

Designing a Site Recovery Strategy on Microsoft Azure

DEFINING SITE RECOVERY GOALS



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Course Overview



Defining Site Recovery Goals

Designing and Implementing Site Recovery Infrastructure

Identifying Site Recovery Resources

Designing Site Failover Strategy

Overview

How Site Recovery Works

**Replicating Azure, VMware, Hyper-V
and Physical Servers**

Leveraging Existing HA/DR Options

**Working with the ASR Deployment
Planner**

How the Site Recovery Services Works

BC/DR

Continuous
Replication

App Consistent
Snapshots

Flexible Failover

Recovery Plans

Azure Automation
Integration

Site Recovery Use Cases



Disaster Recovery



Migration

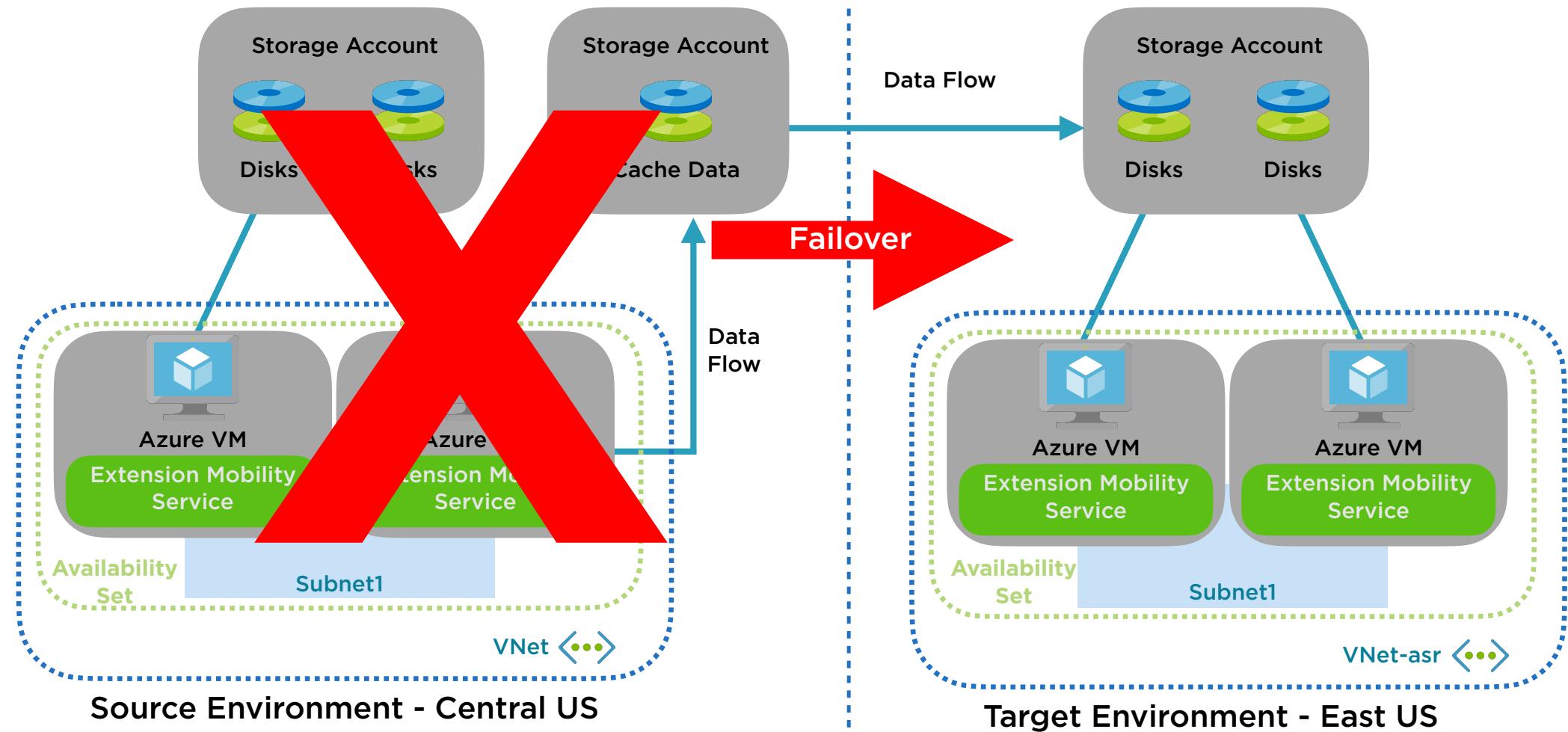
<https://docs.microsoft.com/en-us/azure/migrate/>

What Can You Protect with Site Recovery?



