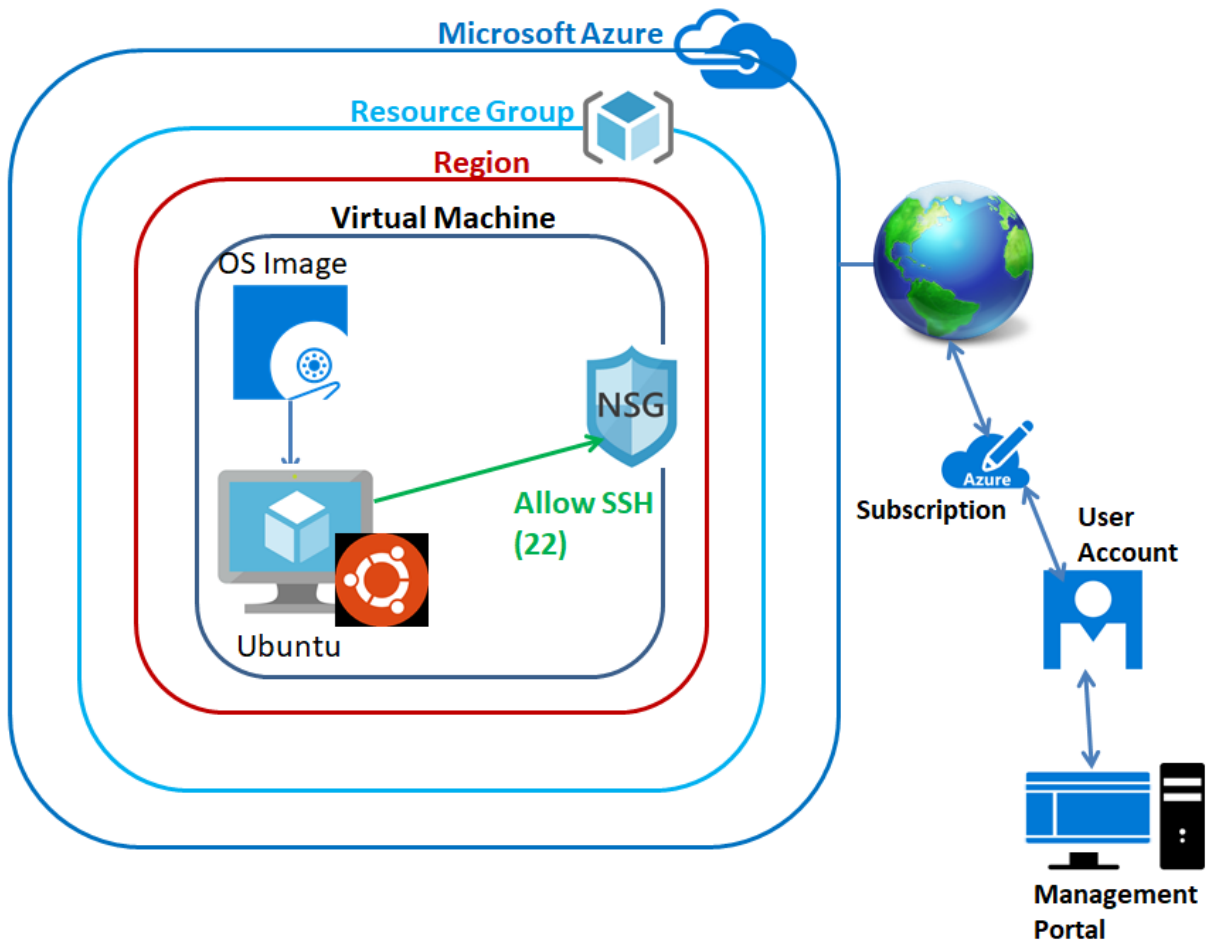
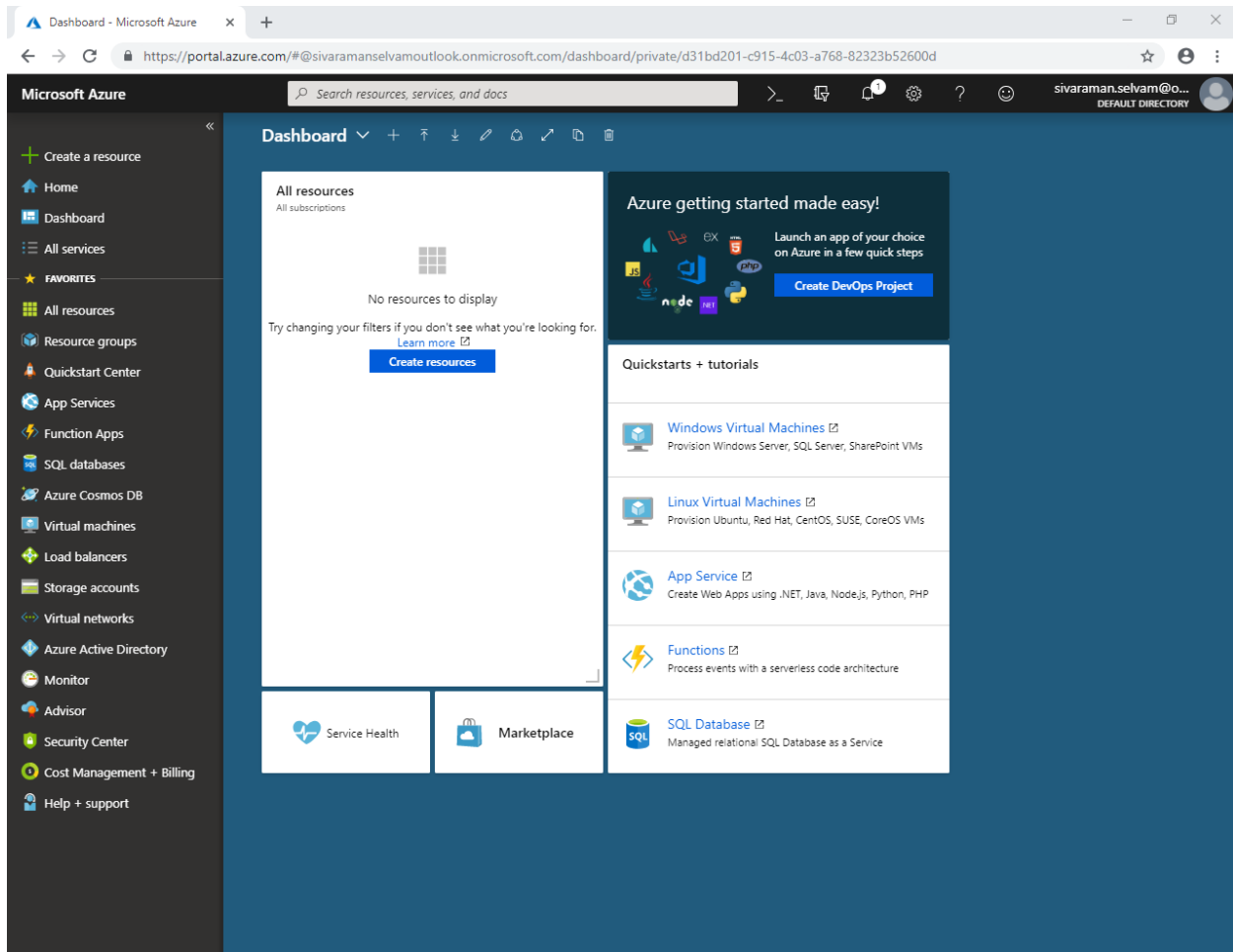


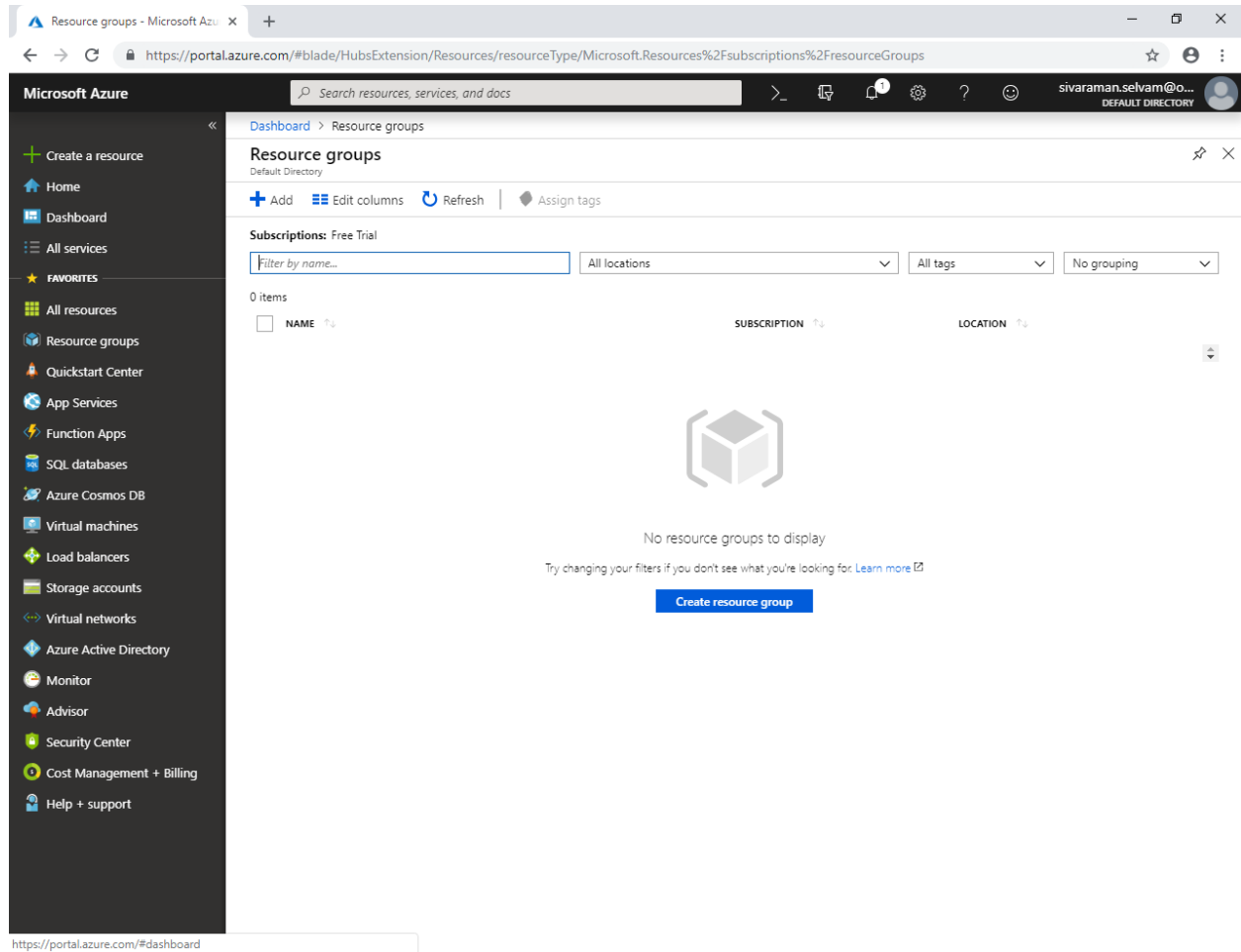
Lab2 – Creating Virtual Machine – Ubuntu in Azure



In Dashboard, Click “Resource groups”.



In “Resource Groups” click “Add”.

