

SharePoint Server 2013 系統架構規劃



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MCP, MCP+I, MCSA, MCSE, MCDBA, MCAD, MCSD, MCTS, MCITP, MCPD, MCT, MVP

大綱

- 基礎知識
- 伺服器與角色架構
- 服務應用程式架構
- 身份驗證架構

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- 身份驗證架構

談架構之前你應該知道的 ...

- Service Applications
- Services on the Server
- Visual Technologies
- SharePoint Farm
- Server Roles
 - Web servers
 - Application server roles
 - Database servers

談架構之前你應該知道的 ...

- Web Application
- Content DB
- IIS Application Pool
- Site Collection
- Site

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最低容錯配置



Web servers



Application servers
running all service
application roles



All databases

Use SQL Server clustering, mirroring, or AlwaysOn for the database servers. AlwaysOn requires SQL Server 2012.

搜尋最佳化配置

Web servers



Dedicated web server for crawling

Application servers running all other service application roles



All databases



Dedicated application servers for the **query processing component** and the **index component**

Office Web Apps Server

Web servers



Office Web Apps Server farm



Application servers running all other service application roles



All databases



Query processing components and index components

要求管理與負載平衡

Load Balancer



Request Management runs on all web servers in a farm when in integrated mode

- Integrated mode
- Dedicated mode

Web servers



Office Web Apps Server farm

Application servers running all other service application roles



Request Management does not apply to Office Web Apps Server.

Request Manager runs within SharePoint under SPRequestModule and responds to HTTP requests only.

All databases



Query processing components and index components

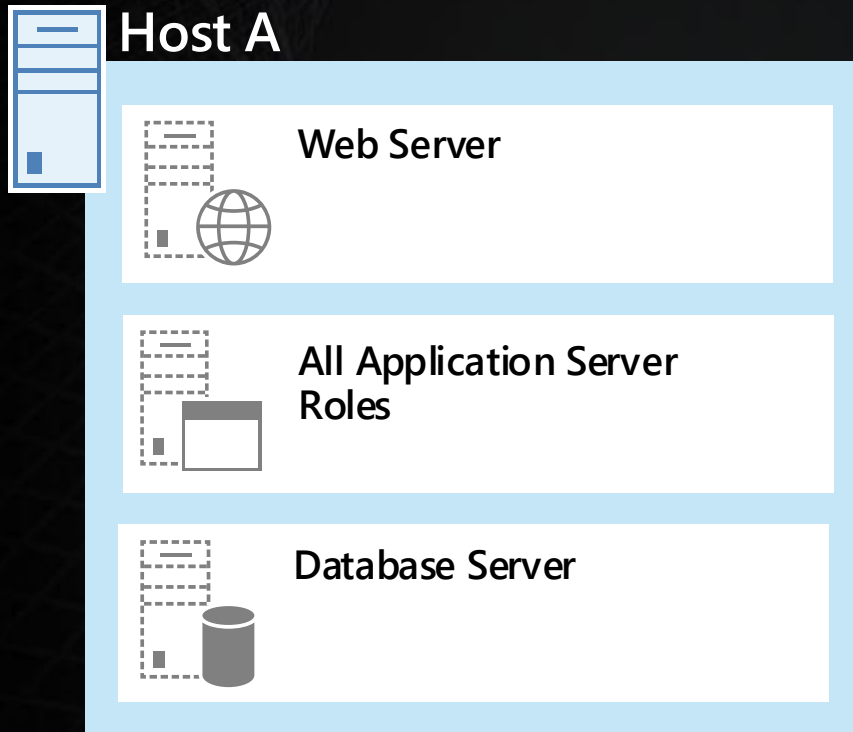
To configure Request Manager:

- Start the Request Management service on desired web servers.
- Configure rules by using Windows PowerShell.

範例: 1~2 部伺服器

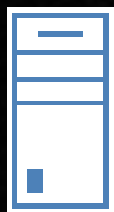
Development Environments

Mimic a three-tier environment by using virtualization.



範例: 1~2 部伺服器

One-server farm
Evaluation or <100 users



All roles on one server, including SQL Server

Two-tier farm
Up to 10,000 users



All Web and application server roles

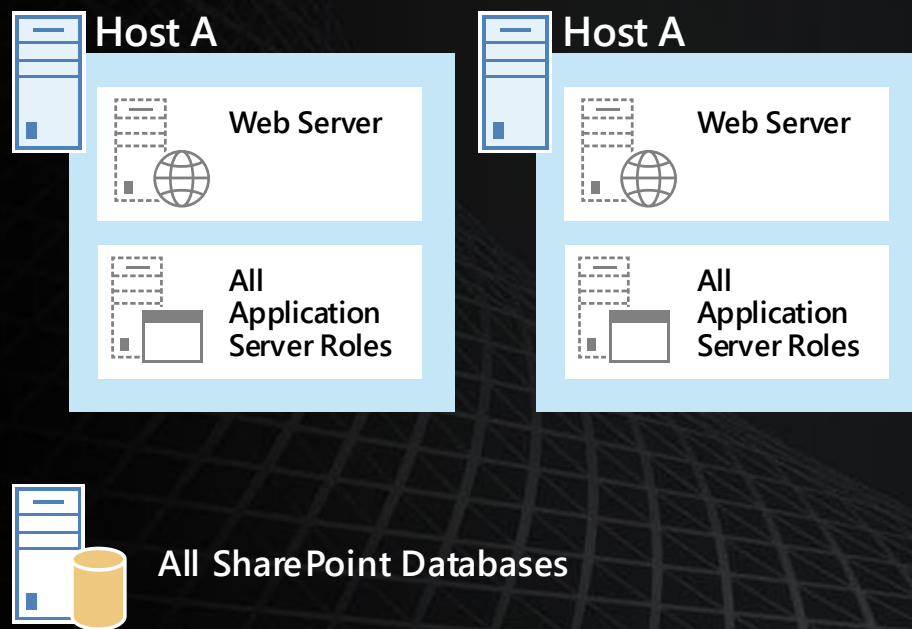


Databases

範例: 3 部伺服器

Three-server virtualized farm
Use virtualization to maximize the potential of a smaller number of servers.

Two web servers are predicted to serve 10,000-20,000 users.



High availability — For environments above 1,000 users, two servers utilizing SQL Server clustering, mirroring, or AlwaysOn is recommended. AlwaysOn requires SQL Server 2012.

