

## MINI PROJECTS

1.S3 bucket creation in AWS

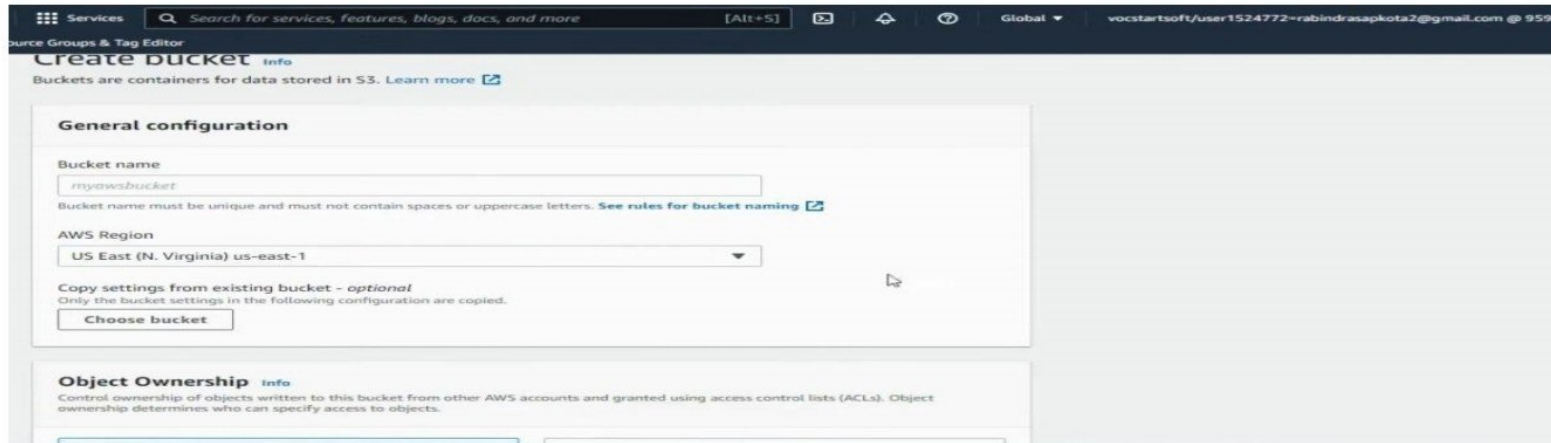
2.AZURE VIRTUAL MACHINES CREATIONS WITH  
LOAD BALANCING

- Name : Navyashree G M

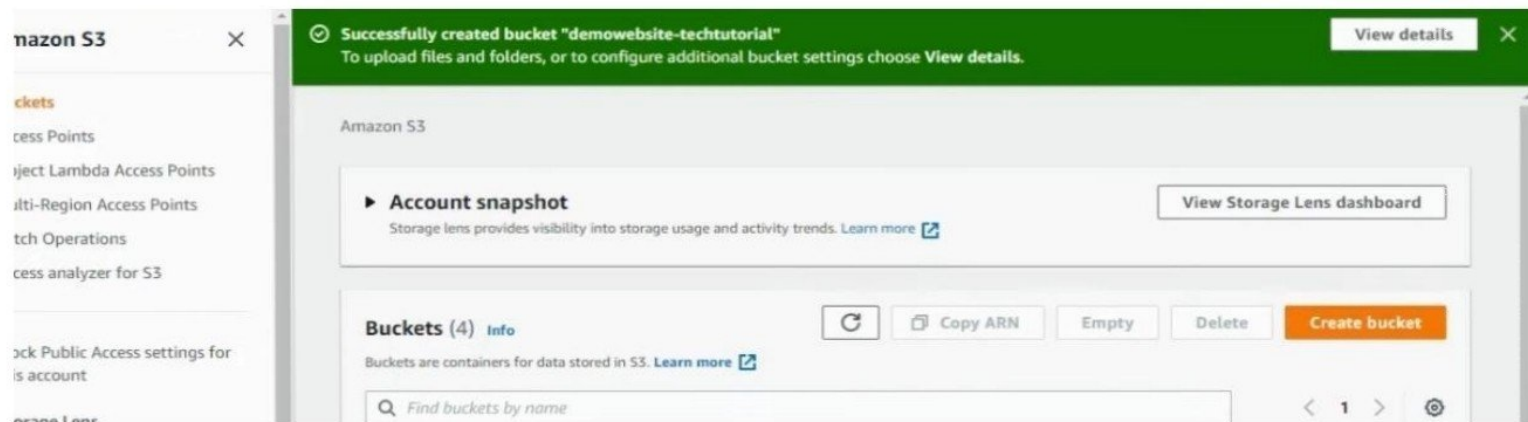
## 1.S3 bucket creation in AWS

- Step 1: Create a bucket
- Step 2: Enable static website hosting
- Step 3: Edit Block Public Access settings
- Step 4: Add a bucket policy that makes your bucket content publicly available
- Step 5: Configure an index document
- Step 6: Configure an error document
- Step 7: Test your website endpoint
- Step 8: Clean up

