To create a Virtual Machine (VM) using Azure CLI on your local machine, follow these steps:

**Step 1: Install Azure CLI**

If you don’t already have the Azure CLI installed on your local machine, you can follow these steps:

1. **Windows:**
   * Download the installer from the Azure CLI download page.
   * Run the installer and follow the on-screen instructions.
2. **macOS:**
   * Open Terminal and run the following command:

bash

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brew update && brew install azure-cli

1. **Linux:**
   * Run the following commands based on your distribution. For example, for Ubuntu:

bash

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sudo apt-get update

sudo apt-get install ca-certificates curl apt-transport-https lsb-release gnupg

curl -sL https://aka.ms/InstallAzureCLIDeb | sudo bash

**Step 2: Sign in to Azure**

Once the Azure CLI is installed, open a terminal or command prompt and sign in to your Azure account:

bash

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az login

This will open a browser window for you to authenticate with your Azure account. After logging in successfully, you can close the browser and return to the CLI.

**Step 3: Set the Subscription (if needed)**

If you have multiple Azure subscriptions, ensure you're using the correct one. To list available subscriptions:

bash

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az account list --output table

To set the subscription you want to use:

bash

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az account set --subscription "Subscription Name or ID"

**Step 4: Create a Resource Group**

A resource group is a container for managing related Azure resources. To create a resource group, run the following command:

bash

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az group create --name <resource-group-name> --location <location>

For example, if you want to create a resource group named myResourceGroup in the East US region:

bash

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az group create --name myResourceGroup --location eastus

**Step 5: Create a Virtual Network and Subnet (optional but recommended)**

Creating a virtual network (VNet) and subnet ensures that your VM is in a networked environment. Here's how to create a VNet and a subnet:

bash

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az network vnet create \

--resource-group <resource-group-name> \

--name <vnet-name> \

--address-prefix <address-range> \

--subnet-name <subnet-name> \

--subnet-prefix <subnet-address-range>

For example:

bash

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az network vnet create \

--resource-group myResourceGroup \

--name myVNet \

--address-prefix 10.0.0.0/16 \

--subnet-name mySubnet \

--subnet-prefix 10.0.1.0/24

**Step 6: Create a Public IP Address (optional)**

If you want your VM to have a public IP, create one using:

bash

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az network public-ip create \

--resource-group <resource-group-name> \

--name <public-ip-name>

For example:

bash

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az network public-ip create \

--resource-group myResourceGroup \

--name myPublicIP

**Step 7: Create a Network Interface (NIC)**

Create a network interface (NIC) for the VM to connect to the VNet:

bash

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az network nic create \

--resource-group <resource-group-name> \

--name <nic-name> \

--vnet-name <vnet-name> \

--subnet <subnet-name> \

--public-ip-address <public-ip-name> # Omit if you don’t need a public IP

For example:

bash

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az network nic create \

--resource-group myResourceGroup \

--name myVMNIC \

--vnet-name myVNet \

--subnet mySubnet \

--public-ip-address myPublicIP

**Step 8: Create a Virtual Machine**

Now, create the virtual machine. You’ll need to specify the OS image, the VM size, and the network interface you just created.

bash

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az vm create \

--resource-group <resource-group-name> \

--name <vm-name> \

--nics <nic-name> \

--image <image-name> \

--admin-username <admin-username> \

--admin-password <admin-password> \

--size <vm-size> \

--public-ip-address "" # Omit if you want to disable public IP

For example, creating a basic Ubuntu VM:

bash

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az vm create \

--resource-group myResourceGroup \

--name myVM \

--nics myVMNIC \

--image UbuntuLTS \

--admin-username azureuser \

--admin-password MyPassword123 \

--size Standard\_DS1\_v2

**Step 9: Open Ports (Optional)**

If you want to open ports to access your VM (for example, SSH on port 22 for Linux or RDP on port 3389 for Windows), use the following command:

For SSH (Linux):

bash

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az vm open-port --resource-group <resource-group-name> --name <vm-name> --port 22

For RDP (Windows):

bash

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az vm open-port --resource-group <resource-group-name> --name <vm-name> --port 3389

**Step 10: Verify the VM Creation**

Once the VM creation is complete, you should see a summary with details of the VM. You can check the VM’s status with:

bash

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az vm show --resource-group <resource-group-name> --name <vm-name>

**Step 11: Connect to the VM**

* **Linux VM (SSH):** If you created a Linux VM and opened port 22, use SSH to connect:

bash

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ssh azureuser@<public-ip>

* **Windows VM (RDP):** If you created a Windows VM and opened port 3389, connect using Remote Desktop Protocol (RDP) and the VM’s public IP.

**Summary of Commands**

Here’s a summary of the main commands you'll use:

bash

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az login

az group create --name myResourceGroup --location eastus

az network vnet create --resource-group myResourceGroup --name myVNet --address-prefix 10.0.0.0/16 --subnet-name mySubnet --subnet-prefix 10.0.1.0/24

az network public-ip create --resource-group myResourceGroup --name myPublicIP

az network nic create --resource-group myResourceGroup --name myVMNIC --vnet-name myVNet --subnet mySubnet --public-ip-address myPublicIP

az vm create --resource-group myResourceGroup --name myVM --nics myVMNIC --image UbuntuLTS --admin-username azureuser --admin-password MyPassword123 --size Standard\_DS1\_v2

az vm open-port --resource-group myResourceGroup --name myVM --port 22 # For SSH

**Additional Notes:**

* Make sure to replace placeholders (<...>) with actual values based on your setup.
* The --image parameter can be used with any of the available Azure VM images (e.g., UbuntuLTS, WindowsServer, CentOS, etc.).
* Be aware of your Azure resource consumption and costs when deploying VMs.