

MICROSOFT AZURE

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GITHUB LINK: <https://github.com/Yaminah786/Microsoft-Azure-yaminah.git>

REQUESTING A CLOUD SHELL SUCCEEDED.

CONNECTING TERMINAL...

Welcome to Azure Cloud Shell

SANDBOX:

- `az vm create --resource-group "learn-1dd151f8-37c6-44cc-a975-8f08e65c30c2" --name my-vm --public-ip-sku Standard --image Ubuntu2204 --admin-username azureuser --generate-ssh-keys`
- `az vm extension set --resource-group "learn-1dd151f8-37c6-44cc-a975-8f08e65c30c2" --vm-name my-vm --name customScript --publisher Microsoft.Azure.Extensions --version 2.1 --settings '{"fileUri":["https://raw.githubusercontent.com/MicrosoftDocs/mslearn-welcome-to-azure/master/configure-nginx.sh"]}' --protected-settings '{"commandToExecute": "./configure-nginx.sh"}'`
- `sudo apt-get update`
- `ssh azureuser@98.70.112.108`
- `echo "sudo apt-get update -y"`
- `sudo apt-get install nginx -y`
- `sudo systemctl start nginx`
- `sudo systemctl enable nginx" > setup_nginx.sh`
- `chmod +x setup_nginx.sh`

- ./setup_nginx.sh
- echo "<html><body><h2>Welcome to Azure! My name is \$(hostname).</h2></body></html>" | sudo tee -a /var/www/html/index.html
-
- sudo systemctl status nginx
- az vm open-port --resource-group "learn-1dd151f8-37c6-44cc-a975-8f08e65c30c2" --name my-vm --port 80
- az vm list-ip-addresses --resource-group "learn-1dd151f8-37c6-44cc-a975-8f08e65c30c2" --name my-vm --output table
- ssh azureuser@ 98.70.112.108
- sudo apt-get update
- git clone https://github.com/Karthika-19/myportfolio.git
- sudo cp -r html/* /var/www/html/
- sudo chown -R www-data:www-data /var/www/html
- sudo chmod -R 755 /var/www/html
- sudo systemctl restart nginx\

EXECUTING COMMANDS IN SAND BOX

The screenshot displays the Azure Cloud Shell environment. On the left, the 'Training' pane shows a list of commands for creating an Azure VM named 'my-vm' and configuring Nginx. The main pane shows the execution of these commands in a terminal window. The commands include creating the VM, opening port 80, and installing Nginx. The output shows the VM creation progress and the successful installation and startup of Nginx.

```

--resource-group "learn-c613594d-3594-4697-b592-4e50058b3545" \
--name my-vm \
--public-ip-sku Standard \
--image Ubuntu2204 \
--admin-username azureuser \
--generate-ssh-keys

Your VM takes a few moments to come up. You named the VM my-vm.
You use this name to refer to the VM in later steps.

2. Run the following az vm extension set command to configure Nginx on
your VM:

Azure CLI
az vm extension set \
--resource-group "learn-c613594d-3594-4697-b592-4e50058b3545" \
--vm-name my-vm \
--name customScript \
--publisher Microsoft.Azure.Extensions \
--version 2.1 \
--settings '{"fileUri":["https://raw.githubusercontent.com/Micro
--protected-settings '{"commandToExecute": "sudo ./configure-nginx.sh

Azure Cloud Shell
Switch to PowerShell Restart Manage files New session
</h2></body></html>" | sudo tee -a /var/www/html/index.html
chtml><body><h2>Welcome to Azure! My name is my-vm.</h2></body></html>
azureuser@my-vm:~$ echo "<html><body><h2>Welcome to Azure! My name is $(hostname).
</h2></body></html>" | sudo tee -a /var/www/html/index.html
chtml><body><h2>Welcome to Azure! My name is my-vm.</h2></body></html>
azureuser@my-vm:~$ az vm open-port --resource-group "learn-6be6874e-0957-486f-a28f
-895aa6db1625" --name my-vm --port 80
az: command not found
azureuser@my-vm:~$ sudo systemctl status nginx
● nginx.service - A high performance web server and a reverse proxy server
   Loaded: loaded (/lib/systemd/system/nginx.service; enabled; vendor preset: en
   Active: active (running) since Fri 2024-08-09 03:57:33 UTC; 19min ago
     Docs: man:nginx(8)
   Main PID: 2370 (nginx)
    Tasks: 2 (limit: 4011)
   Memory: 4.6M
     CPU: 29ms
   CGroup: /system.slice/nginx.service
           └─2370 "nginx: master process /usr/sbin/nginx -g daemon on; master pr
             └─2373 "nginx: worker process"

Aug 09 03:57:33 my-vm systemd[1]: Starting A high performance web server and a p
Aug 09 03:57:33 my-vm systemd[1]: Started A high performance web server and a p
nginx: 1-14/14 (FIN)

