Verzeo Project Report

Topic-

Cloud computing||
Microsoft azure

ACKNOWLEDGMENT

I thank team verzeo and my mentor Mr. Surya for providing this platform and teaching to their best ability.

Also I’m grateful to my mentor for his esteemed guidance in this project.

Sincere regards

Seerat Sharma

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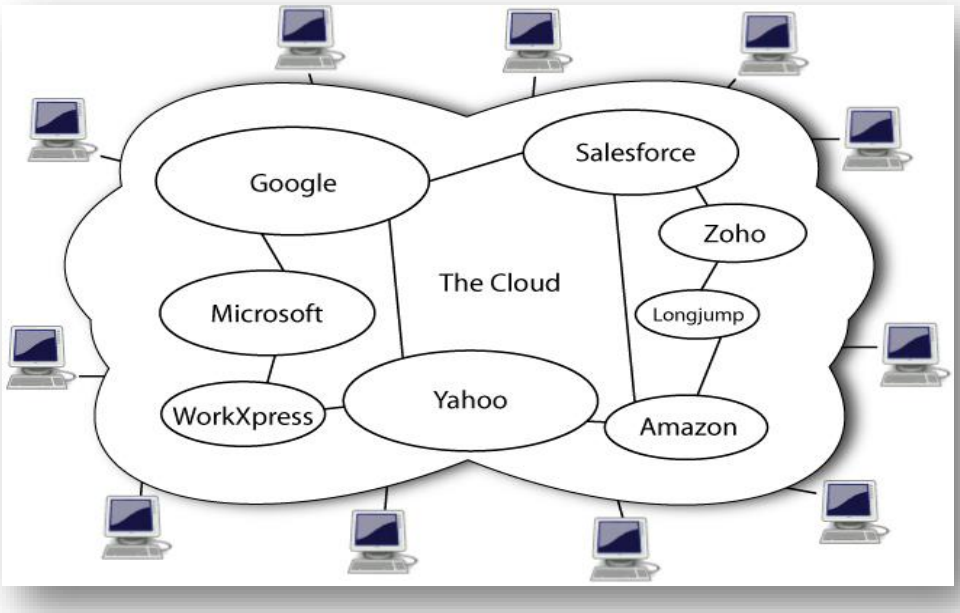
Cloud Computing

Cloud Computing is a model that we deploy for usage on demand.



It is an on-demand availability of services over the internet which follows the rule of pay as you go, which means, you only pay for the service you use and also the payment is time bound; that is, if you use the service for 1 hour, you are supposed to pay for that one hour only.

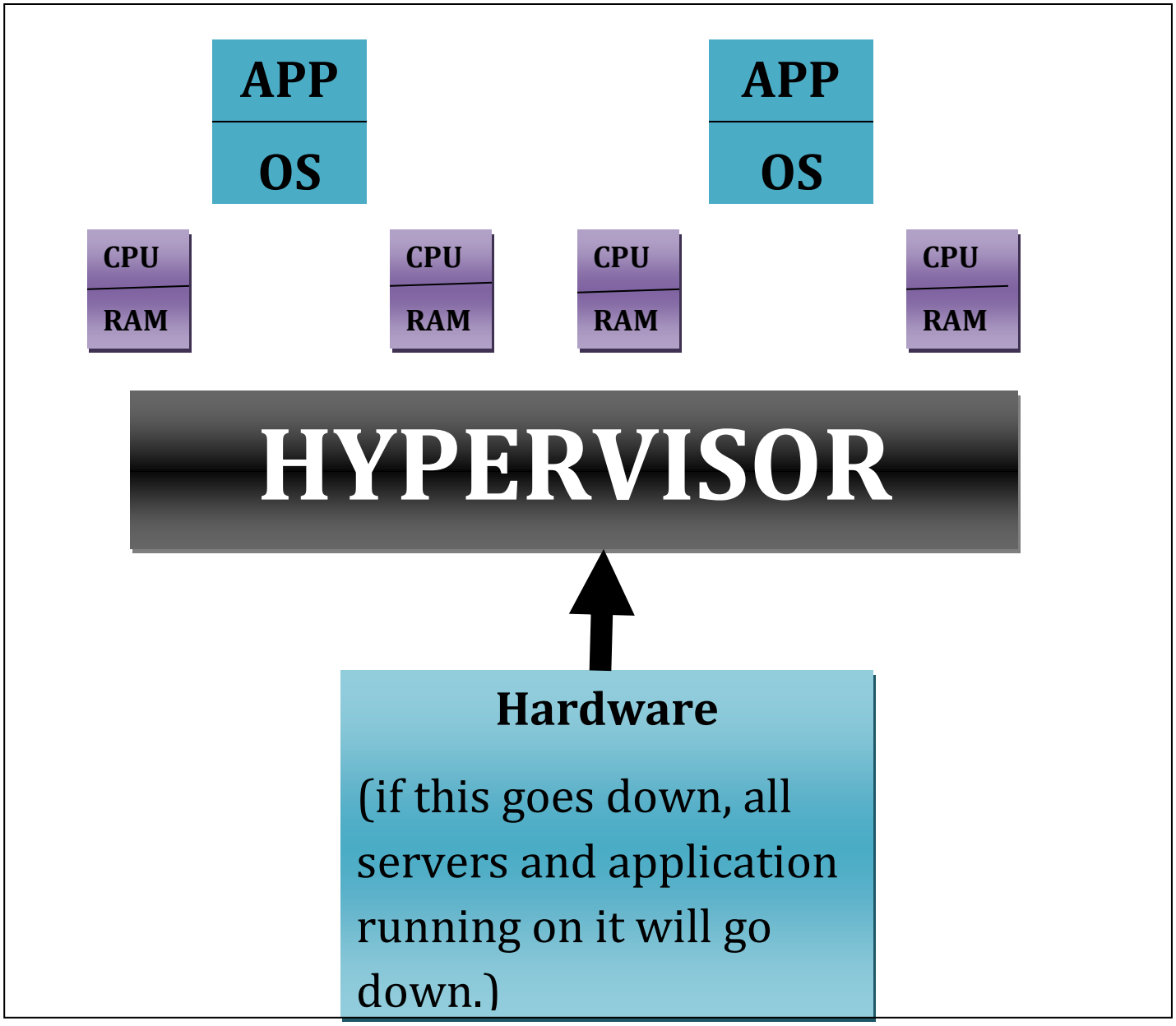
Need for evolution from physical data centers to virtualization.

Before the era of cloud computing emerged, physical data centers were into existence. A physical data centre may be defined as a group of physical systems connected over a LAN; wherein each physical system has an operating system with its set of configuration.

