# CLOUD COMPUTING

## Lab 1

## Introduction to Cloud Computing


Gokul Samandhavada Dillirajan
Ravi Teja Polavarapu
Rogan Gopi

# Lab Summary:

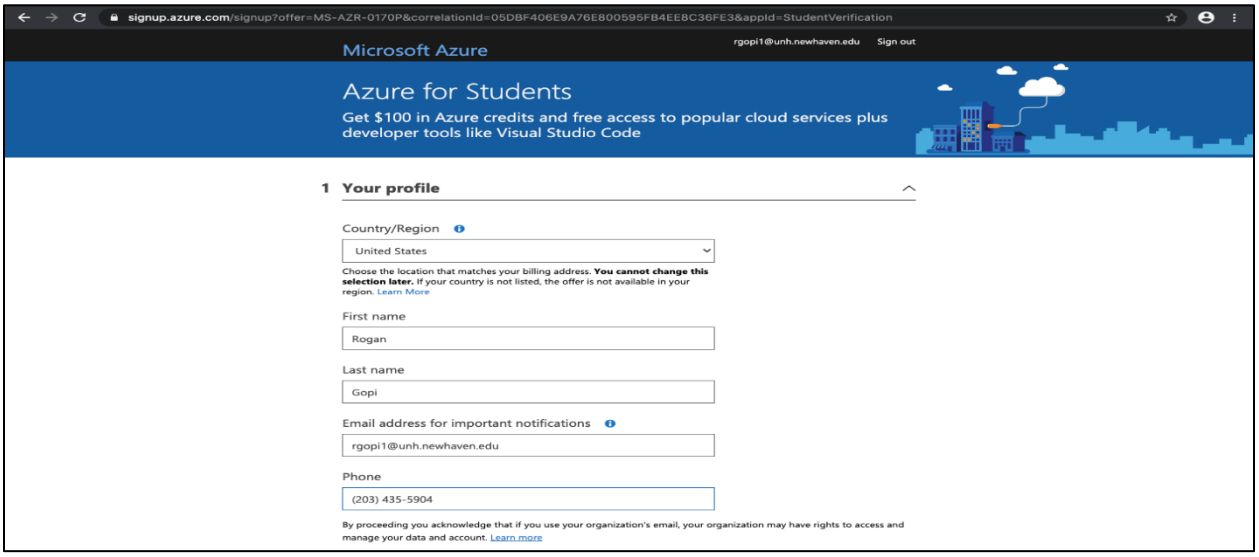
The main goal of the cloud computing lab is to experience the services provided by the cloud providers. In order to perform this lab, we chose the Microsoft Azure as our service provider as we have some basic knowledge to play around web services provided by the Amazon.
Initially, as per the lab instruction, a new account was created in the Microsoft Azure with one of our member's university ID (student account), Which directed us to the dashboard of Azure as the registration was completed.

Secondly, the task was to create a new virtual machine inside the Azure and how to interact with the resources provided such as storage, computing power, network and so on. Once the VM is created successfully, it should be configured such that you can login remotely from any computer with the perfect credentials.

Finally, a web application (web page) was created and deployed with lot of complicated steps to get familiar with the services provided by Azure and steps was explained clearly in the creation of web application [ fig: screenshot]

## Creation of Microsoft Azure:

A new account was created in the Microsoft Azure with student account (without validation of credit card). The student account lets the students to create their own account without credit card and $100 credit was given to have interaction with the services.



## Creating Virtual Machine on Azure:

A Virtual Machine was created with student subscription account with the pre-built or inbuilt ISO of the particular Operating System, storage, network interface, authentication to login with azure and  enabled ports to login with SSH. The complete details of the VM will be in the following screenshots.

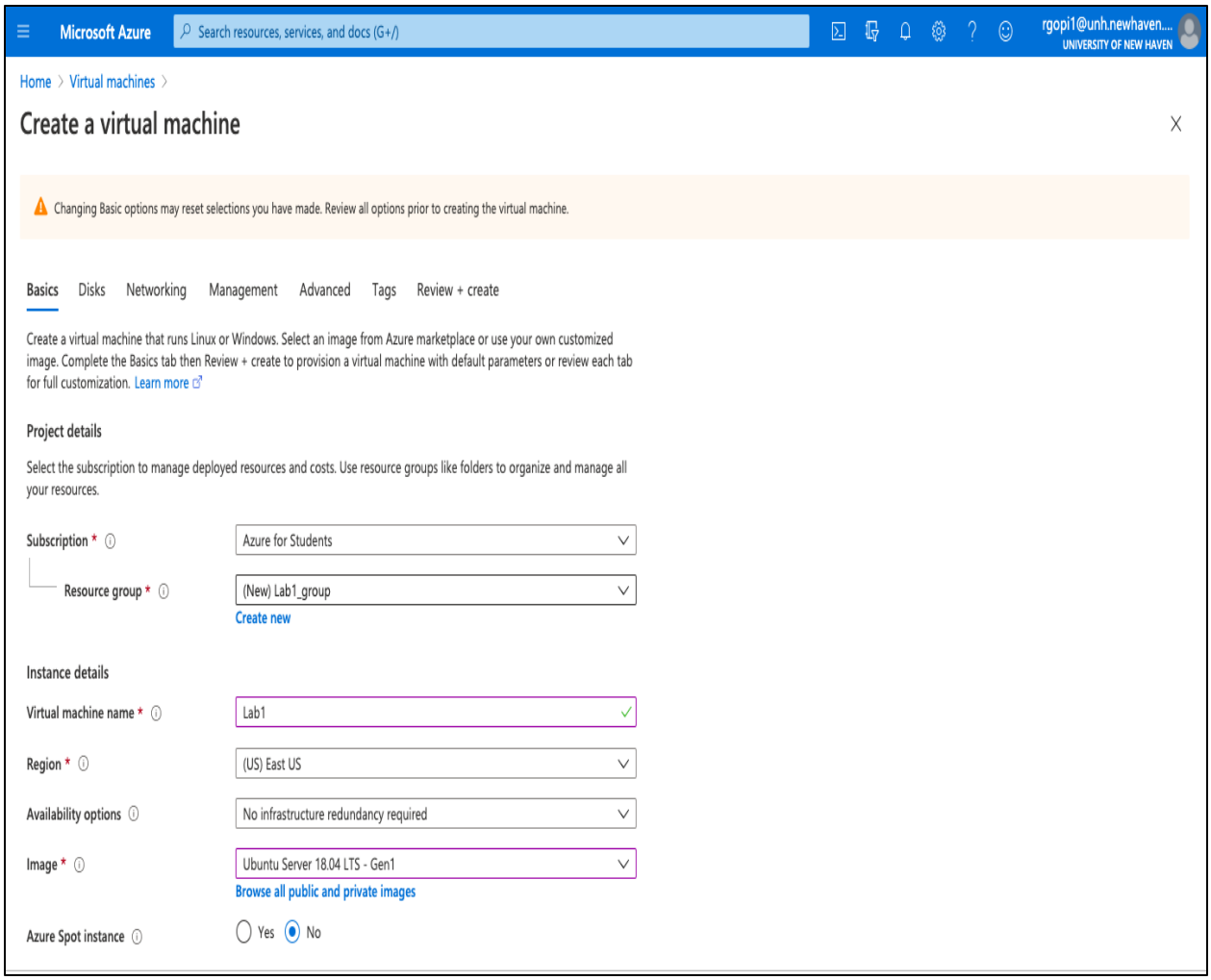
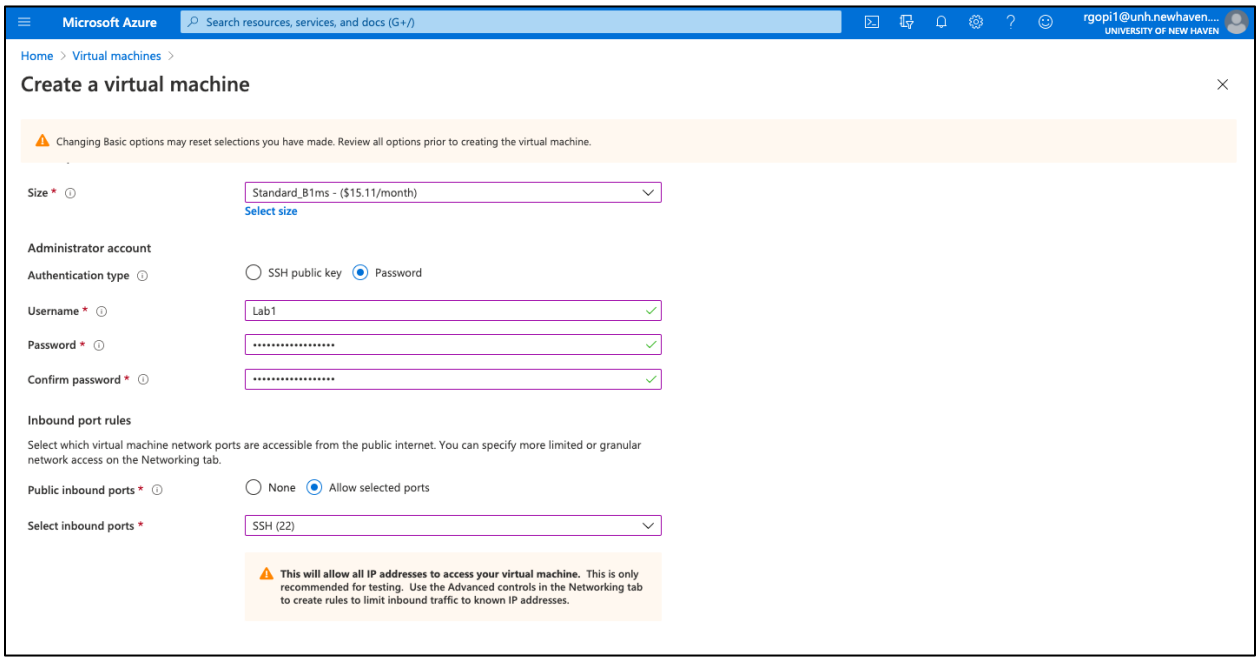
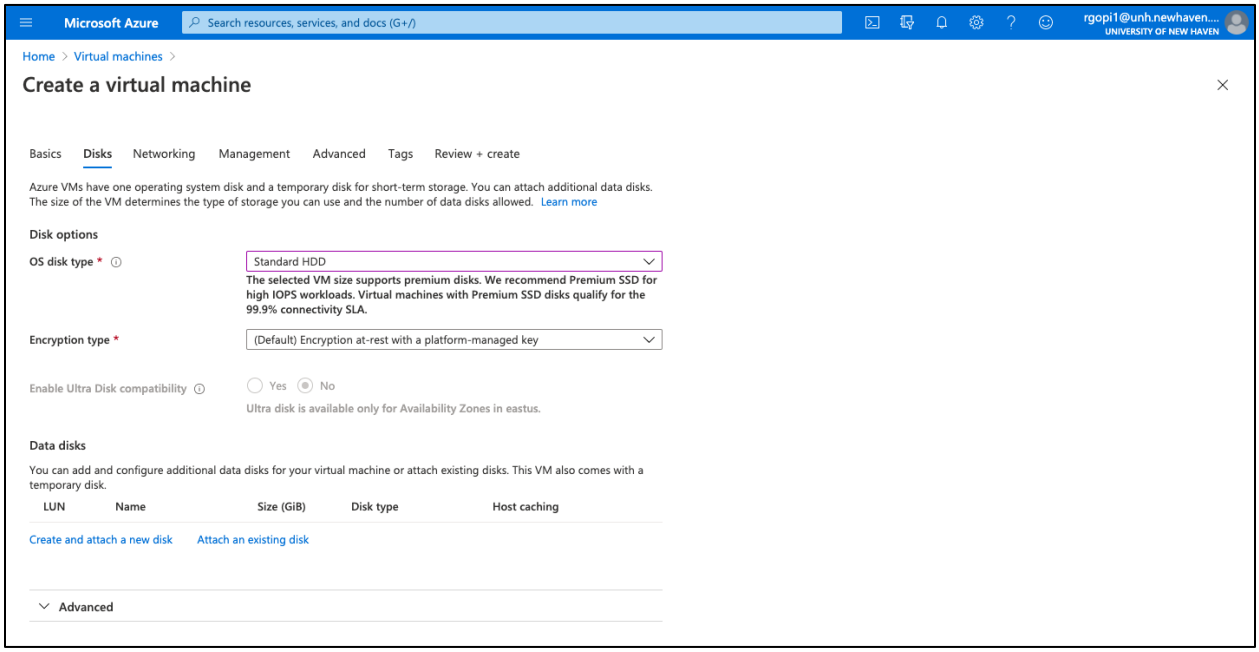



