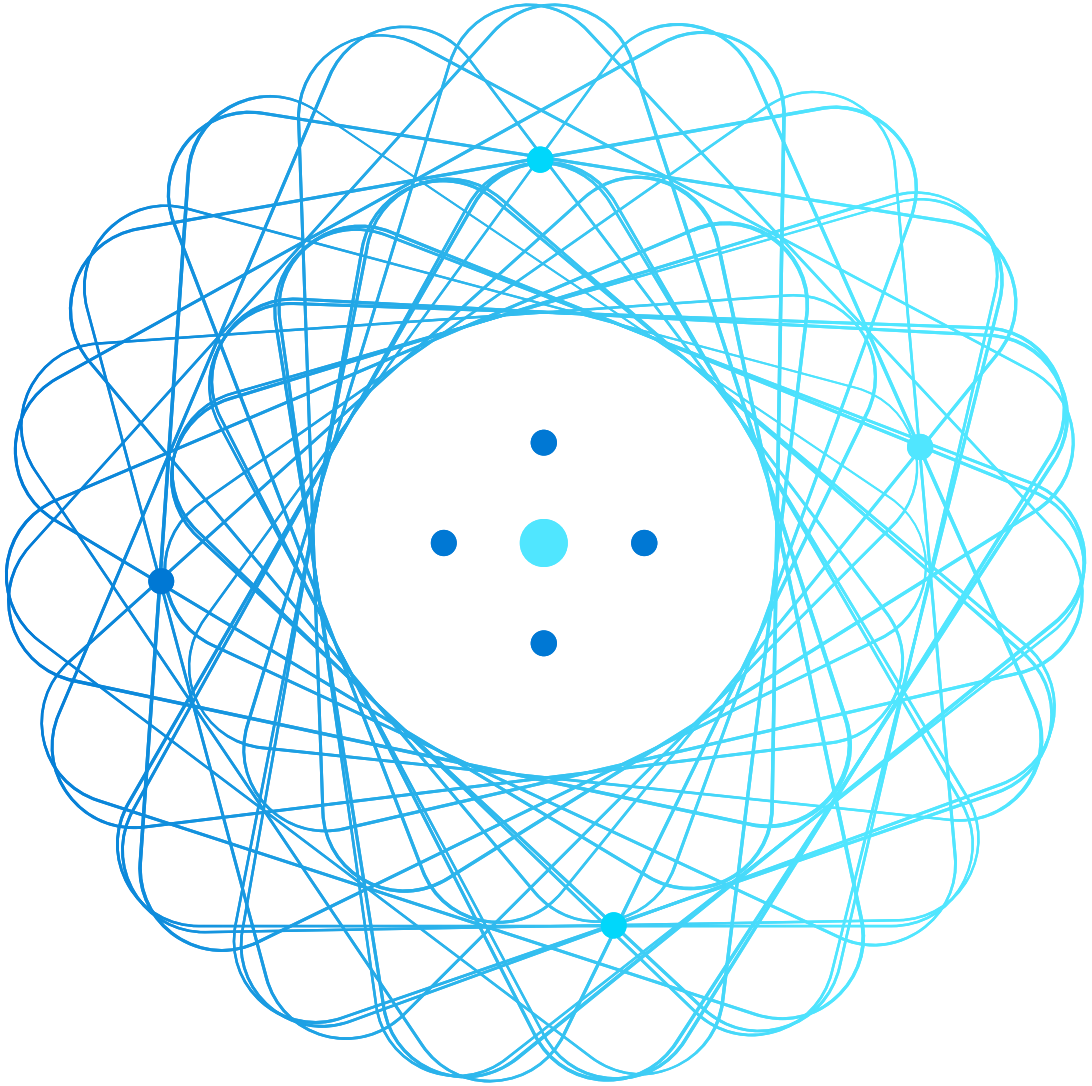
Microsoft Azure

AZ-305

Designing Microsoft Azure Infrastructure Solutions



AZ-305 Agenda

(AZ-900) 1. AZ-104 2. AZ-305

Lab

Frage Antwort

Performance Based Testing?

