

Windows Server 2022: Implement and Manage Windows Server High Availability

Implement a Windows Server Failover Cluster



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Overview



Implement a failover cluster on-premises, hybrid, or cloud-only

Create a Windows failover cluster

Stretch a cluster across datacenters or Azure regions

Configure storage for failover clustering



Windows Server 2022: Implement and Manage Windows Server High Availability

Implement a Windows Server Failover Cluster

Configure a Windows Server Failover Cluster

Manage a Windows Server Failover Cluster

Manage Failover Clustering

Implement and Manage Storage Spaces Direct



Windows Server Hybrid Administrator Associate

Take two exams



CERTIFICATION EXAM **AZ-800**
**Administering Windows Server
Hybrid Core Infrastructure**

AND



CERTIFICATION EXAM **AZ-801**
**Configuring Windows Server
Hybrid Advanced Services**

Earn the certification




ASSOCIATE CERTIFICATION
**Microsoft Certified:
Windows Server Hybrid
Administrator Associate**

One-year cert validity



Exercise Files



What do you want to learn?

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Troubleshooting with Microsoft Azure Network Watcher

by Tim Warner

Microsoft now gives you packet-level access to your Windows Server and Linux virtual machines (VMs) running in Azure. You'll learn how to use Network Watcher to troubleshoot network security groups (NSGs), perform packet captures, and much more.


[Resume Course](#)[Bookmark](#)[Add to Channel](#)

Table of contentsDescriptionTranscript**Exercise files**DiscussionLearning CheckRecommended

These exercise files are intended to provide you with the assets you need to create a video-based hands-on experience. With the exercise files, you can follow along with the author and re-create the same solution on your computer. We find this to be even more effective than written lab exercises.

[Download exercise files](#)

Course author

**Tim Warner**

Timothy Warner is a Microsoft Most Valuable Professional (MVP) in Cloud and Datacenter Management who is based in Nashville, TN.

Course info

Level	Intermediate
Rating	★★★★★
My rating	★★★★★
Duration	2h 12m
Released	31 Oct 2017

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Exercise Files

The screenshot displays a Windows desktop environment with three overlapping windows:

- File Explorer:** Located on the left, it shows the path `C:\Users\Tim\Downloads\azure`. The file list contains folders named 02, 03, 04, 05, and 06. Folder 02 is selected. The status bar at the bottom indicates "0 / 5 object(s) selected".
- Code Editor:** The central window is titled `microsoft-azure-ad-privileged-identity-management-configuring-m4-links.txt`. It displays a list of 22 lines of text, which are links to various Azure documentation pages. The text is as follows:

```
1 Module 4: Organize and Perform Azure AD PIM Access Reviews↵
2 ↵
3 Microsoft Azure↵
4 https://azure.microsoft.com/en-us/↵
5 ↵
6 Azure Documentation↵
7 https://docs.microsoft.com/en-us/azure/↵
8 ↵
9 Azure AD Privileged Identity Management (PIM) documentation | Microsoft Docs↵
10 https://docs.microsoft.com/en-us/azure/active-directory/
    privileged-identity-management/↵
11 ↵
12 Identity Governance - Azure Active Directory | Microsoft Docs↵
13 https://docs.microsoft.com/en-us/azure/active-directory/governance/
    identity-governance-overview↵
14 ↵
15 Create an access review of Azure resource roles in PIM - Azure Active Directory |
    Microsoft Docs↵
16 https://docs.microsoft.com/en-us/azure/active-directory/
    privileged-identity-management/pim-resource-roles-start-access-review↵
17 ↵
18 Review access to Azure AD roles in PIM - Azure Active Directory | Microsoft Docs↵
19 https://docs.microsoft.com/en-us/azure/active-directory/
    privileged-identity-management/pim-how-to-perform-security-review↵
20 ↵
21 View audit history for Azure AD roles in PIM - Azure Active Directory | Microsoft
    Docs↵
22 https://docs.microsoft.com/en-us/azure/active-directory/
    privileged-identity-management/pim-how-to-use-audit-log↵
```
- File Details Window:** A small window on the right shows details for the selected folder 02. It lists the path `02\demos\` and includes a table with file sizes and package counts.

