



IT4090
Cloud Computing
4th Year, 1st Semester

<Azure Lab 03>

**Use the Azure portal to create a virtual
network**

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IT21303548

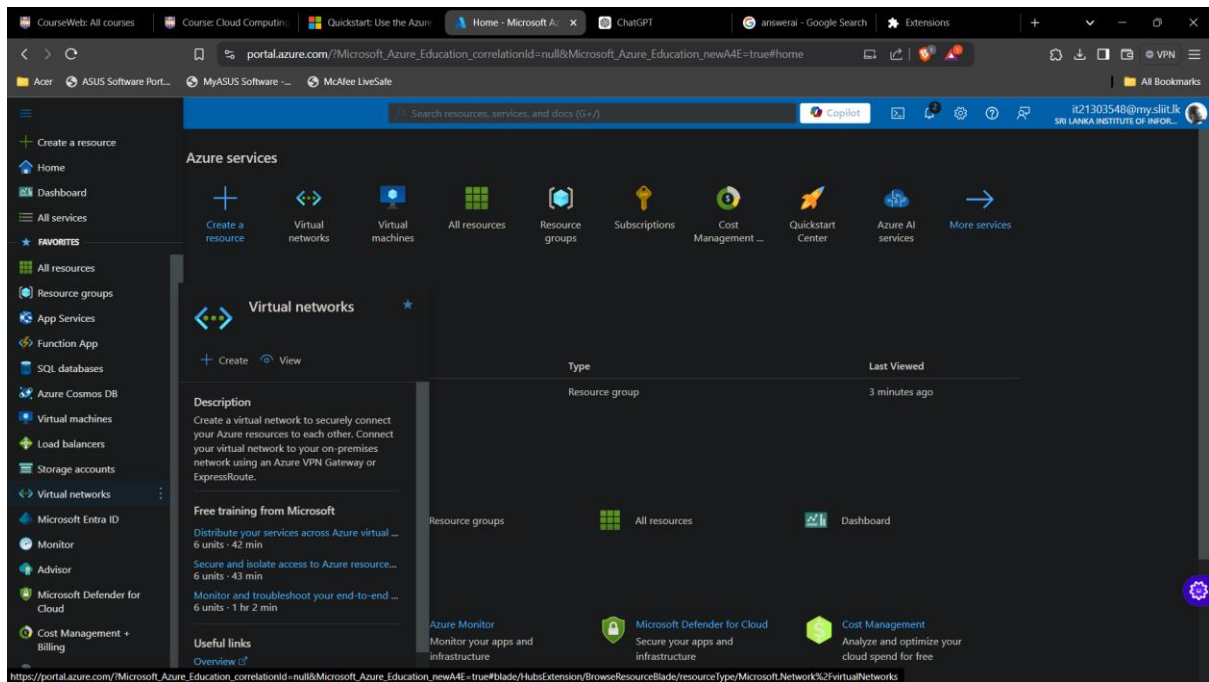
Submitted to

Sri Lanka Institute of Information Technology

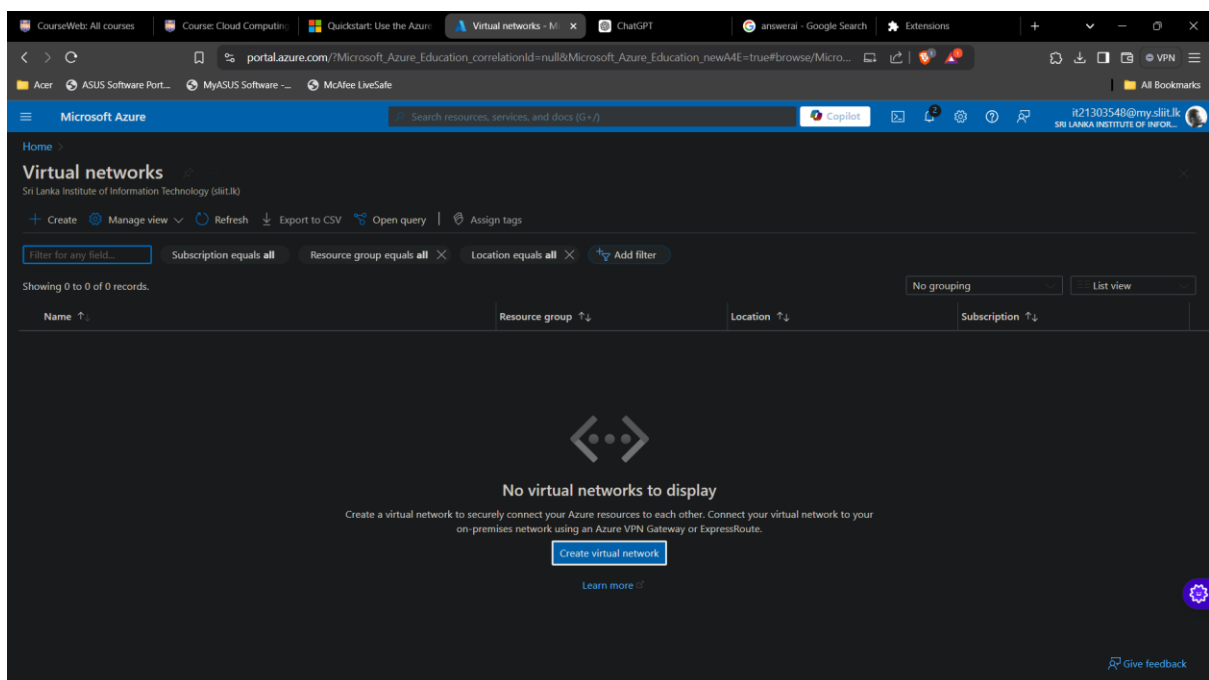
In partial fulfillment of the requirements for the

Bachelor of Science Special Honors Degree in Information Technology

<8.18.2024>



01) Create virtual network 001



02) Create virtual network 002

The screenshot shows the 'Create virtual network' page in the Microsoft Azure portal. The 'Basics' tab is selected. The page includes a search bar, a user profile, and a navigation menu. The main content area is divided into two sections: 'Project details' and 'Instance details'.

Project details

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

Subscription *

Resource group * [Create new](#)

Instance details

Virtual network name *

Region * [Deploy to an Azure Extended Zone](#)

At the bottom, there are three buttons: 'Previous', 'Next', and 'Review + create'.

03) Create virtual network filling Basics details

The screenshot shows the 'Create virtual network' page in the Microsoft Azure portal, with the 'Security' tab selected. The page includes a search bar, a user profile, and a navigation menu. The main content area is divided into three sections: 'Enable Azure Bastion', 'Azure Firewall', and 'Azure DDoS Network Protection'.

Enable Azure Bastion

☒ Enable Azure Bastion

Azure Bastion host name

Azure Bastion public IP address * [Create a public IP address](#)

Azure Firewall

Azure Firewall is a managed cloud-based network security service that protects your Azure Virtual Network resources. [Learn more](#)

☐ Enable Azure Firewall

Azure DDoS Network Protection

Azure DDoS Network Protection is a paid service that offers enhanced DDoS mitigation capabilities via adaptive tuning, attack notification, and telemetry to protect against the impacts of a DDoS attack for all protected resources within this virtual network.

At the bottom, there are three buttons: 'Previous', 'Next', and 'Review + create'.

04) Create virtual network filling security informations

Create virtual network

Basics Security **IP addresses** Tags Review + create

Define the address space of your virtual network with one or more IPv4 or IPv6 address ranges. Create subnets to divide your virtual network address space into smaller ranges for use by your applications. When you deploy resources into a virtual network, you assign the resource an IP address from the subnet. [Learn more](#)

Add IPv4 address space

10.0.0.0/16 [Delete address space](#)

10.0.0.0 /16 65,536 addresses

[+ Add a subnet](#)

Subnets	IP address range	Size	NAT gateway
default	10.0.0.0 - 10.0.0.255	/24 (256 addresses)	-
AzureBastionSubnet	10.0.1.0 - 10.0.1.63	/26 (64 addresses)	-

Add a subnet

Select an address space and configure your subnet. You can customize a default subnet or select from subnet templates if you plan to add select services later. [Learn more](#)

Subnet purpose: Default

Name: subnet1

IP version: IPv4

Include an IPv4 address space: ☒

IPV4 address range: 10.0.0.0/16

10.0.0.0 - 10.0.255.255

Starting address: 10.0.2.0

Size: /24 (256 addresses)

Subnet address range: 10.0.2.0 - 10.0.2.255

IPV6: ☐ This virtual network has no IPv6 address ranges.

