

Exchange Pro 19.12

Requirements

December 2019

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This document details the requirements for implementing Binary Tree's Exchange Pro.

Hardware Prerequisites



Exchange Pro should not be installed on an Exchange server.

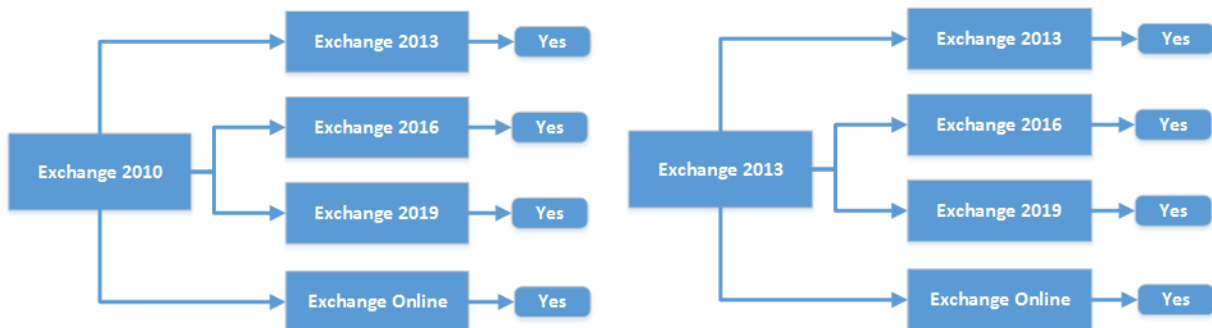
Exchange Pro requires the use of a Windows Server 2012 R2, 2016, or 2019 to host the migration management software.

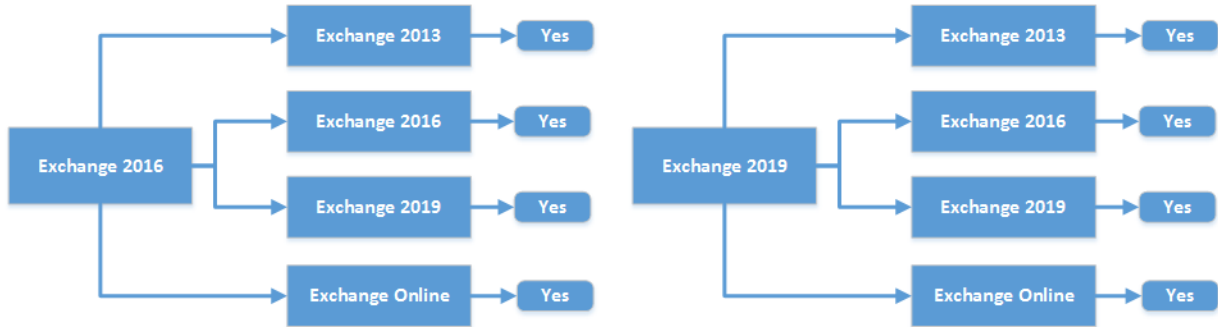
Component	Requirement
Processor	Minimum: Intel Xeon quad core 1.8 Ghz (x64) or AMD equivalent
Memory	Minimum: 8 GB 8GB of RAM on the Exchange Pro server should be sufficient for an environment containing 15,000 mailboxes or less. But for larger environments, or for environments containing large Public Folder hierarchies, increasing the memory to 16GB is recommended.
Disk Space Requirements	Minimum: 100 MB for application installation and 4 GB for database storage.
Display	1280 x 768 or higher resolution monitor
Other	Keyboard and Microsoft Mouse (or compatible pointing device), Internet access

