Microsoft SharePoint Server 2016 Architectural Models

Introduction to fundamental SharePoint Server 2016 architectural models

SharePoint

This series is intended to raise awareness of the different fundamental architectural models through which SharePoint Online and SharePoint on-premises can be consumed. Start with whichever configuration best suits your organization's needs and future plans. Consider and use others as needed.

Four architectural models

- **SharePoint Online/SaaS** – You consume SharePoint through a Software as a Service (SaaS) subscription model. SharePoint is always up to date, but you are responsible for managing SharePoint itself.

- **SharePoint Hybrid** – You combine a SharePoint Online subscription with your on-premises SharePoint offering. You can incorporate SharePoint Online services into your overall SharePoint offering, start building SaaS management skills in your organization, and move your SharePoint sites and apps to the cloud at your own pace.

- **SharePoint in Azure/IaaS** – You extend your on-premises environment into Microsoft Azure Infrastructure as a Service (IaaS) for production, disaster recovery, and dev/test SharePoint Server 2016 farms.

- **SharePoint on-premises** – You plan, deploy, maintain, and customize your SharePoint environment in a datacenter that you maintain.

IT responsibilities

SharePoint provides the same rich set of capabilities no matter how you architect your deployment. The main difference between these four architectures is which IT responsibilities you own, and which you pay Microsoft to support through your subscription.

No matter which architecture is best for your organization, there are four core responsibilities that you will always own:

- **Data governance & rights management** – You should classify your sensitive data and ensure it is protected and monitored wherever it is stored and while it is in transit.

- **Client Endpoints** – Establish, measure, and enforce modern security standards on devices that are used to access your data and assets.

- **Account & access management** – Establish a profile for "normal" account activity and be alerted for unusual activity.

- **Identity** - Use credentials secured by hardware or Multi-Factor Authentication (MFA) for all identities.

IT Responsibility	SharePoint Online	Hybrid	Azure/ IaaS	On-premises
Data governance & rights management	Customer	Customer	Customer	Customer
Client endpoints	Customer	Customer	Customer	Customer
Account & access management	Customer	Customer	Customer	Customer
Identity and directory infrastructure	Microsoft/Customer	Microsoft/Customer	Customer	Customer
Network controls	Microsoft	Customer	Customer	Customer
Applications	Microsoft	Customer	Customer	Customer
Operating system	Microsoft	Microsoft/Customer	Customer	Customer
Physical hosts	Microsoft	Customer	Customer	Customer
Physical network	Microsoft	Microsoft/Customer	Customer	Customer
Physical datacenter	Microsoft	Microsoft/Customer	Microsoft	Customer

