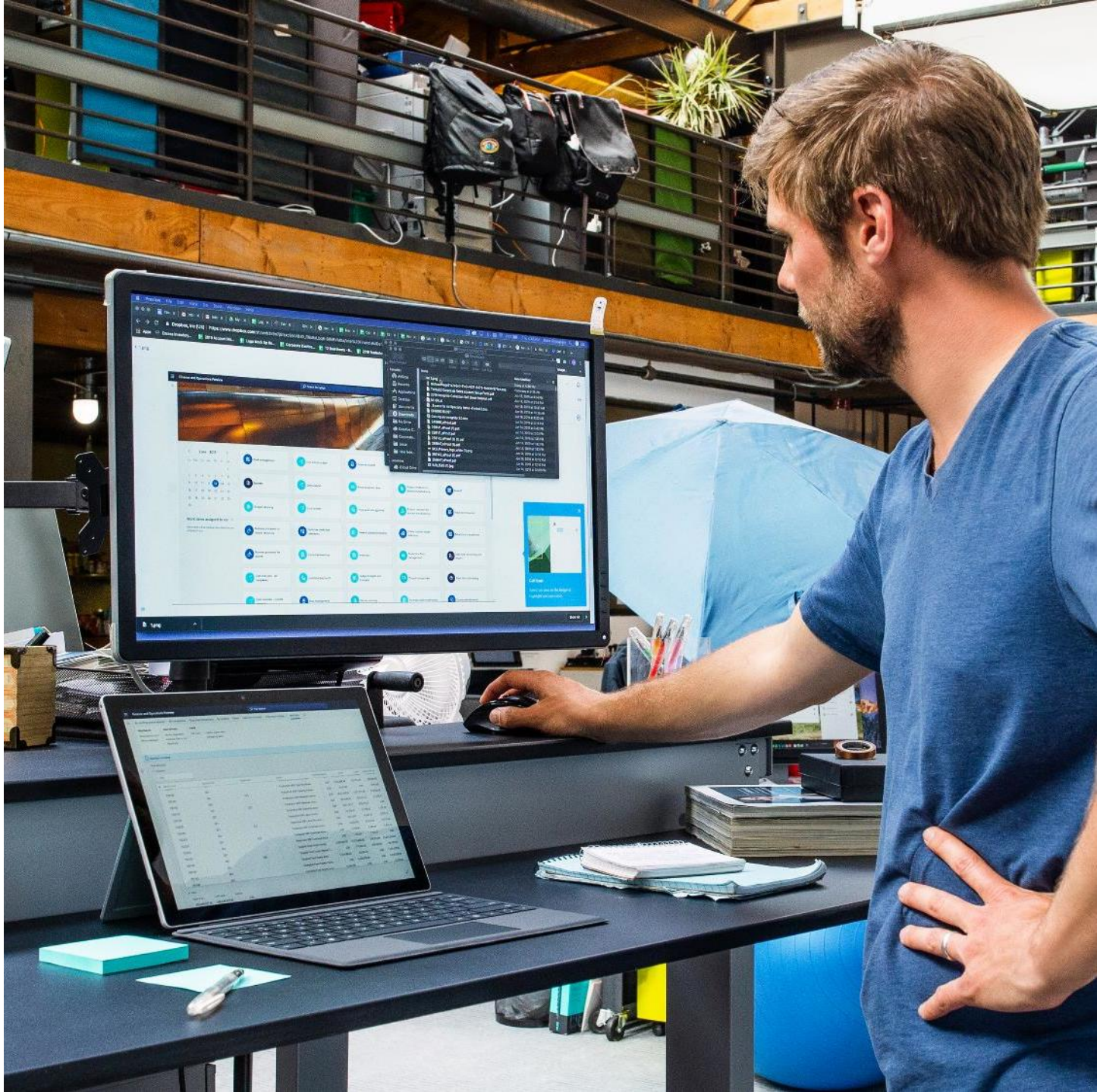
Microsoft

WorkshopPLUS: SharePoint Server Administration

SQL Server Disaster Recovery



Agenda - Chapter 1

1	**SQL Disaster Recovery Strategies**
2	SQL Technologies

High Availability vs Disaster Recovery

Defining High Availability

High Availability represents strategies that allow the environment to continue serving content in the case of component failures.

- System remains available even if individual SQL nodes fail.

We focus on Disaster Recovery

Disaster Recovery represents strategies that allow us to recover the environment in the case of total failure of the data center.

- The environment can be brought back online with data loss limited to acceptable ranges.