- Azure virtual machines**
- Between Azure Regions**
- On-premises systems into Azure**
- VMware VMs**
- Physical servers**
- Hyper-V VMs**
- Application agnostic workloads**

Replicating Azure VMs



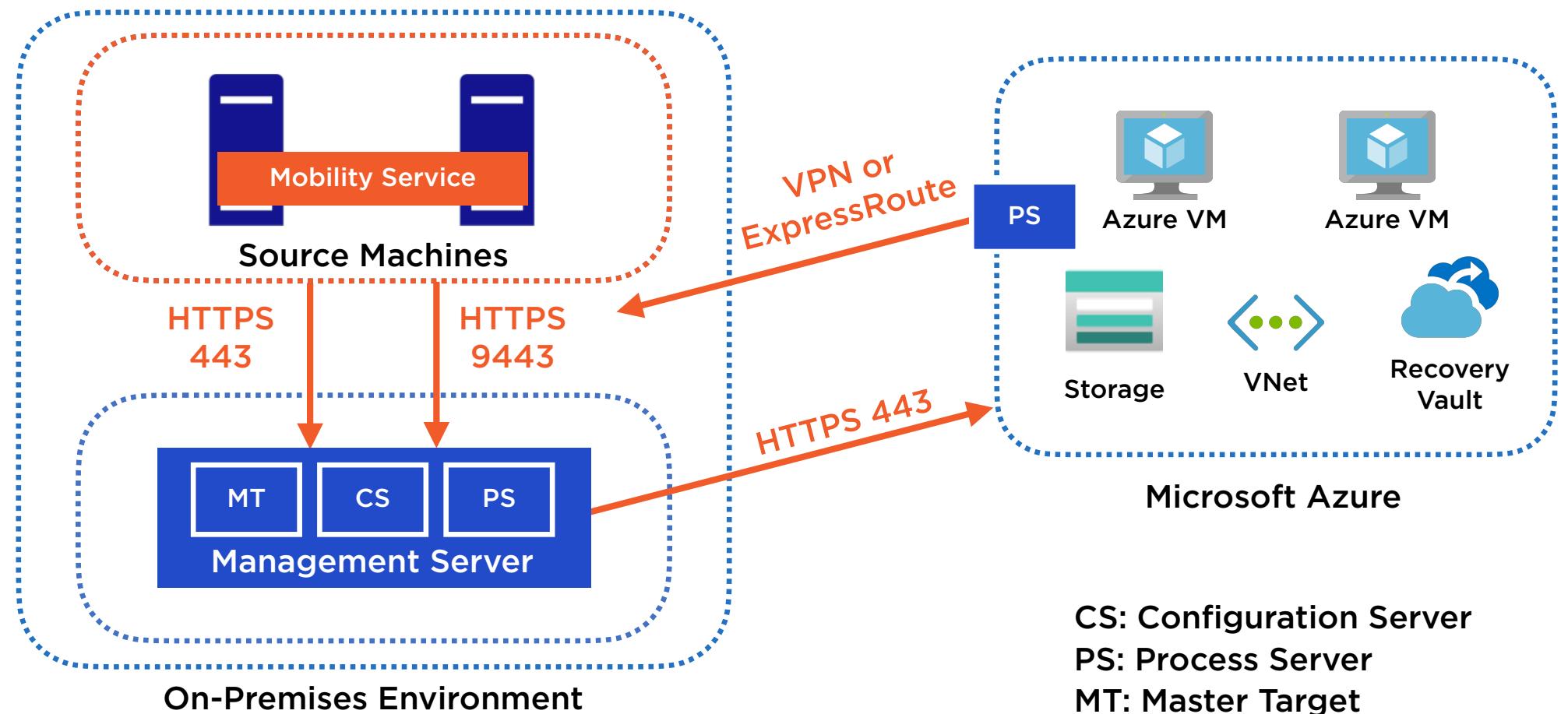
Demo