The code editor window has a status bar at the bottom showing "Spaces: 4", "UTF-8", "CRLF", and "Plain Text".



Windows Failover Clustering



Windows Server Failover Clustering



Group of independent hosts that provide high availability and scalability to clustered roles

Cluster Shared Volumes (CSVs)

- Scale-Out File Server
- Highly Available Hyper-V VMs

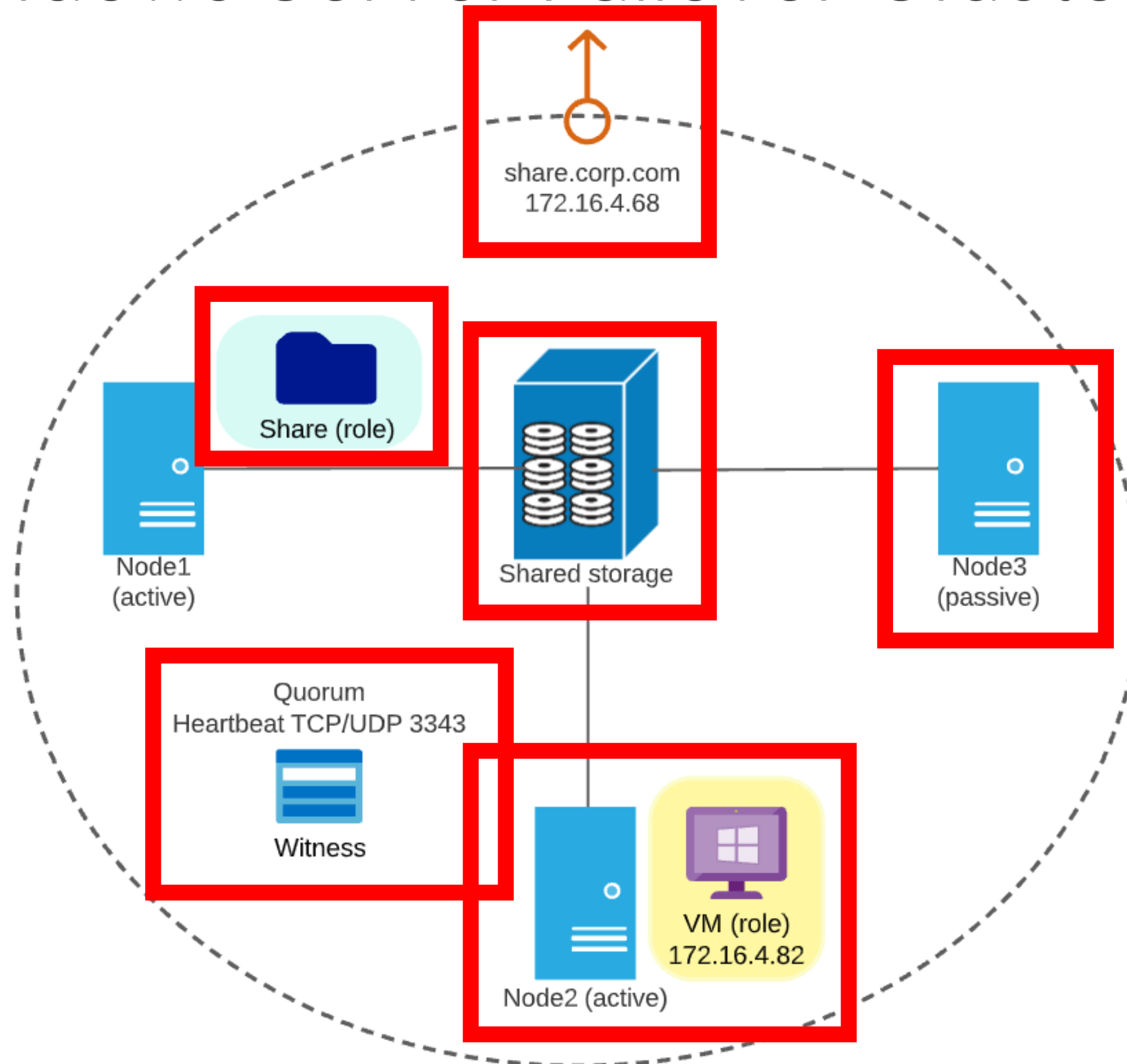
Cluster-Aware Updating

Guest clustering

