

# 1. Secured static website using Azure VM

## Step 1 : Created a vm

VM Overview Activity log Access control (IAM) Tags Diagnose and solve problems Settings Networking Connect Disks Size Microsoft Defender for Cloud Advisor recommendations Extensions + applications Availability + scaling Configuration Identity Properties

**Essentials**

Resource group ( <a href="#">move</a> ) : hub	Operating system : Linux (ubuntu 20.04)
Status : Running	Size : Standard D2s v3 (2 vcpus, 8 GiB memory)
Location : West US 3 (Zone 1)	Public IP address : 20.163.28.117
Subscription ( <a href="#">move</a> ) : Azure for Students	Virtual network/subnet : vnet1/subnet1
Subscription ID : b7ea7452-37fc-4ab2-bc47-5b68df9abedc	DNS name : Not configured
Availability zone : 1	Health state : -
Tags ( <a href="#">edit</a> ) : Add tags	

**Properties** Monitoring Capabilities (7) Recommendations Tutorials

**Virtual machine**

Computer name	vm
Operating system	Linux (ubuntu 20.04)
Image publisher	canonical
Image offer	0001-com-ubuntu-server-focal
Image plan	20_04-lts-gen2
VM generation	V2
VM architecture	x64
Agent status	Ready

**Networking**

Public IP address	20.163.28.117 ( Network interface vm454_z1 )
Private IP address (IPv6)	-
Private IP address (IPv4)	10.0.0.4
Virtual network/subnet	vnet1/subnet1
DNS name	Configure

**Size**

## Step 2 : Connected to the vm using public ip

```
Bash Requesting a Cloud Shell.Succeeded. Connecting terminal... Welcome to Azure Cloud Shell Type "az" to use Azure CLI Type "help" to learn about Cloud Shell Storage fileshare subscription b7ea7452-37fc-4ab2-bc47-5b68df9abedc is not registered to Microsoft.CloudShell Namespace. Please follow these instructions "https://aka.ms/RegisterCloudShell" to register. In future, unregistered subscriptions will have restricted access to CloudShell service. azureuser [ ~ ]$ ssh vm@20.163.28.117 vm@20.163.28.117's password: Welcome to Ubuntu 20.04.6 LTS (GNU/Linux 5.15.0-1045-azure x86_64) * Documentation: https://help.ubuntu.com * Management: https://landscape.canonical.com * Support: https://ubuntu.com/advantage System information as of Sat Sep 9 15:26:31 UTC 2023 System load: 0.0 Processes: 125 Usage of /: 5.9% of 28.89GB Users logged in: 0 Memory usage: 4% IPv4 address for eth0: 10.0.0.4 Swap usage: 0% * Strictly confined Kubernetes makes edge and IoT secure. Learn how MicroK8s just raised the bar for easy, resilient and secure K8s cluster deployment. https://ubuntu.com/engage/secure-kubernetes-at-the-edge Expanded Security Maintenance for Applications is not enabled. 4 updates can be applied immediately.
```

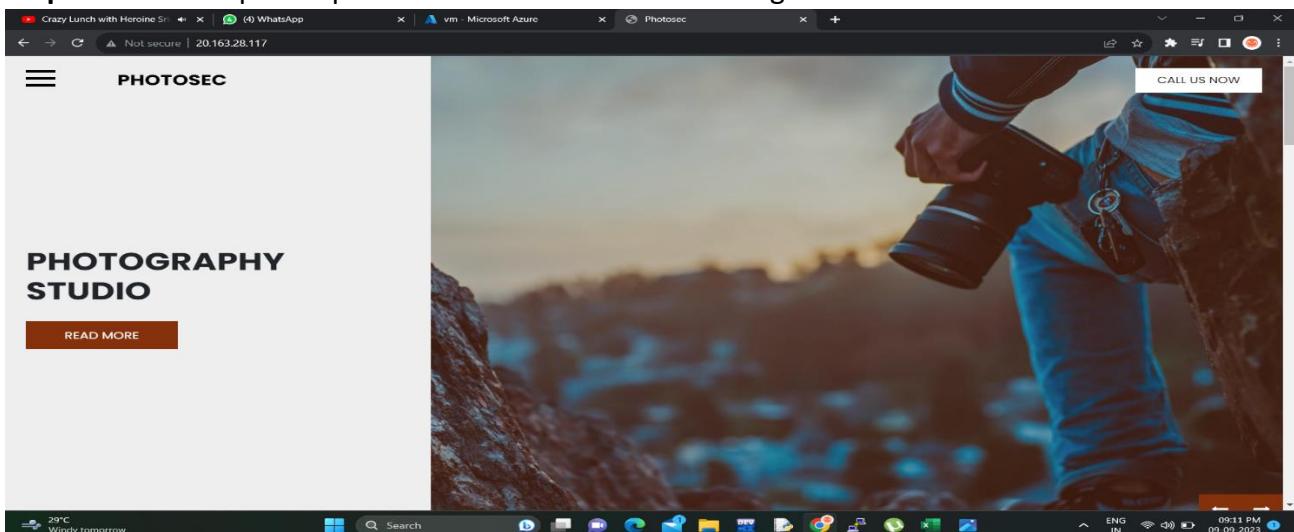
### Step 3 : Update and install apache2 and git

```
Last login: Sat Sep  9 15:13:11 2023 from 20.235.64.180
vm@vm:~$ sudo su
root@vm:/home/vm# cd /
root@vm:# apt update
Hit:1 http://azure.archive.ubuntu.com/ubuntu focal InRelease
Hit:2 http://azure.archive.ubuntu.com/ubuntu focal-updates InRelease
Hit:3 http://azure.archive.ubuntu.com/ubuntu focal-backports InRelease
Hit:4 http://azure.archive.ubuntu.com/ubuntu focal-security InRelease
Hit:5 https://packages.microsoft.com/repos/microsoft-ubuntu-focal-prod focal InRelease
Reading package lists... Done
Building dependency tree
Reading state information... Done
4 packages can be upgraded. Run 'apt list --upgradable' to see them.
root@vm:# apt install apache2
Reading package lists... Done
Building dependency tree
Reading state information... Done
The following additional packages will be installed:
  apache2-bin apache2-data apache2-utils libapr1 libaprutil1 libaprutil1-dbd-sqlite3 libaprutil1-ldap libjansson4 liblua5.2-0 ssl-cert
Suggested packages:
  apache2-doc apache2-suexec-pristine | apache2-suexec-custom www-browser openssl-blacklist
The following NEW packages will be installed:
  apache2 apache2-bin apache2-data apache2-utils libapr1 libaprutil1 libaprutil1-dbd-sqlite3 libaprutil1-ldap libjansson4 liblua5.2-0 ssl-cert
0 upgraded, 11 newly installed, 0 to remove and 4 not upgraded.
Need to get 104 kB/1867 kB of archives.
After this operation, 8098 kB of additional disk space will be used.
Do you want to continue? [Y/n] y
Get:1 http://azure.archive.ubuntu.com/ubuntu focal-updates/main amd64 libaprutil1 amd64 1.6.1-4ubuntu2.2 [85.1 kB]
Get:2 http://azure.archive.ubuntu.com/ubuntu focal-updates/main amd64 libaprutil1-dbd-sqlite3 amd64 1.6.1-4ubuntu2.2 [10.5 kB]
Get:3 http://azure.archive.ubuntu.com/ubuntu focal-updates/main amd64 libaprutil1-ldap amd64 1.6.1-4ubuntu2.2 [8752 B]
```

### Step 4 : Paste the github link of the static website code

```
root@vm:/# apt install git
Reading package lists... Done
Building dependency tree
Reading state information... Done
git is already the newest version (1:2.25.1-1ubuntu3.11).
0 upgraded, 0 newly installed, 0 to remove and 4 not upgraded.
root@vm:/# cd var
root@vm:/var# ls
backups cache crash lib local lock log mail opt run snap spool tmp www
root@vm:/var# cd www
root@vm:/var/www# ls
html
root@vm:/var/www# rm -r html
root@vm:/var/www# ls
root@vm:/var/www# git clone https://github.com/subhash366/html1.git
Cloning into 'html1'...
remote: Enumerating objects: 35, done.
remote: Counting objects: 100% (35/35), done.
remote: Compressing objects: 100% (35/35), done.
remote: Total 35 (delta 3), reused 0 (delta 0), pack-reused 0
Unpacking objects: 100% (35/35), 1.08 MiB | 4.66 MiB/s, done.
root@vm:/var/www# ls
html1
root@vm:/var/www# mv html1 html
root@vm:/var/www# ls
html
```

### Step 5 : Paste the public ip of vm in browser ...then we can get the website



## 2. Build multiple Vnet connection in different 3 regions and connect each vm with another vm

### Step 1 : Build 3 Vnets From 3 different regions

Home > vnet1 | Overview >

vnet1 Virtual network

Search Overview Activity log Access control (IAM) Tags Diagnose and solve problems Settings

Move Delete Refresh Give feedback

Essentials

Resource group ( <a href="#">move</a> ) :	hub	Address space :	10.0.0.0/23
Location ( <a href="#">move</a> ) :	West US	DNS servers :	Azure provided DNS service
Subscription ( <a href="#">move</a> ) :	Azure for Students	Flow timeout :	<a href="#">Configure</a>
Subscription ID :	b7ea7452-37fc-4ab2-bc47-5b68df9abedc	BGP community string :	<a href="#">Configure</a>
		Virtual network ID :	d4f361c8-f1a5-4cc8-96ba-240cbe86ab1f

Home > vnet2 | Overview >

vnet2 Virtual network

Search Overview Activity log Access control (IAM) Tags Diagnose and solve problems Settings

Move Delete Refresh Give feedback

Essentials

Resource group ( <a href="#">move</a> ) :	hub	Address space :	100.0.0.0/23
Location ( <a href="#">move</a> ) :	Japan West	DNS servers :	Azure provided DNS service
Subscription ( <a href="#">move</a> ) :	Azure for Students	Flow timeout :	<a href="#">Configure</a>
Subscription ID :	b7ea7452-37fc-4ab2-bc47-5b68df9abedc	BGP community string :	<a href="#">Configure</a>
		Virtual network ID :	b0620327-06a6-4133-b94b-fe4de5b3bcbe

Home >

vnet3 Virtual network

Search Overview Activity log Access control (IAM) Tags Diagnose and solve problems Settings

Address space

Move Delete Refresh Give feedback

Essentials

Resource group ( <a href="#">move</a> ) :	hub	Address space :	20.0.0.0/23
Location ( <a href="#">move</a> ) :	Central India	DNS servers :	Azure provided DNS service
Subscription ( <a href="#">move</a> ) :	Azure for Students	Flow timeout :	<a href="#">Configure</a>
Subscription ID :	b7ea7452-37fc-4ab2-bc47-5b68df9abedc	BGP community string :	<a href="#">Configure</a>
		Virtual network ID :	b3b9e664-58f5-40d4-820e-91901d4f9eba

