Deploying Exchange Server 2016

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Agenda

Preparing for Exchange Server 2016
Coexistence and Migration
Deploying Exchange Server 2016
Preparing for Exchange Server 2016
What’s New in Exchange Server 2016

Client Access Server services now part of Mailbox server role

Outlook Web App has been renamed to Outlook on the Web

Support for Outlook Modern Authentication (ADAL)

MAPI over HTTP is default modern protocol

Integration with OneDrive and Outlook Web Apps Server
What’s New in Exchange Server 2016

Hybrid Configuration Wizard is now a cloud-based app that is downloaded at runtime
Additional sensitive information types added to DLP
Transport rules contain new conditions and actions
Public folder support for In-Place eDiscovery and In-Place Hold
Enhanced compliance search has been added to PowerShell
What’s Going or Gone from Exchange 2016

Gone
Client Access server role
Support for MAPI/CDO connectivity
Support for Outlook 2007
Support Outlook for Mac 2008 EWS Edition

De-Emphasized
Third-Party Replication APIs
RPC over HTTP
Support for Cluster Administrative Access Points
Setup Updates

D:\setup /mode:install /roles:mailbox /iacceptexchangeserverlicenseterms

Server Role Selection

Select the Exchange server roles you want to install on this computer:

- [ ] Mailbox role
- [ ] Management tools
- [ ] Edge Transport role

- [ ] Automatically install Windows Server roles and features that are required to install Exchange Server
Environment Requirements

Exchange 2016 supports coexistence with
Exchange 2010 SP3 RU11 and later
Exchange 2013 CU10 and later

Exchange 2016 requires
Windows Server 2008 FFM and later
Windows Server 2008 and later Global Catalog servers in each site with Exchange installed
Outlook clients running
  Outlook 2010 SP2 (with KB2956191 and KB2965295) or later
  Outlook 2013 SP1 (with KB3020812) or later
  Outlook 2016
  Outlook for Mac 2011 or later
Server Requirements

Exchange 2016 is supported on full GUI installs of

Windows Server 2012
Windows Server 2012 R2
Windows Server 2016

Exchange 2016 requires

.NET Framework 4.5.2
Windows Management Framework 4.0
Unified Communications Managed API (UCMA) 4.0
Office Web Apps Server installed on separate server(s) for attachment rendering in Outlook on the web

Outlook on the web supports

Microsoft Edge
Internet Explorer 11
Most recent versions of Mozilla Firefox, Google Chrome, and Safari
# Existing Exchange Servers

All existing Exchange server versions must meet prerequisite levels

Recreate Edge Subscriptions before running Exchange 2016 Setup

```powershell
Get-ExchangeServer | FT Name,AdminDisplayVersion,ServerRole -AutoSize
```

<table>
<thead>
<tr>
<th>Name</th>
<th>AdminDisplayVersion</th>
<th>ServerRole</th>
</tr>
</thead>
<tbody>
<tr>
<td>E2K10-EDG-001</td>
<td><strong>Version 14.2 (Build 247.5)</strong></td>
<td>EdgeTransport</td>
</tr>
<tr>
<td>E2K13-MLT-001</td>
<td>Version 15.0 (Build 1104.5)</td>
<td>Mailbox, ClientAccess</td>
</tr>
</tbody>
</table>
Earlier versions of Exchange cannot be reintroduced after Exchange 2016 PrepareAD is run.
Offline Address Book

Exchange 2016 creates a new default OAB for the organization

```
[PS] C:\>Get-OfflineAddressBook | FT Name,IsDefault,ExchangeVersion
Name                          IsDefault ExchangeVersion
----                          -------- ---------------
Default Offline Address Book  False 0.1 (8.0.535.0)
Default Offline Address Book (Ex2013) True 0.20 (15.0.0.0)
```

