv6)	-
Virtual network/subnet	VirtualNetwork1-BhargaviNukala/WebSvrSubnet
DNS name	Configure

Connect to VM-Webserver and install IIS server.



Server Manager ▸ Dashboard

WELCOME TO SERVER MANAGER

Add Roles and Features Wizard

Select server roles

DESTINATION SERVER
VM-Webserver

Select one or more roles to install on the selected server.

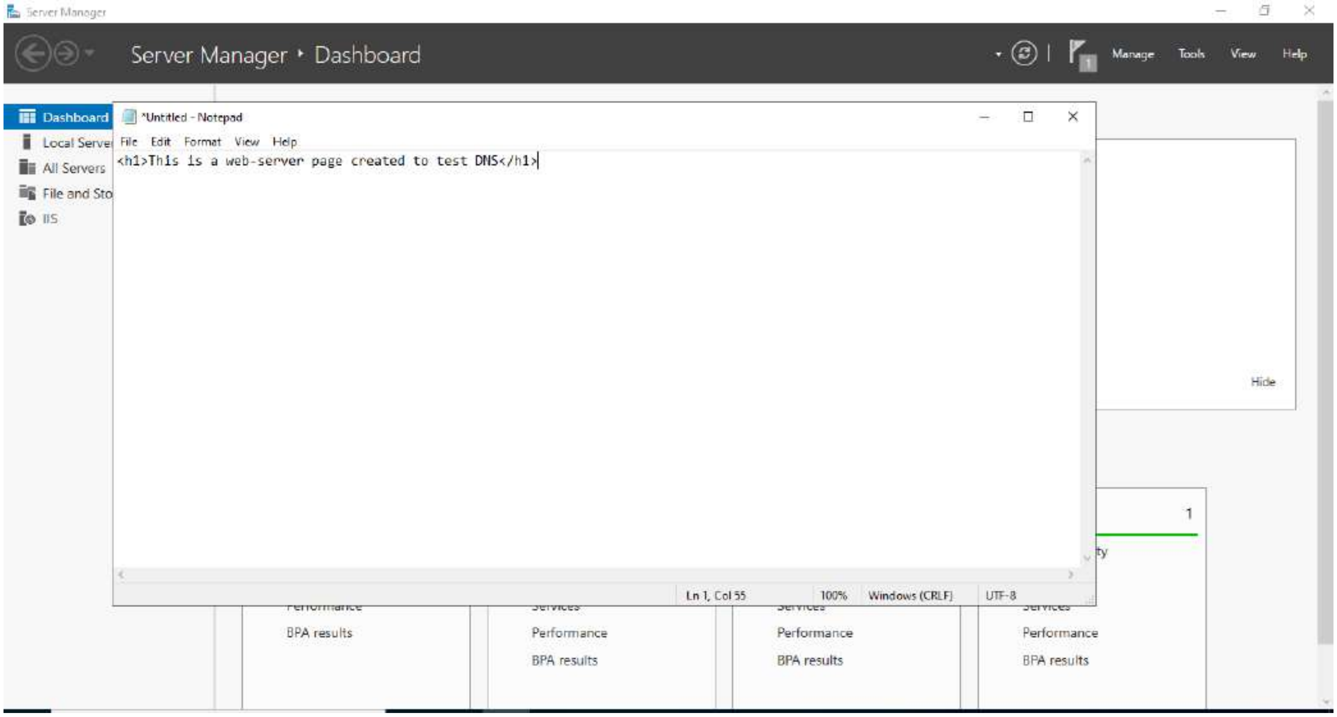
Roles

- ☐ Active Directory Certificate Services
- ☐ Active Directory Domain Services
- ☐ Active Directory Federation Services
- ☐ Active Directory Lightweight Directory Services
- ☐ Active Directory Rights Management Services
- ☐ Device Health Attestation
- ☐ DHCP Server
- ☐ DNS Server
- ☐ Fax Server
- ■ File and Storage Services (1 of 12 installed)
- ☐ Host Guardian Service
- ☐ Hyper-V
- ☐ Network Controller
- ☐ Network Policy and Access Services
- ☐ Print and Document Services
- ☐ Remote Access
- ☐ Remote Desktop Services
- ☐ Volume Activation Services
- ☑ Web Server (IIS)
- ☐ Windows Deployment Services

Description

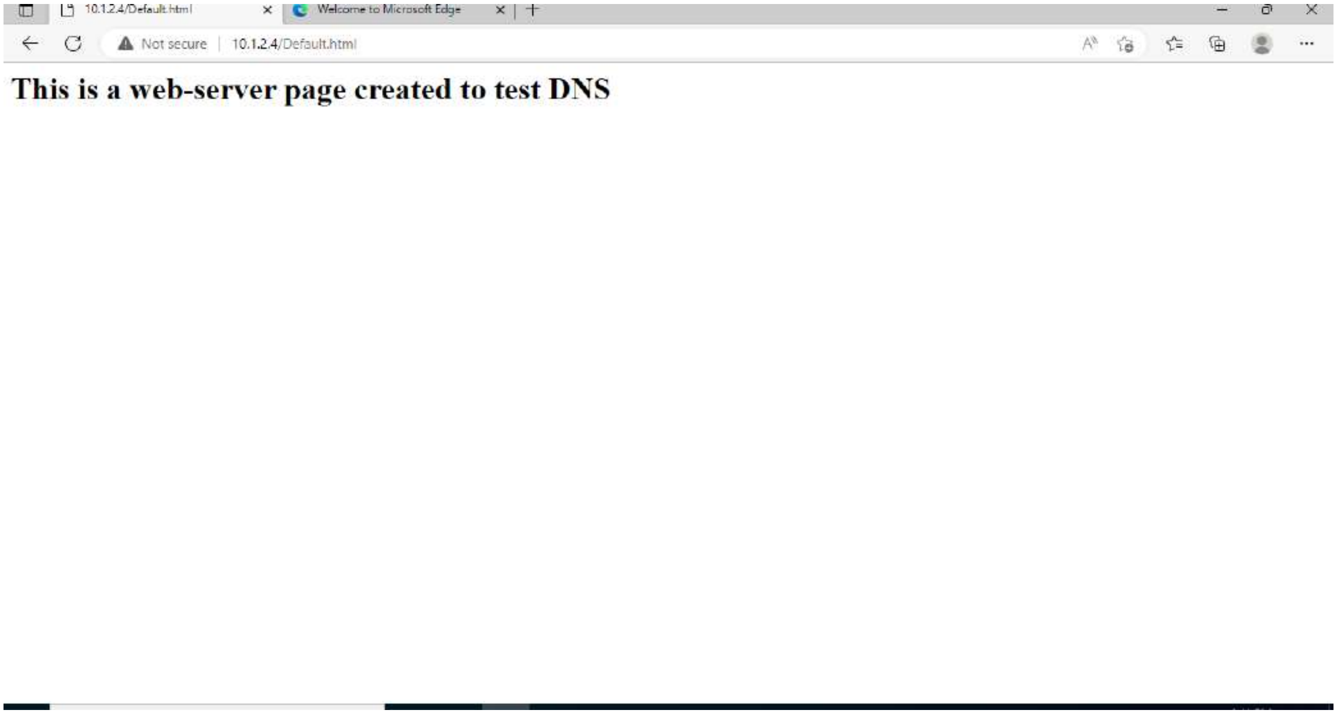
Web Server (IIS) provides a reliable, manageable, and scalable Web application infrastructure.

