



EXCHANGE SERVER FUNDAMENTALS

**EVERY EMAIL ADMINISTRATOR
SHOULD KNOW**

Read this Guide to get essential knowledge on Exchange Server architecture, Exchange mail flow mechanism, Exchange planning & deployment, Exchange mailbox management, maintenance and more.



CONTENTS

EXECUTIVE SUMMARY	01
WHAT IS EXCHANGE SERVER?	02
HOW DOES EXCHANGE SERVER WORK?	02
EXCHANGE SERVER ARCHITECTURE: AN OVERVIEW	04
EXCHANGE SERVER PLANNING	08
EXCHANGE SERVER DEPLOYMENT	13
MAILBOX SERVER MANAGEMENT IN EXCHANGE	14
EXCHANGE SERVER MAINTENANCE CHECKLIST	16
CLOSING NOTES	19
REFERENCES	19



EXECUTIVE SUMMARY

Email is widely used in business communication to facilitate an immediate exchange of messages with a systematic trail across different email platforms. Unlike personal communication, where individuals may also use instant messengers, business communication mostly needs to rely on a “centralized email service” such as on-premises server to allow sending out messages, calendar invites, etc., daily. These email services allow 24x7 exchange of messages and data files among all users with valid email addresses, irrespective of their physical location, email platform, and network.

Such global transmission of messages through any network is enabled and managed using a mail server such as **Microsoft Exchange Server** in the backend. A mail server or Message Transfer Agent (MTA) is a software that uses a communication protocol called Simple Mail Transfer Protocol (SMTP) to transmit the messages to and from other mail servers in the network. An enterprise mail server technology such as Exchange Server allows the frontend users to readily access the emails through an email client such as Microsoft Outlook, a web service, or mobile devices apart from other applications.

With this preamble, it is evident that ensuring a robust email service with no or minimal outages is a core responsibility for Email Administrators. Meeting this goal necessitates a well-rounded understanding of **Exchange Server fundamentals**, including Exchange architecture & components, how Exchange works, Exchange Server deployment and maintenance, disaster recovery & backup tests, etc. to run the service optimally.

The purpose of this Guide is to provide a thorough understanding of Microsoft Exchange Server fundamentals for the beginner to mid-level Exchange Administrator. Nonetheless, it could also serve as a valuable refresher for the experienced administrators. The end goal is to impart the necessary technical and role-specific knowledge to help the administrators get started on Exchange.

In this guide, we share Exchange Server concepts, including Exchange mail flow mechanism, Exchange Server architecture, Exchange Server planning & deployment, maintenance best practices, email administration tasks. We have intentionally kept Exchange troubleshooting out of this Guide’s scope, considering it to be an advanced area relevant for an experienced Exchange Administrator and the broad purview of troubleshooting scenarios and topics. We hope this Guide serves as a useful reference for the Exchange administrators’ community.



WHAT IS EXCHANGE SERVER?

Before deep-diving into Exchange Server fundamental concepts, it is crucial to understand aspects like “what is Exchange Server” and how it fits into the email ecosystem. As mentioned earlier, Exchange Server is a mail server and calendaring server used for messaging and collaboration within and across different organizations. The application runs on Windows Server and leverages several server OS roles and capabilities to deploy a robust and intuitive messaging infrastructure. It provides features such as messaging, calendaring, global contact store, tasks, notes, public folders, etc., across desktop, web, and mobile interfaces.

HOW DOES EXCHANGE SERVER WORK?

How does Exchange Server enable such a broad emailing functionality? Like other mail servers, Exchange Server uses Simple Mail Transfer Protocol (SMTP) to send and receive messages over a network. An overview of the general mail processing model helps understand mail flow in Exchange Server through the following stages:

Stage 1: The mail client or Mail User Agent (MUA) submits the email to the mail server or Mail Submission Agent (MSA) using SMTP, IMAP or MAPI.

Stage 2: The MSA delivers the email to the Message Transfer Agent (MTA), a mail relay or delivery software or role on the mail server.

Stage 3: The MTA of the originating mail server uses Domain Name System (DNS) to look up the Mail Exchanger (MX) record for the recipient domain and the target MTA.

Stage 4: The source MTA establishes a connection with the target MTA and facilitates mail delivery based on the rules and factors associated with the recipient mail server.

Notes:

- MSA and MTA are mostly instances of the same utility with different roles, i.e., mail retrieval and submission and delivery (relay).
- The local processing (i.e., retrieval, submission, and relay) of messages can happen in a single step or multiple hops through several machines on the local network.



EXCHANGE MAIL FLOW MECHANISM

Understanding the Exchange mail flow mechanism is critical to understanding the Exchange Server mail server technology & its architectural components. Exchange Server uses a 'transport pipeline' comprising services, connections, components, and queues to process the mails.

The following steps outline the Exchange internal mail flow mechanism after a third-party or external mail server MTA connects with the **Exchange Server Front End Transport** service (Exchange MTA) to deliver a message:

1. The message enters the Exchange transport pipeline of the local Mailbox server on the internal network through the default Receive connector in the Front End Transport service.
2. The Front End Transport Service routes the message to the **Transport service on the local Mailbox server**, which inspects and categorizes the message. Notably, the Transport service never communicates directly with the mailbox databases.
3. Next, the Transport service on the local Mailbox server routes the message to the **Mailbox Transport Delivery service***.
4. Finally, the message is delivered to the local mailbox data by the Mailbox Transport Delivery service using a Remote Procedural Call (RPC).

