



*Theoria cum Praxi  
Theoria multiplex -  
Veritas una*

# AZ-801

## Configuring Windows Server Hybrid Advanced Services

### 7 Migrate Windows Server to the Cloud



# AZ-801 Course Outline

- 1 Windows Server Security on Prem
- 2 Windows Server Security Cloud
- 3 Failover Cluster
- 4 Disaster Recovery on Prem
- 5 Disaster Recovery Cloud
- LP4 [ 6 Windows Server Upgrade and Migrate
- 7 Migrate Windows Server to Cloud ←
- LP5 [ 8 Windows Server Monitoring
- 9 Monitoring in the Cloud

# Migrate Servers and Workloads in on-premises and Hybrid Environments *(Implementing migration in hybrid scenarios)*

- Migrate on-premises Windows Server instances to Azure IaaS virtual machines
- Upgrade and migrate Windows Server IaaS virtual machines
- Containerize and migrate ASP.NET applications to Azure App Service
- Lab 07 – Migrating Hyper-V VMs to Azure by using Azure Migrate

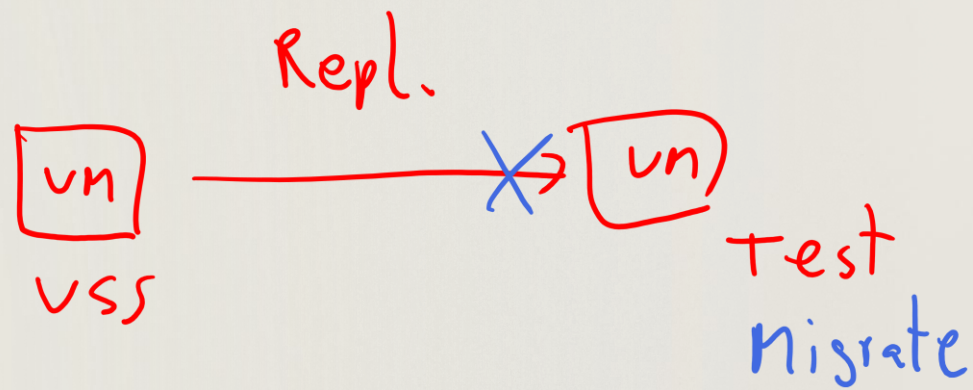
Azure Migrate IaaS  
☐ Repl ✗ ☐ ✓

2h

Cloud Native?

On Prem

Azure



# Migrate on-premises Windows Server Instances to Azure IaaS Virtual Machines

# Plan Your Migration

Preplanning phases involve an assessment of:

- Business model
- Current processing and systems
- How the business process will appear in Azure after the migration

## Choose a migration strategy

- Rehost – Enables you to migrate your existing apps to Azure quickly
- Refactor – Requires minimal changes to apps  
Container
- Rearchitect – Seeks to optimize the app architecture for cloud scalability
- Rebuild – Rebuilds an app from scratch using Azure cloud technologies

# Plan Your Migration

## Migration tools

- Azure Migrate: Server Assessment
- Azure Migrate: Server Migration
- Azure Migrate: Database Assessment
- Azure Migrate: Database Migration
- Azure Migrate: Web App Assessment
- Azure Migrate: Data Box *off line*

It's important you understand which tool to use in a given scenario.

# Describe Azure Migrate

## What is Azure Migrate?

Azure Migrate is a set of features located in a centralized hub that you can use to assess and migrate different workloads to Azure

- Azure Migrate components include:
  - Unified migration platform.
  - Assessment and migration tools
  - Assessment and migration of different workloads.

## How can you use Azure Migrate?

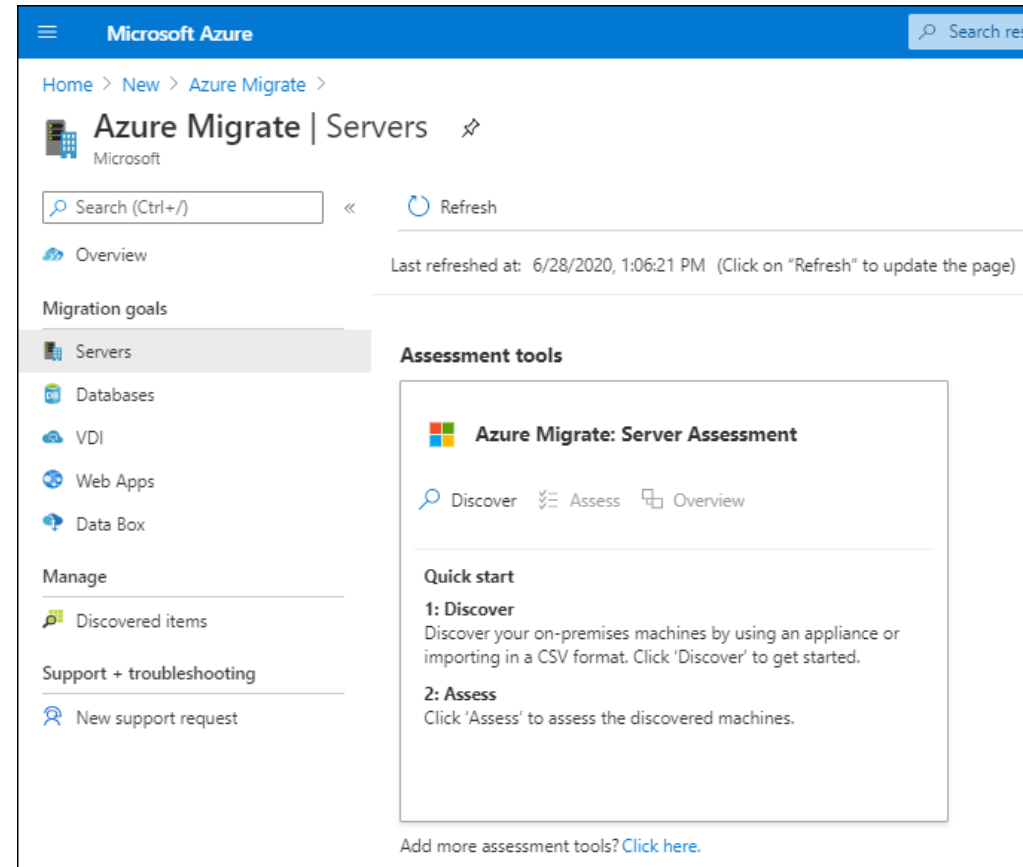
There are six major scenarios where you can use Azure Migrate. These are:

- Windows Server workloads
- SQL Server workloads
- Linux workloads
- ASP.NET-PHP-Java apps
- SAP HANA
- Specialized compute

# Perform Server Assessment

A server assessment consists of the following steps:

- Discover machines
- Create assessments





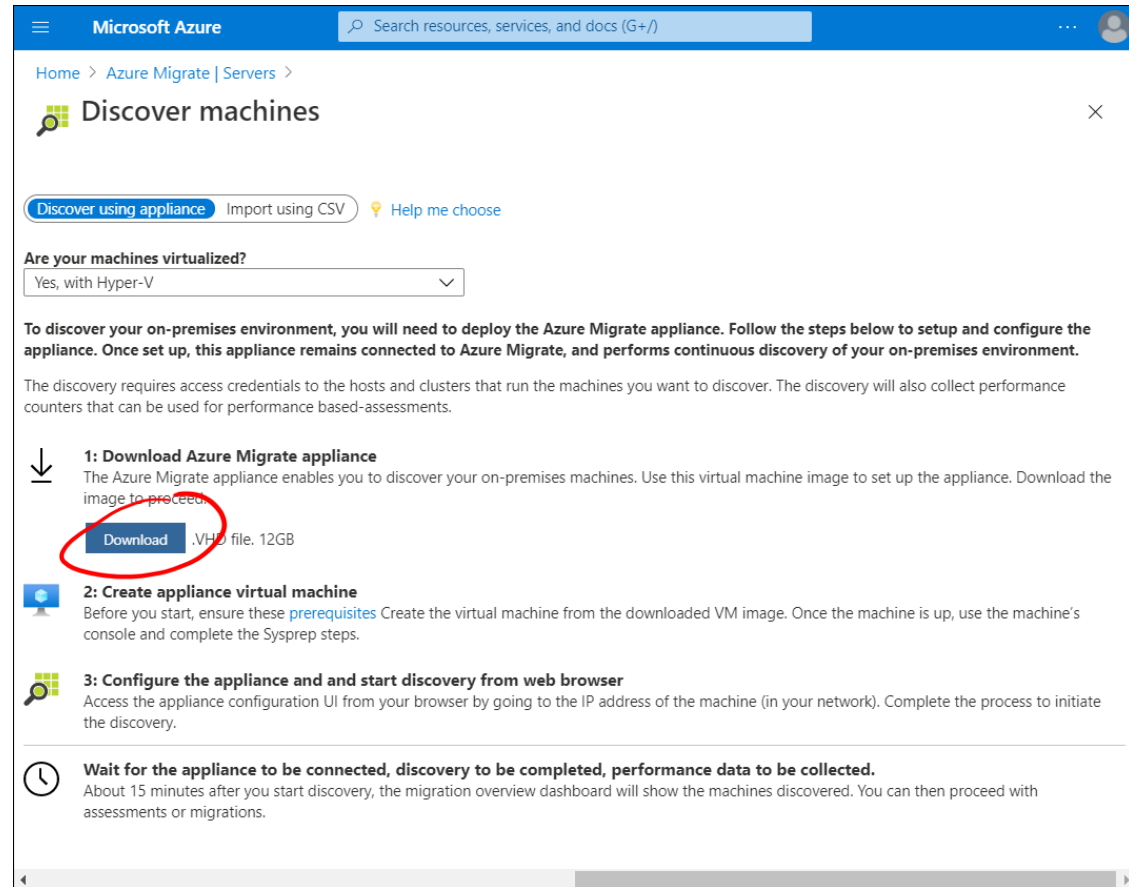
# Perform Server Assessment

## Discover machines

- To perform an agentless discovery, you use the Azure Migrate: Server Assessment tool
- This tool guides you through downloading a lightweight collector appliance

After you download the appliance:

- Import and start the collector appliance
- Complete its configuration
- Connect it to your Azure Migrate project

