Create a Windows Virtual Machine Image in Azure

Description

When architecting solutions in the cloud that leverage compute, it is very common to need to rapidly deploy Windows or Linux servers, which fit a specific purpose.

VM images allow you to have a Windows or Linux server, which is pre-configured with applications, software, security, and more. We can then speed up (and automate) the deployment of VMs, which are built from these images and are ready for use.

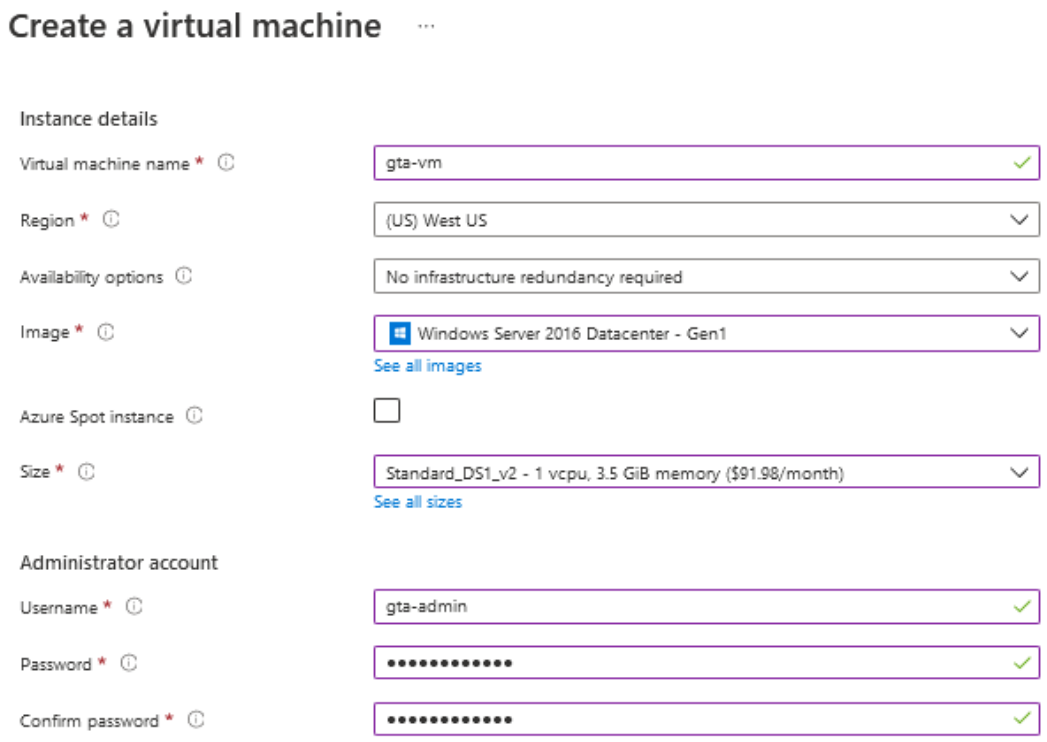
Within this lab, you'll gain experience creating a custom VM image from a Windows virtual machine.

