
## *Windows PowerShell Get-Help on Cmdlet 'New-AzVMConfig'*

***PS:\>Get-HELP New-AzVMConfig -Full***

NAME

New-AzVMConfig

SYNOPSIS

Creates a configurable virtual machine object.

SYNTAX

New-AzVMConfig [-VMName] <System.String> [-VMSize] <System.String> [[-AvailabilitySetId] <System.String>] [[-LicenseType] <System.String>] [-IdentityType] {SystemAssigned | UserAssigned | SystemAssignedUserAssigned | None} [-CapacityReservationGroupId <System.String>] [-DefaultProfile <Microsoft.Azure.Commands.Common.Authentication.Abstractions.Core.IAzureContextContainer>] [-DiskControllerType <System.String>] [-EnableSecureBoot <System.Nullable`1[System.Boolean]>] [-EnableUltraSSD] [-EnableVtpm <System.Nullable`1[System.Boolean]>] [-EncryptionAtHost] [-EvictionPolicy <System.String>] [-HibernationEnabled] [-HostId <System.String>] [-IdentityId <System.String[]>] [-ImageReferenceId <System.String>] [-MaxPrice <System.Double>] [-PlatformFaultDomain <System.Int32>] [-Priority <System.String>] [-ProximityPlacementGroupId <System.String>] [-SecurityType {TrustedLaunch | ConfidentialVM | Standard}]

[-SharedGalleryImageId <System.String>] [-Tags <System.Collections.Hashtable>] [-UserData <System.String>] [-vCPUCountAvailable <System.Int32>] [-vCPUCountPerCore

<System.Int32>] [-VmssId <System.String>] [-Zone <System.String[]>] [<CommonParameters>]

DESCRIPTION

The New-AzVMConfig cmdlet creates a configurable local virtual machine object for Azure. <br>

The following cmdlets are used to set different properties of the virtual machine object: <br> -

[Add-AzVMNetworkInterface](https://learn.microsoft.com/en-us/powershell/module/az.compute/add-azvmnetworkinterface) to set the network profile.<br> -

[Set-AzVMOperatingSystem](https://learn.microsoft.com/en-us/powershell/module/az.compute/set-azvmoperatingsystem) to set the OS profile. <br> -

[Set-AzVMSourceImage](https://learn.microsoft.com/en-us/powershell/module/az.compute/set-azvmsourceimage) to set the source image.<br> -

[Set-AzVMOSDisk](https://learn.microsoft.com/en-us/powershell/module/az.compute/set-azvmosdisk) to set the OS disk (storage profile).<br> -

[Get-AzComputeResourceSku](https://learn.microsoft.com/en-us/powershell/module/az.compute/get-azcomputeresourcesku) can also be used to find out available virtual

machine sizes for your subscription and region.<br> <br> See Quickstart: Create a Windows virtual machine in Azure with PowerShell

(https://learn.microsoft.com/en-us/azure/virtual-machines/windows/quick-create-powershell)for tutorial. <br>

PARAMETERS

-AvailabilitySetId <System.String>

Specifies the ID of an availability set. To obtain an availability set object, use the Get-AzAvailabilitySet cmdlet. The availability set object contains an ID

property. <br> Virtual machines specified in the same availability set are allocated to different nodes to maximize availability. <br> For more information about

availability sets, see Manage the availability of virtual machines (/azure/virtual-machines/availability). <br> For more

information on Azure planned maintenance,

see Planned maintenance for virtual machines in Azure

(/azure/virtual-machines/maintenance-and-updates?toc=/azure/virtual-machines/windows/toc.json&bc=/azure/virtual-machines/windows/breadcrumb/toc.json)<br>

Currently, a VM can only be added to availability set at creation time. The availability set to which the VM is being added should be under the same resource

group as the availability set resource. An existing VM cannot be added to an availability set. <br> This property cannot exist along with a non-null

properties.virtualMachineScaleSet reference.

Required? false

Position? 2

Default value None

Accept pipeline input? True (ByPropertyName)

Accept wildcard characters? false

-CapacityReservationGroupId <System.String>

Id of the capacity reservation Group that is used to allocate.