*A Note on Exchange Mailbox Transport Services

Exchange Mailbox Transport services are made up of Mailbox Transport Delivery service & Mailbox Transport Submission service.

- The **Mailbox Transport Delivery service** receives the messages from the Transport service on the local Mailbox server and delivers them to the local mailbox databases using RPC.
- The **Mailbox Transport Submission service** retrieves the messages from local mailbox data bases using RPC and submits them to the Transport service on the local Mailbox server.

EXCHANGE SERVER ARCHITECTURE: AN OVERVIEW

This section overviews Exchange Server architecture, its components and roles, & how they are organized to enable a highly efficient and available business emailing service. There are three sub-architectural components of Exchange Server, namely—

1. SERVER COMMUNICATION ARCHITECTURE

The purpose of server communication architecture is to control the mail flow to and from the Exchange Servers, including the different versions. The server communication controls the information flow within the **Protocol layer** comprising Exchange Web Services (EWS), Mailbox Replication Service (MRS), and Simple Mail Transport Protocol (SMTP). **Figure 1** illustrates the protocol layer information exchange between two Exchange Servers in the server communication architecture.

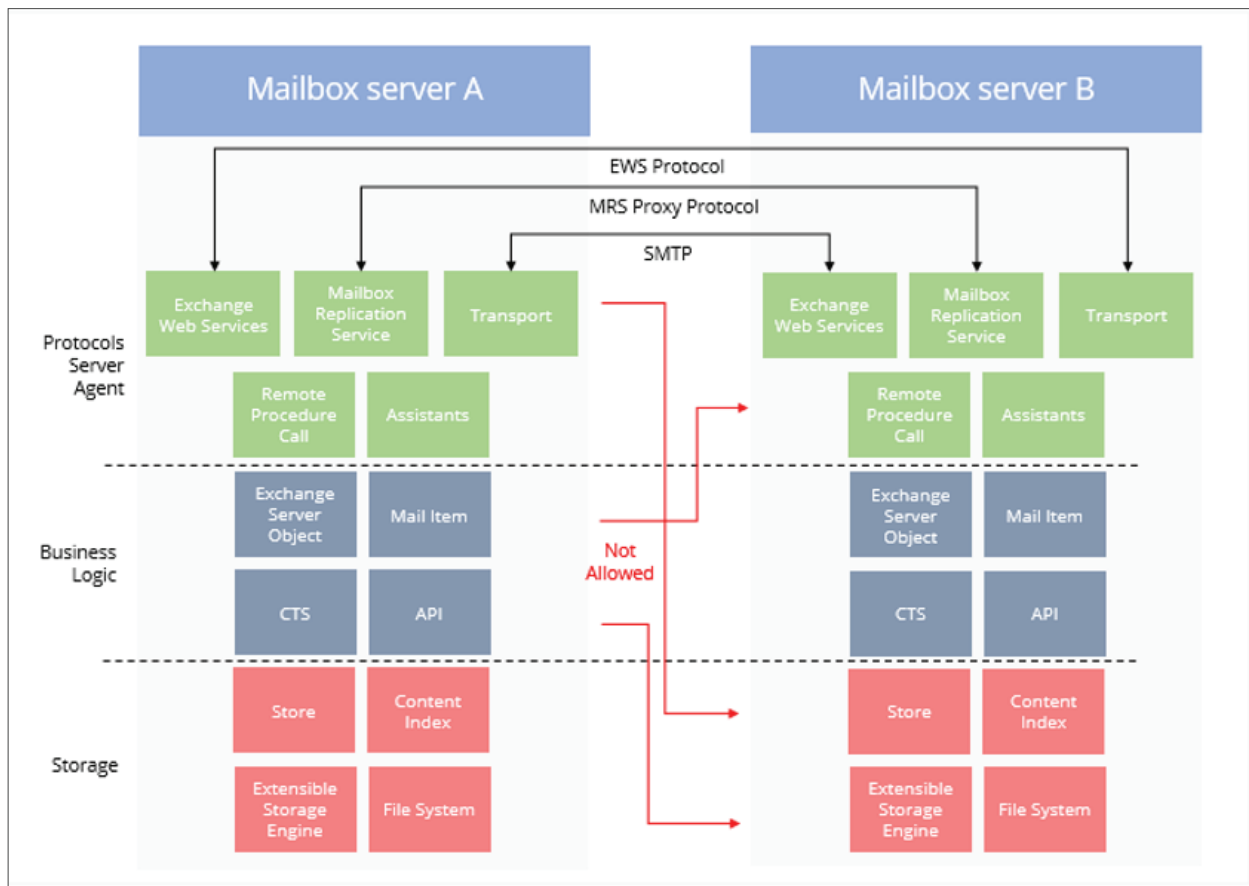


Fig. 1: Schematic for Exchange Server Communication architecture (Source: Microsoft Exchange documentation)



2. SERVER ROLE ARCHITECTURE

The Server Role architecture is central to the ‘messaging’ function of the Exchange Server. Mainly, this component facilitates mail transport, configures, and manages mailbox databases, and enables the client connections with backend services on the Mailbox server. It also handles external mail flow for the Exchange Server organization through the Edge Transport server. The Server Role architecture is made up of the following components:

A. Mailbox server

In Exchange 2019 and 2016 versions, the Mailbox server constitutes the core messaging system. It includes the Transport services for mail flow and routing, Mailbox databases storing the users’ mails in Exchange Databases (EDB) file format, and Client Access services to facilitate the client connections through authentication. The following is a summary of the three services:

a) Transport services

As described earlier in this Guide, mail flow in Exchange Server is managed using a collection of services called Transport services, as follows—