1- Log In to the Azure Portal

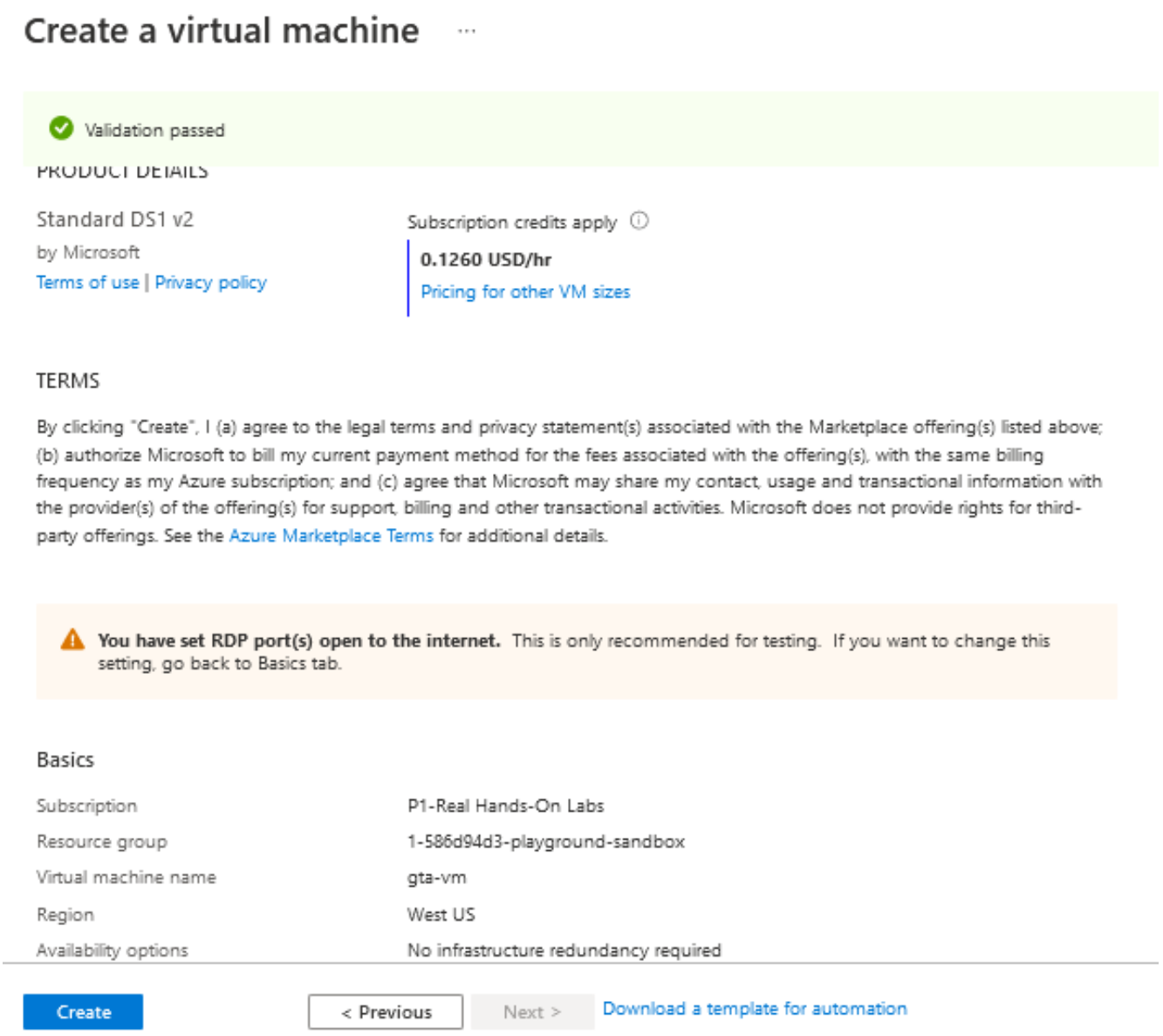
1- On the lab instructions page, click Open Azure Portal.
2- On the Azure Portal sign-in page, enter the username you were provided by the trainer.
3- Click Next.
4- Enter the password you were provided on the lab instructions page.
5- Click Sign in.

2- Create a Virtual Machine

1- On the Azure Portal home page, click Create a Resource.
2- Select Windows Server Datacenter 2016
3- In the Basics tab, configure the following settings:
   - Resource group: (Select the pre-provisioned group from the dropdown.)
   - Location: Leave the region the same as your Resource Group's region.
   - Virtual machine name: (Give the virtual machine a unique name.)
   - Image: Windows Server 2016 Datacenter Gen1
   - Size: Standard DS1_v2
   - Username: gta-admin
   - Password: Admin123456!
   - Confirm password: Admin123456!
4- Click Next : Disks >.
5- In the Disks tab, configure the following settings:
   - OS disk type: Premium SSD