Tags ([edit](#)) : Add tags

## Step 2 : 3 vms each in each vnet

Home > CreateVm-canonical.0001-com-ubuntu-server-focal-2-20230911164658 | Overview >

**Essentials**

Resource group ( <a href="#">move</a> )	: hub	Operating system	: Linux (ubuntu 20.04)
Status	: Running	Size	: Standard D2s v3 (2 vcpus, 8 GiB memory)
Location	: West US	Public IP address	: 13.64.49.225
Subscription ( <a href="#">move</a> )	: Azure for Students	Virtual network/subnet	: vnet1/subv1
Subscription ID	: b7ea7452-37fc-4ab2-bc47-5b68df9abedc	DNS name	: Not configured
		Health state	: -

**Properties**    [Monitoring](#)    [Capabilities \(7\)](#)    [Recommendations](#)    [Tutorials](#)

**Virtual machine**

Computer name	vm1	Networking	Public IP address	13.64.49.225 ( Network interface <a href="#">vm1117</a> )
Operating system	Linux (ubuntu 20.04)	Public IP address (IPv6)	-	
Image publisher	canonical	Private IP address	10.0.0.4	
Image offer	0001-com-ubuntu-server-focal	Private IP address (IPv6)	-	
Image plan	20_04-lts-gen2	Virtual network/subnet	vnet1/subv1	
VM generation	V2	DNS name	<a href="#">Configure</a>	
VM architecture	x64			
Agent status	Ready	<a href="#">Size</a>		

Home > CreateVm-canonical.0001-com-ubuntu-server-focal-2-20230911164921 | Overview >

**Essentials**

Resource group ( <a href="#">move</a> )	: hub	Operating system	: Linux (ubuntu 20.04)
Status	: Running	Size	: Standard D2s v3 (2 vcpus, 8 GiB memory)
Location	: Japan West	Public IP address	: 40.74.69.215
Subscription ( <a href="#">move</a> )	: Azure for Students	Virtual network/subnet	: vnet2/subv2
Subscription ID	: b7ea7452-37fc-4ab2-bc47-5b68df9abedc	DNS name	: Not configured
		Health state	: -

**Properties**    [Monitoring](#)    [Capabilities \(7\)](#)    [Recommendations](#)    [Tutorials](#)

**Virtual machine**

Computer name	vm2	Networking	Public IP address	40.74.69.215 ( Network interface <a href="#">vm2672</a> )
Operating system	Linux (ubuntu 20.04)	Public IP address (IPv6)	-	
Image publisher	canonical	Private IP address	100.0.0.4	
Image offer	0001-com-ubuntu-server-focal	Private IP address (IPv6)	-	
Image plan	20_04-lts-gen2	Virtual network/subnet	vnet2/subv2	
VM generation	V2	DNS name	<a href="#">Configure</a>	
VM architecture	x64			
Agent status	Ready	<a href="#">Size</a>		

Home > CreateVm-canonical.0001-com-ubuntu-server-focal-2-20230911180144 | Overview >

**Essentials**

Resource group ( <a href="#">move</a> )	: hub	Operating system	: Linux (ubuntu 20.04)
Status	: Running	Size	: Standard D2s v3 (2 vcpus, 8 GiB memory)
Location	: Central India (Zone 1)	Public IP address	: 98.70.0.53
Subscription ( <a href="#">move</a> )	: Azure for Students	Virtual network/subnet	: vnet3/subv3
Subscription ID	: b7ea7452-37fc-4ab2-bc47-5b68df9abedc	DNS name	: Not configured
Availability zone	: 1	Health state	: -

**Properties**    [Monitoring](#)    [Capabilities \(7\)](#)    [Recommendations](#)    [Tutorials](#)

**Virtual machine**

Computer name	vm3	Networking	Public IP address	98.70.0.53 ( Network interface <a href="#">vm3805_z1</a> )
Operating system	Linux (ubuntu 20.04)	Public IP address (IPv6)	-	
Image publisher	canonical	Private IP address	20.0.0.4	
Image offer	0001-com-ubuntu-server-focal	Private IP address (IPv6)	-	
Image plan	20_04-lts-gen2	Virtual network/subnet	vnet3/subv3	
VM generation	V2	DNS name	<a href="#">Configure</a>	
VM architecture	x64			
Agent status	Ready	<a href="#">Size</a>		

### Step 3 : Peerings

The image contains three separate screenshots of the Azure portal's "Peering" section for different virtual networks:

- vnet1 | Peerings**: Shows two peering connections: vnet1\_vnet2 (Connected, Peer: vnet2, Gateway transit: Disabled) and vnet1\_vnet3 (Connected, Peer: vnet3, Gateway transit: Disabled).
- vnet2 | Peerings**: Shows one peering connection: vnet2\_vnet1 (Connected, Peer: vnet1, Gateway transit: Disabled).
- vnet3 | Peerings**: Shows one peering connection: vnet3\_vnet2 (Connected, Peer: vnet2, Gateway transit: Disabled).

### Step 4 : Connecting all the 3 vms

```
azureuser [ ~ ]$ ssh vm1@13.64.49.225
The authenticity of host '13.64.49.225 (13.64.49.225)' can't be established.
ED25519 key fingerprint is SHA256:SCw2zsWIOn9HVssSjQ9OzXWsiTZAcNqUiweqWv7/z0BQ.
This key is not known by any other names
Are you sure you want to continue connecting (yes/no/[fingerprint])? yes
Warning: Permanently added '13.64.49.225' (ED25519) to the list of known hosts.
vm1@13.64.49.225's password:
Welcome to Ubuntu 20.04.6 LTS (GNU/Linux 5.15.0-1045-azure x86_64)

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

 System information as of Mon Sep 11 12:39:08 UTC 2023

 System load: 0.0          Processes:           114
 Usage of /: 5.2% of 28.89GB   Users logged in:     0
 Memory usage: 3%           IPv4 address for eth0: 10.0.0.4
 Swap usage: 0%

 Expanded Security Maintenance for Applications is not enabled.

 0 updates can be applied immediately.

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

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

 The programs included with the Ubuntu system are free software;
```

```
individual files in /usr/share/doc/*copyright.

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

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

vm1@vm1:~$ ssh vm2@40.74.69.215
The authenticity of host '40.74.69.215 (40.74.69.215)' can't be established.
ECDSA key fingerprint is SHA256:ypYic2ZSp2zv/61Dia9IKuzTBDERinxqVC4AjuI2RQ.
Are you sure you want to continue connecting (yes/no/[fingerprint])? yes
Warning: Permanently added '40.74.69.215' (ECDSA) to the list of known hosts.
vm2@40.74.69.215's password:
Welcome to Ubuntu 20.04.6 LTS (GNU/Linux 5.15.0-1045-azure x86_64)

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

System information as of Mon Sep 11 12:40:05 UTC 2023

System load: 0.0          Processes:      124
Usage of /: 5.2% of 28.89GB  Users logged in:    0
Memory usage: 3%           IPv4 address for eth0: 100.0.0.4
Swap usage: 0%

* Strictly confined Kubernetes makes edge and IoT secure. Learn how MicroK8s
just raised the bar for easy, resilient and secure K8s cluster deployment.

https://ubuntu.com/engage/secure-kubernetes-at-the-edge

Expanded Security Maintenance for Applications is not enabled.

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

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

vm2@vm2:~$ ssh vm3@98.70.0.53
The authenticity of host '98.70.0.53 (98.70.0.53)' can't be established.
ECDSA key fingerprint is SHA256:Vcoka72P9Ttx7f0zS2e2X7gNu9aRqNtfts3schZAzo.
Are you sure you want to continue connecting (yes/no/[fingerprint])? yes
Warning: Permanently added '98.70.0.53' (ECDSA) to the list of known hosts.
vm3@98.70.0.53's password:
Welcome to Ubuntu 20.04.6 LTS (GNU/Linux 5.15.0-1045-azure x86_64)

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

System information as of Mon Sep 11 12:40:40 UTC 2023

System load: 0.01          Processes:      124
Usage of /: 5.2% of 28.89GB  Users logged in:    0
Memory usage: 3%           IPv4 address for eth0: 20.0.0.4
Swap usage: 0%

Expanded Security Maintenance for Applications is not enabled.

0 updates can be applied immediately.

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

The list of available updates is more than a week old.

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

vm3@vm3:~$ ssh vm1@13.64.49.225
The authenticity of host '13.64.49.225 (13.64.49.225)' can't be established.
ECDSA key fingerprint is SHA256:vx5g5DKuwUMtgJnrM4y37HuYkQS1wt1MJWrdbnnbiOXE.
Are you sure you want to continue connecting (yes/no/[fingerprint])? yes
Warning: Permanently added '13.64.49.225' (ECDSA) to the list of known hosts.
vm1@13.64.49.225's password:
Welcome to Ubuntu 20.04.6 LTS (GNU/Linux 5.15.0-1045-azure x86_64)

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

System information as of Mon Sep 11 12:41:56 UTC 2023

System load: 0.08          Processes:      118
Usage of /: 5.3% of 28.89GB  Users logged in:    1
Memory usage: 4%           IPv4 address for eth0: 10.0.0.4
Swap usage: 0%

Expanded Security Maintenance for Applications is not enabled.

0 updates can be applied immediately.

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

The list of available updates is more than a week old.
To check for new updates run: sudo apt update
New release '22.04.3 LTS' available.
```

```

vm1@13.64.49.225's password:
Welcome to Ubuntu 20.04.6 LTS (GNU/Linux 5.15.0-1045-azure x86_64)

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

 System information as of Mon Sep 11 12:41:56 UTC 2023

 System load: 0.08      Processes:           118
 Usage of /: 5.3% of 28.89GB  Users logged in:    1
 Memory usage: 4%          IPv4 address for eth0: 10.0.0.4
 Swap usage: 0%          

Expanded Security Maintenance for Applications is not enabled.

0 updates can be applied immediately.

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

The list of available updates is more than a week old.
To check for new updates run: sudo apt update
New release '22.04.3 LTS' available.
Run 'do-release-upgrade' to upgrade to it.

Last login: Mon Sep 11 12:39:10 2023 from 20.219.15.166
To run a command as administrator (user "root"), use "sudo <command>".
See "man sudo_root" for details.

vm1@vm1:~$ 

```

## Diagrams from vnets

Home > vnet1

### vnet1 | Diagram

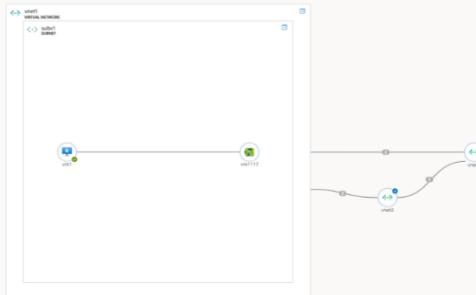
Virtual network

- [Search](#)
- [Service endpoints](#)
- [Private endpoints](#)
- [Properties](#)
- [Locks](#)
- [Monitoring](#)
  - [Alerts](#)
  - [Metrics](#)
  - [Diagnostic settings](#)
  - [Logs](#)
  - [Connection monitor \(classic\)](#)
- [Diagram](#)
- [Automation](#)

