

# AIO-16 LAB SETUP

## AIO-16 LAB SETUP

### Overview

EX16_AIO		
Host	shgbsvmas	<a href="#">VMAS - Workspaces</a>
Host Name	AIO-16	
Role	DC & MBX & Outlook	
OS Version	Windows Server 2016 Datacenter (RTM)	
Original OS Language	English (en-us)	
Additional Language Packs	Simplified Chinese (zh-cn) Traditional Chinese (zh-tw)	
Exchange Build Number	CU23	Exchange Server build numbers and release dates <a href="https://docs.microsoft.com/en-us/exchange/new-features/build-numbers-and-release-dates?view=exchserver-2019">https://docs.microsoft.com/en-us/exchange/new-features/build-numbers-and-release-dates?view=exchserver-2019</a>
Password Complexity	16	
Certificate created and configured	Exchange self-generated	
Outlook Version	Microsoft 365 2019	
Outlook Language Packs	Simplified Chinese (zh-cn) English (en-us) Traditional Chinese (zh-tw)	
Outlook Anywhere enabled	Y	

<b>EX16_AIO</b>		
OAB and EWS enabled	Y	
Network Monitor installed	Y	<a href="https://aka.ms/wxex">https://aka.ms/wxex</a>
Fiddler installed	Y	<a href="https://aka.ms/wxex">https://aka.ms/wxex</a>
Telnet25	Y	<a href="https://aka.ms/wxex">https://aka.ms/wxex</a>
ExTRA	Y	<a href="https://aka.ms/wxex">https://aka.ms/wxex</a>
Disable CRL check		Exchange 2010 Management Console (EMC) is very slow <a href="https://blogs.technet.microsoft.com/nawar/2011/06/03/exchange-2010-management-console-emc-is-very-slow/">https://blogs.technet.microsoft.com/nawar/2011/06/03/exchange-2010-management-console-emc-is-very-slow/</a> Configuring Exchange Servers Without Internet Access <a href="https://techcommunity.microsoft.com/t5/exchange-team-blog/configuring-exchange-servers-without-internet-access/ba-p/593692">https://techcommunity.microsoft.com/t5/exchange-team-blog/configuring-exchange-servers-without-internet-access/ba-p/593692</a>
NIC	Private IP	
ActiveSync device connectivity	Y	
Additional disk for Backup issue	Y	
Enable Windows Server Backup	Y	
Backup	Y	
Snap Shot	Y	
Lab known issue		If EMC and EMS does not work properly, please clean the credential manager in the Control Panel. It is because Outlook user credential cache.
FAQ		

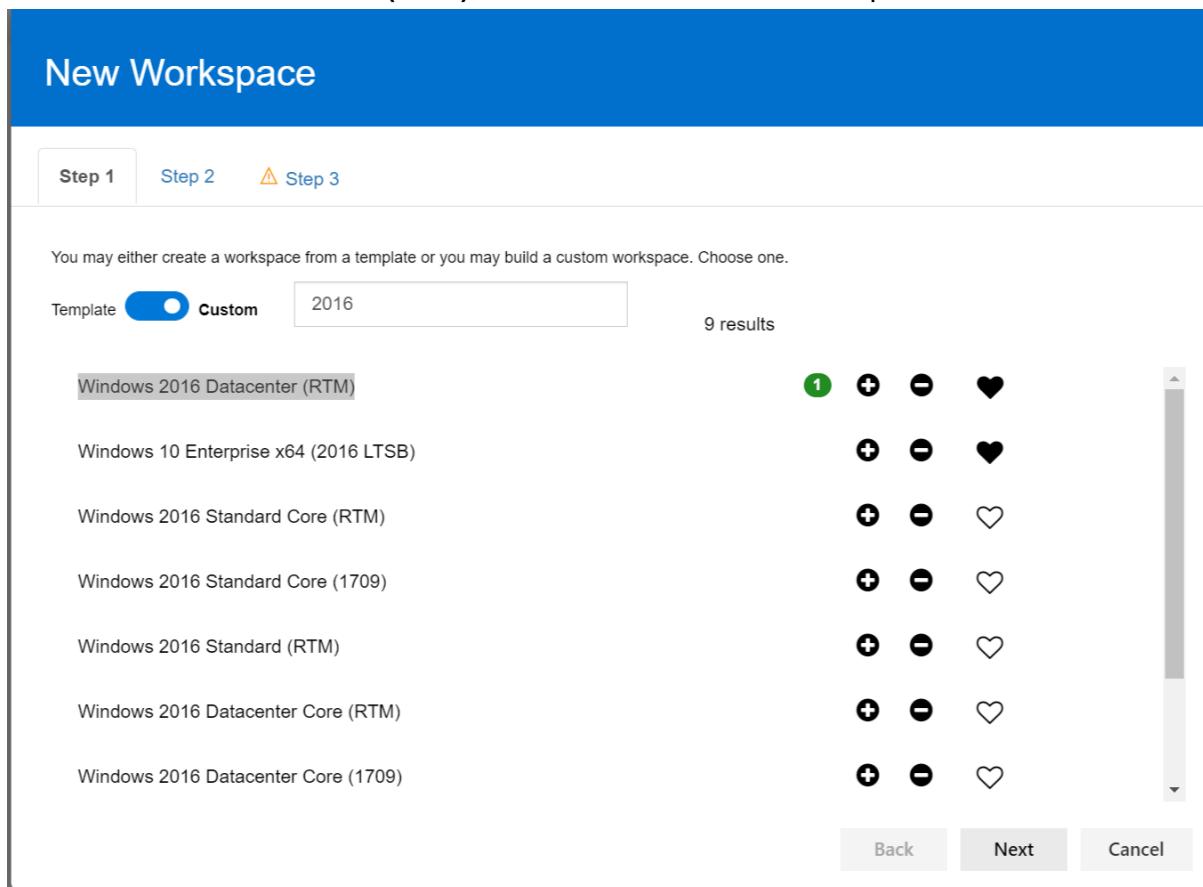
## Deployment Step by step

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Here are the differences of deployment between the AIO-16 and the general AIO. For more information about the general deployment of AIO, see [General Deployment of AIO Step by step](#).

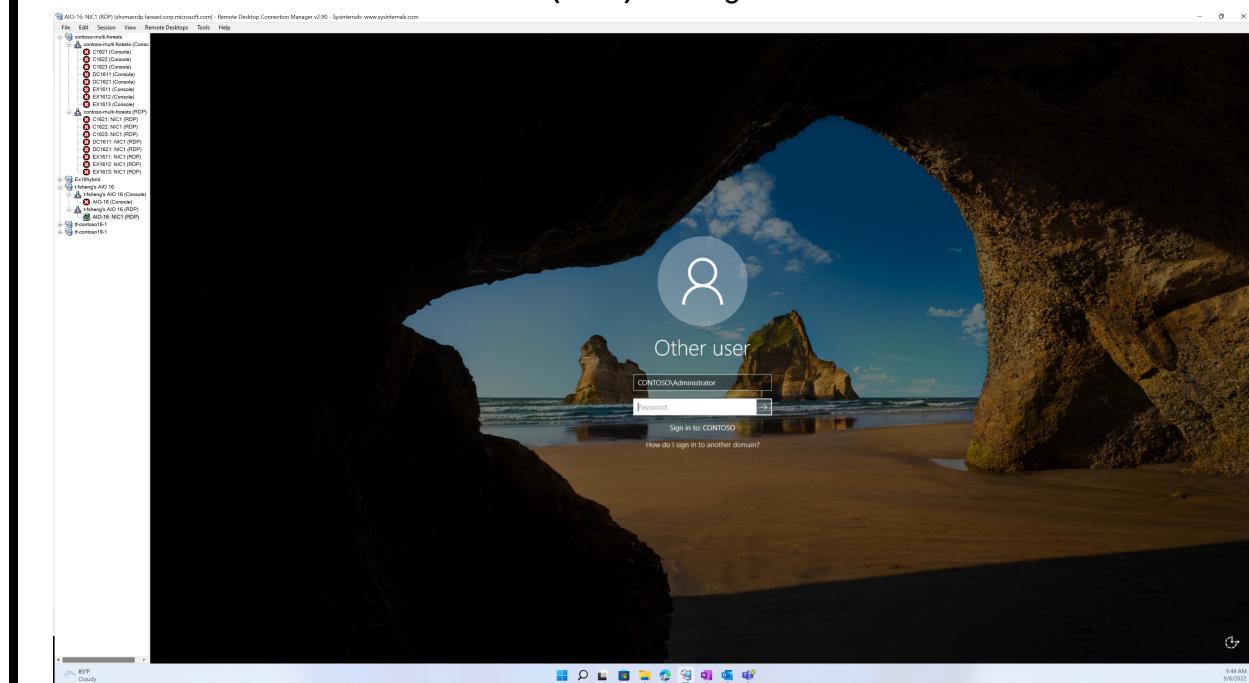
## Step 1: configure the all-in-one virtual machine on VMAs.