The image shown above is of a physical data centre. In a physical server, one cannot use high end applications or multiple applications, otherwise the system will crack . A company, doing a business requires many applications to be used and hence requires many servers, because if the load on a server will increase, it will go down and thereby the entire business will go down. Each server costs between 15-60 Lakhs.

Not only cost, but the physical system comes with a lot many challenges, which includes power, security, manpower, maintenance, power cooling system, networking, cabling , disaster management and many more. A solution

to all of this is Virtualization/cloud computing. Virtualization implements the physical characteristics of a system onto a logical environment, in other words it simply encapsulates the physical characteristics.



The diagram above shows the entire mechanism of cloud server environment

The hypervisor converts all the physical characteristics of the hardware like virtual cpu, ram, network, throughput etc into logical ones. All virtual machines run on this software called as hypervisor. Services, that are being used over the cloud logically do exist somewhere physically on the data centers. These data centers are run by the cloud service providers, which provide cloud service to people with respect to their demand. Hence for a company, it is better to access these cloud computing services than to have its own data centre which come with a lot much of cost and maintenance.

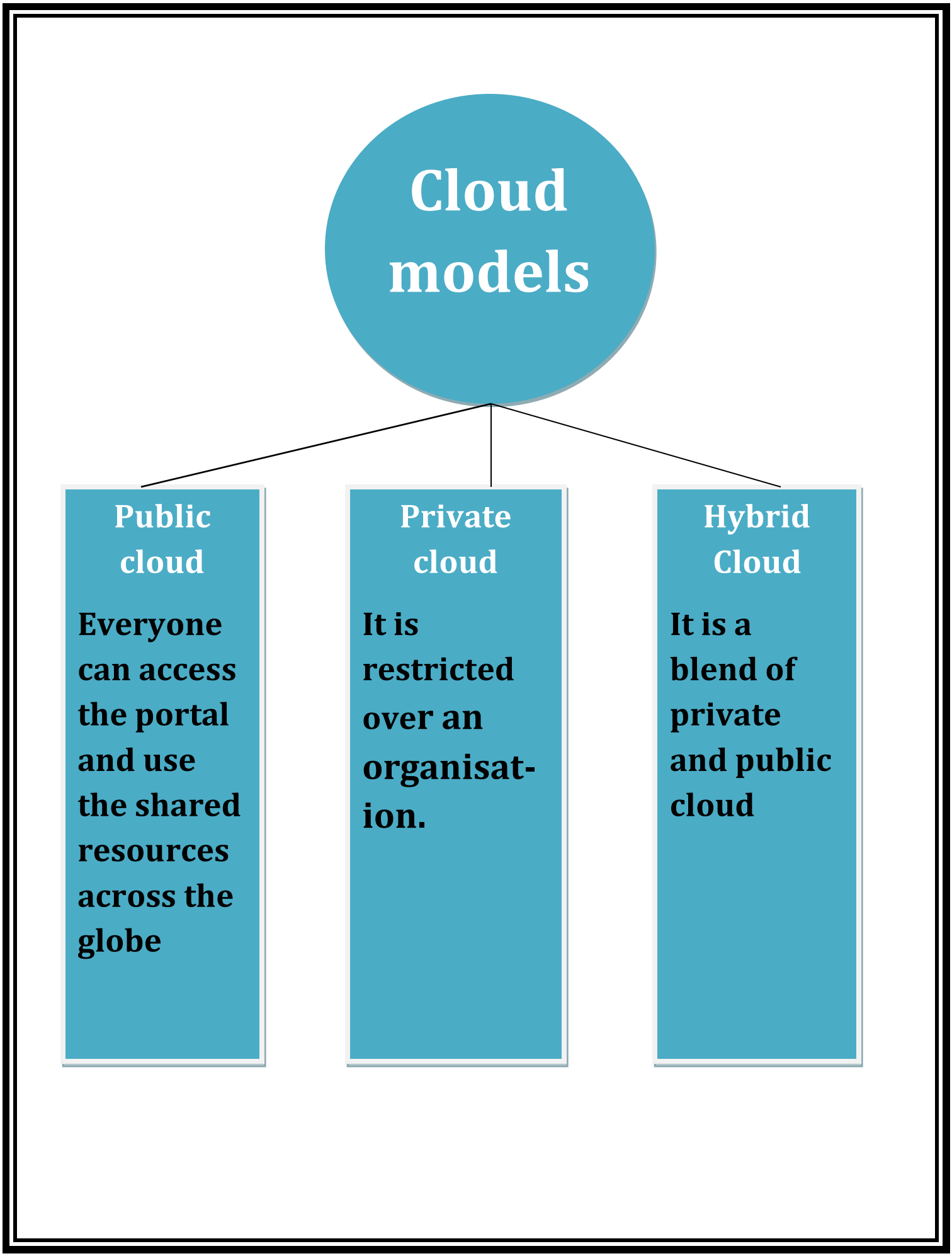
Some of the major cloud service providers are:

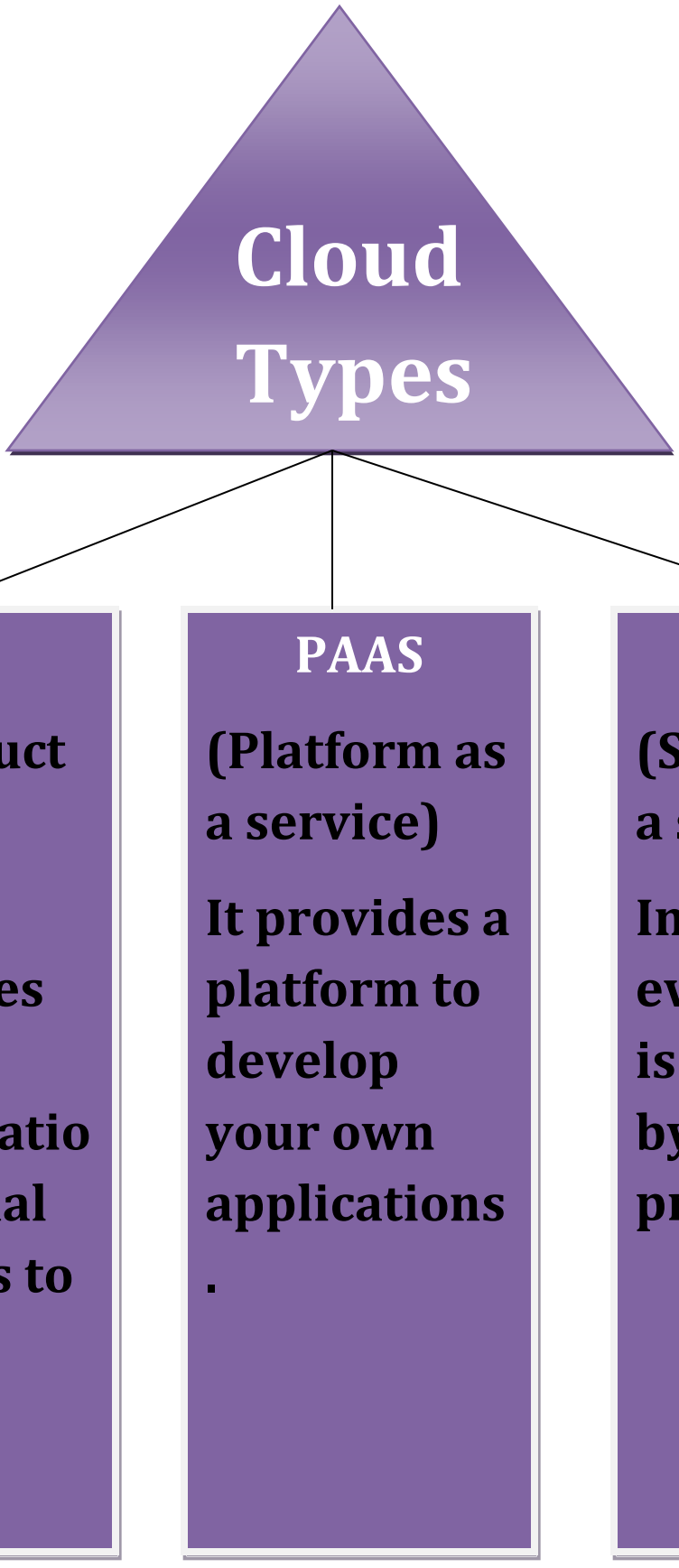
1. Microsoft azure
2. Aws (amazon web services)
3. GCP (Google cloud Platform)

Cloud computing gives you preinstalled operating system and applications that are ready to use.

Some of the advantages of cloud computing are :

- Cost effective
- Scalable (it is easy to upgrade your logical vm)
- Elasticity
- Reliability
- Secure


Cloud models
Public cloud
Everyone can access the portal and use the shared resources across the globe
Private cloud
It is restricted over an organisat-ion.
Hybrid Cloud
It is a blend of private and public cloud


Cloud Types
IAAS
(Infrastructure as a service)
It provides logical encapsulation of virtual machines to use over internet.
PAAS
(Platform as a service)
It provides a platform to develop your own applications.
SAAS
(Software as a service)
In this type, everything is managed by the provider.

Project Description

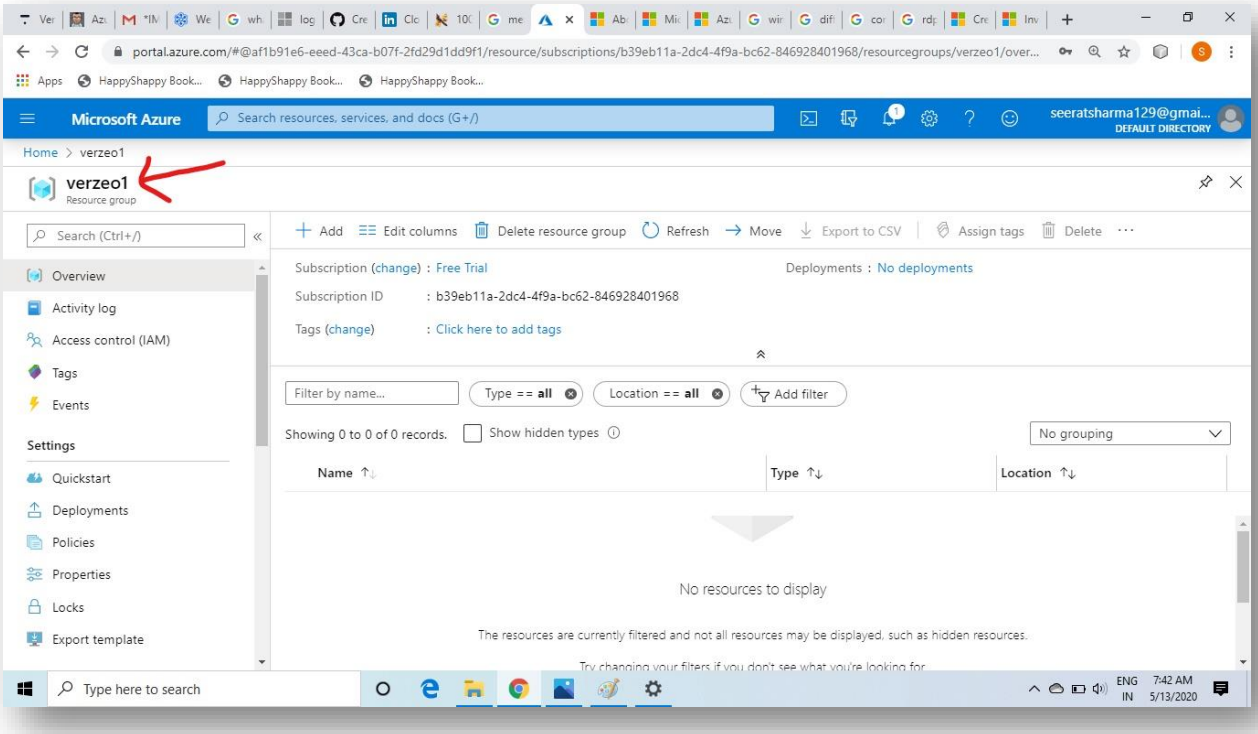
Snapshot based backup of Azure VM

Considering a situation that a Vm crashes on rebooting or due to some other reason, in this case the entire data in the vm will be lost. A company cannot afford to lose its valuable data. Microsoft azure helps in this case by providing a service such that we can create a a snapshot based backup of the vm and assign to it some backup policies, with respect to which, the vm will be backed up timely and there will be no loss of data.

