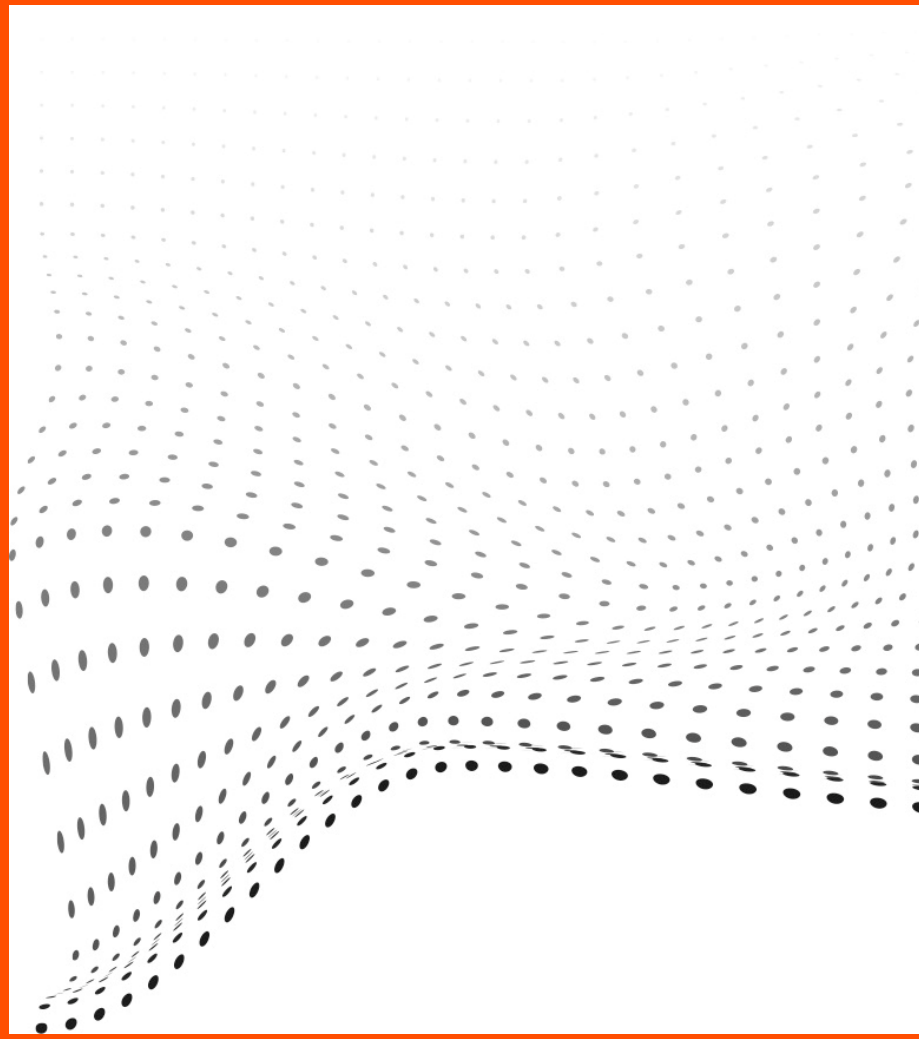
DB BITS

SOLUÇÕES
EM GERÊN
DE DADOS

Zero to Hero in 16 Hours: HADR on SQL Server

Module 1: Intro to HADR

Why do we need HADR?



Goals

- The need for High Availability
- High Availability and Disaster Recovery concepts
- Overview of Technologies for achieving HA/DR on SQL SERVER
- Infrastructure basics

The need for High Availability

Recovering a Database – the hard and easy ways

The need for High Availability

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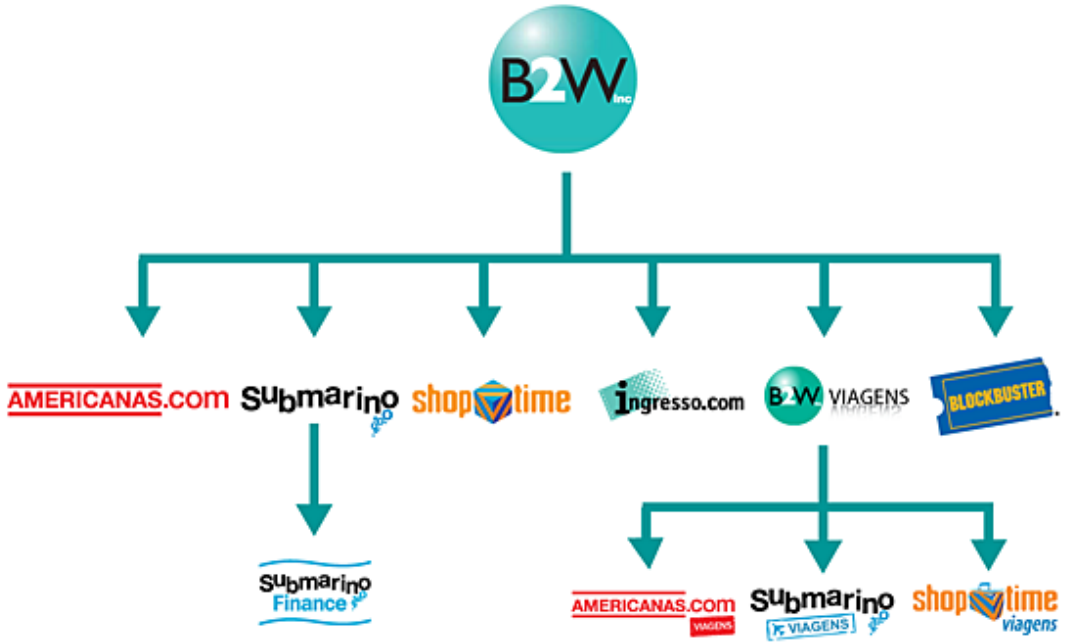
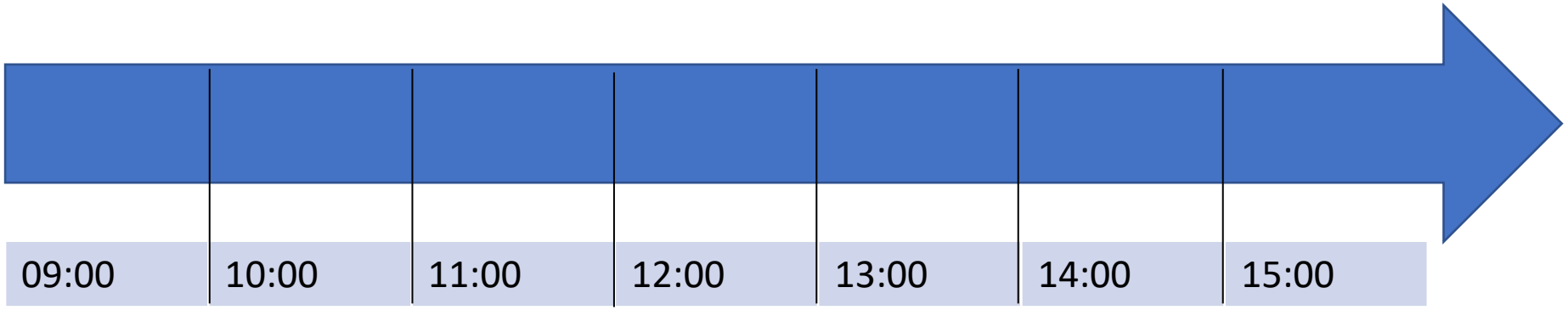


