Microsoft Azure

Save your resources! Microsoft Azure Infrastructure Services frees you to create a highly available Internet-facing SharePoint farm in the cloud with virtual machines. SQL Server AlwaysOn manages the SharePoint databases for you.

Here's how to set up a SharePoint farm with SQL AlwaysOn:

I. CONFIGURE AZURE COMPONENTS

Using the management portal, create 3 cloud services, 1 virtual network with 1 subnet, 1 storage account, and 4 VHD data disks. Also create 8 virtual machines for a minimum configuration:

- 2 Windows Server 2012 R2 Datacenter (size A2)
- 2 Microsoft SQL Server 2012 SP1 Enterprise on Windows Server 2012 (size A7 or larger)
- 4 SharePoint Server 2013 Trial (size A4)

2. CONFIGURE DOMAIN CONTROLLERS

1. Add the Domain Controller role to one Windows Server 2012 R2 VM.
2. Restart the VM.
3. Add user accounts to the domain:
   - SharePoint Farm Administrator
   - SharePoint Database Administrator (used to configure WSFC cluster)
   - SharePoint Installer
   - SQL Service Login 1 (service account for primary SQL Server instance)
4. Add the Domain Controller role to the second Windows Server 2012 R2 VM as a backup domain controller.

3. CONFIGURE SQL SERVER VMs

For each SQL Server VM, do the following:

1. Join the VM to the domain and restart.
2. Add the database administrator account as a sysadmin role to the default instance.
3. Add the database admin account as a machine administrator.
4. Configure the firewall to allow SQL Server traffic.
5. Change the SQL Server instance to use the respective domain service account (SQL Service Login 1).
6. Add a SQL Server login for NT AUTHORITY\SYSTEM with the following permissions: Alter any availability group, Connect SQL, and View server state.

4. CONFIGURE SHAREPOINT VMs

1. Join a SharePoint application server VM to the domain and restart.
2. Log on to the VM.
3. Run the Farm Configuration Wizard and create a new SharePoint farm with the primary SQL Server VM as the database server.
4. For the other SharePoint application server VM and the SharePoint web front end server VMs:

a. Join them to the domain and restart.
b. Log on to the VM.
c. Run the Farm Configuration Wizard and join the existing SharePoint farm.

TechNet: "Plan for SharePoint 2013"

5. CONFIGURE THE WINDOWS SERVER FAILOVER CLUSTER (WSFC)

1. Add the Failover Clustering feature to the VMs.
2. Create the Windows failover cluster that includes the SQL Server VMs on the primary VM:
   a. Create a single node WSFC cluster.
   b. Take the cluster name offline.
   c. Configure the cluster name's IP address to a link-local address (169.254.x.x).
   d. Bring the cluster name online.
   e. Add other SQL Server VMs to the WSFC cluster.
3. Enable AlwaysOn High Availability in SQL Server Configuration Manager on all SQL Server VMs.

MSDN: "Tutorial: AlwaysOn Availability Groups in Azure"

6. CREATE ALWAYSON AVAILABILITY GROUPS AND ADD DATABASES

1. Log on to the primary SQL Server VM.
2. Create a file share on one of the SQL servers and grant modify rights to the SQL Server Service accounts.
3. Use SQL Server Management Studio to do a full backup of the SharePoint DBs.
4. Run the New Availability Group Wizard to create an availability group (specifying the replicas and DBs).
5. Manually create the Availability Group Listener.
6. Remount the SharePoint databases using the Availability Group Listener.

TechNet: "Configure AlwaysOn Availability Groups for SharePoint 2013, Listener Configuration"