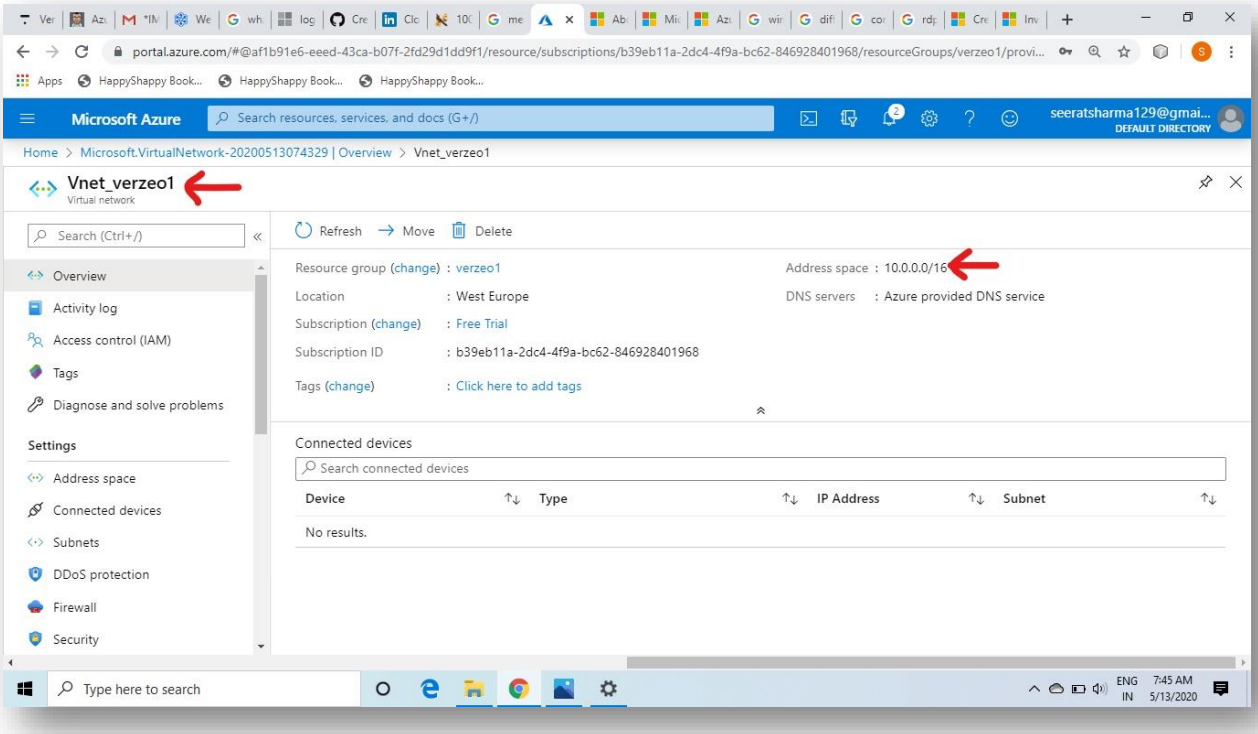
Steps to accomplish the above said are shown below.

Steps to create a snapshot based backup of azure vm

Step 1 Create a resource group. The name of the resource group created is verzeo1.



Step 2 Create a network .Name of the network created is Vnet_verzeo. It is assigned the default subnet 10.0.0/16

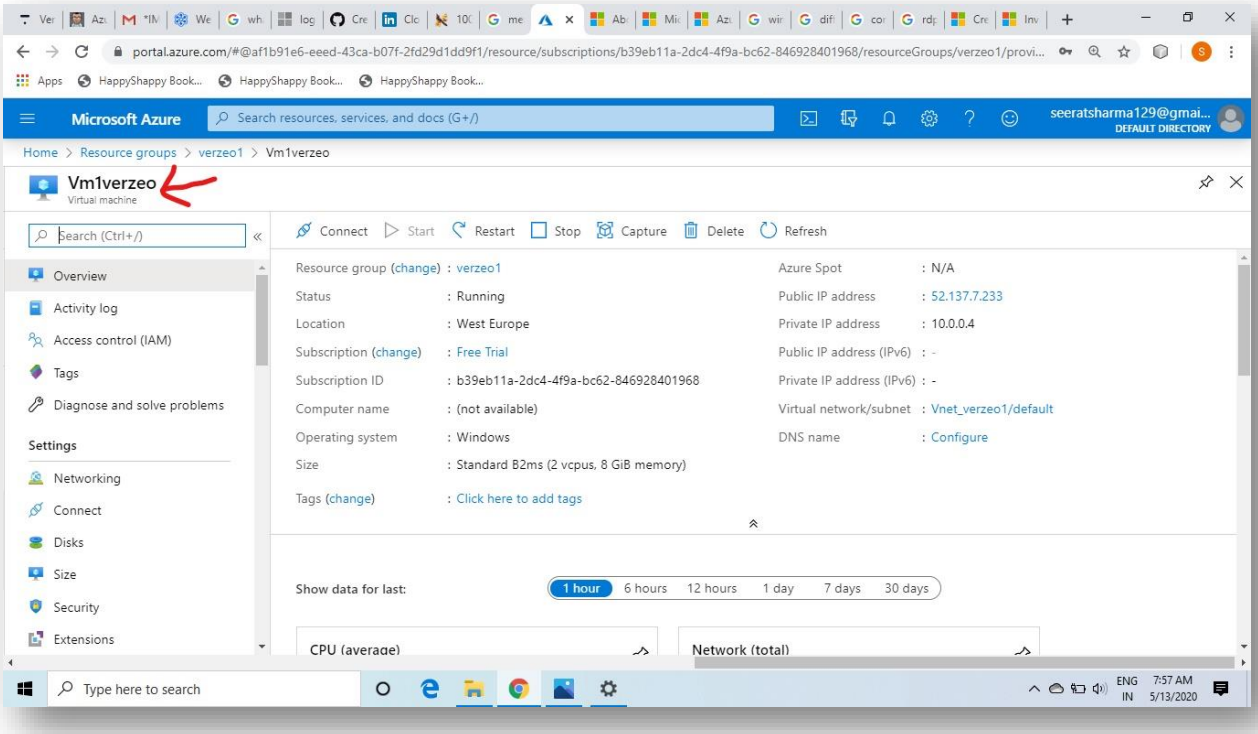


Step 3

Create a vm

Name of the vm -vm1verzeo, the operating system is Windows 10 Pro , version 1809 .