```

```

0 upgraded, 0 newly installed, 0 to remove and 10 not upgraded.
-bash: syntax error near unexpected token `&'
chmod: cannot access 'setup_nginx.sh': No such file or directory
-bash: ./setup_nginx.sh: No such file or directory
azureuser@my-vm:~$ echo "sudo apt-get update -y
sudo apt-get install nginx -y
sudo systemctl start nginx
sudo systemctl enable nginx"> setup_nginx.sh
chmod +x setup_nginx.sh
./setup_nginx.sh
Hit:1 http://azure.archive.ubuntu.com/ubuntu jammy InRelease
Hit:2 http://azure.archive.ubuntu.com/ubuntu jammy-updates InRelease
Hit:3 http://azure.archive.ubuntu.com/ubuntu jammy-backports InRelease
Hit:4 http://azure.archive.ubuntu.com/ubuntu jammy-security InRelease
Reading package lists... Done
Reading package lists... Done
Building dependency tree... Done
Reading state information... Done
nginx is already the newest version (1.18.0-6ubuntu14.4).
0 upgraded, 0 newly installed, 0 to remove and 10 not upgraded.
Synchronizing state of nginx.service with SysV service script with /lib/systemd/sy
stemd-sysv-install.
Executing: /lib/systemd/systemd-sysv-install enable nginx
azureuser@my-vm:~$

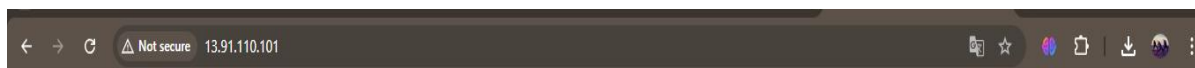
```

RUNNING HTML IN BROWSER WITH PUBLIC IP ADDRESS

```

azureuser@my-vm:~$ echo "<html><body><h2>Welcome to Azure! My name is
$(hostname).</h2></body></html>" | sudo tee -a /var/www/html/index.html
<html><body><h2>Welcome to Azure! My name is
my-vm.</h2></body></html>

```



Welcome to Azure! My name is my-vm.

Welcome to Azure! My name is my-vm.


Welcome to Azure! My name is my-vm.

DISPLAYING VIRTUAL MACHINE, PUBLIC IP AND PRIVATE IP

```
karthikasivakumar2020 [ ~ ]$ az vm list-ip-addresses --resource-group "learn-efdf3b1a-08b4-4cdf-a17e-bf7c86657797" --name my-vm --output table
VirtualMachine      PublicIPAddresses      PrivateIPAddresses
-----
my-vm               40.83.206.211          10.0.0.4
karthikasivakumar2020 [ ~ ]$
```

-----Activate Windows
Go to Settings to activate Windows.

RUNNING PORTFOLIO FROM GIT HUB IN THE BROWSER

 Learn Discover Product documentation Development languages Topics

Training Products Career Paths Browse all training Educator Center Student Hub FAQ & Help

LEVEL 1 100 / 1799 XP

```
--resource-group "learn-c613594d-3594-4697-b592-495605863549" \
--name my-vm \
--public-ip-sku Standard \
--image Ubuntu2204 \
--admin-username azureuser \
--generate-ssh-keys
```

Your VM takes a few moments to come up. You named the VM my-vm.
You use this name to refer to the VM in later steps.