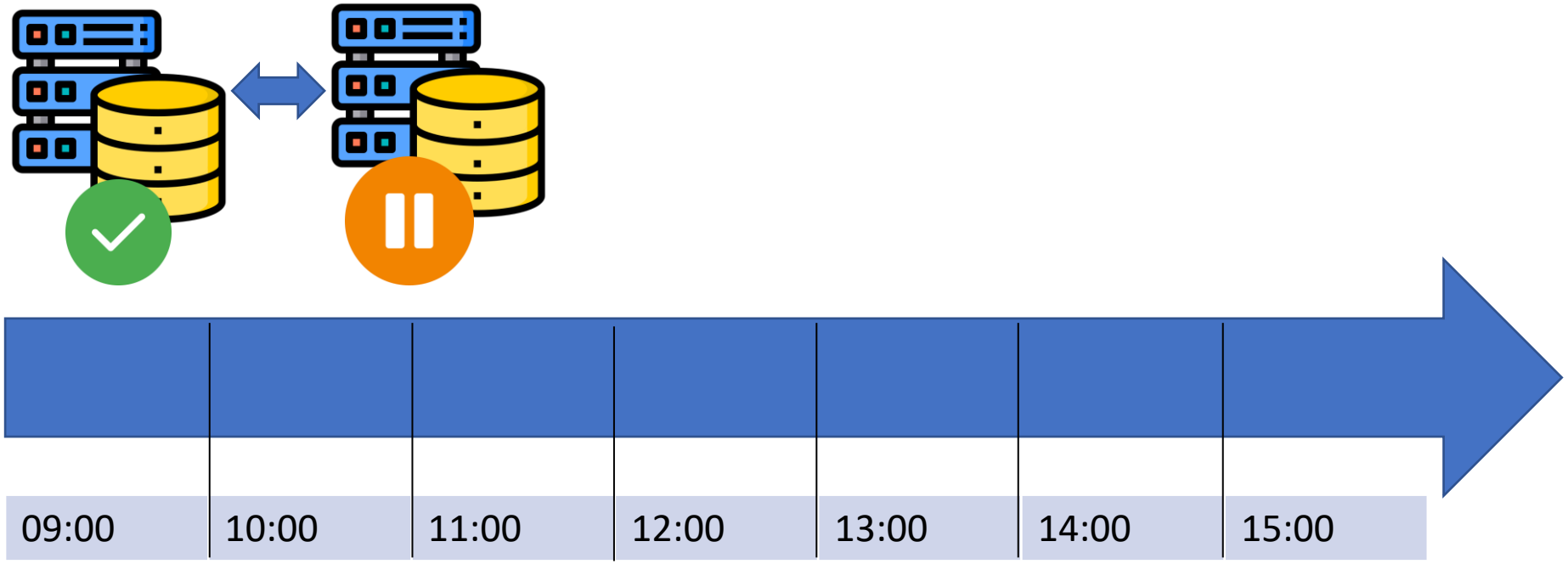
System functioning fine…



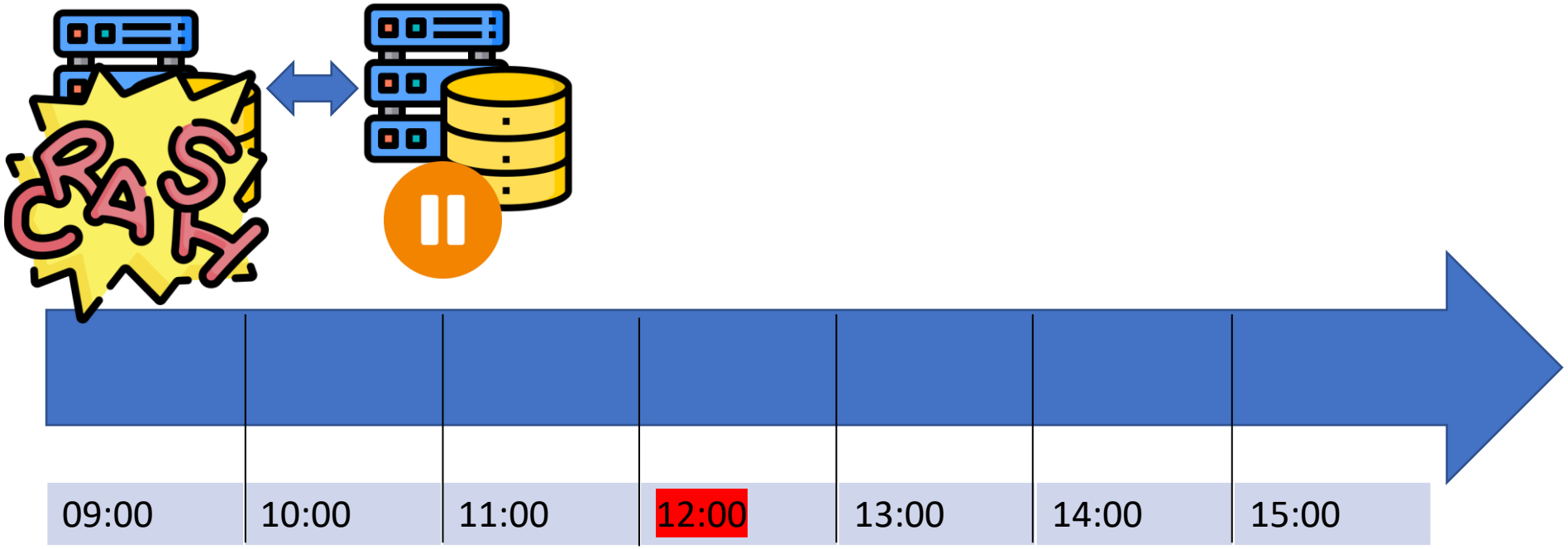
Server crash…

System restablished…

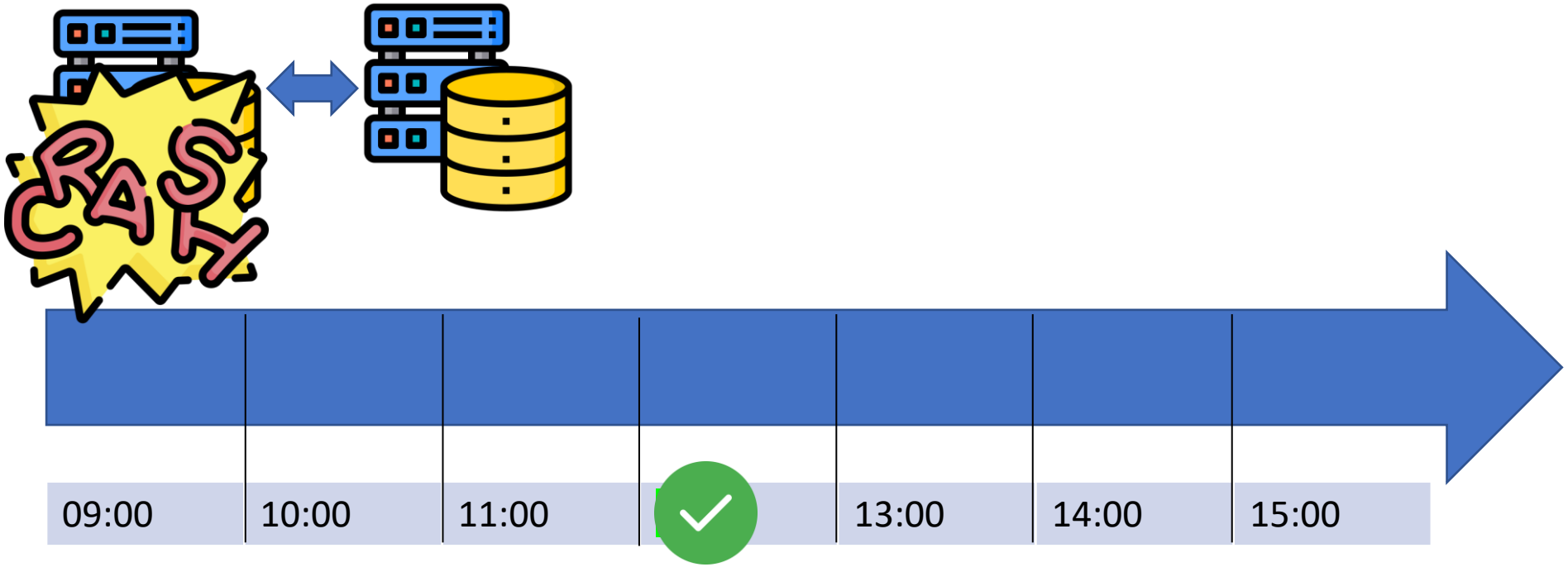
System functioning fine…



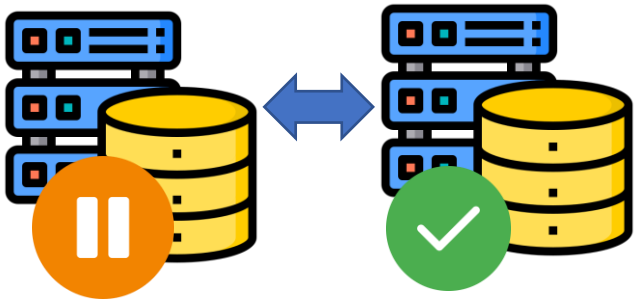
Server crash…



Standby take over…



System functioning fine…



Downtime and Data Loss

Brainstorm

HADR concepts

Calculating Availability

So, what is HA?

High availability is about putting a set of technologies into place **before** a failure occurs in order to prevent the failure from affecting the availability of data.

High Availability and Disaster Recovery concepts

What is Disaster Recovery?

DR = HA ?

How to be aware of your needs?

- Recovery Time Objective – RTO
- Recovery Point Objective – RPO