# Step 1: create bucket

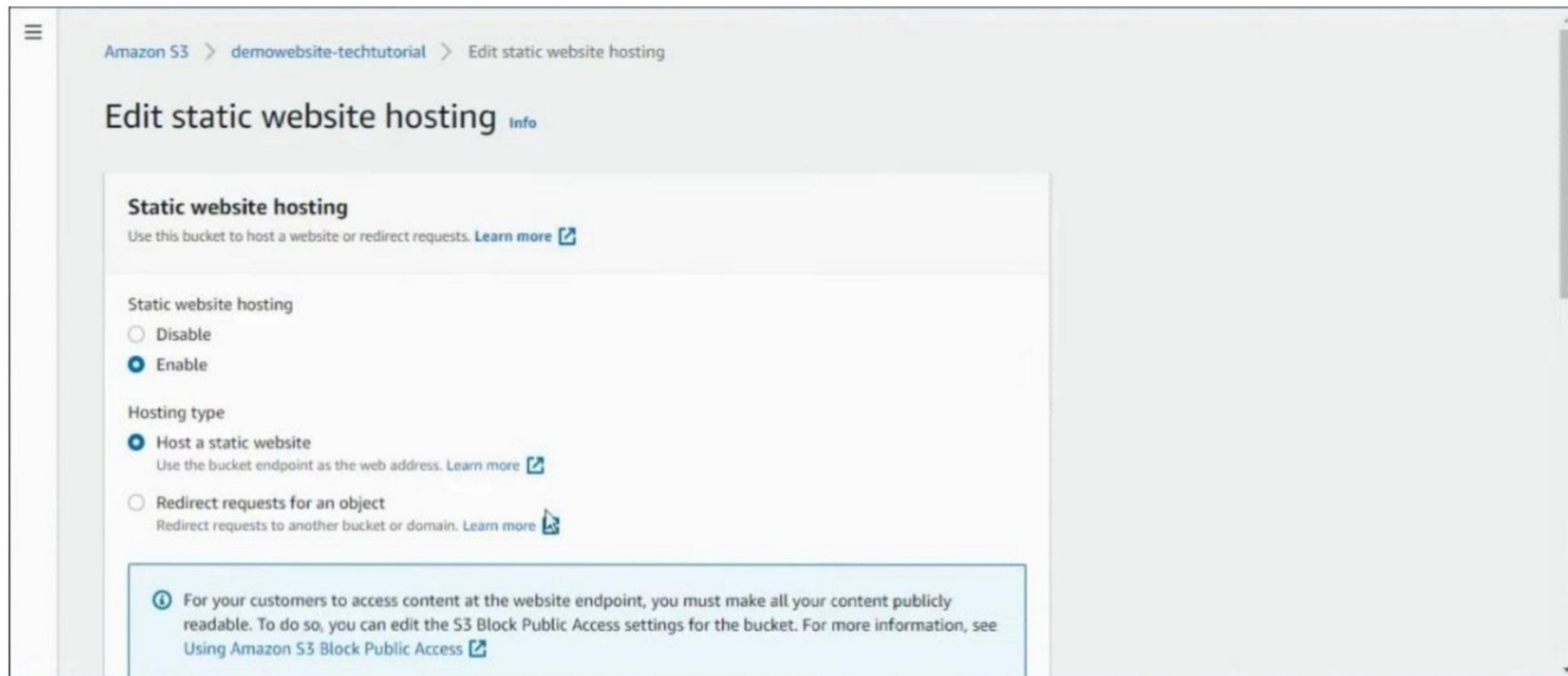


The screenshot shows the 'Create Bucket' page in the AWS Management Console. The page has a dark blue header with the 'Services' menu, a search bar, and user information. Below the header, the 'Create Bucket' title is followed by a brief description: 'Buckets are containers for data stored in S3. Learn more'. The main content area is divided into two sections. The 'General configuration' section contains a 'Bucket name' text input field with the value 'myawsbucket', a note stating 'Bucket name must be unique and must not contain spaces or uppercase letters. See rules for bucket naming', an 'AWS Region' dropdown menu set to 'US East (N. Virginia) us-east-1', and a 'Copy settings from existing bucket - optional' section with a 'Choose bucket' button. The 'Object Ownership' section is partially visible below, with a note about controlling ownership of objects.



The screenshot shows the AWS S3 console interface. A green notification banner at the top states 'Successfully created bucket "demowebste-techtutorial"' and provides instructions to upload files or configure settings. The left sidebar contains a navigation menu with options like 'Buckets', 'Access Points', 'Object Lambda Access Points', 'Multi-Region Access Points', 'Batch Operations', 'Access analyzer for S3', 'Block Public Access settings for this account', and 'Amazon S3'. The main content area displays the 'Amazon S3' dashboard. It includes an 'Account snapshot' section with a 'View Storage Lens dashboard' button. Below this is a 'Buckets (4)' section with a search bar, a 'Find buckets by name' input, and a list of actions: 'Refresh', 'Copy ARN', 'Empty', 'Delete', and a prominent orange 'Create bucket' button. A pagination control shows '1' of 4 items.

# Step 2: Enable static website hosting





Use the bucket endpoint as the web address. [Learn more](#)

- ☐ **Redirect requests for an object**  
Redirect requests to another bucket or domain. [Learn more](#)

**i** For your customers to access content at the website endpoint, you must make all your content publicly readable. To do so, you can edit the S3 Block Public Access settings for the bucket. For more information, see [Using Amazon S3 Block Public Access](#)

#### Index document

Specify the home or default page of the website.

index.html

#### Error document - optional

This is returned when an error occurs.

error.html

#### Redirection rules - optional

Redirection rules, written in JSON, automatically redirect webpage requests for specific content. [Learn more](#)


1

Cancel

Save changes

# Step 3: Edit Block Public Access settings

## Block public access (bucket settings)

Public access is granted to buckets and objects through access control lists (ACLs), bucket policies, access point policies, or all. In order to ensure that public access to all your S3 buckets and objects is blocked, turn on Block all public access. These settings apply only to this bucket and its access points. AWS recommends that you turn on Block all public access, but before applying *any* of these settings, ensure that your applications will work correctly without public access. If you require some level of public access to your buckets or objects within, you can customize the individual settings below to suit your specific storage use cases. [Learn more](#) 



### Account settings for Block Public Access are currently turned on

Account settings for Block Public Access that are enabled apply even if they are disabled for this bucket.

- ☐ **Block *all* public access**  
Turning this setting on is the same as turning on all four settings below. Each of the following settings are independent of one another.
  - ☐ **Block public access to buckets and objects granted through *new* access control lists (ACLs)**  
S3 will block public access permissions applied to newly added buckets or objects, and prevent the creation of new public access ACLs for existing buckets and objects. This setting doesn't change any existing permissions that allow public access to S3 resources using ACLs.
  - ☐ **Block public access to buckets and objects granted through *any* access control lists (ACLs)**  
S3 will ignore all ACLs that grant public access to buckets and objects.
  - ☐ **Block public access to buckets and objects granted through *new* public bucket or access point policies**  
S3 will block new bucket and access point policies that grant public access to buckets and objects. This setting doesn't change any existing policies that allow public access to S3 resources.
  - ☐ **Block public and cross-account access to buckets and objects through *any* public bucket or access point policies**  
S3 will ignore public and cross-account access for buckets or access points with policies that grant public access to buckets and objects.