1.3. In the pop up **New Workspace**, type "2016" in the Filter Operating Systems, add one **Windows 2016 Datacenter (RTM)**, and click on 'Next' at the 'Step 1' tab.



## Step 2: login the AIO.

2.3. Double-click on the **AIO-16:NIC1(RDP)** and login.



## Step 3: install necessary applications needed for AIO-16.

You need to install apps below:

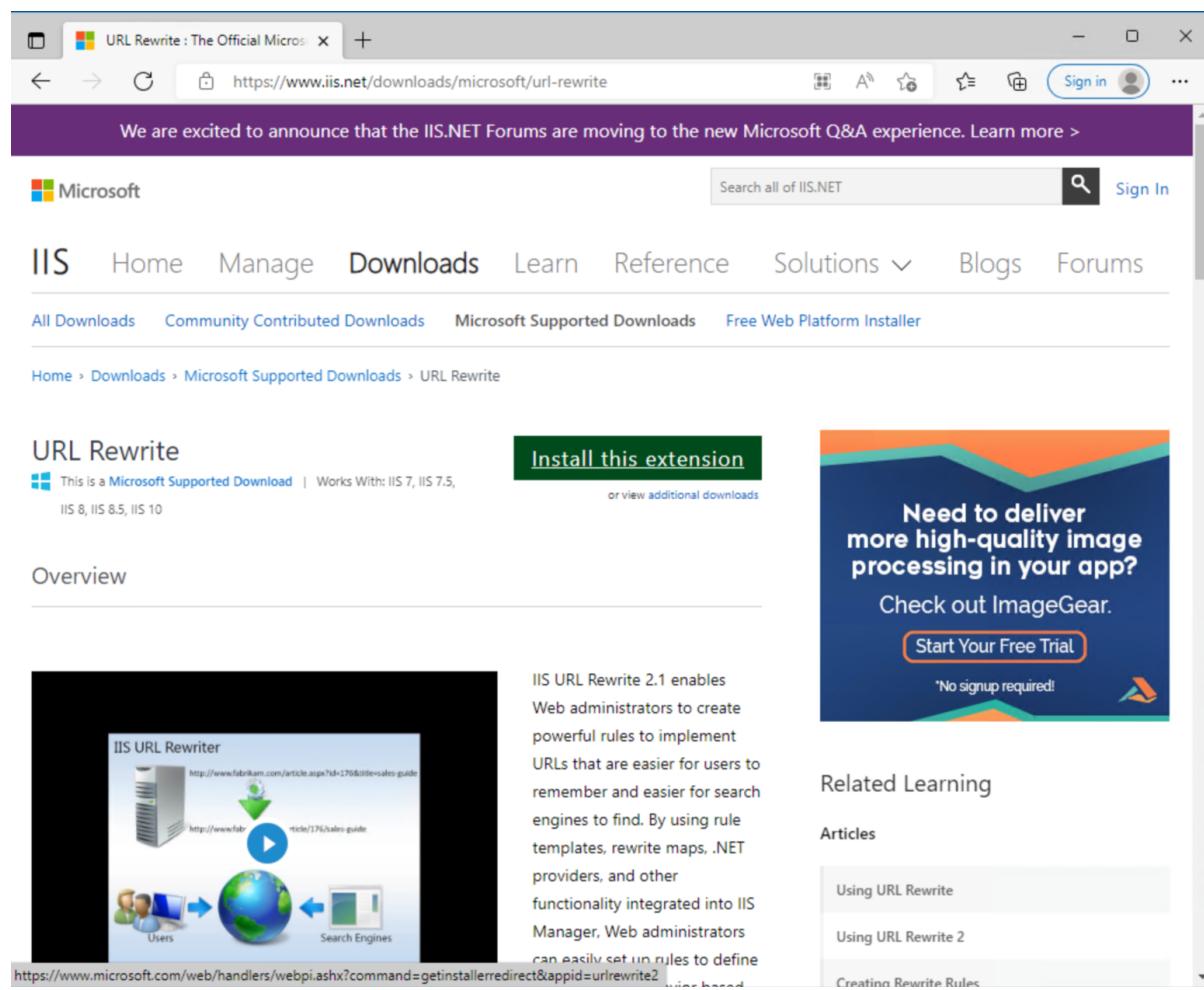
1. Microsoft Edge Browser.
2. .NET Framework 4.8.
3. Visual C++ Redistributable Package for Visual Studio 2013
4. Unified Communications Managed API 4.0 Runtime
5. IIS URL Rewrite 2.1
6. ISO: Cumulative Update 23 for Exchange Server 2016

The installation of 1~4 refer to 'Step 3' of [General Deployment of AIO Step by step](#);

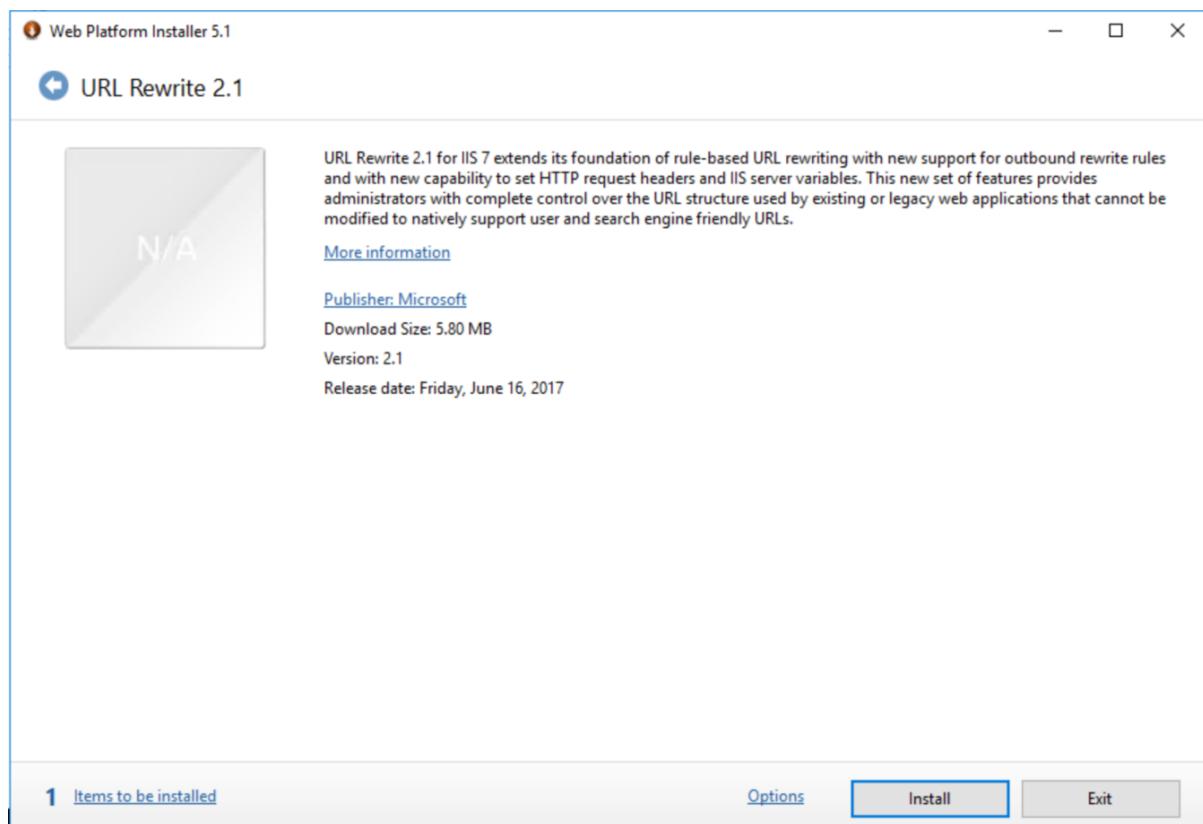
The installation of 5~6 refer to 'Step 3' of [AIO-16 LAB SETUP](#);