範例: 4 部伺服器



Web/Query server



Application Server



All SharePoint Databases



Web server



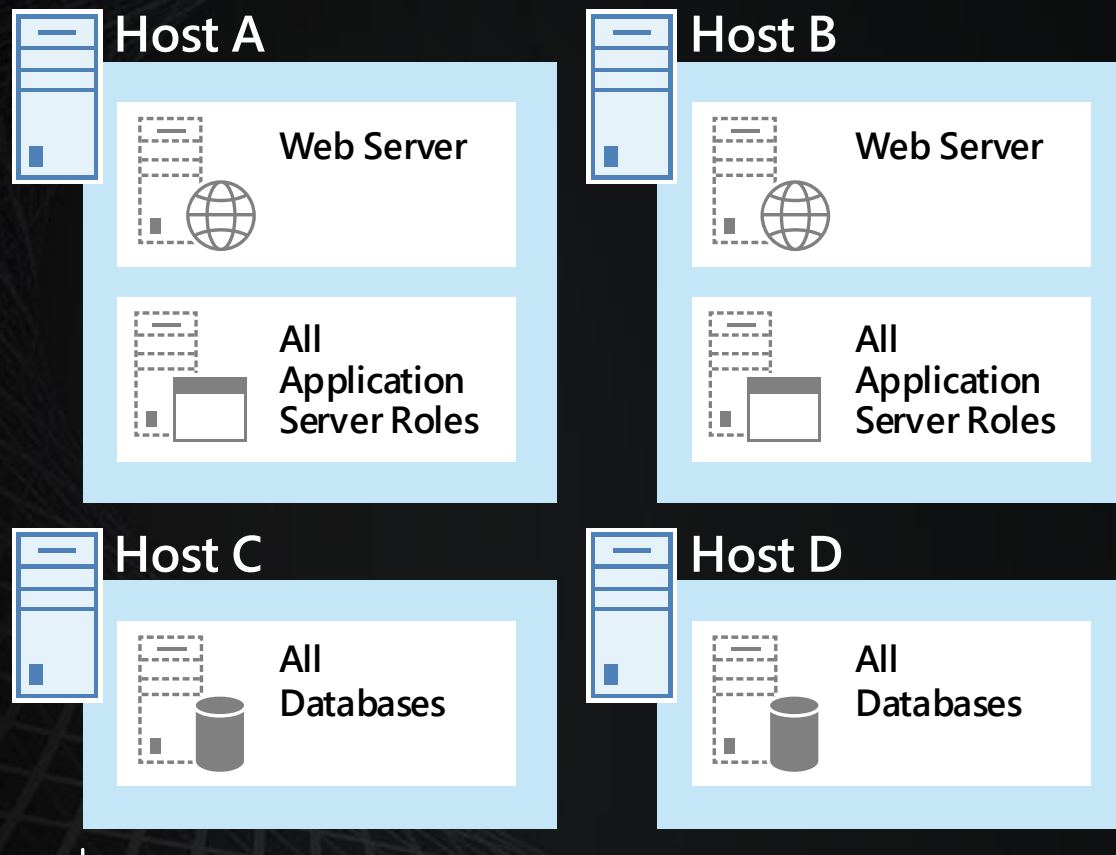
Application Servers



All SharePoint Databases

範例: 4 部伺服器 + 虛擬化

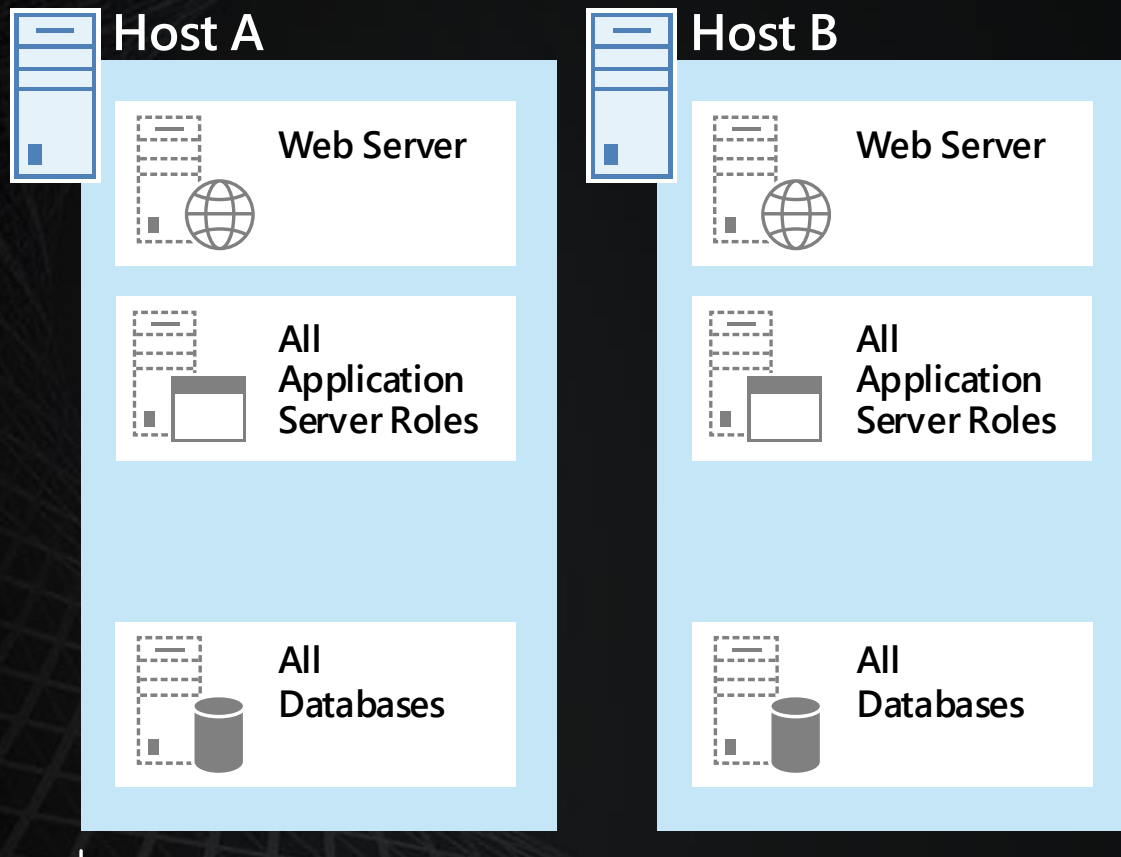
Windows Server 2008 R2



SQL Server installed and configured to support SQL clustering, mirroring, or AlwaysOn. AlwaysOn requires SQL Server 2012.

範例: 2 部伺服器 + 虛擬化

Windows Server 2012



SQL Server installed and configured to support SQL clustering, mirroring, or AlwaysOn. AlwaysOn requires SQL Server 2012.