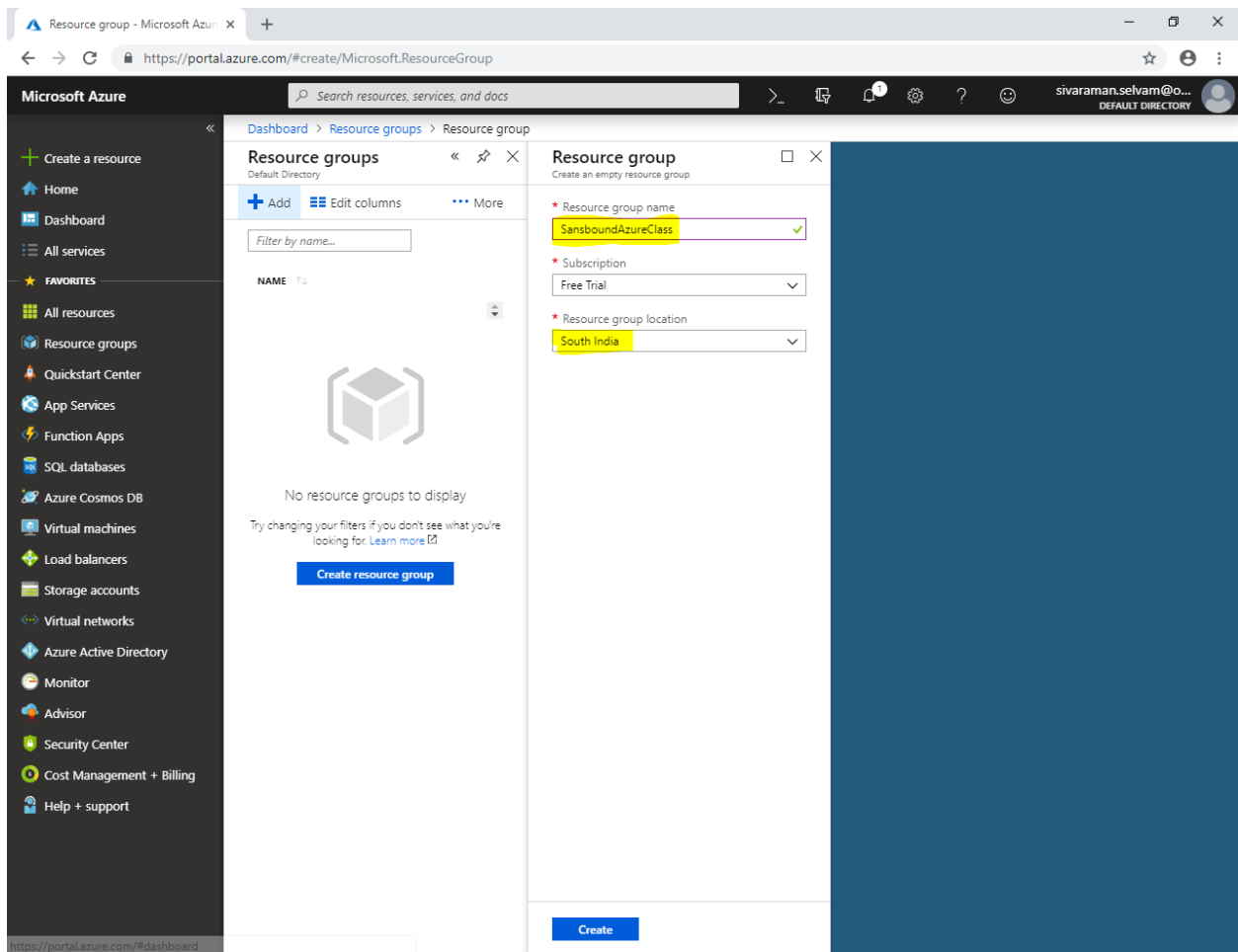


The screenshot shows the Microsoft Azure portal interface. The left sidebar contains navigation links such as 'Create a resource', 'Home', 'Dashboard', 'All services', and 'FAVORITES'. The main content area is titled 'Resource groups' and includes a search bar, a '+ Add' button, and filters for 'Subscriptions: Free Trial', 'Filter by name...', 'All locations', 'All tags', and 'No grouping'. Below the filters, it states '0 items' and shows a table with columns 'NAME', 'SUBSCRIPTION', and 'LOCATION'. A large cube icon is displayed in the center of the table area, with the text 'No resource groups to display' and a link to 'Learn more'. A blue button labeled 'Create resource group' is positioned at the bottom of the main content area.

Type “Resource Group” as “**SansboundAzureClass**”.

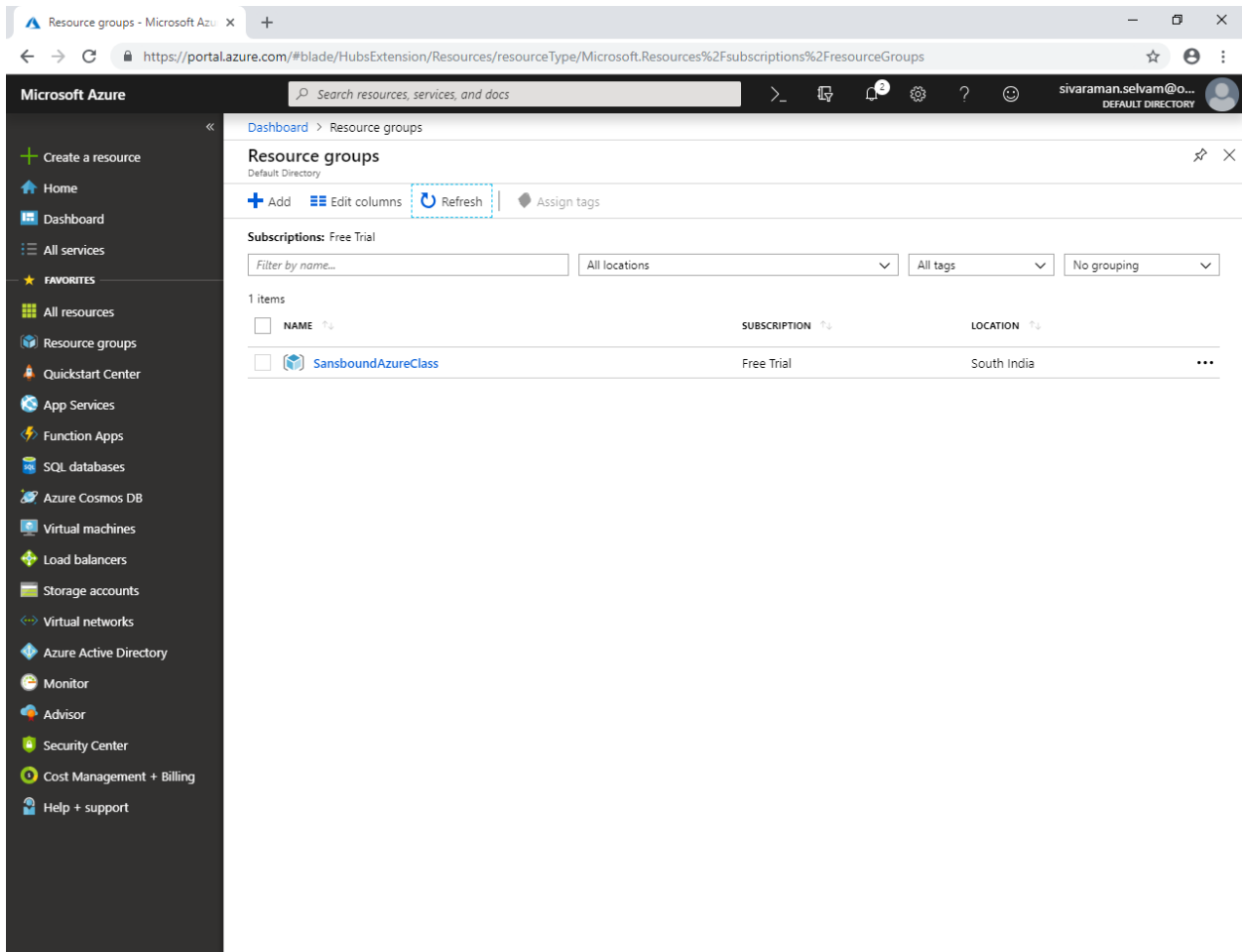
Subscription should be “**Free Trial**”

Region I will select “**South India**”.



Click “**Create**”.

In “Resource Groups” click “Refresh” to view the newly created “Resource Groups”.

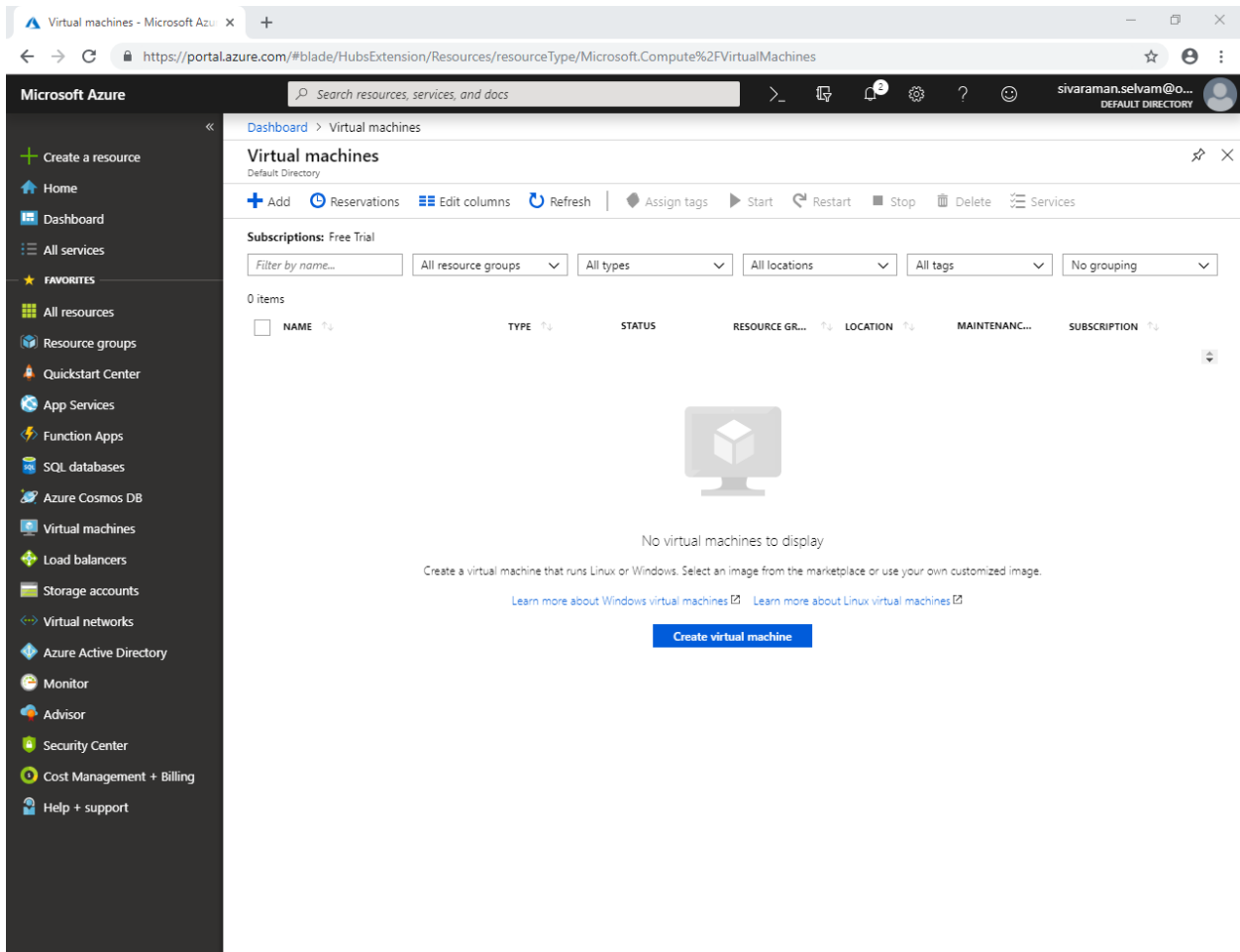


The screenshot shows the Microsoft Azure portal interface. The left sidebar contains navigation links for various services. The main content area displays the 'Resource groups' page. At the top, there are buttons for 'Add', 'Edit columns', 'Refresh' (highlighted with a dashed blue box), and 'Assign tags'. Below these, there are filters for 'Subscriptions: Free Trial', 'Filter by name...', 'All locations', 'All tags', and 'No grouping'. A table lists the resource groups, showing one item: 'SansboundAzureClass' under the 'Free Trial' subscription in the 'South India' location.

NAME	SUBSCRIPTION	LOCATION
SansboundAzureClass	Free Trial	South India

In Dashboard, click “Virtual machines”

Click “Add”.