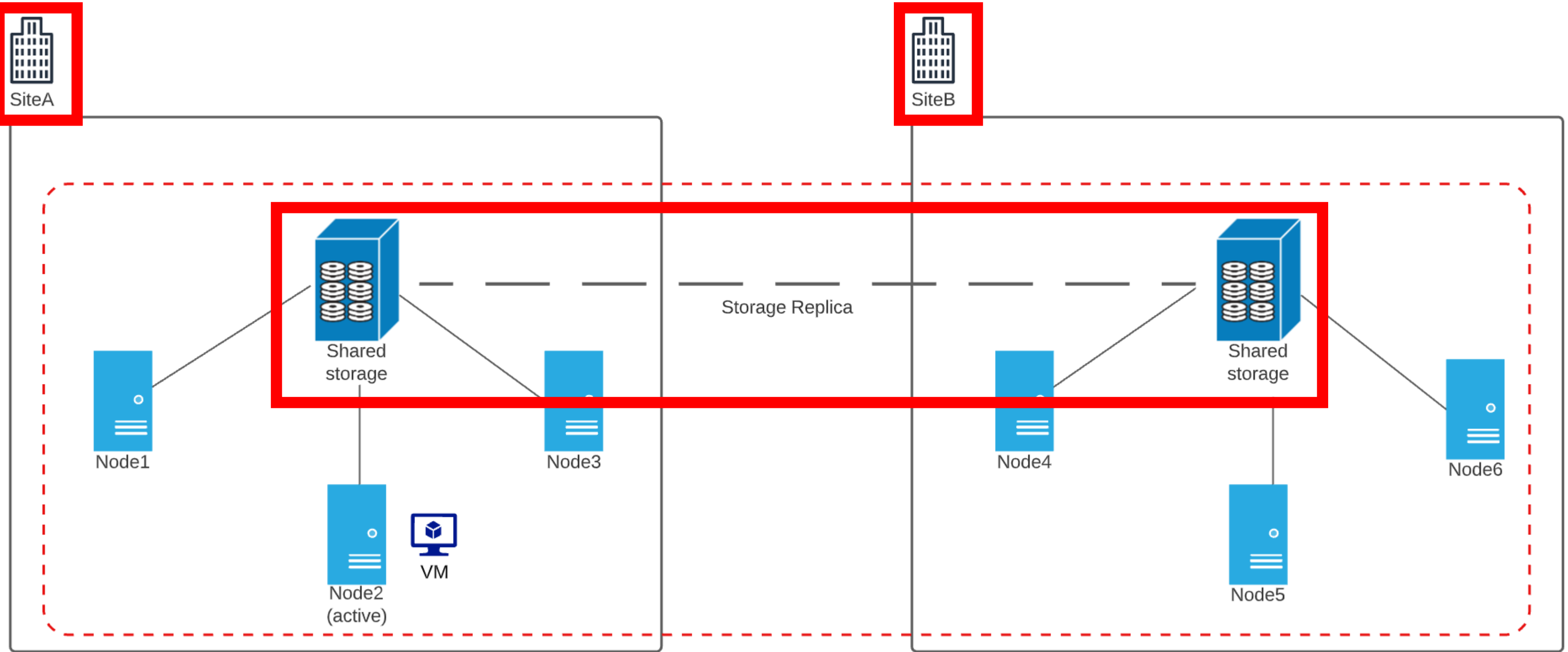
Stretch clustering



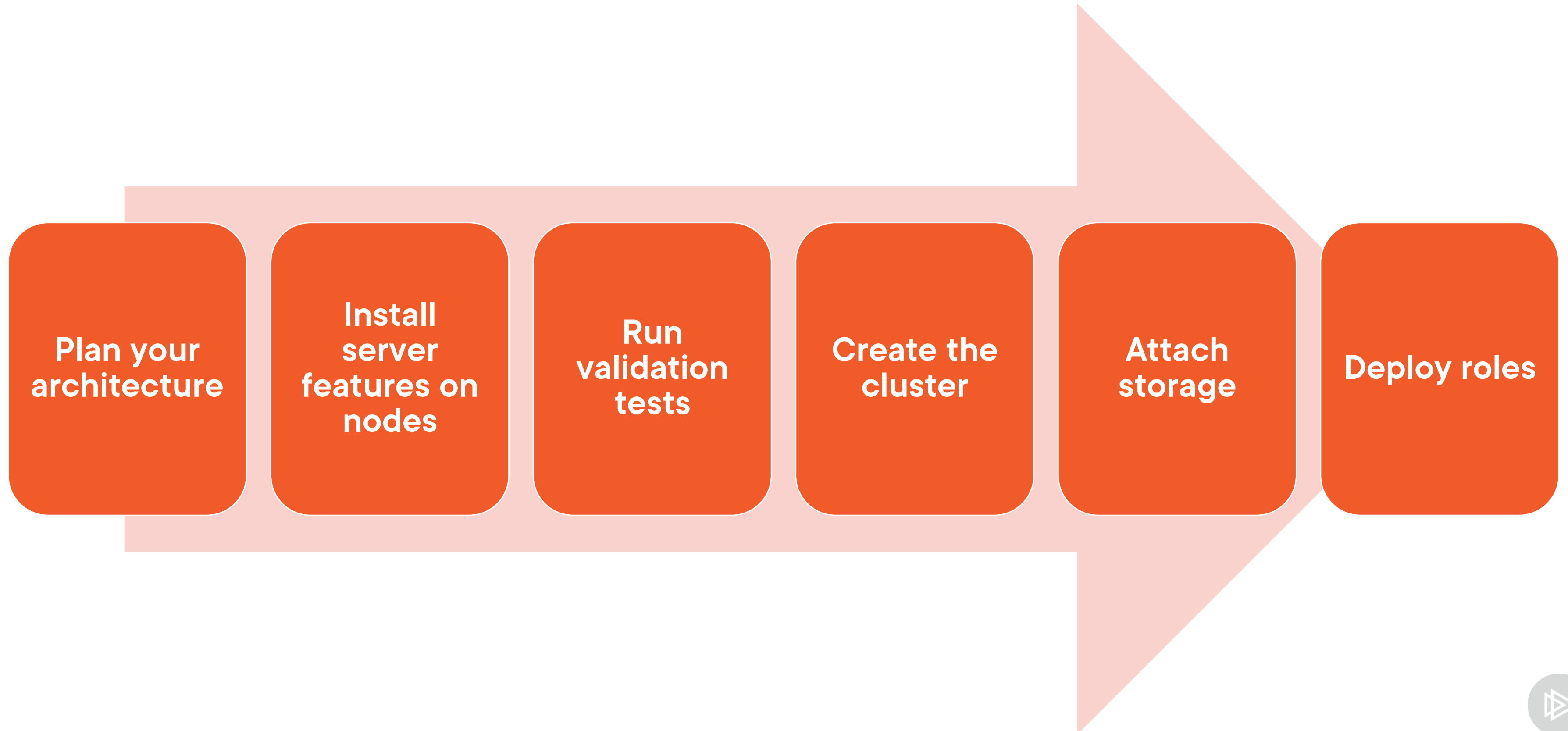
Windows Server Failover Clustering



Stretch Cluster



Failover Cluster Deployment Process



Cluster Storage Options



Windows Failover Clustering Storage Options

Traditional Shared Storage

Storage Area Network (SAN)

Serial Attached SCSI (SAS)

Fibre Channel

iSCSI

Multipath I/O (MPIO)

Teamed network adapters

Storage Spaces Direct (S2D)

SAS JBOD enclosures

SMB 3.0 with RDMA

Cluster Shared Volumes (CSVs)

MPIO

Teamed NICs



Demo



1

Deploy cluster with no storage

Monitor cluster



Summary



Windows Server failover clustering can save your business a lot of money

- Guest clustering with VMs
- S2D with CSVs

You can use nested virtualization to host clusters in Microsoft Azure IaaS



Up Next:

Configure a Windows Server Failover Cluster