Module 01 Design a governance solution
Module 02 Design a compute solution
Module 03 Design a non-relational data storage solution
Module 04 Design a data storage solution for relational data
Module 05 Design a data integration solution
Module 06 Design an application architecture solution
Module 07 Design Authentication and Authorization Solutions
Module 08 Design a solution to log and monitor Azure resources
Module 09 Design a network infrastructure solution
Module 10 Design a business continuity solution
Module 11 Design a migration solution

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Skillpipe → MS Learn

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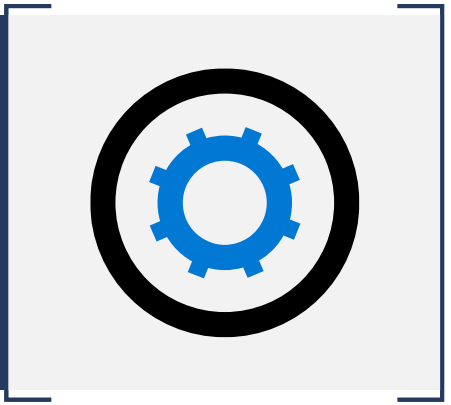
Design a migration solution



Introduction

- Evaluate migration with the Cloud Adoption Framework
- Describe the Azure Migration Framework
- Assess your workloads
- Compare migration tools
- Migrate your databases
- Select an online storage migration tool
- Select an offline storage migration tool
- Summary and resources

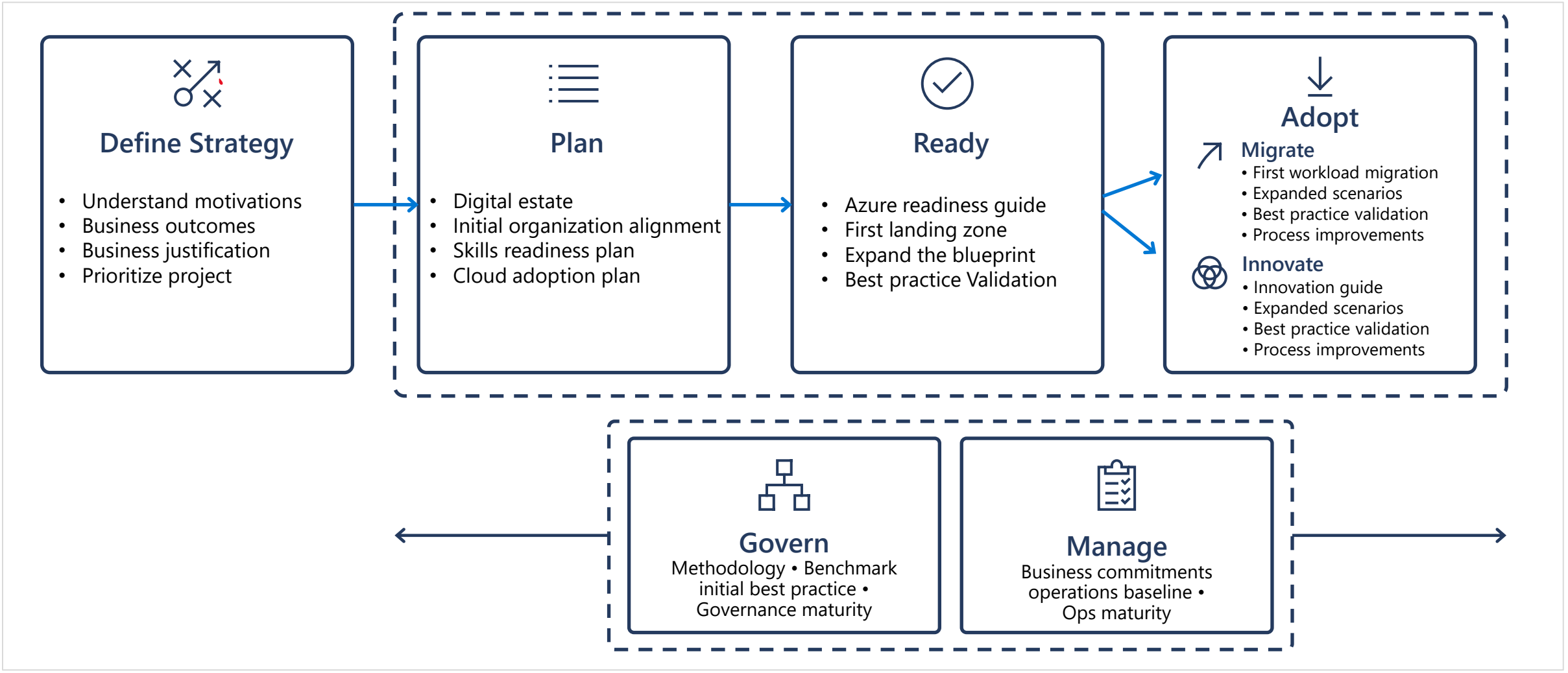
AZ-305: Design Infrastructure Solutions (25-30%)