Supported Migration Paths

Supported Mailbox Migration Paths

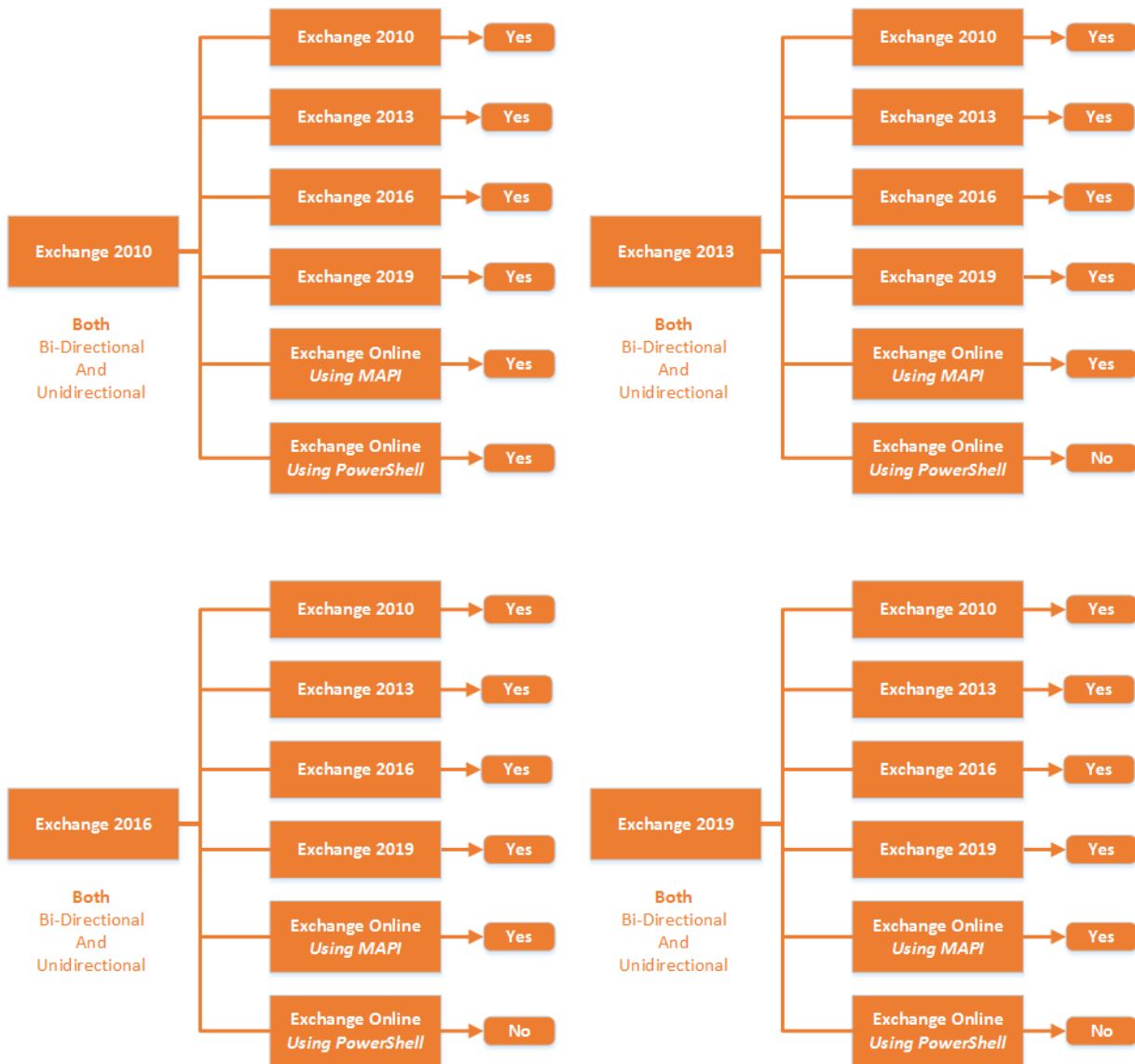
The current release of *Exchange Pro* supports mailbox migration for these source/target scenarios:





Supported Public Folder Migration Paths

Exchange Pro supports inter-org (only) Public Folders migration for these source/target scenarios:



Software Prerequisites

General Installation Requirements

- Windows Server 2012 R2, 2016, or 2019
- PowerShell 2.0, 3.0, or 4.0
- IIS (included with Windows Server 2012 R2, 2016, and 2019).
- .NET 3.5.1
- .NET 4.6.1 Framework (if not already installed, it will be downloaded and installed automatically if there is an Internet connection)
- Internet Explorer 8 or later or Firefox



When running Exchange Pro with PowerShell 3.0 or 4.0 installed, you may experience a small increase in memory usage of the MCP service compared with environments which use PowerShell 2.0.



