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Administer Data Protection

Learning Objectives

01 Azure Backup Solution

02 Configure File and Folder Backups

03 Configure Virtual Machine Backups

04 Vault data protection

05 Azure Site Recovery

Moved Lab 03a – Manage Azure resources with the Azure portal into this module. It covers resource locks.

Azure Backup Solution

- A repeatable way to deliver software and infrastructure code to its destination
- Build and test code
- Deploy to on-prem or cloud resources
- CICD isn't just for software developers. It's also for infrastructure pros

Azure Backup – Benefits

It is an Azure-based service used to backup and restore data in Microsoft Azure.
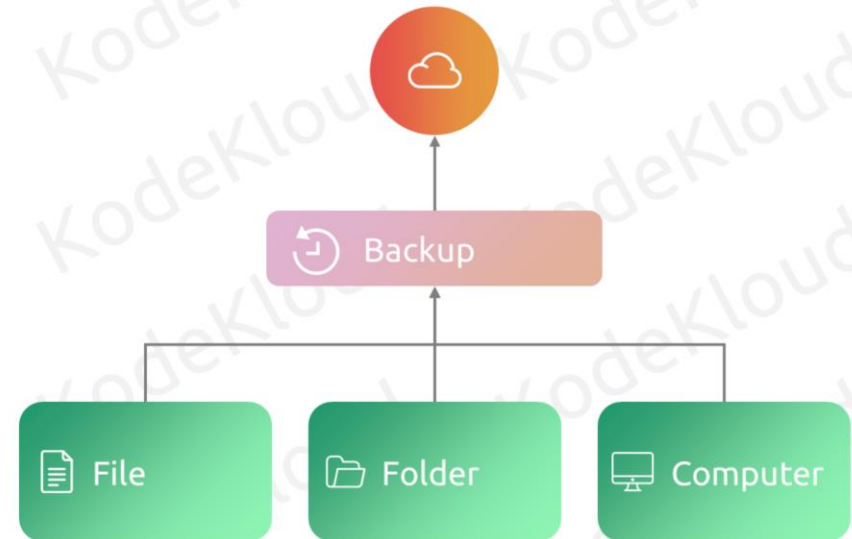
Automatic storage management	Multiple storage options
Unlimited data transfer	Data encryption
Application consistent backup	Long-term retention

Backup

File   Folder   Computer

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Why use Azure Backup? - https://docs.microsoft.com/azure/backup/backup-introduction-to-azure-backup#why-use-azure-backup

✔ What are some of the reasons your organization might choose Azure Backup?

Recovery Services vaults overview - https://docs.microsoft.com/azure/backup/backup-azure-recovery-services-vault-overview

Create a Recovery Services vault - https://docs.microsoft.com/azure/backup/backup-create-rs-vault

Soft delete for virtual machines - https://docs.microsoft.com/azure/backup/soft-delete-virtual-machines

Azure Backup Center

- A repeatable way to deliver software and infrastructure code to its destination
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Overview of Backup Center - https://docs.microsoft.com/azure/backup/backup-center-overview

Supported scenarios
Backup Center is currently supported for Azure VM backup, SQL in Azure VM backup, SAP HANA in Azure VM backup, Azure Files backup, Azure Blobs backup, Azure Managed Disks backup, and Azure Database for PostgreSQL Server backup.

File and Folder Backup

- A repeatable way to deliver software and infrastructure code to its destination
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File and Folder Backup

Azure Files

Where is your workload running?

| Azure | ⌄ |

What do you want to backup?

| 🗔 Azure file share | ⌄ |

Step: Configure Backup

Backup

Recovery Services Vault

On-Premises

Where is your workload running?

| On-Premises | ⌄ |

What do you want to backup?

| Files and folders | ⌄ |

Step: Prepare Infrastructure

Prepare Infrastructure

MARS
Agent

Windows Server

Virtual Machine Backup

- A repeatable way to deliver software and infrastructure code to its destination
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Virtual Machine Backup – Azure VMs

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Virtual Machine
Backup – On-Premises

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Virtual Machine Backup – On-Premises VMs

