

# Creating a VM using Azure

## Creating the VM manually on Azure

After creating an account on Azure with my personal email (while waiting for my PNC credentials to get processed), I used the free services page on azure portal (<https://go.microsoft.com/fwlink/?linkid=859151>) to create a Linux Virtual Machine.

The details of the machine I created are shown below:

### Create a virtual machine

✓ Validation passed

Basics   Tags   Review + create

⚠ **You have set SSH port(s) open to the internet.** This is only recommended for testing. If you want to change this setting, go back to Basics tab.

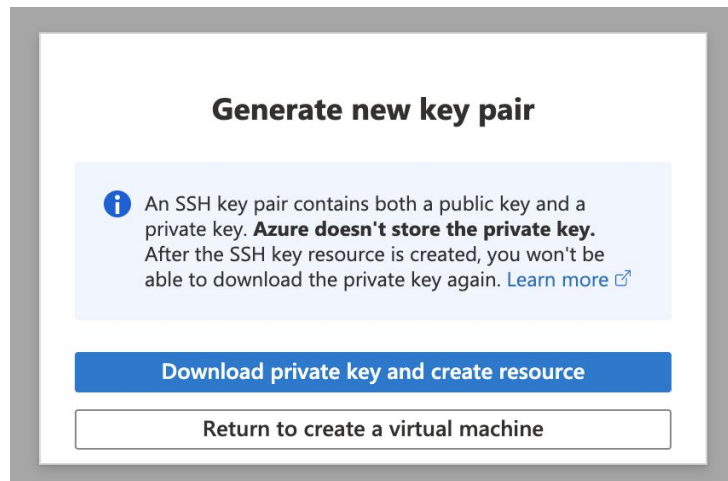
Ubuntu Server 16.04-LTS  
Image

Standard B1s  
1 vcpu, 1 GiB memory

#### Basics

Subscription	Free Trial
Resource group	pncvm_group
Virtual machine name	pncvm
Region	West US 2
Image	Ubuntu Server 16.04-LTS - Gen1
Size	Standard B1s (1 vcpu, 1 GiB memory)
Authentication type	SSH public key
Username	azureuser
Key pair name	pncvm_key
Public inbound ports	SSH
Azure Spot	No

After selecting “create”, I was prompted to generate and save the key-value pair to my computer



After this the VM began to deploy.

### ... Deployment is in progress



Deployment name: CreateVm-canonical.UbuntuServer-16.04-LTS-2...  
Subscription: [Free Trial](#)  
Resource group: [pncvm](#)

Start time: 1/19/2021, 2:56:37 PM  
Correlation ID: 74ad9bb9-2c99-4435-9dc5-31b18dad8584

And as soon as it was complete, I could see it in my dashboard of VMs

### ✓ Your deployment is complete



Deployment name: CreateVm-canonical.UbuntuServer-16.04-LTS-2...  
Subscription: [Free Trial](#)  
Resource group: [pncvm](#)

Start time: 1/19/2021, 2:56:37 PM  
Correlation ID: 74ad9bb9-2c99-4435-9dc5-31b18dad8584

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## Virtual machines

Default Directory

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**i** Try the new virtual machine resource browser! This experience is faster and has improved sorting and filtering capabilities. Please note that the new experience will not show classic virtual machines and does not include support for some columns such as maintenance status.

**Subscriptions:** Free Trial – Don't see a subscription? [Open Directory](#) + [Subscription settings](#)

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

1 items

<input type="checkbox"/> Name ↑↓	Type ↑↓	Status	Resource group ↑↓	Location ↑↓	Source	Maintenance status	Subscription ↑↓	
<input type="checkbox"/> <a href="#">pncvm</a>	Virtual machine	Creating	<a href="#">pncvm</a>	West US 2	Marketplace	-	<a href="#">Free Trial</a>	...

## Connecting to the Virtual Machine from my computer

Initially I tried to use the instructions found here

<https://docs.microsoft.com/en-us/azure/virtual-machines/ssh-keys-portal> to use my SSH key to connect to my VM using 'ssh -i <path-to-key-file> <username>@<VM's-IP-address>'.

I got this error:

```
priyakanipakam@Priyas-MBP-2 virtualmachine % ssh -i pncvm_key_0119.pem azureuser@52.183.85.79
@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@
@                WARNING: UNPROTECTED PRIVATE KEY FILE!                @
@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@
Permissions 0644 for 'pncvm_key_0119.pem' are too open.
It is required that your private key files are NOT accessible by others.
This private key will be ignored.
Load key "pncvm_key_0119.pem": bad permissions
azureuser@52.183.85.79: Permission denied (publickey).
```

This was because you need to switch the file with the key to a read only file for security reasons. I did this using the command "chmod 400 <file-name>.pem". After this, I was able to connect to my VM.

```
priyakanipakam@Priyas-MBP-2 virtualmachine % ssh -i pncvm_key_0119.pem azureuser@52.183.85.79
Welcome to Ubuntu 16.04.7 LTS (GNU/Linux 4.15.0-1103-azure x86_64)

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

0 packages can be updated.
0 of these 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.

azureuser@pncvm:~$
```

## Creating a VM using terraform

In order to explore how we could use automation to create VMs in azure, I will create a VM using terraform.

About terraform

- It is used for provisioning and managing cloud infrastructure. It codifies infrastructure in configuration files that describe the topology of cloud resources.

- Terraform CLI provides a simple mechanism to deploy and version the configuration files to Azure.

Instructions:

<https://docs.microsoft.com/en-us/azure/developer/terraform/create-linux-virtual-machine-with-infrastructure>