

Implement and Manage Storage Spaces Direct



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Overview



Create a failover cluster using Storage Spaces Direct

Upgrade a Storage Spaces Direct node

Configure Storage Spaces Direct



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



Storage Spaces Direct (S2D)



Storage Spaces Direct



Software-defined storage solution

2-16 Windows Server nodes that share storage without need for dedicated SAN hardware

Supported with physical or guest failover clusters

Unsupported: All-HDD deployments



S2D Deployment Options

Hyperconverged

- **Single cluster for both compute and storage**
- **Cost-effective**
- **Simplified administration**

Disaggregated (converged)

- **Separate clusters for storage and compute**
- **Allows independent scaling**



Add Servers to an S2D Cluster

```
# Re-run cluster validation
```

```
Test-Cluster -Node n1, n2, n3, n4, newnode -Include "Storage Spaces Direct"
```

```
# Add new node to cluster
```

```
Add-ClusterNode -Name "newnode"
```

```
# 3 servers unlocks 3-way mirroring
```

```
New-Volume -FriendlyName <Name> -FileSystem CSVFS_ReFS -StoragePoolFriendlyName  
S2D* -Size <Size> -PhysicalDiskRedundancy 2
```

```
# 4 servers unlocks dual parity (erasure coding)
```

```
New-Volume -FriendlyName <Name> -FileSystem CSVFS_ReFS -StoragePoolFriendlyName  
S2D* -Size <Size> -PhysicalDiskRedundancy 2 -ResiliencySettingName Parity
```



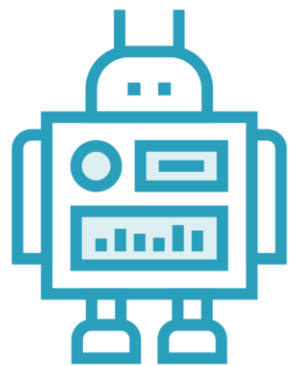
Add Disks to Storage Spaces Direct



All servers should have identical storage configurations



Verify new disk(s): Get-PhysicalDisk | Select-Object -Property
SerialNumber, CanPool, CannotPoolReason



S2D will automatically claim eligible drives



Demo



1

Get-PhysicalDisk | Select-Object -Property
SerialNumber, CanPool, CannotPoolReason

Demo Storage Spaces

Onboard S2D

Add physical and virtual disks

CSVs



Summary



Storage Spaces Direct brings high availability to most businesses

Thanks!

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