

Migrate to Microsoft Online Services

White Paper

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For the latest information, please visit [Microsoft Online Services](#).

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Migrate to Microsoft Online Services

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Introduction

Microsoft® Online Services supports migration of the contents of local Microsoft Exchange Server mailboxes as well as the contents of POP3 and IMAP4 mailboxes from your current environment to Microsoft Exchange Online. Migration can be done as quickly or as slowly as you want. Small organizations may be able to migrate to Microsoft Online Services overnight or over a weekend. Larger or more complex organizations typically prefer to establish e-mail and directory coexistence for a longer period of time and perform a controlled migration in logical stages.

To successfully migrate from your current environment to Microsoft Online Services, you must consider the following steps:

- [Understand migration](#)
- [Plan your migration](#)
- [Prepare for migration](#)
- [Establish e-mail coexistence](#)
- [Migrate your mailboxes](#)
- [Complete your migration](#)

The size and complexity of your current environment, your organization's existing Internet connectivity, the type of e-mail system you are using, whether or not you are using the Active Directory® directory service—all of these factors will help determine your migration goals. In some cases, you may be able to skip or minimize some of these steps. Follow the links above to the sections of this document that describe each of these steps.

Understand Migration

You must understand the following concepts when discussing migration to Microsoft Online Services:

- [Simple Microsoft Online Services](#)
- [Microsoft Online Services with your e-mail domain](#)
- [E-mail coexistence](#)
- [Directory synchronization](#)
- [Mailbox migration](#)
- [Migration tools](#)

Simple Microsoft Online Services

When you register with Microsoft Online Services, you are assigned a domain name similar to example.microsoftonline.com. You can use this domain name and Microsoft Online Services with no attempts to make it work with your existing e-mail environment. This is referred to as simple Microsoft Online Services.

Microsoft Online Services Using Your E-Mail Domain

Many organizations have a registered Internet domain name that they use when sending and receiving e-mail. Microsoft Online Services supports adding your domain name to your Exchange Online service. If you want to use your e-mail domain without migrating from an existing e-mail environment, see the Microsoft TechNet article [About Using Your Domain with Microsoft Online Services](#).

E-Mail Coexistence

If you have an existing local Exchange Server e-mail environment, you can continue to use that environment while evaluating Microsoft Online Services. You can establish one-way synchronization from your local Active Directory directory service to Microsoft Online Services and migrate groups of users and their mailbox contents from your local Exchange Server environment to Exchange Online. During this phase, some of your organization's mailboxes will be hosted on your local Exchange Server environment, and others will be hosted in Exchange Online. This is referred to as e-mail coexistence.

Directory Synchronization

Establishing e-mail coexistence between your local Exchange Server environment and your Exchange Online environment requires directory synchronization. The Microsoft Online Services Directory Synchronization Tool provides one-way synchronization from your local Active Directory directory service to Microsoft Online Services.

When you first run the Microsoft Online Services Directory Synchronization Tool, it writes a copy of each user account and all e-mail-enabled contacts and groups to your organization's Microsoft Online Services directory. Directory synchronization can also provide Global Address List synchronization between your local Exchange Server environment and Exchange Online.

When user accounts are first synchronized with your Microsoft Online Services directory they are marked as disabled. They cannot send or receive e-mail and they do not consume licenses. When you are ready to assign Exchange Online mailboxes to specific users, you must select and activate these users.

Important:

When your organization is using the Microsoft Online Services Directory Synchronization Tool to synchronize your local directory with Microsoft Online Services, you must edit all synchronized objects (user accounts and e-mail enabled contacts and groups) in your local Active Directory using the Active Directory Users and Computers Microsoft Management Console snap-in. It is possible to edit synchronized contacts and groups in Microsoft Online Services, but any changes that you make in Microsoft Online Services will be overwritten the next time directory synchronization runs.

Mailbox Migration

Microsoft Online Services provides tools to help you migrate the contents of your local Exchange Server mailboxes to Exchange Online. You can also migrate the contents of POP3 and IMAP4 mailboxes to Exchange Online. The migration tools include the Microsoft Online Services Migration Console, which should handle most of your migration needs. The tools also include several Windows PowerShell™ cmdlets that you can use to script your migration.

When migrating local Exchange Server mailboxes to Exchange Online, we recommend that you first establish e-mail coexistence between your local Exchange Server environment and Exchange Online. However, you can also choose to migrate the contents of your organization's mailboxes to Exchange Online without establishing e-mail coexistence. This is usually done by small organizations with simple e-mail environments or by organizations without an existing local Exchange Server e-mail environment.

There are two basic types of mailbox migration:

- [Exchange Server mailbox migration](#)
- [POP3 or IMAP4 mailbox migration](#)

Your choice is determined by which e-mail system is currently in place at your organization.

Exchange Mailbox Migration

Microsoft Online Services supports the migration of Exchange Server 2000, Exchange Server 2003, and Exchange Server 2007 mailboxes. Migration of Exchange Server mailboxes can be done in stages by establishing e-mail coexistence and directory synchronization between your local Exchange Server environment and Exchange Online. You can then migrate the mailbox contents in logical groups of users. When all mailboxes have been migrated, you delete the local Exchange Server mailboxes and perform the DNS administration task of switching your MX records to deliver all of your organization's e-mail to your Exchange Online service. For more information about switching your MX records, see "[Reroute Incoming Mail](#)" later in this paper.

If you have a small organization with a simple e-mail environment, you might be able to migrate to Microsoft Online Services overnight, or over a weekend. Larger organizations with more complex e-mail environments should plan their migration over a longer period to minimize the disruption for their users. For more information, see "[Plan Your Migration](#)" later in this document.

POP3 or IMAP4 Mailbox Migration

Microsoft Online Services does not support coexistence with POP3 and IMAP4 mailboxes. When migrating from POP3 and IMAP4 mailboxes, you can use the migration tools to copy the contents of the POP3 or IMAP4 mailboxes directly to Exchange Online mailboxes.

Migration Tools

Microsoft Online Services provides two tools to help your organization establish e-mail coexistence and migrate from your current e-mail environment to Microsoft Exchange Online. Those tools are:

- [Microsoft Online Services Directory Synchronization Tool](#)
- [Microsoft Online Services Mailbox Migration Tools](#)

Microsoft Online Services Directory Synchronization Tool

The Microsoft Online Services Directory Synchronization Tool is required to establish e-mail coexistence. If your company uses the Active Directory directory service, you can use this tool to provide regular one-way synchronization of user accounts, e-mail-enabled contacts, and e-mail-enabled groups from your local Active Directory to Microsoft Online Services.

Microsoft Online Services Migration Tools

The Microsoft Online Services Migration Tools help you migrate mailbox content from your local Exchange Server environment or your POP3 and IMAP4 servers to Exchange Online. They are also used during e-mail coexistence to establish e-mail forwarding from your local Exchange Server mailboxes to Exchange Online.

Plan Your Migration

The key to a successful migration is thorough planning. The first part of the planning process is to understand your current environment. At a minimum, you must consider the following:

- [Migration and synchronization computer security](#)
- [Type of e-mail environment](#)
- [Installation prerequisites](#)
- [Mailbox information](#)
- [E-mail client software](#)
- [E-mail-enabled applications](#)
- [Number of objects to be synchronized](#)
- [Network bandwidth](#)
- [Help desk resources](#)
- [Required permissions](#)

- [Complex environments](#)

If you are not comfortable with the questions and the terminology used in this section, you may choose to work with a Microsoft Certified company. To find a Microsoft Certified company, use the **Find it Fast** feature of the Microsoft Pinpoint Web site at <http://pinpoint.microsoft.com>.

Migration and Synchronization Computer Security

You should control access to the computers on which you install the Microsoft Online Services Migration Tools and the Microsoft Online Services Directory Synchronization tools as tightly as you control access to your Active Directory domain controllers and other sensitive network components. You should only allow people with Domain Admin permissions or greater to access these computers.

Type of E-Mail Environment

Determine what type of e-mail environment your organization is currently using. Microsoft Online Services supports mailbox content migration from local Exchange Server environments and from POP3 and IMAP4 servers. If you have a local Exchange Server environment running Exchange Server 2000, Exchange Server 2003, or Exchange Server 2007 you can establish e-mail coexistence and directory synchronization and then migrate your organization's mailbox contents over time.

Installation Prerequisites

The computers on which you install the Microsoft Online Services Migration Tools and the Microsoft Online Services Directory Synchronization tool must meet specific requirements.

Migration Tool Prerequisites

The Microsoft Online Services Migration Tools are available in both 32-bit and 64-bit versions. They can be installed on computers that meet the following prerequisites:

- Windows PowerShell is installed.
- Microsoft Management Console (MMC) version 3 is installed.
- Windows Vista® operating system, Windows Server® 2000, Windows Server 2003, or Microsoft Windows® XP with Service Pack 2 is installed. The Migration Tools can be installed on an Active Directory domain controller.