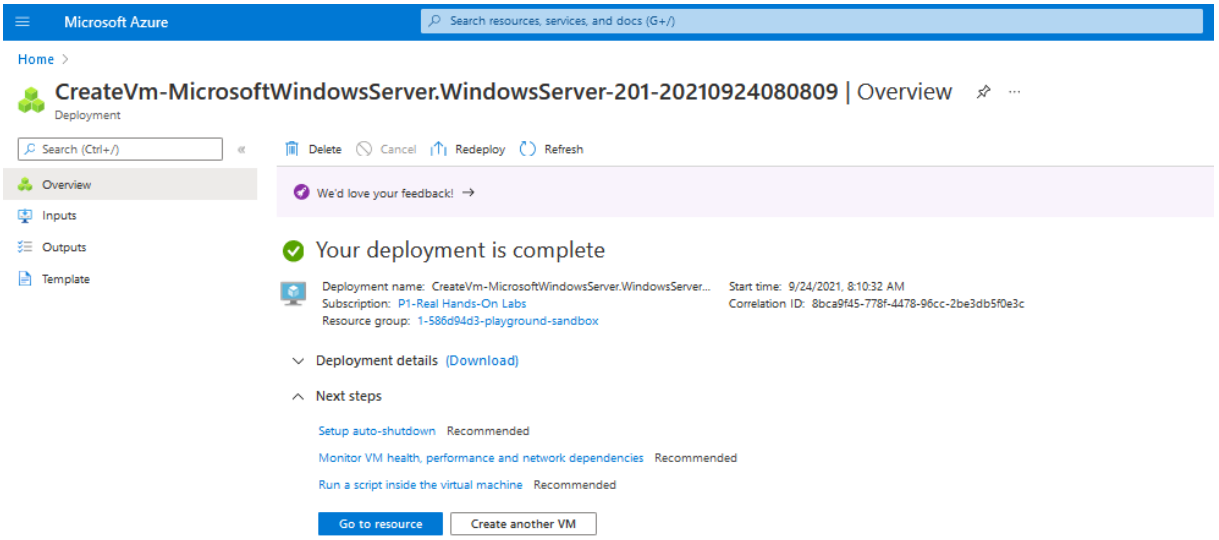
6- Click Next : Networking >.
   - If for some reason port 3389 is not automatically filled in, for "Public Inbound Ports" select "Allow selected ports" and then for "Selected Inbound Ports" use the drop to choose "RDP 3389"
7- Click Next : Management >.
8- Click Next : Advanced >.
9- Click Next : Tags >.
10- Click Next : Review + create >.



11- Click Create.

12- Click the notifications icon at the top of the screen to monitor the deployment.

13- Wait a few minutes for the status to change to Your deployment is complete.

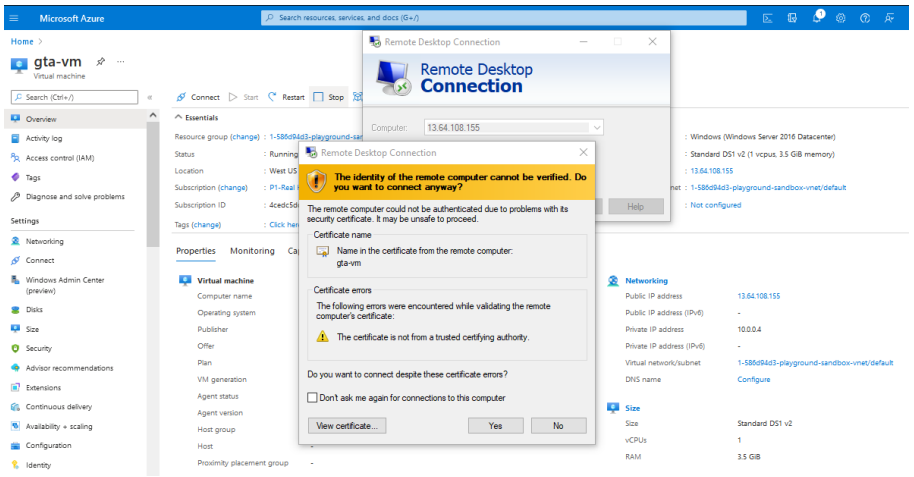


3- Connect to the Virtual Machine

1- Click All resources in the left sidebar.
2- Click the name of our virtual machine to open it.
3- Click Connect at the top of the page.
4- Click Download RDP File. Note: You have to wait a few minutes before you will be able to connect even if the VM shows as ready.

Execute the RDP file either from the folder is was downloaded to, or your browser if it allows it Quick Note: If you are on a Mac, make sure you are using the latest remote desktop tool which can be found at this URL.
https://apps.apple.com/app/microsoft-remote-desktop/id1295203466?mt=12

5- In the Enter your credentials menu, enter the following:
   - User name: gta-admin
   - Password: Admin123456!
6- Click OK.
7- Click Yes.
8- Wait a few minutes for the virtual machine connection to be established.