範例: 6 部伺服器

Web Servers



Application servers
running all service
application roles

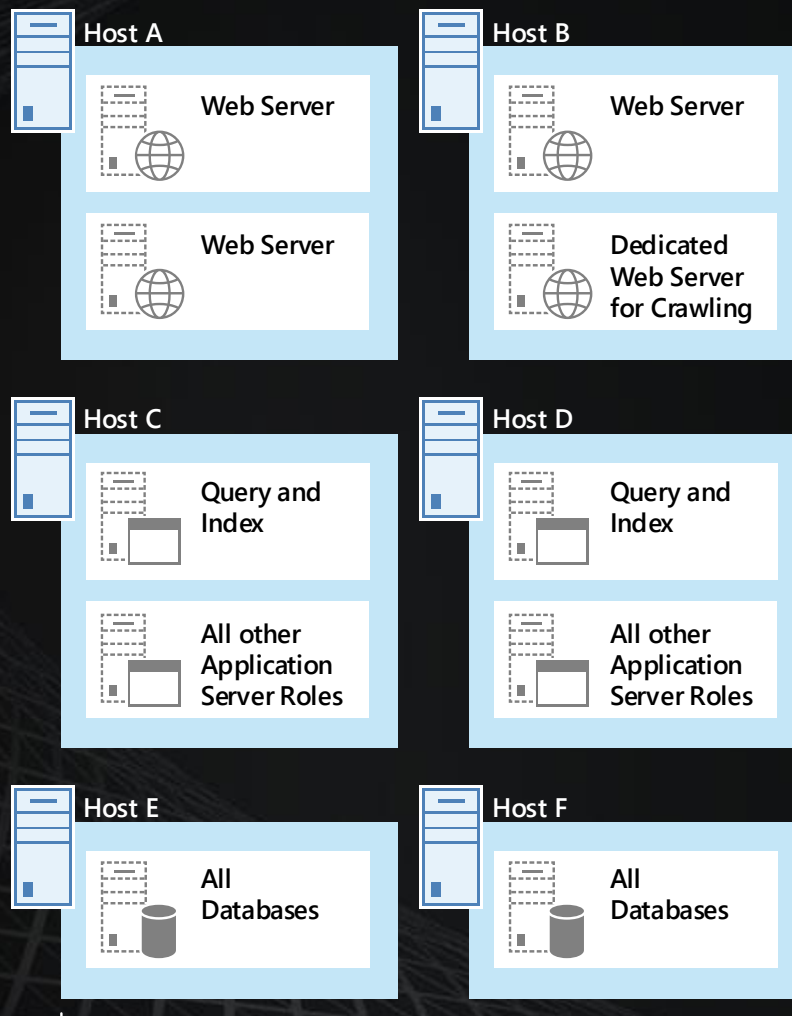


All SharePoint
Databases



範例: 6 部伺服器 + 虛擬化

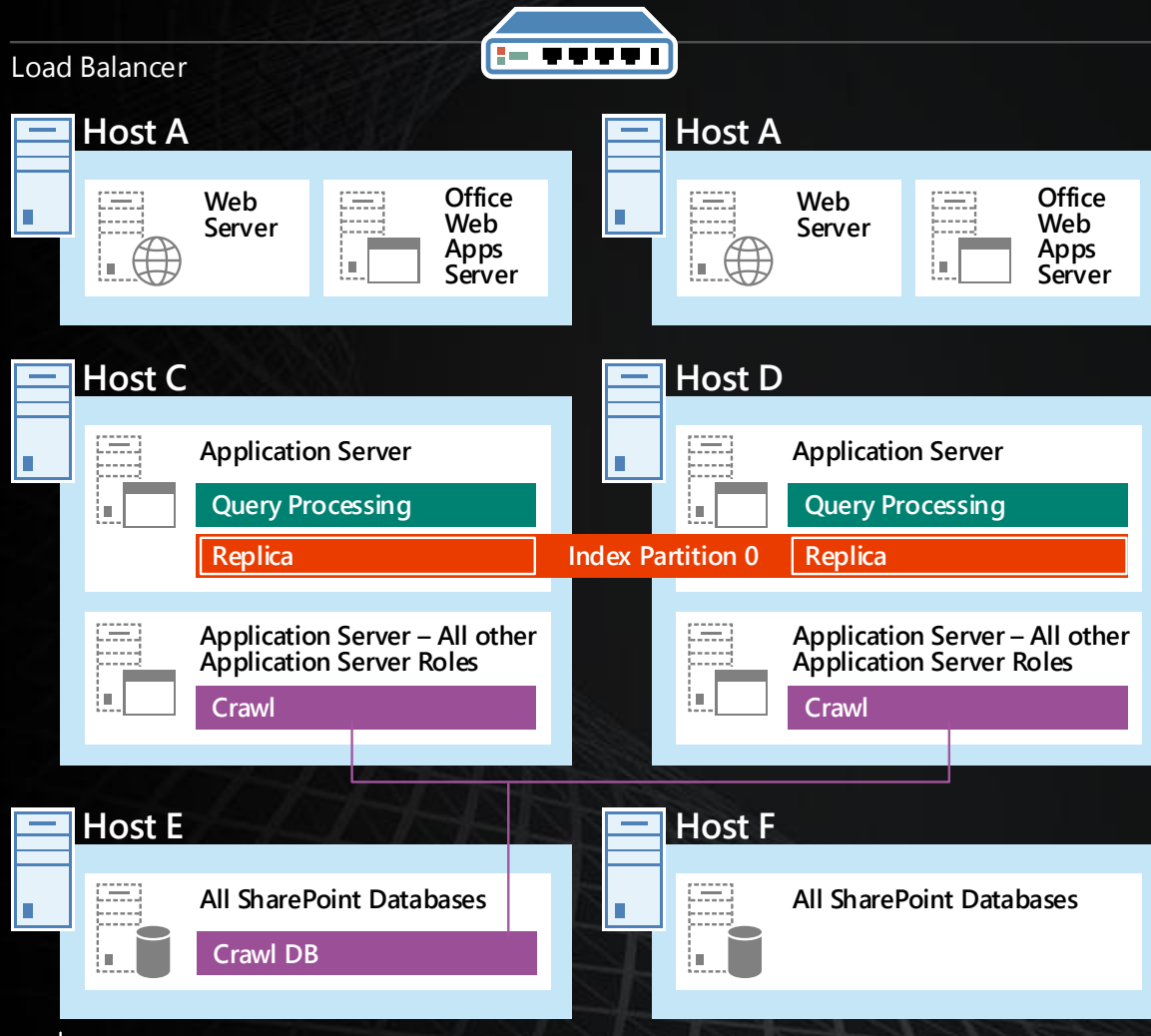
Windows Server 2008 R2



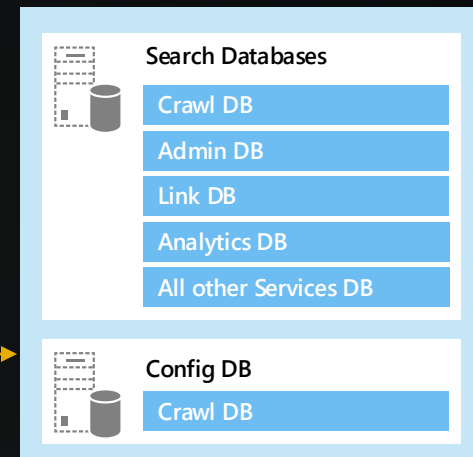
SQL Server installed and configured to support SQL clustering, mirroring, or AlwaysOn. AlwaysOn requires SQL Server 2012.

範例: 6 部伺服器 + 虛擬化 + ...

Windows Server 2008 R2



Scale out the database layer by first separating content DBs from services DBs. The Config DB can share a server with the content DBs.



SQL Server installed and configured to support SQL clustering, mirroring, or AlwaysOn across both of the hosts.

資料庫效能配置

Database group 1



Content databases and configuration database

Database group 2



Search databases

Database group 3



All other SharePoint databases

伺服器角色效能與負載 1/2

Server roles	Performance goal	Components and services	Candidates for dedicated servers
Distributed Cache and Request Management servers	<p>Fast response to user requests with consistent latency:</p> <ul style="list-style-type: none"> • Latency — low (<500 millisecond) • Throughput — medium • Resource utilization — low-medium 	<p>Distributed Cache Microsoft SharePoint Foundation Web Application Request Management</p>	
Front-end servers	<p>Maximize resources with high throughput:</p> <ul style="list-style-type: none"> • Latency — high (>1 minute) • Throughput — high • Resource utilization — high to very high 	<p>Access Services and Access Services 2010 Business Data Connectivity Central Administration Managed Metadata Microsoft SharePoint Foundation Web Application Secure Store Service State Subscription Settings User Code User Profile Visio Graphics</p>	<p>Excel Calculation Performance Point Project Search Query</p>

伺服器角色效能與負載 2/2

Server roles	Performance goal	Components and services	Candidates for dedicated servers