Hard-code the current OAB on all existing databases before installing Exchange 2016

```
[PS] C:\Windows\system32>Get-MailboxDatabase | FT NAME,*offline*,exchangeversion -AutoSize
Name              OfflineAddressBook ExchangeVersion
Mailbox Database 2128912305 \Default Offline Address Book 0.10 (14.0.100.0)
```
Coexistence and Migration
Exchange 2010 + Exchange 2016

Same experience as Exchange 2010 + Exchange 2013
No legacy namespace required
Exchange 2016 can proxy to Exchange 2010
Exchange 2010 can’t proxy to Exchange 2016
## Client Connectivity - Exchange 2010 + 2016

<table>
<thead>
<tr>
<th>Protocol/App</th>
<th>Exchange 2010 user accessing Exchange 2016 namespace</th>
</tr>
</thead>
<tbody>
<tr>
<td>OWA/ECP</td>
<td>Mailbox is mounted in the same AD Site: Exchange 2016 proxies to Exchange 2010 CAS endpoint in the local site</td>
</tr>
<tr>
<td></td>
<td>Mailbox is mounted in an Internal-only AD site: Exchange 2016 proxies to Exchange 2010 CAS endpoint in the remote site</td>
</tr>
<tr>
<td></td>
<td>Mailbox is mounted in an Externally-facing AD site: Exchange 2016 proxies or issues a silent/SSO cross-site redirect to an ExternalURL in the remote site of your choice that could resolve to Exchange 2016, 2013, or 2010, as all are capable of getting the traffic to Exchange 2010 mailboxes in that site</td>
</tr>
<tr>
<td>Exchange ActiveSync</td>
<td>Exchange 2016 proxies the request to an Exchange 2010 CAS endpoint</td>
</tr>
<tr>
<td>Outlook Anywhere</td>
<td></td>
</tr>
<tr>
<td>Exchange Web Services</td>
<td></td>
</tr>
<tr>
<td>POP/IMAP</td>
<td></td>
</tr>
<tr>
<td>Remote PowerShell</td>
<td></td>
</tr>
<tr>
<td>Autodiscover</td>
<td></td>
</tr>
<tr>
<td>Offline Address Book</td>
<td></td>
</tr>
<tr>
<td>MAPI/HTTP</td>
<td>Not applicable for Exchange 2010 mailboxes</td>
</tr>
</tbody>
</table>
Exchange 2010 coexistence with Exchange 2016

Condensed steps to upgrade from Exchange 2010

1. Prep your environment (service packs, RUs, DFL/FFL, schema, AD, domains, etc...)
2. Install Exchange 2016 (consider using a deployment AD site)
3. Configure the Exchange 2016 server URLs
4. Import certificate(s) to Exchange 2016 servers
5. Move load balanced namespaces to Exchange 2016 once ready to accept clients
6. Setup your DAG(s)
7. Start moving mailboxes
8. Repeat for all Internet facing sites and then repeat for all non-Internet facing
9. Move incoming mail flow to Exchange 2016 once it makes sense (>50% moved)
Exchange 2016/2010 Coexistence