Directory Synchronization Tool Prerequisites

The Directory Synchronization tool can be installed on computers that meet the following prerequisites:

- Joined to a domain in the Active Directory forest that you plan to synchronize with Microsoft Online Services. Installation on Active Directory domain controllers is not supported.
- Able to communicate with all of the other domain controllers for all of the domains in your Active Directory forest.
- Running 32-bit Windows Server 2003 or Windows Server 2008 with the latest service packs installed. Installation on 64-bit computers is not supported.
- Running Microsoft .NET Framework version 2.0. [Click here for information about installing the .NET Framework.](#)
- Running Windows PowerShell. [Click here to install Windows PowerShell.](#)

Mailbox Information

Determine the number of mailboxes, mailbox size, and the rate of mailbox size growth. This information will help you evaluate the impact of migration traffic on your network. You should take this into consideration when you schedule your migration.

Does your organization enforce maximum mailbox size limits? This information is very important when you define your organization's Exchange Online storage capacities. At a minimum, the new environment should let all users store the same amount of data or more in their Exchange Online mailboxes. It may be

necessary for users with extra-large mailboxes to move some of that content from their mailboxes to some form of offline storage, such as a Microsoft Outlook® .PST file.

E-Mail Client Software

What e-mail client applications are your users currently using? Exchange Online requires Microsoft Office Outlook 2007 or Outlook Web Access (OWA). If your users are not familiar with Office Outlook or OWA, you may want to schedule user training.

E-Mail–Enabled Applications

Does your organization have any e-mail–enabled applications? Some examples of e-mail–enabled applications are:

- An auto-reply to incoming e-mail addressed to a specific e-mail address.
- A report automatically generated by a line-of-business application that is e-mailed to an e-mail address or a distribution group.

If your organization has any e-mail–enabled applications, you must determine whether they can be modified to work with Microsoft Online Services. In some cases, it may be necessary to keep your existing e-mail environment, in order to support your e-mail–enabled applications until you can make the necessary modifications.

Number of Objects to Be Synchronized

If you are planning to establish one-way directory synchronization between your on-premises Active Directory and Microsoft Online Services, how many objects will be synchronized? The Microsoft Online Services Directory Synchronization Tool synchronizes all user accounts, as well as e-mail–enabled contacts and groups. If your organization has more than 20,000 objects, please contact Microsoft Online Services Support for a special migration process.

The initial synchronization copies all user accounts and e-mail–enabled contacts and groups from your local Active Directory to Microsoft Online Services. Depending on the number of objects and your available network bandwidth, you may want to schedule this first synchronization for an off-peak time. Subsequent (regular) synchronizations copy only the changes to the individual objects, which generally does not take significant bandwidth.

Network Bandwidth

What is your available network bandwidth? What type of connection does your organization have to the Internet? Using Microsoft Online Services will significantly increase your Internet traffic. E-mail coexistence and directory synchronization will have the most impact, but you will notice a general increase in Internet traffic after migrating your users to Microsoft Online Services.

When you know the number of mail-enabled objects that will be copied during the initial synchronization, find that number in the table below for an estimate of how long the initial synchronization may take. You can use this information to decide when to schedule your first directory synchronization.

Objects	Estimated first synchronization
500	70 minutes
5,000	120 minutes

Note:

The actual synchronization time is influenced by the available bandwidth of your organization's Internet connection.

Help Desk Resources

You may want to consider temporarily increasing your help desk resources. There are bound to be questions as your users become familiar with Microsoft Online Services, particularly during the e-mail coexistence and migration phases.

Required Permissions

Migrating to Microsoft Online Services requires high-level permissions in your existing Exchange Server and Active Directory environment. See "[Install and Configure the Microsoft Online Services Directory Synchronization Tool](#)" and "[Install the Microsoft Online Services Migration Tools](#)" later in this paper for the permissions required.

Complex Environments

Those organizations with larger or more complex network and e-mail environments should gather the information listed above, and also consider the following, more detailed information:

- [E-mail system information](#)
- [Network information](#)
- [Client computer information](#)
- [User information](#)
- [Backup and restore procedures](#)
- [Additional questions](#)

If your organization does not already have detailed diagrams of your current environment, consider preparing a set. The thorough understanding that this process yields, and your ability to communicate complex concepts quickly with these diagrams, will help you plan your migration and communicate with any consultants or Microsoft Online Services Support personnel.

E-Mail System Information

Whether your organization's e-mail system is a local, on-premises e-mail environment, or is provided by an Internet e-mail provider, you can strengthen your migration plan by gaining as much information as possible about your system.

- If your organization currently has an on-premises e-mail environment, you should gather the following information to help you plan your migration to Microsoft Online Services:
 - Number of on-premises e-mail servers
 - E-mail server software and versions
 - E-mail server locations
 - E-mail server roles
 - E-mail server names
 - Your organization's e-mail domain names
 - Documentation of registered ownership of your e-mail domain names
 - E-mail domain hosting organization
 - Designated administrator contact information
- If your organization currently uses an Internet e-mail provider, gather the following information:
 - Number of e-mail users
 - Type of e-mail service (Hosted Exchange Server, POP3, IMAP4, others)
 - Type of administrative access (if any)

- E-mail hosting company
- Your organization's e-mail domain names
- Documentation of registered ownership of your e-mail domain names
- E-mail domain hosting company
- Designated administrator and support contact information

Network Information

You need to understand how your network traffic flows within your organization and between your organization and the Internet. If they don't already exist, you should create diagrams of your topology to make it easier to determine where potential problems may arise. Information collected should include:

- Local-area network (LAN) configurations
- Wide-area network (WAN) configuration
- Internet connectivity details (such as type of connection and available bandwidth)
- Low-bandwidth, high-latency, and intermittent links
- Gateway servers between e-mail domains
- Internet gateways (Simple Mail Transfer Protocol [SMTP] in and out)
- E-mail and network traffic statistics (if available)
- Other messaging add-ons, such as fax, pager, or BlackBerry
- Active Directory and Exchange Server replication schedules and exclusions/formulae
- Firewalls and their restrictions
- Routers and their configurations
- Foreign domains
- Foreign SMTP domains
- Designated network and e-mail administrator and support contact information

Client Computer Information

Microsoft Online Services has specific operating system and application compatibility requirements. To make sure that your client computers are compatible with Microsoft Online Services, gather the following information about your organization's client computers and compare this information to the "System Requirements" Help topic.

- Client computer locations
- Organization computer configuration standards and any known deviations from those standards
- Client hardware — for example, x86, x64, other
- Operating system version, service pack level, and hotfixes or patches
- Internet browser versions and service pack level
- E-mail clients
- Mobile device operating system and version

User Information

User data such as the following can be useful, especially when determining risk:

- List of users by domain or server
- Any e-mail quotas in force
- Designated help desk contact information

Backup and Restore Procedures

Your ability to restore production systems in the event of a migration issue will minimize disruptions in your environment. In order to perform proper backup and restore procedures, you must:

- Identify current backup schedule and validation policies for individual servers.
- Specify storage location of backup media.
- Specify storage location of product media.
- Verify that backups can be successfully restored.

Additional Questions

You may also want to answer the following questions to help you with your migration efforts.

Are there any known problems in the current infrastructure that might adversely affect the implementation?

Beware of overtaxing the existing connections, transmission problems caused by inadequate software components, and inefficient or incorrect message routing. For example:

- Bottlenecks or malfunctioning connectors are the likely cause when messages are queued on a bridgehead server.
- Non-delivery reports (NDRs) are signs of incorrect message routing.
- Message loops are created if messages are routed multiple times through the same bridgehead.

What servers must remain?

It may be necessary to retain some of your existing e-mail environment after migrating your users to Exchange Online.

- Does the organization have workflow dependencies or mail-in database functionality that requires that certain e-mail servers must remain?
- Have you identified and are you familiar with every application that is involved in sending e-mail? Understanding what applications send mail is critical to minimizing e-mail transmission problems. Although administrators may be familiar with the Exchange Server e-mail system and other systems that are part of the overall message flow, what applications are sending e-mail and where they're sending are generally not well documented.
- When you start retiring servers, or if you are trying to resolve odd e-mail addressing problems, you may discover an issue with a rogue application that is sending messages in a non-standard way.

Do users require training on Microsoft Office Outlook?

Users who are familiar with Outlook will find the migration to Exchange Online straightforward. However, novice users might face a learning curve because Outlook offers a comprehensive set of messaging features. You can ease this situation by providing appropriate user training.

Is the help desk prepared for an increased workload related to the implementation?

A properly prepared help desk can be a key factor in the success of your organization's migration.

- The implementation phase can put pressure on help desk personnel because the support call volume increases when users start using their new messaging clients. Depending on the size of your organization, it may be necessary for you to dedicate a help desk specialist to Outlook-related questions and to provide this person with special training.
- To maintain productivity in larger organizations, the help desk's Outlook task force may consist of a number of experts. You might want to temporarily increase the number of people in the help desk department. It is reasonable to assume that the call level will return to normal within a few months after migration is completed.

How will you keep management, IT administrators, help desk personnel, and users updated about the implementation progress?