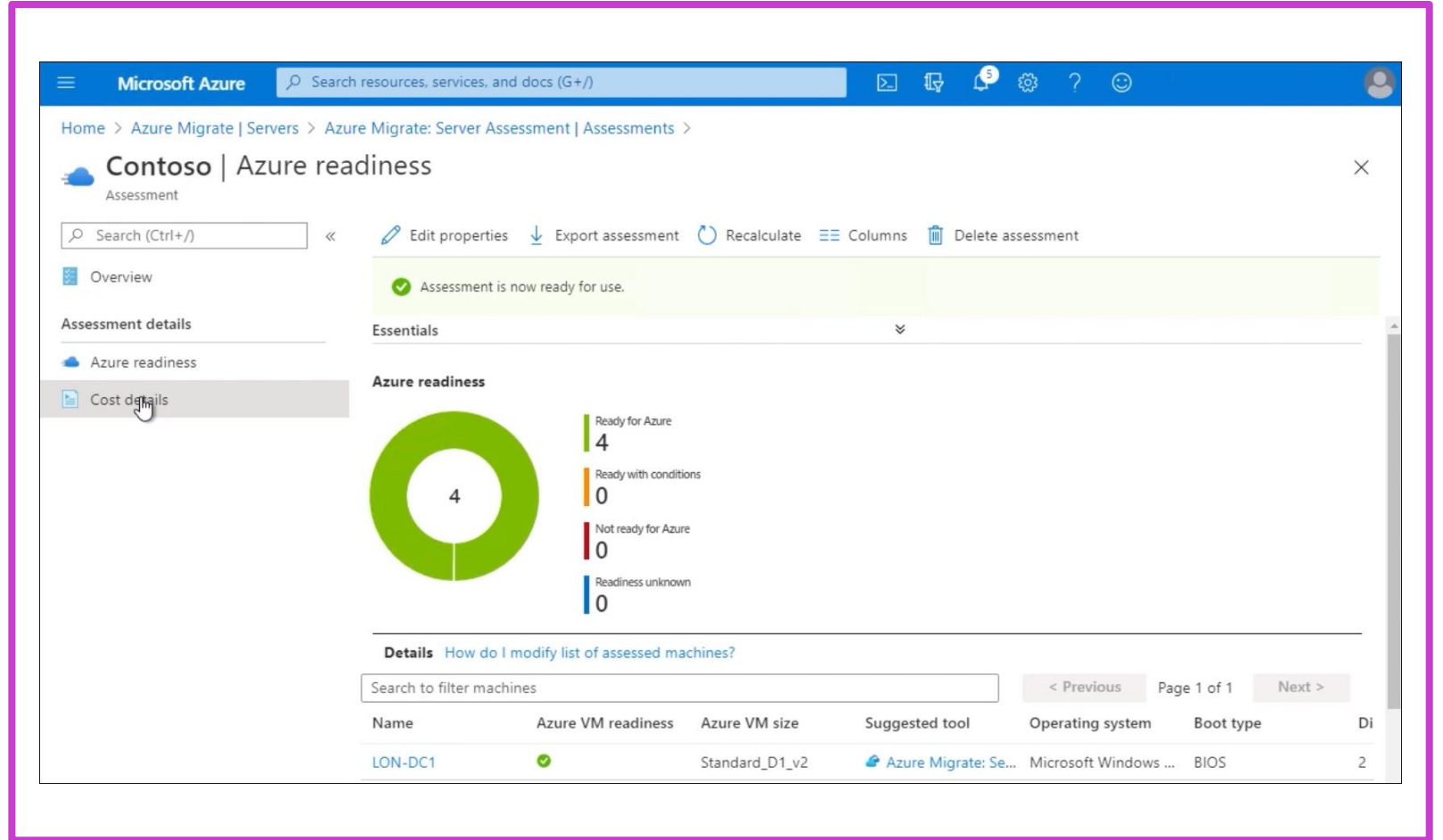


# Perform Server Assessment

## Create an assessment

After you have completed the discovery and data collection phase:

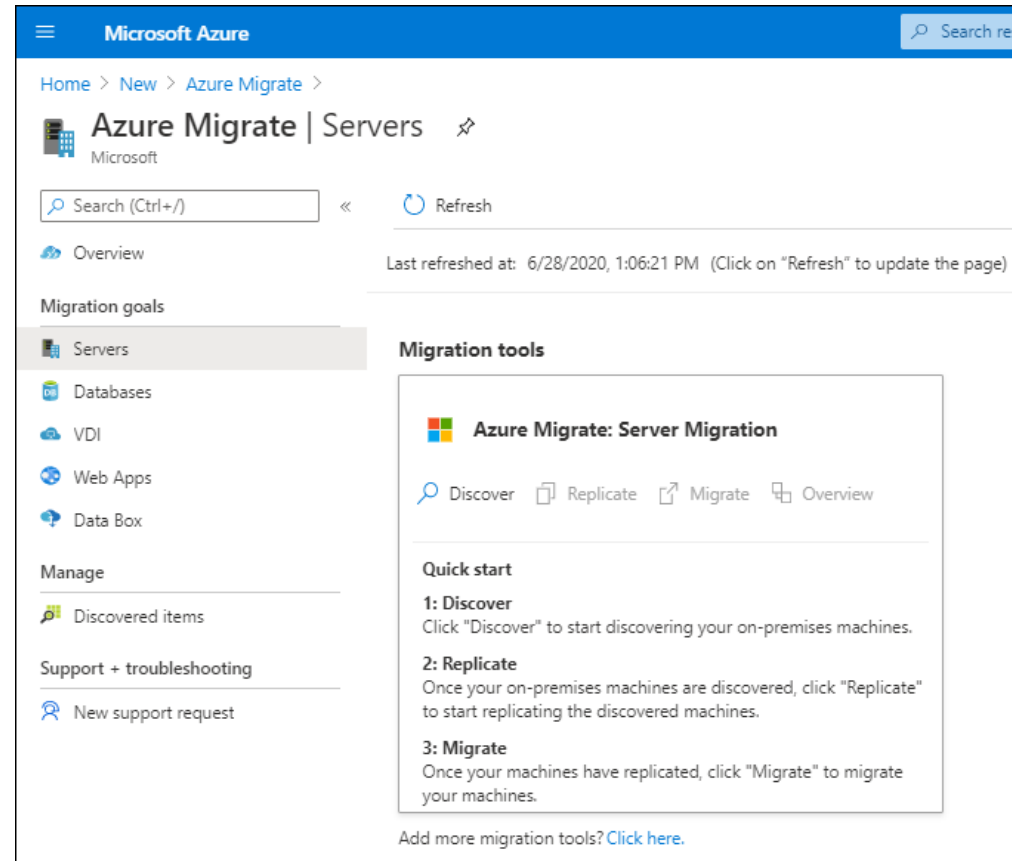
- Azure Migrate assesses your environment's readiness to be migrated to Azure
- Azure creates an assessment using default settings
- You can change these settings later by editing the assessment's properties



# Migrate Windows Server Workloads by Using Azure Migrate

The steps involved in a technical implementation phase:

1. Prepare Azure for the Azure Migrate: Server Migration tool
2. Prepare the on-premises VMs for migration
3. Replicate the on-premises VMs
4. Migrate the VMs