■ Microsoft ■ Customer

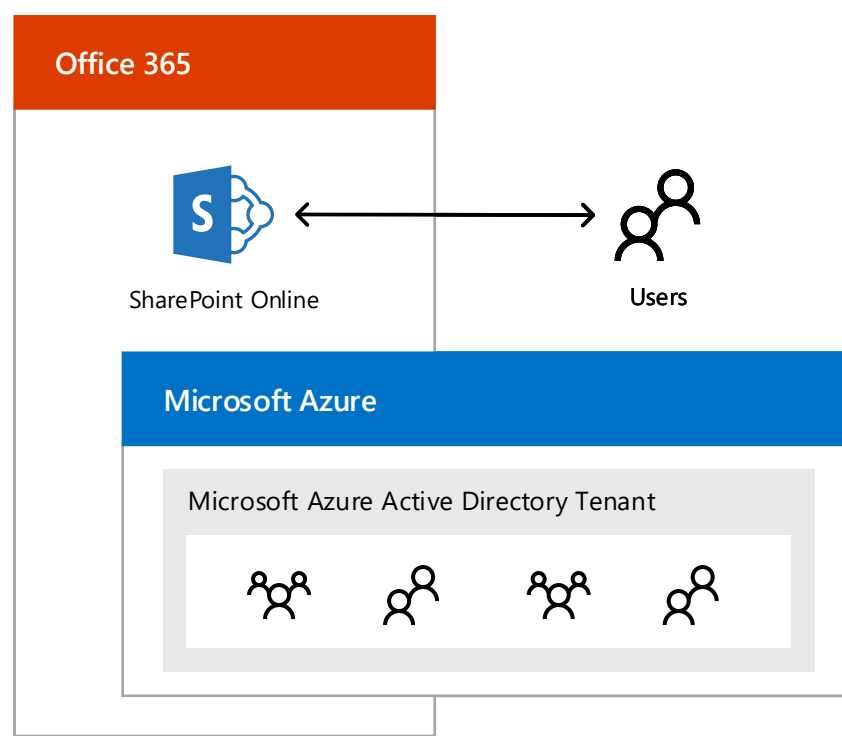**Microsoft**

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SharePoint Online

SharePoint

Let Microsoft host your user accounts and manage your SharePoint datacenter infrastructure.

Overview

- Microsoft hosts and manages the IT infrastructure, you manage your information and users.
- With Software as a Service (SaaS), a rich feature set is always up to date.
- Includes a Microsoft Azure Active Directory tenant.
- User log on with Microsoft Account from anywhere.
- Supports secure client communication (HTTPS).
- Customizations: Apps for Office and SharePoint.
- Dedicated Microsoft data center equipment through Office 365 Dedicated Subscriptions, includes IPsec-secured VPN, MFA and ITAR-support plan .

Architecture tasks

- Plan and design integration with Azure Active Directory.
- Ensure network capacity and availability on-premises.
- Get third-party SSL certificates if required.
- If you have on-premises directory, get third-party SSL certificates.
- Plan the tenant name, design site collection architecture, and governance.
- Plan customizations, solutions, and apps for SharePoint Online.

Best for...

- When you have minimal on-premises IT infrastructure, no on-premises directory
- Start-ups/small businesses

