**MANAGED DISKS**  
and   
**UNMANAGED DISKS**

**INDEX**

UNMANAGED DISKS

MANAGED DISKS

* BENEFITS OF MANAGED DISKS
* ENCRYPTION
* DISK ROLES

**UNMANAGED DISKS**

* In Unmanaged disks, you have to create storage accounts to hold the disks (VHD files) for your Azure VMs.
* Is not an ARM resource, but a file (.vhd) residing on an Azure Storage Account.
* You can choose the disk size during the provisioning (and can be resized) when using Standard Storage.

**MANAGED DISKS**

* Azure managed disks are block-level storage volumes that are managed by Azure and used with Azure Virtual Machines.
* With managed disks, all you have to do is specify the disk size, the disk type, and provision the disk.
* With Managed Disks, you are no longer limited by the storage account limits. You can have one storage account per Azure region.
* Is an ARM (Azure Resource Manager) object (resource).
* The managed disks sizes are fixed (and can be resized). Which means that you cannot choose a custom size. You will need to pick up from a list.

**BENEFITS OF MANAGED DISKS**

* **Highly durable and available.**
  + - 99.999% availability
    - 3 replicas
* **Simple and scalable VM deployment.**
  + - Create up to 50,000 VM disks of a type in a subscription per region
* **Integration with availability zones.**
* **Azure backup support** 
  + - Azure Backup supports backup and restore of managed disks.
* **Granular access control.**

**ENCRYPTION**

Managed disks offer two different kinds of encryption. The first is Server Side Encryption (SSE), which is performed by the storage service. The second one is Azure Disk Encryption (ADE), which you can enable on the OS and data disks for your VMs.  
  
**Server-side encryption**

* Azure Server-side encryption provides **encryption-at-rest** and safeguards your data to meet your organizational security and compliance commitments.
* Server-side encryption is **enabled by default** for all managed disks, snapshots, and images in all the regions where managed disks are available.

**Azure Disk Encryption**

* Azure Disk Encryption allows you to encrypt the OS and Data disks used by an IaaS Virtual Machine.
* For Windows, the drives are encrypted using industry-standard **BitLocker** encryption technology. For Linux, the disks are encrypted using the **DM-Crypt technology**.

**DISK ROLES**

There are three main disk roles in Azure: the data disk, the OS disk, and the temporary disk.

**Data disk**

A data disk is a managed disk that's attached to a virtual machine to store application data, or other data you need to keep.

**OS disk**

Every virtual machine has one attached operating system disk.

**Temporary disk**

Every VM contains a temporary disk, which is not a managed disk. The temporary disk provides short-term storage for applications and processes

and is intended to only store data such as page or swap files.