Specialized Workloads
- Exchange
- SharePoint
- Microsoft SQL Server

Virtual Machines on VMware and Hyper-V
- Microsoft Hyper-V
- vmware
- Windows
- Linux

Physical Servers
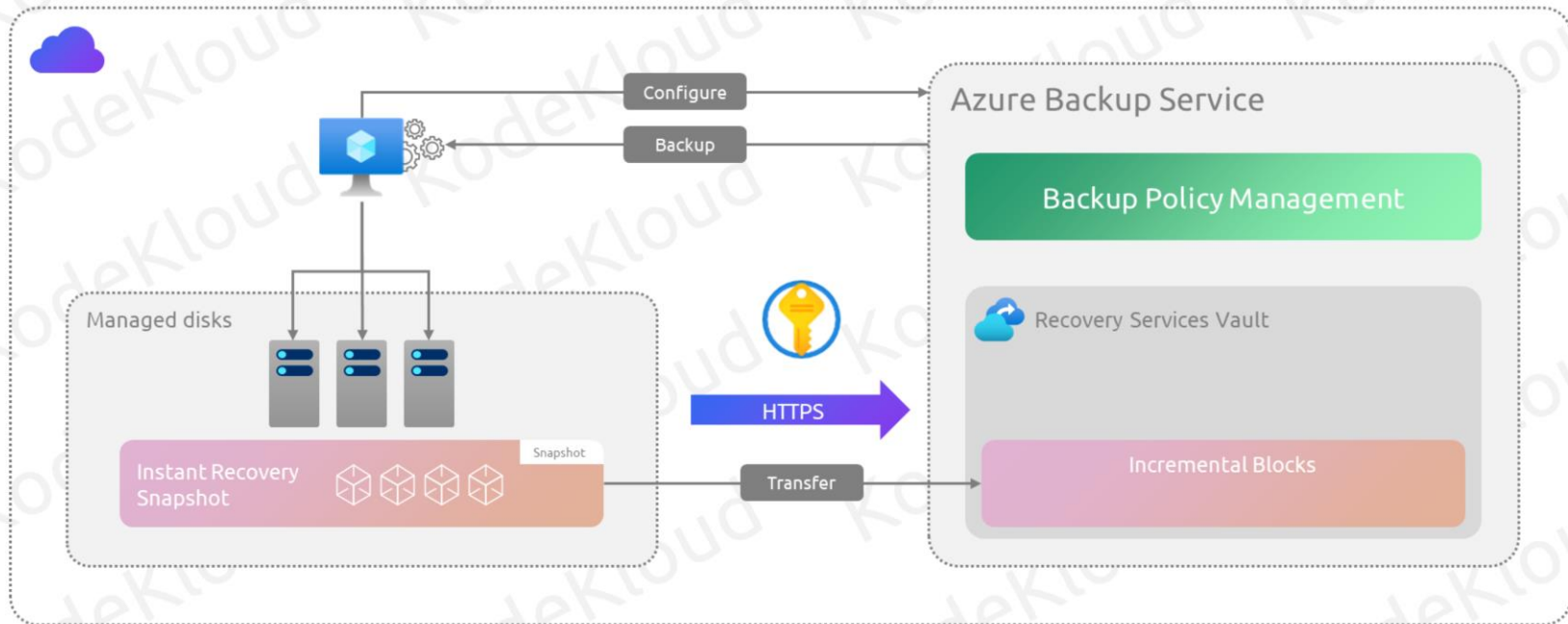- Windows Server

MABS or DPM

Backup →

Recovery Services Vault

Compare On-premises
Backup Options

- A repeatable way to deliver software and infrastructure code to its destination
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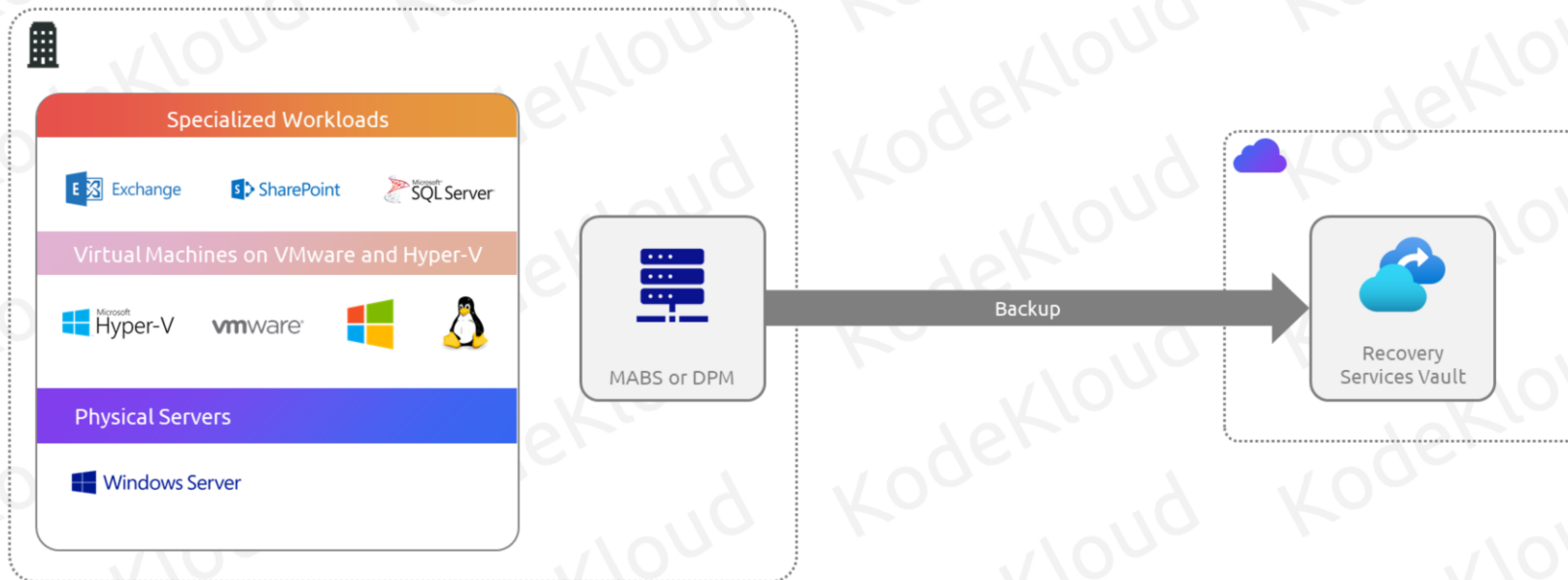- CICD isn't just for software developers. It's also for infrastructure pros

Backup Options – Comparison

Component	Benefits	Limits	Protects	Backup Storage
Azure Backup (MARS) agent	• Backup files and folders on physical or virtual Windows OS • No separate backup server required	• Backup 3x per day • Not application aware • File, folder, and volume-level restore only • No support for Linux	• Files • Folders	• Recovery services vault
Azure Backup Server (MABS)	• App aware snapshots • Full flex for when to backup • Recovery granularity • Linux support on Hyper-V and VMware VMs • Backup and restore VMware VMs • Doesn't require a System Center license	• Cannot backup Oracle workloads • Always requires live Azure subscription • No support for tape backup	• Files • Folders • Volumes • VMs • Applications • Workloads	• Recovery services vault • Locally attached disk

Restore Virtual Machines

Once you trigger the restore operation, the Backup service creates a job for tracking the restore operation

The Backup service also creates and temporarily displays notifications, so you monitor how the backup is proceeding

ContosoWebFE1
Backup Item

| Backup now | Restore VM | File Recovery | Stop backup | Resume backup |

Alerts and Jobs

View all Alerts (last 24 hours)

View all Jobs (last 24 hours)

Backup status

| Backup Pre-Check | ✅ Passed |
| Last backup status | ✅ Success 3/12/2020, 12:20:38 AM |