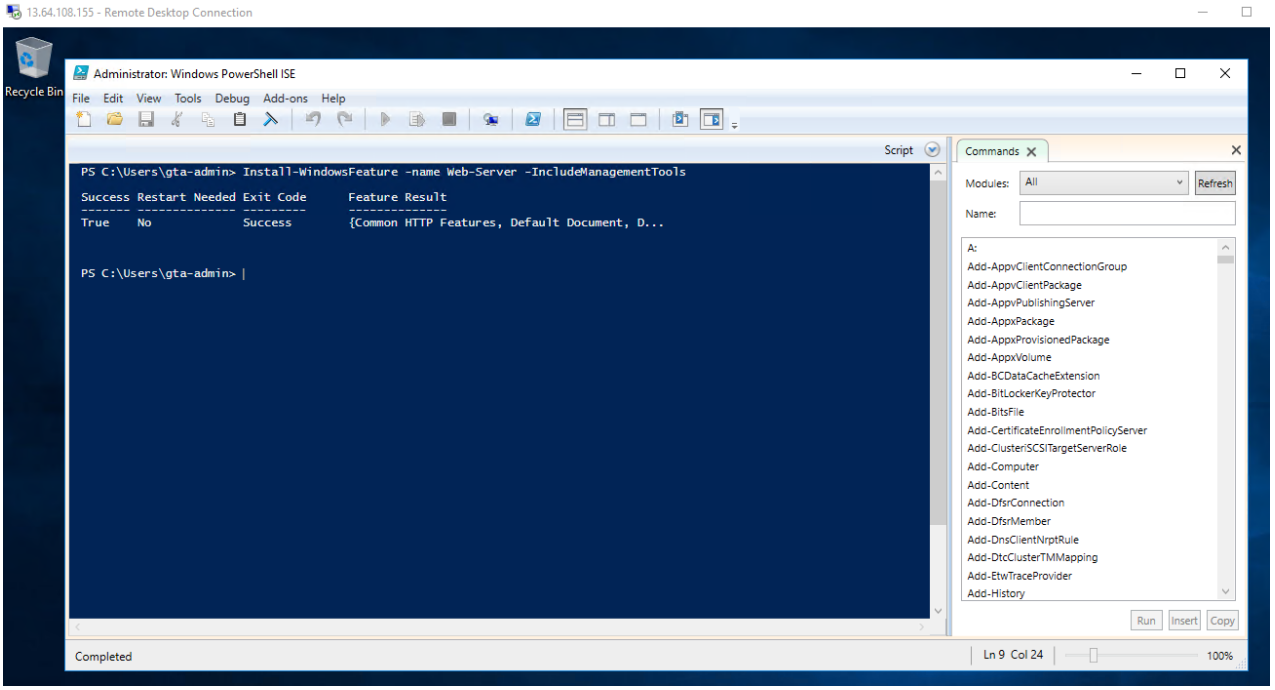


4- Turn Off the Virtual Machine (Optional)

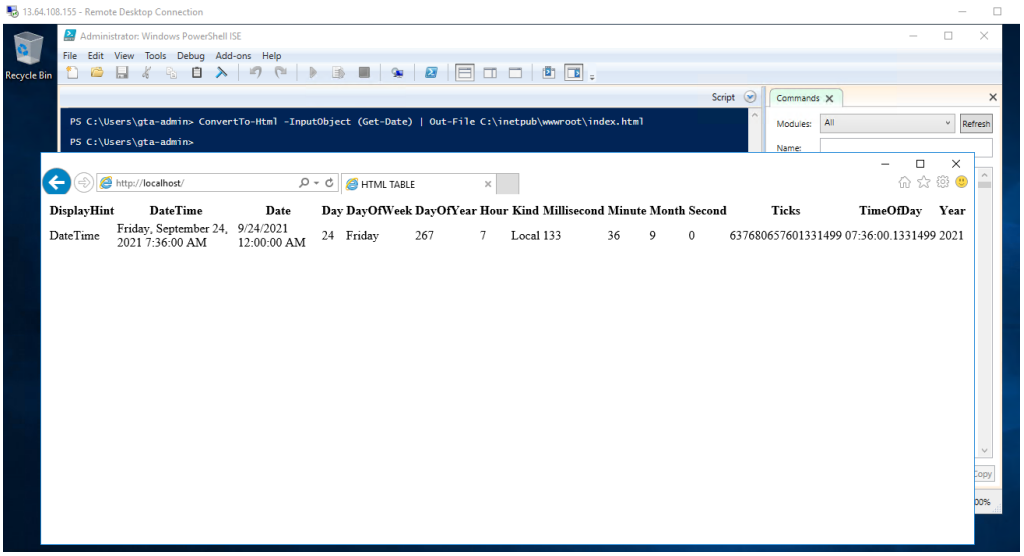
1- Go back to the Azure Portal in your browser.
2- In the virtual machine menu, click Stop.
3- Click OK.
4- Wait a few moments, and refresh the menu until the status changes to Stopped (deallocated).