Design migrations

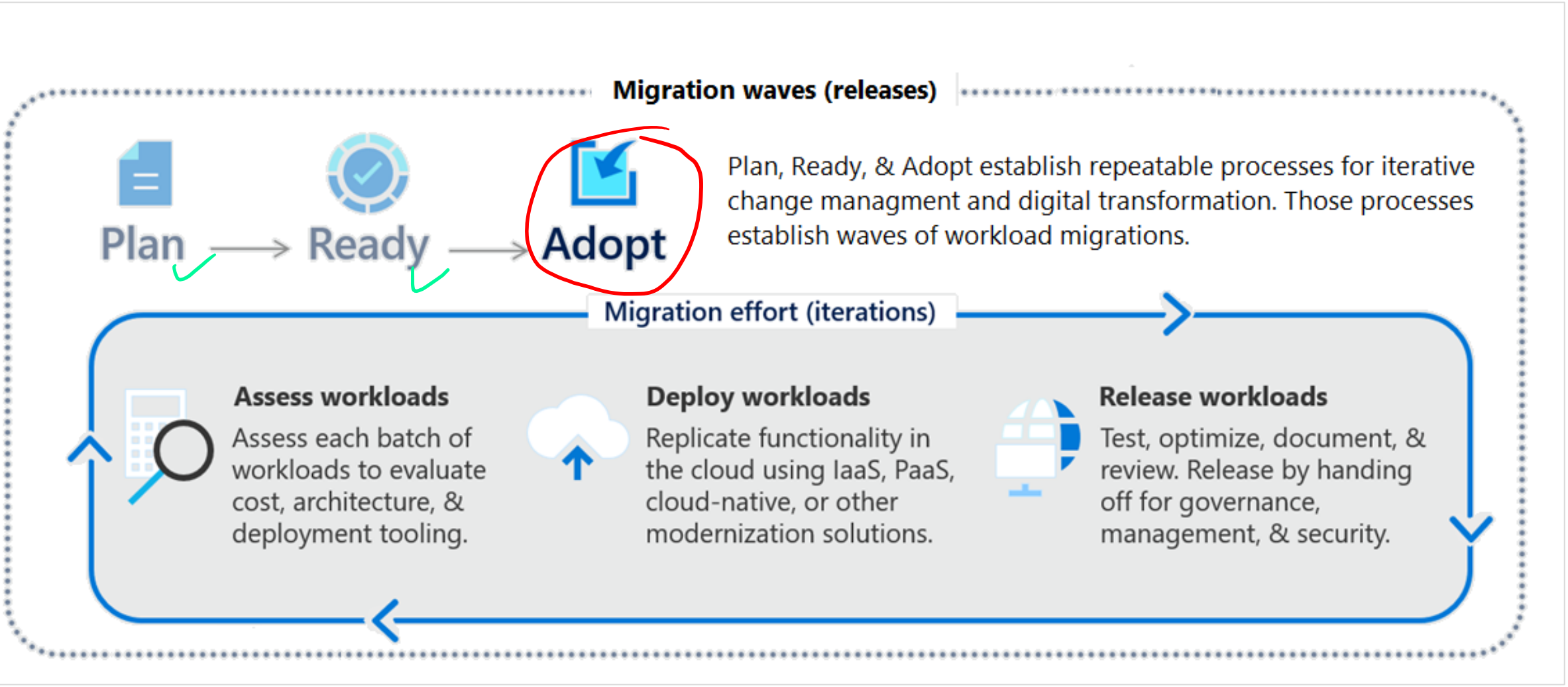
- Evaluate migration solution that leverages the Cloud Adoption Framework
- Assess and interpret on-premises servers, data, and applications for migration
- Recommend a solution for migrating applications and Virtual Machines
- Recommend a solution for migrating databases
- Recommend a solution for migrating unstructured data

