INSTALLING EXCHANGE 2016

Step by step

By Off2work

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Intro

In Exchange 2016 CAS role has now been removed, so there is only Mailbox and Edge role left. This guide will focus mostly on Mailbox role, configuration, backup and DNS. Since my resource (Hardware and software) is limited, I will skip DAG but will instead provide a link with a guide at the end of this guide.

My Lab contains of:

Server name	**Role**	**Internal IP**	**Disk**
DC.domain.local	**RootCA,** **DC, DNS**	**192.168.0.3**	**C:** **50GB**
EX1.domain.local	**Mailbox**	**192.168.0.4**	**C:75GB** **D:10GB** **E:5GB** **F:7GB**

Checklist before installing Exchange 2016

1. Firewall disabled within domain network
2. Has static IP setup and can ping DC and other servers in the domain
3. Latest windows update
4. Windows is activated
5. Is joined domain
6. Account that is going to install is member of Schema Admins, Enterprise Admins and Organization Management
7. DC (writeable)
8. File share witness server (can't be Exchange server or DC)
9. RootCA
10. DNS

Hardware Requirements

Processor	Intel X64 or AMD64
Memory	8GB minimum (5GB working in Lab)
Disk space	32GB minimum (Lab setup has 75GB C: drive, 7GB D:(Database) drive, 5GB E:(Log) drive, 6GB F:(Backup for log) drive)

Operating system requirements

Windows Server 2012 R2 Standard or Datacenter

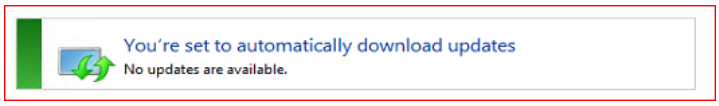
Windows Server 2012 Standard or Datacenter

Prerequisites

1. .Net Framework 4.5.2 http://go.microsoft.com/fwlink/p/?LinkId=518380
2. Unified Communications Managed API 4.0 Runtime http://go.microsoft.com/fwlink/p/?linkId=258269
3. Open Windows PowerShell as administrator and run following command (mailbox role)

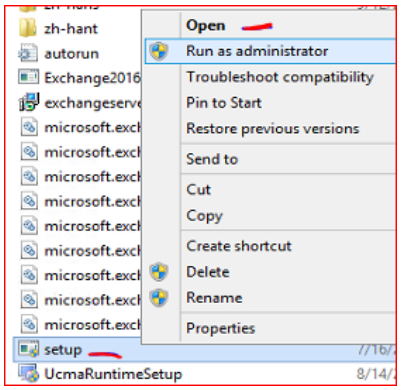
Install-WindowsFeature RSAT-ADDS, AS-HTTP-Activation, Desktop-Experience, NET-Framework-45-Features, RPC-over-HTTP-proxy, RSAT-Clustering, RSAT-Clustering-CmdInterface, RSAT-Clustering-Mgmt, RSAT-Clustering-PowerShell, Web-Mgmt-Console, WAS-Process-Model, Web-Asp-Net45, Web-Basic-Auth, Web-Client-Auth, Web-Digest-Auth, Web-Dir-Browsing, Web-Dyn-Compression, Web-Http-Errors, Web-Http-Logging, Web-Http-Redirect, Web-Http-Tracing, Web-ISAPI-Ext, Web-ISAPI-Filter, Web-Lgcy-Mgmt-Console, Web-Metabase, Web-Mgmt-Console, Web-Mgmt-Service, Web-Net-Ext45, Web-Request-Monitor, Web-Server, Web-Stat-Compression, Web-Static-Content, Web-Windows-Auth, Web-WMI, Windows-Identity-Foundation

Restart and run windows update a couple of times. When there are no more Windows update, we are ready to install.

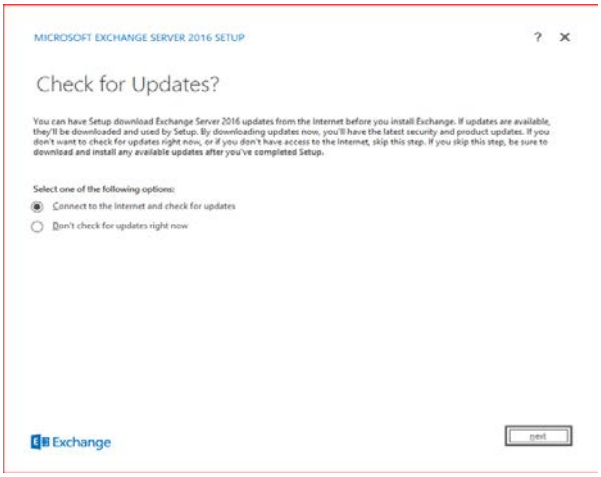


Download and Install

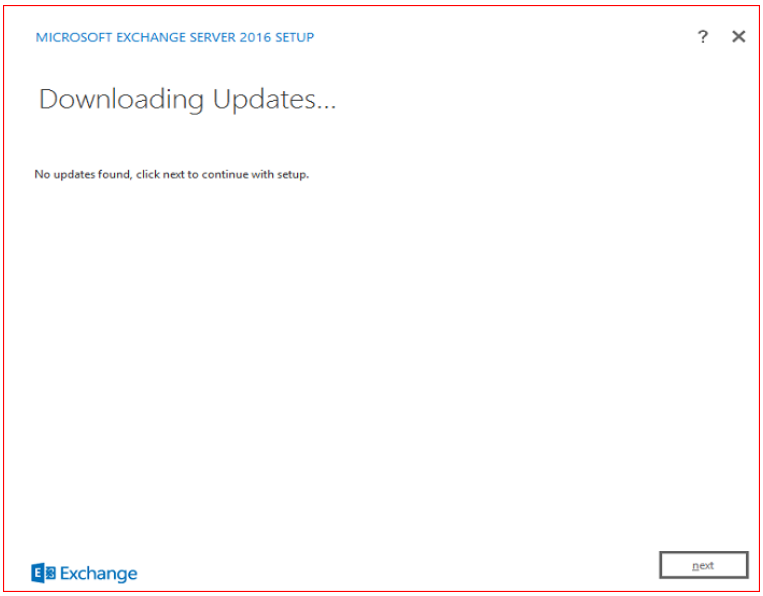
1. Download Exchange server 2016 (preview) and extract it to local drive. I extracted mine to C:\Exchange 2016\ https://www.microsoft.com/en-us/download/details.aspx?id=48210
2. Run setup.exe as administrator



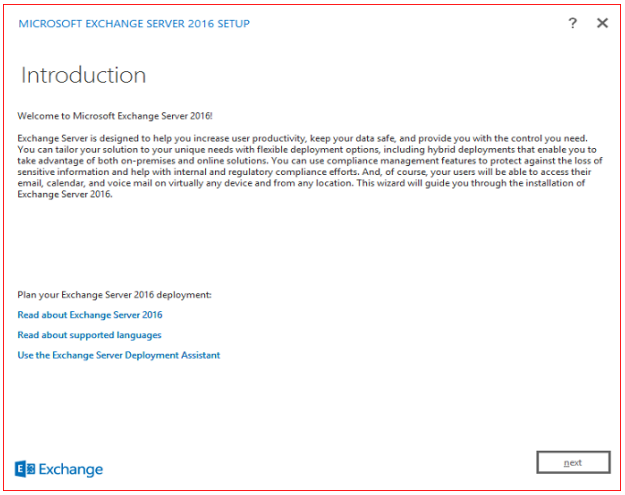
3. Chose default and click Next



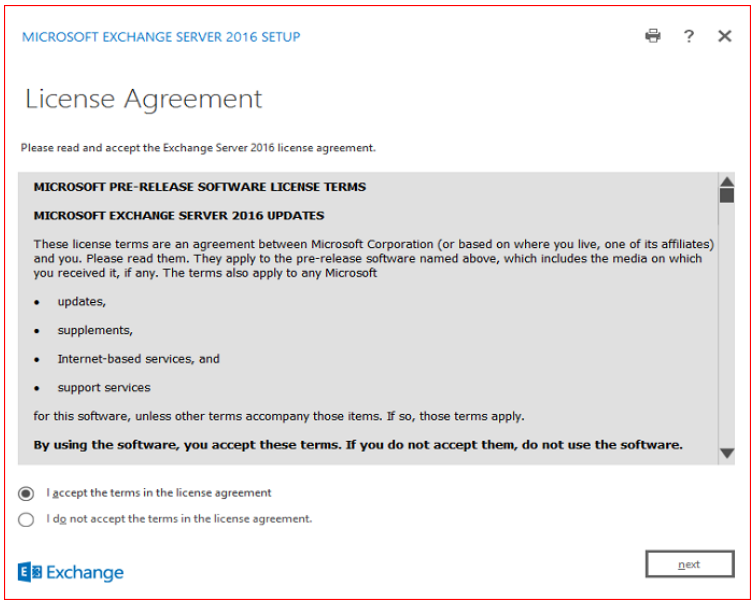
4. Click Next



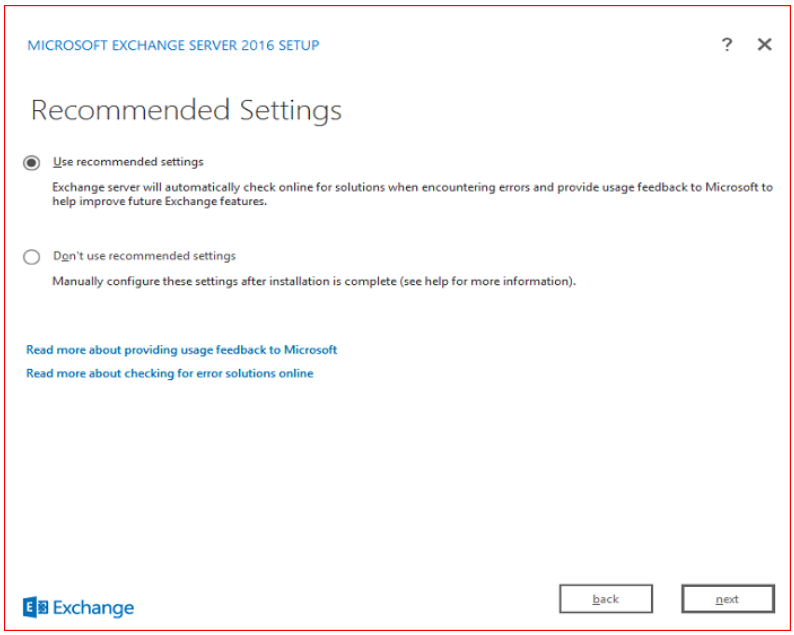
5. Click Next



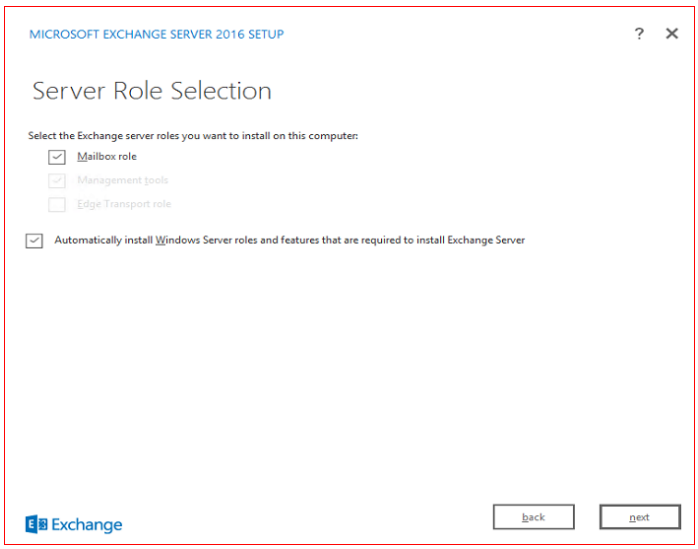
6. Accept License Agreement and click Next



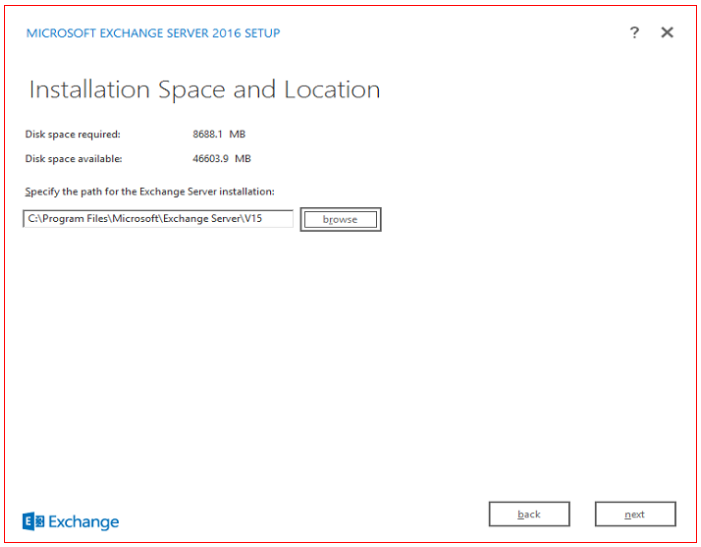
7. Use recommended settings and click next



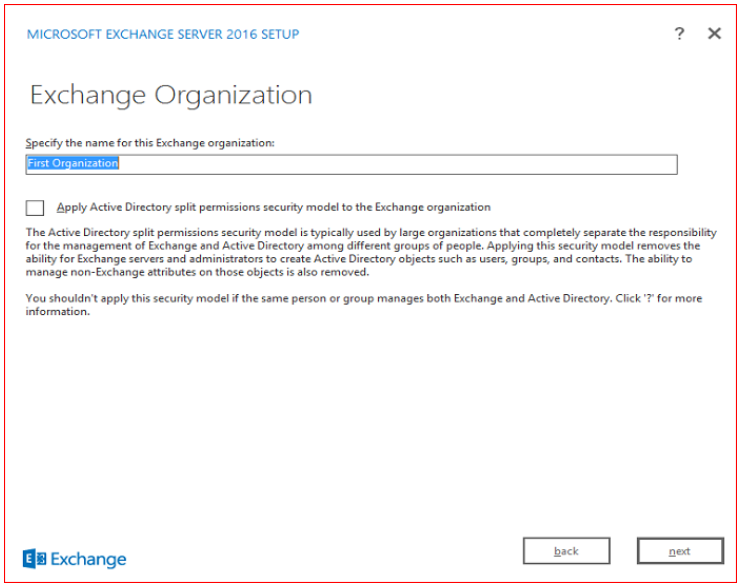
8. Check for Mailbox Role (management tool will be automatically selected) and Automatically install. Click Next



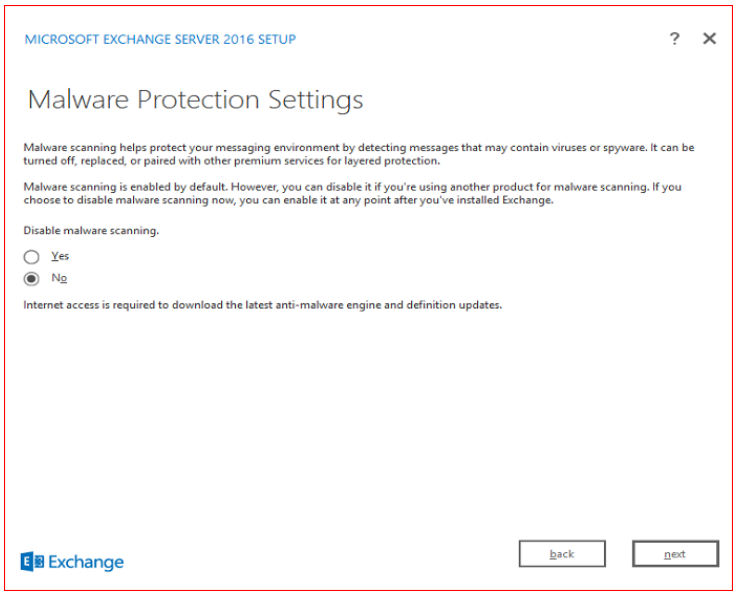
9. Click Next



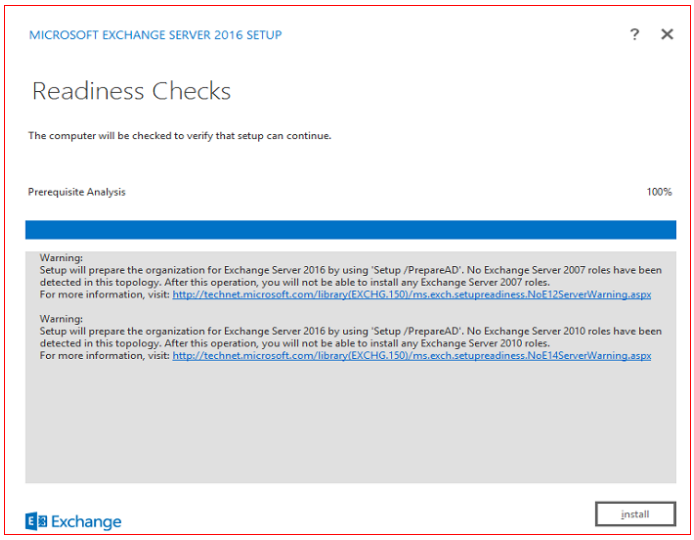
10. Specify a desired name or leave default and Click Next



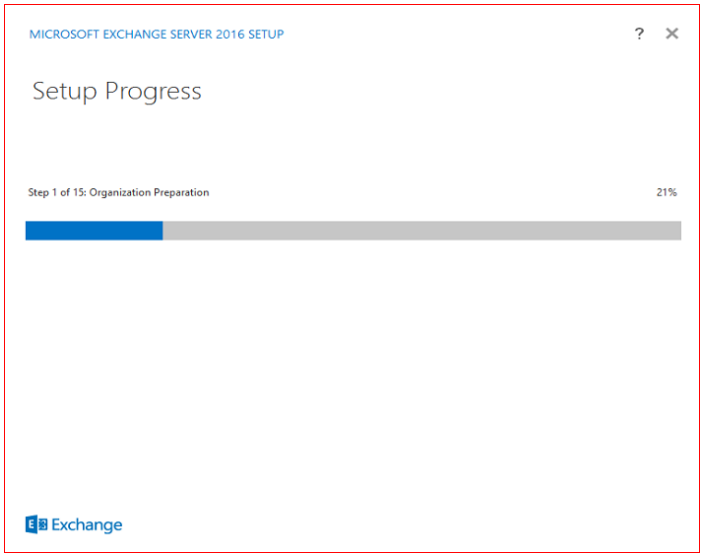
11. Leave default and click Next



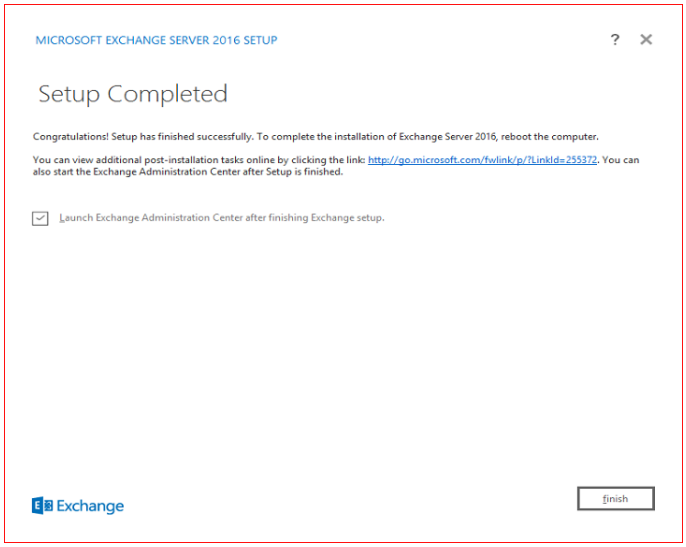
12. Click Install



13. Now installation will prepare your organization (AD, Schema and Domain). This will take a while, depends on your hardware setup. With my setup it took around 1 hour!



14. We are done! Check for Launch ECP and click finish.

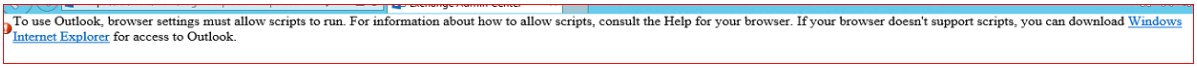


Configure Exchange Server

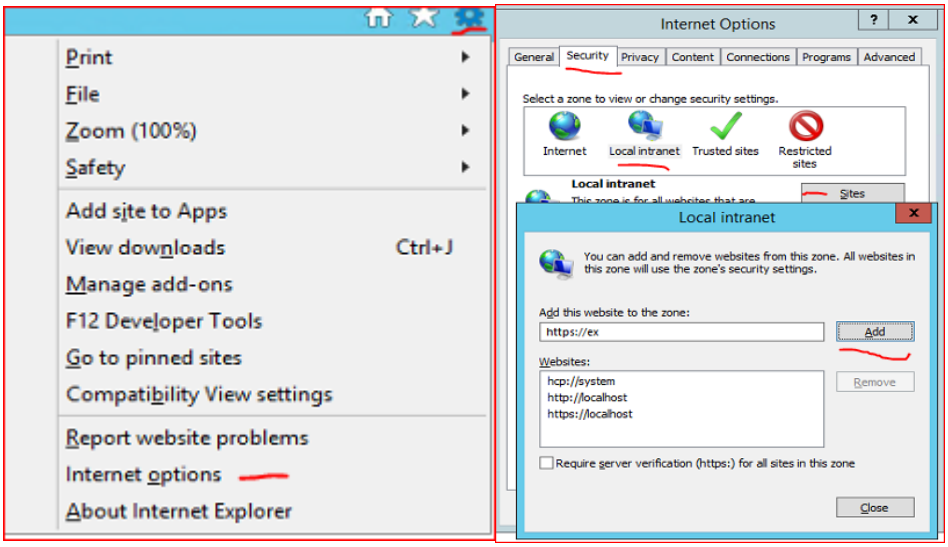
In this chapter, we will configure Virtual Directories, Mapi, create new Database and request a new certificate.

Configure Virtual Directories

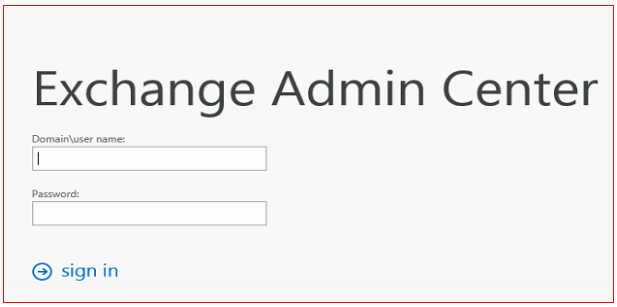
1. When IE starts, we will be greeted by a warning.



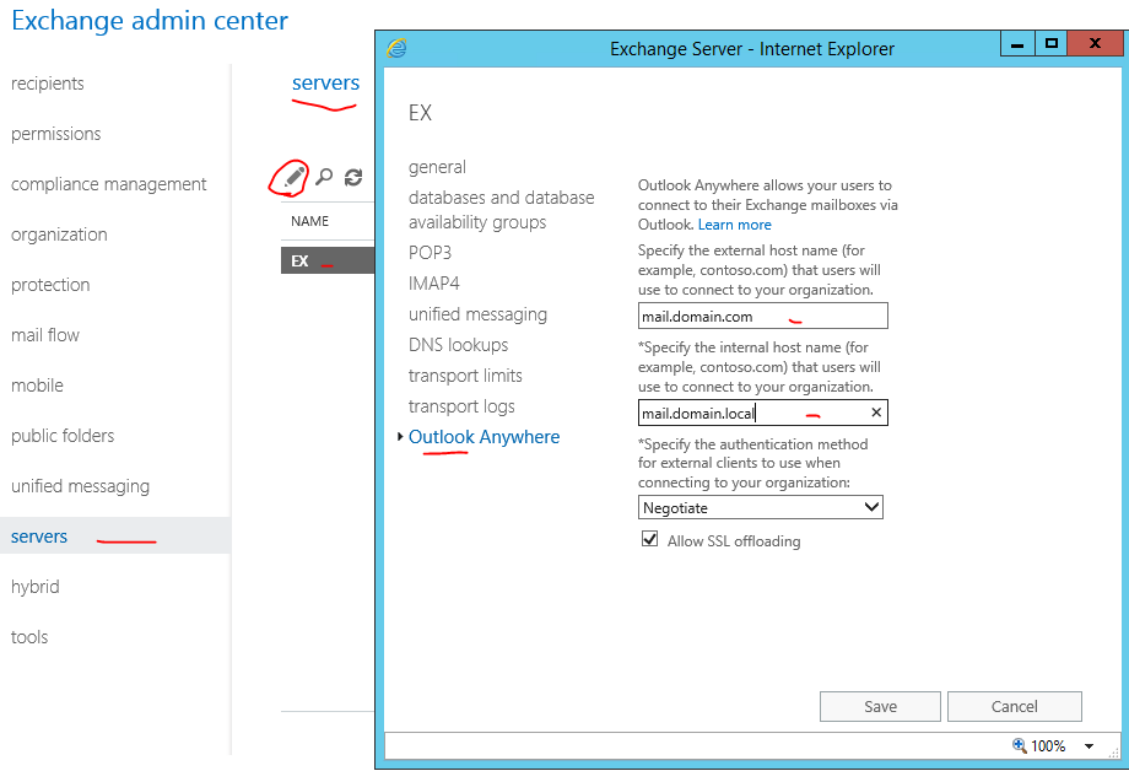
   Click on tools – internet options – security – Local Intranet – Sites and add it to the zone. Close Internet Options and refresh the page.