- How about performance after failover?

The (in)famous SLA table

Uptime SLA	/year indisp.	/month indisp.
99,9%	8,76 hours	43,8 mins
99,99%	52,6 mins	4,38 mins
99,999%	5,26 mins	0,43 mins

- What other factor increases as we add 9s?

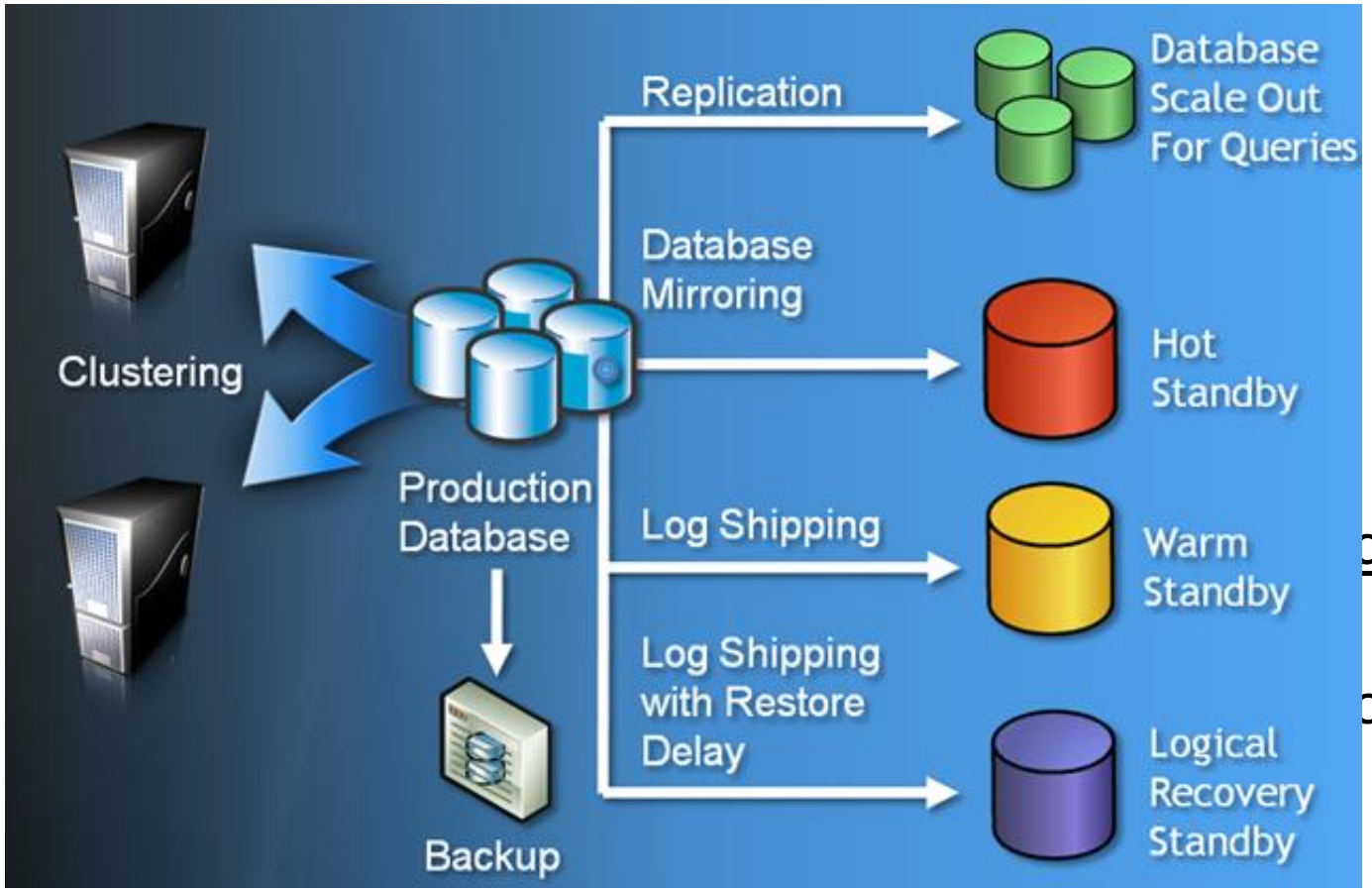
Come up with a plan, seriously!

- How much time can business wait for the database to be available?
- How much data can we lose?
- Sketch your needed environment
- Name everything
- Be redundant whenever you can
- Write a step-by-step guide on how to proceed in the case of a Disaster Recovery scenario

Enter Always On – SQL SERVER

- Unified and simplified;
- Easy to deploy and manage;
- Extensible to the cloud;
- Reuse existing investment;
- Cost-effective (no idle hardware);

