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OMR, CHENNAI - 119

PLACEMENT EMPOWERMENT PROGRAM

Cloud Computing & DevOps Center

**Set up a VIRTUAL MACHINE on a cloud VM: Launch a Virtual
Machine and SSH into it.**

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Dept: CSE

INTRODUCTION

In Azure, setting up a virtual machine (VM) involves several steps to provision and access your VM. First, you need to log into the Azure portal and navigate to the "Virtual Machines" section. There, you can create a new VM by selecting the desired operating system, size, region, and other configurations like networking and security settings. After configuring the VM, Azure will generate a public IP address that you'll use to SSH into the machine.

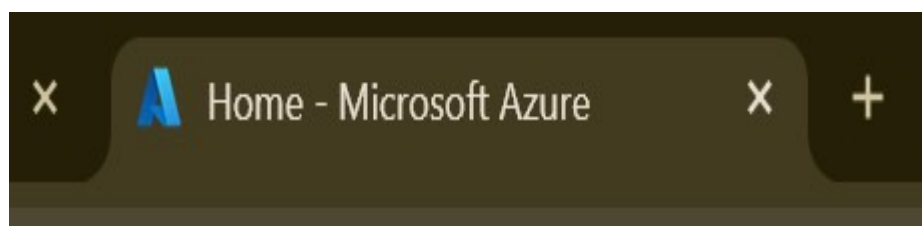
To SSH into the VM, you'll need the private key associated with the VM's SSH key pair (unless you used a password for authentication). Using an SSH client, such as the terminal on Linux/macOS or PuTTY on Windows, you can connect to the VM by entering the command `ssh username@public-ip-address`, where "username" is the name you set up during the VM creation process and "public-ip-address" is the IP assigned by Azure.

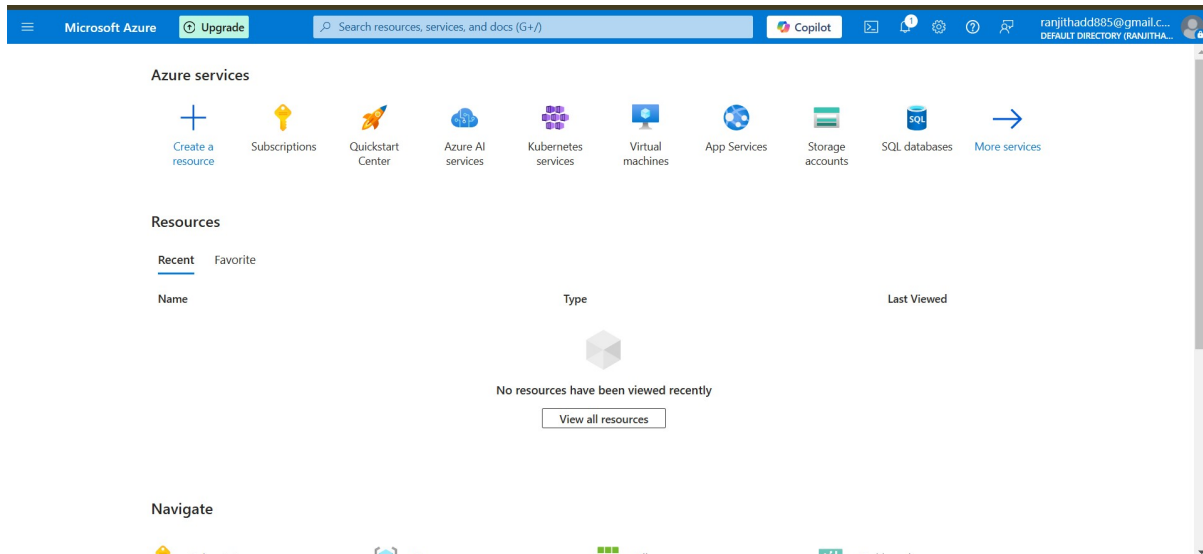
Once connected, you can begin managing the VM, install software, and run applications remotely. Azure also provides additional tools, like the Azure CLI and Azure Bastion, for easier and more secure access to your virtual machines.

