Feature Integration Across Microsoft Office Server Products
SharePoint Server, Exchange Server, Lync Server, and Office Web Apps

Illustrations for cross-server features

This multi-tab Visio file (or multi-page PDF file) includes descriptions and architecture illustrations for features that work across Microsoft Office server products.

Send feedback or additional requests to MODAContent@microsoft.com. The Microsoft Office Division is investing in content for cross-server solutions. We welcome your feedback and requests.

Tips for printing

The page size of each tab is 22 x 17 inches (about a quarter of the size of an ANSI Engineering diagram). This page size can be printed on two Tabloid size sheets (17 x 11) inches) or four Letter size sheets (11 x 8.5 inches). If you have a plotter, you can print these posters in their full size. If you don't have plotter, use the following steps to print on smaller paper.

Print posters on smaller paper

1. Open the poster in Visio.
2. On the **File** menu, click **Page Setup**.
3. On the **Print Setup** tab, in the **Printer paper** section, select the size of paper you want to print on.
4. On the **Print Setup** tab, in the **Print zoom** section, click **Fit to**, and then enter **1 sheet across by 1 sheet down**.
5. On the **Page Size** tab, click **Size to fit drawing contents**, and then click **OK**.
6. On the **File** menu, click **Print**.

Microsoft tags and QR codes
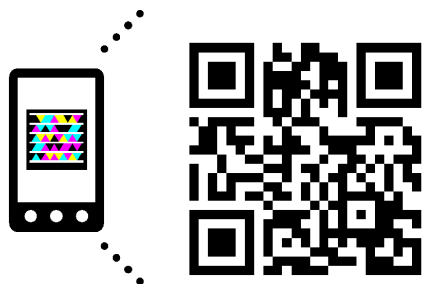
Use your Windows phone or download a QR Code reader to get more information about implementing these features.

Get the free mobile app at
http://gettag.mobi

	SHAREPOINT	EXCHANGE	LYNC	OFFICE WEB APPS
Server-to-server authentication	✔	✔	✔	✔
High resolution user photos	✔	✔	✔	
Unified contact store		✔	✔	
Site mailboxes	✔	✔		
Exchange task synchronization	✔	✔		
Lync presence in Outlook Web App			✔	
Voicemail			✔	
Meeting recordings	✔		✔	

Office Web Apps Server

Office Web Apps Server is an Office server product that provides browser-based file viewing and editing services for Office files. Office Web Apps Server works with products and services that support WOPI, the Web app Open Platform Interface protocol. These products, known as hosts, include SharePoint 2013, Lync Server 2013, and Exchange Server 2013.

To learn more about Office Web Apps Server, download the Office Web Apps Server: Office Web Apps deployment simplified poster.

http://aka.ms/OfficeWebAppsPoster

Exchange   SharePoint   Lync

Microsoft

Server-to-Server Authentication
Servicing resource requests between servers

Server-to-server authentication is a new feature of Exchange Server 2013, Lync Server 2013, and SharePoint Server 2013 that allows a server to request resources of another server on behalf of a user. This feature uses the industry standard Open Authorization (OAuth) 2.0 protocol. Server-to-server authentication enables many new scenarios such as eDiscovery, high resolution user photos, and site mailboxes.

Server products

- Exchange Server 2013
- SharePoint Server 2013
- Lync Server 2013

Server-to-server trust relationships

In order for a server to service an incoming resource request, it must trust the server making the request. To establish this trust, you must configure server-to-server trust relationships.

A server-to-server trust relationship is one way. When you configure a server that runs SharePoint 2013 to trust an Exchange 2013 server, the server that runs SharePoint Server trusts resource requests from the Exchange server but the Exchange server does not trust resource requests from the server that runs SharePoint Server. For seamless integration, you should establish two-way trusts.

Server-to-server trusts
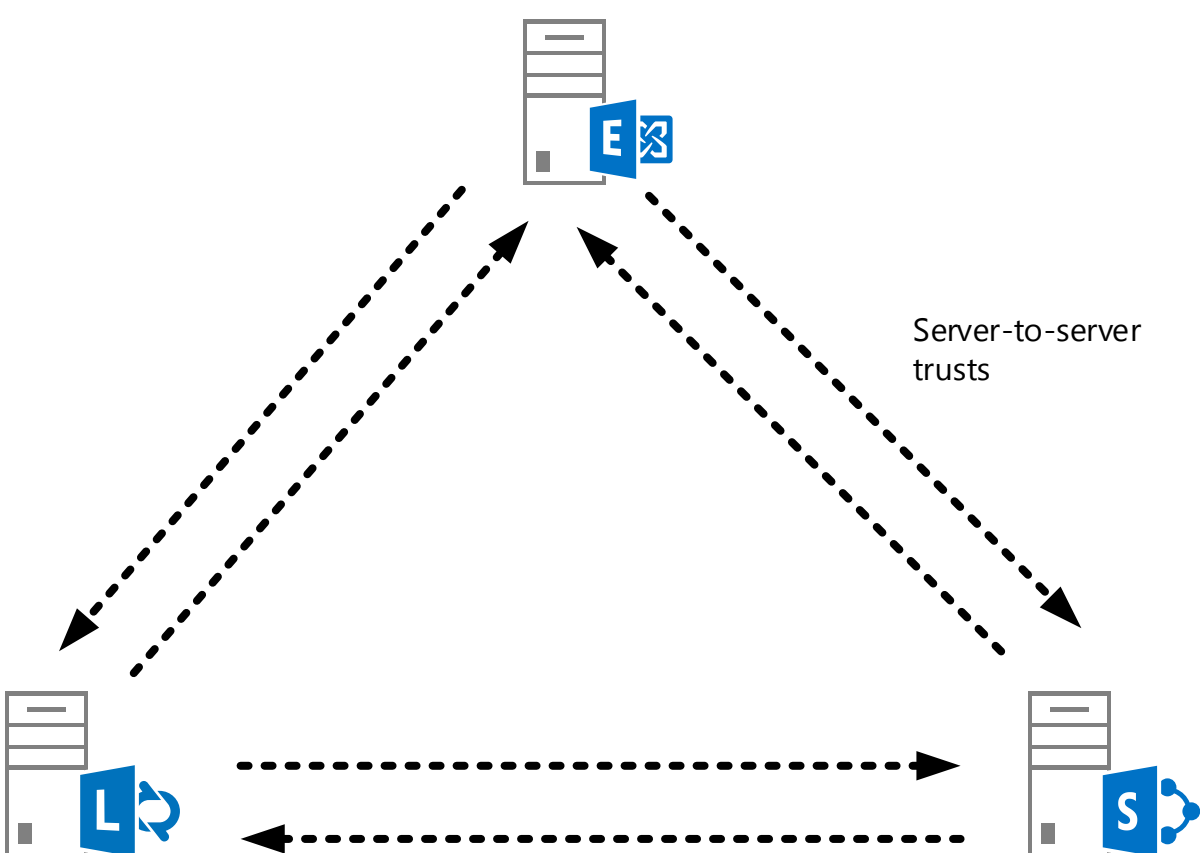
Configuration

To configure a server-to-server authentication trust, you must add a new trusted security token issuer that corresponds to each server that will send resource requests on behalf of users. Each type of server has a JavaScript Object Notation (JSON) metadata endpoint containing configuration information and a public portion of the access token signing certificate. Part of configuring a server-to-server authentication trust is specifying the JSON metadata endpoint of the other server.