Private subnet [PREVIEW](#)

Private subnets enhance security by not providing default outbound access. To enable outbound connectivity for virtual machines to access the Internet, it is necessary to explicitly grant outbound access. A NAT gateway is the recommended way to provide outbound connectivity for virtual machines in the subnet. [Learn more](#)

[Previous](#) [Next](#) [Review + create](#) [Add](#) [Cancel](#) [Give feedback](#)

05) Create virtual network add subnet

Create virtual network

Basics Security **IP addresses** Tags Review + create

assigns the resource an IP address from the subnet. [Learn more](#)

Add IPv4 address space

10.0.0.0/16 [Delete address space](#)

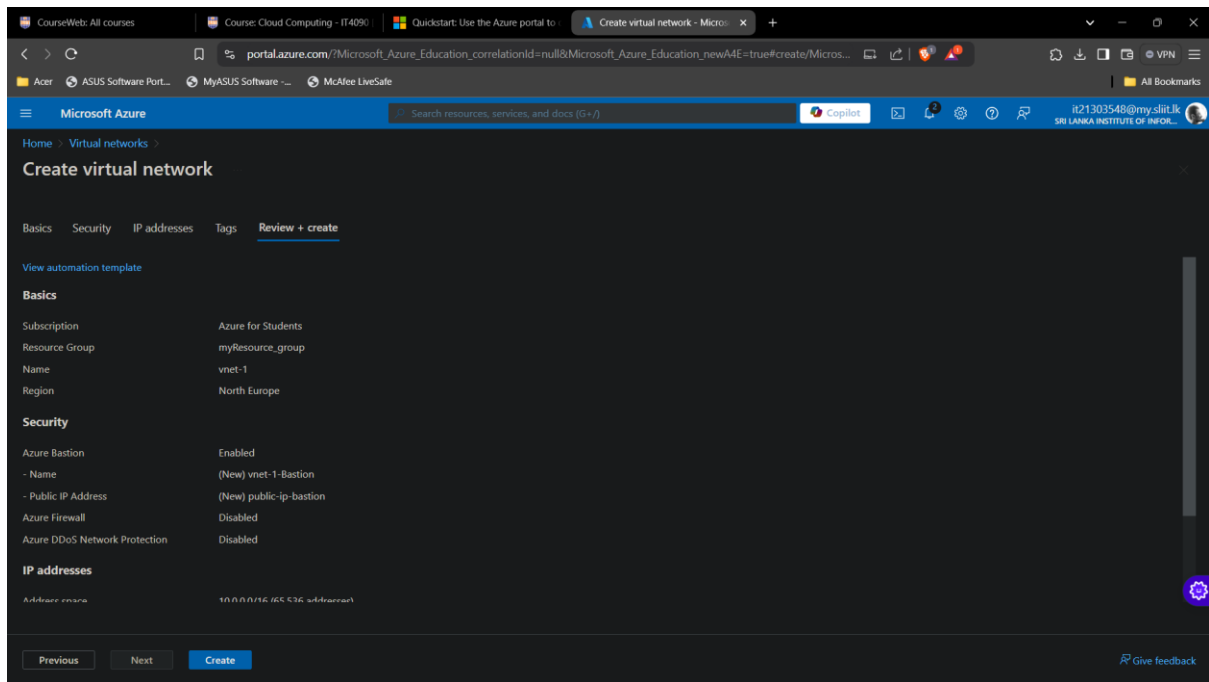
10.0.0.0 /16 65,536 addresses

[+ Add a subnet](#)

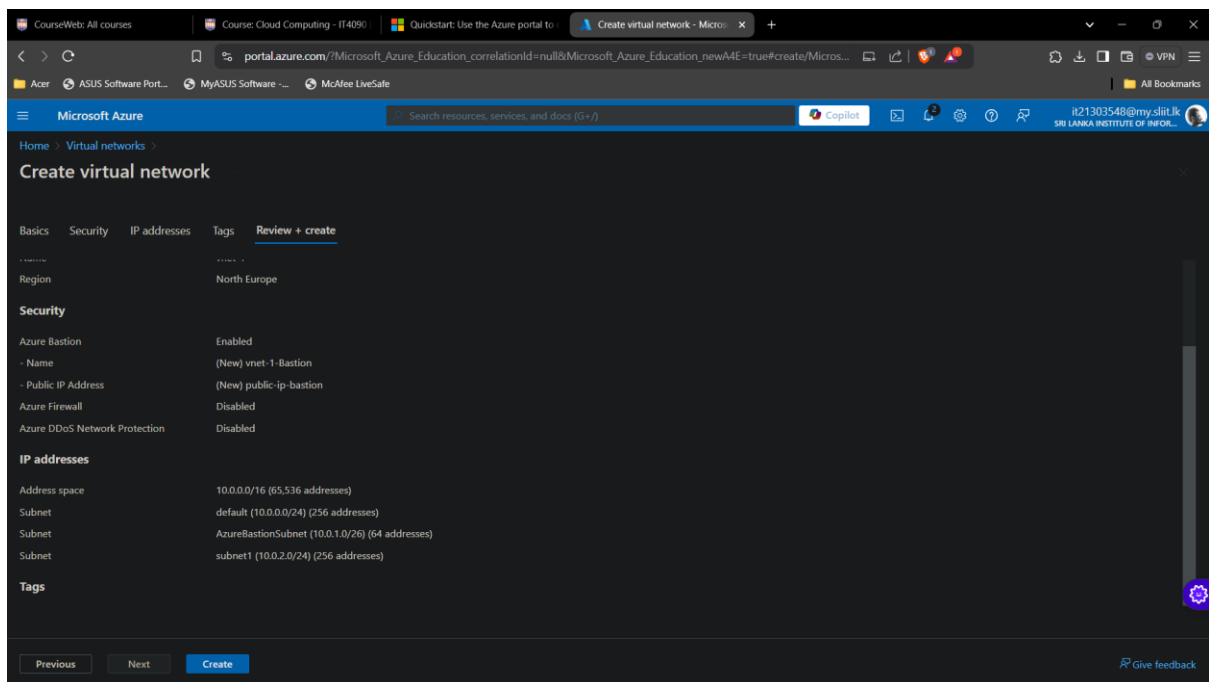
Subnets	IP address range	Size	NAT gateway
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AzureBastionSubnet	10.0.1.0 - 10.0.1.63	/26 (64 addresses)	-
subnet1	10.0.2.0 - 10.0.2.255	/24 (256 addresses)	-

[Previous](#) [Next](#) [Review + create](#) [Give feedback](#)

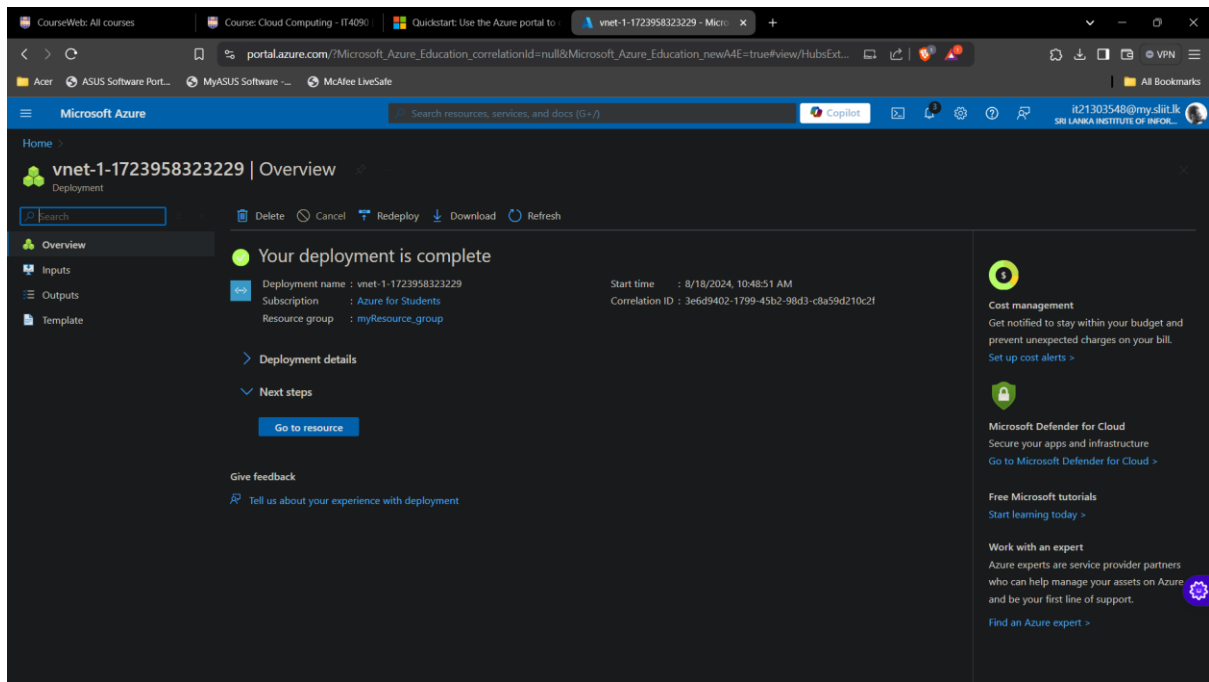
06) Create virtual network review and create