Create a Default.html page and save it in C:/inetpub/wwwroot in VM-Webserver



```
<h1>This is a web-server page created to test DNS</h1>
```

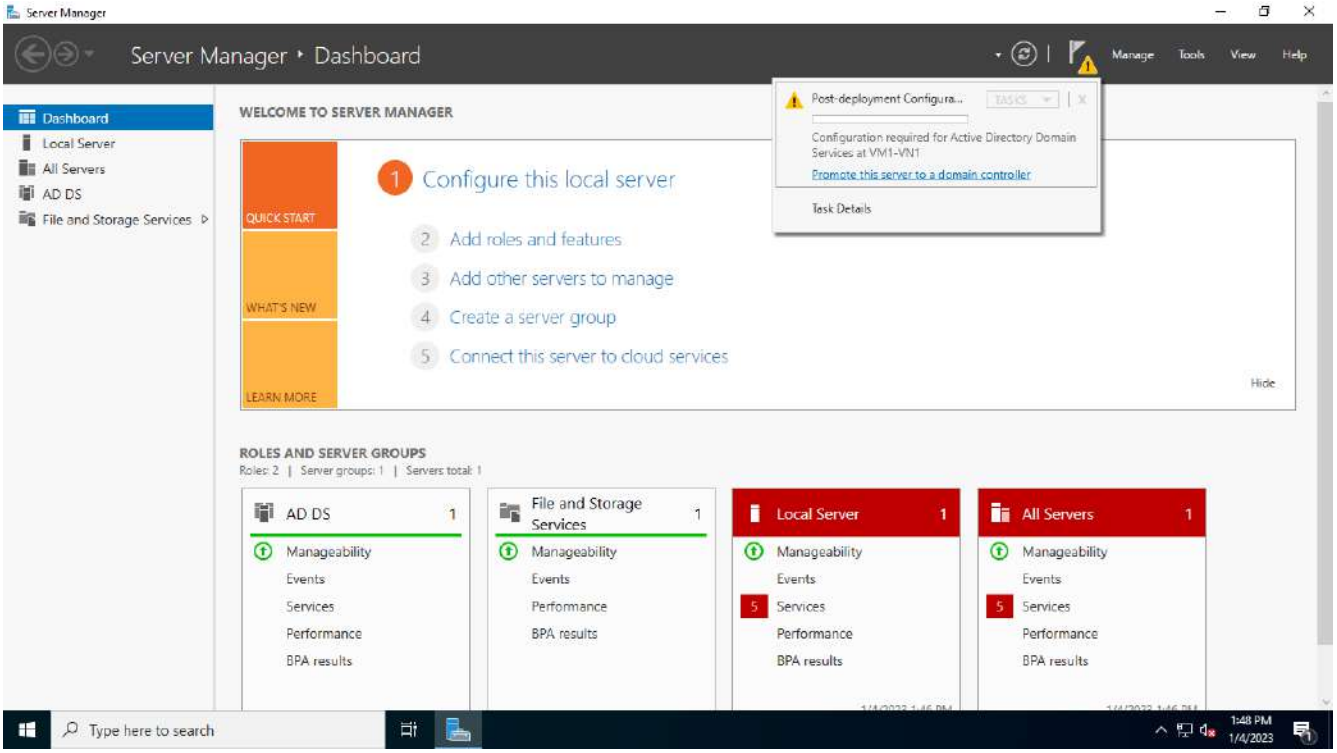
Access Default.html from web browser using private IP of VM-Webserver



This is a web-server page created to test DNS

Restart DNS VM and in Server Manager, click on Notifications on Top Flag button.

Click on"Promote this to domain controller" link



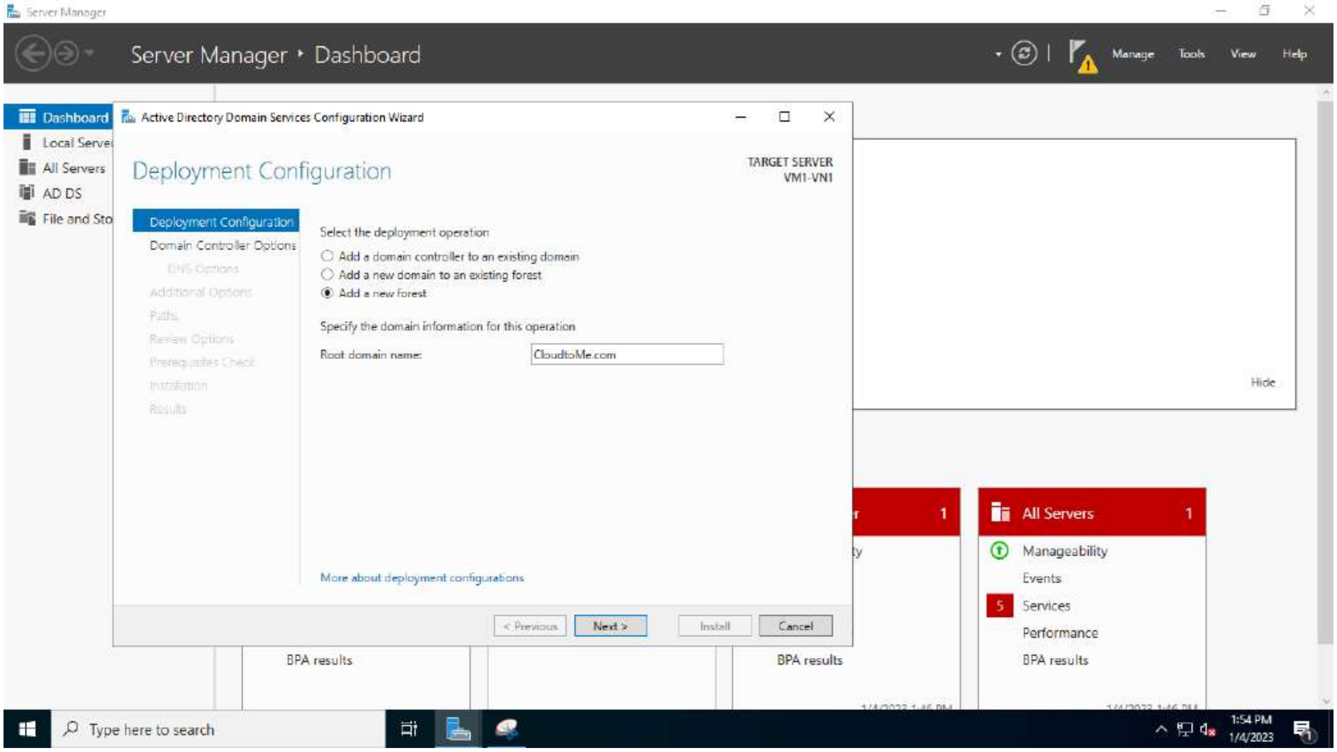
Post-deployment Configura...

Configuration required for Active Directory Domain Services at VM1-VN1

Promote this server to a domain controller

Task Details

Select Add to new Forest-> give our Domain name like "CloudtoMe.com"



Active Directory Domain Services Configuration Wizard

Deployment Configuration

TARGET SERVER
VM1-VN1

Select the deployment operation

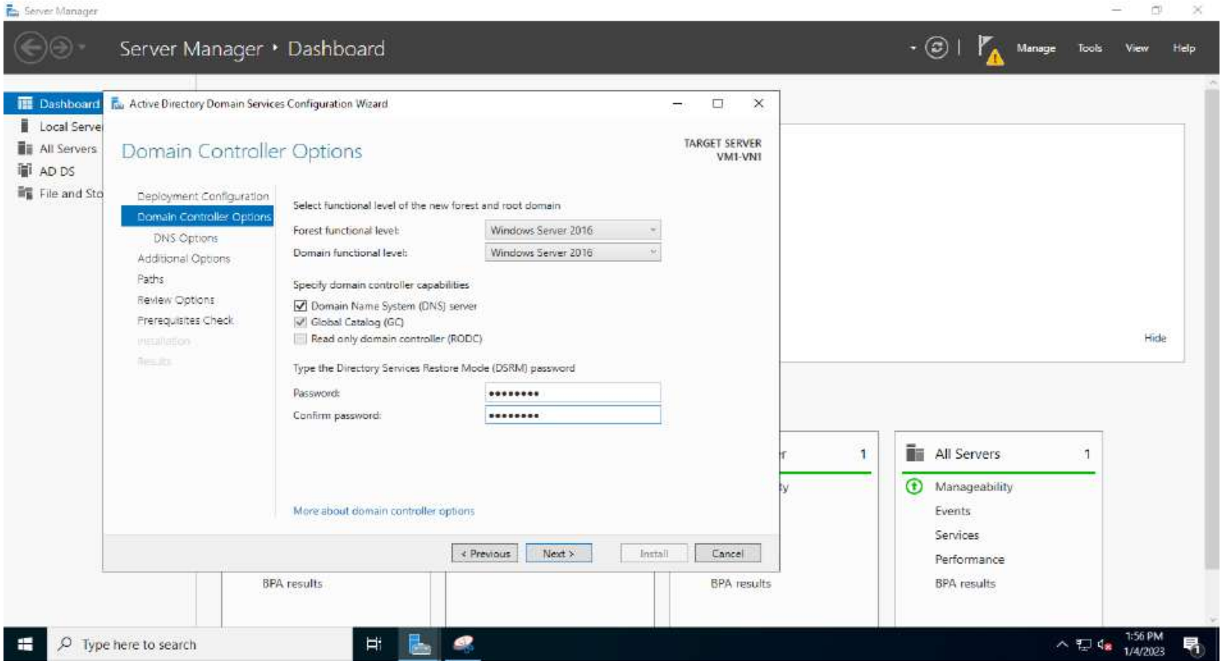
○ Add a domain controller to an existing domain
○ Add a new domain to an existing forest
● Add a new forest