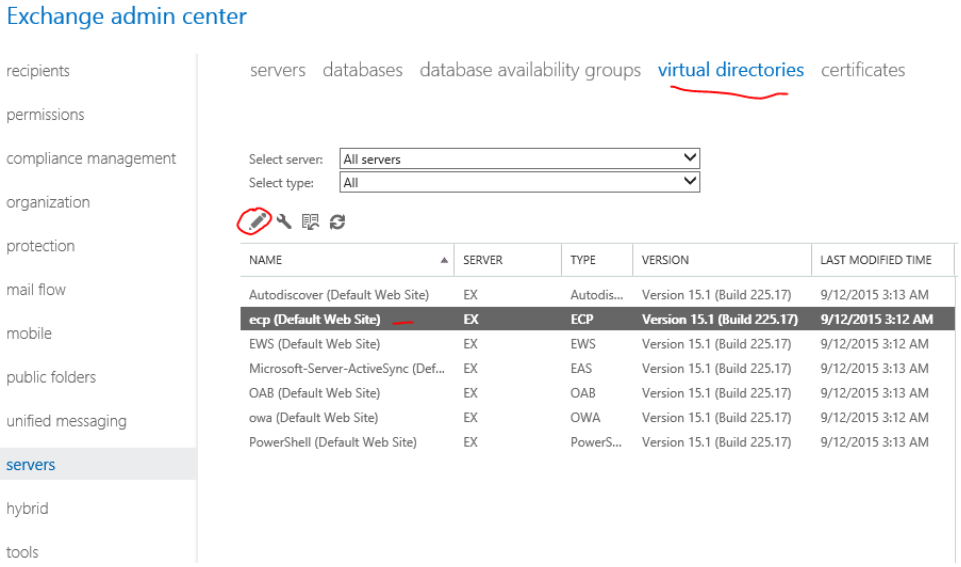
2. Login with your domain admin user. (Don't worry about slow login, this is normal during first time login).



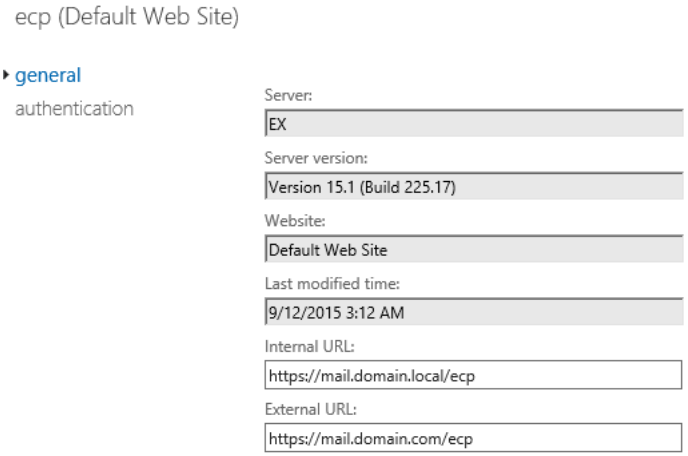
3. Navigate to Servers and click edit button. In the new window click Outlook Anywhere then add External and Internal hostname (If you want to keep your certificate easy, you can add *.com as internal and external hostname. If you do so, you should create internal DNS for your .com zone, we will go thru certificate request later on).Click Save to save your changes.



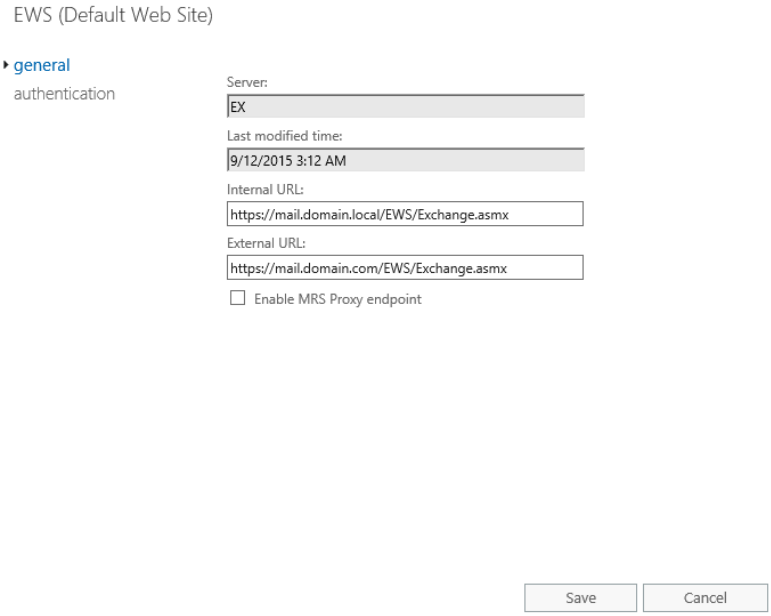
4. Click on virtual directories – ECP – Edit



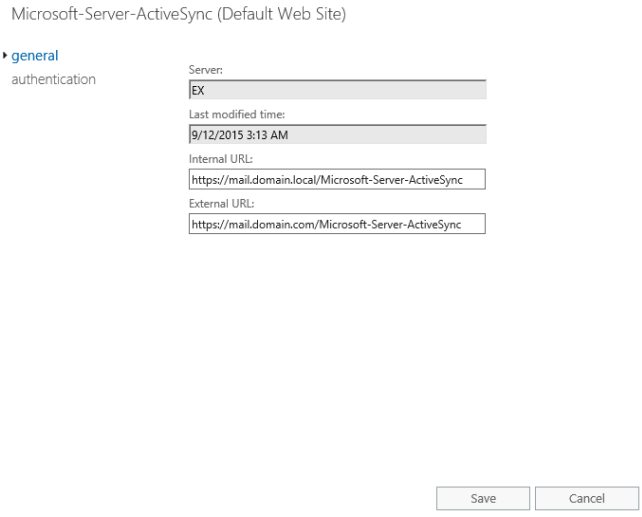
In the new window, edit Internal and external url (again both can be *.com) and save.



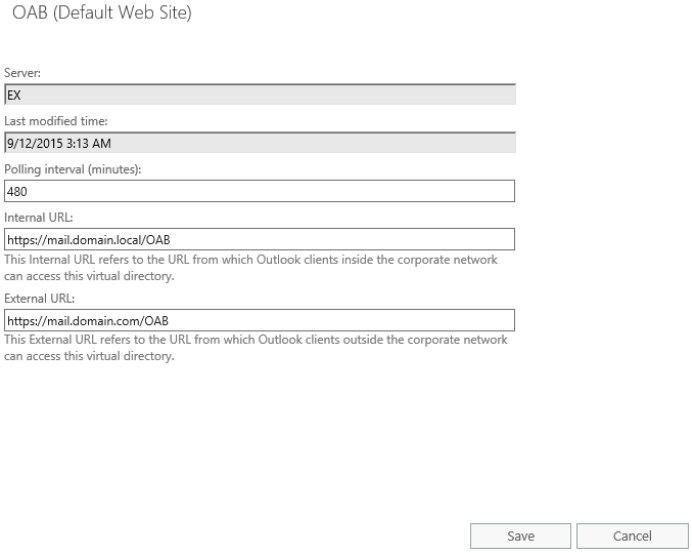
5. Now click twice on EWS, in new window add internal and external url (*.com on both if you want) then click save. (Ignore error about Internal url cannot be resolved, we will fix it later in DNS guide)



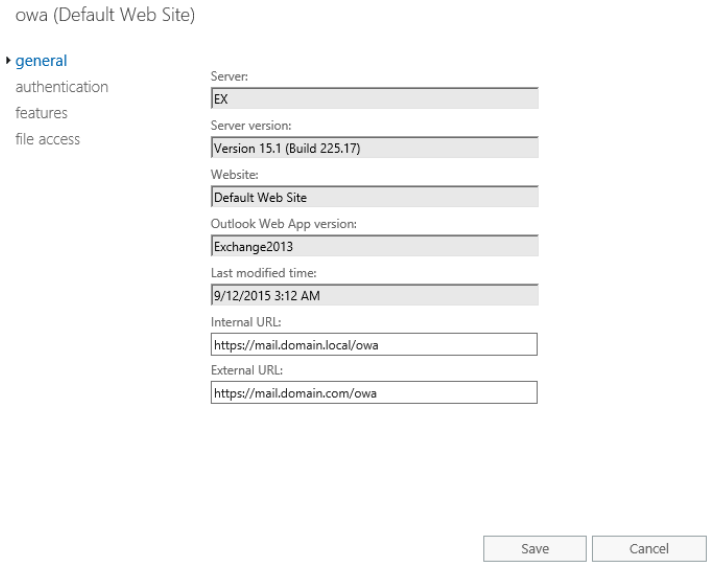
6. Click twice on Microsoft-Server-ActiveSync and edit Internal and External URL. (Ignore error when click save)



7. Click twice on OAB and edit Internal and External Url, then click save.



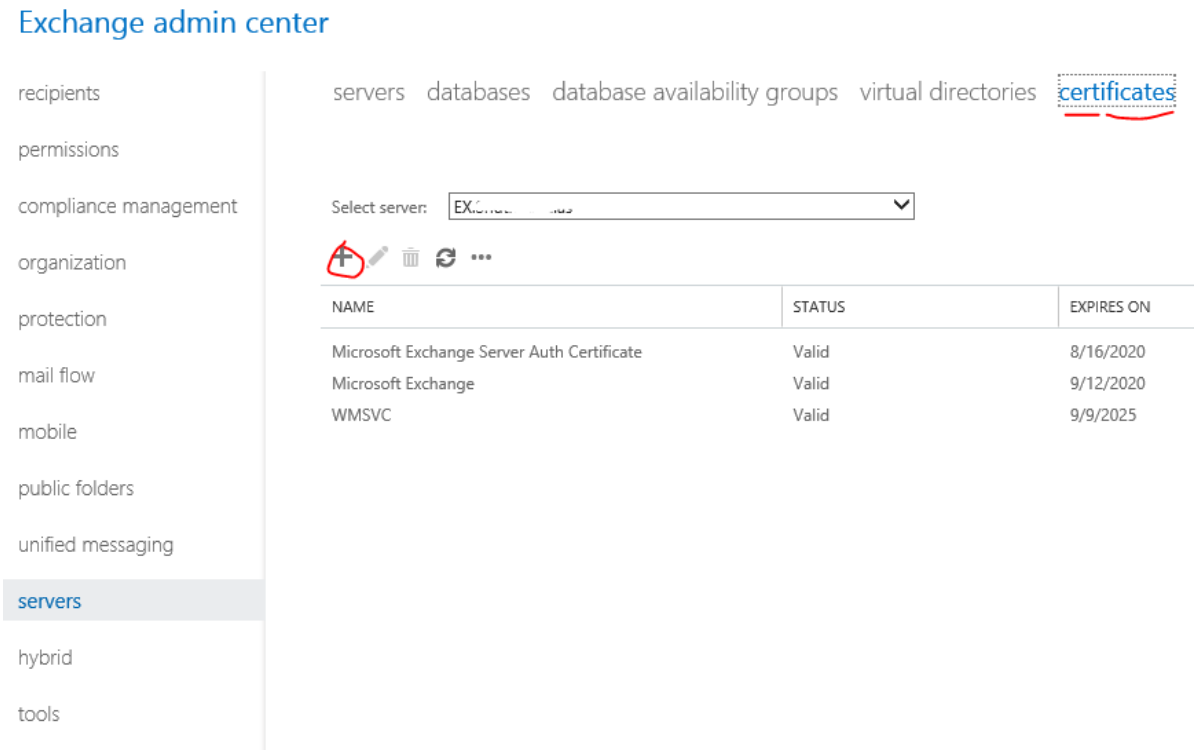
8. Click twice on OWA and edit Internal and External Url, then click save.



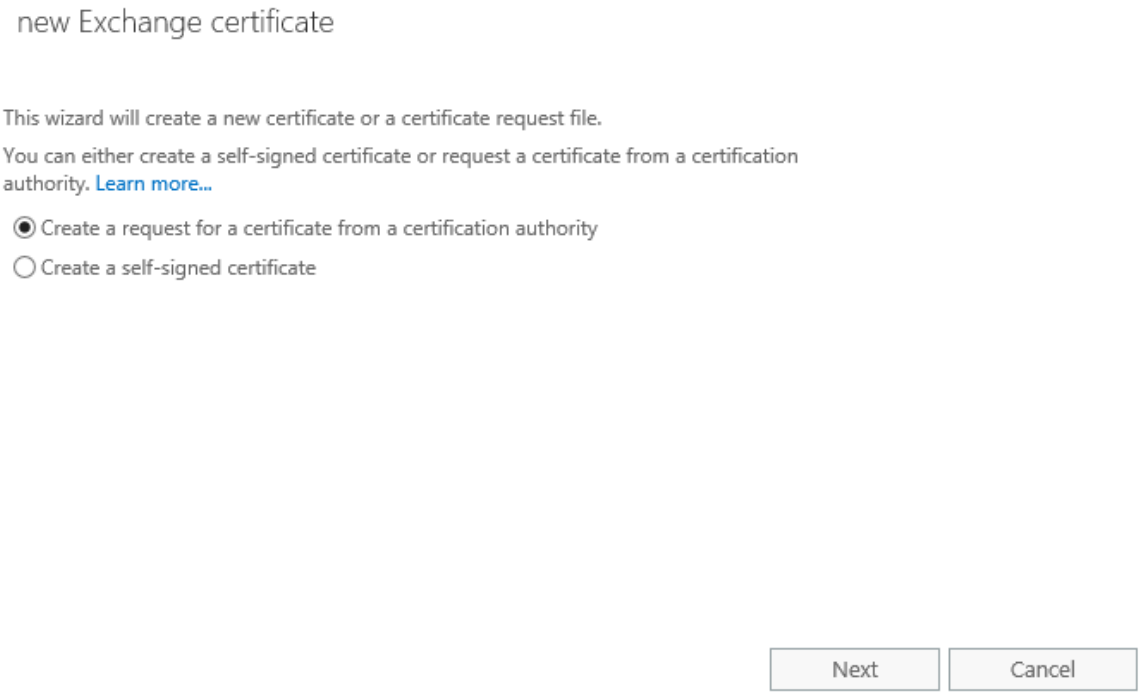
9. PowerShell virtual directory can be left as default

Configure Certificate

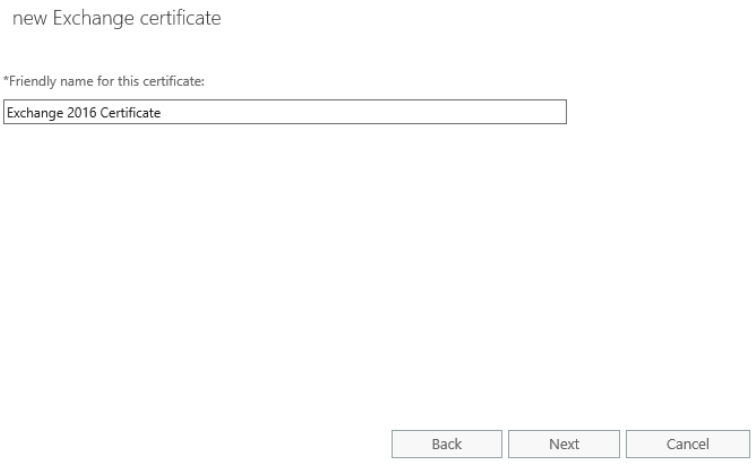
1. Click on Certificate and plus sign to create new certificate request



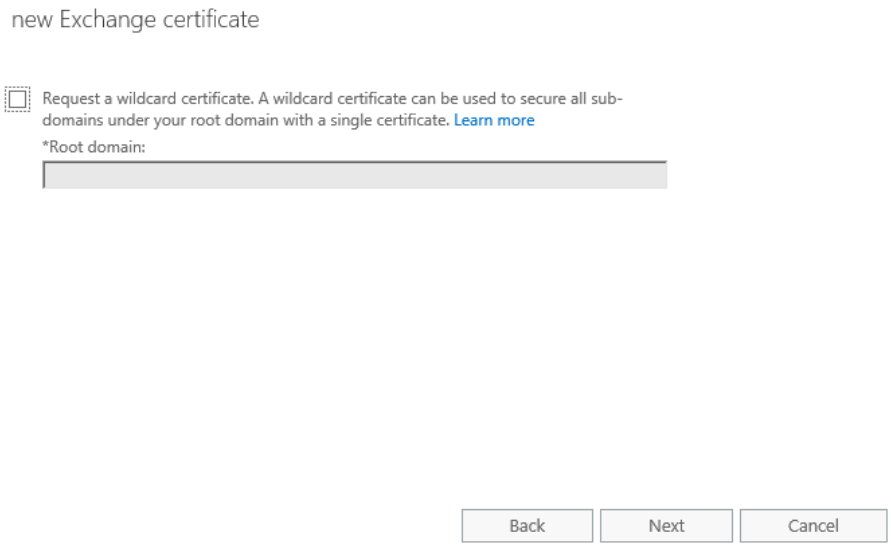
2. Click Next (Requires that you have Root CA installed in your domain)



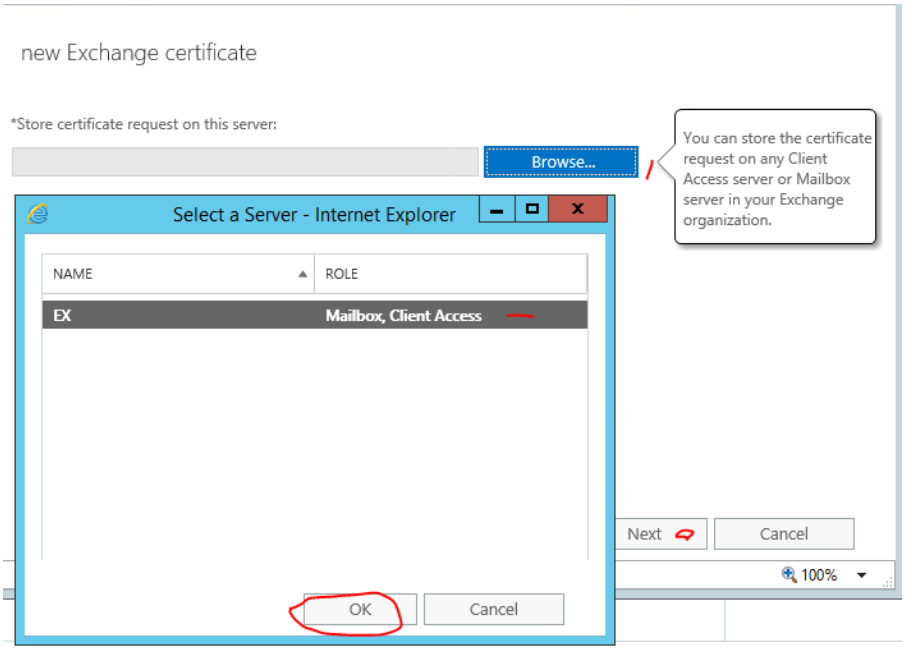
3. Give Certificate a name (it can be any of your choise)



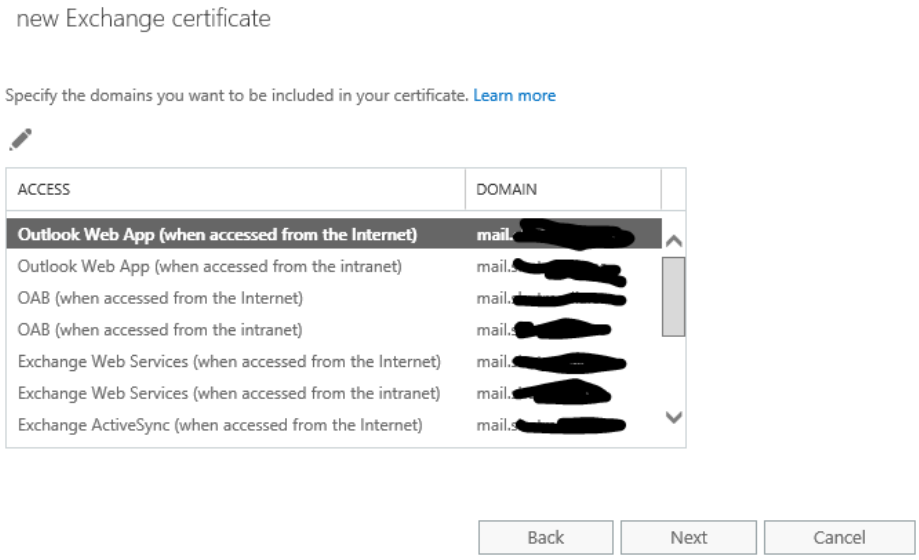
4. Leave default and click Next



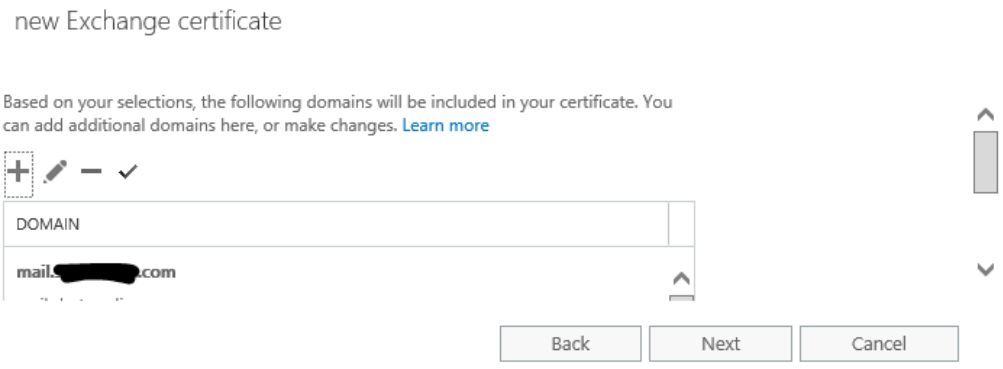
5. Click browse, choose server you wish to store the certificate and click OK then Next



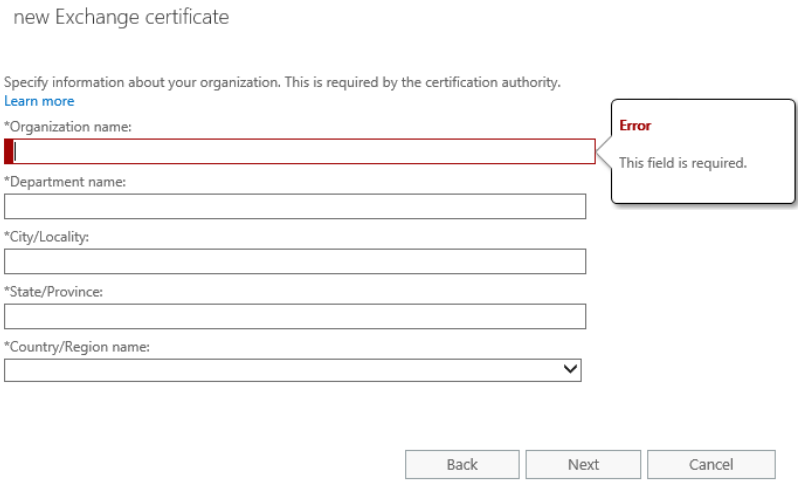
6. In this window it will automatically add names we have configured in Virtual Directories earlier. Click next.