New Support Ticket

#### Virtual Network

vnet1



Home > vnet2

### vnet2 | Diagram

Virtual network

- [Search](#)
- [Network manager](#)
- [DNS servers](#)
- [Peering](#)
- [Service endpoints](#)
- [Private endpoints](#)
- [Properties](#)
- [Locks](#)
- [Monitoring](#)
  - [Alerts](#)
  - [Metrics](#)
  - [Diagnostic settings](#)
  - [Logs](#)
  - [Connection monitor \(classic\)](#)
- [Diagram](#)

New Support Ticket

#### Virtual Network

vnet2

vnet2 VIRTUAL NETWORK

subv2 SUBNET



Home > vnet3

### vnet3 | Diagram

Virtual network

- [Microsoft Defender for Cloud](#)
- [Network manager](#)
- [DNS servers](#)
- [Peering](#)
- [Service endpoints](#)
- [Private endpoints](#)
- [Properties](#)
- [Locks](#)
- [Monitoring](#)
  - [Alerts](#)
  - [Metrics](#)
  - [Diagnostic settings](#)
  - [Logs](#)
  - [Connection monitor \(classic\)](#)
- [Diagram](#)

New Support Ticket

#### Virtual Network

vnet3

vnet3 VIRTUAL NETWORK

subv3 SUBNET



### 3. Deploy app using serverless service

**Step 1 :** Created a app services in azure portal and added a application (python) to it from github.

Microsoft Azure

Search resources, services, and docs (G+)

Home > Microsoft.Web-WebApp-Portal-837f964b-919f | Overview

webappppppp Web App

Overview

Activity log

Access control (IAM)

Tags

Diagnose and solve problems

Microsoft Defender for Cloud

Events (preview)

Deployment

Deployment slots

Deployment Center

Settings

Configuration

Authentication

Application Insights

Identity

Backups

Custom domains

Resource group (move) : hub

Status : Running

Location (move) : East US

Subscription (move) : Azure For Students

Subscription ID : b7ea7452-37fc-4ab2-bc47-5b68df9abedc

Tags (edit) : Add tags

Default domain : webappppppp.azurewebsites.net

App Service Plan : plan (B1: 1)

Operating System : Linux

Health Check : Not Configured

Github Project : <https://github.com/Meghana-04/python-mini-project>

Properties Monitoring Logs Capabilities Notifications Recommendations

Web app

Name : webappppppp

Publishing model : Code

Runtime Stack : Python - 3.11

Domains

Default domain : webappppppp.azurewebsites.net

Custom domain : Add custom domain

Deployment Center

Deployment logs

Last deployment

Deployment provider

View logs

Successful on Sunday, September 24, 03:13:03 PM Refresh

GitHub

Application Insights

Name

Not supported. Learn more

Networking

33°C Haze

Search

ENG IN 03:42 PM 24-09-2023

**Step 2 :** Copied and pasted the Default domain url in the browser.

Microsoft Azure

Hey, Python developers!

Your app service is up and running.

Time to take the next step and deploy your code.

Have your code ready?

Use deployment center to get code published from your client or setup continuous deployment.

Don't have your code yet?

Follow our quickstart guide and you'll have a full app ready in 5 minutes or less.

Deployment Center

Quickstart

Expecting to see your app? You may need to configure your startup process. [Learn more](#)

33°C Haze

Search

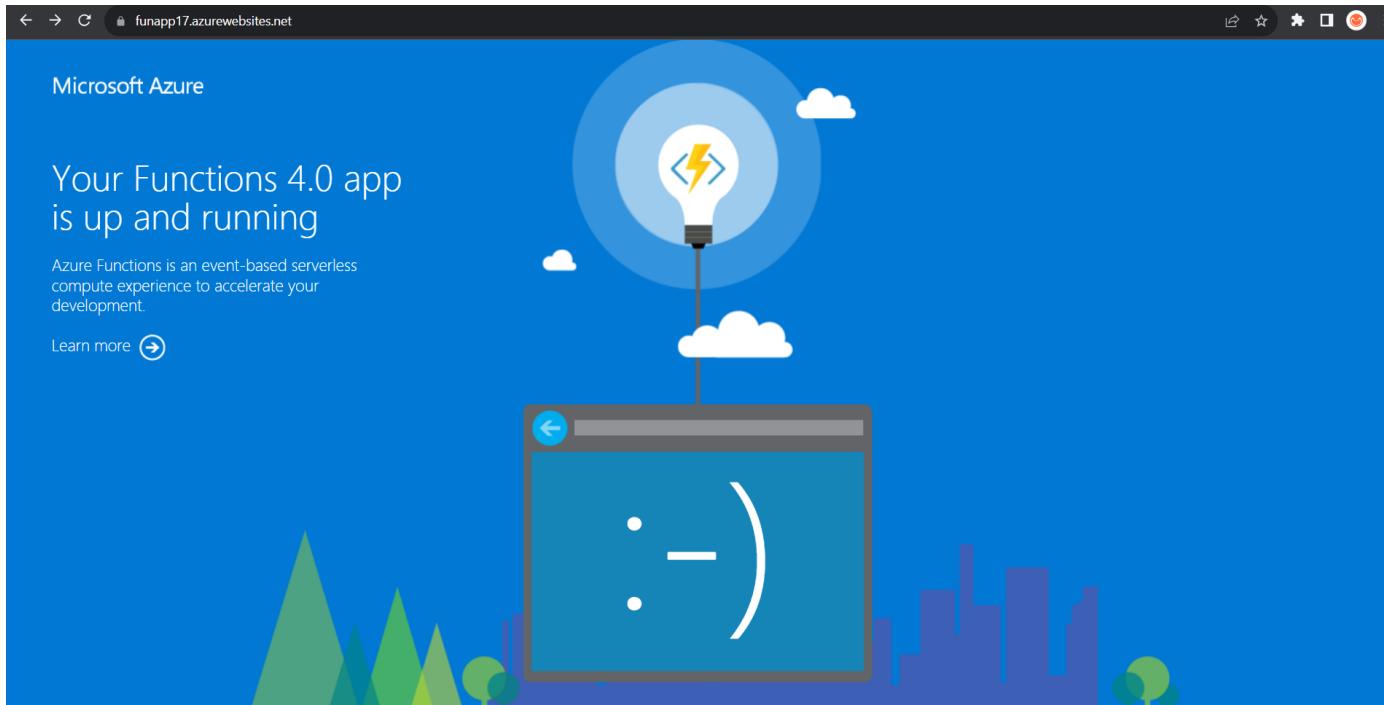
ENG IN 03:41 PM 24-09-2023

## 4. Deploy app using function app

### Step 1 : Create a Function app

The screenshot shows the Microsoft Azure portal interface for a Function App named 'funapp17'. The top navigation bar includes the Microsoft Azure logo, a search bar, and various navigation icons. The main content area displays the 'Essentials' section for the app, listing details such as Resource group (hub), Status (Running), Location (East US), Subscription (Azure for Students), and more. It also shows the URL <https://funapp17.azurewebsites.net>. On the left, a sidebar provides links for Activity log, Access control (IAM), Tags, Diagnose and solve problems, Microsoft Defender for Cloud, Events (preview), Functions (App keys, App files, Proxies), Deployment (Deployment slots, Deployment Center), and Settings (Configuration, Authentication). At the bottom, there are three options for creating functions: 'Create in Azure portal', 'VS Code Desktop', and 'Other editors or CLI'.

### Step 2 : Copy and paste URL in browser.



## 5 .Connect global load balancer to 3 different regions

### Step 1 : Create 3 VM s in 3 different regions

**Screenshot 1: Microsoft Azure - vm1 Overview**

Resource group: hub  
Status: Running  
Location: Canada Central (Zone 1)  
Subscription: Azure for Students  
Subscription ID: b7ea7452-37fc-4ab2-bc47-5b68df9abedc  
Availability zone: 1  
Tags (edit): Add tags

**Virtual machine**  
Computer name: vm1  
Operating system: Linux (ubuntu 22.04)

**Networking**  
Public IP address: 20.220.19.178 (Network interface vm117\_z1)  
20.220.19.149 (Load balancer lb1)

**Screenshot 2: Microsoft Azure - vm2 Overview**

Resource group: hub (Copy to clipboard)  
Status: Running  
Location: Japan East (Zone 1)  
Subscription: Azure for Students  
Subscription ID: b7ea7452-37fc-4ab2-bc47-5b68df9abedc  
Availability zone: 1  
Tags (edit): Add tags

**Virtual machine**  
Computer name: vm2  
Operating system: Linux (ubuntu 20.04)

**Networking**  
Public IP address: 20.78.10.15 (Network interface vm2365\_z1)  
20.78.9.232 (Load balancer lb2)

**Screenshot 3: Microsoft Azure - vm3 Overview**

Resource group: hub (Copy to clipboard)  
Status: Copy to clipboard  
Location: UK West  
Subscription: Azure for Students  
Subscription ID: b7ea7452-37fc-4ab2-bc47-5b68df9abedc  
Tags (edit): Add tags

**Virtual machine**  
Computer name: vm3  
Operating system: Linux (ubuntu 22.04)

**Networking**  
Public IP address: 20.254.145.130 (Network interface vm318)  
20.254.147.16 (Load balancer lb3)

## Step 2 : Create load balancers to the VMs

The image contains three separate screenshots of the Microsoft Azure portal, each showing the configuration of a different load balancer:

- lb1:** Located in Canada Central, using a Standard SKU. It has one backend pool (lb1-backendpool01) and one health probe (lb1-probe01). The tier is Regional.
- lb2:** Located in Japan East, using a Standard SKU. It has one backend pool (lb2-backendpool01) and one health probe (lb2-probe01). The tier is Regional.
- lb3:** Located in UK West, using a Standard SKU. It has one backend pool (lb3-backendpool01) and one health probe (lb3-probe01). The tier is Regional.

## Step 3 : Create Global load balancer for all 3 load balancers

The screenshot shows the creation of a global load balancer named "glb". The "Copy to clipboard" button is highlighted, indicating the next step in the process.

**Essentials** (Global Load Balancer)

- Resource group (move) : remo
- Location : East US 2
- Subscription (move) : Azure for Students
- Subscription ID : b7ea7452-37fc-4ab2-bc47-5b68df9abedc
- SKU : Standard
- Tags (edit) : Add tags

Backend pool : gpool (3 load balancers)  
Load balancing rule : grule (Tcp/80)  
Tier : Global  
Public IP address : 20.15.0.66 (gip)

Microsoft Azure

Search resources, services, and docs (G+)

21A91A05D5@aec.edu.in ADITYA EDUCATIONAL INSTITUT...