Fig: 2. Creating VM on Azure

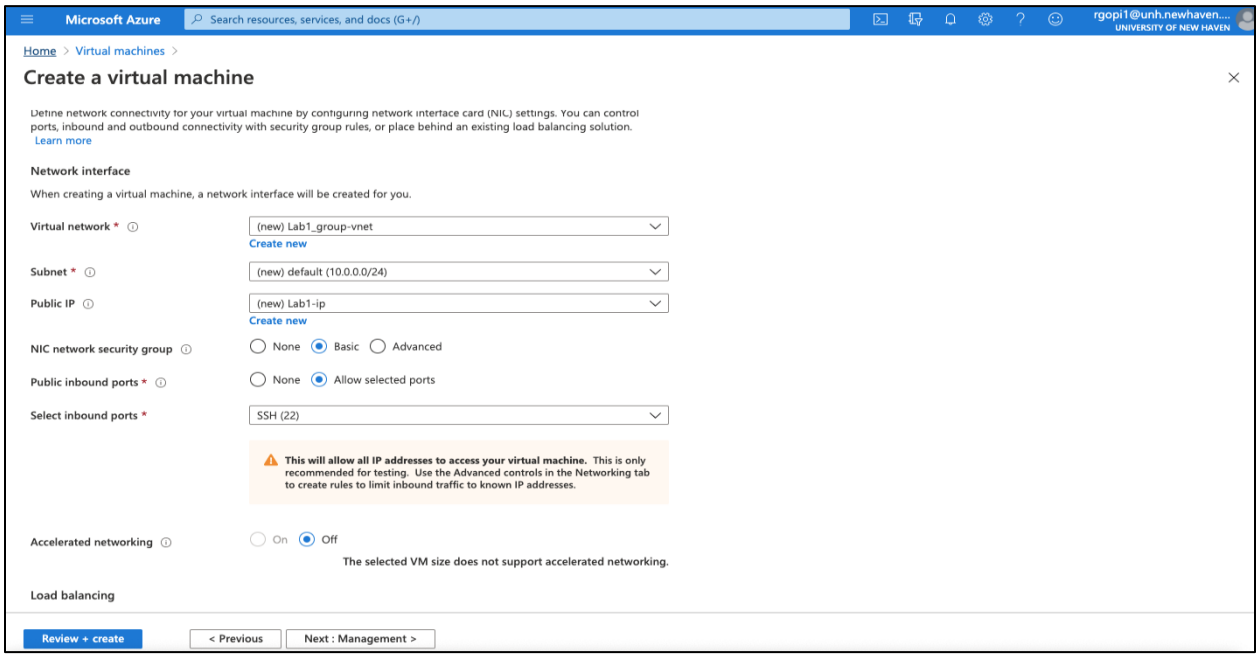
## Creation of username and password for the virtual machine:-



