Overview of Hybrid Scenarios with Office 365 and SharePoint

- **#SPSParis** - C03
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ESPC Stockholm

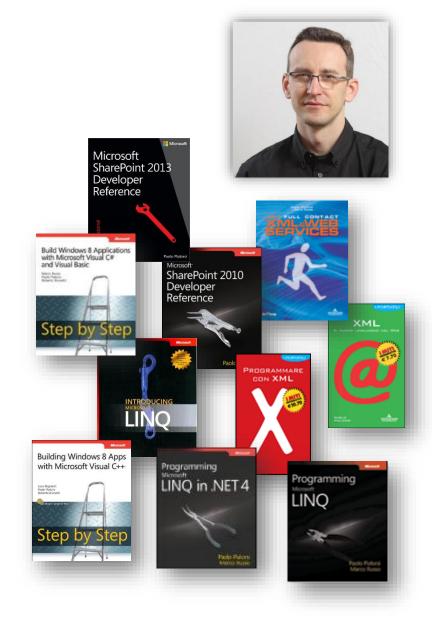9-12 November 2015

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About me

- Project Manager, Consultant, Trainer
- About 50 Microsoft certification exams passed
  - MCSM – Charter SharePoint
  - MVP Office 365
  - Office 365 Dev PnP Core Team Member
- Focused on SharePoint since 2002
- Author of 10 books
- Speaker at main IT conferences

Agenda

- Understanding Hybrid Scenarios in SharePoint
- Hybrid Cloud Topologies
    - Hybrid Search Outbound
    - Hybrid Search Inbound
    - Hybrid Search Two-Way
    - Topologies for BCS
    - Topologies for SAP
- Other Services
- What's new with SharePoint 2016 and Office 365

Understanding Hybrid Scenarios in SharePoint

Why Hybrid Cloud does matter?

- The cloud optimizes businesses
  - Scalable
  - Accessible
  - Flexible
  - You pay as you go (lower TCO)
  - Etc.
- Right now, just a few enterprises are "cloud only"
- Much more have both services on-premises and on the cloud
  - They are moving gradually …
  - Hybrid Cloud supports these kind of business
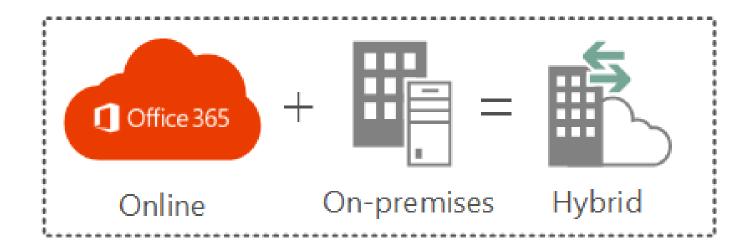
Office 365 and Hybrid Cloud

- When you have an Office 365 tenant
- And you have on-premises services
  - SharePoint Server 2013
  - Exchange Server 2013
  - Lync Server 2013
  - Business Data sources (DBMS, SOAP services, etc.)
  - SAP
- You can choose an hybrid deployment
- Leveraging Office 365, SharePoint, Exchange, Lync, and Azure

SharePoint Hybrid Scenarios in Office 365

- Hybrid Search
- Business Connectivity Services
- Duet Enterprise

Online + On-premises = Hybrid

Benefits of Hybrid SharePoint

- Search for content in both SharePoint Server 2013 and SharePoint Online at once
- Interact with on-premises business data from SharePoint Online
- Access corporate SAP systems from SharePoint Online
- Seamlessly access files and data in both SharePoint Server 2013 and SharePoint Online

Why Going Hybrid?

- Contents both on-premises and on the cloud
- Sharing users' accounts across on-premises and cloud
  - Single sign-on for users via ADFS
- Some business data (ERP, DBMS, DWH) are on-premises
- Performances, to avoid cross-premises/cross-network issues
- Independence from the cloud for some «business critical» data

Requirements for Hybrid Topologies

- Directory Federation via ADFS and Azure AD Sync
- Internet routable AD domains
- SSL certificates and secured communication channels
- Good bandwidth and Internet connectivity
- Office 365 Enterprise Subscriptions
- SharePoint Server 2013 Enterprise on-premises

Limitations of Hybrid Topologies

- Office 365 + DirSync does not support multi-forest environments
  - You will need the new Azure Active Directory Sync Tool
- Some Service Applications cannot be shared
  - User Profile Service
  - Managed Metadata Service
  - Word Automation Services
  - Workflow Services
  - Etc.

Demo

Let's see how Hybrid SharePoint behaves!

Hybrid Cloud Topologies

Available Topologies for Search

- One-way outbound
  - SharePoint Server 2013 Search services can query the SharePoint Online search index and return federated results to SharePoint Server 2013 Search.

