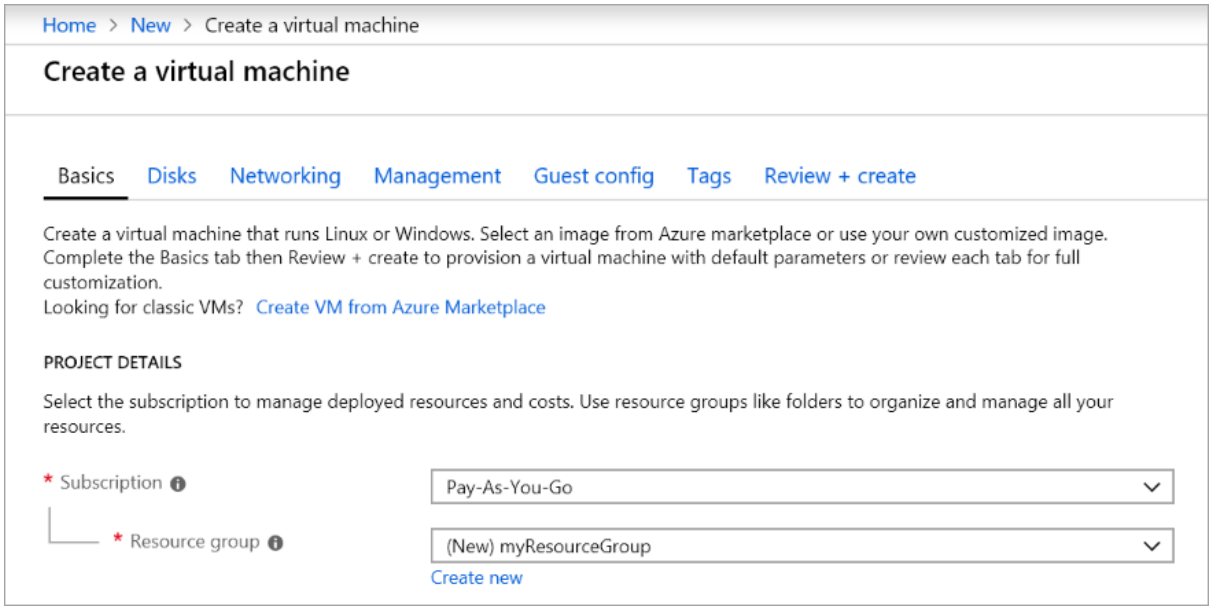
Practice - Creating a VM in the Portal

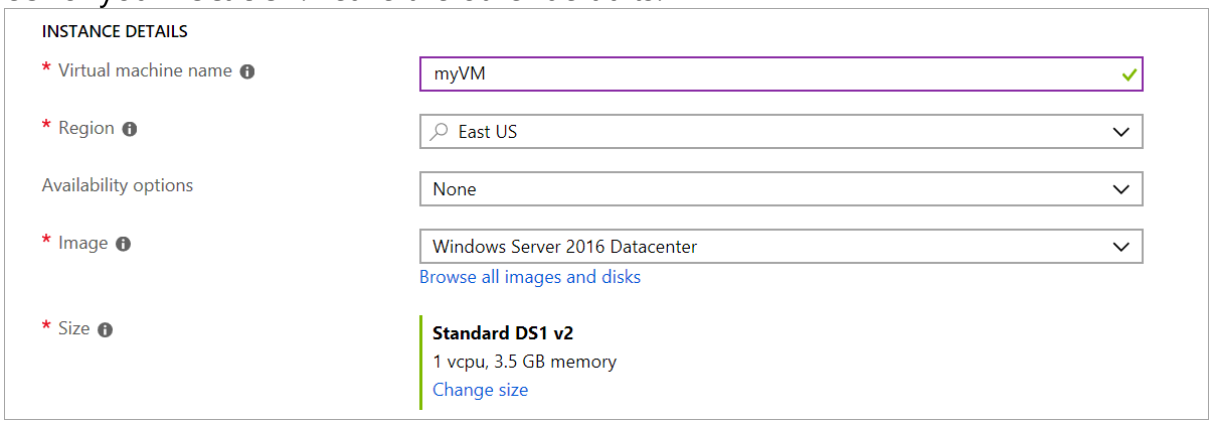
In this demonstration, we will create and access a Windows virtual machine in the portal.