Home > glb

glb | Backend pools

Load balancer

Search

+ Add Refresh Give feedback

Overview

Activity log

Access control (IAM)

Tags

Diagnose and solve problems

Settings

Frontend IP configuration

Backend pools

Load balancing rules

Properties

Locks

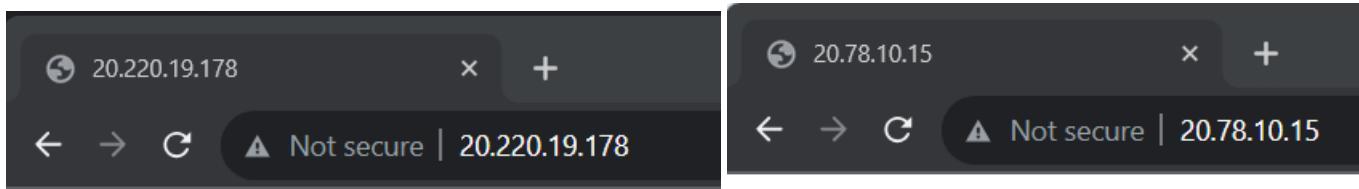
Backend pool Load balancer Frontend IP address

gpool lb1 lb1-frontendconfig01 20.220.19.149

gpool lb2 lb2-frontendconfig01 20.78.9.232

gpool lb3 lb3-frontendconfig01 20.254.147.16

**Step 4 : Add something to the VMs and check them by pasting ips**

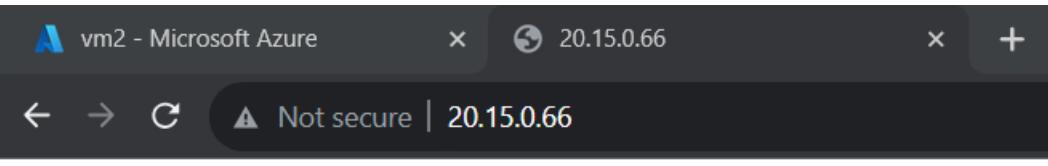


vm1

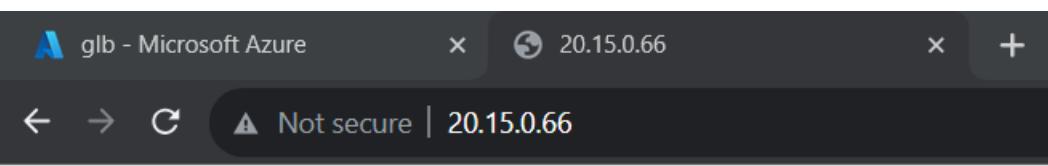
vm2

vm3

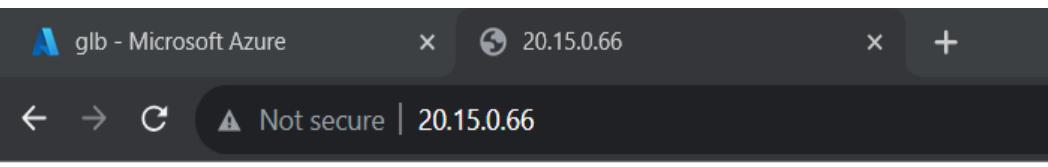
**Step 5 : Check the global load balancer**



vm1



vm2



vm3

## 6. Create Auto scaling vm & test the load, configure monitor, alerts, logs

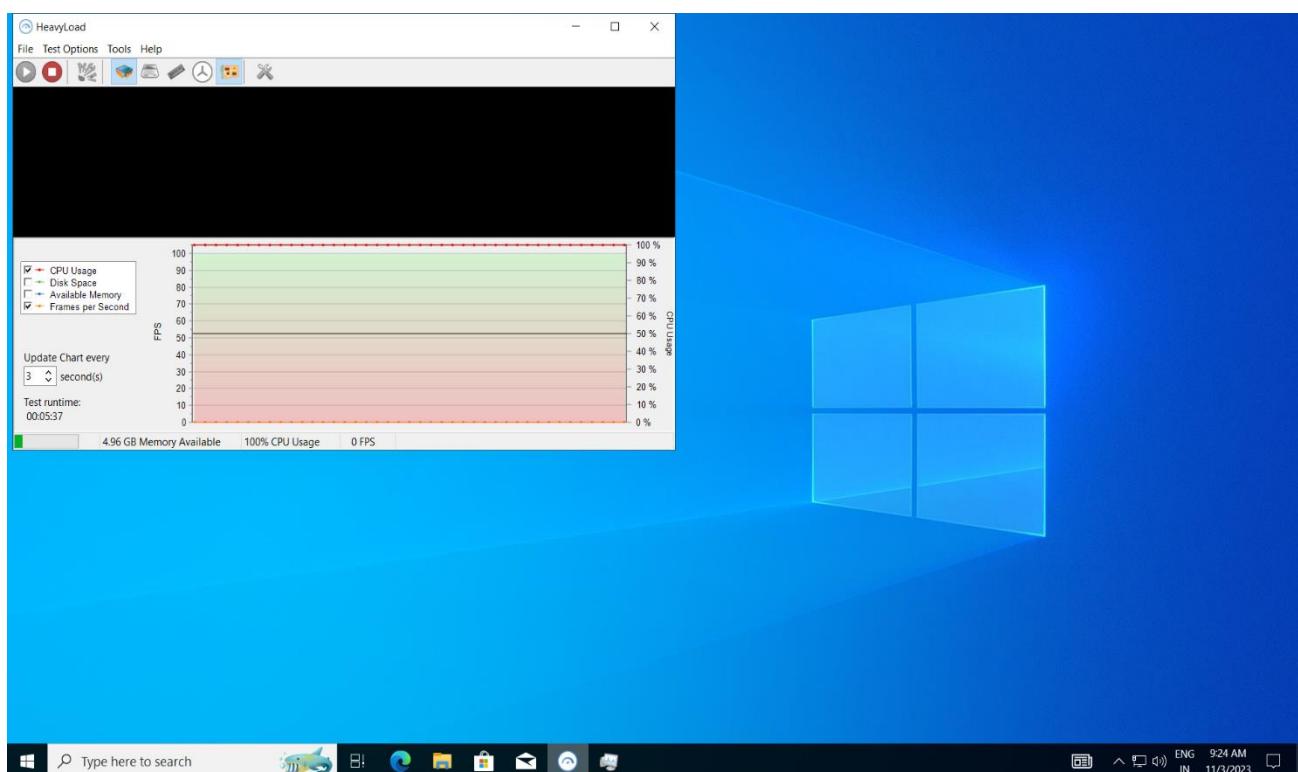
Step 1 : Create a scale set by auto scaling With initial 1 instance

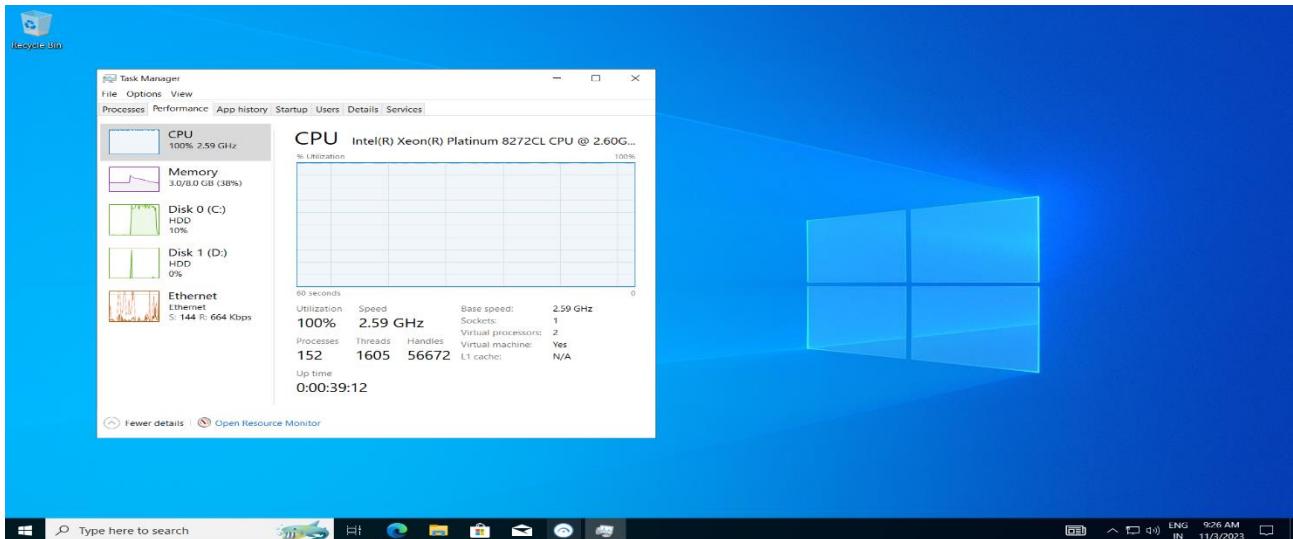
The screenshot shows the Microsoft Azure portal interface for creating a Virtual Machine Scale Set. The main pane displays the 'scaleset' overview, detailing its configuration: Resource group (hub), Status (1 out of 2 succeeded), Location (East US 2 (Zone 1, 2)), Subscription (Azure for Students), and Subscription ID (b7ea7452-37fc-4ab2-bc47-5b68df9abedc). It also shows the Tags (edit) section with an option to 'Add tags'. Below this, the Properties tab is selected, showing the Virtual machine profile (Operating system: Windows, Image publisher: MicrosoftWindowsDesktop, Image offer: Windows-10, Image plan: win10-22h2-ent-g2, Capacity reservation group: -), Networking (Public IP address: 20.85.24.19, Public IP address (IPv6): -, Virtual network/subnet: hub-vnet/default), and Size (Size: Standard\_D2s\_v3, vCPUs: 2, RAM: 8 GiB).

The left sidebar lists various settings: Overview, Activity log, Access control (IAM), Tags, Diagnose and solve problems, Instances, Networking, Scaling, Disks, Operating system, Microsoft Defender for Cloud, Size, Extensions + applications, Configuration, Upgrade policy, Health and repair.

The bottom navigation bar includes links for All services, CreateVmss-MicrosoftWindowsDesktop.Windows-10-win-20231103140014 | Overview, and scaleset.

Step 2 : Entered the windows VM and added the heavy load to it i.e, stressed the cpu (test the load)





**Step 3 :** A alert is created to the mail if the CPU performance exceeds 30...then we receive it.

Search

ip

Archive Report Sweep Move to Quick steps Read / Unread ...

Focused Other

Microsoft Azure Fired:Sev3 Azure Monitor Alert Fired at November 3, 2023 1...

Microsoft Azure You're now in the recalc... 3:23 PM You've been added to an Azure M...

Microsoft Azure This is a test activity log ... 3:20 PM Alert Fired at November 3, 2023 9...