- One-way inbound
  - SharePoint Online Search services can query the SharePoint Server 2013 search index and return federated results to SharePoint Online Search.

- Two-way
  - Both SharePoint Server 2013 and SharePoint Online Search services can query the search index in the other environment and return federated results.
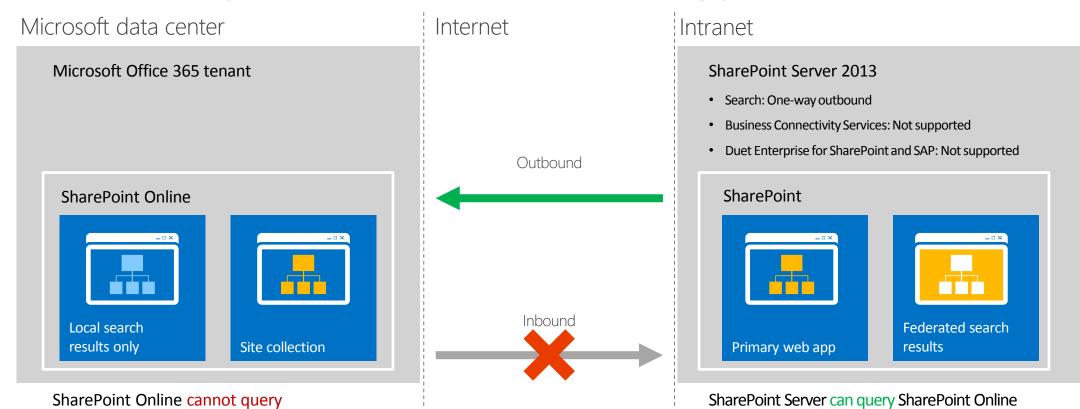
One-way outbound topology

Microsoft data center

Internet

Intranet

Microsoft Office 365 tenant

SharePoint Server 2013

- Search: One-way outbound
- Business Connectivity Services: Not supported
- Duet Enterprise for SharePoint and SAP: Not supported

SharePoint Online

Outbound

SharePoint

Local search results only

Site collection

Primary web app

Federated search results

Inbound

❌

SharePoint Online **cannot query** SharePoint Server

SharePoint Server **can query** SharePoint Online

On-premises SharePoint Server 2013 Enterprise Search portal: Local and remote search results are available

SharePoint Online search portal: Local search results are available

Requirements for one-way outbound

- An operational AD DS
  - Windows Server 2003 forest functional level or higher
- An internet public domain with DNS management
- An Office 365 Enterprise plan subscription provisioned
- An operational SharePoint Server 2013 Enterprise farm on-premises
- An on-premises ADFS deployment
  - Including the implied requirements
- An on-premises DirSync/AAD Sync server
- Replace the default STS certificate on-premises

Requirements for one-way outbound (more)

- SharePoint Server on-premises required services
  - User Profile Service
  - App Management Service
  - Microsoft SharePoint Foundation Subscription Settings Service
- Web Application with Integrated Windows Authentication NTLM
  - Can be a dedicated zone, which extends the default one
- Check OAuth requirements (HTTP/HTTPS) against your endpoint

Configure Server-to-Server trust (cont.)

- Install the following tools
  - The Microsoft Online Services Sign-In Assistant
  - The Azure Active Directory Module for Windows PowerShell
  - The SharePoint Online Management Shell
- Execute a bunch of PowerShell scripting to configure S2S with SharePoint Online
  - Upload STS certificate to SharePoint Online
  - Add SPN to Azure Active Directory
  - Register SharePoint Online AppPrincipal within on-premises farm
  - Configure an on-premises proxy for Azure AD
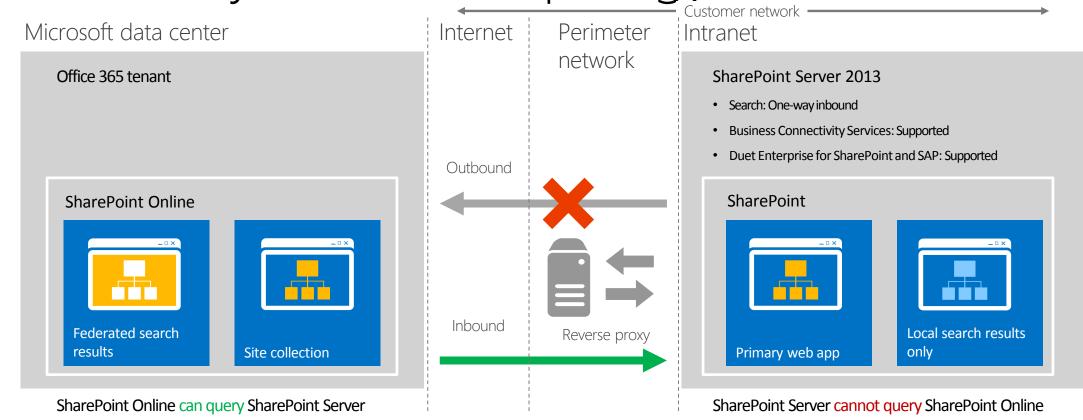
Search One-Way Outbound