Virtual machines - Microsoft Azure

Search resources, services, and docs

Dashboard > Virtual machines

Virtual machines

Default Directory

+ Add Reservations Edit columns Refresh Assign tags Start Restart Stop Delete Services

Subscriptions: Free Trial

Filter by name... All resource groups All types All locations All tags No grouping

0 items

NAME	TYPE	STATUS	RESOURCE GR...	LOCATION	MAINTENANC...	SUBSCRIPTION
------	------	--------	----------------	----------	---------------	--------------

No virtual machines to display

Create a virtual machine that runs Linux or Windows. Select an image from the marketplace or use your own customized image.

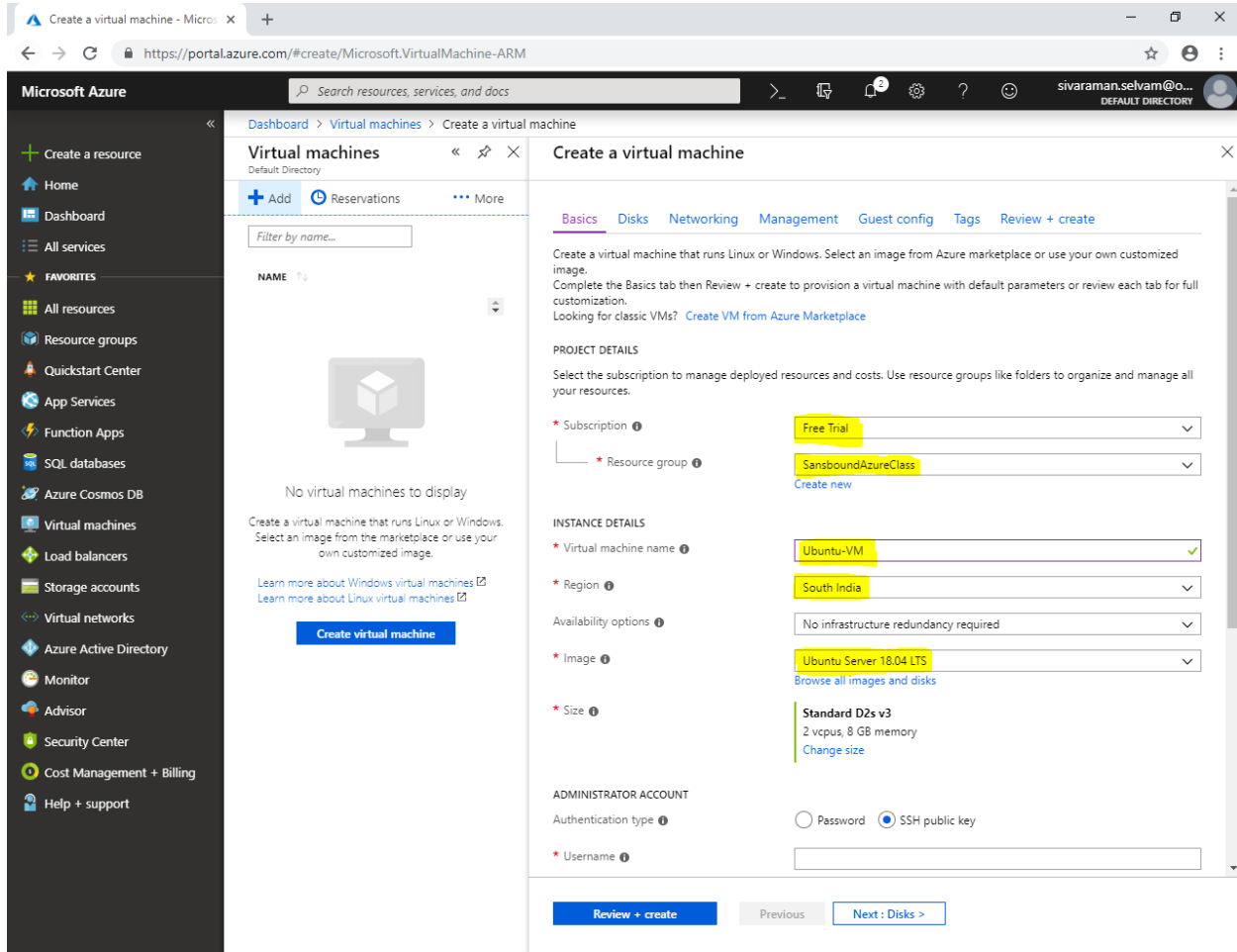
[Learn more about Windows virtual machines](#) [Learn more about Linux virtual machines](#)

Create virtual machine

While creating Virtual machine, Select the Subscription **“Free Trial”** and select the “Resource Group” as **“SansboundAzureClass”**.

Type virtual machine name as **“Ubuntu-VM”** and select the Region as **“South India”**.

Select OS Image as **“Ubuntu Server 18.04 LTS”**.



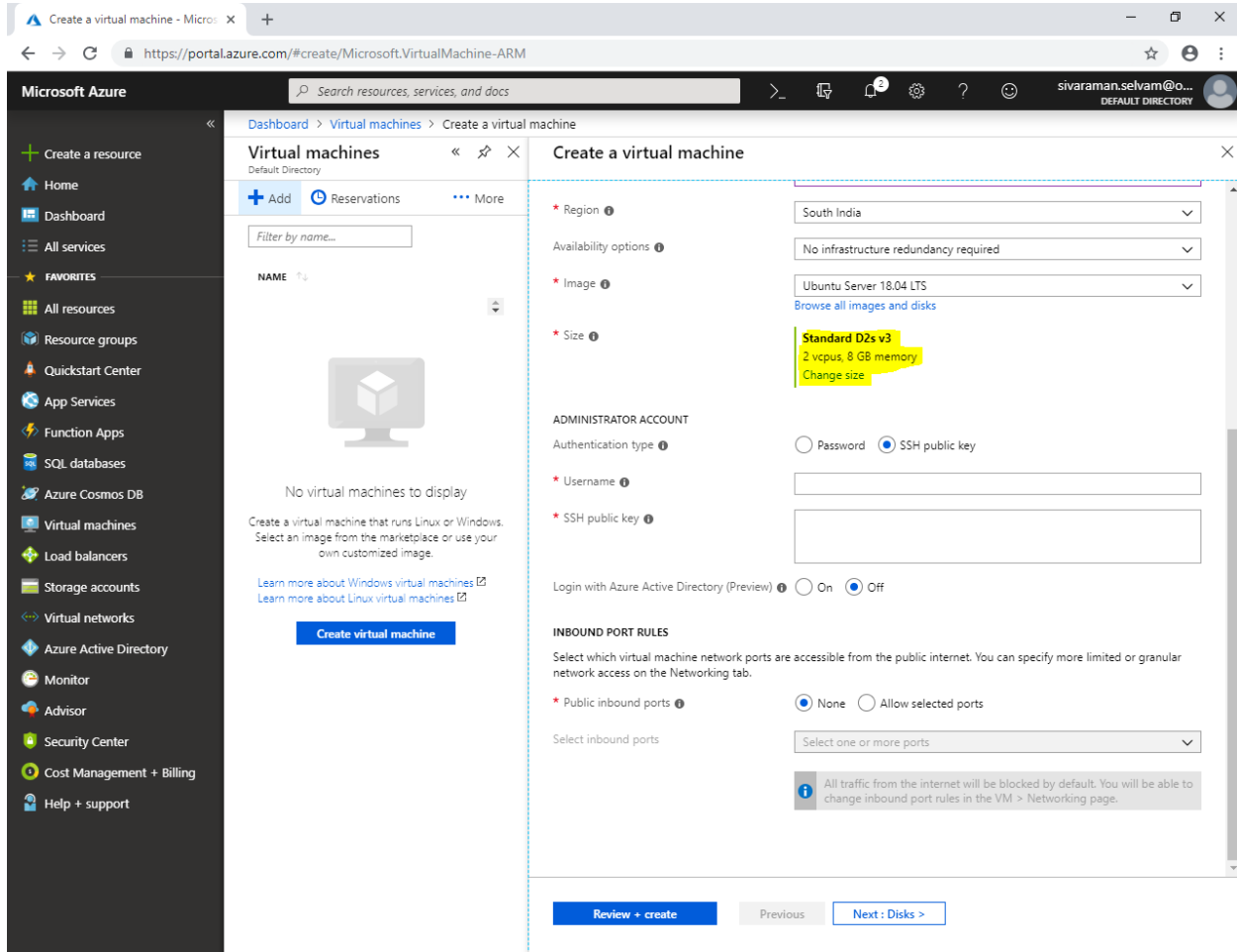
The screenshot displays the Azure portal interface for creating a new virtual machine. The left sidebar shows the navigation menu with options like 'Create a resource', 'Home', 'Dashboard', and various services. The main area is titled 'Create a virtual machine' and includes tabs for 'Basics', 'Disks', 'Networking', 'Management', 'Guest config', 'Tags', and 'Review + create'. The 'Basics' tab is active, showing the following configuration details:

- Subscription:** Free Trial
- Resource group:** SansboundAzureClass
- Virtual machine name:** Ubuntu-VM
- Region:** South India
- Image:** Ubuntu Server 18.04 LTS
- Size:** Standard D2s v3 (2 vcpus, 8 GB memory)
- Availability options:** No infrastructure redundancy required
- Administrator account:** SSH public key (selected)

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

In Virtual machine size by default it has been selected **“Standard D2s v3”** with 2 vCPU’s and 8 GB RAM.

Click **“Change size”** But, we need to change it to as **Standard “B1s”** manually.



The screenshot shows the Microsoft Azure portal interface for creating a virtual machine. The left sidebar contains navigation links for various Azure services. The main content area is titled 'Create a virtual machine' and includes a 'Virtual machines' list on the left and a configuration form on the right. The configuration form has the following settings:

- Region:** South India
- Availability options:** No infrastructure redundancy required
- Image:** Ubuntu Server 18.04 LTS
- Size:** Standard D2s v3 (2 vcpus, 8 GB memory)
- ADMINISTRATOR ACCOUNT:** Authentication type is SSH public key.
- Username:** (empty field)
- SSH public key:** (empty field)
- Login with Azure Active Directory (Preview):** Off
- INBOUND PORT RULES:** Public inbound ports are set to None.
- Select inbound ports:** Select one or more ports (dropdown menu)

At the bottom of the form, there is a 'Review + create' button and a 'Next: Disks >' button.

Select Virtual machine size as **Standard “B1s”** and click “Select” button at bottom of the portal.

Cloud Computing - Azure

Select a VM size - Microsoft Azure

https://portal.azure.com/#create/Microsoft.VirtualMachine-ARM

Microsoft Azure

Search resources, services, and docs

Search by VM size... Clear all filters

Size: Small (0-4) Generation: Current Family: General purpose Premium disk: Supported Add filter

Showing 12 of 147 VM sizes. Subscription: Free Trial Region: South India Current size: Standard_D2s_v3

VM SIZE	OFFERING	FAMILY	VCPUS	RAM (GB)	DATA DISKS	MAX IOPS	TEMPORARY STOR...	PREMIUM DISK SU...	COST/MONTH (ESTL...
B1ms	Standard	General purpose	1	2	2	800	4 GB	Yes	₹1,445.76
B1s	Standard	General purpose	1	1	2	400	4 GB	Yes	₹713.05
B2ms	Standard	General purpose	2	8	4	2400	16 GB	Yes	₹5,802.72
B2s	Standard	General purpose	2	4	4	1600	8 GB	Yes	₹2,852.19
B4ms	Standard	General purpose	4	16	8	3600	32 GB	Yes	₹11,605.44
D2s_v3	Standard	General purpose	2	8	4	3200	16 GB	Yes	₹6,638.71
D4s_v3	Standard	General purpose	4	16	8	6400	32 GB	Yes	₹13,326.59
DS1_v2	Standard	General purpose	1	3.5	4	3200	7 GB	Yes	₹4,130.75
DS2_v2	Standard	General purpose	2	7	8	6400	14 GB	Yes	₹8,310.68
DS3_v2	Standard	General purpose	4	14	16	12800	28 GB	Yes	₹16,572.18
DS2_v2	Promo	General purpose	2	7	8	6400	14 GB	Yes	₹8,310.68
DS3_v2	Promo	General purpose	4	14	16	12800	28 GB	Yes	₹16,572.18

Select

Prices presented are estimates in your local currency that include only Azure infrastructure costs and any discounts for the subscription and location. The prices don't include applicable software costs. Final charges will appear in your local currency in cost analysis and billing views. [View Azure pricing calculator.](#)

Ensure that VM Size is “Standard B1s” is selected.