- Front End Transport service manages the flow of SMTP traffic between servers
- Transport Service on Mailbox server inspects and categorizes the messages and routes them to the Mailbox Transport Delivery service
- Mailbox Transport Delivery service delivers the message to the local mailbox database using RPC
- Mailbox Transport Submission service is used for retrieving messages from the local mailbox database
- Transport service on Edge Transport handles the flow of mails to and from the Internet

b) Mailbox databases

The mailbox database is an entity in Exchange for storing any data related to the mailboxes. It stores the mailboxes in an Exchange database file, commonly known as the EDB file. A section named Mailbox Server Management in Exchange in this guide provides the instructions to create an Exchange mailbox database, configure mailbox database properties, mount a mailbox database, and more.

c) Client Access services

The Client Access services handle internal and external client connections with the Mailbox server back-end services. These services authenticate the client connection requests and route them to the user’s active mailbox database copy through redirection and proxy connections based on SMTP, IMAP, or POP. Client Access services also enable network security through Transport Layer Security (TLS) encryption. Figure 2 illustrates the layout of Exchange Client Access services.

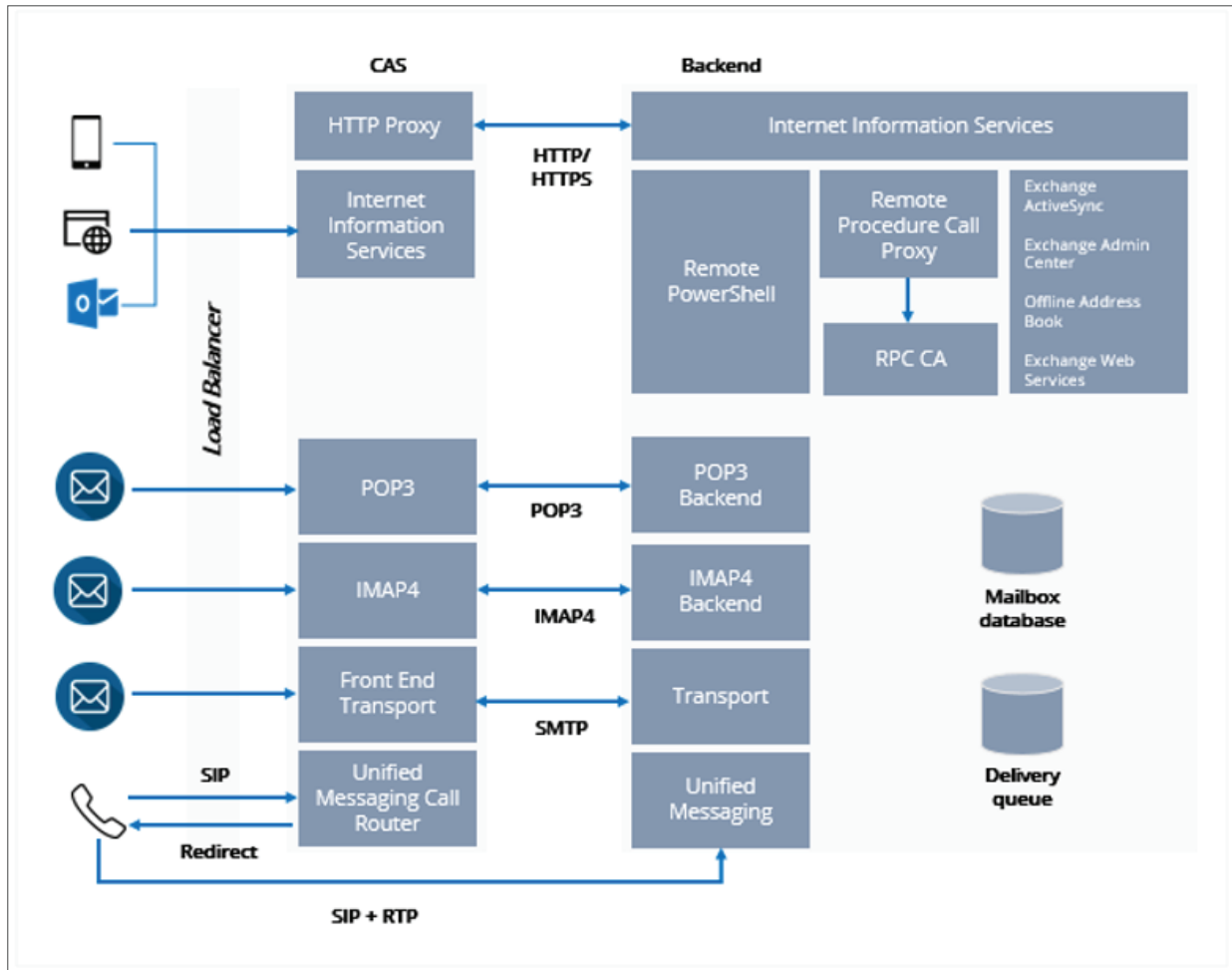


Fig 2: Exchange Client Access services schematic (Source: Microsoft Exchange Documentation)

B. Edge Transport server

In Exchange 2019 and 2016 versions, the Mailbox server constitutes the core messaging system. It includes the Transport services for mail flow and routing, Mailbox databases storing the users' mails in Exchange Databases (EDB) file format, and Client Access services to facilitate the client connections through authentication. The following is a summary of the three services:

HIGH-AVAILABILITY ARCHITECTURE

Exchange Server 2010 & later versions support High-Availability architecture for the Mailbox databases & Transport services. The purpose of Exchange High Availability is to ensure the availability of mailbox databases and email continuity in different failover scenarios and outages for a single-site organization.