If you decide to establish coexistence and then migrate over time, it is important to keep everyone in your organization fully informed about the migration progress. For example, the users must know when they are scheduled for Outlook training and the IT administrators, help desk personnel, and management need

information about project progress. We recommend that you create a detailed communication plan. Many organizations implement a dedicated intranet site to facilitate communication about the migration. For more information about the communication plan, see the [Microsoft Online Services Migration and Coexistence](#) forum.

Prepare For Migration

After gathering the information above, you can now develop the right migration plan for your organization. Your plan should include the following:

- Documentation of your existing environment
- Plan for any required client computer changes
- Plan for any required client software changes
- Plan for training associated with the above changes
- Plan to establish e-mail coexistence (if desired)
- Plan for dealing with legacy e-mail applications
- Plan to migrate your organization's mailbox contents
- What size of Exchange Online mailboxes will your users need?
- How many mailboxes to migrate in one session?
- How many sessions will be needed?
- How to group users to be migrated?
- How long will the overall migration take?
- Plan for supporting your users during the migration
- Administrative and troubleshooting responsibilities

See the "[Sample Planning Documents](#)" appendix for some examples of planning documents.

Establish E-Mail Coexistence

If your organization is running Exchange Server 2000, Exchange Server 2003, or Exchange Server 2007, you can establish e-mail coexistence between your local Exchange Server environment and Microsoft Exchange Online. E-mail coexistence provides a unified e-mail experience during trial and migration to Microsoft Online Services. E-mail coexistence enables users with mailboxes in your local Exchange Server environment and users with Exchange Online mailboxes to find each other in your Global Address List (GAL), and to send, receive, and reply to e-mail regardless of which system is hosting their mailbox.

Note:

Implementation of e-mail coexistence requires directory synchronization. For more information, see "[Install and Configure Directory Synchronization](#)" later in this paper.

Establishing e-mail coexistence between your local Exchange Server environment and Exchange Online includes the following steps:

- [Add your organization's domain to Microsoft Online Services.](#)
- [Enable Transport Layer Security \(TLS\).](#)
- [Verify your e-mail traffic flow.](#)
- [Enable directory synchronization.](#)
- [Install and configure the Microsoft Online Directory Synchronization Tool.](#)
- [Verify directory synchronization.](#)

Many of the steps required to enable e-mail coexistence are performed on the E-Mail Coexistence page of the Migration tab in the Microsoft Online Administration Center.

Add Your Organization's Domain to Microsoft Online Services

If your organization has a registered Internet domain and you want to send and receive e-mail addressed to that domain in Exchange Online, you must:

- [Add your domain to Microsoft Online Services](#).
- [Verify ownership of your domain](#).

Add Your Domain to Microsoft Online Services

If you have a registered Internet domain, you can register this domain with Microsoft Online Services. If you want to establish e-mail coexistence between your local Exchange Server environment and Microsoft Online Services, and your local Exchange Server environment is already sending and receiving e-mail addressed to this domain, adding your domain to Microsoft Online Services will enable Exchange Online to send e-mail from your domain.

To add your domain to Microsoft Online

Sign in to the Microsoft Online Services Administration Center using your administrator user name and password.

1. If you have not created a new domain entry for your company in Microsoft Online Services, click **Setup primary domain to enable e-mail** in the **Tasks I Need To Do** pane of the Administration Center home page.
OR
Navigate to the **Domains** page of the **Users** tab, and then click **New** in the title bar of the **Domains** pane.
2. In the **Name** field of the **New Domain Wizard**, type the name of your company's domain (for example, contoso.com).
3. In the **Type** area, select **External Relay** if you have an existing e-mail environment that uses this domain name.
OR
Select **Authoritative** if your Microsoft Online Services e-mail service is the only e-mail environment that uses this domain name.
4. Click **Create**, and then on the **Confirmation** page, verify the domain name and type that you provided.

Note:

You must verify ownership of your company's domain before you can add users or send and receive e-mail. For information about verifying a domain, see the next section, "[Verify Ownership of Your Domain](#)".

Verify Ownership of Your Domain

Microsoft Online Services offers domain verification procedures that are specific to some of the most popular domain registrars. You can go to the Microsoft Online Services Forum or contact Microsoft Online Services Support to see if there is a procedure for your domain registrar. However, the procedure in this section can be used with *any* domain registrar.

You only need to add and verify a domain once. If someone else in your company has already added and verified the same domain, you will receive a message noting this.

Note:

Step 3a of the verification process presented in this section requires you to access your domain account with your domain registrar. Contact your domain registrar if you need help accessing your domain account.

To verify ownership of your domain

1. If you are not already signed in to the Microsoft Online Services Administration Center, sign in using your administrator user name and password.
2. Navigate to the **Users** tab, click **Domains**, and then, in the **Status** column next to the appropriate domain in the **Domains** pane, click **Verify now**.
3. In the **Verify Domain Wizard**, create a new alias:
 - a. On the **Verification details** page, carefully read and follow the instructions.
 - b. Open a new Web browser window or tab, navigate to your domain registrar's Web portal, and sign in to your domain account. (Contact your domain registrar if you need help accessing your domain account.)
 - c. Copy the part of your Microsoft Online Services **CNAME** information before the first dot (similar to *C9D882D-8A55-4700-9B0B-4C9C0F10AB12*), and then enter this information into the appropriate alias (CNAME) location in your domain account.
 - d. Copy your Microsoft Online Services fully qualified domain name (**FQDN**) information (similar to *mail.contoso.com*), and then enter this information into the appropriate FQDN or "points-to" location in your domain account.
4. Save your changes in your domain account, and then sign out of your domain registrar's Web portal.
5. Close the **Verify Domain Wizard** and sign out of the Microsoft Online Services Administration Center. Wait at least 15 minutes.

Note:

It takes between 15 minutes and 72 hours for the new alias you created on your domain account to propagate through the Internet. The domain verification process will fail until the propagation is complete.

6. After at least 15 minutes, sign in to the Microsoft Online Services Administration Center again, using your Administrator user name and password.
7. On the **Users** tab, click **Domains**, and then in the **Status** column next to the appropriate domain in the **Domains** pane, click **Verify now**.
8. In the **Verify Domain Wizard**, on the **Verification details** page, click **Verify**.
9. In the **Confirmation** page of the **Verify Domain Wizard**, make a test connection to your domain, and confirm that the verification was successful.

Note:

If your verification fails, it is likely due to the fact that the changes you made to your domain account need more time to propagate throughout the Internet. Cancel the **Verify Domain Wizard** and come back to verify the domain later. If it has been more than 72 hours since you made the changes to your domain account, log on to your domain account, and verify that you entered the CNAME information correctly. If the information was entered incorrectly, you must remove the incorrect alias and create a new one with the correct information, by repeating the steps above.

10. After successfully verifying your domain ownership, click **Close** to exit the **Verify Domain Wizard**. Your domain should now be listed as **Verified** in the **Domains** pane of the **Exchange Online** page.

Important

If the domain you are adding was previously owned by another Microsoft Online Services customer, you must wait 24 hours after verifying the domain before adding users, contacts, or distribution lists to your new domain. This prevents possible access to this information by the previous domain owners.

Enable Transport Layer Security (TLS)

As part of establishing e-mail coexistence between your local Exchange Server environment and Exchange Online, we recommend that you implement Transport Layer Security (TLS) send and receive capability in your local Exchange Server environment. This is recommended because, during coexistence with Exchange Online, e-mail that was previously sent and received within your organization will now be transmitted over the Internet, so you'll want an extra measure of security in such an open environment.

This paper describes how to secure e-mail traffic on Exchange Server 2000 and Exchange Server 2003. If your local Exchange Server environment is using Exchange Server 2007, refer to your Exchange Server documentation. For more information about TLS, see the Microsoft TechNet article [What is TLS/SSL?](#)

Note:

Securing your e-mail traffic with TLS requires a certificate granted by a recognized certification authority (CA).

The steps involved in implementing TLS in your local Exchange Server environment include:

- Identify the Exchange Server on which to install the certificate.
- Generate a certificate request.
- Acquire the certificate.
- Install the certificate.
- Create a Simple Mail Transfer Protocol (SMTP) connector.
- Configure TLS.

Identify the Exchange Server on Which to Install the Certificate

TLS should be enabled on the bridgehead server of your local Exchange Server environment. That is the Exchange Server computer that directs your organization's e-mail to and from the Internet. For more information about bridgehead servers and Exchange Server message routing, see the Microsoft TechNet article [Exchange Server 2003 Message Routing Topology](#).

If you have separate bridgehead servers for sending and receiving e-mail via the Internet, you will need to acquire and install a certificate on each SMTP server that is running Exchange Server; however, you will need to set up a connector and enable TLS only on the server that is used for sending e-mail to the Internet.

Important:

- If your Exchange Server environment relies on an external relay server to send and receive e-mail to and from the Internet, you will need to contact the administrator of the external relay service about their TLS support. When TLS has been enabled on the external service, secure e-mail will flow between their relay server and Microsoft Online Services.
- If you have third-party bridgehead software or service, refer to that product's documentation to see how you can configure TLS.

If you have a local Exchange Server bridgehead server running the standard SMTP virtual server, continue with this process.

