STEP BY STEP EXCHANGE 2019 INSTALLATION GUIDE

Riaz Javed Butt

MS EXPERT TALK | www.msexperttalk.com

Twitter: @RiazJavedButt

Facebook: https://web.facebook.com/msexperttalk

LinkedIn: https://pk.linkedin.com/in/riazbutt

Author: Riaz Javed Butt
Blog: www.msexperttalk.com

Table of Contents

Author: Riaz Javed Butt
Blog: www.msexperttalk.com

Exchange Server 2019 Installation Step by Step

October 22, 2018 Microsoft announced the final build of Exchange Server 2019 available to download from the Volume Licensing Service Center. Exchange Server 2019 is designed to deliver security, performance and improved administration and management capabilities.

Exchange 2019 compatibility Requirements

Before you install Exchange Server 2019, we recommend that you review this topic to ensure your network, hardware, software, clients, and other elements meet the requirements for Exchange 2019. Also, make sure you understand the coexistence scenarios that are supported for Exchange 2019 and earlier versions of Exchange.

The supported coexistence scenarios between Exchange 2019 and earlier versions of Exchange are described in the following table:

Exchange version	Exchange 2019 organization coexistence
Exchange 2010 and earlier versions	Not supported
Exchange 2013	Supported with Exchange 2013 Cumulative Update 21 (CU21) or later on all Exchange 2013 servers in the organization, including Edge Transport servers.
Exchange 2016	Supported with Exchange 2016 CU11 or later on all Exchange 2016 servers in the organization, including Edge Transport servers.
Mixed Exchange 2013 and Exchange 2016 organization	Supported if all Exchange 2013 and Exchange 2016 servers in the organization meet the requirements as previously described in this table.

The requirements for the network and the directory servers in your Exchange 2019 organization are described in the following table:

Component	Requirement
Domain controllers	All domain controllers in the forest need to be running one of the following versions of Windows Server: • Windows Server 2019 Standard or Datacenter • Windows Server 2016 Standard or Datacenter • Windows Server 2012 R2 Standard or Datacenter
Active Directory forest	The Active Directory forest functional level is **Windows Server 2012 R2** or higher.

Author: Riaz Javed Butt
Blog: www.msexperttalk.com

Component	Requirement
Active Directory site	The Active Directory site where you install the Exchange Server must contain at least one writeable domain controller that's also a global catalog server, or the installation will fail. Furthermore, you can't install the Exchange server and then remove the domain controller from the Active Directory site.
DNS namespace	Exchange 2019 supports the following DNS namespaces: • Contiguous • Noncontiguous • Single label domains • Disjoint
IPv6	Exchange 2013 and later support IPv6 only when IPv4 is also installed and enabled on the Exchange server. If you deploy Exchange in this configuration, and your network supports IPv4 and IPv6, all Exchange servers can send data to and receive data from devices, servers, and clients that use IPv6 addresses.

Installing Exchange 2019 on a computer that's running Windows Server Core is fully supported and recommended by Microsoft. The Desktop Experience feature is no longer required.

Exchange 2019 Pre-requisites

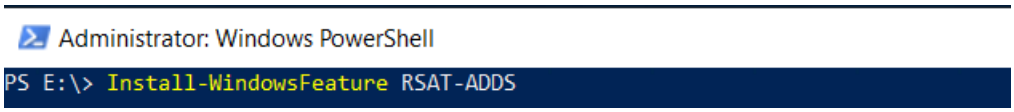
You can use any member of the Active Directory domain to prepare Active Directory for Exchange 2019. The computer requires the following software:

- .NET Framework 4.7.2 or later
- Visual C++ Redistributable Package for Visual Studio 2012

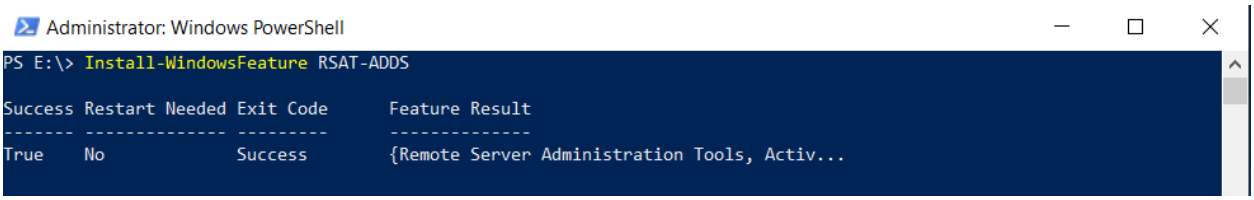
The Visual C++ Redistributable package is required if you're using the Exchange Setup Wizard to prepare Active Directory. If you're using unattended Setup from the command line to prepare Active Directory, this package isn't required.

- Install the Remote Tools Administration Pack by running the following command in Windows PowerShell:

```
Install-WindowsFeature RSAT-ADDS
```



Author: Riaz Javed Butt
Blog: www.msexperttalk.com



.Net Framework Installation

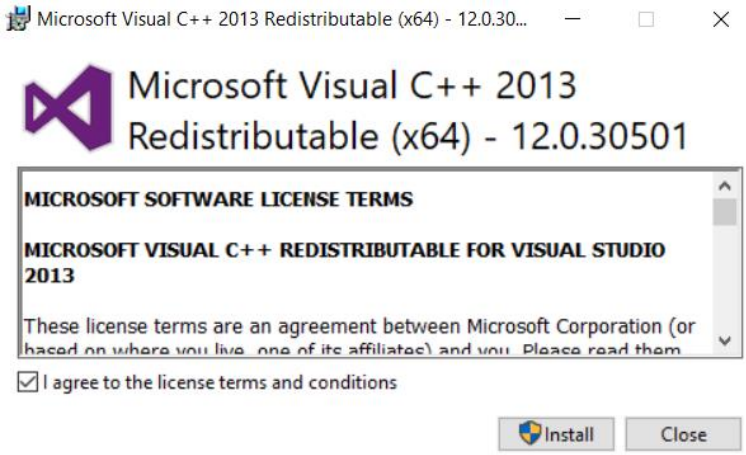
If you are installing Exchange Server 2019 on Windows Server 2019 then no action is required as Windows Server 2019 comes with .Net Framework 4.7.2. For Windows Server 2016, you need to install .Net Framework 4.7.1 or higher.

- .NET Framework 4.7.1 or above (Windows Server 2016)
- .NET Framework 4.7.2 (comes default with Windows Server 2019 preview)

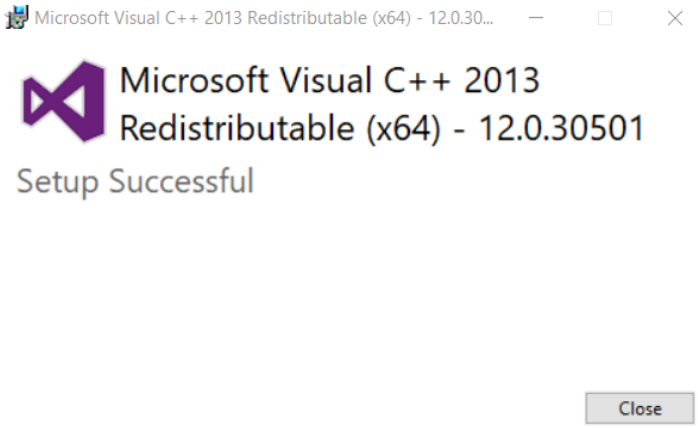
If .Net Framework on Windows Server 2019 isn't installed, you can install this from Server Manger.

Install Visual C++ Redistributable Packages for Visual Studio 2013

Download Visual C++ Redistributable package for VS 2013 and install on Exchange server. Visual C++ Redistributable Packages for Visual Studio 2013 can be downloaded from Microsoft website.

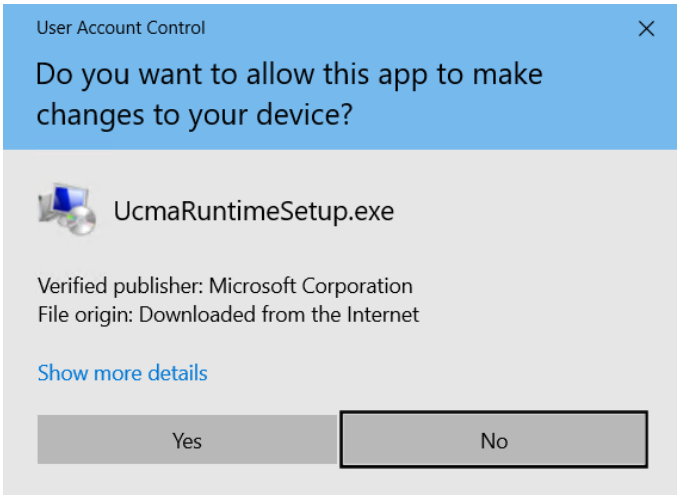


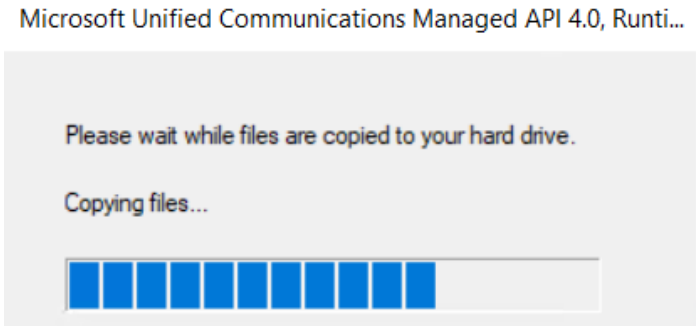
Author: Riaz Javed Butt
Blog: www.msexperttalk.com



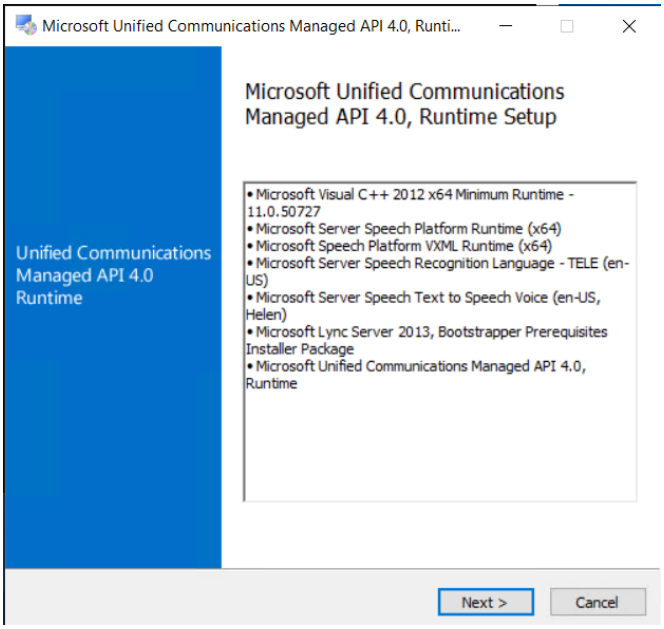
Microsoft Unified Communications Managed API 4.0

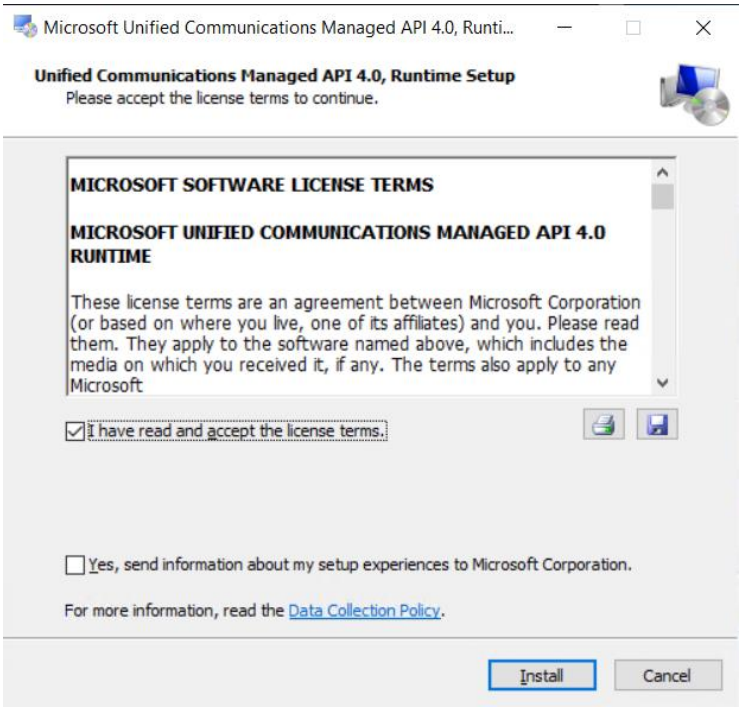
Download and install [Unified Communications Managed API (UCMA) 4.0] package from Microsoft website.



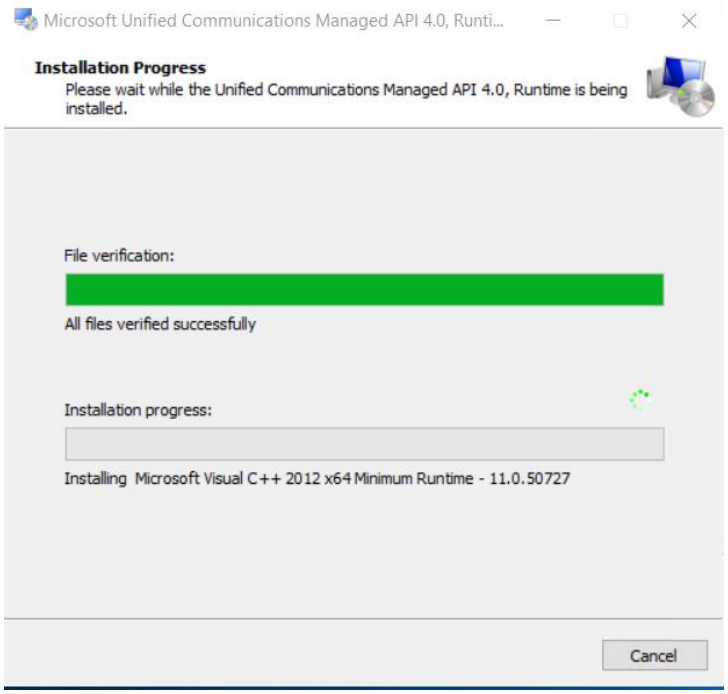


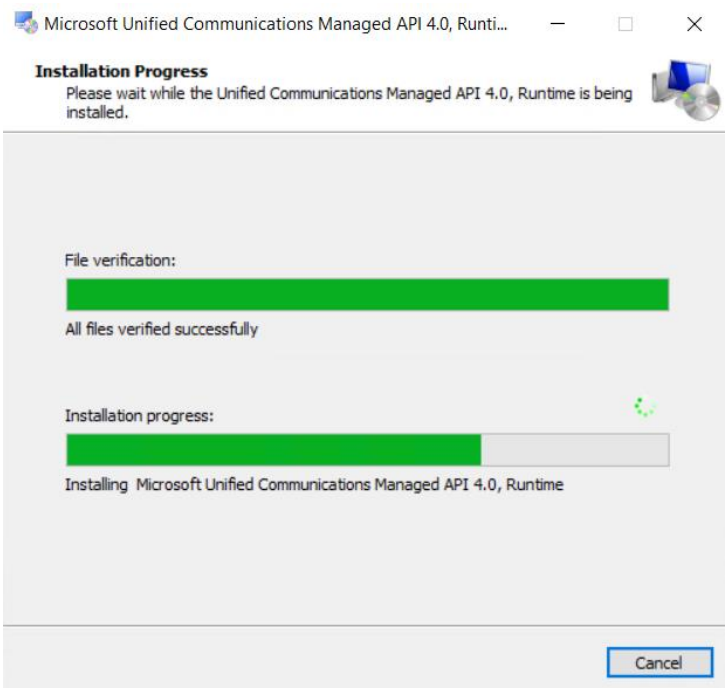
Author: Riaz Javed Butt
Blog: www.msexperttalk.com



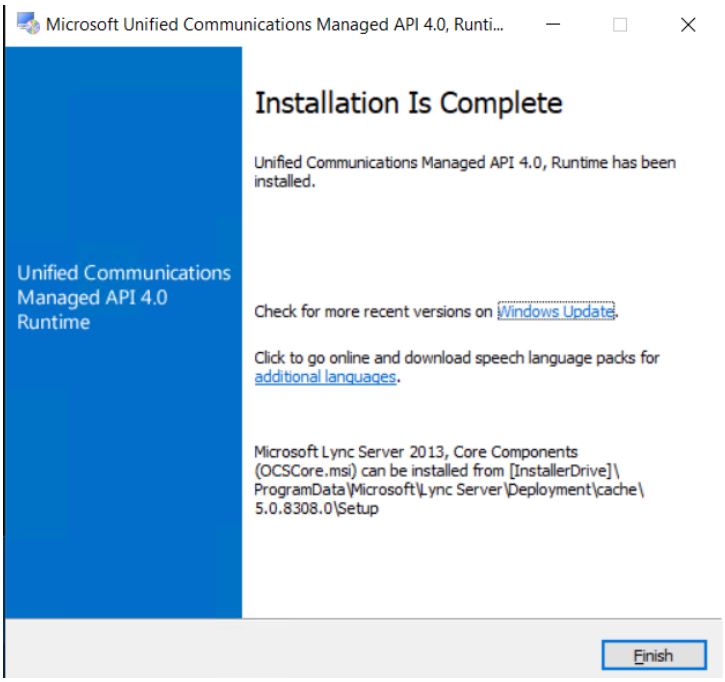


Author: Riaz Javed Butt
Blog: www.msexperttalk.com





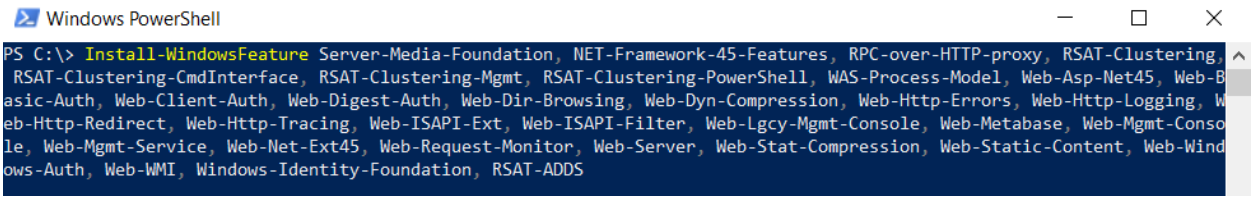
Author: Riaz Javed Butt
Blog: www.msexperttalk.com



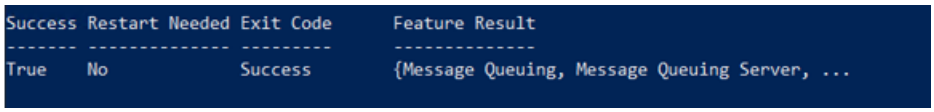
Windows Server 2019 prerequisites for Exchange Server 2019

Run the following powershell cmdlet to install Windows Server 2019 prerequisites for Exchange server 2019.

```
Install-WindowsFeature Server-Media-Foundation, NET-Framework-45-Features, RPC-over-HTTP-proxy, RSAT-Clustering, RSAT-Clustering-CmdInterface, RSAT-Clustering-Mgmt, RSAT-Clustering-PowerShell, 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, RSAT-ADDS
```



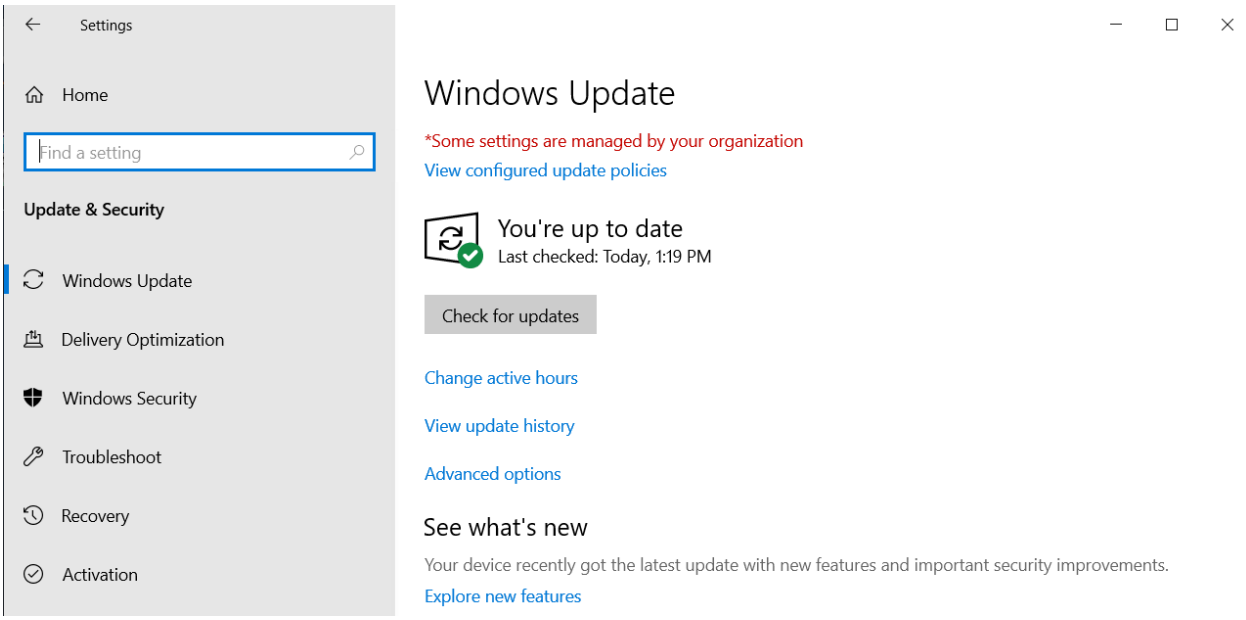
Once installation is completed, you will see a following message in your PowerShell window.



Author: Riaz Javed Butt
Blog: www.msexperttalk.com

Check Windows Updates

Before Installing Exchange Server 2019 or any version of Exchange server, it's highly recommended to ensure you have all windows patches installed on your windows server.



Exchange Server 2019 Installation

Once all pre-requisites are completed. Now is the time to extend your Active Directory with Exchange Server 2019. It's recommended to perform this task after hours and ensure you have a backup of your active directory available before you perform following steps.

Step 1: Extend the Active Directory schema

When you extend the Active Directory schema for Exchange, the following requirements apply:

- Your account needs to be a member of the **Schema Admins** and **Enterprise Admins** security groups. If you have multiple Active Directory forests, make sure you're logged into the right one.
- The computer needs to be a member of the same Active Directory domain and site as the schema master.
- If you use the ***/DomainController:<DomainControllerFQDN>*** switch, you need to specify the domain controller that's the schema master.
- The only supported way to extend the schema for Exchange is to use Setup.exe with */PrepareSchema*, */PrepareAD*, or the Exchange Setup wizard. Other ways of extending the schema aren't supported.