Required? false

Position? named

Default value None

Accept pipeline input? False

Accept wildcard characters? false

-DefaultProfile <Microsoft.Azure.Commands.Common.Authentication.Abstractions.Core.IAzureContextContainer>

The credentials, account, tenant, and subscription used for communication with azure.

Required? false

Position? named

Default value None

Accept pipeline input? False

Accept wildcard characters? false

-DiskControllerType <System.String>

Specifies the disk controller type configured for the VM and VirtualMachineScaleSet. This property is only supported for virtual machines whose operating system

disk and VM sku supports Generation 2 (https://learn.microsoft.com/en-us/azure/virtual-machines/generation-2), please check the HyperVGenerations capability

returned as part of VM sku capabilities in the response of Microsoft.Compute SKUs api for the region contains V2

(https://learn.microsoft.com/rest/api/compute/resourceskus/list) . <br> For more information about Disk Controller Types supported please refer to

https://aka.ms/azure-diskcontrollertypes.

Required? false

Position? named

Default value None

Accept pipeline input? False

Accept wildcard characters? false

-EnableSecureBoot <System.Nullable`1[System.Boolean]>

Specifies whether secure boot should be enabled on the virtual machine.

Required? false

Position? named

Default value None

Accept pipeline input? True (ByPropertyName)

Accept wildcard characters? false

-EnableUltraSSD <System.Management.Automation.SwitchParameter>

Enables a capability to have one or more managed data disks with UltraSSD_LRS storage account type on the VM. Managed disks with storage account type UltraSSD_LRS

can be added to a virtual machine only if this property is enabled.

Required? false

Position? named

Default value False

Accept pipeline input? True (ByPropertyName)

Accept wildcard characters? false

-EnableVtpm <System.Nullable`1[System.Boolean]>

Specifies whether vTPM should be enabled on the virtual machine.

Required? false

Position? named

Default value None

Accept pipeline input? True (ByPropertyName)

Accept wildcard characters? false

-EncryptionAtHost <System.Management.Automation.SwitchParameter>

EncryptionAtHost property can be used by user in the request to enable or disable the Host Encryption for the virtual machine or virtual machine scale set. This

will enable the encryption for all the disks including Resource/Temp disk at host itself. Default: The Encryption at host will be disabled unless this property is

set to true for the resource.

Required? false

Position? named

Default value False

Accept pipeline input? False

Accept wildcard characters? false

-EvictionPolicy <System.String>

The eviction policy for the Azure Spot virtual machine. Supported values are 'Deallocate' and 'Delete'.

Required? false

Position? named

Default value None

Accept pipeline input? True (ByPropertyName)

Accept wildcard characters? false

-HibernationEnabled <System.Management.Automation.SwitchParameter>

The flag that enables or disables hibernation capability on the VM.

Required? false

Position? named

Default value False

Accept pipeline input? True (ByPropertyName)

Accept wildcard characters? false

-HostId <System.String>

The Id of Host

Required? false

Position? named

Default value None

Accept pipeline input? True (ByPropertyName)

Accept wildcard characters? false

-IdentityId <System.String[]>

Specifies the list of user identities associated with the virtual machine scale set. The user identity references will be ARM resource ids in the form:

'/subscriptions/{subscriptionId}/resourceGroups/{resourceGroupName}/providers/Microsoft.ManagedIdentity/identities/{identityName}'

Required? false

Position? named

Default value None

Accept pipeline input? True (ByPropertyName)

Accept wildcard characters? false

-IdentityType <System.Nullable`1[Microsoft.Azure.Management.Compute.Models.ResourceIdentityType]>

The identity of the virtual machine, if configured.

Required? true

Position? 4

Default value None

Accept pipeline input? False

Accept wildcard characters? false

-ImageReferenceId <System.String>

Specified the shared gallery image unique id for vm deployment. This can be fetched from shared gallery image GET call.