Batch-processing servers	Maximize resources with high throughput: <ul style="list-style-type: none"> • Latency — high (>1 minute) • Throughput — high • Resource utilization — high to very high 	Crawl Target Machine Translation Microsoft SharePoint Foundation Web Application PowerPoint Conversion User Profile Synchronization Word Automation Work Management Workflow timer service	Search Crawl
Specialized workloads (if needed)	Fairly consistent latency: <ul style="list-style-type: none"> • Latency — low (<500 milliseconds) • Throughput — medium • Resource utilization — low-high 	Excel Calculation PerformancePoint Project Search Microsoft SharePoint Foundation Web Application	
All databases	Fast response and consistent latency: <ul style="list-style-type: none"> • Latency — very low (<5 milliseconds) • Throughput — very high • Resource utilization — low-medium 		





案例: 微軟 Office 部門的配置 1/3

- 工作負載
 - 15,000 users
 - 2,500 unique users per hour
 - 8,8000 active users per week
 - 1.7 million requests per day
 - Collaboration, social, document management, Project
 - 204,106 profiles
 - 1 Web application

案例: 微軟 Office 部門的配置 2/3

- 資料量
 - 1.3 Terabytes total data
 - 1,001,141 documents
 - 10 content databases
 - Largest content database—290 Gb
 - 8,297 site collections
 - Largest site collection—275 Gb (tested at larger than recommended limit)
- Service-level agreement (during peak hours)
 - 99.9% availability

案例: 微軟 Office 部門的配置 3/3

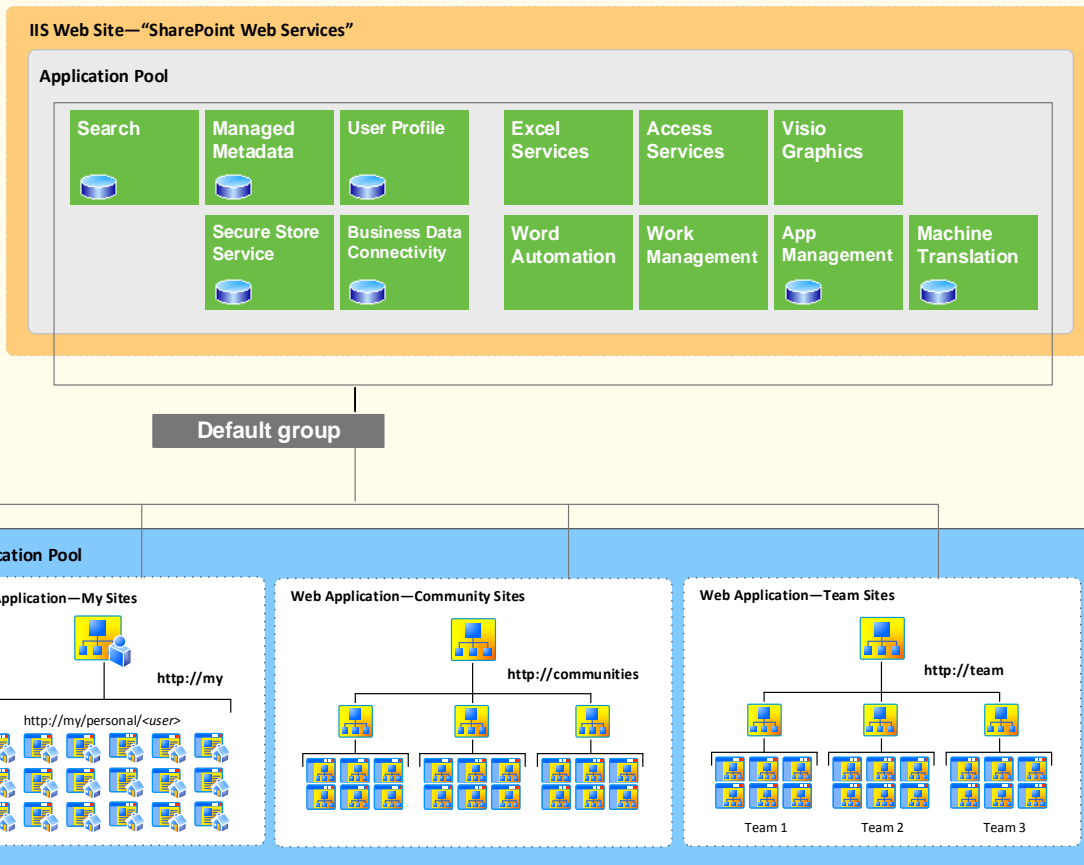
Role and hardware	Server count	Performance during peak hours		Notes
		Average CPU	Memory utilization	
Distributed cache and Request Management VM, 4 cores, 14 GB RAM		12%	8 GB	Two servers for availability. A load balancer is necessary to balance requests to these two servers
Front end VM, 4 cores, 14 GB RAM		45%	11 GB	Three servers allow room for spikes in performance.
Batch processing VM, 4 cores, 14 GB RAM		80%	12 GB	These servers run highly utilized to maximize the hardware. These do not process user requests.
Database 8 cores, 64 GB RAM		11%	46 GB	SQL Server is deployed to physical servers. One server is dedicated to the logging database for collecting information about the farm. Two database servers is sufficient to support the load and provide high availability.