### 3.1 Install [IIS URL Rewrite 2.1](#).

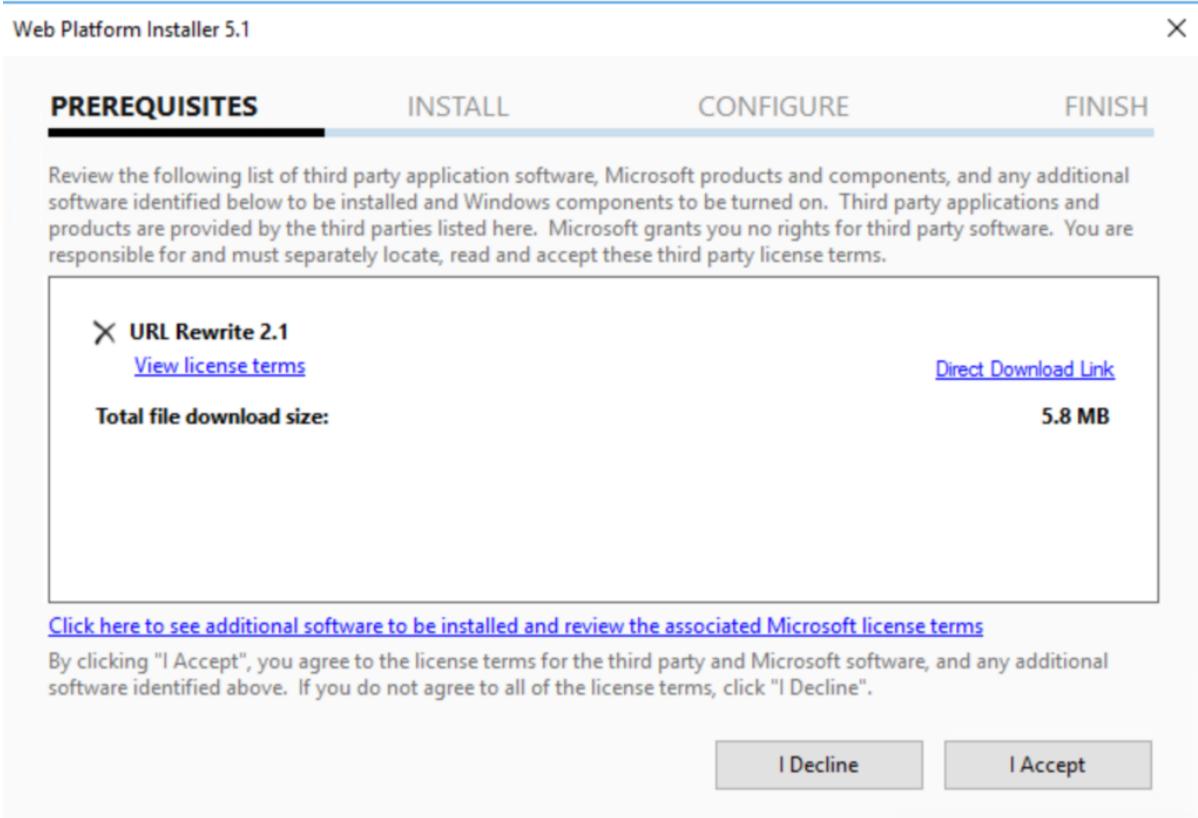
3.1.1 After entering the hyperlink above, click on **install this extension** button and download.



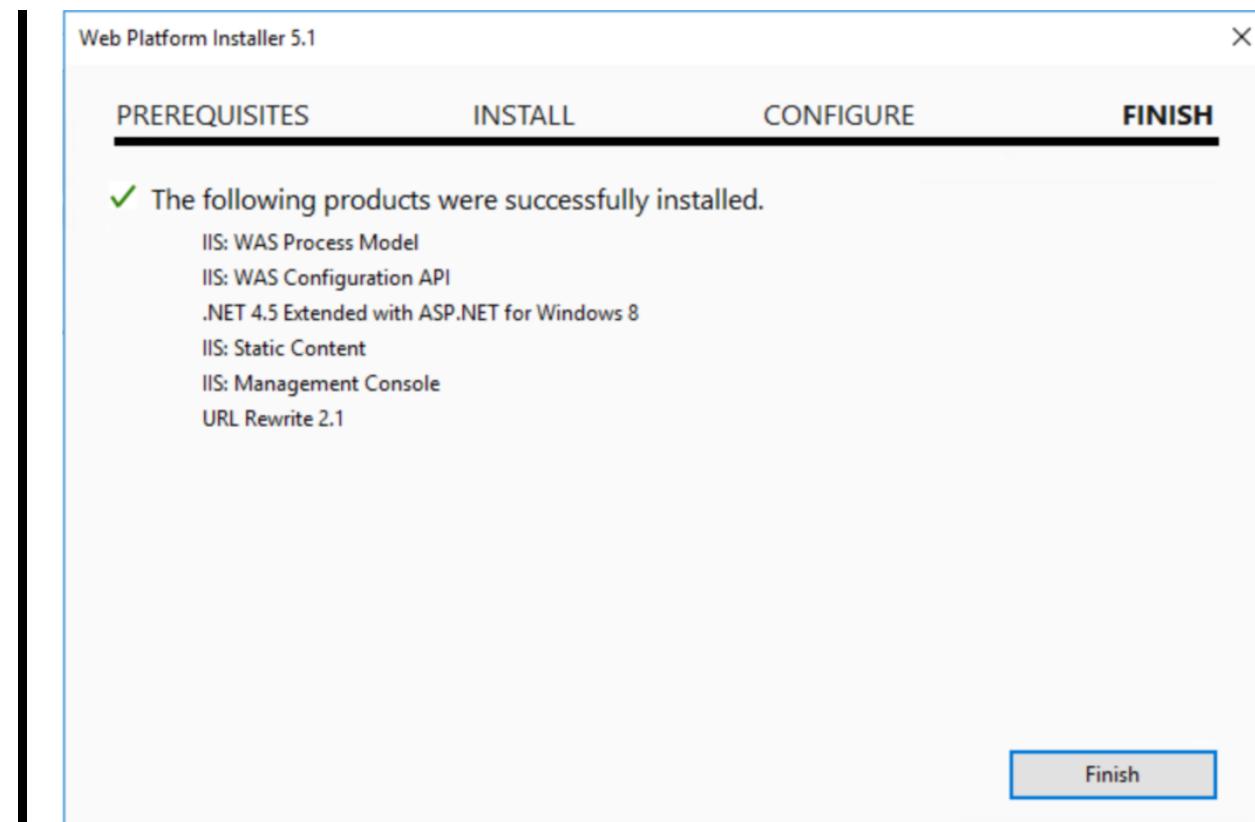
3.1.2 Double-click on the exe and the **Web platform installer 5.1** will pop up. Click on **install** button.



### 3.1.3 In the pop-up, click on the "I accept..." button.



### 3.1.4 The installation of **IIS URL Rewrite 2.1** is completed and exit the installer.



3.2 Download [Cumulative Update 23 for Exchange Server 2016 \(KB5011155\)](#). Click on the link and the 'Download' button on this page.

Explore the world from your desktop—one photo at a time. Get the Bing Wallpaper app today.

Bringing your desktop to life with daily backgrounds when you get Bing Wallpaper

No thanks Get it now

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## Surface devices

Original by design

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Cumulative Update 23 for Exchange Server 2016 (KB5011155)

*Important!* Selecting a language below will dynamically change the complete page content to that language.