Generate a Certificate Request

Use Exchange System Manager to generate a certificate request on your bridgehead server. You will need to provide the fully qualified domain name (FQDN) of the bridgehead server. For more information, see the Microsoft TechNet article [Creating a Certificate or Certificate Request for TLS](#).

Acquire the Certificate

Locate a recognized certification authority (CA), such as VeriSign, Comodo, and GoDaddy. Submit the certificate request file that you generated in the previous section. The CA will provide you with a certificate (.CER) file containing the certificate for your server.

Important:

You must use a certificate from a recognized certificate authority. You cannot configure TLS with a self-signed certificate.

Install the Certificate

Use Exchange System Manager to install the certificate file. You will need to provide the path to the certificate file that you received from the CA. Consult your Exchange Server documentation for instructions.

Create an SMTP Connector to Microsoft Online Services

In this step, you will create the SMTP connector that will be used to send e-mail to Microsoft Online Services. For more information about creating SMTP connectors, see the Microsoft Help and Support article [How to Configure the SMTP Connector in Exchange 200x](#).

To create an SMTP connector

1. In Exchange System Manager, right-click **Connectors**, and then select **New SMTP Connector**.
2. Type a name for the connector (for example, MicrosoftOnlineServices).
3. On the **General** tab, select **Forward all e-mail through this connector to the following smart host**, and then type mail.global.frontbridge.com.
4. Under **Local Bridgeheads**, click **Add**, and then select your bridgehead Exchange Server server.
5. On the **Address Space** tab, click **Add**, and then type your organization's Microsoft Online Services e-mail routing domain (for example, contoso1.microsoftonline.com).

Note:

To determine your organization's Microsoft Online Services e-mail routing domain, sign in to the Microsoft Online Administration Center, select the **Migration** tab, and then click **E-Mail Coexistence**. The domain is listed on the right side of the page.

Configure TLS

After you install the certificate, your server will be able to receive TLS e-mail. However, it cannot send TLS e-mail until you configure TLS.

To configure TLS

1. In Exchange System Manager, expand Connectors and locate the MicrosoftOnlineServices connector that you created in the previous section, "Create an SMTP Connector to Microsoft Online Services."
2. Right-click the connector, and then click **Properties**.
3. On the **Advanced** tab, click **Outbound Security**, and then select **TLS Encryption**.

Verify Your E-Mail Traffic Flow

After establishing e-mail coexistence between your local Exchange Server environment and Exchange Online, you should verify the flow of your e-mail traffic to make sure that everything is configured correctly. To verify the flow of your e-mail traffic during e-mail coexistence, you must have at least one local Exchange Server mailbox and one Exchange Online mailbox. For the purpose of this procedure, let's assume the following:

- Your organization has registered and is currently using the e-mail domain name of contoso.com.
- When you registered with Microsoft Online Services, your organization received the Microsoft Online Services domain name of contoso.microsoftonline.com.
- You have created an Exchange Online test user whose e-mail address is user1@contoso.microsoftonline.com.
- You have created a test user in your local environment whose e-mail address is user2@contoso.com.

To verify your e-mail traffic flow

1. In the **Microsoft Online Services Administration Center**, verify that you have entered a valid e-mail address for your organization's technical contact.
2. Use Microsoft Outlook Web Access to log on to Microsoft Online Services as user1@contoso.microsoftonline.com.
3. Send an e-mail message to user2@contoso.com.
4. Use Microsoft Outlook Web Access to open the user2 mailbox, and then verify that the message arrived correctly.
5. From the user2 mailbox, send a reply to the original message.
6. From the user1 Exchange Online mailbox, verify that the message arrived correctly.

Enable Directory Synchronization

Enabling directory synchronization must be done before installing the Microsoft Online Services Directory Synchronization Tool. For more information about directory synchronization, see "[Directory Synchronization](#)" later in this paper.

To enable directory synchronization

1. Sign in to the Microsoft Online Services Administration Center, click **Migration**, and then click **Directory Synchronization**.
2. Complete the first step on the **Directory Synchronization** page.
3. In the **Enable one-way synchronization from your local Active Directory to Microsoft Online Services** step, click **Enable**.

Install and Configure the Microsoft Online Services Directory Synchronization Tool

Before installing the Microsoft Online Services Directory Synchronization Tool, you must verify that you have the required permissions. This section lists these permissions and walks you through both installation and configuration.

Required Permissions

The Microsoft Online Services Directory Synchronization Tool requires the following permissions:

- The person installing the Microsoft Online Services Directory Synchronization Tool must have local Administrator permissions on the computer on which the tool is being installed.

- When configuring directory synchronization, you must provide the user name and password of an account with Administrator permissions on your Microsoft Online Services company.
- You must provide the user name and password of an account with Enterprise Admin permissions on your local Active Directory directory service.
- You must have Exchange Administrator permissions to implement TLS in your Exchange Server environment.

Installation

Before beginning the installation process, refer to your migration plan and verify that you have met the computer requirements and that you have the necessary permissions.

To install the Microsoft Online Services Directory Synchronization Tool

1. Sign in to the Microsoft Online Services Administration Center, click **Migration**, and then click **Directory Synchronization**.
2. On the **Directory Synchronization** page, complete steps 1 and 2, click **Download**, and then follow the instructions to save the installation file on your computer.
3. If necessary, copy the installation file to the computer on which it will be installed, and then run the installation program.

Note:

You must successfully complete the **Microsoft Online Services Directory Synchronization Tool Configuration Wizard** before synchronization will begin. You can run the configuration wizard immediately after installation by selecting **Start Configuration Wizard now** on the **Finish** page of the **Microsoft Online Services Directory Synchronization Tool Installation Wizard**.

To configure the Microsoft Online Services Directory Synchronization Tool

1. If you are working through the **Microsoft Online Services Directory Synchronization Tool Installation Wizard**, on the **Finish** page, select **Start Configuration Wizard now**, and then click **Finish**.
OR
Click **Start**, click **All Programs**, click **Microsoft Directory Sync**, and then click **Directory Sync Configuration**.
2. On the **Microsoft Online Services Credentials** page of the **Microsoft Online Services Directory Synchronization Configuration Wizard**, provide the user name and password for a user account with Administrator permissions in your Microsoft Online Services company.
3. On the **Active Directory Credentials** page of the **Microsoft Online Services Directory Synchronization Configuration Wizard**, provide the user name and password for an account with Enterprise Admin permissions on your local Active Directory directory service.
4. On the **Finish** page, select **Synchronize directories now**, and then click **Finish**.

Important:

- The Microsoft Online Services credentials that you provided are used to synchronize information from your local Active Directory to your Microsoft Online Services directory service. If you change the password associated with this account, you must rerun the configuration wizard and provide the updated credentials.

- The Enterprise Admin credentials that you provided are not saved. They are used to create the MSOL_AD_Sync directory synchronization service account. This service account is used to read the changes from your local Active Directory.

Verify Directory Synchronization

Verifying one-way directory synchronization from your local Active Directory to Microsoft Online Services requires testing both forced (manual) synchronization and automatic synchronization. Because the Microsoft Online Services Directory Synchronization Tool performs an automatic one-way synchronization between your local Active Directory and your Microsoft Online Services directory once every three hours, completion of this procedure may take up to three hours. You can also force directory synchronization at any time.

The Microsoft Online Services Directory Synchronization Tool writes entries to an event log. These entries indicate the start and end of a synchronization session. When you review the event log, look for entries whose source is "Directory Synchronization". An entry that is designated Event 4 and that has the description "The export has completed" indicates that the directory synchronization is complete. Directory synchronization errors are also sent via e-mail to your organization's designated technical contact.

When directory synchronization is installed, the local Active Directory is the master for all changes to the synchronized e-mail-enabled objects in Microsoft Online Services. As part of both forced and automatic verification procedures, you will make changes to mail-enabled objects in your local Active Directory and verify that those changes are synchronized with Microsoft Online Services.

Forced Directory Synchronization

You may occasionally need to force an immediate directory synchronization. The procedure in this section verifies this process. For more information about forcing directory synchronization, see "[Force Directory Synchronization](#)" later in this paper.

To verify forced directory synchronization

1. Sign in to Microsoft Online Services with Administrator credentials.
2. Ensure that your organization's Technical Contact information contains a valid e-mail address that is monitored by your technical contact.
3. Verify the address properties of a user account that is being synchronized from your local Active Directory to the Microsoft Online Services Administration Center.
4. Verify that you cannot edit the address properties of that user account in the Microsoft Online Services Administration Center.
5. Open Active Directory Users and Computers and target your local Active Directory with permissions to edit user accounts, contacts, and distribution groups.
6. Make a simple but obvious change to one of the address properties of the user account that you verified in step 2.
7. Open the **Microsoft Online Services Directory Synchronization Configuration Wizard**, provide the information requested on the wizard pages, and on the **Finish** page, select **Synchronize directories now**, and then click **Finish**.
8. When the synchronization is complete, view the address properties of the user in your Microsoft Online Services Administration Center and verify that the changes you made in your local Active Directory have been synchronized to Microsoft Online Services.