The following table lists the JSON metadata endpoint for each server.

Server	JSON metadata endpoint
E	https://<server name>/autodiscover/metadata/json/1
L	https://<server name>/metadata/json/1
S	https://<web app name>/_layouts/15/metadata/json/1

Example — How server-to-server authentication works for eDiscovery between SharePoint and Exchange

In this example, the Exchange 2013 server has been configured to trust the server that runs SharePoint Server with a server-to-server trust. An eDiscovery center on the server that runs SharePoint Server has been configured to include data in mailboxes on the Exchange server.

Requests for resources on another server take the form of access tokens that are sent to the web server service on the destination server.

1. An eDiscovery administrator sends a query to the server that runs SharePoint Server that includes resources on an Exchange server.
2. The server that runs SharePoint Server generates an access token, identifying the user and the requested resource.
3. The server that runs SharePoint Server sends the access token to the Exchange server.
4. The Exchange server validates the access token and sends the query results.
5. The server that runs SharePoint Server sends the eDiscovery query results to the eDiscovery administrator's computer.

Server-to-server trust

Access

Exchange   SharePoint   Lync

Microsoft
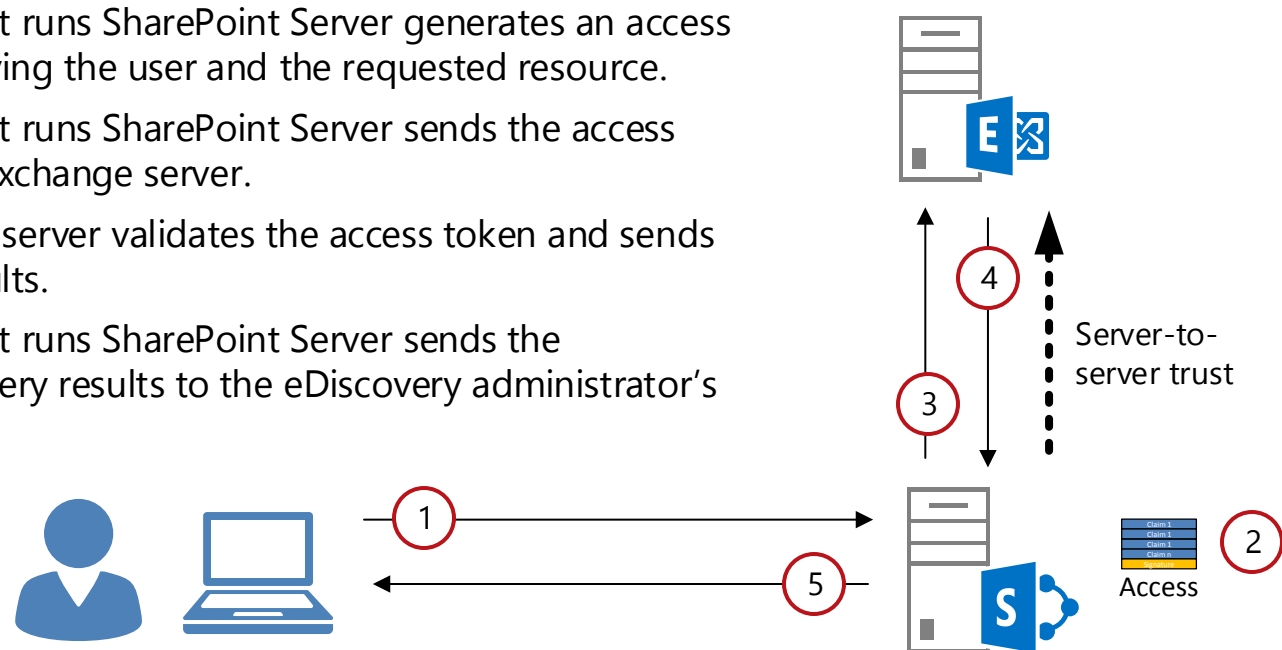
High-Resolution User Photos
Larger profile picture used across all Office applications

High-resolution user photos enables photos up to 648x648 pixels to be stored in Exchange 2013 that can be accessed by client applications, including Outlook, Outlook Web App, SharePoint 2013, Lync 2013, and mobile email clients. A low-resolution photo is also stored in Active Directory.

Server products

- Exchange Server 2013
- SharePoint Server 2013
- Lync Server 2013

Configuration

Configure server-to-server authentication

- Between Exchange 2013 and SharePoint 2013.
- Between Exchange 2013 and Lync 2013.
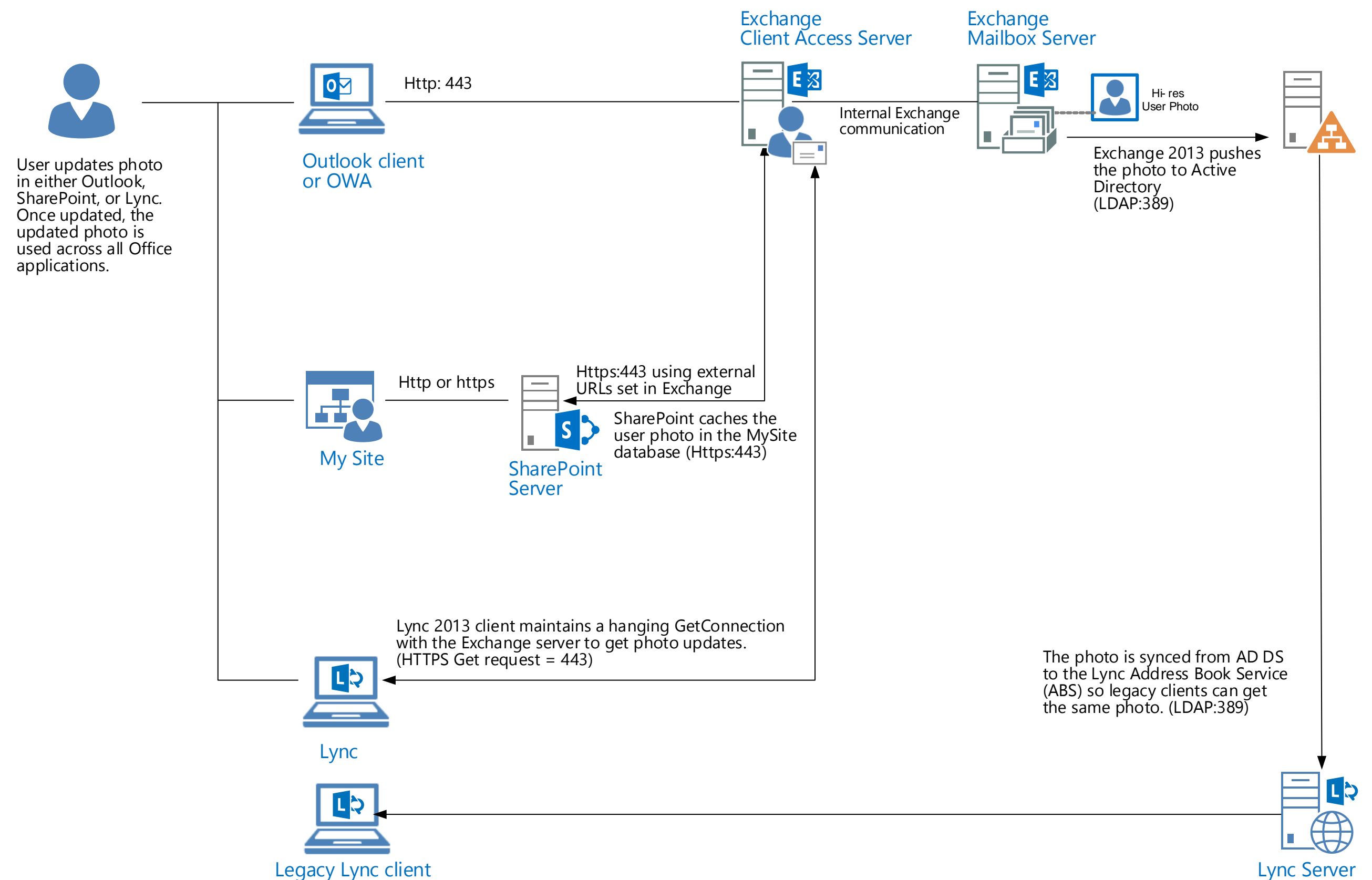
On Exchange Server 2013