- Acting as a Search Admin in on-premises farm

- Configure a result source on SharePoint Server 2013
    - Protocol: Remote SharePoint
    - Provide Remote Service URL as https://<tenant>.sharepoint.com
    - Provide Default Authentication for Credentials

- Configure a query rule on SharePoint Server 2013

One-Way Inbound Search

One-way inbound topology

Microsoft data center

Internet

Perimeter network

Customer network

Intranet

Office 365 tenant

SharePoint Server 2013

- Search: One-way inbound
- Business Connectivity Services: Supported
- Duet Enterprise for SharePoint and SAP: Supported

SharePoint Online

Outbound

SharePoint

Federated search results

Site collection

Inbound

Reverse proxy

Primary web app

Local search results only

SharePoint Online **can query** SharePoint Server

SharePoint Server **cannot query** SharePoint Online

On-premises SharePoint Server 2013 Enterprise Search portal: Local search results are available

SharePoint Online search portal: Local and remote search results are available

Requirements for one-way inbound

- An operational AD DS
  - Windows Server 2003 forest functional level or higher
- An internet public domain with DNS management
- An Office 365 Enterprise plan subscription provisioned
- An operational SharePoint Server 2013 Enterprise farm on-premises
- An on-premises ADFS deployment
  - Including the implied requirements
- An on-premises DirSync/AAD Sync server
- A Reverse Proxy + SSL certificate (* or SAN Certificate)
  - SSL issued by a public and trusted CA
- Replace the default STS certificate on-premises

Requirements for one-way inbound (more)

- SharePoint Server on-premises required services
  - User Profile Service
  - App Management Service
  - Microsoft SharePoint Foundation Subscription Settings Service
- Web Application with Integrated Windows Authentication NTLM
  - Can be a dedicated zone, which extends the default one
  - HTTPS endpoint for External URL (which is the Public URL)
- Optionally configure May 2014 CU or later
- Check OAuth requirements (HTTP/HTTPS) against your endpoint

Requirements for one-way inbound (more)

- Configure a Target Application in Secure Store in SharePoint Online
  - Target Application ID: SecureChannelTargetApplication
  - Display Name: Secure Channel Target App
  - Credentials: Certificate + Certificate Password
- Set Credentials for Target Application

Configure a Reverse Proxy

- Supported: Windows Server 2012 R2 WA-P, TMG, F5 BIG-IP, Citrix Netscaler
  - http://technet.microsoft.com/en-us/library/dn607304.aspx
  - Updated 15-05-2015
- General Requirements
  - Client certificate authentication (* or SAN certificate)
  - Pass-through authentication for OAuth 2.0
    - Including unlimited OAuth bearer token transactions
  - Accept unsolicited inbound traffic on TCP port 443 (HTTPS)
  - Bind a wildcard or SAN SSL certificate to a published endpoint
  - Relay traffic to an on-premises SharePoint Server 2013 farm or load balancer without rewriting any packet headers

Continues like one-way outbound ...
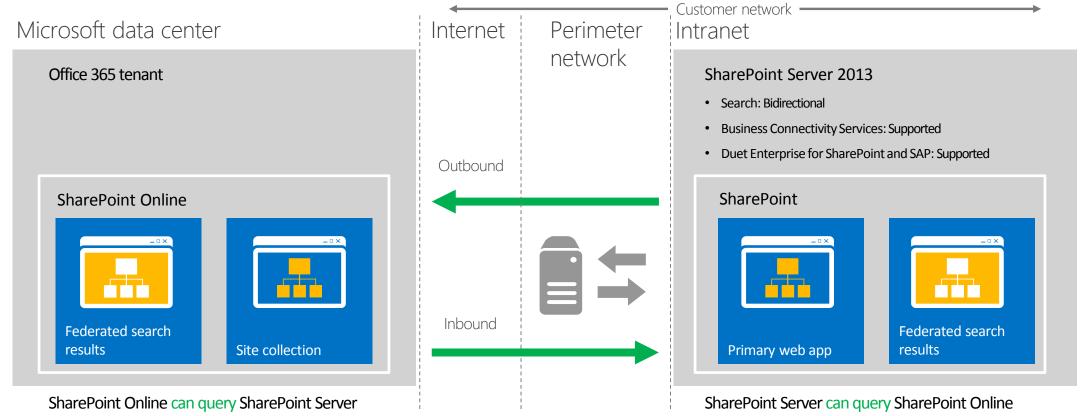
Hybrid Search One-Way Inbound