Automatic Directory Synchronization

The Microsoft Online Services Directory Synchronization Tool synchronizes changes to user accounts and mail-enabled contacts and groups from your local Active Directory to your Microsoft Online Services directory service every three hours, beginning at the time of your initial synchronization.

To verify automatic directory synchronization

1. Sign in to Microsoft Online Services with Administrator credentials.
2. Ensure that your organization's Technical Contact information contains a valid e-mail address that is monitored by your technical contact.
3. In the Microsoft Online Services Administration Center, verify the address properties of a specific user account, contact, and distribution group that are being synchronized from your local Active Directory to your Microsoft Online Services organization.
4. In Microsoft Online Services, modify the properties of the contact and distribution group that you verified in step 3.
5. Open Active Directory Users and Computers and target your local Active Directory with permissions to edit user accounts, contacts, and distribution groups.
6. In your local Active Directory, make a simple but obvious change to one of the address properties of the user account that you verified in step 3.
7. In your local Active Directory, make simple but obvious changes to the contact and the distribution group that you modified in step 4.
8. Check the directory synchronization event log to determine when directory synchronization is complete. This may take up to three hours.
9. When synchronization is complete, view the properties of the user, contact, and distribution list in your Microsoft Online Services Administration Center and verify that the changes you made in your local Active Directory now appear in Microsoft Online Services.

Note:

In this procedure, the changes you made to the contact and distribution group in Microsoft Online Services have been overwritten by the changes you made to the same contact and distribution group in your local Active Directory.

Migrate Your Mailboxes

If you are migrating from a local Exchange Server 2000, Exchange Server 2003, or Exchange Server 2007 environment, we recommend that you establish e-mail coexistence between your local Exchange Server environment and Exchange Online. You can migrate directly from a local Exchange Server environment, but this type of migration is usually done only by organizations with very few user accounts.

You can also migrate directly from POP3 or IMAP4 mailboxes. If those mailboxes are hosted by an Internet e-mail hosting company, you can select individual mailboxes to migrate and then migrate their mailbox content to Exchange Online. If you have POP3 or IMAP mailboxes hosted on local Exchange Server 2000, Exchange Server 2003, or Exchange Server 2007, you may be able to establish e-mail coexistence and then migrate the contents of those mailboxes to Exchange Online.

Install the Microsoft Online Services Migration Tools

Before installing the Microsoft Online Services Migration Tools, verify that you have the required permissions. This section lists these permissions and walks you through the installation process.

Required Permissions

The Microsoft Online Services Migration Tools require the following permissions:

- The person installing the Microsoft Online Services Migration Tools must use a user account with local Administrator permissions on the computer on which the tools are being installed.

- When migrating from a local Exchange Server environment to your Exchange Online service, the user account used to perform the migration must have Exchange Administrator permissions in the local Exchange Server environment.
- When migrating from POP3 or IMAP4 mailboxes, you may need Administrator permissions for each mailbox. For more information, see [Determine Your Internet Server Access Method](#).

Install Migration Tools

Before beginning the installation process, refer to your migration plan to verify that you have met the computer requirements and prerequisites, and that you have the necessary permissions.

To install the Microsoft Online Services Migration Tools

1. Sign in to the Microsoft Online Services Administration Center, select the **Migration** tab, and then select the **E-Mail Migration** page.
2. On the **E-Mail Migration** page, complete step 1, click the **Download** button for the type of computer on which you will install the migration tools, and then follow the instructions to save the installation file on your computer.
3. If necessary, copy the installation file to the computer on which it will be installed, and then run the installation program.

Migrate Local Exchange Server Mailboxes

If your organization is running a local Exchange Server 2000, Exchange Server 2003, or Exchange Server 2007 environment, we recommend that you establish e-mail coexistence between your local environment and Exchange Online.

If you have already established e-mail coexistence, the steps involved in migrating your local Exchange Server mailboxes to Exchange Online are:

- [Activate Selected Users](#)
- [Run the Move Exchange Mailboxes to Microsoft Online Wizard](#)

If you are migrating groups of user mailboxes over time, repeat these steps for each group until you have migrated all of your local Exchange Server mailboxes.

Activate Selected Users

You must activate the user accounts that you want to migrate before you can migrate the e-mail contents of the users' local Exchange Server mailboxes.

To activate selected users

1. Sign in to the Microsoft Online Services Administration Center, select the **Users** tab, and then select the **User List** page.
2. In the **Views** pane, click **Disabled User Accounts**.
3. In the **All Users** pane, select one or more users.
4. In the **Actions** pane, click **Activate user**.
5. On the **Assign Services** page, select the services to assign to the selected users. You must select at least one service to activate the selected users.
6. On the **Password Options** page, you can select to send a list of the passwords for the newly activated user accounts to someone in an e-mail message. If you decide not to send the passwords in e-mail, you can copy and paste them on the **Confirmation** page.
7. After making your selection, click **Activate**.

8. Verify the list of activated users on the **Confirmation** page. You can copy the temporary passwords from this page and paste them into a document or an e-mail message for distribution.

Run the Move Exchange Mailboxes to Microsoft Online Services Wizard

To help prevent user confusion between the available mailboxes, you should run the Move Exchange Mailboxes to Microsoft Online Services wizard as soon as possible after activating the users. The Move Exchange Mailboxes to Microsoft Online Services Wizard helps you migrate the current contents of local Exchange Server mailboxes to Exchange Online. It also establishes e-mail forwarding of future messages from the local Exchange Server mailboxes to your Exchange Online mailboxes.

To run the Move Exchange Mailboxes to Microsoft Online Services Wizard

1. Click **Start**, click **All Programs**, click **Microsoft Online Services Migration Tools**, and then click **Microsoft Online Services Migration Console**.
2. In the navigation pane under **Microsoft Exchange**, click **Mailboxes ready to migrate**. The user list populates with the first 1000 activated users who have mailboxes that are ready to be migrated.
3. Select the users whose mailboxes you want to migrate, and then click **Move selected mailboxes to Exchange Online** to start the Move Exchange Mailboxes to Microsoft Online Services Wizard.
4. On the **Migrate Mailbox Options** page of the **Move Exchange Mailboxes to Microsoft Online Services Wizard**, select whether to copy the local mailbox content to Exchange Online.

Note:

If you select to copy the local mailbox content, you can also delete the local mailboxes.

5. If you chose to copy the local mailbox content, on the **Select Mailbox Content** page, select the types of mailbox content to copy and the date range of the content to copy.
6. After reviewing the list of selected mailboxes on the **Review Mailboxes** page, click **Migrate** to perform the actions that you selected in steps 4 and 5.
7. Complete the Move Exchange Mailboxes to Microsoft Online Services Wizard.

Note:

The Move Exchange Mailboxes to Microsoft Online Services Wizard copies the most recent mailbox content first, for a given user account. If the size of the original Exchange Server mailbox is larger than the size allowed in Exchange Online, the migration process stops when the Exchange Online mailbox is full. The user cannot use the Exchange Online mailbox until enough mailbox content is deleted to reduce the mailbox size below the Exchange Online mailbox size limit.

Important:

After the Move Exchange Mailboxes to Microsoft Online Services Wizard is run:

- Copies of all e-mail messages that are addressed to the local Exchange Server mailboxes of the selected users are forwarded to their Exchange Online mailboxes.
- E-mail sent from Exchange Online is delivered to the Exchange Online mailboxes of the selected users. It does not appear in their local Exchange Server mailboxes.

For more information about migrating local Exchange Server mailboxes to Microsoft Online Services, see [“E-Mail Migration” later in this paper.](#)

Migrate POP3 and IMAP4 Mailboxes

If your organization is using Internet-hosted POP3 or IMAP4 mailboxes, you can use the Microsoft Online Services Migration Tools to migrate the contents of those mailboxes to Exchange Online. It is not possible to establish e-mail coexistence with Internet-hosted POP3 or IMAP4 mailboxes.

The steps involved in migrating Internet-hosted POP3 and IMAP4 mailboxes to Exchange Online are:

- [Create user accounts.](#)
- [Determine your Internet server access method.](#)
- [Create a comma separated values \(CSV\) file.](#)
- [Import the list of mailboxes.](#)
- [Run the Internet Mailbox Migration Wizard.](#)

If you are migrating groups of user mailboxes over time, repeat these steps for each group until you have migrated all of your POP3 and IMAP4 mailboxes to Exchange Online.

Create User Accounts

Before migrating Internet-hosted POP3 or IMAP4 mailboxes, you must create the Microsoft Online Services user accounts to which you will migrate the mailbox contents.

To create user accounts

1. Sign in to the Microsoft Online Services Administration Center, select the **Users** tab, and then, under **Actions**, click **New user**.
2. On the **User Properties** page, enter the user's personal information, employee information, and contact information, and then click **Next**.
3. On the **Security Settings** page, copy the temporary password and paste it into a document or an e-mail message to distribute to the new user, and then click **Next**.
4. Select whether to grant this user Administrator permissions on your Microsoft Online Services company.
5. Select whether to enable this user account, and then click **Next**. If you do not enable the user account, the user will not be able to sign in to Microsoft Online Services.
6. On the **Services** page, assign at least one service to the new user, and then click **Create**.
7. On the **Confirmation** page, you can select to send an e-mail message containing the temporary password of the new user account. If you want to send the message, type the e-mail addresses you want, and then click **Send**.