Create a virtual machine - Micro: x

https://portal.azure.com/#create/Microsoft.VirtualMachine-ARM

Microsoft Azure

Search resources, services, and docs

sivaraman.selvam@o...
DEFAULT DIRECTORY

Dashboard > Virtual machines > Create a virtual machine

Virtual machines
Default Directory

+ Add Reservations ... More

Filter by name...

NAME %

No virtual machines to display

Create a virtual machine that runs Linux or Windows. Select an image from the marketplace or use your own customized image.

[Learn more about Windows virtual machines](#) [Learn more about Linux virtual machines](#)

Create virtual machine

Create a virtual machine

* Region South India

Availability options No infrastructure redundancy required

* Image Ubuntu Server 18.04 LTS
[Browse all images and disks](#)

* Size **Standard B1s**
1 vcpu, 1 GB memory
[Change size](#)

ADMINISTRATOR ACCOUNT

Authentication type ☐ Password ☒ SSH public key

* Username

* SSH public key

Login with Azure Active Directory (Preview) ☐ On ☒ Off

INBOUND PORT RULES

Select which virtual machine network ports are accessible from the public internet. You can specify more limited or granular network access on the Networking tab.

* Public inbound ports ☒ None ☐ Allow selected ports

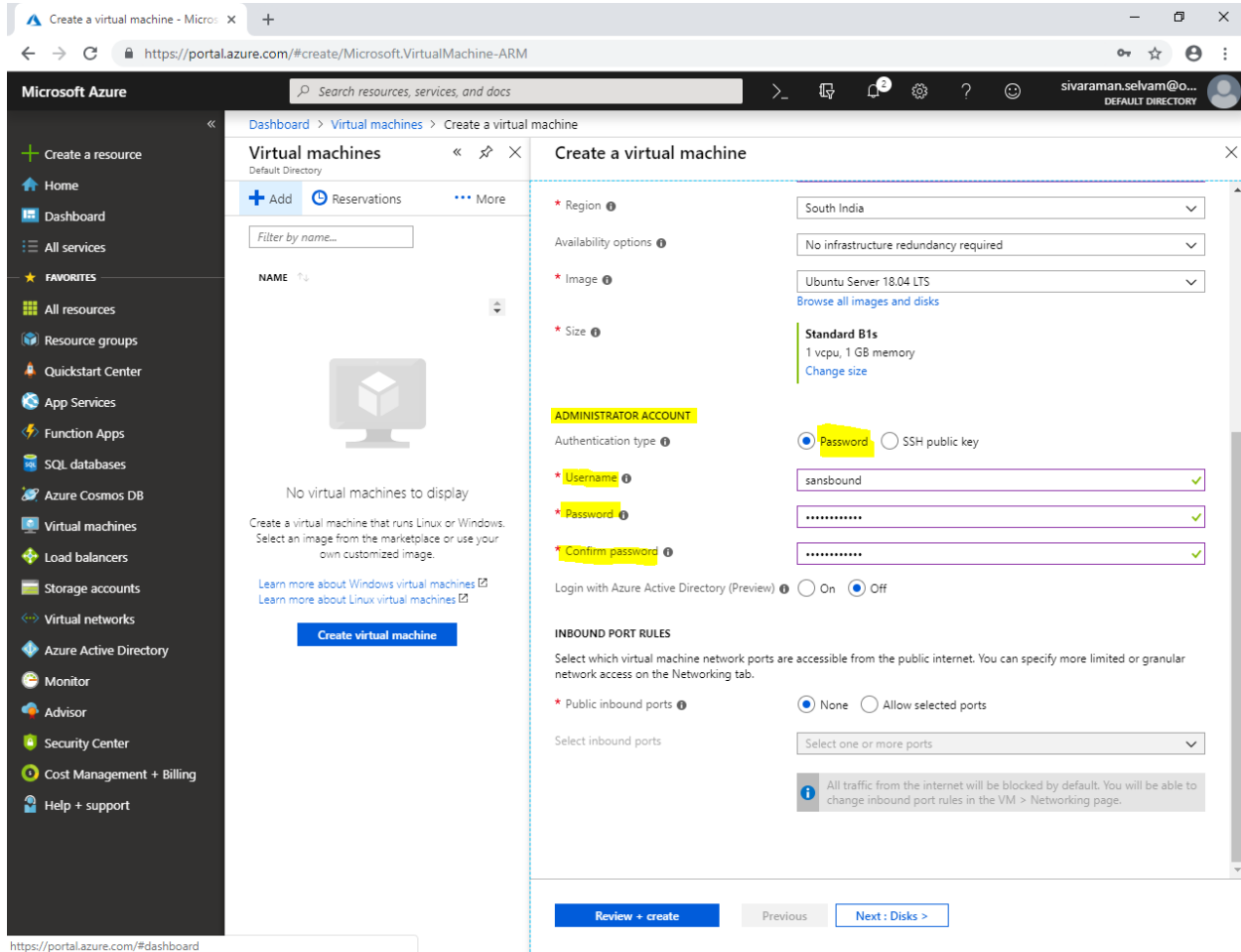
Select inbound ports Select one or more ports

All traffic from the internet will be blocked by default. You will be able to change inbound port rules in the VM > Networking page.

Review + create Previous Next: Disks >

In “Administrator Account” click the option “Password” and type username to access the virtual machine remotely.

Set “Password” with 12 characters to access the server remotely.



Microsoft Azure

Create a virtual machine - Micros X

https://portal.azure.com/#create/Microsoft.VirtualMachine-ARM

Dashboard > Virtual machines > Create a virtual machine

Virtual machines

Default Directory

+ Add Reservations More

Filter by name...

NAME

No virtual machines to display

Create a virtual machine that runs Linux or Windows. Select an image from the marketplace or use your own customized image.

Learn more about Windows virtual machines

Learn more about Linux virtual machines

Create virtual machine

Create a virtual machine

* Region South India

Availability options No infrastructure redundancy required

* Image Ubuntu Server 18.04 LTS

Browse all images and disks

* Size Standard B1s

1 vcpu, 1 GB memory

Change size

ADMINISTRATOR ACCOUNT

Authentication type Password SSH public key

* Username sansbound

* Password

* Confirm password

Login with Azure Active Directory (Preview) On Off

INBOUND PORT RULES

Select which virtual machine network ports are accessible from the public internet. You can specify more limited or granular network access on the Networking tab.

* Public inbound ports None Allow selected ports

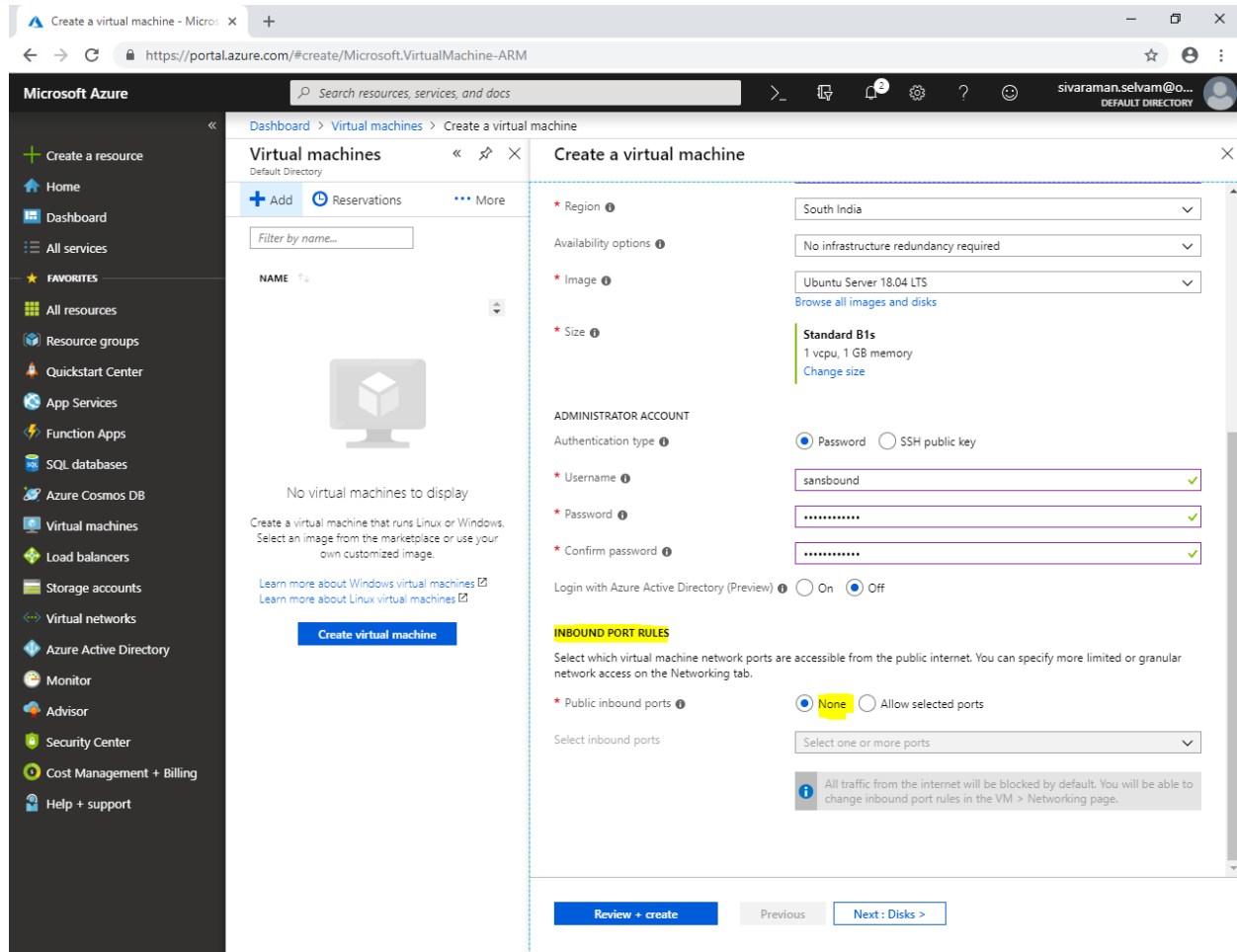
Select inbound ports Select one or more ports

All traffic from the internet will be blocked by default. You will be able to change inbound port rules in the VM > Networking page.

Review + create Previous Next : Disks >

https://portal.azure.com/#dashboard

In “Inbound Port Rules” by default it has been set as none.



The screenshot displays the Microsoft Azure portal interface for creating a virtual machine. The left sidebar shows the navigation menu with options like 'Create a resource', 'Home', 'Dashboard', 'All services', and various resource types. The main area is titled 'Create a virtual machine' and shows the 'INBOUND PORT RULES' section. In this section, 'Public inbound ports' is set to 'None', and 'Select inbound ports' is set to 'Select one or more ports'. A message states: 'All traffic from the internet will be blocked by default. You will be able to change inbound port rules in the VM > Networking page.'