Restore points (30)

| CRASH CONSISTENT | APPLICATION CONSISTENT | FILE-SYSTEM CONSISTENT |
| 30 | 0 | 0 |

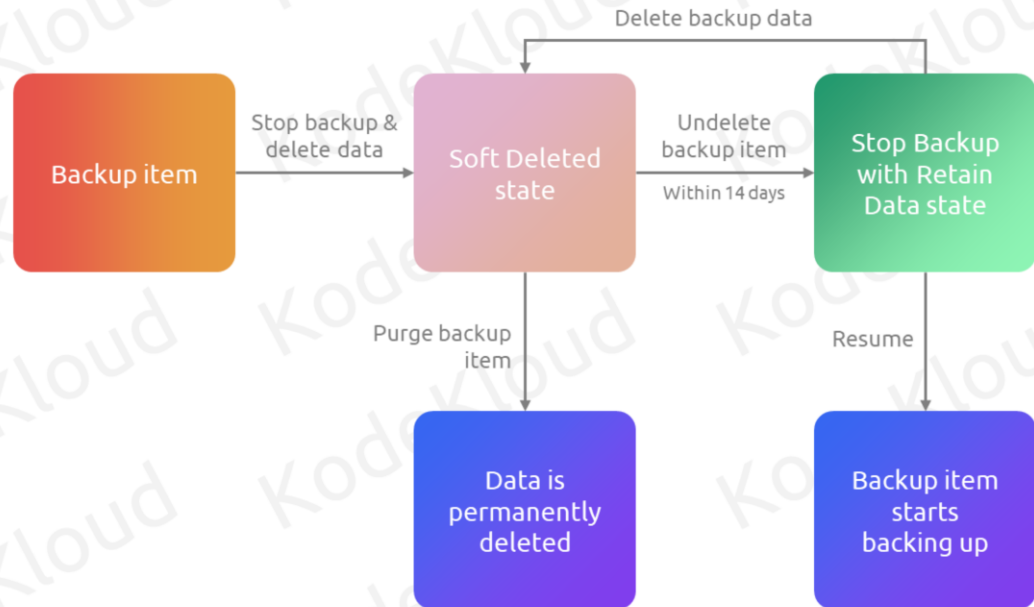| Time ↑↓	Consistency
3/12/2020, 12:20:42 AM	Crash Consistent
3/11/2020, 12:20:59 AM	Crash Consistent

Vault Data Protection

- A repeatable way to deliver software and infrastructure code to its destination
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Manage Soft Delete

Backup data is retained for 14 additional days*

| Recover soft deleted backup items using an 'Undelete' operation |

| Also available for storage account containers and file shares |

| Natively built-in for all the recovery services vaults |

Delete backup data

Backup item → Stop backup & delete data → **Soft Deleted state** → Undelete backup item / Within 14 days → **Stop Backup with Retain Data state**

Soft Deleted state → Purge backup item → **Data is permanently deleted**

Stop Backup with Retain Data state → Resume → **Backup item starts backing up**

Soft delete for virtual machines in Azure Backup - https://azure.microsoft.com/updates/soft-delete-virtual-machine-backup/

* Now soft delete number of days can be extended beyond 14 days, although it will have a fee associated to it.