- Start and configure the Exchange 2013 Autodiscover service.
- Set external URLs for SharePoint. These are the URLs SharePoint will use when accessing photos in Exchange.

On SharePoint Server 2013

- Install the Exchange Web Services Managed API. Use GacUtil to load the Microsoft.Exchange.WebServices.dll into the Global Assembly Cache (GAC).
- Use Windows PowerShell to configure photo sync with Exchange.

How it works

- Users upload a photo using the My Account page in Outlook Web App or using account settings in Outlook 2013.
- Exchange automatically resizes the image for use by Active Directory (48 x 48 pixels) or by other Office applications, including OWA and the Outlook 2013 client (96 x 96 pixels).

User updates photo in either Outlook, SharePoint, or Lync. Once updated, the updated photo is used across all Office applications.

Outlook client or OWA

Http: 443

Exchange Client Access Server

Internal Exchange communication

Exchange Mailbox Server

Hi-res User Photo

Exchange 2013 pushes the photo to Active Directory (LDAP:389)

My Site

Http or https

SharePoint Server

Https:443 using external URLs set in Exchange

SharePoint caches the user photo in the MySite database (Https:443)

Lync 2013 client maintains a hanging GetConnection with the Exchange server to get photo updates. (HTTPS Get request = 443)

Lync

The photo is synced from AD DS to the Lync Address Book Service (ABS) so legacy clients can get the same photo. (LDAP:389)

Legacy Lync client

Lync Server

Users can upload pictures with pixel ranges from 48×48 to 648×648. The photos are resized:

- 64×64 is used for the AD thumbnail.
- 96×96 is used for Outlook Web Access, Outlook, Lync Web Access, and Lync 2013.
- 648×648 is used for Lync Web Access and Lync 2013.

For example configuration scripts, see Jens Trier Rasmussen's blog articles:

- Using Exchange 2013 high-resolution photos from SharePoint Server 2013
  (http://aka.ms/Bhr4d2)

- Integrating Exchange 2013 and Lync Server 2013
  (http://aka.ms/Pn08dw)

Exchange   **SharePoint**   **Lync**

Microsoft

Unified Contact Store

Exchange 2013 is the contact store for all Office applications

Unified contact store (UCS) provides a consistent contact experience across Microsoft Office products. Users store all contact information in their Exchange 2013 mailbox. The same contact information is available globally across Lync, Exchange, Outlook and Outlook Web App.

Server products:
- Exchange Server 2013
- Lync Server 2013

Configuration
- Configure server-to-server authentication between Exchange Server 2013 and Lync Server 2013.
- In Lync 2013, enable the unified contact store policy (default is enabled).

For example configuration scripts, see Jens Trier Rasmussen's blog article:

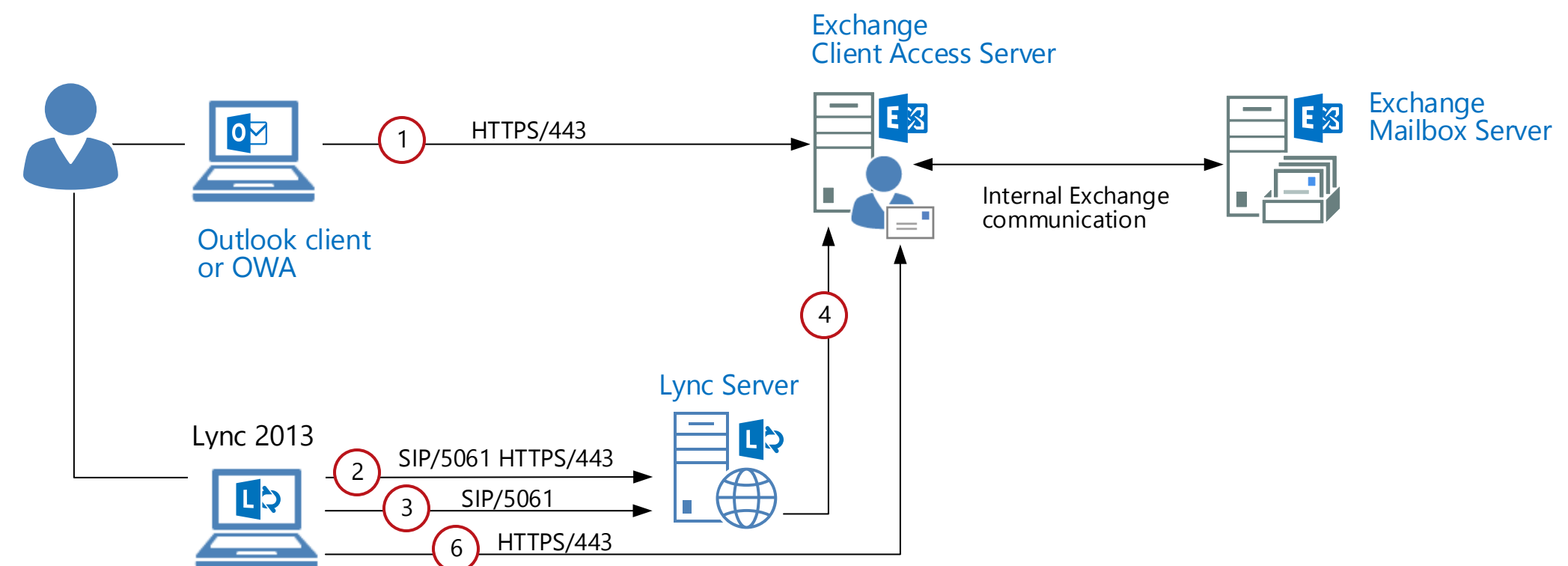Integrating Exchange 2013 and Lync Server 2013
(http://aka.ms/Oyg7fh)

How it works:
- Lync contacts for a user are migrated to Exchange 2013 automatically when the user logs in with Lync 2013.
- Users can access and manage their Lync contacts from Lync 2013, Outlook 2013, or Outlook Web Access.

A user's contacts are automatically migrated to the Exchange 2013 server when the user:
- Has been assigned a user services policy that has UcsAllowed set to True.
- Has been provisioned with an Exchange 2013 mailbox and has signed into the mailbox at least once.
- Logs in to Lync by using a Lync 2013 rich client.