Achieving HADR on SQL SERVER



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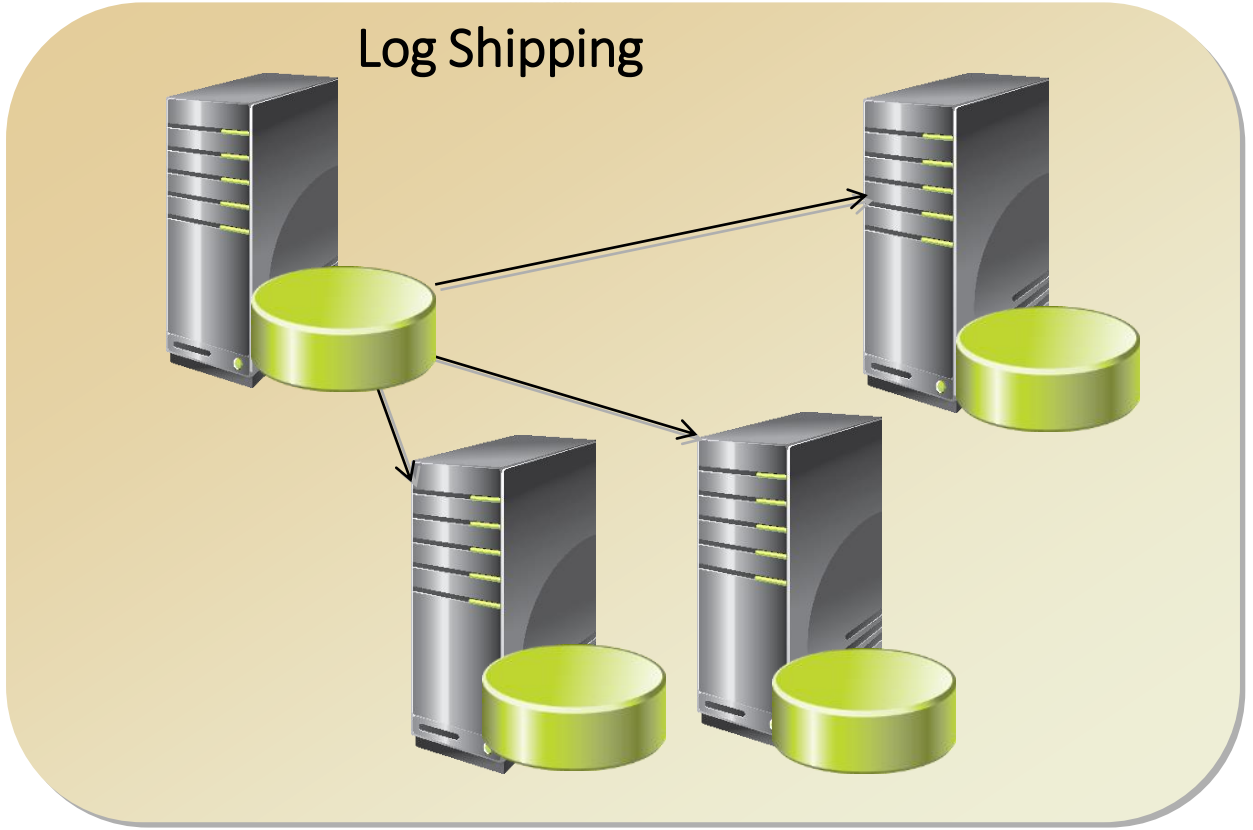
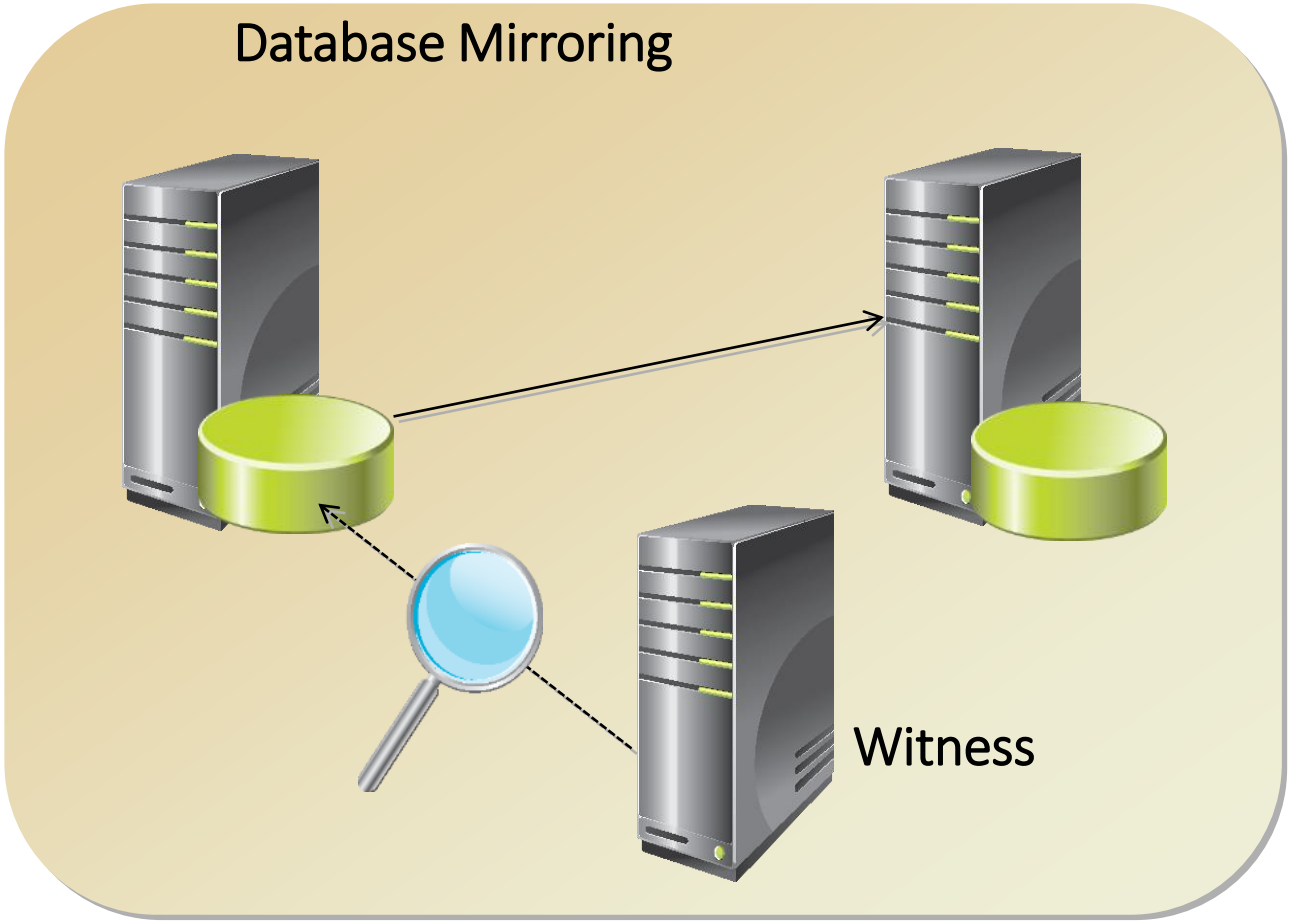
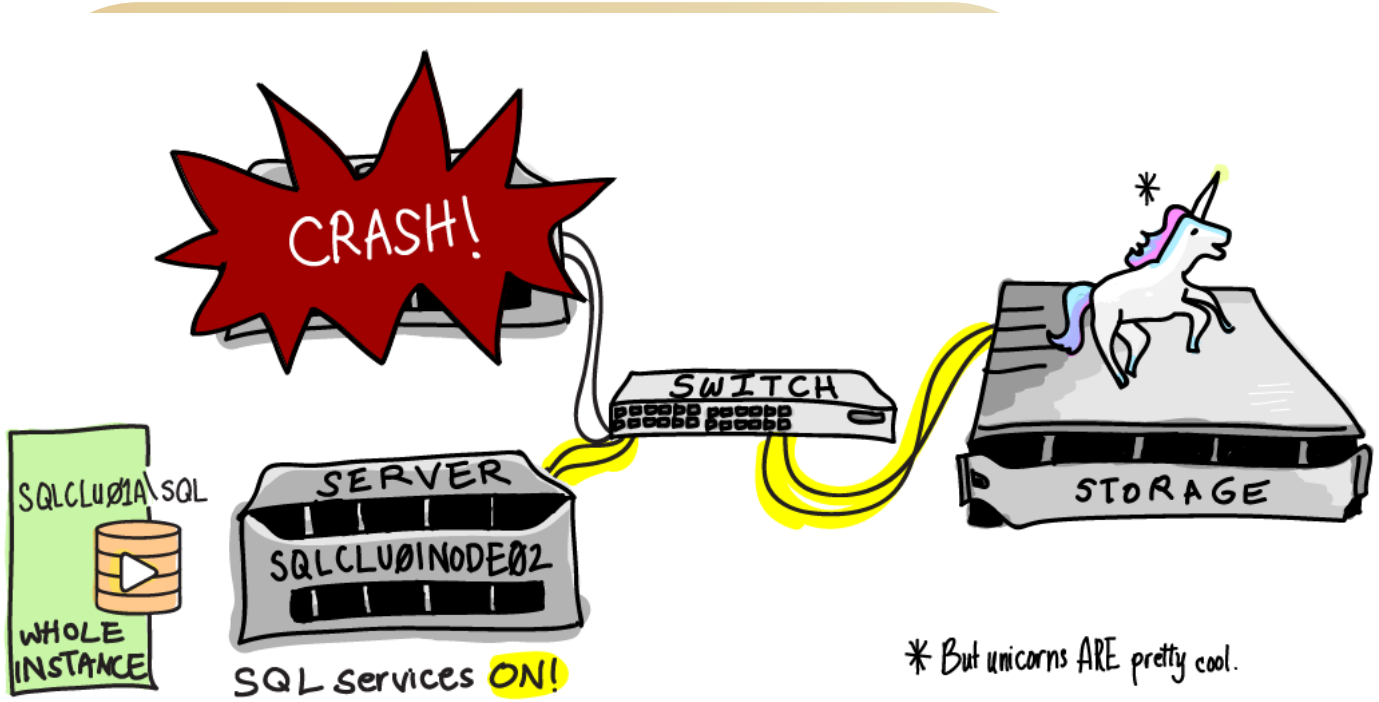
Log Shipping