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- 身份驗證架構

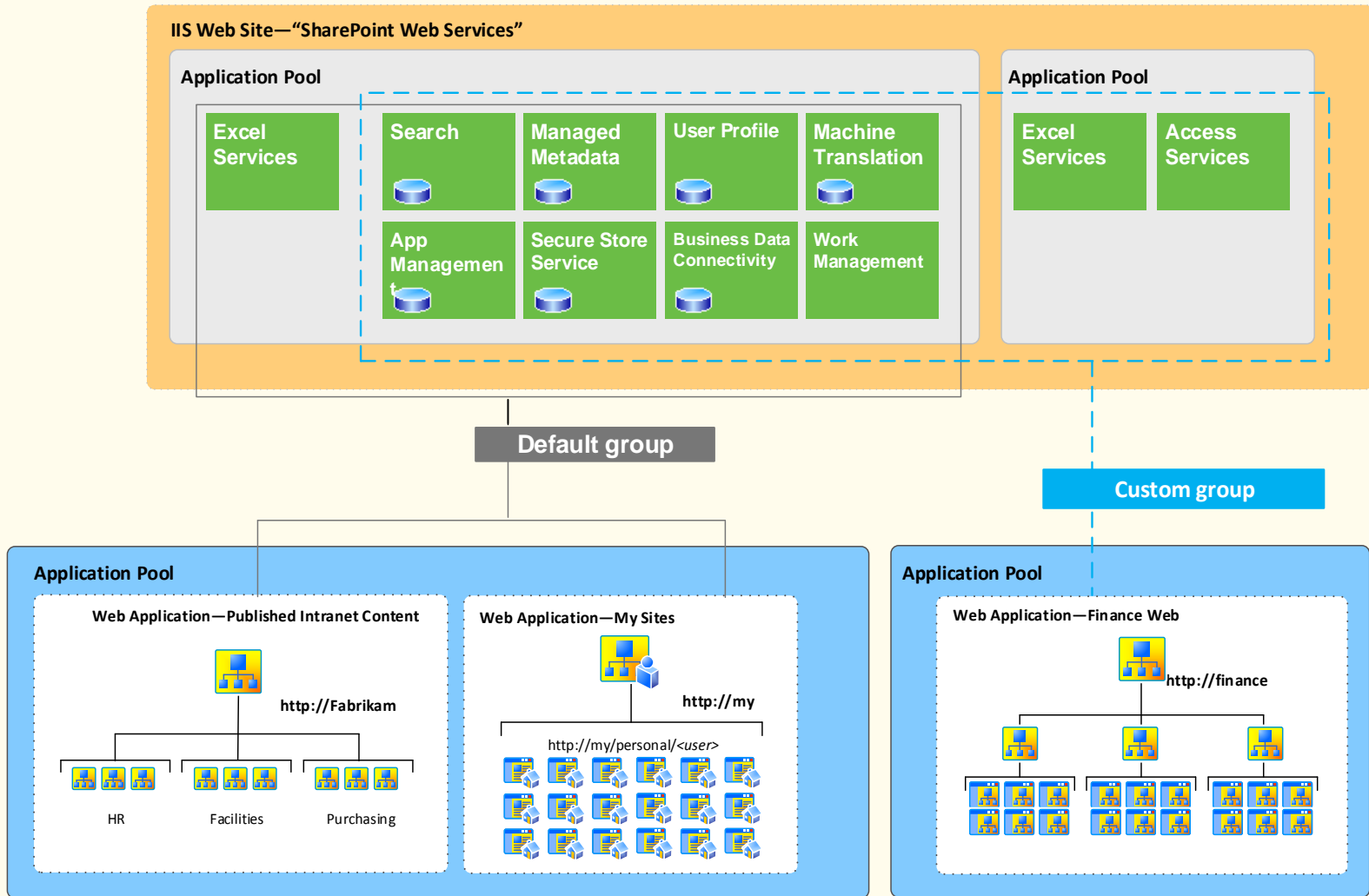
服務應用程式配置 1/3

Farm A



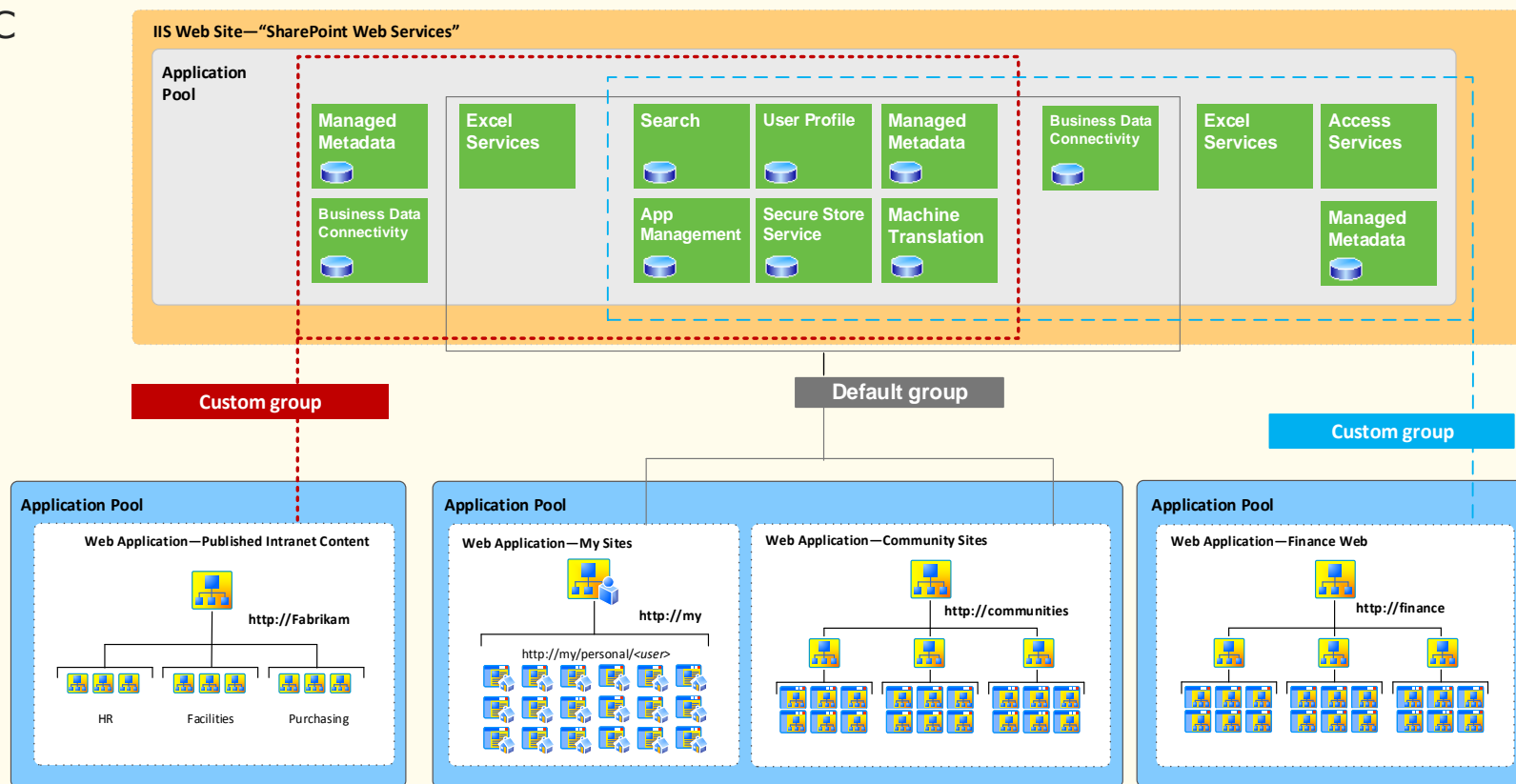
服務應用程式配置 2/3

Farm B



服務應用程式配置 3/3

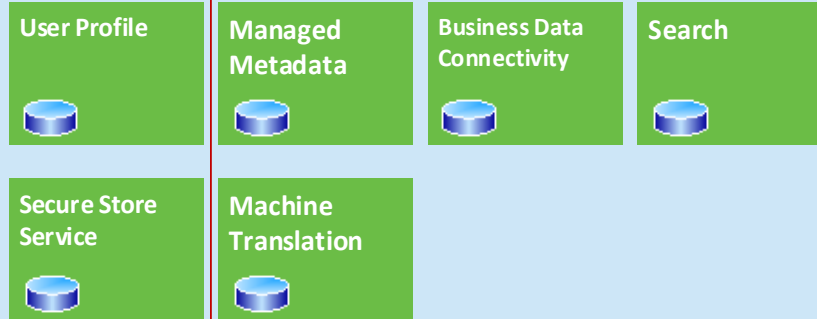
Farm C



服務應用程式 – Multi-farm 考量

Cross-farm service applications

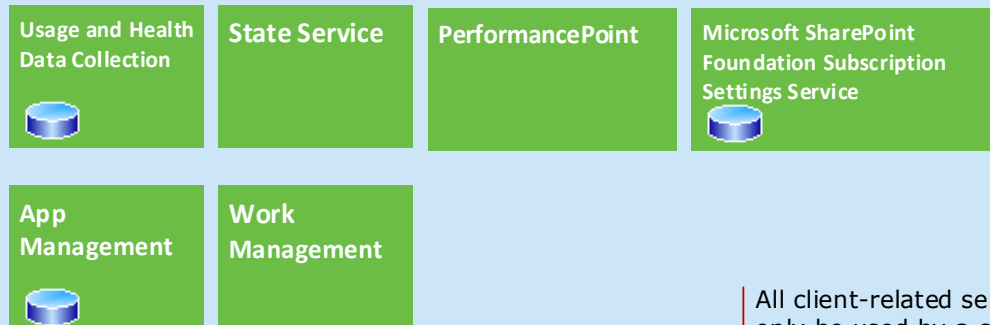
These service applications can be shared across multiple farms.



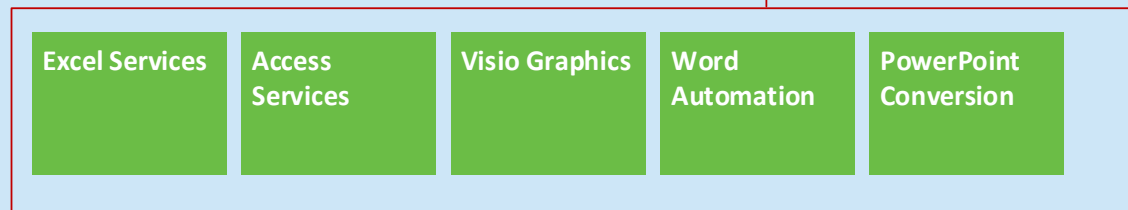
Most commonly shared services

Single-farm service applications

These service applications can be used only within a single farm.

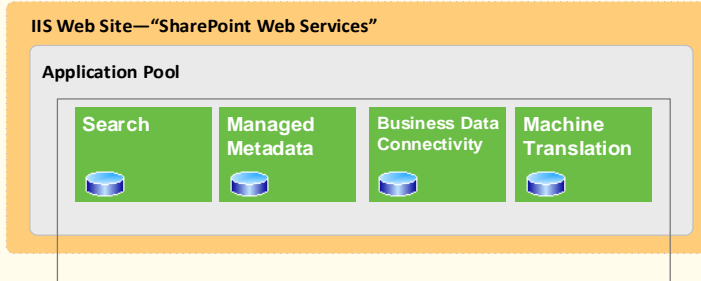


All client-related services can only be used by a single farm.