Run the following cmdlet from PowerShell to extend AD Schema for Exchange Server 2019.

```
.\Setup.exe /IAcceptExchangeServerLicenseTerms /PrepareSchema
```

Author: Riaz Javed Butt
Blog: www.msexperttalk.com

```
PS E:\> .\Setup.EXE /IAcceptExchangeServerLicenseTerms /PrepareSchema

Microsoft Exchange Server 2019 Unattended Setup

Copying Files...
File copy complete. Setup will now collect additional information needed for installation.


Performing Microsoft Exchange Server Prerequisite Check

    Prerequisite Analysis                                                   COMPLETED

Configuring Microsoft Exchange Server

    Extending Active Directory schema                                       COMPLETED

The Exchange Server setup operation completed successfully.
```

I have Exchange Server 2019 setup mounted in E Drive.

Step 2: Prepare Active Directory

After Active Directory schema has been extended, you can prepare other parts of Active Directory for Exchange. During this step, Exchange will create containers, objects, and other items in Active Directory to store information. The collection of the Exchange containers, objects, attributes, and so on, is called the *Exchange organization*.

When you prepare Active Directory for Exchange, the following requirements apply:

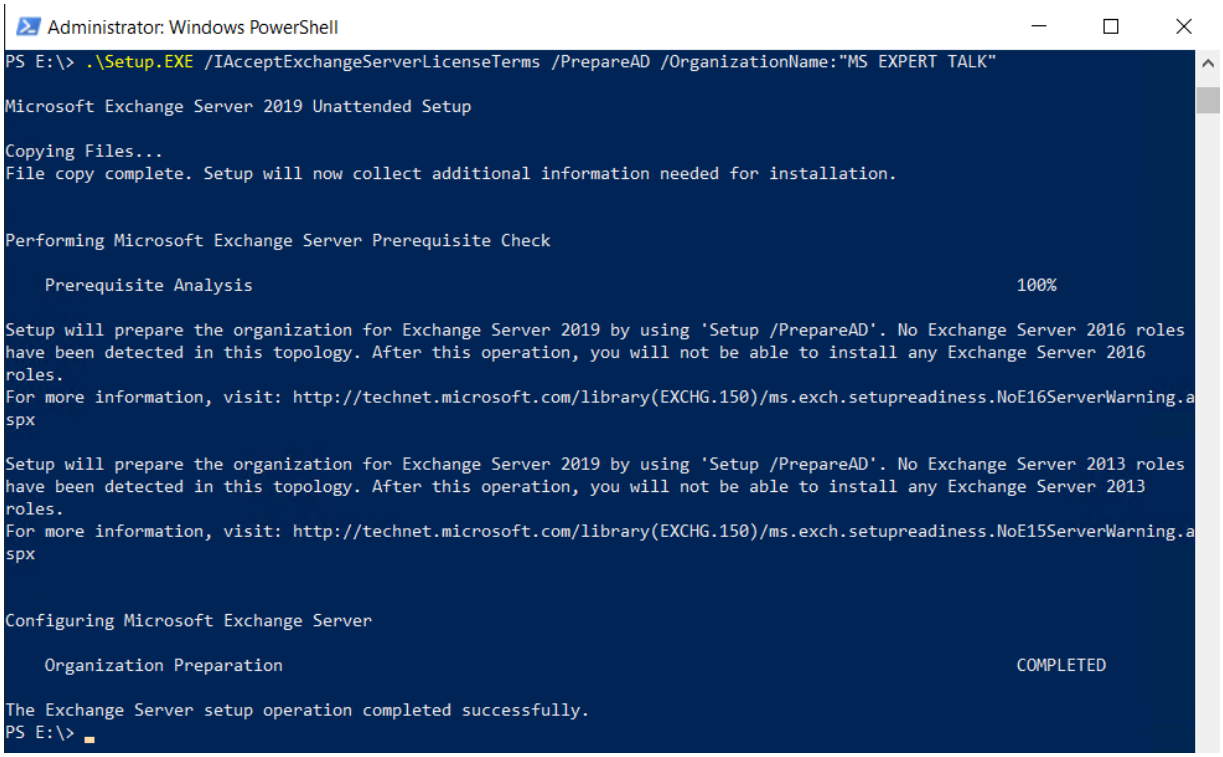
- Your account needs to be a member of the **Enterprise Admins** security group. If you skipped Step 1 because you want the */PrepareAD* command to extend the schema, the account also needs to be a member of the **Schema Admins** security group.
- The computer needs to be needs to be a member of the same Active Directory domain and site as the schema master and must be able to contact all of the domains in the forest on TCP port 389.
- Wait until Active Directory has finished replicating the schema changes from Step 1 to all domain controllers before you try to prepare Active Directory.
- You need to select a name for the Exchange organization. The organization name is used internally by Exchange and isn't typically seen by users, doesn't affect the functionality of Exchange, and doesn't determine what you can use for email addresses.
    - The organization name can't contain more than 64 characters and can't be blank.
    - Valid characters are A to Z, a to z, 0 to 9, hyphen or dash (-), and space, but leading or trailing spaces aren't allowed.
    - You can't change the organization name after it's set.

To prepare Active Directory for Exchange, run the following command in a Windows Command Prompt window:

```
.\Setup.exe /IAcceptExchangeServerLicenseTerms /PrepareAD /OrganizationName: “MS Expert Talk"
```

I’m using the Exchange installation files on drive E: and names the Exchange organization "MS Expert Talk".

Author: Riaz Javed Butt
Blog: www.msexperttalk.com



If you have a hybrid deployment configured between your on-premises organization and Exchange Online, add the */TenantOrganizationConfig* switch to the command.

As in Step 1, you'll need to wait while Active Directory replicates the changes from this step to all your domain controllers before you proceed, and you can use the **repadmin** tool to check the progress of the replication.

Step 3: Prepare Active Directory Domains

The final step is to prepare the Active Directory domain where Exchange servers will be installed or where mail-enabled users will be located. This step creates additional containers and security groups and sets the permission, so Exchange can access them.

If you have multiple domains in your Active Directory forest, you have the following choices in how to prepare them:

- Prepare all domains in the Active Directory forest
- Choose the Active Directory domains to prepare

Regardless of the method you choose, wait until Active Directory has finished replicating the changes from Step 2 to all domain controllers before you proceed. Otherwise, you might get an error when you try to prepare the domains.

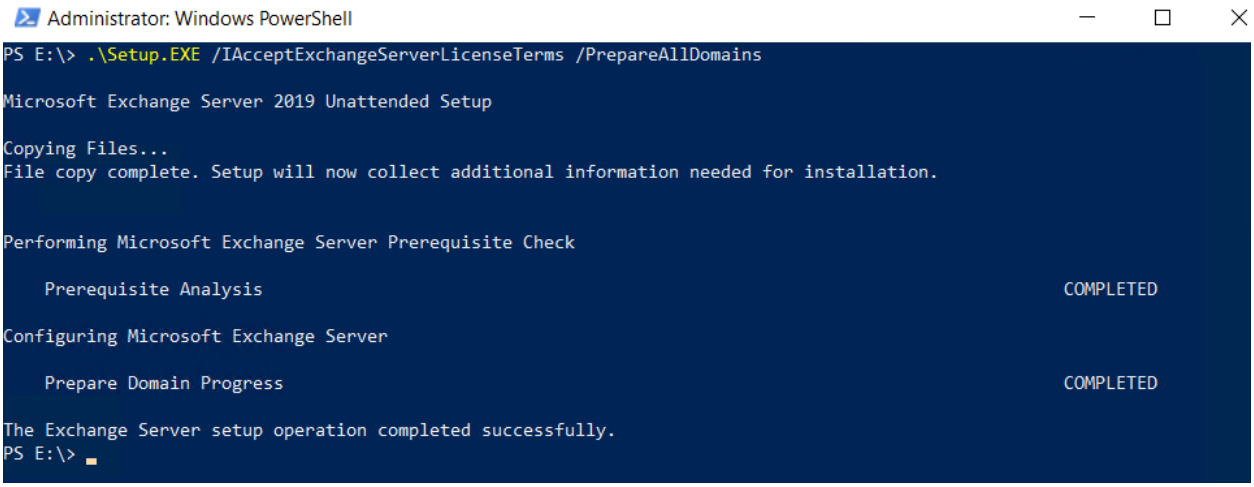
Step 3.1: Prepare all domains in the Active Directory forest

When you prepare all domains in the Active Directory forest for Exchange, your account needs to be a member of the Enterprise Admins security group.

Author: Riaz Javed Butt
Blog: www.msexperttalk.com

To prepare all domains in your Active Directory forest, run the following command in a Windows Command Prompt window:

```
.\Setup.exe /IAcceptExchangeServerLicenseTerms /PrepareAllDomains
```



Step 3.2: Choose the Active Directory domains to prepare

You don't need to do this step in the domain where you ran the */PrepareAD* command in Step 2, because the */PrepareAD* command has automatically prepared that domain for you.

When you prepare specific domains in your Active Directory forest, the following requirements apply:

- You need to prepare every domain where an Exchange server will be installed.
- You need to prepare any domain that will contain mail-enabled users, even if the domain won't contain any Exchange servers.
- Your account needs to be a member of the **Domain Admins** group in the domain that you want to prepare.
- If the domain that you want to prepare was created **after** you ran /**PrepareAD** in Step 2, your account also needs to be a member of the **Organization Management** role group in Exchange.

To a prepare a specific domain in your Active Directory forest, run the following command in a Windows Command Prompt window:

```
.\Setup.exe /IAcceptExchangeServerLicenseTerms /PrepareDomain:<Domain Name>
```

If you have a single domain AD forest, you are not required to perform step 3.2. For this tutorial, I only have signle forest root domain and I am not required to run this cmdlets in my topology.

Exchange Active Directory versions

The tables in the following sections contain the Exchange objects in Active Directory that are updated each time you install a new version of Exchange (a new installation or a CU). You can compare the object versions you see with the values in the tables to verify that Exchange successfully updated Active Directory during the installation.

- **rangeUpper** is located in the **Schema** naming context in the properties of the **ms-Exch-Schema-Version-Pt** container.
- **objectVersion (Default)** is the **objectVersion** attribute located in the **Default naming context** in the properties of the **Microsoft Exchange System Objects** container.
- **objectVersion (Configuration)** is the **objectVersion** attribute located in the **Configuration** naming context in **Services** > **Microsoft Exchange** in the properties of the **<Your Exchange Organization Name>** container.

Exchange 2019 version	rangeUpper	objectVersion (Default)	objectVersion (Configuration)
Exchange 2019 RTM	17000	13236	16751
Exchange 2019 Preview	15332	13236	16213

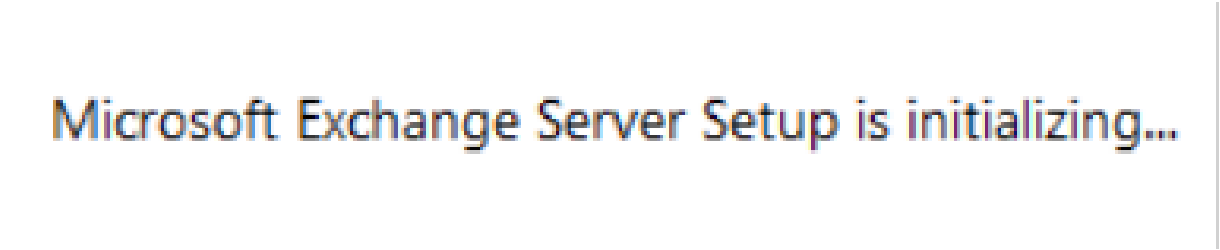
Exchange Server 2019 Installation

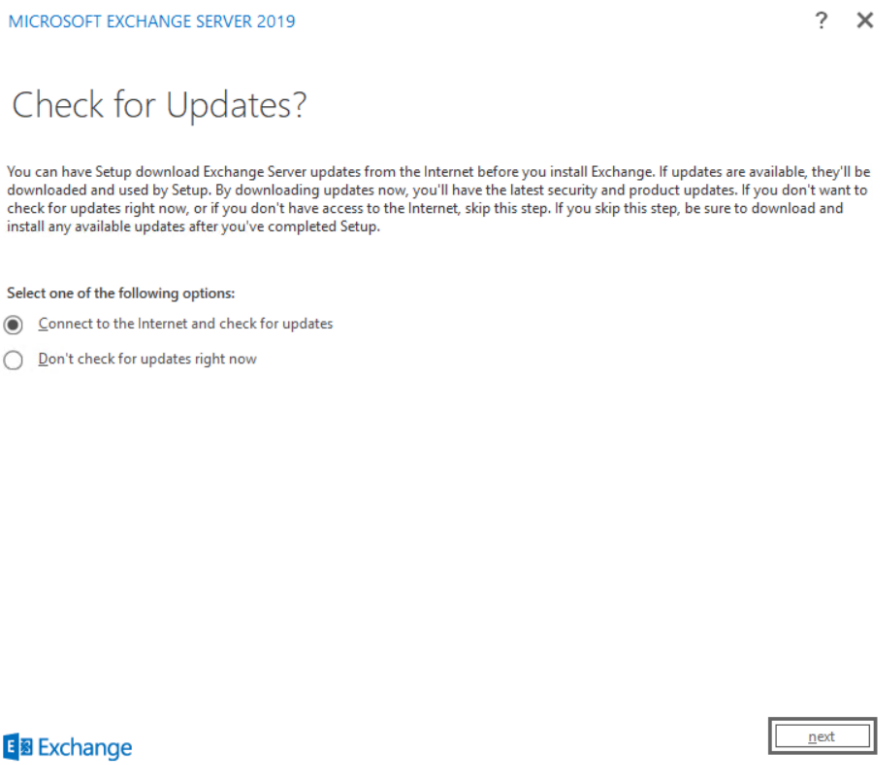
Before you install an Exchange Server 2019, verify the following prerequisites:

- The target server must be a member of an Active Directory domain.
- The account that you use to install Exchange requires the following permissions:
    - Enterprise Admins group membership: Required if this is the first Exchange server in the organization.
    - Schema Admins group membership: Required if you haven't previously extended the Active Directory schema or prepared Active Directory for Exchange 2019.
    - Exchange Organization Management role group membership: Required if you've already prepared the Active Directory domain that will contain the Exchange server, or if other Exchange servers already exist in the organization.

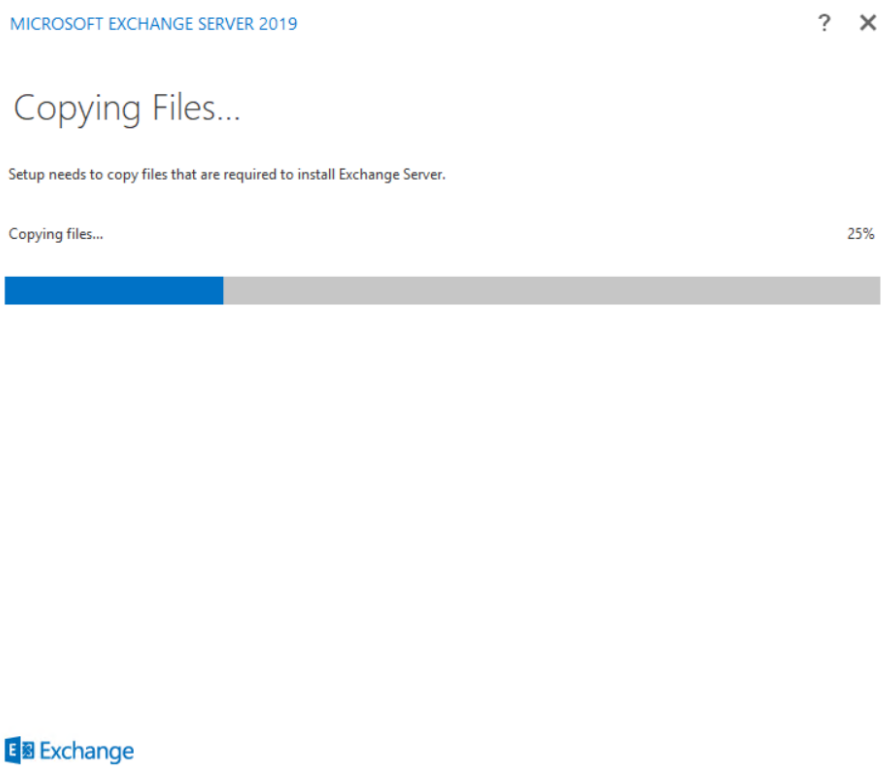
At this point, you are ready to install your first Exchange 2019 server. As mentioned previously in the document, this lab is focused on installation of Exchange server 2019 on Windows Server 2019 with Desktop Experience. I'll upload a separate documentation for installing Exchange Server 2019 on Windows Server Core. To install Exchange Server 2019, follow the following steps:

- Run Setup.exe as administrator



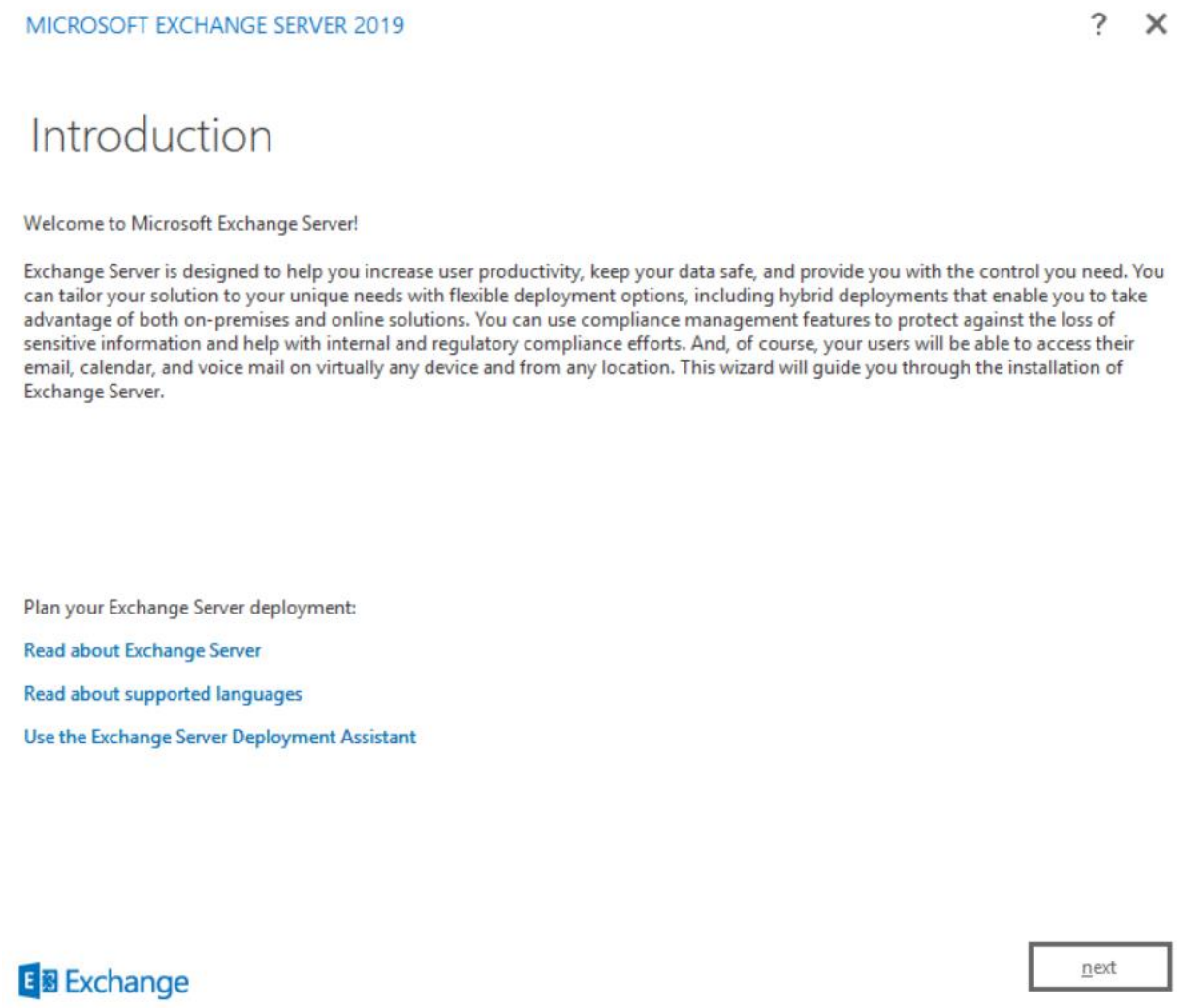


It's recommended to always check for updates before you start the installation, Click **Next** to proceed. In next step, setup will start the copy process to copy Exchange files.