**Creating a Recovery Services Vault
Enabling Protection for an Azure VM**

Review

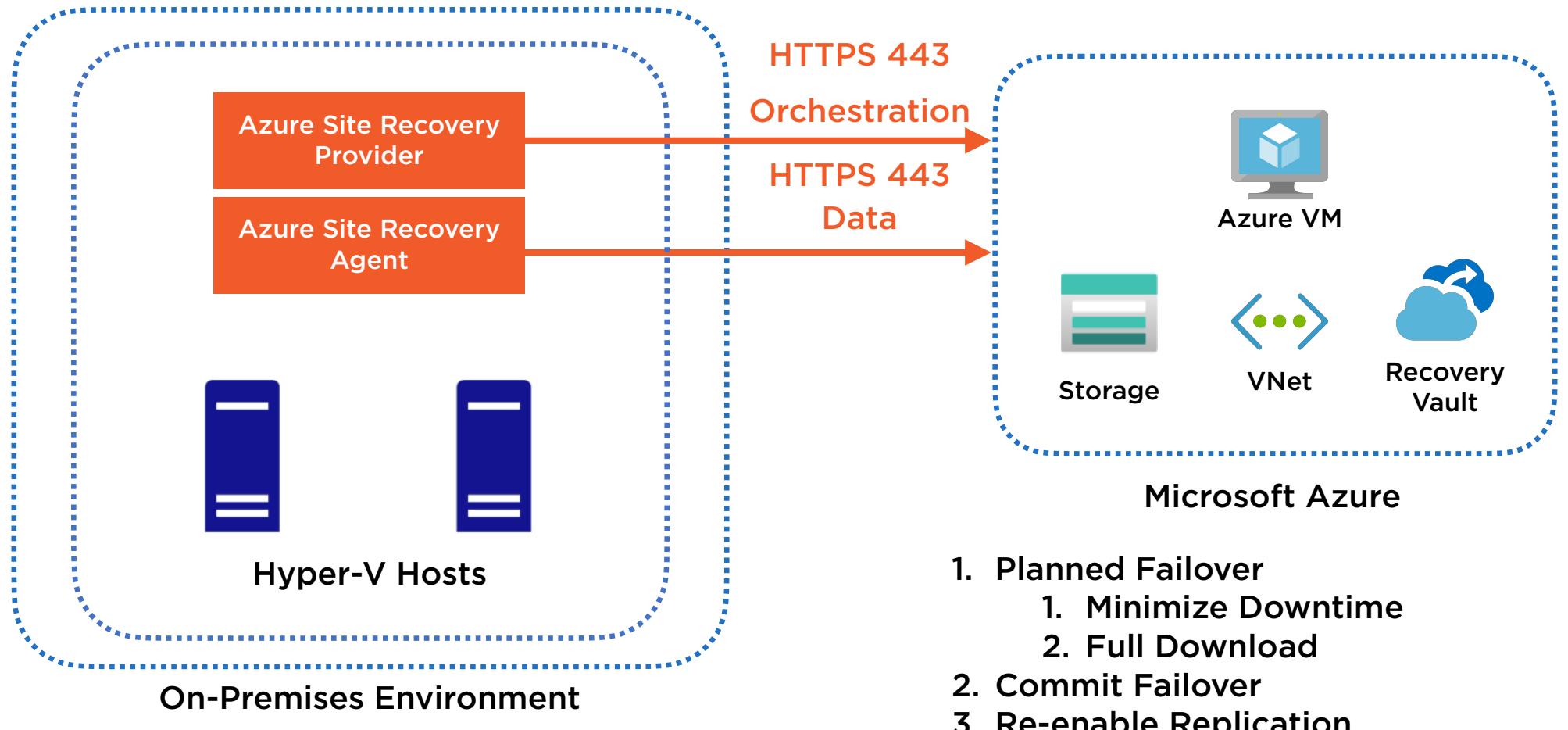
- Created Recovery Services Vault**
- Enabled Protection on an Azure VM**
- Site Recovery Jobs**
- Checked Replication Health and Status**
- Recovery Points**
- Source and Target Resources**