Create the virtual machine

1. Choose **Create a resource** in the upper left-hand corner of the Azure portal.
2. In the search box above the list of Azure Marketplace resources, search for **Windows Server 2016 Datacenter**. After locating the image, click **Create**.
3. In the **Basics** tab, under **Project details**, make sure the correct subscription is selected and then choose to **Create new** resource group. Type *myResourceGroup* for the name.



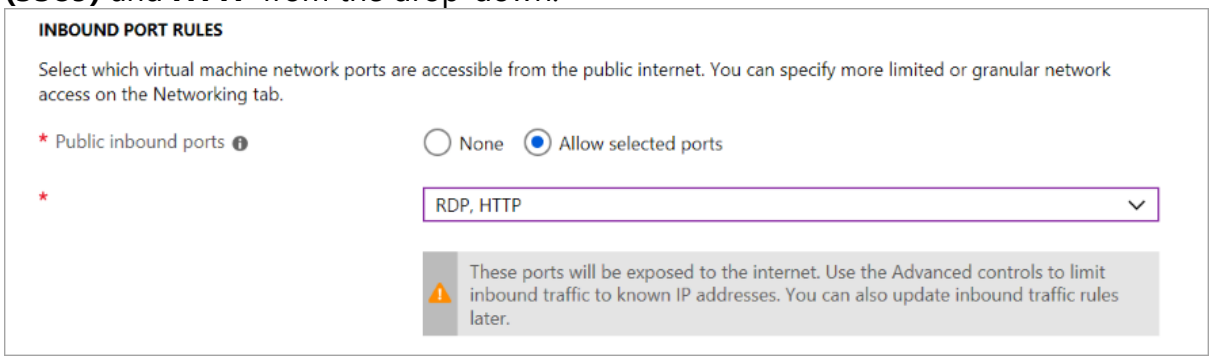
4. Under **Instance details**, type *myVM* for the **Virtual machine name** and choose *East US* for your **Location**. Leave the other defaults.



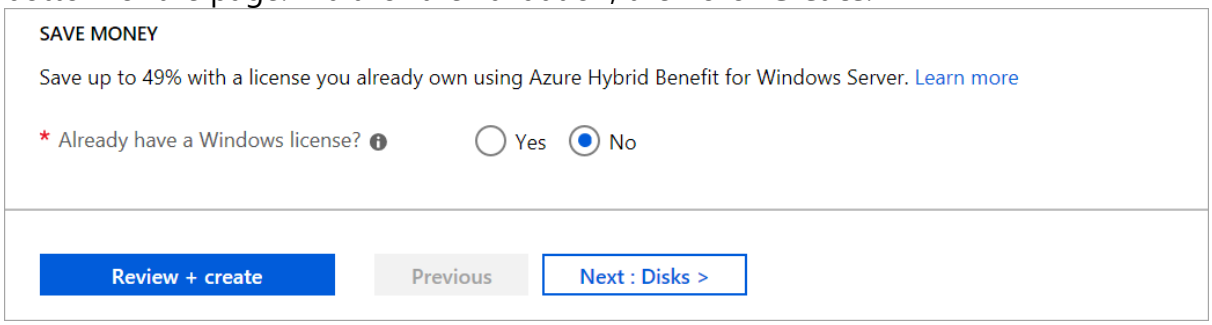
5. Under **Administrator account**, provide a username, such as *azureuser* and a password. The password must be at least 12 characters long and meet the defined

complexity requirements.

6. Under **Inbound port rules**, choose **Allow selected ports** and then select **RDP (3389)** and **HTTP** from the drop-down.



7. Move to the **Management** tab, and under **Monitoring** turn **Off** Boot Diagnostics. This will eliminate validation errors.
8. Leave the remaining defaults and then select the **Review + create** button at the bottom of the page. Wait for the validation, then click **Create**.



Connect to the virtual machine

Create a remote desktop connection to the virtual machine. These directions tell you how to connect to your VM from a Windows computer. On a Mac, you need to install an RDP client from the Mac App Store.

1. Select the **Connect** button on the virtual machine properties page.
2. In the **Connect to virtual machine** page, keep the default options to connect by DNS name over port 3389 and click **Download RDP file**.
3. Open the downloaded RDP file and select **Connect** when prompted.
4. In the **Windows Security** window, select **More choices** and then **Use a different account**. Type the username as localhost\username, enter password you created for the virtual machine, and then select **OK**.
5. You may receive a certificate warning during the sign-in process. Select **Yes** or **Continue** to create the connection.