Determine Your Internet Server Access Method

To migrate POP3 or IMAP4 mailbox content, you must be able to access the mailboxes that you plan to migrate. These are referred to as the source mailboxes. The Internet Message Access Protocol (IMAP) does not specify a standard mechanism for administrative access. As a result, Internet e-mail providers have developed a wide variety of administrative access methods. The Microsoft Online Services Migration Tools support several authentication methods to access the source mailboxes.

The administrative access method you choose will depend on the implementation used by your Internet e-mail server. Each of the methods offered by the Microsoft Online Services Migration Tools requires you to construct a comma separated values (CSV) file that contains the necessary authorization credentials. The structure of the CSV file will be determined by the type of administrative access provided by your Internet mail server.

Each CSV file will contain some of the following fields:

- SourceIdentity (required)

- SourceServer (required)
- SourceLoginID (required)
- SourcePassword (optional)
- TargetIdentity (optional)
- SourceRootFolder (optional)

The following sections give examples of the CSV structures for each of the supported IMAP mail server administrative access methods:

- [Combined Administrator/User ID Login](#)
- [Manually combined UserID and Administrator ID login](#)
- [Source root folder](#)
- [Individual mailbox credentials](#)
- Consult your Internet e-mail provider's documentation to determine which option to select.

Combined Administrator/User ID Login

This is the default option of the Microsoft Online Services Migration Tools. When you run the migration tools, they construct the login name for the source e-mail server based on the SourceLoginID value that you provide in the CSV file and the source Administrator user name that that you provide in the migration tools. This login name takes the form *AdminUserName/SourceLoginID*.

The following example shows a header row and two entries in a CSV file for the combined Administrator/User ID Login type of IMAP mailbox access. The fields required in this method are: SourceIdentity, SourceServer, and SourceLoginID. You provide the Administrator credentials in the Microsoft Online Services Migration Tools user interface.

```
SourceIdentity,SourceServer,SourceLoginID
Sourceuser1@domain.com,CS050,SourceUser01
Sourceuser2@domain.com,CS050,SourceUser02
```

Source Root Folder

Some IMAP systems allow administrative access when you log on as Administrator and then access mailboxes relative to the root folder.

To use this SourceRoot Folder option in the Microsoft Online Services Migration Tools, specify the AdminUserName in the SourceLoginID field of your CSV file, and indicate the source root folder that you need to migrate in the SourceRootFolder field of the CSV file. You provide the Administrator credentials in the Microsoft Online Services Migration Tools user interface.

The following example shows a header row and two entries in a CSV file for the Source Root Folder type of mailbox access. The required fields are: SourceIdentity, SourceServer, SourceLoginID, and SourceRootFolder.

```
SourceIdentity,SourceServer,SourceLoginID,SourceRootFolder
Sourceuser1@domain.com,mail01,AdminUserName,~/mail/SourceUser01
Sourceuser2@domain.com,mail01, AdminUserName,~/mail/SourceUser02
```

Individual Mailbox Credentials

If Administrator logon is not supported by your Internet e-mail server, you must specify the credentials for each entry in the CSV file.

The following example shows a header row and two entries in a CSV file for the Individual Mailbox Credentials type of mailbox access. The required fields are: SourceIdentity, SourceServer, SourceLoginID, and SourcePassword. The SourceRootFolder field may be required in some cases.

```
SourceIdentity,SourceServer,SourceLoginID,SourcePassword,SourceRootFolder
Sourceuser1@domain.com,mail01,AdminUserName,AdminPassword,
```

```
~/mail/SourceUser01
Sourceuser2@domain.com,mail01,
AdminUserName,AdminPassword,~/mail/SourceUser02
```

In this case, select **Use individual account credentials** in the Microsoft Online Services Migration Tools, because both the admin user name (SourceLoginID) and the password (SourcePassword) are contained in the CSV file.

Manually Combined User ID and Administrator ID Login

Some servers support the combination of SourceUser*AdminUserName in the CSV file. This entire string must be included in the SourceLoginID entries. You must also provide the Administrator password in the CSV file instead of providing this information in the Microsoft Online Services Migration Tools user interface as is done in the Combined Administrator/User ID Login method.

The following example shows a header row and two entries in a CSV file for this type of IMAP mailbox access. The required fields are SourceIdentity, SourceServer, SourceLoginID, and SourcePassword.

```
SourceIdentity,SourceServer,SourceLoginID,SourcePassword
Sourceuser1@domain.com,mail01,SourceUser01*AdminUserName,AdminPassword
Sourceuser2@domain.com,mail01,SourceUser02*AdminUserName,AdminPassword
```

In this case, when you run the Microsoft Online Services Migration Tools you must select **Use individual account credentials** because both the admin user name (SourceLoginID) and the password (SourcePassword) are contained in the CSV file.

Create a Comma Separated Values (CSV) File

After determining the Internet server access method for your Internet mailboxes, you must create a CSV file with a header row containing appropriate columns and a row for each mailbox to be migrated. You can use Microsoft Office Excel® to create the CSV file.

To create a CSV file

1. Open a blank Excel worksheet. In the worksheet, create a header row with the following values:
 - SourceIdentity (required)
 - SourceServer (required)
 - SourceLoginID (required)
 - SourcePassword (optional)
 - TargetIdentity (optional)
 - SourceRootFolder (optional)
2. Add a row with the appropriate account information in each column for each mailbox to be migrated.

The following table shows you a sample section of a mailbox list.

SourceIdentity	SourceServer	SourceLoginID	SourcePassword	TargetIdentity
Joe@adatum.com	e045	testuser001	Password!1	Joe@contoso.com
Mary@adatum.com	e045	testuser002	Password!2	Mary@contoso.com

3. After you have entered the account information for each mailbox to be migrated, on the **File** menu, click **Save As**, provide a file name, select **CSV (Comma delimited)** from the **Save as type** drop-down list, and then click **Save**.
4. After you save the worksheet as a CSV file, each value in the mailbox list will be separated by a comma, as shown in the following example:

```
SourceIdentity,SourceServer,SourceLoginID,SourcePassword,TargetIdentity
Joe@adatum.com,e045,testuser001>Password!1,Joe@contoso.com
Mary@adatum.com,e045,testuser002>Password!2,Mary@contoso.com
```

Import the Mailbox List

After you have created the CSV mailbox list file to be migrated, you import the mailbox list to the Microsoft Online Services Migration Tools.

To import the mailbox list

1. Click **Start**, click **All Programs**, click **Microsoft Online Services Migration Tools**, and then click **Microsoft Online Services Migration Console**.
2. In the navigation pane, click **Internet Mail**, and then, in the **Actions** pane, click **Add Mailboxes**.
3. In the **Add Mailboxes** dialog box, click **Browse**, select your CSV file, and then click **Import**.
4. In the **Actions** menu, click **Remove Selected Mailboxes** to remove mailboxes from the list of mailboxes to migrate.

Note:

Mailboxes that do not yet have corresponding accounts in Exchange Online will be marked as not ready to migrate.

Run the Internet Mailbox Migration Wizard

When you have verified that the mailbox list displays the correct mailboxes, run the **Internet Mailbox Migration Wizard** to copy the mailbox content from the selected mailboxes to Exchange Online.

To start the Internet Mailbox Migration Wizard

1. Click **Start**, click **All Programs**, click **Microsoft Online Services Migration Tools**, and then click **Microsoft Online Services Migration Console**.
2. In the navigation pane, click **Internet Mail**, and then, in the **Actions** pane, click **Migrate selected Mailboxes**.
3. On the **Select Mailbox Type** page of the **Internet Mailbox Migration Wizard**, select the type of mailbox that you want to migrate. You can select one of the following types:
 - POP
 - IMAP

The Internet Mailbox Migration Wizard provides the following options:

- [Select folder mapping](#)
- [Select date range to migrate](#)
- [Migrate the contents of selected mailboxes](#)

Select Folder Mapping

If you select IMAP mailboxes, you can specify how folders in your Internet mailboxes are mapped to folders in your Exchange Online mailboxes. There are two types of folder mapping:

- **Default Folder Mapping:** This option uses a predetermined folder mapping.
- **Custom Folder Mapping:** This option uses a custom map file that you create. With this file, map the folder structure of your Internet mailboxes to the default folder structure in Exchange Online or to a custom folder structure. To create this file, you can modify the default folder mapping table that is installed with the Microsoft Online Services Migration Tools. By default, the folder mapping table is installed in the Program Files\Microsoft Transporter Tools\Config folder. For more information about creating a custom folder mapping, see "[E-Mail Migration](#)" later in this paper.

To select folder mapping

- On the **IMAP Folder Mapping** page of the Internet Mailbox Migration Wizard, select Use the default folder mapping.
OR
- Select **Use a custom folder mapping**, and then click **Browse** to select your custom folder mapping file.