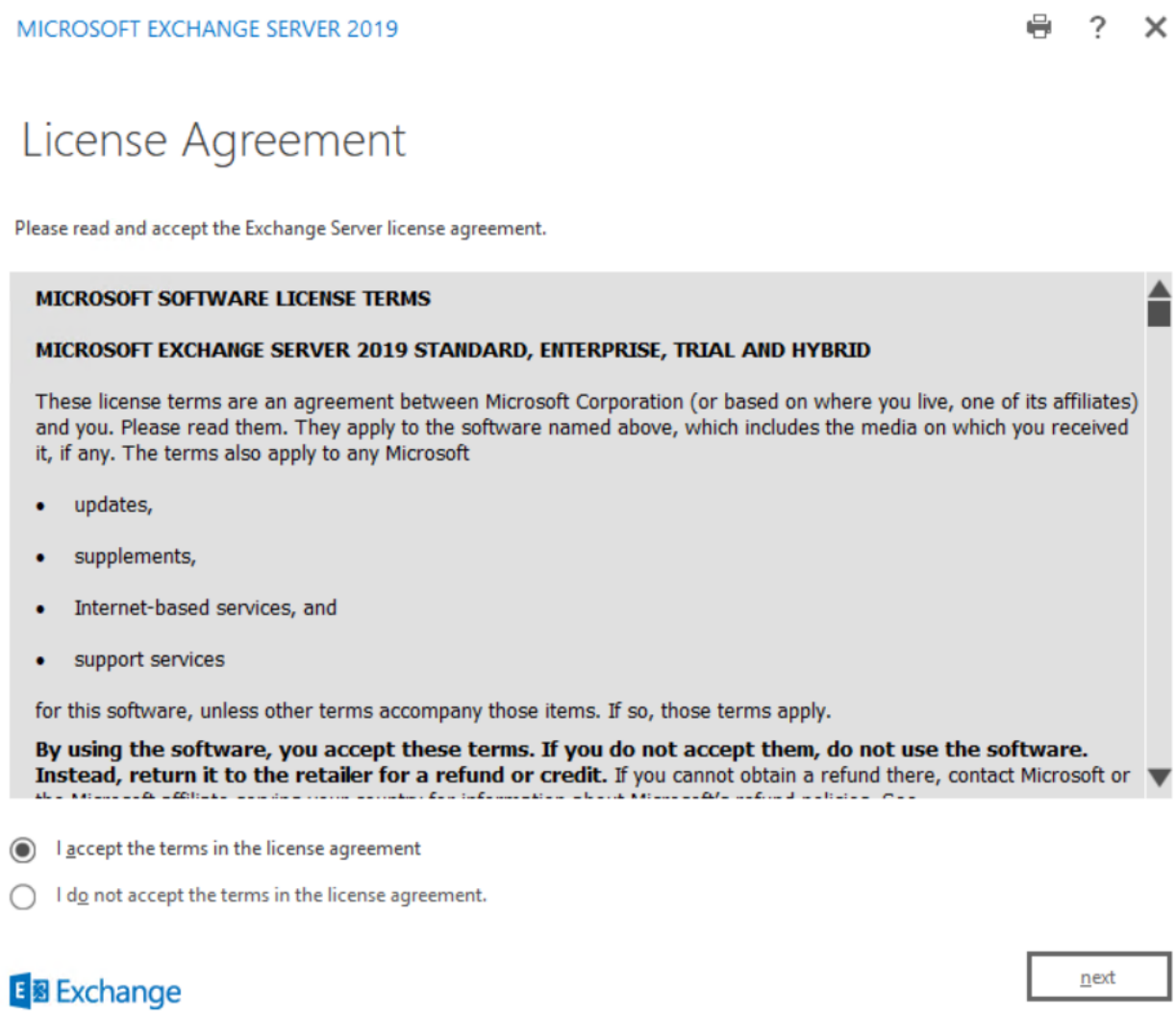
The **Copying Files** page shows the progress of copying files to the local hard drive. Typically, the files are copied to **%WinDir%\Temp\ExchangeSetup**, but you can confirm the location in the Exchange Setup log at **C:\ExchangeSetupLogs\ExchangeSetup.log**

Author: Riaz Javed Butt
Blog: www.msexperttalk.com



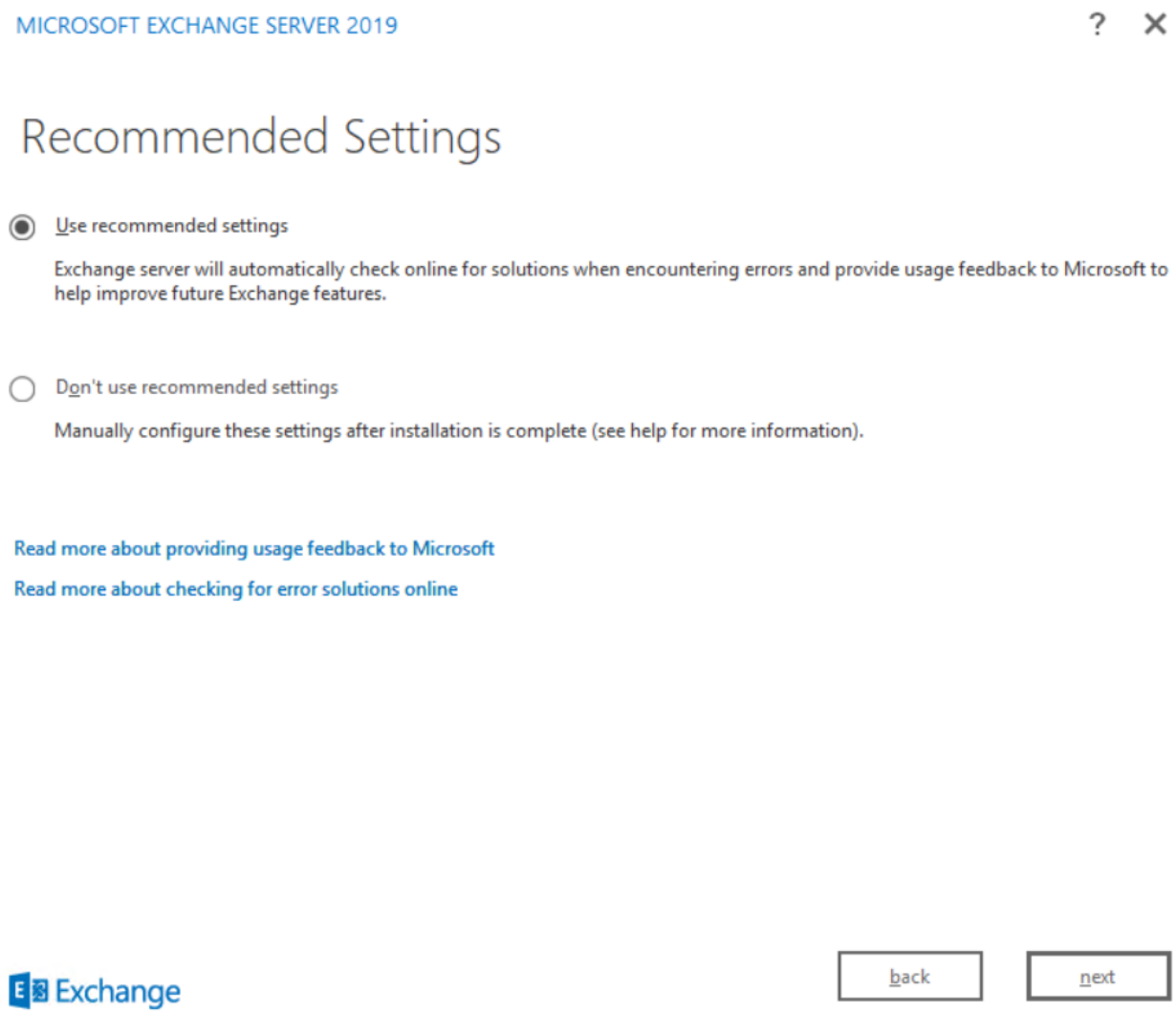
On the **Introduction** page, Microsoft recommend that you visit the Exchange Server deployment planning links if you haven't already reviewed them. Click **Next** to continue.

Author: Riaz Javed Butt
Blog: www.msexperttalk.com



On the **License Agreement** page, review the software license terms, select **I accept the terms in the license agreement**, and then click **Next** to continue. I would say you probably don't have any other option other then accepting the agreement or you can't install Exchange server ☺

Author: Riaz Javed Butt
Blog: www.msexperttalk.com

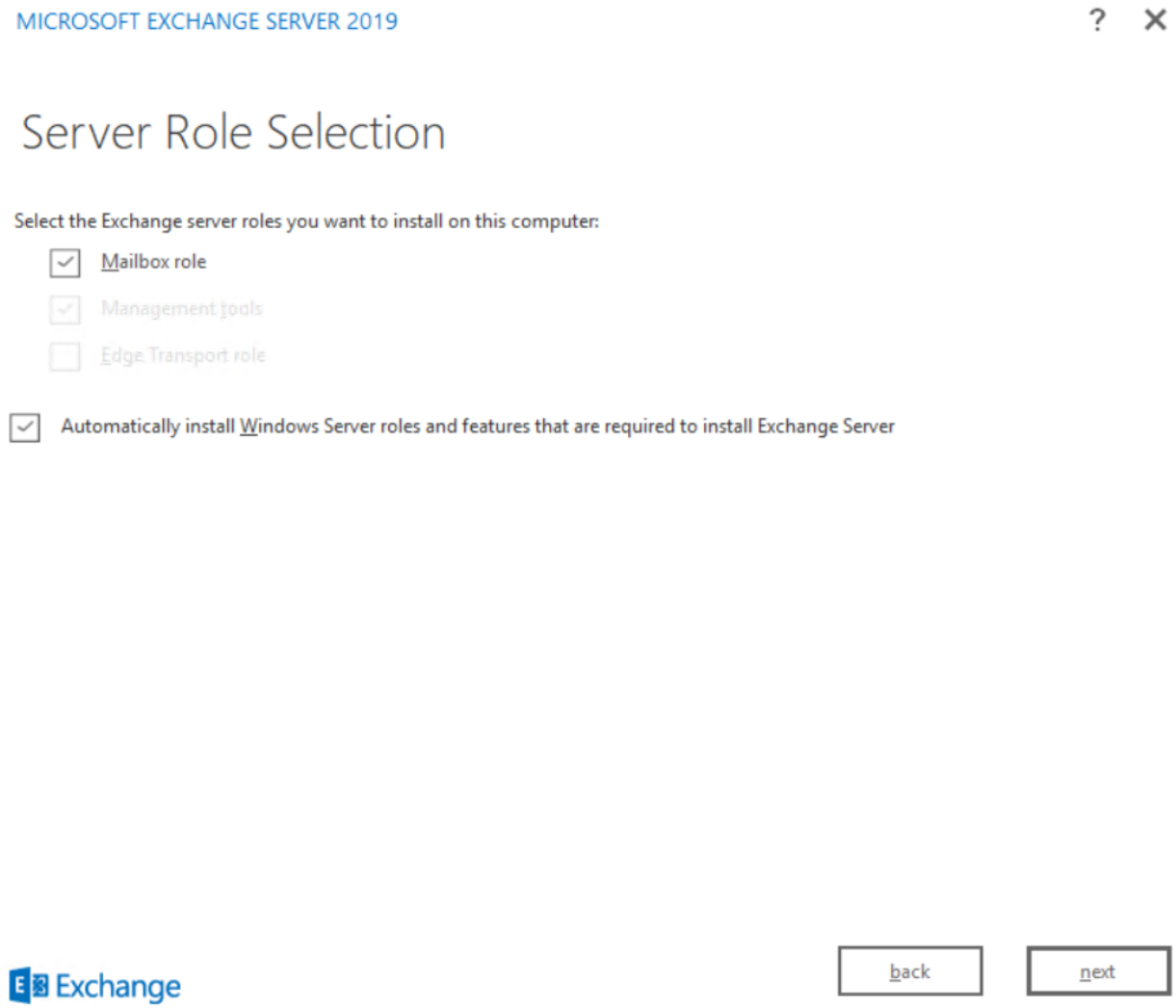


On the **Recommended Settings** page, choose one of the following settings:

- **Use recommended settings**: Exchange automatically sends error reports and information about your computer hardware and how you use Exchange to Microsoft. For information about what's sent to Microsoft and how it's used, click **?** or the help links on the page.
- **Don't use recommended settings**: These settings are disabled, but you can enable them at any time after Setup completes.

I highly recommend to us "**Recommended Settings".** Click **Next** to continue.

Author: Riaz Javed Butt
Blog: www.msexperttalk.com



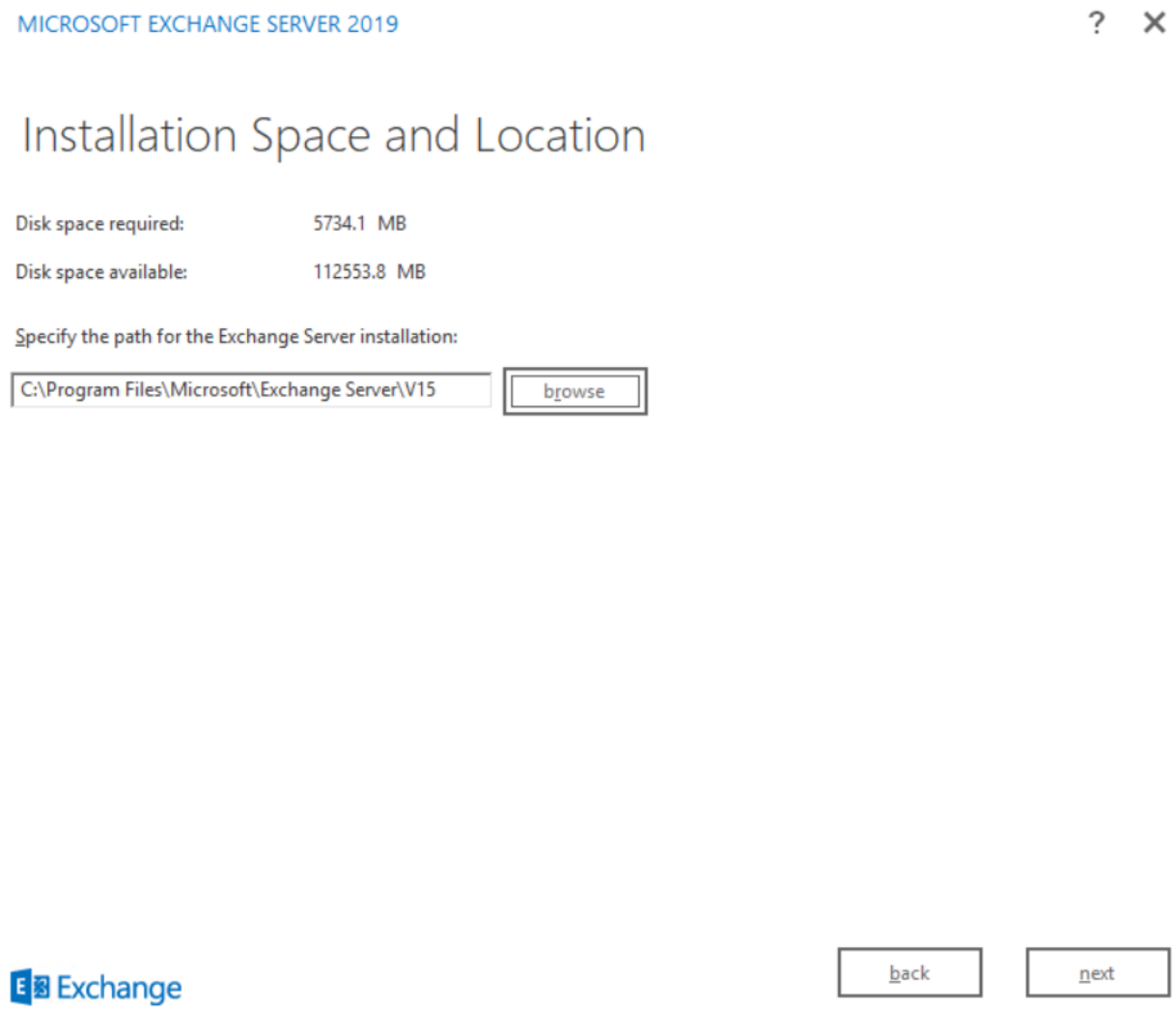
On the **Server Role Selection** page, configure the following options:

- **Mailbox role**: Select this option, which also automatically installs the **Management Tools**.
- **Automatically install Windows Server roles and features that are required to install Exchange**: Select this option to have the Setup wizard install the required Windows prerequisites. You might need to reboot the computer to complete the installation of some Windows features. If you don't select this option, you need to install the Windows features manually.

Selecting this option installs only the *Windows features* that are required by Exchange. You need to install other prerequisites manually.

Click **Next** to continue.

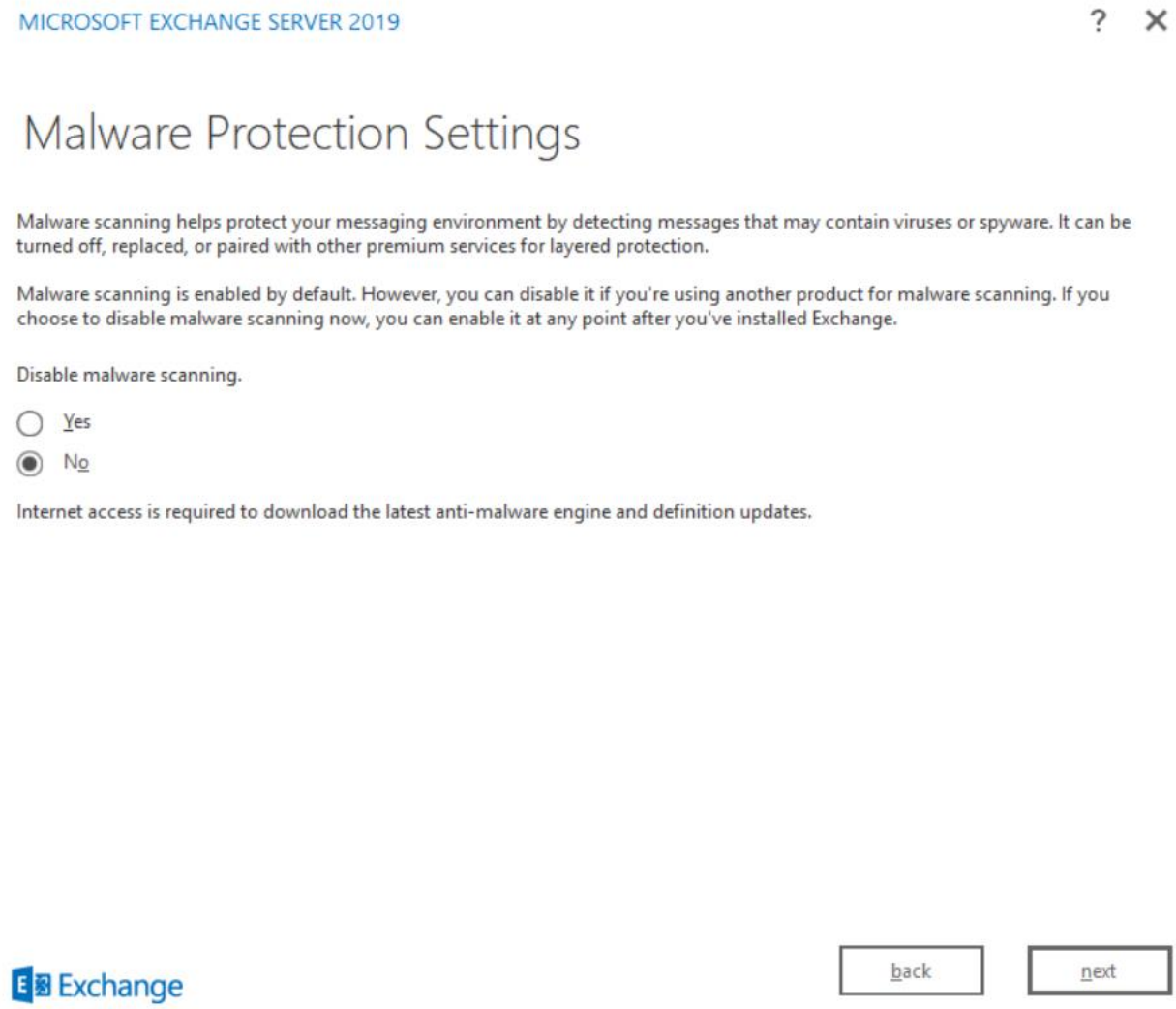
Author: Riaz Javed Butt
Blog: www.msexperttalk.com



On the **Installation Space and Location** page, either accept the default installation location (**C:\Program Files\Microsoft\Exchange Server\V15**) or click **Browse** to choose a new location. Make sure that you have enough disk space available in the location where you want to install Exchange. It's highly recommended not to install Exchange Server on OS drive. As I'm doing an installation in lab environment, we're good to do the installation on C/OS drive. For production implementation, I highly recommend leveraging a separate drive for Exchange installation.

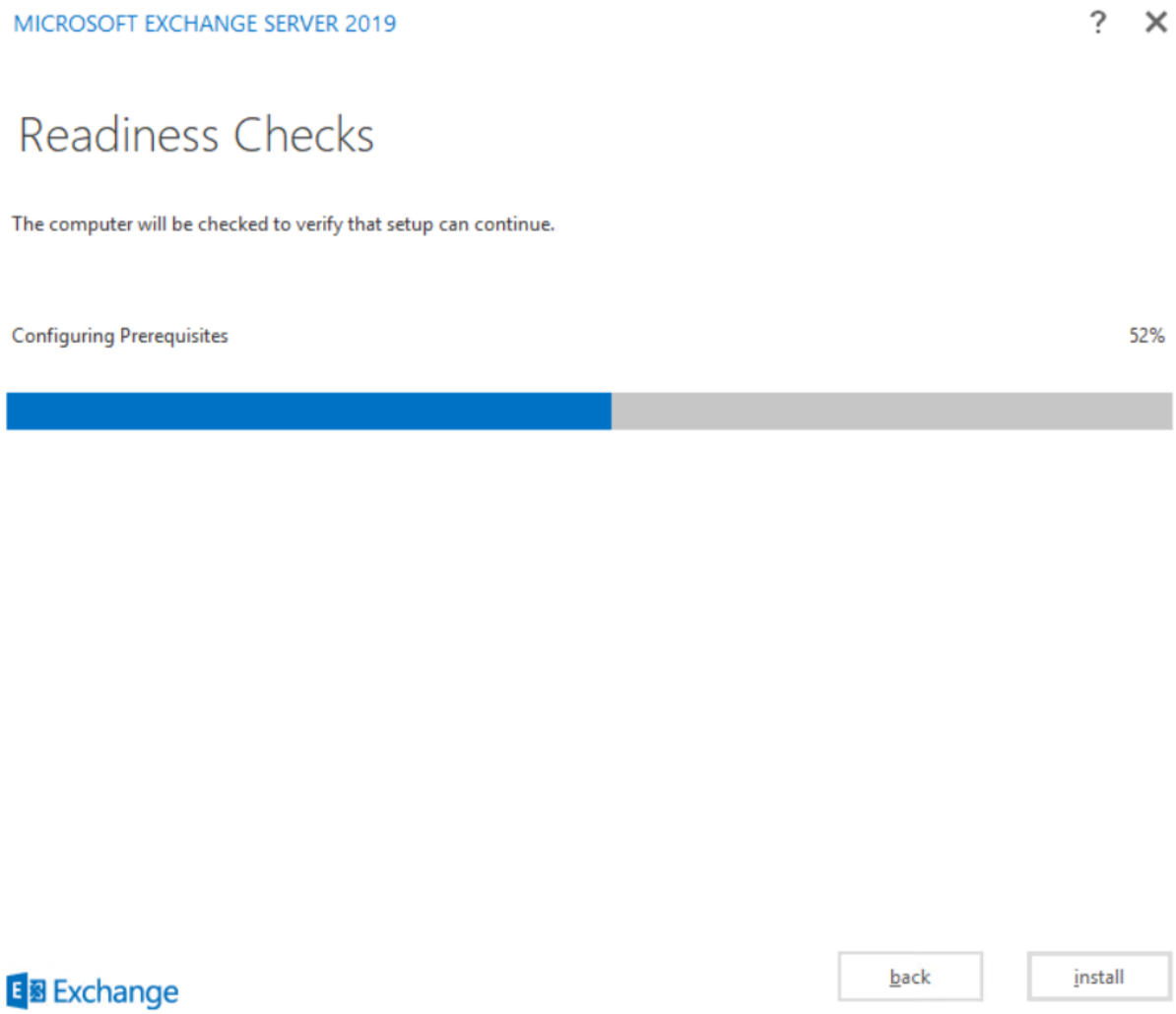
Click **Next** to continue.