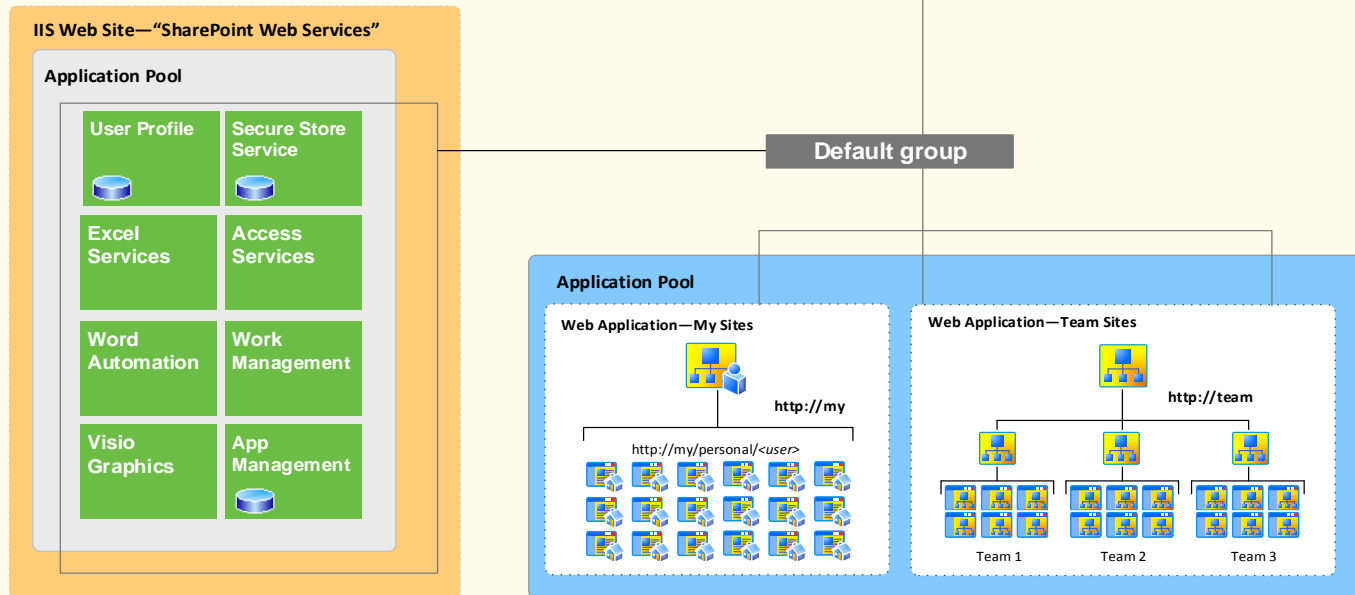


Dedicated Enterprise Services Farm

Farm A—Enterprise Services

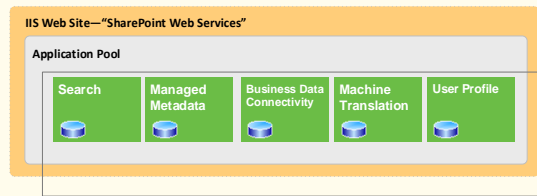


Farm B—Content Farm



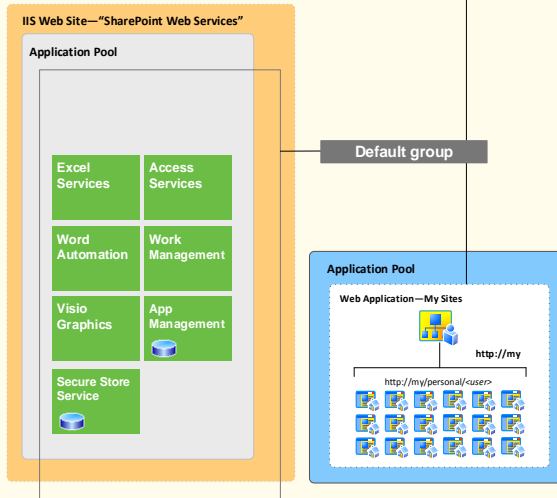
Multiple Content Farms

Farm A—Enterprise Services

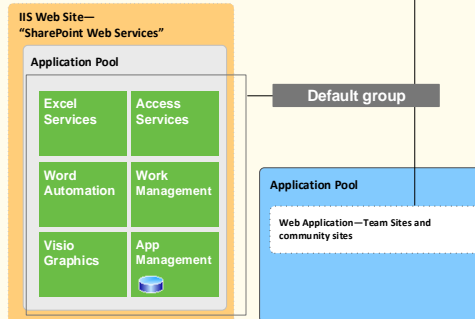


Farm G—Office Web Apps

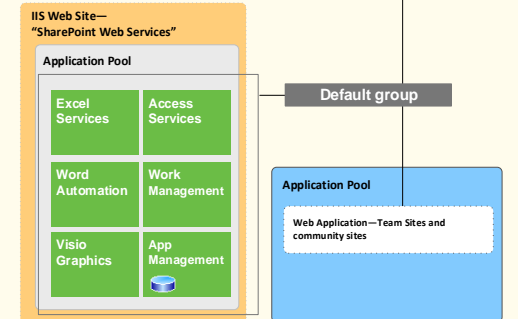
Farm B—My Site Farm



