**VM creation**

**Creation of required parameters**

1. First step – Resource group creation:

* [New-AzureRmResourceGroup](https://docs.microsoft.com/en-us/powershell/module/azurerm.resources/new-azurermresourcegroup)
  + **New-AzureRmResourceGroup -ResourceGroupName myResourceGroupVM -Location EastUS**
  + (Important parameters – ResourceGroupName, Location)

1. Second step- create Vnet

* Create the subnet first:
  + [New-AzureRmVirtualNetworkSubnetConfig](https://docs.microsoft.com/en-us/powershell/module/azurerm.network/new-azurermvirtualnetworksubnetconfig)
    - * **$subnetConfig = New-AzureRmVirtualNetworkSubnetConfig -Name mySubnet -AddressPrefix 192.168.1.0/24**
      * (Important parameters – Name, AddressPrefix)
* Create the VNET:
  + [New-AzureRmVirtualNetwork](https://docs.microsoft.com/en-us/powershell/module/azurerm.network/new-azurermvirtualnetwork)
    - * **$vnet = New-AzureRmVirtualNetwork -ResourceGroupName myResourceGroupVM -Location EastUS -Name myVnet -AddressPrefix 192.168.0.0/16 -Subnet $subnetConfig**
      * (Important parameters – ResourceGroupName, Location, Name, AddressPrefix, Subnet)

1. Third step - Create public IP address:
   * [New-AzureRmPublicIpAddress](https://docs.microsoft.com/en-us/powershell/module/azurerm.network/new-azurermpublicipaddress)
     + - **$pip = New-AzureRmPublicIpAddress -ResourceGroupName myResourceGroupVM -Location EastUS -AllocationMethod Static -Name myPublicIPAddress**
       - (Important parameters – ResourceGroupName, Location, AllocationMethod, Name)
2. Fourth Step - Create network interface card
   * [New-AzureRmNetworkInterface](https://docs.microsoft.com/en-us/powershell/module/azurerm.network/new-azurermnetworkinterface)
     + - **$nic = New-AzureRmNetworkInterface -ResourceGroupName myResourceGroupVM -Location EastUS -Name myNic -SubnetId $vnet.Subnets[0].Id -PublicIpAddressId $pip.Id**
       - (Important parameters – ResourceGroupName, Location, Name, SubnetId, PublicIpAddressId)
3. Fifth step - Create network security group:
   * Add a nsg rule first.
   * [Add-AzureRmNetworkSecurityRuleConfig](https://docs.microsoft.com/en-us/powershell/module/azurerm.network/add-azurermnetworksecurityruleconfig)
     + - $nsgRule = New-AzureRmNetworkSecurityRuleConfig -Name myNSGRule -Protocol Tcp -Direction Inbound -Priority 1000 -SourceAddressPrefix \* -SourcePortRange \* -DestinationAddressPrefix \* -DestinationPortRange 3389 -Access Allow
       - (Important parameters – Name, Protocol, Direction, Priority, SourceAddressPrefix, SourcePortRange, DestinationAddressPrefix, DestinationPortRange, Access)
   * Create the NSG
   * [New-AzureRmNetworkSecurityGroup](https://docs.microsoft.com/en-us/powershell/module/azurerm.network/new-azurermnetworksecuritygroup)
     + - $nsg = New-AzureRmNetworkSecurityGroup -ResourceGroupName myResourceGroupVM -Location EastUS -Name myNetworkSecurityGroup -SecurityRules $nsgRule
       - (Important parameters – ResourceGroupName, Location, Name, SecurityRules)
   * Add NSG to the required subnet
   * [Set-AzureRmVirtualNetworkSubnetConfig](https://docs.microsoft.com/en-us/powershell/module/azurerm.network/set-azurermvirtualnetworksubnetconfig)
     + - Set-AzureRmVirtualNetworkSubnetConfig -Name mySubnet -VirtualNetwork $vnet -NetworkSecurityGroup $nsg -AddressPrefix 192.168.1.0/24
       - Parameters - Already specified.
   * Update the virtual network
   * [Set-AzureRmVirtualNetwork](https://docs.microsoft.com/en-us/powershell/module/azurerm.network/set-azurermvirtualnetwork)
     + - Set-AzureRmVirtualNetwork -VirtualNetwork $vnet

**Create virtual machine**

1. Credentials:
   * 1. [Get-Credential](https://msdn.microsoft.com/powershell/reference/5.1/microsoft.powershell.security/Get-Credential)
        + $cred = Get-Credential
2. Create the initial configuration:
   * 1. [New-AzureRmVMConfig](https://docs.microsoft.com/en-us/powershell/module/azurerm.compute/new-azurermvmconfig)
        + $vm = New-AzureRmVMConfig -VMName myVM -VMSize Standard\_D1
        + Parameters: VMName, VMSize
3. Setting the OS parameter:
   * [Set-AzureRmVMOperatingSystem](https://docs.microsoft.com/en-us/powershell/module/azurerm.compute/set-azurermvmoperatingsystem)
     + - $vm = Set-AzureRmVMOperatingSystem -VM $vm -Windows -ComputerName myVM -Credential $cred -ProvisionVMAgent –EnableAutoUpdate
       - Parameters: VM , Windows/linux, ComputerName, Credential, ProvisionVMAgent, EnableAutoUpdate
   * [AzureRmVMSourceImage](https://docs.microsoft.com/en-us/powershell/module/azurerm.compute/set-azurermvmsourceimage):
     + - $vm = Set-AzureRmVMSourceImage -VM $vm -PublisherName MicrosoftWindowsServer -Offer WindowsServer -Skus 2016-Datacenter -Version latest
       - Parameters: VM, PublisherName, Offer, Skus, Version
4. Add the operating system disk:
   * [Set-AzureRmVMOSDisk](https://docs.microsoft.com/en-us/powershell/module/azurerm.compute/set-azurermvmosdisk)
     + $vm = Set-AzureRmVMOSDisk -VM $vm -Name myOsDisk -DiskSizeInGB 128 -CreateOption FromImage -Caching ReadWrite
     + Parameters: VM, Name, DiskSizeInGB, CreateOption, Caching
5. Add the network interface card
   * [Add-AzureRmVMNetworkInterface](https://docs.microsoft.com/en-us/powershell/module/azurerm.compute/add-azurermvmnetworkinterface)
     + $vm = Add-AzureRmVMNetworkInterface -VM $vm -Id $nic.Id

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| [New-AzureRmVM](https://docs.microsoft.com/en-us/powershell/module/azurerm.compute/new-azurermvm) |
| New-AzureRmVM -ResourceGroupName myResourceGroupVM -Location EastUS -VM $vm |