Licensing requirements

- Subscription model, no additional licenses needed

Microsoft
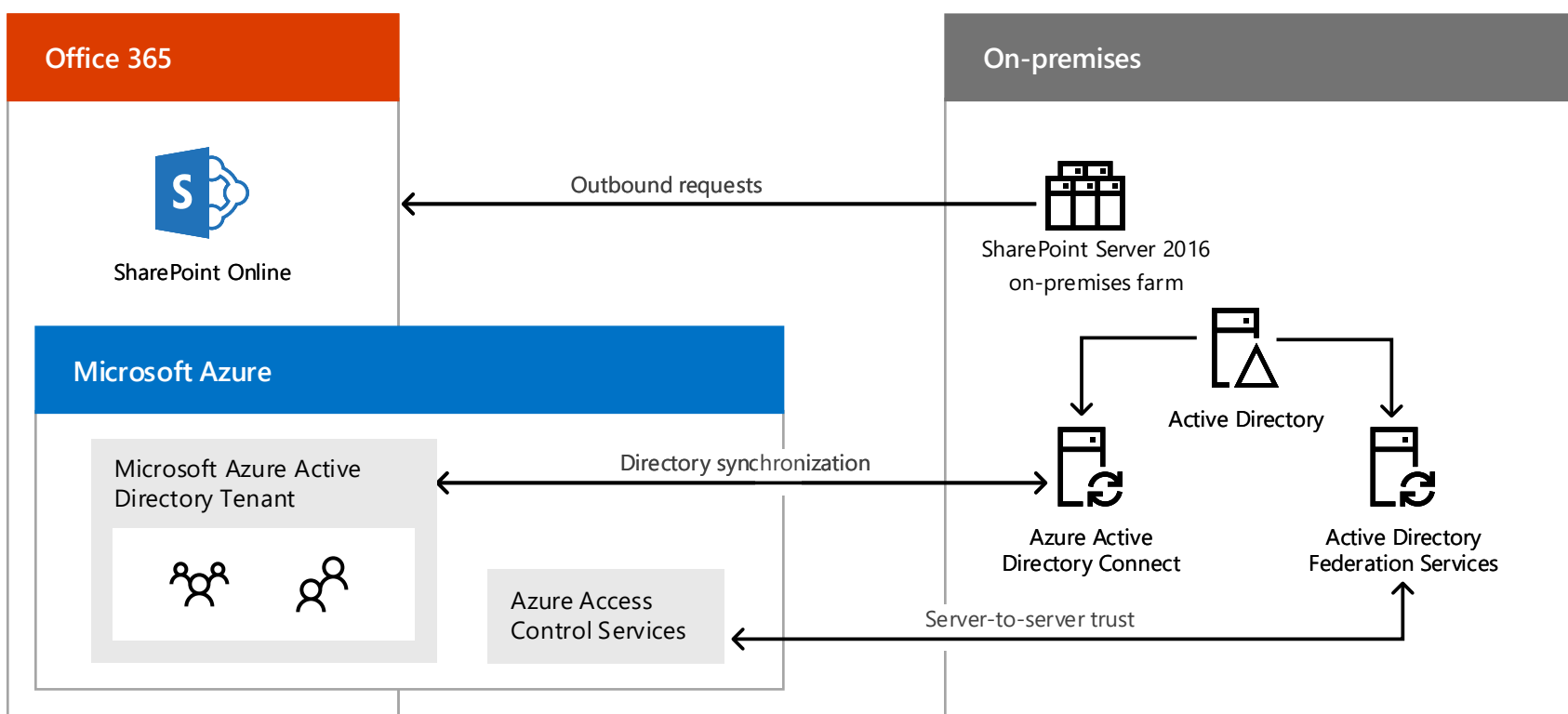
SharePoint hybrid

Add SharePoint Online to your on-premises SharePoint environment and move workloads to the cloud at your own pace.

Office 365

SharePoint Online

← Outbound requests

Microsoft Azure

Microsoft Azure Active Directory Tenant

Azure Access Control Services

On-premises

SharePoint Server 2016 on-premises farm

Active Directory

Directory synchronization

Azure Active Directory Connect

Active Directory Federation Services

Server-to-server trust →

Overview

All the benefits of SharePoint Online in Office 365 plus these integrated capabilities.

SharePoint Search	Hybrid SharePoint Search	OneDrive for Business Redirect	Office 365 Cloud Services
• Your users access the SharePoint hybrid environment from anywhere • Their searches run against the whole SharePoint environment	• Help unify your users' portal navigation experience across SharePoint on-premises and Office 365. • Consolidate your user profiles in Office 365. • Consolidate your followed sites list in Office 365. • Bring tiles from the Office 365 app launcher to SharePoint on-premises	• When you configure OneDrive for Business redirect, all user interaction with their existing OneDrive for Business On-premises is seamlessly redirected to their OneDrive for Business in SharePoint Online in Office 365 • Offload on-premises OneDrive for Business storage overhead to OneDrive for Business in SharePoint Online.	• Make Office 365 cloud services available to your SharePoint Server 2016 on-premises users: • Office 365 Video • Delve • App launcher

Best for...

- When you want to bring the benefits of the SaaS SharePoint Online service to your organization and then move workloads to the cloud at your own pace.
- External sharing and collaboration instead of setting up an extranet.
- Developing cloud skill sets in a safe way that doesn't introduce unnecessary risk to your organization.
- Reducing your SharePoint on-premises footprint.
- Charting a supported, safe, and viable course for your SharePoint environment into the future.

Architecture tasks

- Plan network connectivity between on-premises and SharePoint Online in Office 365
- Plan server-to-server trusts and certificates.
- Plan for identity synchronization.
- Plan User Profile migration to SharePoint Online.
- Plan for a dedicated on-premises search farm
- Decide which features to integrate and workloads to move
- Plan for moving your OneDrive for Business content to OneDrive for Business in SharePoint Online before implementing OneDrive for Business redirect.