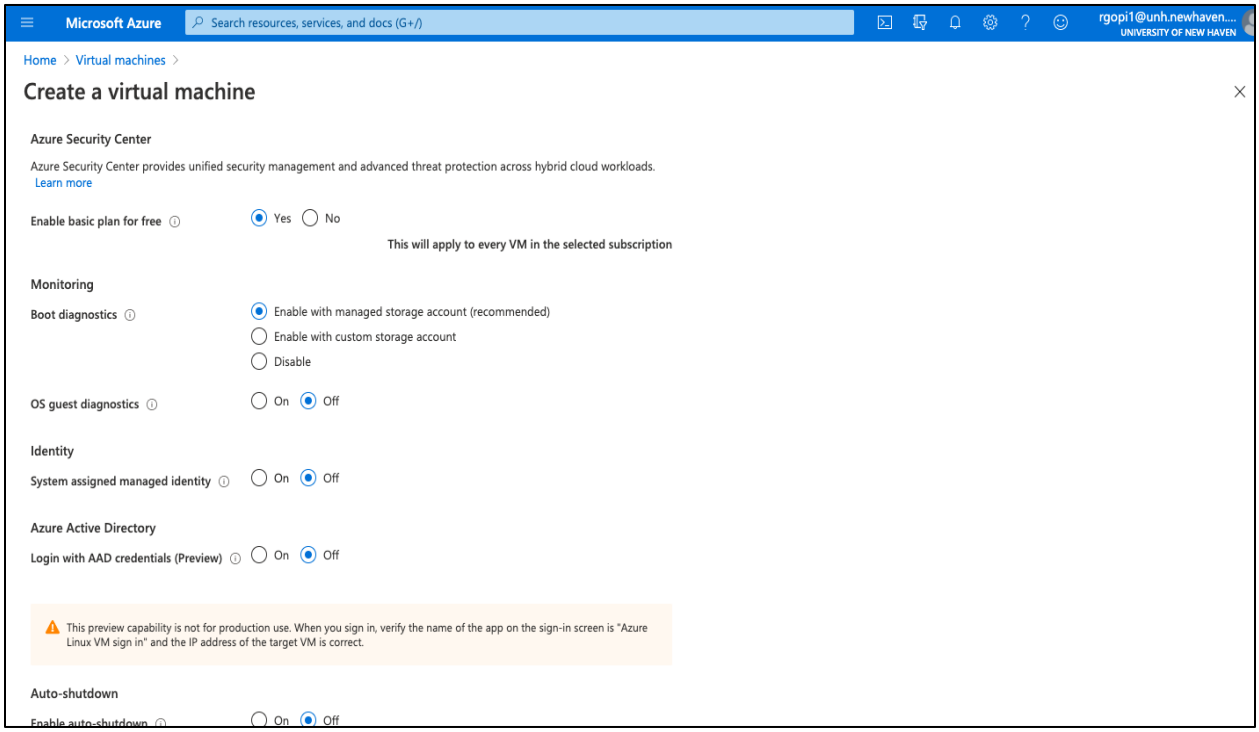

## Volume type selection



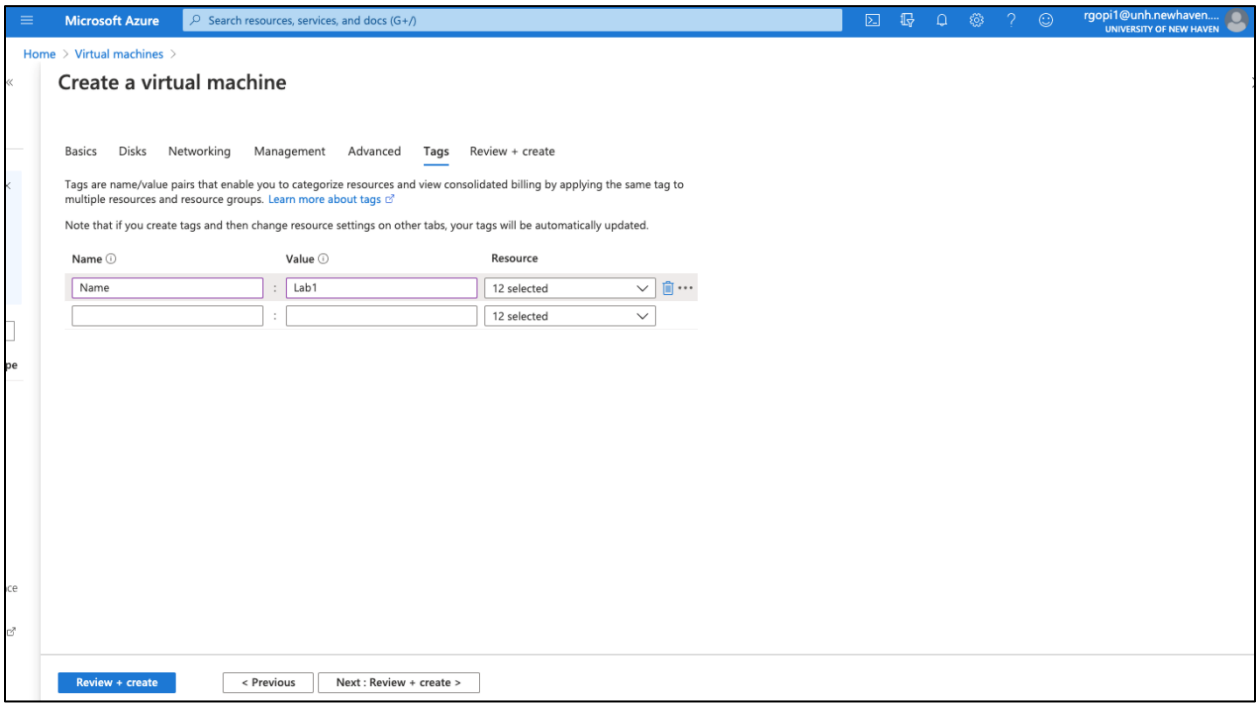
## Network interface for the virtual machine