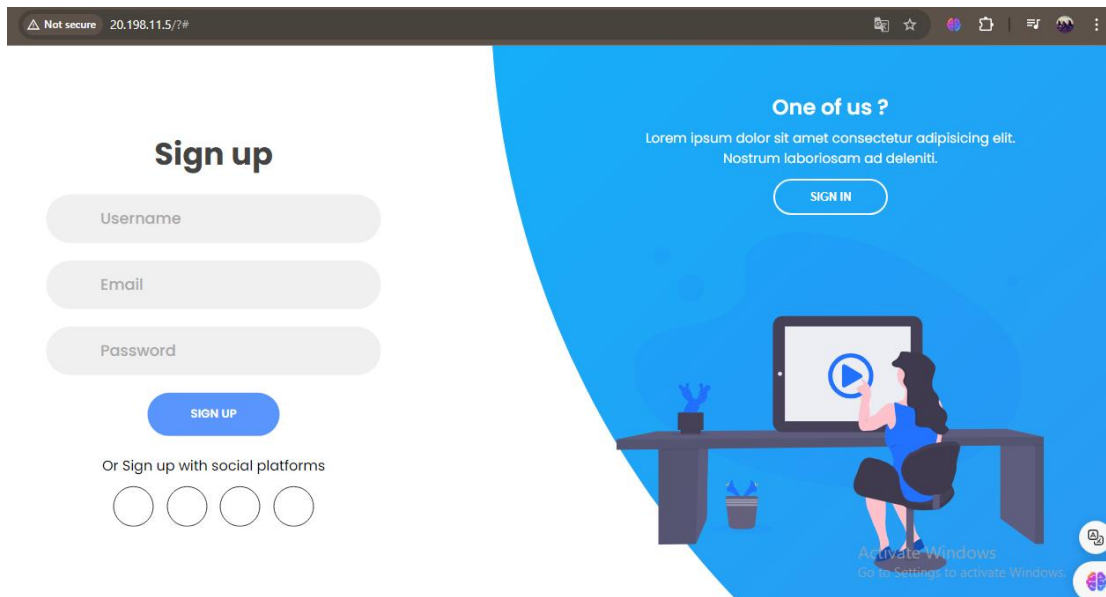
2. Run the following `az vm extension set` command to configure Nginx on your VM:

```
az vm extension set \
--resource-group "learn-c613594d-3594-4697-b592-495605863549" \
--vm-name my-vm \
--publisher Microsoft.Azure.Extensions \
--version 2.1 \
--settings '{"fileUri":["https://raw.githubusercontent.com/Micro
--protected-settings '{"commandToExecute": "./configure-nginx.sh
```

Azure Cloud Shell

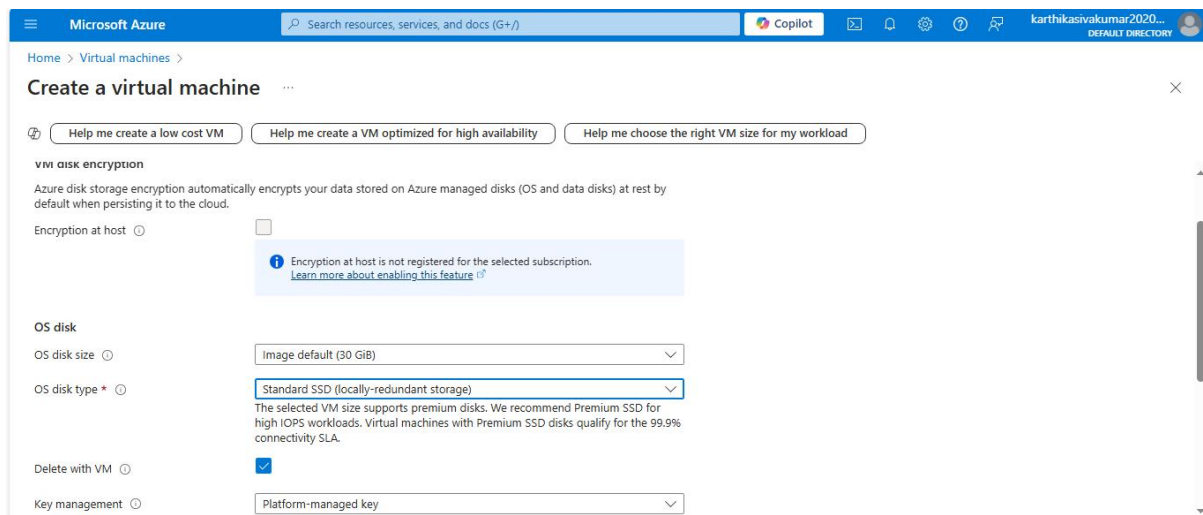
Switch to PowerShell Restart Manage files New session