Exchange Client Access Server

Exchange Mailbox Server

Outlook client or OWA

1 HTTPS/443

Internal Exchange communication

4

Lync Server

Lync 2013

2 SIP/5061 HTTPS/443
3 SIP/5061
6 HTTPS/443

1. User logs into their Exchange 2013 mailbox.
2. User logs into Lync 2013.
3. The Lync client tells the Lync server that the user is enabled for Unified Contact Store.
4. Lync Server uses the Lync Storage Service to migrate the user's contacts to Exchange 2013.
5. The user must sign out and sign in to Lync 2013 to pick up the change (not shown).
6. After the migration is finished, the Lync client uses Exchange Web Services (EWS) to read and maintain the Lync contacts.

Exchange   Lync

Microsoft

Site mailboxes
A central filing cabinet for emails and documents

Site mailboxes improve collaboration and user productivity by allowing access to both documents stored in SharePoint and email messages stored in Exchange, using the same client interface.

Server products
- Exchange Server 2013
- SharePoint Server 2013

Configuration

SharePoint
- Configure user profile synchronization in the SharePoint farm
- Configure app management service application in the SharePoint farm
- Configure SSL for the default zone to support server-to-server authentication
- Install EWS API on servers that run SharePoint 2013
- Establish OAuth trust and service permissions on servers that run SharePoint 2013

Exchange
- Establish OAuth trust and service permissions on Exchange servers
- Create site mailbox provisioning policy
- Configure site mailbox name prefix (optional)

How it works

A site mailbox is functionally comprised of SharePoint 2013 site membership (owners and members), shared storage through an Exchange 2013 mailbox for email messages and a SharePoint 2013 site for documents, and a management interface that addresses provisioning and lifecycle needs.

1. Users can access SharePoint team site documents through the site mailboxes in Outlook 2013 Pro Plus.
2. Users can also read emails in the Site Mailbox Inbox from the SharePoint team site.
3. Emails are stored on Exchange servers.
4. Documents are stored on SharePoint servers.
5. The metadata of the content on the SharePoint site is synchronized to Exchange using the Representation State Transfer (REST) API over HTTPS.

Users

1   2

Outlook   SharePoint Team Site

Emails   Site Mailbox   Documents

3   4

5
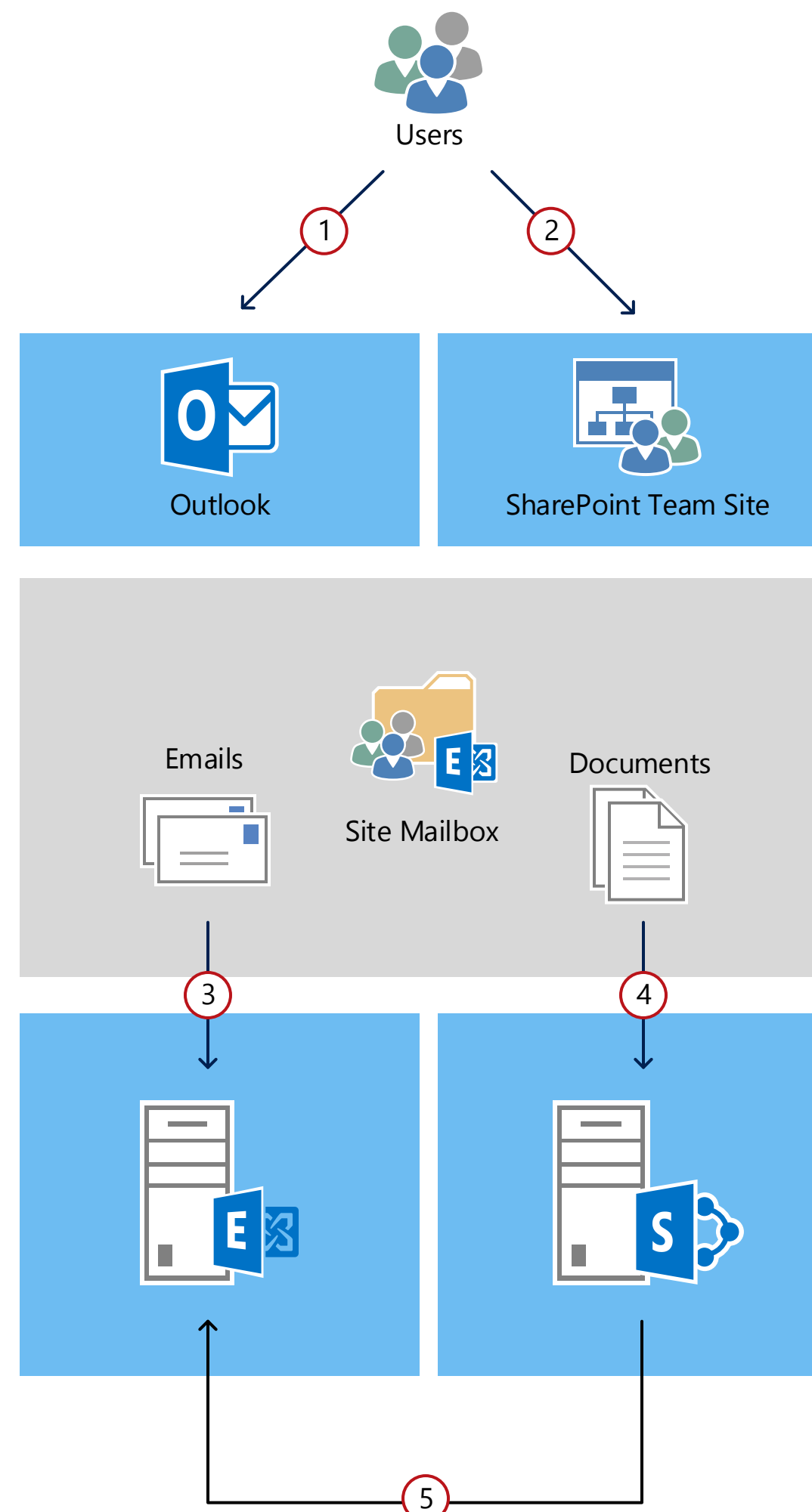
Provisioning & Management

Site Mailboxes are provisioned and managed through SharePoint 2013.

SharePoint

Site Mailbox App   Team Site Membership Members/Owners   Team Site Lifecycle Policy

In order to provision a new Site Mailbox, you need to install the Site Mailbox app on your team site, and access the app at least once.

The SharePoint site membership determines who has access to the Site Mailbox.

Site mailbox retention follows the same lifecycle policy configured for the SharePoint site with which it is associated.

Exchange

Site Mailbox Provisioning Policy

On the Exchange side you can define Site Mailbox Provisioning Policies. These policies govern the email characteristics sent to and received from the site mailbox, the size of the site mailbox on the Exchange Server and let you define a prefix for Site Mailbox email addresses.

For on-premises Exchange deployments, you also need to periodically search for and delete Site Mailboxes that have been marked for deletion through the SharePoint lifecycle policy.

Exchange   SharePoint

Microsoft

Exchange Task Synchronization

Synchronizing tasks between SharePoint Server 2013, Project Server 2013 and Exchange Server 2013

Exchange Task Synchronization allows users to synchronize tasks in SharePoint Server 2013 and Project Server 2013 with Exchange Server 2013. Users may view and manage their tasks in Outlook 2013, or on their My Site.