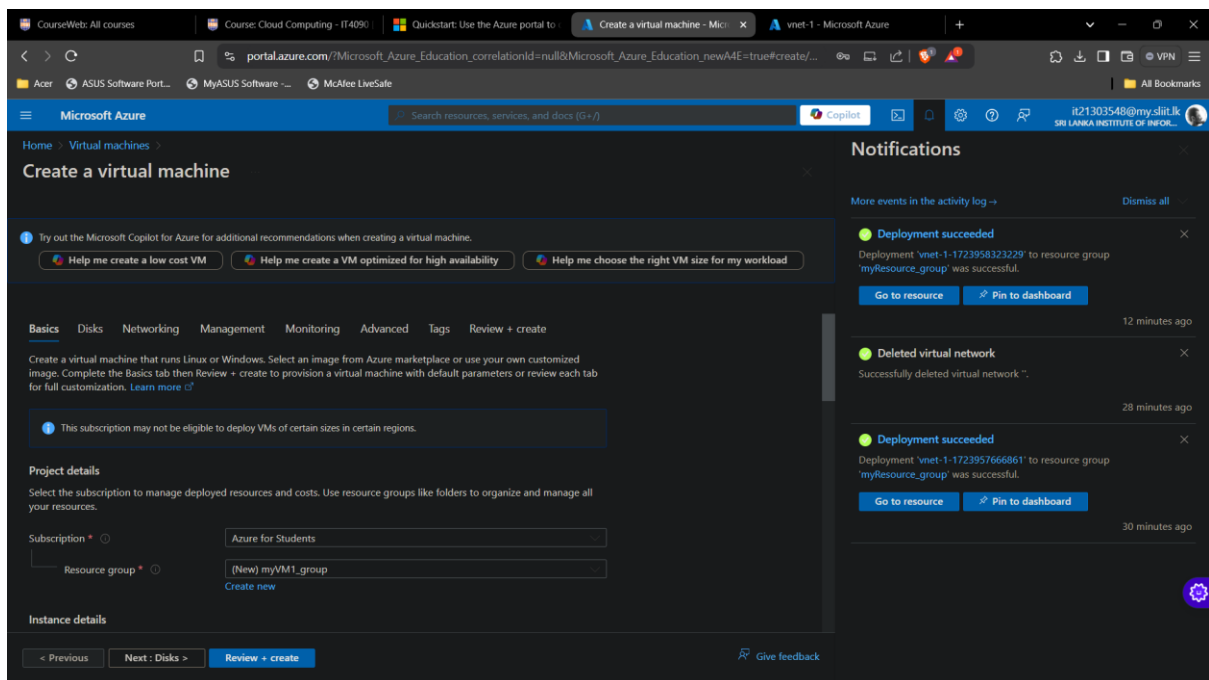
07) Create virtual network review details



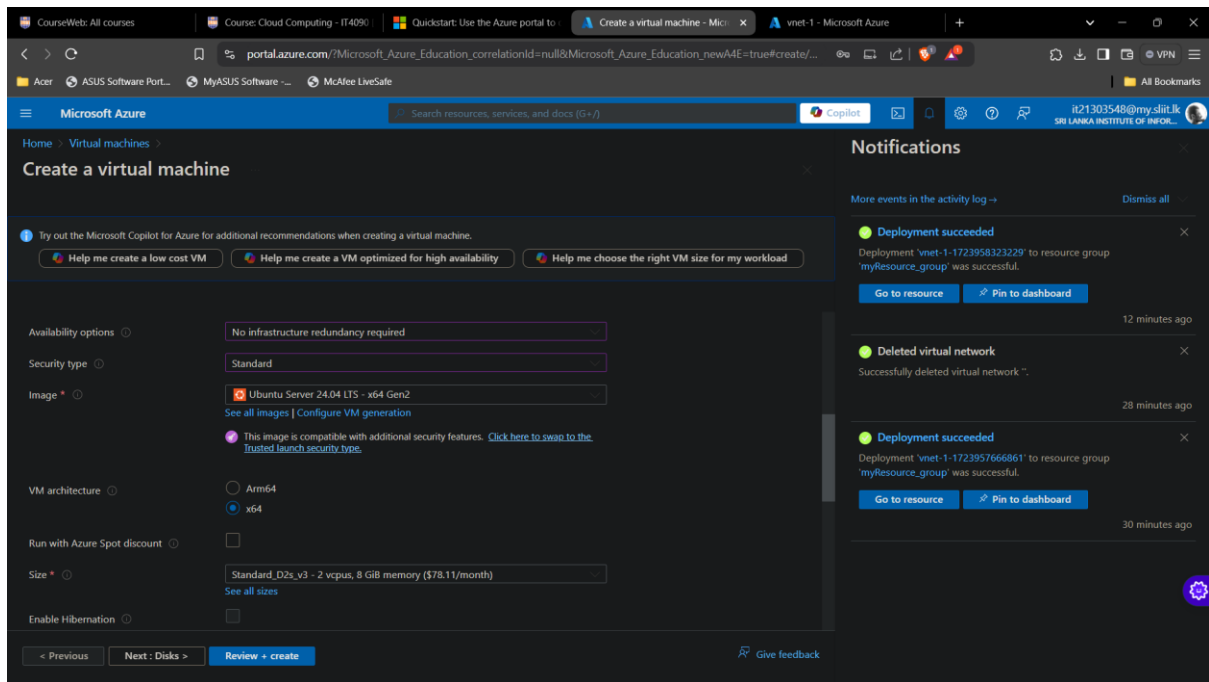
08) Create virtual network review details