5- Configure a Web Server

1- Click Start, Windows PowerShell, then Windows PowerShell.
2- Type the command: **Install-WindowsFeature -name Web-Server -IncludeManagementTools**



3- Create a Basic HTML Page: Click Start, Windows PowerShell, then Windows PowerShell.
4- Type the command: **ConvertTo-Html -InputObject (Get-Date) | Out-File C:\inetpub\wwwroot\index.html**
5- You can test that the webserver is working by opening http://locahost in Internet Explorer. It should display the test HTML page you just created (date-time). Remain connected to the server by RDP for the next task

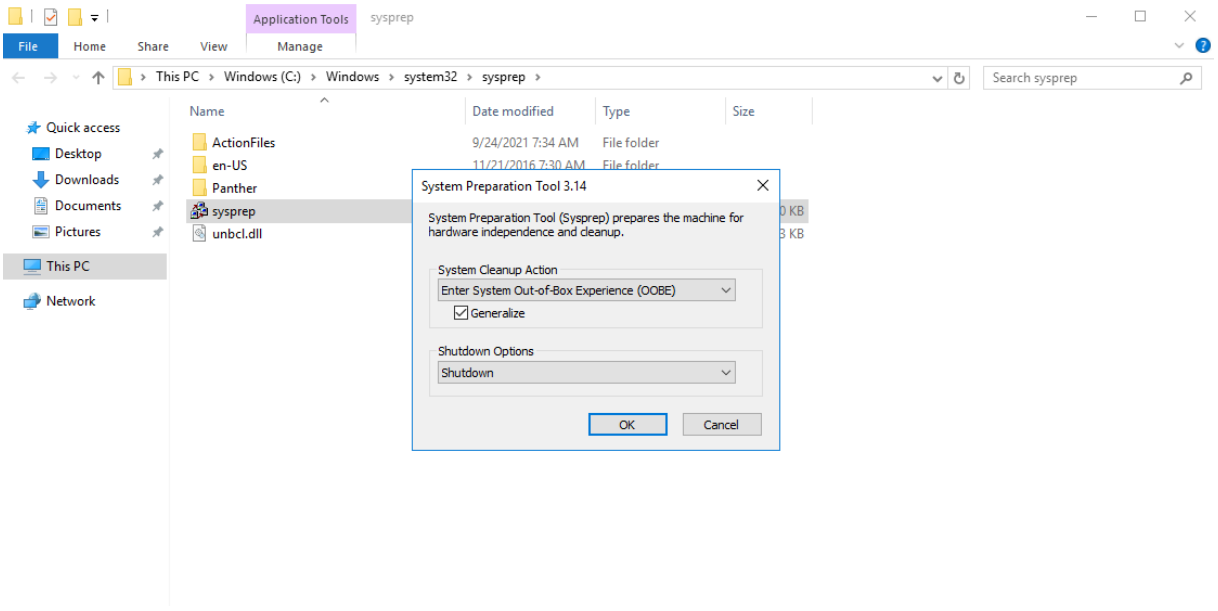


6- Generalize the Windows Server, Perform Sysprep

1- Right-click the start menu.
2- Click on Run.
3- Type the following: **%WINDIR%\system32\sysprep.**
4- Click OK to open the folder.
5- Double-click on the **sysprep.exe** file.
6- Use the following settings:

System Cleanup Action: Enter System Out-of-Box Experience (OOBE)
Generalize: tick the tickbox
Shutdown Options: Shutdown
NOTE: When you click OK, the computer will generalize and then shutdown

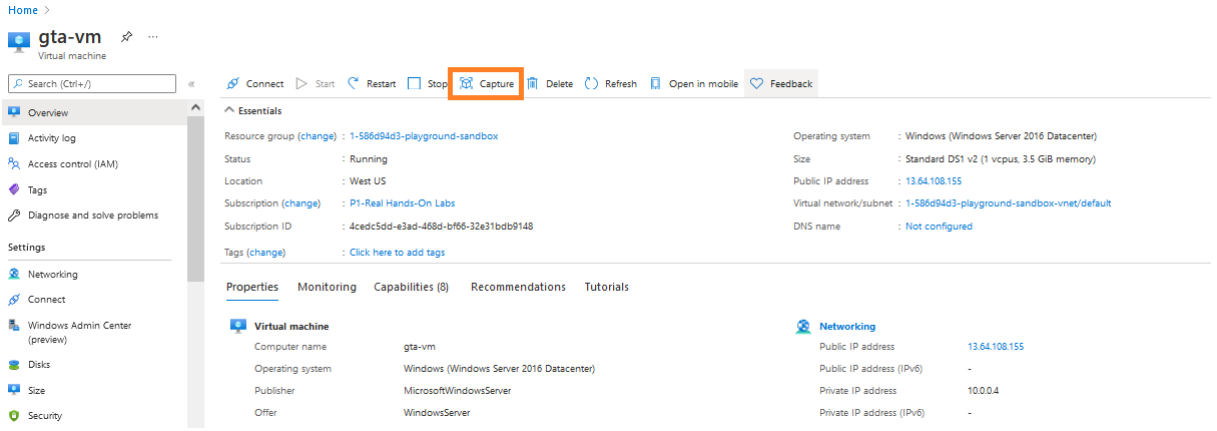
7- Click OK.