Step-by-step process:

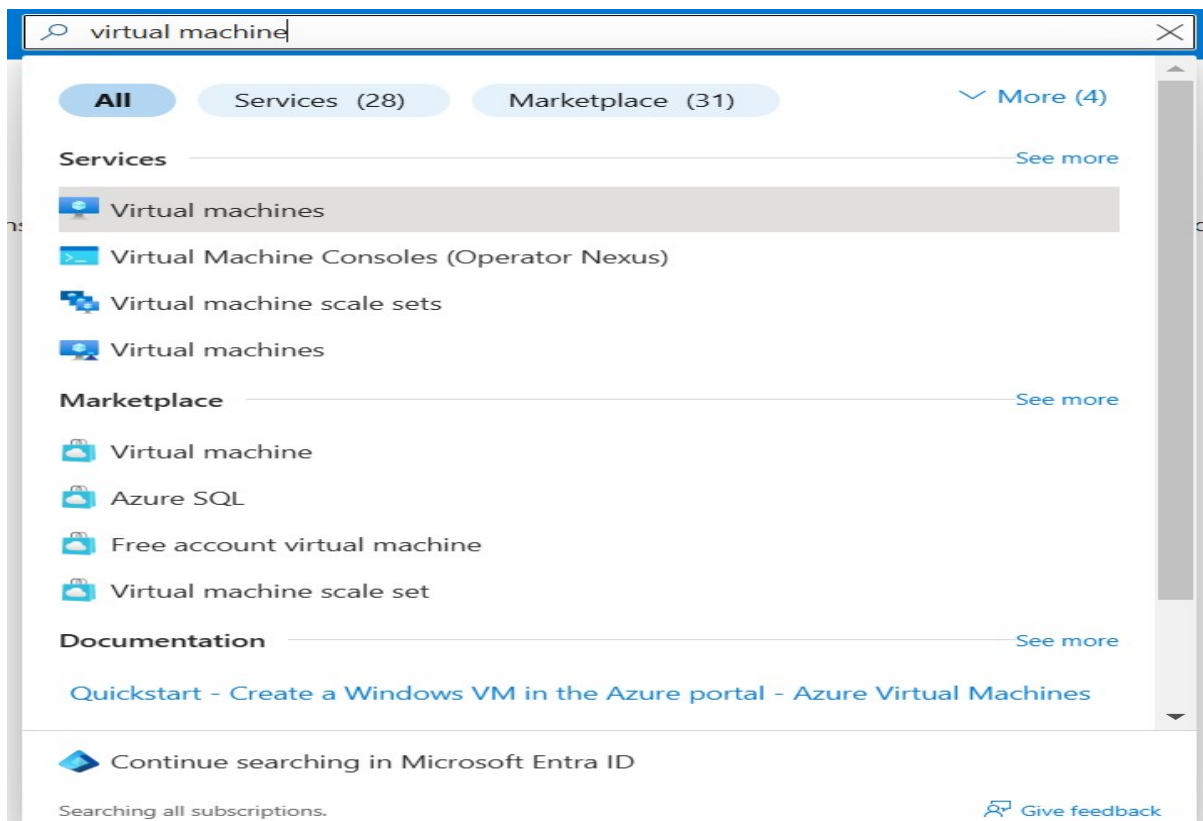
Step 1: Open the Azure portal.

[Home - Microsoft Azure](#)