Load Balancer

mail.contoso.com

IIS

HTTP Proxy

Protocol Head

Exchange 2010 CAS

RPC

Store

Exchange 2010 Mailbox

Database

Protocol Head

Exchange 2016

Site Boundary

OTTW Redirect if ExternalURL exists in remote site

europe.mail.contoso.com

Load Balancer

Protocol Head

Exchange 2010 CAS

RPC

Store

Exchange 2010 Mailbox

Database
Exchange 2013 + Exchange 2016

No legacy namespaces required
Exchange 2016 can proxy to Exchange 2013
Exchange 2013 can proxy to Exchange 2016
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<tr>
<td>OOTW/ECP</td>
<td>Mailbox mounted in the same AD Site: Exchange 2016 proxies to Exchange 2013 Mailbox server in local AD site with active database</td>
<td>Mailbox mounted in the same AD Site: Exchange 2013 proxies to Exchange 2016 Mailbox server in local AD site with active database</td>
</tr>
<tr>
<td></td>
<td>Mailbox mounted in an Internal only AD site: Exchange 2016 proxies to Exchange 2013 Mailbox server in remote AD site with active database</td>
<td>Mailbox mounted in an Internal only AD site: Exchange 2013 proxies to Exchange 2016 Mailbox server in remote AD site with active database</td>
</tr>
<tr>
<td></td>
<td>Mailbox mounted in an External facing AD site: Exchange 2016 proxies to the Exchange 2013 Mailbox server with active database, or issues a silent/SSO cross-site redirect to site's ExternalURL* (your choice).</td>
<td>Mailbox mounted in an External facing AD site: Exchange 2013 proxies to the Exchange 2016 Mailbox server with active database, or issues a silent/SSO cross-site redirect to the site's ExternalURL* (your choice).</td>
</tr>
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<td></td>
<td>* Could resolve to Exchange 2016 or 2013 as both are capable of getting the traffic to Exchange 2013 mailboxes in that site</td>
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<td>Exchange 2013 CAS proxies to Exchange 2016 Mailbox server with active database</td>
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<td>Offline Address Book</td>
<td>Exchange 2016 proxies the request to an OAB generation mailbox with the OAB or a shadow copy of the OAB</td>
<td>Exchange 2013 proxies the request to an OAB generation mailbox with the OAB or a shadow copy of the OAB</td>
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</tbody>
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Exchange 2013 + 2016 Coexistence

Option 1: Let Exchange 2013 up-version proxy

Condensed steps

1. Prep your environment (service packs, CUs, DFL/FFL, schema, AD, domains, etc.,...)
2. Install Exchange 2016
3. Configure Exchange 2016 server URLs as you would have for Exchange 2013
4. Import the certificate(s) to Exchange 2016 servers
5. Setup your DAG(s)
6. Start moving mailboxes
7. Repeat for all Internet facing sites and then repeat for non-Internet facing
8. Move incoming mail flow to Exchange 2016 once it makes sense (>50% moved)
9. Swing the load balanced namespaces over from 2013 to 2016
   a. Recommended: Gradually introduce Exchange 2016 servers into the existing LB pool
   b. Supported: Cutover to all Exchange 2016 servers at once
Exchange 2013 + 2016 Coexistence

Option 2: Let Exchange 2016 down-version proxy

Condensed steps

1. Prep your environment (service packs, CUs, DFL/FFL, schema, AD, domains, etc.,...)
2. Install Exchange 2016
3. Configure Exchange 2016 server URLs as you would have Exchange 2013
4. Import the certificate(s) to Exchange 2016 servers
5. Swing the load balanced namespaces over from Exchange 2013 to Exchange 2016
6. Setup your DAG(s)
7. Start moving mailboxes
8. Repeat for all Internet facing sites and then repeat for non-Internet facing
9. Move incoming mail flow to Exchange 2016 once it makes sense (>50% moved)
CAS replacement process w/up-version proxy

1. LB is sending traffic to Exchange 2013 CAS
2. Exchange 2016 is introduced
3. Exchange 2016 client access services added to LB pool
4. Exchange 2013 CAS services removed from LB pool
5. More Exchange 2016 introduced and added to LB pool
6. More 2013 CAS services removed from LB pool
7. More Exchange 2016 introduced and added to LB pool
8. Final 2013 CAS services removed from LB pool

Legend:
- Purple: LB to Client Access Services
- Black: Client Access Services to Mailbox
- Orange: 2013 Client Access to 2016 Mailbox
CAS replacement using DNS response ratios

Diagrammtitel

WLB VIP1

E13 CAS

E13 CAS

E13 CAS

E13 MBX

E13 MBX

E13 MBX

WLB VIP2

2016 MBX

2016 MBX

2016 MBX

Legend:

- Purple: LB to Client Access Services
- Gray: Client Access Services to Mailbox
- Blue: 2013 Client Access to 2016 Mailbox