Exchange High Availability is enabled using the Database Availability Group (DAG), which comprises a group of member servers, each hosting one or multiple copies of the mailbox databases from the other member servers. Figure 3 illustrates a basic DAG setup comprising two member servers and a File Share witness.

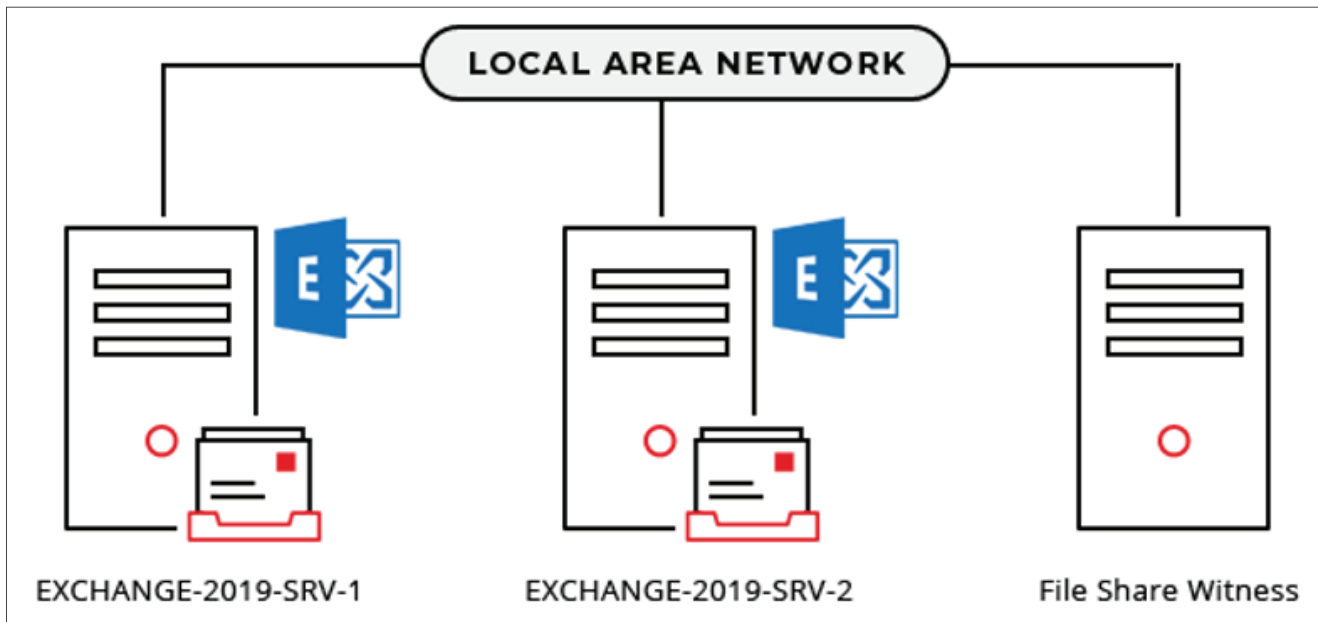


Fig 3: DAG schematic depicting the member serves and a file share witness.

These database copies are maintained as one Active copy & one or more Passive copies per database, which are continually replicated from the Active to Passive database copies to keep them updated.

Database Availability Group (DAG) facilitates high availability by enabling “database-level” recovery through automated Switchover and Failover mechanisms, managed using the Active Manager role running inside the Microsoft Server Replication service on all member servers. DAG provides automated mailbox database recovery in situations involving database, network, or server failures. Figure 4 illustrates the replication process between members of a DAG.