Server products

- Exchange Server 2013
- SharePoint Server 2013
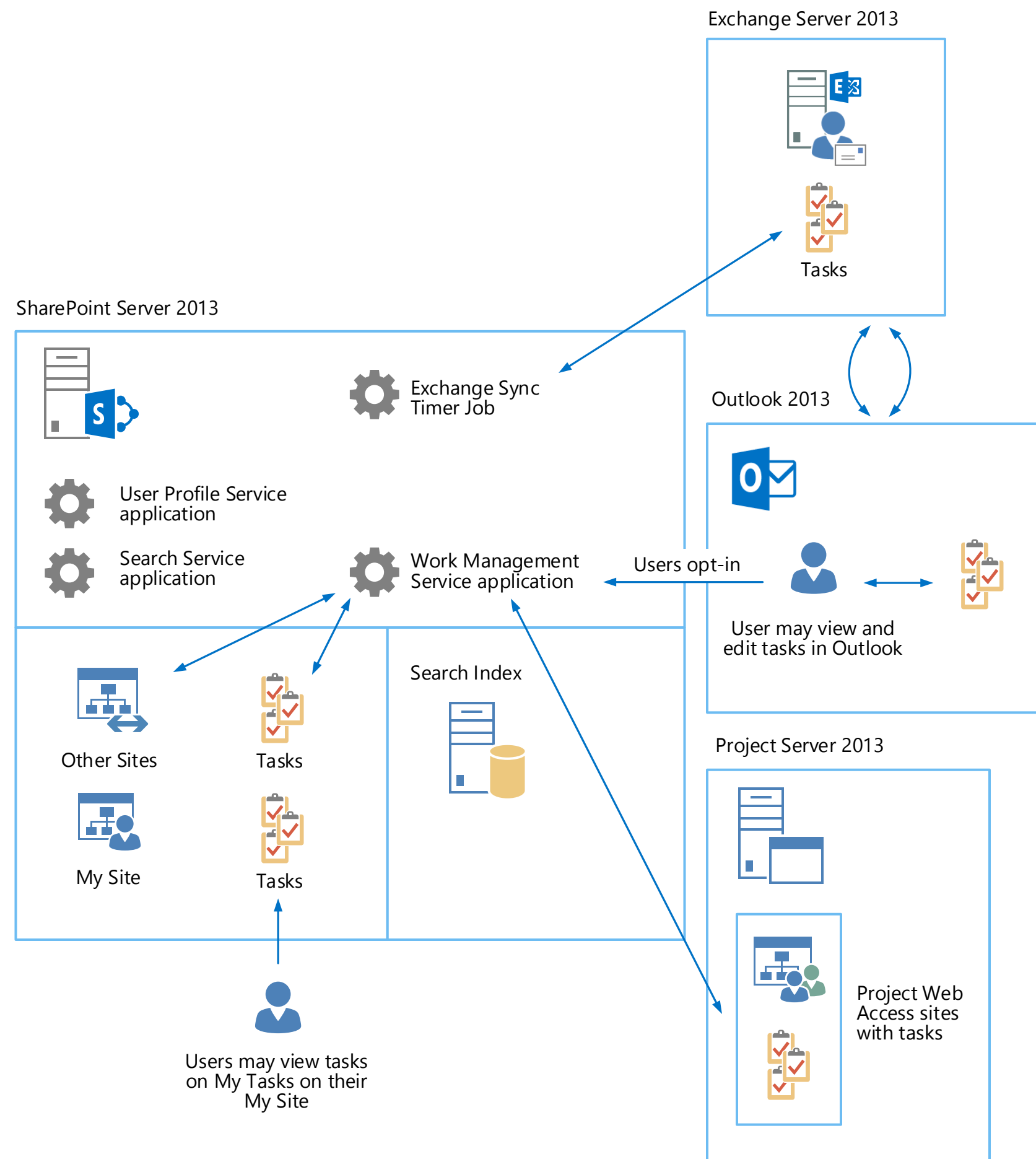- Project Server 2013 (optional)

Prerequisites

On Exchange 2013.

- Configure OAuth trust and service permission.

On SharePoint Server 2013.

- User Profile Service application.
- Work Management Service application.
- Search (this is required for tasks in SharePoint Server 2013). Configure with continuous crawls and incremental crawls.
- Secure Sockets Layer (SSL) is required.
- Users have existing My Sites.
- Project Service application (to aggregate Project Server tasks).
- Exchange Web Services API on each web front end server (this is a separate downloadable .exe file that must be installed).

On Project Server 2013

- Create Project Web Application sites.

Exchange Server 2013

Tasks

SharePoint Server 2013

Exchange Sync Timer Job

User Profile Service application

Search Service application

Work Management Service application

Users opt-in

Outlook 2013

User may view and edit tasks in Outlook

Other Sites   Tasks

Search Index

My Site   Tasks

Users may view tasks on My Tasks on their My Site

Project Server 2013

Project Web Access sites with tasks

Work Management Service application

- Aggregates tasks from SharePoint lists and Project task lists (Does not synchronize tasks with Exchange Server).
- Performs synchronization when a user views their My Site.
- Maintains the list of opted-in users
- Synchronizes the next batch of users

Exchange Sync Timer Job

- Determines the next batch of users.
- Ensures all users are constantly synchronized.
- Initiates call to Work Management Service application to perform synchronization of tasks with Exchange Server for opted-in users only.

Opt-in

- Users must opt-in to synchronize their Exchange tasks with their My Site, or their SharePoint Server 2013 and Project Server 2013 tasks with Exchange Server 2013.

How it works

When the My Tasks view on the My Sites is opened or refreshed

- The Work Management Service application performs a synchronization between SharePoint Server and Project Server
- Exchange Sync Timer Job calls the Work Management Service application to synchronize tasks with Exchange Server 2013
- The My Tasks page on the My Sites is refreshed

When the Exchange Sync Timer Job runs

- The Work Management Service application performs a synchronization between SharePoint Server, Project Server and Exchange Server