Select Language: English

Cumulative Update 23 for Exchange Server 2016 (KB5011155)

**Details**

**System Requirements**

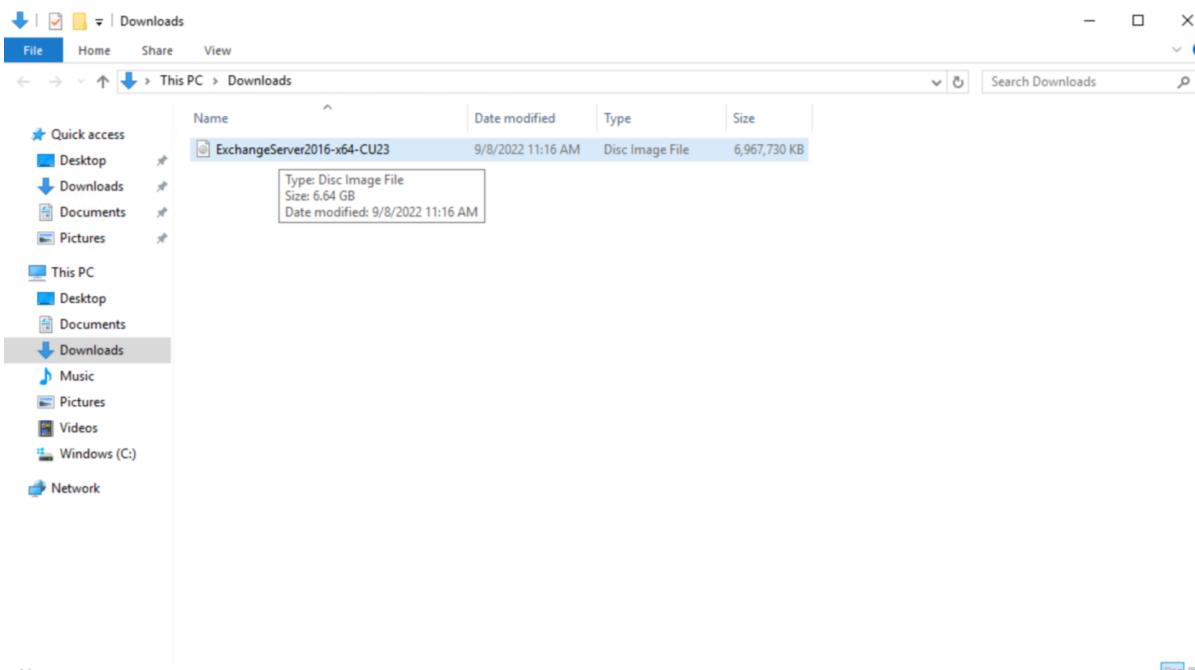
**Install Instructions**

**Related Resources**

#### **Step 4: pending the ISO.**

Refer to 'Step 4' of [General Deployment of AIO Step by step](#).

Double-click on the **ExchangeServer2016-x64-CU23** and let the ISO stay pending.



File Explorer window showing the Downloads folder. A file named "ExchangeServer2016-x64-CU23" is selected. The details pane shows:

Name	Date modified	Type	Size
ExchangeServer2016-x64-CU23	9/8/2022 11:16 AM	Disc Image File	6,967,730 KB

Details pane content:

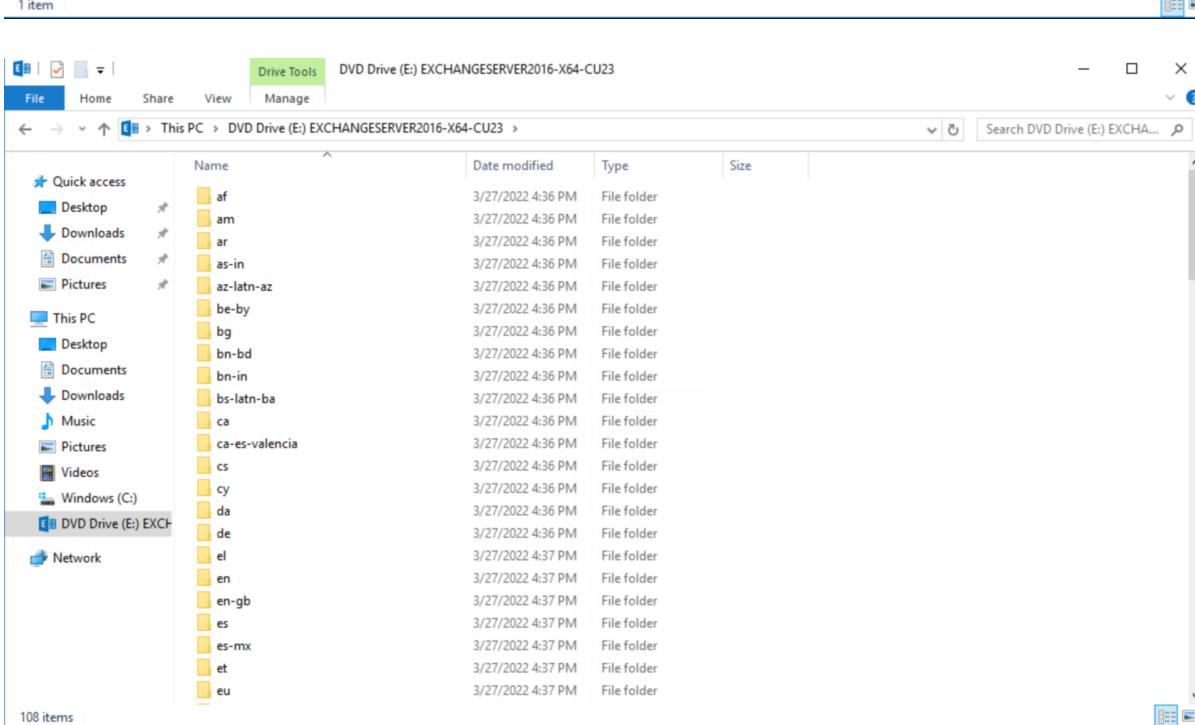
Type: Disc Image File  
Size: 6.64 GB  
Date modified: 9/8/2022 11:16 AM

File Explorer sidebar:

- Quick access
- Desktop
- Downloads
- Documents
- Pictures
- This PC
  - Desktop
  - Documents
  - Downloads
  - Music
  - Pictures
  - Videos
  - Windows (C:)
- Network

1 item

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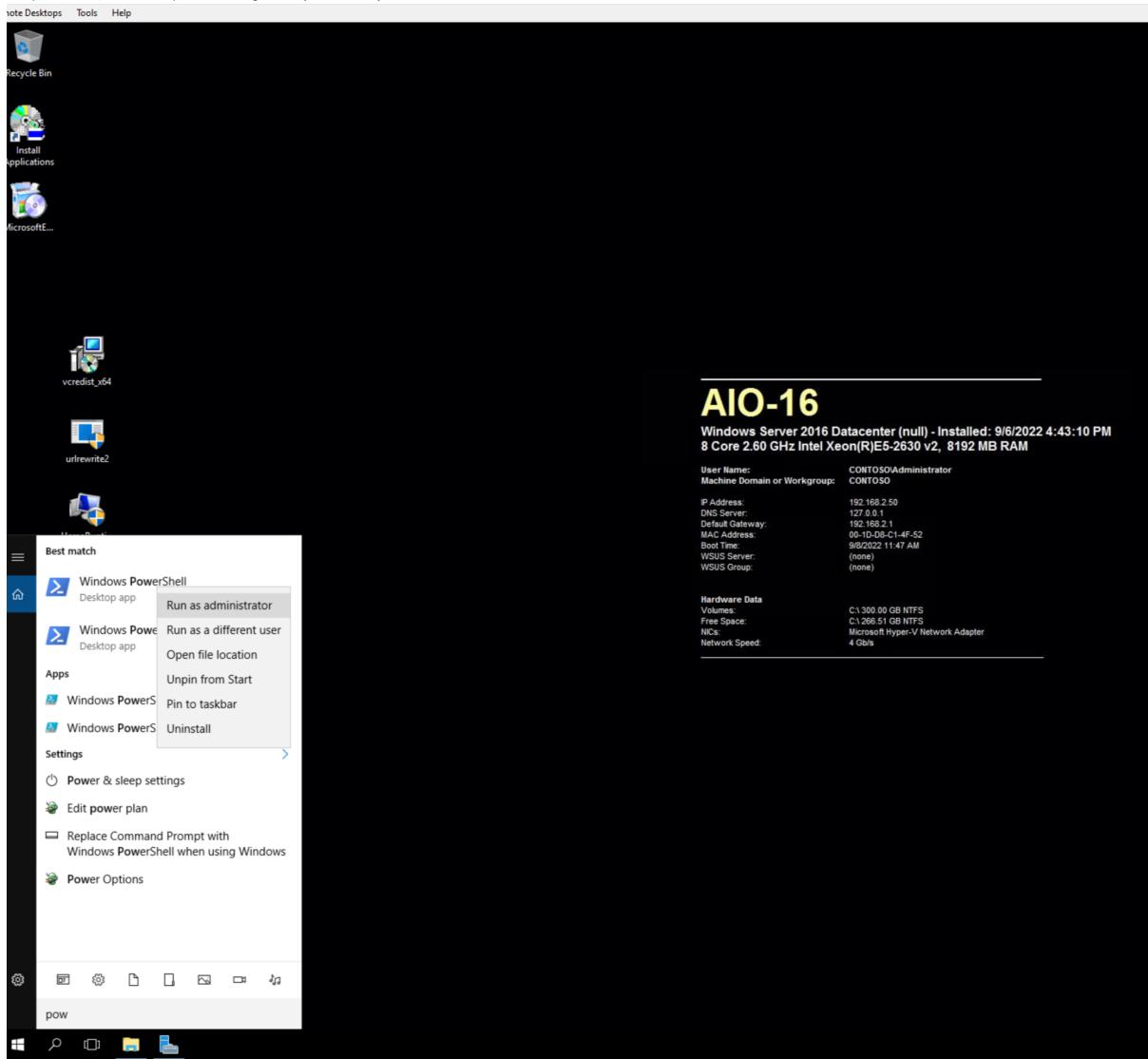
File Explorer window showing the contents of the ISO file on a DVD Drive (E:). The path is This PC > DVD Drive (E:) EXCHANGESERVER2016-X64-CU23. The details pane shows:

Name	Date modified	Type	Size
af	3/27/2022 4:36 PM	File folder	
am	3/27/2022 4:36 PM	File folder	
ar	3/27/2022 4:36 PM	File folder	
as-in	3/27/2022 4:36 PM	File folder	
az-latn-az	3/27/2022 4:36 PM	File folder	
be-by	3/27/2022 4:36 PM	File folder	
bg	3/27/2022 4:36 PM	File folder	
bn-bd	3/27/2022 4:36 PM	File folder	
bn-in	3/27/2022 4:36 PM	File folder	
bs-latn-ba	3/27/2022 4:36 PM	File folder	
ca	3/27/2022 4:36 PM	File folder	
ca-es-valencia	3/27/2022 4:36 PM	File folder	
cs	3/27/2022 4:36 PM	File folder	
cy	3/27/2022 4:36 PM	File folder	
da	3/27/2022 4:36 PM	File folder	
de	3/27/2022 4:36 PM	File folder	
el	3/27/2022 4:37 PM	File folder	
en	3/27/2022 4:37 PM	File folder	
en-gb	3/27/2022 4:37 PM	File folder	
es	3/27/2022 4:37 PM	File folder	
es-mx	3/27/2022 4:37 PM	File folder	
et	3/27/2022 4:37 PM	File folder	
eu	3/27/2022 4:37 PM	File folder	

108 items

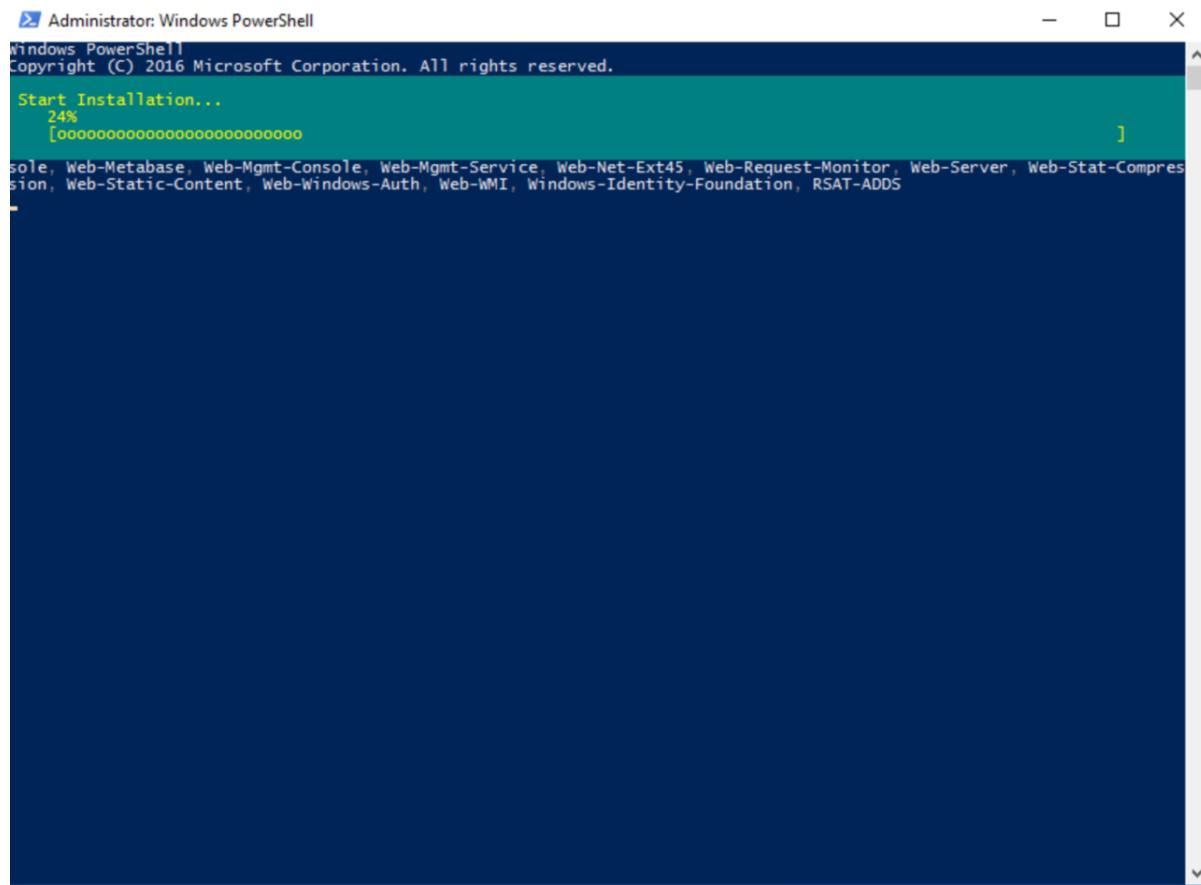
## Step 5: install Windows Features.