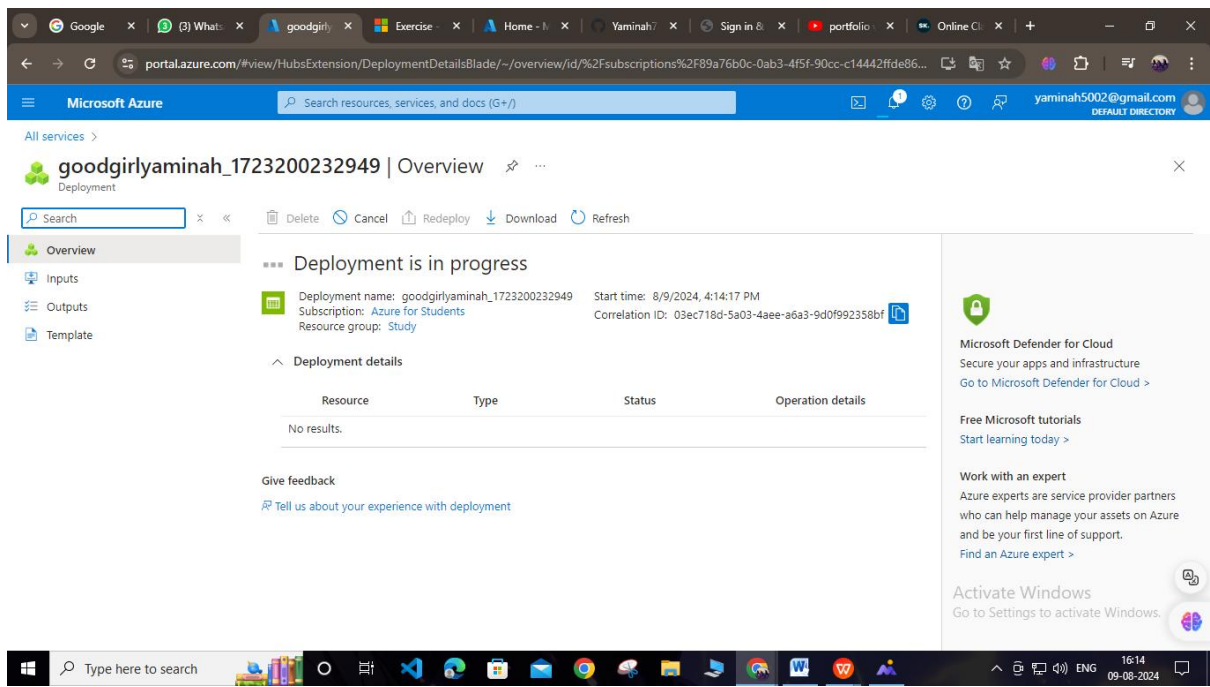
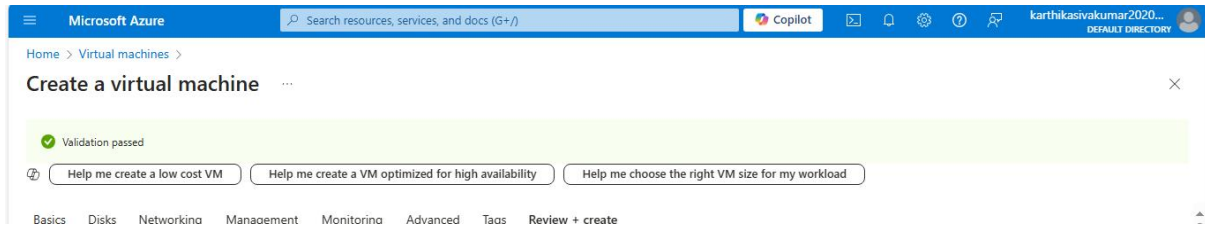
Last login: Fri Aug 9 04:00:27 2024 from 20.235.209.48
azureuser@my-vm:~\$ sudo apt-get update
sudo apt-get install git -y
Hit:1 http://azure.archive.ubuntu.com/ubuntu jammy InRelease
Hit:2 http://azure.archive.ubuntu.com/ubuntu jammy-updates InRelease
Hit:3 http://azure.archive.ubuntu.com/ubuntu jammy-backports InRelease
Hit:4 http://azure.archive.ubuntu.com/ubuntu jammy-security InRelease
Reading package lists... Done
Reading package lists... Done
Building dependency tree... Done
Reading state information... Done
git is already the newest version (1:2.34.1-1ubuntu1.11).
git set to manually installed.
0 upgraded, 0 newly installed, 0 to remove and 10 not upgraded.
azureuser@my-vm:~\$ git clone https://github.com/Yaminah786/newloginpage.git
Cloning into 'newloginpage'...
remote: Enumerating objects: 10, done.
remote: Counting objects: 100% (10/10), done.
remote: Compressing objects: 100% (9/9), done.
remote: Total 10 (delta 0), reused 10 (delta 0), pack-reused 0
Receiving objects: 100% (10/10), 21.84 KiB | 545.00 KiB/s, done.