Evaluate migration with the Cloud Adoption Framework

Review the Cloud Adoption Framework



Focus on migration efforts



Describe the Azure Migration Framework

Determine your migration strategy

Select a strategy that meets your goals – you may need several strategies

Pattern	When to use
Rehost	• Move workloads quickly to the cloud • Don't need immediate changes to app capabilities
Refactor	• Apply Azure DevOps practices or using a container strategy for workloads. • Consider the portability of your existing code base and available development skills.
Rearchitect	• Use existing application investments, • Apps need major revisions for new features and to work effectively on a cloud platform.
Rebuild (new)	• Rapid development and existing apps have limited functionality and lifespan. • Expedite business innovation by using Azure DevOps practices. • Legacy apps as no code or low apps in the cloud.

Lift & shift

Cloud native

Assess your workloads

Determine what to migrate

Migrate and modernize all your mission-critical workloads to Azure.

Scenario	Description
Windows Server workloads	• On-premises Windows virtual machines (not databases)
SQL Server workloads	• Databases and other functionality running on SQL Server virtual machines
Linux workloads	• RedHat or SUSE VMs, and Hadoop and Linux containers
ASP.NET-PHP-Java apps	• Customer-facing and internal-facing apps at the SaaS level
SAP HANA	• Enterprise resource planning with a centralized database
Specialized compute	• High-performance computing (HPC)

Compare migration tools

Identify migration tools

Tool	Usage
Azure Migrate: Server Assessment	• Physical servers and on-premises VMs running in Hyper-V and VMware environments as preparation for migrating to Azure.
Azure Migrate: Server Migration	• Physical servers and on-premises VMs running in Hyper-V, VMware environments, and other public cloud VMs.
Azure Migrate: Database Assessment	• Performs an assessment of on-premises Microsoft SQL Server databases as preparation for migration to Azure SQL Database, an Azure SQL Managed Instance, or Azure VMs running Microsoft SQL Server.
Azure Migrate: Database Migration	• Migrates data from your existing on-premises databases to databases running in Azure.
Azure Migrate: Web App Assessment	• Assessment of on-premises web apps and migrates them to Azure.
Azure Migrate: Data Box	• Move of large amounts of offline data to Azure by using Azure Data Box.

Migrate your databases

Select a database migration type

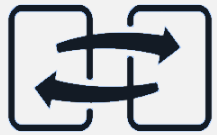
Database migrations can be performed offline and online

Migration type	Migration scenario
Offline	• Requires shutting down the server at the start of the migration. • Application downtime begins when the migration starts.
Online	• To limit downtime to the time required to cut over to the new environment when the migration completes, use an online migration. • Uses a continuous synchronization of live data, allowing a cutover to the Azure replica database at any time.

Each migration type supports different source and target database pairs

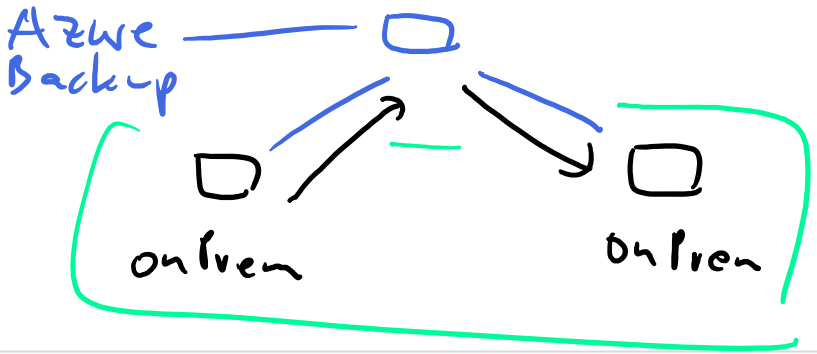
- Check for support of your migration scenario as migration tools are updated frequently

