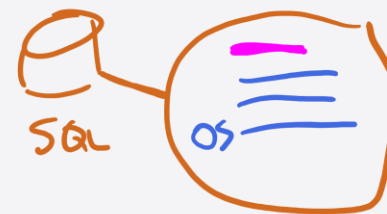


# AZ-104

# Administer Data Protection

# AZ-104 Course Outline

- 01: Administer Identity
- 02: Administer Governance and Compliance
- 03: Administer Azure Resources
- 04: Administer Virtual Networking
- 05: Administer Intersite Connectivity
- 06: Administer Network Traffic Management
- 07: Administer Azure Storage
- 08: Administer Azure Virtual Machines
- 09: Administer PaaS Compute Options
- 10: Administer Data Protection
- 11: Administer Monitoring



Container Stateless!  
Container Image Read Only!

CNI

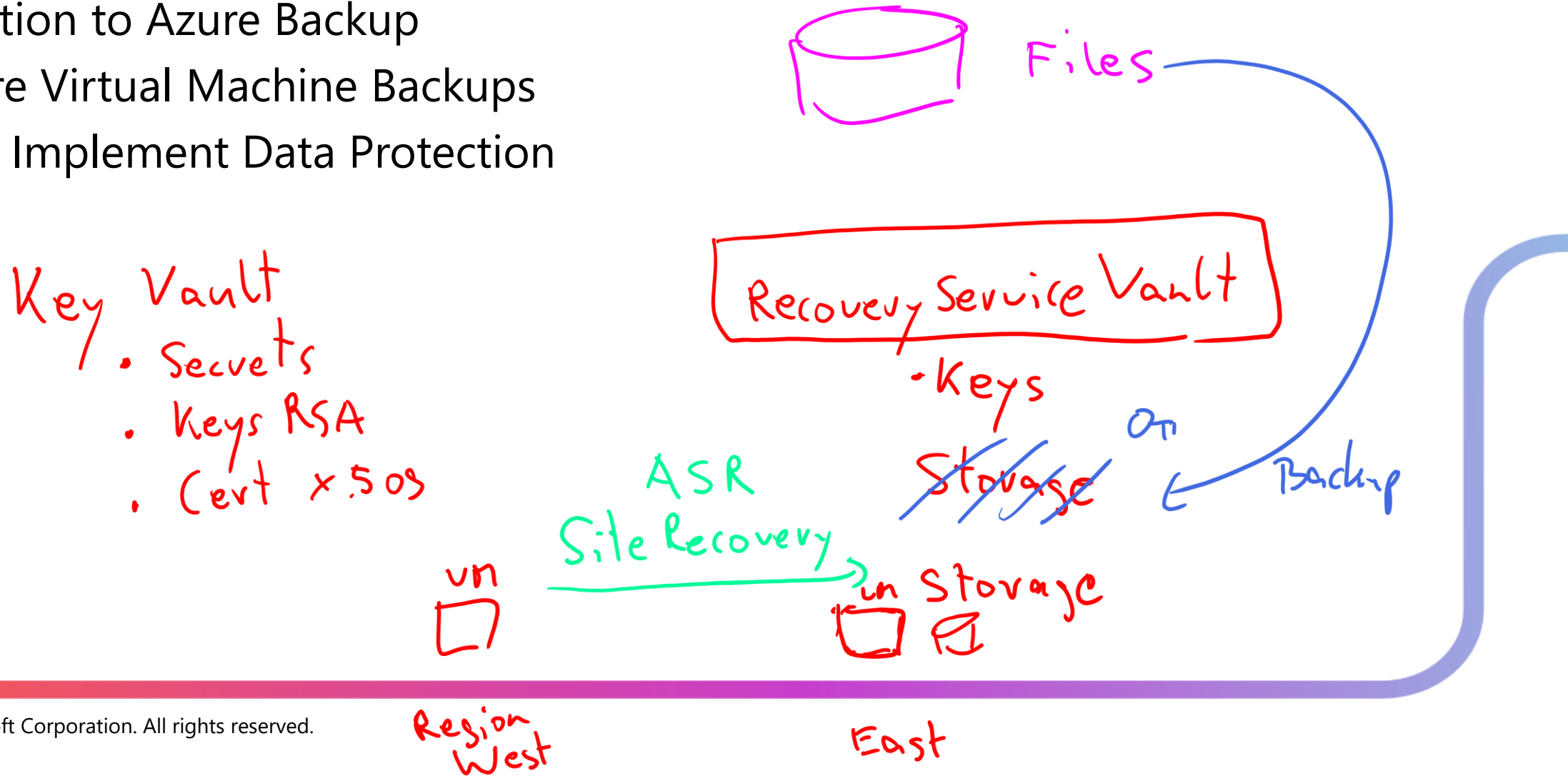
DOCKERFILE

From OS

SA Backup.  
vn Backup.  
ASR

# Learning Objectives - Administer Network Protection

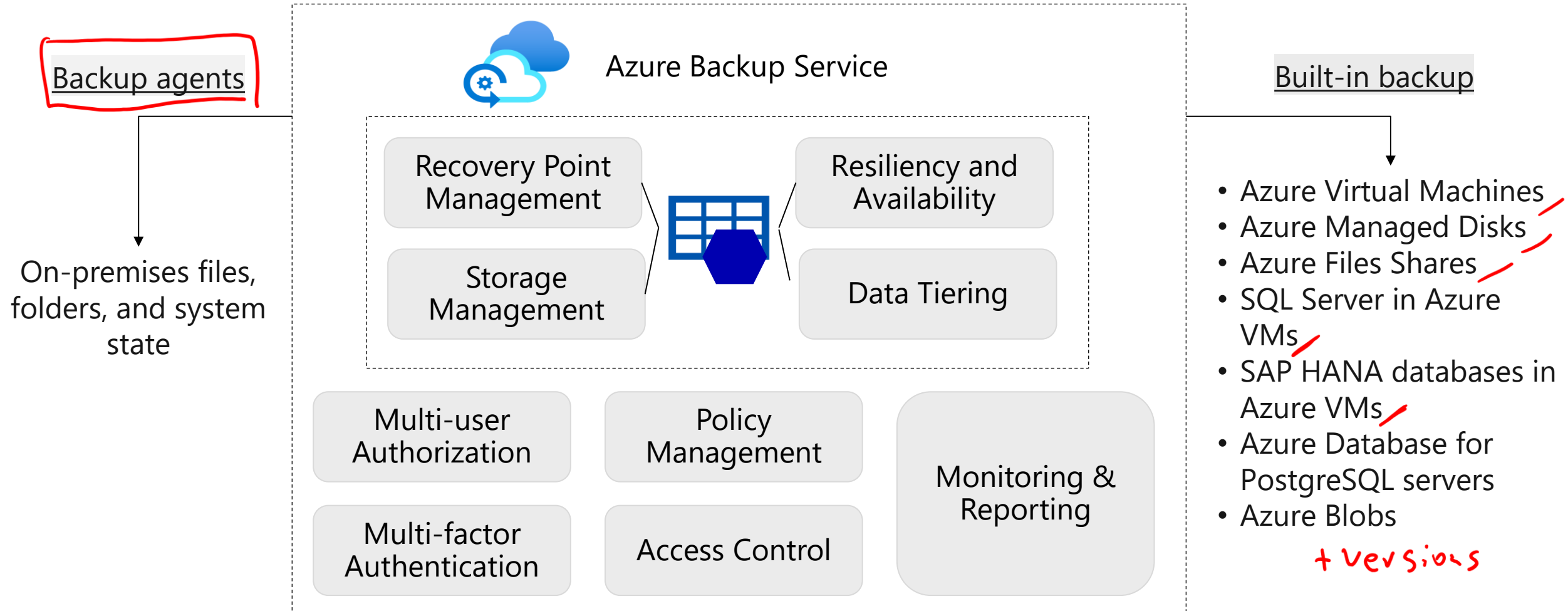
- Introduction to Azure Backup
- Configure Virtual Machine Backups
- Lab 10 – Implement Data Protection