Replicating VMware Virtual Machines and Physical

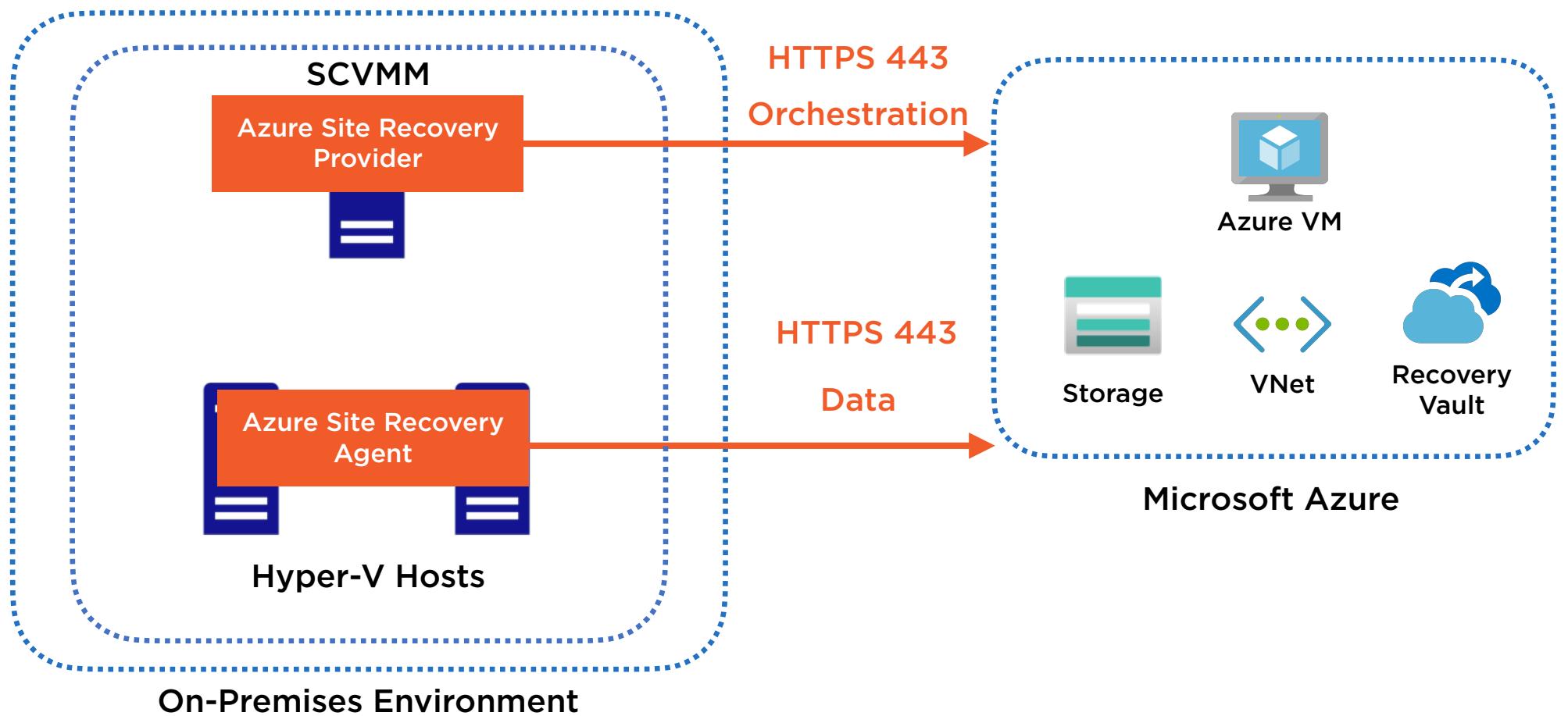


<https://docs.microsoft.com/en-us/azure/site-recovery/vmware-azure-architecture>