Database Mirroring (deprecated)

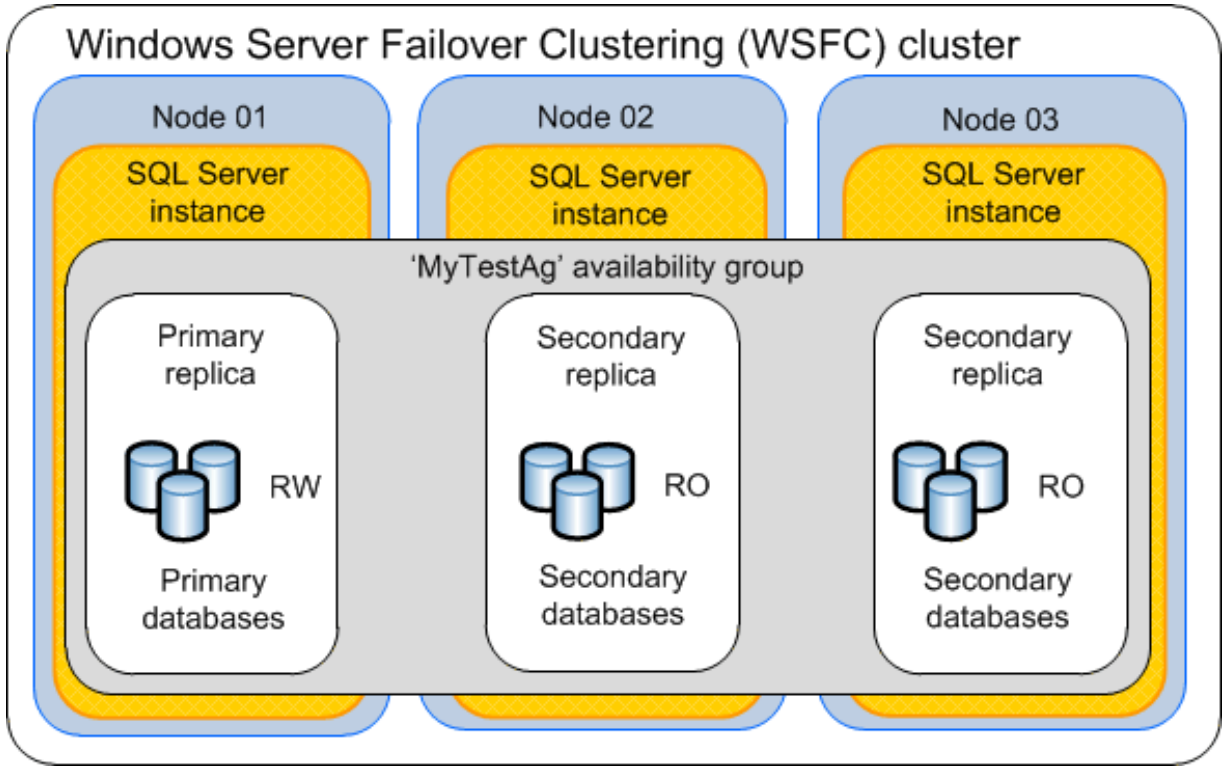


Always On Failover Cluster Instance (FCI)