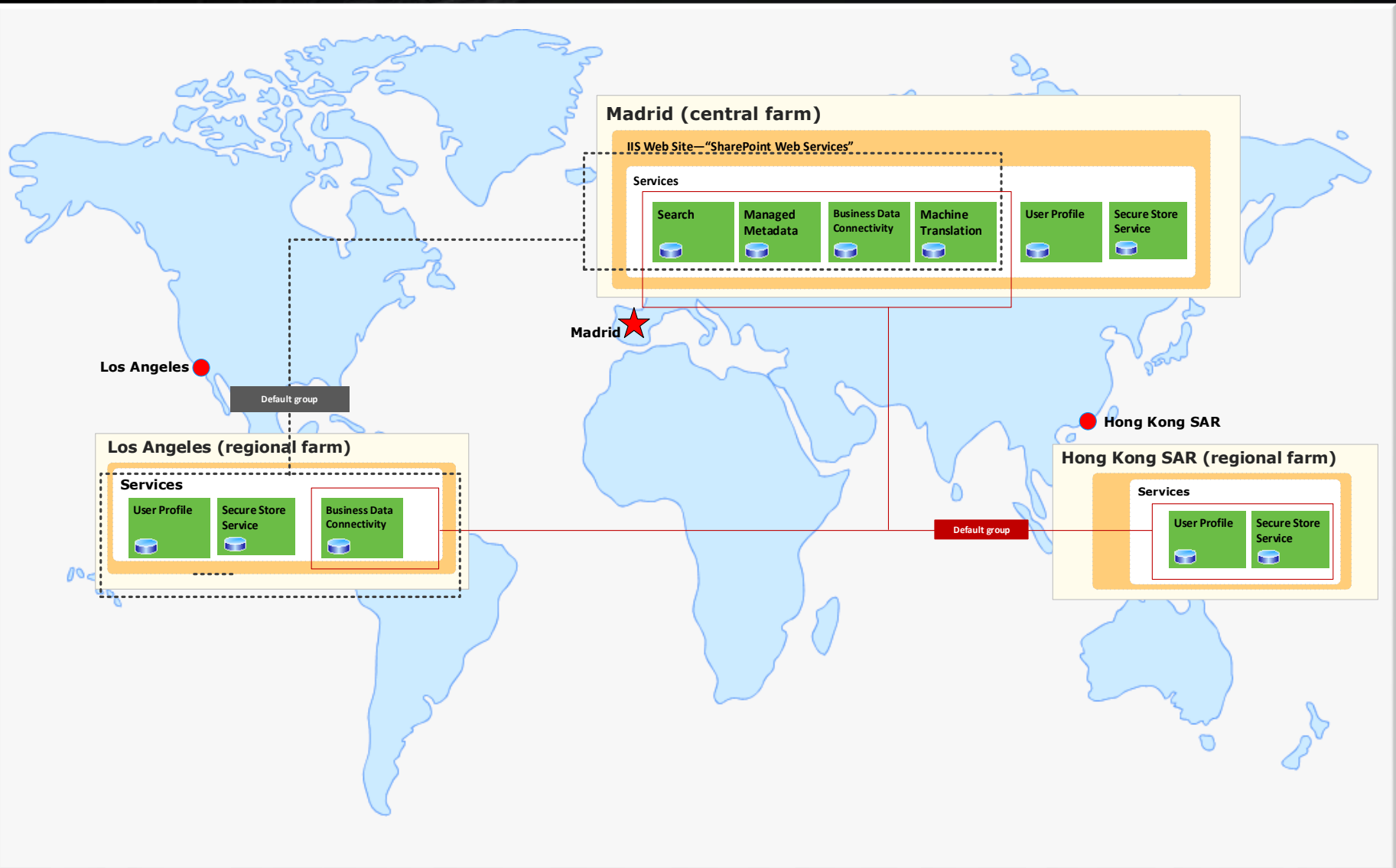
Farm C—Content Farm



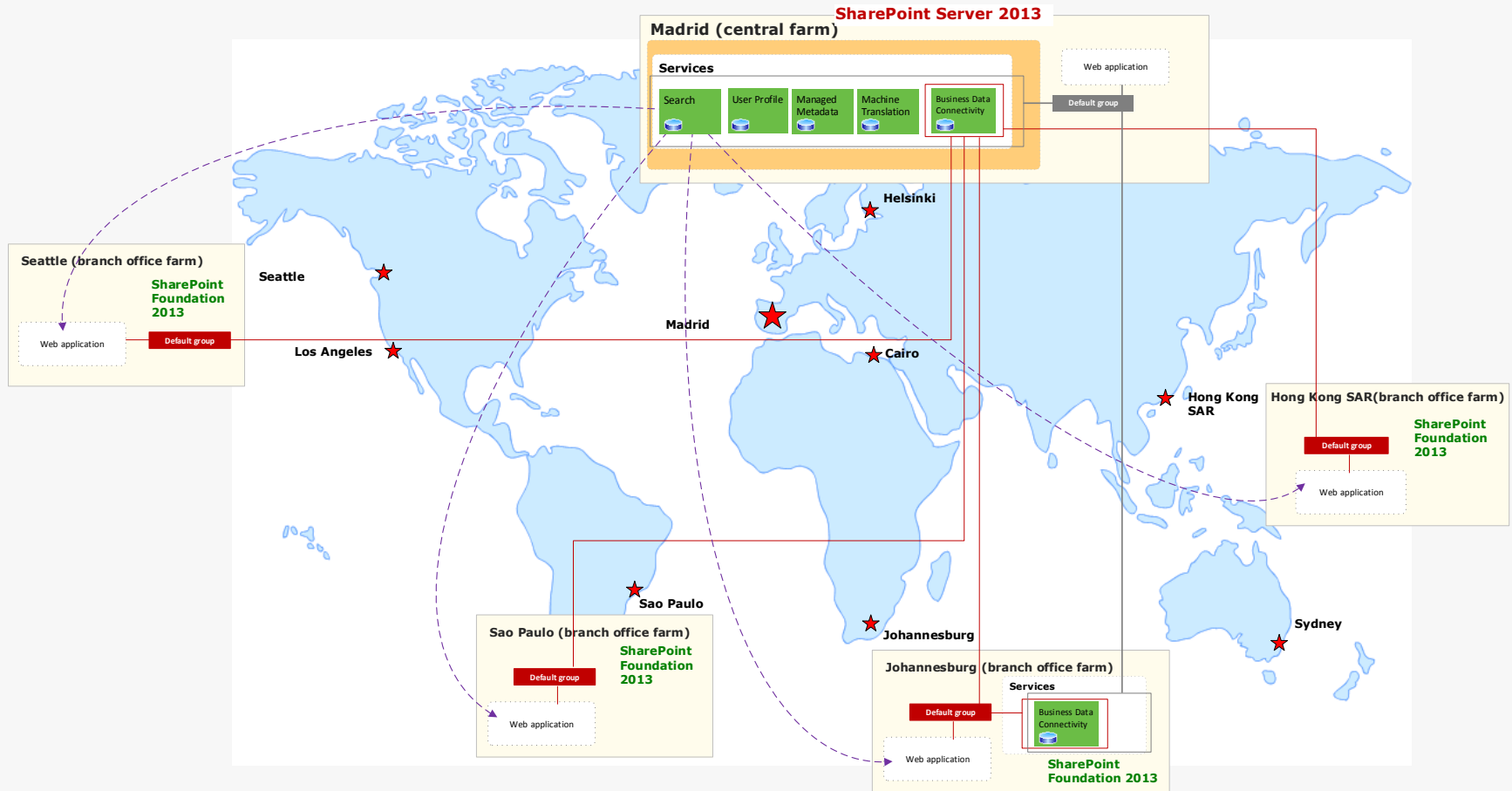
Farm D—Content Farm



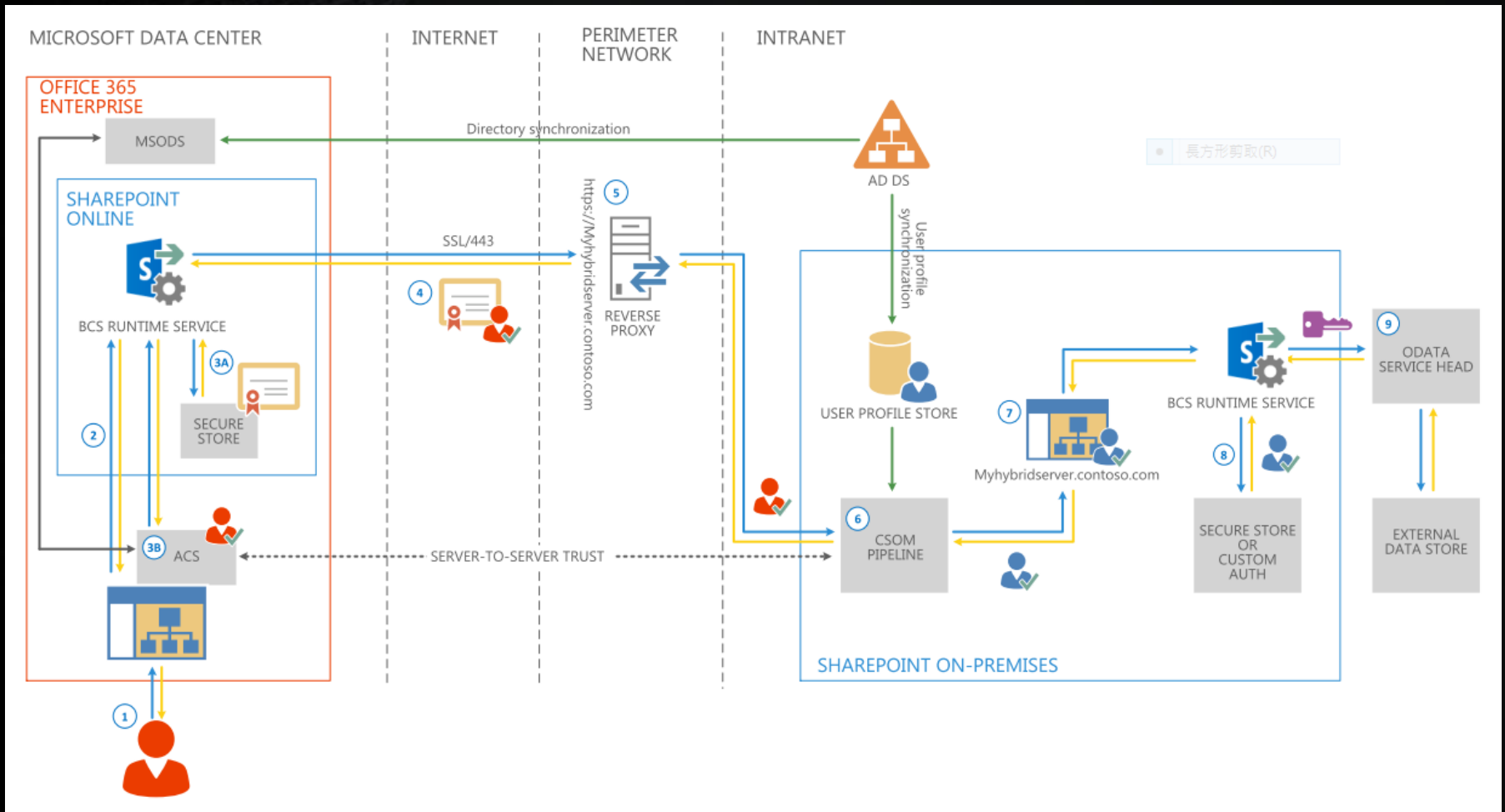
服務應用程式 – Global Solution 1/2



服務應用程式 – Global Solution 2/2



BCS + SharePoint Online

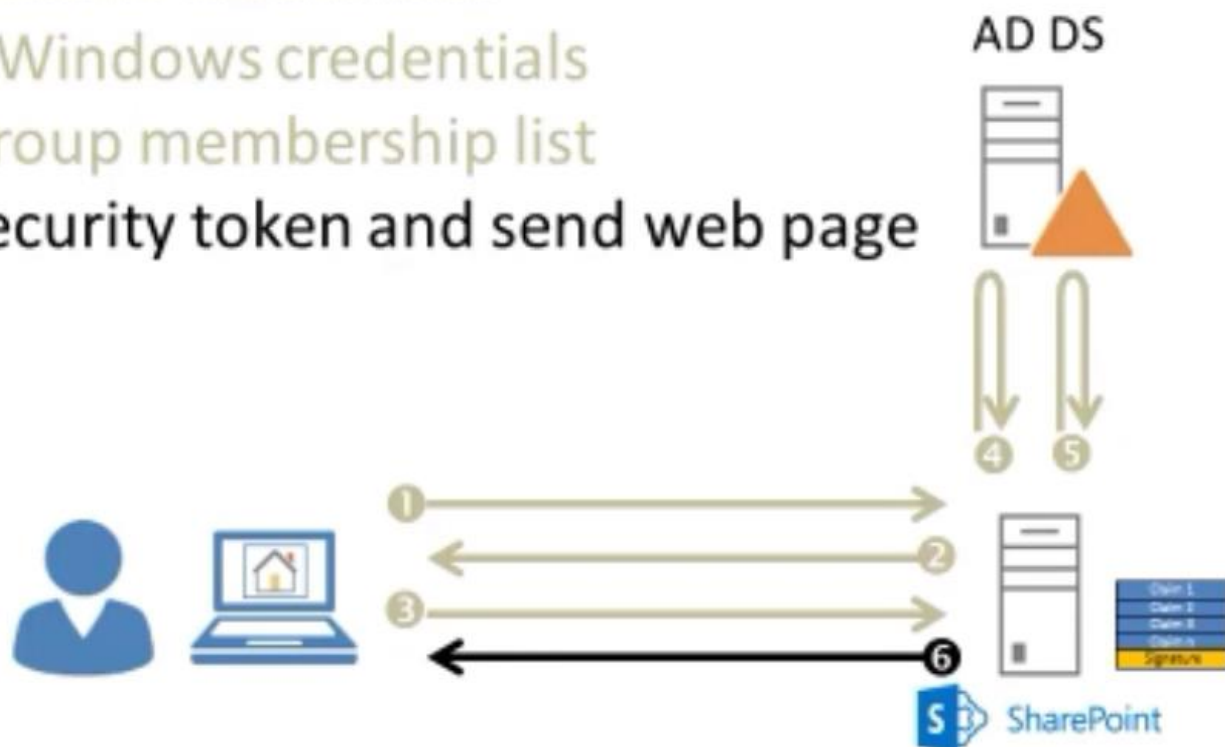


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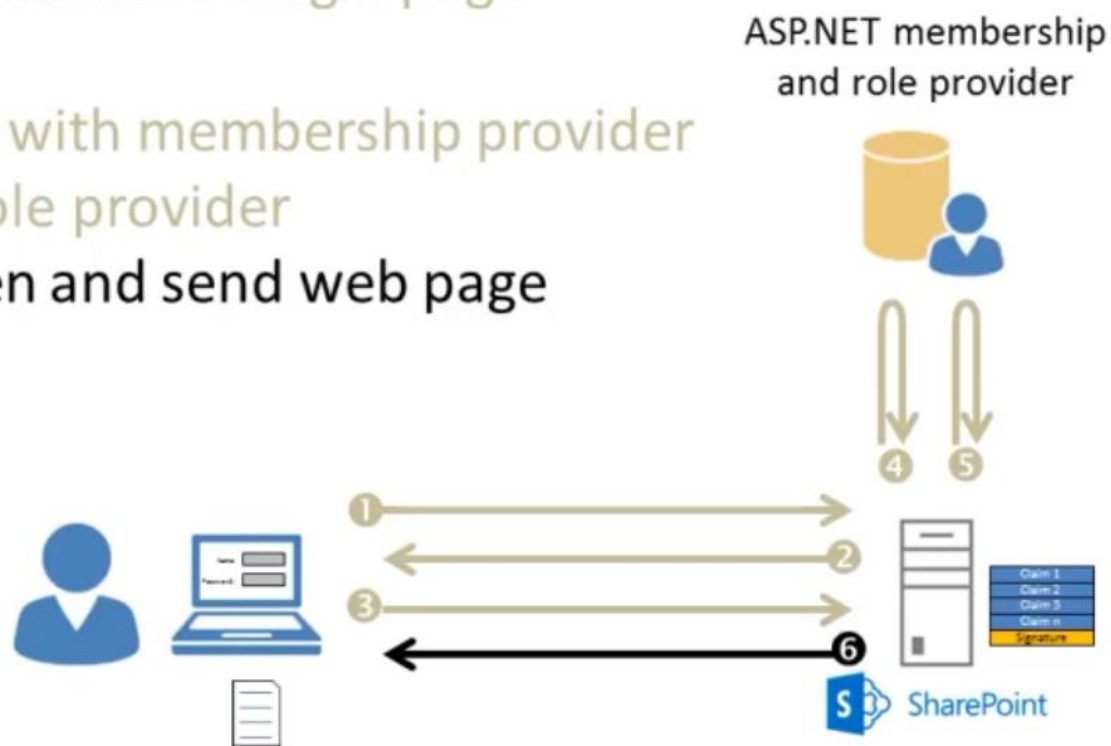
身份驗證 – Windows