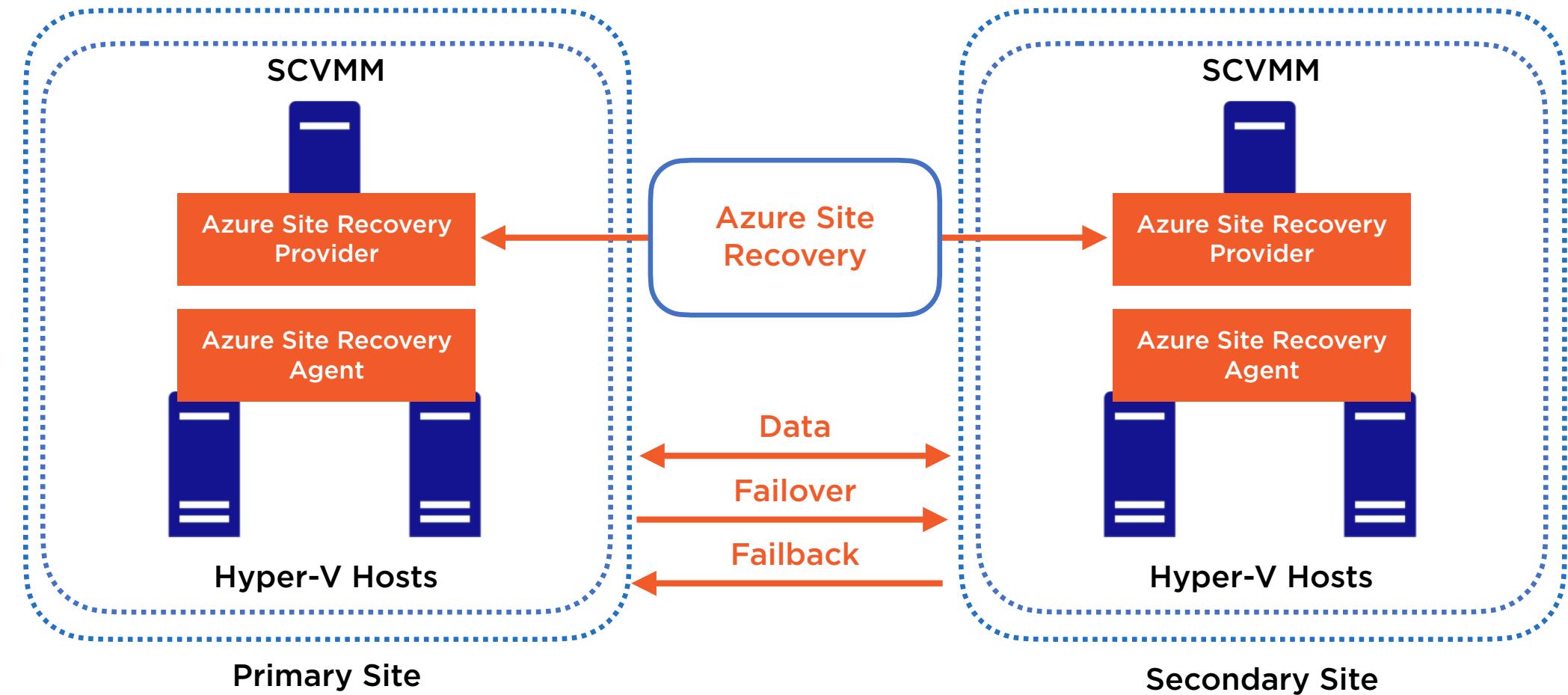
Replicating Hyper-V Virtual Machines



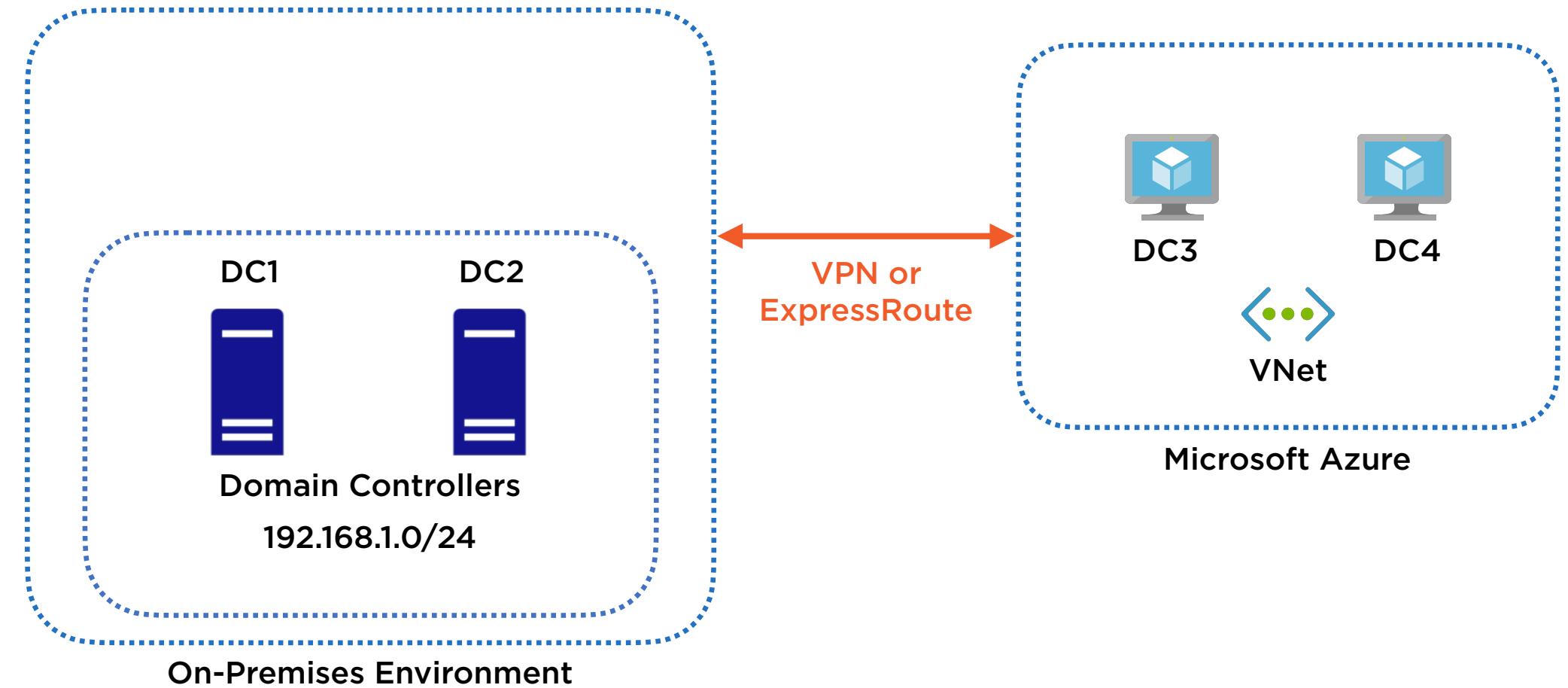
Replicating Hyper-V Virtual Machines - SCVMM