Exchange Pro cannot rationalize Office 365 mailboxes when the *WhenChanged DateTime* format is *ddMMyyyy*, due to a remote PowerShell error claiming invalid date time format. Changing the date-time format of the operating system to *mmddyyyy* resolves the issue.

Networking Requirement

During installation, any prerequisites missing will be downloaded automatically and thus require an internet connection.

SQL Server Installation Requirements

- SQL Server 2014 SP2 CU13, 2016 SP2 CU3, or 2017 CU11.

OR

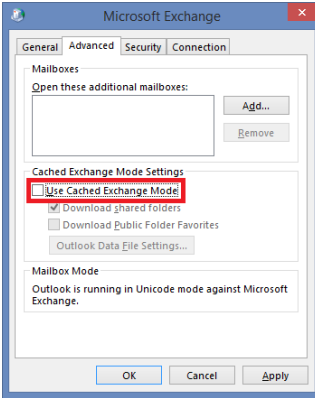
- SQL Server 2012 Express SP2 with Advanced Services. Exchange Pro's *Default Install* option will install SQL Server 2012 Express SP2 with Advanced Services if a local instance of SQL is not detected.
 - Note that SQL browsing service does not run by default. Please ensure this service is running.
 - Refer to the [SQL Server \(or Express\) Setup](#) Knowledge Base article for additional set up information.
- Network connectivity to SQL Server.

Supported Outlook Versions

The following Outlook versions are supported on the Exchange Pro Migration Server:

- Outlook 2016 32-bit
- Outlook 2019

Public Folder migration to Office 365 Groups requires Outlook 2019 be installed on the Exchange Pro and/or Exchange Pro Worker machines. Note also:



- The Outlook profiles on the Exchange Pro migration server and migration Worker machines must have Cached Mode disabled for the migration to proceed. But note that end users' Outlook profiles must be in Cached Mode to permit end-user viewing of O365 Groups by the Outlook client.
- If using Outlook profiles for Public Folder migration, and if *Use Cached Exchange Mode* is enabled, Exchange Pro will automatically disable this mode when the profile is selected.

Additional Requirements

TLS 1.2 Certification

- Exchange Pro supports TLS 1.2

Certified Exchange versions

BinaryTree has tested and certified Exchange Pro for these versions of Microsoft Exchange:

- Exchange Server 2019 CU1
- Exchange Server 2016: CU10
- Exchange Server 2013: CU21
- Exchange Server 2010: SP3 Update Rollup 22



BinaryTree will support customers running later cumulative updates of the supported Exchange versions of what is listed above, however, the above is what has been tested and certified as of this GA release.

Other Requirements

- Exchange Pro utilizes the remote capabilities of PowerShell 2.0 to communicate with Exchange 2010 or 2013. Therefore, **provide a Fully Qualified Domain Name (FQDN) of the Exchange 2010 or Exchange 2013 server** that would communicate remotely through PowerShell. Ensure that PowerShell Remoting is enabled on the Exchange Server.
- FQDN of SQL server.
- Internet Explorer Enhanced Security Configuration (IE ESC) must be disabled.
- Public Folder migration to Exchange 2013 requires Exchange 2013 CU5+.
- The registry must be modified to disable User Account Control (UAC). In the registry, navigate to `HKEY_LOCAL_MACHINE\SOFTWARE\Microsoft\Windows\CurrentVersion\policies\system`, set `DWORD EnableLUA` to 0, and then reboot.