VIRTUAL MACHINE

CREATING A VIRTUAL MACHINE

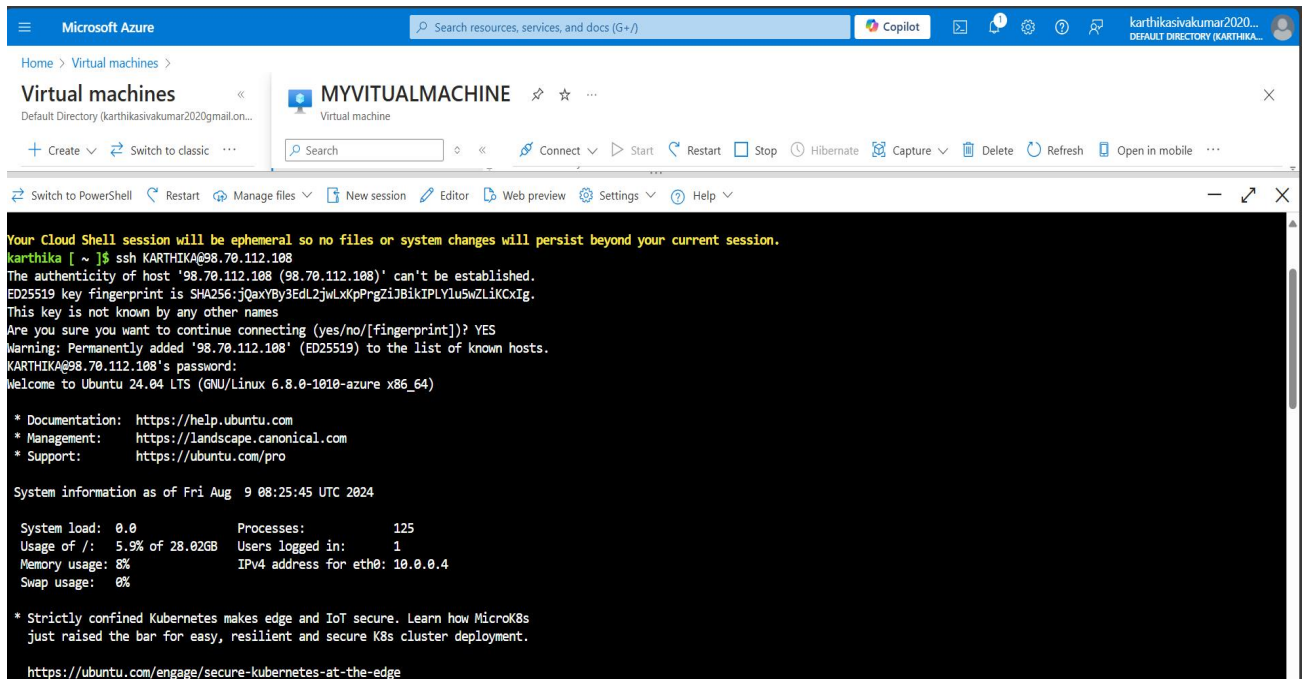




COMMANDS FOR VIRTUAL MACHINE

- ✓ ssh Yaminah@20.198.11.5
- ✓ sudo apt update
- ✓ sudo apt install git
- ✓ sudo apt install nginx
- ✓ sudo systemctl start nginx
- ✓ sudo systemctl enable nginx
- ✓ cd /var/www/html
- ✓ sudo rm -rf *
- ✓ sudo git clone <https://github.com/Karthika-19/myportfolio.git>
- ✓ sudo chown -R www-data:www-data /var/www/html

EXECUTING THE VIRTUAL MACHINE COMMANDS



```
Microsoft Azure
Search resources, services, and docs (G+)
Copilot
karthikasivakumar2020...
DEFAULT DIRECTORY (KARTHIKA...)

Home > Virtual machines >
Virtual machines
Default Directory (karthikasivakumar2020@gmail.on...
+ Create Switch to classic ...

MYVITUALMACHINE
Virtual machine
Search
Connect Start Restart Stop Hibernate Capture Delete Refresh Open in mobile ...

Switch to PowerShell Restart Manage files New session Editor Web preview Settings Help ...

Your Cloud Shell session will be ephemeral so no files or system changes will persist beyond your current session.
karthika [ ~ ]$ ssh KARTHIKA@98.70.112.108
The authenticity of host '98.70.112.108 (98.70.112.108)' can't be established.
ED25519 key fingerprint is SHA256:jQaxYBy3EdL2jwLXpPngZiJBikIPLYlu5wZLiKxIg.
This key is not known by any other names
Are you sure you want to continue connecting (yes/no/[fingerprint])? YES
Warning: Permanently added '98.70.112.108' (ED25519) to the list of known hosts.
KARTHIKA@98.70.112.108's password:
Welcome to Ubuntu 24.04 LTS (GNU/Linux 6.8.0-1010-azure x86_64)

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

System information as of Fri Aug 9 08:25:45 UTC 2024

System load: 0.0          Processes:            125
Usage of /:  5.9% of 28.02GB Users logged in:        1
Memory usage: 8%          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
```

```

Reading package lists... Done
Building dependency tree... Done
Reading state information... Done
nginx is already the newest version (1.24.0-2ubuntu7).
0 upgraded, 0 newly installed, 0 to remove and 9 not upgraded.
KARTHIKA@MYVITUALMACHINE:~$ sudo systemctl start nginx
KARTHIKA@MYVITUALMACHINE:~$ sudo systemctl enable nginx
Synchronizing state of nginx.service with SysV service script with /usr/lib/systemd/systemd-
sysv-install.
Executing: /usr/lib/systemd/systemd-sysv-install enable nginx
KARTHIKA@MYVITUALMACHINE:~$ cd /var/www/html
KARTHIKA@MYVITUALMACHINE:/var/www/html$ sudo rm -rf *
KARTHIKA@MYVITUALMACHINE:/var/www/html$ sudo git clone https://github.com/Karthika-19/myport
folio.git
Cloning into 'myportfolio'...
remote: Enumerating objects: 8, done.
remote: Counting objects: 100% (8/8), done.
remote: Compressing objects: 100% (8/8), done.
remote: Total 8 (delta 0), reused 8 (delta 0), pack-reused 0
Receiving objects: 100% (8/8), 185.18 KiB | 8.82 MiB/s, done.
KARTHIKA@MYVITUALMACHINE:/var/www/html$ sudo chown -R www-data:www-data /var/www/html
KARTHIKA@MYVITUALMACHINE:/var/www/html$