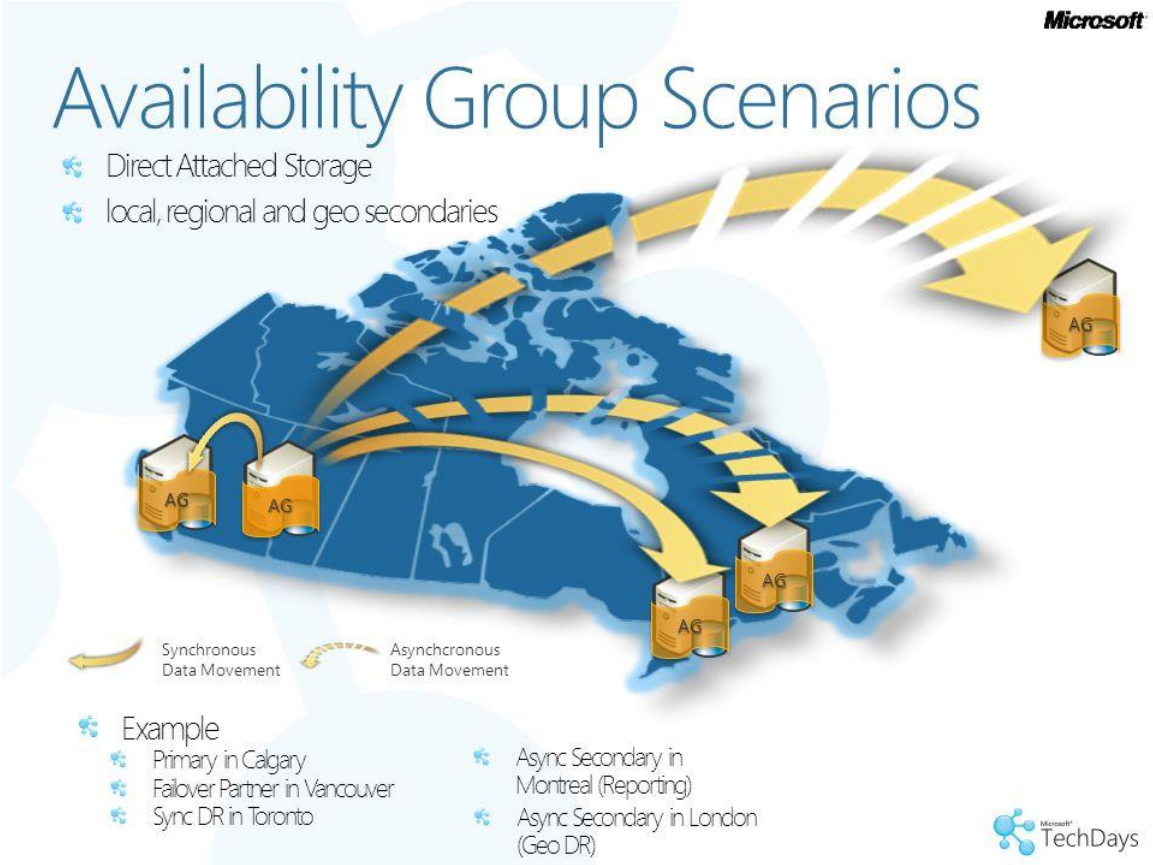


https://www.brentozar.com/archive/2012/02/introduction-sql-server-clusters/

Always On Availability Groups -

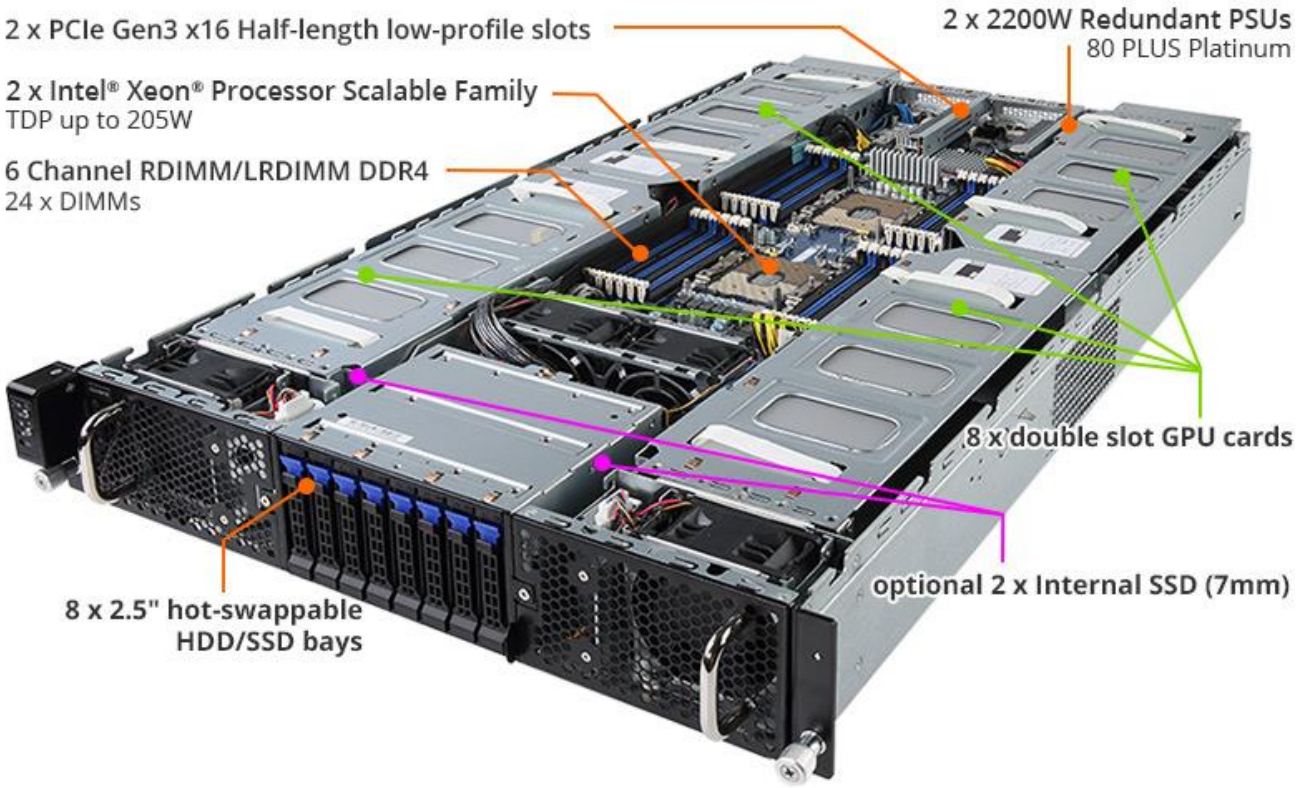


AG common usage

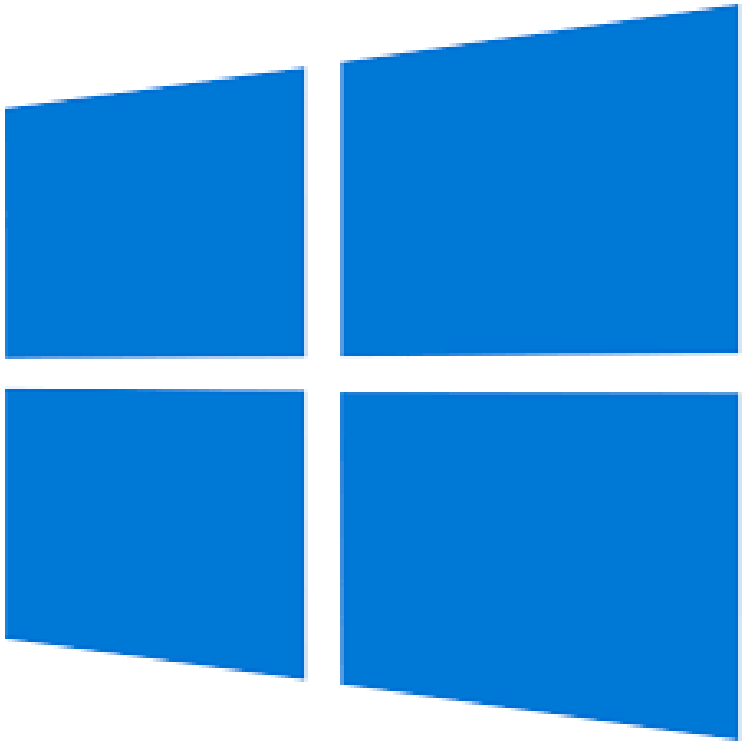


http://slideplayer.com/slide/8283815/

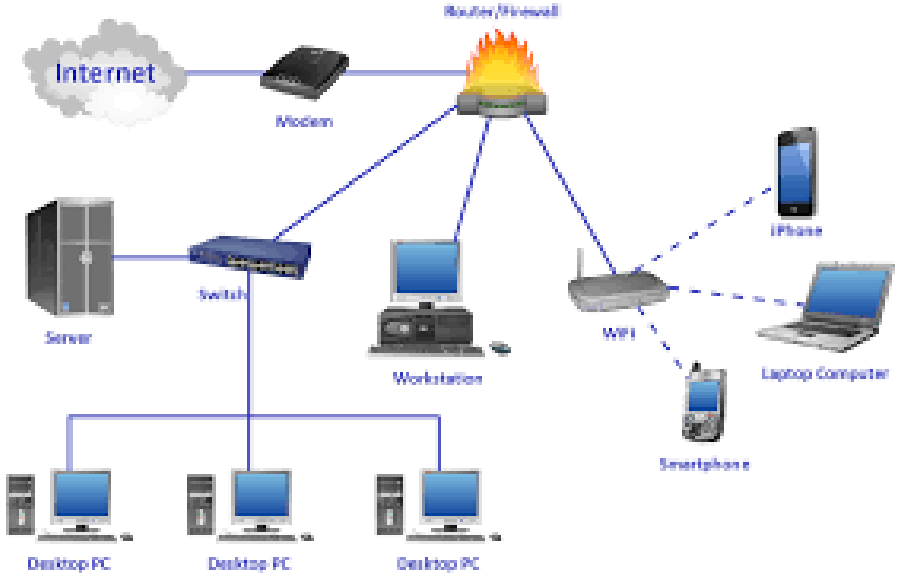
Infrastructure basics - Server



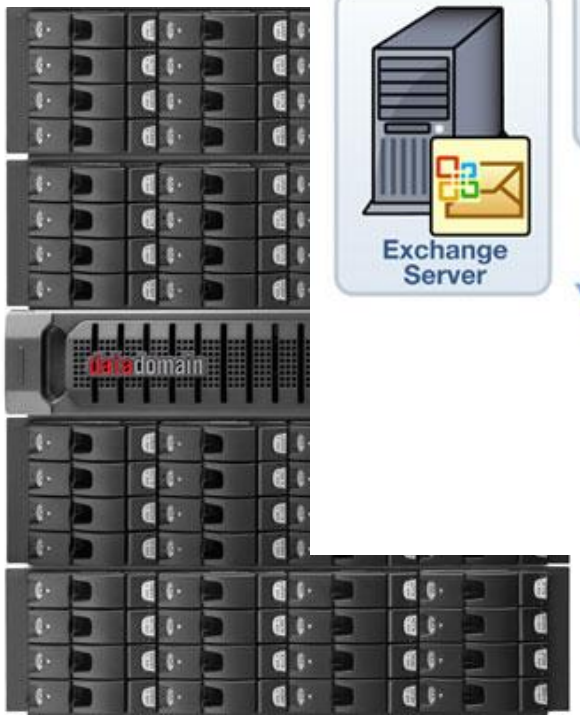
Infrastructure basics – Operating System