## Step 4 :code

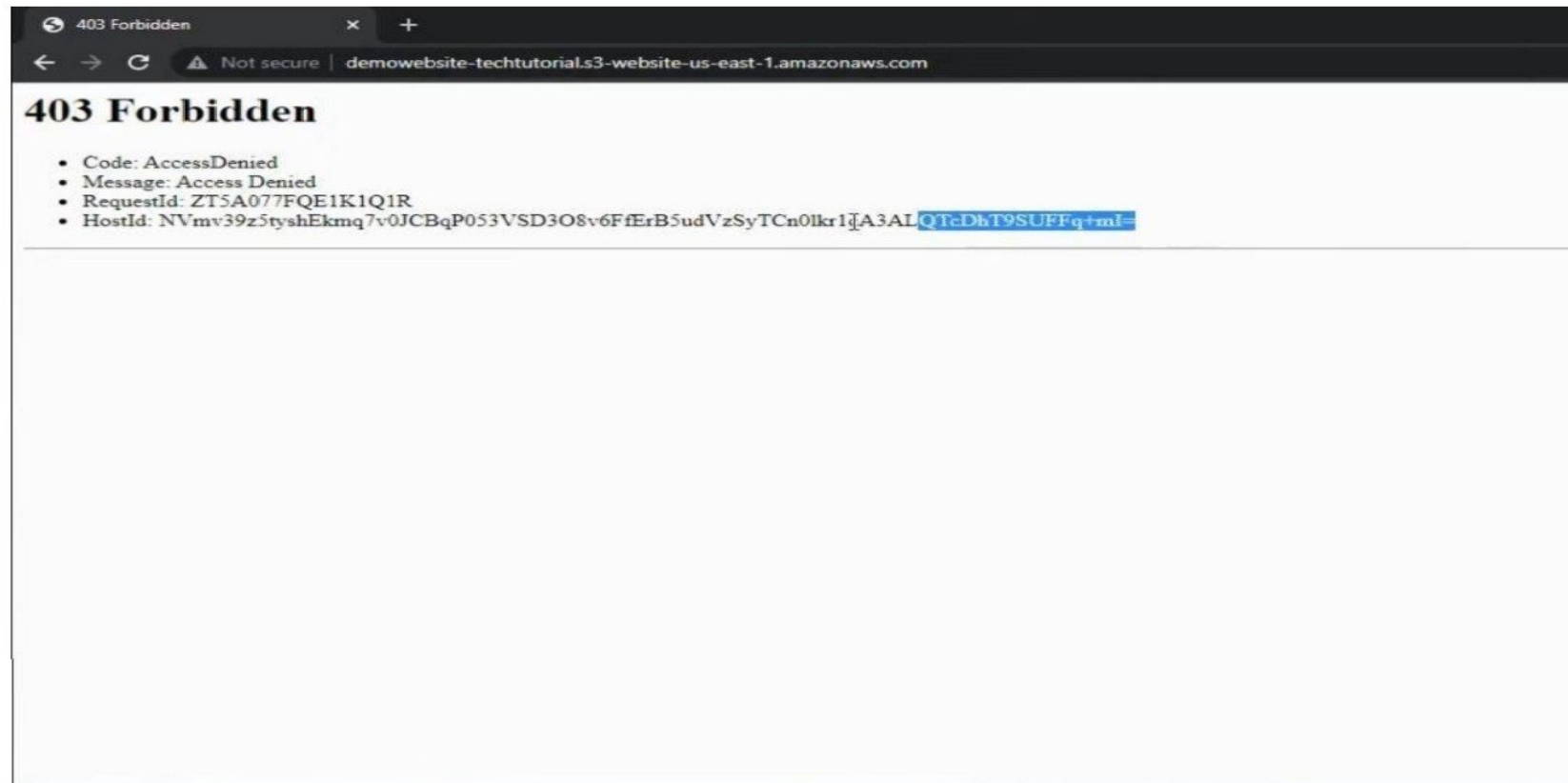
```
{
  "Version": "2012-10-17",
  "Statement": [
    {
      "Sid": "mybucky123",
      "Effect": "Allow",
      "Principal": "*",
      "Action": "s3:GetObject",
      "Resource": [
        "arn:aws:s3:::mybucky123/*",
        "arn:aws:s3:::mybucky123"
      ]
    }
  ]
}
```



## Step 5: Configure an index document

- `<html xmlns=http://www.w3.org/1999/xhtml >`
- `<head>`
- `<title>My Website Home Page</title>`
- `</head>`
- `<body>`
- `<h1>Welcome to my website</h1>`
- `<p>Now hosted on Amazon S3!</p>`
- `</body>`
- `</html>`

## Step 6: Configure an error document



Amazon S3 > demowebsite-techtutorial > Make public

Make public [Info](#)

The make public action enables public read access in the object access control list (ACL) settings. [Learn more](#)

- When public read access is enabled and not blocked by Block Public Access settings, anyone in the world can access the specified objects.
- This action applies to all objects within the specified folders. Objects added to these folders while the action is in progress might be affected.

Specified objects

Find objects by name

< 1 >

Name	Type	Last modified	Size
...	...	...	...

Successfully edited public access

View details below.

Make public: status 

Close

The information below will no longer be available after you navigate away from this page.

Summary

Source	Successfully edited public access	Failed to edit public access
--------	-----------------------------------	------------------------------

---

## Step 8: Clean up

- Delete the AWS resources that you allocated so that you no longer accrue charges. After you delete your AWS resources, your website is no longer available. For more information, see

## 2. AZURE virtual machine creation and load balancing

Minor project : 2

Create a Azure Load Balancer by using four Virtual Machines and Using

Application Gateway as Load Balancer (Distribute the Load on four Virtual Machines)

- Step 1:Create Virtual Machines
- Step 2:Configure Virtual Machines
- Step3:Create Application Gateway
- Step4:Configure Application Gateway
- Step5:Backend Pool Configuration
- Step6:Listener Configuration
- Step7:Health Probes
- Step8: front end configuration and Load Balancing Algorithm
- Step9:Monitoring and Scaling