Author: Riaz Javed Butt
Blog: www.msexperttalk.com



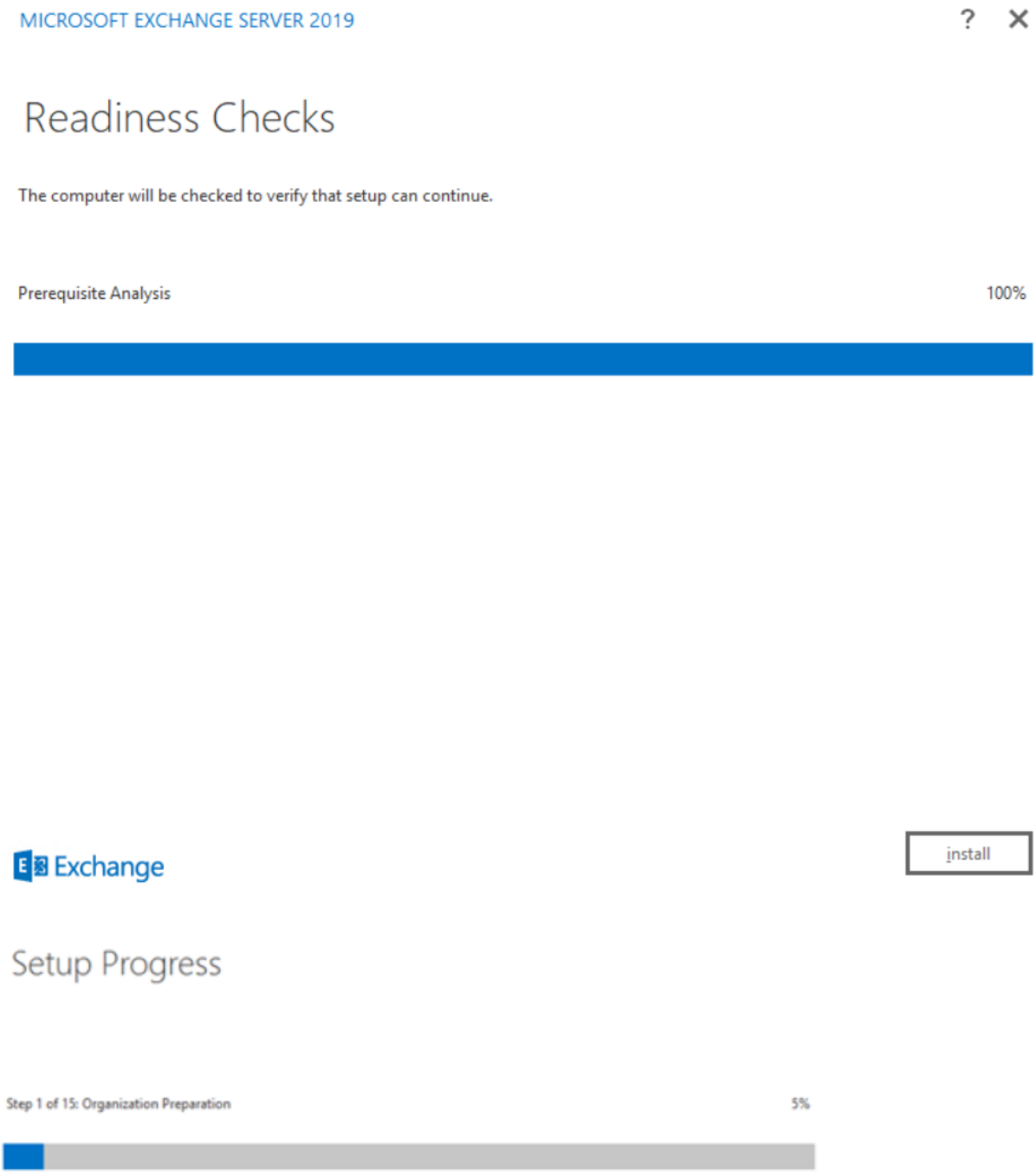
On the **Malware Protection Settings** page, choose whether you want disable malware scanning. Malware scanning is enabled by default (the value **No** is selected). If you disable malware scanning, you can enable it in the future. Click **Next** to continue.

Author: Riaz Javed Butt
Blog: www.msexperttalk.com



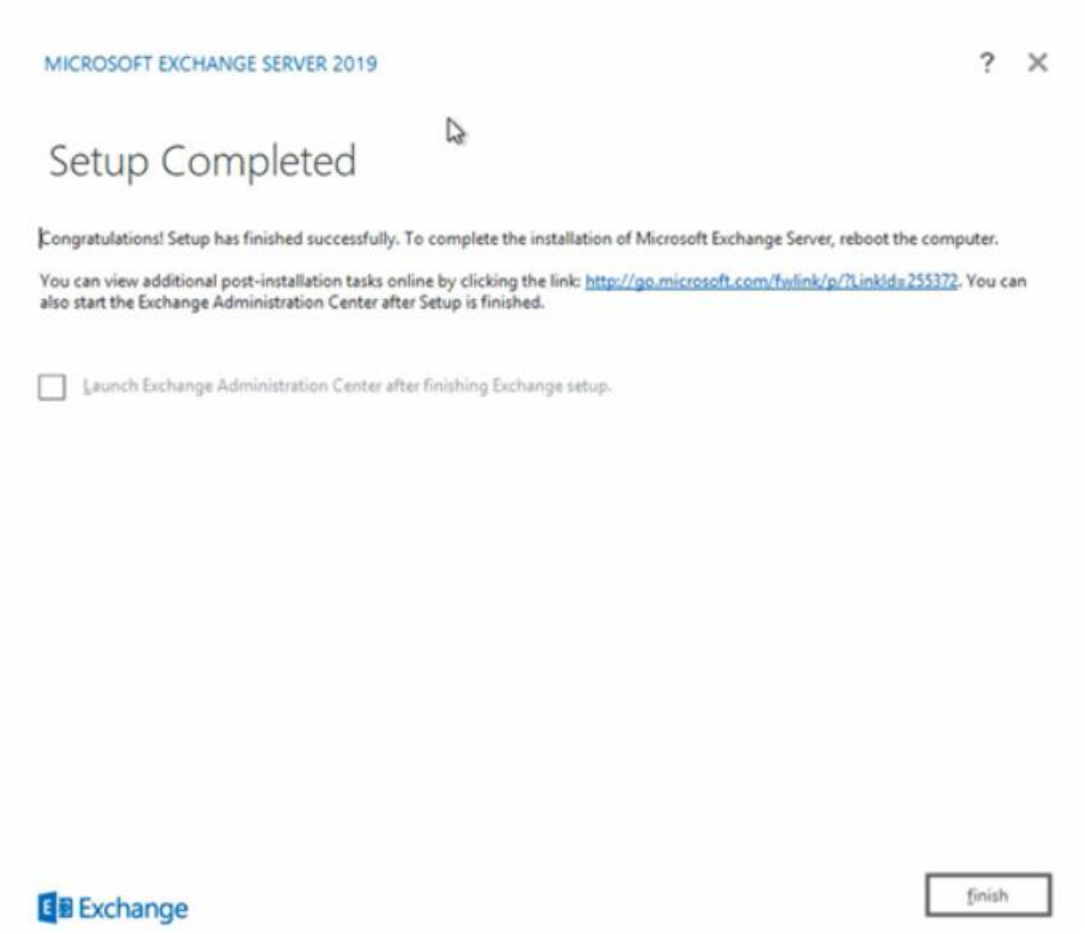
On the **Readiness Checks** page, verify that the organization and server role prerequisite checks completed successfully. If they haven't, the only option on the page is **Retry**, so you need to resolve the errors before you can continue.

Author: Riaz Javed Butt
Blog: www.msexperttalk.com



On the **Setup Progress** page, a progress bar indicates how the installation is proceeding.

Author: Riaz Javed Butt
Blog: www.msexperttalk.com



On the **Setup Completed** page, click **Finish**, and then restart the computer.

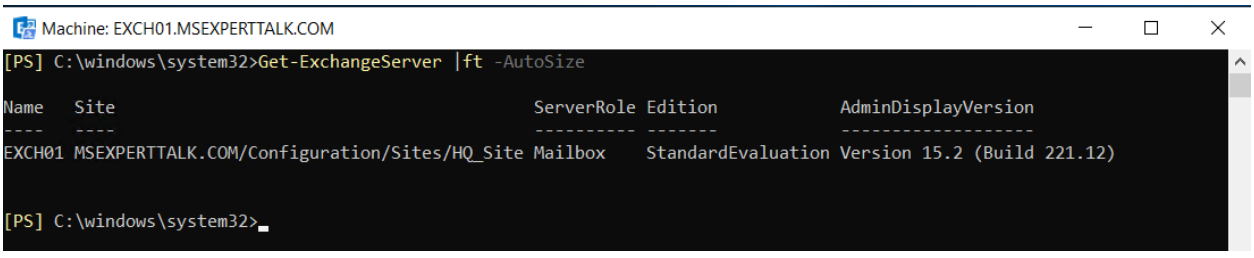
Verify Exchange Server 2019 Installation

After you install Exchange Server 2019, Microsoft recommend that you verify the installation by running the **Get-ExchangeServer** cmdlet and by reviewing the Exchange Setup log. If the setup process fails or errors occur during installation, you can use the Setup log to find the source of the problem.

Get-ExchangeServer Cmdlet

To verify that Exchange installed successfully, run the following commands in the Exchange Management Shell.

```
Get-ExchangeServer
```

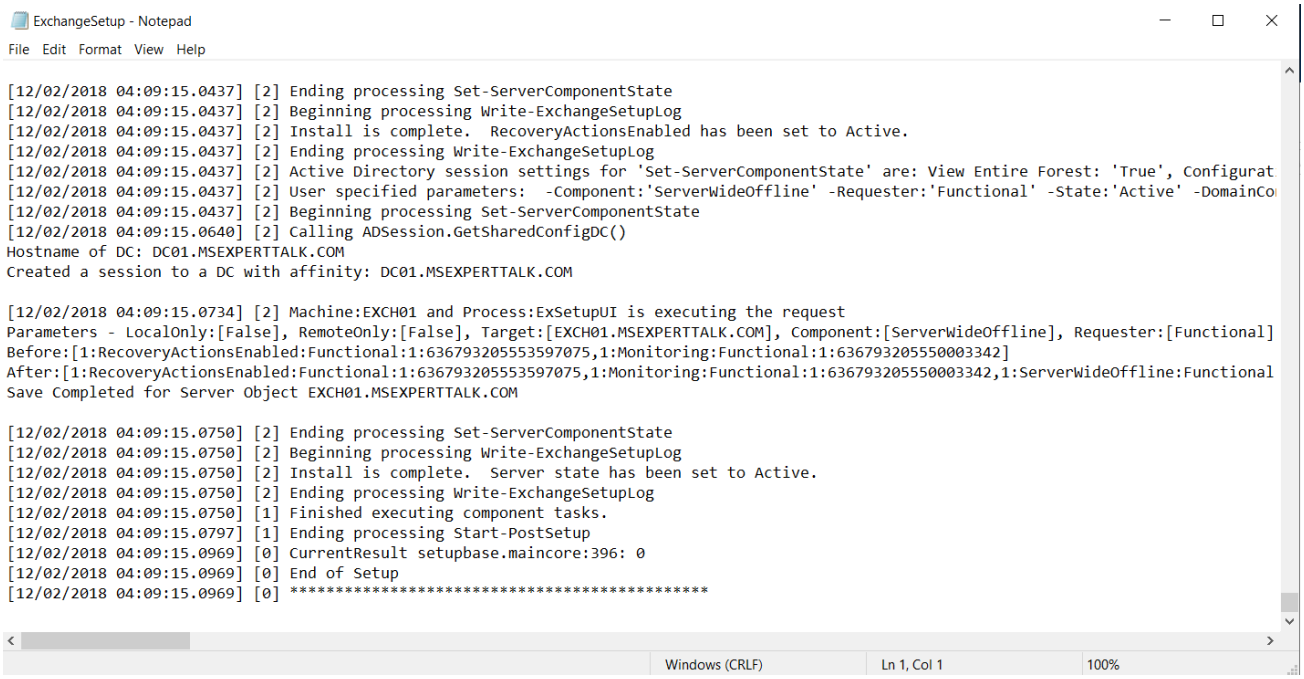


Author: Riaz Javed Butt
Blog: www.msexperttalk.com

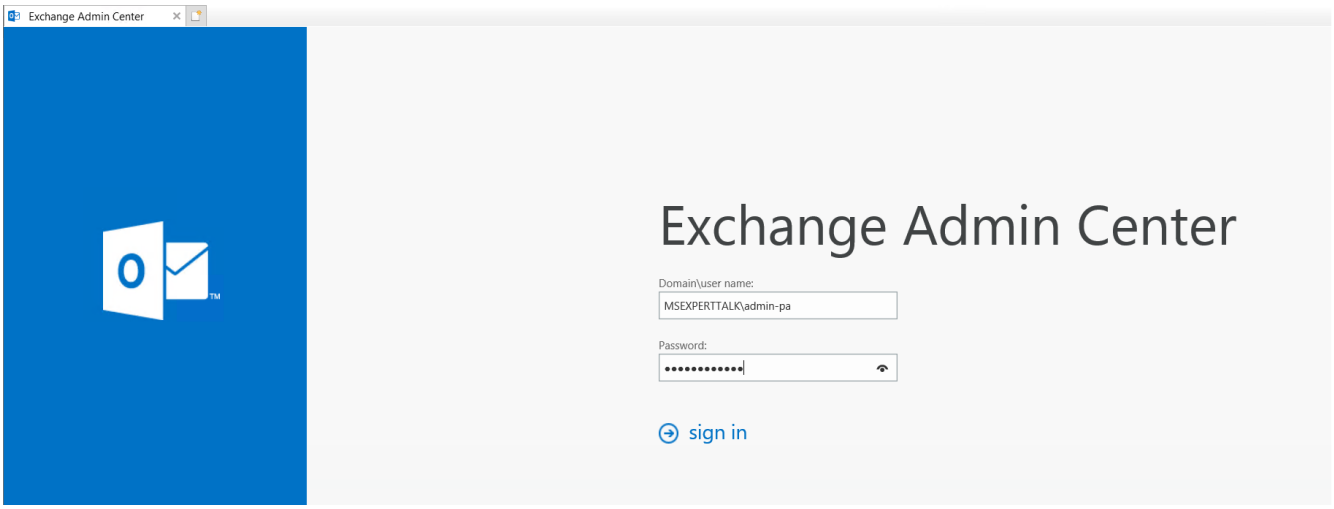
Exchange Setup Logs

Exchange Setup logs events in the **Application** log of the Windows Server. This log contains a history of each action that the system takes during Exchange setup and any errors that occurred (By default, the logging method is set to Verbose). You can use the Windows **Event Viewer** to find the messages related to Exchange setup.

The Exchange Setup log is available at ***<system drive>*:\ExchangeSetupLogs\ExchangeSetup.log** (*<system drive>* is the drive where Windows is installed). The Setup log tracks the progress of every task during the Exchange installation and configuration. The file contains information about the status of the prerequisite and system readiness checks before installation starts, the application installation progress, and the configuration changes that are made to the system. Check this log file to verify that Exchange was installed as expected. Below is the snipped of how ExchangeSetup.Logs file looks like.



Author: Riaz Javed Butt
Blog: www.msexperttalk.com



Exchange 2019 Post Installation Steps

Once you have your Exchange 2019 server installed, next step is to perform post installation configuration to ensure your server is ready to handle day to day messaging operations. Post installation activities includes:

- Create admin mailbox
- Exchange 2019 Product Activation
- Configure mail flow and Client access on Exchange Servers
- Install Exchange Management tools
- Configure IM integration
- Configure Virtual Directories
- Configure Offline Address Book

Rename Exchange Database

Just like previous version of Exchange, Exchange 2019 installation also creates a default database with the name "**Mailbox Database 123456789**" in default installation directory. In my case, the default database is being created in "***C:\Program Files\Microsoft\Exchange Server\V15\Mailbox***" as I have installed Exchange Server 2019 in default directory.

It's not recommended to install Exchange server on operating system drive.

One of the Exchange 2019 Post-Installation step is to rename the default database as per the naming convention used by your organization. There are two methods available to rename your database in Exchange 2019.

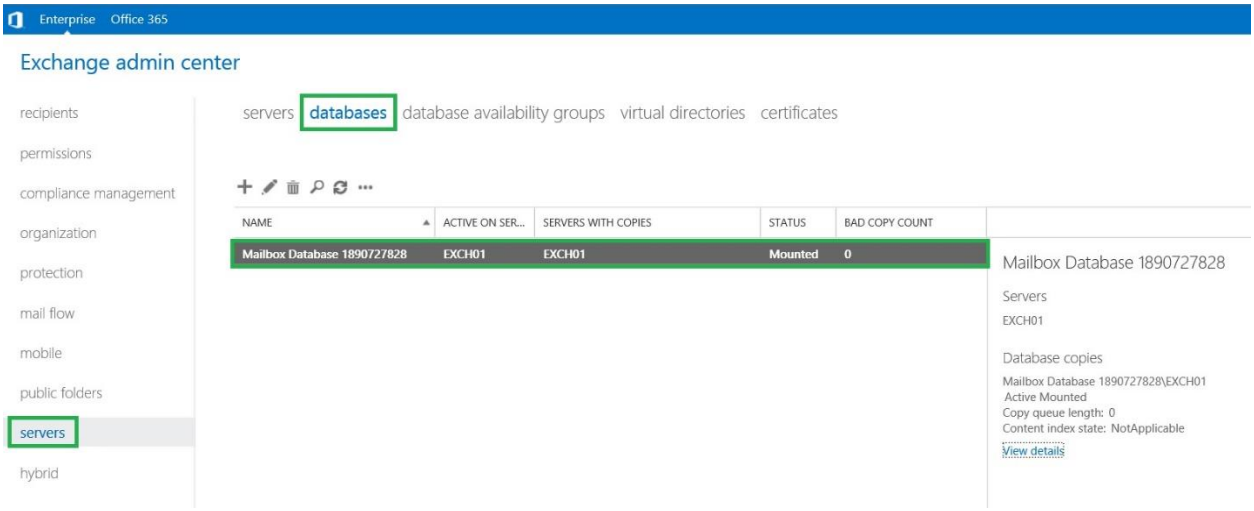
- Rename Exchange 2019 Database from GUI
- Rename Exchange 2019 Database from Exchange Management Shell

Author: Riaz Javed Butt
Blog: www.msexperttalk.com

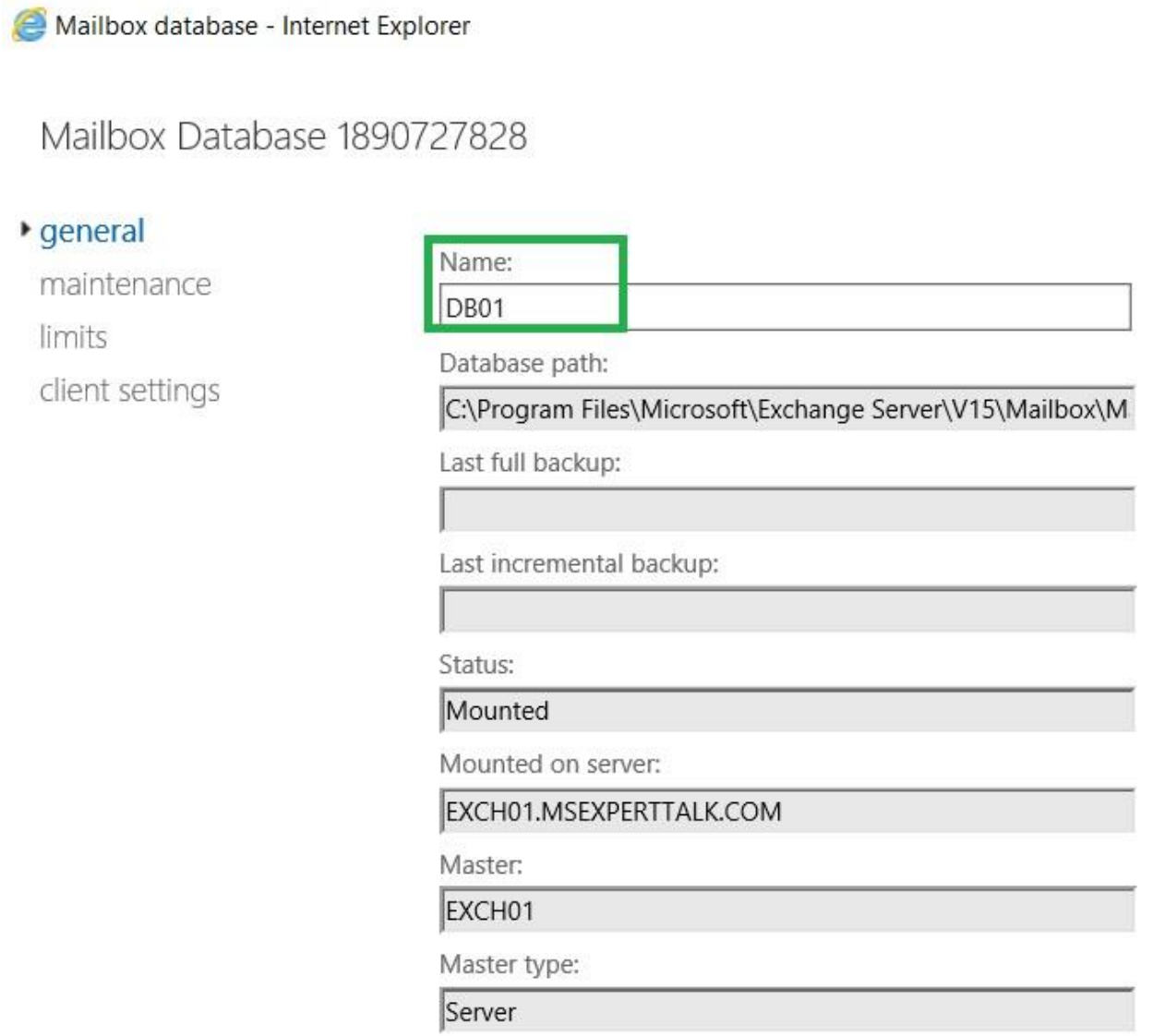
Option 1 - Rename Exchange 2019 Database from GUI

To rename your database using GUI method, follow the following steps.

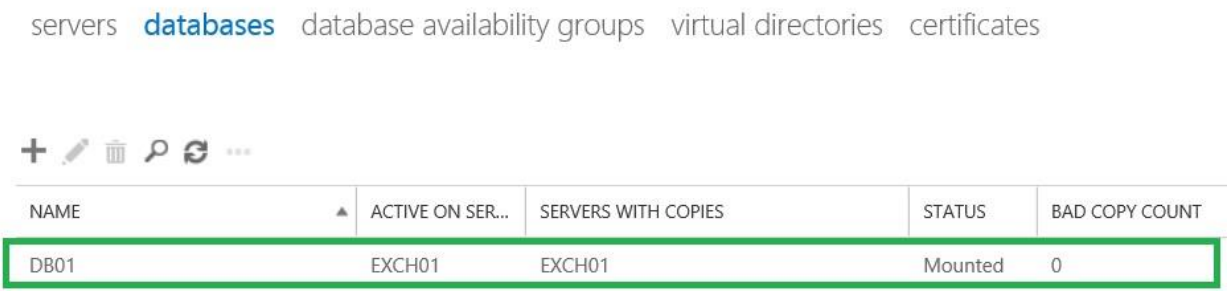
- Login to Exchange Admin Center.
- Navigate to Exchange Admin Center –> Servers –> Databases
- Select the database and click on Edit



- Enter the new name of the Database in **"Name"** field and Click on Save



- Hit Save button and you are done renaming your database via GUI.

