

# Manage a Windows Server Failover Cluster

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# Overview



**Configure Scale-Out File Servers**

**Create an Azure witness**

**Configure a floating IP address for the cluster**

**Implement load balancing for the failover cluster**



# 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**



# Scale-Out File Server



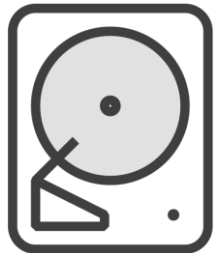
# Cluster Witness



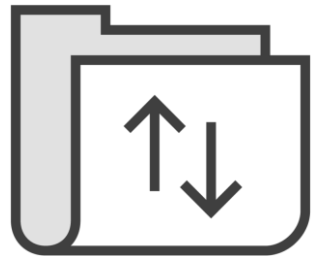
**Quorum: Majority vote count that keeps cluster online**



**Witness: Provides tie-breaking vote**



**Disk witness: Best for single-site clusters**



**File share witness: Best for multi-site clusters**



**Cloud witness: Best when cluster has Internet connectivity**



# Scale-Out File Server (SOFS)



**Continuously available file shares**

**All nodes host the share**

**Automatic client rebalancing**

**File server for general use: SMB and NFS file shares that are compatible with FSRM and DFS**

**Scale-out file server for application data: Hyper-V VHDs and SQL Server databases**



# Cluster Load Balancing



# Failover Cluster VM Load Balancing

## Cluster property to optimize cluster node utilization

- Clustered VMs may be moved due to patching
- Prevents an unbalanced cluster

## Heuristics at play

- Host memory pressure
- Host CPU utilization

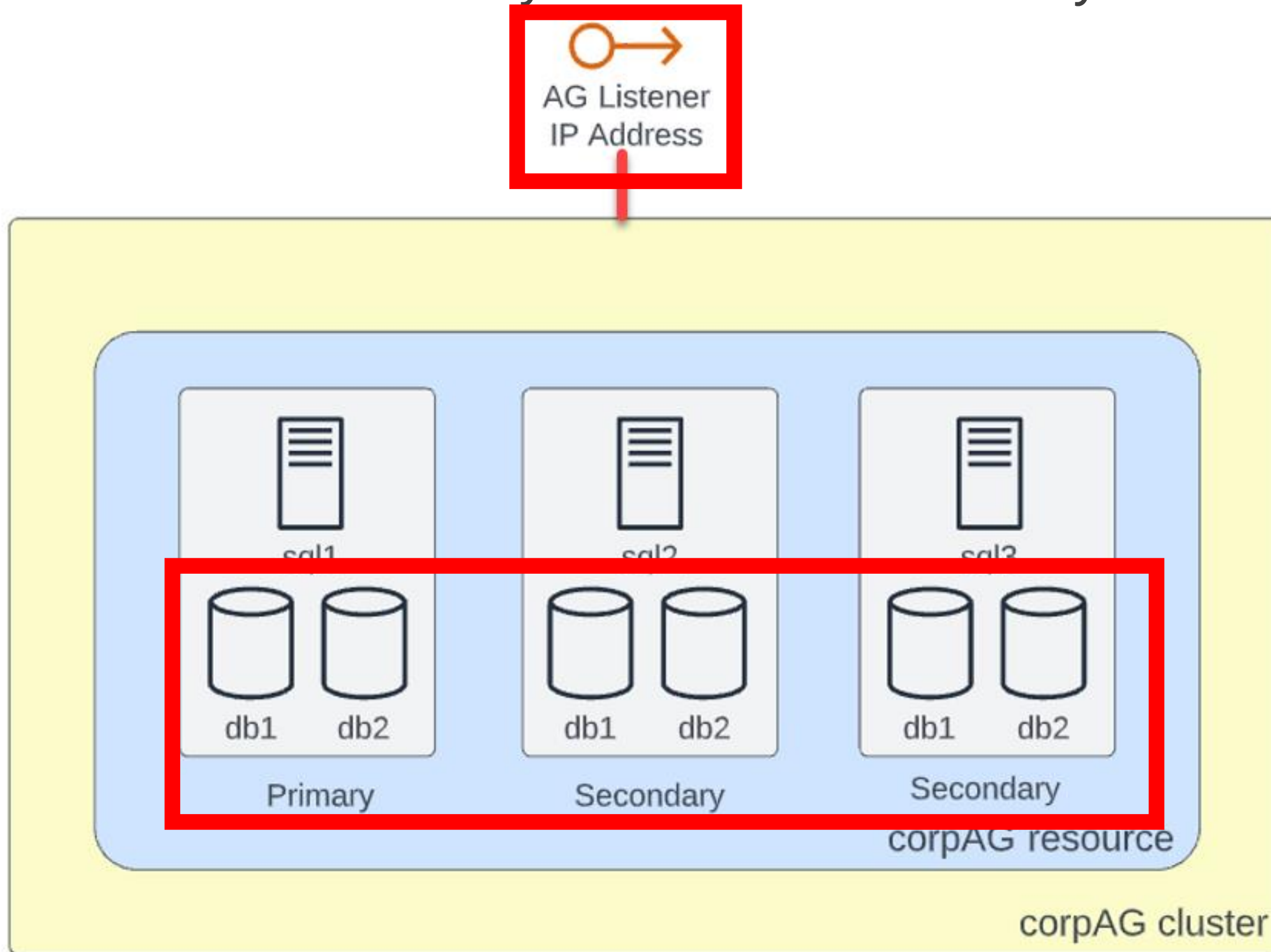
## Configuration

- (Get-Cluster).AutoBalancerLevel
- 1 (default): Moves VMs when host is >80 percent utilized
- 2: Moves VMs when host is >70 percent utilized
- 3: Moves VMs when host is >5 percent above cluster average