Select an online migration tool

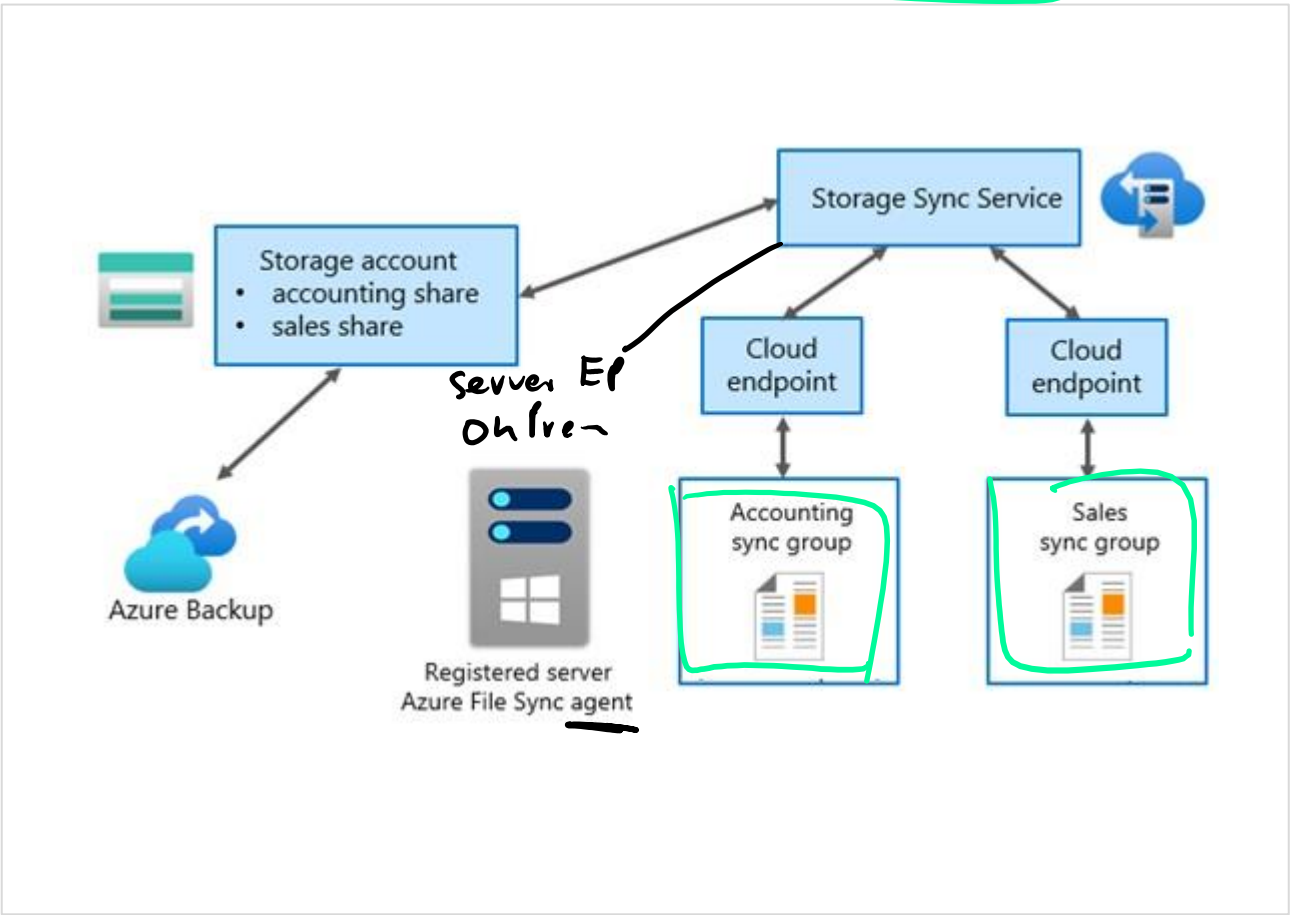


Consider using Azure File Sync

Azure File Sync can be used specifically for migration



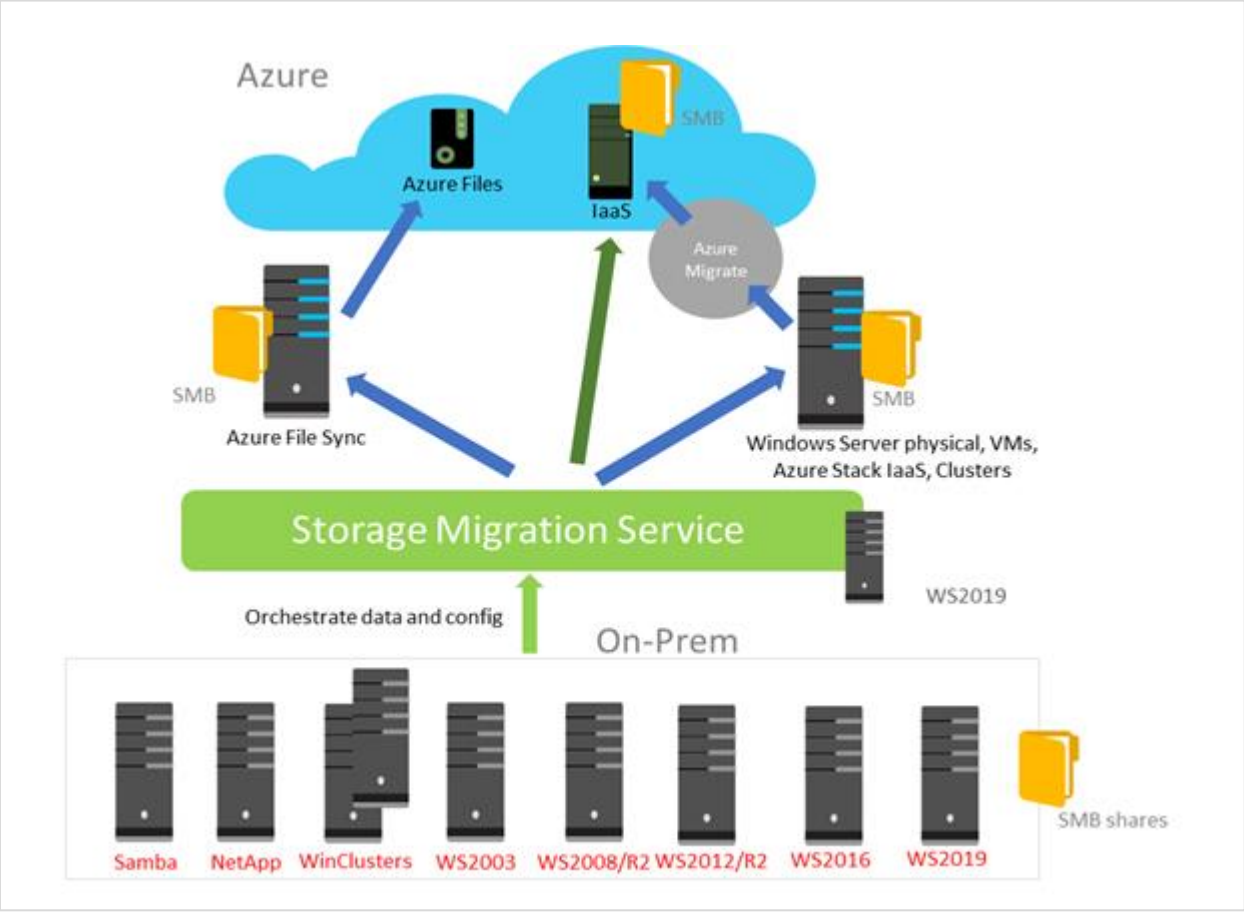
- Works in both hybrid and cloud migrations
- Transfers both the data stream and file metadata
- Combines with other products like Azure Data Box
- Supports tiering options



Consider the Storage Migration Service

Storage Migration Service migrates storage to Windows Server or to Azure.

- Inventory multiple servers and their data
- Rapidly transfer files, file shares, and security configuration from the source servers
- Optionally, cut over to the new servers.