Select Date Range to Migrate

When migrating Internet mailbox content, you can select the date range of mailbox content to migrate.

To select the date range

- On the **Select Date Range** page of the **Internet Mailbox Migration Wizard**, select **Date range** and then click the calendar buttons to specify a start date and an end date.
OR
- Select **All e-mail** to migrate all e-mail in the Internet mailbox.

Migrate the Contents of Selected Mailboxes

To migrate the contents of selected mailboxes

- After reviewing the selected mailboxes on the **Review Selected Mailboxes** page, click **Migrate** to begin copying mailbox content from your Internet mailboxes to Exchange Online.

Note:

The Internet Mailbox Migration Wizard copies the most recent mailbox content first. If the size of the Internet mailbox is larger than the size allowed in Exchange Online, the migration process stops when the Exchange Online mailbox is full. The user cannot use the Exchange Online mailbox until enough mailbox content is deleted to reduce the mailbox size below the Exchange Online mailbox size limit.

For more information about migrating local POP3 and IMAP4 mailbox content to Microsoft Online Services, see [“E-Mail Migration” later in this paper.](#)

Complete Your Migration

After migrating all of your mailboxes to Microsoft Exchange Online, you should be ready to complete your migration. The three remaining steps are:

- [Delete mailboxes.](#)
- [Reroute incoming mail.](#)
- [Decommission your local Exchange Server environment.](#)

Delete Mailboxes

To prevent confusion and to simplify supporting your e-mail users, we recommend that you delete your organization’s old mailboxes as soon as possible after migrating the mailbox content.

If you are migrating from Internet-hosted POP3 or IMAP mailboxes, you can contact your Internet mailbox hosting company and have those mailboxes deleted any time after you have migrated their contents to Exchange Online. Check with your Internet mailbox hosting company to see if it has any mailbox retention policy.

If you are migrating from local Exchange Server mailboxes to Exchange Online, you can use the Delete Mailbox Wizard in the Microsoft Online Services Migration Tools to delete selected local Exchange Server mailboxes.

Important:

By default, Exchange Server disconnects deleted mailboxes for a period of 30 days, before permanently deleting them. You can reconnect deleted local Exchange Server mailboxes at any time during this period. For more information about deleting and recovering deleted Exchange Server mailboxes, see the Microsoft Help and Support article [How to Recover a Deleted Mailbox in Exchange](#).

To delete local Exchange Server mailboxes

1. Click **Start**, click **All Programs**, click **Microsoft Online Services Migration Tools**, and then click **Microsoft Online Services Migration Console**.
2. In the navigation pane, under **Microsoft Exchange**, click **Mailboxes Already Migrated**, select the mailboxes to delete, and then, in the **Actions** pane, click **Delete local mailboxes**.
3. On the **Review Mailboxes** page of the **Delete Mailbox Wizard**, verify the list of mailboxes to be deleted, and then click **Delete**.

Note:

To see history and status for users whose mailboxes have been deleted, you can review the migration log file at:

```
[Drive]:Documents and Settings\[Username]\Local Settings\Application Data\Microsoft\Transporter\Logs
```

Reroute Incoming Mail

If you have established e-mail coexistence, all e-mail that is addressed to your organization's domain is still being routed to your local Exchange Server environment and then forwarded to your Exchange Online service. If your organization does not have any e-mail-enabled applications or other reasons to continue using your local Exchange Server environment, you can safely change your organization's mail exchanger (MX) record to re-route all e-mail that is addressed to your company's domain, and have it sent to Exchange Online, and enable Exchange Online to accept incoming e-mail.

Note:

Step 5b of the procedure presented in this section requires you to access your domain account with your domain registrar. (Contact your domain registrar if you need help accessing your domain account.)

To enable Microsoft Online Services to receive incoming e-mail

1. Sign in to the Microsoft Online Services Administration Center using your Administrator user name and password.
2. Navigate to the **Service Settings** tab, click **Exchange Online**, and then in the **Domains** pane, click your domain name (for example, contoso.com).
3. On the **SMTP Domain Properties** tab of the **Edit Domain** window, select **Authoritative**.
4. On the **Inbound messaging** tab, click **Enable**.
5. In the **Enable Inbound Messaging Wizard**, click **Enable**.
6. On the **Confirmation details** page, carefully read and follow the instructions.
7. Log on to your domain registrar's Web portal, access your domain account settings, and add a highest-priority MX record for the domain that you enable to receive inbound messages.

8. Copy your Microsoft Online Services MX record information (similar to mail.global.frontbridge.com), and then enter this information into the appropriate MX record location in your domain account.
9. Save the changes to your MX records and log off your domain registrar account.
10. Close the **Enable Inbound Messaging Wizard**.

Note:

You can have more than one MX record, but the one pointing to your Microsoft Online Services account must be the highest-priority MX record.

11. To confirm that enabling inbound messaging was successful, send e-mail messages from an account on another service, such as Microsoft Hotmail®, to e-mail addresses in your Microsoft Online Services account. When you start receiving these test messages, your other users should expect their e-mail messages to arrive at their Microsoft Online Services accounts as well.
12. Wait up to 72 hours to receive the test messages.

Note:

When you change your MX record to direct incoming e-mail to your Microsoft Online Services mailboxes, a “change of address” notice is sent out to the Internet. It can take up to 72 hours before all systems become aware of the change and start routing e-mail to your Exchange Online service. If you do not receive e-mail messages at your Microsoft Online Services account after 72 hours, log on to your domain registrar's Web portal, access your domain account settings, and verify that you have entered the MX record information correctly. MX lookup tools can help you determine when your MX records are updated. These tools can be found by searching the Web for "MX lookup".

Decommission Your Local Exchange Server Environment

After deleting your local mailboxes and rerouting incoming mail, if your organization does not have any e-mail-enabled applications or other legacy applications that require you to maintain your local Exchange Server environment, you can safely decommission your local Exchange Server environment.

Other Migration Considerations

If your organization has established e-mail coexistence between your local Exchange Server environment and Exchange Online and established directory synchronization of user accounts and e-mail enabled contacts and groups from your local Active Directory to Microsoft Online Services, you may want to continue using Active Directory authentication to control access to local printers, file shares, and other network resources.

In this situation, leave directory synchronization running and continue to synchronize user accounts and e-mail enabled contacts and groups from your local Active Directory to Microsoft Online Services. Continue to edit the properties of these objects in your local Active Directory.

Advanced Topics

E-Mail Coexistence and E-Mail Migration

This section provides a deeper look at how e-mail coexistence and e-mail migration work. Microsoft Online Services can establish e-mail coexistence between your local Exchange Server environment and Exchange Online. A key part of e-mail coexistence is establishing one-way directory synchronization of all user accounts and e-mail enabled contacts and groups from your local Active Directory directory service to Microsoft Online Services.

The stages of e-mail coexistence and migration are:

- Add and validate SMTP domains to Exchange Online.
- Install and configure directory synchronization.
- Activate directory synchronized users.
- Migrate mailbox content.
- Delete local Exchange Server mailboxes.

Throughout this section, we will assume that you are working for an organization named Contoso and that it has registered the Internet domain name of contoso.com. We'll be discussing a single member of that organization, whose SMTP e-mail address is jim@contoso.com.

Add and Validate SMTP Domains to Exchange Online

When you register with Microsoft Online Services, you are provided with a domain that looks similar to company.microsoftonline.com. You can use this domain as long as you want, but most organizations prefer to use domains that more clearly represent them. In most cases, these organizations already have a registered domain name that they use as part of their SMTP e-mail addresses.

You can add your registered domain to Microsoft Online Services. After you have verified that you own the domain, you can begin to use this domain with Microsoft Online Services. For information about adding your domain to Microsoft Online Services, see the Microsoft TechNet article [About Using Your Domain with Microsoft Online Services](#).

Install and Configure Directory Synchronization

The first time that the Microsoft Online Services Directory Synchronization Tool runs, it creates disabled accounts in Microsoft Online Services for all user accounts and mail-enabled contacts and groups in your local Active Directory. These accounts do not yet have Microsoft Online Services mailboxes.

The user account in the local Exchange Server environment has an SMTP email address similar to jim@contoso.com. Directory synchronization creates a disabled Microsoft Online Services account for that user. There are two SMTP addresses assigned to this user: User@contoso.com and User@contoso.microsoftonline.com. The target address is User@contoso.com.

Directory synchronization creates a synchronized Global Address List (GAL) and establishes mail forwarding from Microsoft Online Services to your local Exchange Server mailboxes using the target addresses assigned to the disabled accounts. This enables the full GAL experience for Microsoft Online Services users.

Your company's MX records still resolve to your local Exchange Server environment. All e-mail addressed to your domain will be routed to your local Exchange Server computers.

Activate Directory Synchronized Users

Before you can migrate mailbox content to Exchange Online, you must activate the users whose mailbox content you want to migrate. Activating users assigns them an Exchange Online mailbox and removes the target address from their Microsoft Online Services account.