Specify the domain information for this operation

Root domain name: CloudtoMe.com

More about deployment configurations

Give password in Next screen and continue clicking Next and Install



Active Directory Domain Services Configuration Wizard

Domain Controller Options

TARGET SERVER
VM1-VN1

Select functional level of the new forest and root domain

Forest functional level: Windows Server 2016
Domain functional level: Windows Server 2016

Specify domain controller capabilities

☑ Domain Name System (DNS) server
☑ Global Catalog (GC)
□ Read only domain controller (RODC)

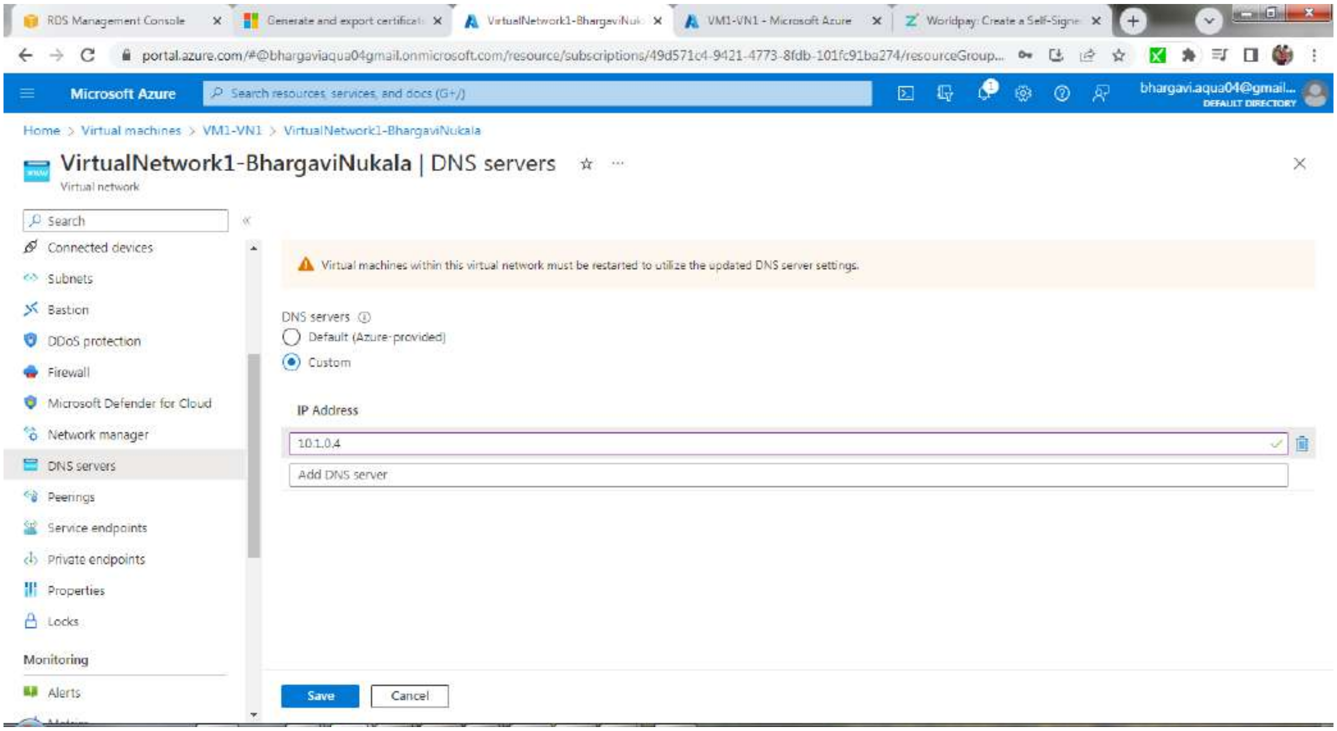
Type the Directory Services Restore Mode (DSRM) password

Password: ••••••••
Confirm password: ••••••••

More about domain controller options

Once this is configured, VM will Reboot.

Now, goto VirtualNetwork1->DNS servers, select Custom and give the Private IP address of VM1-VN1(DNS server)



RDS Management Console
Generate and export certificat
VirtualNetwork1-BhargaviNuk
VM1-VN1 - Microsoft Azure
Worldpay: Create a Self-Signe
portal.azure.com/#@bhargaviaqua04gmail.onmicrosoft.com/resource/subscriptions/49d571c4-9421-4773-8fdb-101fc91ba274/resourceGroup...
Microsoft Azure
Search resources, services, and docs (G+/)
bhargavi.aqua04@gmail...
DEFAULT DIRECTORY
Home > Virtual machines > VM1-VN1 > VirtualNetwork1-BhargaviNukala
Search
Connected devices
Subnets
Bastion
DDoS protection
Firewall
Microsoft Defender for Cloud
Network manager
DNS servers
Peerings
Service endpoints
Private endpoints
Properties
Locks
Monitoring
Alerts
Save
Cancel

VirtualNetwork1-BhargaviNukala | DNS servers

Virtual network

Virtual machines within this virtual network must be restarted to utilize the updated DNS server settings.

DNS servers

○ Default (Azure-provided)