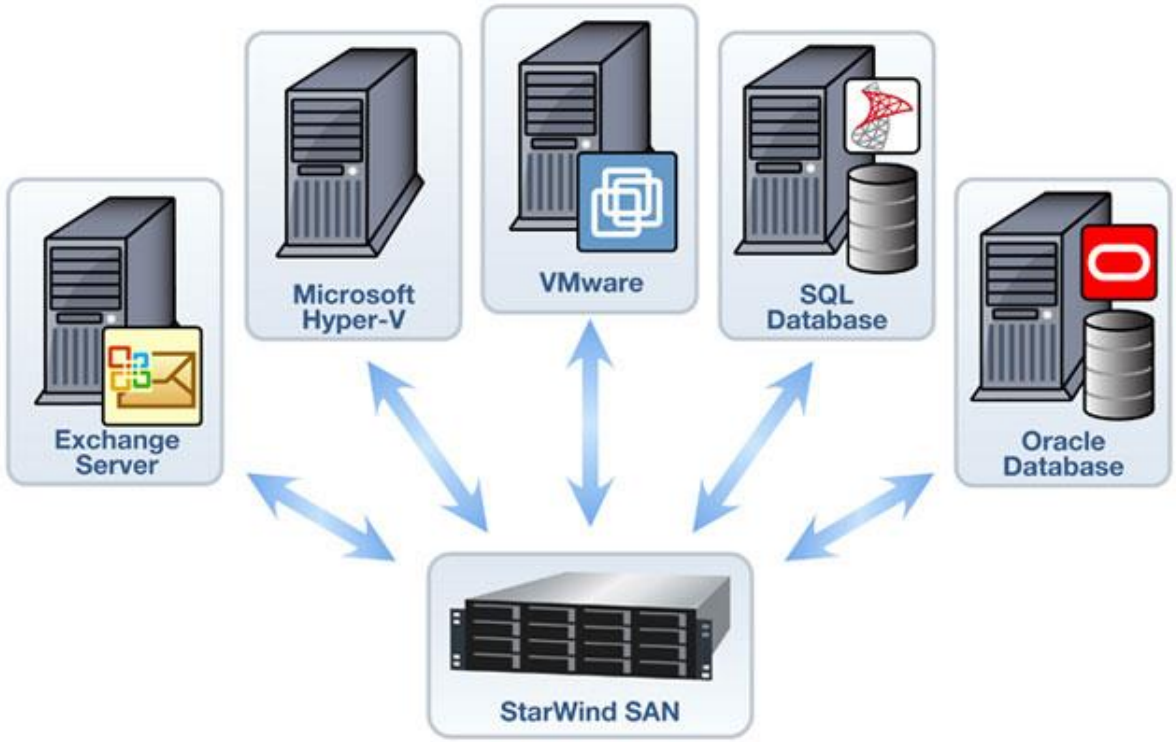


Infrastructure basics – Network

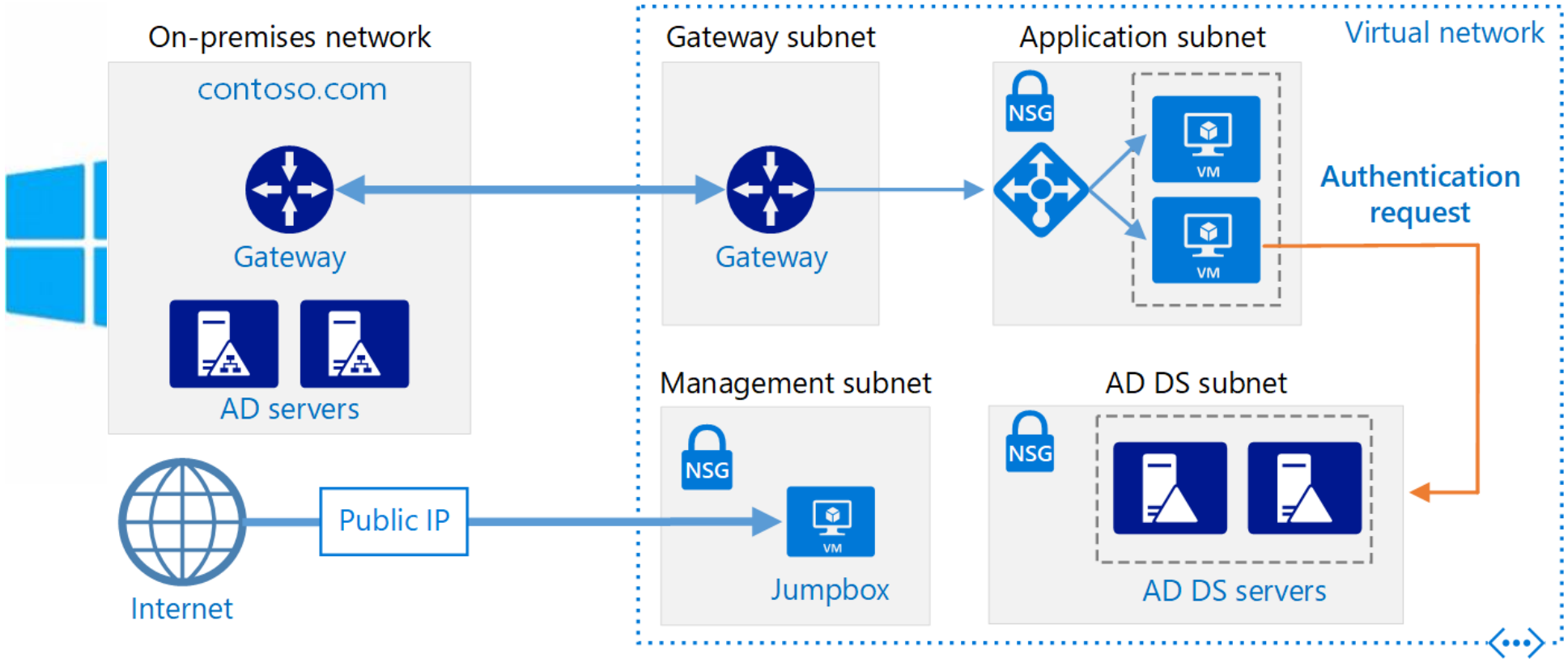


Infrastructure basics – Storage

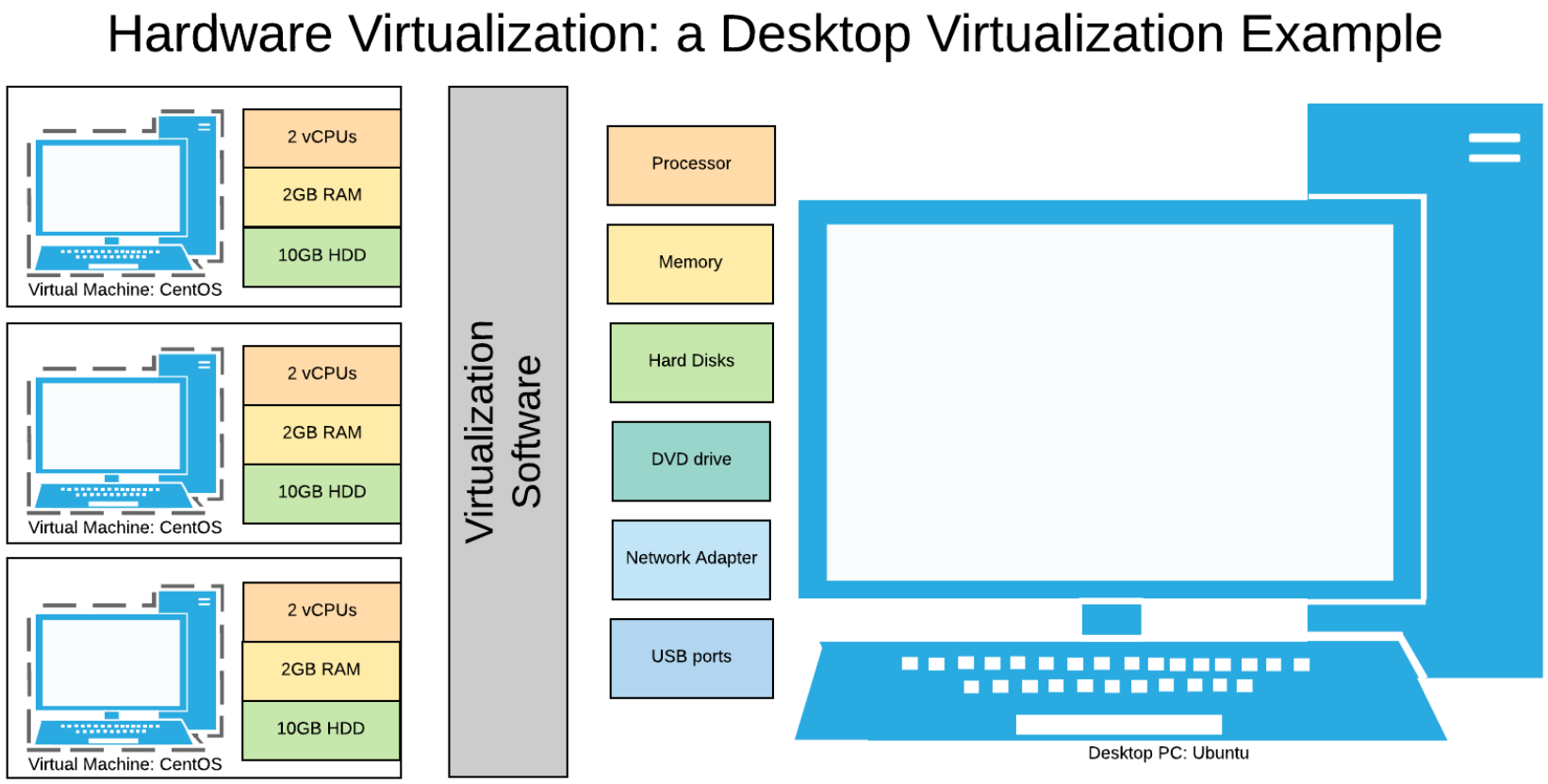