INBOUND PORT RULES

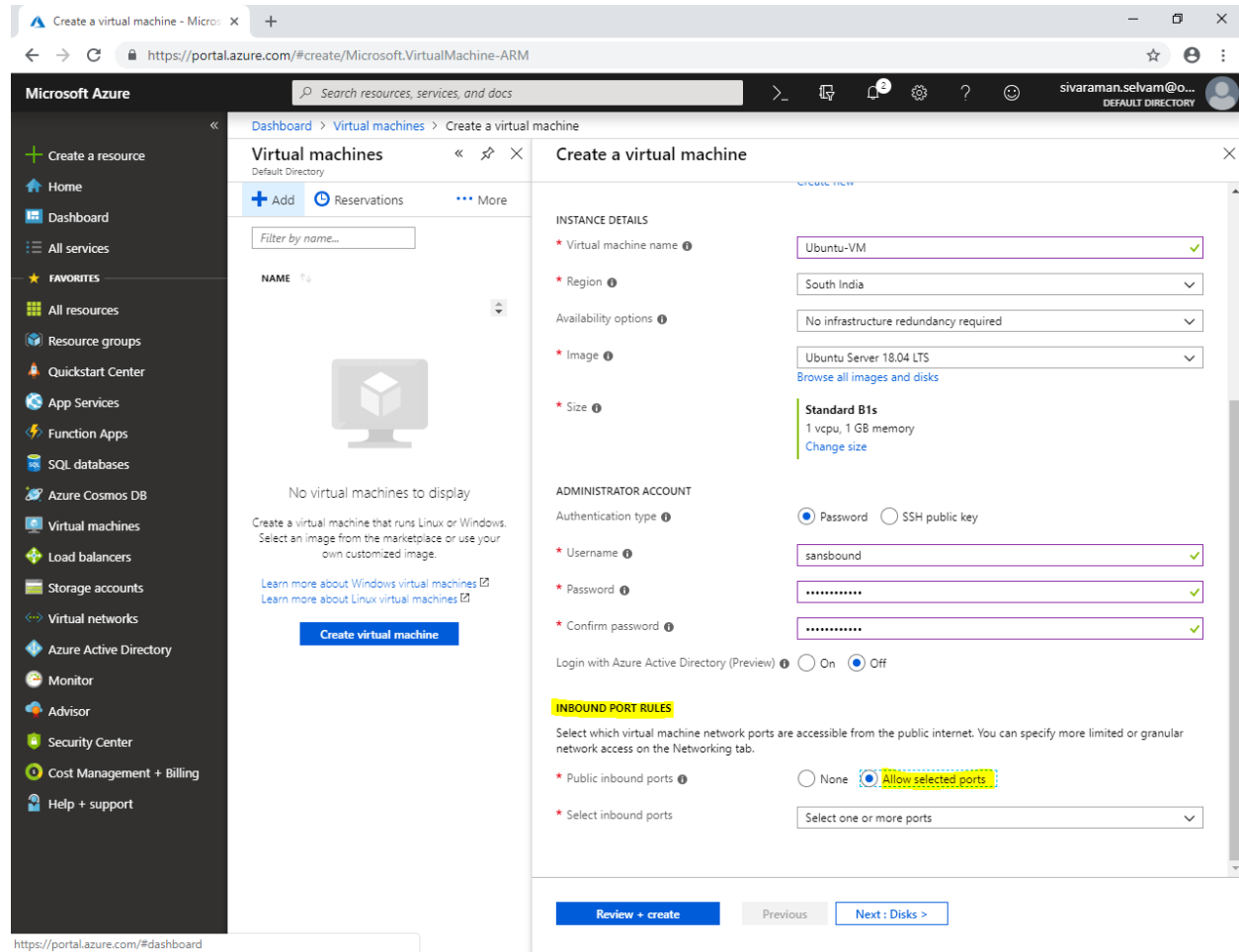
Select which virtual machine network ports are accessible from the public internet. You can specify more limited or granular network access on the Networking tab.

* Public inbound ports ☒ None ☐ Allow selected ports

Select inbound ports: Select one or more ports

All traffic from the internet will be blocked by default. You will be able to change inbound port rules in the VM > Networking page.

In “Inbound Port Rules” click “Allow selected ports”.



The screenshot shows the Microsoft Azure portal interface for creating a virtual machine. The left sidebar contains navigation links for various Azure services. The main content area is titled 'Create a virtual machine' and is divided into two panes. The left pane shows a list of virtual machines (currently empty) and a 'Create virtual machine' button. The right pane contains the configuration details for the new VM.

INSTANCE DETAILS

- Virtual machine name: Ubuntu-VM
- Region: South India
- Availability options: No infrastructure redundancy required
- Image: Ubuntu Server 18.04 LTS
- Size: Standard B1s (1 vcpu, 1 GB memory)

ADMINISTRATOR ACCOUNT

- Authentication type: Password
- Username: sansbound
- Password: [masked]
- Confirm password: [masked]
- Login with Azure Active Directory (Preview): Off

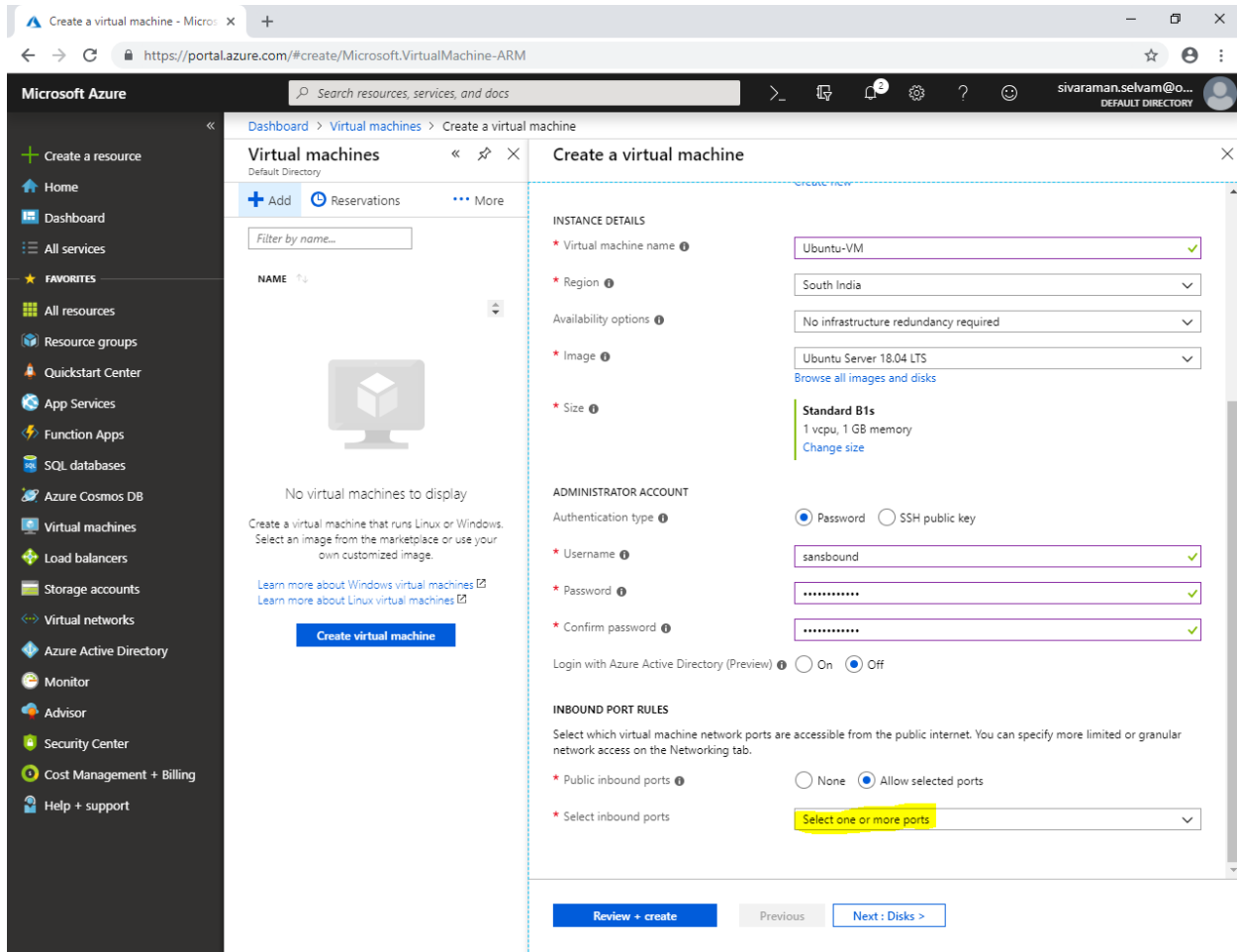
INBOUND PORT RULES

Select which virtual machine network ports are accessible from the public internet. You can specify more limited or granular network access on the Networking tab.

- Public inbound ports: Allow selected ports (selected)
- Select inbound ports: Select one or more ports

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

Click **“Select One or more ports”**.



The screenshot shows the Microsoft Azure portal interface for creating a virtual machine. The left sidebar contains navigation links for various Azure services. The main content area is titled 'Create a virtual machine' and is divided into two panes. The left pane shows a list of virtual machines (currently empty) and a 'Create virtual machine' button. The right pane contains the configuration details for the new VM.

INSTANCE DETAILS

- * Virtual machine name: Ubuntu-VM
- * Region: South India
- Availability options: No infrastructure redundancy required
- * Image: Ubuntu Server 18.04 LTS
- * Size: Standard B1s (1 vcpu, 1 GB memory)

ADMINISTRATOR ACCOUNT

Authentication type: ☒ Password ☐ SSH public key

- * Username: sansbound
- * Password: [masked]
- * Confirm password: [masked]

Login with Azure Active Directory (Preview): ☐ On ☒ Off

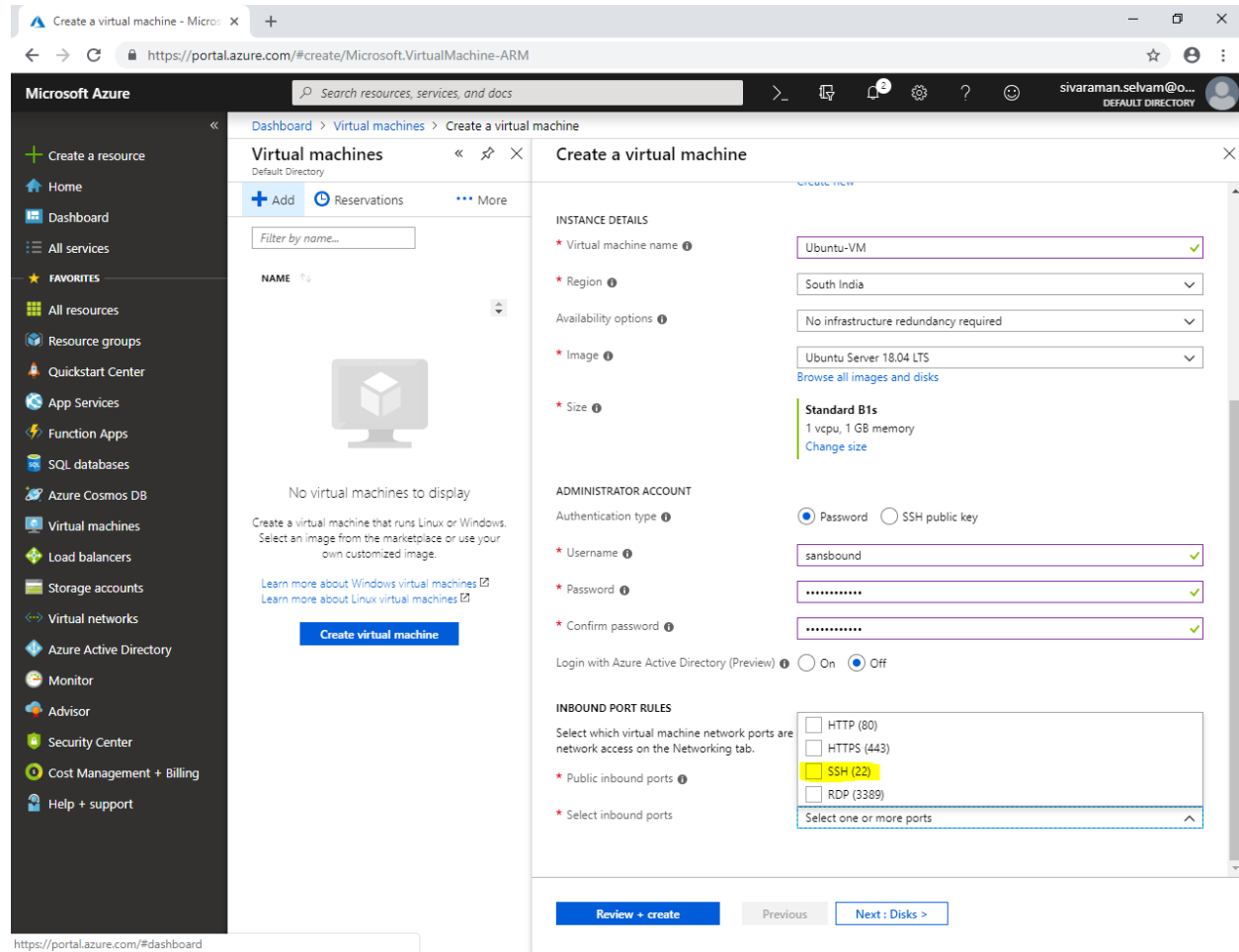
INBOUND PORT RULES

Select which virtual machine network ports are accessible from the public internet. You can specify more limited or granular network access on the Networking tab.