Replicating Hyper-V VMs to a Secondary Site



Leveraging Existing HA/DR Options



Working with the ASR Deployment Planner

Initial Sync

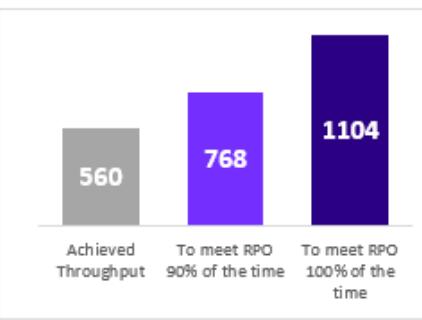
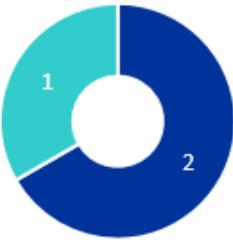
Continuous Replication

Working with the ASR Deployment Planner

 Microsoft Azure Site Recovery Deployment Planner
Recommendations for Hyper-V to Azure

Profiled data period: 10 days (11/1/2017 - 11/10/2017) Number of Hyper-V servers profiled: 26 Desired RPO: 15

Profiling Overview			
108 Total Profiled Virtual Machines	105 Virtual Machines Compatible (Click for details)	3 Virtual Machines Incompatible (Click for details)	15 Desired RPO (minutes)

Required Network Bandwidth (Mbps) For Delta Replication  <table border="1"><thead><tr><th>Category</th><th>Value (Mbps)</th></tr></thead><tbody><tr><td>Achieved Throughput</td><td>560</td></tr><tr><td>To meet RPO 90% of the time</td><td>768</td></tr><tr><td>To meet RPO 100% of the time</td><td>1104</td></tr></tbody></table>	Category	Value (Mbps)	Achieved Throughput	560	To meet RPO 90% of the time	768	To meet RPO 100% of the time	1104	Required Azure Storage Accounts Total: 3  <table border="1"><thead><tr><th>Storage Account Type</th><th>Count</th></tr></thead><tbody><tr><td>Standard</td><td>1</td></tr><tr><td>Premium</td><td>2</td></tr></tbody></table>	Storage Account Type	Count	Standard	1	Premium	2	Required Number of Azure Cores  1012 Learn more about Azure subscription limits <table border="1"><tbody><tr><td>Additional On-premises Storage Requirement (TB)  499.9</td><td>Maximum Copy Frequency 5 Minutes</td></tr></tbody></table>	Additional On-premises Storage Requirement (TB)  499.9	Maximum Copy Frequency 5 Minutes
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Storage Account Type	Count																	
Standard	1																	
Premium	2																	
Additional On-premises Storage Requirement (TB)  499.9	Maximum Copy Frequency 5 Minutes																	