Microsoft Azure You're now in the acgrp ... 2:32 PM You've been added to an Azure M...

Last month

TCS Careers CodeVita Season XI - T... Tue 10/10 Dear Student, It gives us immense...

August

GitHub [GitHub] Please review... 8/21/2023

Alert Fired at November 3, 2023 1...

Microsoft Azure You're now in the recalc... 3:23 PM You've been added to an Azure M...

Microsoft Azure This is a test activity log ... 3:20 PM Alert Fired at November 3, 2023 9...

Microsoft Azure You're now in the acgrp ... 2:32 PM You've been added to an Azure M...

Last month

TCS Careers CodeVita Season XI - T... Tue 10/10 Dear Student, It gives us immense...

August

You're receiving this notification as a member of the recalert1 action group.  
[Unsubscribe](#) from emails directed to this group.

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[Privacy Statement](#)

Microsoft Corporation, One Microsoft Way, Redmond, WA 98052

Fired:Sev3 Azure Monitor Alert Percentage CPU - scaleset\_1729dfe9 on scaleset\_1729dfe9 ( microsoft.compute/virtualmachines ) at 11/3/2023 10:01:56 AM

Microsoft Azure <azure-noreply@microsoft.com> To: 21A91A05D5 Fri 11/3/2023 3:32 PM

**Fired:Sev3 Azure Monitor Alert Percentage CPU - scaleset\_1729dfe9 on scaleset\_1729dfe9 ( microsoft.compute/virtualmachines ) at 11/3/2023 10:01:56 AM**

[View the alert in Azure Monitor >](#)

**Summary**

Alert name	Percentage CPU - scaleset_1729dfe9
Severity	Sev3
Monitor condition	Fired
Affected resource	scaleset_1729dfe9
Resource type	microsoft.compute/virtualmachines

**Resource group** hub

**Monitoring service** Platform

**Signal type** Metric

**Fired time** November 3, 2023 10:01 UTC

**Alert ID** a754ab54-3709-4702-bdc2-52f10bc5f000

**Alert rule ID** [https://portal.azure.com/#resource/subscriptions/b7ea9452-37fc-4ab2-bc47-5b68df9abedc/resourceGroups/hub/providers/Microsoft.Insights/metricAlerts/Percentage CPU - scaleset\\_1729dfe9](https://portal.azure.com/#resource/subscriptions/b7ea9452-37fc-4ab2-bc47-5b68df9abedc/resourceGroups/hub/providers/Microsoft.Insights/metricAlerts/Percentage CPU - scaleset_1729dfe9)

**Metric alert condition** MultipleResourceMultipleMetricCriteria

**Time aggregation** Average

**Metric name** Percentage CPU

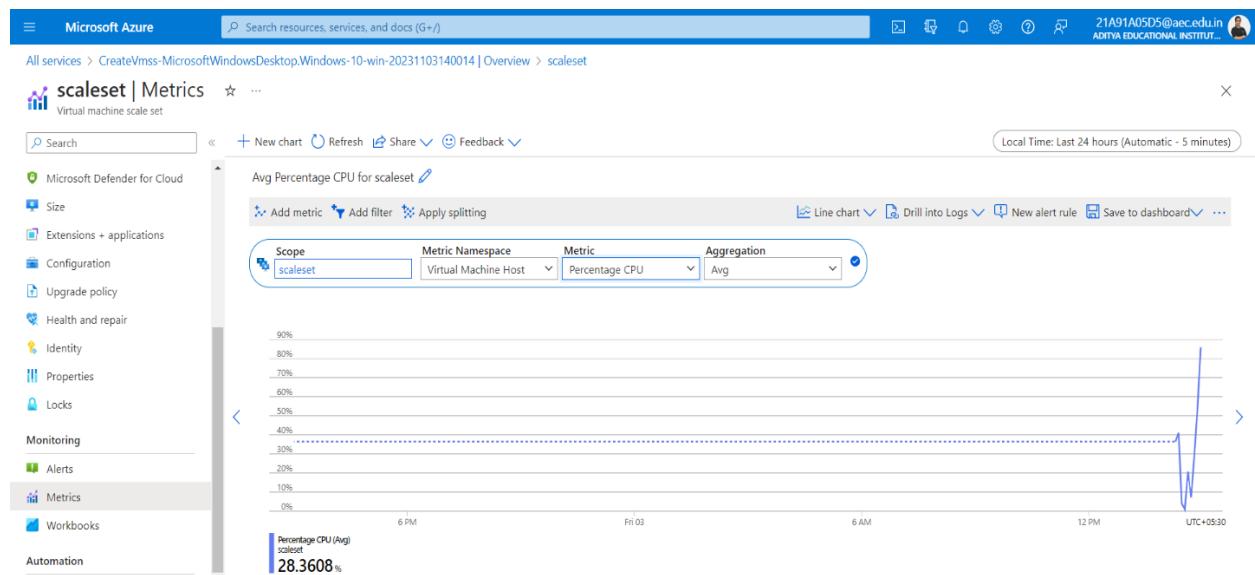
**Metric namespace** microsoft.compute/virtualmachines

**Metric value (when alert fired)** 97.9655

**Operator** GreaterThan

**Threshold** 30

## Step 4 : We check the metrics for monitoring.



## Step 5 : Check the logs

The screenshot shows the Microsoft Azure Activity log page for the 'scaleset' resource group. It lists 14 items of activity logs over the last 24 hours. The columns include Operation name, Status, Time, Time stamp, Subscription, and Event initiated by. Most entries are from 'AzureApplicationInsights' and 'Microsoft.Insights/autoscale'. One entry is from '21A91A05D5@aec.edu.in'. The URL https://portal.azure.com/#/logs/ is visible at the bottom.

Operation name	Status	Time	Time stamp	Subscription	Event initiated by
> Create or Update Virtual Machine Scale Set	Succeeded	4 minutes ago	Fri Nov 03 2...	Azure for Students	AzureApplicationInsights
> Health Event Resolved	Resolved	13 minutes ago	Fri Nov 03 2...	Azure for Students	
> Autoscale scale up completed	Succeeded	20 minutes ago	Fri Nov 03 2...	Azure for Students	Microsoft.Insights/autos...
> Delete Virtual Machines in a Virtual Machine Scale Set	Succeeded	20 minutes ago	Fri Nov 03 2...	Azure for Students	21A91A05D5@aec.edu.in
> Create or Update Virtual Machine Scale Set	Succeeded	23 minutes ago	Fri Nov 03 2...	Azure for Students	AzureApplicationInsights
> Autoscale scale up completed	Succeeded	39 minutes ago	Fri Nov 03 2...	Azure for Students	Microsoft.Insights/autos...
> Delete Virtual Machines in a Virtual Machine Scale Set	Succeeded	39 minutes ago	Fri Nov 03 2...	Azure for Students	21A91A05D5@aec.edu.in
> Create or Update Virtual Machine Scale Set	Succeeded	42 minutes ago	Fri Nov 03 2...	Azure for Students	AzureApplicationInsights
> Autoscale scale up initiated	Succeeded	48 minutes ago	Fri Nov 03 2...	Azure for Students	Microsoft.Insights/autos...
> Delete Virtual Machines in a Virtual Machine Scale Set	Succeeded	49 minutes ago	Fri Nov 03 2...	Azure for Students	21A91A05D5@aec.edu.in
> Create or Update Virtual Machine Scale Set	Succeeded	52 minutes ago	Fri Nov 03 2...	Azure for Students	AzureApplicationInsights
> Autoscale scale up initiated	Succeeded	an hour ago	Fri Nov 03 2...	Azure for Students	Microsoft.Insights/autos...
> Delete Virtual Machines in a Virtual Machine Scale Set	Succeeded	an hour ago	Fri Nov 03 2...	Azure for Students	21A91A05D5@aec.edu.in
https://portal.azure.com/#/logs/	Succeeded	an hour ago	Fri Nov 03 2...	Azure for Students	21A91A05D5@aec.edu.in

## Step 6 : If we observe instances ...there will be 2<sup>nd</sup> instance created

The screenshot shows the Microsoft Azure Instances page for the 'scaleset' virtual machine scale set. The left sidebar includes Settings (Instances, Networking, Scaling, Disks) and a 'Diagnose and solve problems' button. The main area lists two virtual machine instances: 'scaleset\_04a4722d' and 'scaleset\_1729df9', both of which are running and succeeded. A blue callout points to the second instance.

Instance	Computer name	Type	Status	Provisioning state
scaleset_04a4722d	scaleset21ADD7X	VM	Running	Succeeded
scaleset_1729df9	scaleset26FDHBD	VM	Running	Succeeded

## 7 . Launch static website using storage accounts & create File share between multiple linux vm's

### Step 1 : Creating a vm with ip : 20.163.28.117

The screenshot shows the Azure portal interface for a virtual machine named 'vm'. The 'Essentials' section displays the following details:

Setting	Value
Resource group	: hub
Status	: Running
Location	: West US 3 (Zone 1)
Subscription	: Azure for Students
Subscription ID	: b7ea7452-37fc-4ab2-bc47-5b68df9abedc
Availability zone	: 1
Tags	: Add tags

The 'Properties' tab is selected, showing the following configuration details:

Category	Setting	Value
Virtual machine	Computer name	vm
	Operating system	Linux (ubuntu 20.04)
	Image publisher	canonical
	Image offer	0001-com-ubuntu-server-focal
	Image plan	20_04-lts-gen2
	VM generation	V2
	VM architecture	x64
Agent status	Ready	

Category	Setting	Value
Networking	Public IP address	20.163.28.117 ( Network interface vm454_z1 )
	Public IP address (IPv6)	-
	Private IP address	10.0.0.4
	Private IP address (IPv6)	-
	Virtual network/subnet	vnet1/subnet1
DNS name	Configure	

Category	Setting	Value
Size	Performance	: Standard
	Replication	: Locally-redundant storage (LRS)

### Step 2 : Creating a Storage Account

The screenshot shows the Azure portal interface for a storage account named 'stoaccccc'. The 'Essentials' section displays the following details:

Setting	Value
Resource group	: hub
Location	: West US 3
Subscription	: Azure for Students
Subscription ID	: b7ea7452-37fc-4ab2-bc47-5b68df9abedc
Disk state	: Available
Tags	: Add tags

The 'Properties' tab is selected, showing the following configuration details:

Category	Setting	Value
Blob service	Hierarchical namespace	Disabled
	Default access tier	Hot
	Blob anonymous access	Disabled
	Blob soft delete	Enabled (7 days)
	Container soft delete	Enabled (7 days)
	Versioning	Disabled
	Change feed	Disabled
	NFS v3	Disabled
	Allow cross-tenant replication	Disabled

Category	Setting	Value
Security	Require secure transfer for REST API operations	Enabled
	Storage account key access	Enabled
	Minimum TLS version	Version 1.2
	Infrastructure encryption	Disabled
Networking	Allow access from	Selected networks
	Number of private endpoint connections	0

### Step 3 : Enabling static website and do copy the Primary endpoint url

The screenshot shows the Azure portal interface for the storage account 'stoaccccc'. The 'Static website' section is active, with the 'Enabled' button highlighted.