- * Public inbound ports: ☐ None ☒ Allow selected ports
- * Select inbound ports: **Select one or more ports**

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

In “Selected Inbound Ports” drop down list, select “SSH (22)”.



The screenshot shows the Microsoft Azure portal interface for creating a virtual machine. The left sidebar contains navigation links for various Azure services. The main content area is titled "Create a virtual machine" and is divided into two panes. The left pane shows a list of virtual machines (currently empty) and a "Create virtual machine" button. The right pane contains the configuration details for the new VM.

INSTANCE DETAILS

- Virtual machine name: Ubuntu-VM
- Region: South India
- Availability options: No infrastructure redundancy required
- Image: Ubuntu Server 18.04 LTS
- Size: Standard B1s (1 vcpu, 1 GB memory)

ADMINISTRATOR ACCOUNT

- Authentication type: Password
- Username: sansbound
- Password: [masked]
- Confirm password: [masked]
- Login with Azure Active Directory (Preview): Off

INBOUND PORT RULES

Select which virtual machine network ports are network access on the Networking tab.

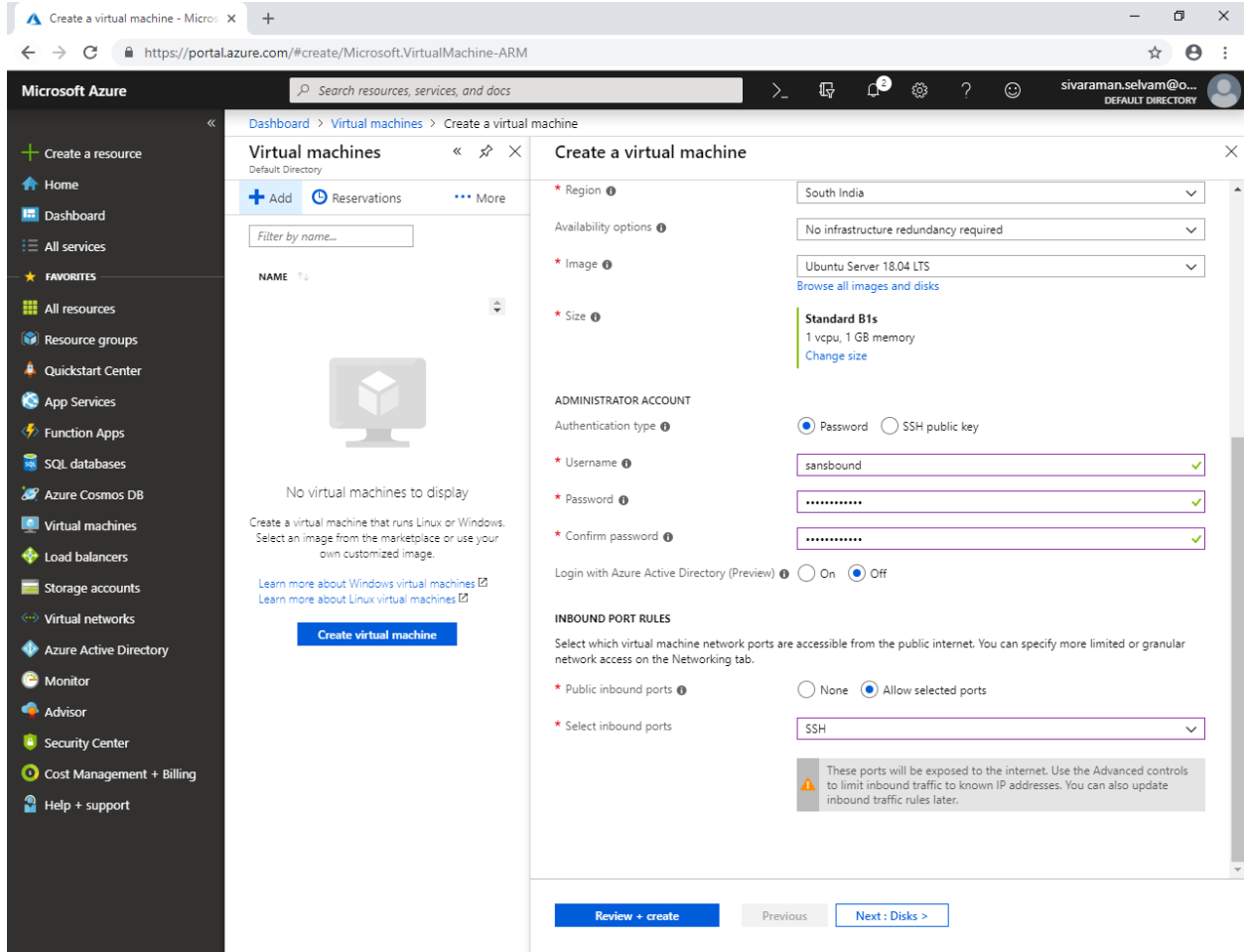
- ☐ HTTP (80)
- ☐ HTTPS (443)
- ☒ SSH (22)
- ☐ RDP (3389)

Public inbound ports: [SSH (22) selected]

Select inbound ports: [Select one or more ports]

Buttons at the bottom: Review + create, Previous, Next: Disks >

Click **“Review and Create”**.



Microsoft Azure

Search resources, services, and docs

Dashboard > Virtual machines > Create a virtual machine

Virtual machines

Default Directory

+ Add Reservations More

Filter by name...

NAME

No virtual machines to display

Create a virtual machine that runs Linux or Windows. Select an image from the marketplace or use your own customized image.

[Learn more about Windows virtual machines](#) [Learn more about Linux virtual machines](#)

Create virtual machine

* Region South India

Availability options No infrastructure redundancy required

* Image Ubuntu Server 18.04 LTS [Browse all images and disks](#)

* Size **Standard B1s**
1 vcpu, 1 GB memory [Change size](#)

ADMINISTRATOR ACCOUNT

Authentication type ☒ Password ☐ SSH public key

* Username sansbound ✓

* Password ✓

* Confirm password ✓

Login with Azure Active Directory (Preview) ☐ On ☒ Off

INBOUND PORT RULES

Select which virtual machine network ports are accessible from the public internet. You can specify more limited or granular network access on the Networking tab.

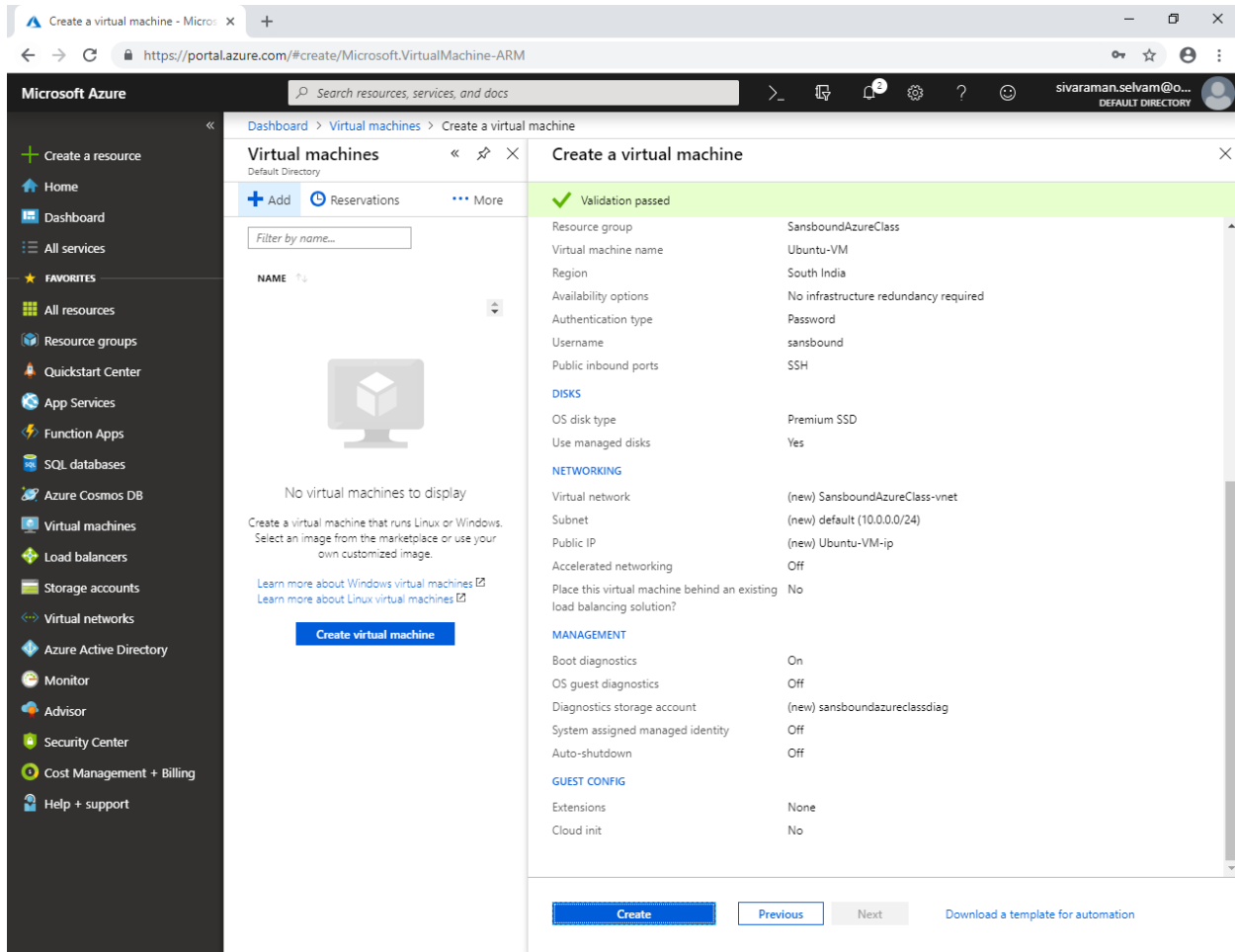
* Public inbound ports ☐ None ☒ Allow selected ports

* Select inbound ports SSH

These ports will be exposed to the internet. Use the Advanced controls to limit inbound traffic to known IP addresses. You can also update inbound traffic rules later.

Review + create Previous **Next: Disks >**

Click **“Create”** to create Virtual machine.

