Creating a Linux VM

Lab: Creating a Linux VM

- https://learn.microsoft.com/en-us/azure/virtual-machines/linux/quick-create-portal?tabs=ubuntu
- https://learn.microsoft.com/en-us/azure/virtual-machines/linux-vm-connect?tabs=Linux

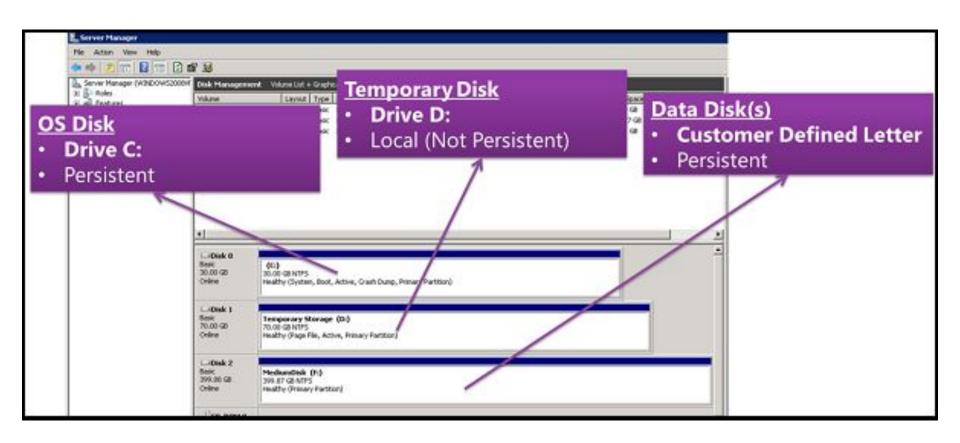# Attaching a Data Disk to a VM

Overview of Data Disk

- Additional storage attached to a virtual machine (VM).

- Separate from the operating system (OS) disk.

- Used for storing application data, databases, logs, etc.

Types of Data Disk

- **Ultra disks:** designed to meet the demands of mission-critical applications requiring extremely low latency and high IOPS (Input/Output Operations Per Second)
- **Standard HDD:** Cost-effective, suitable for low I/O workloads.
- **Standard SSD:** Balance between cost and performance.
- **Premium SSD:** High-performance, suitable for high I/O workloads.

Disk Roles

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

OS Disk

Every virtual machine has one attached operating system disk.

That OS disk has a pre-installed OS, which was selected when the VM was created. This disk contains the boot volume. Generally, you should only store your OS information on the OS disk, and store all applications, and data on data disks.

However, if cost is a concern, you can use the OS disk instead of creating a data 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. Data disks are registered as SCSI drives(Small Computer Interface) and are labeled with a letter that you choose.

The size of the virtual machine determines how many data disks you can attach to it and the type of storage you can use to host the disks.

Generally, you should use the data disk to store your applications and data, instead of storing them on OS disks.

Using data disks to store applications and data offers the following benefits over using the OS disk:

- Improved Backup and Disaster Recovery
- More flexibility and scalability
- Performance isolation
- Easier maintenance
- Improved security and access control

https://learn.microsoft.com/en-us/azure/virtual-machines/faq-for-disks?tabs=azure-portal#why-should-i-use-the-data-disk-to-store-applications-and-data-instead-of-the-os-disk-

Temporary Disk

Most VMs contain 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 files, swap files, or SQL Server tempdb.

Data on the temporary disk may be lost during a maintenance event, when you redeploy a VM, or when you stop the VM. During a successful standard reboot of the VM, data on the temporary disk will persist.

Snapshots

A managed disk snapshot is a read-only crash-consistent full copy of a managed disk that is stored as a standard managed disk by default.

With snapshots, you can back up your managed disks at any point in time.

These snapshots exist independent of the source disk and can be used to create new managed disks.

Images

Managed disks also support creating a managed custom image.

You can create an image from your custom VHD in a storage account or directly from a generalized (sysprepped) VM.

This process captures a single image. This image contains all managed disks associated with a VM, including both the OS and data disks. This managed custom image enables creating hundreds of VMs using your custom image without the need to copy or manage any storage accounts.

Images vs Snapshots

It's important to understand the difference between images and snapshots. With managed disks, you can take an image of a generalized VM that has been deallocated. This image includes all of the disks attached to the VM. You can use this image to create a VM, and it includes all of the disks.

A snapshot is a copy of a disk at the point in time the snapshot is taken. It applies only to one disk. If you have a VM that has one disk (the OS disk), you can take a snapshot or an image of it and create a VM from either the snapshot or the image.

Steps to Attach a Data Disk to an Azure VM

- **Navigate to the Azure Portal:**

  - Go to portal.azure.com and sign in.

- **Select the Virtual Machine:**

  - Choose the VM you want to attach the data disk to from the "Virtual Machines" blade.

- **Add Data Disk:**

  - In the VM's settings, go to the "Disks" section.

  - Click on "+ Add data disk".

- **Create or Attach Existing Disk:**
  - **Create New Disk:** Define the disk name, size, and type (Standard HDD, Standard SSD, Premium SSD).
  - **Attach Existing Disk:** Select an existing managed disk from your storage account.
- **Configure Disk Settings:**
  - Configure the disk settings, including size and performance tier.
  - Click "Save" to apply the changes.
- **Initialize Disk in VM:**
  - Connect to the VM via Remote Desktop Protocol (RDP) or SSH.
  - Open Disk Management (Windows) or use fdisk/parted (Linux).
  - Initialize the new disk, create a new volume, and format it.

Summary

- Attaching data disks to Azure VMs provides scalable, flexible, and high-performance storage solutions.
- It enhances storage capacity, optimizes performance, and offers better data management and cost efficiency.

Lab

- Attaching data disk to a Windows VM

Quiz Time

https://quizizz.com/admin/quiz/666e8e065954896e17b92ca3

Assignment

Write a blog showing detailed steps on Creating and Connecting to a Linux VM using a Public Key.

Deadline: Friday

Submission Link:
https://docs.google.com/forms/d/e/1FAIpQLSfgiKN7hbvNjoz3hPl0TlyWBXxrGhFL-GSH5uQQ4dRCGKiiVA/viewform?usp=sf_link

Resources

https://learn.microsoft.com/en-us/azure/virtual-machines/managed-disks-overview

https://learn.microsoft.com/en-us/azure/virtual-machines/windows/attach-managed-disk-portal