#### Setting up Azure

- 1. Go to the following URL in your browser: <u>https://azure.microsoft.com/en-us/free/students/</u>
- 2. Click on the green **Start free** button and follow on-screen instructions to setup your azure account. **Remember** to use your **BU** email id to register.

#### Login to Azure

In a web browser of your choice, enter the following URL: <u>portal.azure.com</u> You will see the dashboard as follows:



## Creating a Virtual Machine

1. Click on the Virtual Machines icon (shown below)

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2. Click on the Create button. Select the Virtual machine option

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Name 1	Subscription $\uparrow \downarrow$	Resource group 14	Location 14	Status 14	Operating system $\uparrow_{\downarrow}$	Size 14	Public IP address ?↓	Disks 14	
PA1.2-Machine	Azure for Students	PA12-Machine_group	East US	Running	Linux	Standard_B1s	40.114.46.200	1	

- 3. You will be taken to a **Create a Virtual Machine Window**. Make sure that you choose Azure for Students under the Subscription.
- 4. Select the **cs561** resource group (you will need to create a new resource, following *these* instructions).
- 5. Name your virtual machine as **Project1-Machine**.
- 6. You may keep the defaults for Region, Availability options and Security type.
- 7. Under Image, select Ubuntu Server 20.04 LTS Gen2.
- 8. Under size, make sure you select **Standard\_B1s 1vcpu, 1GiB memory** (\$7.59/month). Note, you will not be charged anything even though Azure will show you a monthly rate for the instance. This is because they maintain the same user interface for students and general users.
- 9. Under authentication type, select the **Password** option/radio button. You will be prompted for the username and password. For both username and password, enter *exactly* as follows:
  - a. Username: cs561user
  - b. Password: Cs561project1
- all other settings set to their defaults. 10. Ke
- 11 as follows:

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our resources.	
ubscription * ①	Azure for Students
Resource group * ()	(New) PA2-Machine_group Create new
nstance details	
firtual machine name * 💿	PA2-Machine
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wailability options 🕕	No infrastructure redundancy required
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ize* 🛈	Standard_B1s - 1 vcpu, 1 Gi8 marnory (\$7.59/month) See all sizes
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- 12. Click on **Review+Create**.
- 13. In the review window, click on **Create**. Your instance will be deployed in a few minutes.

- 14. Once the instance is deployed, you will be given an option for **Go to Resource**. Click on it to view your Virtual Machine instance details.
  - Your deployment is complete
     Deployment name: CreateVm-canonical.0001-com-ubuntu-server-f... Start time: 11/10/2021, 3:09:30 PM
  - Subscription: Azure for Students Resource group: PA2-Machine\_group
     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

## Logging into the Virtual Machine

The resource window for our created instance will look as follows:

, <sup>O</sup> Search (Cmd+/)	🖉 Connect 🕞 Start 🦿	Restart 🔲 Stop 🐹 Capture 📋 Delete Ů Refresh	CLI / PS	R Feedback
Cverview				JSON View
Activity log	Resource group (change) : PA	2-Machine_group	Operating system : Linu	x (ubuntu 20.04)
Access control (IAM)	Status : Ru	nning	Size : Star	dard B1s (1 vcpus, 1 GiB memory)
Tags	Location : Eas	it US	Public IP address : 13.8	2.4.126
Diagnose and solve problems	Subscription (change) : Az	are for Students	Virtual network/subnet : PAC	Machine_group-vnet/default
6 and and and and house in	Subscription ID : 458	b23d64-8fda-47ab-a5e5-4e8561f6f222	DNS name : Not	configured
Settings	Tags (change) : Cli	ck here to add tags		
2 Networking				
Ø Connect	Properties Monitoring	Capabilities (7) Recommendations Tutorials		
S Disks	Virtual machine		Networking	
📮 Size	Computer name	PA2-Machine	Public IP address	13,82,4,126
O Security	Health state	*	Public IP address (IPv6)	(*)
Advisor recommendations	Operating system	Linux (ubuntu 20.04)	Private IP address	10.1.0.4
T Extensions	Publisher	canonical	Private IP address (IPv6)	
	Offer	0001-com-ubuntu-server-focal	Virtual network/subnet	PA2-Machine_group-vnet/default
Continuous delivery	Plan	20_04-lts-gen2	DNS name	Configure
Availability + scaling	VM generation	V2		
Configuration	Agent status	Ready	Size	
😪 Identity	Agent version	2.5.0.2	Size	Standard B1s
Properties	Host group	None	VCPUs	1
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× Bastion	Capacity reservation grou	ip -		Machine_OsDisk_1_80107965297d4890ac116e753417dd46
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C Backup	Availability rone	-	Ephemeral OS disk	N/A
22.0	rivanability 2016	-	Data disks	0

Here, we note the public ip address that has been allocated for our resource. Note, this address might change after you stop/start the resource again. We will use the IP address listed in the resource details to login to the machine using **ssh** (like we did for login to csa1 machines). If the IP address changes, we will use the latest one.

- 1. Open a new terminal on a mac/linux system. If you are in a windows machine, please use PuTTY.
- Login to the remote VM (Virtual machine) using ssh. Here, our username will be cs561user (that we listed while creating the instance) and password will be Cs561project1. Use this command to login from the terminal:

ssh cs561user@<ip\_address>

**Remember to replace <ip\_address> with the public IP address listed for your resource.** For example, in my case, I would type the above command as follows: ssh <u>cs561user@13.82.4.126</u>

- 3. Type the password **Cs561project1** when prompted.
- 4. You will now be logged into the resource and will see the following window in your terminal:



# Installing make

Run the following command:

sudo apt install make

## Installing gcc

Run the following command:

sudo apt-get install gcc