SharePoint   **Exchange**   **Project**

Microsoft

Lync Presence in Office 2013, Outlook Web App and SharePoint Server

Lync Server as the authoritative source of presence information

Lync presence information allows a consistent view of presence information across Microsoft Office products between Lync, Outlook, and SharePoint. Outlook queries presence information directly from Lync installed locally on the same computer as Outlook. When users view presence information in SharePoint Server, presence information is queried by Lync on the local computer.
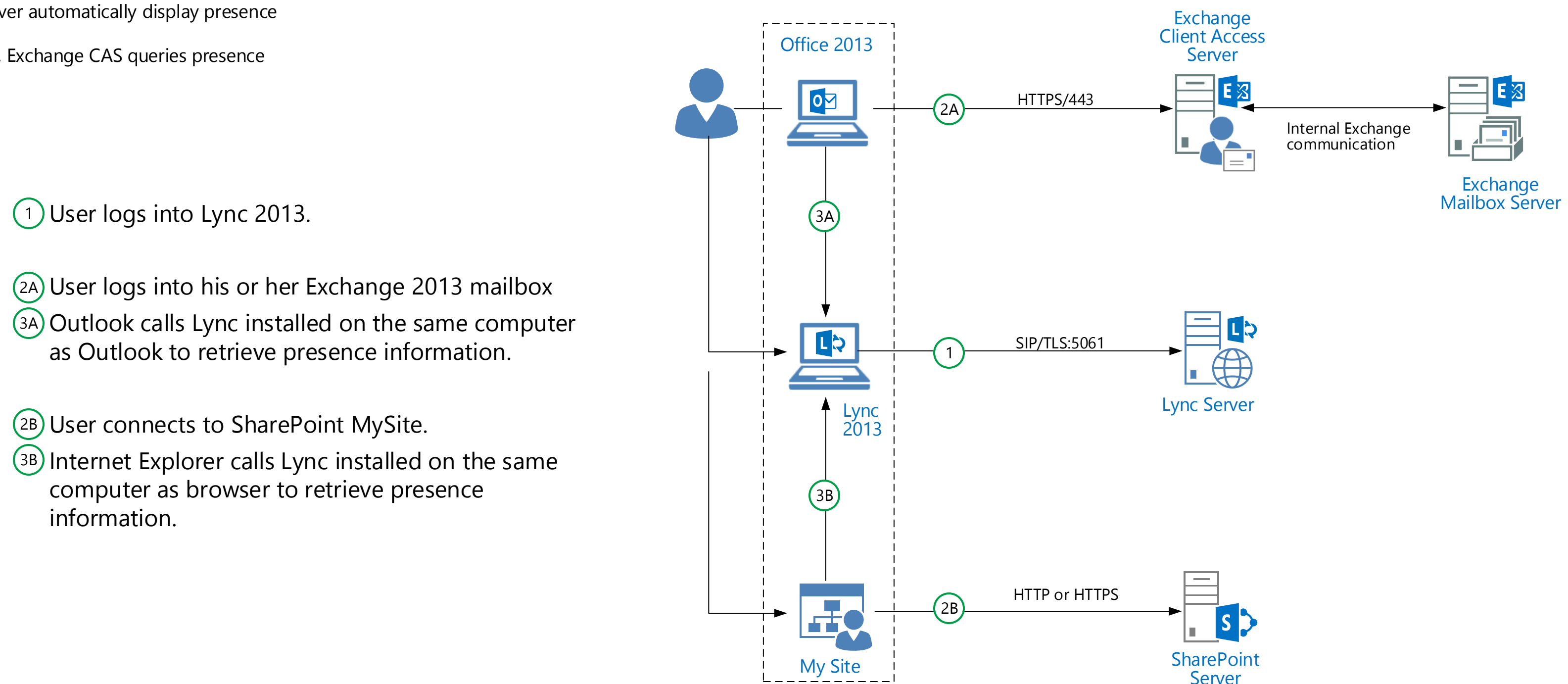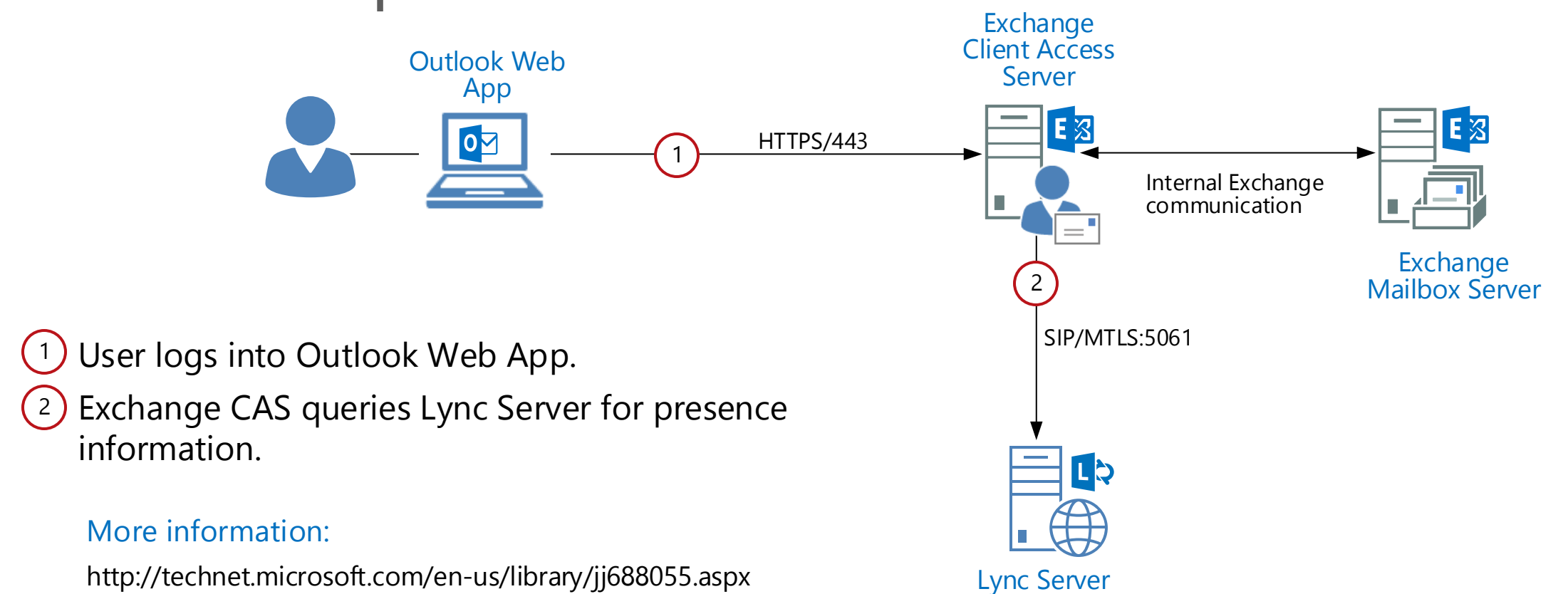
Client products:
- Outlook 2013
- Lync 2013

Server products:
- Exchange Server 2013
- Lync Server 2013
- SharePoint Server 2013

How it works:
As long as Lync 2013 is installed on the user's local computer, Outlook and SharePoint Server automatically display presence information of users.
For Outlook Web App users, Exchange CAS queries presence on behalf of the user.

① User logs into Outlook Web App.

②A User logs into his or her Exchange 2013 mailbox

③A Outlook calls Lync installed on the same computer as Outlook to retrieve presence information.

②B User connects to SharePoint MySite.

③B Internet Explorer calls Lync installed on the same computer as browser to retrieve presence information.

Outlook Web App

① User logs into Outlook Web App.

② Exchange CAS queries Lync Server for presence information.