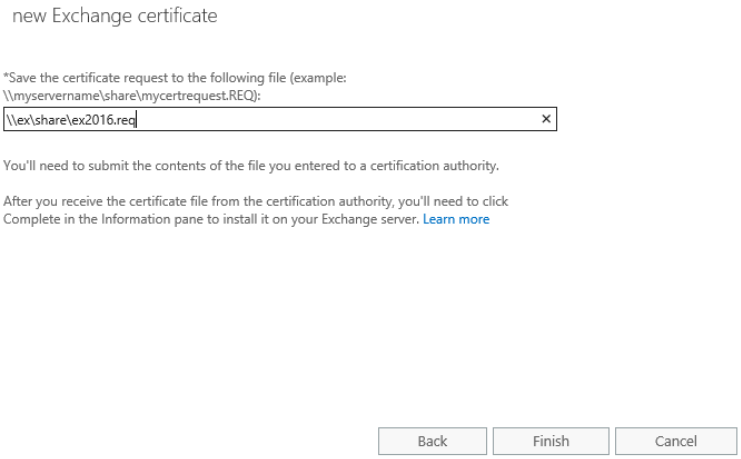
7. If you have multiple domains, you will have to add autodiscover.domain.com and autodiscover.domain.local for each of your domains (last part is not needed if you have configured Virtual directories to use *.com). Mail.domain.com does not need to be added if you use same url for OWA. Click Next



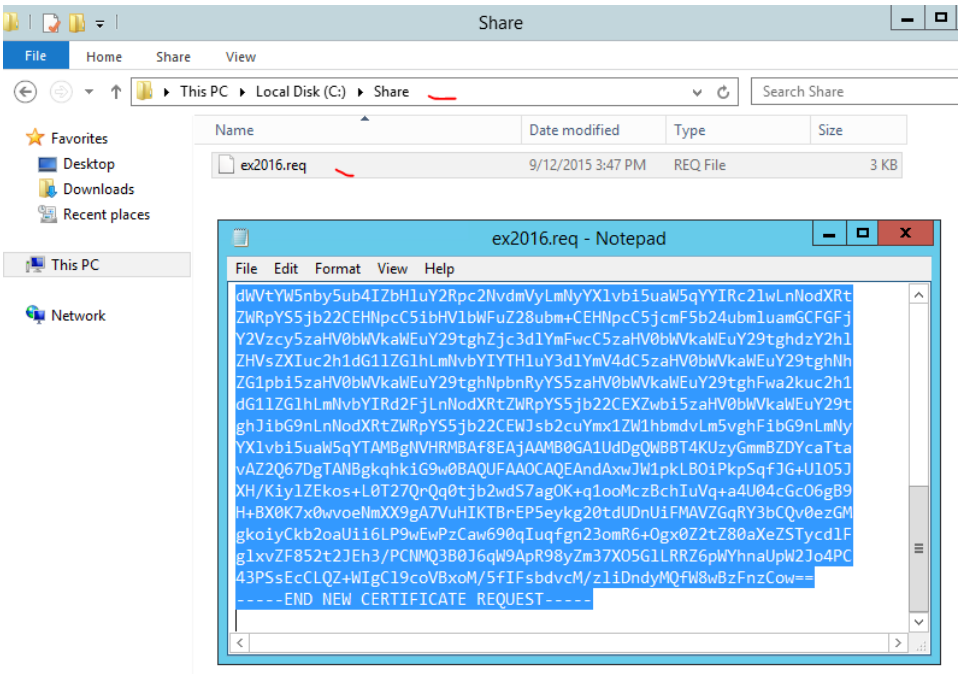
8. Enter required fields and click Next



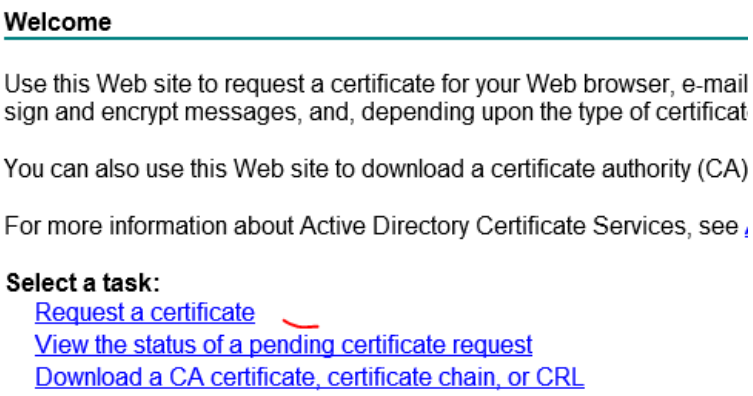
9. Enter path to a share to store the certificate. In my case I just created a folder named Share under C:\ on my Exchange server. Then shared the folder with path \\EX1\Share. Click Finish.



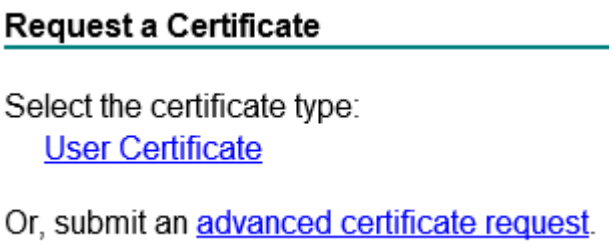
10. Navigate to the folder where the certificate was stored, right click the file and open it with Notepad. CTRL+A and CTRL+C to select all and copy the content



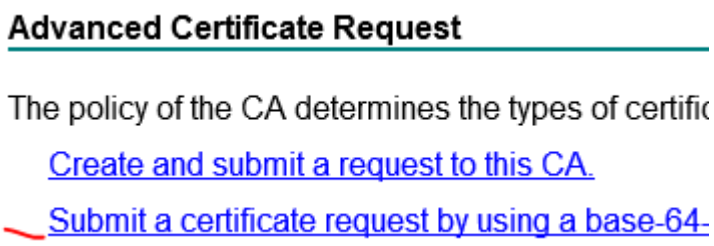
11. Open IE and enter url for certificate request. In my case I have installed CA on my DC, so url is http://DC/certsrv (if its not in local intranet zone, be sure to add it before entering url or request will fail). Click on Request a certificate



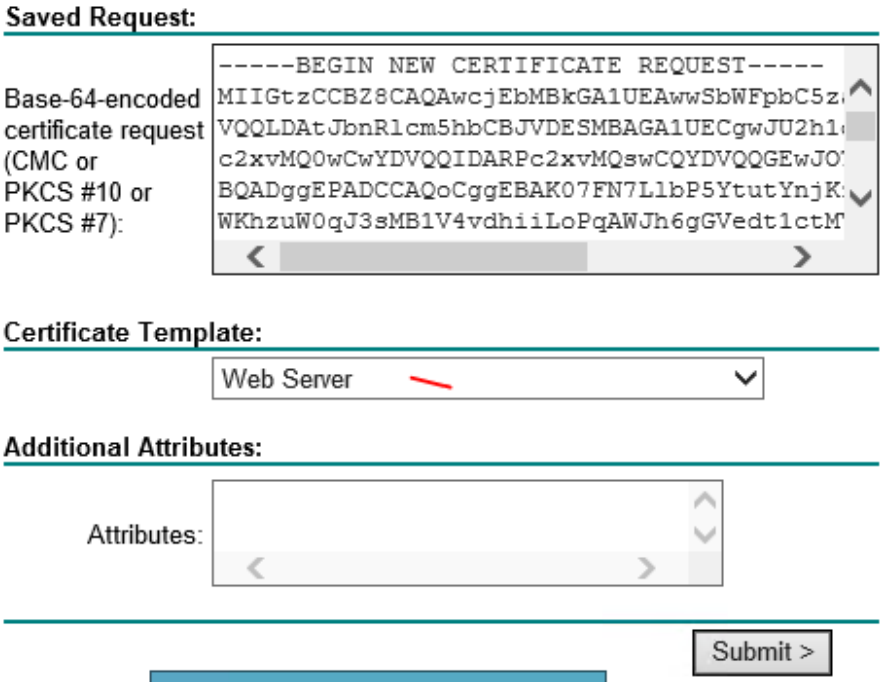
12. Click advanced certificate request



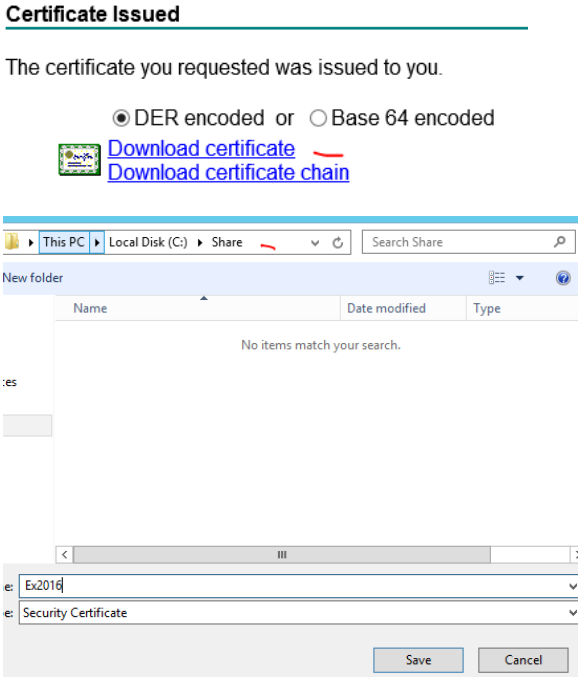
13. Click Submit a certificate request by using a ..



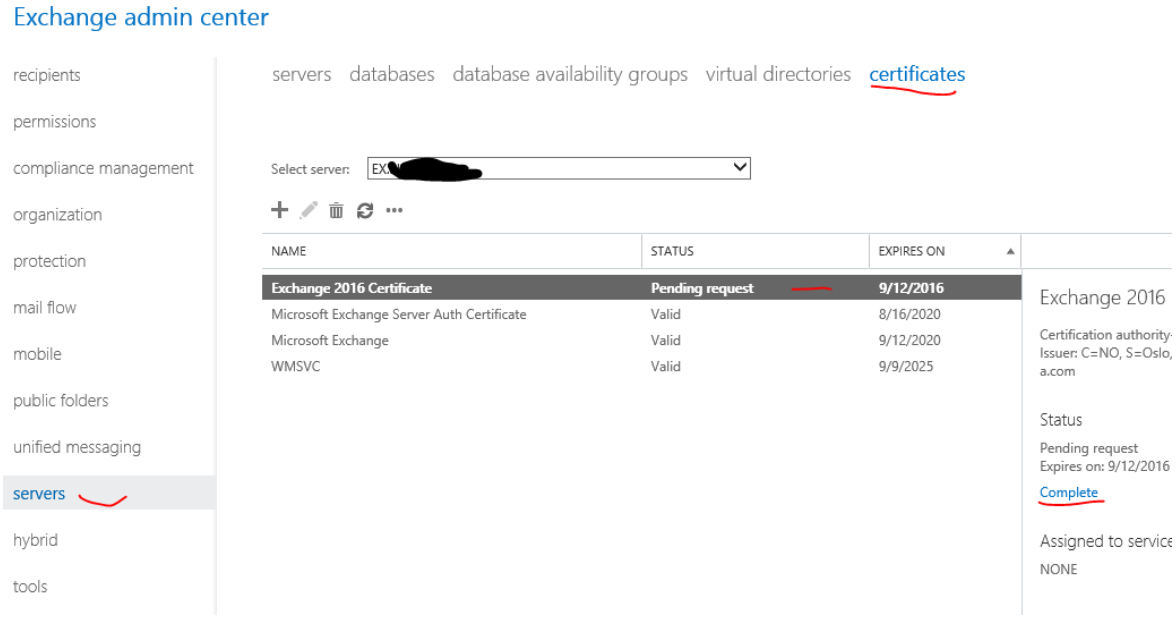
14. Paste in the content we copied earlier, choose webserver and click submit



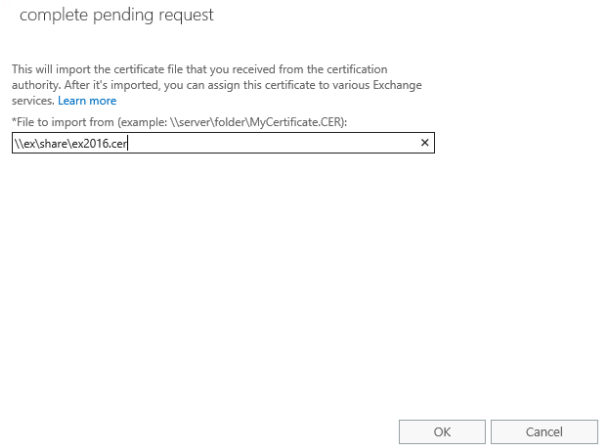
15. Click download certificate and save it on same share we stored the certificate request earlier.



16. Navigate back to ECP – Servers – Certificate. Mark the pending request and click complete.

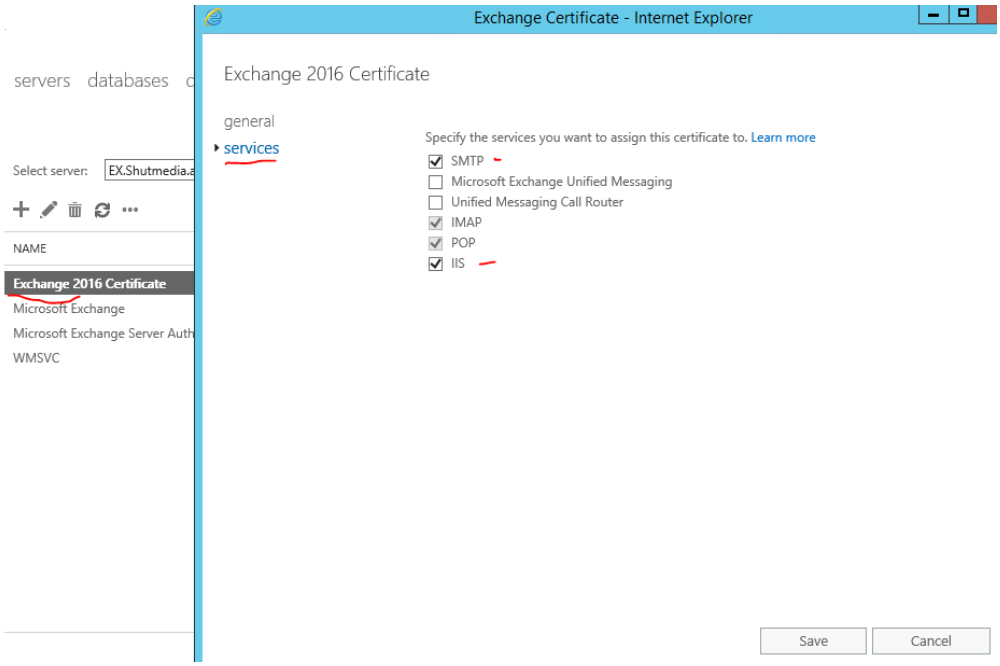


17. Enter path to filename and click OK (In my case its \\ex1\share\Ex2016.cer)

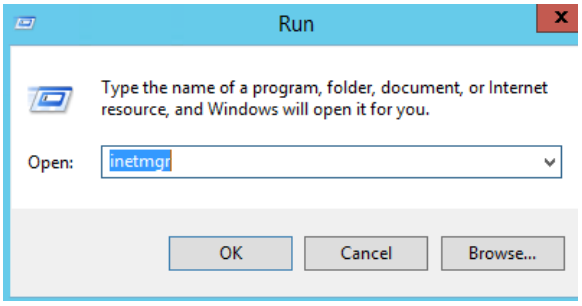


Certificate will now have a valid state

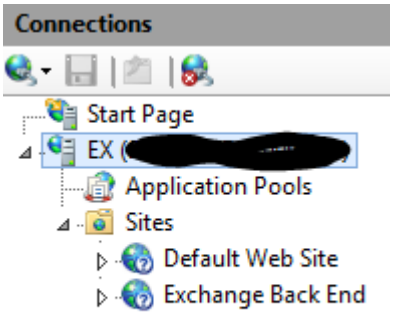
18. Click twice on the new Certificate – services and thick for SMTP and IIS then click save. Click Yes to confirm.



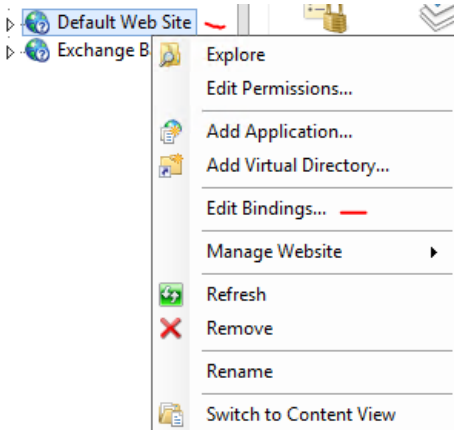
19. Open run (Windows +R) and type inetmgr then click ok to open IIS management



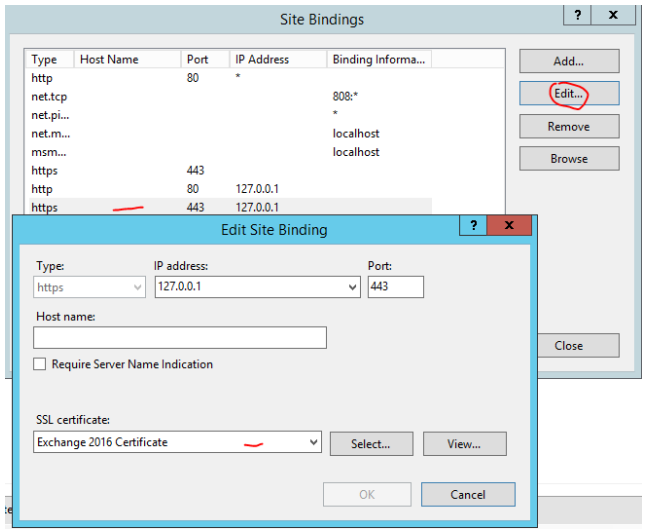
20. Expand your server – sites



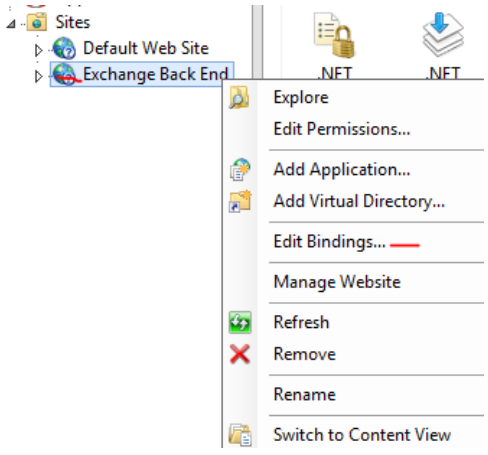
21. Right click Default Web Site – Edit Bindings



22. Click on https and click edit, confirm that the correct certificate is chosen.

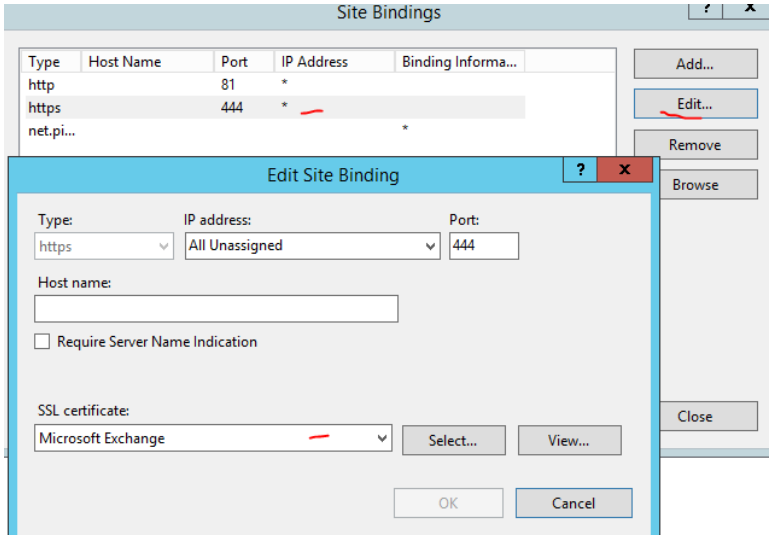


23. Right click Exchange Backend and chose edit bindings.



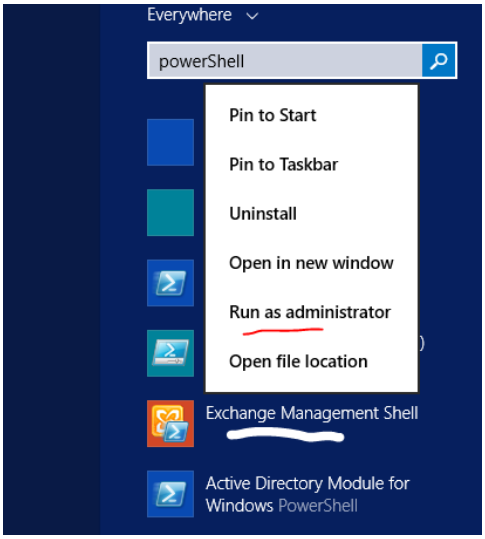
Mark https and click Edit. Here default certificate should be ok, but if you experience any certificate issue, then it can be change to the same as default website (Exchange 2016 certificate. When all is

confirmed close IIS manager.



Configure MAPI

1. Search for PowerShell, then right click Exchange Management Shell and run as administrator

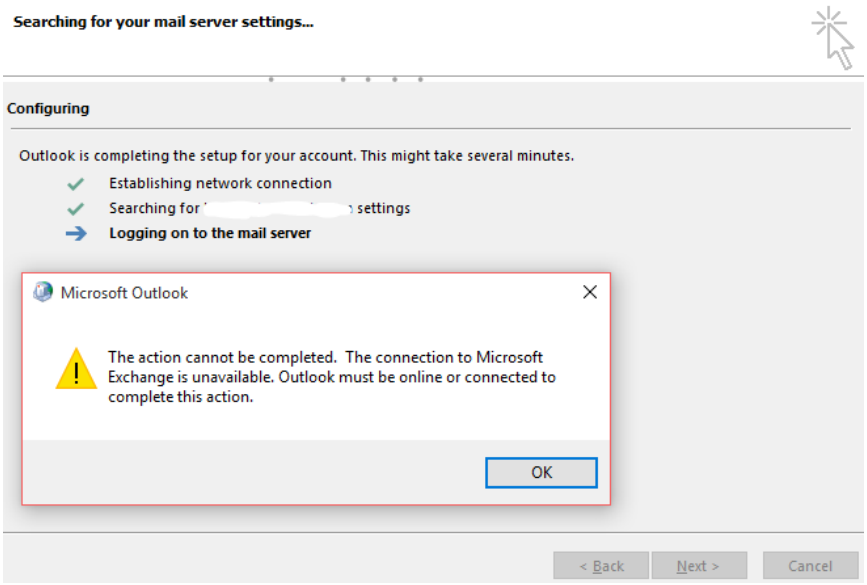


2. Type **Get-mapivirtualdirectory |fl internalurl, identity** and hit enter

   InternalUrl : https://ex.domain.local/mapi

   Identity : EX1\mapi (Default Web Site)

   By default internalurl will be named https://EX1.domain.local/mapi and identity will be EX\mapi Default website (where EX1 is name of your Exchange server). By default, this is not added during certificate request, so then your users will have issue creating profile in Outlook. This error might show up:



As you can see, it passes autodiscover, but fails to login to the mail server. Since Outlook now connects thru MAPI it will look for the mapi virtual directory. If default name is not in your certificate, it will fail to connect. To correct this issue run this command:
Set-mapivirtualdirectory –identity “Ex\mapi (Default Web Site)” –internalurl https://mail.domain.com/mapi

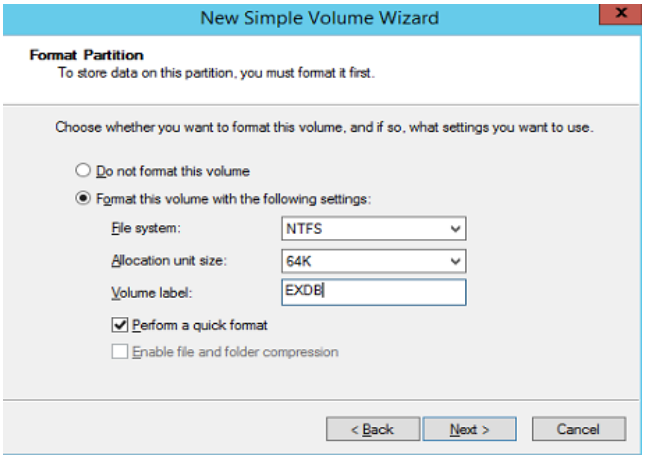
Create new mailbox database

You can skip this part if you want to keep the default database, which can be found under C:\Program Files\Microsoft\Exchange Server\V15\Mailbox\. Since the name is long and will be time consuming in the future (entering the long name), I like to create a new database and delete default one.

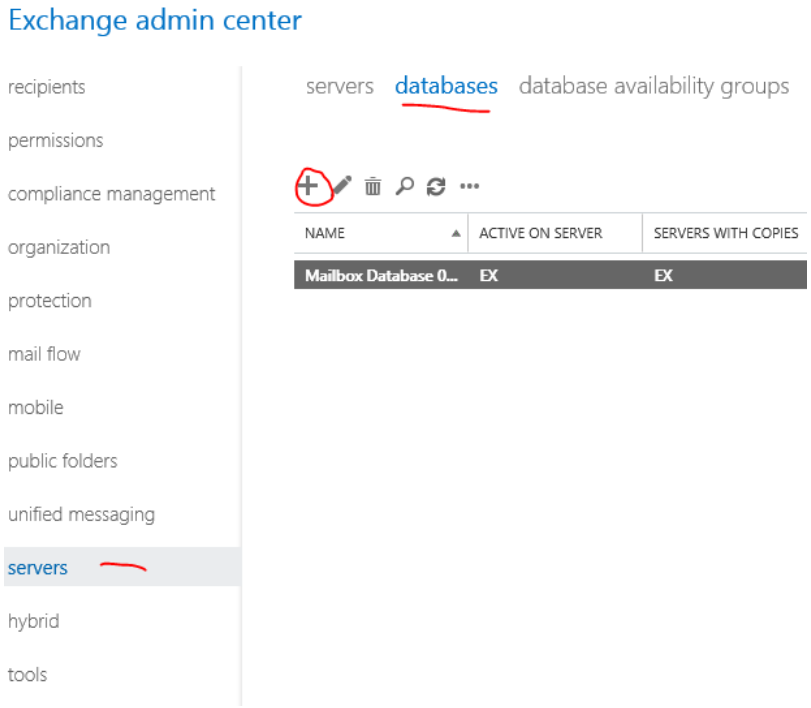
I have created three partitions on my Exchange server, since I like to separate Log and database disk and have a backup disk to clean up log files.