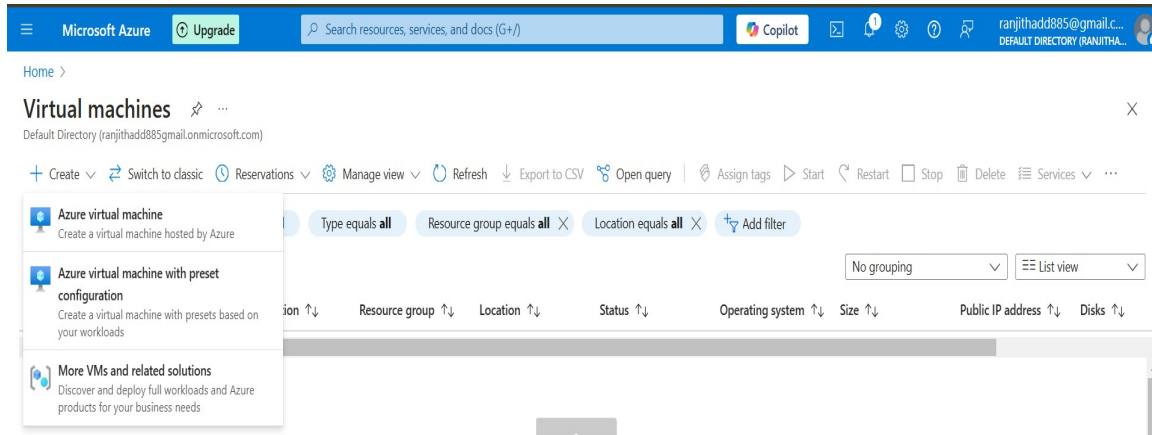




Step 2: Navigate to Virtual Machines in menu bar [Located in top left corner of home] (or) you can search Virtual machines in Search bar.



Step 3: Select Azure Virtual Machine.



Step 4: Enter the following details:

- > Resource Group: you can create a new one or select the existing one. [your choice]
- > Virtual Machine name
- > Region
- > Image
- > Size
- > In administrator account : enter Username, password and Confirm Password.
- > Inbound port rules – SSH

Microsoft Azure

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Home > Virtual machines >

Create a virtual machine

Help me create a low cost VMHelp me create a VM optimized for high availabilityHelp me choose the right VM size for my workload

Subscription * ⓘ

Free Trial

Resource group * ⓘ

(New) RG1

Create new

Instance details

Virtual machine name * ⓘ

vm1

Region * ⓘ

(Asia Pacific) Central India

Availability options ⓘ

Availability zone

Zone options ⓘ

☒ Self-selected zone

Choose up to 3 availability zones, one VM per zone

☐ Azure-selected zone (Preview)

Let Azure assign the best zone for your needs

Using an Azure-selected zone is not supported in region 'Central India'.

Availability zone * ⓘ

Zone 1

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Security type ⓘ

Trusted launch virtual machines

Configure security features

Image * ⓘ

Windows Server 2022 Datacenter: Azure Edition Hotpatch - x64 Gen2 (free)

See all images | Configure VM generation

VM architecture ⓘ

☐ Arm64

☒ x64

Arm64 is not supported with the selected image.

Run with Azure Spot discount ⓘ

☐

You are in the free trial period. Costs associated with this VM can be covered by any remaining credits on your subscription.

Learn more

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Create a virtual machine

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Administrator account

Username * ⓘ

Ranjitha Prabha P

Password *

Confirm password *

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 *

RDP (3389)

This will allow all IP addresses to access your virtual machine. This is only

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Step 5: Move on to Disk and select Standard SSD.

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Create a virtual machine

Help me create a low cost VM Help me create a VM optimized for high availability Help me choose the right VM size for my workload

Encryption at host ☐

Encryption at host is not registered for the selected subscription. [Learn more](#)

OS disk

OS disk size

OS disk type *

Delete with VM ☒

Key management

Enable Ultra Disk compatibility ☐

Data disks for vm1

You can add and configure additional data disks for your virtual machine or attach existing disks. This VM also comes with a temporary disk.

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Step 6: Click on "REVIEW + CREATE". once reviewed, click on "CREATE" to create the Virtual Machine.

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Home > Virtual machines >

Create a virtual machine

Validation passed

Help me create a low cost VM Help me create a VM optimized for high availability Help me choose the right VM size for my workload