Account Requirements

Account Services

Administrative accounts are needed for the following:

- Exchange Pro MCP Windows service
- Active Directory access
- Exchange 2010/2013/2016/2019 access (PowerShell)
- Public folder access (MAPI)
- SMTP notifications
- SQL Server database

Account Permissions

Administrative accounts require the following permissions:

- Member of the “Exchange Organization Administrators” and “Organization Management” group
- Local administrator on the Exchange Pro server
- Read & List Contents rights to "Deleted Objects" container. You may follow these steps if your account is not a Domain Administrator or equivalent (see KB892806):

Using a domain admin account, open a command prompt and confirm the successful execution of the following commands:

```
dsaclS "CN=Deleted Objects,DC=domain,DC=com" /takeownership  
dsaclS "CN=Deleted Objects,DC=domain,DC=com" /g  
Domain\ServiceAccount:LCRP
```

Inter-Org Public Folder Migration Requirements

- The Target/Home account must be mailbox enabled and added to the Exchange “Public Folder Management” security group in the target forest.
- The Source account must be mailbox enabled and added to the Exchange “Public Folder Management” security group in the source forest.



Both the Source and Target mailbox enabled accounts for Public Folder migration should be logged into first, to avoid a warning during Exchange Pro Configuration.

Public Folder Migration to Office 365 using PowerShell Requirements

The Public Folder account used for Office 365 must be a member of the *PublicFolders* and *MailEnabledPublicFolders* role groups (in Office 365 EAC, Permissions > Admin roles).

Mailbox Migration Service Account Requirements

A mailbox-enabled service account is required to gather the required mailbox statistics via PowerShell. Exchange Pro requires a mailbox-enabled user with administrative privileges for both on-premises and Office 365 mailbox move migrations. This only pertains to Exchange 2010 and above.

Mailbox Migration to Office 365

Mailbox migration to Office 365 requires **either** Global Admin, **or** Billing, Exchange and User Admin roles.

Public Folder Migration to Office 365 Groups

- Public Folder migration to Office 365 Groups requires the admin be designated an Office 365 global administrator.
- The MAPI account configured within Exchange Pro, in *Forests | Accounts | Exchange (MAPI)*, should be using a mailbox that was created in Office 365 and not one that was migrated to Office 365 from on-premises.

SQL Accounts and Permissions

The following accounts must be created with the respective permissions in SQL before commencing installation of Exchange Pro.

If you are using a **single** account to connect to your database, and Active Directory and Exchange connectivity, you must grant these database permissions to the account:

- **Exchange Pro MCP Service Identity** - Only requires a SQL Login Account unless the account is also used as the SQL setup account, then it must have the following server role assigned: *dbcreator*

After the database has been created, you can remove *dbcreator* and assign the following specific permissions:

- *db_datareader*
- *db_datawriter*
- *db_ddladmin*

If you are using **multiple** accounts to connect to your database, and Active Directory and Exchange connectivity, you must grant the following database permissions:

- **Setup SQL Account** – This allows the SQL server administrator to retain accounts for Exchange Pro that require the least amount of privileges when the application is running in a production environment. The setup login must exist prior to the configuration and requires at a minimum *dbcreator* rights, and can either be a Windows or SQL Login.
 - *dbcreator* rights
 - Windows (Current User)
 - SQL Login
- **Application SQL Account**
 - *db_datareader*
 - *db_datawriter*
 - *db_ddladmin*
- **Exchange Pro MCP Service Identity:** public

- **Public Folders Identity** - The “Exchange Pro Worker” runs in the context of the currently logged on user. This user must have read/write access to the Exchange Pro database if SQL Server authentication is not being used.



As stated, the SQL login account(s) must already exist in order for the mapping to be established to the database account using these rights. This is important as these database accounts and rights are established when the database is created. If you are using a single SQL account for application access, it will need *db_datareader/db_datawriter /db_ddladmin*.

The Exchange Pro MCP account requires *db_ddladmin* to control the schema (identity values and constraints) when using bulk copy operations as part of the data population.