Name	Drive	Size and format
EXDB	D:	10 GB, Allocation unit size 64K
EXLOG	E:	5 GB, Allocation unit size 64K
EXBACKUP	F:	7 GB, default allocation unit size

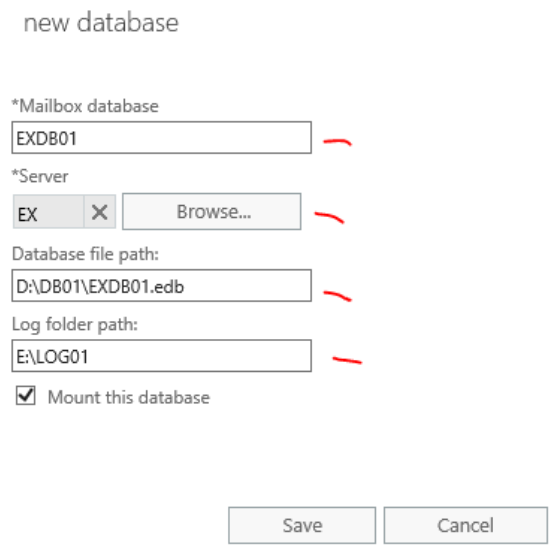
When format the drive in Disk management.



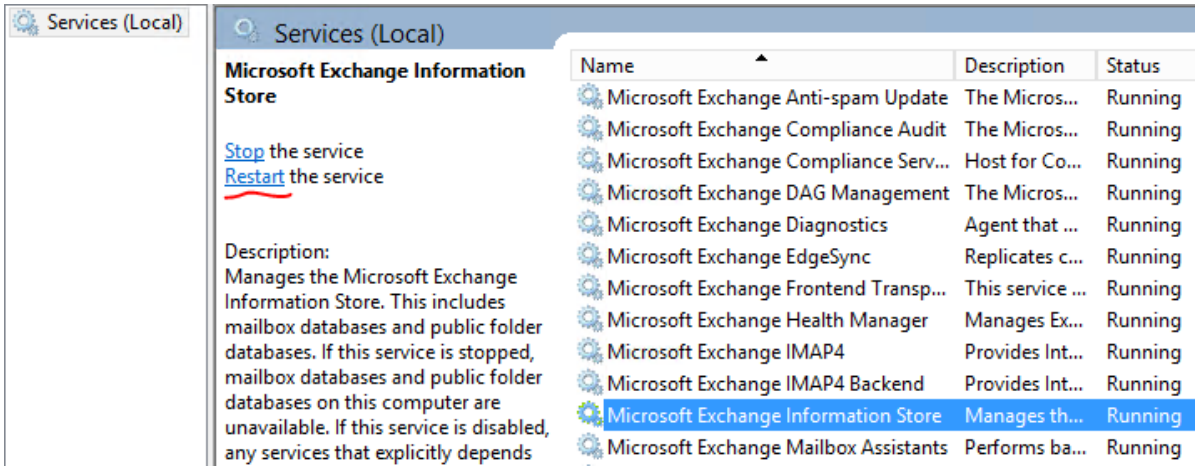
1. Navigate to ECP – Servers – Database and click + sign to create new database



2. Fill in required fields and click save (Click ok for the warning about restarting Information store service)



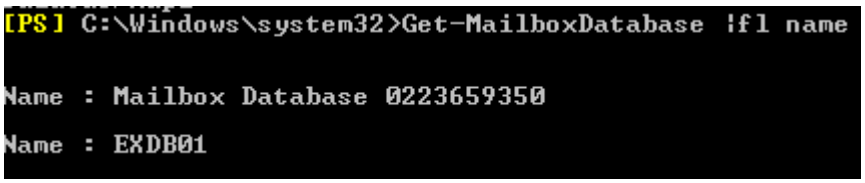
3. Open services and restart the Information store service



4. Refresh and wait until Content index status is Healthy (this might take few minutes)

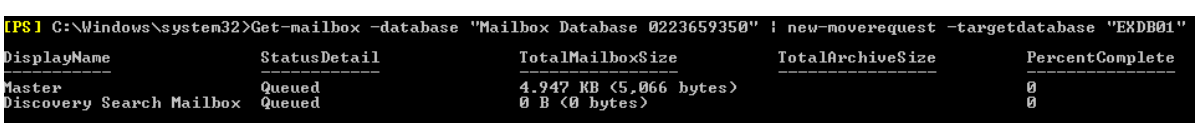
5. Open Exchange management Shell and run the following command:

Get-mailboxdatabase |fl name



Then run the following command to move all mailboxes from the old database to the new one:

Get-mailbox -database "Mailbox Database 0223659350" | new-moverequest -targetdatabase "EXDB01"



Then run the following command to move arbitration mailboxes:

Get-mailbox -database "Mailbox Database 0223659350" -arbitration| new-moverequest -targetdatabase "EXDB01"

```
[PS] C:\Windows\system32>Get-mailbox -database "Mailbox Database 0223659350" -arbitration| new-moverequest -targetdatabase "EXDB01"

DisplayName                StatusDetail            TotalMailboxSize          TotalArchiveSize          PercentComplete
-----------                ------------            ----------------          ----------------          ---------------
Microsoft Exchange App...  Queued                  0 B (0 bytes)                                       0
Microsoft Exchange         Queued                  0 B (0 bytes)                                       0
Microsoft Exchange         Queued                  76.29 KB (78,123 bytes)                             0
Microsoft Exchange Mig...  Queued                  0 B (0 bytes)                                       0
Microsoft Exchange Fed...  Queued                  0 B (0 bytes)                                       0
```

Then run the following command to move Auditlog mailbox (new in Exchange 2016)

Get-Mailbox -Database "Mailbox Database 0223659350" -AuditLog | New-MoveRequest –TargetDatabase "EXDB01

It will take around 5 minutes or so to move all mailboxes. Run Get-moverequest to check current status

```
[PS] C:\Windows\system32>Get-MoveRequest

DisplayName                                        Status                 TargetDatabase
-----------                                        ------                 --------------
Master                                             Completed              EXDB01
Microsoft Exchange Approval Assistant              Completed              EXDB01
Microsoft Exchange                                 Completed              EXDB01
Microsoft Exchange                                 Completed              EXDB01
Discovery Search Mailbox                           Completed              EXDB01
Microsoft Exchange Migration                       Completed              EXDB01
Microsoft Exchange Federation Mailbox              Completed              EXDB01
SystemMailbox{8cc370d3-822a-4ab8-a926-bb94b...     Completed              EXDB01
```

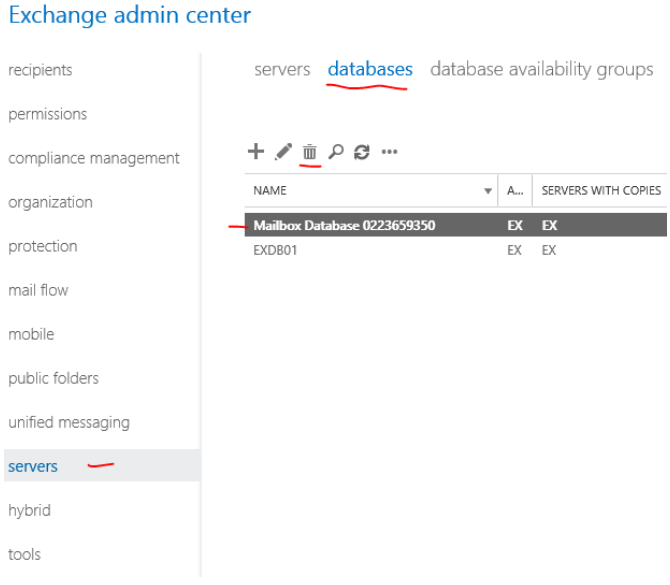
When all status is Completed run the following command to remove move request:

Get-MoveRequest -MoveStatus Completed | Remove-MoveRequest

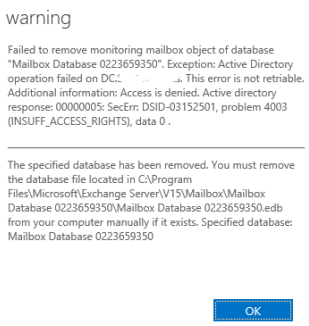
```
[PS] C:\Windows\system32>Get-MoveRequest -MoveStatus Completed | Remove-MoveRequest

Confirm
Are you sure you want to perform this action?
Removing completed move request "Master".
[Y] Yes  [A] Yes to All  [N] No  [L] No to All  [?] Help (default is "Y"): a
[PS] C:\Windows\system32>_
```

Enter A to confirm all

6. Back in ECP – Servers – Database, mark on the old database and click delete



Click ok on the warning



7. Navigate to C:\Program Files\Microsoft\Exchange Server\V15\Mailbox\ and delete the old database

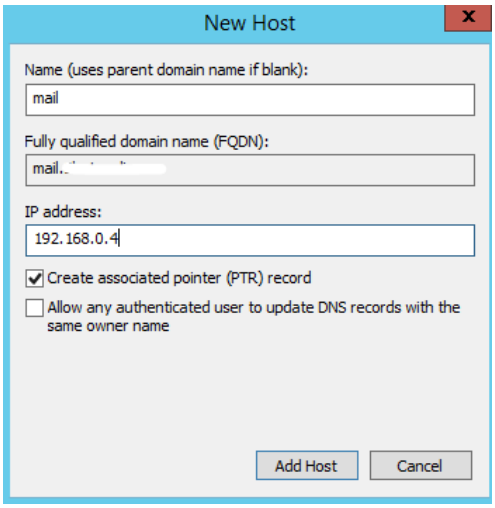
Configure DNS

Before we start to configure Internal and External DNS, I just want to explain what they do. Exchange does not require that many DNS registers (compared to Lync/Skype for business), so here are minimum requirements:

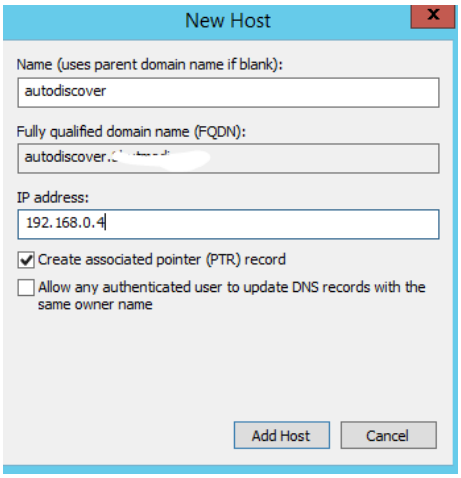
Internal	External
Mail.domain.local (for use with OWA)	Mail.domain.com (for use with OWA)
Autodiscover.domain.local (For Outlook and ActiveSync)	Autodiscover.domain.com(For Outlook and ActiveSync)
MX record (for mail delivery)	MX record (for mail delivery)

When you configure Outlook, it will first look for autodiscover at **domain.com**. If not found, it will look at **autodiscover.domain.com**. Final it will look for SRV record **_autodiscover._tcp.domain.com.**

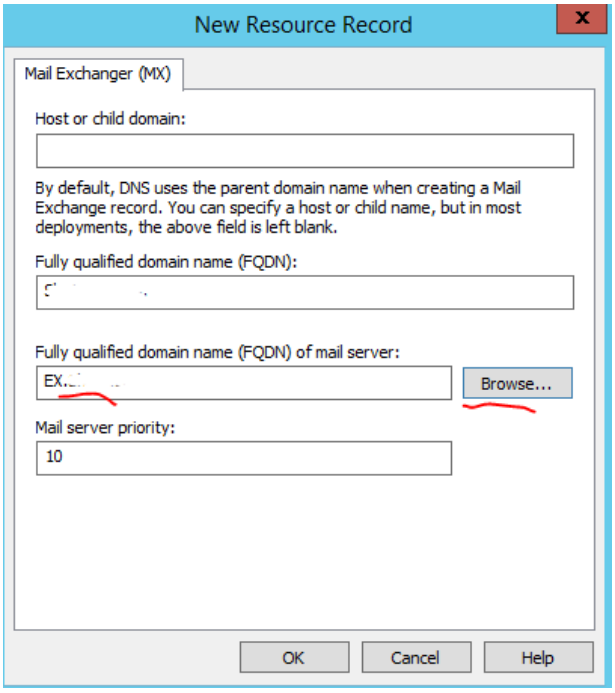
1. Open your DNS and navigate to your local zone. Create a new A host Mail and point it to the IP of your Exchange server



2. Then create a new A record for autodiscover and point it to IP of your Exchange Server.



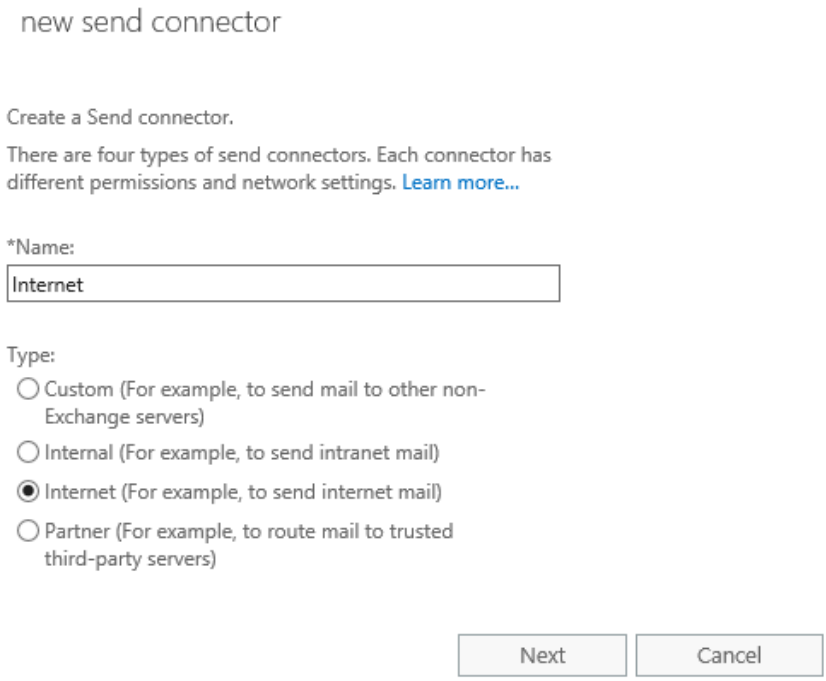
3. Then the final record is MX record. Just click browse or type in full FQDN of your Exchange server.



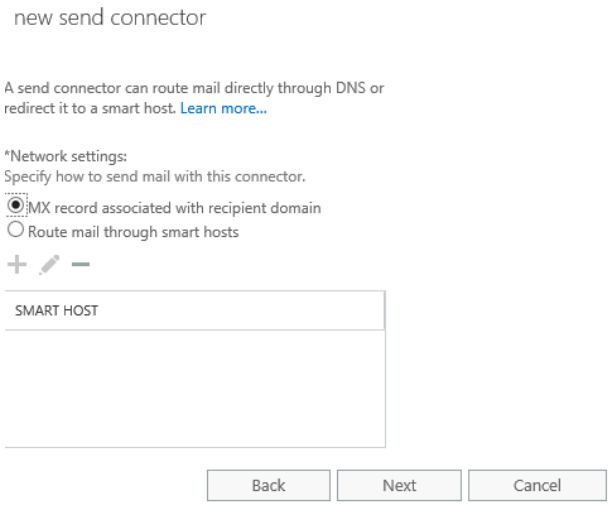
If you have a .com zone in your DNS, repeat same steps as above (mail, autodiscover and MX record).For External DNS you will have to repeat same steps as above, but point it to your External IP on your firewall, which will again forward it to your Exchange server.

Configure Send connector

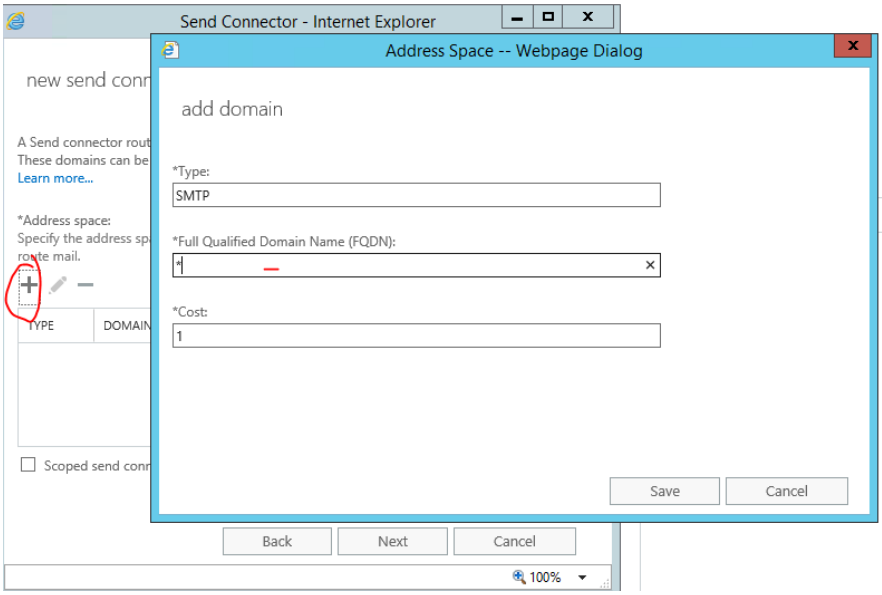
1. Navigate to ECP – mail flow –Send connector – Click on + sign to create new send connector Give it any name and chose Internet then click next



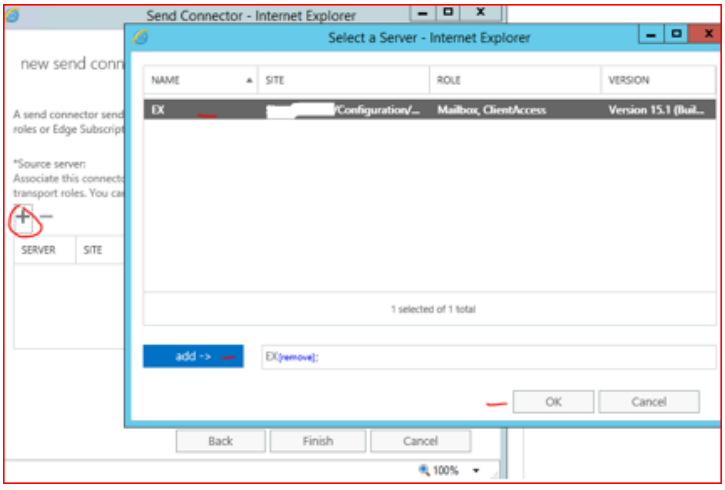
2. Click next if you don't use any smart host



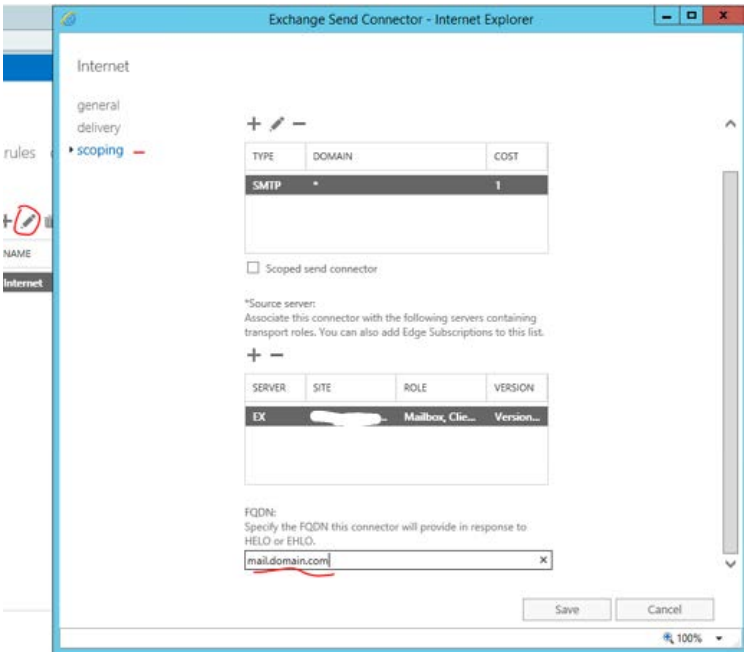
3. Click + sign and add * to FQDN field. Save and next



4. Click + sign – mark your Exchange server – add and ok, then click Finish

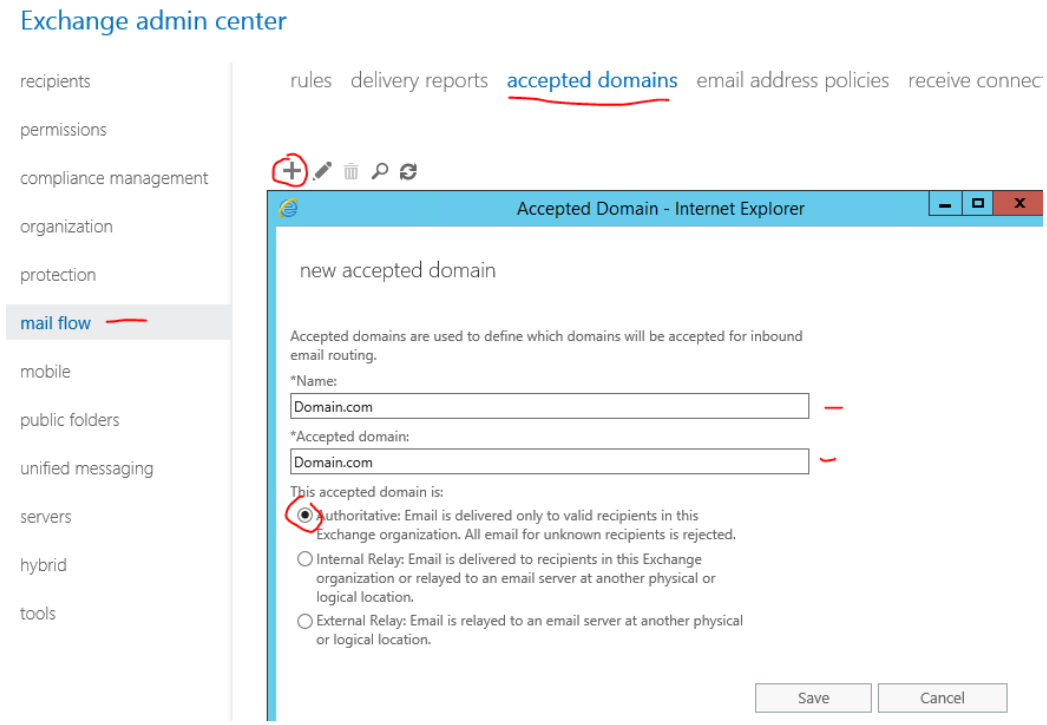


5. Click edit on the new connector and click scoping. Add mail.domain.com in FQDN field and click save.

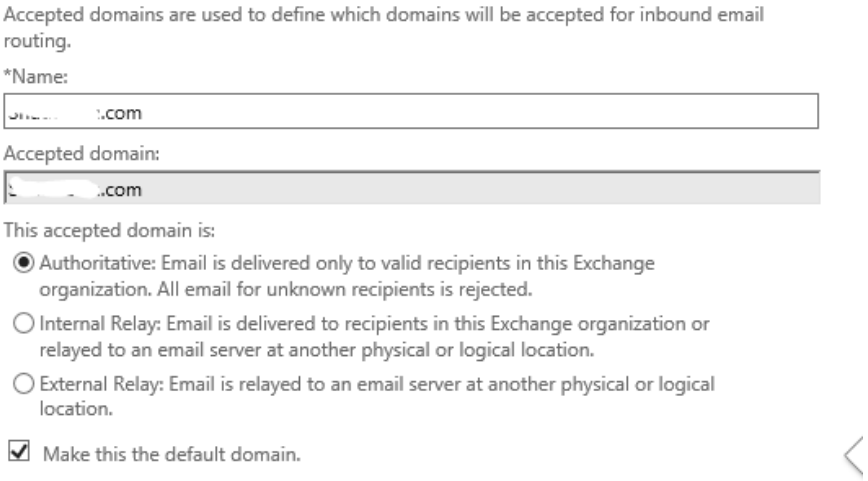


Add accepted domain

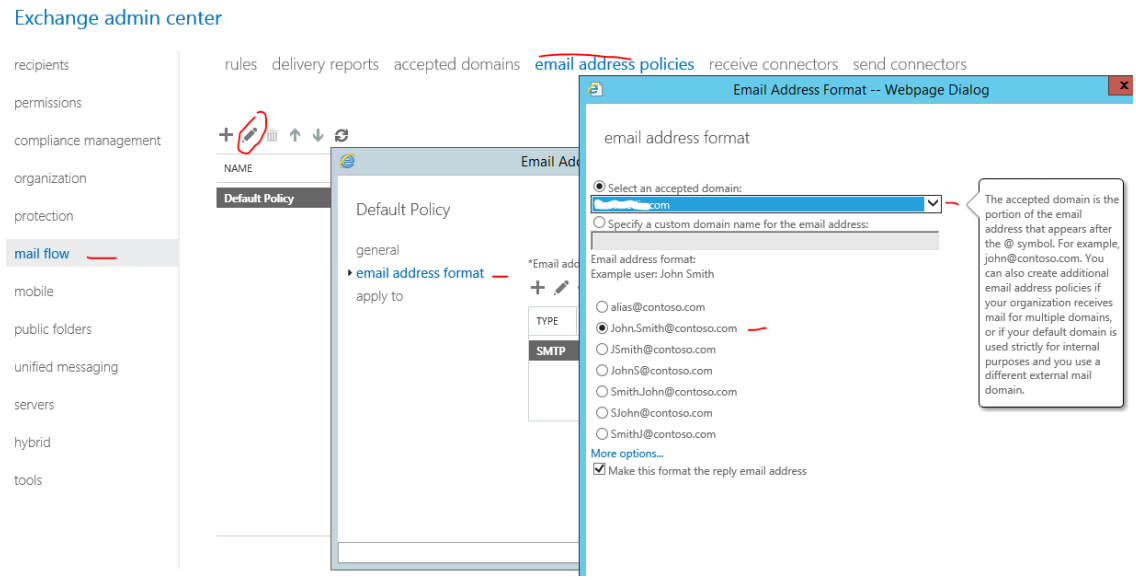
1. Navigate to ECP – Mail flow – accepted domain. Click + sign to add a new domain. Fill in all required fields. Name field can be any, but accepted domain must be valid and added to your certificate.