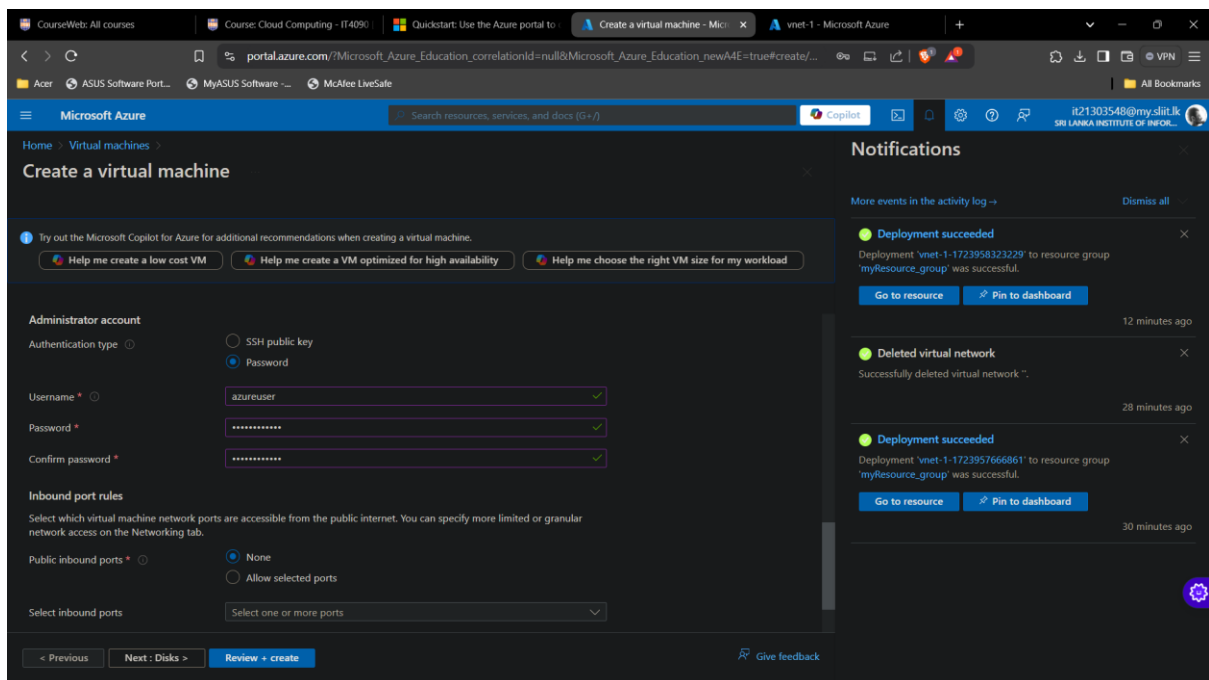
09) vnet details



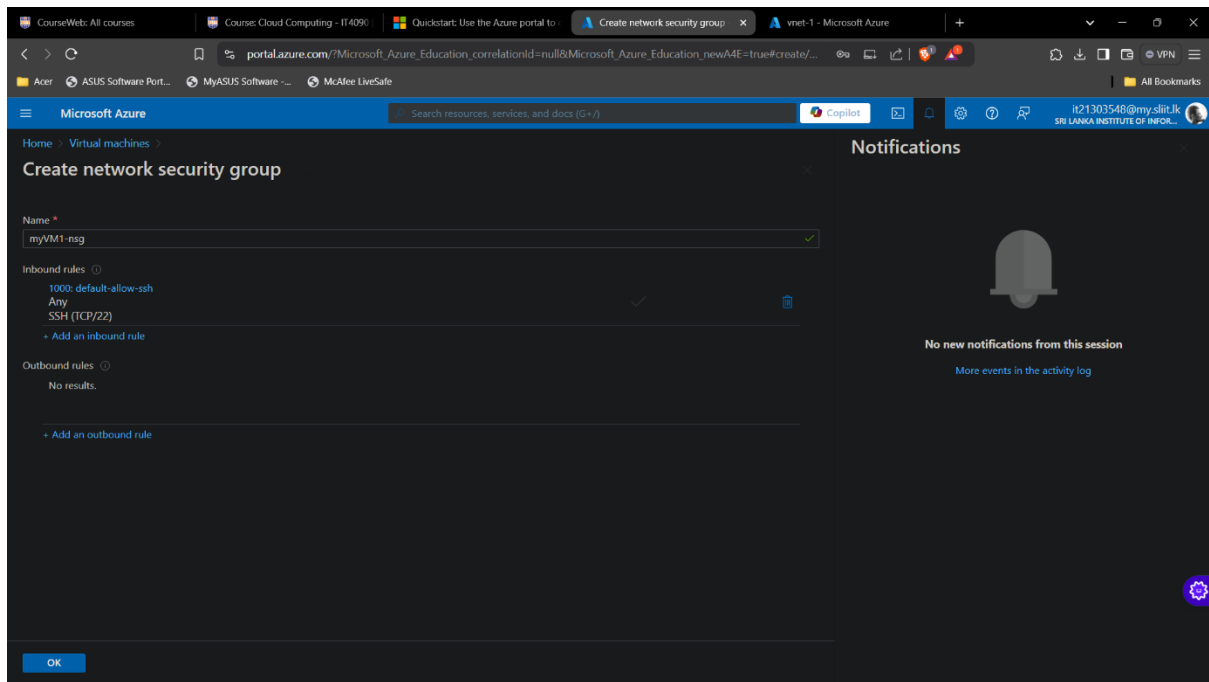
010) Create virtual machine 1



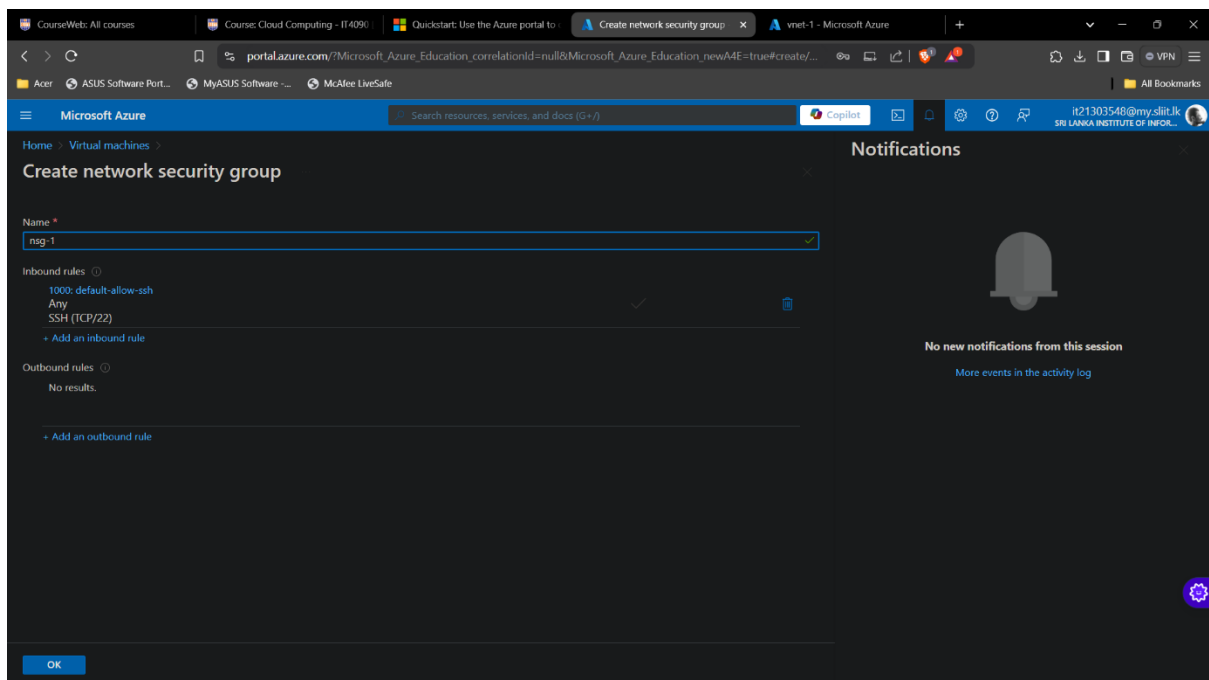
011) Create virtual machine 1



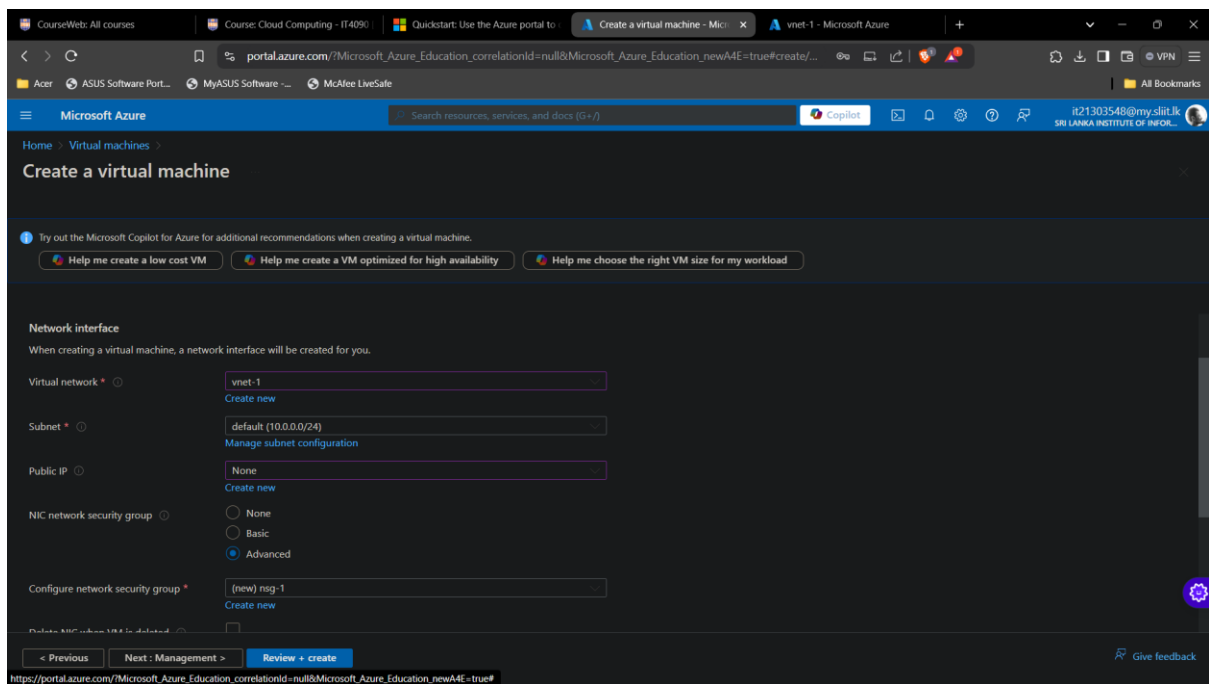
012) Create virtual machine 1



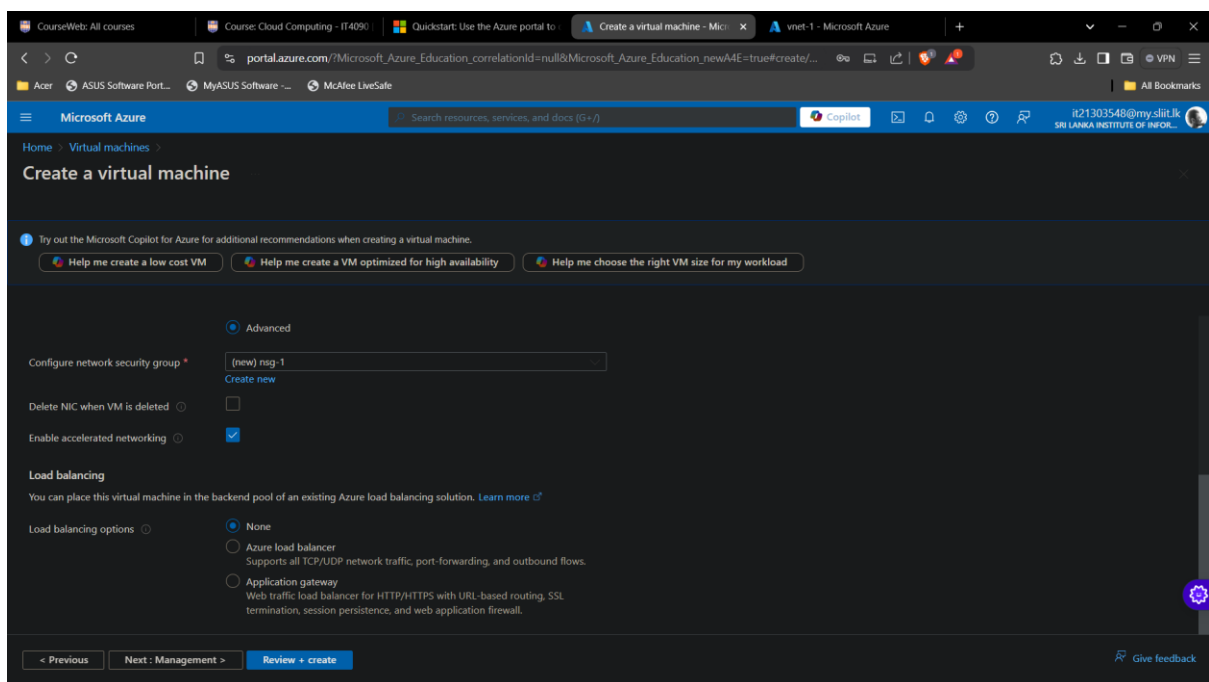
013) Create virtual machine 1



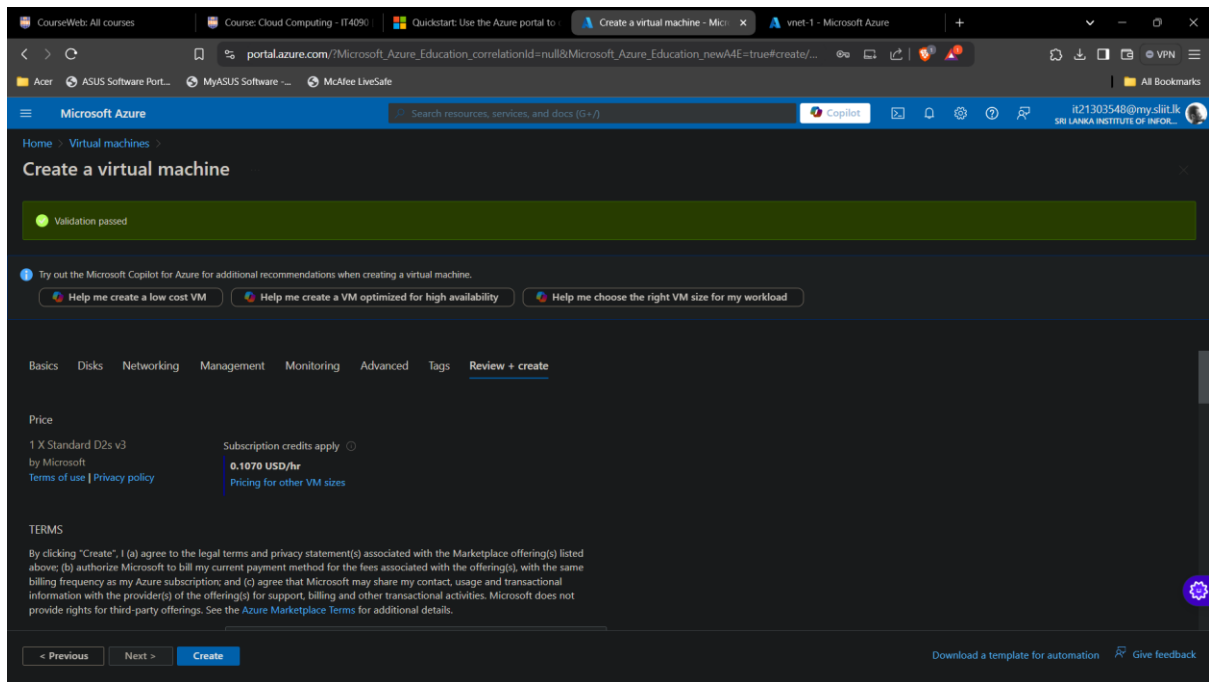
014) Create virtual machine 1



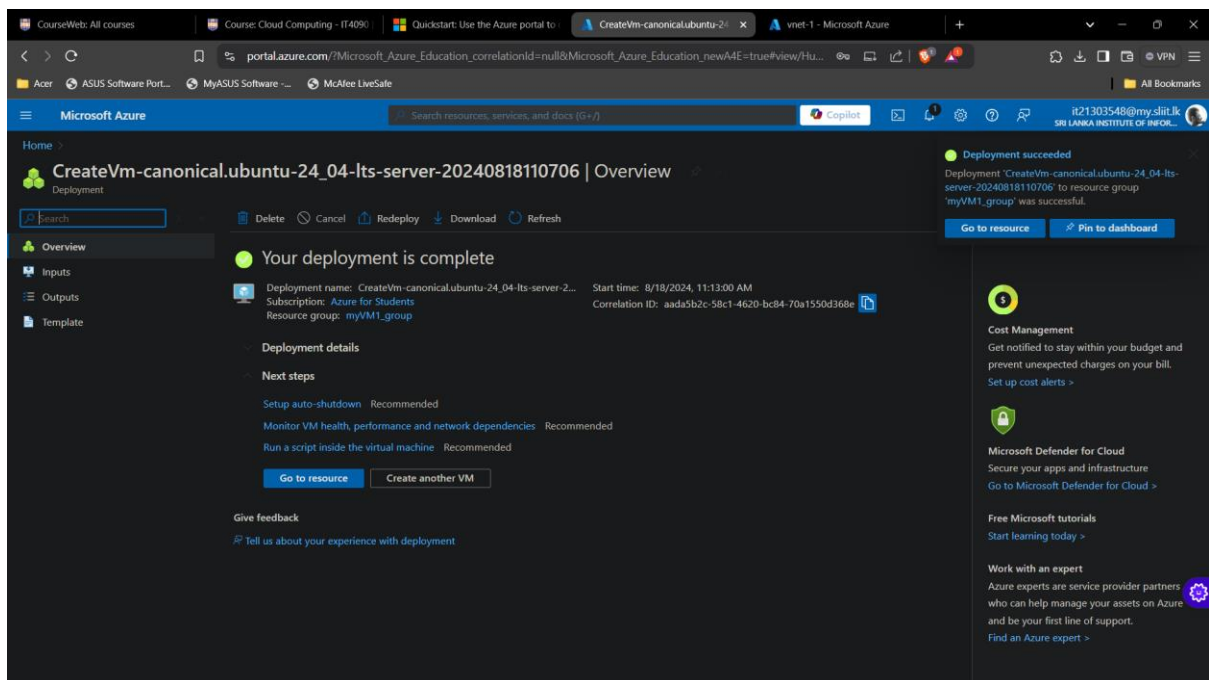
015) Create virtual machine 1



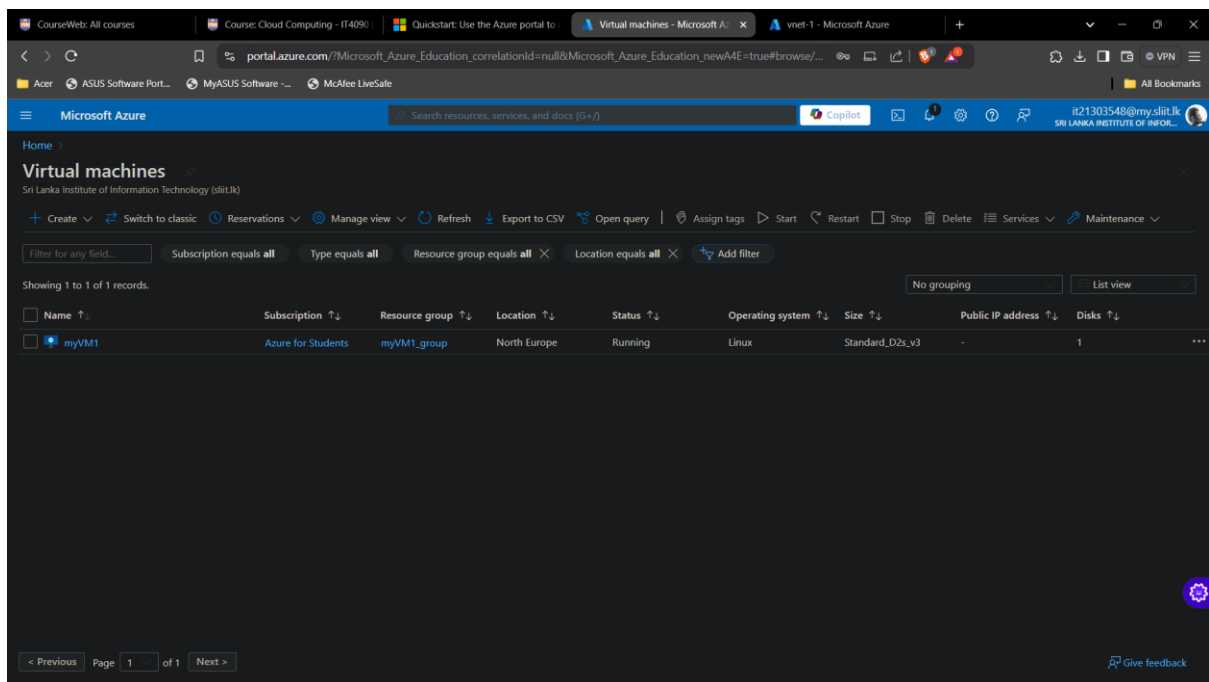
016) Create virtual machine 1



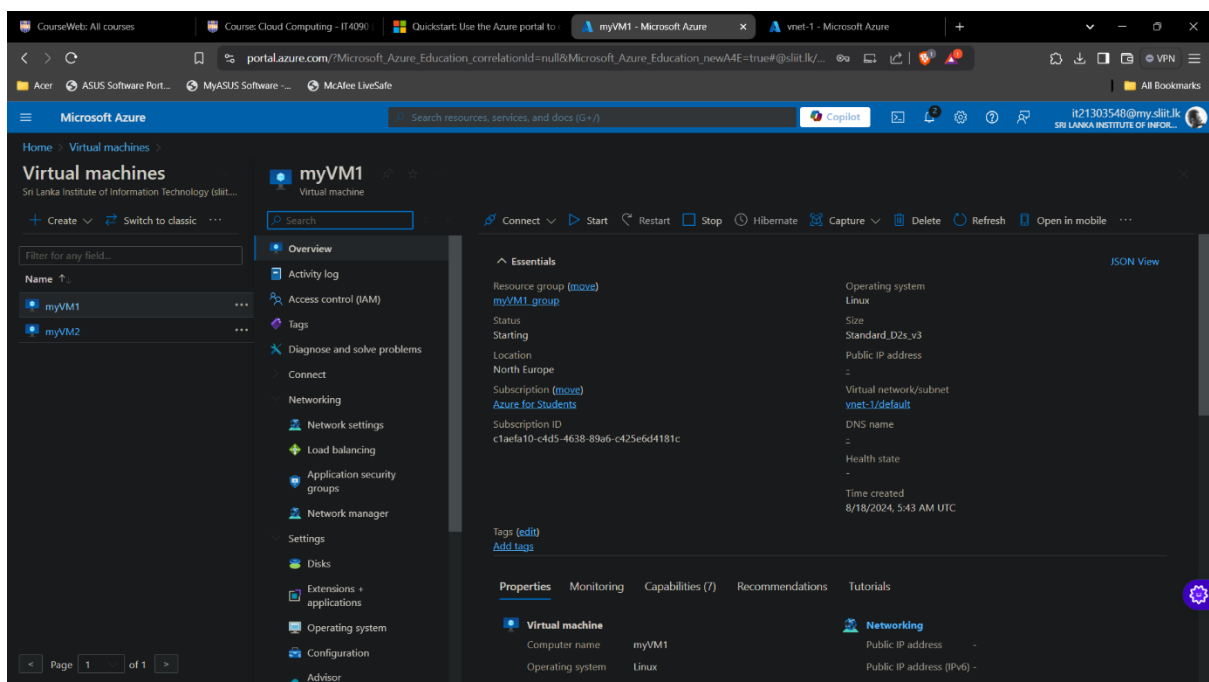
017) Create virtual machine 1



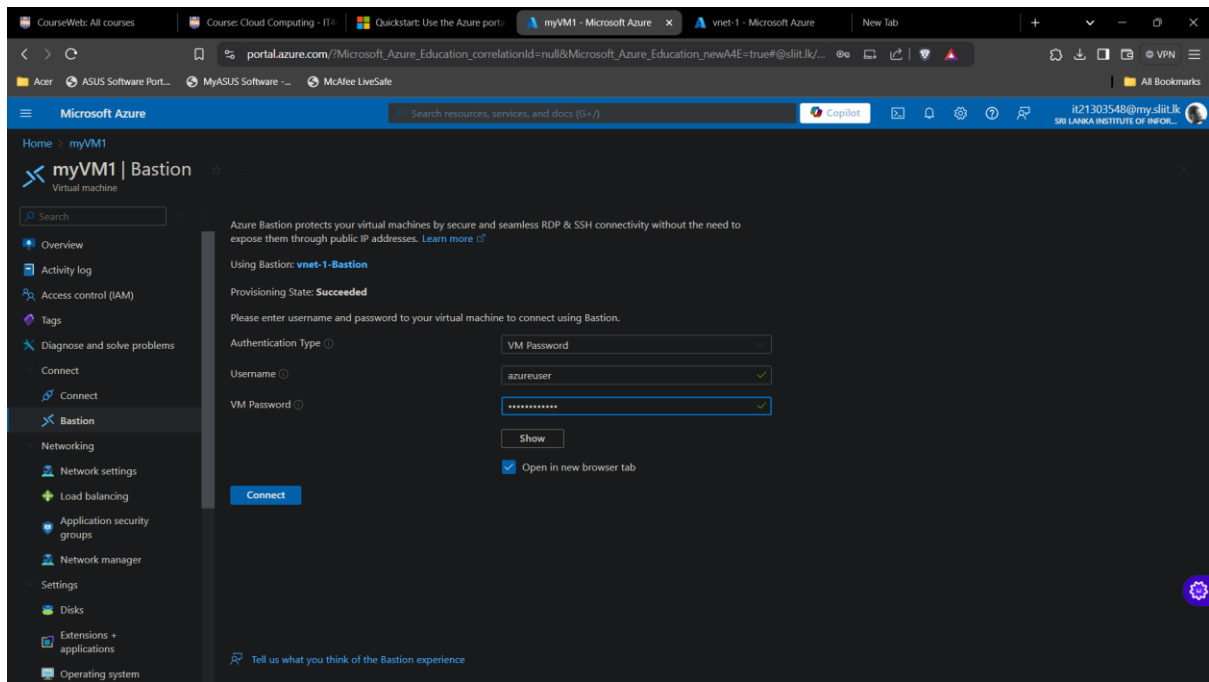
018) Create virtual machine 1



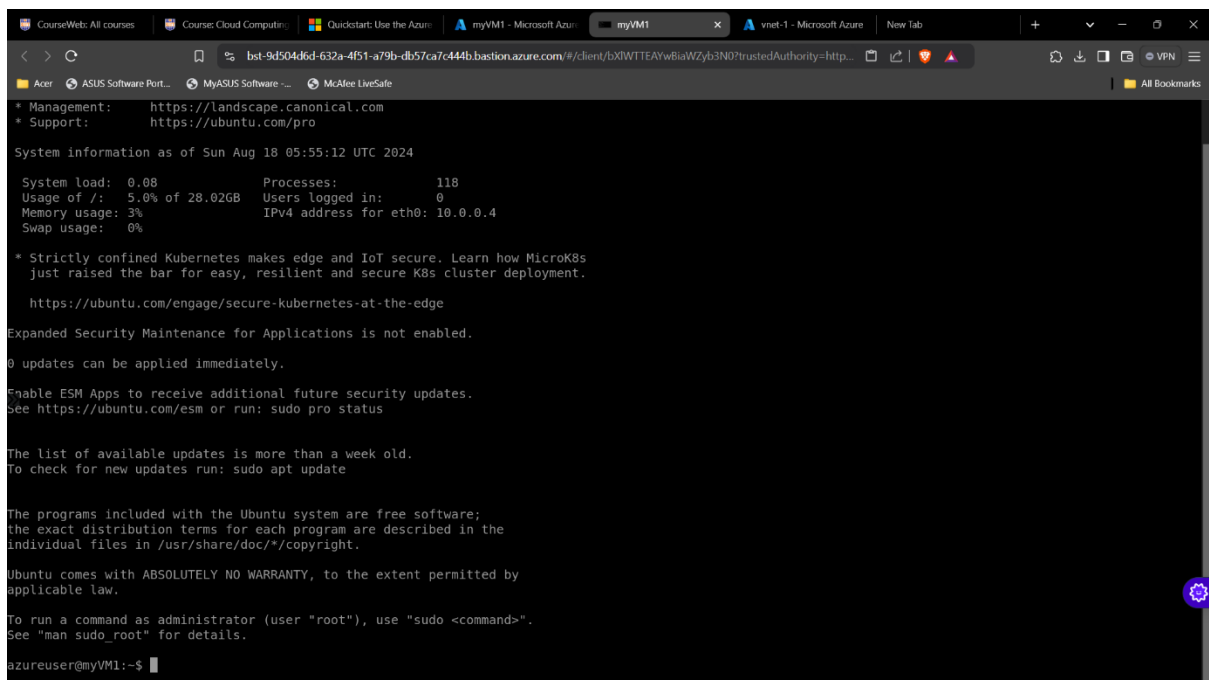
019) Create virtual machine



020) Connect With VM 2



21) log it



22) myVM interface

```