An informational message states: "Enabling static websites on the blob service allows you to host static content. Webpages may include static content and client-side scripts. Server-side scripting is not supported. As data is replicated asynchronously from primary to secondary regions, files at the secondary endpoint may not be immediately available or in sync with files at the primary endpoint. [Learn more](#)"

The 'Primary endpoint' is listed as <https://stoaccccc.z1.web.core.windows.net/>.

Configuration options include:

- Index document name: index.html
- Error document path: (empty field)

A success message box is visible in the top right corner: "Successfully updated static website settings".

Then a container \$web will be created

The screenshot shows the Azure Storage account interface for a storage account named 'stoacccc'. In the left sidebar, under 'Containers', a new container named '\$web' is being created. The main pane displays a table of containers with columns: Name, Last modified, Anonymous access level, and Lease state. Two containers are listed: '\$logs' and '\$web'. Both are private and available.

Step 4 : Open \$web and uploaded the blob(s)

The screenshot shows the '\$web' container details. A message box indicates 'Successfully uploaded blob(s)' and 'Successfully uploaded 11 blob(s)'. The main pane lists 11 blobs with their names, modified times, access tiers, archive status, blob types, sizes, and lease states. The blobs include files like 'explore.jpg', 'gal\_1.jpg', and 'index.html'.

Step 5 : Now do paste the copied url and paste in browser we get the website

The screenshot shows a web browser window with multiple tabs. The active tab is 'stoacccc - Microsoft Azure' showing the '\$web' container details. Below it, the browser displays a website with a blue background image of mountains. The header reads 'ADVENTURE' with navigation links 'Home', 'Tours', 'Explore', 'About', and 'Contact us'. The main content area features the text 'EXPLORE THE COLOURFUL WORLD OF NATURE' and 'Wonderful Gift' with a 'Learn More' button.

## Step 6 : Creating another VM for file sharing

The screenshot shows the Azure portal interface for a virtual machine named "vm1". The main pane displays the "Essentials" section with details such as Resource group (hub), Status (Running), Location (West US 3 (Zone 1)), Subscription (Azure for Students), and Tags. The "Properties" tab is selected, showing the Virtual machine properties like Computer name (vm1), Operating system (Linux (ubuntu 20.04)), and Size (Standard D2s v3 (2 vcpus, 8 GiB memory)). The Networking section shows Public IP address (20.150.194.183) and Virtual network/subnet (vnet1/subnet1). The "Size" section indicates the VM architecture (x64) and agent status (Ready).

## Step 7 : Created a file share in stoacccc (Created storage account)

The screenshot shows the Azure portal interface for creating a new file share named "fileshare". The "Essentials" section includes Storage account (stoacccc), Resource group (hub), Location (West US 3), and Subscription (Azure for Students). The "Properties" tab is selected, showing Size (Maximum capacity 5 TiB, Used capacity 0 B, Tier Transaction optimized) and Feature status (Soft delete 7 days, Large file shares Disabled). The "Active Directory" section shows Directory service Not configured and Domain -. The "SMB protocol settings" section shows Security profile Maximum compatibility.

## Step 8 : Copy the script from the linux os

The screenshot shows the Azure portal interface for connecting to the "fileshare". The "Connect" section is open, showing the Linux tab. It includes a "Mount point" field (fileshare) and a "Hide Script" button. Below it is a terminal window displaying a command-line script for mounting the file share on a Linux system. The script uses sudo commands to create directories and copy credentials from /etc/smbcredentials/stoacccc.cred to /etc/smbcredentials/stoacccc.cred'. It also includes commands to change file permissions and mount the share at /mnt/fileshare.

**Step 9 :** Created a directory in the file share to see it in the connected vms

The screenshot shows the 'fileshare | Browse' page for an SMB file share. The left sidebar includes 'Overview', 'Diagnose and solve problems', 'Access Control (IAM)', and 'Operations'. The main area displays a search bar, navigation buttons (Connect, Upload, Add directory, Refresh, Delete share), and a quota editor. A note about the authentication method is present. The file list table shows one item: 'dirr' (Directory). The bottom right corner has a '...' button.

Name	Type	Size
dirr	Directory	

## **Step 10 : Connect to vms**

We can see created dir in the vm...then created a file f11 in it to see it in another vm also

```
Last login: Sat Sep  9 16:29:26 2023 from 20.150.194.183
vm@vm:~$ sudo su
root@vm:/home/vm# cd /
root@vm:/# ls
bin  boot  dev  etc  home  lib  lib32  lib64  libx32  lost+found  media  mnt  opt  proc  root  run  sbin  snap  srv  sys  tmp  usr  var
root@vm:/# cd mnt
root@vm:/mnt# ls
DATALOSS_WARNING_README.txt  f1  fileshare  lost+found
root@vm:/mnt# cd fileshare
root@vm:/mnt/fileshare# ls
dirrr
root@vm:/mnt/fileshare# cd dirrr
root@vm:/mnt/fileshare/dirrr# ls
root@vm:/mnt/fileshare/dirrr# cat >f11.txt
hello vm!!!
root@vm:/mnt/fileshare/dirrr#
```

## **Step 11 : Login to another VM**

```
ssh vm1@20.150.194.183
The authenticity of host '20.150.194.183' (20.150.194.183) can't be established.
ECDSA key fingerprint is SHA256:5R25gmaaVh+Oeh6jDarrPHZvic4D6sTtNh8rValMm8.
Are you sure you want to continue connecting (yes/no/[fingerprint])? yes
Warning: Permanently added '20.150.194.183' (ECDSA) to the list of known hosts.
vm1@20.150.194.183's password:
Welcome to Ubuntu 20.04.6 LTS (GNU/Linux 5.15.0-1045-azure x86_64)

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

System information as of Sat Sep  9 16:37:27 UTC 2023

System load:  0.13          Processes:           138
Usage of /:   5.9% of 28.89GB  Users logged in:     1
Memory usage: 4%            IPv4 address for eth0: 10.0.0.5
Swap usage:   0%

Expanded Security Maintenance for Applications is not enabled.

3 updates can be applied immediately.
3 of these updates are standard security updates.
To see these additional updates run: apt list --upgradable
```

Here we can see both directory created in azure and file f11 created in before vm

```
Last login: Sat Sep 9 16:25:50 2023 from 20.163.28.117
vm1@vm1:~$ sudo su
root@vm1:/home/vm1# cd /
root@vm1:/# cd mnt
root@vm1:/mnt# ls
DATALOSS_WARNING_README.txt  f2  filesare  lost+found
root@vm1:/mnt# cd filesare
root@vm1:/mnt/filesare# ls
dirrr
root@vm1:/mnt/filesare# cd dirrr
root@vm1:/mnt/filesare/dirrr# ls
f11.txt
root@vm1:/mnt/filesare/dirrr#
```

We can see the sam f11 file in the dir created in azure

Home > stoacccc | File shares > filesare

**filesare | Browse** ...

SMB File share

Search | Upload | Add directory | Refresh | Delete directory | Properties

Overview      Authentication method: Access key ([Switch to Azure AD User Account](#))

Diagnose and solve problems

Access Control (IAM)

**Browse**

Operations

Search files by prefix

Name	Type	Size	...
[..]			...
f11.txt	File	12 B	...

## 8 . Docker

### Ubuntu vm

The screenshot shows the Microsoft Azure portal interface for a virtual machine named "ubuvm". The main pane displays the "Essentials" section with details such as Resource group (hub), Status (Running), Location (East US (Zone 1)), Subscription (Azure for Students), and Tags (Add tags). The "Networking" section shows Public IP address (20.127.209.47), Private IP address (10.0.0.4), Virtual network/subnet (ubuvm-vnet/default), and DNS name (Not configured). The "Properties" tab is selected, showing properties like Computer name (ubuvm), Operating system (Linux (ubuntu 22.04)), and Image publisher (canonical). The "Size" section indicates the VM is V2, x64, and Ready. On the left sidebar, there are sections for Overview, Activity log, Access control (IAM), Tags, Diagnose and solve problems, Connect (with options for Connect and Bastion), Networking (Network settings, Load balancing, Application security groups, Network manager), Settings (Disks, Configuration, Advisor recommendations), and JSON View.

Install Docker & pull httpd nginx images & clone git links

```
3 apt update
4 apt install docker.io
5 docker pull httpd
6 docker pull nginx
7 history
8 mkdir dir1
9 apt install git
10 cd dir1
11 git init
12 git clone https://github.com/ahmetbozaci/youtube_clone.git
13 ls
14 mv youtube_clone html
15 ls
16 cd ..
17 mkdir dir2
18 git init
19 git clone https://github.com/mohitpanthri/Netflix-Landing-Page.git
20 history
root@ubuvm:/# docker images
REPOSITORY      TAG          IMAGE ID      CREATED        SIZE
nginx           latest        bc649bab30d1   6 hours ago   187MB
httpd           latest        ca77aadc3cbc   13 hours ago  168MB
root@ubuvm:/# 
```

Add ports 800 & 8000

The screenshot shows the "Inbound port rules" section for a Network security group named "ubuvm-nsg". There are seven rules listed:

Priority	Name	Port	Protocol	Source	Destination	Action
300	SSH	22	TCP	Any	Any	Allow
320	HTTP	80	TCP	Any	Any	Allow
330	AllowAnyCustom800Inbound	800	Any	Any	Any	Allow
340	AllowAnyCustom8000Inbound	8000	Any	Any	Any	Allow
65000	AllowVnetInBound	Any	Any	VirtualNetwork	VirtualNetwork	Allow
65001	AllowAzureLoadBalancerInBound	Any	Any	AzureLoadBalancer	Any	Allow

## Run both images

```
root@ubuvm:~# docker ps -a
CONTAINER ID IMAGE COMMAND CREATED STATUS PORTS NAMES
root@ubuvm:~# docker run -d -p 800:80 httpd
10dd87c22b1e1b5ded36eb901cce1e4daeb26cfb4d88a24e67a8182d23022ad
root@ubuvm:~# docker run -d -p 8000:80 nginx
cda12dbe6e6b18d77e33b87c085460da6dbdfb6ff341a03b5b6608e1258fc01f
root@ubuvm:~# docker ps
CONTAINER ID IMAGE COMMAND CREATED STATUS PORTS NAMES
cda12dbe6e6b nginx "/docker-entrypoint..." 10 seconds ago Up 9 seconds 0.0.0.0:8000->80/tcp, :::8000->80/tcp musing_kowalevski
10dd87c22b1e httpd "httpd-foreground" 24 seconds ago Up 23 seconds 0.0.0.0:80->80/tcp, :::800->80/tcp trusting_wu
root@ubuvm:~#
```

Copy git application to containers

```
28 docker exec -it 10dd87c22b1e /bin/bash
29 docker cp dir1/html 10dd87c22b1e:/usr/local/apache2/htdocs
30 docker exec -it cda12dbe6e6b /bin/bash
31 docker cp dir2/html cda12dbe6e6b:/usr/share/nginx
```

Port : 800

The Last Intel Mac VS The Osborne Effect!

