Managing Virtual Machine Disks

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Course Overview

Introduction and Azure Fundamentals

Provisioning Virtual Machines with the Microsoft Azure Portal, Azure CLI and PowerShell

Building and Deploying a Custom Virtual Machine Image

Managing Virtual Machine Disks

Designing and Implementing Azure DevTest Labs

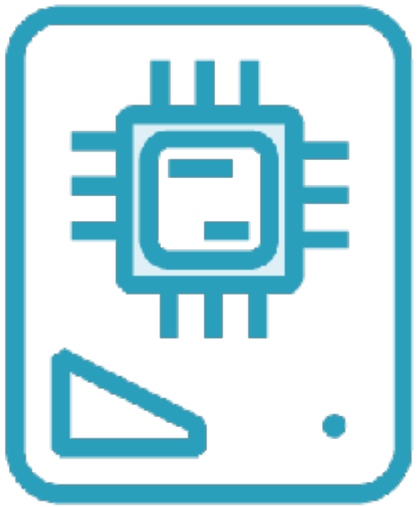
Overview

Understanding Azure Disk Storage

Virtual Machine's Disk Topology

Common Administrative Tasks

Azure Disk Storage



Disks - VHDs attached to VMs

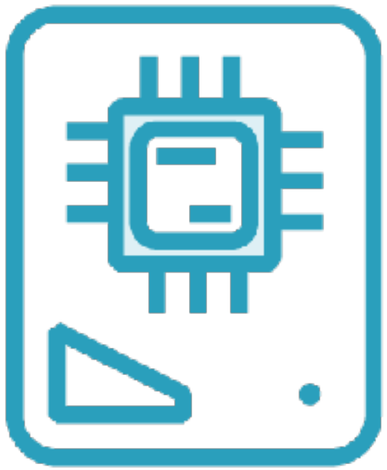
Different types of storage available

- **Standard and Premium**
- **Managed and Unmanaged Disks**

Storage Account

Types of Storage

Standard



Premium

Standard Storage

Magnetic based - HDD

Solid state based - SSD (Preview)

Fixed in terms of IOPs and throughput

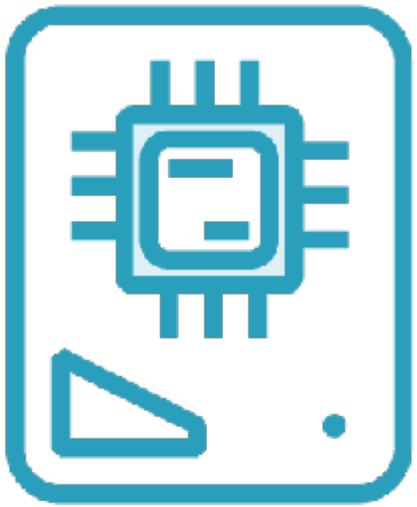
Tied to the tier of the VM

Cost sensitive and latency insensitive workloads

Non-production, backup and big data

https://docs.microsoft.com/en-us/azure/virtual-machines/windows/standard-storage
https://docs.microsoft.com/en-us/azure/virtual-machines/linux/standard-storage

Premium Storage



Solid state based - SSD

Latency sensitive workloads

Higher costs

IOPs and throughput increase with disk capacity not the VM

Performance limits associated with VM's size

Use on nearly all production workloads

https://docs.microsoft.com/en-us/azure/virtual-machines/windows/premium-storage
https://docs.microsoft.com/en-us/azure/virtual-machines/linux/premium-storage

Types of Azure Disks

Unmanaged

Managed

https://docs.microsoft.com/en-us/azure/virtual-machines/windows/disk-scalability-targets#unmanaged-virtual-machine-disks

Virtual Machine Disk Topology

	Window	Linux	Purpose
Operating System	C:	/dev/sda	House the operating system
Temporary	D:	/dev/sdb	Page or swap file and short lived!
Data	X:	/dev/sdX	Store application data

Common Disk Administrative Operations

Create/Provision	Attach VHD to a VM	Prepare the disk for the OS
Snapshot	Resize	Remove

Azure Disk Snapshots

Full, read-only copy of a single VHD

- Operating System disk
- Data disk

Using a snapshot

- OS disk - copy snapshot into a new disk, then create a new VM
- Data disk - copy to a new disk and mount it, could be same VM or new VM

Azure Recovery Services

Demo

Common Administrative Disk Operations

- Creating a disk
- Attaching a disk
- Preparing the disk for the OS
- Resizing a disk
- Removing a disk
- Snapshots

Azure CLI Examples

PowerShell Examples

Summary

Understanding Azure Disk Storage

Virtual Machine's Disk Topology

Common Administrative Tasks

What's Next!

Designing and Implementing Azure DevTest Labs