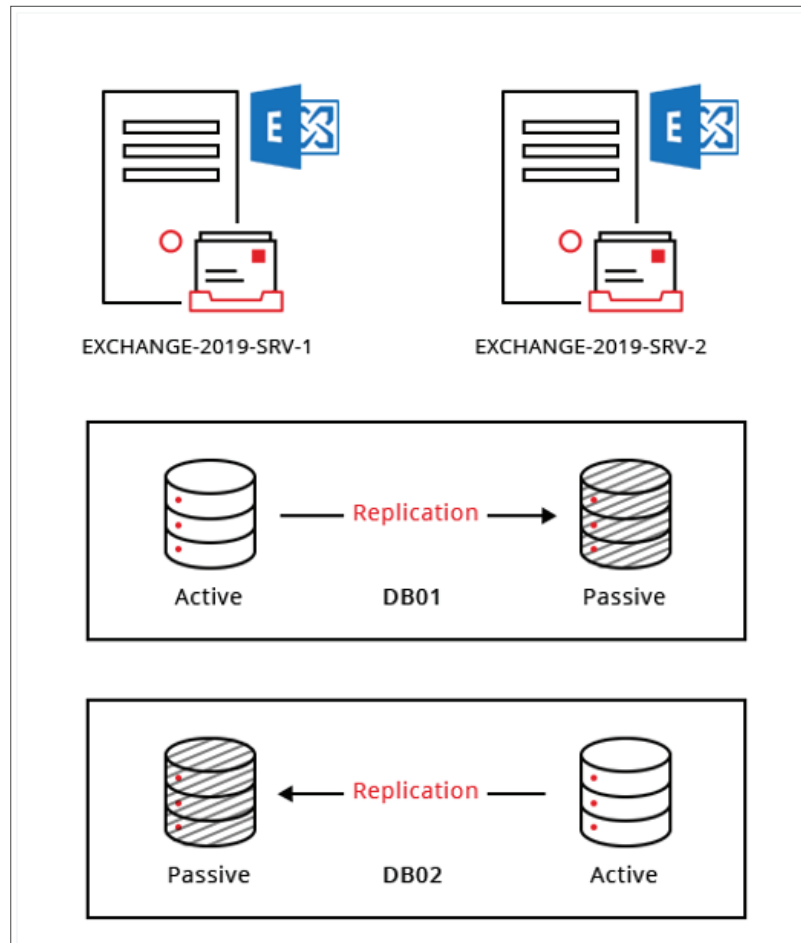


Fig 4: Replication of mailbox database copies in DAG

EXCHANGE SERVER PLANNING

Exchange Server deployment requires extensive planning to ensure an optimal setup based on the organization's needs. This section provides the fundamental knowledge to plan the deployment of Exchange Server 2019 and Exchange Server 2016 through the following checkpoints:

1. EXCHANGE COEXISTENCE SCENARIOS

Installing different Exchange Server versions in an organization is bound by the technical viability of their "Coexistence." Therefore, knowing the coexistence scenarios or rules is a critical first step Exchange deployment planning. The following table summarizes the coexistence scenarios for Exchange Server 2019 and 2016 organizations.

Exchange Organization	Supported Coexistence Scenario
Exchange Server 2019	<ul style="list-style-type: none"> Exchange 2010: Not supported Exchange 2013: Supported with Cumulative Update 21 or later, including Edge Transport Servers. Exchange 2016: Supported with Cumulative Update 11, including Edge Transport Servers.
Exchange Server 2016	<ul style="list-style-type: none"> Exchange 2007: Not supported Exchange 2010: Supported with Update Rollup 11 for Exchange 2010 SP3 or later, including Edge Transport servers. Exchange 2013: Supported with cumulative update 10 or later, including Edge Transport servers.

2. EXCHANGE SERVER SYSTEM REQUIREMENTS

Exchange deployment requires meeting specific system requirements, spanning three specific areas, namely, network, resources, and operating system as follows:

a) Network:

The below table specifies the network and directory server requirements for deploy Exchange 2019 and Exchange 2016.

Exchange Server 2019 »

Component Name	Requirement
Domain controllers	Windows Server 2012 R2, 2016, or 2019 Supported editions: Standard and Datacenter
Active Directory forest	Windows Server 2012 R2 or higher version
Active Directory site	The Active Directory site used for Exchange deployment must have at least one writeable domain controller that is also a global catalog server.
DNS namespace	<ul style="list-style-type: none"> Contiguous: The domains are organized hierarchically. Non-Contiguous or discontinuous: The domains in the forest do not have hierarchical organization, therefore, they form separate domain trees. Single label: DNS without a suffix such as .com, .org, .net, etc. Disjoint: The primary DNS suffix of a client machine does not match the DNS domain name.
IPv6	IPv4 installation is necessary to support IPv6 in Exchange 2013, 2016, & 2019.

Exchange Server 2016 »

Component Name	Requirement
Domain controllers	Windows Server 2012 R2, 2016, or 2019 Supported editions: Standard and Datacenter Or, Windows Server 2008 R2 Supported editions: Standard, Enterprise, Datacenter RTM or later
Active Directory forest	Windows Server 2008 R2 or higher version
Active Directory site	The Active Directory site used for Exchange deployment must have at least one writeable domain controller that is also a global catalog server.
DNS namespace	<ul style="list-style-type: none">▪ Contiguous▪ Non-Contiguous or discontinuous▪ Single label▪ Disjoint
IPv6	IPv4 installation is necessary to support IPv6 in Exchange 2013, 2016, & 2019.

b) Resources:

The hardware requirement spans components such as processor, memory, disk space, etc., listed in the below table for Exchange Server 2019 and Exchange Server 2016.

Exchange Server 2019 »

Component Name	Requirement
Processor	Intel® or AMD® 64-bit processor.
Memory	<ul style="list-style-type: none">▪ Minimum 128 GB for Mailbox▪ Minimum 64 GB for Edge Transport
Paging file size	Minimum and Maximum paging file values should be 25% of the memory
Disk Space	Minimum 30 GB of drive space for installation Maintain a min. 200 MB free space on the system drive and 500 MB of free space on the drive used for storing the message queue database
Screen Resolution	Min. 1024 x 768 pixels XGA
File System	Resilient File System (ReFS) on partitions containing the mailbox databases and transaction logs NTFS on other partitions

Exchange Server 2016 »

Component Name	Requirement
Processor	Intel® or AMD® 64-bit processor.
Memory	<ul style="list-style-type: none">Minimum 8 GB for MailboxMinimum 4 GB for Edge Transport
Paging file size	< 32 GB RAM: Physical RAM + 10 MB to a maximum of 32 GB >32 GB RAM: 32 RAM
Disk Space	Minimum 30 GB of drive space for installation and additional 500 MB for installing each Unified Messaging language page Maintain a min. 200 MB free space on the system drive and 500 MB of free space on the drive used for storing the message queue database
Screen Resolution	Min. 1024 x 768 pixels XGA
File System	Resilient File System (ReFS) on partitions containing the mailbox databases and transaction logs, and content indexing files. NTFS on other partitions

c) Operating System:

The table lists the OS requirements for installing the specific components of Exchange Server 2019 and Exchange Server 2016.