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838,026 views • Aug 10, 2020

115K 1.1K

MKBHD

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Watch Later Share

The NEW Samsung Galaxy Tab S7+  
Dave Lee 1.2M views

First Flight on Another Planet!  
Veritasium 4M views

MARS HELICOPTER 16:01

The OLD Samsung Galaxy Tab S7+  
Lee Dave 2.1M views

Second Flight on Another Planet!  
Veritasium2 32M views

MARS HELICOPTER 16:01

Watch on YouTube

Not secure | 20.127.209.47:800/html/

Port : 8000

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Watch anywhere. Cancel anytime.

Ready to watch? Enter your email to create or restart your membership.

Email Address

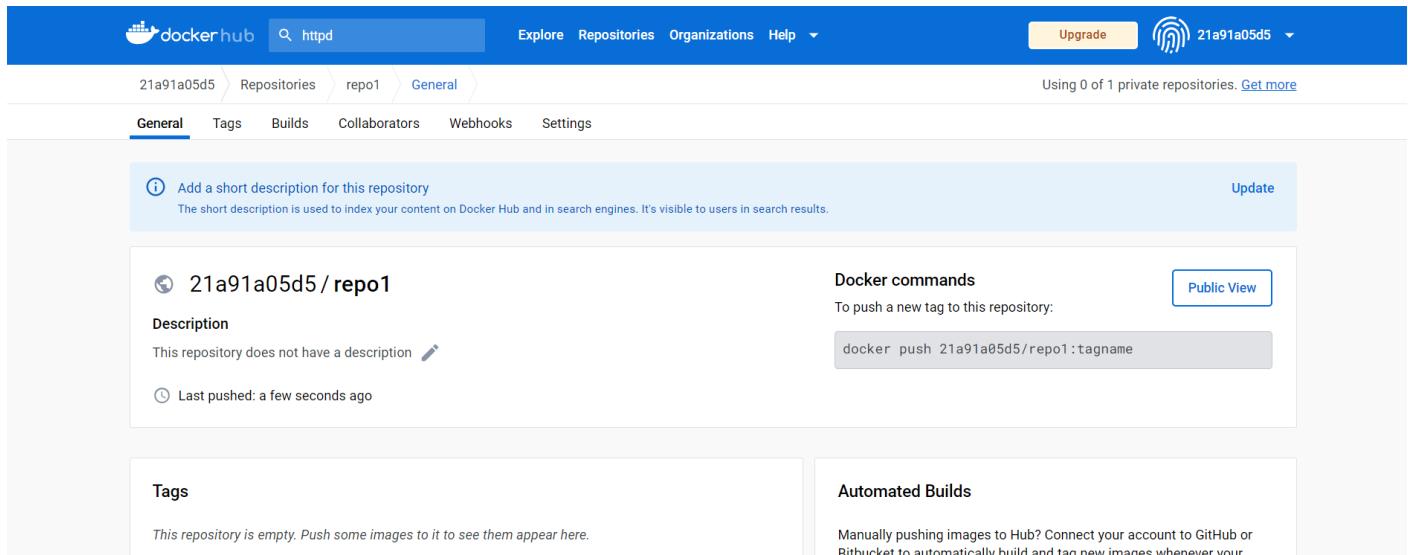
Get Started >

English

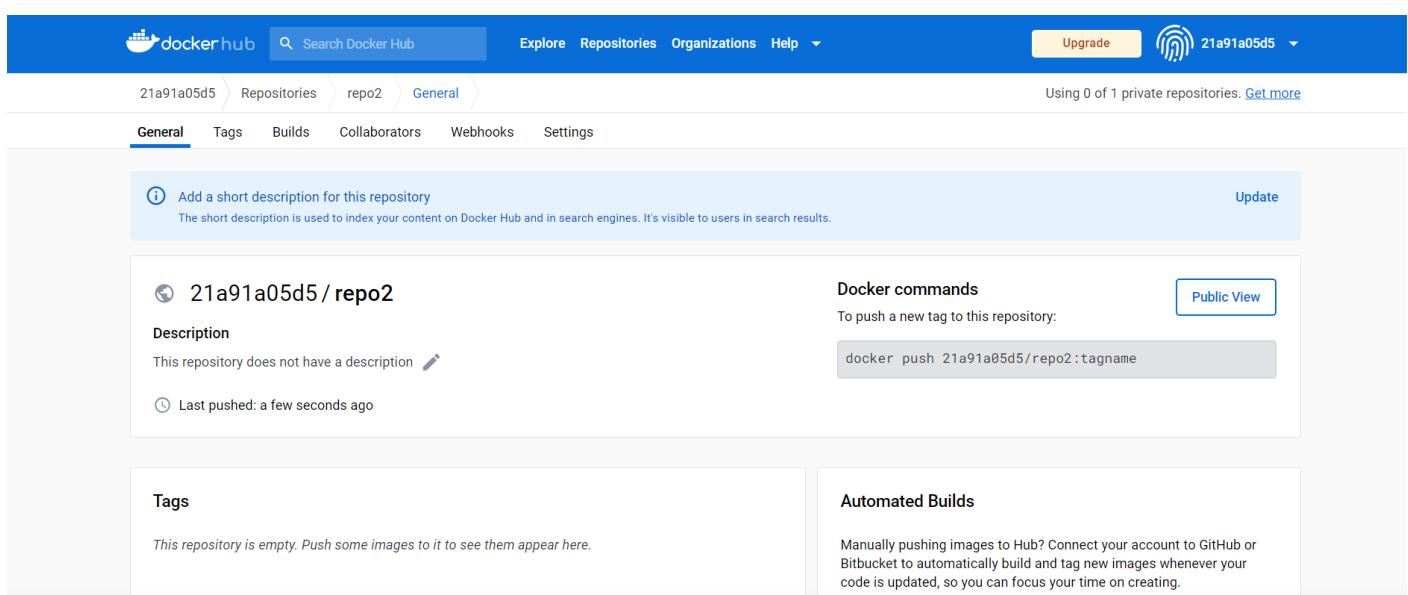
Sign in

Not secure | 20.127.209.47:8000

## Create repos in dockerhub



Screenshot of the Docker Hub interface showing the creation of a new repository named 'repo1'. The top navigation bar includes 'Explore', 'Repositories', 'Organizations', 'Help', 'Upgrade', and a user profile. The main content area shows a placeholder for a repository description and a 'Docker commands' section with a command box containing 'docker push 21a91a05d5/repo1:tagname'. Other sections include 'Tags' (empty) and 'Automated Builds' (instructions for connecting GitHub or Bitbucket).



Screenshot of the Docker Hub interface showing the creation of a new repository named 'repo2'. The layout is identical to the first screenshot, with a placeholder for a repository description and a 'Docker commands' section containing the command 'docker push 21a91a05d5/repo2:tagname'. The 'Tags' and 'Automated Builds' sections are also present.

## Push to dockerhub

```
58 docker commit cda12dbe6e6b
59 docker images
60 docker tag 4d702191c9ac 21a91a05d5/repo2
61 docker push 21a91a05d5/repo2

46 docker login
47 docker ps
48 docker commit 10dd87c22b1e
49 docker images
50 docker tag b6b828c247a2 21a91a05d5/repo1
51 docker push 21a91a05d5/repo1
```

## 21a91a05d5 / repo1

### Description

This repository does not have a description [Edit](#)

Last pushed: 6 minutes ago

### Docker commands

To push a new tag to this repository:

[Public View](#)

```
docker push 21a91a05d5/repo1:tagname
```

### Tags

This repository contains 1 tag(s).

Tag	OS	Type	Pulled	Pushed
latest		Image	---	6 minutes ago

[See all](#)

[Go to Advanced Image Management](#)

### Automated Builds

Manually pushing images to Hub? Connect your account to GitHub or Bitbucket to automatically build and tag new images whenever your code is updated, so you can focus your time on creating.

Available with Pro, Team and Business subscriptions. [Read more about automated builds](#).

[Upgrade](#)

## 21a91a05d5 / repo2

### Description

This repository does not have a description [Edit](#)

Last pushed: a few seconds ago

### Tags

This repository contains 1 tag(s).

Tag	OS	Type	Pulled	Pushed
latest		Image	---	a few seconds ago

[See all](#)

[Go to Advanced Image Management](#)

### Docker commands

To push a new tag to this repository:

[Public View](#)

```
docker push 21a91a05d5/repo2:tagname
```

### Automated Builds

Manually pushing images to Hub? Connect your account to GitHub or Bitbucket to automatically build and tag new images whenever your code is updated, so you can focus your time on creating.

Available with Pro, Team and Business subscriptions. [Read more about automated builds](#).

[Upgrade](#)

## Another vm Enable ports also

The screenshot shows the Microsoft Azure portal interface for a virtual machine named "anovm". The main pane displays the "Essentials" section with the following details:

Resource group ( <a href="#">move</a> )	: hub
Status	: Running
Location	: East US (Zone 1)
Subscription ( <a href="#">move</a> )	: Azure for Students
Subscription ID	: b7ea7452-37fc-4ab2-bc47-5b68df9abedc
Availability zone	: 1
Tags ( <a href="#">edit</a> )	: Add tags

Below this, the "Properties" tab is selected, showing the following configuration:

Virtual machine	Computer name: anovm
	Operating system: Linux (ubuntu 22.04)
	Image publisher: canonical
	Image offer: 0001-com-ubuntu-server-jammy
	Image plan: 22_04-lts-gen2
	VM generation: V2
	VM architecture: x64

The "Networking" tab shows the following network settings:

Public IP address	: 20.55.89.143 ( Network interface anovm367_z1 )
Public IP address (IPv6)	: -
Private IP address	: 10.0.0.5
Private IP address (IPv6)	: -
Virtual network/subnet	: ubuvm-vnet/default
DNS name	: Not configured

At the bottom, a terminal window displays the following command sequence:

```
1 cd /
2 apt update
3 apt install docker.io
6 docker login
```

```

8 docker pull 21a91a05d5/repo1:latest
9 docker pull 21a91a05d5/repo2:latest
root@anovm:~# docker images
REPOSITORY          TAG      IMAGE ID      CREATED       SIZE
21a91a05d5/repo2   latest   4d702191c9ac  15 minutes ago  229MB
21a91a05d5/repo1   latest   6ec8d24e2032  18 minutes ago  229MB
root@anovm:~# docker run -d -p 800:80 21a91a05d5/repo1:latest
d7b4fa8f55071d7119f30ad3e7c45dd11cbfd7c35754bcfbc27f4bfe5cc05494
root@anovm:~# docker run -d -p 8000:80 21a91a05d5/repo2:latest
ac36f7fe0754a09f5e1b3705c6ac7a2538c71415bd210270624aebdfbb435df7

```

The Last Intel Mac VS The Osborne Effect!