Disaster Recovery Concepts

Discuss acceptable RPO/RTO values with

- Executive stakeholders
- IT personnel
- Business users

Recovery Point Objective (RPO)

Amount of data (in minutes/hours) that can be permanently lost in catastrophe scenarios

Recovery Time Objective (RTO)

Amount of time allowable for recovering the environment to a functional state

SharePoint is not business critical until the first outage!

Cold Standby

Recover From Offline Backups

Entire farm is rebuilt in a secondary location when failure occurs

Scripted deployments and backups are used to optimize RTO*

SQL Backups can only protect Content Databases and some Service Application databases

SharePoint Configuration can only be protected with a SharePoint Configuration Only Backup

* Like PowerShell Desired State Configuration and SharePointDsc:
https://github.com/dsccommunity/SharePointDsc/wiki

Warm Standby

Copy backups or virtual machine images to second disaster recovery farms

- Pros: Often inexpensive to recover, because a virtual server farm can require little configuration upon recovery
- Cons: Can be very expensive and time-consuming to maintain

Separate SharePoint Farm, may be offline

- Separate ConfigDB and Central Administration ContentDB must be maintained on the failover farm.
- All customizations must be deployed on both farms.
- Operating system, SQL Server, and SharePoint products software updates must be applied to both farms.
- SQL Replication is used to keep standby farm in sync with production data. Asynchronous commit on an **availability group** replica, or **log-shipping**
- Only some service applications support replication.

Hot Standby

Separate SharePoint farm turned on and running	Short timeframe	Details
• Similar configuration to a Warm Standby • Replication intervals are shortened to deliver RPO of minutes or less.	• Failover farm in the standby data center assumes production operations almost immediately after disaster.	• Infrastructure in multiple data centers but serves content and services through only one data center • Pros: Often fast to recover • Cons: Can be very expensive to configure and maintain

Agenda - Chapter 2

1	SQL Disaster Recovery Strategies
2	**SQL Technologies**

AlwaysOn Availability Groups

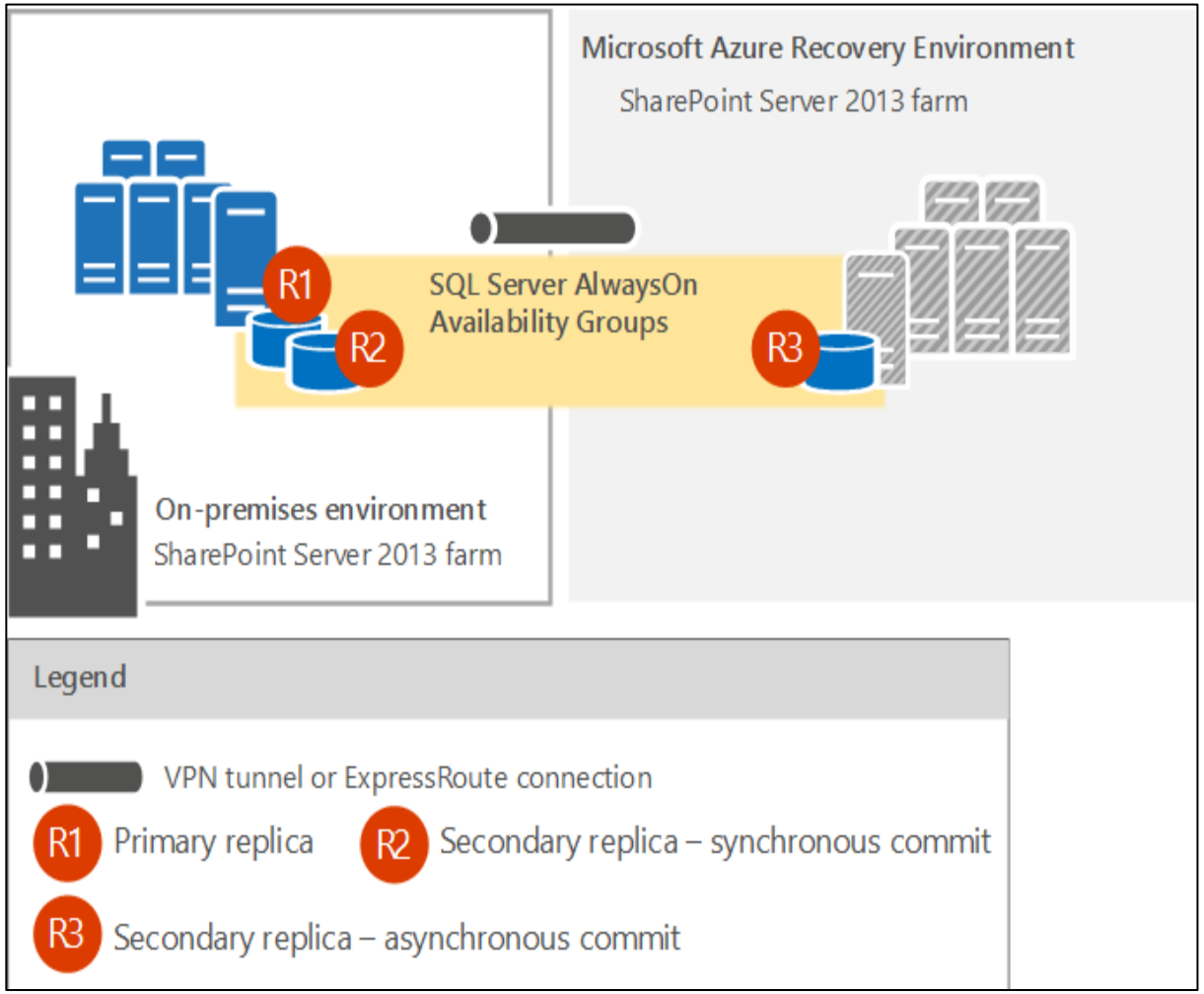
Use AlwaysOn to replicate data to a secondary SQL Server instance