```

```

KARTHIKA@MYVITUALMACHINE:~$ sudo apt update
Hit:1 http://azure.archive.ubuntu.com/ubuntu noble InRelease
Get:2 http://azure.archive.ubuntu.com/ubuntu noble-updates InRelease [126 kB]
Hit:3 http://azure.archive.ubuntu.com/ubuntu noble-backports InRelease
Hit:4 http://azure.archive.ubuntu.com/ubuntu noble-security InRelease
Get:5 http://azure.archive.ubuntu.com/ubuntu noble-updates/main amd64 Packages [344 kB]
Get:6 http://azure.archive.ubuntu.com/ubuntu noble-updates/main amd64 c-n-f Metadata [5716 B]
Get:7 http://azure.archive.ubuntu.com/ubuntu noble-updates/universe amd64 Packages [321 kB]
Get:8 http://azure.archive.ubuntu.com/ubuntu noble-updates/universe amd64 c-n-f Metadata [12.7 kB]
Fetched 809 kB in 1s (1056 kB/s)
Reading package lists... Done
Building dependency tree... Done
Reading state information... Done
0 packages can be upgraded. Run 'apt list --upgradable' to see them.
KARTHIKA@MYVITUALMACHINE:~$ sudo apt install git
Reading package lists... Done
Building dependency tree... Done
Reading state information... Done
git is already the newest version (1:2.43.0-1ubuntu7.1).
0 upgraded, 0 newly installed, 0 to remove and 9 not upgraded.
KARTHIKA@MYVITUALMACHINE:~$ sudo apt install nginx
Reading package lists... Done
Building dependency tree... Done
Reading state information... Done
nginx is already the newest version (1.24.0-2ubuntu7).
0 upgraded, 0 newly installed, 0 to remove and 9 not upgraded.
KARTHIKA@MYVITUALMACHINE:~$ sudo systemctl start nginx