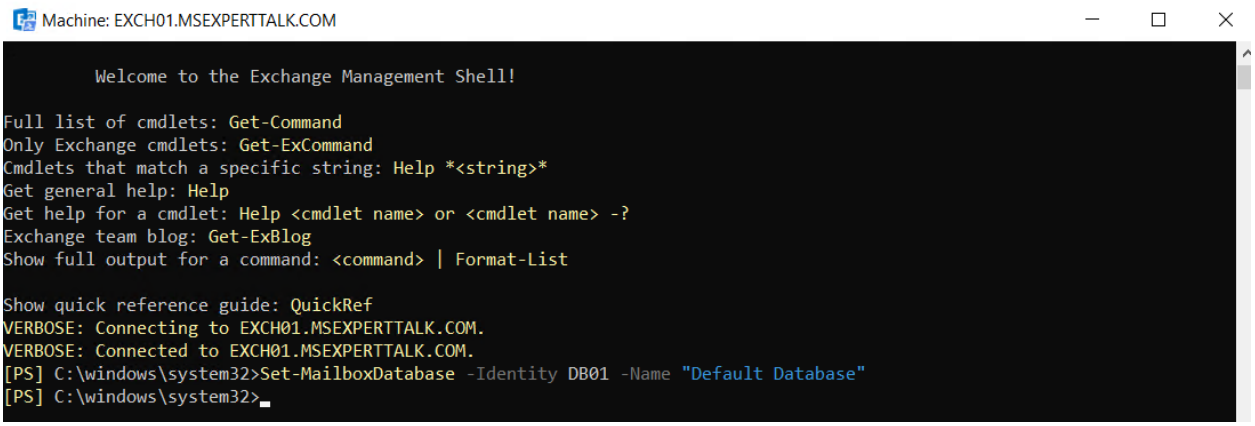


Option 2 - Rename the database by using Exchange Management Shell

Another method of renaming your Exchange 2019 database is to use **Exchange Management Shell**. To rename your database using EMS, follow the following steps.

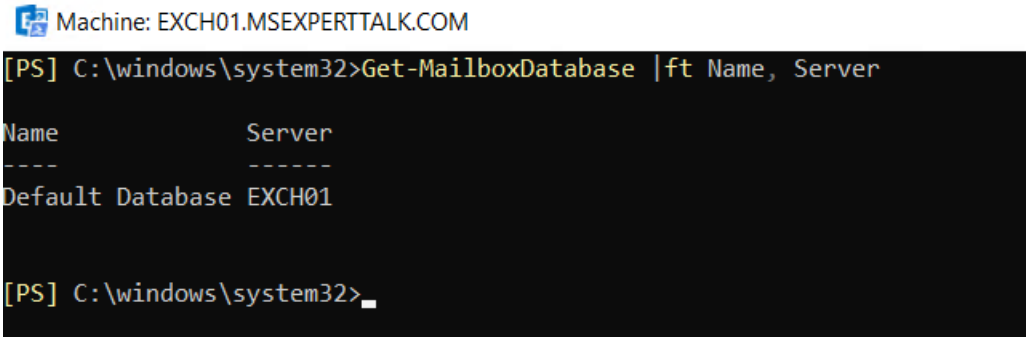
- Run Exchange Management Shell as Administrator
- Run the following cmdlet in Exchange Management Shell

```
C:\> Set-Mailboxdatabase -Identity DB01 -Name “Default Database”
```



To verify that the database is renamed, run the following cmdlet to retrieve database information

- Get-MailboxDatabase | ft Name, Server



Activate Exchange Server 2019

A product key tells Exchange Server 2019 that you have purchased a Standard or Enterprise Edition license.

Enterprise Edition let you mount more than five databases per server in addition to everything that’s available with a Standard Edition license. If you want to read more about Exchange licensing, see Exchange Server editions and versions. If you don’t enter a product key, your server is automatically

licensed as a trial edition. The trial edition has Exchange Standard Edition server features and is helpful if you want to try out Exchange before you buy it, or to run tests in a lab.

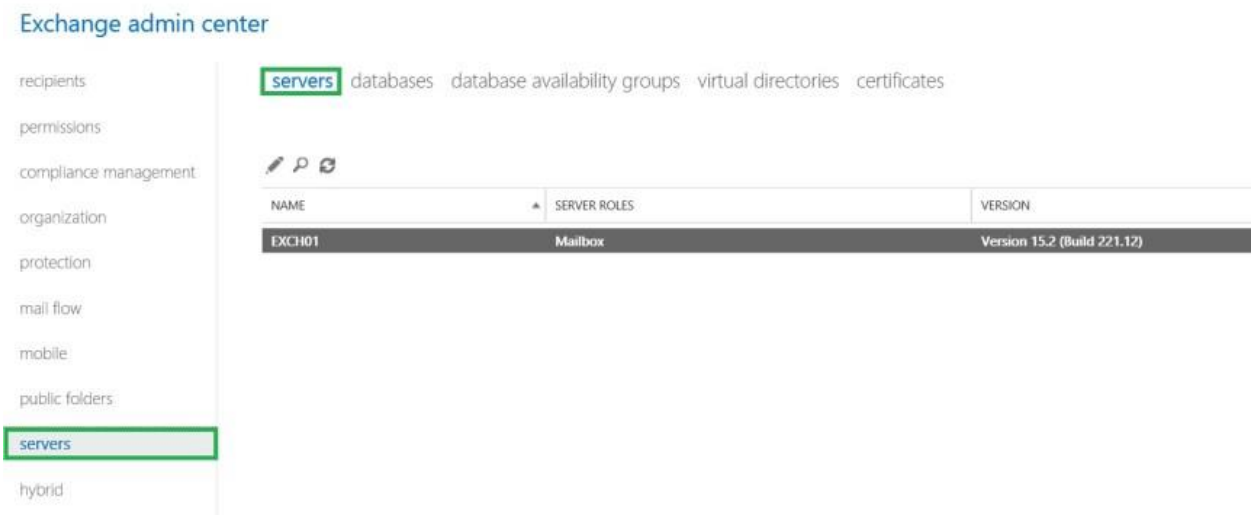
Exchange Server 2019 edition trial edition is valid for up to 180 days. If you want to keep using the server beyond 180 days, you'll need to enter a product key or the Exchange admin center (EAC) will start to show reminders that you need to enter a product key to license the server.

Exchange Server 2019 product key can be entered by using Exchange Admin Center (GUI) or by using Exchange Management Shell. You can use either of these options to enter your Exchange Server product key. Once you enter the product key, you need to restart Information Store service.

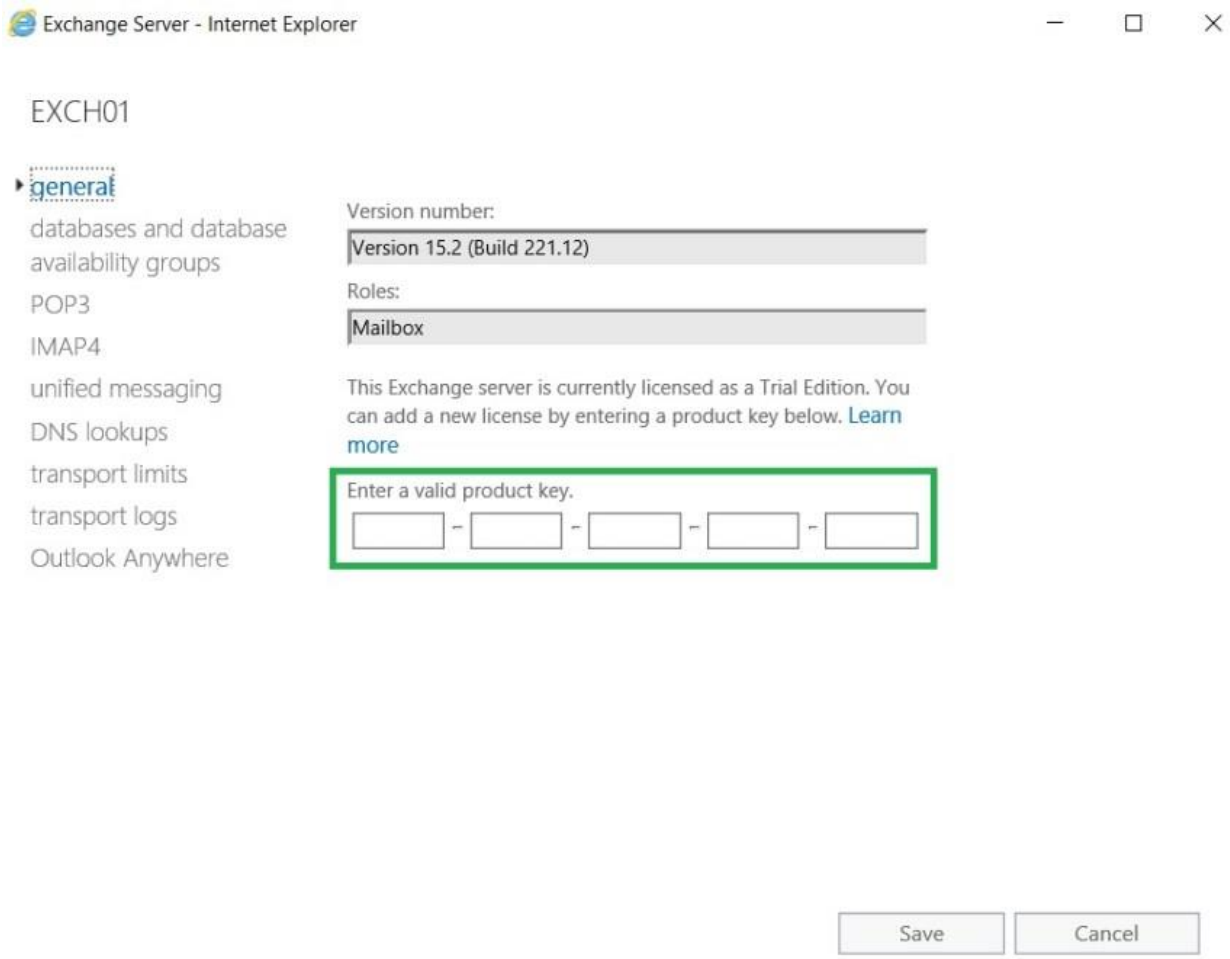
Option 1 – Enter the Product key using GUI

To enter Exchange Server 2019 product key using Exchange Admin Center, Follow the below steps:

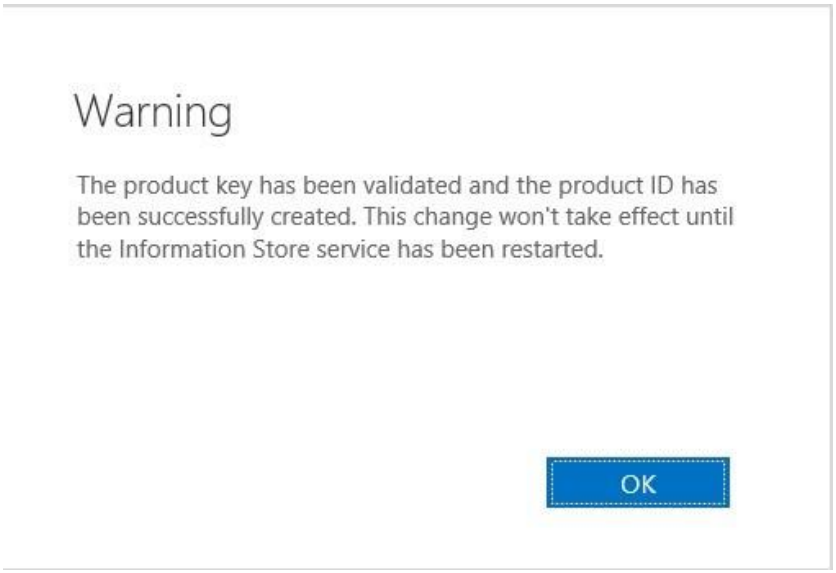
- In the Exchange Admin Center, Navigate to **Servers** > **Servers**, select the server you want to license, and then click **Edit** or Click **Enter Product Key** option in details pane.



- The Exchange server properties window opens. On the **General tab,** enter the product key in the **Enter a valid product key** text box.



- When you're finished, click **Save**. You will see the following message to restart your Exchange Information Store service.



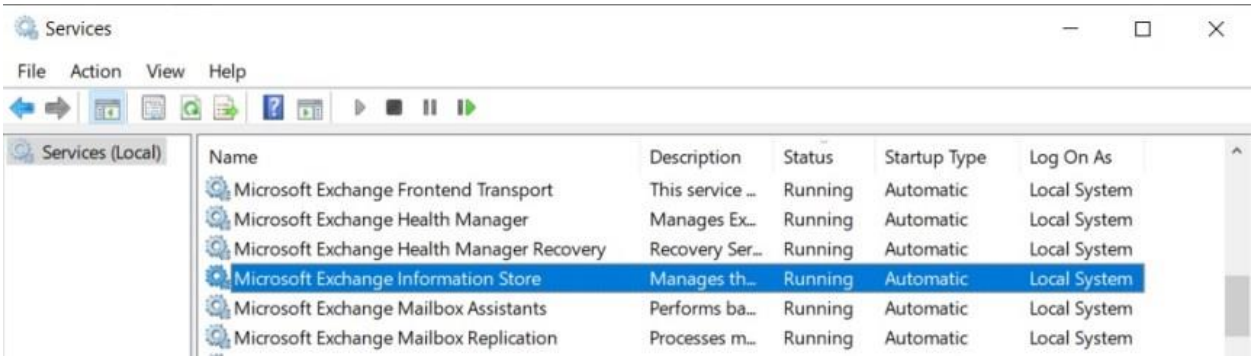
Author: Riaz Javed Butt
Blog: www.msexperttalk.com

After you license a mailbox server, do the following steps to restart the Microsoft Exchange Information Store service:

- On the Exchange server, open the Windows Services console. Open Server Manager, and then click **Tools** > **Services**.

You can also launch services snap in by running the command **services.msc** from the **Run** dialog, a Command Prompt window, or the Exchange Management Shell.

- In the list of services, right-click on **Microsoft Exchange Information Store**, and then click **Restart**.



Once you restart the service, Your Exchange Server 2019 product is activated.

Option 2 – Enter the Product key using Exchange Management Shell

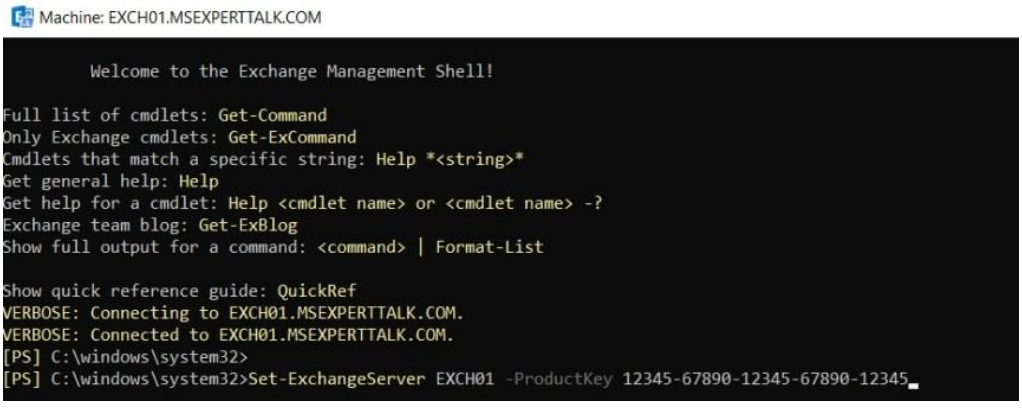
Exchange Server 2019 can product key can be activated with Exchange Management Shell. To enter the product key in the Exchange Management Shell, use this syntax:

```
Set-ExchangeServer <ServerName> -ProductKey <Enter Product Key>
```

Note that this command works to license an unlicensed server or to upgrade a licensed server from a Standard Edition license to an Enterprise Edition license.

This example license the Exchange server named EXCH01.

```
Set-ExchangeServer EXCH01 -ProductKey 12345-67890-12345-67892-09876
```



Once the product key is activated, run the following comdlet to restart Exchange Information Store service.

```
Restart-Service MSExchangeIS
```

For detailed syntax and parameter information, see Set-ExchangeServer.

Configure mail flow and client access on Exchange servers

After you've installed Exchange Server 2019, you need to configure Exchange for mail flow and client access. Without these steps, you won't be able to send mail to the internet and external clients (for example, Microsoft Outlook, and Exchange ActiveSync devices) won't be able to connect to your Exchange.

You will receive certificate warnings when you connect to the Exchange admin center (EAC) website until you configure a secure socket layer (SSL) certificate on the Mailbox server.

Create an internet Send connector

When install your first Exchange 2019 server, the server can not send email outside of your Exchange organization. To send email outside of your Exchange organization, you need to create a Send connector.

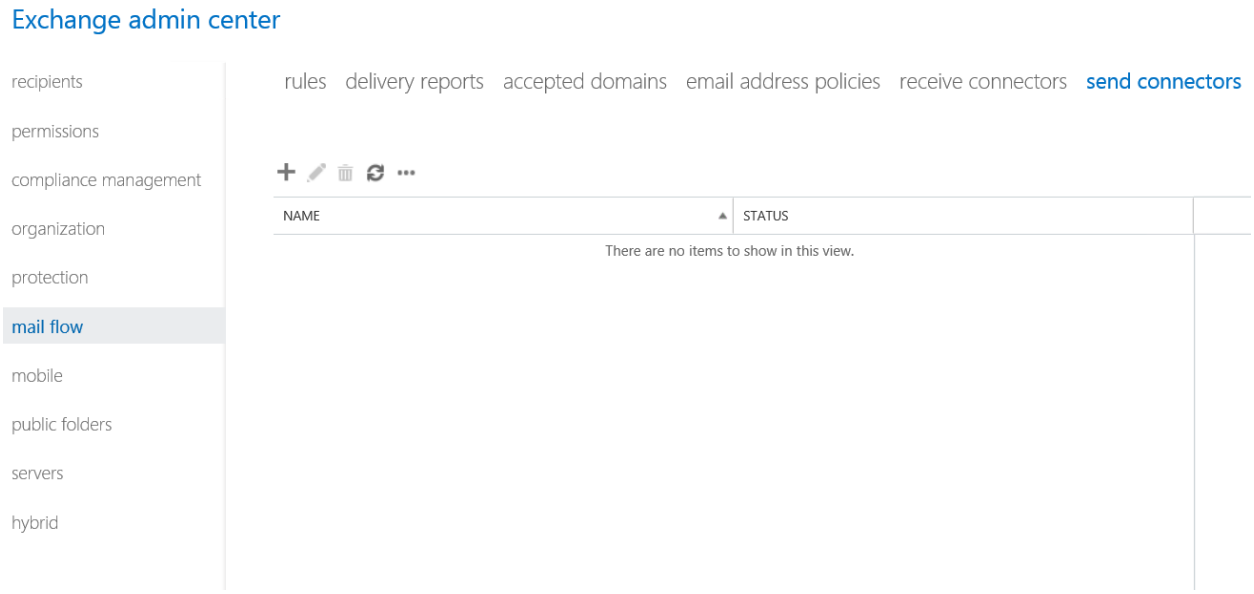
By default, a Receive connector named "Default Frontend <ServerName>_" is created when Exchange is installed. This Receive connector accepts anonymous SMTP connections from external servers. You don't need to do any additional configuration if this is the functionality you want. If you want to restrict inbound connections from external servers, modify the **Default Frontend <Mailbox server>** Receive connector on the Mailbox server.

Until you create a Send connector, mail can't flow from your Exchange to the internet. The exception is if you install an Edge Transport in your perimeter network and subscribe the Edge Transport to your Exchange organization.

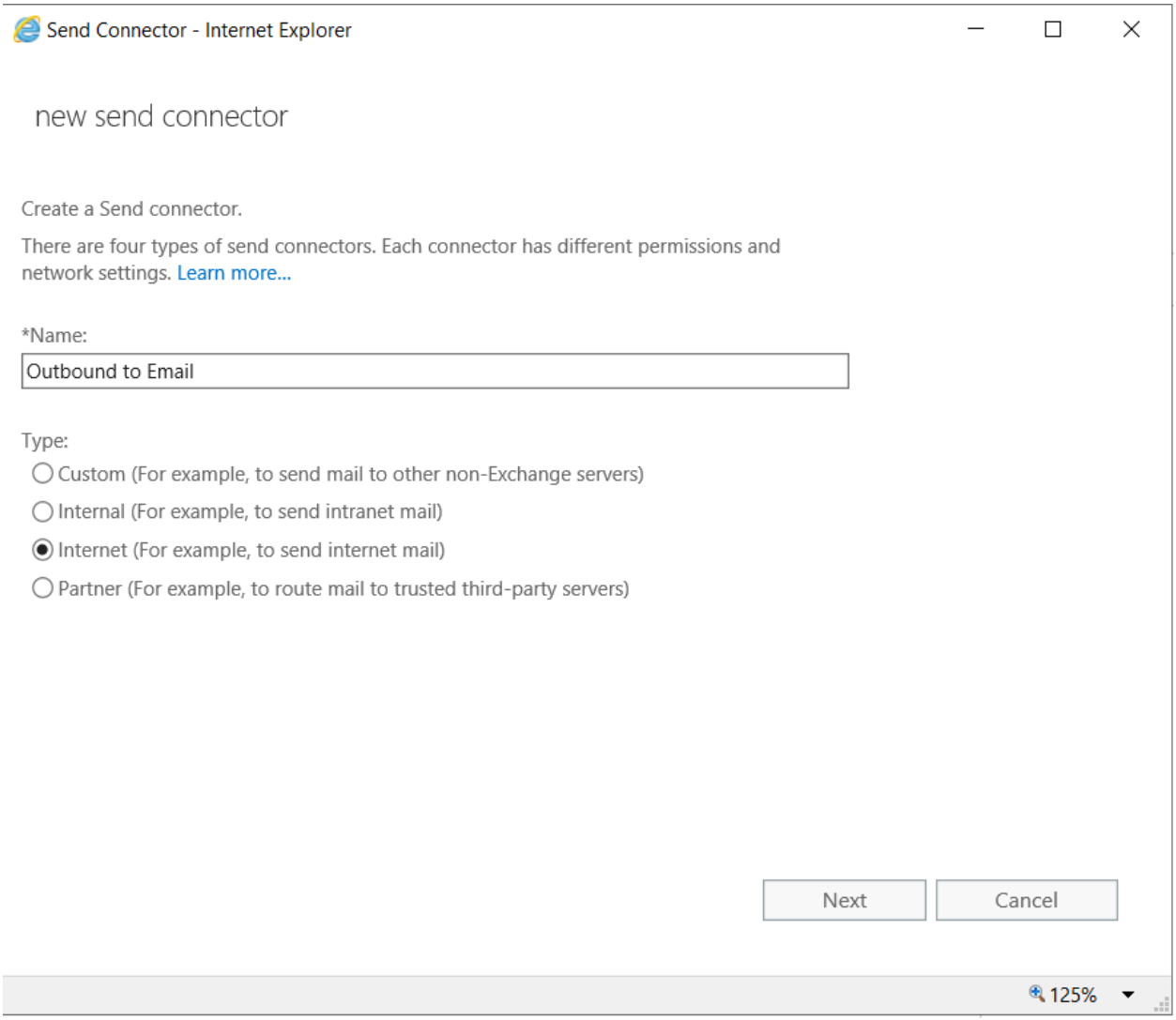
Option 1 - Use the EAC to create an internet Send connector

- In the EAC, navigate to **Mail flow** > **Send connectors**, and then click **Add** +. This starts the **New Send connector** wizard.