- 1 Request web page (anonymous)
- 2 Request Windows credentials (NTLM, Kerberos, basic)
- 3 Send Windows credentials
- 4 Validate Windows credentials
- 5 Obtain group membership list
- 6 Create security token and send web page

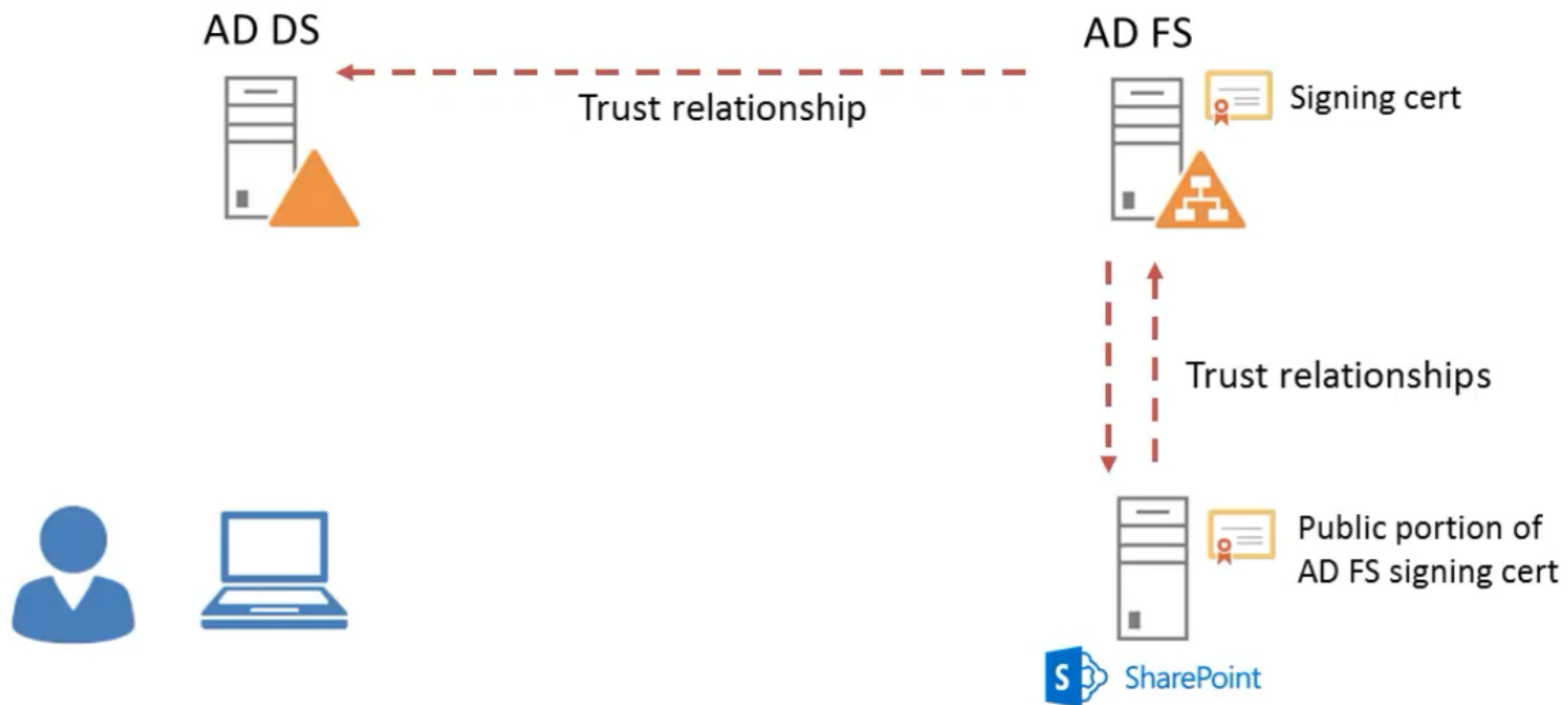


身份驗證 – Form based

- 1 Request web page (anonymous)
- 2 Send SharePoint forms-based login page
- 3 Send credentials
- 4 Validate credentials with membership provider
- 5 Obtain roles from role provider
- 6 Create security token and send web page

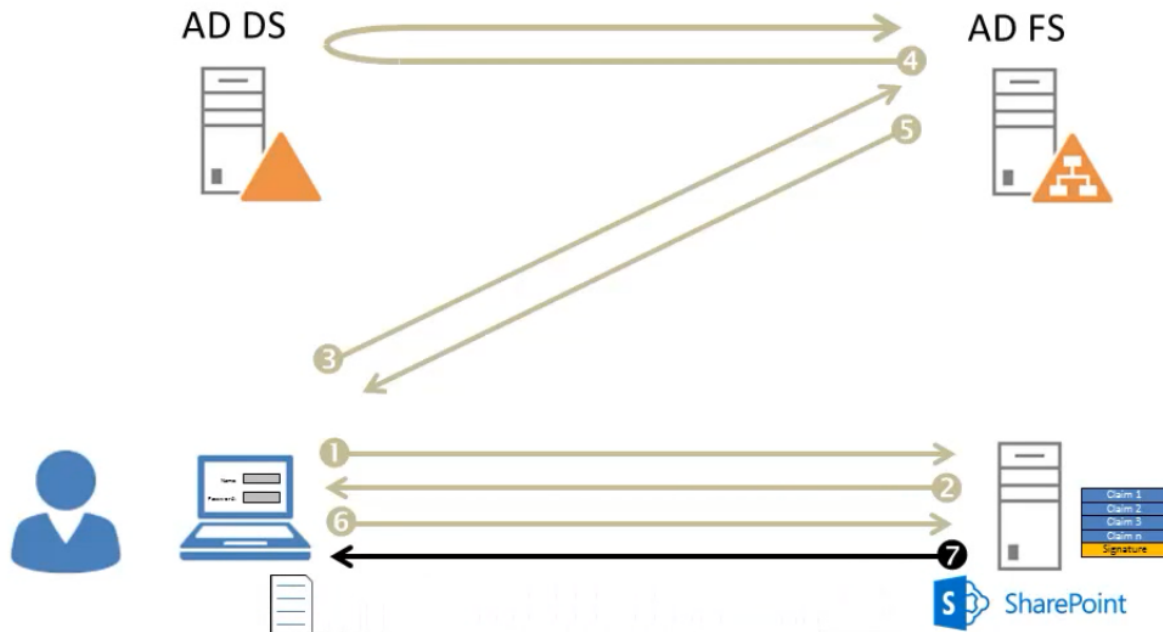


身份驗證 – SAML-based claims 1/2



身份驗證 – SAML-based claims 2/2

- ❶ Request a web page (anonymous)
- ❷ Obtain a login page from the AD FS server
- ❸ Request a SAML security token
- ❹ Validate user credentials with the identity provider
- ❺ Send a SAML security token
- ❻ Send a new web page request containing the SAML security token
- ❼ Create SharePoint security token and send the requested web page



結論

- SharePoint 邏輯架構與實體架構
- 善用伺服器虛擬化
- 服務應用程式的配置
- 資料庫效能與容錯規劃
- 良心建議
 - SharePoint 的世界實在太複雜了
 - 人生苦短，請別太為難自己了
 - 請個顧問吧 😊

相關資源

雲端資源下載

Free Trial Link: http://www.windowsazure.com/en-us/pricing/free-trial/?WT.mc_id=WWE001_1032548834

MSDN Subscription Offer: https://www.windowsazure.com/en-us/pricing/member-offers/msdn-benefits/?WT.mc_id=WWE001_1032548834

BizSpark Offer: https://www.windowsazure.com/en-us/pricing/member-offers/bizspark-benefits/?WT.mc_id=WWE001_1032548834

MPN Offer: https://www.windowsazure.com/en-us/offers/ms-azr-0002p/?WT.mc_id=WWE001_1032548834

提醒

上滿 4 堂課

交回問卷

問卷禮 + 抽獎



第二屆 V-Day 虛擬化戰士英雄會 5 月 8 日

<https://msevents.microsoft.com/CUI/EventDetail.aspx?EventID=1032548843&Culture=zh-TW&community=0>

The image features the Microsoft logo and slogan centered on a dark background. The background is a dark gray or black, with a subtle, light gray grid pattern that appears to be receding into the distance, creating a sense of depth. The grid lines are more prominent in the lower-left and lower-right areas, while they become sparser towards the top. The Microsoft logo is rendered in a bold, white, sans-serif font. Below the logo, the slogan is written in a white, italicized, sans-serif font. The overall aesthetic is clean and professional, typical of a corporate presentation or advertisement.

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