CourseWeb: All cour... Course: Cloud Comp... Quickstart: Use the /... myVM1 - Microsoft / myVM2 - Microsoft / myVM1 x vnet-1 - Microsoft A... New Tab + - - - - - x
b5t-9d504d6d-632a-4f51-a79b-dl57ca7c444b.bastion.azure.com/#/client/bXlWTEAYwBiaWZyb3N0?trustedAuthority=http...
Acer ASUS Software Port... MyASUS Software ... McAfee LiveSafe
* 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.
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;
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.
azureuser@myVM1:~$ ping -c 4 myVM2
PING myVM2.omxcrwhukuiulo3aw424wg2joh.fx.internal.cloudapp.net (10.0.0.5) 56(84) bytes of data.
64 bytes from myvm2.internal.cloudapp.net (10.0.0.5): icmp_seq=1 ttl=64 time=1.80 ms
64 bytes from myvm2.internal.cloudapp.net (10.0.0.5): icmp_seq=2 ttl=64 time=1.19 ms
64 bytes from myvm2.internal.cloudapp.net (10.0.0.5): icmp_seq=3 ttl=64 time=1.03 ms
64 bytes from myvm2.internal.cloudapp.net (10.0.0.5): icmp_seq=4 ttl=64 time=0.968 ms
--- myVM2.omxcrwhukuiulo3aw424wg2joh.fx.internal.cloudapp.net ping statistics ---
4 packets transmitted, 4 received, 0% packet loss, time 3005ms
rtt min/avg/max/mdev = 0.968/1.246/1.797/0.328 ms
azureuser@myVM1:~$
```

023) Connect With VM2

CourseWeb: All cour... Course: Cloud Comp... Quickstart: Use the /... myVM1 - Microsoft / myVM2 - Micro... myVM1 x vnet-1 - Microsoft A... New Tab + - - - - - x

portal.azure.com/?Microsoft_Azure_Education_correlationId=null&Microsoft_Azure_Education_newA4E=true#@slitlk/resou...

Acer ASUS Software Port... MyASUS Software ... McAfee LiveSafe

Microsoft Azure

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

Copilot

it21303548@my.slitlk SRI LANKA INSTITUTE OF TECH...

myVM2 Virtual machine

Overview

Activity log

Access control (IAM)

Tags

Diagnose and solve problems

Connect

Networking

Network settings

Load balancing

Application security groups

Network manager

Settings

Disks

Extensions + applications

Operating system

Configuration

Advisor

Connect

Connect via Bastion

Resource group (move): myResourceGroup

Status: Running

Location: North Europe

Subscription (move): Azure for Students

Subscription ID: c1aefa10-c4d5-4638-89a6-c425e6d4181c

Tags (edit): Add tags

Operating system: Linux (ubuntu 24.04)

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

Public IP address: 52.169.189.248

Virtual network/subnet: vnet-1/default

DNS name: Not configured

Health state: -

Time created: 8/18/2024, 5:49 AM UTC

Properties Monitoring Capabilities (7) Recommendations Tutorials

Virtual machine

Computer name: myVM2

Operating system: Linux (ubuntu 24.04)

VM generation: V2

VM architecture: x64

Agent status: Ready

Agent version: 2.11.1.4

Hibernation: Disabled

Networking

Public IP address: 52.169.189.248 (Network interface myvm2489)