Required? false

Position? named

Default value None

Accept pipeline input? False

Accept wildcard characters? false

-LicenseType <System.String>

Specifies a license type, which indicates that the image or disk for the virtual machine was licensed on-premises. Possible values for Windows Server are: -

Windows_Client

- Windows_Server

Possible values for Linux Server operating system are: - RHEL_BYOS (for RHEL)

- SLES_BYOS (for SUSE)

Required? false

Position? 3

Default value None

Accept pipeline input? False

Accept wildcard characters? false

-MaxPrice <System.Double>

Specifies the maximum price you are willing to pay for a low priority VM/VMSS. This price is in US Dollars. This price will be compared with the current low

priority price for the VM size. Also, the prices are compared at the time of create/update of low priority VM/VMSS and the operation will only succeed if the

maxPrice is greater than the current low priority price. The maxPrice will also be used for evicting a low priority VM/VMSS if the current low priority price goes

beyond the maxPrice after creation of VM/VMSS. Possible values are: any decimal value greater than zero. Example: 0.01538. -1 indicates that the low priority

VM/VMSS should not be evicted for price reasons. Also, the default max price is -1 if it is not provided by you.

Required? false

Position? named

Default value None

Accept pipeline input? True (ByPropertyName)

Accept wildcard characters? false

-PlatformFaultDomain <System.Int32>

Specifies the fault domain of the virtual machine.

Required? false

Position? named

Default value None

Accept pipeline input? True (ByPropertyName)

Accept wildcard characters? false

-Priority <System.String>

The priority for the virtual machine. Only supported values are 'Regular', 'Spot' and 'Low'. 'Regular' is for regular virtual

machine. 'Spot' is for spot virtual

machine. 'Low' is also for spot virtual machine but is replaced by 'Spot'. Please use 'Spot' instead of 'Low'.

Required? false

Position? named

Default value None

Accept pipeline input? True (ByPropertyName)

Accept wildcard characters? false

-ProximityPlacementGroupId <System.String>

The resource id of the Proximity Placement Group to use with this virtual machine.

Required? false

Position? named

Default value None

Accept pipeline input? True (ByPropertyName)

Accept wildcard characters? false

-SecurityType <System.String>

Specifies the SecurityType of the virtual machine. It has to be set to any specified value to enable UefiSettings. By default, UefiSettings will not be enabled

unless this property is set.

Required? false

Position? named

Default value None

Accept pipeline input? True (ByPropertyName)

Accept wildcard characters? false

-SharedGalleryImageId <System.String>

Specified the shared gallery image unique id for vm deployment. This can be fetched from shared gallery image GET call.

Required? false

Position? named

Default value None

Accept pipeline input? False

Accept wildcard characters? false

-Tags <System.Collections.Hashtable>

The tags attached to the resource.

Required? false

Position? named

Default value None

Accept pipeline input? True (ByPropertyName)

Accept wildcard characters? false

-UserData <System.String>

UserData for the VM, which will be base-64 encoded. Customer should not pass any secrets in here.

Required? false

Position? named

Default value None

Accept pipeline input? True (ByPropertyName)

Accept wildcard characters? false

-vCPUCountAvailable <System.Int32>

Specifies the number of vCPUs available for the VM. When this property is not specified in the request body the default behavior is to set it to the value of

vCPUs available for that VM size exposed in api response of List all available virtual machine sizes in a region (https://learn.microsoft.com/en-us/rest/api/compute/resource-skus/list).

Required? false

Position? named

Default value None

Accept pipeline input? True (ByPropertyName)

Accept wildcard characters? false

-vCPUCountPerCore <System.Int32>

Specifies the vCPU to physical core ratio. When this property is not specified in the request body the default behavior is set to the value of vCPUsPerCore for

the VM Size exposed in api response of List all available virtual machine sizes in a region

(https://learn.microsoft.com/en-us/rest/api/compute/resource-skus/list). Setting this property to 1 also means that hyper-threading is disabled.

Required? false

Position? named

Default value None

Accept pipeline input? True (ByPropertyName)

Accept wildcard characters? false

-VMName <System.String>

Specifies a name for the virtual machine.