Install web server

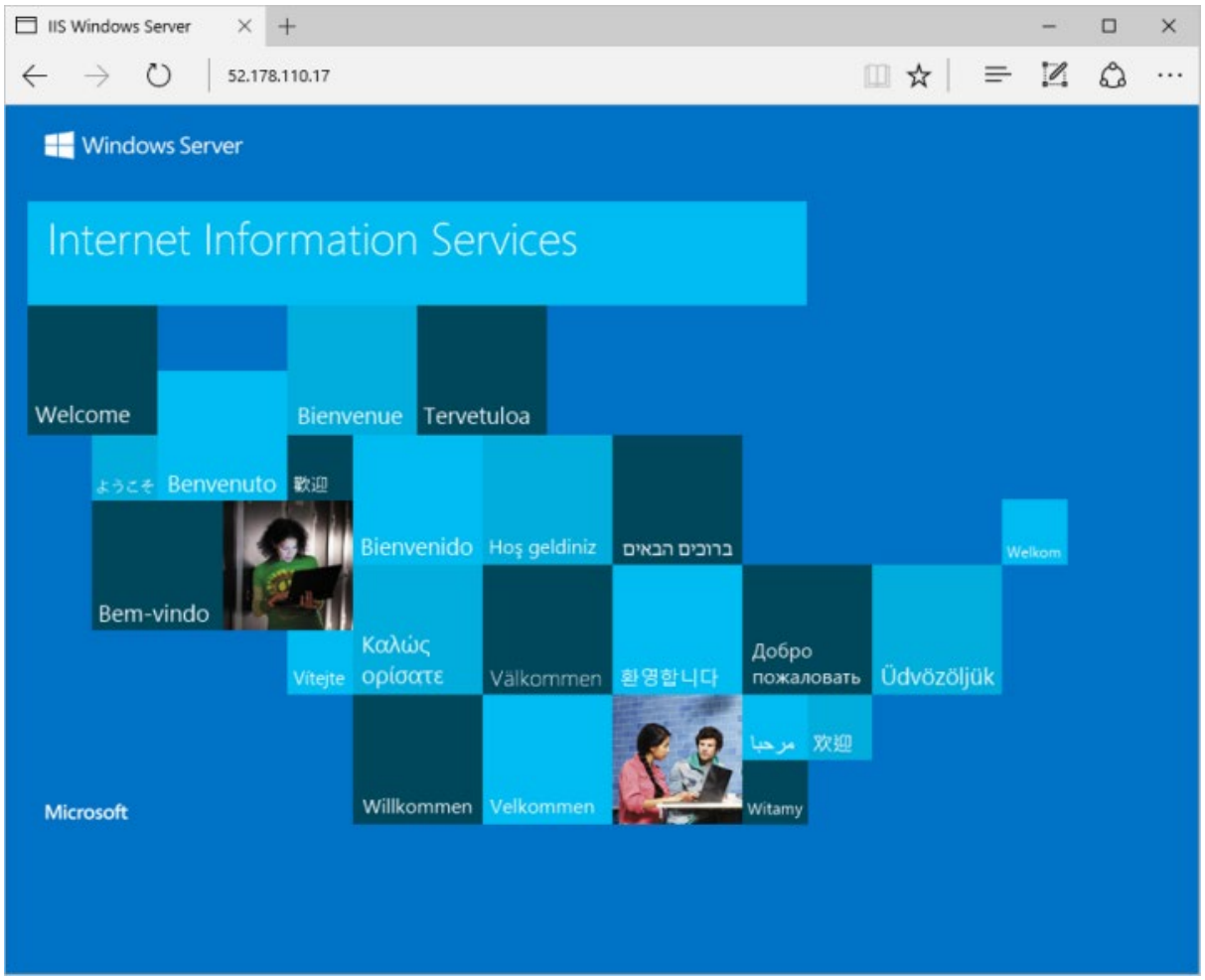
To see your VM in action, install the IIS web server. Open a PowerShell prompt on the VM and run the following command:

```
Install-WindowsFeature -name Web-Server -
IncludeManagementTools
```

When done, close the RDP connection to the VM.