Basics Disks Networking Management Monitoring Advanced Tags **Review + create**

Price

1 X Standard B1s
by Microsoft
[Terms of use](#) | [Privacy policy](#)

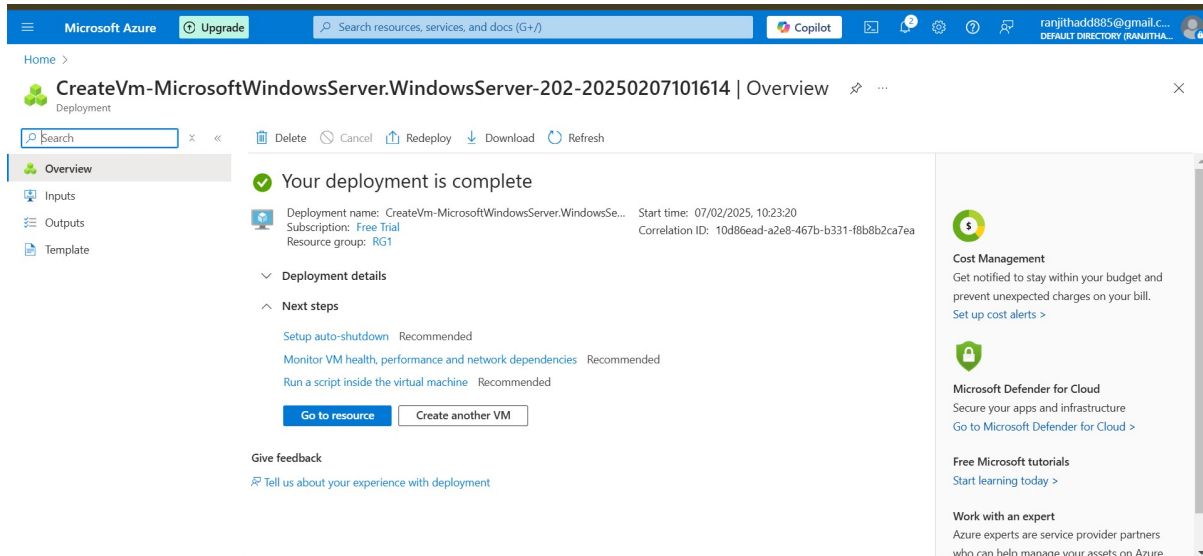
Subscription credits apply ☐
1.2646 INR/hr
[Pricing for other VM sizes](#)

TERMS

By clicking "Create", I (a) agree to the legal terms and privacy statement(s) associated with the Marketplace offering(s) listed above; (b) authorize Microsoft to bill my current payment method for the fees associated with the offering(s), with the same billing frequency as my Azure subscription; and (c) agree that Microsoft may share my contact, usage and transactional information with the provider(s) of the offering(s) for support, billing and other transactional activities. Microsoft does not provide rights for third-party offerings. See the [Azure Marketplace Terms](#) for additional details.

< Previous Next > Create Download a template for automation Give feedback

Step 7: Once deployment is complete, you can click on go to resource to view the Virtual Machine.



Azure CLI cmds for connection:

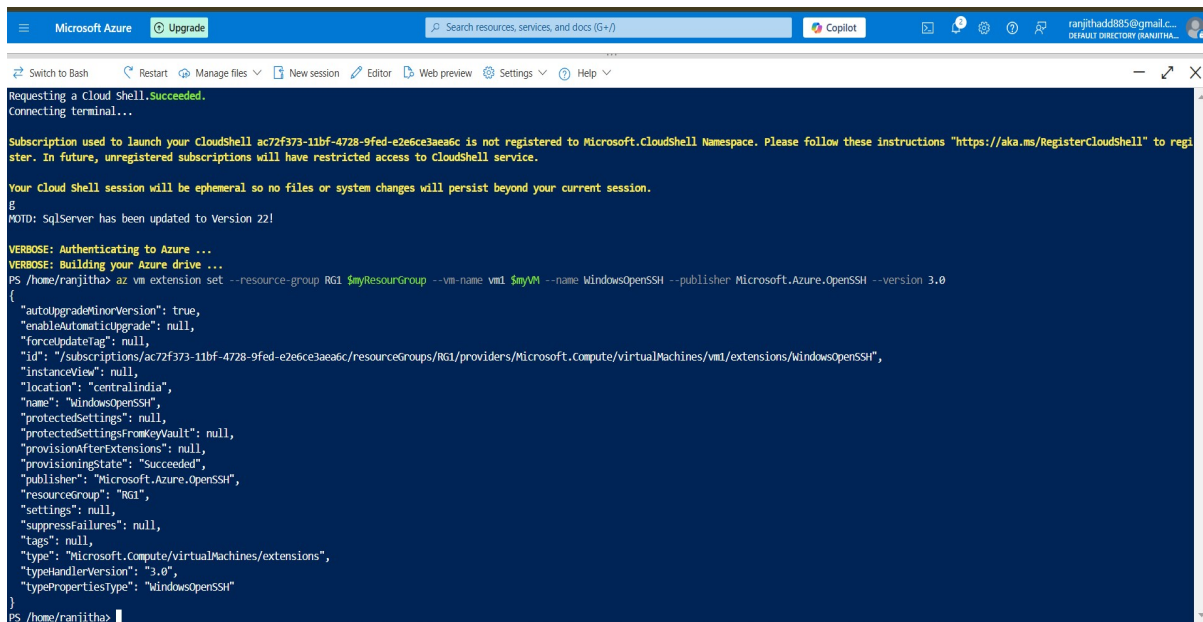
POC-8:

IN AZURE CLI:

1. Enable SSH

cmd: Set-AzVMExtension -ResourceGroupName
\$myResourceGroup -VMName \$myVM -Name 'OpenSSH' -

**Publisher 'Microsoft.Azure.OpenSSH' -Type 'WindowsOpenSSH'
-TypeHandlerVersion '3.0'.**



```
Microsoft Azure Upgrade Search resources, services, and docs (G+/) Copilot ranjithadd885@gmail.c...
Switch to Bash Restart Manage files New session Editor Web preview Settings Help
Requesting a Cloud Shell.Succeeded.
Connecting terminal...

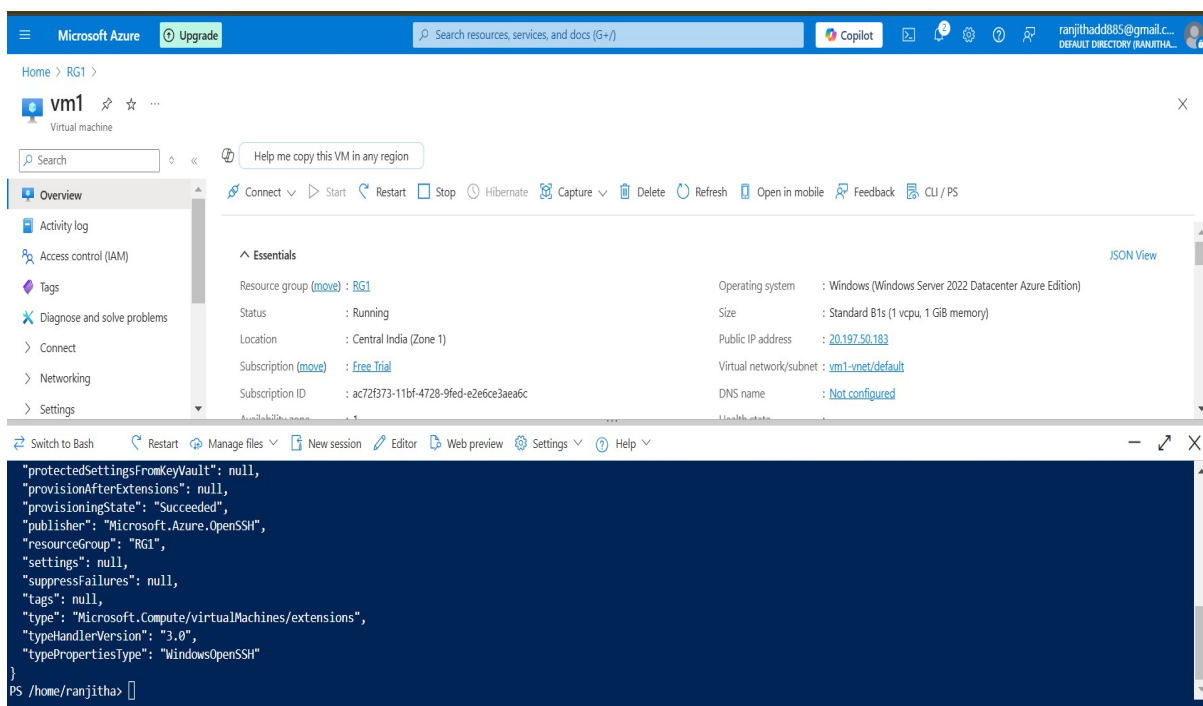
Subscription used to launch your CloudShell ac72f373-11bf-4728-9fed-e2e6ce3aea6c is not registered to Microsoft.CloudShell Namespace. Please follow these instructions "https://aka.ms/RegisterCloudShell" to register. In future, unregistered subscriptions will have restricted access to CloudShell service.

Your Cloud Shell session will be ephemeral so no files or system changes will persist beyond your current session.
$
MOTD: SqlServer has been updated to Version 22!

VERBOSE: Authenticating to Azure ...
VERBOSE: Building your Azure drive ...
PS /home/ranjitha> az vm extension set --resource-group Rg1 $myResourceGroup --vm-name vm1 $myVM --name WindowsOpenSSH --publisher Microsoft.Azure.OpenSSH --version 3.0
{
  "autoUpgradeMinorVersion": true,
  "enableAutomaticUpgrade": null,
  "forceUpdateTag": null,
  "id": "/subscriptions/ac72f373-11bf-4728-9fed-e2e6ce3aea6c/resourceGroups/Rg1/providers/Microsoft.Compute/virtualMachines/vm1/extensions/WindowsOpenSSH",
  "instanceView": null,
  "location": "centralindia",
  "name": "WindowsOpenSSH",
  "protectedSettings": null,
  "protectedSettingsFromKeyVault": null,
  "provisionAfterExtensions": null,
  "provisioningState": "Succeeded",
  "publisher": "Microsoft.Azure.OpenSSH",
  "resourceGroup": "Rg1",
  "settings": null,
  "suppressFailures": null,
  "tags": null,
  "type": "Microsoft.Compute/virtualMachines/extensions",
  "typeHandlerVersion": "3.0",
  "typePropertiesType": "WindowsOpenSSH"
}
PS /home/ranjitha>
```