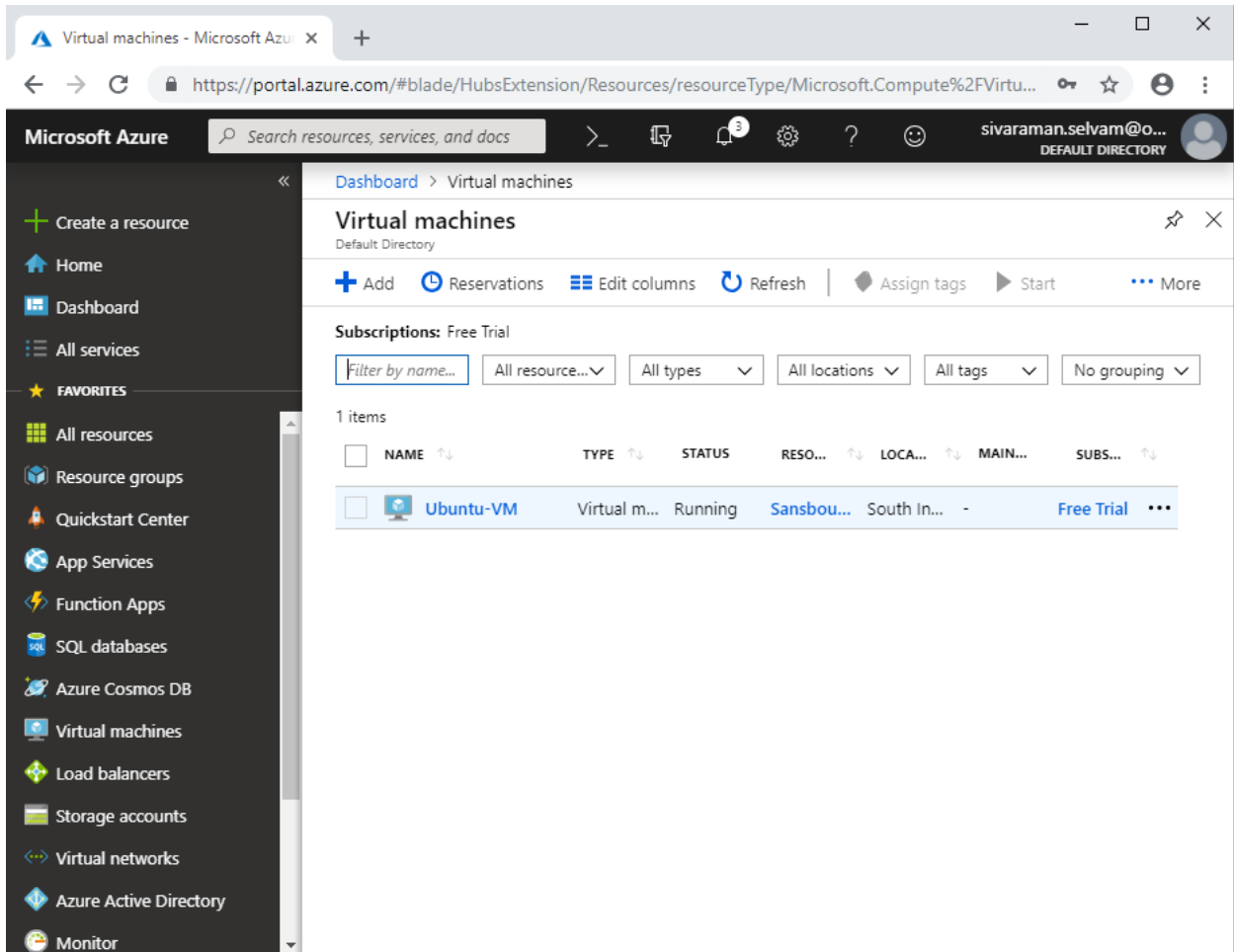


Section	Configuration
Resource group	SansboundAzureClass
Virtual machine name	Ubuntu-VM
Region	South India
Availability options	No infrastructure redundancy required
Authentication type	Password
Username	sansbound
Public inbound ports	SSH
DISKS	
OS disk type	Premium SSD
Use managed disks	Yes
NETWORKING	
Virtual network	(new) SansboundAzureClass-vnet
Subnet	(new) default (10.0.0.0/24)
Public IP	(new) Ubuntu-VM-ip
Accelerated networking	Off
Place this virtual machine behind an existing load balancing solution?	No
MANAGEMENT	
Boot diagnostics	On
OS guest diagnostics	Off
Diagnostics storage account	(new) sansboundazureclassdiag
System assigned managed identity	Off
Auto-shutdown	Off
GUEST CONFIG	
Extensions	None
Cloud init	No

At the bottom of the wizard, there are buttons for **Create**, **Previous**, **Next**, and a link to [Download a template for automation](#).

Ubuntu VM has been deployed successfully.

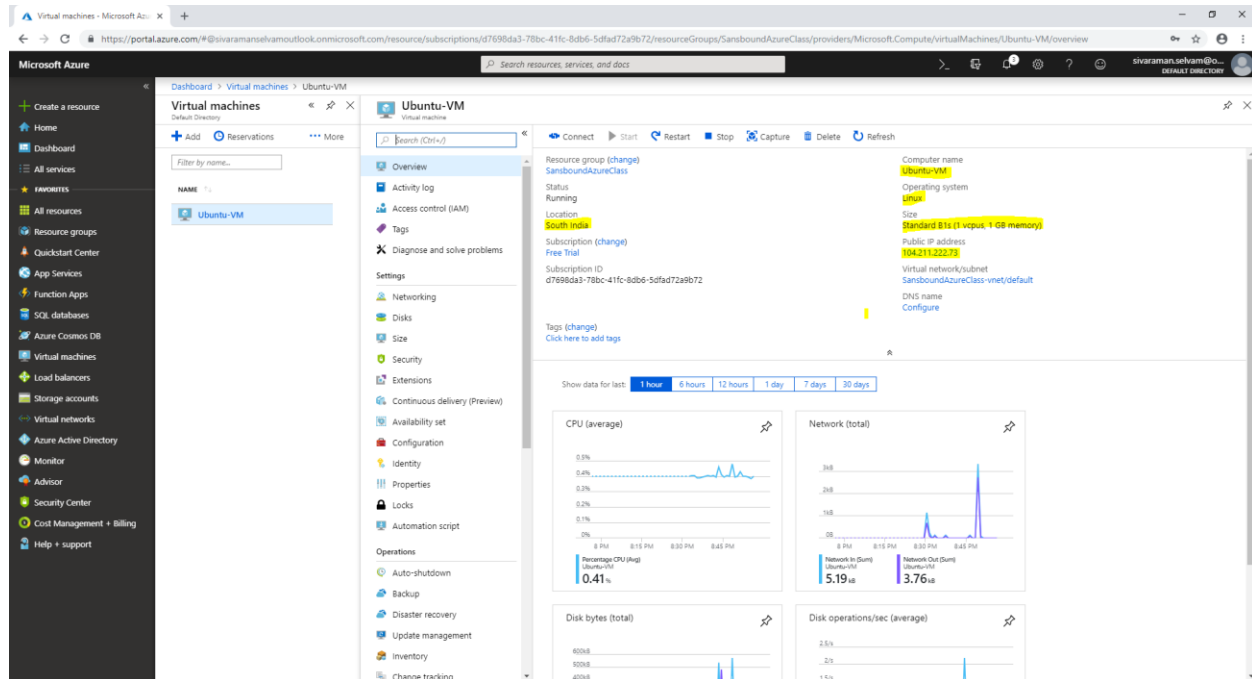
Click “Ubuntu-VM”



The screenshot shows the Microsoft Azure portal interface. The left sidebar contains navigation links such as 'Create a resource', 'Home', 'Dashboard', 'All services', and 'FAVORITES'. The main content area is titled 'Virtual machines' and shows a list of virtual machines. The table has the following columns: NAME, TYPE, STATUS, RESO..., LOCA..., MAIN..., and SUBS... The only item listed is 'Ubuntu-VM', which is a 'Virtual m...' (Virtual Machine) in a 'Running' state, located in 'South In...' (South India) under the 'Sansbou...' (Sansbound) subscription. The subscription type is 'Free Trial'.

NAME	TYPE	STATUS	RESO...	LOCA...	MAIN...	SUBS...
Ubuntu-VM	Virtual m...	Running	Sansbou...	South In...	-	Free Trial

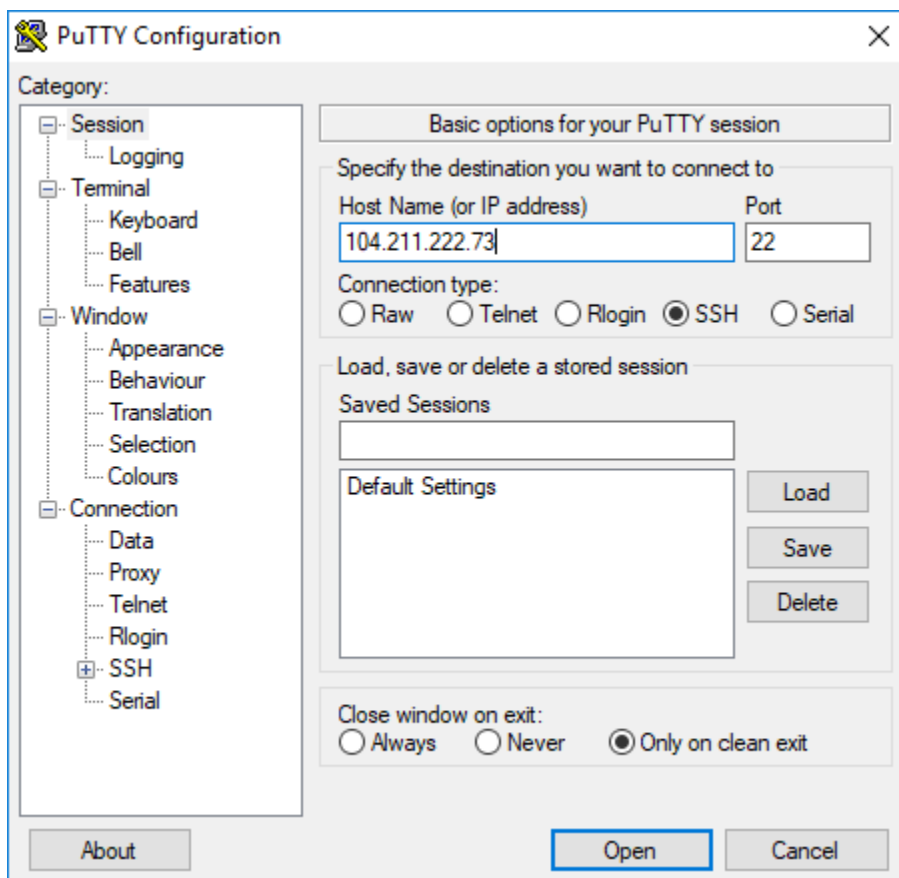
In Ubuntu-VM you have got the public IP address as 104.211.222.73



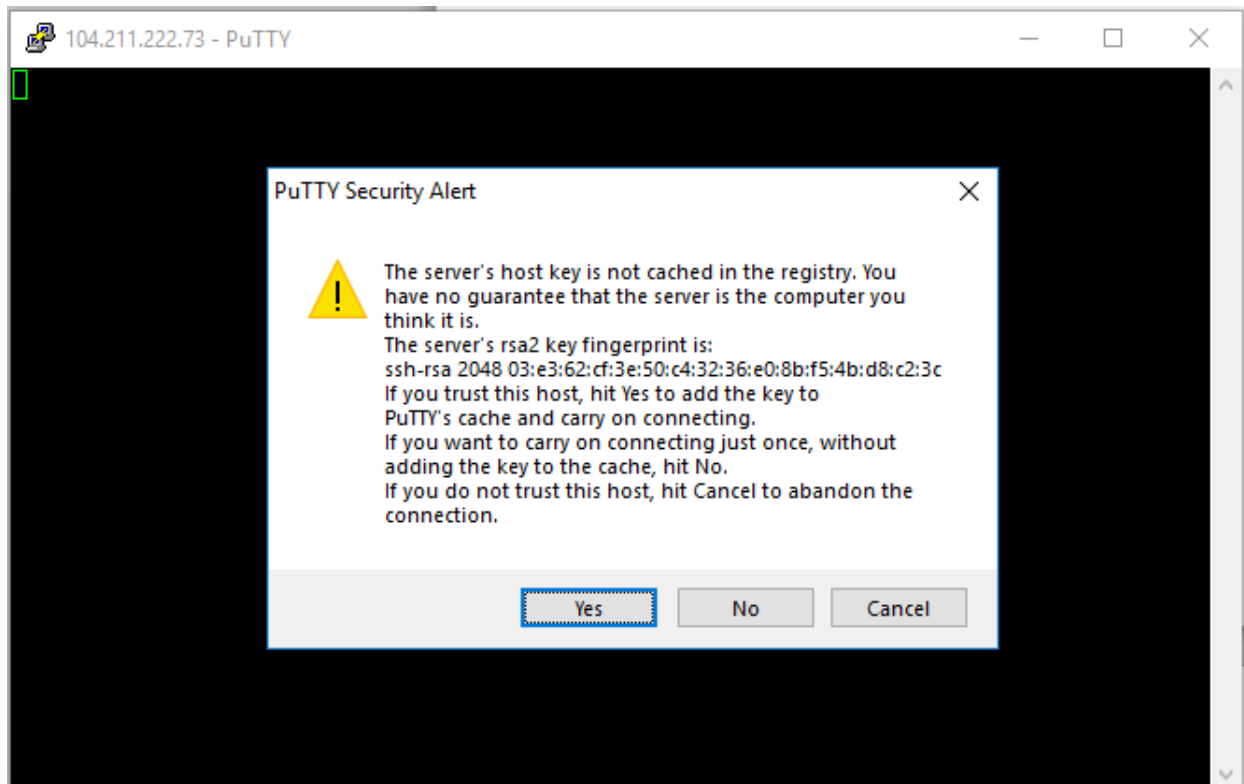
We have required to access the Ubuntu server by using putty.exe.