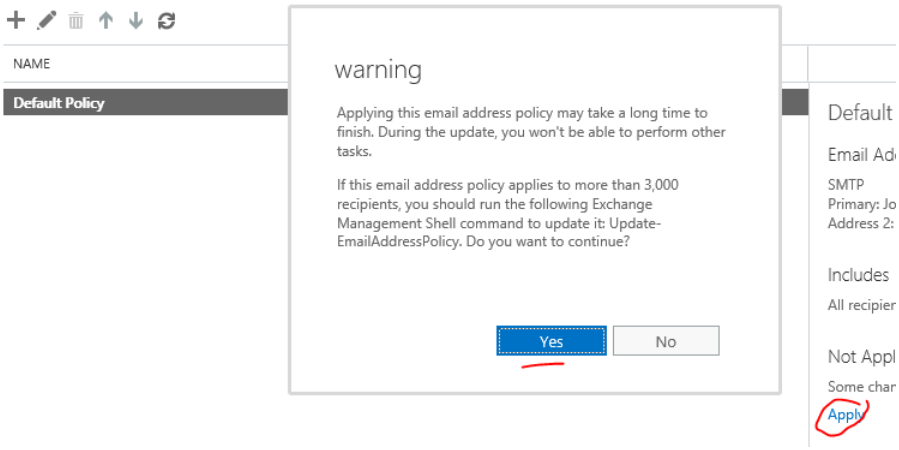
2. Edit the new accepted domain to set it as default



3. Navigate to ECP – Mail flow – Email address policies and edit default policy. Click Email address format and + sign to add new Email address format. Here its up to company policy what you want as default format. From my experience, the most common one is Firstname.Lastname@domain.com. If you want you can also make it as default.When done click save.



4. As warning showed after we clicked save, policy has to be applied. Click apply and Yes to confirm



Setup Round Robin for high availability

If your company does not have a lot of money to spend on a hardware or software load balancer, then Round Robin DNS is good enough solution for you. This requires that you have 2 Exchange servers.

Result will look like this

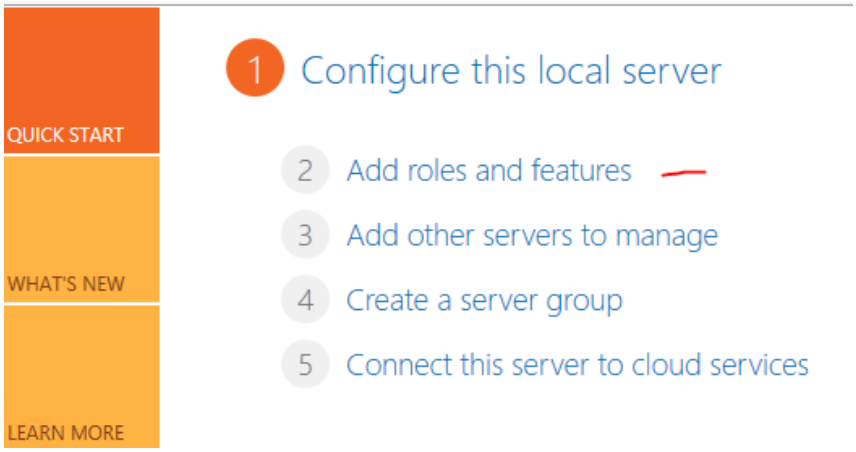
Name	Type	Destination
Mail.domain.local	Host (A)	192.168.0.4 (Exchange1)
Mail.domain.local	Host (A)	192.168.0.5 (Exchange2)
Autodiscover.domain.local	Host (A)	192.168.0.4 (Exchange1)
Autodiscover.domain.local	Host (A)	192.168.0.5 (Exchange2)
Same as parent	Mail Exchanger (MX)	Exchange01.domain.local
Same as parent	Mail Exchanger (MX)	Exchange02.domain.local

If you have .com as local zone in your DNS, the above records have to be created there as well.

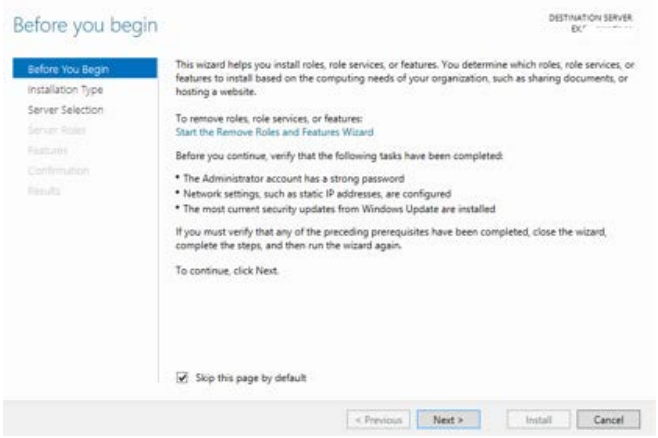
Configure Backup

To avoid Log disk getting full, a backup as to be done. Using built in Windows Server backup are one of the tools. A very importance notice here is that it DOES NOT support single item recovery. It will instead backup and recover a whole database. If you need single item recovery, then this is not a tool for you. Tools that supports single item recovery usually cost a bit.

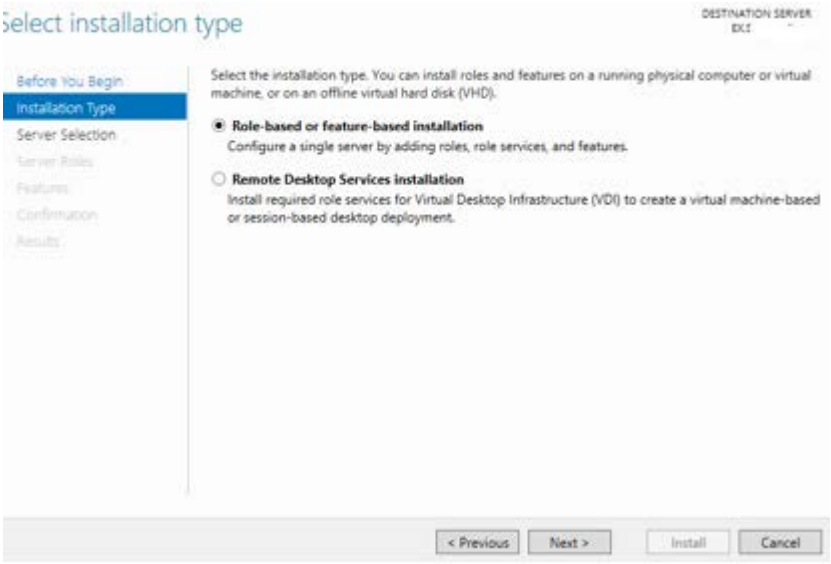
1. On your Exchange Server, start Server Management – click Add roles and features



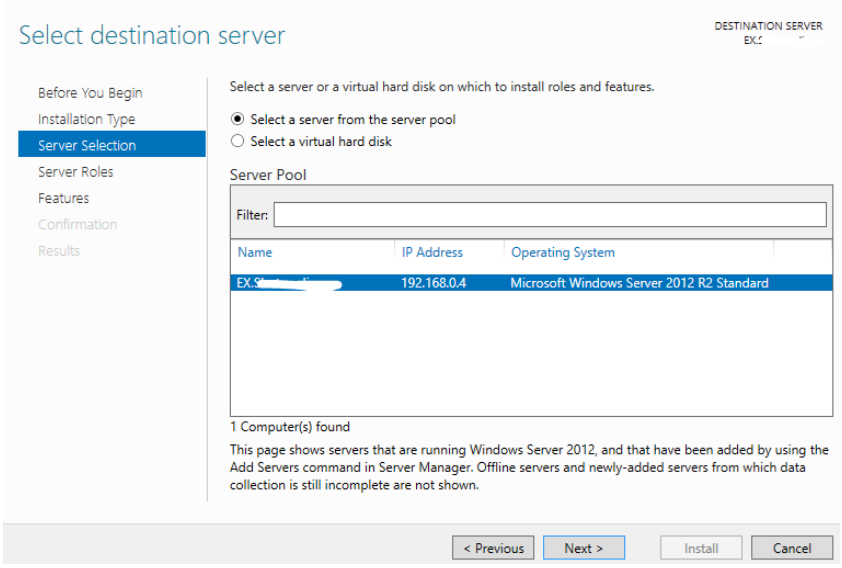
2. Click Next



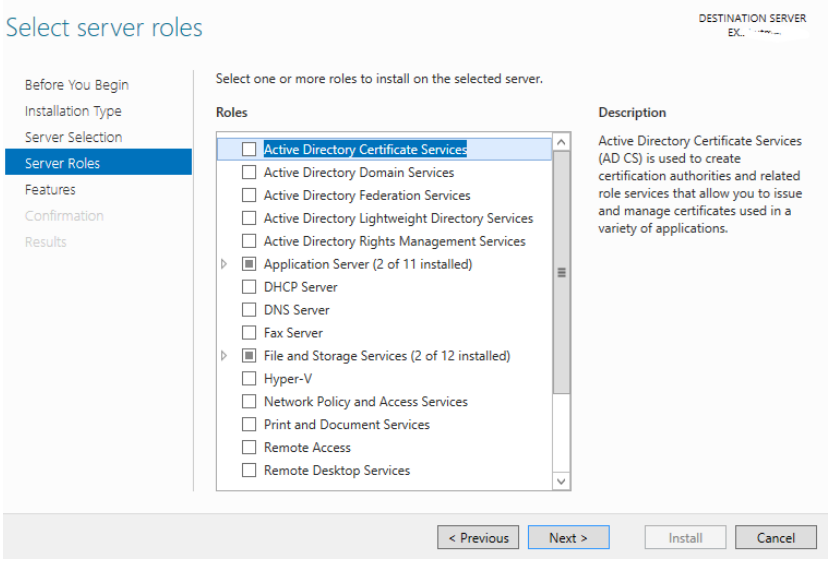
3. Leave default and click Next



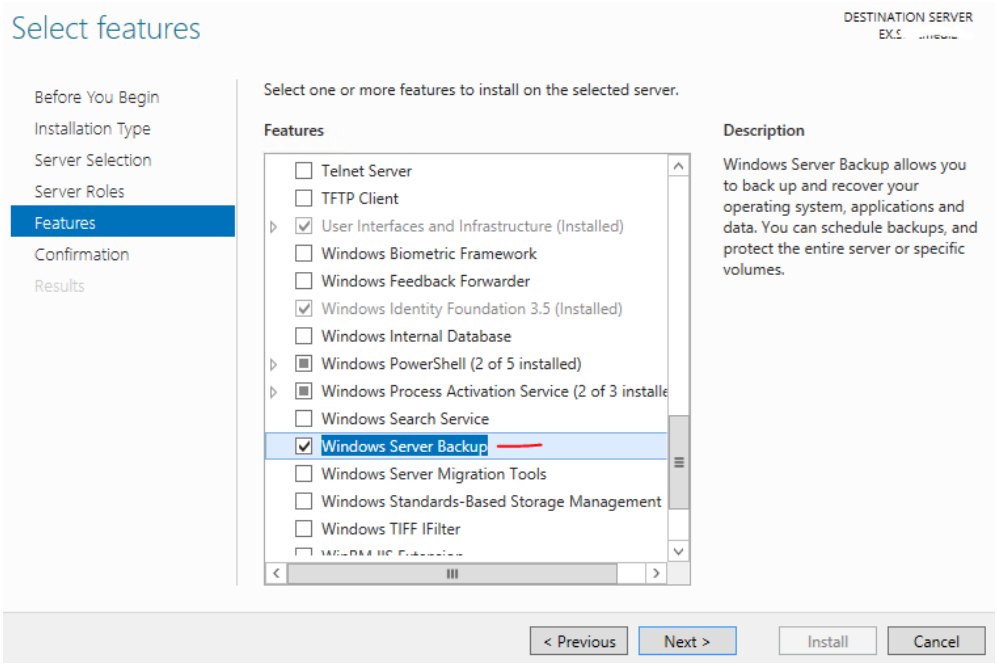
4. Click Next



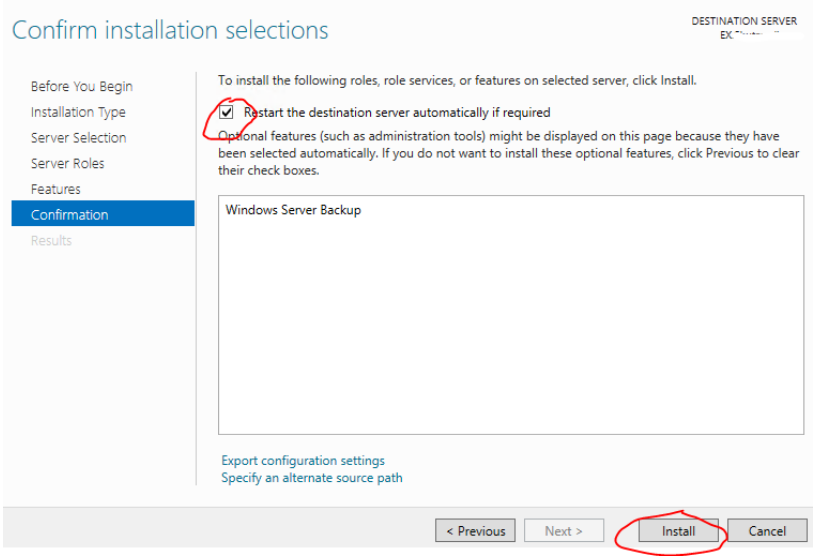
5. Click Next



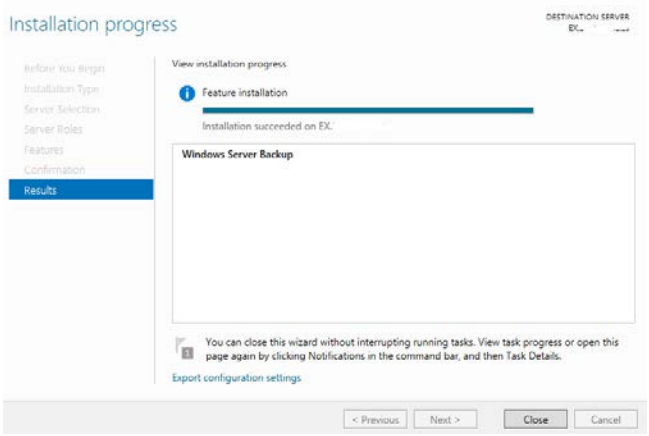
6. Scroll down until you see Windows server Backup and check it to install. Click Next



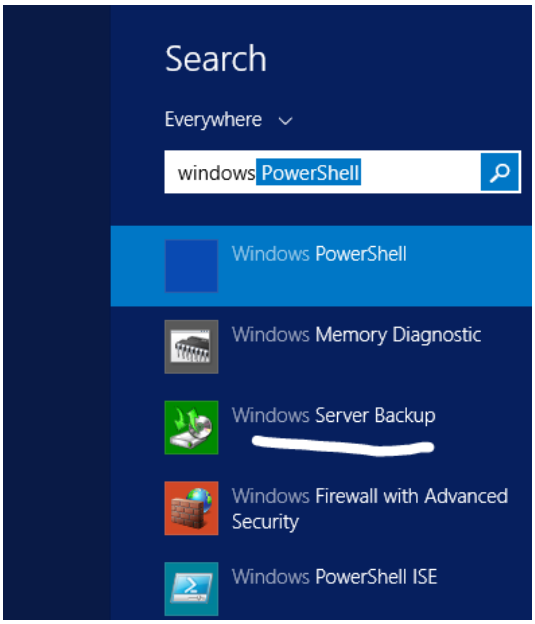
7. Check Restart if required and click Install



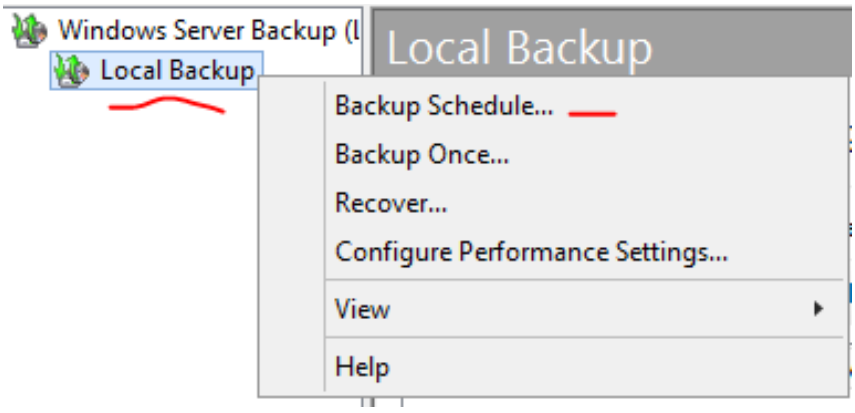
8. Click Close



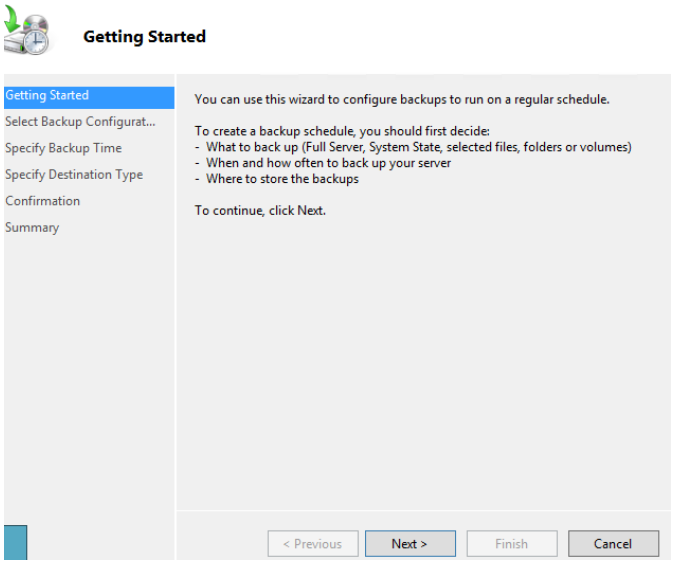
9. Search for Windows Server Backup and click on it to start



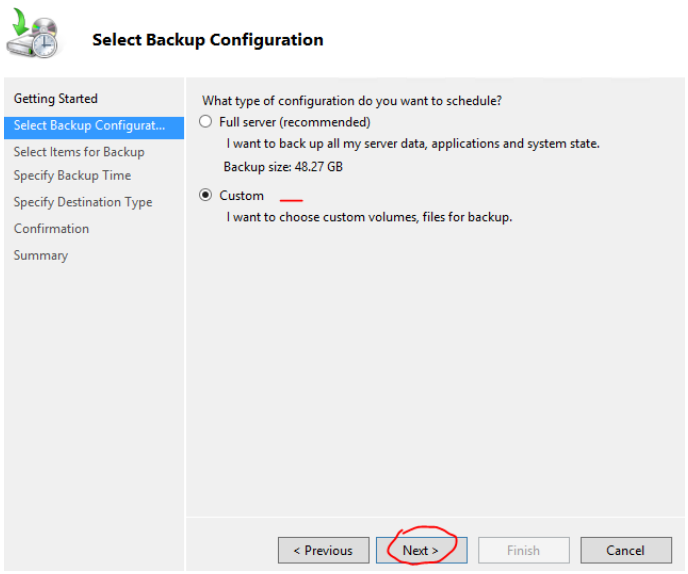
10. Click on Local Backup, when finished loading right click and choose Backup Schedule



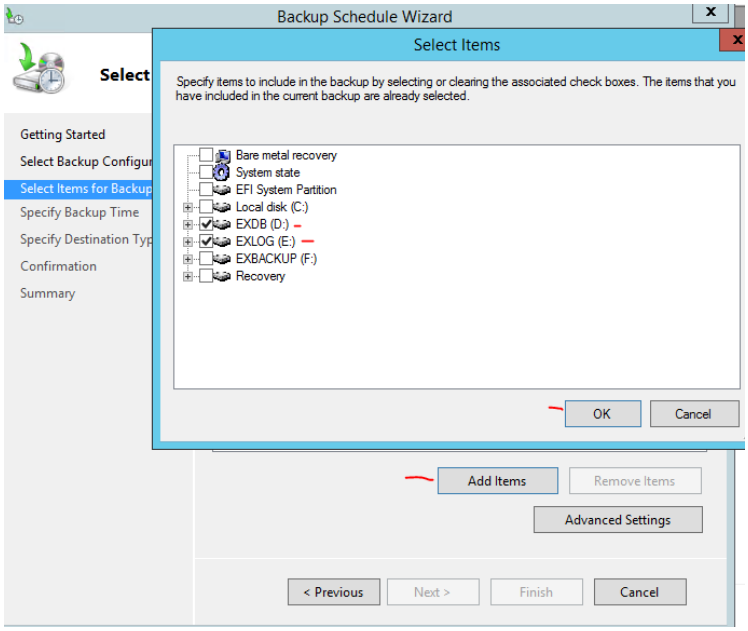
11. Click Next



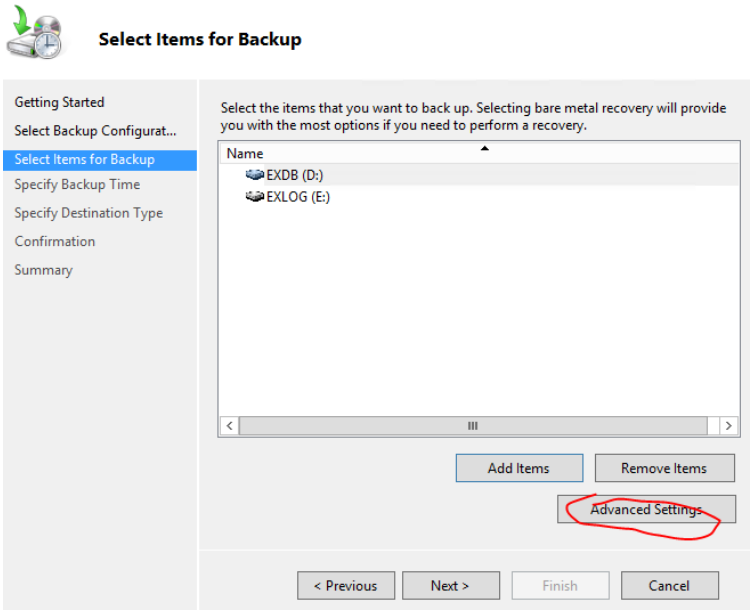
12. Select Custom and click Next



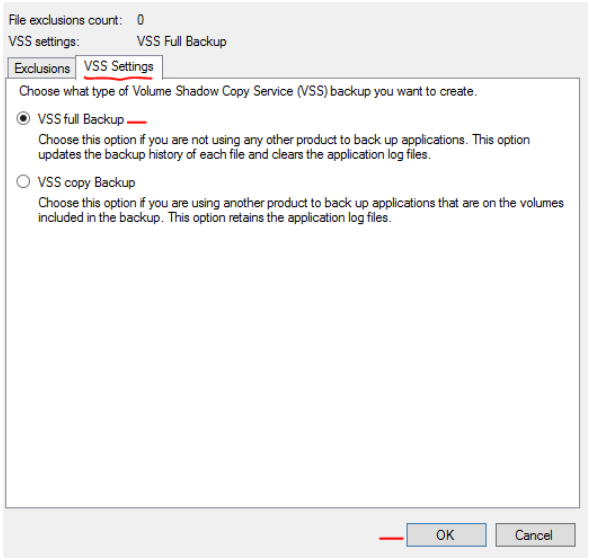
13. Click Add items - select your Database and Log Disk and click OK