 [Recommendation: Use ExpressRoute](#)

 [Recommended VM placement plan](#)

 [Learn more](#)

 [Learn more](#)

Working with the ASR Deployment Planner

What if you provision lower bandwidth (Mbps): 768

If the bandwidth provided
768 Mbps
you can achieve
15 minutes RPO
for
90% of the time
and you will have
22 RPO violations

RPO Violations over Profiling Period

Date	RPO (HH:MM)
01-Nov	~0:55
02-Nov	~0:25
03-Nov	~0:35
04-Nov	~0:55
05-Nov	~0:35
06-Nov	~0:15
07-Nov	~0:65
08-Nov	~0:15
09-Nov	~0:25
10-Nov	~0:15

Recommendations for Successful Initial Replication

1.1 Gbps
Minimum bandwidth required

18
Number of batches in which VMs to be protected

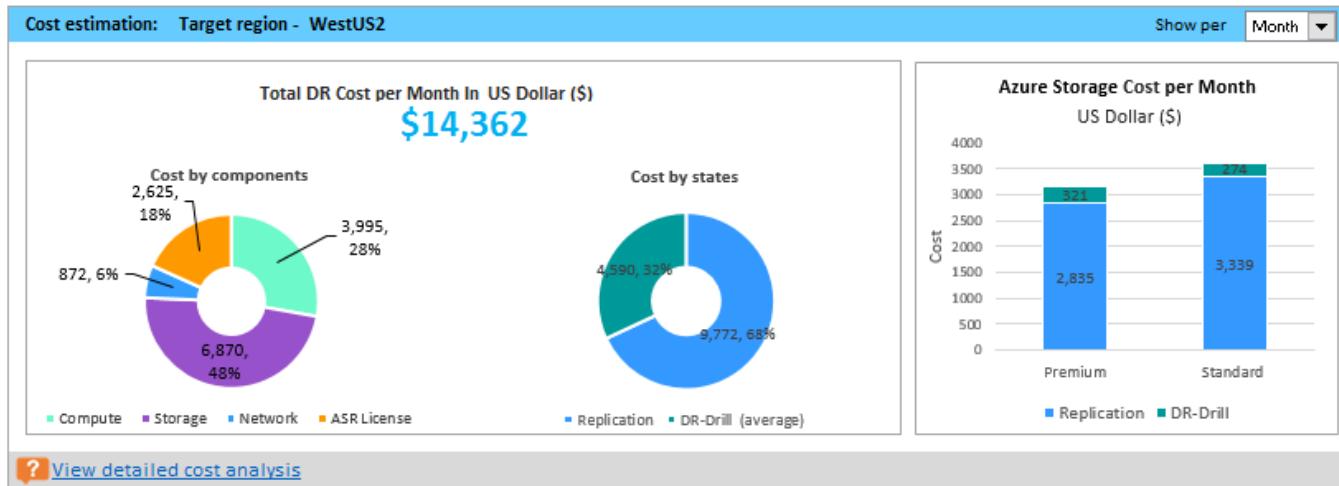
[View each batch details](#)

Bandwidth Distribution for Initial Replication and Delta Replication by Each Batch

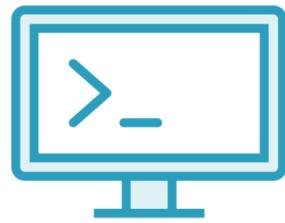
Batch	Available bandwidth for initial replication (Mbps)	Bandwidth required for delta replication (Mbps)
1	~1050	~50
2	~1050	~50
3	~1050	~50
4	~1050	~50
5	~1050	~50
6	~1050	~50
7	~1050	~50
8	~1050	~50
9	~1050	~50
10	~1050	~50
11	~1050	~50
12	~1050	~50
13	~1050	~50
14	~1050	~50
15	~1050	~50
16	~1050	~50
17	~1050	~50
DR Bandwidth	~1050	~50

■ Available bandwidth for initial replication ■ Bandwidth required for delta replication

Working with the ASR Deployment Planner



Working with the ASR Deployment Planner



Compatibility



Bandwidth



Azure
Infrastructure



On-premises
Infrastructure



Initial
Synchronization



Cost Analysis

Review

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Up Next:

Designing and Implementing Site Recovery Infrastructure