# Upgrade and migrate Windows Server IaaS virtual machines



# Describe Azure Migrate

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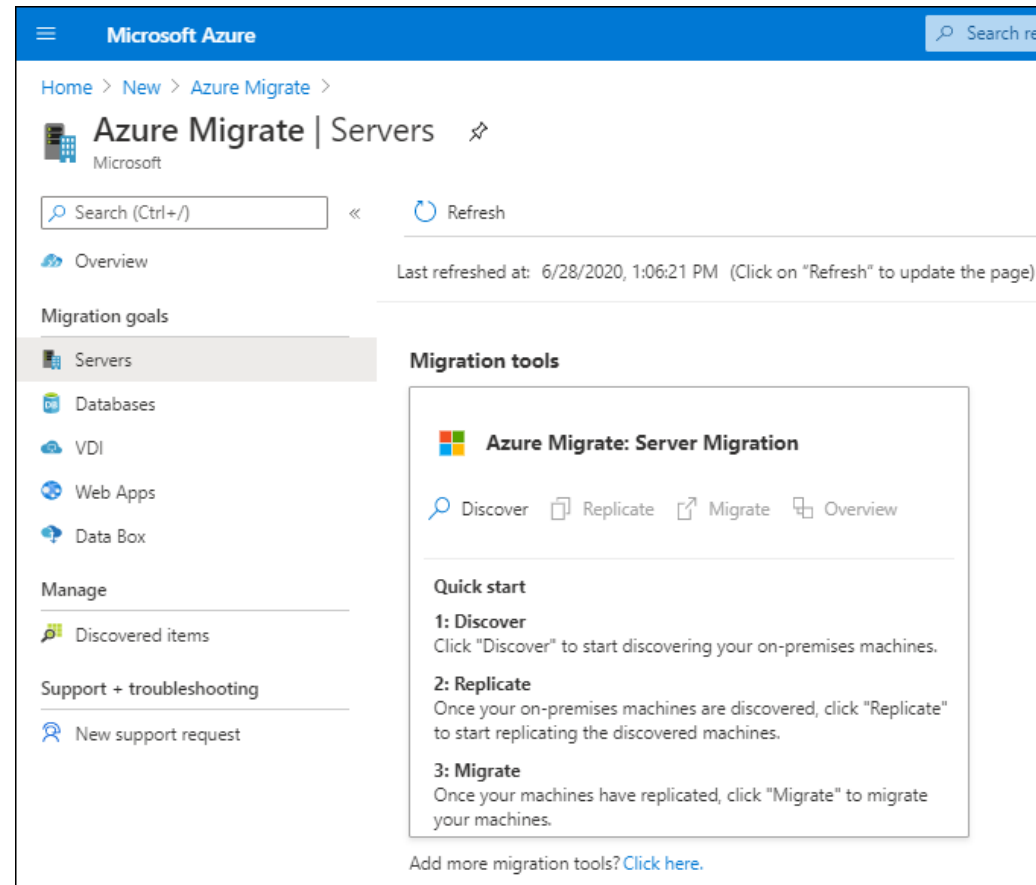
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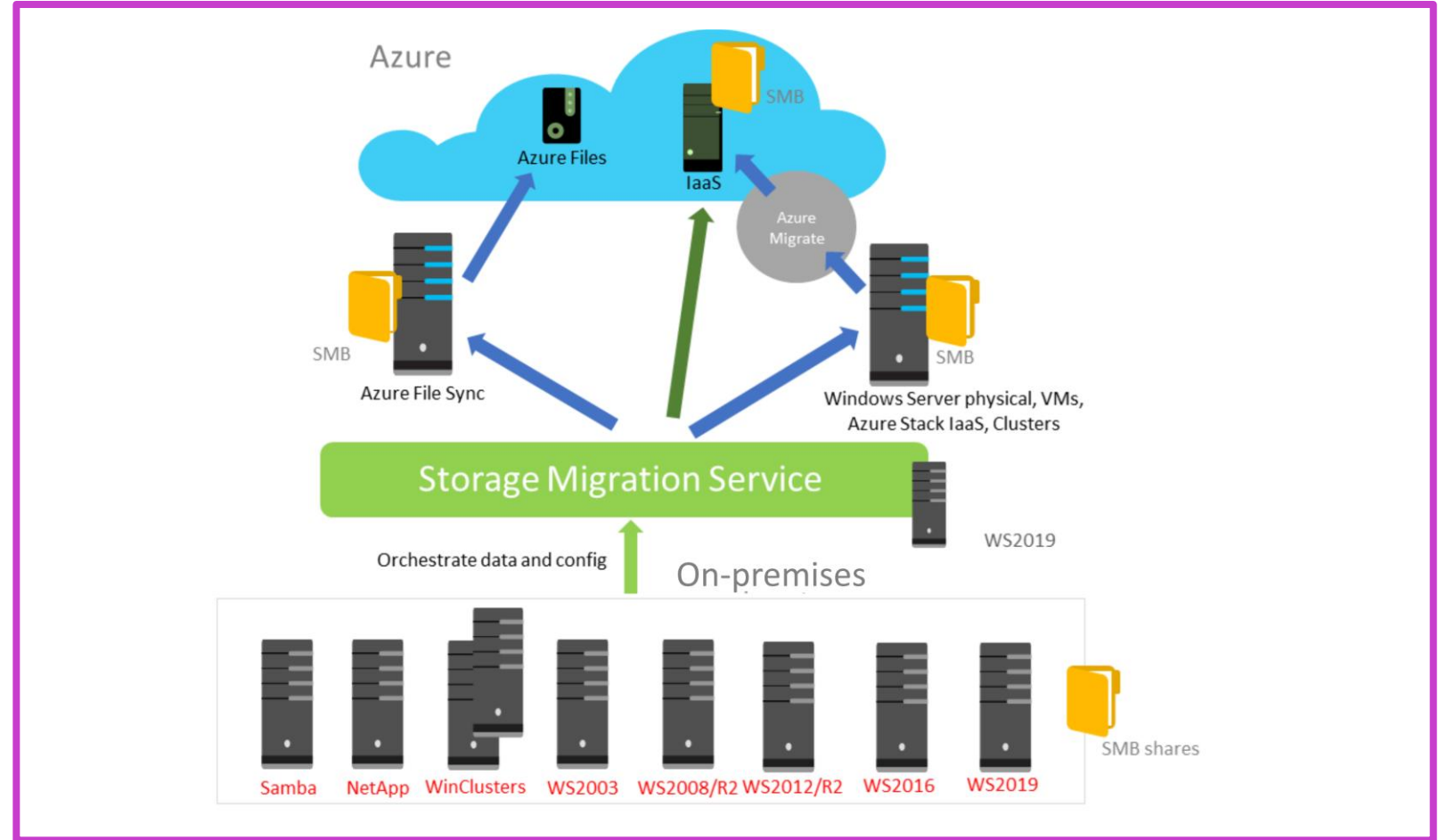
# Describe Storage Migration