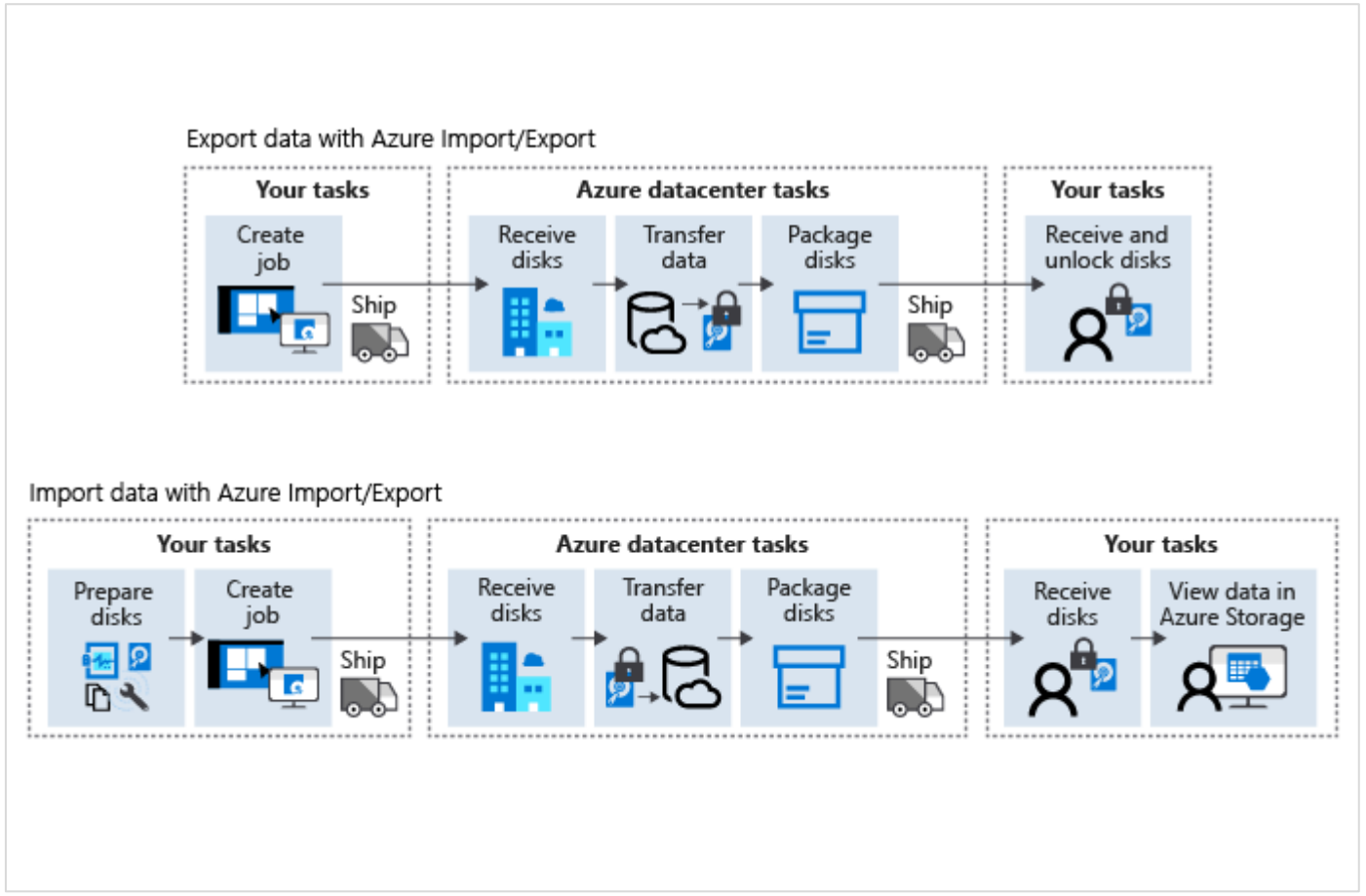


Select an offline migration tool

Consider the import/export service

Import/Export migrates on-premises locations and Azure Storage accounts.