Required? true

Position? 0

Default value None

Accept pipeline input? True (ByPropertyName)

Accept wildcard characters? false

-VMSize <System.String>

Specifies the size for the virtual machine. Get-AzComputeResourceSku (https://learn.microsoft.com/en-us/powershell/module/az.compute/get-azcomputeresourcesku)can

be used to find out available sizes for your subscription and region.

Required? true

Position? 1

Default value None

Accept pipeline input? True (ByPropertyName)

Accept wildcard characters? false

-VmssId <System.String>

The Id of virtual machine scale set

Required? false

Position? named

Default value None

Accept pipeline input? True (ByPropertyName)

Accept wildcard characters? false

-Zone <System.String[]>

Specifies the availability zone for the virtual machine. Although it takes in an array of zones, virtual machines do not support multiple availability zones. The

allowed value depends on the capabilities of the region. Allowed value will normally be 1, 2, or 3. More information on Azure availability zones

(https://learn.microsoft.com/en-us/azure/reliability/availability-zones-overview#availability-zones).

Required? false

Position? named

Default value None

Accept pipeline input? True (ByPropertyName)

Accept wildcard characters? false

<CommonParameters>

This cmdlet supports the common parameters: Verbose, Debug,

ErrorAction, ErrorVariable, WarningAction, WarningVariable,

OutBuffer, PipelineVariable, and OutVariable. For more information, see

about_CommonParameters (https:/go.microsoft.com/fwlink/?LinkID=113216).

INPUTS

System.String

System.String[]

System.Collections.Hashtable

System.Management.Automation.SwitchParameter

OUTPUTS

Microsoft.Azure.Commands.Compute.Models.PSVirtualMachine

NOTES

--------- Example 1: Create a virtual machine resource ---------

```
$rgname = "resourceGroupName";
$loc = "eastus";

New-AzResourceGroup -Name $rgname -Location $loc -Force;

# General Setup
$vmname = 'v' + $rgname;
$domainNameLabel = "d1" + $rgname;
$vmSize = 'Standard_DS3_v2';
```

```
    $computerName = "c" + $rgname;
    $securityTypeStnd = "Standard";

    # Credential. Input Username and Password values
    $user = "";
    $securePassword = "" | ConvertTo-SecureString -AsPlainText -Force;
    $cred = New-Object System.Management.Automation.PSCredential ($user, $securePassword);

    # Creating a VMConfig
    $vmconfig = New-AzVMConfig -VMName $vmname -vmsize $vmsize -SecurityType $securityTypeStnd;

    # Set source image values
    $publisherName = "MicrosoftWindowsServer";
    $offer = "WindowsServer";
    $sku = "2019-DataCenter";
     $vmconfig = Set-AzVMSourceImage -VM $vmconfig -PublisherName $publisherName -Offer $offer -Skus $sku -Version
'latest';

    # NRP Setup
    $subnet = New-AzVirtualNetworkSubnetConfig -Name ('subnet' + $rgname) -AddressPrefix "10.0.0.0/24";
       $vnet = New-AzVirtualNetwork -Force -Name ('vnet' + $rgname) -ResourceGroupName $rgname -Location $loc
-AddressPrefix "10.0.0.0/16" -Subnet $subnet;
    $vnet = Get-AzVirtualNetwork -Name ('vnet' + $rgname) -ResourceGroupName $rgname;
    $subnetId = $vnet.Subnets[0].Id;
      $pubip = New-AzPublicIpAddress -Force -Name ('pubip' + $rgname) -ResourceGroupName $rgname -Location $loc
-AllocationMethod Static -DomainNameLabel $domainNameLabel;
    $pubip = Get-AzPublicIpAddress -Name ('pubip' + $rgname) -ResourceGroupName $rgname;
    $pubipId = $pubip.Id;
    $nic = New-AzNetworkInterface -Force -Name ('nic' + $rgname) -ResourceGroupName $rgname -Location $loc -SubnetId
$subnetId -PublicIpAddressId $pubip.Id;
    $nic = Get-AzNetworkInterface -Name ('nic' + $rgname) -ResourceGroupName $rgname;
    $nicId = $nic.Id;
```

```
$vmconfig = Add-AzVMNetworkInterface -VM $vmconfig -Id $nicId;
$vmconfig = Set-AzVMOperatingSystem -VM $vmconfig -Windows -ComputerName $computerName -Credential $cred;

# Create the VM
New-AzVM -ResourceGroupName $rgname -Location $loc -Vm $vmconfig;
$vm = Get-AzVM -ResourceGroupName $rgname -Name $vmname;
```