If you have putty, please launch the exe otherwise download it from internet.

Type the IP of Ubuntu server and Click “Open” to access the server through SSH.

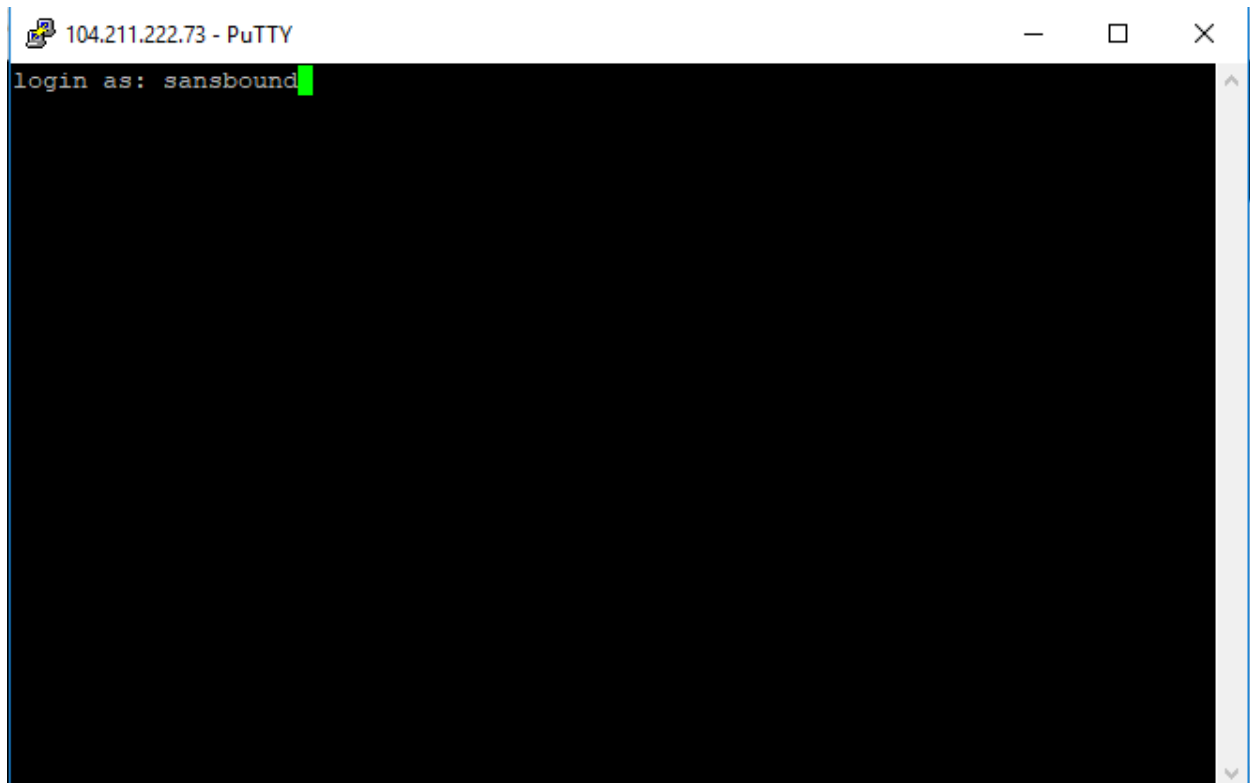


Click “Yes”.

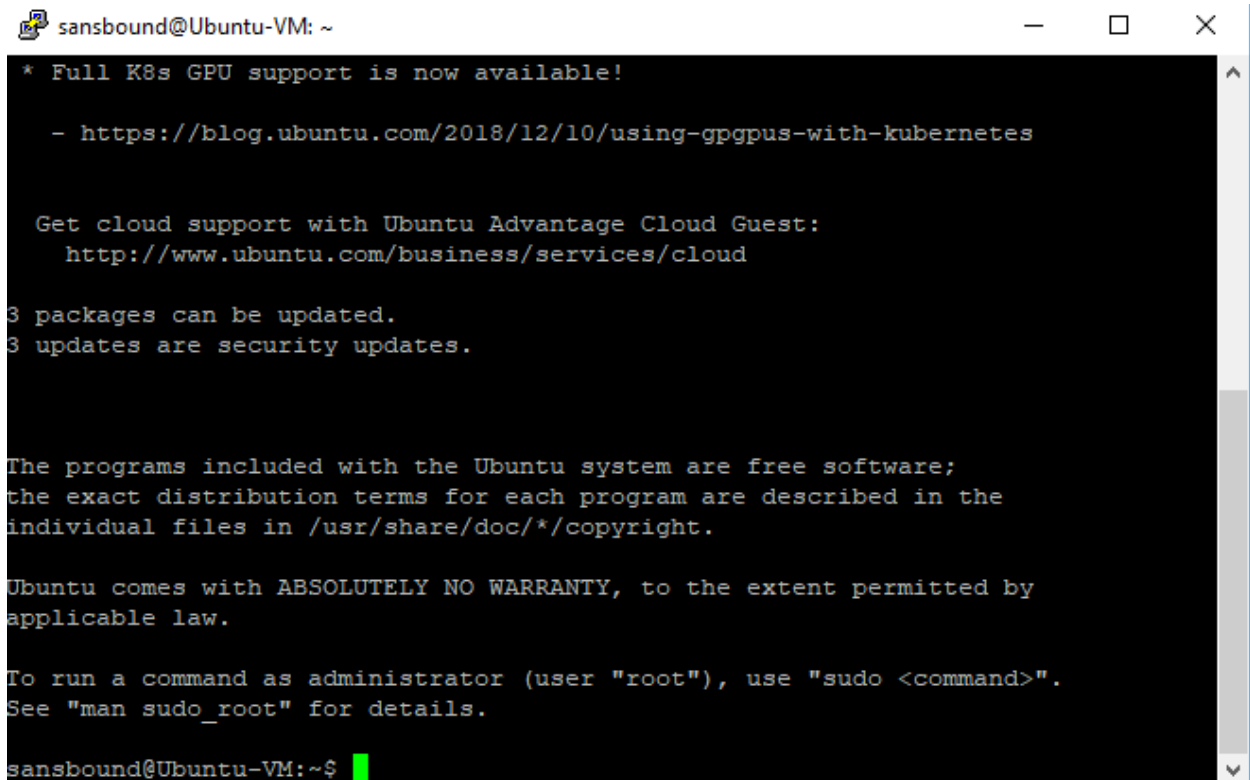


Type Username as “**sansbound**” and press “Enter”.

Type password of “**Ubuntu Server**” and press “Enter”.



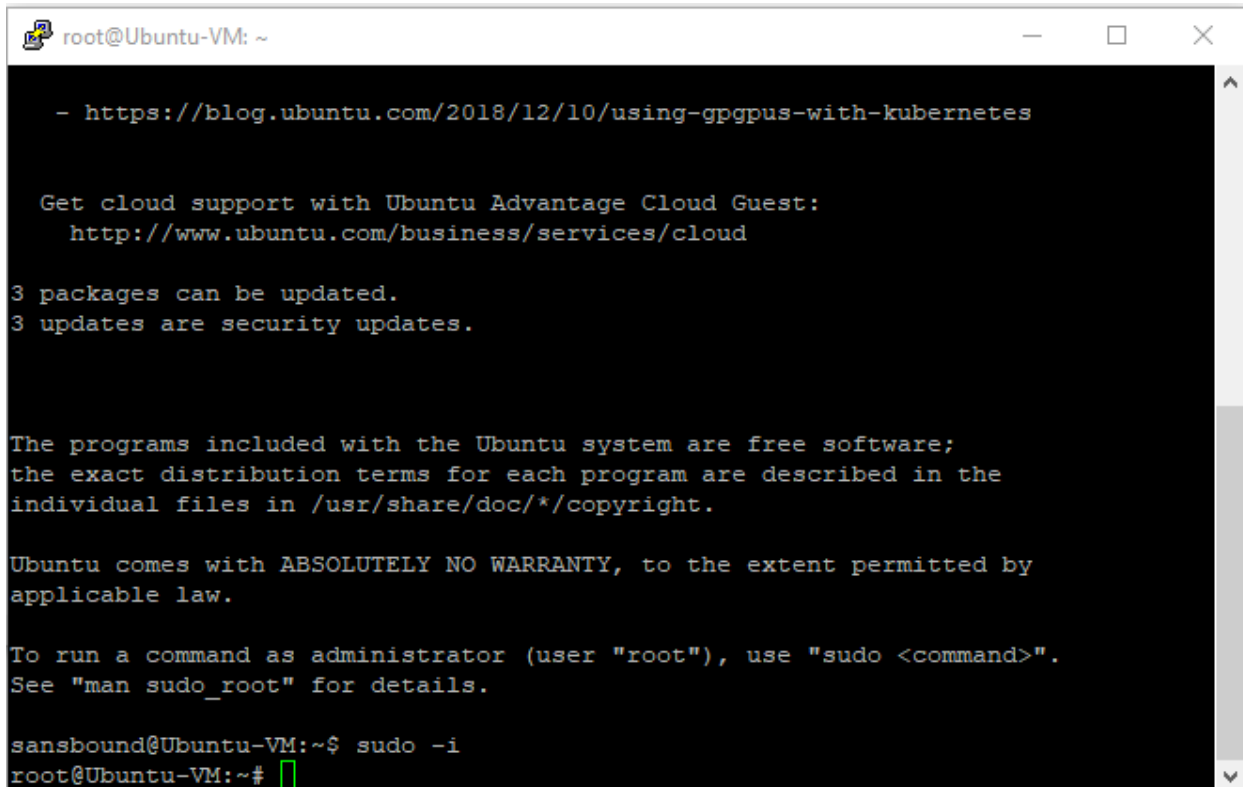
Now you have successfully logged into the Ubuntu Server.



```
sansbound@Ubuntu-VM: ~  
* Full K8s GPU support is now available!  
  
- https://blog.ubuntu.com/2018/12/10/using-gpgpus-with-kubernetes  
  
Get cloud support with Ubuntu Advantage Cloud Guest:  
  http://www.ubuntu.com/business/services/cloud  
  
3 packages can be updated.  
3 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.  
  
sansbound@Ubuntu-VM:~$
```


Type **sudo -i** and press “Enter” to login as root account.

You are able to see that Ubuntu has been logged in with root account.

A terminal window titled 'root@Ubuntu-VM: ~' with standard window controls. The terminal output shows a link to a blog post, Ubuntu Advantage Cloud Guest information, package update status, system software disclaimer, warranty statement, and instructions on using sudo. The user 'sansbound' enters 'sudo -i' and the prompt changes to 'root@Ubuntu-VM:~#'.

```
root@Ubuntu-VM: ~  
  
- https://blog.ubuntu.com/2018/12/10/using-gpgpus-with-kubernetes  
  
Get cloud support with Ubuntu Advantage Cloud Guest:  
http://www.ubuntu.com/business/services/cloud  
  
3 packages can be updated.  
3 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.  
  
sansbound@Ubuntu-VM:~$ sudo -i  
root@Ubuntu-VM:~#
```

Note : Now you can stop the virtual machine and delete the Resource groups in Free trial / learning purpose only. Please do not delete the Resource group in Realtime environment.