## Benefit of Storage Migration Service:

It can assign the identity of the source server to the target server, including the server name and the server IP addresses

## The general process for using Storage Migration Service:

- Inventory source servers
- Transfer data
- Cut over identities



# Describe Storage Migration

## Orchestrator server

- Requirements for an orchestrator server are:
- Running Windows Server 2019 or newer
- Installed with 2 CPU cores and 2 GB of memory

## Source servers:

- Can be running Windows Server 2003 or newer versions
- Can also be running Linux (Samba)

## Destination servers

- Running Windows Server 2012 R2 or newer
- Installed with 2 CPU cores and 2 GB of memory

## Security

On source and destination servers, the following firewall rules must be enabled:

- File and Printer Sharing (SMB-In)
- Netlogon Service (NP-In)
- Windows Management Instrumentation (DCOM-In)
- Windows Management Instrumentation (WMI-In)



# Migrate File Servers by Using Storage Migration Service

After you've installed the service and opened any necessary firewall ports, you must complete the following additional migration steps:

- Inventory your servers
- Transfer data
- Cut over to the new servers

## Step 1: Install Storage Migration Service and check firewall ports

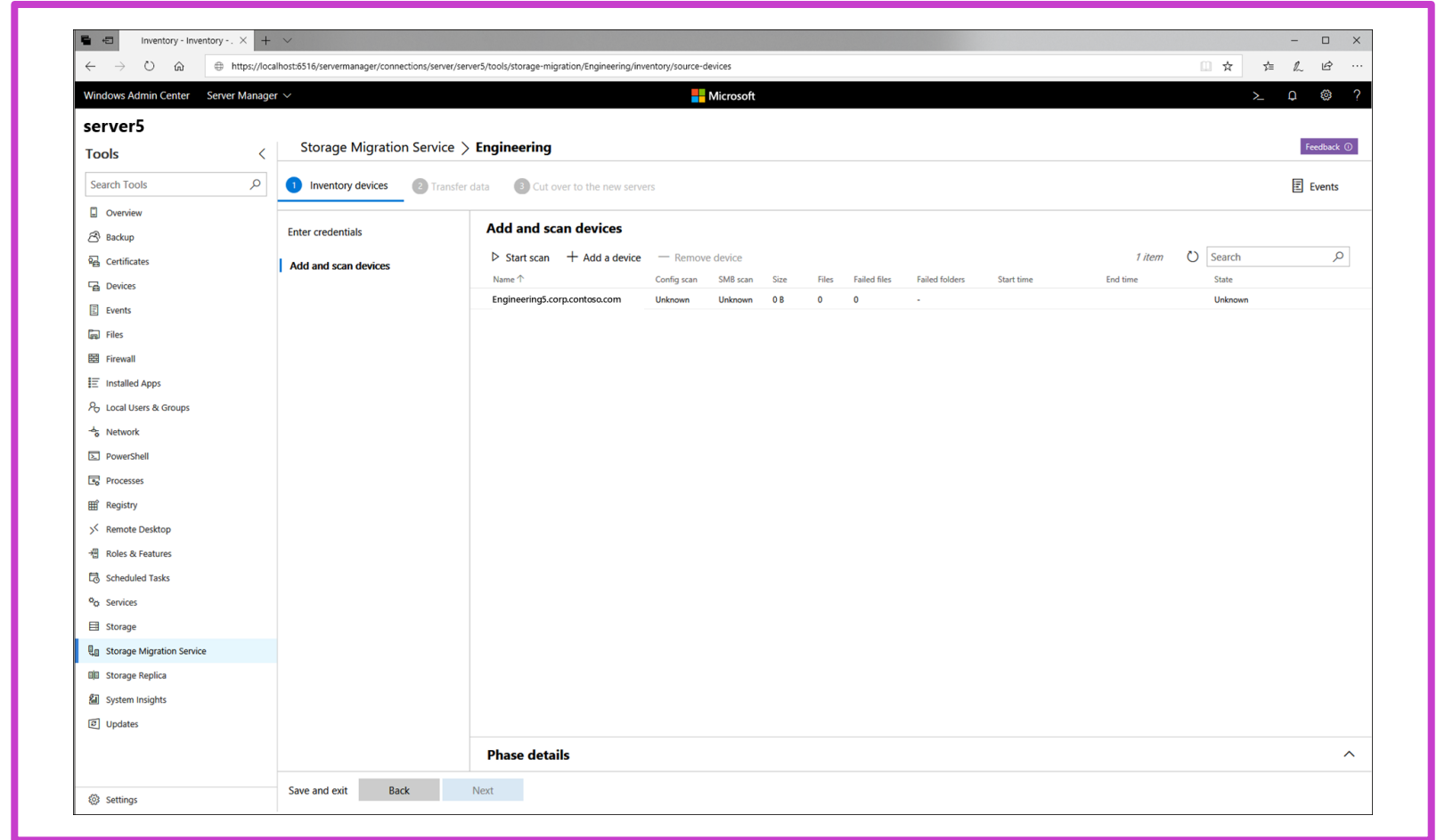
# Migrate File Servers by Using Storage Migration Service

## Step 2: Create a job and inventory your servers

- Add the servers to be inventoried and start a scan

The scan of the source servers identifies:

- Shares
- Server configuration
- Network adapter configuration
- Volumes

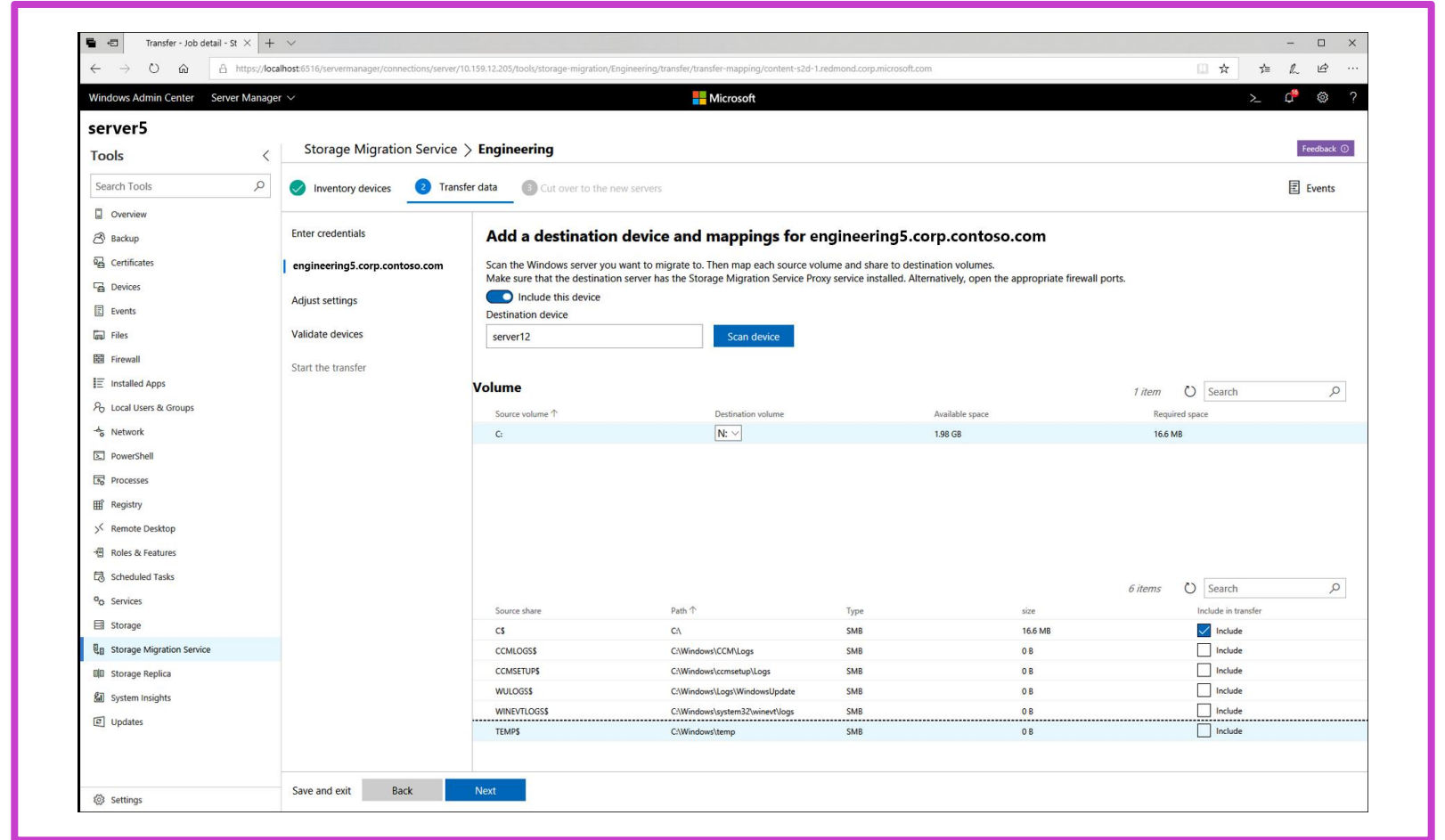


# Migrate File Servers by Using Storage Migration Service

## Step 3: Transfer data to the destination servers

To transfer data, you must:

- Enter credentials that have administrative permissions on the destination server
- Map source volumes to the volumes on the destination servers
- Identify which shares you want to migrate
- Choose to migrate local users and groups from source servers to the destination server