```


My Portfolio

Yaminah

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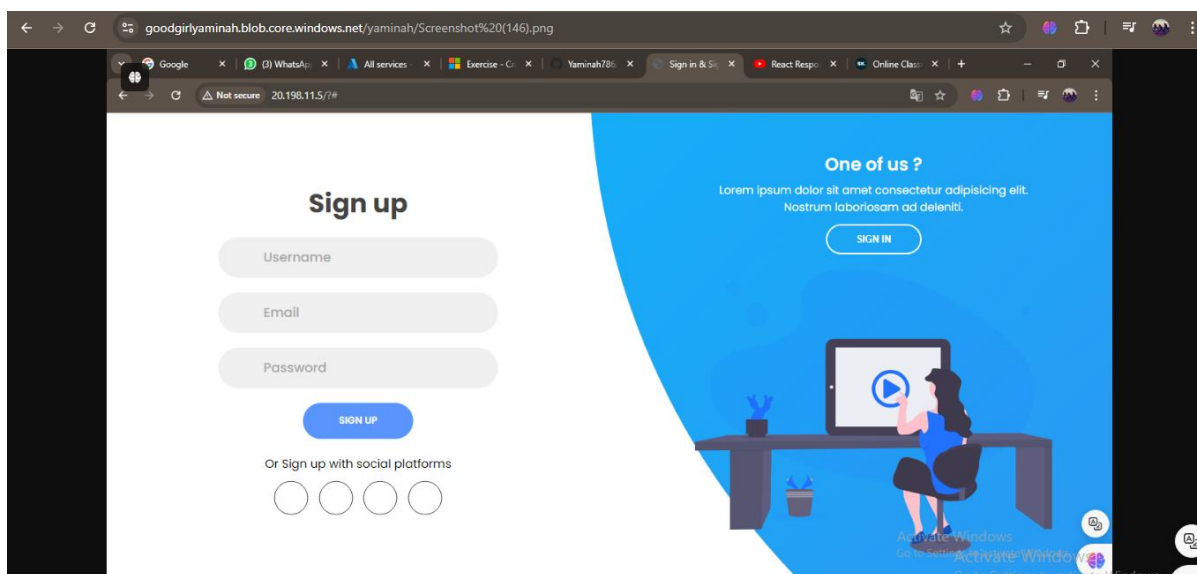
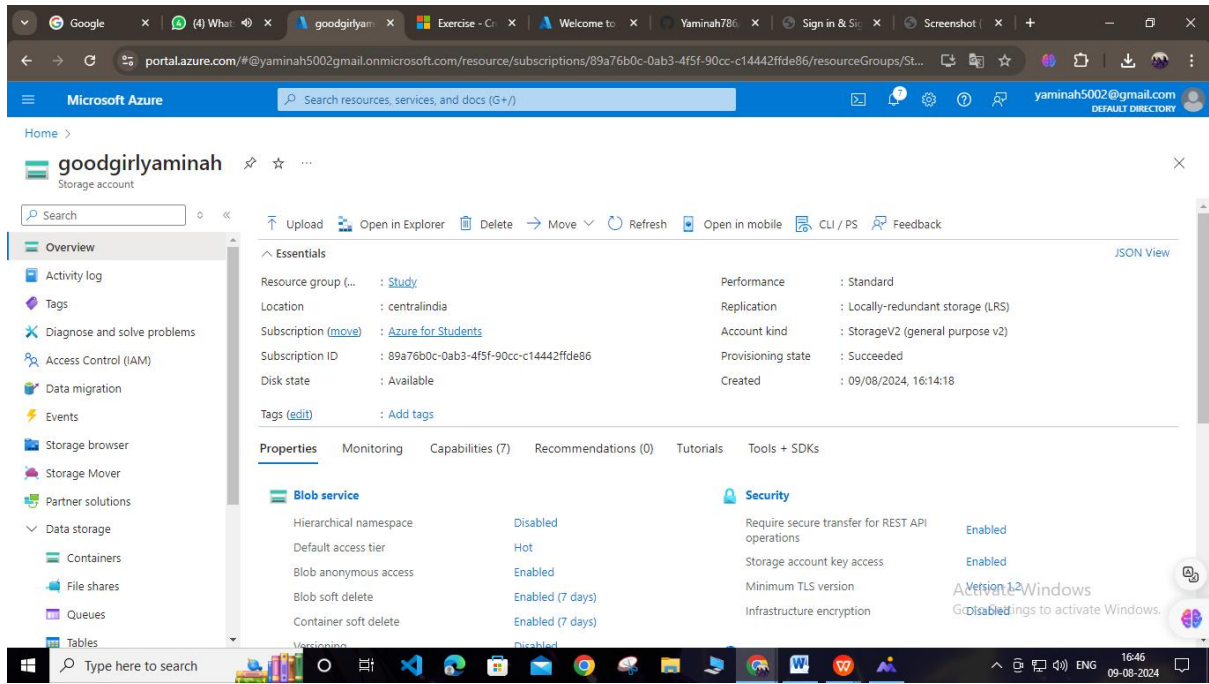
Hi,
I'm **Yaminah**
Web Designer

[Contact](#)



Activate Windows

STORAGE ACCOUNT- CONTAINERS- BLOG



COST MANAGEMENT

Servers

Enter the details of your on-premises server infrastructure. After adding a workload, select the workload type and enter the remaining details.

Servers: Windows VMs

Workload [?]

Environment [?]

Operating system [?]

Operating System Licence [?]

VMs [?]

Virtualisation [?]

Core(s) [?]

RAM (GB) [?]

Optimise by [?]

Windows Server 2008/2008 R2 [?]

Windows/Linux Server

Virtual Machines

Windows

Datacentre

50
(1 - 9999)

Hyper-V

8
(1 - 32)

15
(1 - 448)

CPU

☐

Servers: Linux VMs

Workload [?]

Environment [?]

Operating system [?]

VMs [?]

Virtualisation [?]

Core(s) [?]

RAM (GB) [?]

Optimise by [?]

Windows/Linux Server

Virtual Machines

Linux

50
(1 - 9999)

VMware

8
(1 - 32)

16
(1 - 448)

CPU

+ Add server workload

Activate Windows
Go to Settings to activate Windows.
[Chat with Sales](#)

Total Cost of Ownership (TCO) Calculator

https://azure.microsoft.com/en-gb/pricing/tco/calculator/

Azure

Contact Sales

Try Azure for free

Storage

Enter the details of your on-premises storage infrastructure. After adding storage, select the storage type and enter the remaining details.

Server Storage

Storage type [?]

Disk type [?]

Capacity [?]

Back up [?]

Archive [?]