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## 9 . Deploy application using Jenkin

### 1) Install a vm named master and allow 8080 port

Microsoft Azure

Home > CreateVm-canonical.0001-com-ubuntu-server-jammy-2-20231114134535 | Overview

master Virtual machine

Overview

Activity log

Access control (IAM)

Tags

Diagnose and solve problems

Settings

Networking

Connect

Disk

Size

Microsoft Defender for Cloud

Advisor recommendations

Extensions + applications

Availability + scaling

Configuration

Identity

Properties

Essentials

Resource group (move) : hub

Status : Running

Location : East US 2 (Zone 1)

Subscription (move) : Azure for Students

Subscription ID : b7ea7452-37fc-4ab2-bc47-5b68df9abedc

Availability zone : 1

Tags (edit) : Add tags

Operating system : Linux (ubuntu 22.04)

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

Public IP address : 20.186.91.121

Virtual network/subnet : master-vnet/default

DNS name : Not configured

Health state : -

Properties

Virtual machine

Computer name : master

Operating system : Linux (ubuntu 22.04)

Image publisher : canonical

Image offer : 0001-com-ubuntu-server-jammy

Image plan : 22.04-lts-gen2

VM generation : V2

VM architecture : x64

Networking

Public IP address : 20.186.91.121 ( Network interface master582\_z1 )

Public IP address (IPv6) : -

Private IP address : 10.0.0.4

Private IP address (IPv6) : -

Virtual network/subnet : master-vnet/default

DNS name : Configure

Size

master | Networking

Virtual machine

Overview

Activity log

Access control (IAM)

Tags

Diagnose and solve problems

Settings

Networking

Connect

Disk

Size

Microsoft Defender for Cloud

Advisor recommendations

Extensions + applications

Availability + scaling

Configuration

Identity

Networking

master582\_z1

IP configuration : ipconfig1 (Primary)

Network Interface: master582\_z1 Effective security rules Troubleshoot VM connection issues Topology

Virtual network/subnet: master-vnet/default NIC Public IP: 20.186.91.121 NIC Private IP: 10.0.0.4 Accelerated networking: Enabled

Inbound port rules Outbound port rules Application security groups Load balancing

Add inbound port rule

Network security group master-nsg (attached to network interface: master582\_z1)  
Impacts 0 subnets, 1 network interfaces

Priority	Name	Port	Protocol	Source	Destination	Action
300	SSH	22	TCP	Any	Any	Allow
320	HTTP	80	TCP	Any	Any	Allow
330	AllowAnyCustom8080Inbound	8080	Any	Any	Any	Allow
65000	AllowVnetInbound	Any	Any	VirtualNetwork	VirtualNetwork	Allow
65001	AllowAzureLoadBalancerInbound	Any	Any	AzureLoadBalancer	Any	Allow
65500	DenyAllInbound	Any	Any	Any	Any	Deny

### 2) Install java and Jenkins and add "Jenkins ALL=NOPASSWD:ALL" in sudoers

```
root@master:/# history
1 cd /
2
```

```
3 java --version
4 apt install openjdk-11-jre-headless
5 apt update
6 sudo wget -O /usr/share/keyrings/jenkins-keyring.asc https://pkg.jenkins.io/debian-stable/jenkins.io-2023.key
7 echo deb [signed-by=/usr/share/keyrings/jenkins-keyring.asc] https://pkg.jenkins.io/debian-stable binary/ | sudo tee /etc/apt/sources.list.d/jenkins.list > /dev/null
8 sudo apt-get update
9 sudo apt-get install fontconfig openjdk-11-jre
10 sudo apt-get install jenkins
11 jenkins --version
12 systemctl status jenkins
13 cd /etc/sudoers.d
14 ls
15 vi sudoers
16 cd /
17 history
root@master:/#
```

### 3) Open Jenkins and give password from "systemctl status Jenkins" with the ip of vm paste in browser along with port ...20.186.91.121:8080 and open create a freestyle project and give all github repo essentials the, credentials etc..also the clone url etc in build steps

Not secure | 20.186.91.121:8080/job/job1/configure

Dashboard > job1 > Configuration

Plain text [Preview](#)

### Configure

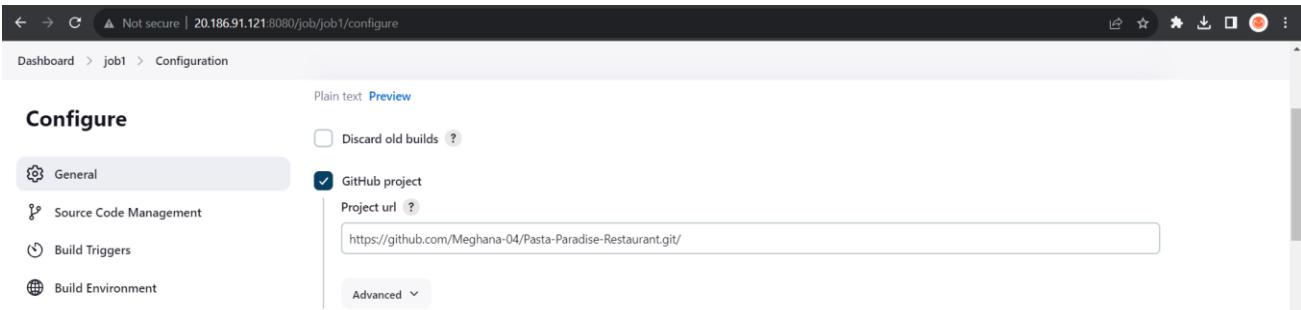
Discard old builds ?

GitHub project

Project url ?

General  
Source Code Management  
Build Triggers  
Build Environment

Advanced ▾



Not secure | 20.186.91.121:8080/job/job1/configure

Dashboard > job1 > Configuration

### Configure

General  
 Source Code Management  
 Build Triggers  
 Build Environment  
 Build Steps  
 Post-build Actions

**Repositories** ?

Repository URL ?

Credentials ?

Add ▾

Advanced ▾

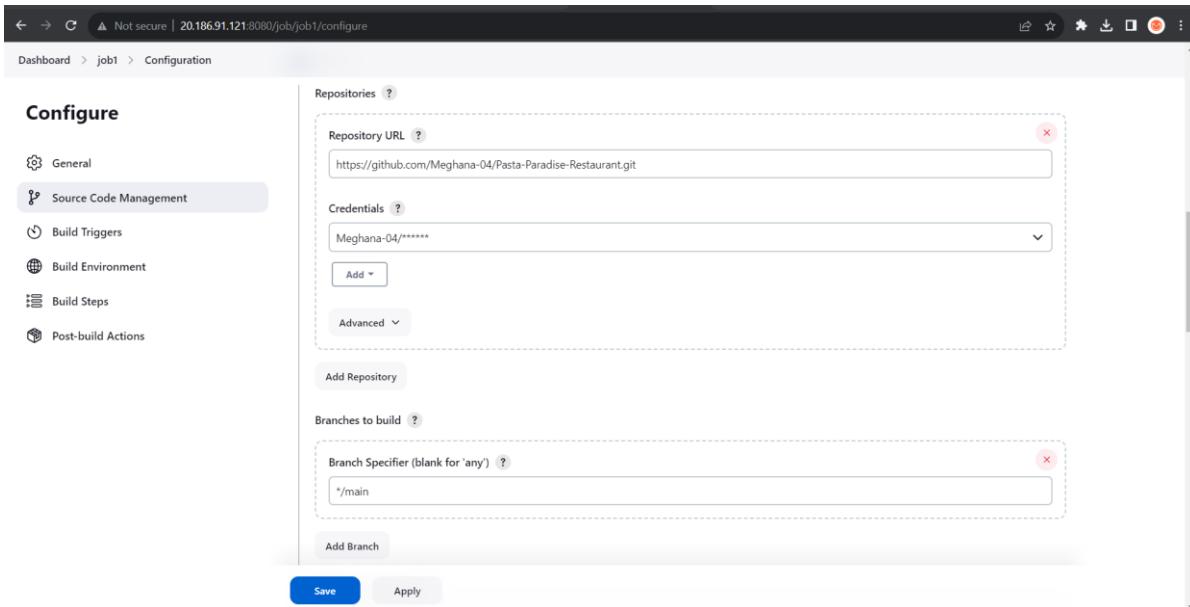
Add Repository

**Branches to build** ?

Branch Specifier (blank for 'any') ?

Add Branch

**Save** **Apply**



### Build Steps

**Execute shell** ?

Command

See the [list of available environment variables](#)

```
sudo su
sudo apt install git
sudo apt update -y
sudo apt install apache2 -y
cd /
sudo rm -rf var/www/html
sudo mkdir html
sudo git clone https://github.com/Meghana-04/Pasta-Paradise-Restaurant.git /var/www/html
```

Advanced ▾

Add build step ▾

**Save** **Apply**



Not secure | 20.186.91.121:8080/jobs/job1/1/console

**Jenkins**

Dashboard > job1 > #1 > Console Output

**Console Output**

- Status
- Changes
- Console Output**
- View as plain text
- Edit Build Information
- Delete build '#1'
- Git Build Data

```

Started by user Gudapati Meghana Priya
Running as SYSTEM
Building in workspace /var/lib/jenkins/workspace/job1
The recommended git tool is: NONE
No credentials specified
Cloning the remote Git repository
Cloning repository https://github.com/Meghana-04/Pasta-Paradise-Restaurant.git
> git init /var/lib/jenkins/workspace/job1 # timeout=10
Fetching upstream changes from https://github.com/Meghana-04/Pasta-Paradise-Restaurant.git
> git --version # timeout=10
> git --version # 'git version 2.34.1'
> git fetch --tags --force -oprogress ... https://github.com/Meghana-04/Pasta-Paradise-Restaurant.git +refs/heads/*:refs/remotes/origin/*
timeout=10
> git config remote.origin.url https://github.com/Meghana-04/Pasta-Paradise-Restaurant.git # timeout=10
> git config --add remote.origin.fetch +refs/heads/*:refs/remotes/origin/* # timeout=10
Avoid second fetch
> git rev-parse refs/remotes/origin/main{commit} # timeout=10
Checking out Revision 6bf6812fd0e17a4e5083c0eb0396d61fc8d0989 (refs/remotes/origin/main)
> git config core.sparsecheckout # timeout=10
> git checkout -f 6bf6812fd0e17a4e5083c0eb0396d61fc8d0989 # timeout=10
Commit message: "Add or update the Azure App Service build and deployment workflow config"
First time build. Skipping changelog.
[job1] $ /bin/sh -xe /tmp/jenkins8217038583228709986.sh
+ ender

```

#### 4) Build the application and paste the ip in the browser