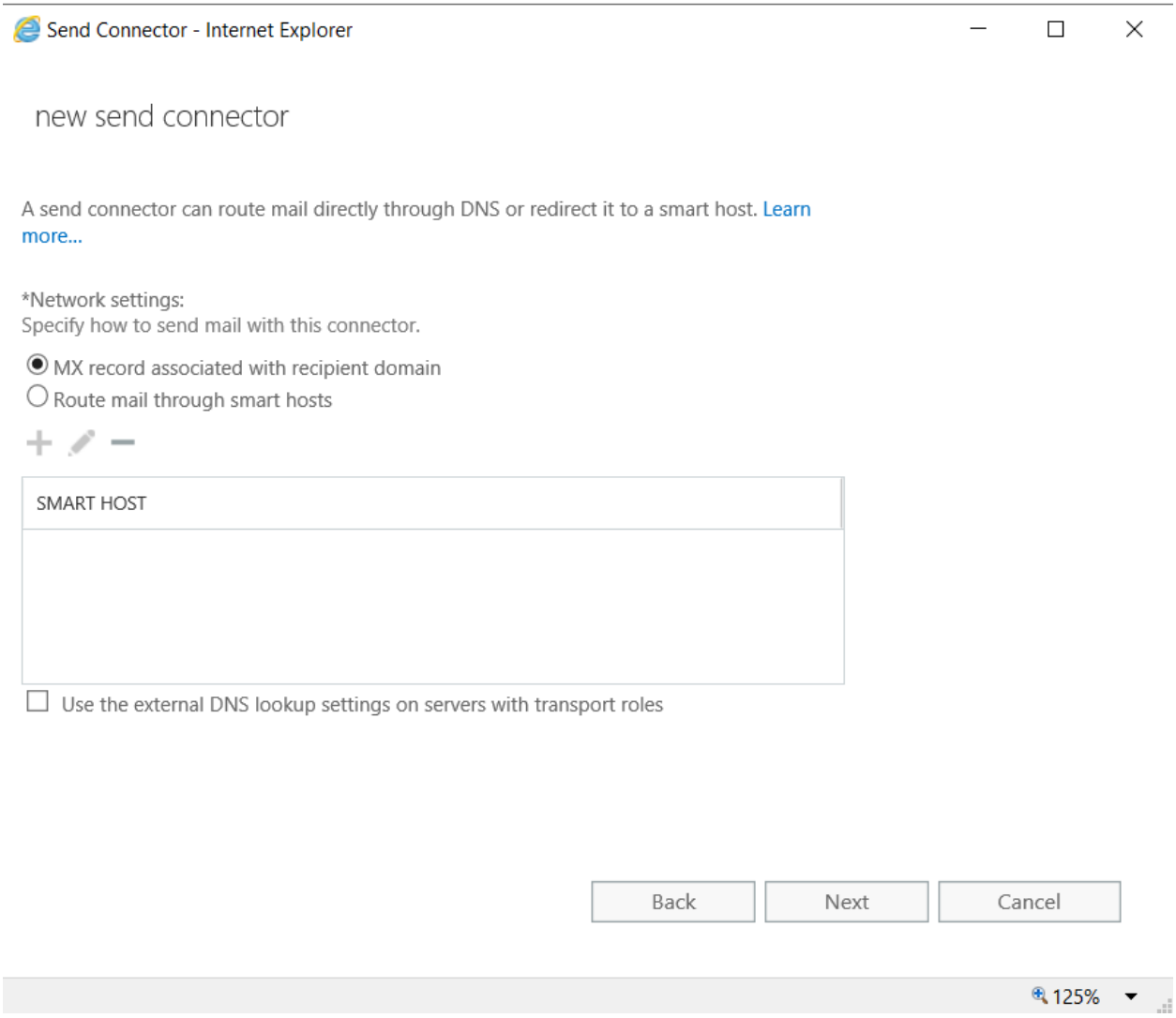
Author: Riaz Javed Butt
Blog: www.msexperttalk.com



- On the first page, enter the following information:
  - **Name**: Enter a descriptive name for the Send connector, for example, Outbound to internet.
  - **Type**: Select **Internet**.
  - When you're finished, click **Next**.

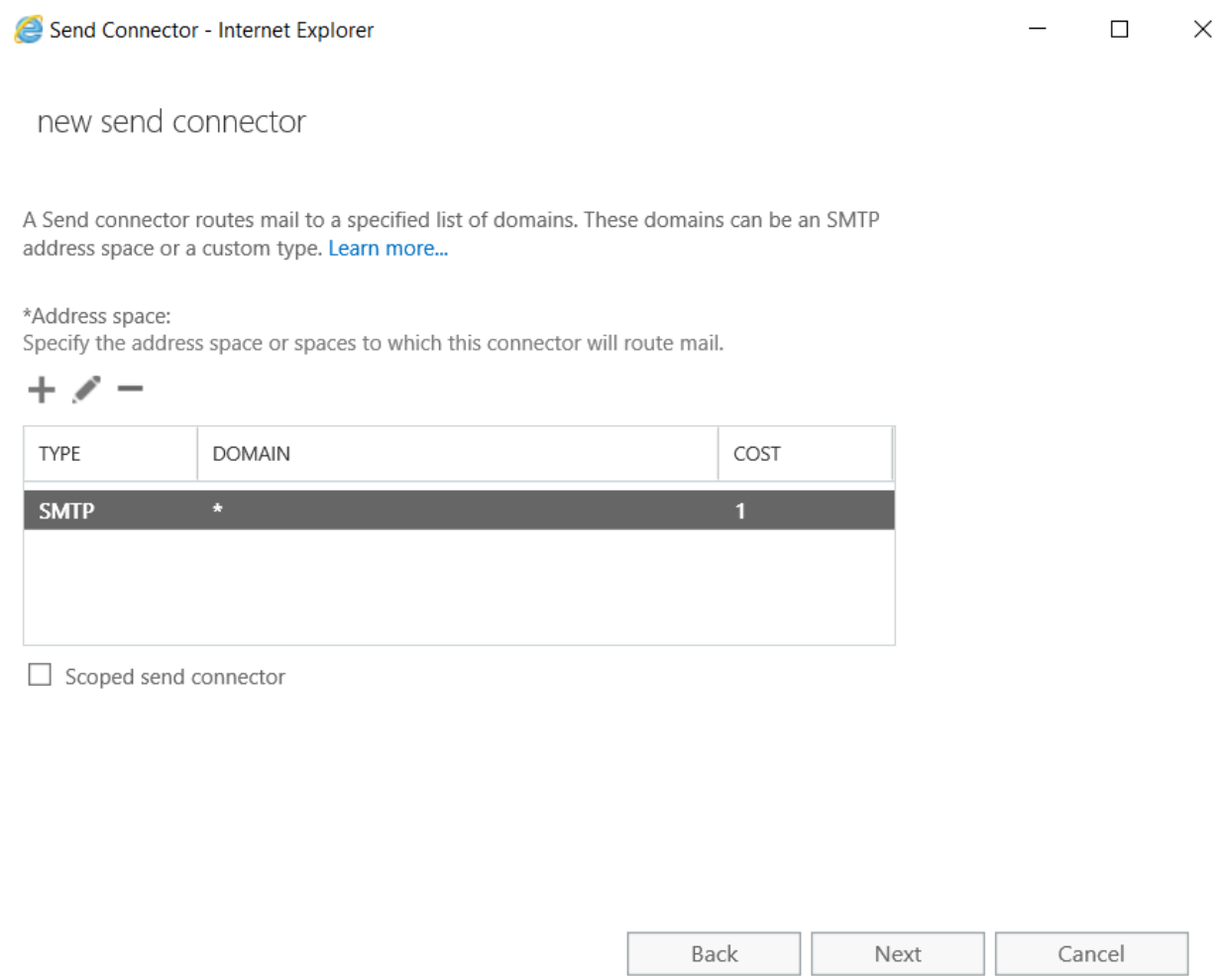


- On the next page, verify that **MX record associated with recipient domain** is selected. This means the connector uses DNS on the internet to route mail, as opposed to routing all outbound mail to a smart host. When you're finished, click **Next**.



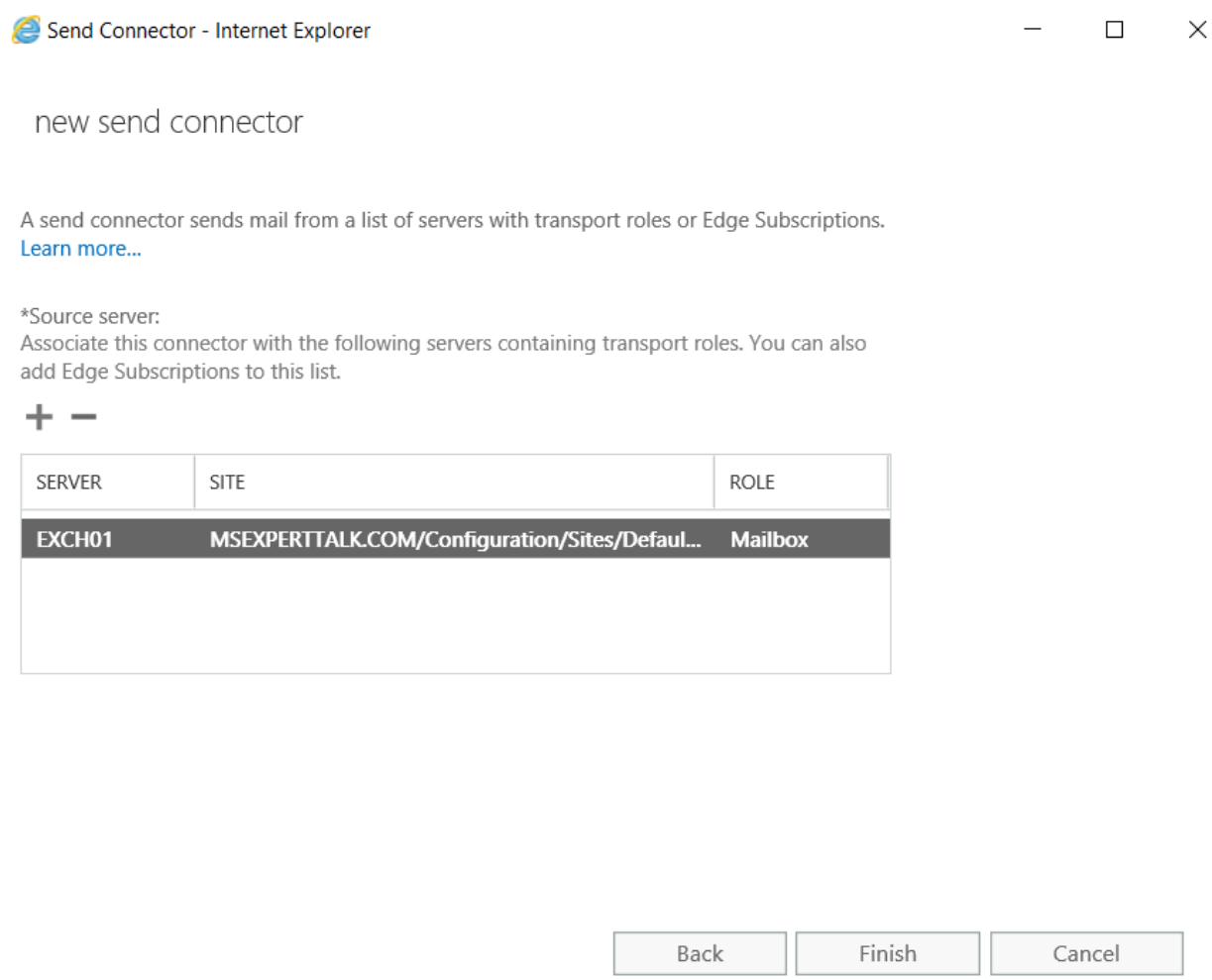
- On the next page, enter the following information:
    - In the **Address space** section, click **Add** +. In the **Add domain** dialog box that appears, in **Fully Qualified Domain Name (FQDN)**, enter an asterisk (*), and then click **Save**. This value indicates that the Send connector applies to messages addressed to all external domains.

Author: Riaz Javed Butt
Blog: www.msexperttalk.com



- The **Scoped send connector** setting is important if your organization has Exchange servers installed in multiple Active Directory sites:
- If you don't select **Scoped send connector**, the connector is usable by all transport servers (Exchange 2013 or later Mailbox servers and Exchange 2010 Hub Transport servers) in the entire Active Directory forest. This is the default value.
- If you select **Scoped send connector**, the connector is only usable by other transport servers in the same Active Directory site.

- When you're finished, click **Next**.
- On the next page, in the **Source server** section, click **Add** +. In the **Select a Server** dialog box that appears, select one or more Mailbox servers that you want to use to send mail to the internet. If you have multiple Mailbox servers in your environment, select the ones that can route mail to the internet. If you have only one Mailbox server, select that one. After you've selected at least one Mailbox server, click **Add**, click **OK**, and then click **Finish**.



Option 2 - Use the Exchange Management Shell to create an internet Send connector

- Open the Exchange Management Shell. Run the following Exchange Management cmdlet:

```
New-SendConnector -Name <Name> -AddressSpaces * -Internet [-SourceTransportServer <fqdn1>,<fqdn2>...]
```

This example creates the internet Send connector named "To internet" with the following properties:

- The usage type is **Internet**.
- The Send connector uses DNS routing. We aren't using the ***DNSRoutingEnabled*** parameter, and the default value is $true.
- The Send connector is for all external domains (*****).
- The local Exchange server is the source server. We aren't using the *SourceTransportServer* parameter, and the default value is the local Exchange server.
- The Send connector isn't scoped to the local Active Directory site. We aren't using the *IsScopedConnector* parameter, and the default value is $false.

Author: Riaz Javed Butt
Blog: www.msexperttalk.com

Configure Exchange Server 2019 Virtual Directories

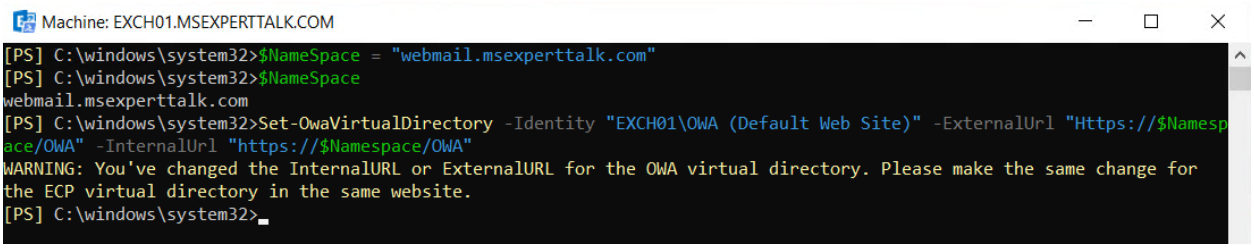
You can use the Exchange admin center (EAC) or the Exchange Management Shell to view or modify the properties of Exchange 2019 virtual directories.

Configure Outlook on the Web Virtual Directory

Although the name has changed to Outlook on the web for OWA, the name of the virtual directory is still "owa". To configure Outlook on the web virtual directory, run the following Exchange Management Shell commands.

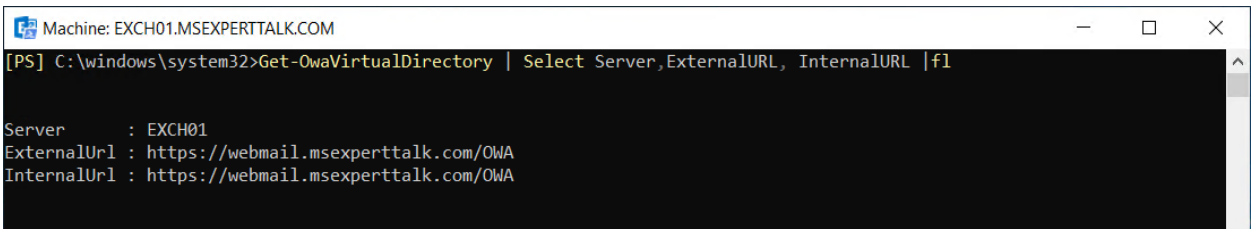
```
$namespace = “webmail.msexperttalk.com”

Set-OwaVirtualDirectory -Identity “HOSTNAME\OWA (Default Web Site)” -ExternalUrl https://$Namespace/owa -InternalUrl https://$Namespace/owa
```



To verify the OWA URL, run the following command.

```
Get-OwaVirtualDirectory | Select Server,ExternalURL,InternalURL | fl
```



Configure ECP Virtual Directory

To configure ECP virtual directory, run the following Exchange Management Shell commands.

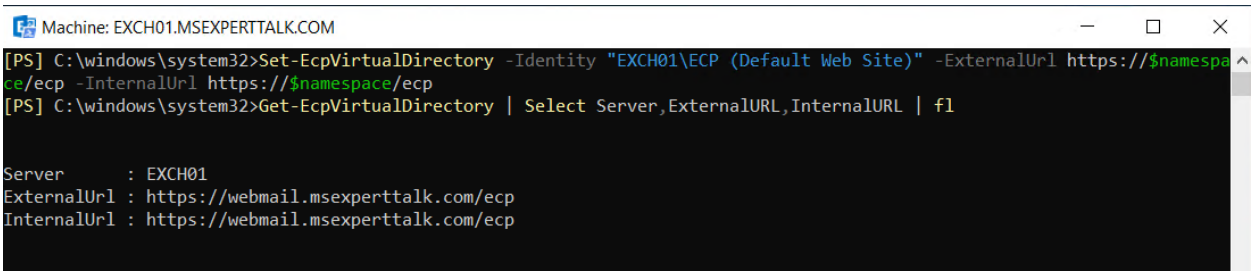
```
$namespace = “webmail.msexperttalk.com”

Set-EcpVirtualDirectory -Identity “HOSTNAME\ECP (Default Web Site)” -ExternalUrl https://$namespace/ecp -InternalUrl https://$namespace/ecp
```

To verify the configuration of ECP virtual directory, run the following cmdlet.

```
Get-EcpVirtualDirectory | Select Server,ExternalURL,InternalURL | fl
```

Author: Riaz Javed Butt
Blog: www.msexperttalk.com



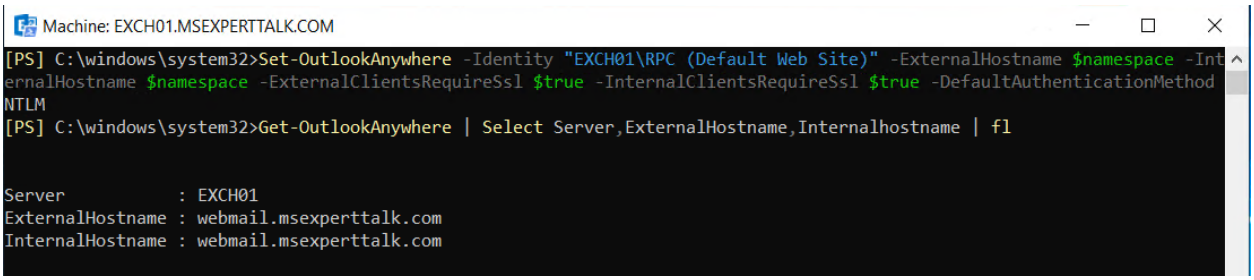
Configure Outlook Anywhere

To configure Outlook Anywhere, run the following command.

```
Set-OutlookAnywhere -Identity “HOSTNAME\RPC (Default Web Site)” -ExternalHostname $namespace -InternalHostname $namespace -ExternalClientsRequireSsl $true -InternalClientsRequireSsl $true -DefaultAuthenticationMethod NTLM
```

To verify Outlook anywhere configuration, run the following command.

```
Get-OutlookAnywhere | Select Server,ExternalHostname,Internalhostname | fl
```



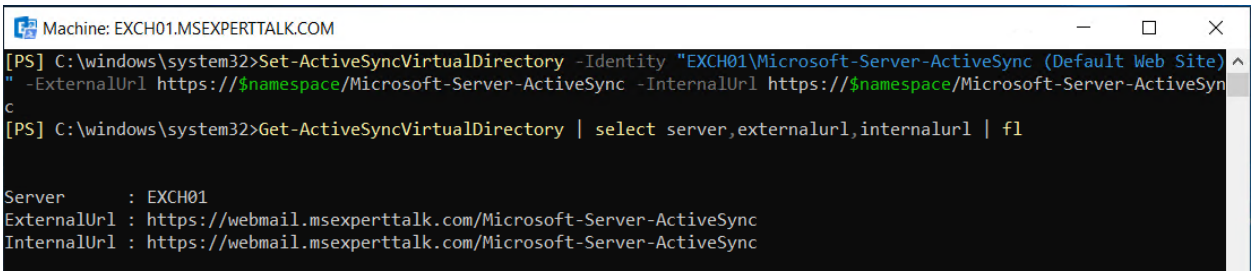
Configure ActiveSync Virtual Directory

Run the following command to configure activesync virtual directory.

```
Set-ActiveSyncVirtualDirectory -Identity “HOSTNAME\Microsoft-Server-ActiveSync (Default Web Site)” -ExternalUrl https://$namespace/Microsoft-Server-ActiveSync -InternalUrl https://$namespace/Microsoft-Server-ActiveSync
```

To verify the active sync configuration, run the following command.

```
Get-ActiveSyncVirtualDirectory | select server,externalurl,internalurl | fl
```



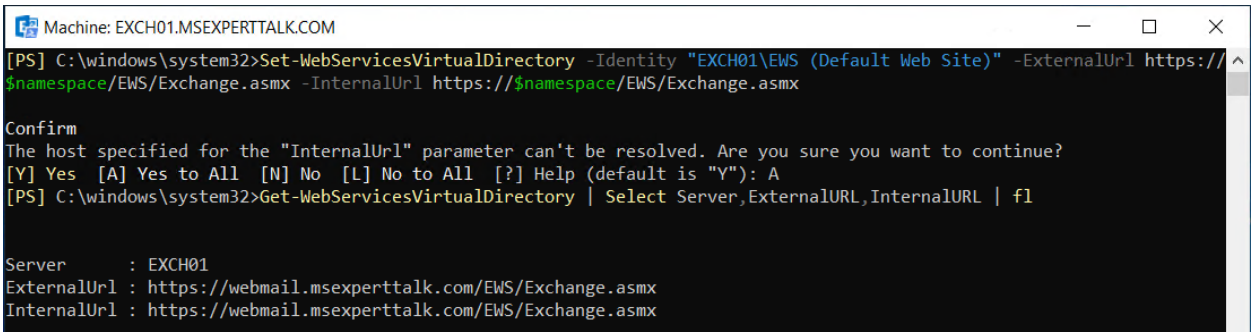
Configure Exchange Web Services Virtual Directory