Example 2: Create a virtual machine object in a virtual machine scale set with fault domains setup

```
$rgname = "resourceGroupName";
$loc = "eastus";
$vmname = "vm" + $rgname;

New-AzResourceGroup -Name $rgname -Location $loc -Force;

$domainNameLabel = "d1" + $rgname;
$vmname = "v" + $rgname;
$vnetname = "myVnet";
$vnetAddress = "10.0.0.0/16";
$subnetname = "slb" + $rgname;
$subnetAddress = "10.0.2.0/24";
$vmssName = "vmss" + $rgname;
$faultDomainNumber = 2;
$vmssFaultDomain = 3;
$securityTypeStnd = "Standard";

$OSDiskName = $vmname + "-osdisk";
$NICName = $vmname+ "-nic";
$NSGName = $vmname + "-NSG";
$OSDiskSizeinGB = 128;
```

```
$VMSize = "Standard_DS2_v2";
$PublisherName = "MicrosoftWindowsServer";
$Offer = "WindowsServer";
$SKU = "2019-Datacenter";

# Credential. Input Username and Password values.
$user = "";
$securePassword = "" | ConvertTo-SecureString -AsPlainText -Force;
$cred = New-Object System.Management.Automation.PSCredential ($user, $securePassword);

$frontendSubnet = New-AzVirtualNetworkSubnetConfig -Name $subnetname -AddressPrefix $subnetAddress;
$vnet = New-AzVirtualNetwork -Name $vnetname -ResourceGroupName $rgname -Location $loc -AddressPrefix $vnetAddress -Subnet $frontendSubnet;

$vmssConfig = New-AzVmssConfig -Location $loc -PlatformFaultDomainCount $vmssFaultDomain -SecurityType $securityTypeStnd;
$vmss = New-AzVmss -ResourceGroupName $RGName -Name $VMSSName -VirtualMachineScaleSet $vmssConfig;

$nsgRuleRDP = New-AzNetworkSecurityRuleConfig -Name RDP -Protocol Tcp -Direction Inbound -Priority 1001 -SourceAddressPrefix * -SourcePortRange *
-DestinationAddressPrefix * -DestinationPortRange 3389 -Access Allow;
$nsg = New-AzNetworkSecurityGroup -ResourceGroupName $RGName -Location $loc -Name $NSGName -SecurityRules $nsgRuleRDP;
$nic = New-AzNetworkInterface -Name $NICName -ResourceGroupName $RGName -Location $loc -SubnetId $vnet.Subnets[0].Id -NetworkSecurityGroupId $nsg.Id
-EnableAcceleratedNetworking;

# VM
$vmConfig = New-AzVMConfig -VMName $vmName -VMSize $VMSize -VmssId $vmss.Id -PlatformFaultDomain $faultDomainNumber -SecurityType $securityTypeStnd;
Set-AzVMOperatingSystem -VM $vmConfig -Windows -ComputerName $vmName -Credential $cred ;
Set-AzVMOSDisk -VM $vmConfig -StorageAccountType "Premium_LRS" -Caching ReadWrite -Name $OSDiskName -DiskSizeInGB $OSDiskSizeinGB -CreateOption FromImage ;
```

```
Set-AzVMSourceImage -VM $vmConfig -PublisherName $PublisherName -Offer $Offer -Skus $SKU -Version latest ;
Add-AzVMNetworkInterface -VM $vmConfig -Id $nic.Id;

New-AzVM -ResourceGroupName $RGName -Location $loc -VM $vmConfig;
$vm = Get-AzVM -ResourceGroupName $rgname -Name $vmName;
```