Azure Site Recovery
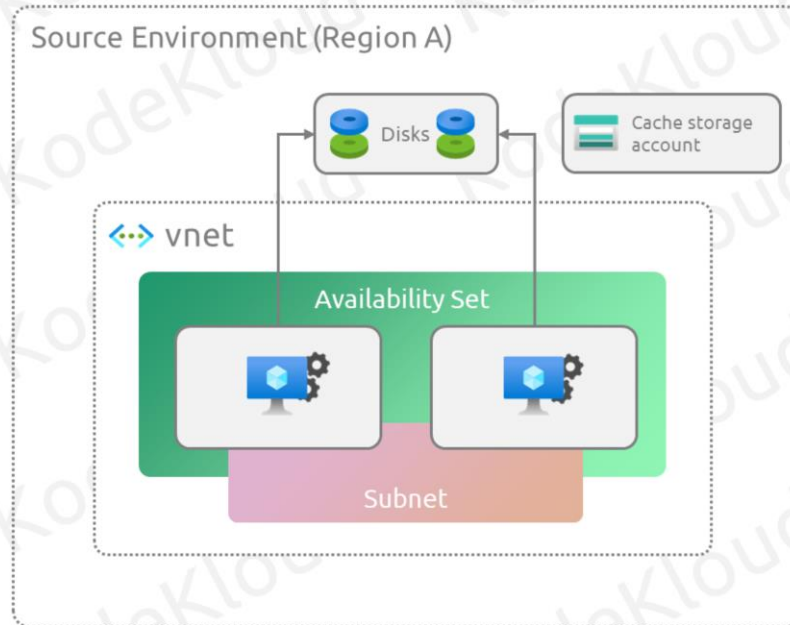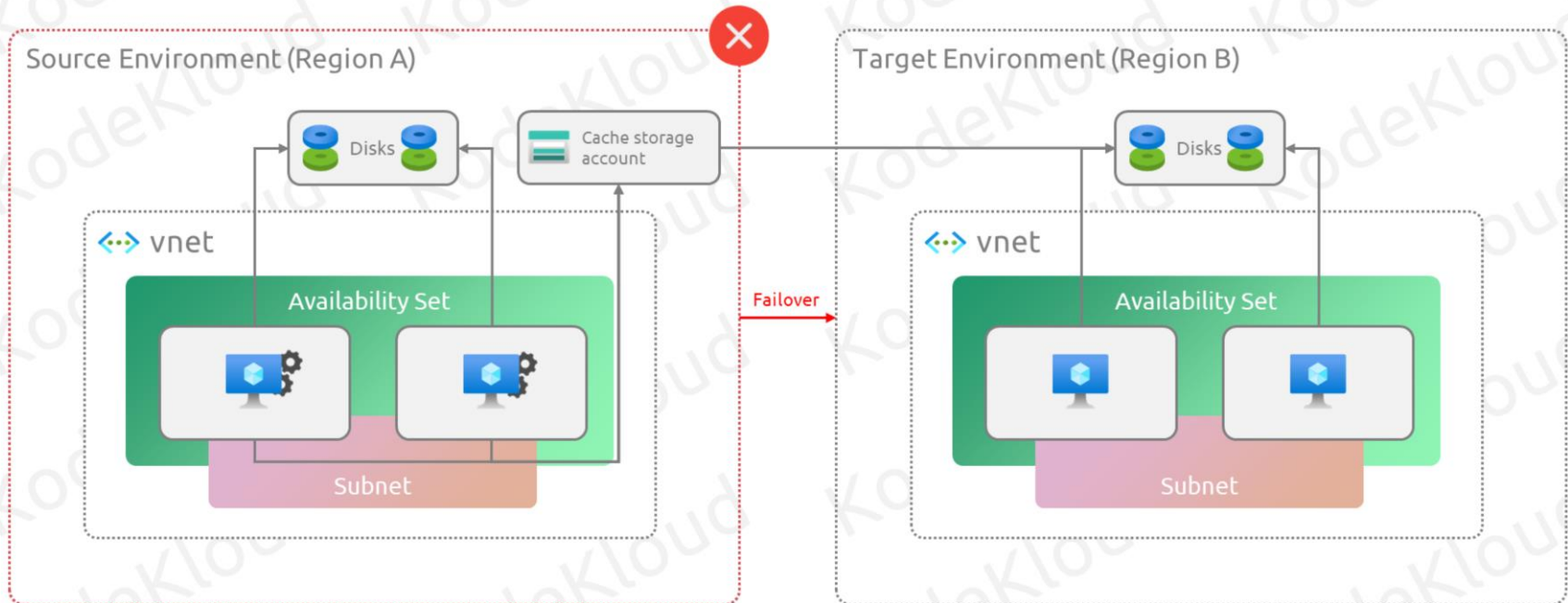
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Azure Site Recovery

Source Environment (Region A)

Disks

Cache storage account

<·> vnet

Availability Set

Subnet

Azure Site Recovery

Source Environment (Region A)

Disks

Cache storage account

vnet

Availability Set

Subnet

Failover

Target Environment (Region B)

Disks

vnet

Availability Set

Subnet

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