Diagrammtitel
Exchange 2016/2013/2010 Coexistence

- **Client Access Services**
- **IIS Protocol Head**
- **DB Load Balancer**
- **IIS HTTP Proxy**
- **Protocol Head**
- **Store**
- **DB**

**Server Details**
- 16 MBX Server
- Exchange 2013 Store
- Exchange 2016 Store
- Exchange 2010 MBX
- Exchange 2007 CAS
- Europe.mail.contoso.com

**Usage**
- OOTW/ECP redirects where appropriate

**Domain**
- mail.contoso.com
Exchange 2016/2013/2010 Coexistence

OOTW/ECP redirects where appropriate

16 MBX Server
Client Access Services
IIS
HTTP Proxy
Protocol Head
DB
Exchange 2016 Store

Protocol Head
DB
Exchange 2013 MBX

Protocol Head
DB
Exchange 2010 MBX

Load Balancer
mail.contoso.com

Load Balancer
europe.mail.contoso.com

Site Boundary

Exchange 2010 CAS
RPC

Store
DB
Exchange 2010 MBX
Installing Exchange Server 2016
Recommended (and Easiest) Way to Install

1. Install new server in a deployment AD site
2. Install perquisites and reboot
3. Install Exchange 2016, allowing setup to install required Windows components, and reboot for settings to take effect
4. Configure and move to production AD site
5. Add the server to the load balancing pool
Using a Deployment Site

As soon as Exchange is installed into an AD site it becomes...

A valid Service Connection Point for Autodiscover requests

An SCP’s default AutodiscoverServiceInternalUri value is the server’s FQDN, which will produce a certificate error

A valid source of answers for Autodiscover responses

All of the virtual directory default values are the server’s FQDN, which will also produce a certificate error
Using a Deployment Site

In this case a /29 subnet provides 6 host addresses from .129-.134 to use for server deployments within the overall /24 subnet.

One of those IPs will be needed for a GC in the site.
Using a Deployment Site

Check the server’s site with NLTEST before installing Exchange

Post-install, check the server’s site information from Exchange’s perspective with Get-ExchangeServer

Update the AD site scope before changing the server’s IP to an IP within the production site
MAPI/HTTP

Recommended as part of the Preferred Architecture

MAPI/HTTP will be enabled by default when...
- Exchange 2016 is the first Exchange server in a greenfield Exchange org
- The first Exchange 2016 server is installed in an Exchange 2010-only org
- The first Exchange 2016 server is installed in an Exchange 2013 org if MAPI/HTTP is already enabled

MAPI/HTTP will not be enabled by default when...
- The first Exchange 2016 server is installed in an Exchange 2013 org when MAPI/HTTP is not already enabled
Welcome to Microsoft Exchange Server 2016 Unattended Setup
Copying Files...
File copy complete.
Setup will now collect additional information needed for installation.

Languages
Management tools
Mailbox role: Transport service
Mailbox role: Client Access service
Mailbox role: Unified Messaging service
Mailbox role: Mailbox service
Mailbox role: Front End Transport service
Mailbox role: Client Access Front End service

Performing Microsoft Exchange Server Prerequisite Check

<table>
<thead>
<tr>
<th>Configuring Prerequisites</th>
<th>COMPLETED</th>
</tr>
</thead>
<tbody>
<tr>
<td>Prerequisite Analysis</td>
<td>COMPLETED</td>
</tr>
</tbody>
</table>

MAPI over HTTP, the preferred Outlook desktop client connectivity with Exchange server, is currently not enabled. Consider enabling it using: Set-OrganizationConfig -MapiHttpEnabled $true
For more information, visit:
MAPI/HTTP

Scenario: An Exchange 2013 org with MAPI/HTTP disabled is migrating to Exchange 2016