Example 2: Create a VM using Virtual Machine Config object for TrustedLaunch Security Type, flags Vtpm and Secure Boot are set to True by default.

```
$rgname = "rgname";
$loc = "eastus";
New-AzResourceGroup -Name $rgname -Location $loc -Force;

# VM Profile & Hardware
$domainNameLabel = "d1" + $rgname;
$vmsize = 'Standard_D4s_v3';
$vmname = $rgname + 'Vm';
$securityType_TL = "TrustedLaunch";
$vnetname = "myVnet";
$vnetAddress = "10.0.0.0/16";
$subnetname = "slb" + $rgname;
$subnetAddress = "10.0.2.0/24";
$OSDiskName = $vmname + "-osdisk";
$NICName = $vmname+ "-nic";
$NSGName = $vmname + "-NSG";
$OSDiskSizeinGB = 128;
$PublisherName = "MicrosoftWindowsServer";
$Offer = "WindowsServer";
$SKU = "2016-datacenter-gensecond";
$disable = $false;
```

```
$enable = $true;
$extDefaultName = "GuestAttestation";
$vmGADefaultIDentity = "SystemAssigned";
# Credential
$password = <Password>;
$securePassword = $password | ConvertTo-SecureString -AsPlainText -Force;
$user = <Username>;
$cred = New-Object System.Management.Automation.PSCredential ($user, $securePassword);
# Network resources
$frontendSubnet = New-AzVirtualNetworkSubnetConfig -Name $subnetname -AddressPrefix $subnetAddress;
$vnet = New-AzVirtualNetwork -Name $vnetname -ResourceGroupName $rgname -Location $loc -AddressPrefix $vnetAddress -Subnet $frontendSubnet;
$nsgRuleRDP = New-AzNetworkSecurityRuleConfig -Name RDP -Protocol Tcp -Direction Inbound -Priority 1001 -SourceAddressPrefix * -SourcePortRange *
-DestinationAddressPrefix * -DestinationPortRange 3389 -Access Allow;
$nsg = New-AzNetworkSecurityGroup -ResourceGroupName $rgname -Location $loc -Name $NSGName -SecurityRules $nsgRuleRDP;
$nic = New-AzNetworkInterface -Name $NICName -ResourceGroupName $rgname -Location $loc -SubnetId $vnet.Subnets[0].Id -NetworkSecurityGroupId $nsg.Id
-EnableAcceleratedNetworking;
# Configure Values using VMConfig Object
$vmConfig = New-AzVMConfig -VMName $vmname -VMSize $vmsize;
Set-AzVMOperatingSystem -VM $vmConfig -Windows -ComputerName $vmname -Credential $cred;
Set-AzVMSourceImage -VM $vmConfig -PublisherName $PublisherName -Offer $Offer -Skus $SKU -Version latest ;
Add-AzVMNetworkInterface -VM $vmConfig -Id $nic.Id;

# VM Creation using VMConfig for Trusted Launch SecurityType
$vmConfig = Set-AzVMSecurityProfile -VM $vmConfig -SecurityType $securityType_TL;
New-AzVM -ResourceGroupName $rgname -Location $loc -VM $vmConfig;
$vm = Get-AzVM -ResourceGroupName $rgname -Name $vmname;
# Validate that for -SecurityType "TrustedLaunch", "-Vtpm" and "-SecureBoot" are "Enabled/true"
#$vm.SecurityProfile.UefiSettings.VTpmEnabled $true;
#$vm.SecurityProfile.UefiSettings.SecureBootEnabled $true;
```

This example creates a VM using a VMConfig object for the TrustedLaunch Security Type and validates flags VtpmEnabled and SecureBootEnabled are true by default.

RELATED LINKS

Online Version: https://learn.microsoft.com/powershell/module/az.compute/new-azvmconfig

Update-AzVM

Set-AzVMOperatingSystem

Set-AzVMSourceImage

Get-AzAvailabilitySet