Exchange Pro Worker Prerequisites

The Exchange Pro Worker is utilized to distribute the provisioning and migration of Public Folders. There can be multiple Exchange Pro Workers installed for this purpose, and the following operating systems are supported:

- Windows Server 2012
- Windows Server 2012 R2
- Windows Server 2016
- Windows Server 2019

Exchange Pro Worker requires a 64-Bit Operating System to run.

Hardware Requirements

- **Processor:** Minimum 4 cores for server OS's.
- **Memory:** Minimum 6GB.
- **Disk Space Requirements:** Minimum 4GB free disk space.

Software Requirements

- The Exchange Pro Worker requires Microsoft .NET 4.5.2 framework. The Exchange Pro Worker installer will download this framework from Microsoft if not already installed. If the end user network environment does not allow the workstations to access the internet, the end user must acquire and install this.
- We recommend all Microsoft updates and service packs be installed before using the Exchange Pro Worker.
- The Exchange Pro Worker requires Outlook 2016 32-bit or Outlook 2019.
- The worker computers should be joined to the same domain as the main Exchange Pro server and logged into with the <domain>\ExchangeProServiceAccount. This account should be a member of the worker computer's Local Administrators group.
- The registry must be modified to disable User Account Control (UAC). In the registry, navigate to *HKEY_LOCAL_MACHINE\SOFTWARE\Microsoft\Windows\CurrentVersion\policies\system*, set *DWORD EnableLUA* to 0, and then reboot.

Exchange Pro Network Requirements

These general guidelines outline the firewall ports that should be opened for a fully functioning Exchange Pro project. We assume that the messaging and Active Directory environments in both the source and target are configured according to Microsoft's published guidance. For example, these guidelines assume that on-premises Exchange servers can freely communicate with global catalog servers within the same environment, and network isolation boundaries do not exist.

This table should be considered as a reference, but ultimately the ports are those required by Microsoft technologies, so they are the authoritative source on what is needed. Please refer to the Microsoft documentation if there are questions about which ports are required for Exchange Pro to communicate or utilize these technologies.

<https://docs.microsoft.com/en-us/exchange/plan-and-deploy/deployment-ref/network-ports?view=exchserver-2019>

<https://docs.microsoft.com/en-us/exchange/network-ports-for-clients-and-mail-flow-in-exchange-2013-exchange-2013-help>

From	To	Component	Protocol	Port (Default)	Remark
Exchange Pro	Source Domain Controller	Profile Outlook	TCP	25	Profile Outlook
Exchange Pro	Target SMTP messaging server	Exchange Pro MCP Service	TCP	25	Send email notifications
Source Messaging servers	Target messaging servers	Coexistence	TCP	25	Mail redirection
Target Messaging servers	Source messaging servers	Coexistence	TCP	25	Mail redirection
Exchange Pro	Source DNS servers	Exchange Pro MCP Service	TCP/IP	53	DNS lookups
Exchange Pro	Target DNS servers	Lookup	TCP	53	DNS
Exchange Pro	Source Domain Controllers	Outlook RPC over HTTP(S)	TCP	80	Profile Outlook
Exchange Pro	Target Domain Controllers	Outlook RPC over HTTP(S)	TCP	80	Profile Outlook
Exchange Pro	Source messaging servers	Outlook RPC over HTTP(S)	TCP	80	Profile Outlook
Exchange Pro	Target messaging servers	Outlook RPC over HTTP(S)	TCP	80	Profile Outlook