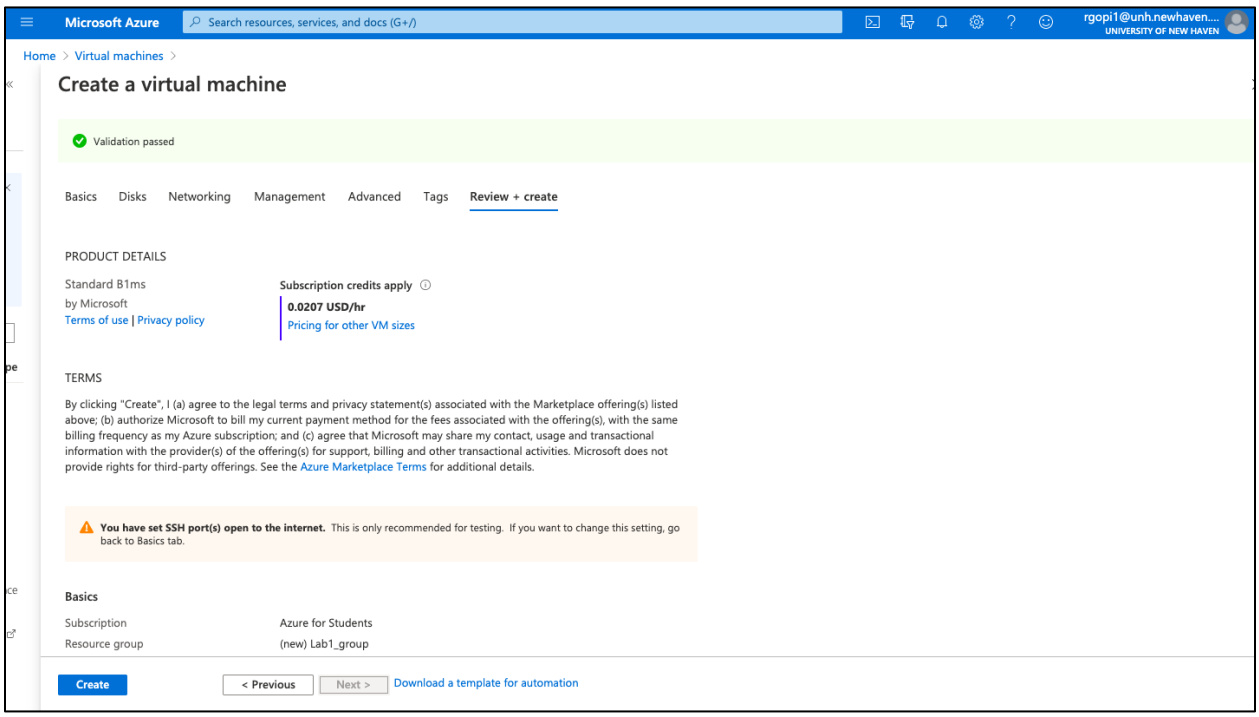

## Security Center for the virtual machine

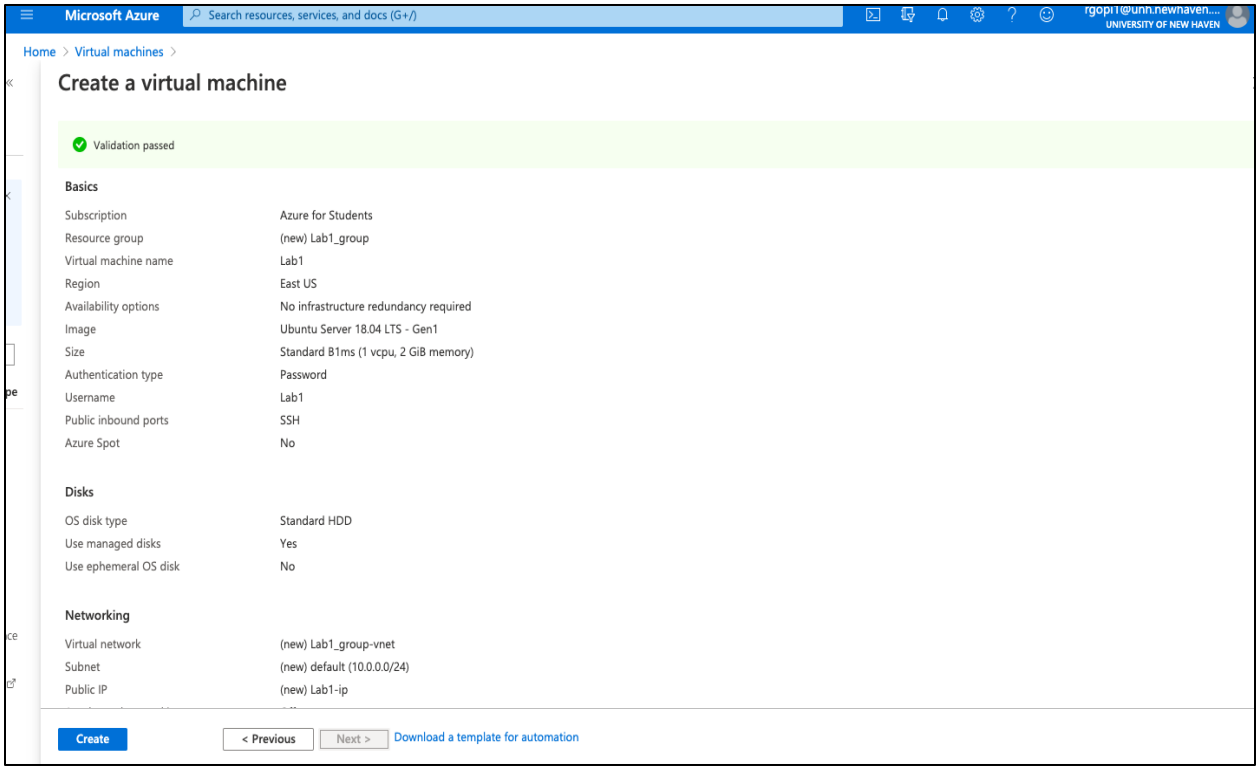


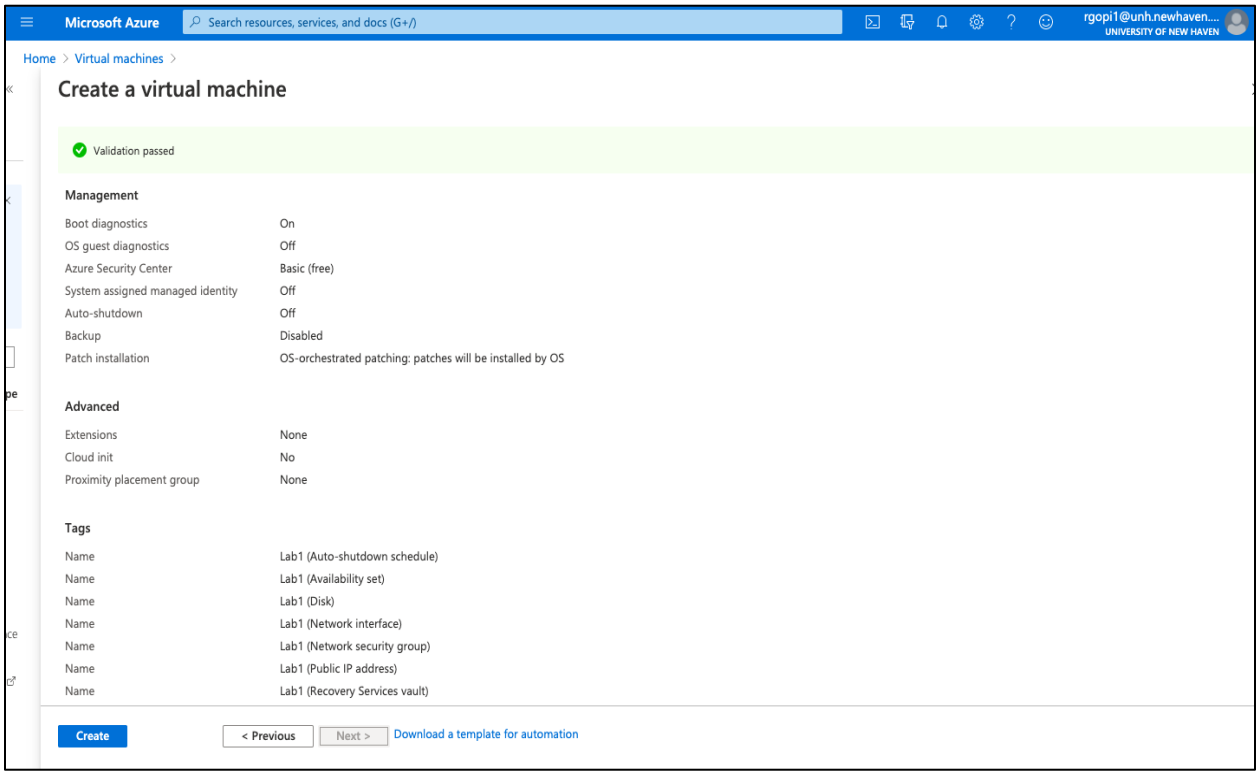
## Name tag for the virtual machine



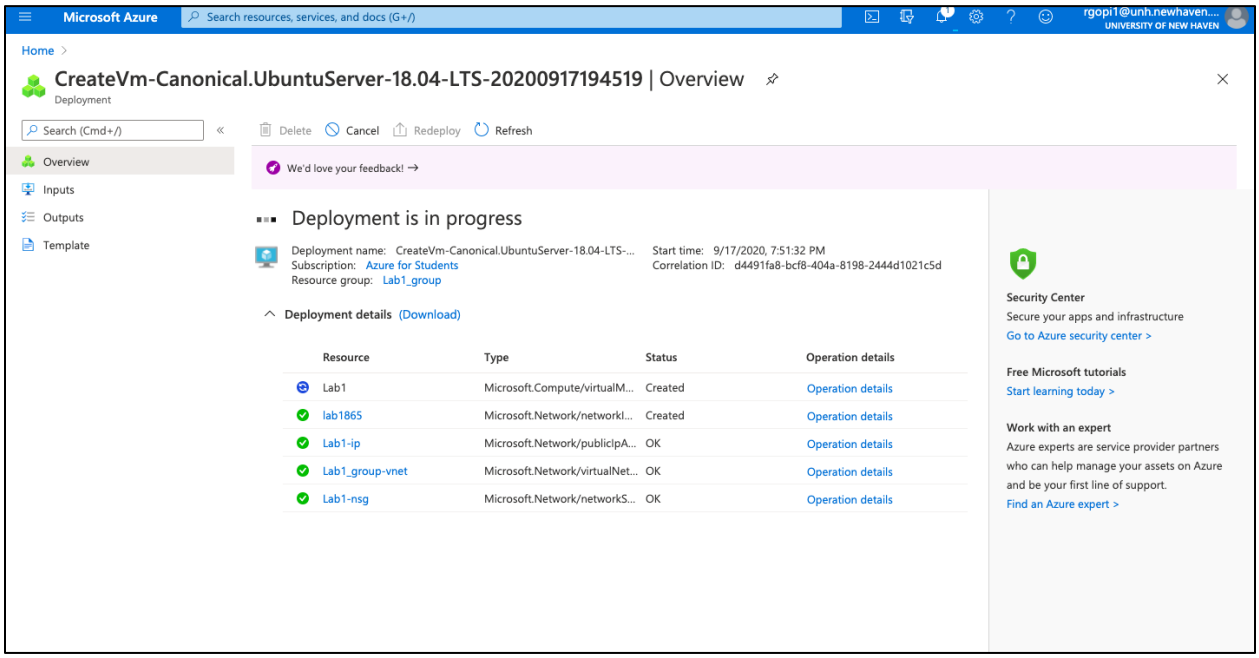

## Reviewing the virtual machine details



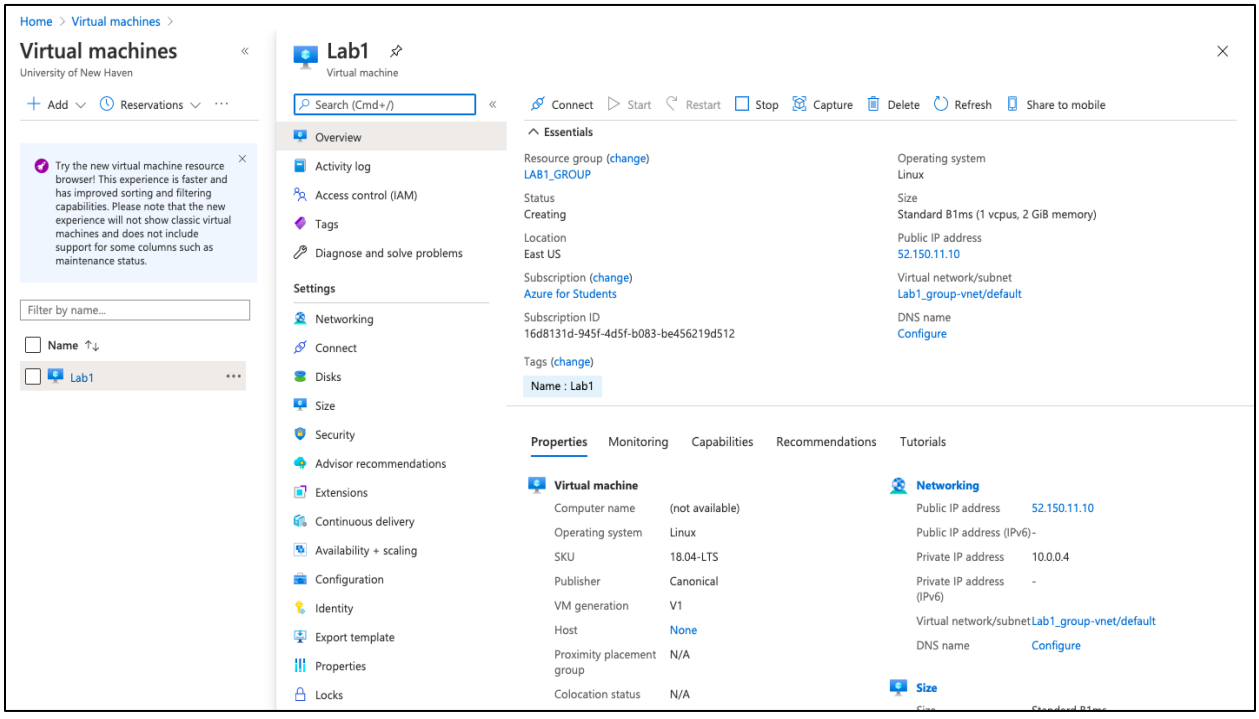

Microsoft Azure
Search resources, services, and docs (G+/)
rgopi1@unh.newhaven....
UNIVERSITY OF NEW HAVEN
Home > Virtual machines >
Create a virtual machine
Validation passed
Basics
Subscription Azure for Students
Resource group (new) Lab1_group
Virtual machine name Lab1
Region East US
Availability options No infrastructure redundancy required
Image Ubuntu Server 18.04 LTS - Gen1
Size Standard B1ms (1 vcpu, 2 GiB memory)
Authentication type Password
Username Lab1
Public inbound ports SSH
Azure Spot No
Disks
OS disk type Standard HDD
Use managed disks Yes
Use ephemeral OS disk No
Networking