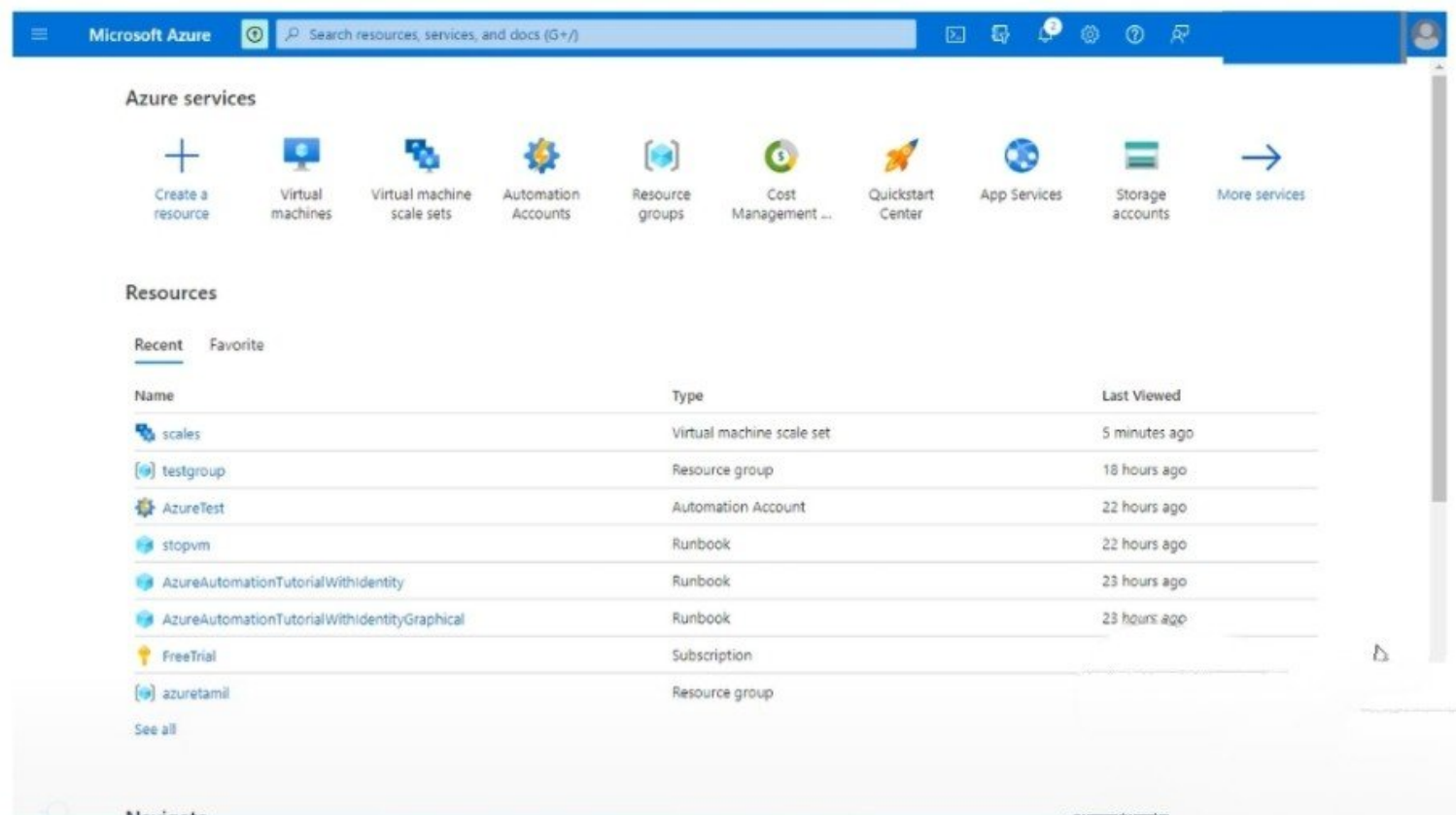
# To Create And Configure Load Balancer On Microsoft Azure

## Introduction:

An Azure load balancer is an ultra-low-latency Open Systems Interconnection (OSI) model Layer 4 inbound and outbound load balancing service for all UDP and TCP protocols.

## Installation Steps:

### Step 1: Login to Microsoft Azure portal





# Step2: Select virtual machine and click Create the virtual machine primary-server

Microsoft Azure

Search resources, services, and docs (G+)

Home > Virtual machines >

Create a virtual machine

for full customization. [Learn more](#)

This subscription may not be eligible to deploy VMs of certain sizes in certain regions.

Project details

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

Subscription \*

FreeTrial

Resource group \*

(New) linuxhelp

[Create new](#)

Instance details

Virtual machine name \*

primary-server

Region \*

(US) West US 3 (free services eligible)

Availability options

Availability zone

Availability zone \*

Zones 1

You can now select multiple zones. Selecting multiple zones will create one VM per zone. [Learn more](#)

Review + create

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# Step 3: Enter the Project details Instance Details and Administration account details

Microsoft Azure Search resources, services, and docs (G+/)

Home > Virtual machines >

## Create a virtual machine

Availability options ⓘ Availability zone

Availability zone \* ⓘ Zones 1

✓ You can now select multiple zones. Selecting multiple zones will create one VM per zone. [Learn more](#)

Security type ⓘ Standard

Image \* ⓘ Ubuntu Server 20.04 LTS - Gen2 (free services eligible)

[See all images](#) | [Configure VM generation](#)

Run with Azure Spot discount ⓘ ☐

Size \* ⓘ Standard\_B1s - 1 vcpu, 1 GiB memory (₹546.97/month) (free services eligible)

[See all sizes](#)

Administrator account

Authentication type ⓘ

☒ SSH public key

☐ Password

ℹ Azure now automatically generates an SSH key pair for you and allows you to store it for future use. It is a fast, simple, and secure way to connect to your virtual machine.

[Review + create](#) < Previous Next: Disks >

Microsoft Azure

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Home > Virtual machines >

Create a virtual machine

See all sizes

Administrator account

Authentication type ⓘ

SSH public key

☒ Password

Username \* ⓘ

linuxhelp

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 \*

SSH (22)

This will allow all IP addresses to access your virtual machine. This is only recommended for testing. Use the Advanced controls in the Networking tab to create rules to limit inbound traffic to known IP addresses.

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## Step 4: Enter the Disk Details and click next

Microsoft Azure

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Home > Virtual machines >

Create a virtual machine

Basics Disks Networking Management Advanced Tags Review + create

Azure VMs have one operating system disk and a temporary disk for short-term storage. You can attach additional data disks. The size of the VM determines the type of storage you can use and the number of data disks allowed. [Learn more](#)

Disk options

OS disk size \* ⓘ

Default size (30 GiB)

OS disk type \* ⓘ

Premium SSD (locally-redundant storage)

Delete with VM ⓘ

☒

Enable encryption at host ⓘ

☐

Encryption at host is not registered for the selected subscription. [Learn more about enabling this feature](#)

