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# Glossry:

SKU : Stock Keeping Units ( Various types or options available)

# Virtual Machine

## VM Naming Convention

<https://docs.microsoft.com/en-us/azure/virtual-machines/vm-naming-conventions>

## Availability Zones

## Availability Sets

## Scale sets

Azure virtual machine scale sets provide the management capabilities for applications that run across many VMs, [automatic scaling of resources](https://docs.microsoft.com/en-us/azure/virtual-machine-scale-sets/virtual-machine-scale-sets-autoscale-overview), and load balancing of traffic.

| **Scenario** | **Manual group of VMs** | **Virtual machine scale set** |
| --- | --- | --- |
| Add additional VM instances | Manual process to create, configure, and ensure compliance | Automatically create from central configuration |
| Traffic balancing and distribution | Manual process to create and configure Azure load balancer or Application Gateway | Can automatically create and integrate with Azure load balancer or Application Gateway |
| High availability and redundancy | Manually create Availability Set or distribute and track VMs across Availability Zones | Automatic distribution of VM instances across Availability Zones or Availability Sets |
| Scaling of VMs | Manual monitoring and Azure Automation | Autoscale based on host metrics, in-guest metrics, Application Insights, or schedule |

There is no additional cost to scale sets. You only pay for the underlying compute resources such as the VM instances, load balancer, or Managed Disk storage. The management and automation features, such as autoscale and redundancy, incur no additional charges over the use of VMs.

<https://docs.microsoft.com/en-us/azure/virtual-machine-scale-sets/overview>

## Disk Types

<https://docs.microsoft.com/en-us/azure/virtual-machines/disks-types>

# Azure Disk Encryption

### Terminology

| **Terminology** | **Definition** |
| --- | --- |
| Azure Key Vault | Key Vault is a cryptographic, key management service that's based on Federal Information Processing Standards (FIPS) validated hardware security modules. These standards help to safeguard your cryptographic keys and sensitive secrets. For more information, see the [Azure Key Vault](https://azure.microsoft.com/services/key-vault/) documentation and [Creating and configuring a key vault for Azure Disk Encryption](https://docs.microsoft.com/en-us/azure/virtual-machines/linux/disk-encryption-key-vault). |
| DM-Crypt | [DM-Crypt](https://gitlab.com/cryptsetup/cryptsetup/wikis/DMCrypt) is the Linux-based, transparent disk-encryption subsystem that's used to enable disk encryption on Linux VMs. |
| Key encryption key (KEK) | The asymmetric key (RSA 2048) that you can use to protect or wrap the secret. You can provide a hardware security module (HSM)-protected key or software-protected key. For more information, see the [Azure Key Vault](https://azure.microsoft.com/services/key-vault/) documentation and [Creating and configuring a key vault for Azure Disk Encryption](https://docs.microsoft.com/en-us/azure/virtual-machines/linux/disk-encryption-key-vault). |

<https://docs.microsoft.com/en-us/azure/virtual-machines/linux/disk-encryption-overview>

Azure Disk Encryption is not available on [Basic, A-series VMs](https://azure.microsoft.com/pricing/details/virtual-machines/series/), or on virtual machines that do not meet these minimum memory requirements:

| Supported VMs | |
| --- | --- |
| **Virtual machine** | **Minimum memory requirement** |
| Linux VMs when only encrypting data volumes | 2 GB |
| Linux VMs when encrypting both data and OS volumes, and where the root (/) file system usage is 4GB or less | 8 GB |
| Linux VMs when encrypting both data and OS volumes, and where the root (/) file system usage is greater than 4GB | **The root file system usage \* 2. For instance, a 16 GB of root file system usage requires at least 32GB of RAM** |

Once the OS disk encryption process is complete on Linux virtual machines, the VM can be configured to run with less memory.

| **Publisher** | **Offer** | **SKU** | **URN** | **Volume type supported for encryption** |
| --- | --- | --- | --- | --- |
| Canonical | Ubuntu | 18.04-LTS | Canonical:UbuntuServer:18.04-LTS:latest | OS and data disk |
| RedHat | RHEL 7.8 | 7.8 | RedHat:RHEL:7.8:latest | OS and data disk (see note below) |
| OpenLogic | CentOS 7.7 | 7.7 | OpenLogic:CentOS:7.7:latest | OS and data disk |
| SUSE | openSUSE 42.3 | 42.3 | SUSE:openSUSE-Leap:42.3:latest | Data disk only |
| SUSE | SLES 12-SP4 | 12-SP4 | SUSE:SLES:12-SP4:latest | Data disk only |

### VM Requirement for Encryption

Azure Disk Encryption requires the **dm-crypt and vfat modules** to be present on the system.

Before enabling encryption, the data disks to be encrypted must be properly listed in /etc/fstab.

If the /etc/fstab file doesn't mount the drive properly before enabling encryption, Azure Disk Encryption won't be able to mount it properly.

Before starting encryption, be sure to stop all services and processes that could be writing to mounted data disks and disable them, so that they do not restart automatically after a reboot. These could keep files open on these partitions, preventing the encryption procedure to remount them, causing failure of the encryption.

# VM Cli

<https://docs.microsoft.com/en-us/cli/azure/vm?view=azure-cli-latest>

# VM Power Shell

# FAQ

<https://docs.microsoft.com/en-us/azure/virtual-machines/linux/faq>

<https://docs.microsoft.com/en-us/azure/virtual-machines/windows/faq>

## Azure VM sizes with no local temporary disk

1. Can I resize a VM size that has a local temp disk to a VM size with no local temp disk?

No. The only combinations allowed for resizing are:

1. VM (with local temp disk) -> VM (with local temp disk); and
2. VM (with no local temp disk) -> VM (with no local temp disk).
3. Do these VM sizes support both Linux and Windows Operating Systems (OS)?

Yes.

1. Will this break my custom scripts, custom images or OS images that have scratch files or page files on a local temp disk?

If the custom OS image points to the local temp disk, the image might not work correctly with this diskless size.