Run the following command for exchange web services virtual directory configuration.

```
Set-WebServicesVirtualDirectory -Identity “HOSTNAME\EWS (Default Web Site)” -ExternalUrl https://$namespace/EWS/Exchange.asmx -InternalUrl https://$namespace/EWS/Exchange.asmx
```

To verify the configuration, run the following cmdlet.

```
Get-WebServicesVirtualDirectory | Select Server,ExternalURL,InternalURL | fl
```



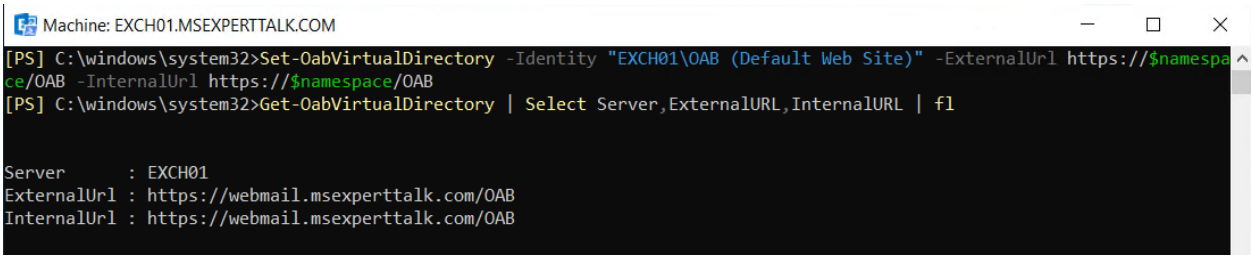
Configure OAB Virtual Directory

Run the following command to configure OAB virtual directory.

```
Set-OabVirtualDirectory -Identity “HOSTNAME\OAB (Default Web Site)” -ExternalUrl https://$namespace/OAB -InternalUrl https://$namespace/OAB
```

To verify the OAB virtual directory URL configuration, run the following command.

```
Get-OabVirtualDirectory | Select Server,ExternalURL,InternalURL | fl
```



Configure AutoDiscover Virtual Directory

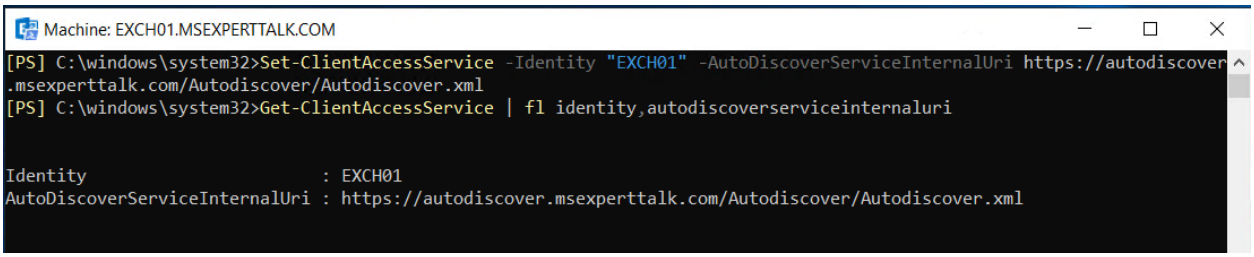
Configure AutoDiscover Service Internal URI. By default, it’s setup with server hostname.

```
Set-ClientAccessService -Identity <HOSTNAME> –AutoDiscoverServiceInternalUri “https://autodiscover.msexperttalk.com/Autodiscover/Autodiscover.xml”
```

To verify, run the following cmdlet.

```
Get-ClientAccessService | fl identity,autodiscoverserviceinternaluri
```

Author: Riaz Javed Butt
Blog: www.msexperttalk.com



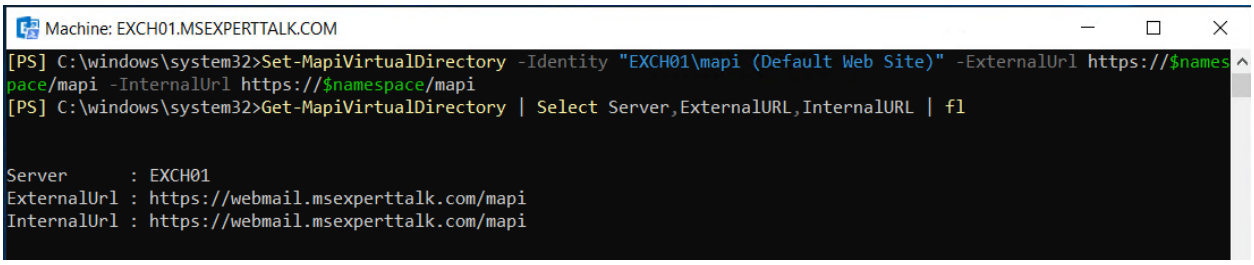
Configure MAPI Virtual Directory

Run the following command to configure MAPI virtual directory.

```
Set-MapiVirtualDirectory -Identity “HOSTNAME\mapi (Default Web Site)” -ExternalUrl https://$namespace/mapi -InternalUrl https://$namespace/mapi
```

To verify, run the following command.

```
Get-MapiVirtualDirectory | Select Server,ExternalURL,InternalURL | fl
```



Once all Exchange virtual directories are configured, restart IIS service by running the following command.

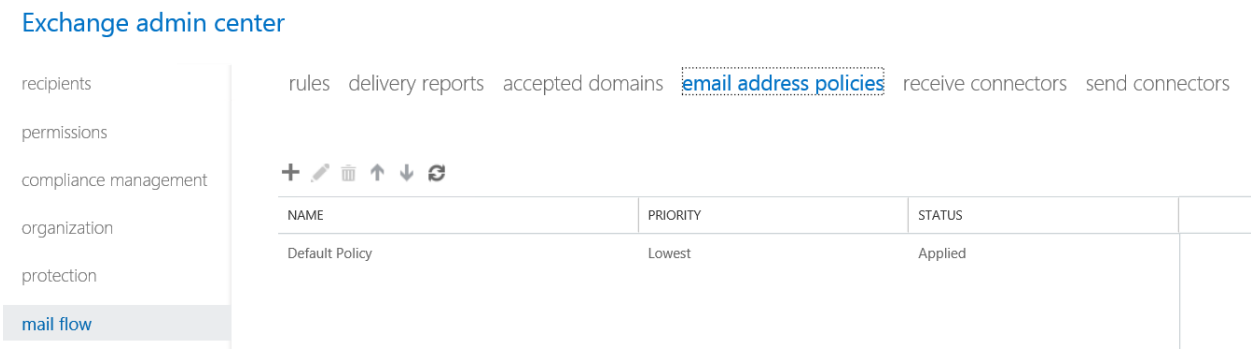
```
C:\> IISReset
```

Configure Default Email Address Policy

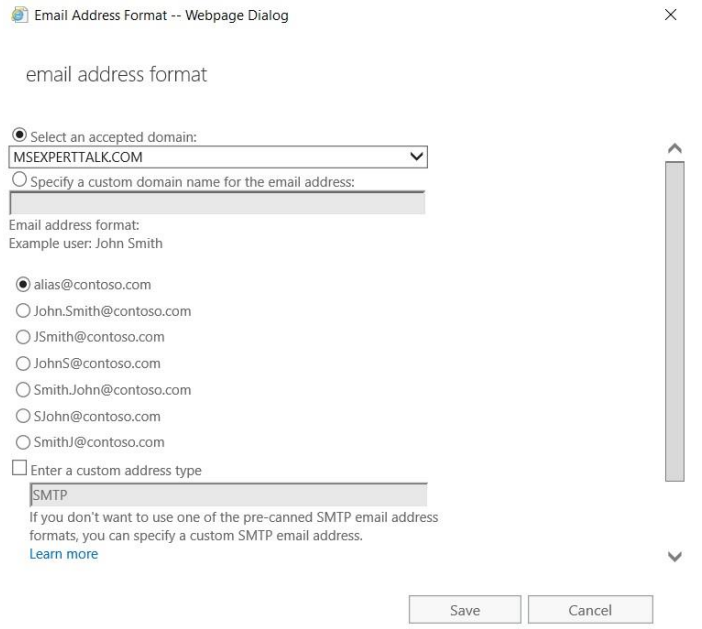
We recommend that you configure a user principal name (UPN) that matches the primary email address of each user. If you don't provide a UPN that matches the email address of a user, the user will be required to manually provide their domain\user name or UPN in addition to their email address. If their UPN matches their email address, Outlook on the web (formerly known as Outlook on the web), ActiveSync, and Outlook will automatically match their email address to their UPN. To configure the default email address policy, run the following steps:

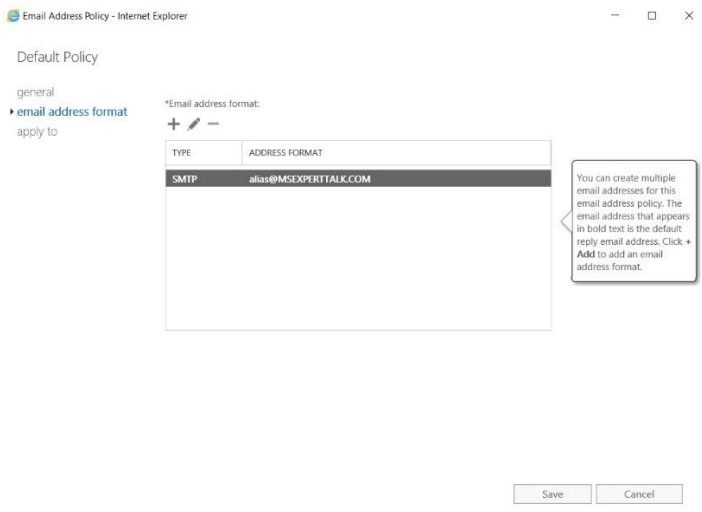
- In the EAC, go to **Mail flow** > **Email address policies**.

- Select the email address policy that you want to modify and click on **Edit**

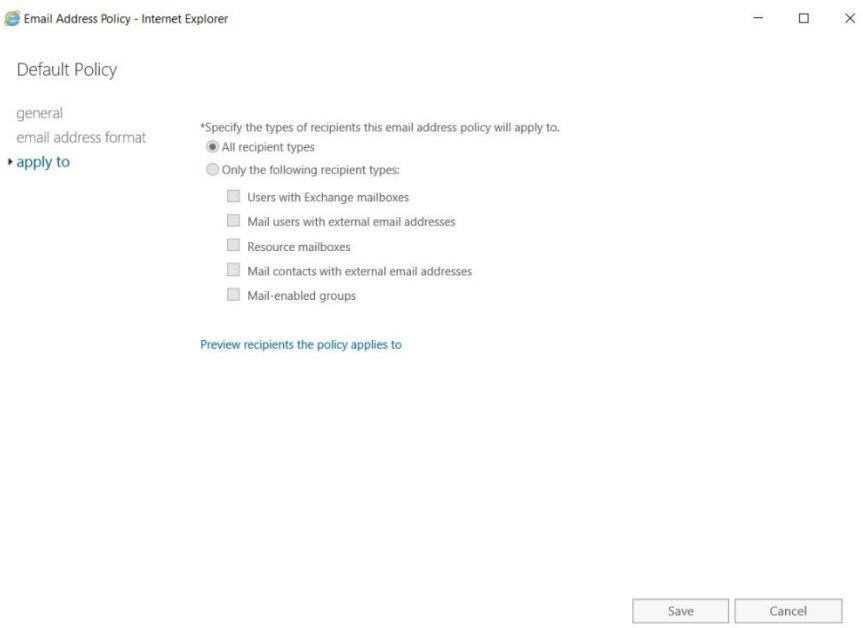


- Select the policy and modify the configuration as per your email address policy

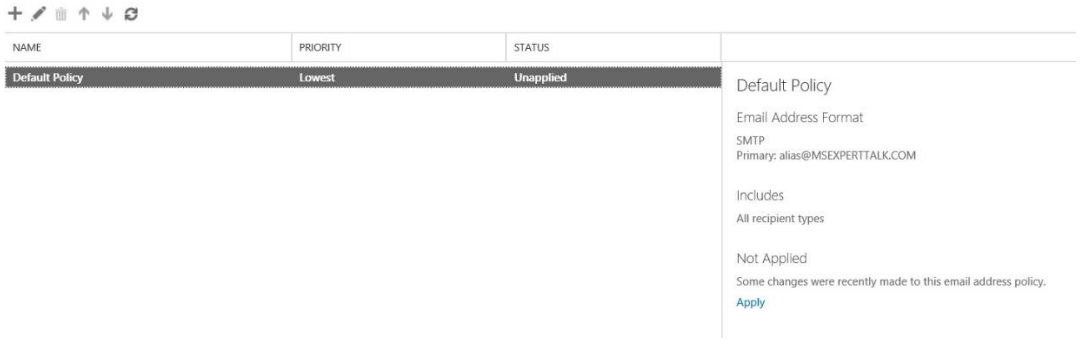




Author: Riaz Javed Butt
Blog: www.msexperttalk.com

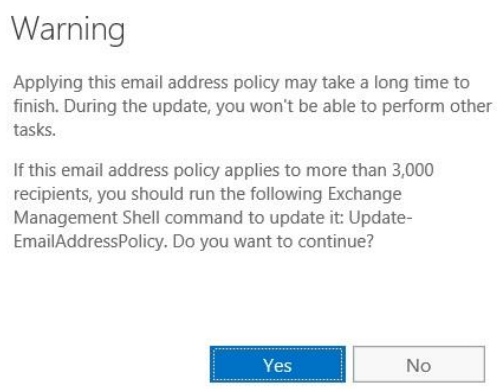


- Select the email address policy that you want to apply (a policy that has the **Status** value **Unapplied**).
- In the details pane, click **Apply**.



- After you click **Apply**, a warning message that appears. Click **Yes** to apply the policy by using the EAC. A progress bar allows you to monitor the recipient update process. When updates are complete, click **Close**.

Author: Riaz Javed Butt
Blog: www.msexperttalk.com



Configure Exchange Server 2019 Certificate

One of the most important post installation tasks is to configure SSL certificate in Exchange 2019. Ensuring that certificates are installed and configured correctly is key to deliver a secure messaging infrastructure. Certificate management in the EAC can help administrators:

- Minimizing the number of certificates that are required.
- Minimizing the interaction that's required for certificates.
- Allowing the centralized installation and management of certificates on all Exchange servers in the organization.

There are 2 methods available in Exchange 2019 to configure SSL Certificate.

- SSL Certificate using Exchange Admin Center
- SSL Certificate using Exchange Management Shell

Certificate Requirements for Exchange services

The Exchange services that certificates can be assigned to are described in the following table.

Service	Description
IIS (HTTP)	By default, the following services are offered under the default website in the Client Access (frontend) services on a Mailbox server, and are used by clients to connect to Exchange: • Autodiscover • Exchange ActiveSync • Exchange admin center • Exchange Web Services • Offline address book (OAB) distribution • Outlook Anywhere (RPC over HTTP) • Outlook MAPI over HTTP • Outlook on the web

Service	Description
	• Remote PowerShell* Because you can only associate a single certificate with a website, all the DNS names that clients use to connect to these services need to be included in the certificate. You can accomplish this by using a SAN certificate or a wildcard certificate.
POP or IMAP	The certificates that are used for POP or IMAP can be different from the certificate that's used for IIS. However, to simplify administration, we recommend that you also include the host names that are used for POP or IMAP in your IIS certificate, and use the same certificate for all of these services.
SMTP	SMTP connections from clients or messaging servers are accepted by one or more Receive connectors that are configured in the Front End Transport service on the Exchange server.

Best practices for Exchange certificates

Although the configuration of your organization's digital certificates will vary based on its specific needs, information about best practices has been included to help you choose the digital certificate configuration that's right for you.

- **Use as few certificates as possible:** Very likely, this means using SAN certificates or wildcard certificates. In terms of interoperability with Exchange, both are functionally equivalent. The decision on whether to use a SAN certificate vs a wildcard certificate is more about the key capabilities or limitations (real or perceived) for each type of certificate as described in the Digital certificates overview.
- **Use certificates from a commercial CA** for client and external server connections: Although you can configure most clients to trust any certificate or certificate issuer, it's much easier to use a certificate from a commercial CA for client connections to your Exchange servers. No configuration is required on the client to trust a certificate that's issued by a commercial CA. Many commercial CAs offer certificates that are configured specifically for Exchange. You can use the EAC or the Exchange Management Shell to generate certificate requests that work with most commercial CAs.
- **Verify that the CA is trusted by the clients** (operating systems, browsers, and mobile devices) that connect to your Exchange servers.
- Verify that the CA supports the kind of certificate that you need. For example, not all CAs support SAN certificates, the CA might limit the number of common names that you can use in a

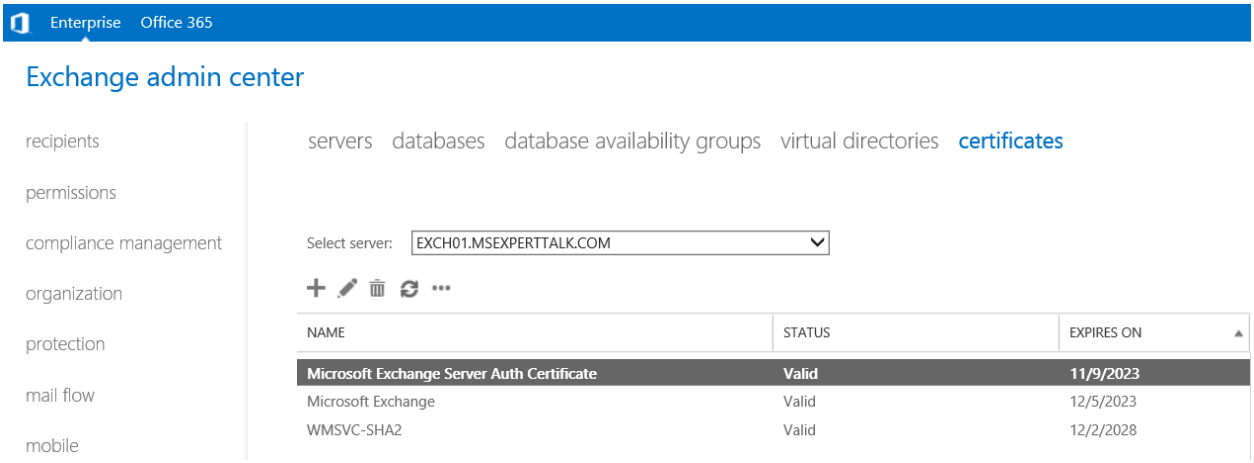
SAN certificate, or the CA may charge extra based on the number of common names in a SAN certificate.

- See if the CA offers a grace period during which you can add additional common names to SAN certificates after they're issued without being charged.
- Verify that the certificate's license allows you to use the certificate on the required number of servers. Some CAs only allow you to use the certificate on one server.
- **Use the Exchange certificate wizard**: A common error when you create certificates is to forget one or more common names that are required for the services that you want to use. The certificate wizard in the Exchange admin center helps you include the correct list of common names in the certificate request. The wizard lets you specify the services that will use the certificate and includes the common names that you need to have in the certificate for those services.
- **Use as few host names as possible**: Minimizing the number of host names in SAN certificates reduces the complexity that's involved in certificate management. Don't feel obligated to include the host names of individual Exchange servers in SAN certificates if the intended use for the certificate doesn't require it. Typically, you only need to include the DNS names that are presented to the internal clients, external clients, or external servers that use the certificate to connect to Exchange.

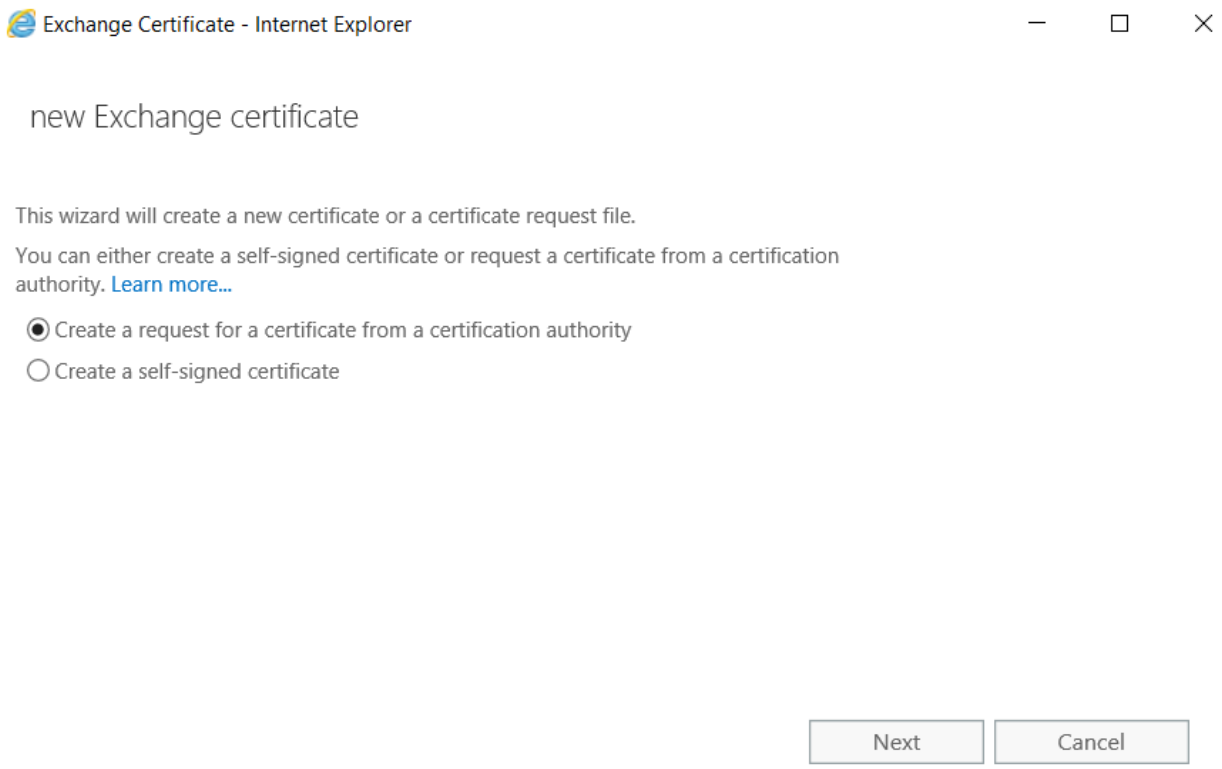
For this documentation, we're going to configure SSL Certificate on Exchange 2019 using the **Exchange Admin Center.** To configure the SSL Certificate, follow the instructions mentioned below.