- Acting as a Global Admin for Office 365 tenant

- Configure a result source on SPO
  - Protocol: Remote SharePoint
  - Provide Remote Service URL as External URL of SP on-premises
  - Provide SSO Id for Credentials using «SecureChannelTargetApp»

- Configure a query rule on SPO

Two-Way Search

Two-Way topology

Customer network

Microsoft data center

Internet | Perimeter network | Intranet

Office 365 tenant

SharePoint Server 2013

- Search: Bidirectional
- Business Connectivity Services: Supported
- Duet Enterprise for SharePoint and SAP: Supported

SharePoint Online

Outbound

Federated search results

Site collection

SharePoint

Inbound

Primary web app

Federated search results

SharePoint Online can query SharePoint Server

SharePoint Server can query SharePoint Online

On-premises SharePoint Server 2013 Enterprise Search portal and SharePoint Online search portal: Local and remote search results are available. If extranet authentication services are configured, extranet users can log in remotely through an on-premises Active Directory account and use all available hybrid functionality.

Union of one-way inbound and one-way outbound …

Other Hybrid Topologies

Available Topologies for BCS

- One-way inbound or Two-way
  - The SharePoint Online BCS service can connect to an on-premises SharePoint Server 2013 farm by using an app for SharePoint or an external list that is installed on a SharePoint Online site collection.
  - The BCS Service configured on the on-premises farm brokers the connection to on-premises OData Service endpoints and supports both read and write operations.
  - BCS hybrid solutions can be configured to support full CRUDQ (Create, Read, Update, Delete and Query) functionality.
  - Requires a two-way authentication topology
  - Requires OData services

Available Topologies for SAP Integration

- One-way inbound or Two-way
  - SharePoint Online users can perform both read and write operations against an on-premises SAP system. You can do this by either using an app for SharePoint that's installed on a SharePoint Online site collection or by enabling a Duet Enterprise Online feature.

Other Services

Social Features and Capabilities

- Social capabilities can't work across the two worlds
  - SharePoint 2013 on-premises and SharePoint Online are social «disconnected»
  - Users cannot act on documents in one world from the other one
- Yammer connects both SharePoint on-premises and SharePoint Online
- The Enterprise Social hybrid solution
  - Set Yammer as default social network engine
    - Both in Office 365 and in SharePoint 2013 SP1
  - Use the Yammer app to embed Yammer feeds wherever you need

OneDrive for Business

- You can leverage OneDrive for Business in Office 365
    - From SharePoint 2013 on-premises
    - Starting from SharePoint 2013 SP1
- Move the huge workload of users' personal documents to the cloud
    - Allow users to access their personal documents anywhere, everywhere, and from every device (PC, laptop, tablet, smartphone)

SharePoint Online External Sharing

- Allows vendors, clients, customers to access online sites and data
  - External Users are not-licensed people
  - They will need a Microsoft Account or an Office 365 UserID
- Internal users can share documents and sites
  - Can share direct guest (friendly and short) links, as well
  - For anonymous access to individual documents

Records Management

- Use on-premises records archive
  - For records coming from SharePoint on-premises or SharePoint Online
- Configure «send to» connection in SharePoint Online
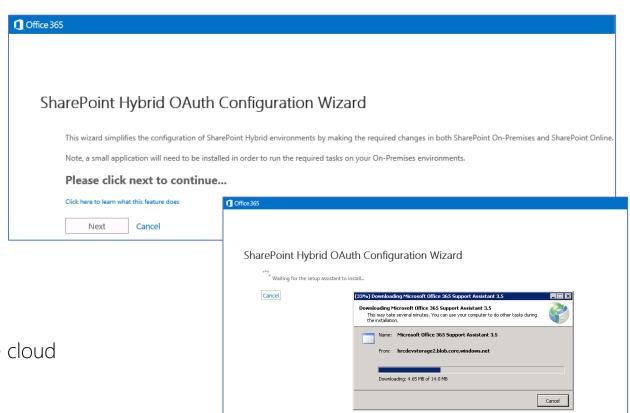 - To send records to the on-premises archive

Hybrid Scenarios with SharePoint 2016

- At Ignite Conference they "promised"
  - A wizard-like hybrid configuration
    - No more 15 pages of PowerShell scripts ☺ …
    - Just a few clicks and the hybrid topology will be ready to go
  - Improved capabilities and features
    - Delve across premises
    - Complete integration of search results
  - Cloud Search Service Application
    - For SharePoint 2013 and 2016 (and 2010)
    - To crawl on-premises and store indexes on the cloud
    - The future of search? Maybe …

Summary

- Office 365 and SharePoint 2013 can work together
- Hybrid Search
  - One-Way Outbound
  - One-Way Inbound
  - Two-Way
- Hybrid BCS
- Hybrid SAP Integration
- Other Hybrid Services
- Office 365 and SharePoint 2016 will work even better together