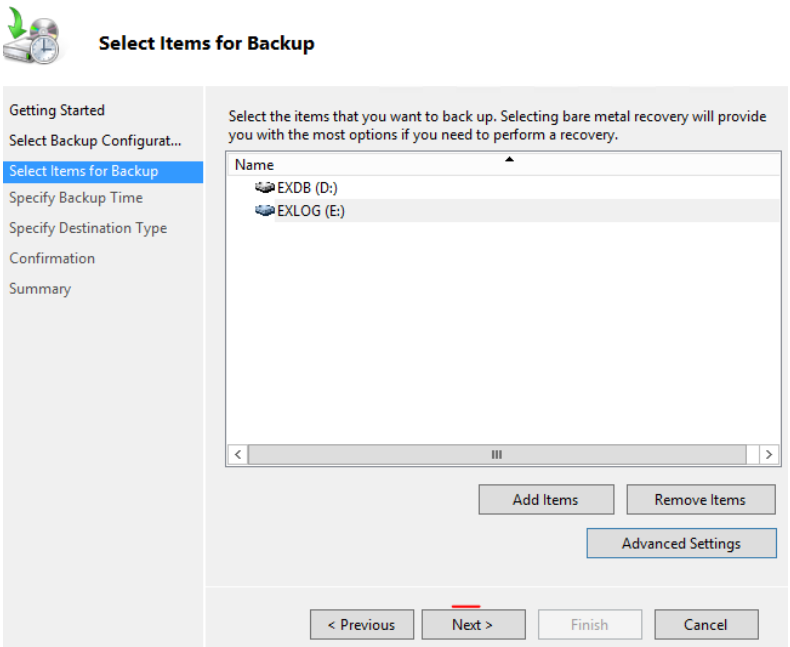
14. Click Advanced Settings



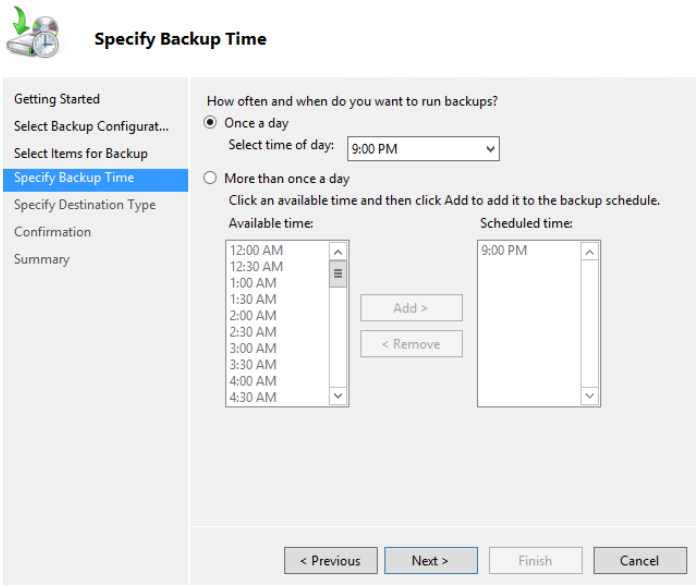
15. Click VSS Settings – select VSS Full Backup and click OK



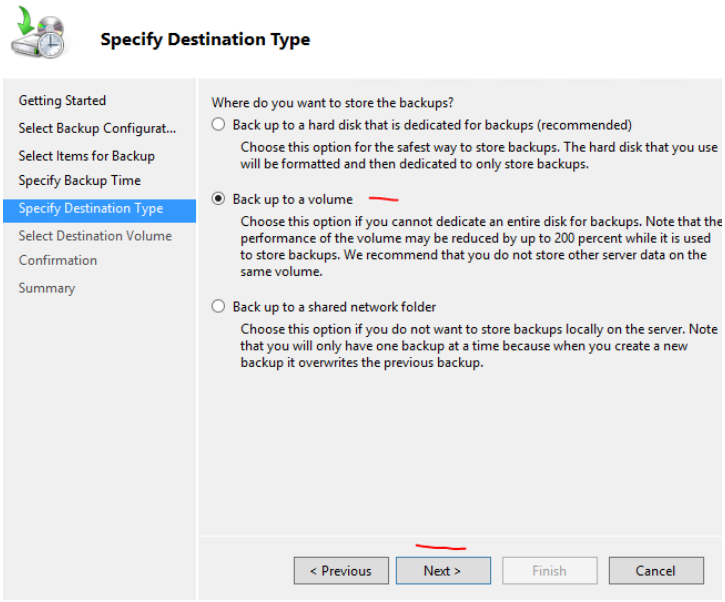
16. Click Next



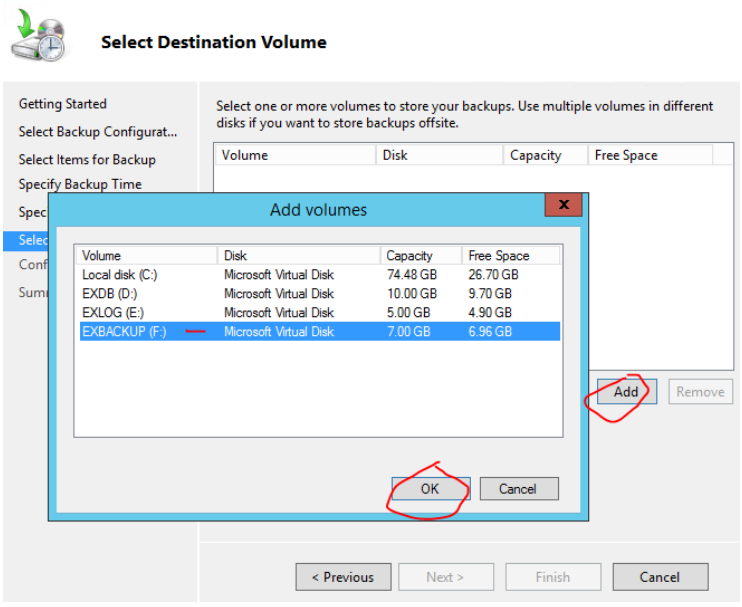
17. Choose your desired settings and click Next



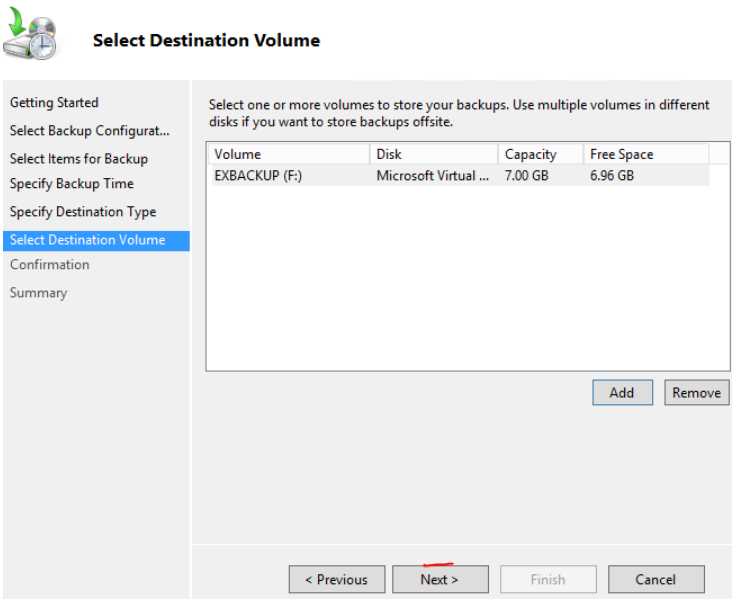
18. If you have dedicated a volume for backup then select it and click Next



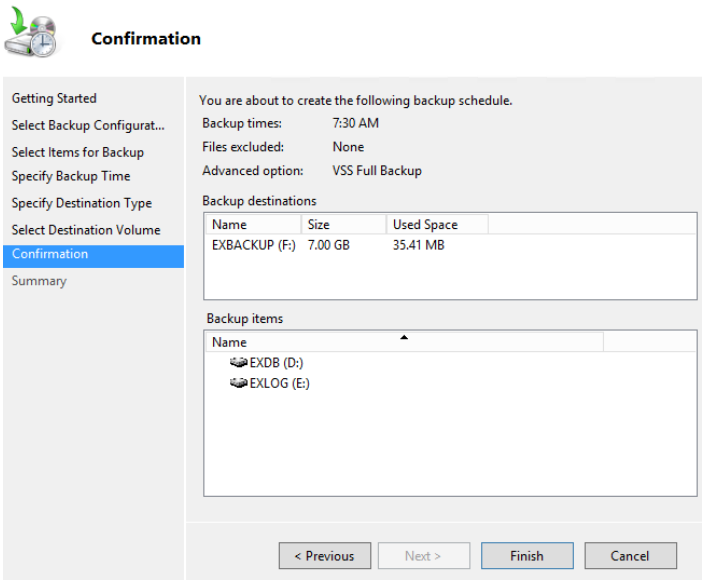
19. Click Add – Select your Volume and click OK



20. Click Next



21. Confirm your settings and click Finish



Important Notice: This will override previous backup, so everything will be replace with newest version! If you wish to keep the old version, you will have to configure another backup of that disk!

Configure Recipient Validation

This configuration I learned from a bad mistake. My server got spam and was blacklisted all over the Internet. It was not easy to get back on the Whitelist again.

In Exchange, 2013 I had to enable Recipient Filter Agent thru the command Enable-TransportAgent "Recipient Filter Agent".

In Exchange 2016, only these transport agents are available:

```
[PS] C:\Windows\system32>Get-TransportAgent

Identity                                Enabled    Priority
--------                                -------    --------
Transport Rule Agent                    True       1
DLP Policy Agent                        True       2
Malware Agent                           True       3
Text Messaging Routing Agent            True       4
Text Messaging Delivery Agent           True       5
System Probe Drop Smtp Agent            True       6
System Probe Drop Routing Agent         True       7
```

Next step is to ensure your accepted domains are using the AddressBook for checking for valid recipients. By default this should be enabled when you set up Exchange as an authoritative Mailbox Server for you domain.

1. To check if your server is using the AddressBook for validation run the following command
   Get-AcceptedDomain | Format-List Name,AddressBookEnabled

   It should provide you with a list of all accepted domains and if the AddressBook is enable or not. If by any chance Exchange is not Authoritative and the AddressBook is disabled then enable it with:

   Set-AcceptedDomain <name of accepted domain> -AddressBookEnabled $true

   Or, to enable for all domains (caution, make sure you are not relaying any domains before running this)

   Get-AcceptedDomain | Set-AcceptedDomain -AddressBookEnabled $true

   Now you should have Recipient Filter on your Mailbox Server and AddressBook enabled on your domain. However, if you test this now, it probably still will not work. That is because Validation is still disabled.

2. To check the status of validation run the following

   Get-RecipientFilterConfig | FL Enabled,RecipientValidationEnabled

   It should return that Recipient Filter is enable, but validation is not

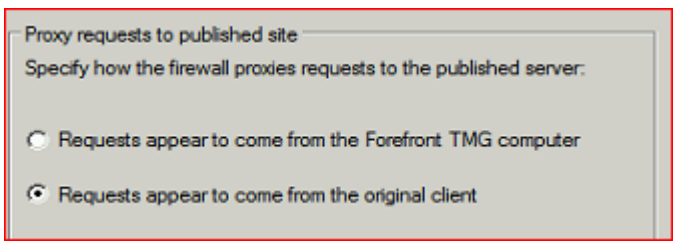
   Enabled: True

   RecipientValidationEnabled : False

3. To enable validation run the following
   Set-RecipientFilterConfig -RecipientValidationEnabled $true

4. Restart the Exchange Transport service

If you use TMG 2010 as your firewall, be sure that your publishing rule does not have “request should not be shown as it comes from TMG” enabled.



If you have this enabled and TMG is allowed to relay mail on your server, then you are going to have a long night ahead!

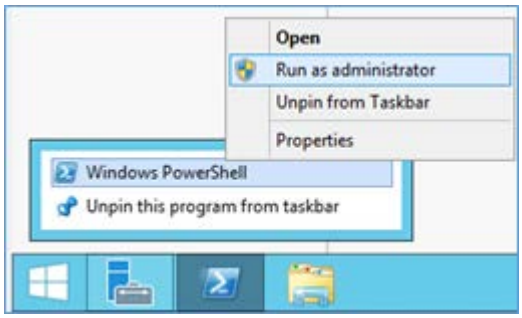
Installing Office Web App server

Office Web Apps Server is a new Office server product that delivers browser-based versions of Word, PowerPoint, Excel, and OneNote. A single Office Web Apps Server farm can support users who access Office files through SharePoint 2013, Lync Server 2013, Exchange Server 2013, shared folders, and websites. Since it is used in so many products, it is recommended to have this installed in your environment.

With previous editions of Exchange, WebReady Document Viewing is built in to Exchange. With OWAS integration in Exchange 2013, SharePoint 2013 and Lync Server 2013, when a user wants to preview an Office attachment, Exchange/SharePoint/Lync makes a Web app Open Platform Interface [WOPI] call to the Office Web Apps Server which renders the document instead.

Install prerequisites

Login to the server and open PowerShell



Copy and paste following command:

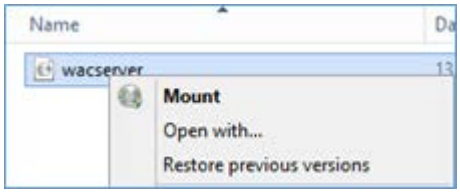
Add-WindowsFeature Web-Server,Web-Mgmt-Tools,Web-Mgmt-Console,Web-WebServer,Web-Common-Http,Web-Default-Doc,Web-Static-Content,Web-Performance,Web-Stat-Compression,Web-Dyn-Compression,Web-Security,Web-Filtering,Web-Windows-Auth,Web-App-Dev,Web-Net-Ext45,Web-Asp-Net45,Web-ISAPI-Ext,Web-ISAPI-Filter,Web-Includes,InkandHandwritingServices –restart

After reboot, run windows update again. You might need to do it a couple for times before everything is up to date.

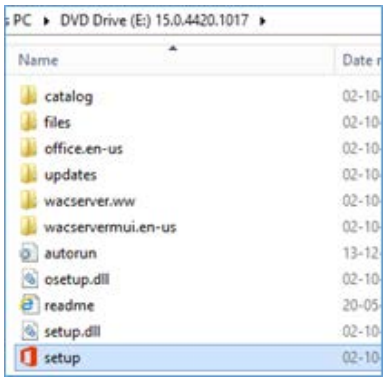
Download Office Web App Server

After the server has restarted, download the Office Web Apps Server 2013 (As per 15.08.2015 you have to download it from MSDN, since it is no longer available as free download)

Mount the wacserver.img file

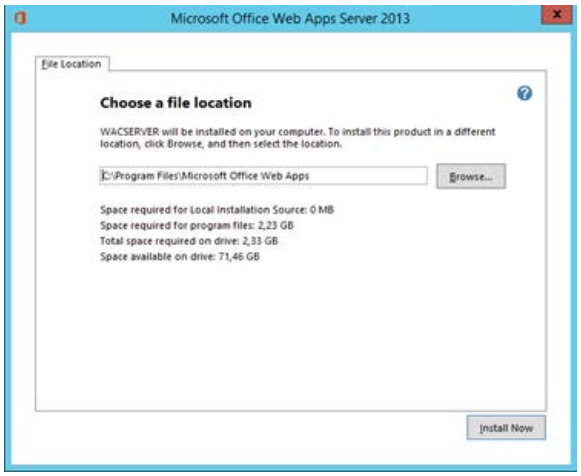


Double click setup.exe to start the installation

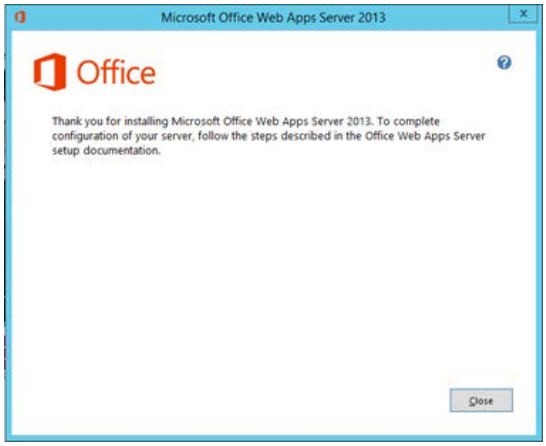


Read the EULA and accept.

Click Install Now



Click on Close



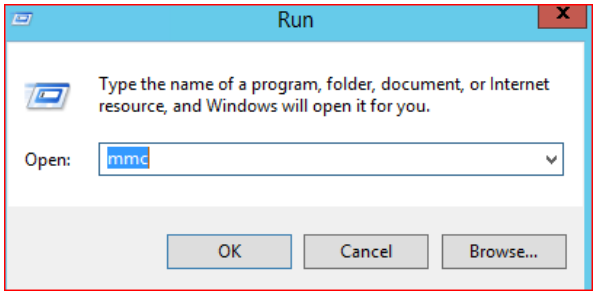
Windows update and also WAC update

When the installation is finished, you should update the WAC server to with the latest fixes by running windows update. Again, this might need to be done a couple of times before everything is up to date.

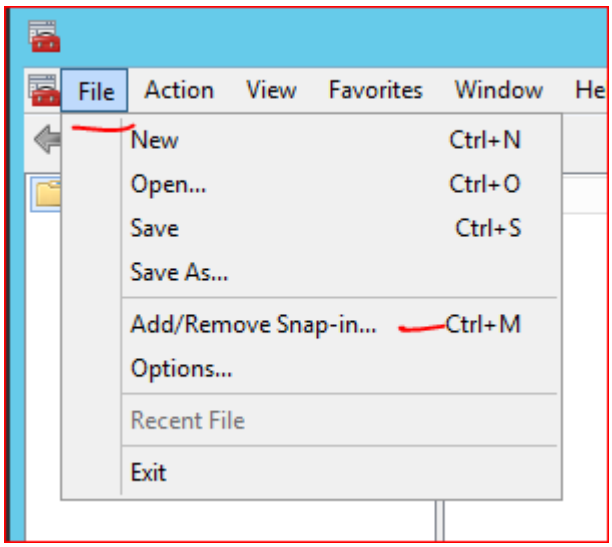
Request and import certificate

When ready, we need to request a certificate that can be used to secure the communication.

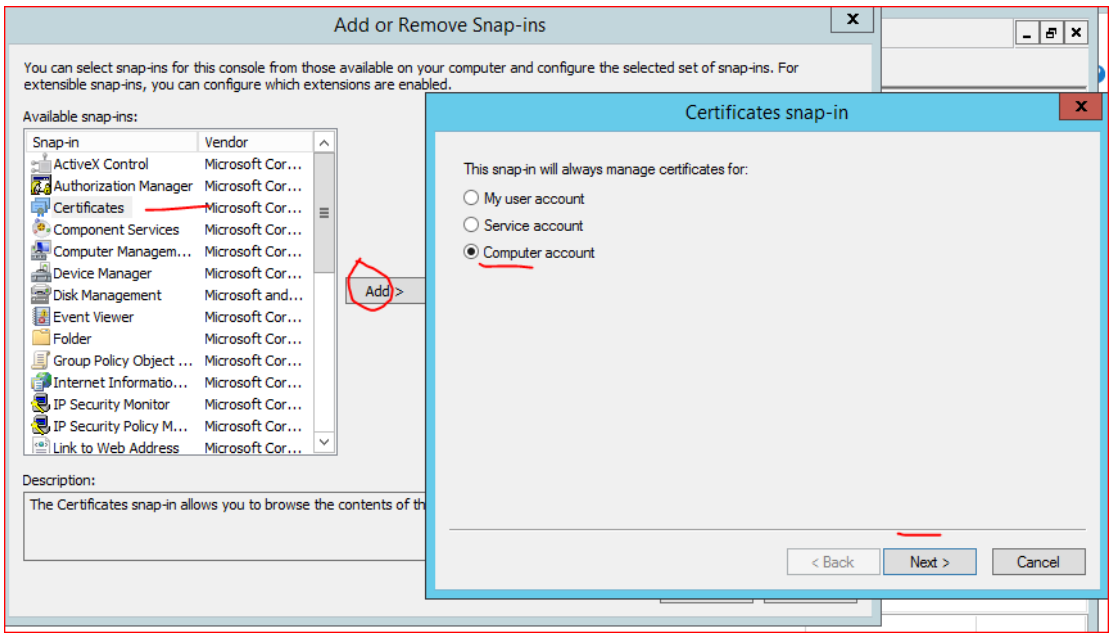
Open mmc console



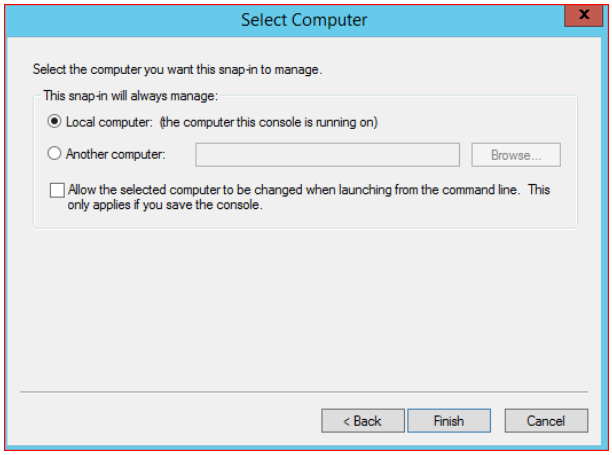
Click file – add remove Snap-in

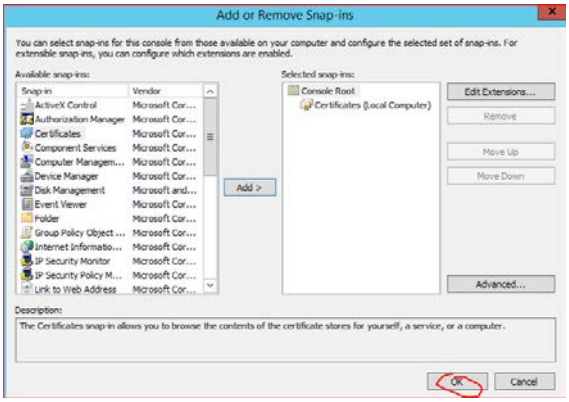


Add the Local Computer Certificate store

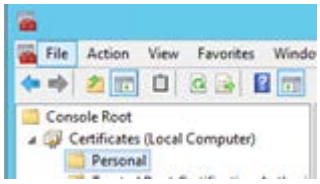


Select local computer and click finish and ok

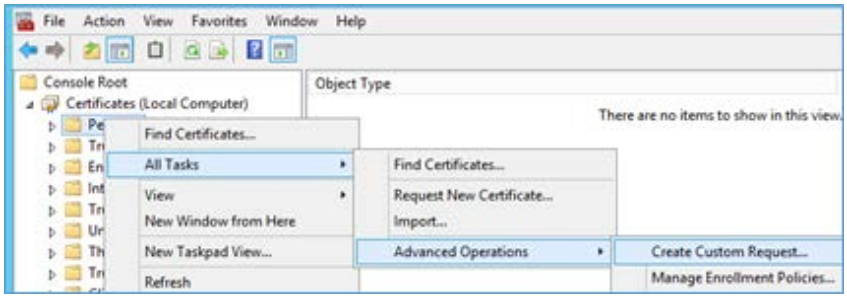




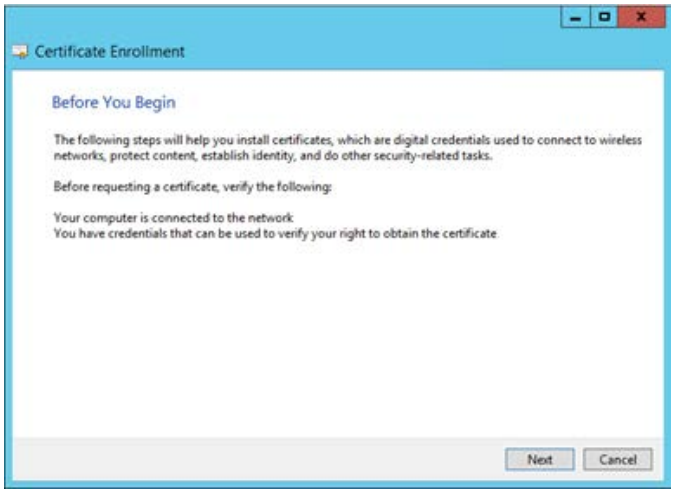
Navigate to Personal



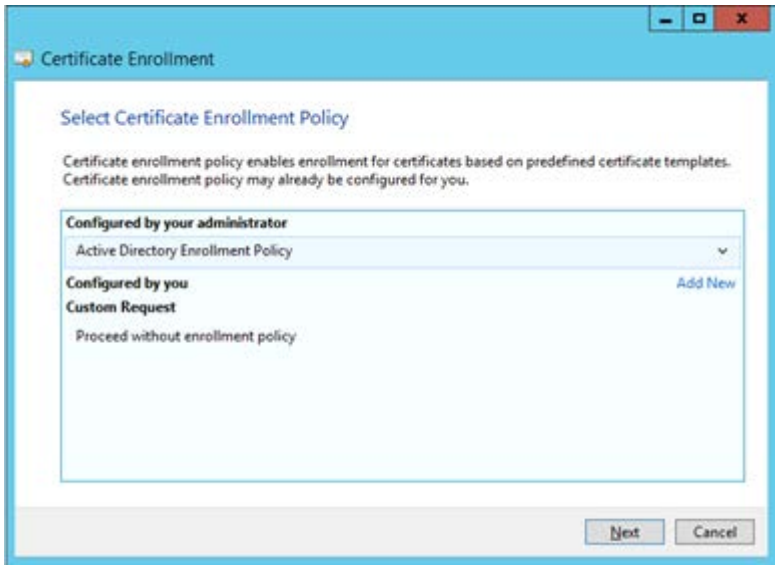
Right click on Personal and select All Tasks -> Advanced Operations -> Create Custom Request