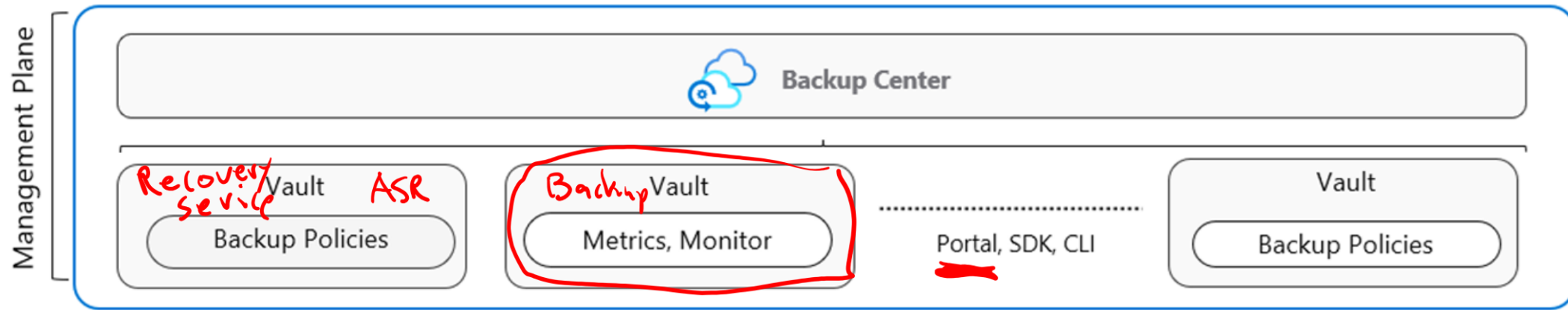
# Introduction to Azure Backup



# What is Azure Backup?



# How Azure Backup works (vaults and policies)



- Vaults store backup copies, recovery points, and backup policies
- Two types of vaults: Backup vault and Recovery Service vault
- Backup Policies define the data source, storage vault, and backup schedule
- The Backup Center provides a single unified management experience (next slide)

# Implement Azure Backup Center

Single pane of glass to manage backups across a large and distributed Azure environment

Datasource-centric management focused on what you are backing up

Connected experiences with native integrations that enables management at scale

The screenshot shows the Azure Backup Center 'Overview' page. The sidebar on the left contains navigation links: Overview (selected), Getting started, Community, Manage (Backup instances, Backup policies, Vaults), Monitoring + reporting (Backup jobs, Backup reports), Policy and compliance (Backup compliance, Azure policies for backup, Protectable datasources), and Support + troubleshooting (New support request). The main content area has a search bar and action buttons (+ Backup, Restore, Policy, Vault, Refresh). Below this, it shows 'Datasource type: Azure Virtual machines' and an 'Overview of Jobs and Backup instances'. A table titled 'Jobs (last 24 Hours)' shows counts for Failed, In progress, and Completed operations. Another section titled 'Backup instances' shows 2 instances for Azure Virtual machines, with details on protection status.

| Operation        | Failed | In progress | Completed |
|------------------|--------|-------------|-----------|
| Scheduled backup | 0      | 0           | 2         |
| On-demand backup | 0      | 0           | 0         |
| Restore          | 0      | 0           | 0         |

| Azure Virtual machines |                       |
|------------------------|-----------------------|
| 2                      | Protection configured |
| 0                      | Protection stopped    |
| 0                      | Soft deleted          |

0 out of 2 Backup instances with the underlying datasource not found

# Learning Recap – Introduction to Azure Backup



- Introduction to Azure Backup

Check your  
knowledge  
questions and  
additional  
study



# Configure Virtual Machine Backups



# Explore options to protect virtual machine data

## Snapshots

Managed snapshots provide a quick and simple option for backing up VMs that use Managed Disks