Exchange Server 2019 »

Component Name	Requirement
Mailbox and Edge Transport server roles	Windows Server 2019 Standard or Datacenter edition
Management Tools	Windows Server 2019 Standard or Datacenter edition Or, Windows 10 64-bit edition * Windows Server Core fully supports Exchange Server 2019 installation.

Exchange Server 2016 »

Component Name	Requirement
Mailbox and Edge Transport server roles	Windows Server 2016, 2012 R2, or 2012 Supported editions: Standard and Datacenter Note: Datacenter edition can install Exchange Server 2016 Cumulative Update or later.
Management Tools	Windows Server 2016, 2012 R2, or 2012 Supported editions: Standard and Datacenter Or, 64-bit edition of Windows 10 or Windows 8.1

3. EXCHANGE SERVER PREREQUISITES: QUICK CHECKLIST

Having understood the coexistence scenarios & system requirements for Exchange 2019 and 2016 deployment, the next step is to verify that you meet the following prerequisites for a smooth installation.

A. Exchange Server 2019 Prerequisites:

The following is a list of prerequisites for preparing Active Directory, meeting Windows Server 2019 prerequisites for Exchange Server 2019, and installing Exchange Server 2019 Mailbox servers and Edge Transport servers on Windows Server 2019.

- Install .NET Framework 4.8
- Install Visual C++ Redistributable Package for Visual Studio 2012
- Install Remote Tools Administration Pack

Run the PowerShell command to install the Remote Tools Administration Pack

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

- Add Lync Server or Skype for Business Server components
 - Install the Server Media Foundation using the following PowerShell command

```
Install-WindowsFeature Server-Media-Foundation
```

- Install the Unified Communications Managed API 4.0.

Download link: <https://www.microsoft.com/en-us/download/details.aspx?id=34992>

#Check the References section for Microsoft documentation on Exchange 2019 prerequisites.

B. Exchange Server 2016 Prerequisites:

- a) Install .NET Framework 4.8
- b) Install Visual C++ Redistributable Package for Visual Studio 2012
- c) Install Remote Tools Administration Pack

Run the PowerShell command to install the Remote Tools Administration Pack

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

- d) Install the December 13, 2016 (KB3206632) security update if you are using Windows Server 2016 ver.14393.576 or earlier.

Learn more: <https://support.microsoft.com/en-us/help/4004227/windows-10-update-kb3206632>

- e) Install Microsoft Unified Communications Managed API 4.0, Core Runtime 64-bit.

Download link: <https://www.microsoft.com/en-us/download/details.aspx?id=34992>

#Check the References section for Microsoft documentation on Exchange 2016 prerequisites.

EXCHANGE SERVER DEPLOYMENT

Exchange Server deployment is the next step after Exchange Server planning. It involves Exchange Server installation through the following step

Step 1: Prepare Active Directory and domains for Exchange.

This step prepares the Active Directory to store Exchange mailbox and configuration information using the Exchange Setup wizard. It involves extending the Active Directory schema and preparing the Active Directory and its domains.

Step 2: Install Exchange Mailbox servers.

This step involves installing the Exchange Mailbox server role using the Exchange Server Setup wizard. It also includes configuring the Mailbox role and Windows prerequisites, specifying the Exchange organization name, etc.

Step 3: Install Exchange Edge Transport servers.

This step installs the Edge Transport server role using the Exchange Server Setup wizard. It also involves configuring the Edge Transport role and installing Windows Server roles and features required for Exchange Server installation.

Note: We recommend using the Exchange Deployment Assistant for technical guidance.

MAILBOX SERVER MANAGEMENT IN EXCHANGE

As understood earlier in this Guide, the Mailbox server is a vital component of the Server role in Exchange Server architecture, enabling Exchange Server's messaging function. Therefore, knowing the basics of Mailbox Server management is essential to run an efficient Exchange-based email service. Following are some critical Mailbox server management tasks with instructions:

a) Create a mailbox database

Use the **New-MailboxDatabase** cmdlet to create a mailbox database.

```
New-MailboxDatabase -Server Server3 -Name "DB51" -EdbFilePath  
E:\ExchangeDatabases\DB51\DB49.edb -LogFolderPath D:\Logs\
```

The above command creates a database named DB51 on the mailbox server named Server3 located in the E:\ drive with the log files in the drive D:\.

b) Get the mailbox database properties

Use the **Get-MailboxDatabase** cmdlet to retrieve the mailbox database object(s) from a server.

```
Get-MailboxDatabase -Identity MailboxDatabase51 -Status | Format-List
```

The above command fetches detailed information about MailboxDatabase51.

c) Set mailbox database properties

Use the **Set-MailboxDatabase** cmdlet to configure the mailbox database properties. The following example shows how to set the retention time for a deleted mailbox database named DB51.

```
Set-MailboxDatabase "DB51" -DeletedItemRetention 8.00:00:00
```

d) Move a mailbox database path

This task involves moving the mailbox database to a new location through two steps, namely

- Temporary dismounting of the database
- Defining a new path to the database location on a Mailbox server

Here's how to perform these steps:

Use the **Dismount-Database** cmdlet to dismount the database

```
Dismount-Database -Identity Database51
```




The above example dismounts the mailbox database named Database51.