The public ip assigned to the vm is 52.137.7.23

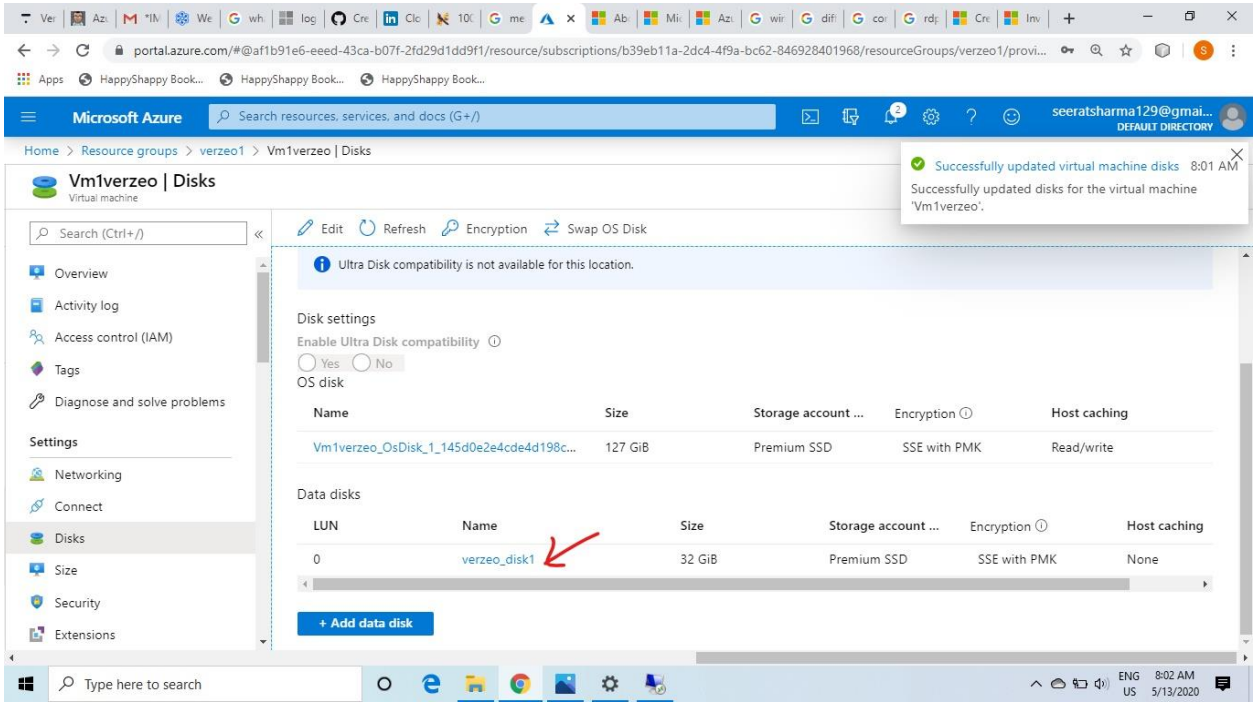

portal.azure.com/#@af1b91e6-eeed-43ca-b07f-2fd29d1dd9f1/resource/subscriptions/b39eb11a-2dc4-4f9a-bc62-846928401968/resourceGroups/verzeo1/provi...
Microsoft Azure
Search resources, services, and docs (G+/)
seeratsharma129@gmai...
DEFAULT DIRECTORY
Home > Resource groups > verzeo1 > Vm1verzeo
Vm1verzeo
Virtual machine
Search (Ctrl+/)
Overview
Activity log
Access control (IAM)
Tags
Diagnose and solve problems
Settings
Networking
Connect
Disks
Size
Security
Extensions
Connect
Start
Restart
Stop
Capture
Delete
Refresh
Resource group (change) : verzeo1
Status : Running
Location : West Europe
Subscription (change) : Free Trial
Subscription ID : b39eb11a-2dc4-4f9a-bc62-846928401968
Computer name : (not available)
Operating system : Windows
Size : Standard B2ms (2 vcpus, 8 GiB memory)
Tags (change) : Click here to add tags
Azure Spot : N/A
Public IP address : 52.137.7.233
Private IP address : 10.0.0.4
Public IP address (IPv6) : -
Private IP address (IPv6) : -
Virtual network/subnet : Vnet_verzeo1/default
DNS name : Configure
Show data for last:
1 hour
6 hours
12 hours
1 day
7 days
30 days
CPU (average)
Network (total)
Type here to search
ENG
IN
7:57 AM
5/13/2020

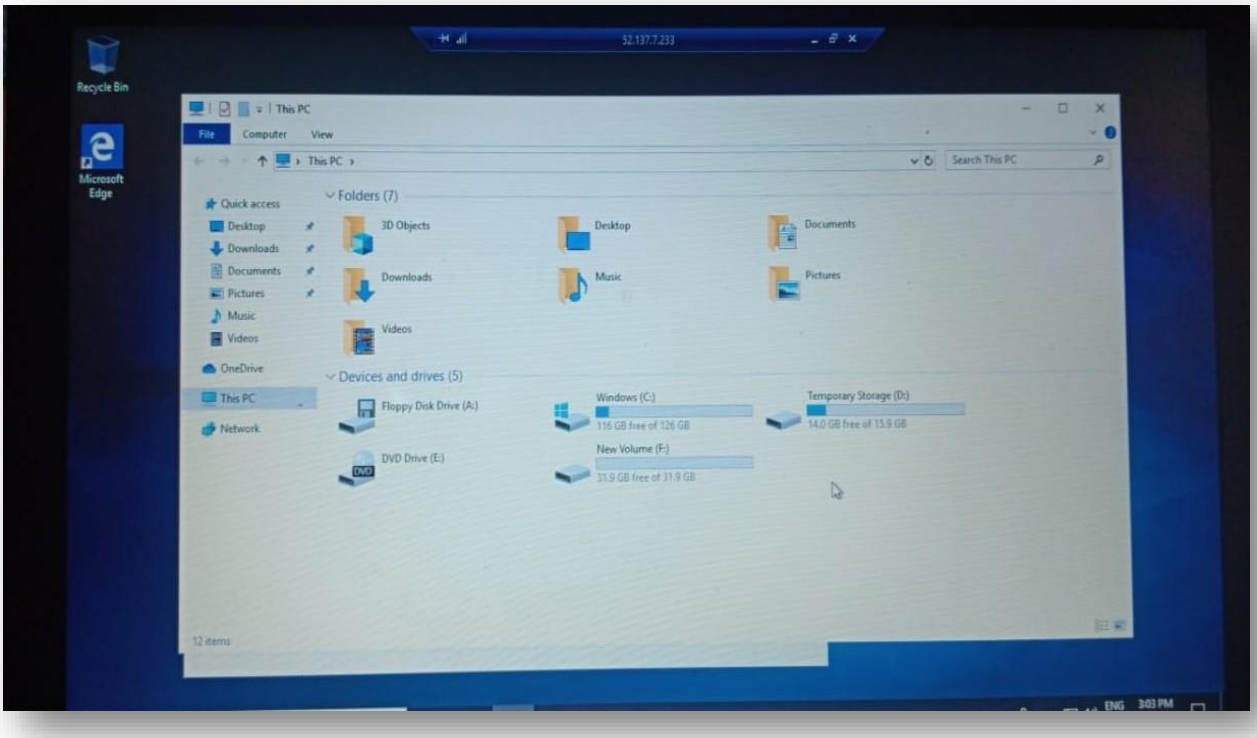
Recycle Bin
Microsoft Edge
Type here to search
ENG
IN
2:59 PM
5/13/2020

Step 4 Add data disk and create logical partition in the VM using disk management.