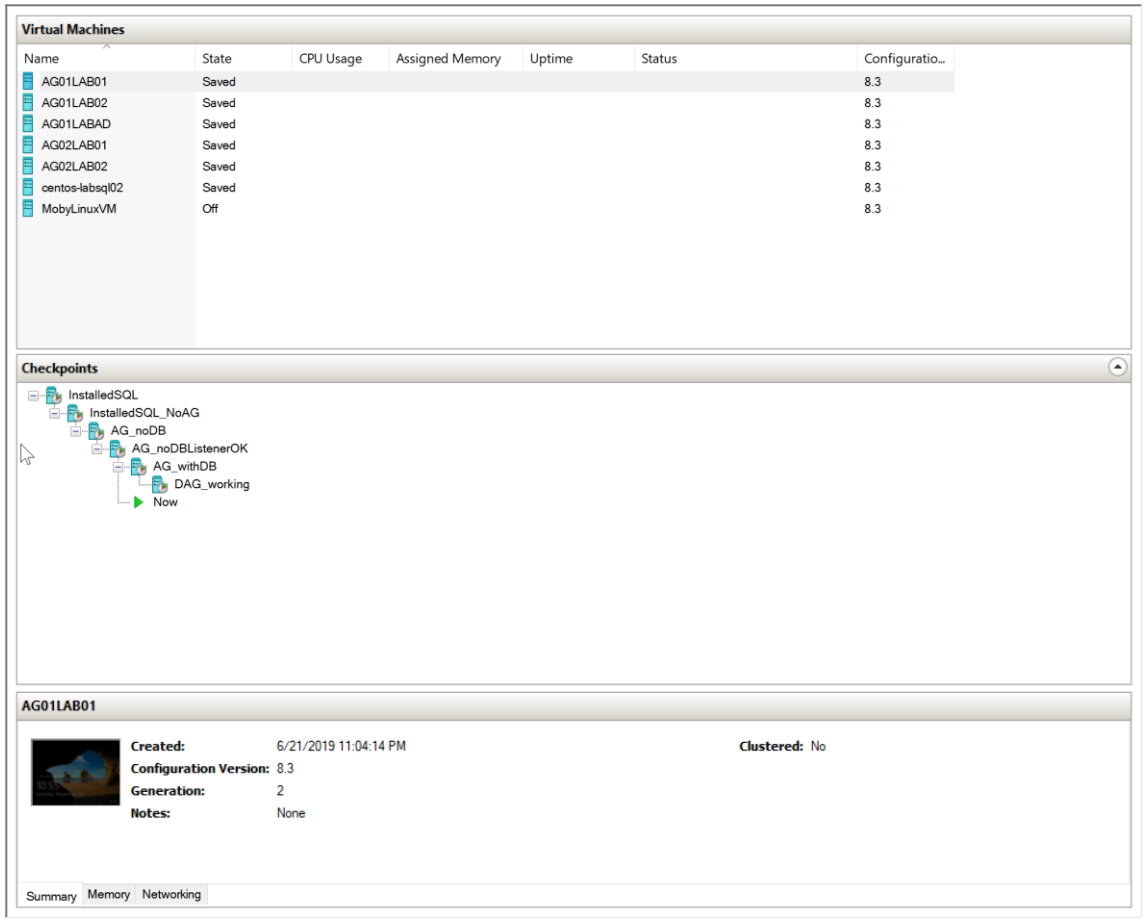
Infrastructure basics – Active Directory



Infrastructure basics – Virtualization



Virtualization on Hyper-V



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