Virtual network (new) Lab1_group-vnet
Subnet (new) default (10.0.0.0/24)
Public IP (new) Lab1-ip
Create
< Previous
Next >
Download a template for automation

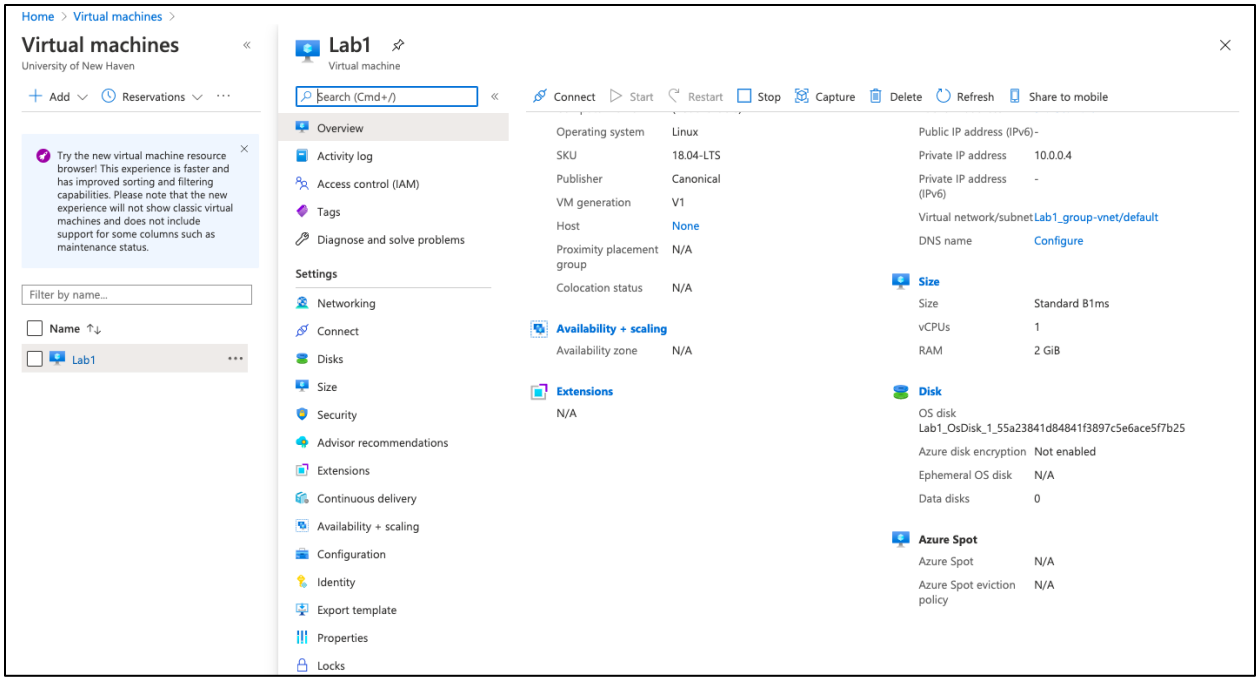

Microsoft Azure
Search resources, services, and docs (G+/)
rgopi1@unh.newhaven....
UNIVERSITY OF NEW HAVEN
Home > Virtual machines >
Create a virtual machine
Validation passed
Management
Boot diagnostics On
OS guest diagnostics Off
Azure Security Center Basic (free)
System assigned managed identity Off
Auto-shutdown Off
Backup Disabled
Patch installation OS-orchestrated patching: patches will be installed by OS
Advanced
Extensions None
Cloud init No
Proximity placement group None
Tags
Name Lab1 (Auto-shutdown schedule)
Name Lab1 (Availability set)
Name Lab1 (Disk)
Name Lab1 (Network interface)
Name Lab1 (Network security group)
Name Lab1 (Public IP address)
Name Lab1 (Recovery Services vault)
Create
< Previous
Next >
Download a template for automation