# SQL Server Always On Availability Group

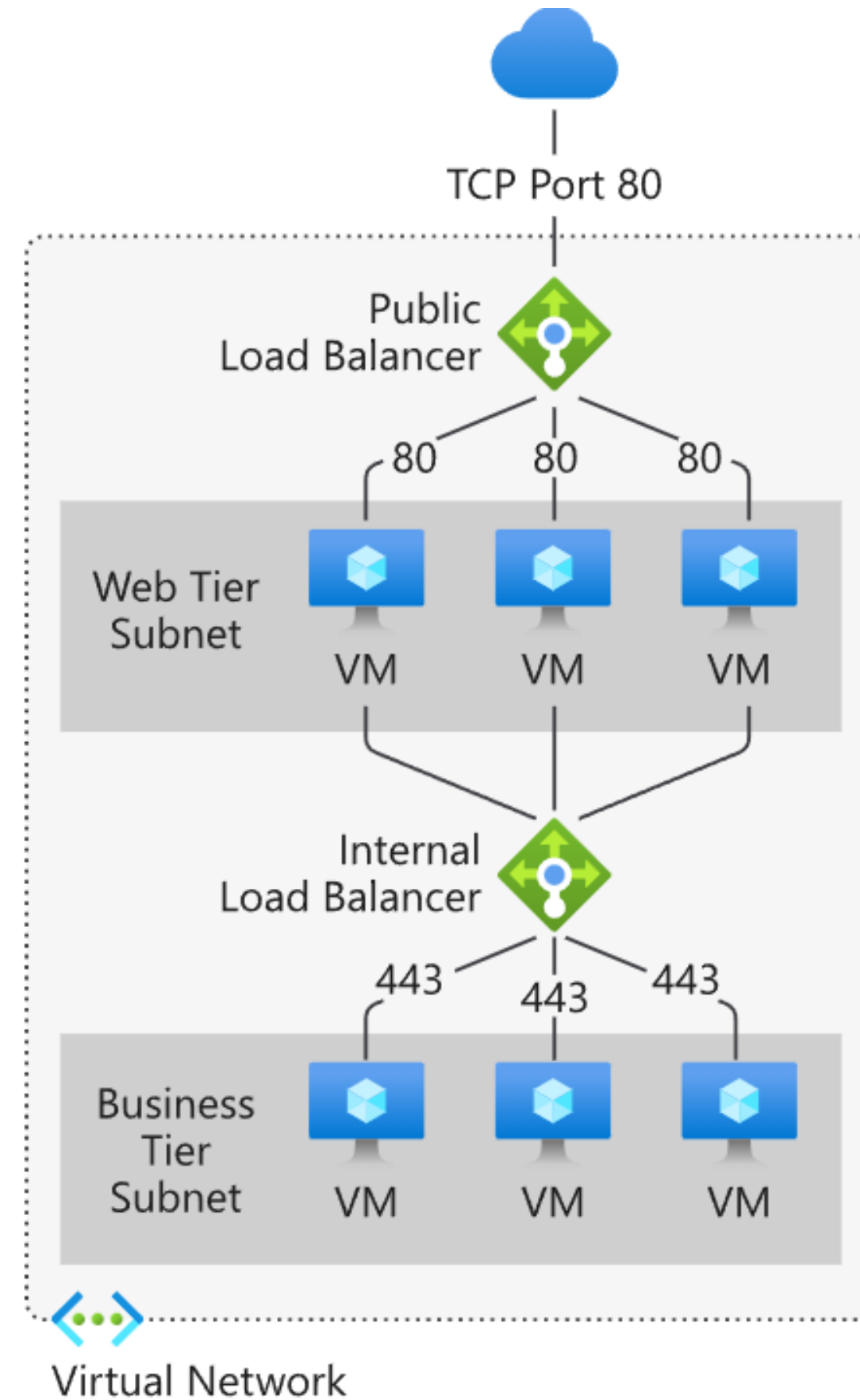


# Azure Load Balancer

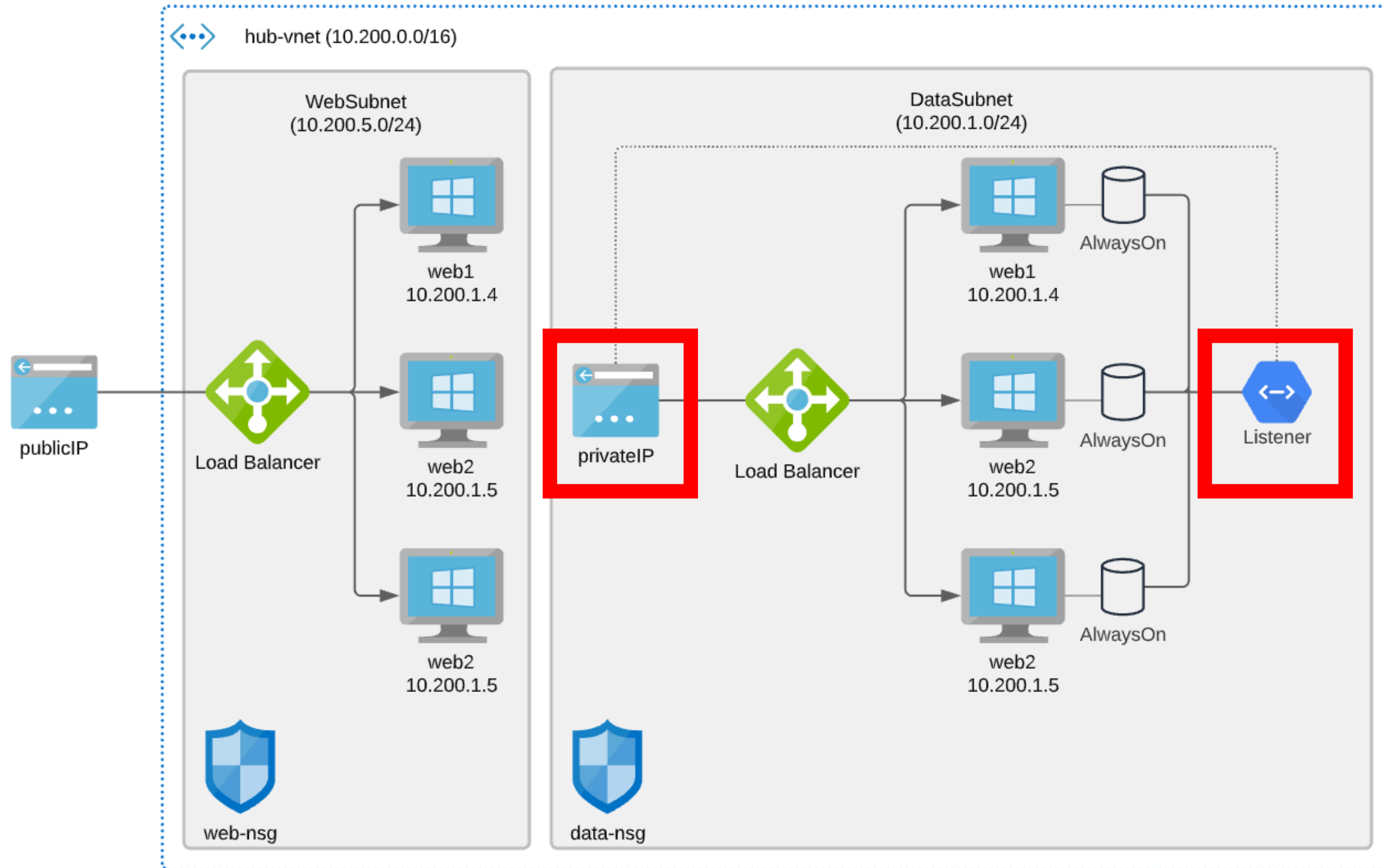
High availability for non-clustered hosts

OSI Layer 4 (IP addresses, ports, protocol)

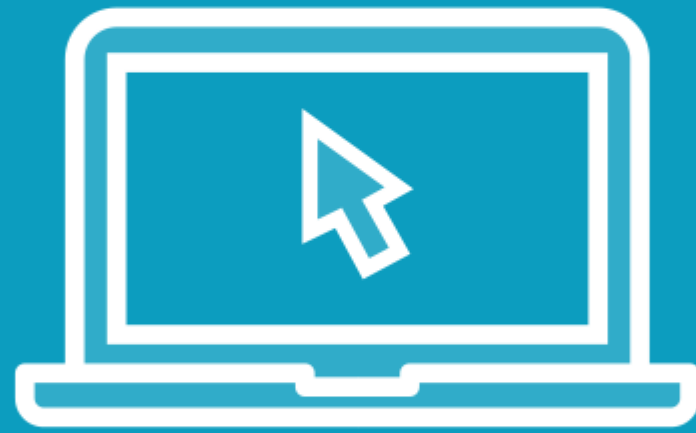
Regional and global deployment



# Azure Load Balancer with Floating IP



# Demo



# 1

**Configure cloud witness**

**Configure SOFS**

**Show Always On cluster in Azure**

**Share template**



## Summary



**For AZ-801, pay more attention to SOFS than Always On Availability Groups**

**If you're using VM failover clusters in Azure, ask yourself "why"**

- Platform-as-a-Service (PaaS) like Azure SQL Database

**"All well and good, Tim. But how do I actually perform failover and failback? What about rolling updates?"**



Up Next:

Manage Failover Clustering

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