Note: The above task can be completed in with the following command-line option if preferred: **%WINDIR%\system32\sysprep\sysprep.exe /generalize /shutdown /oobe.**

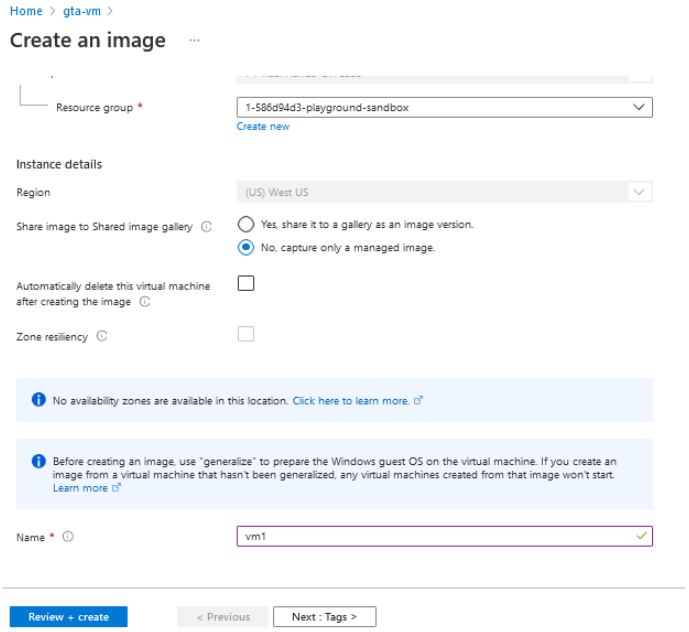
7- Convert VM1 to an Image

1- Navigate to the Virtual Machines services page.
2- Open the existing VM called vm1.
3- Check that the Status is showing as stopped.
4- Use the RDP file with your preferred RDP client.
5- Click on the Capture option in the command menu, and use the following settings:



- Name: **vmimage1**
- Resource group: leave the default selected
- Automatically delete this virtual machine: **no**
- Type the virtual machine name: **vm1**

6- Click on Create.

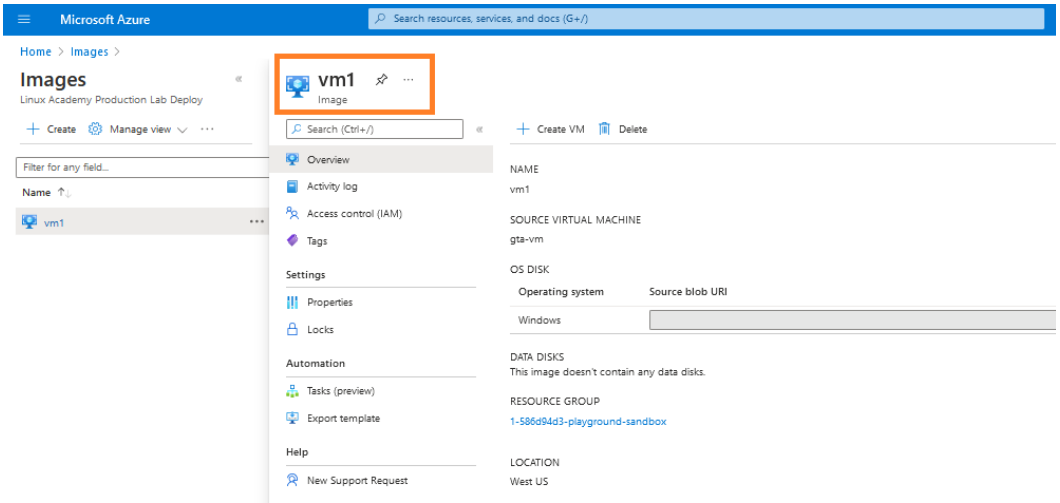


Note: You will no longer be able to start vm1 after completing this step.