### 5.1. Run powershell as admin.



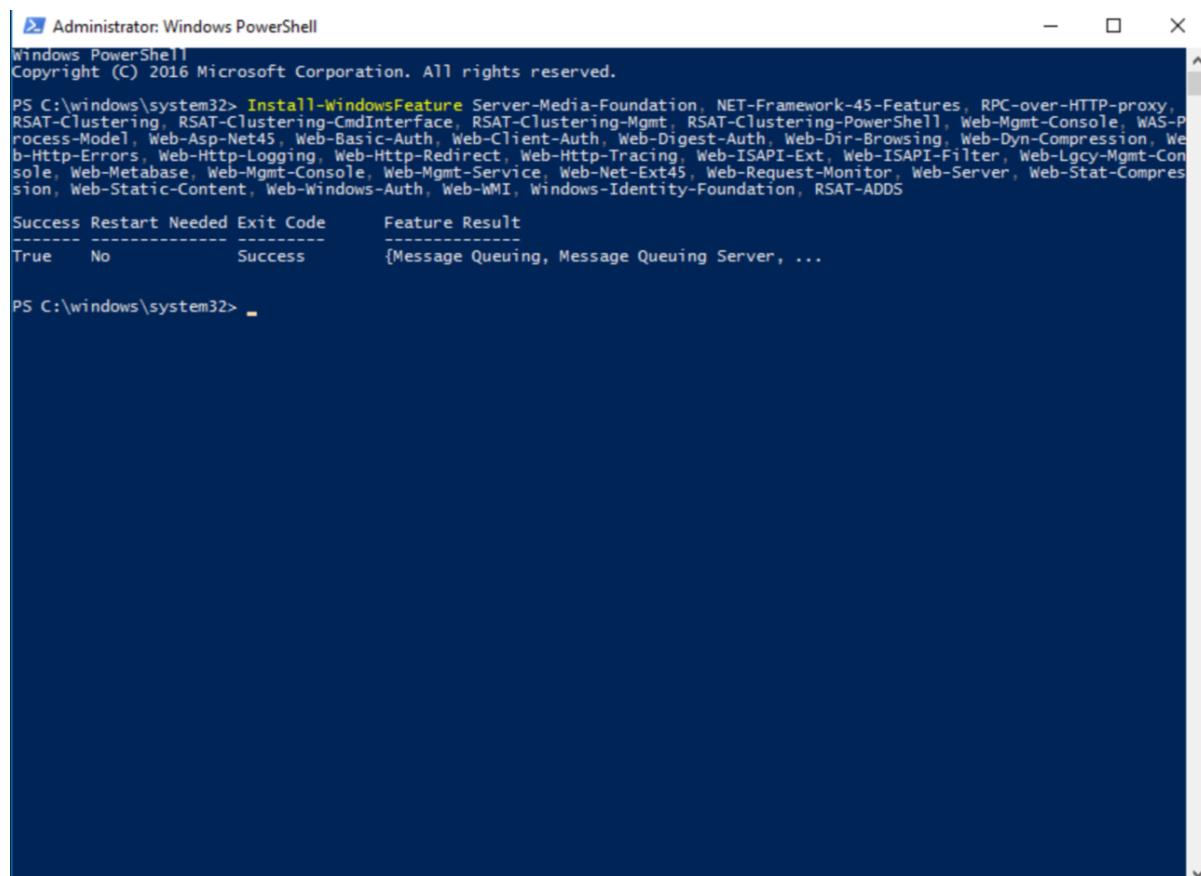
## 5.2. Run the following cmdlet in powershell.

```
Install-WindowsFeature Server-Media-Foundation, 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,  
RSAT-ADDS
```



```
Administrator: Windows PowerShell
Windows PowerShell
Copyright (C) 2016 Microsoft Corporation. All rights reserved.

Start Installation...
24%
[oooooooooooooooooooooooooooo]
```



```
Administrator: Windows PowerShell
Windows PowerShell
Copyright (C) 2016 Microsoft Corporation. All rights reserved.

PS C:\windows\system32> Install-WindowsFeature Server-Media-Foundation, .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, RSAT-ADDS

Success Restart Needed Exit Code      Feature Result
----- -----           -----      {Message Queuing, Message Queuing Server, ...}

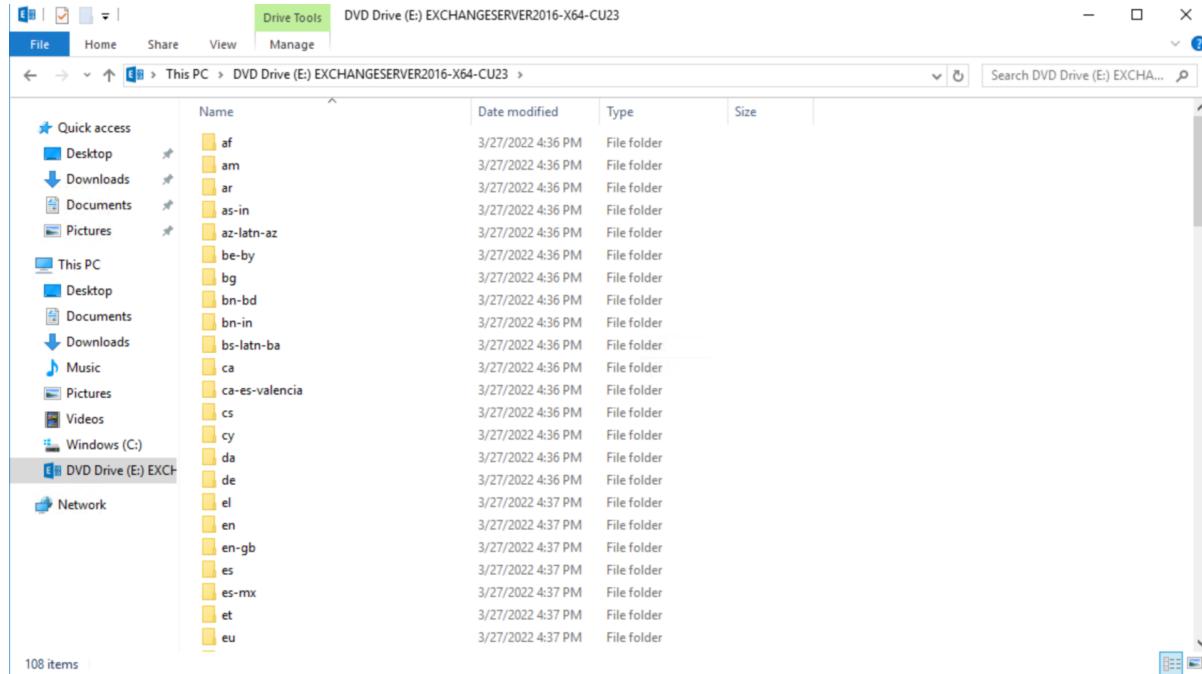
True     No          Success
```

## Step 6: use cmdlet to prepare AD schema, AD, and AD domain.

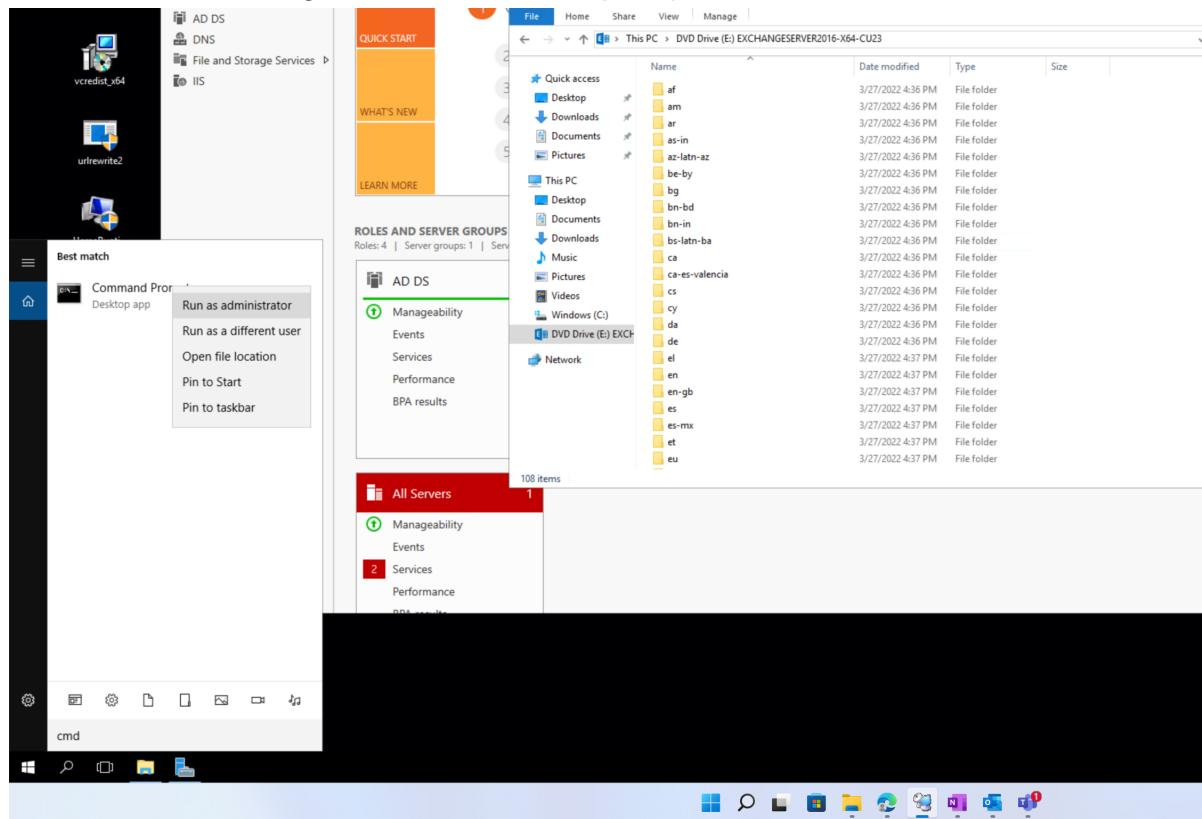
### Reference:

- [Prepare Active Directory and domains for Exchange Server, Active Directory Exchange Server, Exchange Server Active Directory, Exchange 2019 Active Directory | Microsoft Docs](#)

## 6.1 Make sure that the ISO pending.



## 6.2 Search for cmd, right-click on command prompt and run as admin.



## 6.3. Type the below cmdlet as following.

### 6.3.1 Prepare schema.

```
E:\\Setup.exe  
/IAcceptExchangeServerLicenseTerms_DiagnosticDataON  
/PrepareSchema
```

```
Administrator: Command Prompt
Microsoft Windows [Version 10.0.14393]
(c) 2016 Microsoft Corporation. All rights reserved.

C:\windows\system32>E:\Setup.exe /IAcceptExchangeServerLicenseTerms_DiagnosticDataON /PrepareSchema

Microsoft Exchange Server 2016 Cumulative Update 23 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.

C:\windows\system32>
```

### 6.3.2 Prepare AD.

```
E:\Setup.exe
/IAcceptExchangeServerLicenseTerms_DiagnosticDataON /PrepareAD
/OrganizationName:"TestOrg"
```

```
Administrator: Command Prompt
Microsoft Exchange Server 2016 Cumulative Update 23 Unattended Setup

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

Performing Microsoft Exchange Server Prerequisite Check

    Prerequisite Analysis                                         100%

Setup will prepare the organization for Exchange Server 2016 by using 'Setup /PrepareAD'. No Exchange Server 2013 roles have been detected in this topology. After this operation, you will not be able to install any Exchange Server 2013 roles.
For more information, visit: https://docs.microsoft.com/Exchange/plan-and-deploy/deployment-ref/readiness-checks?view=exchserver-2016

Setup will prepare the organization for Exchange Server 2016 by using 'Setup /PrepareAD'. No Exchange Server 2010 roles have been detected in this topology. After this operation, you will not be able to install any Exchange Server 2010 roles.
For more information, visit: https://docs.microsoft.com/Exchange/plan-and-deploy/deployment-ref/readiness-checks?view=exchserver-2016

Configuring Microsoft Exchange Server

    Organization Preparation                                     COMPLETED

The Exchange Server setup operation completed successfully.

C:\windows\system32>
```

### 6.3.3 Prepare domains.

```
E:\Setup.exe
/IAcceptExchangeServerLicenseTerms_DiagnosticDataON
/PrepareAllDomains
```

Or

```
E:\Setup.exe
/IAcceptExchangeServerLicenseTerms_DiagnosticDataON
/PrepareDomain:<domain name>
```

```
Administrator: Command Prompt
C:\windows\system32>E:\Setup.exe /IAcceptExchangeServerLicenseTerms_DiagnosticDataON /PrepareAllDomains
Microsoft Exchange Server 2016 Cumulative Update 23 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
    Prepare Domain Progress                                     COMPLETED
The Exchange Server setup operation completed successfully.
C:\windows\system32>
```

Then the preparation of AD and domains for Exchange Server has been completed.

## Step 7: install exchange mailbox role

7.1. Run cmd as admin.

7.2. Run the following command:

```
E:\\\\Setup.exe /IAcceptExchangeServerLicenseTerms_DiagnosticDataON
/mode:Install /role:Mailbox /DomainController:<DC name\\>
```

```
Administrator: Command Prompt - E:\\Setup.exe /IAcceptExchangeServerLicenseTerms_DiagnosticDataON /mode:Install /role:Mailbox /DomainControll...
File copy complete. Setup will now collect additional information needed for installation.

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

Performing Microsoft Exchange Server Prerequisite Check
    Configuring Prerequisites                                         COMPLETED
    Prerequisite Analysis                                           100%
Installing Exchange Server on a domain controller will elevate the permissions for Exchange Trusted Subsystem to domain
administrators.
For more information, visit: https://docs.microsoft.com/Exchange/plan-and-deploy/deployment-ref/ms-exch-setupreadiness-w
arninginstallexchangerolesondomaincontroller?view=exchserver-2016

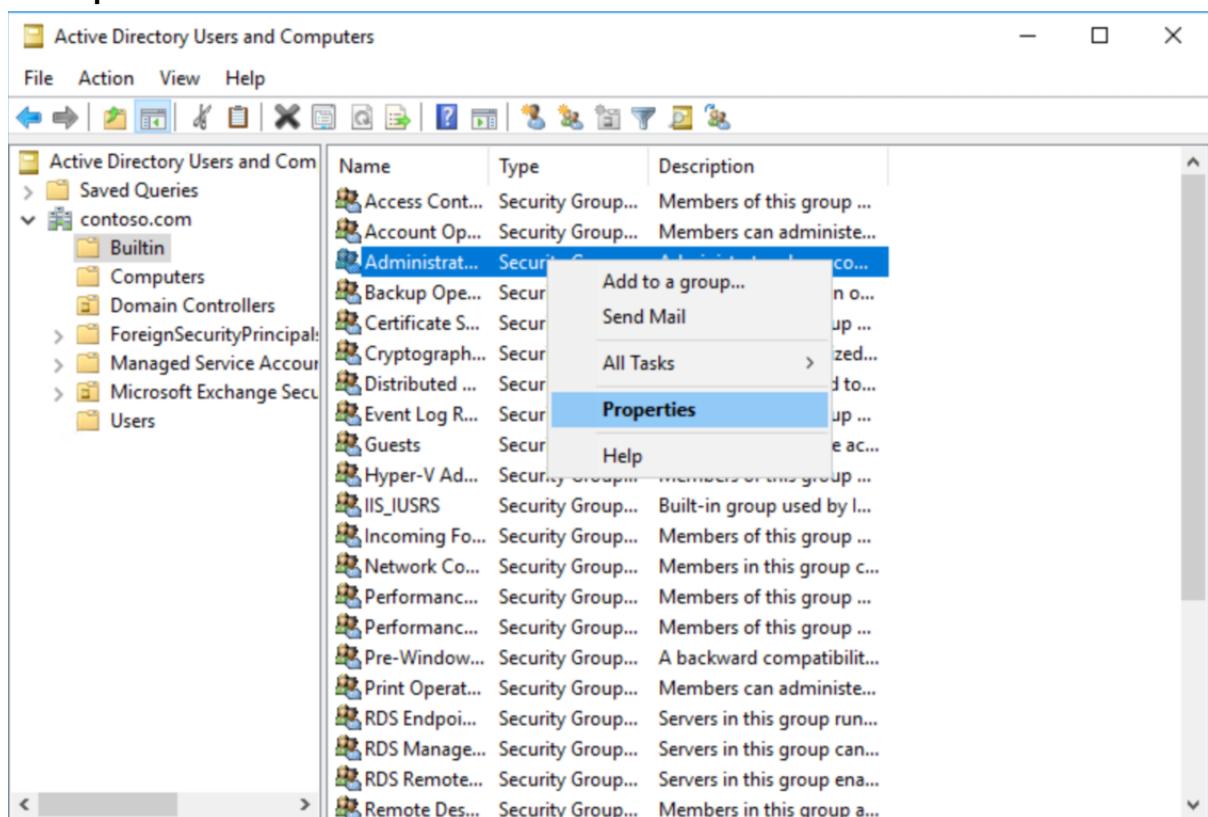
Configuring Microsoft Exchange Server
    Preparing Setup                                                 COMPLETED
    Stopping Services                                              COMPLETED
    Copying Exchange Files                                         42%
```

- Problem: You will receive the warning:

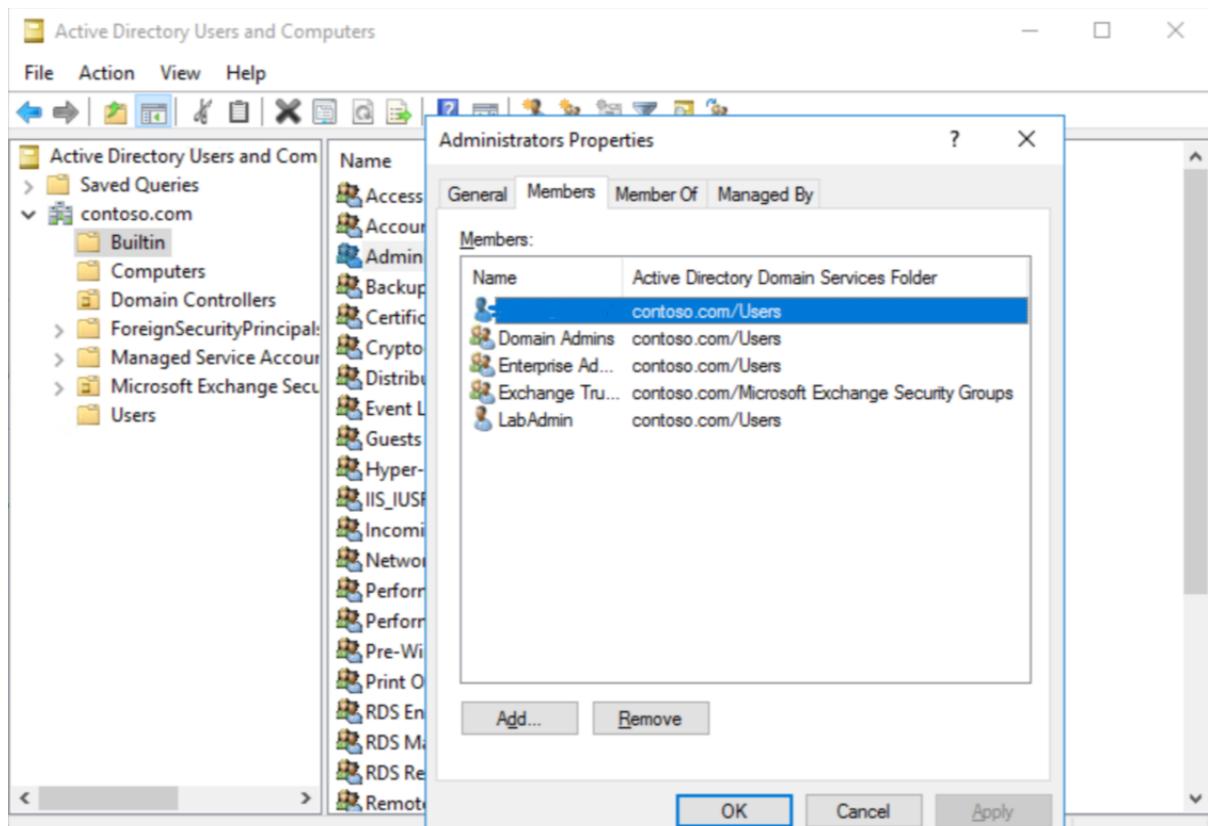
Installing Exchange Server on a domain controller will elevate  
the permissions for Exchange Trusted Subsystem to domain  
administrators.

- Solution:

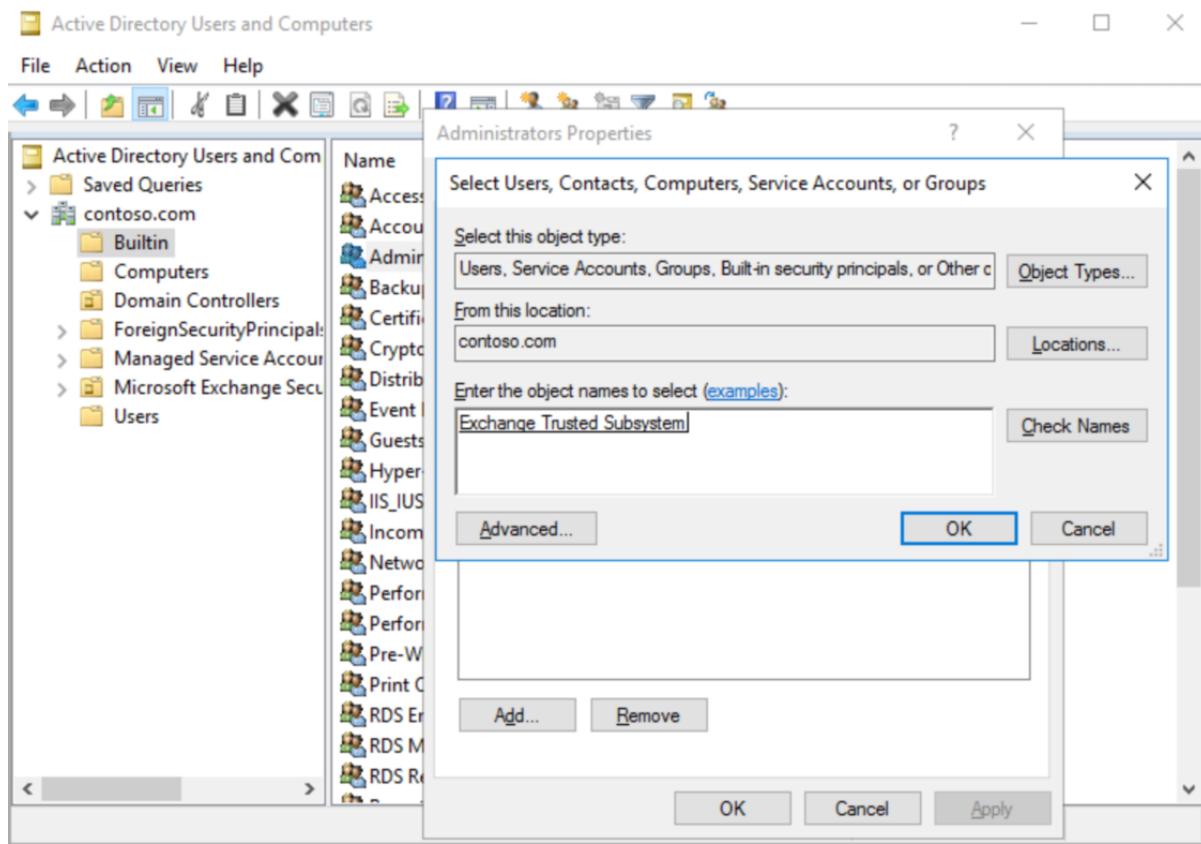
1. Go to **Server Manager --> Tools --> <domain> --> Builtin --> Administrators -> Properties --> Members.**



2. Click on **Add** button.



3. Type "Exchange Trusted Subsystem" in the box and click on **Check Names** button, then click on **OK**.



### 7.3 Wait for the installation.

```
Administrator: Command Prompt
Prerequisite Analysis
Installing Exchange Server on a domain controller will elevate the permissions for Exchange Trusted Subsystem to domain administrators.
For more information, visit: https://docs.microsoft.com/Exchange/plan-and-deploy/deployment-ref/ms-exch-setupreadiness-warninginstallexchangerolesondomaincontroller?view=exchserver-2016

Configuring Microsoft Exchange Server

Preparing Setup                               COMPLETED
Stopping Services                            COMPLETED
Copying Exchange Files                      COMPLETED
Language Files                             COMPLETED
Restoring Services                          COMPLETED
Language Configuration                     COMPLETED
Exchange Management Tools                  COMPLETED
Mailbox role: Transport service            COMPLETED
Mailbox role: Client Access service        COMPLETED
Mailbox role: Unified Messaging service    COMPLETED
Mailbox role: Mailbox service              COMPLETED
Mailbox role: Front End Transport service  COMPLETED
Mailbox role: Client Access Front End service COMPLETED
Finalizing Setup                           COMPLETED

The Exchange Server setup operation completed successfully.
Setup has made changes to operating system settings that require a reboot to take effect. Please reboot this server prior to placing it into production.

C:\windows\system32>
```

### 7.4 Then reboot your system.

## Step 8: install o365.

Same as Step 7 in [General Deployment of AIO Step by step](#).

## Preparation mentioned in Overview.

Same as Preparation mentioned in Overview in [General Deployment of AIO Step by step](#).