2. Open TCP port:

cmd: az network nsg rule create -g \$myResourceGroup --nsg-name \$myNSG -n allow-SSH --priority 1000 --source-address-prefixes 208.130.28.4/32 --destination-port-ranges 22 --protocol TCP



```
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Home > Rg1 >
vm1 Virtual machine
Help me copy this VM in any region
Overview Activity log Access control (IAM) Tags Diagnose and solve problems Connect Networking Settings
Connect Start Restart Stop Hibernate Capture Delete Refresh Open in mobile Feedback CU / PS
JSON View
Essentials
Resource group (move) : Rg1
Status : Running
Location : Central India (Zone 1)
Subscription (move) : Free Trial
Subscription ID : ac72f373-11bf-4728-9fed-e2e6ce3aea6c
Operating system : Windows (Windows Server 2022 Datacenter Azure Edition)
Size : Standard B1s (1 vcpu, 1 GiB memory)
Public IP address : 20.197.50.183
Virtual network/subnet : vm1-vnet/default
DNS name : Not configured
"typePropertiesType": "WindowsOpenSSH"
}
PS /home/ranjitha>
```



```
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Switch to Bash | Restart | Manage files | New session | Editor | Web preview | Settings | Help  
{"publisher": "Microsoft.Azure.OpenSSH",  
  "resourceGroup": "RG1",  
  "settings": null,  
  "suppressFailures": null,  
  "tags": null,  
  "type": "Microsoft.Compute/virtualMachines/extensions",  
  "typeHandlerVersion": "3.0",  
  "typePropertiesType": "WindowsOpenSSH"  
}  
PS /home/ranjitha> az vm run-command invoke -g RG1 $myResourceGroup -n vm1 $myVM --command-id RunPowerShellScript --scripts "MYPUBLICKEY | Add-Content 'C:\Users\getpr\OneDrive\Desktop\poc8rp.pem' -Encoding UTF8;icacls.exe 'C:\Users\getpr\OneDrive\Desktop\poc8rp.pem' /inheritance:r 'Administrators:F' /grant 'SYSTEM:F'"  
{  
  "value": [  
    {  
      "code": "ComponentStatus/StdOut/succeeded",  
      "displayStatus": "Provisioning succeeded",  
      "level": "Info",  
      "message": "",  
      "time": null  
    },  
    {  
      "code": "ComponentStatus/StdErr/succeeded",  
      "displayStatus": "Provisioning succeeded",  
      "level": "Info",  
      "message": "MYPUBLICKEY : The term 'MYPUBLICKEY' is not recognized as the name of a cmdlet, function, script file, or operable program. Check the spelling of the name, or if a path was included, verify that the path is correct and try again.\nAt C:\\Packages\\Plugins\\Microsoft.Cplat.Core.RunCommandWindows\\1.1.18\\Downloads\\script0.ps1:1 char:1\n+ MYPUBLICKEY | Add-Content 'C:\\Users\\getpr\\OneDrive\\Desktop\\poc8rp.pem' ... \n+ ~~~~~\n+ CategoryInfo          : ObjectNotFound: (MYPUBLICKEY:String) [], CommandNotFoundException\n+ FullyQualifiedErrorId : CommandNotFoundException\n\nInvalid parameter '\inheritance:r',  
      "time": null  
    }  
  ]  
}  
PS /home/ranjitha>
```