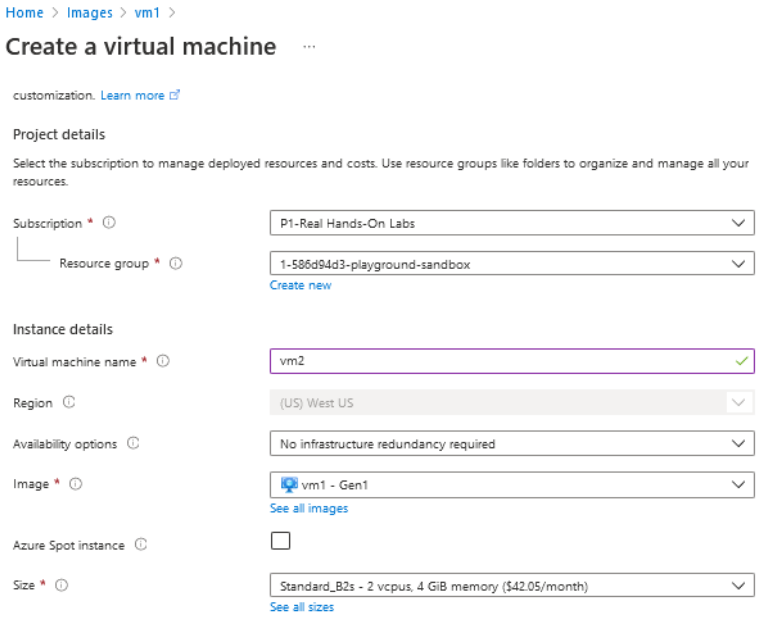
8- Create a VM from the Image

1- Navigate to the Images services page.

2- Click on vmimage1, which we just created.



3- Click on the + Create VM option in the command menu, and use the following settings:



- Basics:
  - Subscription: leave as-is
  - Resource group: leave as-is
  - Virtual machine name: vm2
  - Region: leave as-is
  - Availability options: none
  - Image: leave as-is
  - Size: B2s
  - Administrator account: use the provided lab credentials
  - Public inbound ports: none
  - License Type: Windows Server
  - Would you like to use an existing Windows Server license?: No

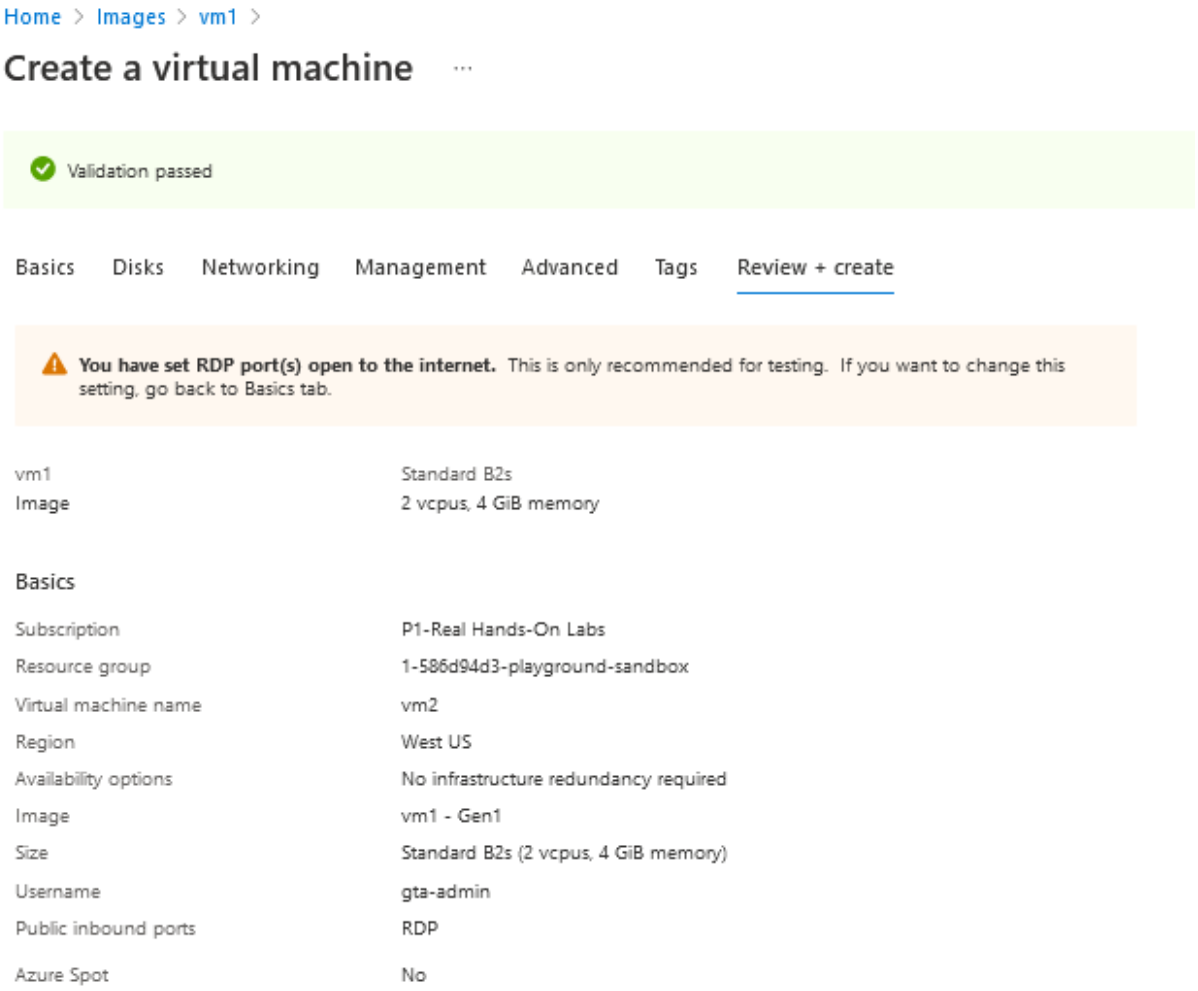
4- Click on Next: Disks.