Goal: Enable only MAPI/HTTP for users as they are migrated to 2016

1. Leave the organization level MapiHttpEnabled as $False
2. Prior to moving mailboxes use Set-CasMailbox from the 2016 EMS to set MapiHttpEnabled to $True on the 2013 mailboxes
3. Move the mailboxes to 2016
4. Once all mailboxes are on 2016, set MapiHttpEnabled to $True at the organization level
5. Use Set-CasMailbox on all 2016 mailboxes to set MapiHttpEnabled to $Null so the organization level value is inherited once again
MAPI/HTTP

Scenario: Customer running an Exchange 2016 org
Goal: Block external Outlook on Windows connectivity for all but a few users with minimal complexity and the fewest admin steps

1. Ensure the InternalURL for the MAPI/HTTP and EWS vDirs as well as the Internal Hostname for Outlook Anywhere resolve only via internal DNS and cannot be reached by external clients (perhaps unless they use VPN)
2. Use Set-CasMailbox and set MAPIBlockOutlookExternalConnectivity to $True for all users not allowed to connect remotely
Exchange 2013 to 2016 Public Folder Migrations

1. Move the Public Folder mailboxes to 2016 databases
Kerberos Authentication

Exchange 2010 + Exchange 2016
Follow the current Exchange 2010 / Exchange 2013 guidance at http://aka.ms/kerbcoexist20102013

Exchange 2013+ Exchange 2016
A single ASA used for both 2013 and 2016 servers in the same environment

Two ASAs where one is 2010 and the other is shared with 2013 & 2016
System Mailbox Moves After Install

Move these system mailboxes from 2010/2013 to 2016

SystemMailbox{1f05a927-d5d7-47a6-b498-f5266abdf909}
SystemMailbox{bb558c35-97f1-4cb9-8ff7-d53741dc928c}
**SystemMailbox{e0dc1c29-89c3-4034-b678-e6c29d823ed9}**
FederatedEmail.4c1f4d8b-8179-4148-93bf-00a95fa1e042
Migration.8f3e7716-2011-43e4-96b1-aba62d229136

If you don’t, you

Can’t save admin tasks to the admin audit log or export it
Can’t start eDiscovery searches
Can’t start batch migrations with Exchange 2016 as target databases
And more...
Outlook on the web - Before Attachment Viewing is Configured

No Native App Installed

Native App Installed

Do you want to save DocuDemo.docx from mail.corp.e16lab.com?

Do you want to open or save DocuDemo.docx from mail.corp.e16lab.com?
Outlook on the web - Before Attachment Viewing is Configured

[PS] C:\Get-MailboxServer E16LAB-2K16-101 | FL WACDiscovery*

WACDiscoveryEndpoint :
Configuring Outlook on the web Attachment Viewing

Configure WAC discovery endpoint per mailbox server

```
Get-MailboxServer E16LAB-E2K16-101 -FL WACDisc
```

WACDiscoveryEndpoint : https://oos.us.corp.e16lab.com/hosting/discovery

Restart MSExchangeOWAAppPool
Outlook on the web - After Attachment Viewing is Configured

View or Download

New side-by-side (SxS) view
Outlook Web Apps Server Connectivity

1. Exchange uses discovery URL to ask OOS which files types it can view and edit
2. OOS returns table of supported file types
3. User opens mail with attachment that matches one of the file types OOS supports and OOTW requests document URLs for supported types
4. Exchange builds URL with Auth token, app URL, and Attachment ID and returns it to OOTW
5. User clicks attachment within OOTW and spawns an iFrame on client to load the URL returned by Exchange
6. OOS retrieves document content from Exchange
7. OOS renders content in OOS client (e.g., Word Web App)
Object Management

Exchange 2013 can manage Exchange 2016 objects

Exchange 2016 can manage Exchange 2013 objects

Exchange 2010 object management varies, best to use version-specific tools
Summary

Exchange 2016 deployments have been simplified, but they still require up-front planning. Office Web App server integration provides optional in-line document viewing in Outlook on the web.
Thank you!