● Custom

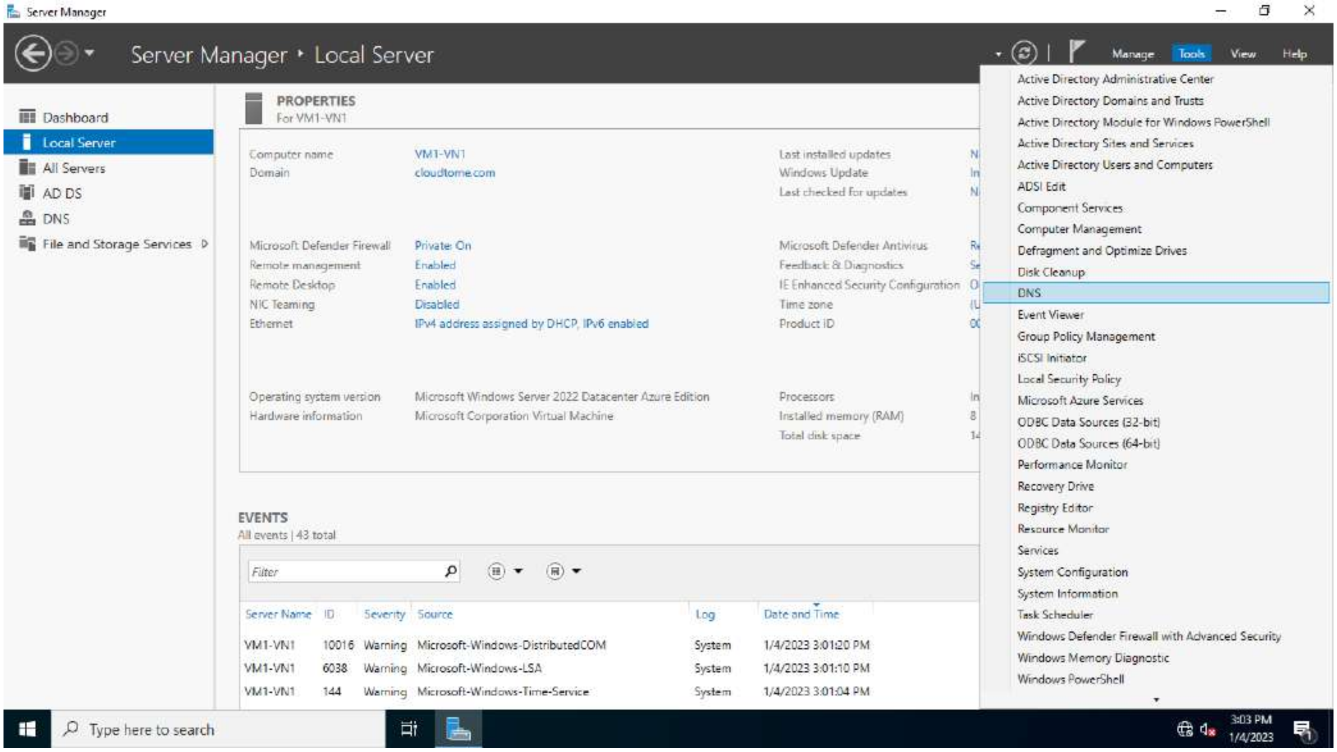
IP Address

10.1.0.4

Add DNS server

Restart both VMs

Now on DNS server, goto Server Manager->Tools->DNS



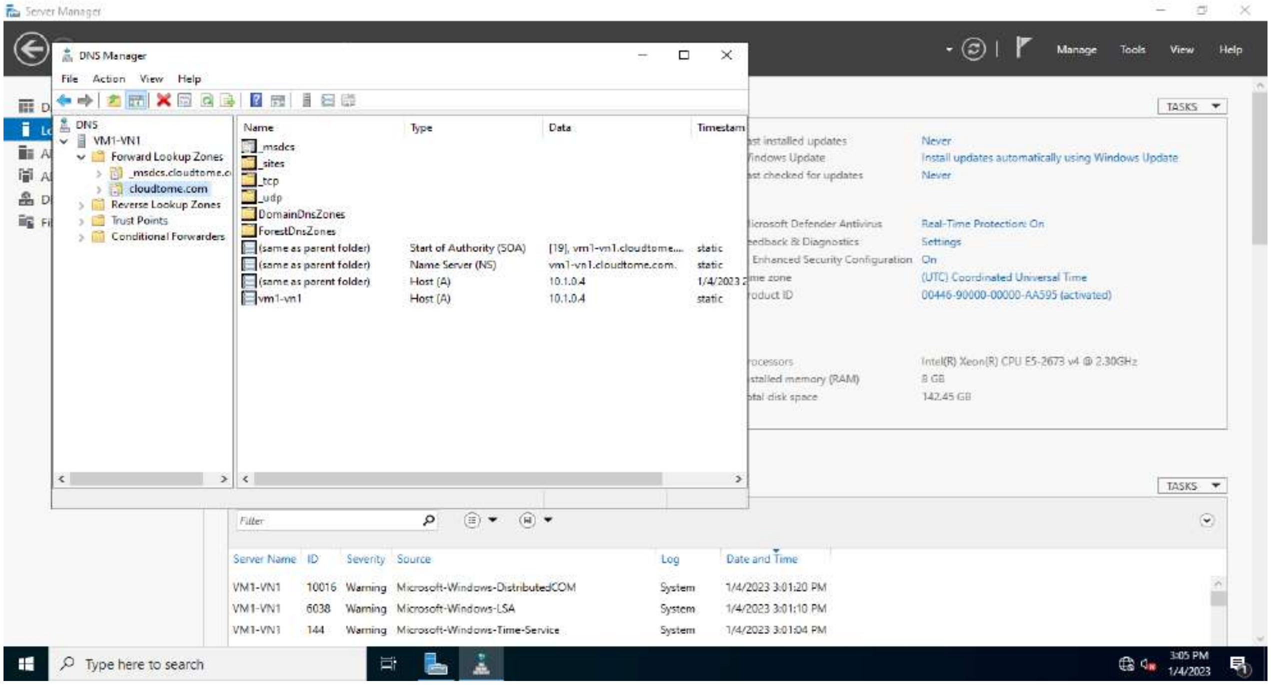
PROPERTIES
For VM1-VN1

Computer name	VM1-VN1	Last installed updates	
Domain	cloudtome.com	Windows Update	
		Last checked for updates	
Microsoft Defender Firewall	Private: On	Microsoft Defender Antivirus	
Remote management	Enabled	Feedback & Diagnostics	
Remote Desktop	Enabled	IE Enhanced Security Configuration	
NIC Teaming	Disabled	Time zone	
Ethernet	IPv4 address assigned by DHCP, IPv6 enabled	Product ID	
Operating system version	Microsoft Windows Server 2022 Datacenter Azure Edition	Processors	
Hardware information	Microsoft Corporation Virtual Machine	Installed memory (RAM)	
		Total disk space	

EVENTS
All events | 43 total

Server Name	ID	Severity	Source	Log	Date and Time
VM1-VN1	10016	Warning	Microsoft-Windows-DistributedCOM	System	1/4/2023 3:01:20 PM
VM1-VN1	6038	Warning	Microsoft-Windows-LSA	System	1/4/2023 3:01:10 PM
VM1-VN1	144	Warning	Microsoft-Windows-Time-Service	System	1/4/2023 3:01:04 PM

Goto VM1-VN1->Forward Lookup Zones->cloudtome.com



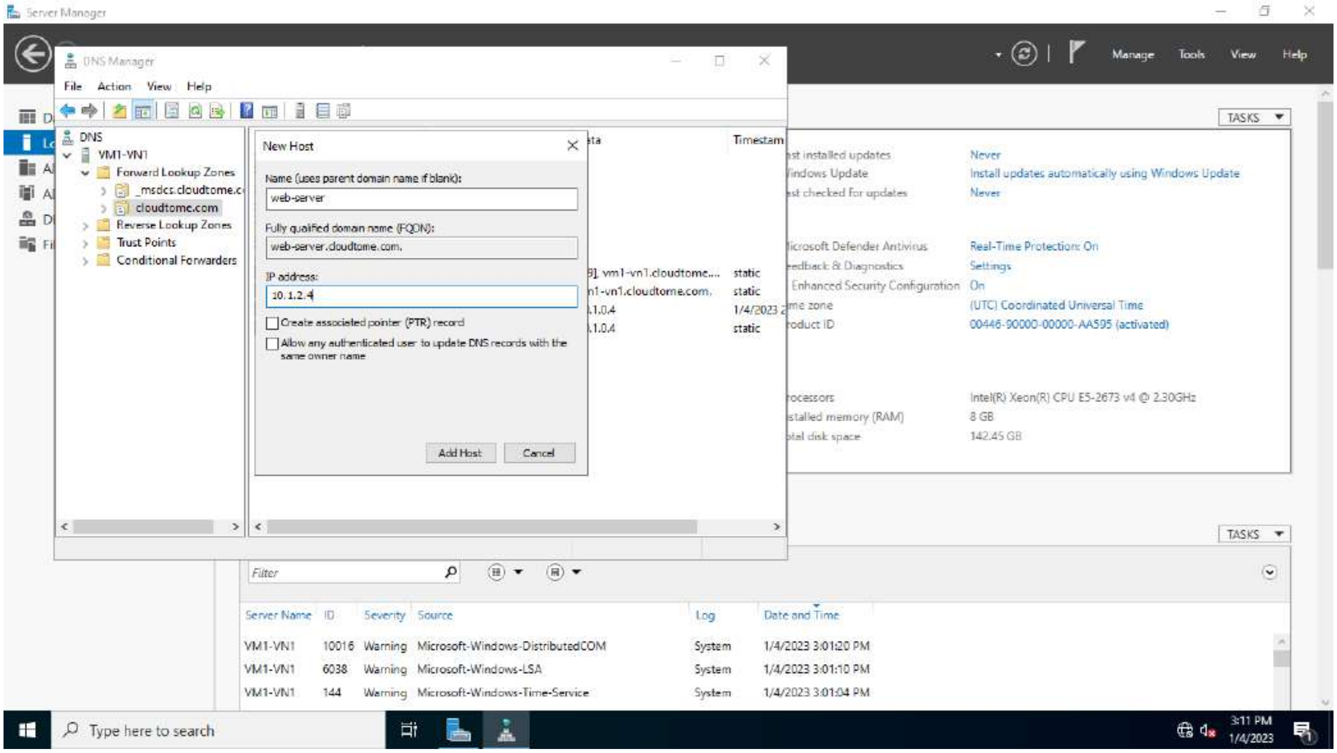
Name	Type	Data	Timestam
_msdcs			
_sites			
_tcp			
_udp			
DomainDnsZones			
ForestDnsZones			
(same as parent folder)	Start of Authority (SOA)	[19], vm1-vn1.cloudtome....	static
(same as parent folder)	Name Server (NS)	vm1-vn1.cloudtome.com.	static
(same as parent folder)	Host (A)	10.1.0.4	1/4/2023
vm1-vn1	Host (A)	10.1.0.4	static

ast installed updates	Never
Vindows Update	Install updates automatically using Windows Update
ast checked for updates	Never
licrosoft Defender Antivirus	Real-Time Protection: On
eedback & Diagnostics	Settings
Enhanced Security Configuration	On
me zone	(UTC) Coordinated Universal Time
oduct ID	00445-90000-00000-AA595 (activated)
rocessors	Intel(R) Xeon(R) CPU E5-2673 v4 @ 2.30GHz
stalled memory (RAM)	8 GB
otal disk space	142.45 GB

Server Name	ID	Severity	Source	Log	Date and Time
VM1-VN1	10016	Warning	Microsoft-Windows-DistributedCOM	System	1/4/2023 3:01:20 PM
VM1-VN1	6038	Warning	Microsoft-Windows-LSA	System	1/4/2023 3:01:10 PM
VM1-VN1	144	Warning	Microsoft-Windows-Time-Service	System	1/4/2023 3:01:04 PM

Right click and Add a new host entry. Give the **Private** IP address of VM-Webserver

This means we are configuring the Webserver IP on DNS server.