- Disks: Leave as-is

5- Click on Next: Networking

- Networking
  - Virtual network: vnet1
  - Subnet: subnet1
  - Public IP: leave as-is
  - NIC network security group: None
  - Click on Review + create.
  - Click on Create.

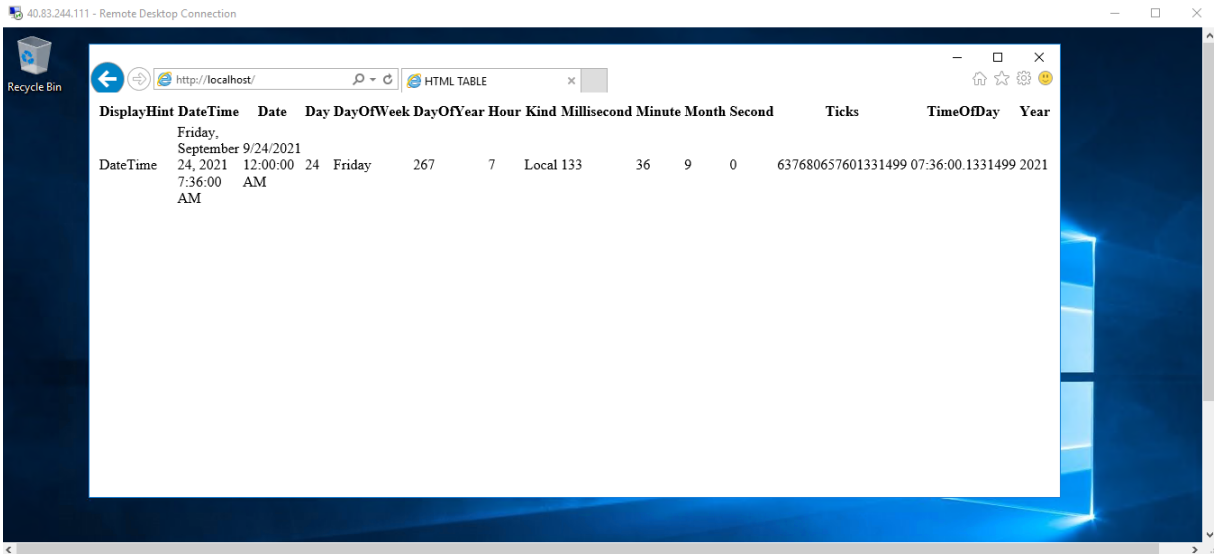
Note: We have network security already associated with vnet1. This will allow RDP access to vm2.



9- Test the VM

1- Connect to the VM using the steps followed earlier. Ensure you use the new public IP address for vm2.

2- Once connected, you can verify the VM is created from the image by performing the following test: - Test: Open http://localhost in Internet Explorer Result: You should see the page we created earlier.



3- The above test validates that your new server has (a) IIS configuration from vm1, and (b) the index.html file you generated on vm1.