Encryption type \*

(Default) Encryption at-rest with a platform-managed key

Enable Ultra Disk compatibility ⓘ

☐

Data disks for primery-server

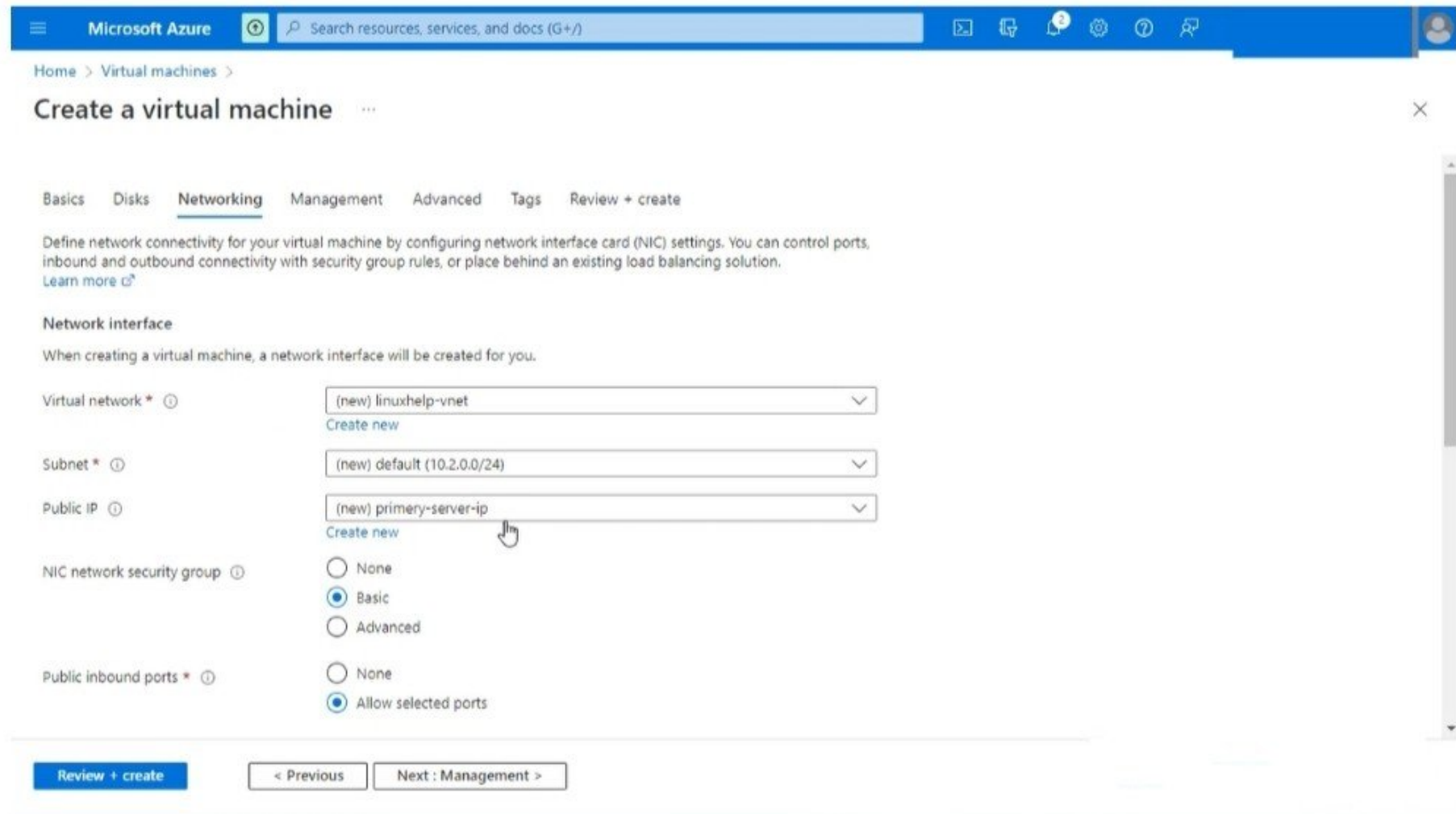
You can add and configure additional data disks for your virtual machine or attach existinn disks. This VM also comes with a

Review + create

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Next : Networking >

# Step 5: Enter the Networking Interface Details



The screenshot shows the 'Create a virtual machine' wizard in the Microsoft Azure portal, specifically the 'Networking' tab. The interface includes a top navigation bar with the Microsoft Azure logo and a search bar. Below the navigation bar, the breadcrumb 'Home > Virtual machines >' is visible. The main heading is 'Create a virtual machine' with a close button (X) on the right. The 'Networking' tab is selected, and the sub-header 'Network interface' is displayed. A descriptive text explains that a network interface will be created for the virtual machine. The configuration fields are as follows:

- Virtual network \***: A dropdown menu showing '(new) linuxhelp-vnet' with a 'Create new' link below it.
- Subnet \***: A dropdown menu showing '(new) default (10.2.0.0/24)' with a 'Create new' link below it.
- Public IP \***: A dropdown menu showing '(new) primary-server-ip' with a 'Create new' link below it.
- NIC network security group**: Radio buttons for 'None', 'Basic' (selected), and 'Advanced'.
- Public inbound ports \***: Radio buttons for 'None' and 'Allow selected ports' (selected).

At the bottom, there are three buttons: 'Review + create' (blue), '< Previous' (disabled), and 'Next : Management >' (disabled).

Step 6: Set to Default configuration in management, advanced and tags tab



# Step 7: Review and Click Create to create the virtual machine

The screenshot shows the 'Create a virtual machine' wizard in the Microsoft Azure portal. The 'Review + create' tab is selected. A green banner at the top indicates 'Validation passed'. Below the tabs, a blue box contains a note: 'Cost given below is an estimate and not the final price. Please use [Pricing calculator](#) for all your pricing needs.' The 'PRODUCT DETAILS' section shows '1 X Standard B1s by Microsoft' with a price of '0.7493 INR/hr'. The 'TERMS' section contains a legal disclaimer. At the bottom, there is a 'Create' button, a '< Previous' button, a 'Next >' button, and a 'Download a template for automation' link.

Microsoft Azure Search resources, services, and docs (G+)

Home > Virtual machines >

## Create a virtual machine

Validation passed

Basics Disks Networking Management Advanced Tags **Review + create**

Cost given below is an estimate and not the final price. Please use [Pricing calculator](#) for all your pricing needs.

**PRODUCT DETAILS**

1 X Standard B1s  
by Microsoft  
[Terms of use](#) | [Privacy policy](#)

Subscription credits apply ⓘ  
**0.7493 INR/hr**  
[Pricing for other VM sizes](#)

**TERMS**

By clicking "Create", I (a) agree to the legal terms and privacy statement(s) associated with the Marketplace offering(s) listed above; (b) authorize Microsoft to bill my current payment method for the fees associated with the offering(s), with the same billing frequency as my Azure subscription; and (c) agree that Microsoft may share my contact, usage and transactional information with the provider(s) of the offering(s) for support, billing and other transactional activities. Microsoft does not provide rights for third-party offerings. See the [Azure Marketplace Terms](#) for additional details.

Create < Previous Next > Download a template for automation

# Step 8: The Deployment is successful

The screenshot shows the 'Overview' page for the deployment 'CreateVm-Canonical.UbuntuServer-18\_04-lts-gen2-20220803104506'. A green banner at the top right says 'Deployment succeeded'. The main content area shows 'Your deployment is complete' with details: 'Deployment name: CreateVm-Canonical.UbuntuServer-18\_04-lts-g...', 'Subscription: FreeTrial', 'Resource group: linuxhelp', 'Start time: 8/3/2022, 12:18:51 PM', and 'Correlation ID: b436e37b-64d4-46b6-ae31-1847b792b2bc'. Below this, there are sections for 'Deployment details' and 'Next steps' with recommended actions like 'Setup auto-shutdown', 'Monitor VM health', and 'Run a script inside the virtual machine'. At the bottom, there are 'Go to resource' and 'Create another VM' buttons. On the right sidebar, there are links for 'Cost Management', 'Microsoft Defender for Cloud', and 'Free Microsoft tutorials'.

