

Azure Virtual Machines (VMs)

Overview:

Azure Virtual Machines provide Infrastructure-as-a-Service (IaaS), allowing users to run virtualized environments on the Azure cloud.

Key Features:

Customizable Configuration:

- Choose OS (Windows/Linux), size, and storage options.
- Supports custom images and pre-configured Azure Marketplace images.

High Availability and Redundancy:

- Use **Availability Sets** for fault and update domain separation.
- Deploy across **Availability Zones** for disaster recovery.

Scaling:

- **Scale Sets** allow automatic scaling of identical VMs.

Networking:

- Supports custom VNets, NSGs, and private IP addresses.



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Use Cases:

- Hosting databases and web applications.
- Running development and testing environments.
- Migrating on-premises workloads to the cloud.

Pricing:

- Charged per second/minute based on VM size, region, and usage.
- Separate pricing for storage, network, and additional services like backups.

Creating a VM using Azure CLI :

```
az vm create \  
  --resource-group MyResourceGroup \  
  --name MyVM \  
  --image UbuntuLTS \  
  --admin-username azureuser \  
  --generate-ssh-keys
```



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Creating a VM using PowerShell :

Variables

```
$resourceGroup = "MyResourceGroup"
```

```
$location = "EastUS"
```

```
$vmName = "MyNewVM"
```

```
$vmSize = "Standard_DS1_v2"
```

```
$image = "Win2019Datacenter"
```

```
$adminUsername = "azurenewuser"
```

```
$adminPassword = "P67nso3s@s"
```

Create a Resource Group

```
New-AzResourceGroup
```

```
-Name $resourceGroup
```

```
-Location $location
```



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Create a VM

New-AzVM `

```
-ResourceGroupName $resourceGroup `
-Location $location `
-VMName $vmName `
-Image $image `
-Size $vmSize `
-Credential (Get-Credential -UserName $adminUsername -
Message "Enter Password")
```

Creating a VM via Azure Portal

Go to the Azure Portal → Search for Virtual Machines.
Click Create → Virtual Machine.

Fill in details:

- Resource Group: MyResourceGroup
- VM Name: MynewVM
- Region: EastUS
- Image: Windows Server 2019
- VM Size: Standard_DS1_v2

Configure username/password and network settings.
Click Review + Create → Create.