New Host

Name (uses parent domain name if blank):
web-server

Fully qualified domain name (FQDN):
web-server.cloudtome.com.

IP address:
10.1.2.4

☐ Create associated pointer (PTR) record

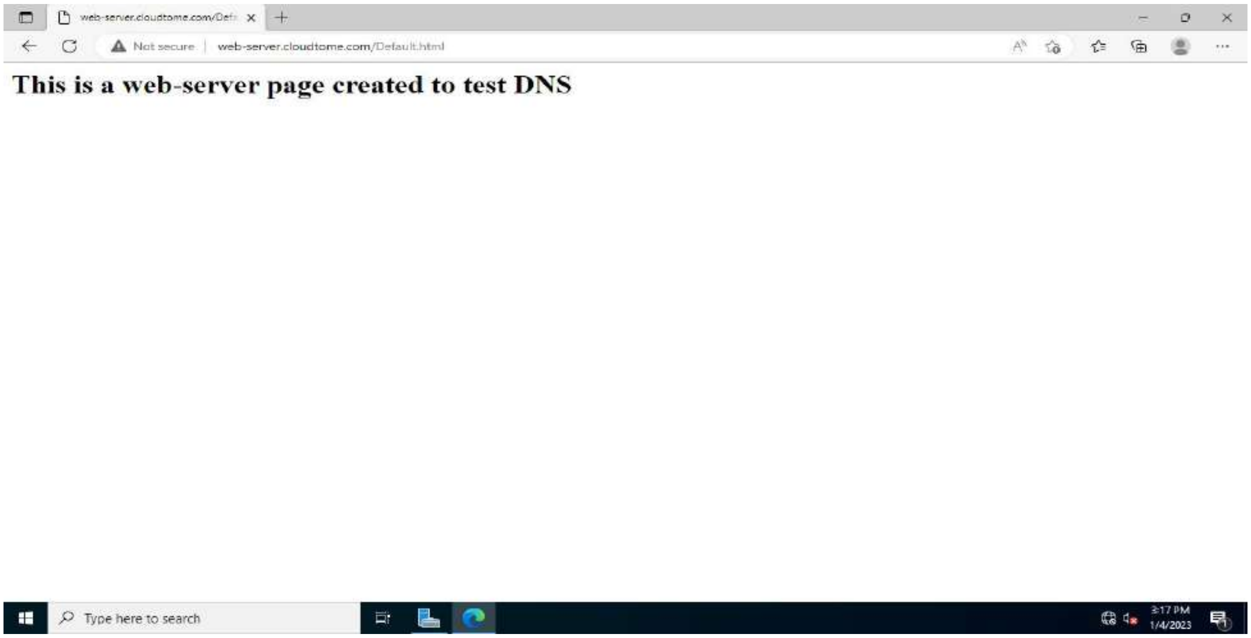
☐ Allow any authenticated user to update DNS records with the same owner name

Add Host | Cancel

```
Server Name  ID     Severity  Source                             Log     Date and Time
VM1-VN1      10016  Warning   Microsoft-Windows-DistributedCOM   System  1/4/2023 3:01:20 PM
VM1-VN1      6038   Warning   Microsoft-Windows-LSA              System  1/4/2023 3:01:10 PM
VM1-VN1      144    Warning   Microsoft-Windows-Time-Service     System  1/4/2023 3:01:04 PM
```

Now take the fully qualified name from this Host entry like

web-server.cloudtome.com/Default.html and access it from browser of DNS server.



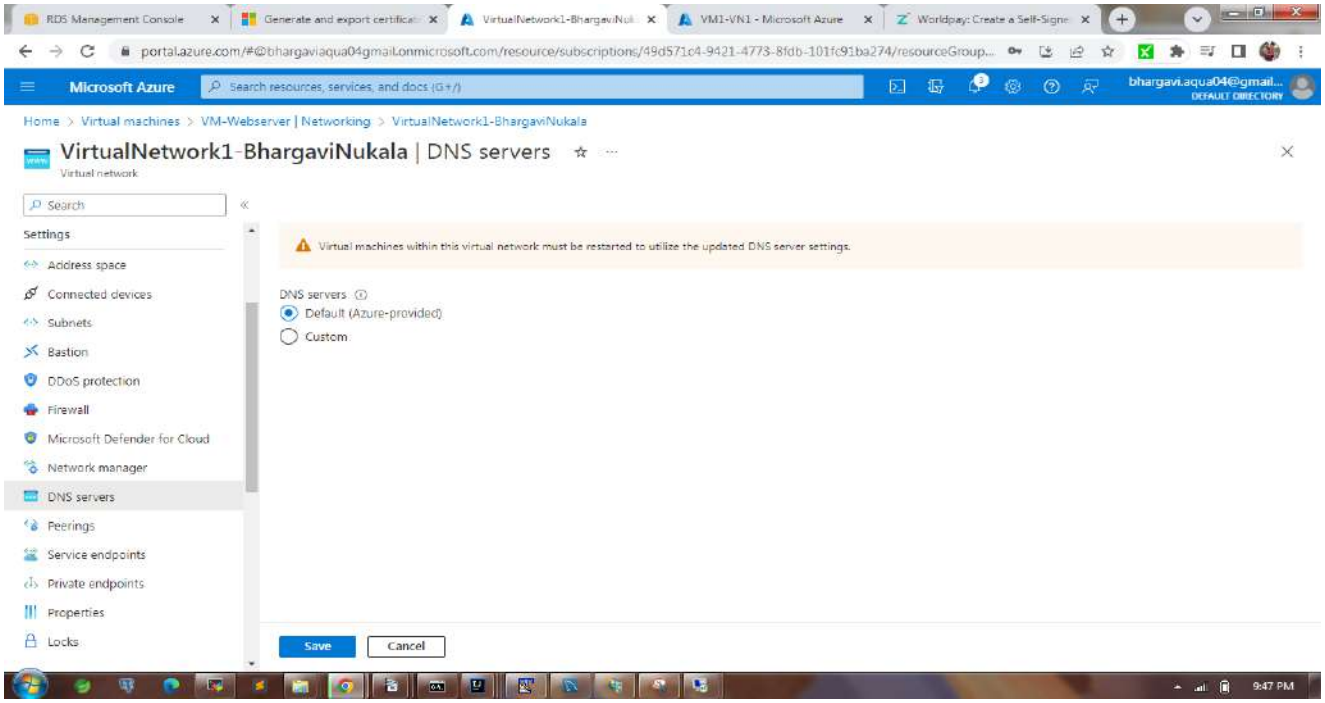
web-server.cloudtome.com/Def
Not secure
web-server.cloudtome.com/Default.html
Type here to search
3:17 PM
1/4/2023

This is a web-server page created to test DNS

This shows that internal DNS server is configured to access Webserver page within the same virtual network.

Private DNS Zones:

Change the configuration of VirtualNetwork1->DNS servers to Default



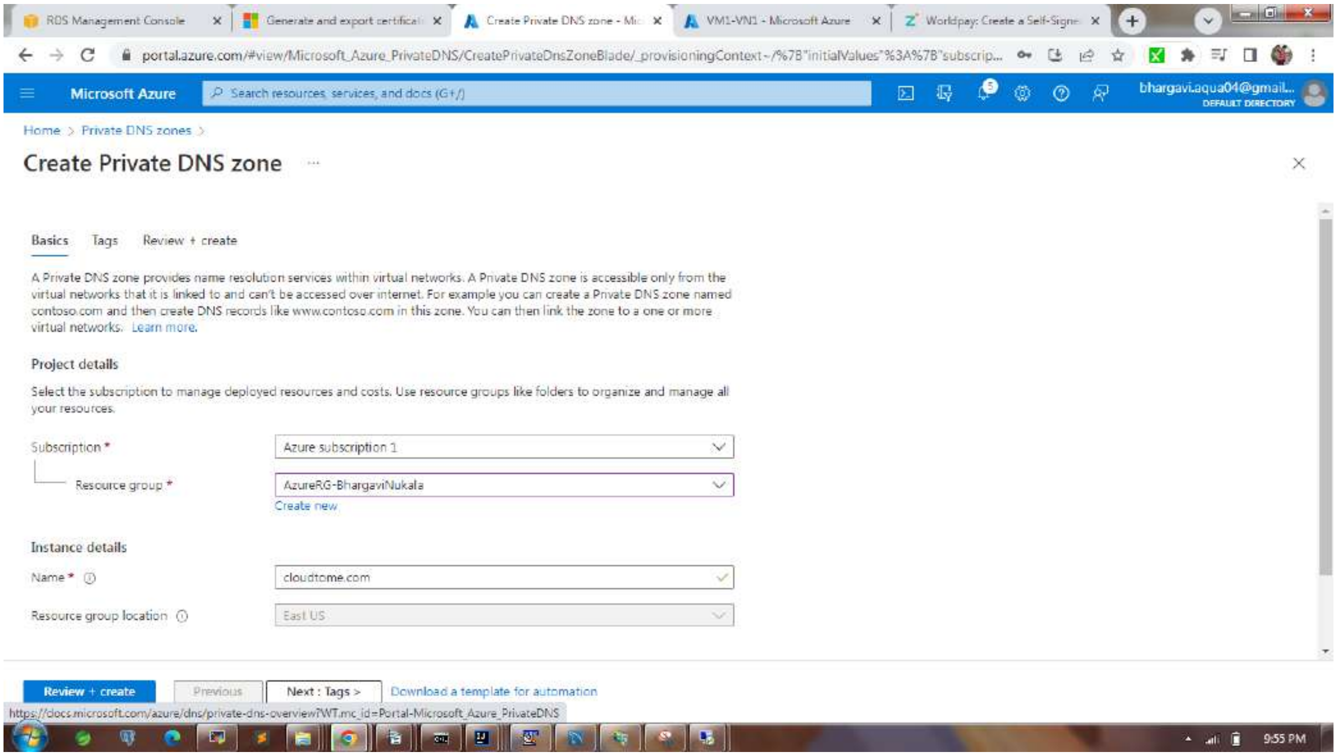
RDS Management Console
Generate and export certificat
VirtualNetwork1-BhargaviNuk
VM1-VN1 - Microsoft Azure
Worldpay: Create a Self-Signe
portal.azure.com/#@bhargaviaqua04gmail.onmicrosoft.com/resource/subscriptions/49d571c4-9421-4773-8fdb-101fc91ba274/resourceGroup...
Microsoft Azure
Search resources, services, and docs (G+/)
bhargavi.aqua04@gmail...
DEFAULT DIRECTORY
Home > Virtual machines > VM-Webserver | Networking > VirtualNetwork1-BhargaviNukala
VirtualNetwork1-BhargaviNukala | DNS servers
Virtual network
Search
Settings
Address space
Connected devices
Subnets
Bastion
DDoS protection
Firewall
Microsoft Defender for Cloud
Network manager
DNS servers
Peerings
Service endpoints
Private endpoints
Properties
Locks
Save
Cancel
9:47 PM

Virtual machines within this virtual network must be restarted to utilize the updated DNS server settings.

DNS servers
● Default (Azure-provided)
○ Custom

Reboot both VMs.

Goto Private DNS Zones->Create->Name:cloudtome.com



Create Private DNS zone

A Private DNS zone provides name resolution services within virtual networks. A Private DNS zone is accessible only from the virtual networks that it is linked to and can't be accessed over internet. For example you can create a Private DNS zone named contoso.com and then create DNS records like www.contoso.com in this zone. You can then link the zone to a one or more virtual networks. Learn more.

Project details

Select the subscription to manage deployed resources and costs. Use resource groups like folders to organize and manage all your resources.

Subscription * : Azure subscription 1

Resource group * : AzureRG-BhargaviNukala

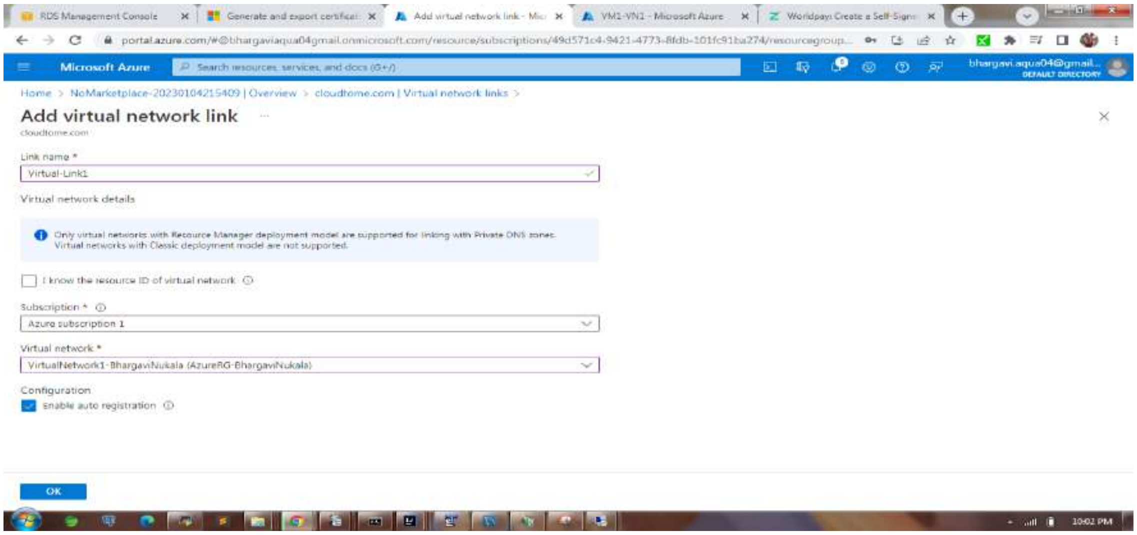
Create new

Instance details

Name * : cloudtome.com

Resource group location : East US

In Private DNS Zone->Virtual network links->Add



Microsoft Azure
Home > NoMarketplace-20230104215409 | Overview > cloudtome.com | Virtual network links >

Add virtual network link

cloudtome.com

Link name * : Virtual-Link1

Virtual network details

Only virtual networks with Resource Manager deployment model are supported for linking with Private DNS zones. Virtual networks with Classic deployment model are not supported.

□ I know the resource ID of virtual network

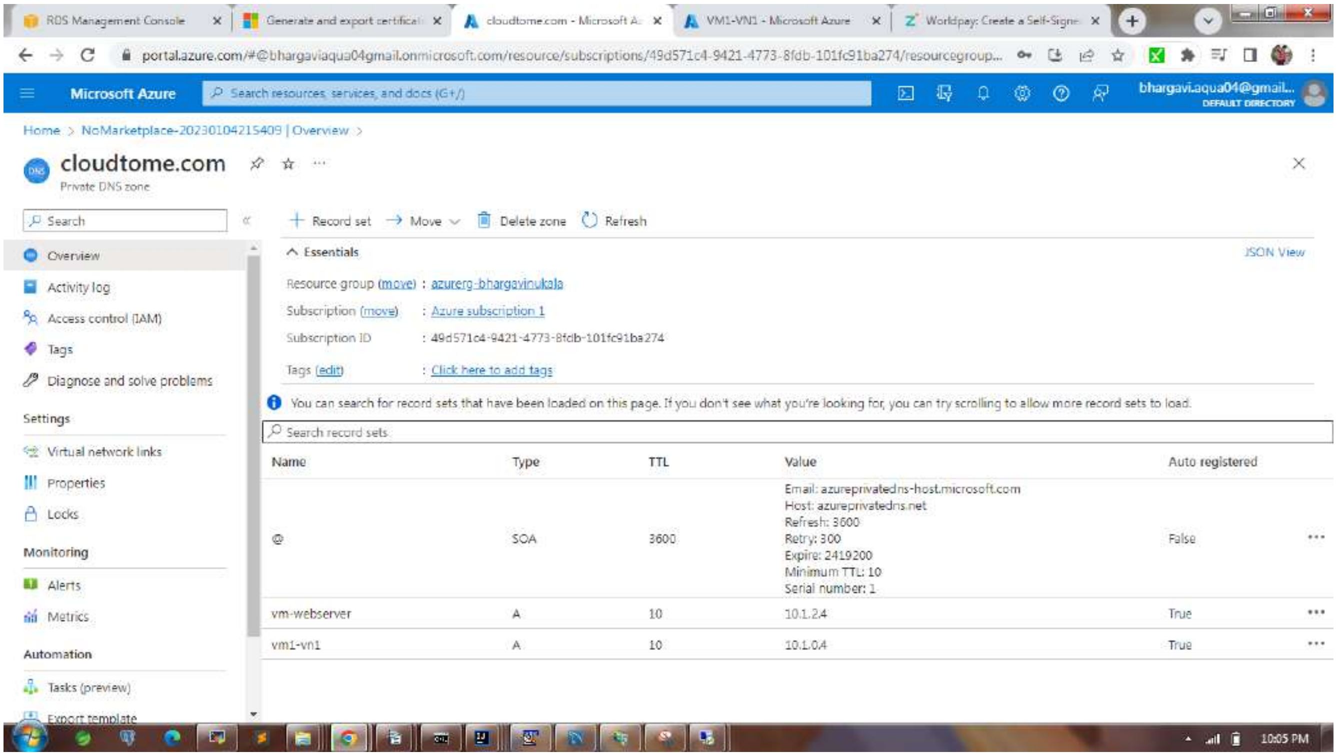
Subscription * : Azure subscription 1

Virtual network * : VirtualNetwork1-BhargaviNukala (AzureRG-BhargaviNukala)

Configuration

☑ Enable auto registration

After creating a virtual network link, click on Overview and we can see 2 entries with vm1-vn1 and vm-webserver created. This shows that websever is linked to our private DNS Zone and Azure acts as a DNS server here.