Microsoft Azure Search resources, services, and docs (G+)

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## CreateVm-Canonical.UbuntuServer-18\_04-lts-gen2-20220803104506 | Overview

Deployment

Search (Ctrl+/) Delete Cancel Redeploy Refresh

We'd love your feedback! →

**✓ Your deployment is complete**

Deployment name: CreateVm-Canonical.UbuntuServer-18\_04-lts-g... Start time: 8/3/2022, 12:18:51 PM  
Subscription: FreeTrial Correlation ID: b436e37b-64d4-46b6-ae31-1847b792b2bc  
Resource group: linuxhelp

Deployment details (Download)

Next steps

Setup auto-shutdown Recommended  
Monitor VM health, performance and network dependencies Recommended  
Run a script inside the virtual machine Recommended

Go to resource Create another VM

**✓ Deployment succeeded**  
Deployment 'CreateVm-Canonical.UbuntuServer-18\_04-lts-gen2-20220803104506' to resource group 'linuxhelp' was successful.  
Go to resource Pin to dashboard

**Cost Management**  
Get notified to stay wi  
prevent unexpected cl  
Set up cost alerts >

**Microsoft Defender for Cloud**  
Secure your apps and  
Go to Microsoft Defen

**Free Microsoft tutorials**  
Learning today >

an expert  
Q&A are serv  
Who can help manage

## Step 9: Again, Create another virtual machine the virtual machine name secondary-server

Microsoft Azure

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### Create a virtual machine

**Instance details**

Virtual machine name \* secondary-server ✓

Region \* (US) West US 3 (free services eligible) ✓

Availability options \* Availability zone ✓

Availability zone \* Zones 2 ✓

☒ You can now select multiple zones. Selecting multiple zones will create one VM per zone. [Learn more](#)

Security type \* Standard ✓

Image \* Ubuntu Server 18.04 LTS - Gen2 (free services eligible) ✓  
[See all images](#) | [Configure VM generation](#)

Run with Azure Spot discount ☐

Size \* Standard\_B1s - 1 vcpu, 1 GiB memory (₹546.97/month) (free services eligible) ✓  
[See all sizes](#)

**Administrator account**

Authentication type \* ☒ SSH public key ☐ Password

[Review + create](#) [< Previous](#) [Next: Disks >](#)

## Step10: After Create the two Virtual Copy the public Ip address and login via ssh

Microsoft Azure

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### Virtual machines

Default Directory

[+ Create](#) [Switch to classic](#) [Reservations](#) [Manage view](#) [Refresh](#) [Export to CSV](#) [Open query](#) [Assign tags](#) [Start](#) [Restart](#) [Stop](#) ...

Filter for any field... Subscription equals all Type equals all Resource group equals all Location equals all Add filter

No grouping List view

<input type="checkbox"/>	Name ↑↓	Type ↑↓	Subscription ↑↓	Resource group ↑↓	Location ↑↓	Status ↑↓	Operating system ↑↓	Size ↑↓
<input type="checkbox"/>	primary-server	Virtual machine	FreeTrial	linuxhelp	West US 3	Running	Linux	Standard_B1s
<input type="checkbox"/>	secondary-server	Virtual machine	FreeTrial	linuxhelp1	West US 3	Running	Linux	Standard_B1s

[< Previous](#) Page 1 of 1 [Next >](#) Showing 1 to 2 of 2 records.

```
linuxhelp@primary-server: ~  
C:\Users\Admin>ssh linuxhelp@20.14.94.30  
The authenticity of host '20.14.94.30 (20.14.94.30)' can't be established.  
ECDSA key fingerprint is SHA256:gYAYDJxgYSUQezULYuT4j31sdXtw0Tv1RbeSZJIT9jU.  
Are you sure you want to continue connecting (yes/no/[fingerprint])? yes  
Warning: Permanently added '20.14.94.30' (ECDSA) to the list of known hosts.  
linuxhelp@20.14.94.30's password:  
Permission denied, please try again.  
linuxhelp@20.14.94.30's password:  
Welcome to Ubuntu 18.04.6 LTS (GNU/Linux 5.4.0-1086-azure x86_64)  
  
 * Documentation:  https://help.ubuntu.com  
 * Management:    https://landscape.canonical.com  
 * Support:       https://ubuntu.com/advantage  
  
System information as of Wed Aug 3 17:27:03 UTC 2022  
  
System load:  0.0          Processes:      98  
Usage of /:   4.8% of 28.89GB Users logged in: 0  
Memory usage: 20%         IP address for eth0: 10.2.0.4  
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.  
  
To run a command as administrator (user "root"), use "sudo <command>".  
See "man sudo_root" for details.  
  
linuxhelp@primary-server:~$  
linuxhelp@primary-server:~$  
linuxhelp@primary-server:~$  
linuxhelp@primary-server:~$  
linuxhelp@primary-server:~$  
linuxhelp@primary-server:~$  
linuxhelp@primary-server:~$
```