Az ssh4. Connect using Az CLI

Connect to Windows machines using Az SSH commands.

Cmd: az ssh vm -g \$myResourceGroup -n \$myVM --local-user \$myUsername

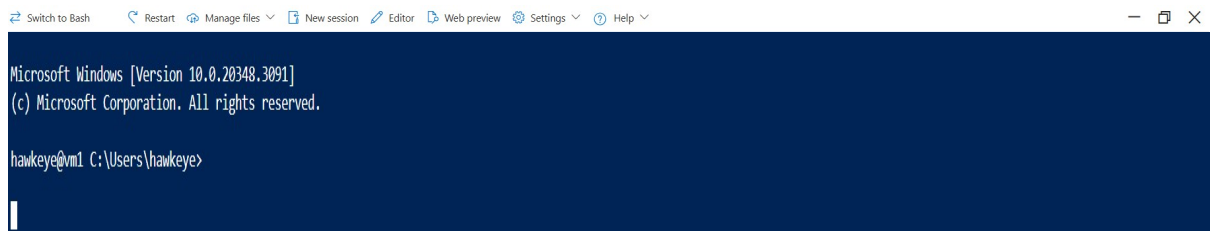
Cmd: az ssh vm -g \$myResourceGroup -n \$myVM --local-user \$myUsername -- -L 3389:localhost:3389

```
PS /home/ranjitha> az ssh vm -g RG1 $myResourceGroup -n vm1 $myVM --local-user hawkeye $myUsername  
The authenticity of host '40.81.227.251 (40.81.227.251)' can't be established.  
ED25519 key fingerprint is SHA256:LU8ncQFgl6KinAphJfYAAI4PwUizswCXs7lBdAdB5tQ.  
This key is not known by any other names  
Are you sure you want to continue connecting (yes/no/[fingerprint])? yes  
Warning: Permanently added '40.81.227.251' (ED25519) to the list of known hosts.  
Connection reset by 40.81.227.251 port 22
```

Step 8: You need to enter your username and password.

```
PS /home/ranjitha> az ssh vm -g RG1 $myResourceGroup -n vm1 $myVM --local-user hawkeye $myUsername -- -L 3389:localhost:3389  
hawkeye@40.81.227.251's password:
```

Step 9: A new page will open after connection via SSH.



The screenshot shows a terminal window with a dark blue background and white text. The window has a title bar with several icons and labels: 'Switch to Bash', 'Restart', 'Manage files', 'New session', 'Editor', 'Web preview', 'Settings', and 'Help'. The terminal output displays the Windows version information: 'Microsoft Windows [Version 10.0.20348.3091]' and '(c) Microsoft Corporation. All rights reserved.' followed by the command prompt 'hawkeye@vm1 C:\Users\hawkeye>' and a white cursor line.

```
Microsoft Windows [Version 10.0.20348.3091]
(c) Microsoft Corporation. All rights reserved.

hawkeye@vm1 C:\Users\hawkeye>
```

Successfully connected!