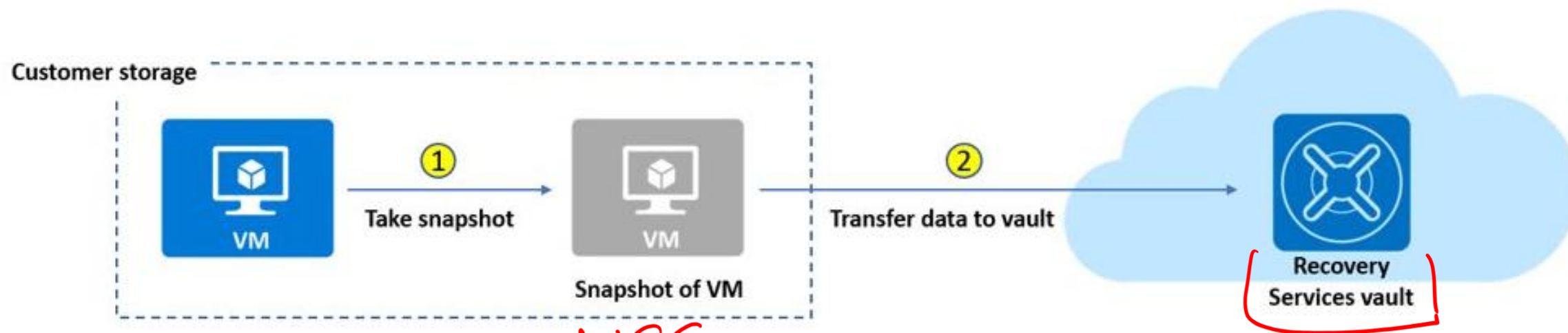
## Azure Backup

Azure Backup supports application-consistent backups for both Windows and Linux VMs

## Azure Site Recovery

Azure Site Recovery protects your VMs from a major disaster scenario when a whole region experiences an outage

# Create virtual machine snapshots in Azure Backup



VSS  
Volume Shadow Copy

Use snapshots taken as part of a backup job


Reduces recovery wait times – don't wait for data transfer to the vault to finish

Configure Instant Restore retention (standard or enhanced)

# Set up Azure Recovery Services vault backup options

Multiple servers can be protected using the same Recovery Services vault

## Azure Workloads

 vault135 | Backup ☆  
Recovery Services vault

Where is your workload running?  

Azure

What do you want to backup?  

Virtual machine


Virtual machine

Azure file share

SQL Server in Azure VM

SAP HANA in Azure VM

## On-Premises Workloads

 vmbackuptest - Backup  
Recovery Services vault

Where is your workload running?  

On-Premises

What do you want to backup?  

4 selected

☐ Files and folders

☒ Hyper-V Virtual Machines

☒ VMware Virtual Machines

☐ Microsoft SQL Server

☐ Microsoft SharePoint

☐ Microsoft Exchange

☒ System State

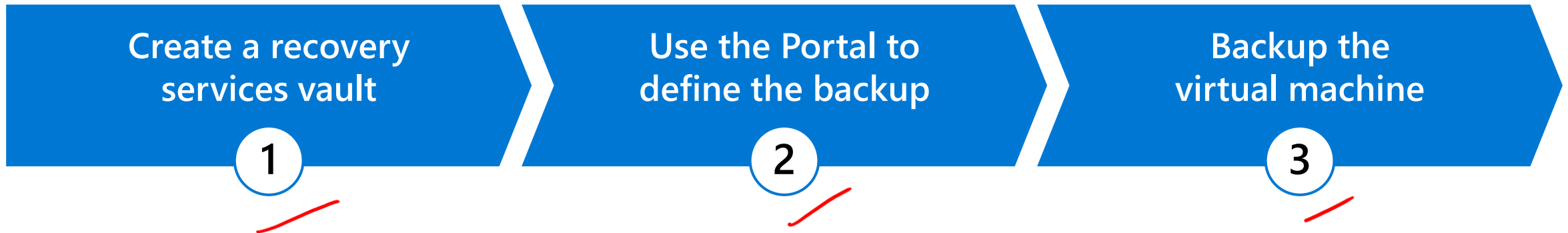
☒ Bare Metal Recovery

Step: Prepare Infrastructure  

Prepare Infrastructure

MARS

# Backup Virtual Machines



Use a Recovery Services Vault in the region where you are performing your Virtual Machine backups and choose a replication strategy for Vault

Take snapshots (recovery points) of your data at defined intervals. These snapshots are stored in recovery services vaults

For the Backup extension to work, the Azure VM Agent must be installed on the Azure virtual machine

# 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

B: ——— vhd  
robocopy

**ContosoWebFE1**  
Backup Item

[Backup now](#) [Restore VM](#) [File Recovery](#) [Stop backup](#) [Resume backup](#)

Alerts and Jobs      Backup status

[View all Alerts](#) (last 24 hours)      Backup Pre-Check ✓ Passed

[View all Jobs](#) (last 24 hours)      Last backup status ✓ Success 3/12/2020, 12:20:38 AM