Step 11: Next Check the Ip Address for Two virtual machine and install the Apache webserver by using following commands.

```
linuxhelp@primary-server: ~  
linuxhelp@primary-server:~$  
linuxhelp@primary-server:~$  
linuxhelp@primary-server:~$ lsb_release -a  
No LSB modules are available.  
Distributor ID: Ubuntu  
Description:    Ubuntu 18.04.6 LTS  
Release:        18.04  
Codename:       bionic  
linuxhelp@primary-server:~$  
linuxhelp@primary-server:~$  
linuxhelp@primary-server:~$  
linuxhelp@primary-server:~$  
linuxhelp@primary-server:~$  
linuxhelp@primary-server:~$  
linuxhelp@primary-server:~$ sudo apt-get install apache2 -y  
Reading package lists... Done  
Building dependency tree  
Reading state information... Done  
The following package was automatically installed and is no longer required:  
  linux-headers-4.15.0-109  
Use 'sudo apt autoremove' to remove it.  
The following additional packages will be installed:  
  apache2-bin apache2-data apache2-utils libapr1 libaprutil1 libaprutil1-dbd-sqlite3 libaprutil1-ldap liblua5.2-0 ssl-cert  
Suggested packages:  
  www-browser apache2-doc apache2-suexec-pristine | apache2-suexec-custom openssl-blacklist  
The following NEW packages will be installed:  
  apache2 apache2-bin apache2-data apache2-utils libapr1 libaprutil1 libaprutil1-dbd-sqlite3 libaprutil1-ldap liblua5.2-0 ssl-cert  
0 upgraded, 10 newly installed, 0 to remove and 0 not upgraded.  
Need to get 1730 kB of archives.  
After this operation, 6997 kB of additional disk space will be used.  
Get:1 http://azure.archive.ubuntu.com/ubuntu bionic/main amd64 libapr1 amd64 1.6.3-2 [90.9 kB]  
Get:2 http://azure.archive.ubuntu.com/ubuntu bionic/main amd64 libaprutil1 amd64 1.6.1-2 [84.4 kB]  
Get:3 http://azure.archive.ubuntu.com/ubuntu bionic/main amd64 libaprutil1-dbd-sqlite3 amd64 1.6.1-2 [10.6 kB]  
Get:4 http://azure.archive.ubuntu.com/ubuntu bionic/main amd64 libaprutil1-ldap amd64 1.6.1-2 [8764 B]  
Get:5 http://azure.archive.ubuntu.com/ubuntu bionic/main amd64 liblua5.2-0 amd64 5.2.4-1.1build1 [108 kB]  
Get:6 http://azure.archive.ubuntu.com/ubuntu bionic-updates/main amd64 apache2-bin amd64 2.4.29-1ubuntu4.25 [1072 kB]  
Get:7 http://azure.archive.ubuntu.com/ubuntu bionic-updates/main amd64 apache2-utils amd64 2.4.29-1ubuntu4.25 [83.8 kB]  
Get:8 http://azure.archive.ubuntu.com/ubuntu bionic-updates/main amd64 apache2-data all 2.4.29-1ubuntu4.25 [160 kB]  
Get:9 http://azure.archive.ubuntu.com/ubuntu bionic-updates/main amd64 apache2 amd64 2.4.29-1ubuntu4.25 [95.1 kB]  
Get:10 http://azure.archive.ubuntu.com/ubuntu bionic/main amd64 ssl-cert all 1.0.39 [17.0 kB]  
Fetched 1730 kB in 0s (7427 kB/s)  
Preconfiguring packages ...  
Selecting previously unselected package libapr1:amd64.  
/Reading database ... 65%
```



```

linuxhelp1@secondary-server: ~$ sudo apt-get install apache2 -y
Reading package lists... Done
Building dependency tree
Reading state information... Done
The following package was automatically installed and is no longer required:
  linux-headers-4.15.0-100
Use 'sudo apt autoremove' to remove it.
The following additional packages will be installed:
  apache2-bin apache2-data apache2-utils libapr1 libaprutil1 libaprutil1-dbd-sqlite3 libaprutil1-ldap liblua5.2-0 ssl-cert
Suggested packages:
  www-browser apache2-doc apache2-suexec-pristine | apache2-suexec-custom openssl-blacklist
The following NEW packages will be installed:
  apache2 apache2-bin apache2-data apache2-utils libapr1 libaprutil1 libaprutil1-dbd-sqlite3 libaprutil1-ldap liblua5.2-0 ssl-cert
0 upgraded, 10 newly installed, 0 to remove and 0 not upgraded.
Need to get 1730 kB of archives.
After this operation, 6997 kB of additional disk space will be used.
Get:1 http://azure.archive.ubuntu.com/ubuntu bionic/main amd64 libapr1 amd64 1.6.3-2 [90.9 kB]
Get:2 http://azure.archive.ubuntu.com/ubuntu bionic/main amd64 libaprutil1 amd64 1.6.1-2 [84.4 kB]
Get:3 http://azure.archive.ubuntu.com/ubuntu bionic/main amd64 libaprutil1-dbd-sqlite3 amd64 1.6.1-2 [10.6 kB]
Get:4 http://azure.archive.ubuntu.com/ubuntu bionic/main amd64 libaprutil1-ldap amd64 1.6.1-2 [8764 B]
Get:5 http://azure.archive.ubuntu.com/ubuntu bionic/main amd64 liblua5.2-0 amd64 5.2.4-1.1build1 [108 kB]
Get:6 http://azure.archive.ubuntu.com/ubuntu bionic-updates/main amd64 apache2-bin amd64 2.4.29-1ubuntu4.25 [1072 kB]
Get:7 http://azure.archive.ubuntu.com/ubuntu bionic-updates/main amd64 apache2-utils amd64 2.4.29-1ubuntu4.25 [83.8 kB]
Get:8 http://azure.archive.ubuntu.com/ubuntu bionic-updates/main amd64 apache2-data all 2.4.29-1ubuntu4.25 [160 kB]
Get:9 http://azure.archive.ubuntu.com/ubuntu bionic-updates/main amd64 apache2 amd64 2.4.29-1ubuntu4.25 [95.1 kB]
Get:10 http://azure.archive.ubuntu.com/ubuntu bionic/main amd64 ssl-cert all 1.0.39 [17.0 kB]
Fetched 1730 kB in 0s (23.9 MB/s)
Preconfiguring packages ...
Selecting previously unselected package libapr1:amd64.
Reading database ... 80%

```

Step 12: After install the Apache webserver give full permission for html file and change the Apache webserver default page by using following commands

```

linuxhelp1@primary-server: ~$ sudo chmod 777 -R /var/www/html/
linuxhelp1@primary-server: ~$
linuxhelp1@primary-server: ~$
linuxhelp1@primary-server: ~$
linuxhelp1@primary-server: ~$
linuxhelp1@primary-server: ~$ sudo echo "<h1><font color=blue>I AM PRIMARY SERVER</font></h1>" > /var/www/html/index.html
linuxhelp1@primary-server: ~$
linuxhelp1@primary-server: ~$
linuxhelp1@primary-server: ~$

```



Step 13: Next, go to the browser browse the primary and secondary Virtual machine Ip address

**I AM PRIMARY SERVER**



**I AM SECONDARY SERVER**



# Step 14: Next, go to azure create the load balancer.

Microsoft Azure

Home > Load balancing

## Load balancing | Load Balancer

Search (Ctrl+/)

+ Create Manage view Refresh Export to CSV Open query Assign tags

Filter for any field...

Subscription equals all Resource group equals all Location equals all Add filter

No grouping List view

Overview

Load Balancing Services

- Application Gateway
- Front Door and CDN profiles
- Load Balancer**
- Traffic Manager

Name ↑

**No load balancers to display**

With built-in load balancing for cloud services and virtual machines, you can create highly-available and scalable applications in minutes. Azure Load Balancer supports TCP/UDP-based protocols such as HTTP, HTTPS, and SMTP, and protocols used for real-time voice and video messaging applications.

[Create load balancer](#)

[Learn more about Load balancers](#)

Waiting for cache...

Microsoft Azure

Home > Load balancing | Load Balancer

## Create load balancer

Basics Frontend IP configuration Backend pools Inbound rules Outbound rules Tags Review + create

Azure load balancer is a layer 4 load balancer that distributes incoming traffic among healthy virtual machine instances. Load balancers uses a hash-based distribution algorithm. By default, it uses a 5-tuple (source IP, source port, destination IP, destination port, protocol type) hash to map traffic to available servers. Load balancers can either be internet-facing where it is accessible via public IP addresses, or internal where it is only accessible from a virtual network. Azure load balancers also support Network Address Translation (NAT) to route traffic between public and private IP addresses. [Learn more.](#)

**Project details**

Subscription \* FreeTrial

Resource group \* linuxhelp

Create new

**Instance details**

Name \* my-loadbalancer

Region \* West US 3

SKU \* Standard

Gateway

Basic

Microsoft recommends Standard SKU load balancer for production workloads.