# Deployment of virtual machine in Microsoft Azure




# Virtual Machine in Azure

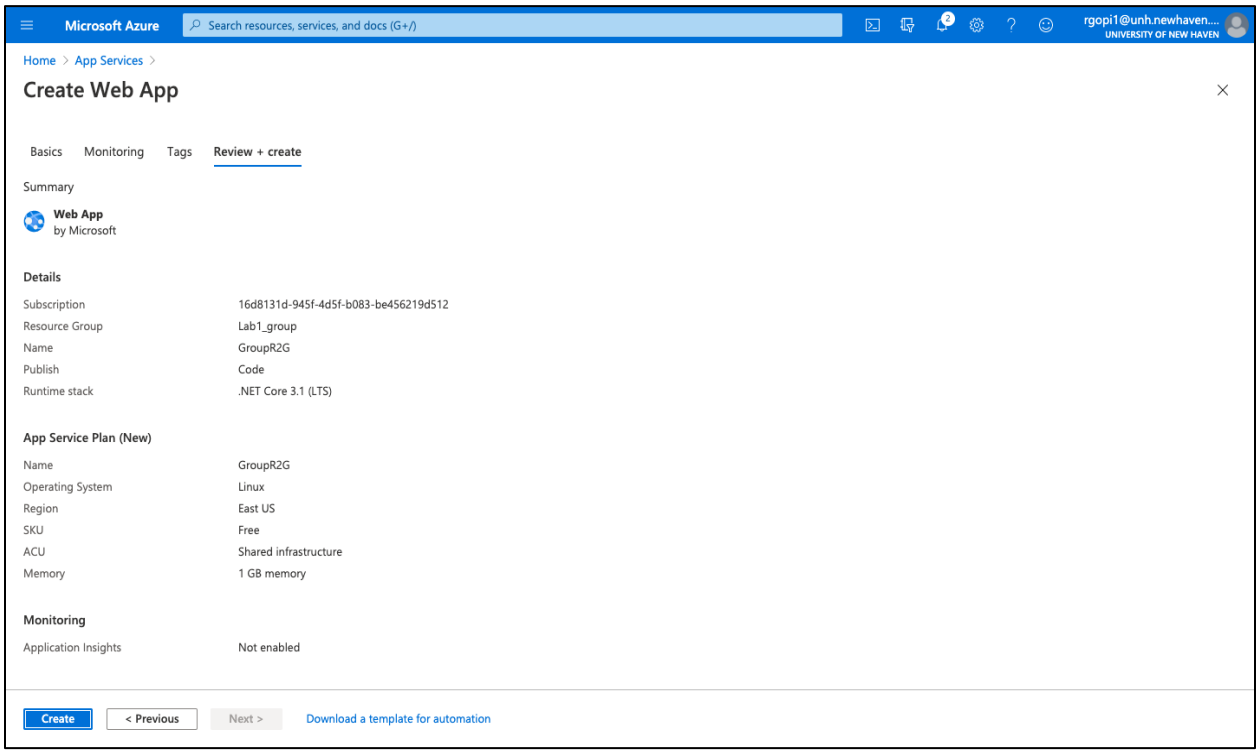


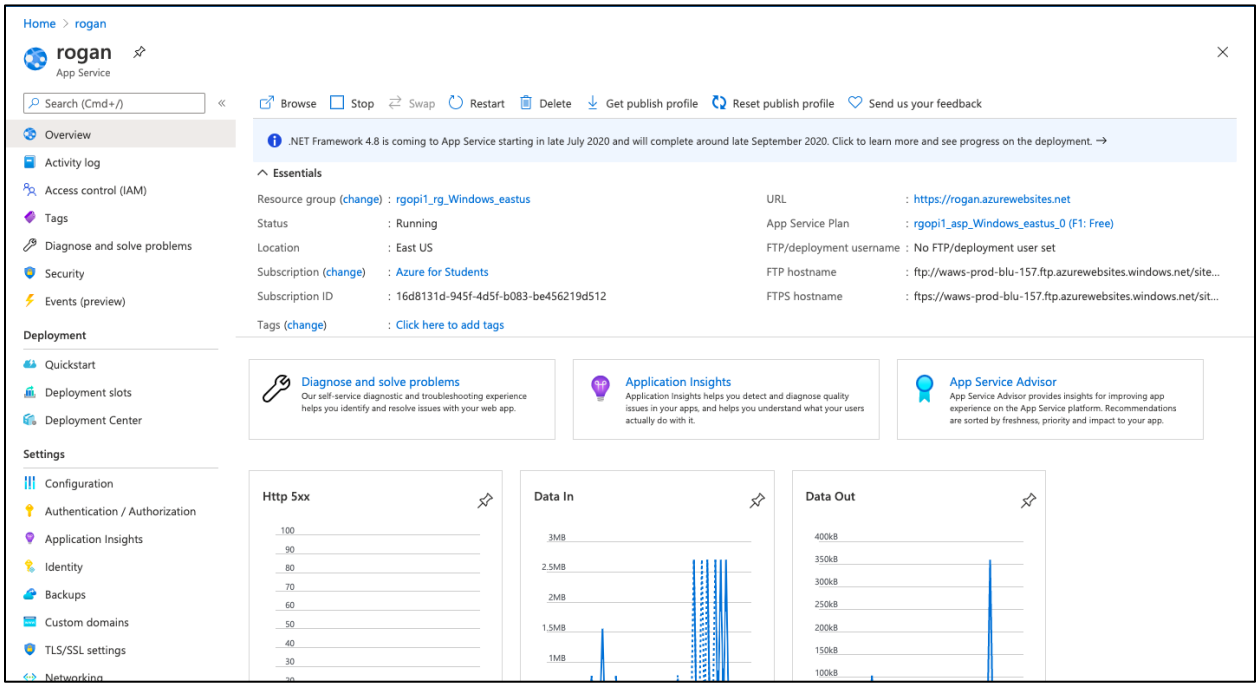



## Logging into VM using SSH:

```
[rogang@ROGANs-MacBook-Air ~ % ssh Lab1@52.150.11.10
The authenticity of host '52.150.11.10 (52.150.11.10)' can't be established.
ECDSA key fingerprint is SHA256:7ypzXSPlUKKSE6cn6YbAlj0BDbZZPvjkBSEMFQkVNHw.
Are you sure you want to continue connecting (yes/no/[fingerprint])? yes
Warning: Permanently added '52.150.11.10' (ECDSA) to the list of known hosts.
Lab1@52.150.11.10's password:
Welcome to Ubuntu 18.04.5 LTS (GNU/Linux 5.4.0-1025-azure x86_64)

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

  System information as of Thu Sep 17 23:54:37 UTC 2020

  System load:  0.32              Processes:           118
  Usage of /:   4.4% of 28.90GB   Users logged in:     0
  Memory usage: 14%               IP address for eth0: 10.0.0.4
  Swap usage:   0%

0 packages can be updated.
0 updates are security updates.



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.

Lab1@Lab1:~$
```

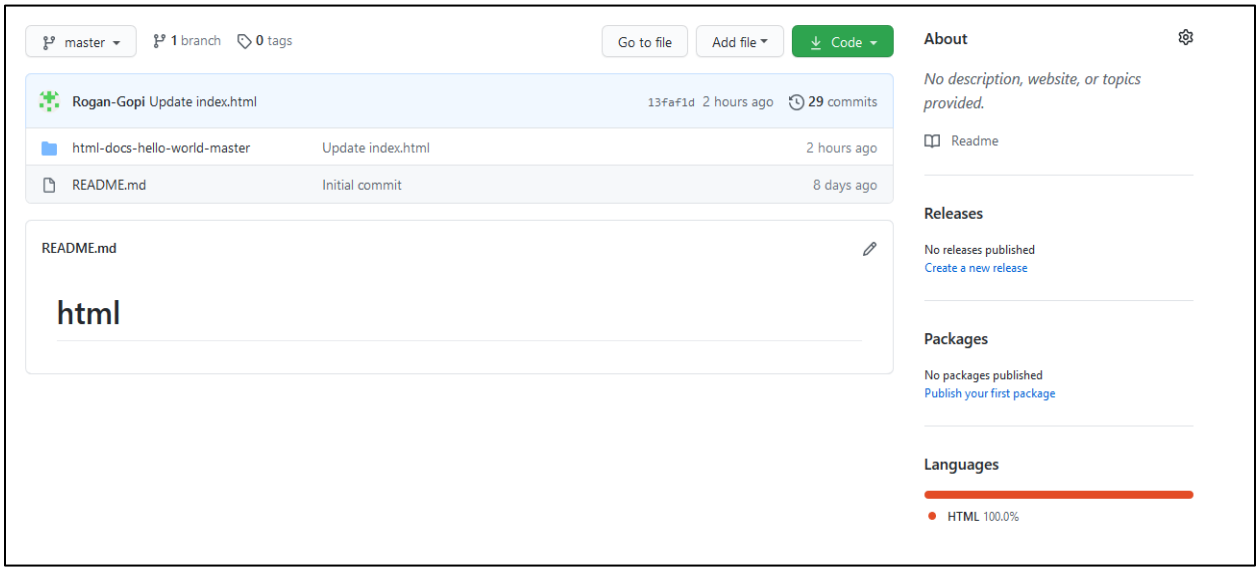
# Creation of Web Application:



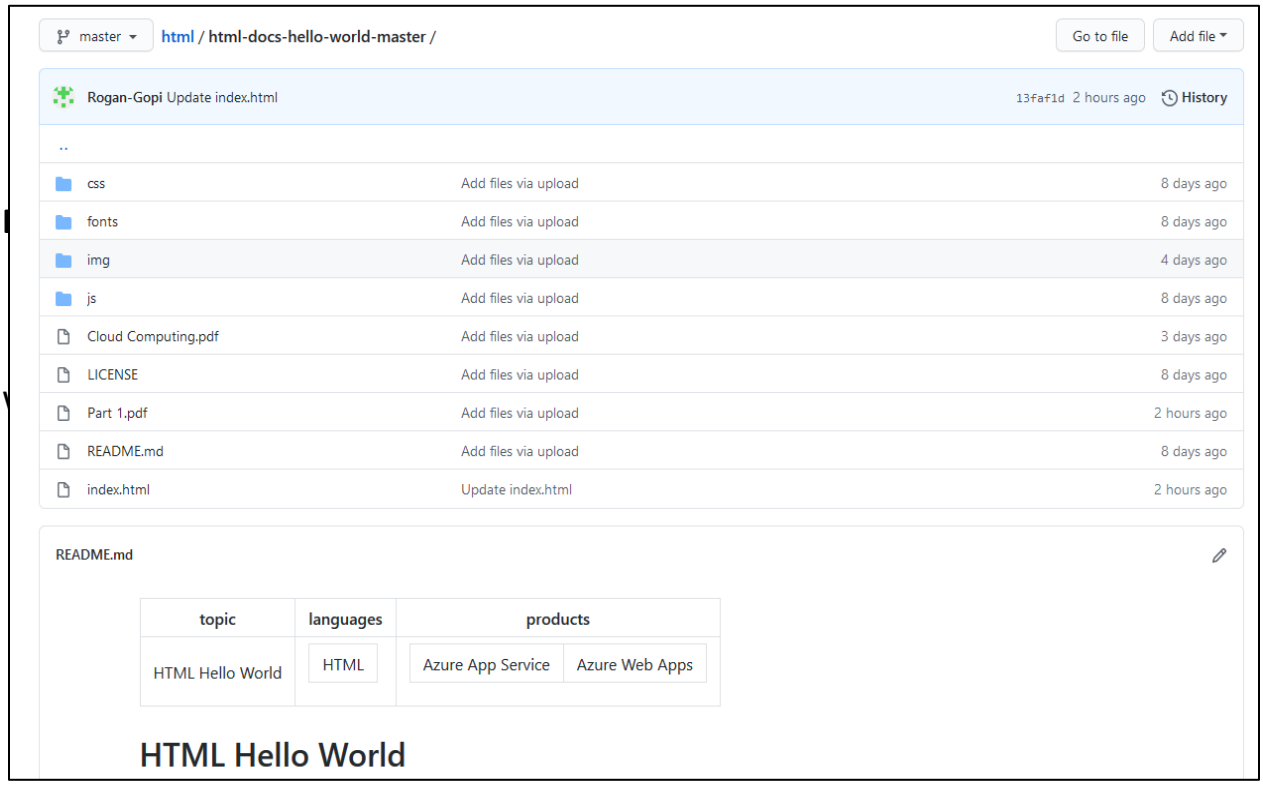



To perform such a web page we first created the git hub repository named HTML, added the required html files and cloned into Azure terminal and deployed it which successfully launched the static website