RDS Management Console
Generate and export certificat
cloudtome.com - Microsoft A
VM1-VN1 - Microsoft Azure
Worldpay: Create a Self-Signe
portal.azure.com/#@bhargaviaqua04gmail.onmicrosoft.com/resource/subscriptions/49d571c4-9421-4773-8fdb-101fc91ba274/resourcegroup...
Microsoft Azure
Search resources, services, and docs (G+/)
bhargavi.aqua04@gmail...
DEFAULT DIRECTORY
Home > NoMarketplace-20230104215409 | Overview >
Search
Overview
Activity log
Access control (IAM)
Tags
Diagnose and solve problems
Settings
Virtual network links
Properties
Locks
Monitoring
Alerts
Metrics
Automation
Tasks (preview)
Export template
Record set
Move
Delete zone
Refresh
JSON View
Search record sets
10:05 PM

cloudtome.com

Private DNS zone

Essentials

Resource group (move) : azurerg-bhargavinukala

Subscription (move) : Azure subscription 1

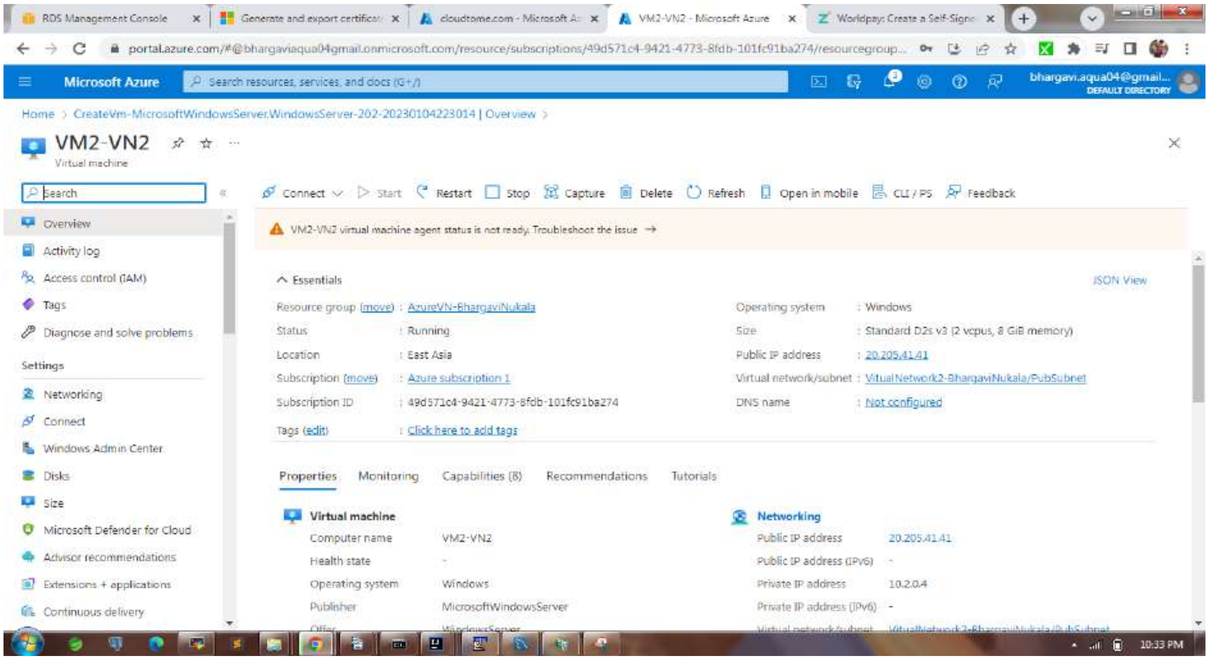
Subscription ID : 49d571c4-9421-4773-8fdb-101fc91ba274

Tags (edit) : Click here to add tags

You can search for record sets that have been loaded on this page. If you don't see what you're looking for, you can try scrolling to allow more record sets to load.

Name	Type	TTL	Value	Auto registered
@	SOA	3600	Email: azureprivatedns-host.microsoft.com Host: azureprivatedns.net Refresh: 3600 Retry: 300 Expire: 2419200 Minimum TTL: 10 Serial number: 1	False
vm-webserver	A	10	10.1.2.4	True
vm1-vn1	A	10	10.1.0.4	True

Create another VirtualNetwork2 and create a VM in that Vnet



Home > CreateVm-MicrosoftWindowsServer.WindowsServer-202-20230104223014 | Overview >

VM2-VN2
Virtual machine

VM2-VN2 virtual machine agent status is not ready. Troubleshoot the issue →

Essentials

Resource group (move)	: AzureVN-BhargaviNukala
Status	: Running
Location	: East Asia
Subscription (move)	: Azure subscription 1
Subscription ID	: 49d571c4-9421-4773-8fdb-101fc91ba274
Tags (edit)	: Click here to add tags
Operating system	: Windows
Size	: Standard D2s v3 (2 vcpus, 8 GiB memory)
Public IP address	: 20.205.41.41
Virtual network/subnet	: VitualNetwork2-BhargaviNukala/PubSubnet
DNS name	: Not configured

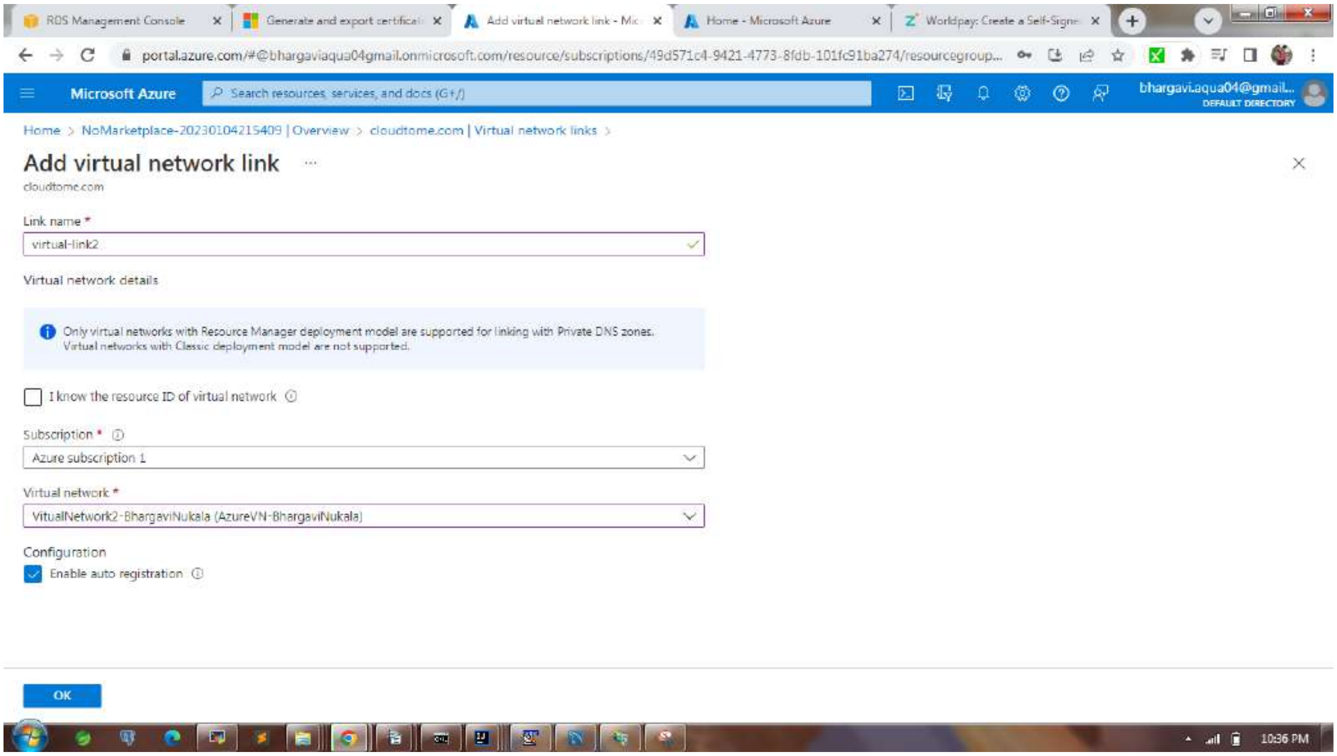
Virtual machine

Computer name	VM2-VN2
Health state	-
Operating system	Windows
Publisher	MicrosoftWindowsServer