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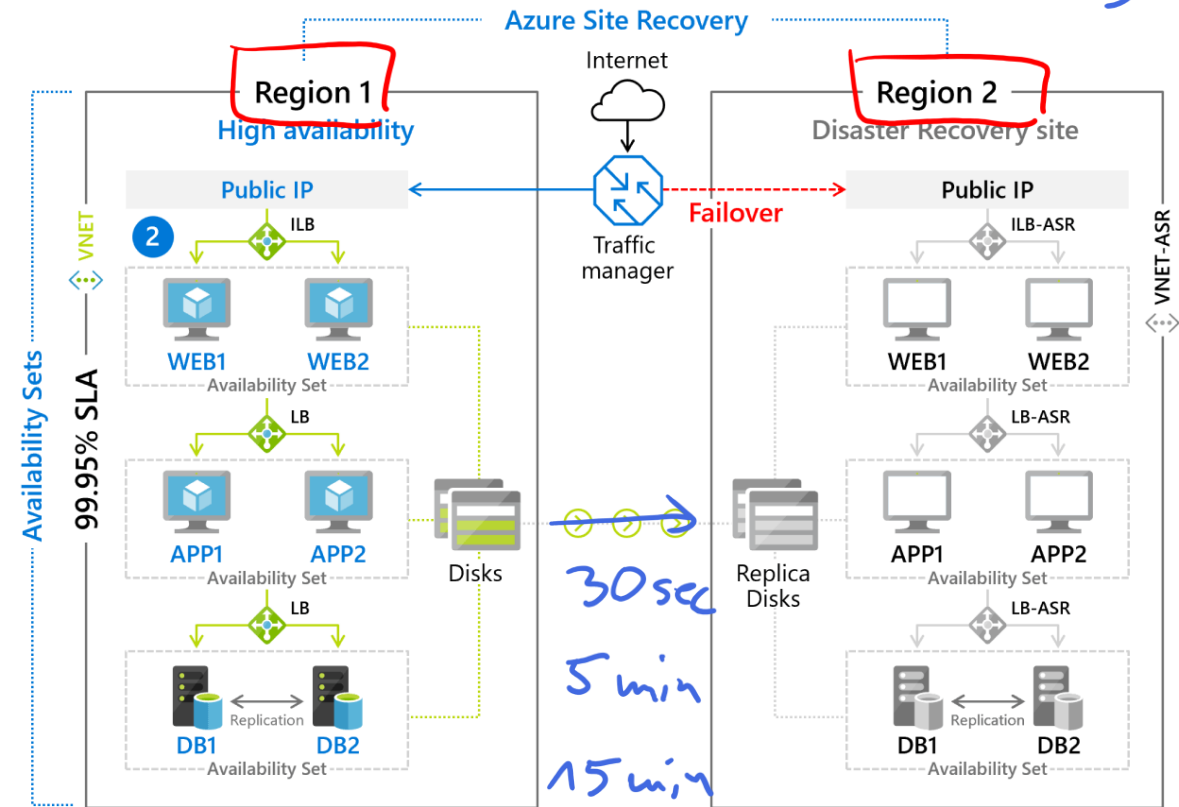
**Restore points (30)**

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

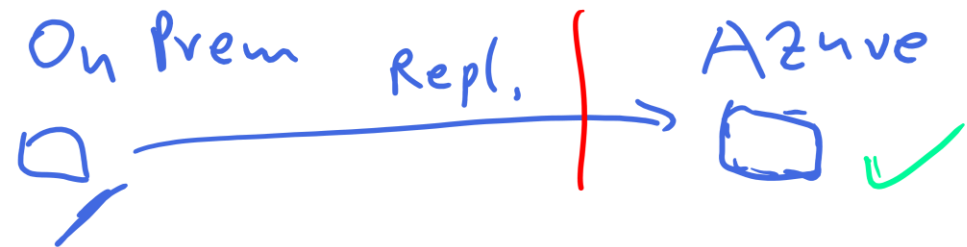
| Time                   | Consistency      |
|------------------------|------------------|
| 3/12/2020, 12:20:42 AM | Crash Consistent |
| 3/11/2020, 12:20:59 AM | Crash Consistent |