Use the **Move-DatabasePath** cmdlet to define a new path to the database location.

```
Move-DatabasePath -Identity Database51 -EdbFilePath  
E:\NewFolder\Database21.edb
```

The above command specifies the path to the new location of Database51.

e) Mount a mailbox database

Use the **Mount-Database** cmdlet to mount a mailbox database on Exchange server.

```
Mount-Database -Identity ExchangeServer1.stellarinfo.com\DB51
```

The above command mounts the database named DB51 on the Mailbox server ExchangeServer1 hosted on stellarinfo.com.

Note: The Mount-Database cmdlet will be unable to mount the database if the Microsoft Exchange Information Store and Exchange Replication services are not running. Other reasons why a database won't be able to mount could be due to issues with the transaction log file or database integrity. This problem can be solved using a third-party Exchange database recovery software such as [Stellar Repair for Exchange](#). The tool repairs EDB file corruption and exports the mailboxes to PST or directly to a Live Exchange server or Office 365 tenants.

f) Fix mailbox corruption issue

You can use the New-MailboxRepairRequest to detect and repair mailbox corruption, as follows:


```
New-MailboxRepairRequest -Mailbox cory@crysler.com -CorruptionType  
FolderView
```

The above example detects and repairs all folder views for the mailbox cory@crysler.com

```
New-MailboxRepairRequest -Mailbox cory -CorruptionType ProvisionedFolder  
-DetectOnly
```

This example only detects and reports the corruption issues with ProvisionedFolder to Cory's mailbox.

```
New-MailboxRepairRequest -Database DBX-DB21 -CorruptionType  
ProvisionedFolder,SearchFolder,AggregateCounts,Folderview
```



This example detects and repairs all corruption types for all mailboxes in the mailbox database DBX-DB21.

Note: If the cmdlets are unable to repair the mailbox corruption, you can use the Exchange database recovery tool mentioned in the previous section to recover the mailboxes and restore them to a new database.

g) Remove or delete a mailbox database

Use the Remove-MailboxDatabase cmdlet to remove all the copies of a mailbox database.

```
Remove-MailboxDatabase -Identity DB51
```

The above command removes all copies of the mailbox database named DB51.

Note: The cmdlet removes only the database object from AD while the database files remain on the server. To remove the database files, you can safely delete the files.

EXCHANGE SERVER MAINTENANCE CHECKLIST


Exchange Server is a large, organization-wide setup serving hundreds and thousands of users' daily communication and collaboration needs. Therefore, efficient Exchange Server maintenance is a crucial aspect of Exchange Server administration, which involves periodic upkeep of the mail server based on rigorously planned schedules. This section outlines the essential facets of Exchange Server maintenance through checklist guidance, as follows:

1. Maintain and verify Exchange backups

Backups provide a critical fallback mechanism to address scenarios involving Exchange database corruption, dismount, disasters, etc. There are two aspects of Exchange backup, namely choosing the right backup strategy and periodically testing the backups' real-world restorability. The Exchange backup strategy is based on the Recovery Point Objective (RPO) and Recovery Time Objective (RTO). RPO specifies the "point in time" before failure, to which the server state and operations need to be restored. RTO specifies the "maximum time allowed" to restore Exchange Server services and mailbox databases.

There are four backup strategies to choose from, namely:

- **Full Backup:** It copies the entire target database and transaction logs every time a backup is taken. After every Full Backup cycle, Exchange Server truncates the old log files.

- 
- **Copy Backup:** This backup strategy is the same as Full Backup, but it does not truncate the transaction logs.
 - **Incremental Backup:** It copies only the specific changes in the transaction log file since the last Full or Incremental backup.
 - **Differential Backup:** This backup strategy copies the specific changes in the transaction log after a Full Backup.

After creating the backups, you must also check them routinely to verify their restorability.

Use the PowerShell command to verify the backup status of an Exchange mailbox database.

```
Get-MailboxDatabase -Server <ServerName> -Status | Format-List Name,*FullBackup
```

2. Check the disk, memory, and CPU utilization

Exchange system performance should be an actively monitored area considering the pre-specified configuration of on-premises installations, which are difficult to scale quickly, unlike cloud. The disk space may get filled up quickly due to the server log files, patches, and backups aside from the growth in the mailbox sizes. Overuse of the memory, CPU, or storage hardware can lead to situations like system crash, database corruption, and even prolonged outages in the absence of a high-availability setup. [Backpressure](#) is a built-in feature of the Microsoft Exchange Transport service to monitor the usage of system resources such as hard drive space and memory.

You can use the **Get-ExchangeDiagnosticInfo** cmdlet to check the resources being monitored by Backpressure.

```
[xml]$bp=Get-ExchangeDiagnosticInfo [-Server <ServerIdentity> ] -Process  
EdgeTransport -Component ResourceThrottling;  
$bp.Diagnostics.Components.ResourceThrottling.ResourceTracker.ResourceMeter
```

3. Monitor the events and security logs

Event monitoring and keeping systematic checks on Windows Server security logs are other crucial aspects of Exchange Server maintenance, necessary to detect potential problems early on for a swift resolution. **Windows Event Viewer** can help you keep a real-time check on application, security, setup, system, and other events through a log of messages, error notifications, and warnings. You can also use the **Get-EventLog** cmdlet to fetch events & event logs for Exchange Server. The following example illustrates the use of **Get-EventLog** cmdlet to get event error logs.

```
Get-EventLog -LogName System -EntryType Error
```

Index	Time	EntryType	Source	InstanceID	Message
13296	Jan 15 13:53	Error	DCOM	10016	The description for Event ID '10016' in Source...
13291	Jan 15 13:51	Error	DCOM	10016	The description for Event ID '10016' in Source...
13245	Jan 15 11:45	Error	DCOM	10016	The description for Event ID '10016' in Source...
13230	Jan 16 11:07	Error	DCOM	10016	The description for Event ID '10016' in Source...