The data disk added in the vm is named as verzeo_disk1.

On creating logical partition the letter used for the disk is ‘F’.

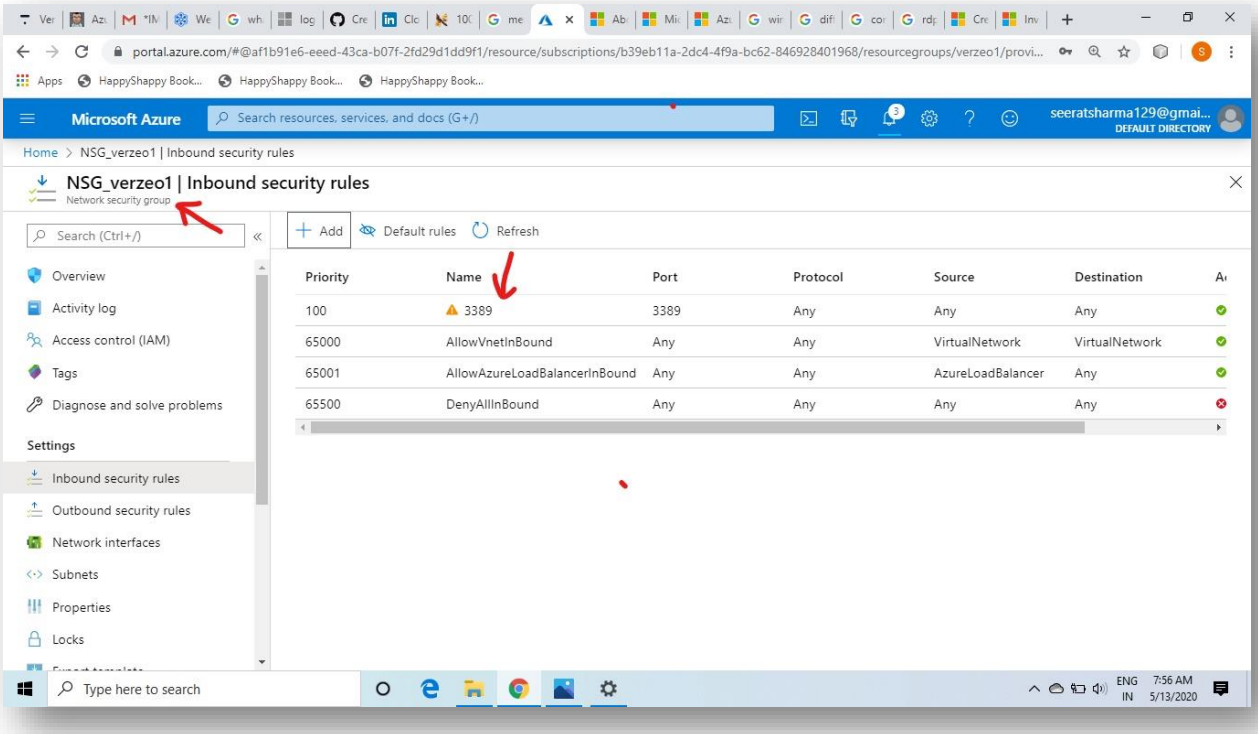




Step 5 Configure the NSG(network security group) and assign it to configured subnet.

Name of the NSG create is NSG_verzeo1.

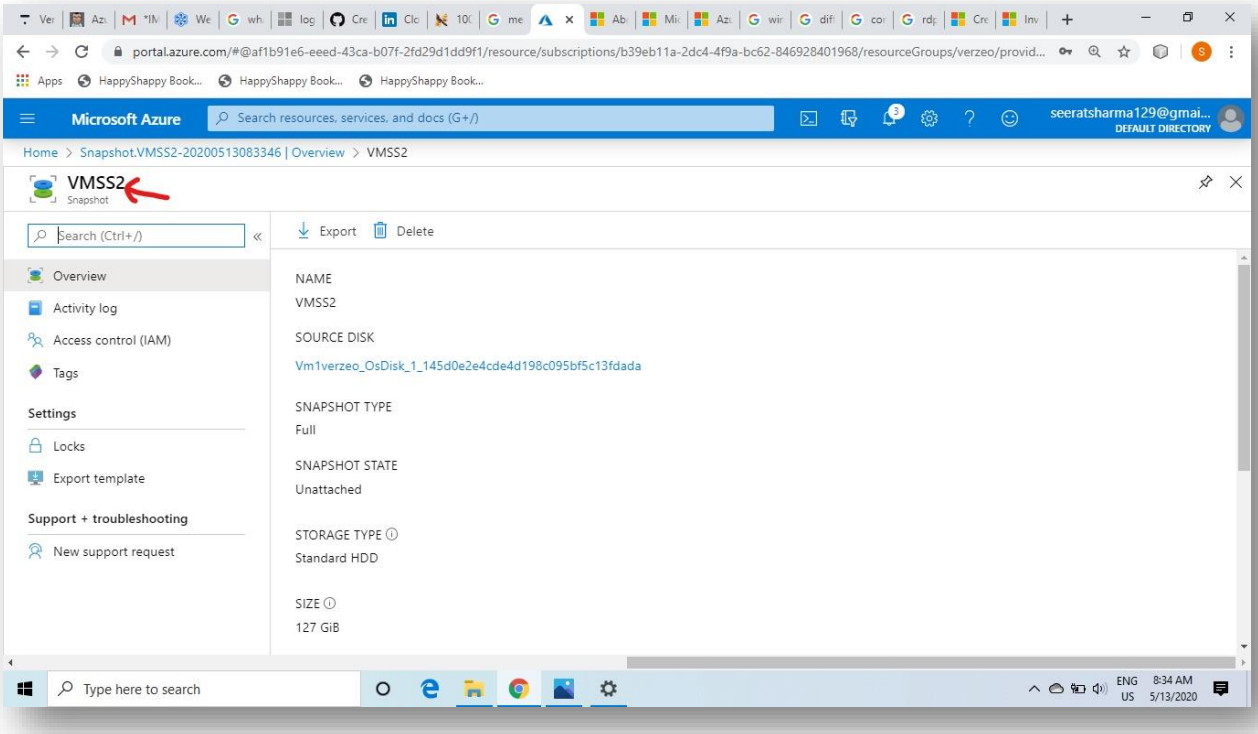
And allow the inbound security rule 3389 (RDP).