More information:
http://technet.microsoft.com/en-us/library/jj688055.aspx

Exchange Client Access Server — HTTPS/443 — Internal Exchange communication — Exchange Mailbox Server

SIP/MTLS:5061 — Lync Server

Office 2013
- Outlook — 2A — HTTPS/443 — Exchange Client Access Server — Internal Exchange communication — Exchange Mailbox Server
- 3A
- Lync 2013 — 1 — SIP/TLS:5061 — Lync Server
- 3B
- My Site — 2B — HTTP or HTTPS — SharePoint Server

Lync

Microsoft

Voicemail

Exchange UM is the voicemail system for Lync Server

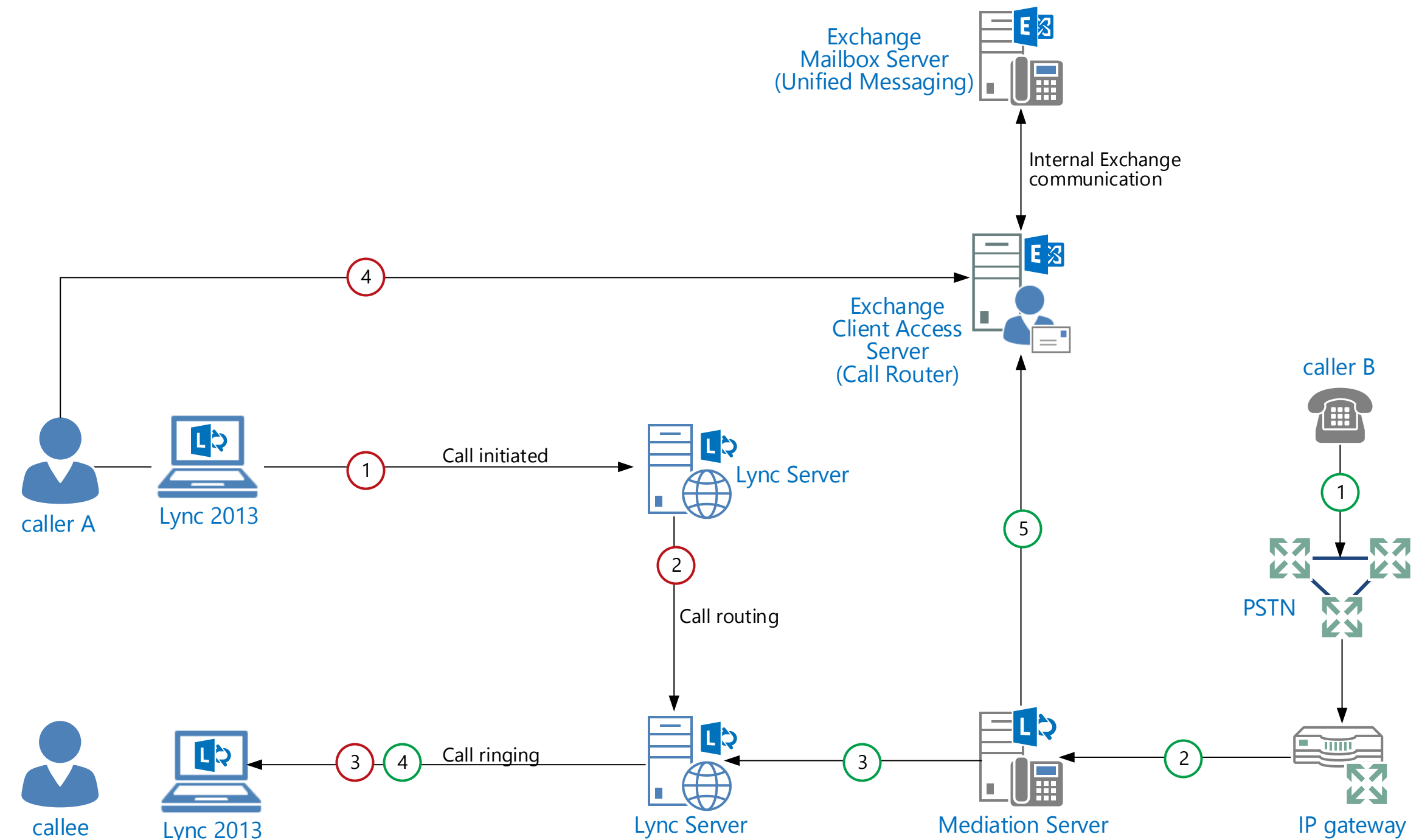Voicemail allows a caller to leave a voicemail to Lync users using Exchange UM.

Client products:
- Lync 2013
- PSTN device (PBX, cellular, POTS)

Server products:
- Exchange Server 2013
- Lync Server 2013

How it works:
When a call is not answered by the callee on any of the callee's active endpoints, Lync Server routes the call to voicemail on Exchange UM (i.e. Exchange Mailbox Server)

Exchange
Mailbox Server
(Unified Messaging)

Internal Exchange communication

Exchange
Client Access
Server
(Call Router)

caller B

caller A

Lync 2013

(1) Call initiated

Lync Server

(2) Call routing

PSTN

(5)

callee

Lync 2013

(3)(4) Call ringing

Lync Server

(3)

Mediation Server

(2)

IP gateway

(1)

① Caller A initiates call to callee.

② Call is routed to callee's Lync home server.

③ Lync Server rings callee's active endpoints.

④ When call is not answered, call is routed to voicemail (Exchange UM).

① Caller B dials callee's phone number.

② PSTN call is routed from IP gateway to Mediation Server.

③ Mediation Server routes call to callee's Lync home server.

④ Lync Server rings callee's active endpoints.

⑤ When call is not answered, call is routed to voicemail (Exchange UM).

Lync

Microsoft

Meeting Recordings
Publish your meeting recordings on your SharePoint team site

Meeting recordings are a core component of unified communications. A good way to share your meeting recordings is to use SharePoint asset libraries on your team sites to store your meeting recordings.

Client products:
- Lync 2013

Server products:
- Lync 2013
- SharePoint 2013

Pre-requisites:

Lync 2013
- The meeting recording is a client-side feature in Lync 2013 that is available out of the box.
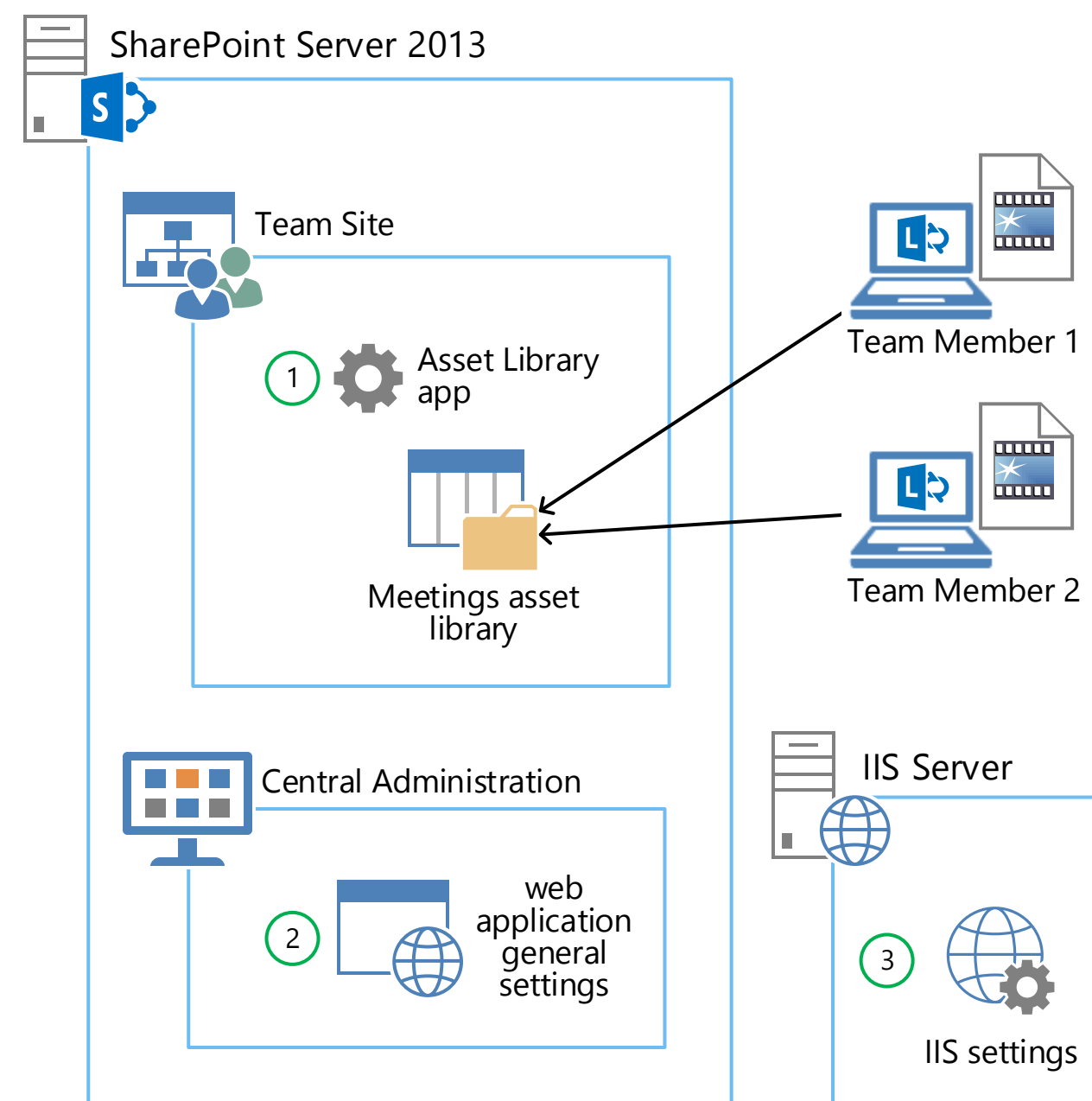
SharePoint 2013
- You have the team site you want to store the meeting recordings already up and running.