Aside from the built-in utilities and cmdlets, there are 3rd-party tools like Stellar Reporter and Auditor for Exchange for real-time reporting on Exchange mailbox, OWA & ActiveSync, mail traffic, storage, etc. It also provides alerts and notifications on errors and other crucial events.

4. Install the latest updates & security patches

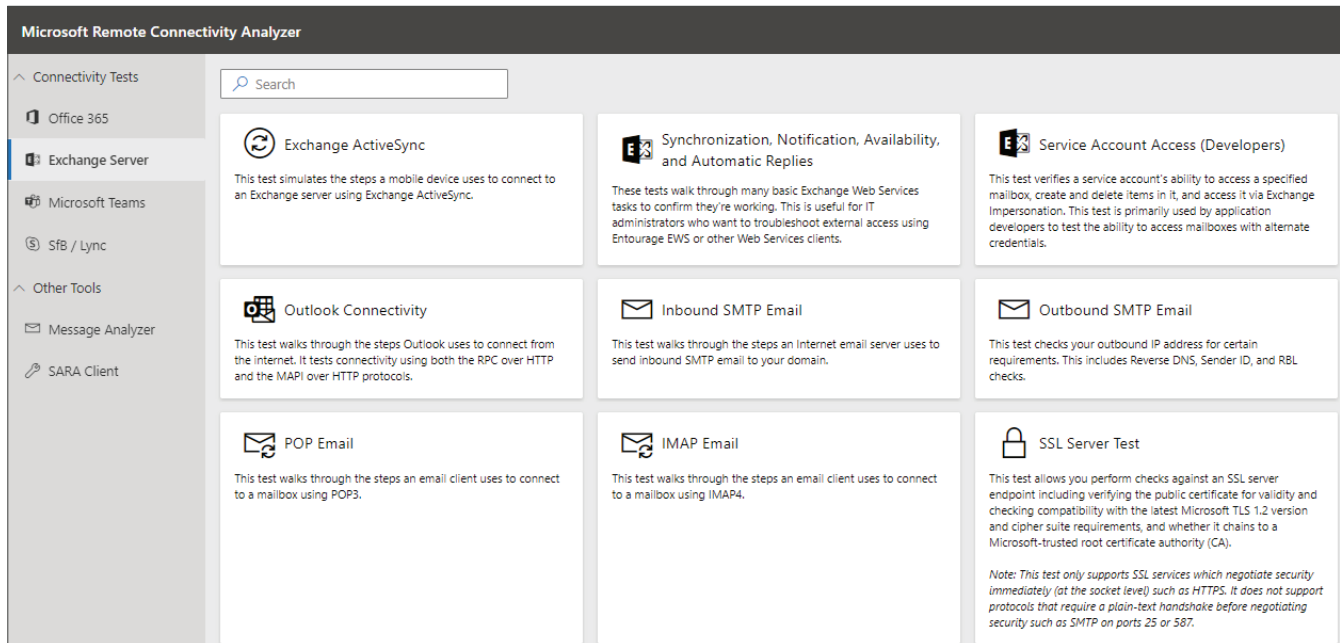
Another critical responsibility of an Administrator is to ensure that the Exchange Server organization is always up to date for optimal performance. This goal requires diligent installation of the server OS security patches, antivirus updates, etc., to ensure maximum protection against exploits and security risks. Also, proactive installation of Exchange Server updates is essential to avoid any unforeseen events apart from planning for future migrations while keeping an eye on the end-of-life and end-of-support of the current infrastructure to plan ahead. You can visit the link to check the latest Exchange Server build numbers and release dates:

<https://docs.microsoft.com/en-us/exchange/new-features/build-numbers-and-release-dates?view=exchserver-2019>

5. Use Microsoft Remote Connectivity Analyzer

Microsoft Remote Connectivity Analyzer is a free, web-based utility for testing the connectivity, availability, and functioning of on-premises Exchange, Lync servers, and Office 365 services. It can test Exchange functioning in terms of Inbound and Outbound SMTP email, POP email, IMAP email, ActiveSync, service account access, etc.

Access the Remote Connectivity Analyzer: <https://testconnectivity.microsoft.com/tests/exchange>



CLOSING NOTES

This Exchange Server fundamentals Guide provides the essential knowledge you need to get started with Microsoft Exchange Server and how to maintain it in its top shape. We plan to keep this Guide up to date from time to time with an endeavor to provide an ‘evergreen’ asset and companion to Exchange Server administrators.

REFERENCES

[Exchange mail flow and transport pipeline](#)

[Exchange architecture](#)

[Exchange 2019 prerequisites](#)

[Exchange 2016 prerequisites](#)

[Exchange high availability and site resilience](#)



Stellar Repair for Exchange

DOWNLOAD FROM:

<https://www.stellarinfo.com/edb-exchange-server-recovery.htm>



+1-877-778-6087 (Tollfree)



support@stellarinfo.com



www.stellarinfo.com

Stellar & Stellar Data Recovery are Registered Trademarks of Stellar Information Technology Pvt. Ltd.

© Copyright 2021 Stellar Information Technology Pvt. Ltd. All Trademarks Acknowledged.