Networking

Public IP address	20.205.41.41
Public IP address (IPv6)	-
Private IP address	10.2.0.4
Private IP address (IPv6)	-

Goto Private DNS Zone cloudtome.com->add another virtual network link for this VirtualNetwork2



Home > NoMarketplace-20230104215409 | Overview > cloudtome.com | Virtual network links >

Add virtual network link
cloudtome.com

Link name *
virtual-link2

Virtual network details

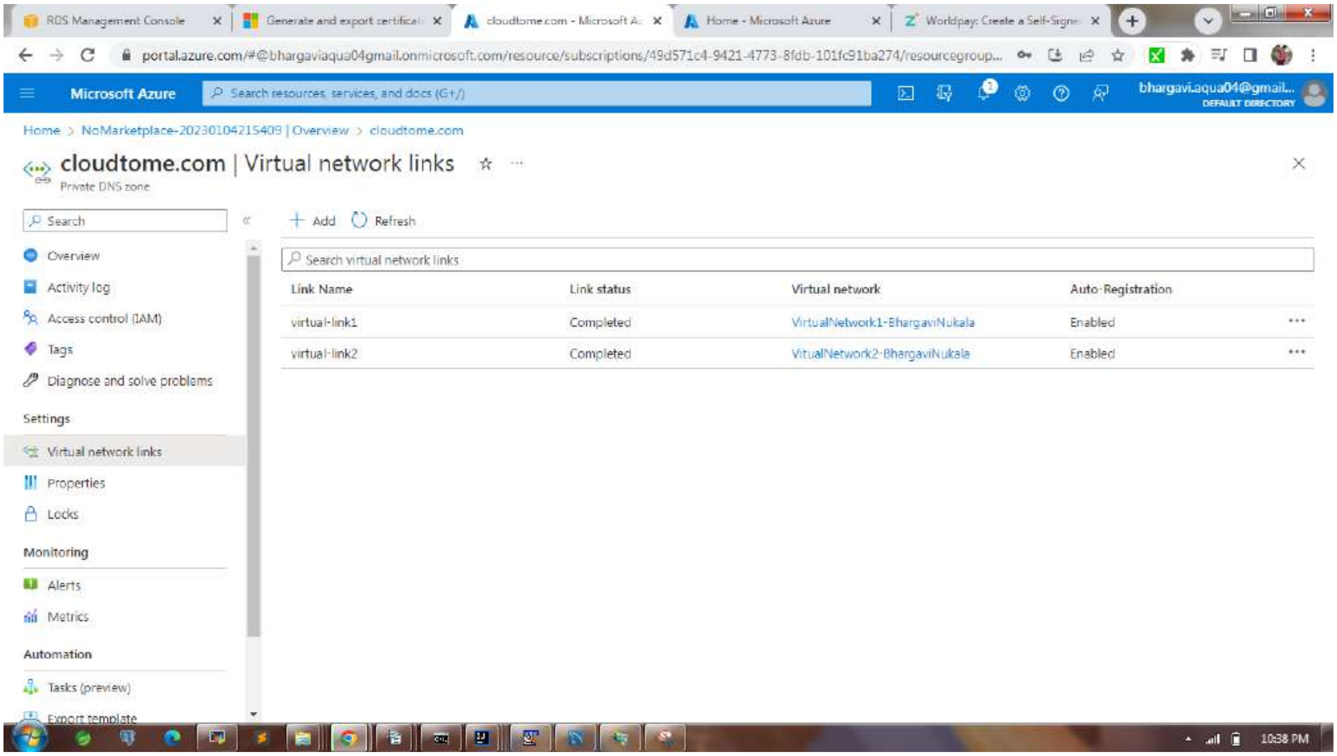
Only virtual networks with Resource Manager deployment model are supported for linking with Private DNS zones. Virtual networks with Classic deployment model are not supported.

□ I know the resource ID of virtual network

Subscription *
Azure subscription 1

Virtual network *
VitualNetwork2-BhargaviNukala (AzureVN-BhargaviNukala)

Configuration
☑ Enable auto registration



portal.azure.com/#@bhargaviaqua04gmail.onmicrosoft.com/resource/subscriptions/49d571c4-9421-4773-8fdb-101fc91ba274/resourcegroup...

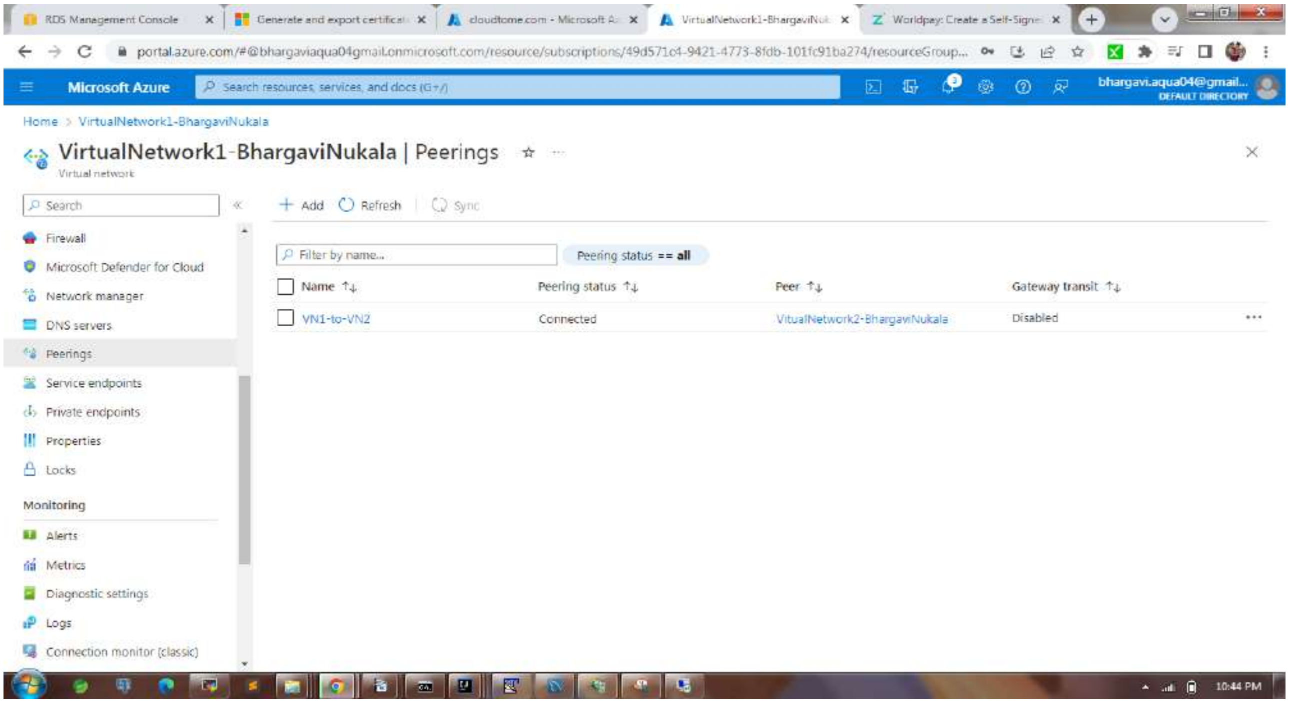
Home > NoMarketplace-20230104215409 | Overview > cloudtome.com

cloudtome.com | Virtual network links

Private DNS zone

Link Name	Link status	Virtual network	Auto-Registration
virtual-link1	Completed	VirtualNetwork1-BhargaviNukala	Enabled
virtual-link2	Completed	VitualNetwork2-BhargaviNukala	Enabled

Create a Vnet Peering between VirtualNetwork1 and VirtualNetwork2



portal.azure.com/#@bhargaviaqua04gmail.onmicrosoft.com/resource/subscriptions/49d571c4-9421-4773-8fdb-101fc91ba274/resourceGroup...

Home > VirtualNetwork1-BhargaviNukala

VirtualNetwork1-BhargaviNukala | Peerings

Virtual network

Name	Peering status	Peer	Gateway transit
VN1-to-VN2	Connected	VitualNetwork2-BhargaviNukala	Disabled

Now logon to VM2-VN2 machine and try to access web-server.cloudtome.com/Default.html