Local Disk/SAN

HDD

60
TB
(1 - 5000)

120
TB
(0 - 5000)

0
TB
(0 - 5000)

+ Add storage

Networking

Enter the amount of network bandwidth you currently consume in your on-premises environment.

Outbound bandwidth [?]

Destination Region

15

East Asia

Activate Windows
Go to Settings to activate Windows.
[Chat with Sales](#)

View report

Timeframe [?]

Region [?]

Licensing programme [?]

Show Dev/Test Pricing [?]

3 Years

North Europe

Microsoft Online Services Programme

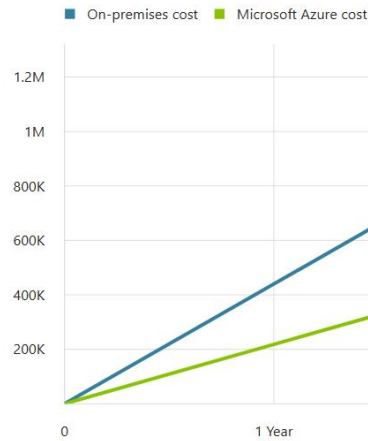
☐

Over 3 year(s) with Microsoft Azure, your estimated cost savings could be as much as **US\$665,456**

Activate Windows
Go to Settings to activate Windows.

Total on-premises vs Azure cost over time

Savings from running workloads in Azure accrue over time. The following shows how those savings add up over years.



Activate Windows

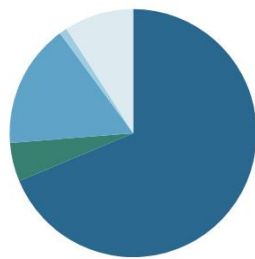
Go to Settings to activate Windows.

Chat with Sales

Total on-premises over 3 year(s)

TCO of on-premises environments tends to be driven by compute and data centre costs.

US\$1,319,436
Total cost

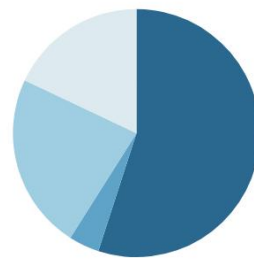


68% 5% 16% 1% 9%

Total Azure cost over 3 year(s)

In Azure, certain cost categories decrease or go away completely.

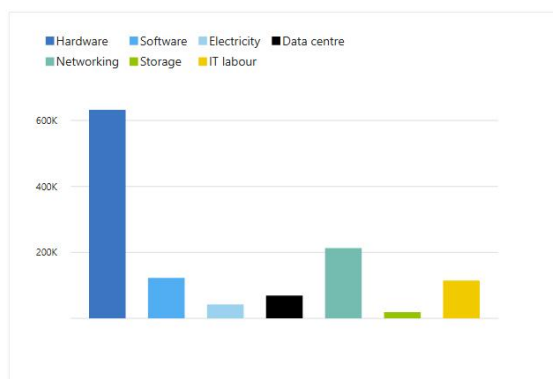
US\$653,980
Total cost



55% 0% 4% 23%

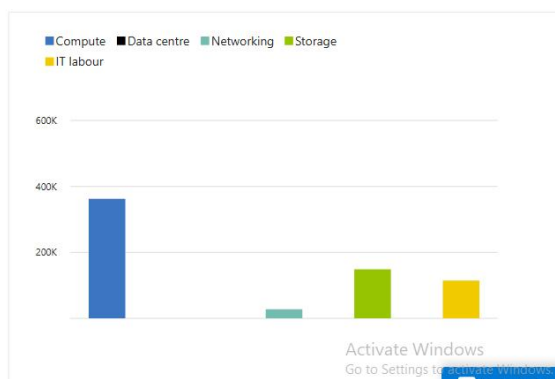
Total on-premises cost breakdown

In Azure, several of the cost categories from the on-premises environment are consolidated and decrease with the efficiency that comes with the cloud.



Total Azure cost breakdown

In Azure, several of the cost categories from the on-premises environment are consolidated and decrease with the efficiency that comes with the cloud.



US\$1,319,436
Cost over 3 year(s)

US\$653,980
Cost over 3 year(s)

On-premises cost breakdown summary

Category	Cost
Compute	US\$903,106.08
Hardware	US\$632,224.00
Software	US\$123,100.00
Electricity	US\$42,166.08
Virtualisation	US\$105,616.00
Data centre	US\$68,917.56
Networking	US\$213,237.39
Storage	US\$19,174.40
IT labour	US\$115,000.23
Total	US\$1,319,436.00

Azure cost breakdown summary

Category	Cost
Compute	US\$362,484.00
Data centre	US\$0.00
Networking	US\$27,639.00
Storage	US\$148,856.83
IT labour	US\$115,000.23
Total	US\$653,980.00