Licensing requirements

- Office 365 — Subscription model, no additional licenses needed.
- On-premises — Windows Server 2012 R2
- On-premises — SQL Server 2014 SP1
- On-premises — SharePoint Server 2016 License
- On-premises — SharePoint Server 2016 Client Access License

More information	Plan for SharePoint Server 2016 hybrid	SharePoint Hybrid
	http://aka.ms/Sp2016Hybrid	http://aka.ms/spsochyb

Microsoft

Microsoft SharePoint Server 2016 Architectural Models

SharePoint Server 2016 in Azure

SharePoint

Run your servers in Azure IaaS and maintain complete control of your SharePoint Server 2016 environment.

Overview

- Use Azure IaaS to host a SharePoint Server 2016 farm.
- Best native cloud platform for SQL Server and SharePoint.
- Computing resources are available almost immediately with no commitment.
- Focus on applications, instead of datacenters and infrastructure.
- SharePoint solutions can be accessible from the Internet or from an on-premises environment through a site-to-site VPN or ExpressRoute connection.
- Customizations are not limited.

Architecture tasks

- Design the Azure virtual network, with addressing, subnets, and DNS.
- Design domain environment and integration with on-premises servers.
- Design availability sets and storage accounts
- Design the SharePoint farm topology and logical architecture using MinRole
- Design high availability with Microsoft Azure availability sets and update domains.
- Choose virtual machines sizes
- Create and configure load balancers.
- Expose external web ports for public access, if needed.
- Design the disaster recovery environment.

Best for...

- Public-facing sites that use Microsoft Azure AD for accounts and authentication.
- Quickly setting up and tearing down dev/test and staging environments.
- Applications that span your datacenter and the cloud.
- A cost-effective disaster recovery environment.
- Farms that require deep reporting or auditing.
- Web analytics.
- Data encryption at rest (data is encrypted in the SQL databases).

Licensing requirements

- Microsoft Azure subscription
- SharePoint Server 2016 License
- SharePoint Server 2016 Client Access License