View the IIS welcome page

In the portal, select the VM and in the overview of the VM, use the **Click to copy** button to the right of the public IP address to copy it and paste it into a browser tab. The default IIS welcome page will open, and should look like this:



Clean up resources

✔ When no longer needed, you can delete the resource group, virtual machine, and all related resources. To do so, select the resource group for the virtual machine, select **Delete**, then confirm the name of the resource group to delete.

Practice - Creating a Virtual Machine with PowerShell

In this demonstration, we will create a virtual machine using PowerShell.

Create the virtual machine

Note: You can use the Cloud Shell or a local version of PowerShell.

Note: There are many ways to create a virtual machine with PowerShell. This example is different from the one explained in the topic slides.

1. Launch the Cloud Shell.
2. Run this code:
```
# create a resource group New-AzResourceGroup -Name myResourceGroup -Location EastUS # create the virtual machine # when prompted, provide a username and password to be used as the logon credentials for the VM New-AzVm ` -ResourceGroupName "myResourceGroup" ` -Name "myVM" ` -Location "East US" ` -VirtualNetworkName "myVnet" ` -SubnetName "mySubnet" ` -SecurityGroupName "myNetworkSecurityGroup" ` -PublicIpAddressName "myPublicIpAddress" ` -OpenPorts 80,3389
```

Verify the machine creation in the portal

1. Access the portal and view your virtual machines.
2. Verify **myVM** was created.
3. Review the VM settings.
4. Notice this is a Windows machine in a new VNet and subnet.
5. Notice the command started the machine.
6. At this point you could use either the portal or PowerShell to make changes.

Connect to the virtual machine

1. Retrieve the public IP address of the machine.`Get-AzPublicIpAddress -ResourceGroupName "myResourceGroup" | Select "IpAddress"`
2. Create an RDP session from your local machine. Replace the IP address with the public IP address of your VM. This command runs from a cmd window.`mstsc /v:publicIpAddress`
3. When prompted, provide your login credentials for the machine. Be sure to **Use a different account**. Type the username as localhost\username, enter password you created for the virtual machine, and then select **OK**. You may receive a certificate warning during the sign-in process. Select **Yes** or **Continue** to create the connection
4. When done, close the RDP connection to the VM.
5. Clean up your resources. This will take a few minutes and remove the resource group and virtual machine.`Remove-AzResourceGroup -Name myResourceGroup`

Practice - Connect to Linux Virtual Machines

In this demonstration, we will create a Linux machine and access the machine with SSL.

Note: Ensure port 22 is open for the connection to work.

Create the SSH Keys

1. Download the PuTTY tool. This will include PuTTYgen - https://putty.org/.
2. Once installed, locate and open the **PuTTYgen** program.
3. In the **Parameters** option group choose **RSA**.
4. Click the **Generate** button.
5. Move your mouse around the blank area in the window to generate some randomness.
6. Copy the text of the **Public key for pasting into authorized keys file**.
7. Optionally you can specify a **Key passphrase** and then **Confirm passphrase.** You will be prompted for the passphrase when you authenticate to the VM with your private SSH key. Without a passphrase, if someone obtains your private key, they can sign in to any VM or service that uses that key. We recommend you create a passphrase. However, if you forget the passphrase, there is no way to recover it.
8. Click **Save private key**.
9. Choose a location and filename and click **Save**. You will need this file to access the VM.

Create the Linux machine and assign the public SSH key

1. In the portal create a Linux machine of your choice.
2. Choose **SSH Public Key** for the **Authentication type** (instead of **Password**).
3. Provide a **Username**.
4. Paste the public SSH key from PuTTY into the **SSH public key** text area. Ensure the key validates with a checkmark.
5. Create the VM. Wait for it to deploy.
6. Access the running VM.
7. From the **Overview** blade, click **Connect**.
8. Make a note of your login information including user and public IP address.

Access the server using SSH

1. Open the **PuTTY** tool.
2. Enter **username@publicIpAddress** where username is the value you assigned when creating the VM and publicIpAddress is the value you obtained from the Azure portal.
3. Specify **22** for the **Port**.

4. Choose **SSH** in the **Connection Type** option group.
5. Navigate to **SSH** in the Category panel, then click **Auth**.
6. Click the **Browse** button next to **Private key file for authentication**.
7. Navigate to the private key file saved when you generated the SSH keys and click **Open**.
8. From the main PuTTY screen click **Open.**
9. You will now be connected to your server command line.