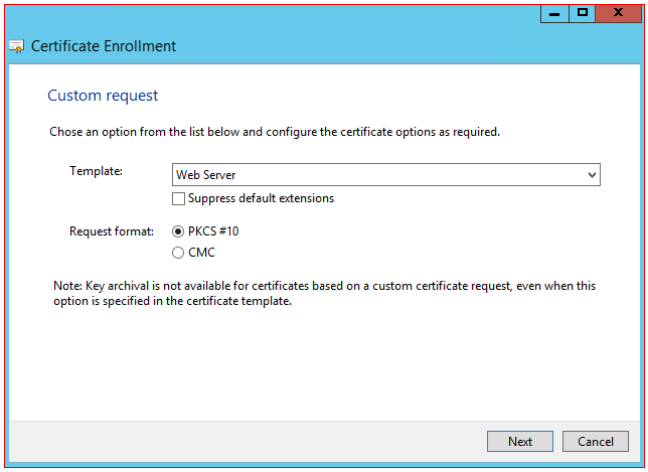
Click Next



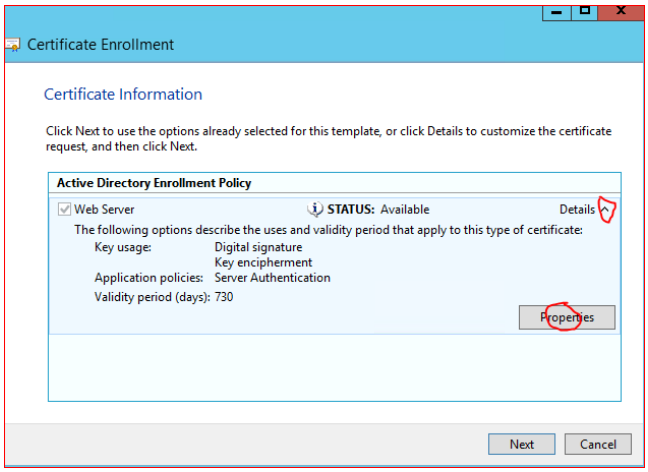
Click Next



Choose your custom Web Server Template from the drop down and click Next

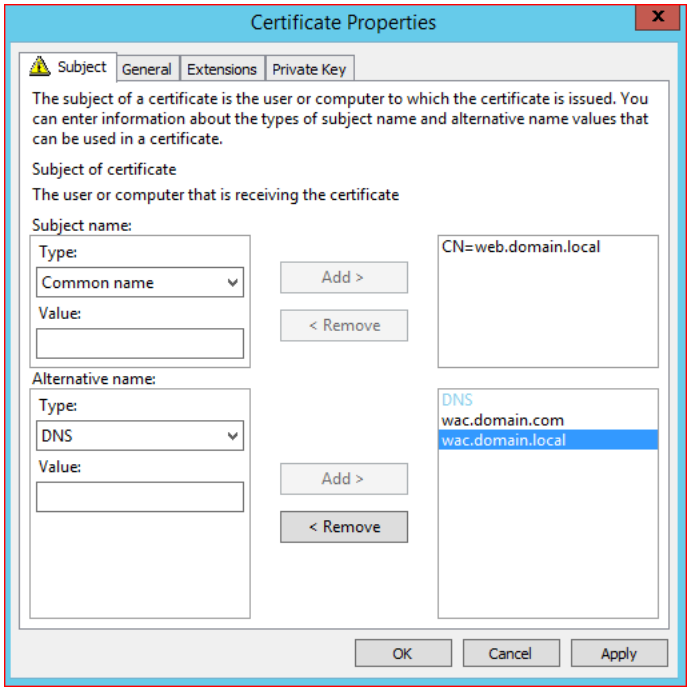


Click on the little arrow and select properties

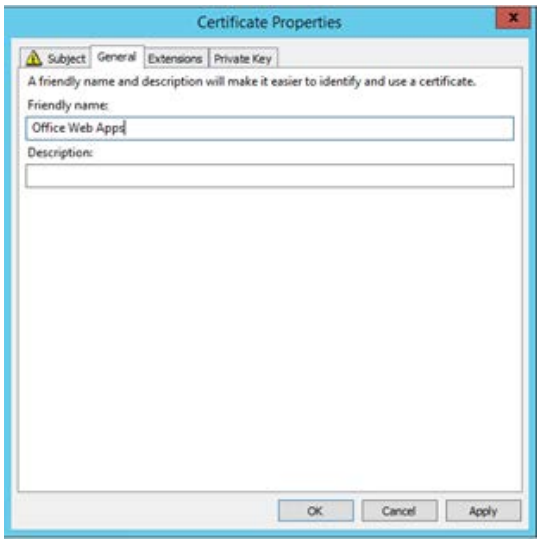


The certificate should contain common name and name of the server. If you plan to install another WAC server for high availability, then you should add it now to avoid future hazel. Also, choose common name well if your WAC server will be used for SharePoint and Lync/Skype for Business Server.

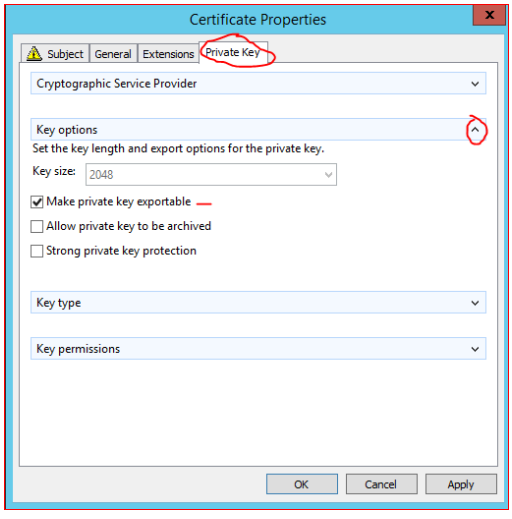
Type FQDN name for the WAC server in common name. In Alternative name, select DNS and add internal FQDN name for the WAC server, and external FQDN name of your WAC url.



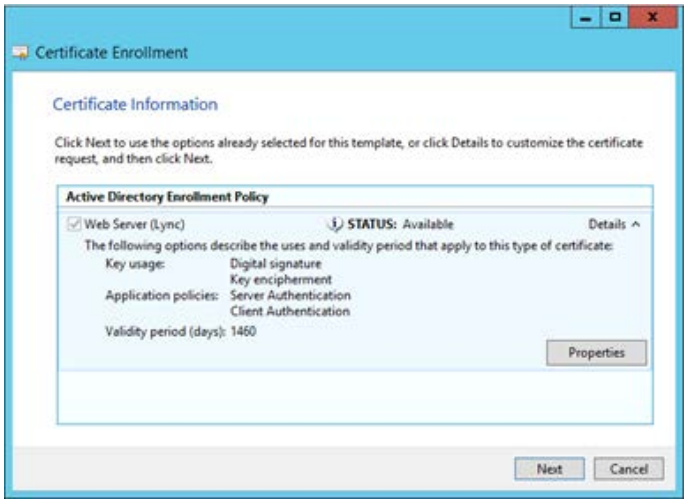
Select the general pane and type a friendly name for the certificate.



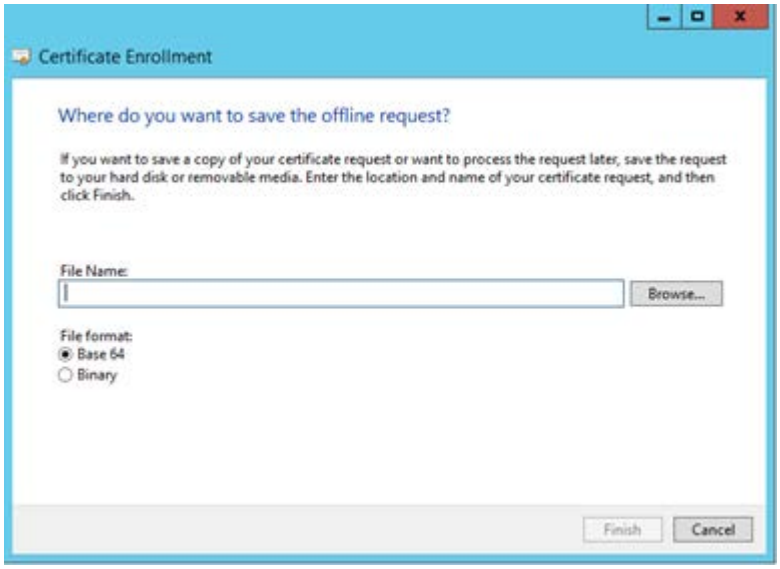
Select the Private Key and click down arrow under Key options. Select “Make private key exportable” and press OK



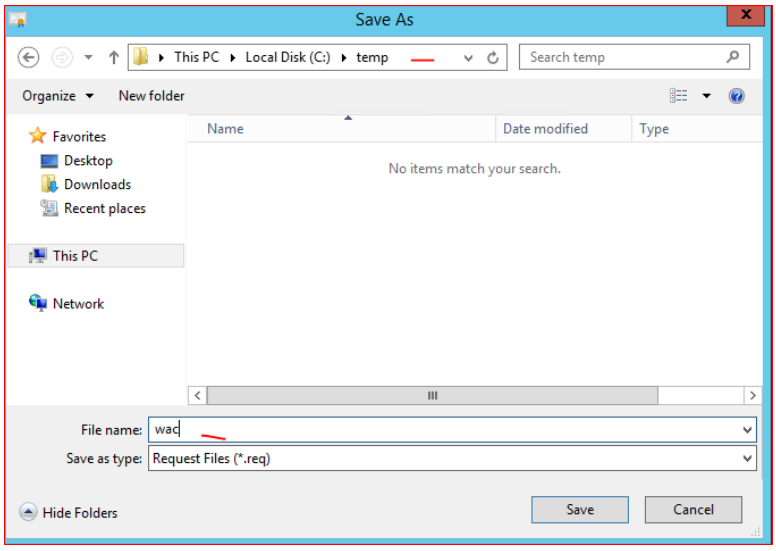
Select Next



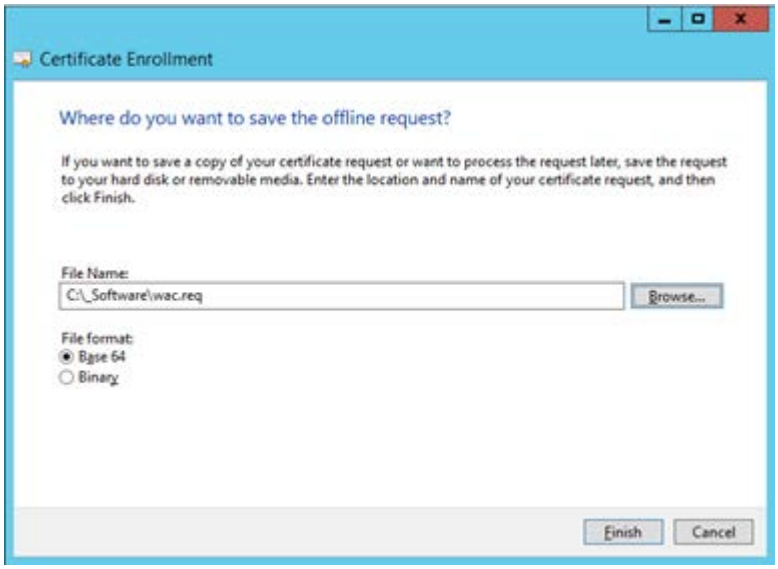
Click on Browse



Select a folder to save it, type a name for the request file and click Save



Click Finish



Open Internet Explorer - navigate to your certificate server, and click on request a certificate

Welcome

Use this Web site to request a certificate for your Web browser, e-mail client, or other program. By using a certificate, you can verify your identity to people you communicate with over the Web, sign and encrypt messages, and, depending upon the type of certificate you request, perform other security tasks.

You can also use this Web site to download a certificate authority (CA) certificate, certificate chain, or certificate revocation list (CRL), or to view the status of a pending request.

For more information about Active Directory Certificate Services, see Active Directory Certificate Services Documentation.

Select a task:

Request a certificate

View the status of a pending certificate request

Download a CA certificate, certificate chain, or CRL

Click on advanced certificate request

Request a Certificate

Select the certificate type:

User Certificate

Or, submit an advanced certificate request.

Select Submit a certificate request by….

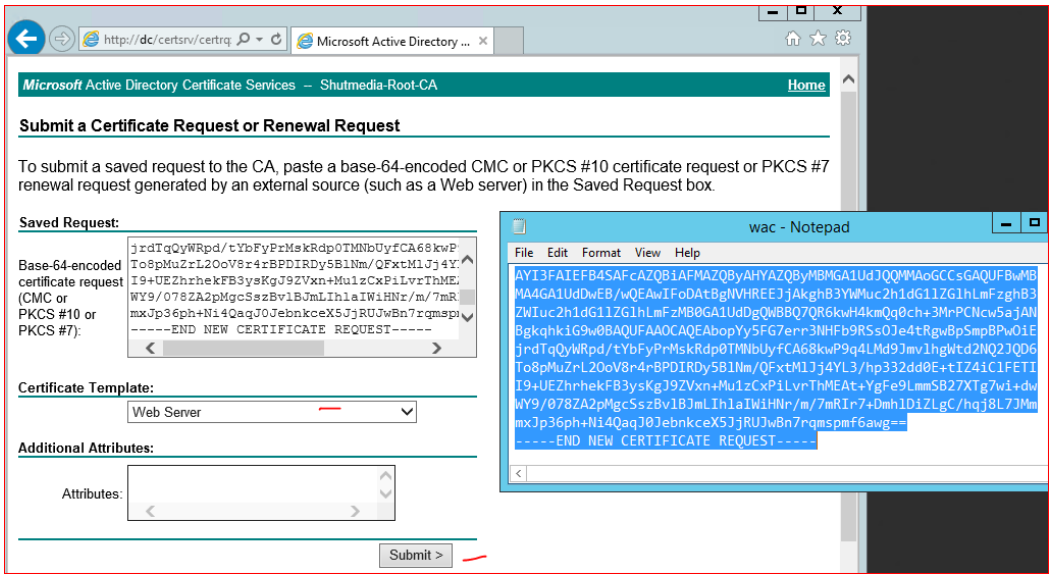
Advanced Certificate Request

The policy of the CA determines the types of certificates you can request. Click one of the following options to:

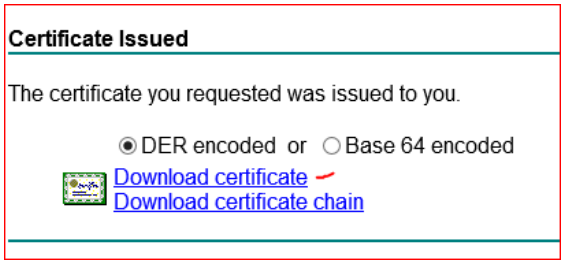
Create and submit a request to this CA.

Submit a certificate request by using a base-64-encoded CMC or PKCS #10 file, or submit a renewal request by using a base-64-encoded PKCS #7 file.

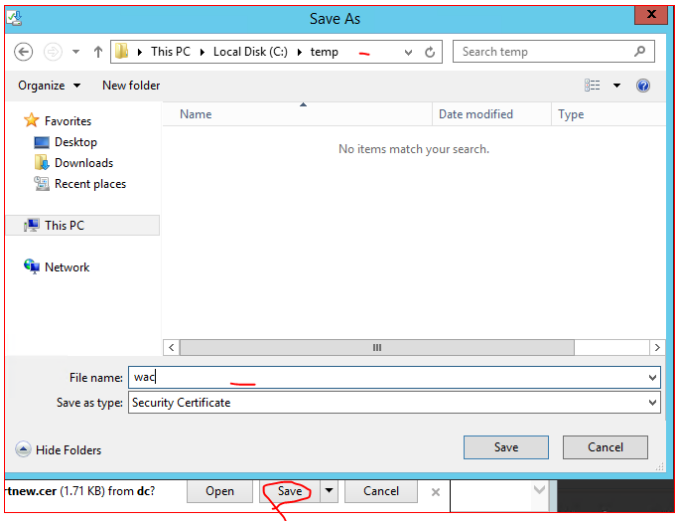
Paste content of the request file you created earlier and select web server certificate and submit.



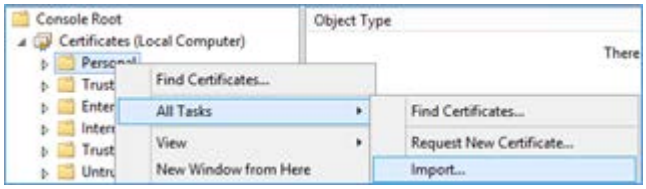
Click Download Certificate



Save the certificate

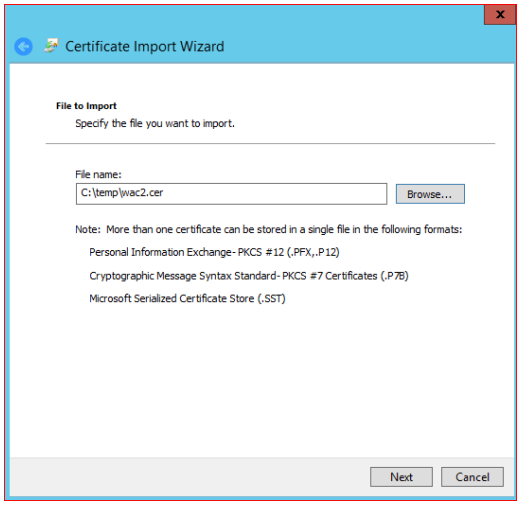


Back in the MMC select All Tasks ->Import

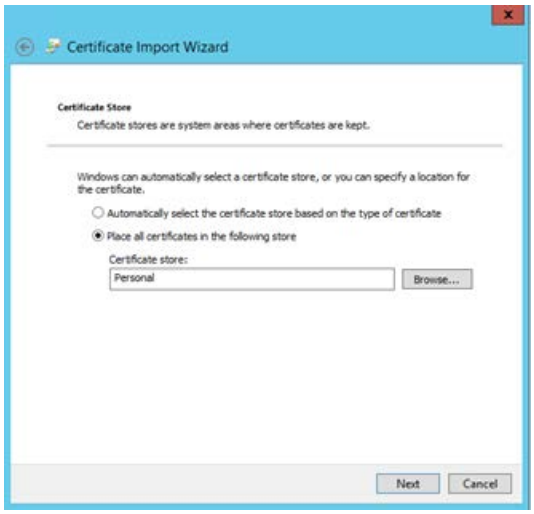


Select Next

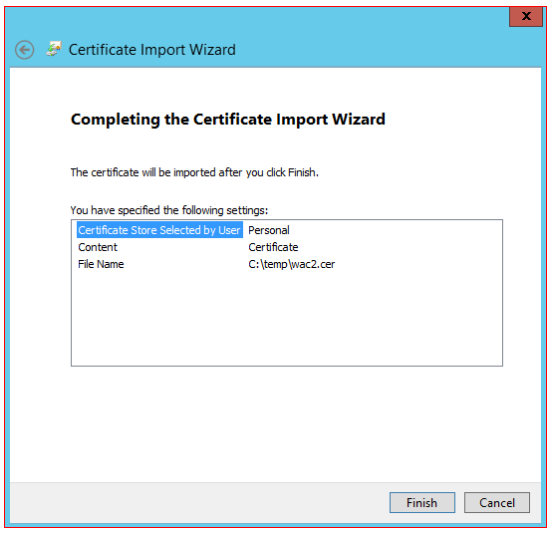
Browse to the certificate and click next



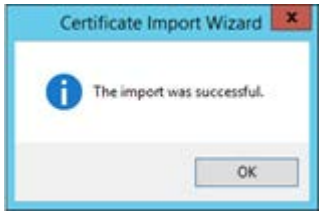
Select Next



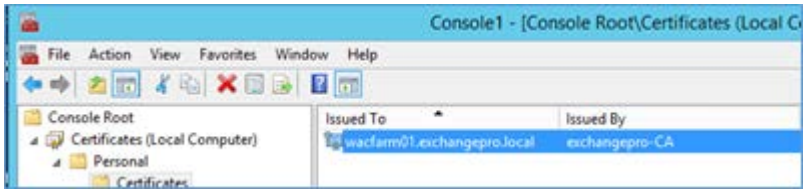
Select Finish



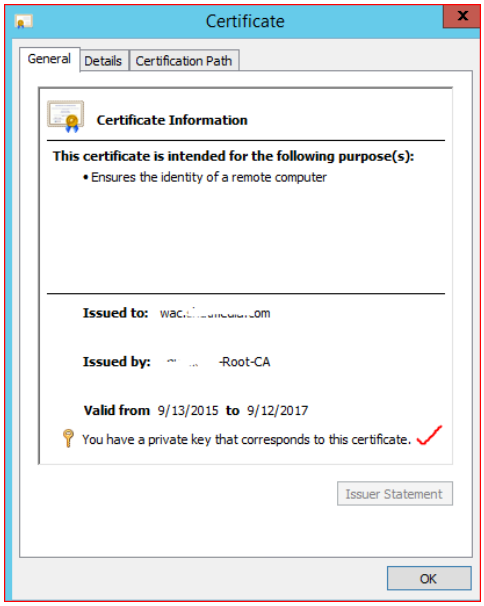
Click OK



You have imported the certificate



Double click on the certificate and make sure you have the private key



Click OK

Configure WAC server

We are now ready to configure the first WAC server, which is done from PowerShell.

Open PowerShell as administrator and run this command

New-OfficeWebAppsFarm -InternalURL "https://wac.domain.local" -ExternalUrl "https://wac.domain.com"-CertificateName "Office Web App"

```
FarmOU                          :
InternalURL                     : https://wac.[redacted]as/
ExternalURL                     : https://wac.[redacted].com/
AllowHTTP                       : False
SSLOffloaded                    : False
CertificateName                 : Office Web App
EditingEnabled                  : False
LogLocation                     : C:\ProgramData\Microsoft\OfficeWebApps\Data\Logs\ULS
LogRetentionInDays              : 7
LogVerbosity                    :
Proxy                           :
CacheLocation                   : C:\ProgramData\Microsoft\OfficeWebApps\Working\d
MaxMemoryCacheSizeInMB          : 75
DocumentInfoCacheSize           : 5000
CacheSizeInGB                   : 15
ClipartEnabled                  : False
TranslationEnabled              : False
MaxTranslationCharacterCount    : 125000
TranslationServiceAppId         :
TranslationServiceAddress       :
RenderingLocalCacheLocation     : C:\ProgramData\Microsoft\OfficeWebApps\Working\waccache
RecycleActiveProcessCount       : 5
AllowCEIP                       : False
ExcelRequestDurationMax         : 300
ExcelSessionTimeout             : 450
ExcelWorkbookSizeMax            : 10
ExcelPrivateBytesMax            : -1
ExcelConnectionLifetime         : 1800
ExcelExternalDataCacheLifetime  : 300
ExcelAllowExternalData          : True
ExcelWarnOnDataRefresh          : True
OpenFromUrlEnabled              : False
OpenFromUncEnabled              : True
OpenFromUrlThrottlingEnabled    : True
PicturePasteDisabled            : True
RemovePersonalInformationFromLogs : False
AllowHttpSecureStoreConnections : False
IgnoreDeserializationFilter     : False
Machines                        : {WEB}
```

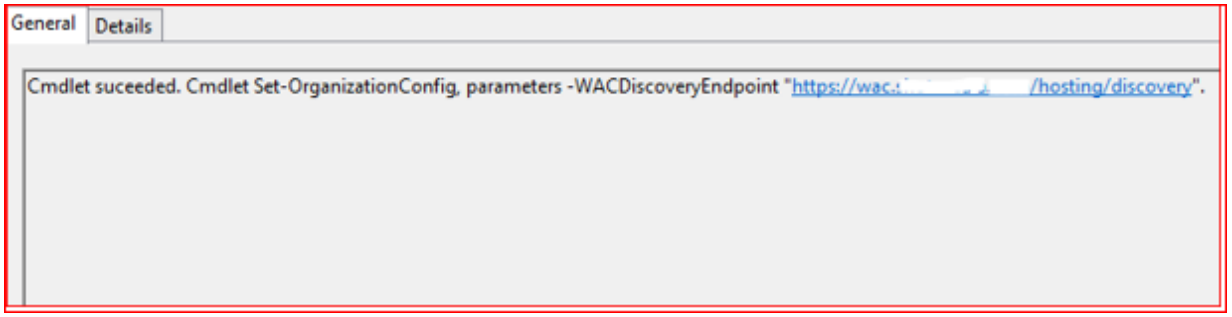
Then our Office Web App is ready, do not forget to add DNS host in your local zone IF internal URL is not the same as computer name. Also, add External DNS with your provider to point wac.domain.com to your firewall, which then will redirect to your Office Web App server.

Configure Office Web Apps Server URL

To use OWAS to render attachments in OWA, first we need to specify the URL of the OWAS using the Set-OrganizationConfig cmdlet using Exchange Management Shell:

Set-MailboxServer EX -WacDiscoveryEndpoint "https://wac.domain.local/hosting/discovery"

Where EX is name of your Exchange mailbox server. You should then see this in event log of your Exchange server.



Enable Office Web Apps Server Rendering

By default, the OWA Virtual Directory is already configured to enable the rendering of attachments through OWAS both on public and private computers.

If you want to disable, for example, OWAS from being used on public computers, you can do so using the following cmdlet (this assuming OWAS is accessible from outside your internal network):

Get-OwaVirtualDirectory | Set-OwaVirtualDirectory WacViewingOnPublicComputersEnabled $False

Force Office Web Apps Server Rendering

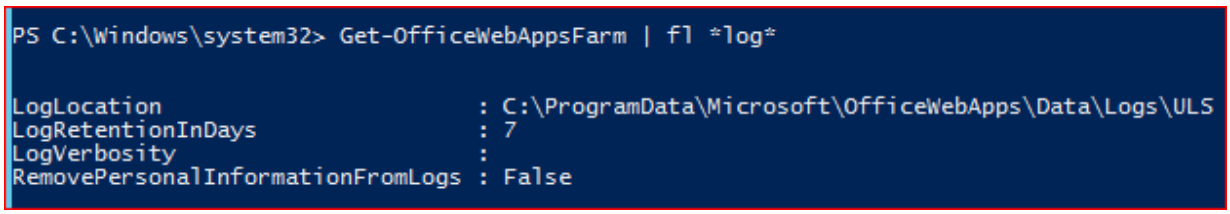
Another available option is to force users to render attachments using OWAS first before they can open them. As you guessed, this is done by setting

ForceWacViewingFirstOnPublicComputers and/or
ForceWacViewingFirstOnPrivateComputers to True.