Source Domain Controllers	Target messaging servers	Authentication	TCP	88	Kerberos
Target messaging servers	Source Domain Controllers	Authentication	TCP	88	Kerberos
Exchange Pro	Target Domain Controllers	Authentication	TCP/UDP	88	Kerberos
Exchange Pro SQL	Target Domain Controllers	Authentication	TCP/UDP	88	Kerberos
Exchange Pro	Source Domain Controllers	Authentication	TCP	88	Kerberos
Exchange Pro	Source Domain Controllers	POP3	TCP	110	Profile Outlook
Exchange Pro	Target Domain Controllers	Windows Time	TCP	123	Windows Time
Exchange Pro SQL	Target Domain Controllers	Windows Time	TCP	123	Windows Time
Exchange Pro	Target messaging servers	Exchange Pro MCP Service	TCP	135	RPC locator
Exchange Pro	Source Domain Controllers	Exchange Pro MCP Service	TCP	135	RPC locator
Source messaging servers	Target messaging servers	RPC End Point	TCP	135	RPC Endpoint
Target messaging servers	Source messaging servers	RPC End Point	TCP	135	RPC Endpoint
Exchange Pro	Source messaging servers	RPC End Point	TCP	135	RPC Endpoint
Exchange Pro	Target Domain Controllers	RPC End Point	TCP	135	RPC Endpoint (domain integration)
Exchange Pro SQL	Target Domain Controllers	RPC End Point	TCP	135	RPC Endpoint (domain integration)
Exchange Pro	Target messaging servers	Exchange Pro MCP Service	TCP	137	NetBIOS Queries for domain binds

Exchange Pro	Source Domain Controllers	Exchange Pro MCP Service	TCP	137	NetBIOS Queries for domain binds
Source Domain Controllers	Target Domain Controllers	NetBIOS Queries for domain binds	TCP	137	NetBIOS Queries for domain binds
Exchange Pro	Target messaging servers	Exchange Pro MCP Service	TCP	138	NetBIOS Queries for domain binds
Exchange Pro	Source Domain Controllers	Exchange Pro MCP Service	TCP	138	NetBIOS Queries for domain binds
Exchange Pro	Target messaging servers	Exchange Pro MCP Service	TCP	139	NetBIOS Queries for domain binds
Exchange Pro	Source Domain Controller	Exchange Pro MCP Service	TCP	139	NetBIOS Queries for domain binds
Exchange Pro	Target messaging servers	Exchange Pro MCP Service	TCP	389	LDAP for object discovery
Exchange Pro	Source Domain Controllers	Exchange Pro MCP Service	TCP	389	LDAP for object discovery
Exchange Pro	Source Domain Controllers	LDAP	UDP	389	LDAP for object discovery
Source Domain Controllers	Target messaging servers	LDAP	TCP	389	LDAP
Target messaging servers	Source Domain Controllers	LDAP	TCP	389	LDAP
Exchange Pro	Target Domain Controllers	LDAP	TCP/UDP	389	LDAP (domain integration)
Exchange Pro SQL	Target Domain Controllers	LDAP	TCP/UDP	389	LDAP (domain integration)
Exchange Pro	Target CAS messaging servers	Exchange Pro MCP Service	TCP	443	PowerShell remoting
Source messaging servers	Target messaging servers	Replication Proxy	TCP	443	Mailbox Replication Proxy service uses port 443 to communicate with other Exchange 2010 client access server via HTTPS.

Target messaging servers	Source messaging servers	Replication Proxy	TCP	443	Mailbox Replication Proxy service uses port 443 to communicate with other Exchange 2010 client access server via HTTPS.
Exchange Pro	Target Domain Controller	SSL	TCP	443	Outlook profile configuration
Exchange Pro	Source Domain Controllers	SSL	TCP	443	Outlook profile configuration
Target messaging servers	Source Domain Controllers	SSL	TCP	443	SSL
Target messaging servers	Source messaging servers	SSL	TCP	443	SSL
Target messaging servers	Source Domain Controllers	SSL	TCP	443	SSL
Exchange Pro	Target messaging servers	SSL	TCP	443	SSL
Source messaging servers	Target Domain Controllers	SSL	TCP	443	SSL
Exchange Pro	Target messaging servers	Exchange Pro MCP Service	TCP	445	Active Directory Authentication
Exchange Pro	Source Domain Controllers	Exchange Pro MCP Service	TCP	445	Active Directory Authentication
Exchange Pro SQL	Target Domain Controllers	AD	TCP/UDP	445	Replication, User and Computer Authentication, Group Policy, Trusts (Domain integration)
Exchange Pro	Target Domain Controllers	AD	TCP/UDP	445	Replication, User and Computer Authentication, Group Policy, Trusts (Domain integration)