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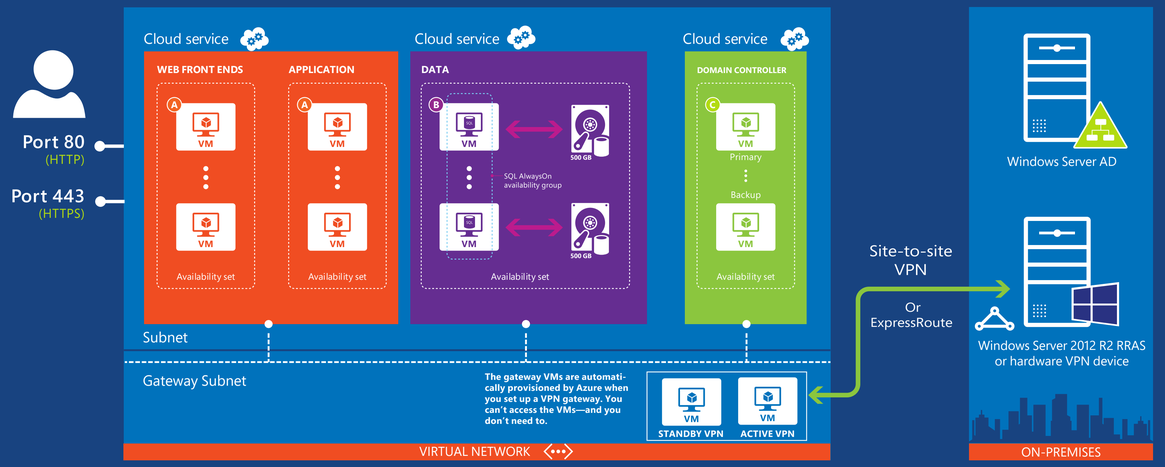
Farming in the cloud

A model of a SharePoint farm running on Azure, with a VPN or ExpressRoute connection to an on-premises site

Search **azure.microsoft.com, MSDN, or TechNet** for the keywords referenced below



Publish to the Internet

Logical views of the SharePoint farm showing how to manage publishing features and identity for an Internet site

SharePoint 2013 farm—logical view with sites (option 1)

OR

SharePoint 2013 farm—logical view with sites (option 2)

Separate environments for dev and production

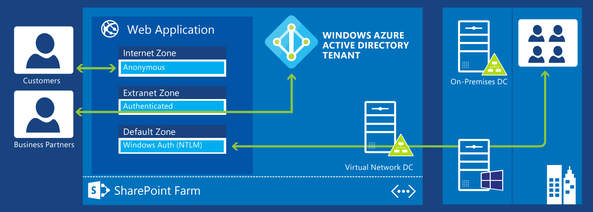
- Author and publish in the same environment
- Use the cross-site publishing feature to separate authoring from live sites
- Apply SharePoint topology guidance for configuring VMs and designing service distribution across VMs

TechNet: "Cross-site publishing"

Separate environments for development, staging, and publishing

- Multiple farm environments can be implemented to satisfy isolation requirements or different service-level agreements
- Cross-site publishing can be used across multiple SharePoint 2013 farms

Logical view of the SharePoint 2013 farm with identity management



Use Windows Azure Active Directory for customer accounts while using your on-premises Active Directory accounts to authenticate site authors and developers.

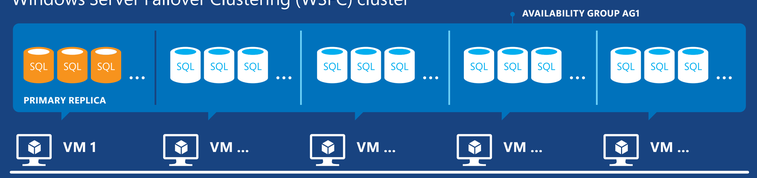
In SharePoint 2013, identity management is factored into the configuration of SharePoint zones and authentication. For Internet-facing sites, the following approach separates internal and external access into different zones:

- Configure the Internet zone for anonymous access
- Configure the Extranet zone for customer authenticated access. Use Azure Active Directory for customer accounts, or use a different SAML-based provider
- Configure the default zone for your internal accounts

Be more available

AlwaysOn availability groups and Azure availability sets

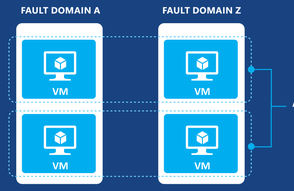
Windows Server Failover Clustering (WSFC) cluster



An availability group contains a discrete set of user databases, known as availability databases, that fail over together. The database set is known as an availability replica. There is one primary replica and up to four secondary replicas. Secondary replicas are not backups. You should back up your data as usual.

Deploying availability groups requires a Windows Server Failover Clustering (WSFC) cluster. Each replica must reside on a different node of the same WSFC cluster.

TechNet: "Overview of AlwaysOn Availability Groups"



AVAILABILITY GROUPS VS. AVAILABILITY SETS

An availability group is a SQL Server AlwaysOn solution that provides high availability to databases. In contrast, Azure availability sets span fault domains and ensure that hardware failures do not take down multiple VMs.

The availability set is a supporting configuration to AlwaysOn availability groups.

MSDN: "Manage the Availability of Virtual Machines"

Microsoft Azure: Deploy SharePoint with SQL Server AlwaysOn

Created by the Azure poster team azureposter@microsoft.com

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