# Implement Azure Site Recovery

- Manages the orchestration of disaster recovery
- Replicates workloads continuously from a primary location or region to a secondary location
- Failover to shift to the secondary location; failback to return to the primary location



Azure Migration Project



# Learning Recap – Configure Virtual Machine Backups



**Check your  
knowledge  
questions and  
additional  
study**

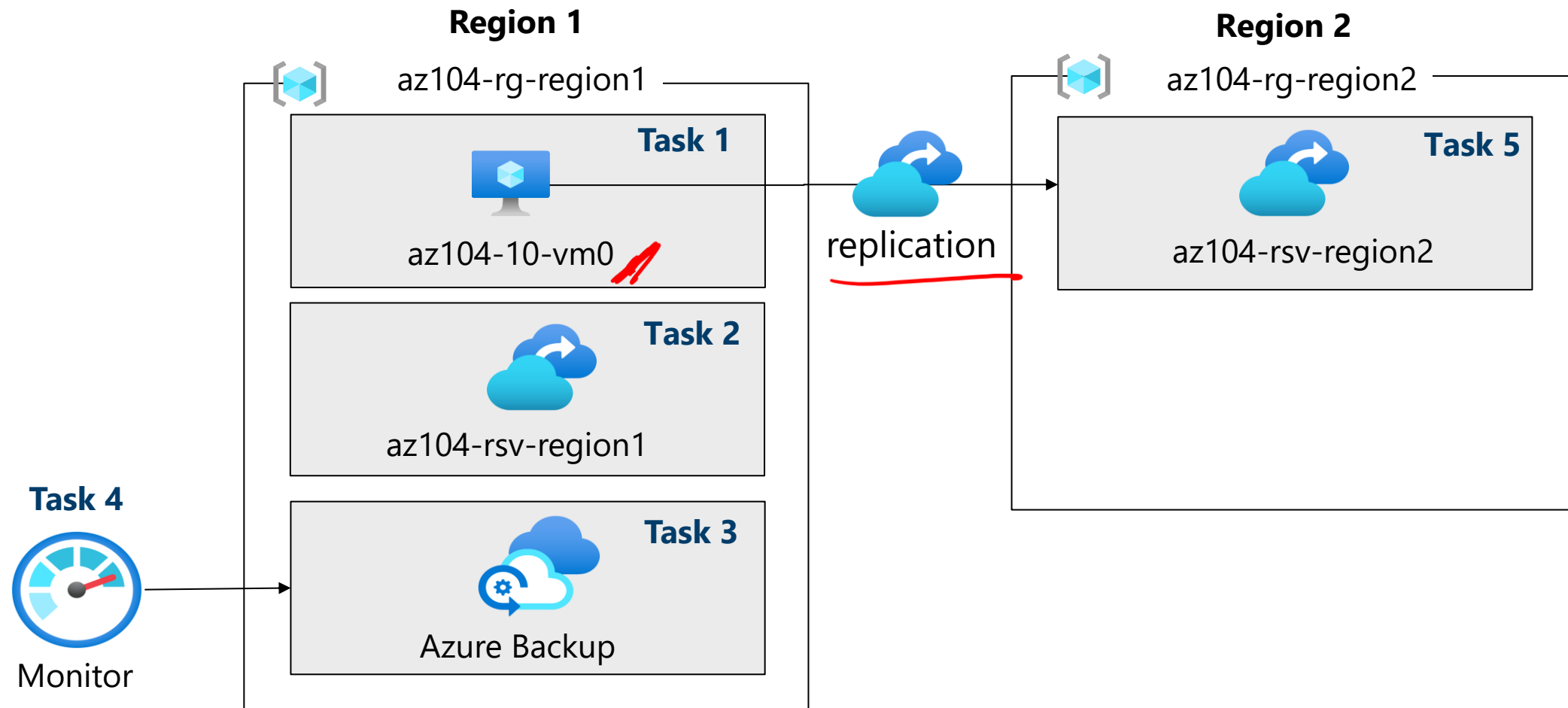
- Introduction to Azure Backup
- Protect your virtual machines by using Azure Backup
- Implement hybrid backup and recovery with Windows Server IaaS
- Protect your Azure infrastructure with Azure Site Recovery



# Lab – Implement Data Protection



# Lab 10 – Architecture diagram



# End of presentation