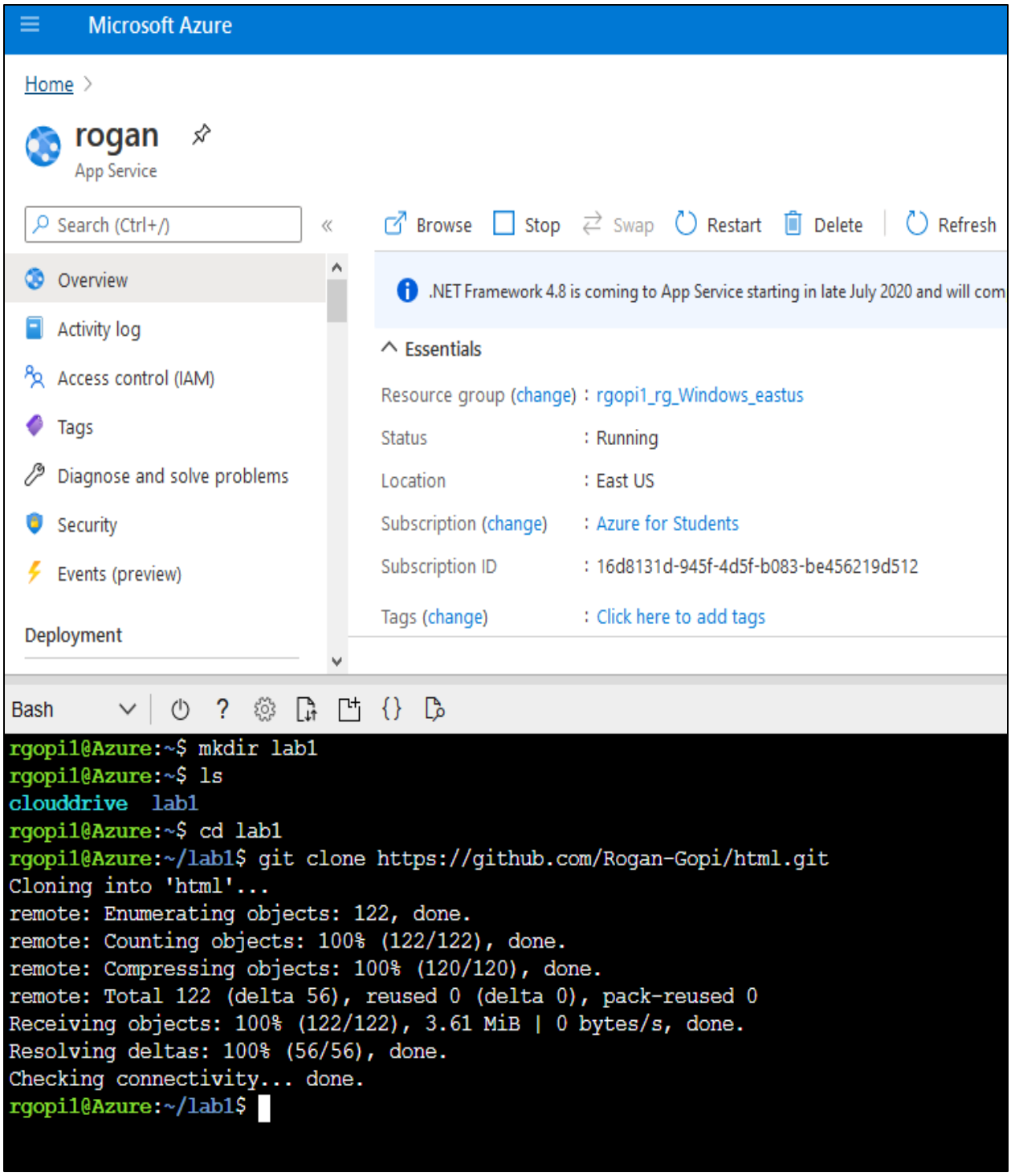
## Git Account



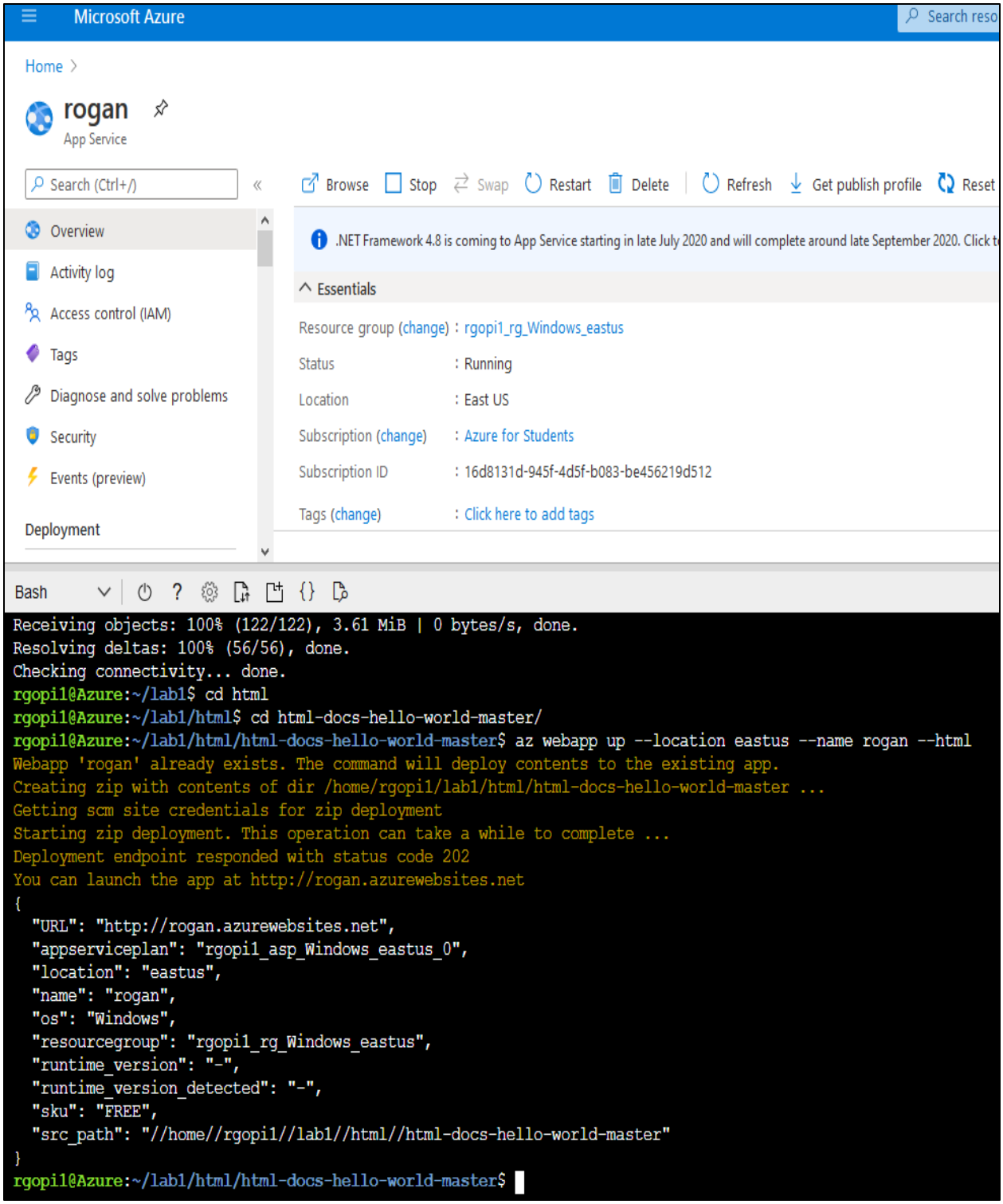

## Git cloning through shell



## Git cloning

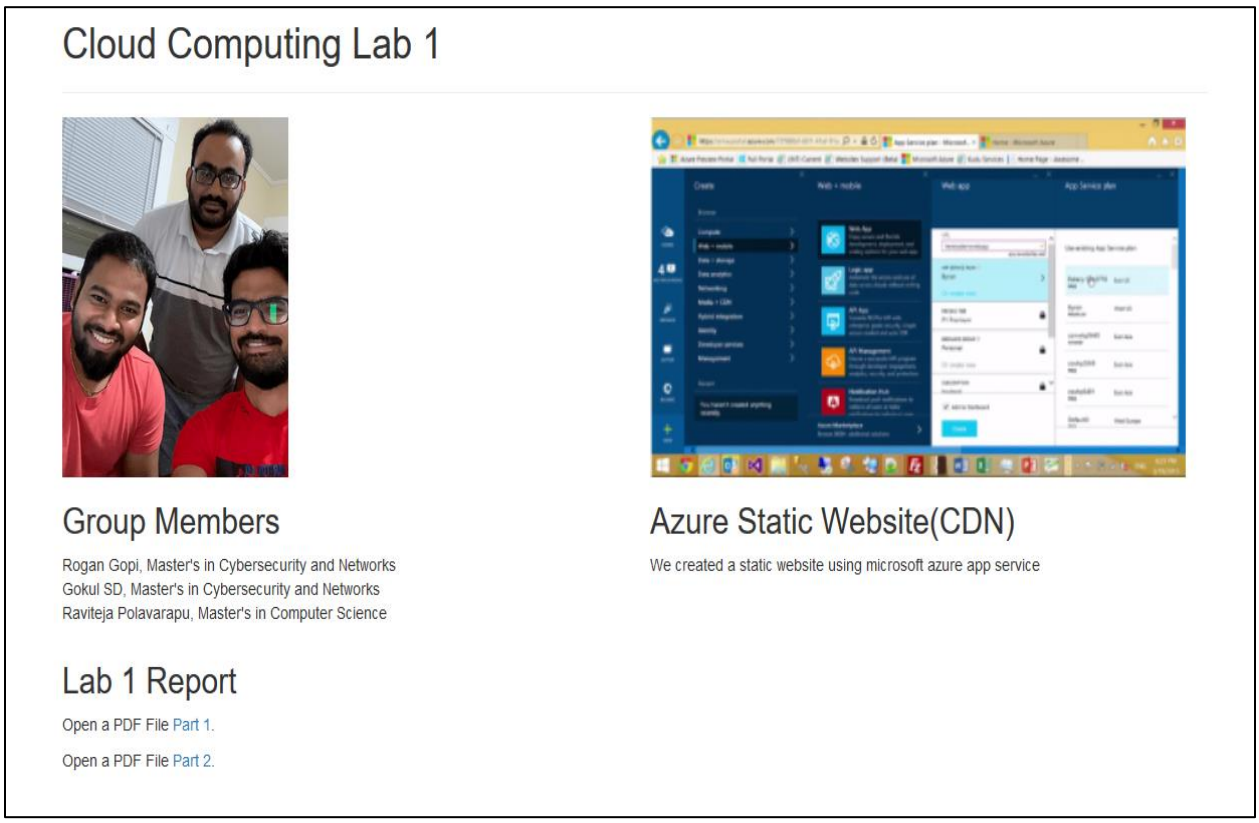

Microsoft Azure
Home
rogan
App Service
Search (Ctrl+/)
Browse
Stop
Swap
Restart
Delete
Refresh
Overview
Activity log
Access control (IAM)
Tags
Diagnose and solve problems
Security
Events (preview)
Deployment
.NET Framework 4.8 is coming to App Service starting in late July 2020 and will com
Essentials
Resource group (change) : rgopi1_rg_Windows_eastus
Status : Running
Location : East US
Subscription (change) : Azure for Students
Subscription ID : 16d8131d-945f-4d5f-b083-be456219d512
Tags (change) : Click here to add tags
Bash
rgopi1@Azure:~$ mkdir lab1
rgopi1@Azure:~$ ls
clouddrive lab1
rgopi1@Azure:~$ cd lab1
rgopi1@Azure:~/lab1$ git clone https://github.com/Rogan-Gopi/html.git
Cloning into 'html'...
remote: Enumerating objects: 122, done.
remote: Counting objects: 100% (122/122), done.
remote: Compressing objects: 100% (120/120), done.
remote: Total 122 (delta 56), reused 0 (delta 0), pack-reused 0
Receiving objects: 100% (122/122), 3.61 MiB | 0 bytes/s, done.
Resolving deltas: 100% (56/56), done.
Checking connectivity... done.
rgopi1@Azure:~/lab1$

## Deploying the web application via shell



**Static website deployed in azure**

Web URL : https://rogan.azurewebsites.net/




Problems and Solution:

The SSH let us only to view the command line whereas not the graphical representation of OS so we tried installing VNC and then we noted the local host which it was tunneling through and configure that port in the Azure to make sure it works good and finally, it allowed us to view the VNC graphical representation of OS.