Step 6

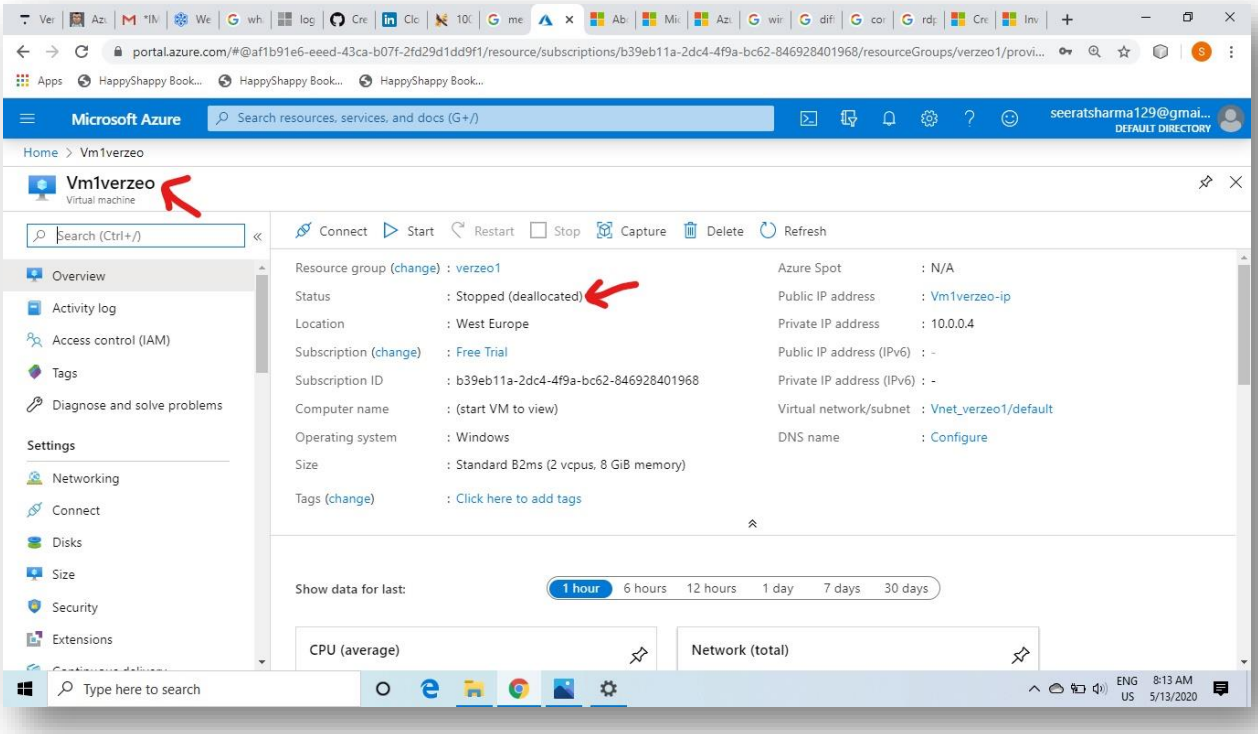
Take a snapshot of the Vm created such that we can retain the data if lost due to vm crash.

Name of the snapshot created is VMSS2.



Now, we assume a situation that the vm crashes . In this case, a company cannot afford to lose all its data and hence we create another vm out of the snapshot taken, so that all the data is lost is retained.

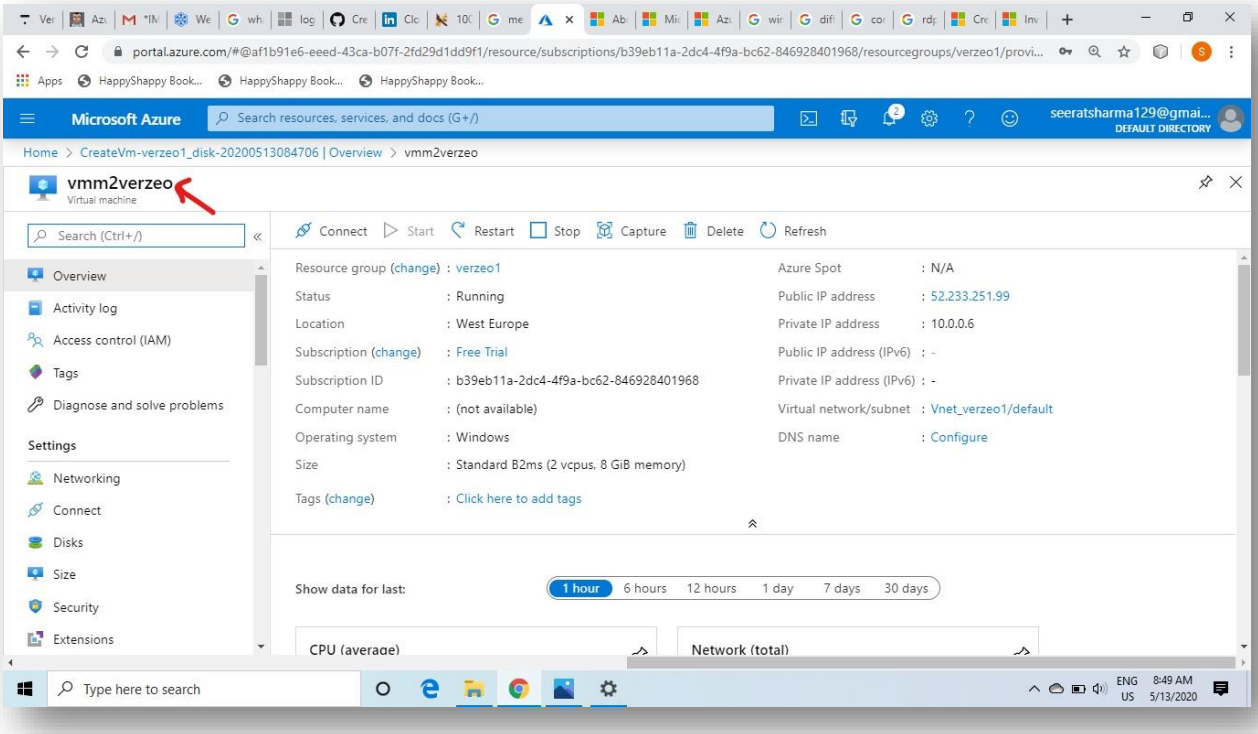
For this, we stop the vm,



And now, we create a disk namely verzeo1_disk, with its source as snapshot(VMSS2).

And Create a VM out of it.