Source messaging servers	Target Domain controllers	DS Service	TCP	445	Microsoft-DS Service
Target messaging servers	Source Domain Controllers	DS Service	TCP	445	Microsoft-DS Service
Source messaging servers	Target messaging servers	DS Service	TCP	445	Microsoft-DS Service
Target messaging servers	Source messaging servers	DS Service	TCP	445	Microsoft-DS Service
Exchange Pro SQL	Target Domain Controllers	AD	TCP/UDP	445	Kerberos Change/set Password (Domain integration)
Exchange Pro	Target Domain Controllers	AD	TCP/UDP	445	Kerberos Change/set Password (Domain integration)
Exchange Pro	Source messaging servers	Outgoing email port Outlook	TCP	587	Outgoing email port Outlook
Exchange Pro SQL	Target Domain Controllers	LDAP SSL	TCP	636	LDAP SSL (Domain integration)
Exchange Pro	Target Domain Controllers	LDAP SSL	TCP	636	LDAP SSL (Domain integration)
Source messaging servers	Target messaging servers	Mailbox Move	TCP	808	Mailbox Replication Service uses to communicate
Target messaging servers	Source messaging servers	Mailbox Move	TCP	808	Mailbox Replication Service uses to communicate
Exchange Pro	Source Domain Controllers	Pop3	TCP	993	Profile Outlook
Exchange Pro	Source Domain Controllers	Imap4	TCP	995	Profile Outlook
Exchange Pro SQL	Target Domain Controllers	LDAP GC	TCP	3268	LDAP GC Domain integration

Exchange Pro	Target Domain Controllers	LDAP GC	TCP	3268	LDAP GC Domain integration
Exchange Pro	Source Domain Controllers	Exchange Pro MCP	TCP	3268	Update Forest
Source Domain Controller	Target messaging servers	LDAP	TCP	3268	LDAP
Target messaging servers	Source Domain Controllers	LDAP	TCP	3268	LDAP
Exchange Pro SQL	Target Domain Controllers	LDAP GC SSL	TCP	3269	LDAP GC SSL Domain integration
Exchange Pro	Target Domain Controllers	LDAP GC SSL	TCP	3269	LDAP GC SSL Domain integration
Exchange Pro SQL	Target Domain Controllers	RPC, DFSR (SYSVOL)	TCP	5722	RPC, DFSR (SYSVOL) Domain integration
Exchange Pro	Target Domain Controllers	RPC, DFSR (SYSVOL)	TCP	5722	RPC, DFSR (SYSVOL) Domain integration
Exchange Pro SQL	Target Domain Controllers	SOAP	TCP	9389	SOAP Domain integration
Exchange Pro	Target Domain Controllers	SOAP	TCP	9389	SOAP Domain integration
Source messaging servers	Target messaging servers	Mailbox Store	TCP Dynamic	1024>65535	Mailbox Store
Target messaging servers	Source messaging servers	Mailbox Store	TCP Dynamic	1024>65535	Mailbox Store
Exchange Pro SQL	Target Domain Controllers	RPC, DCOM, EPM, DRSUAPI, NetLogonR, SamR, FRS	TCP/UDP Dynamic	49152>65535	Domain integration
Exchange Pro	Target Domain Controllers	RPC, DCOM, EPM, DRSUAPI, NetLogonR, SamR, FRS	TCP/UDP Dynamic	49152>65535	Domain integration
Exchange Pro	Source Domain Controllers	Exchange Pro MCP	TCP Dynamic	49152>65535	Update Forest

Learn more about Binary Tree

For more information on Binary Tree, visit us at www.binarytree.com/company/about-binary-tree.

Binary Tree Social Media Resources



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