Review + create < Previous Next: Frontend IP configuration > Download a template for automation Give feedback

Microsoft Azure

Home > Load balancing | Load Balancer

## Create load balancer

Basics **Frontend IP configuration** Backend pools Inbound rules Outbound rules Tags Review + create

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

+ Add a frontend IP configuration

Name ↑ IP address ↑

Add a frontend IP to get started

### Add frontend IP configuration

Name \* frontend

IP version IPv4 IPv6

IP type IP address IP prefix

Public IP address \* (New) demoip

Create new

Microsoft Azure

Search resources, services, and docs (G+)

Home > Load balancing | Load Balancer >

Create load balancer

BasicsFrontend IP configurationBackend poolsInbound rulesOutbound rulesTagsReview + create

A backend pool is a collection of resources to which your load balancer can send traffic. A backend pool can contain virtual machines, virtual machine scale sets, and containers.

+ Add a backend pool

Name	Virtual network	Resource Name	Network interface	IP address	Availability zone
Add a backend pool to get started					

Review + create

< Previous

Next : Inbound rules >

Download a template for automation

Give feedback

Microsoft Azure

Search resources, services, and docs (G+)

Home > Load balancing | Load Balancer >

Create load balancer

BasicsFrontend IP configurationBackend poolsInbound rulesOutbound rulesTagsReview + create

A backend pool is a collection of resources to which your load balancer can send traffic. A backend pool can contain virtual machines, virtual machine scale sets, and containers.

+ Add a backend pool

Name	Virtual network	Resource Name	Network interface	IP address	Availability zone
mybackendpool					
mybackendpool	linuxhelp-vnet	primary-server	primary-server396_z1	10.2.0.5	1
mybackendpool	linuxhelp-vnet	secondary-server	secondary-server85_z2	10.2.0.6	2

Review + create

< Previous

Next : Inbound rules >

Download a template for automation

Give feedback

# Step 15: After creating the load balancer go to resource create a add health probe

Microsoft Azure

Search resources, services, and docs (G+)

Home > Microsoft.LoadBalancer-20220803132838 | Overview > my-loadbalancer

### my-loadbalancer | Health probes

Load balancer

Search (Ctrl+/)

+ Add Refresh Give feedback

Filter by name...

Name ↑↓	Protocol ↑↓	Port ↑↓	Used By ↑↓
No results.			

Overview

Activity log

Access control (IAM)

Tags

Diagnose and solve problems

Settings

Frontend IP configuration

Backend pools

Health probes

Load balancing rules

Inbound NAT rules

Outbound rules

Properties

Locks

Monitoring

Insights

https://portal.azure.com/#@sureshbanu28@gmail.onmicrosoft.com/resource/...

Microsoft Azure

Search resources, services, and docs (G+)

Home > Microsoft.LoadBalancer-20220803132838 | Overview > my-loadbalancer | Health probes >

### Add health probe

my-loadbalancer

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 \* myhealthprobe ✓

Protocol \* TCP ✓

Port \* 80

Interval \* 5 seconds

Used by ① Not used

Add Give feedback

Step 16: Next check the load balancer Ip address and virtual machine Ip address for same. Go to browser browse the Ip address. Automatically open server2 again refresh the page change server1 machine.

The screenshot displays the Microsoft Azure portal interface. At the top, the header shows 'Microsoft Azure' and a search bar. Below the header, the left sidebar contains navigation options: Overview, Activity log, Access control (IAM), Tags, Diagnose and solve problems, Settings (Frontend IP configuration, Backend pools, Health probes, Load balancing rules, Inbound NAT rules, Outbound rules), Properties, Locks, Monitoring, and Insights.

The main content area shows the configuration for a resource named 'my-loadbalancer'. The 'Essentials' section lists the following details:

- Resource group: [linuxhelp](#)
- Location: West US 3
- Subscription: [FreeTrial](#)
- Subscription ID: bc0122bb-2c49-4a76-9506-49bc9c71e0ed
- SKU: Standard
- Tags: [Click here to add tags](#)
- See less

The 'Backend pool' section shows:

- Backend pool: mybackendpool (2 virtual machines)
- Load balancing rule: -
- Health probe: myhelthprobe (Tcp:80)
- NAT rules: 1 inbound
- Tier: Regional
- Public IP address: [20.125.81.196 \(demoip\)](#)

A tooltip is visible over the public IP address, showing the same address: 20.125.81.196 (demoip).

At the bottom, there is a section titled 'Configure high availability and scalability for your applications' with a brief description of Azure Load Balancer capabilities and a 'Learn more' link.

The URL at the bottom of the page is: <https://portal.azure.com/#blade/HubsExtension/ResourceMenuBlade/id/%2Fsubscriptions%2Fbc0122bb-2c49-4a76-9506-49bc9c71e0ed%2FresourceGroups%2Flinuxhelp%2Fproviders%2FMicrosoft.Network%2FloadBalancers%2Fmy-loadbalancer>



Step 17: Open Virtual machine and stop primary-server. Go to the browser again refresh the page all service redirect for the secondary server.

The screenshot shows the Microsoft Azure portal interface. At the top, the navigation bar includes the Microsoft Azure logo and a search bar. Below the navigation bar, the breadcrumb trail shows 'Home > Virtual machines >'. The main content area displays the details for a virtual machine named 'primery-server'. A modal dialog titled 'Stop this virtual machine' is open, asking 'Do you want to stop 'primery-server'?'. The dialog has two buttons: 'Yes' and 'No'. Below the dialog, the VM details are visible, including its name 'primery-server', location 'West US 3 (Zone 1)', and operating system 'Linux (ubuntu 18.04)'. The details are organized into sections: 'Overview', 'Settings', 'Properties', 'Monitoring', 'Capabilities (7)', 'Recommendations', and 'Tutorials'. The 'Properties' section is currently selected, showing the VM's name, health state, and operating system. The 'Networking' section is also visible, showing the public IP address and private IP address.

Section	Property	Value
Overview	Running	Standard B1s (1 vcpu, 1 GiB memory)
	Location	West US 3 (Zone 1)
	Subscription	<a href="#">(move)</a>
	Subscription ID	bc0122bb-2c49-4a76-9506-49bc9c71e0ed
	Availability zone	1
Settings	Tags	<a href="#">(edit)</a>
		<a href="#">click here to add tags</a>
Properties	Computer name	primery-server
	Health state	-
	Operating system	Linux (ubuntu 18.04)
Networking	Public IP address	
	Public IP address (IPv6)	<a href="#">eetst#morking</a>
	Private IP address	