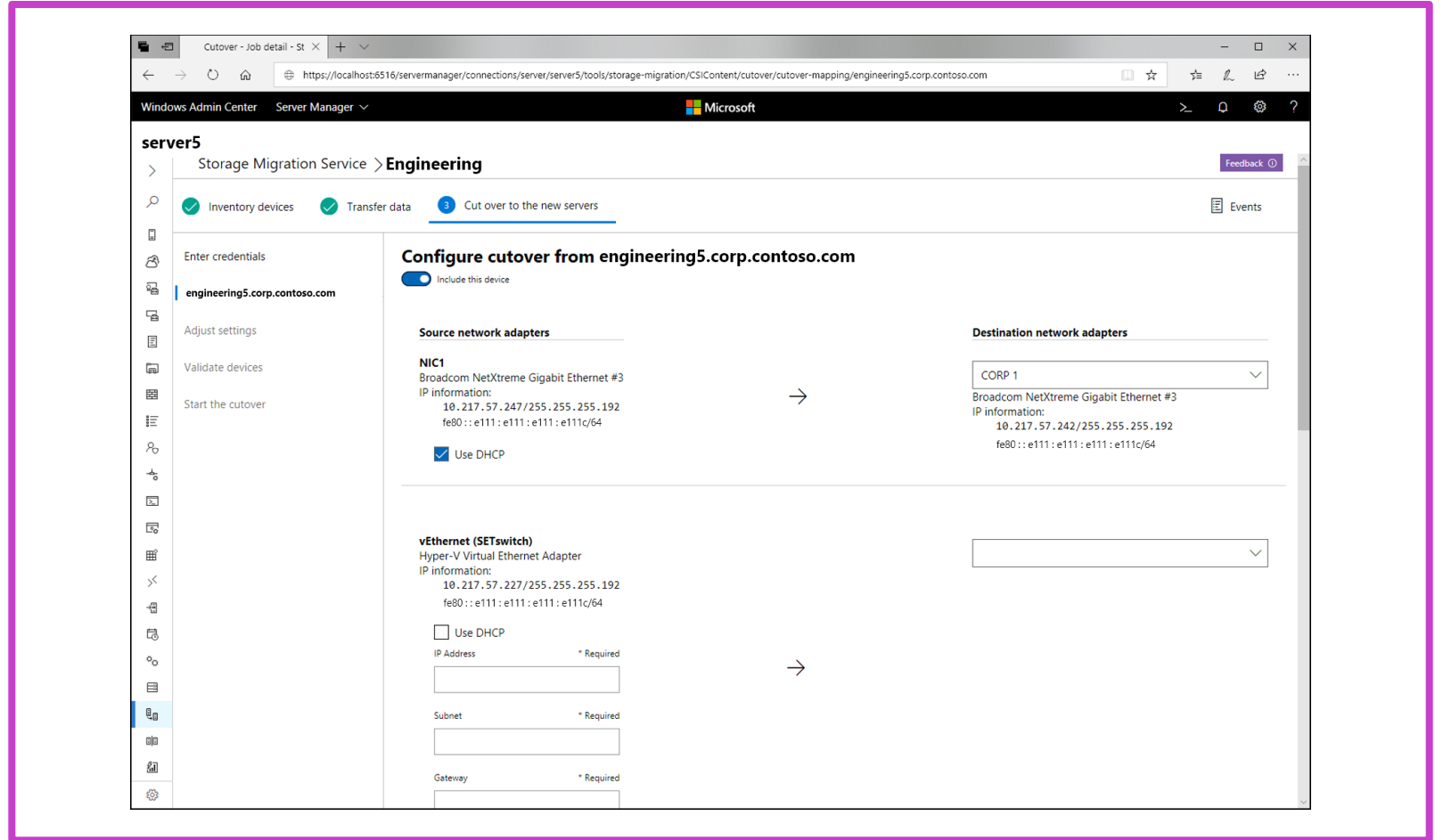
# Migrate File Servers by Using Storage Migration Service

## Step 4: Cut over to the new servers

Moves the identity information from the source server to the destination server.

When you perform the cutover, you must specify:

- Which adapter on the destination server will be configured with the source IP addresses
- The IP address to assign to the source server
- The name to assign to the source server



Wie kann ich einen  
Container Starter?

Dockerfile

→ ACI Container Instance  
→ App Service  
→ AKS Kubernetes  
→ ACA Container Apps

# Containerize and migrate ASP.NET applications to Azure App Service

Alternativen in Cloud zu VMs  
→ App Service  
Docker Container

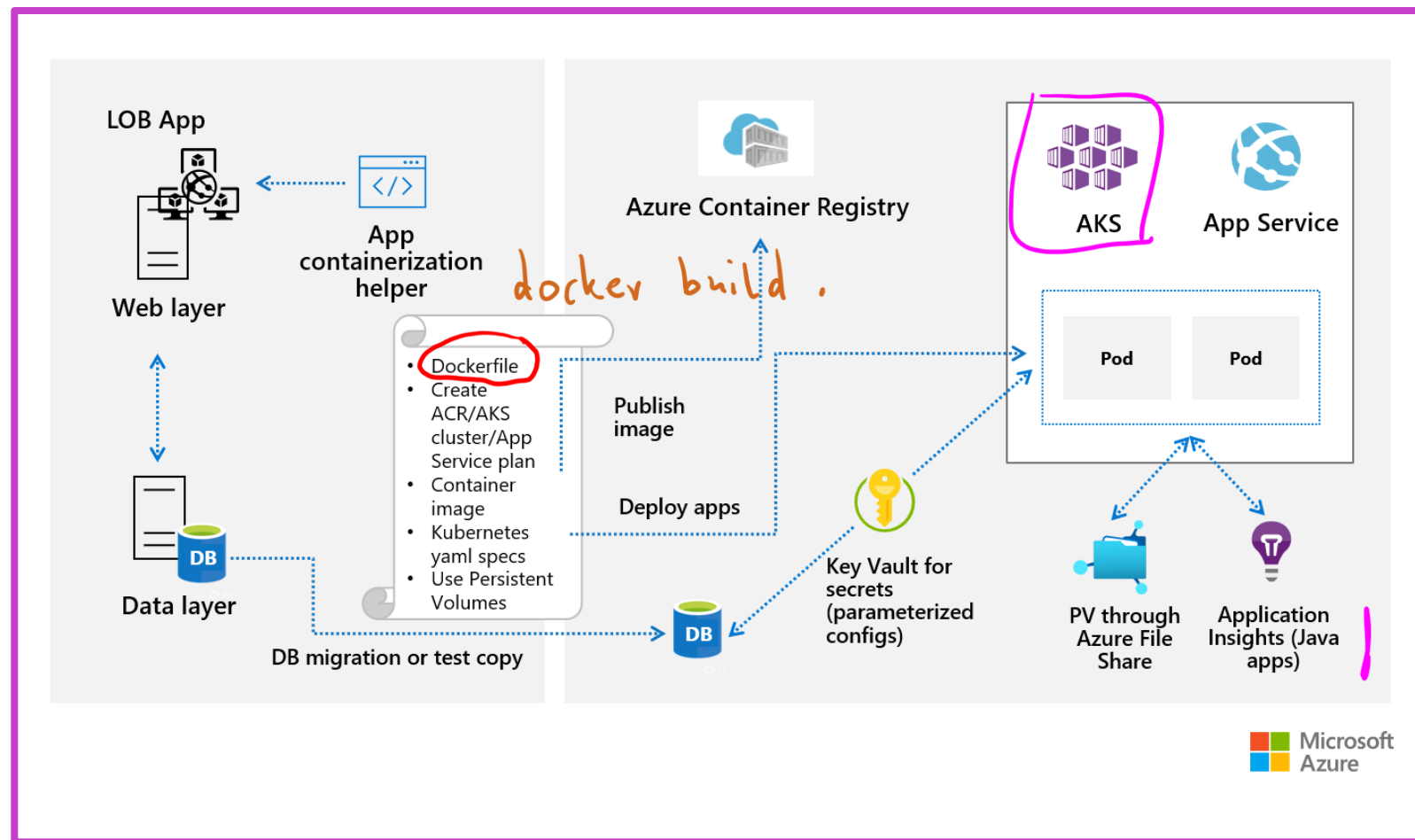
# Azure Migrate App Containerization overview