The new Vm created is named as vmm2verzeo. The public Ip assigned to this vm is 52.233.251.99



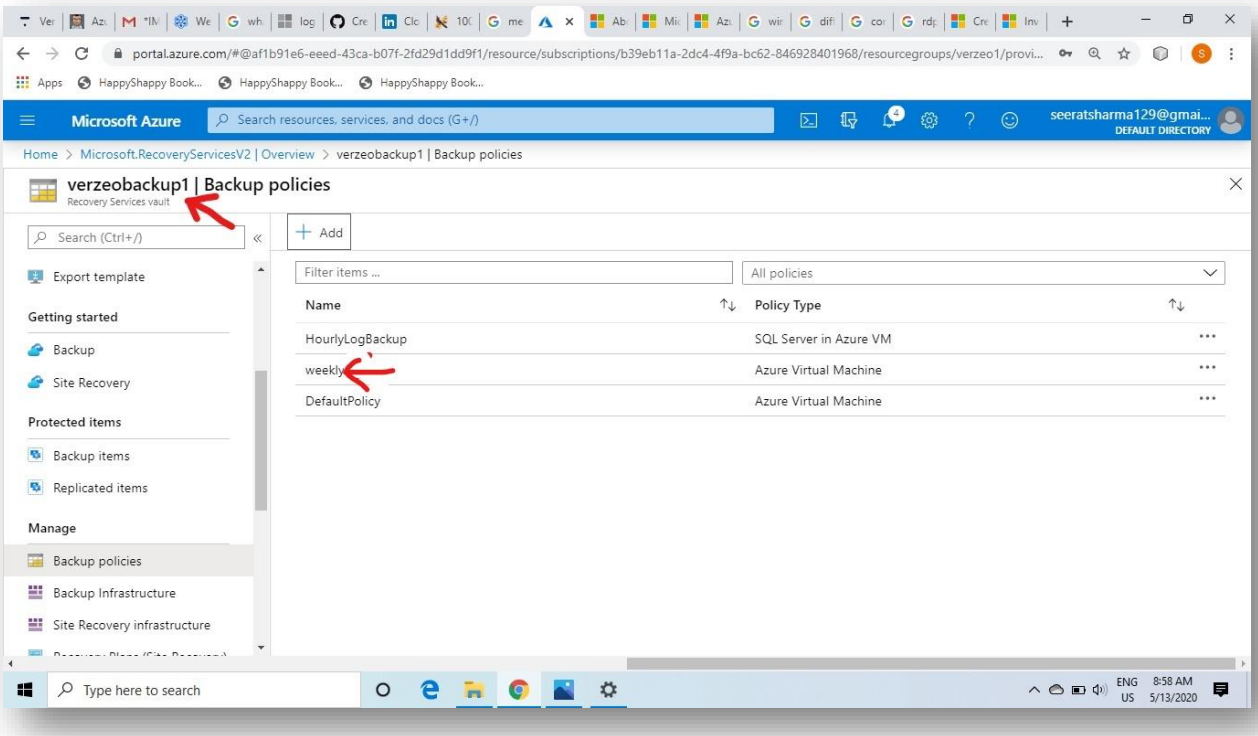
All the data that was stored in vm1verzeo is now restored in vmm2verzeo and hence there is no data lost.

Step 7

Create Vault (Azure Backup)

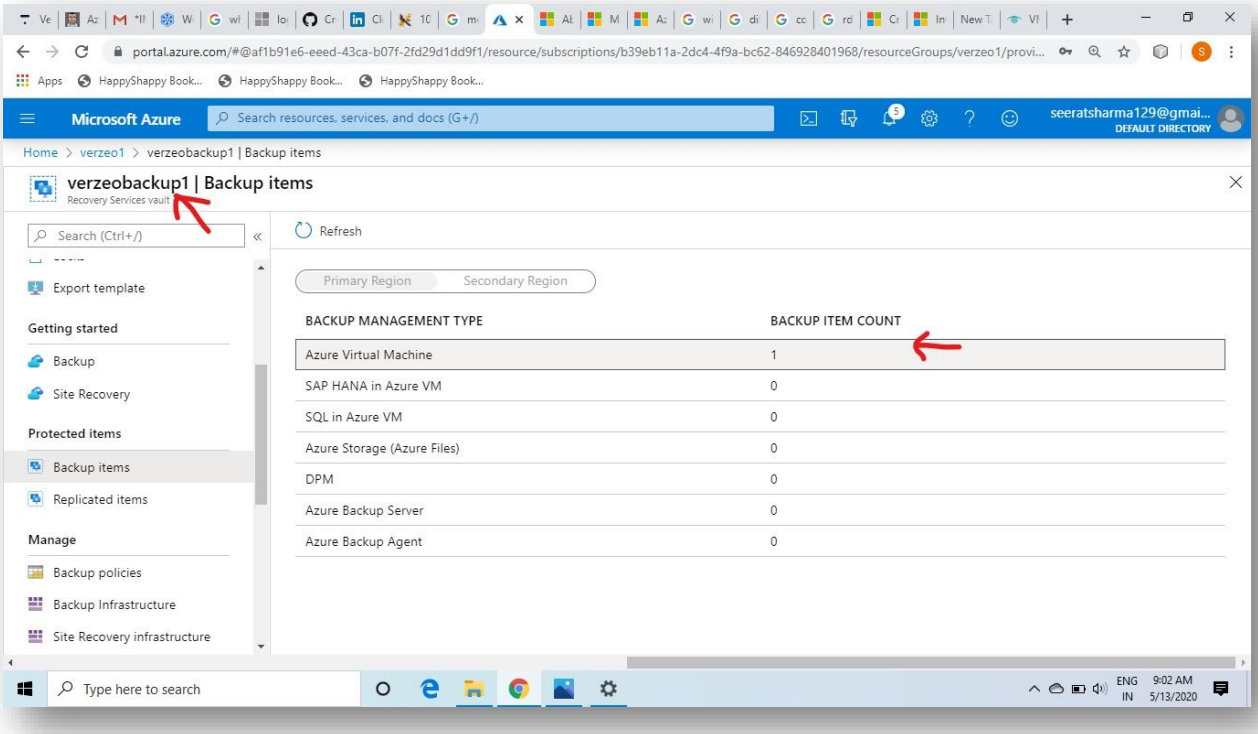
The name of the vault created is verzeobackup1. And a backup policy is

added, according to which a backup will take place weekly at 11:00 pm every Sunday.



Step 8

Configure the backup and schedule the immediate Backup of snapshot VM and give the backup successful results.



Hence, the backup is enabled.

THANK YOU!!!!