Notice the local R1/R2 nodes are configured with SYNC commit.

Always use ASYNC commit across data centers

Notice that replication between R1/R2 and R3 is configured using ASYNC commit.

When using ASYNC commit, you can only protect **some** databases (covered on following slides).



Supported Replication Modes for SharePoint Databases (1/2)

Database type	Synchronous support	Asynchronous support
SharePoint Config	Yes	No
SharePoint AdminContent	Yes	No
State Service	Yes	No
Search Admin	Yes	No
Search Crawl	Yes	No
Search Link Store	Yes	No
Search Analytics Store	Yes	No
User Profile Sync	Yes	No
Usage	Yes	No

Supported Replication Modes for SharePoint Databases (2/2)

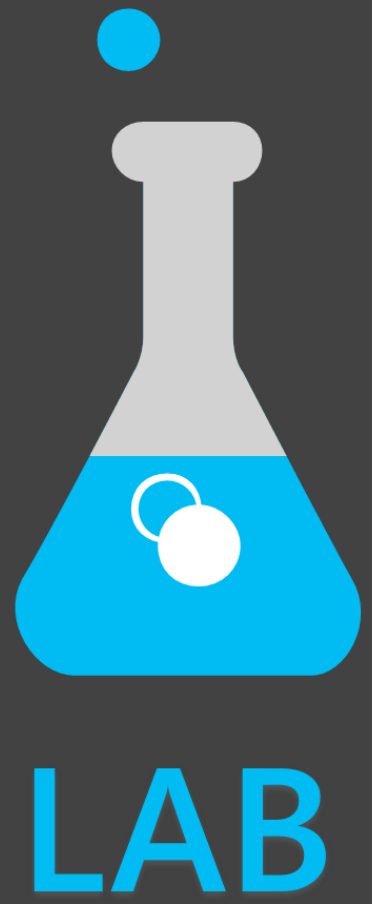
Database type	Synchronous support	Asynchronous support
App Management	Yes	Yes
Business Connectivity Services	Yes	Yes
Managed Metadata	Yes	Yes
PerformancePoint	Yes	Yes
PowerPivot	Yes	Yes
Project	Yes	Yes
Secure Store	Yes	Yes
Subscription Settings	Yes	Yes
Machine Translation Services	Yes	Yes
User Profile Profile	Yes	Yes
User Profile Social	Yes	Yes
Word Automation	Yes	Yes
WSS Content	Yes	Yes

Lab 6:
SQL Server Disaster Recovery

Objectives

After completing this lab, you will be able to:

- Complete SQL Database backup



Knowledge Check

What is the most cost-effective Disaster Recovery strategy with a 4 hour RPO and 24 hour RTO requirement?

- SQL server backups can deliver the 4 hours RPO if you configure the transaction log backup schedule accordingly.
- The 24 hour RTO should provide enough flexibility to restore the entire farm from offline backups using a Cold Standby approach.

How can you protect your farm configuration?

- ConfigDB can only be recovered from backup via DPM
- Use scripted deployments
- Use a Configuration only SharePoint backup

Questions?