The tool currently supports containerization and migration of following ASP.NET applications:

- ASP.NET applications using Microsoft .NET framework 3.5 or newer
- Application servers running Windows Server 2008 R2 or newer
- Applications running on Internet Information Services (IIS) 7.5 or newer

**Azure Migrate: App Containerization** helps you to:

1. Discover your application
2. Build the container image
3. Deploy to Azure Kubernetes Service

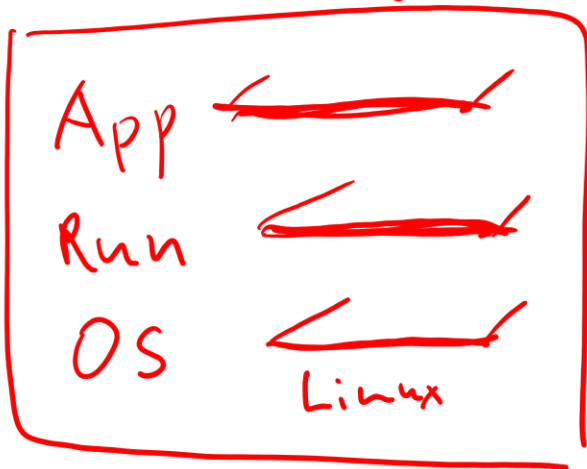


Registry  
e.g. Docker Hub  
ACR

# Docker Container

read only!

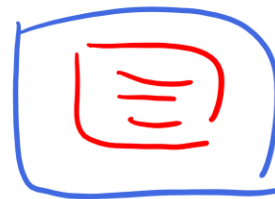
Image (Fs)



stateless!

Container (compute)

docker run ...



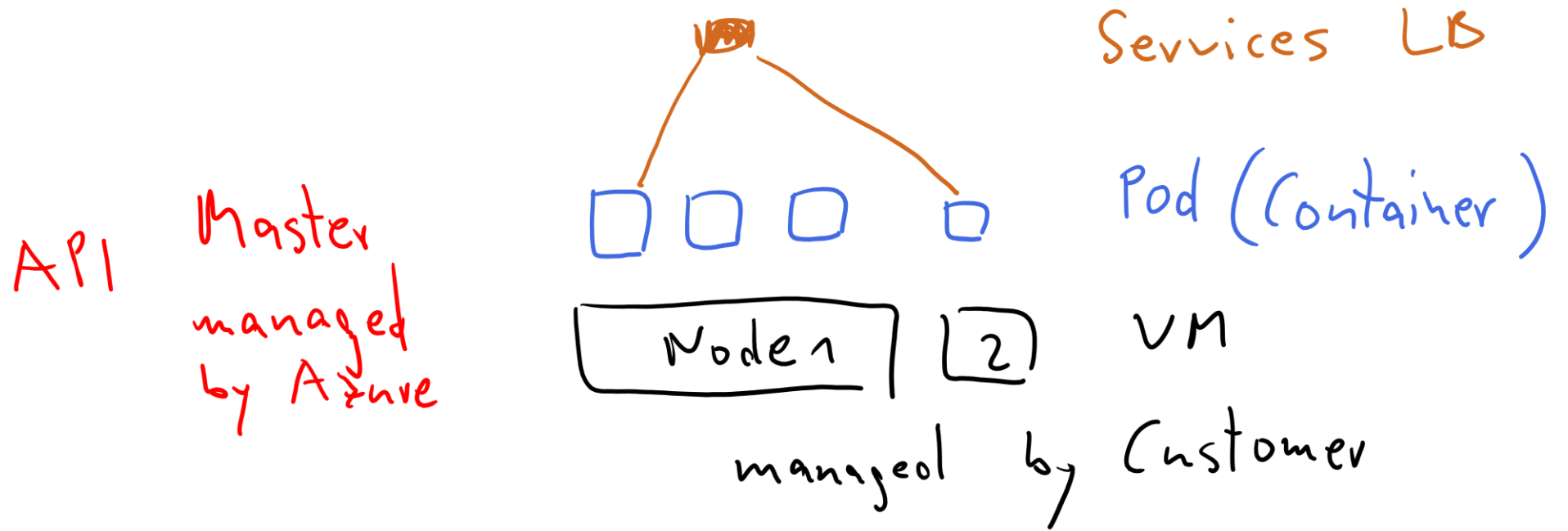
Storage



Kubernetes  
Cluster

AKS

Linux Container  
Windows "



ACA

API



# Lab 07: Migrating Hyper-V VMs to Azure by using Azure Migrate



# Lab 07 – Migrating Hyper-V VMs to Azure by using Azure Migrate



## Lab scenario

Despite its ambitions to modernize its workloads as part of migration to Azure, the Adatum Enterprise Architecture team realizes that, due to aggressive timelines, in many cases, it will be necessary to follow the lift-and-shift approach. To simplify this task, the Adatum Enterprise Architecture team started exploring the capabilities of Azure Migrate. Azure Migrate serves as a centralized hub to assess and migrate to Azure on-premises servers, infrastructure, applications, and data.

While databases, web apps, and virtual desktops are in scope of the next stage of the migration initiative, Adatum Enterprise Architecture team wants to start by evaluating the use of Azure Migrate for migrating their on-premises Hyper-V virtual machines to Azure VM.

## Objectives

- Prepare for assessment and migration by using Azure Migrate
- Assess Hyper-V for migration by using Azure Migrate
- Migrate Hyper-V VMs by using Azure Migrate

# End of presentation