More information

SharePoint Server 2016 in Azure
http://aka.ms/SP2016InAzure

Microsoft Azure Architectures for SharePoint 2013
http://aka.ms/SP2013ArchAzure

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What BDMs and architects need to know about Office 365, Microsoft Azure, and on-premises deployments
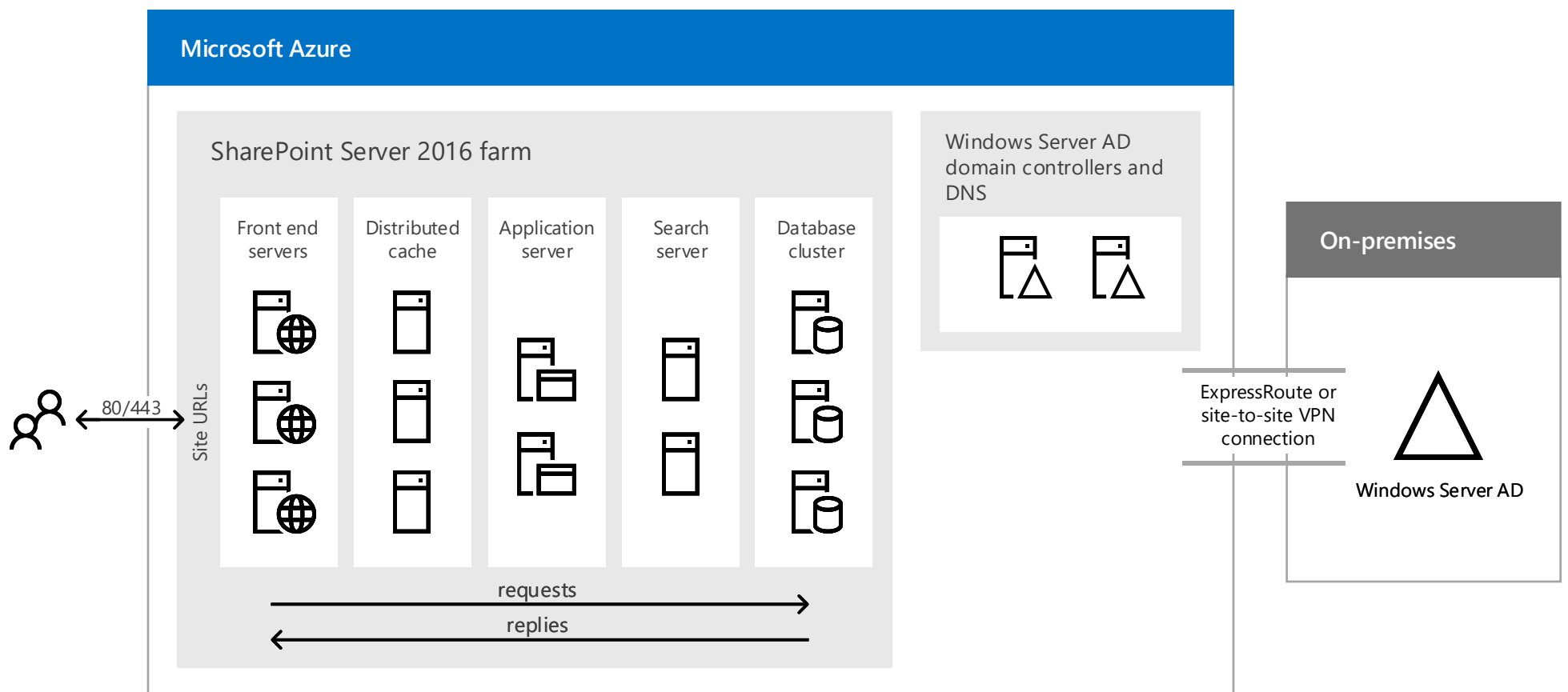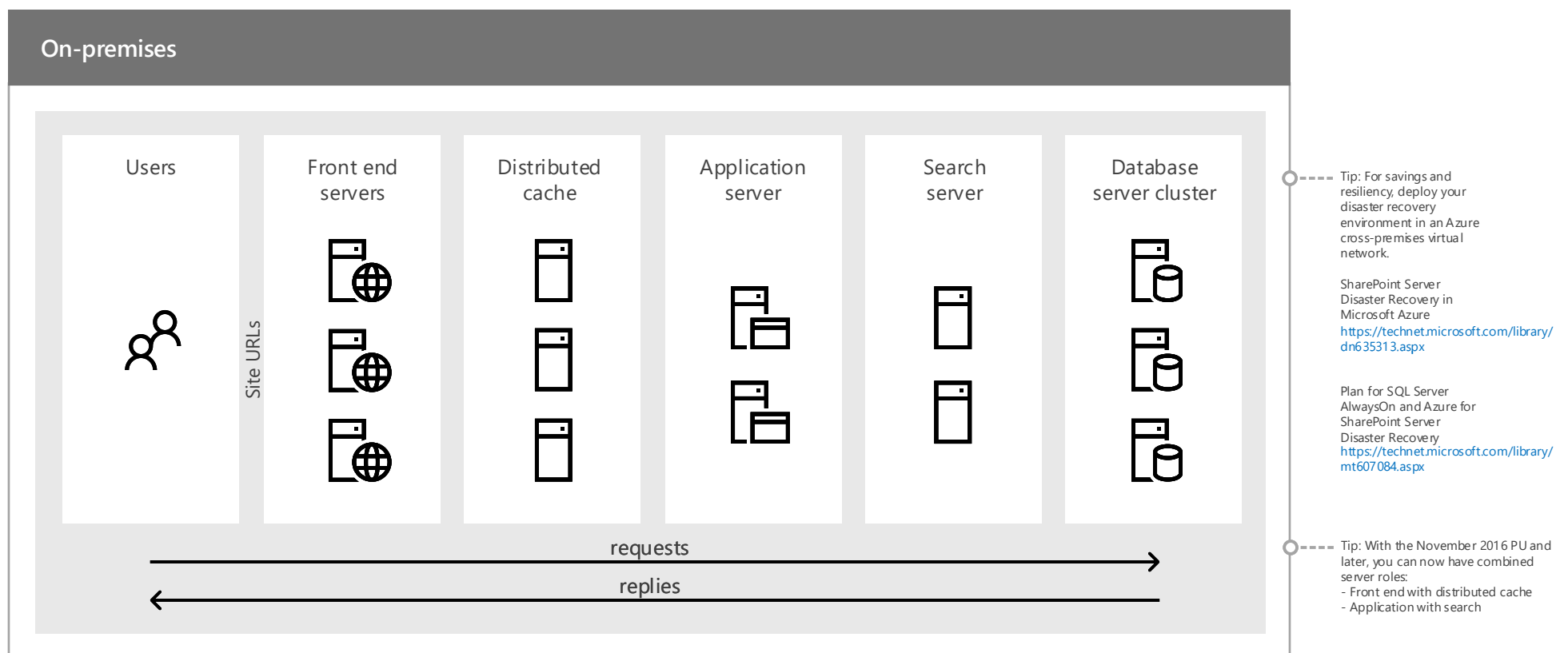
SharePoint Server 2016 on-premises