Public IP address (IPv6): -

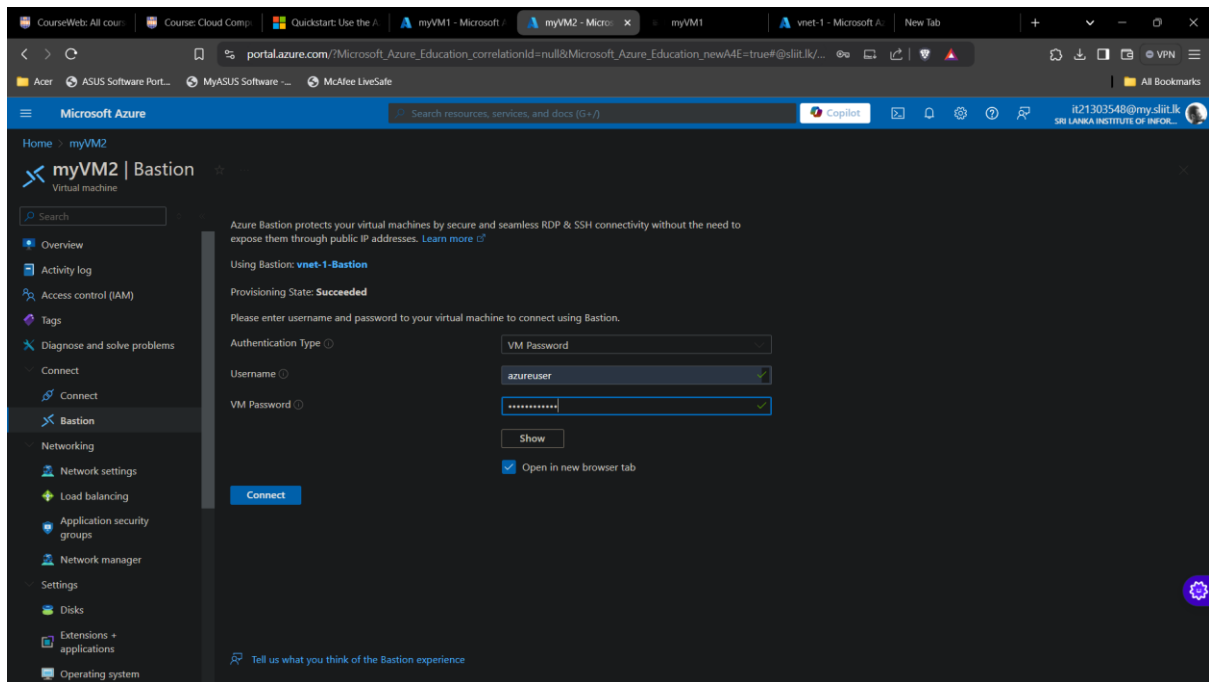
Private IP address: 10.0.0.5

Private IP address (IPv6): -

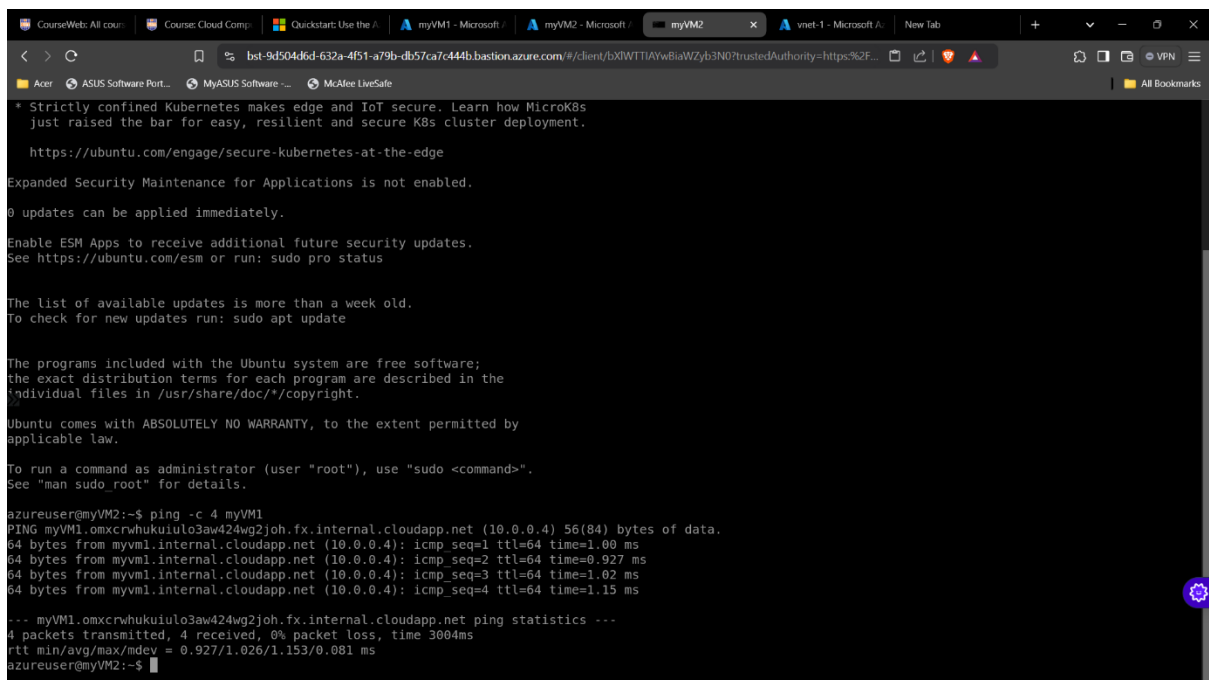
Virtual network/subnet: vnet-1/default

DNS name: Configure

024) Connect VM2 , VM1



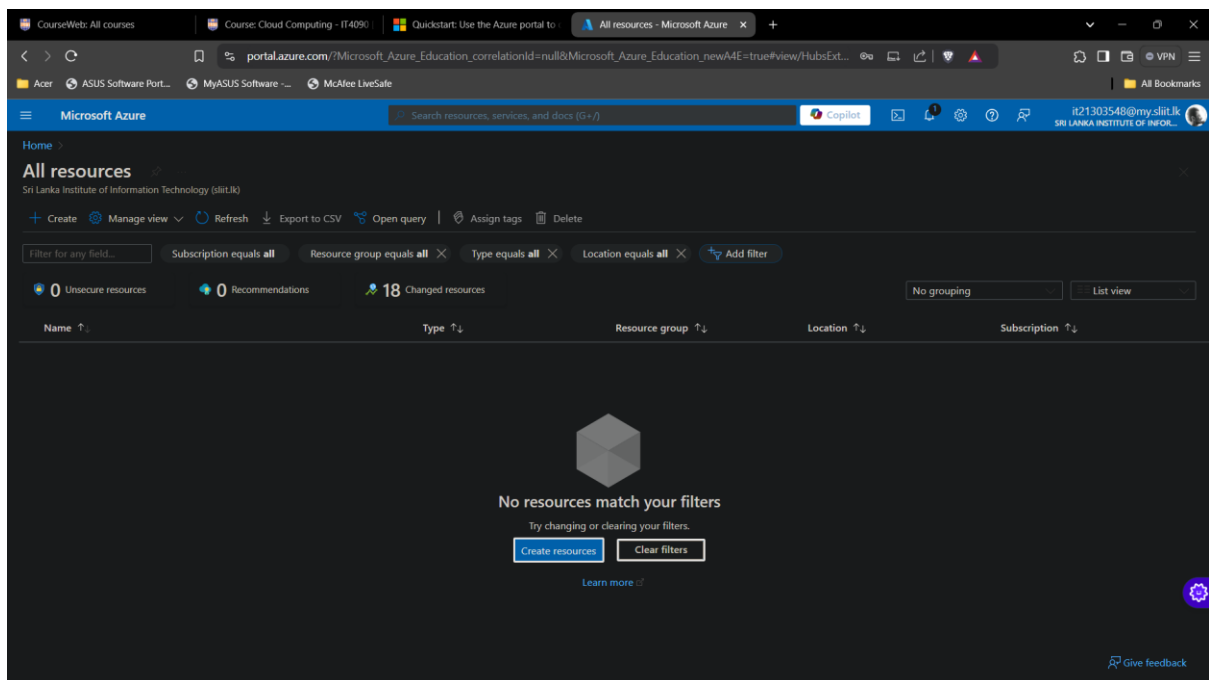
025) Connect VM2 , VM1



026) Connect VM2 , VM1

Name	Type	Resource group	Location	Subscription
datadisk2	Disk	myResource_group	North Europe	Azure for Students
datadisk3	Disk	myResource_group	North Europe	Azure for Students
myKey	SSH key	myResource_group	North Europe	Azure for Students
myVM-ip	Public IP address	myResource_group	North Europe	Azure for Students
myVM-nsg	Network security group	myResource_group	North Europe	Azure for Students
myVM1	Virtual machine	myVM1_group	North Europe	Azure for Students
myvm1891	Network Interface	myVM1_group	North Europe	Azure for Students
myVM1_disk1_b293c8f6f74d99b6ccc7154f47a385	Disk	MYVM1_GROUP	North Europe	Azure for Students
myVM2	Virtual machine	myResourceGroup	North Europe	Azure for Students
myVM2-ip	Public IP address	myResourceGroup	North Europe	Azure for Students
myvm2489	Network Interface	myResourceGroup	North Europe	Azure for Students
myVM2_disk1_b7057d35c8ec4b41ab660c4edb1b7a14	Disk	MYRESOURCEGROUP	North Europe	Azure for Students

027) Finally, all resources



028) After delete all resources