- Migrate large amounts of data from on-premises to Azure, as a one-time task
- Back up your data on-premises in Azure Storage
- Recover large amounts of data that you previously stored in Azure Storage
- Distribute data from Azure Storage to customer site



Consider the Data Box family of products

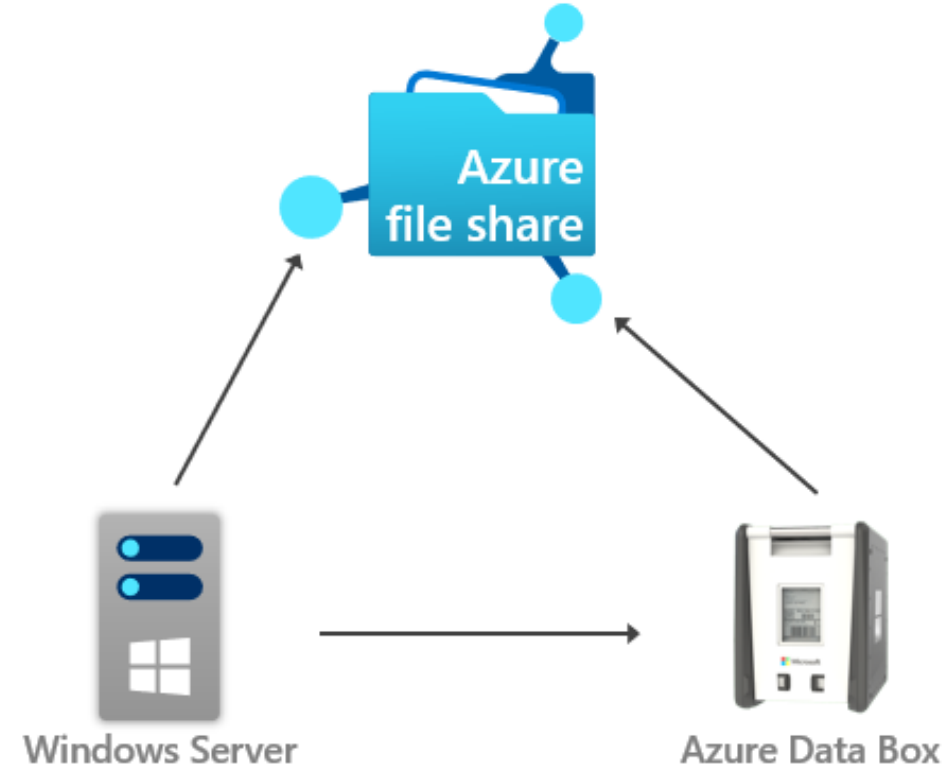
Data Box provides offline and online data transfer.

Scenarios to import data to Azure

- One time migration
- Initial bulk transfer
- Periodic uploads

Scenarios to export data from Azure

- Disaster recovery
- Security requirements
- Migrate back to on-premises or to another cloud service provider



Compare data migration solutions

Dataset	Network bandwidth	Solution to use
Large dataset	Low-bandwidth network or direct connectivity to on-premises storage is limited by organization policies	Azure Import/Export or Data Box for export; Data Box Disk or Data Box for import where supported; otherwise use Azure Import/Export
Large dataset	High-bandwidth network: 1 gigabit per second (Gbps) - 100 Gbps	AZCopy for online transfers; or to import data, Azure Data Factory, Azure Stack Edge, or Azure Data Box Gateway
Large dataset	Moderate-bandwidth network: 100 megabits per second (Mbps) - 1 Gbps	Azure Import/Export or Azure Data Box family where it is supported
Small dataset: a few GBs to a few TBs	Low to moderate-bandwidth network: up to 1 Gbps	If transferring only a few files, use Azure Storage Explorer, Azure portal, AZCopy, or AZ CLI

Review

Discussion (activity)

What strategies or tooling would you suggest for these situations?

- Media and corporate files
- Product catalog that uses a database
- On-premises virtual machines
- On-premises NAS server
- Cloud based blob storage

Summary and resources

Check your knowledge

Microsoft Learn Modules (docs.microsoft.com/Learn)

- Design your migrations to Azure
- Accelerate your migration journey to Azure
- Applications and infrastructure migration and modernization
- Migrate your relational data stored in SQL Server to Azure SQL Database
- Prepare on-premises workloads for migration to Azure
- Migrate on-premises workloads to Azure
- Export large amounts of data from Azure by using Azure Import/Export
- Move large amounts of data to the cloud by using Azure Data Box family

End of presentation