SharePoint

Host your servers locally and maintain complete control of your environment.

On-premises

Users	Front end servers	Distributed cache	Application server	Search server	Database server cluster

Site URLs

requests →
← replies

Tip: For savings and resiliency, deploy your disaster recovery environment in an Azure cross-premises virtual network.

SharePoint Server Disaster Recovery in Microsoft Azure
https://technet.microsoft.com/library/dn635313.aspx

Plan for SQL Server AlwaysOn and Azure for SharePoint Server Disaster Recovery
https://technet.microsoft.com/library/mt607084.aspx

Tip: With the November 2016 PU and later, you can now have combined server roles:
- Front end with distributed cache
- Application with search

Overview

- Traditional model where you plan, deploy, maintain and customize your SharePoint Server 2016 solution and all of the supporting infrastructure.
- Software purchased from Microsoft through an Enterprise Agreement or volume licensing.
- Microsoft can provide support at a cost through the Microsoft Services and Support organizations.

Architecture tasks

- Identify the SharePoint services that your organization needs.
- Design a SharePoint farm topology and logical architecture.
- Size hardware (physical or virtual) and supporting infrastructure.
- Perform validation testing.
- Integrate with Windows Server AD and DNS.
- Design the disaster recovery environment.

Best for...

- Highly customized solutions where it is impractical or too costly to move them to SharePoint Online in Office 365.
- In-country farms (when data is required to reside within a jurisdiction).
- Private cloud solutions.
- Legacy solutions with third-party components that depend on hardware and software that are not supported on Microsoft Azure IaaS.
- Privacy restrictions that prevent synchronization of Windows Server AD accounts with Microsoft Azure Active Directory (a requirement for Office 365).
- Organizations that desire control of the entire platform and solution.

Licensing requirements

- Windows Server 2012 R2 or Windows Server 2016
- SQL Server 2014 SP1 or SQL Server 2016
- SharePoint Server 2016 License
- SharePoint Server 2016 Client Access License

More information

SharePoint Server 2016
http://aka.ms/sp2016TN

Planning for a MinRole server deployment in SharePoint Server 2016
https://technet.microsoft.com/library/mt743704(v=office.16).aspx

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