Office Web Apps Server Logs

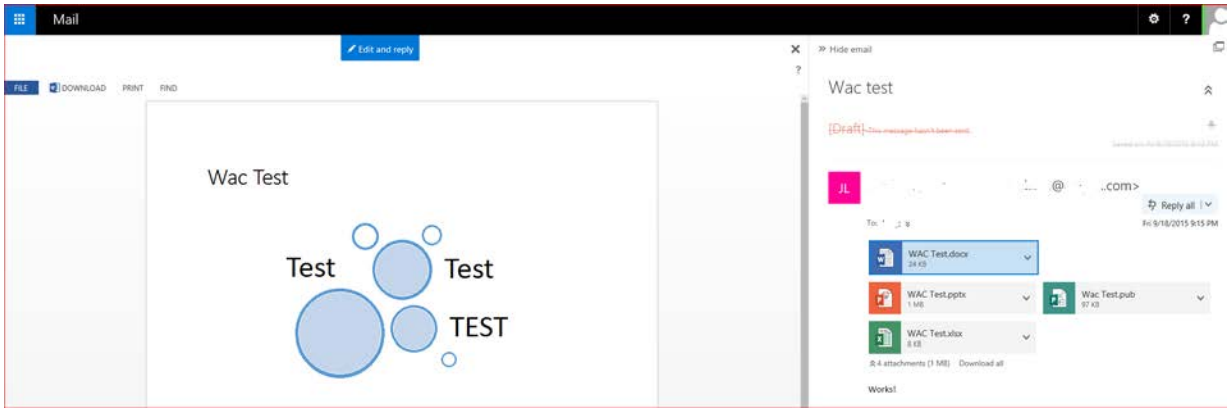
To determine where the Office Web Apps Logs are stored, run the following cmdlet on your WAC server using PowerShell prompt:

Get-OfficeWebAppsFarm | fl *log*



After everything has been configured, you “have” to restart MsExchangeOwaAppPool by running following command on your Exchange Server:

Restart-WebAppPool MsExchangeOwaAppPool



There you have it and off course, this only works with PowerPoint, Excel and Word files.

IM in OWA

Another nice to have feature is IM in OWA. This off course requires Lync/Skype server to work. If you don't have Lync/Skype Server up and running, I have created a guide install Skype for Business Server 2015 Step by Step.

It can be download from here:

https://gallery.technet.microsoft.com/Installing-Skype-for-78703118

In my company, we have many consultant working at customer's site where they do not allow using Outlook or Skype for Business desktop version. This is one of the scenarios IM in OWA comes in handy, another would be if you were at Internet Café or at hotel lobby. Off course, you could use your mobile, but if battery is low, you do not want to turn on 4g or Wi-Fi.

Pre-requisites

Only thing needed is Unified Communications Managed API 4.0 Runtime to be installed on your Exchange server. This is off course one of the pre-requisites to install Exchange server.

You can do this by looking for the existence of the following registry value:

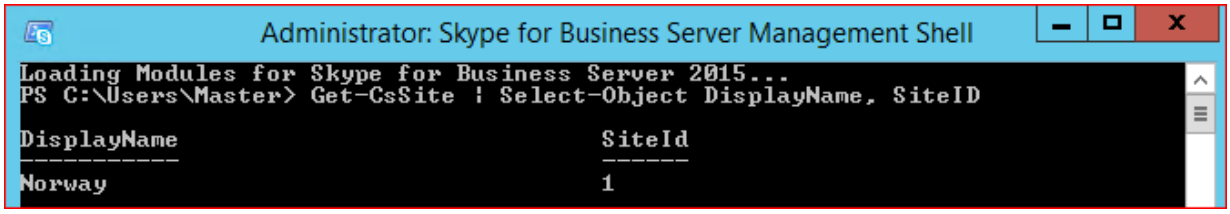
HKEY_LOCAL_MACHINE\SYSTEM\CurrentControlSet\Services\MSExchange OWA\InstantMessaging\ImplementationDLLPath

The ImplementationDLLPath should point to the folder location for the file Microsoft.Rtc.Internal.Ucweb.dll. If it does not, or if the registry value does not exist, then you should download and install the UCMA Runtime setup program from the Microsoft Download Center at http://www.microsoft.com/en-us/download/details.aspx?id=34992 . Information on how to install the UCMA Runtime can be found on that same web page.

Creating a Trusted Application Pool for Outlook Web App

First, we will need to get site ID of our Skype environment. Login to your Frontend server, start Skype PowerShell and run the following command

Get-CsSite | Select-Object DisplayName, SiteID

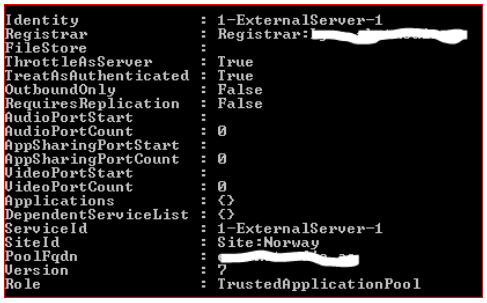


Now that we have SiteID, run this command to create a new Trusted Application pool:

New-CsTrustedApplicationPool -Identity ex.domain.local -Registrar skype.domain.local -Site 1 -RequiresReplication $False

Where Ex.domain.local is FQDN of your Exchange server and Skype.domain.local is FQDN of your Skype Frontend Server. Site 1 is the SiteID we got from running Get-CsSite.

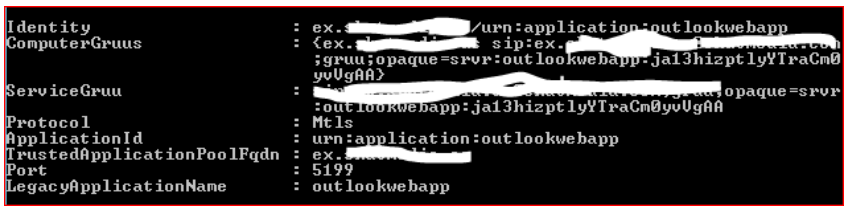
Output will look like this:



After creating the trusted application pool, run this command to configure an application Identity and a port for Outlook Web App:

New-CsTrustedApplication -ApplicationId OutlookWebApp -TrustedApplicationPoolFqdn ex.domain.local -Port 5199

Output will look like this:



To finish off, run the following command:

Enable-CsTopology

If successful, it should look like this:

```
PS C:\Users\Master>> Enable-CsTopology
PS C:\Users\Master>> _
```

Enabling Instant Messaging on Outlook Web App

With Skype for Business Server correctly configured, you can then begin to configure Outlook Web App. The first step in that process is to enable instant messaging on all your Outlook Web App virtual directories on your front-end servers. (There is no need to enable instant messaging for the virtual directories on your backend servers. In fact, it is recommended that you do not enable instant messaging on your backend servers.) Login to your **Exchange Server** and start Exchange PowerShell, and then run the following command:

Get-OwaVirtualDirectory | Set-OwaVirtualDirectory -InstantMessagingEnabled $True -InstantMessagingType OCS

If successful, you should see this (ignore creating a new session message, since I had Exchange PowerShell open to long)

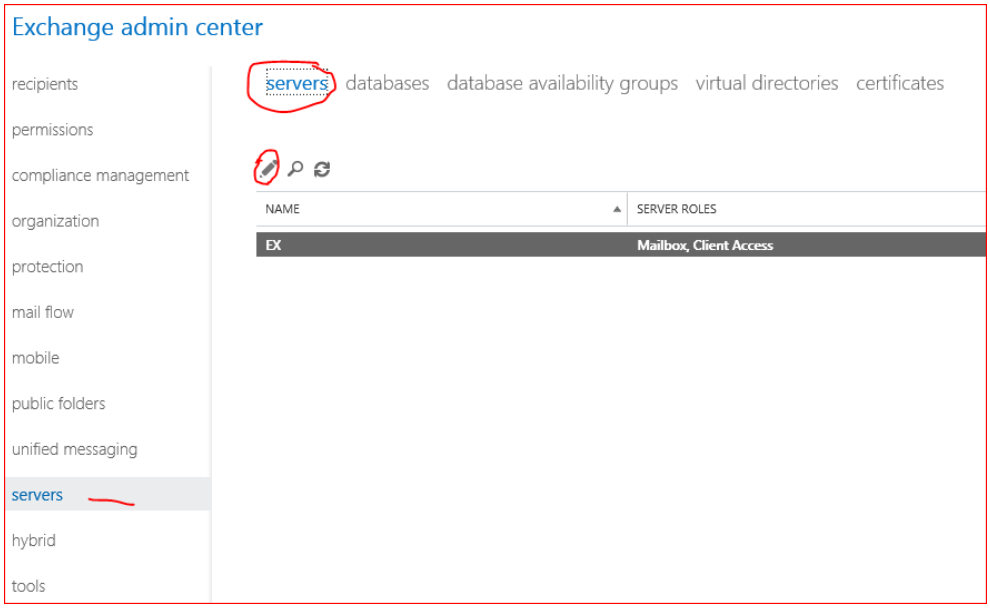
```
[PS] C:\Windows\system32>Get-OwaVirtualDirectory | Set-OwaVirtualDirectory -InstantMessagingEnabled $True -InstantMessag
ingType OCS
Creating a new session for implicit remoting of "Get-OwaVirtualDirectory" command...
[PS] C:\Windows\system32>
```

Now we need to confirm if we have any certificate assigned for UM service. In Exchange PowerShell run the following command:

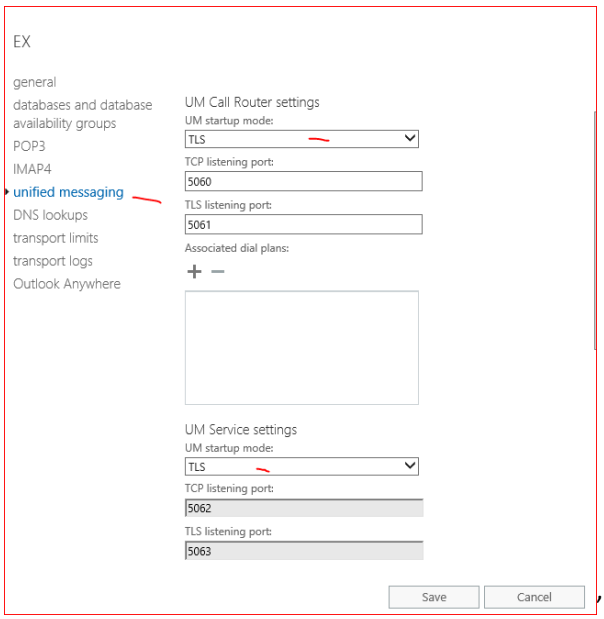
Get-ExchangeCertificate | select services

```
Services
--------
IMAP, POP, IIS, SMTP
SMTP
IMAP, POP, SMTP
None
```

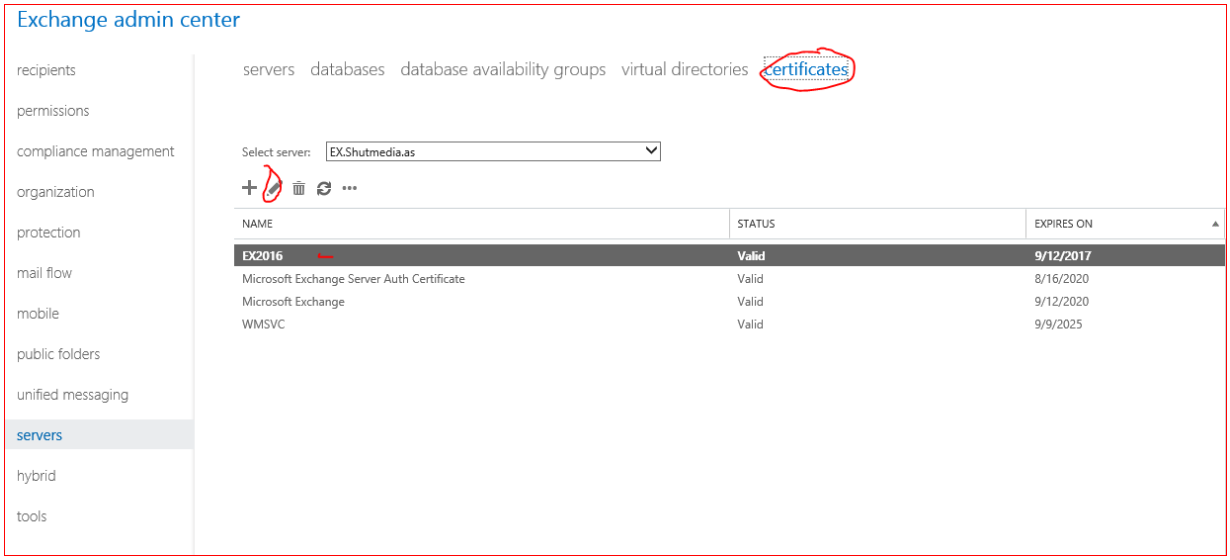
As you can see, we do not have any Certificate assigned to UM service. Login to ECP (https://mail.domain.com/ECP) and navigate to Servers – and Edit your Exchange server:



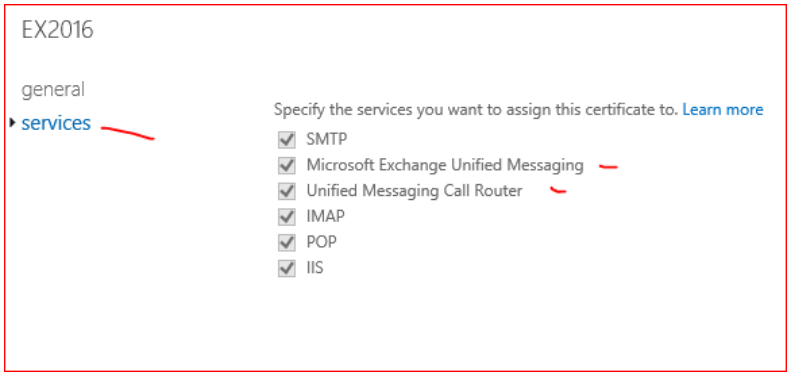
Navigate to Unified Messaging and change UM Call Router settings and UM Service settings to TLS mode. Yes to confirm



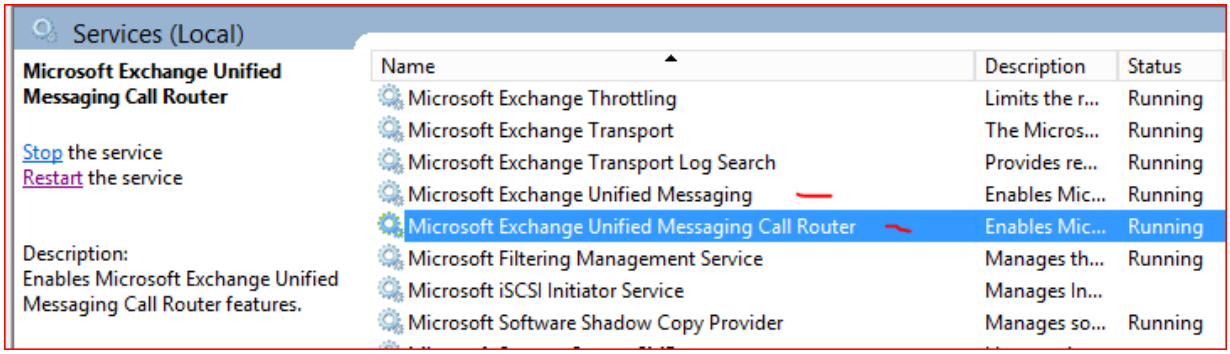
Click Certificate on top menu and edit your chosen certificate (in my case default cert used for OWA)



Click Services and check for both UM services and yes to confirm.



On your Exchange server, open services and restart both UM services.



In Exchange PowerShell run the following command to get thumbprint of your UM certificate:

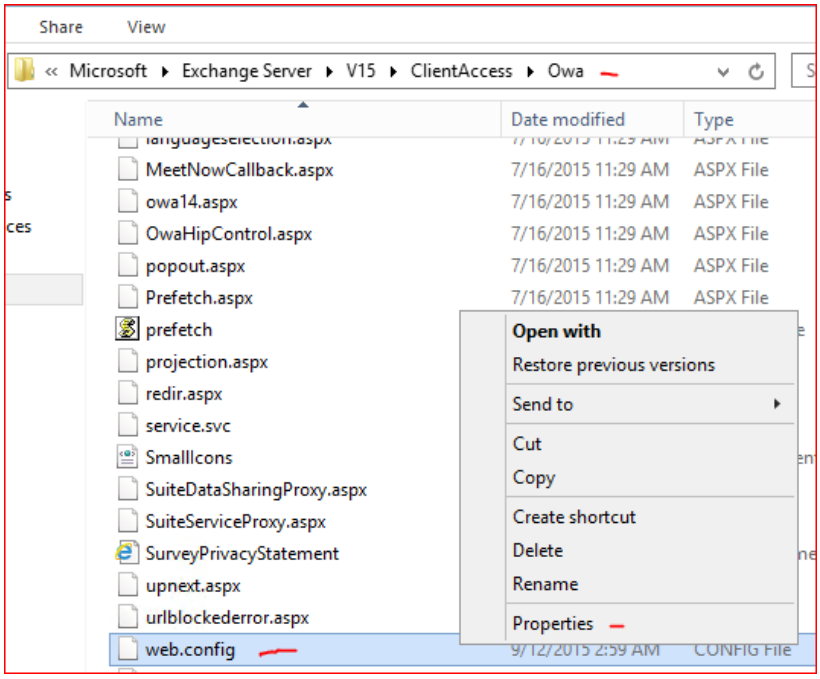
Get-ExchangeCertificate | select services,thumbprint

Take a note of the Thumbprint that has been assigned UM services.

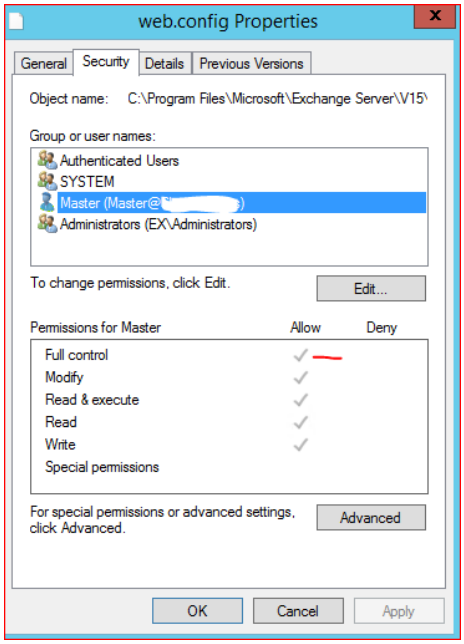
Edit Web.config

Next we must add the following two lines to Outlook Web App Web.config file (this file is typically located in the folder C:\Program Files\Microsoft\Exchange Server\V15\ClientAccess\Owa). These two lines should be added under the <AppSettings> node in the Web.config file, and this procedure should be carried out only on the backend servers (Mailbox Server) where Outlook Web App has been installed.

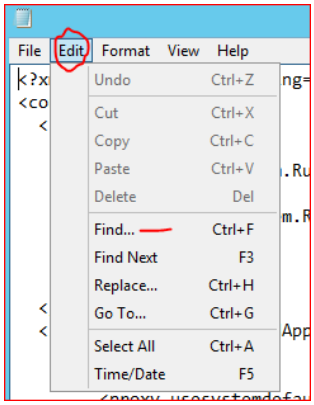
On you Exchange server, navigate to C:\Program Files\Microsoft\Exchange Server\V15\ClientAccess\Owa) - right click web.config file and choose properties



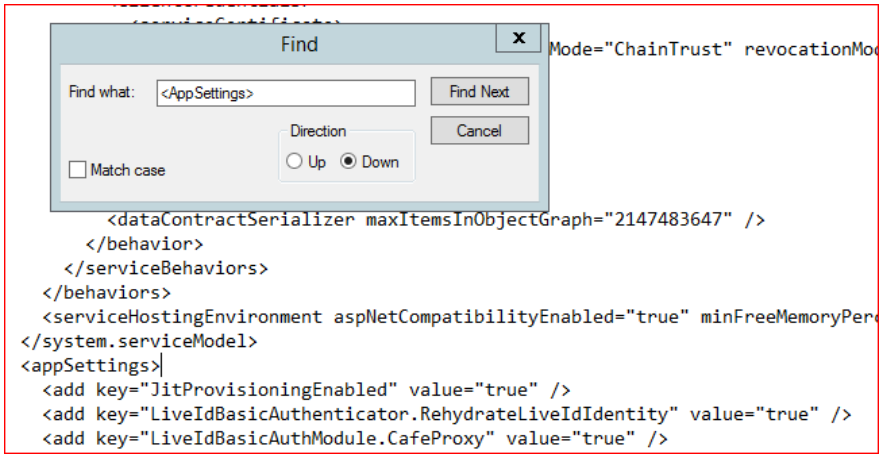
Click permission tab and confirm that your account has full access to the file and click OK.



Now right click same file and choose open with – notepad. In notepad click Edit – find (or ctrl+F)



Search for <AppSettings>



Enter these values right under <appSettings>

<add key="IMCertificateThumbprint" value="2FA5B4B48F0DBE4C73455E8270C5CA7FD9EF6AF5"/>

<add key="IMServerName" value="skype.domain.as"/>

Where skype.domain.as is FQDN of your Skype Frontend Server and IMCertificateThumprint is the thumbprint we got earlier. It will look like this:

```
<appSettings>
  <add key="IMCertificateThumbprint" value="2FA5B4B48F0DBE4C73455E8270C5CA7FD9EF6AF5"/>
  <add key="IMServerName" value="skype.domain.local"/>
```

Save the file and close it.

After you have updated the Web.config file you should then run the following command on the Exchange backend server in order to recycle the Outlook Web App pool:

C:\Windows\System32\Inetsrv\Appcmd.exe recycle apppool /apppool.name:"MSExchangeOWAAppPool"

```
[PS] C:\Windows\system32>C:\Windows\System32\Inetsrv\Appcmd.exe recycle apppool /apppool.name:"MSExchangeOWAAppPool"
"MSExchangeOWAAppPool" successfully recycled
```

If successful, you will see the message: "MSExchangeOWAAppPool" successfully recycled

Configuring Outlook Web App Mailbox Policies

At this point, you can use the following command to configure instant messaging on the appropriate Outlook Web App mailbox policy (or policies). For example, this command, run on one of your mailbox servers, enables instant messaging on the Default policy:

Set-OwaMailboxPolicy -Identity "Default" -InstantMessagingEnabled $True -InstantMessagingType "OCS"

```
[PS] C:\Windows\system32>Set-OwaMailboxPolicy -Identity "Default" -InstantMessagingEnabled $True -InstantMessagingType "
OCS"
[PS] C:\Windows\system32>
```

And this command enables instant messaging for all your Outlook Web App mailbox policies:

Get-OwaMailboxPolicy | Set-OwaMailboxPolicy -InstantMessagingEnabled $True -InstantMessagingType "OCS"

After the mailbox policy has been enabled then all users managed by that policy will have full integration between Skype for Business Server and Outlook Web App, provided that:

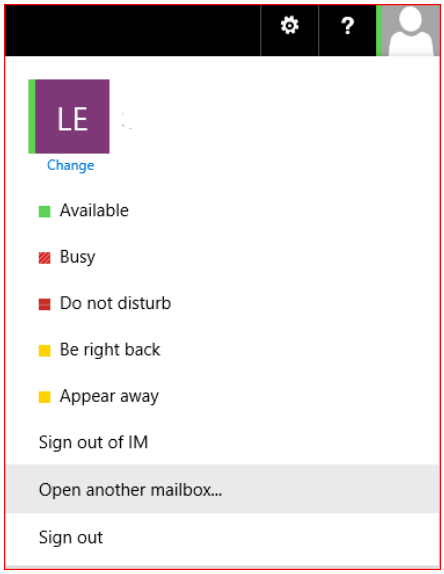
- The user has a mailbox on Exchange 2013.
- The user has been enabled for Skype for Business Server 2015.
- The user has a valid SIP proxy address.

Disabling Instant Messaging in Outlook Web App

If you somehow (after all this work) do not want to integrate Outlook Web App with Skype for Business Server you can run the following command to disable it again:

Get-OwaVirtualDirectory | Set-OwaVirtualDirectory -InstantMessagingEnabled $False

Now to confirm that it works



Final notice

Now that we have come to the end of the road, our final step is to test mail flow and configure Outlook/ ActiveSync. If you have configured Internal/External DNS and firewall correctly, then everything should be good to go.

Be sure that port 25 is forwarded correctly from your Firewall to your exchange server.

If using internal CA, be sure that all clients trust your Root CA

Links

Exchange 2016 system requirements:
https://technet.microsoft.com/en-us/library/aa996719(v=exchg.160).aspx

What is new in Exchange 2016:
https://technet.microsoft.com/en-us/library/jj150540(v=exchg.160).aspx

Exchange Server 2016 Architecture:
http://blogs.technet.com/b/exchange/archive/2015/05/05/exchange-server-2016-architecture.aspx

Installing DAG:
http://www.moh10ly.website/2015/08/preparing-installing-and-configuring.html