Create SSL Certificate Request for Exchange Server

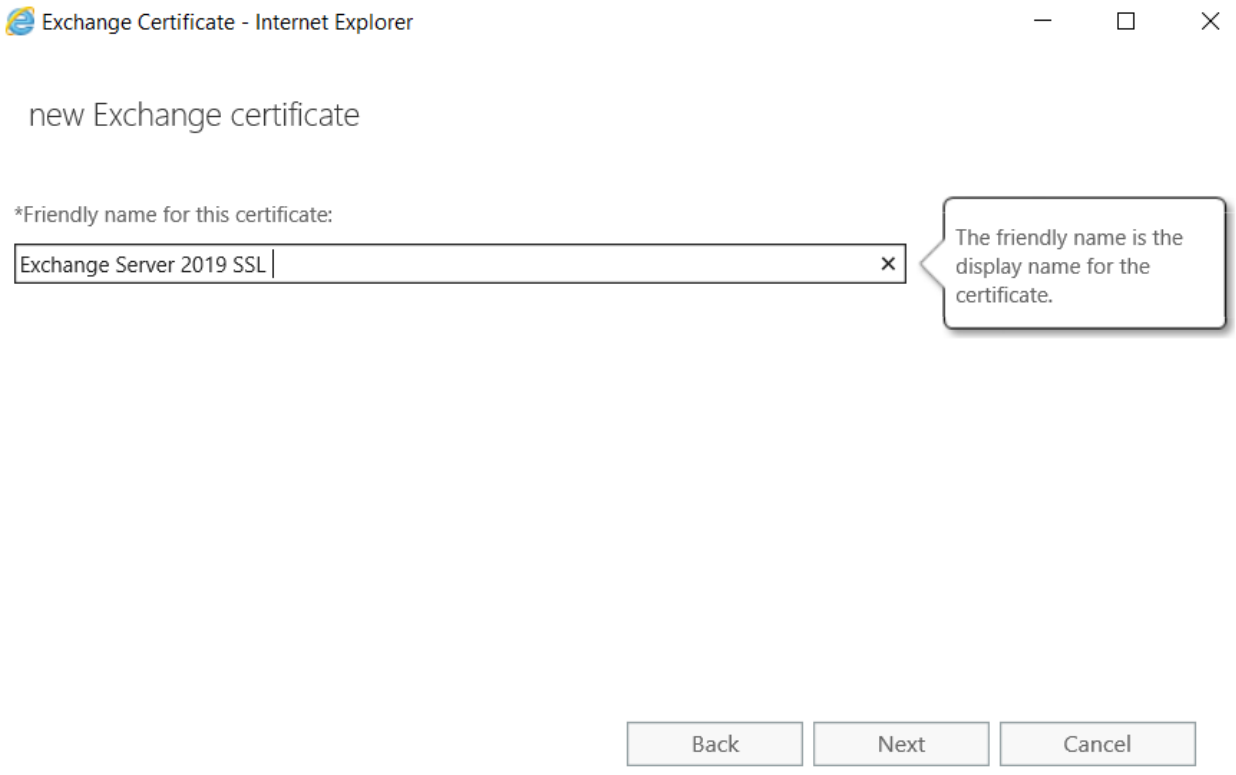
- Open the EAC and navigate to Servers > Certificates.
- In the Select server list, select the Exchange server where you want to install the certificate, and then click Add +.



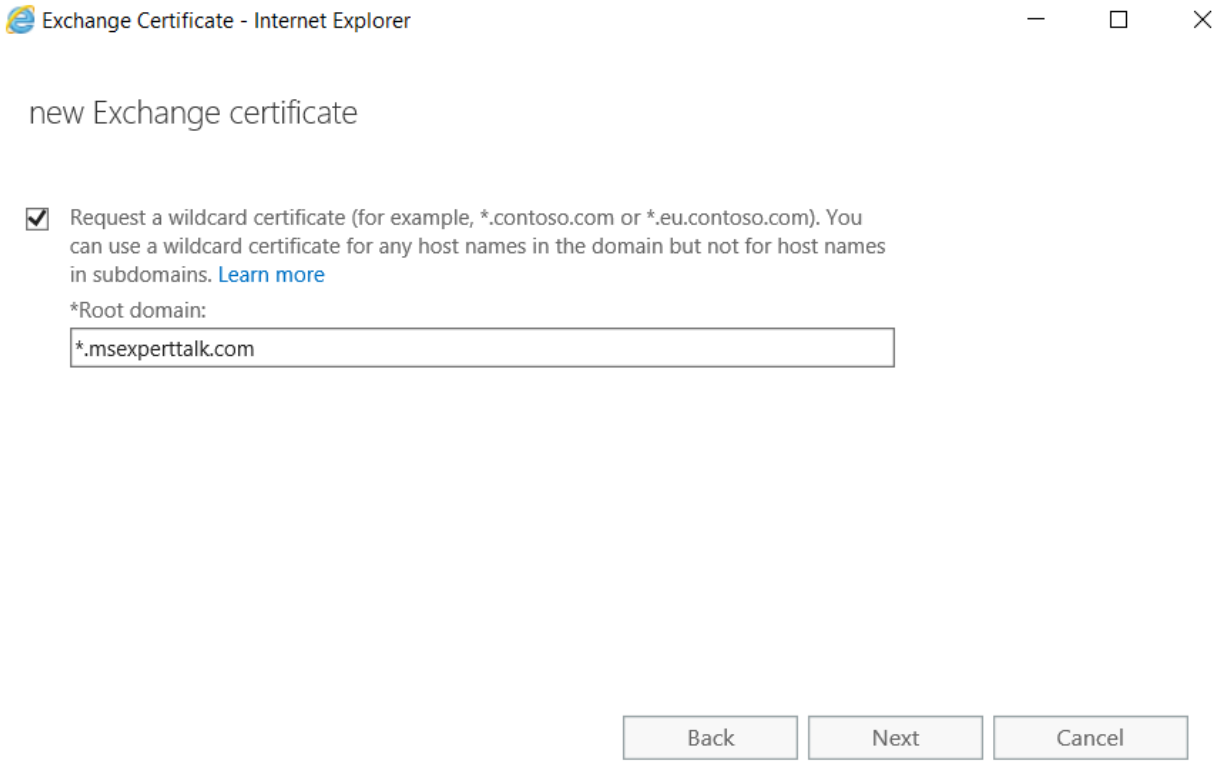
- The New Exchange certificate wizard opens. On the This wizard will create a new certificate or a certificate request file page, verify that Create a request for a certificate from a certification authority is selected, and then click Next.



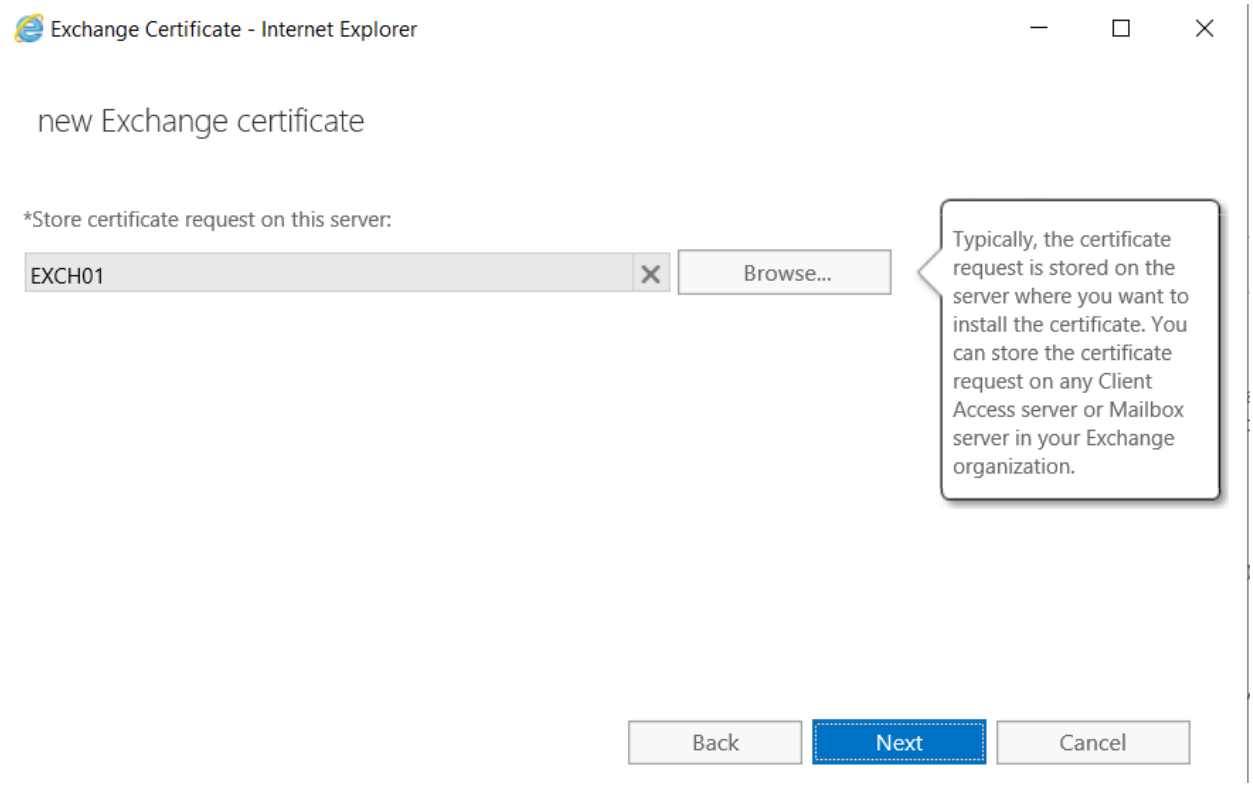
- On the **Friendly name for this certificate** page, enter a descriptive name for the certificate, and then click **Next**.



- On the **Request a wildcard certificate** page, make one of the following choices:
  - **If you want a wildcard certificate**: Select **Request a wildcard certificate**, and enter the wildcard character (*) and the domain in the **Root domain** field. When you're finished, click **Next**.

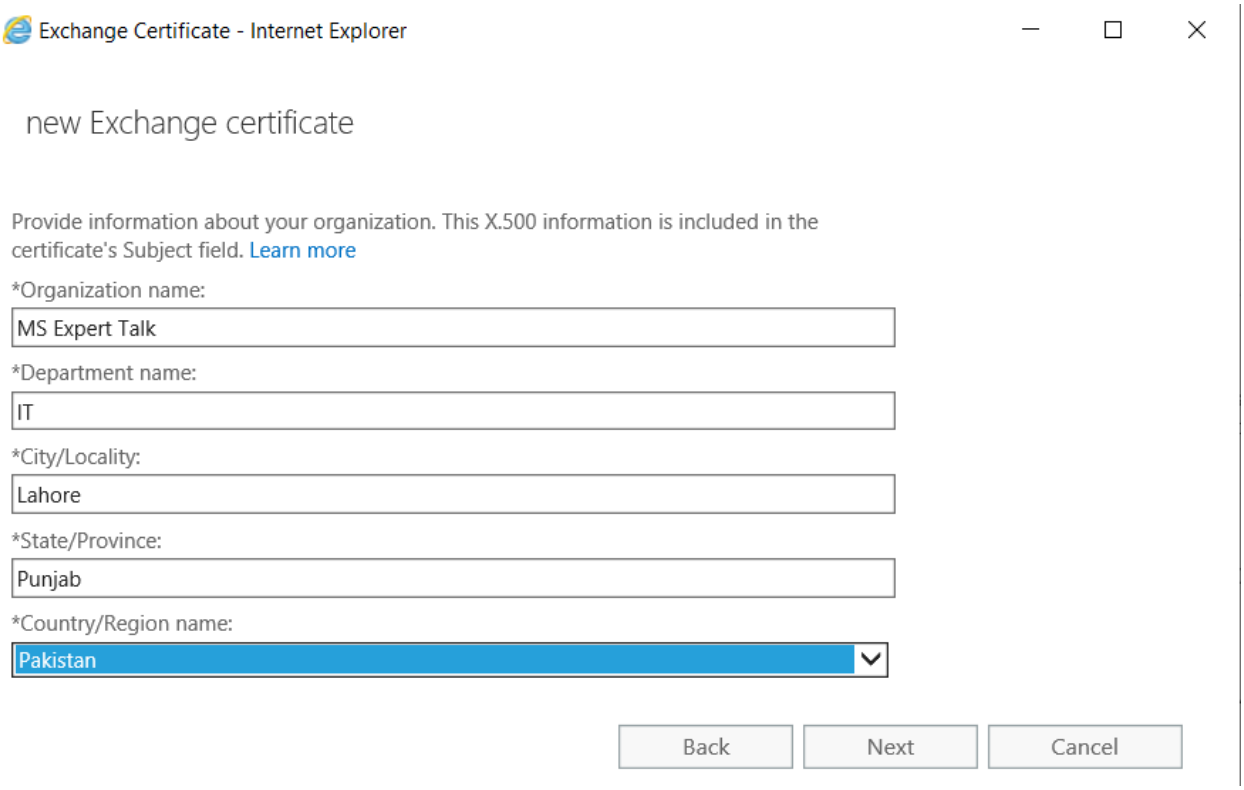


- In the **Store certificate request on this server** page, click **Browse** and select the Exchange server where you want to store the certificate request (where you want to install the certificate), click **OK**, and then click **Next**.



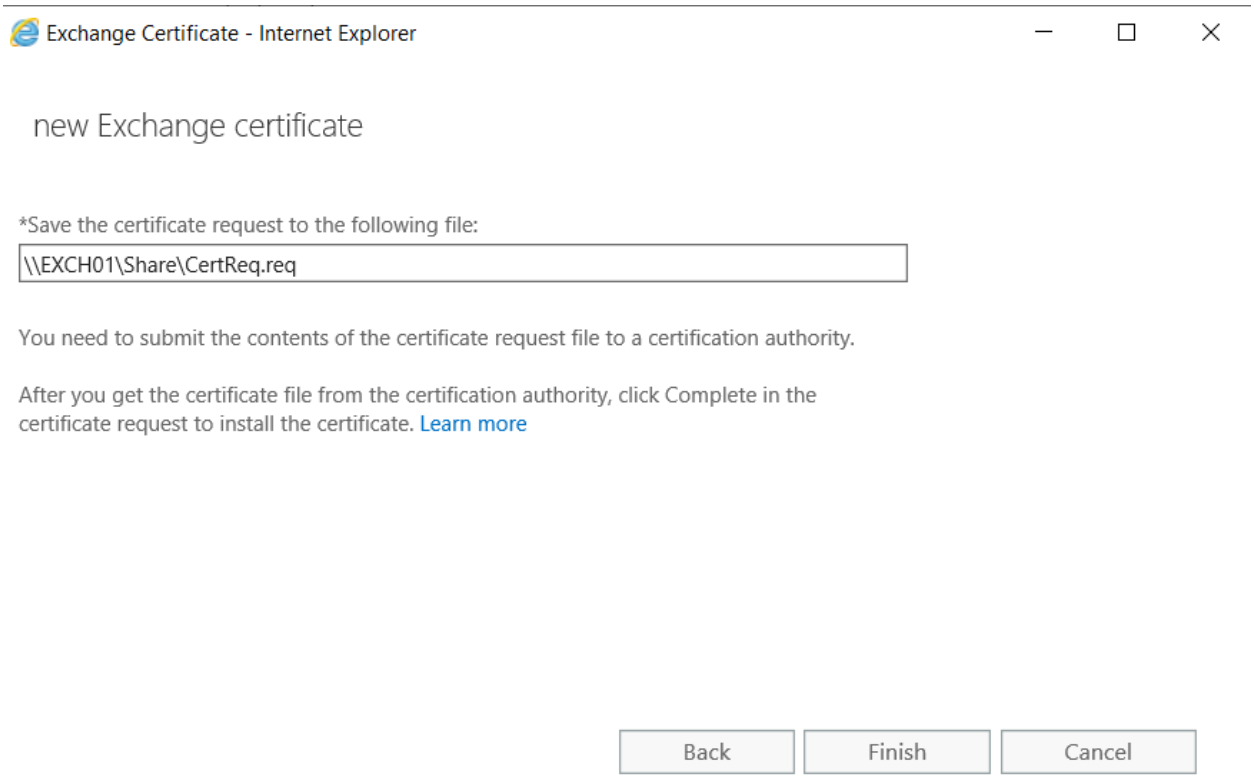
- On the **Specify information about your organization** page, enter the following values:
  - Organization name
  - Department name
  - City/Locality
  - State/Province
  - Country/Region name

Note: These X.500 values are included in the certificate's **Subject** field. Although a value is required in every field before you can proceed, the CA might not care about certain fields (for example, **Department name**), while other fields are very important (for example, **Country/Region name** and **Organization name**). Check the **Subject** field requirements of your CA.



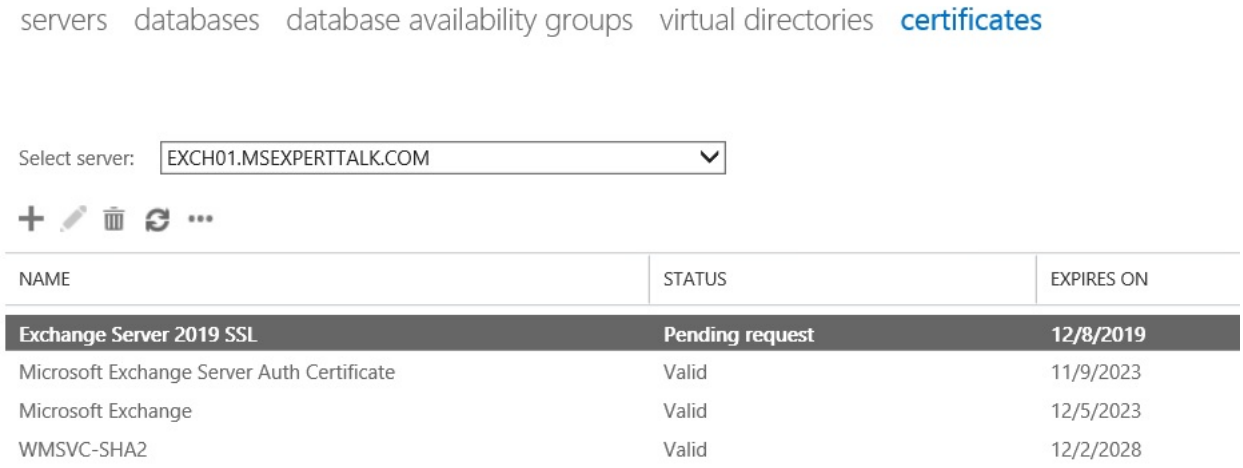
- When you're finished, click **Next**.
- On the **Save the certificate request to the following file** page, enter the UNC path and filename for the certificate request. For example, \\FileServer01\Data\ExchCertRequest.req. When you're finished, click **Finish**.

Author: Riaz Javed Butt
Blog: www.msexperttalk.com



Complete SSL Certificate Request for Exchange Server

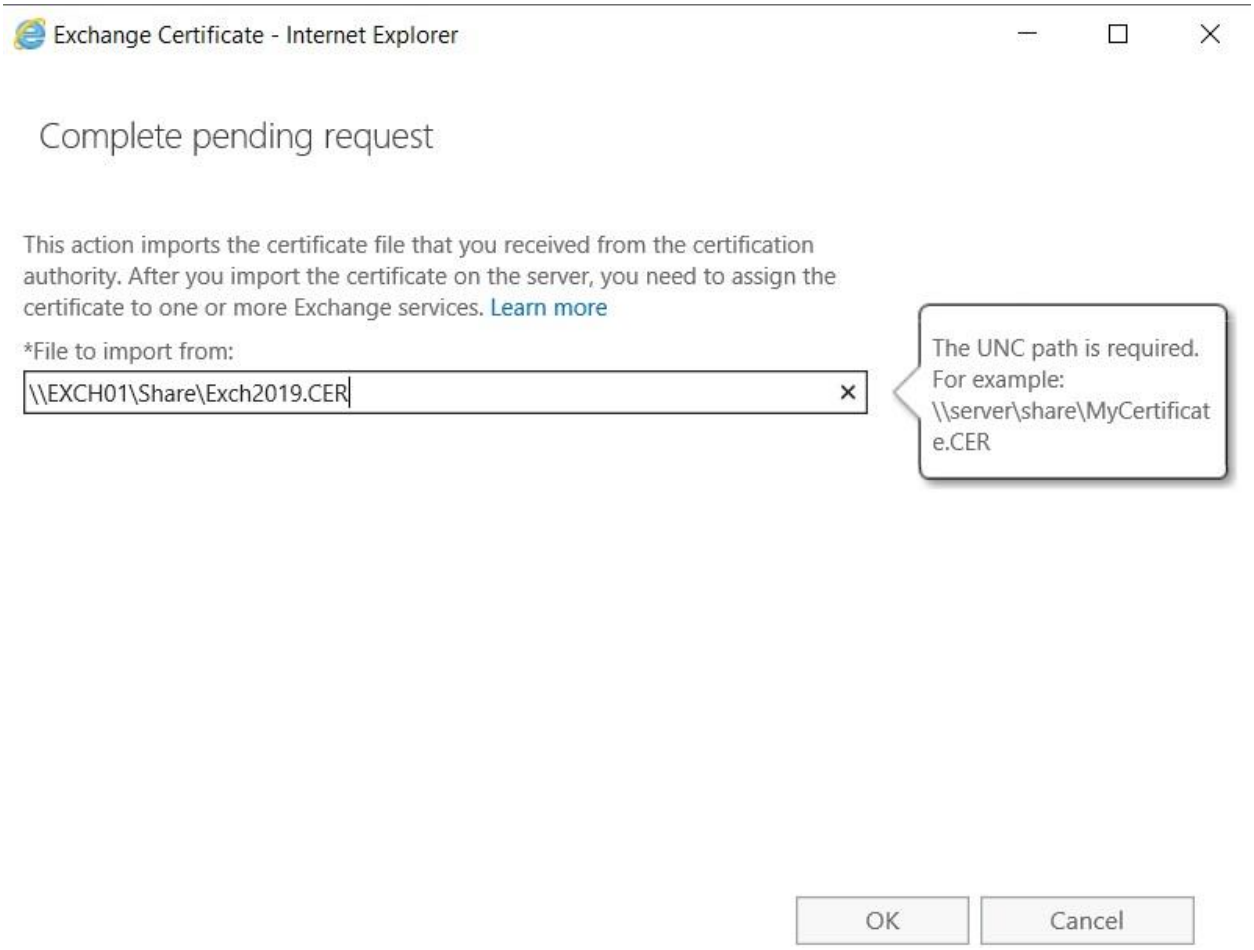
- Open the EAC and navigate to **Servers** > **Certificates**.
- In the **Select server** list, select the Exchange server that holds the pending certificate request.



- A pending certificate request has the following properties:
    - In the list of certificates, the value of the **Status** field is **Pending request**.
    - When you select the certificate request from the list, there's a **Complete** link in the details pane.

- Select the pending certificate request that you want to complete, and then click **Complete** in the details pane.

- On the **Complete pending request** page that opens, in the **File to import from** field, enter the UNC path and filename for the certificate file. For example, When you're finished, click **OK**.



- Once the certificate request is completed. Next Step is to assign the services to the SSL certificate. To assign the services, Select the SSL certificate and click on Edit and select the services under services tab and click Save.