What is recorded?
The following are recorded into an MP4 file during the meeting:

- all audio
- active speaker's video (if used)
- panorama video (if used)
- all content that is presented
- instant messages*

* Only the instant messages within the meeting are included. Any peer-to-peer messaging that occurs between meeting participants is not part of the meeting and therefore is not captured.

Preparing for publishing meeting recordings

1. On your SharePoint team site, add the Asset Library app.

   Optional steps

   If you are unable to upload meeting recordings due to size restrictions or connection timeouts, perform the additional steps 3 & 4.
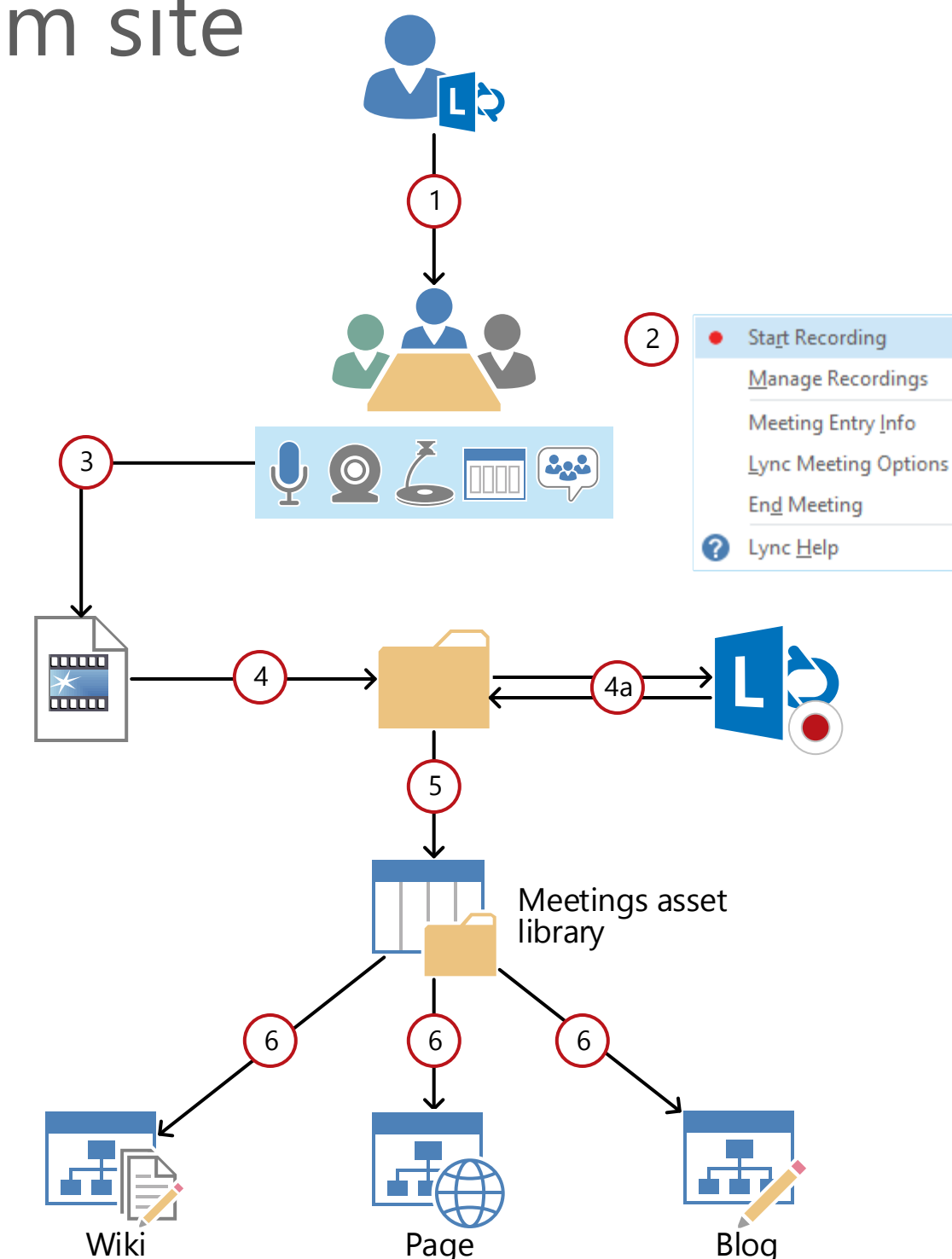
2. In the SharePoint Central Administration, change the maximum upload size setting for the web application that contains your team site collection.

3. In the IIS Server settings, increase the IIS connection timeout for the web site that contains your team site collection.

Recording and publishing a meeting using the Lync client

1. Join a Lync meeting.
2. Start recording the meeting using the Lync client.
3. The meeting content is recorded into an MP4 file during the meeting.
4. After the meeting concludes, the MP4 recording appears in the recording folder on your computer (C:\Users\<username>\Videos\Lync Recordings).

   4a. **Optional:** Customize the meeting recording using the Lync Recording Manager app which gets installed with Lync client.

5. Drag and drop the meeting recording into your SharePoint asset library.
6. **Optional :** Once the recording is in your asset library, you can insert it in any SharePoint page. For more information about this step, see the Office 365 blog entry:

   Create and Publish Training Videos with SharePoint and Lync Online
   http://aka.ms/R61q35

Digital asset libraries
Asset libraries that contain videos have certain capacity and performance implications. See this article for more information.

Plan digital asset libraries in SharePoint Server 2013
http://aka.ms/O1vq5w

Video thumbnails
Improve the look and feel of your asset library. See this article to learn about creating thumbnails for your meeting recordings.

Capture or change a video thumbnail
http://aka.ms/Kupj85