The user's SMTP address in the local Exchange Server environment remains unchanged. After activation, the target address has been removed from the user's Microsoft Online Services account, and activated users will have two valid mailboxes: one on the local Exchange Server environment and the other in Exchange Online. All external mail and mail sent from your local Exchange Server environment to the activated users will be delivered to their local Exchange Server mailboxes and all mail from any Microsoft Online Services account will be delivered to their Exchange Online mailboxes.

Note:

To minimize confusion and support costs, Microsoft Online Services recommends migrating and deleting the local Exchange Server mailboxes of activated users as quickly as possible.

Migrate Mailbox Content

You can use the Microsoft Online Services Migration Tools to migrate the mailbox contents of selected users. During this process, the Microsoft Online Migration Tools retrieve the Microsoft Online SMTP addresses of these users and create contacts as alternate recipients in the local Active Directory. All e-mail addressed to these users will be forwarded to these alternate recipients and a copy of each e-mail will be left in their local Exchange Server mailboxes.

The Microsoft Online Services Migration Tools add a contact with the target address of `user@contoso.microsoftonline.com` to the local Exchange Server environment as an alternate recipient for e-mail addressed to the user. All e-mail addressed to the user that arrives at the local Exchange Mailbox will be forwarded to the Exchange Online mailbox.

The Microsoft Online Services Migration Tools extract the rich Exchange Server mailbox content (such as e-mail, calendar, contacts, tasks, notes, and journal entries) from the local Exchange Server mailboxes and copy this content to the Exchange Online mailboxes. This content is compressed to optimize bandwidth usage. It is transmitted from the computer running the migration tools to Microsoft Online Services over SSL/TLS.

During the transfer process, the Microsoft Online Services Migration Tools resolve message header addresses to SMTP addresses and rewrite the addresses to preserve users' ability to reply to existing messages, even after the content has been migrated to new mailboxes.

Delete Local Exchange Server Mailboxes

At this stage, your users still have two mailboxes. In this configuration, it is easy for them to lose or miss e-mail. After their local Exchange Server mailbox content has been migrated, we recommend deleting their local Exchange Server mailboxes as soon as you are comfortable with Exchange Online.

You can use the Delete Mailbox Wizard in the Microsoft Online Services Migration Tools to help you remove the local Exchange Server mailboxes. This wizard deletes the local alternate recipient and disconnects the mailbox. For each user, it adds the user's Exchange Online target address as a forwarder on the local Active Directory account, so all mail addressed to the user will continue to be forwarded to Exchange Online.

The migration tools remove the user's alternate recipient contact from the local Active Directory. They add `user@contoso.microsoftonline.com` as the target address for e-mail addressed to the user. Therefore, even though the user no longer has a local Exchange Server mailbox, all e-mail addressed to `user@contoso.com` will be forwarded to the Exchange Online mailbox.

Because Exchange Server disconnects deleted mailboxes but does not delete them immediately, you can reconnect deleted Exchange Server mailboxes and fall back from your Exchange Online deployment if you choose.

By default, Microsoft Exchange disconnects deleted mailboxes for a period of 30 days before permanently deleting them. You can reconnect deleted local Exchange Server mailboxes any time during this period. Before relying on the ability to reconnect deleted mailboxes, make sure you know what the mailbox retention period is in your local Exchange Server environment. For more information about deleting and recovering deleted Exchange Server mailboxes, see the Microsoft TechNet article [How to Recover a Deleted Mailbox in Exchange](#).

You should repeat the steps covered in "Activate Directory Synchronized Users," "Migrate Mailbox Content," and "Delete Local Exchange Server Mailboxes" until you have activated all of your users and migrated the contents of all of your local Exchange Server mailboxes. At this point, if you don't have any e-mail-enabled applications or other legacy applications that require a local Exchange Server environment, you can change your MX records to direct all e-mail to your Exchange Online service, and eventually decommission your local Exchange Server environment.

Directory Synchronization

This section provides deeper information about directory synchronization.

How Directory Synchronization Uses the Microsoft Online Services Credentials

When configuring the Microsoft Online Services Directory Synchronization Tool, you are asked to provide the credentials for an account that has Administrator permissions on your organization's Microsoft Online Services company. These credentials must be provided in the following format:

- Someone@example.com

You can provide credentials for any valid Administrator account in the Microsoft Online Services Administration Center, or you may create a special account dedicated to this use.

Important:

All Microsoft Online Services accounts require periodic password changes. When you change the password associated with this Administrator account, you must run the Microsoft Online Services Directory Synchronization Tool Configuration Wizard again and provide the new password.

When the directory synchronization service runs, it reads from your local Active Directory and writes the changes to the synchronization database. The directory synchronization service writes the contents of the synchronization database to Microsoft Online Services using the Microsoft Online Services Administrator credentials that you provided.

How Directory Synchronization Uses the Active Directory Credentials

When configuring the Microsoft Online Services Directory Synchronization Tool, you are asked to provide the credentials for an account that has Enterprise Admin permissions on your organization's local Active Directory directory service. It accepts credentials in either of the following forms:

- Someone@example.com
- Example\someone

These Enterprise Administrator credentials are not saved. They are erased from the computer's memory after the service account is created.

How the Active Directory Credentials Are Used

The Microsoft Online Services Directory Synchronization Tool Configuration Wizard uses the Enterprise Admin credentials to create the directory synchronization service account, MSOL_AD_Sync. This service account is created as a domain account with directory replication permissions on your local Active Directory and with a randomly generated complex password that never expires.

Note:

Changing the password associated with the service account is not recommended.

How the Service Account Is Used

When the directory synchronization service runs, it uses the service account credentials to read from your local Active Directory and write to the synchronization database. The contents of the synchronization database are written to Microsoft Online Services using the Microsoft Online Services credentials requested on the **Microsoft Online Services Credentials** page of the Microsoft Online Services Directory Synchronization Tool Configuration Wizard.

Note:

If you add a domain to your Active Directory forest, you must run the Microsoft Online Services Directory Synchronization Tool Configuration Wizard again to add the new domain to the list of domains to be synchronized.

Force Directory Synchronization

There may be times when you don't want to wait up to three hours for directory synchronization to copy changes from your local Active Directory user accounts and e-mail enabled contacts, and groups to the Microsoft Online Services directory. For example, if you terminate an employee's employment, you may want to immediately disable or delete their Active Directory account to prevent continued access to your e-mail system and network resources. In this situation, you may want to force immediate directory

synchronization. You can do this by running the Microsoft Online Services Directory Synchronization Tool Configuration Wizard.

To force directory synchronization

1. Click **Start**, click **All Programs**, click **Microsoft Directory Sync**, and then click **Directory Sync Configuration**.
2. Follow the instructions in the wizard, and provide the requested credentials.
3. On the **Finish** page of the wizard, select **Start directory synchronization now**, and then click **Finish**.

Known Issues with Synchronization

This section contains some common issues that customers have experienced with Directory Synchronization, as well as some suggested workarounds for these issues.

Directory Synchronization Does Not Migrate Passwords

When an account is migrated from your on-premises Active Directory, the account password is not migrated with the account. When the administrator activates the migrated account, a new password is assigned to that account.

If the password associated with an on-premises Active Directory account is changed, that new password is not migrated. Users must change their Microsoft Online Services passwords manually.

You Must Create Conference Rooms Before Establishing Directory Synchronization

If you have conference rooms in your local Exchange environment, you must create matching conference rooms in Microsoft Exchange Online before synchronization or the conference rooms from your local environment may be synchronized with Exchange Online as disabled users.

Workaround

If you run directory synchronization before creating conference rooms in Exchange Online, you will need to delete the conference rooms that were synchronized into Exchange Online, create new ones in Exchange Online as described in the following section, and synchronize them again.

- **If your company is using Exchange Server 2007:** You must create conference rooms in Exchange Online before installing and enabling directory synchronization. Each conference room that you create in Exchange Online must have an e-mail address that matches at least one of the proxy addresses of the corresponding conference room in your local Exchange environment.

When directory synchronization begins, it will synchronize the conference rooms from your local Exchange Server environment and correctly associate them with the conference rooms that you created in Exchange Online.

- **If your company is using Exchange 2000 Server or Exchange Server 2003:** You must create the conference rooms manually in Exchange Online because the conference rooms in your local Exchange environment will not be synchronized with Microsoft Online Services.

Synchronized Objects May Take up to 24 Hours to Appear in the Offline Address Book (OAB)

Objects that have been synchronized from your on-premises Active Directory directory service will appear immediately in your global address list (GAL), but it may take up to 24 hours before they appear in the OAB.

Directory Synchronization Fails with "Maximum Request Length Exceeded" Message

When synchronizing companies with large Active Directories or with very large distribution groups, you may see the "Maximum Request Length Exceeded" error message. The maximum batch size for objects being migrated is 4 megabytes (MB). The default number of objects to include in one batch is 20. When you are migrating groups, the batch must contain all objects in a particular group. If your groups have

many members, there may not be room in a particular batch for all 20 objects. By reducing the number of objects in a batch, you can optimize synchronization for your situation.

Workaround

The maximum number of objects in a batch is controlled by a registry key. To change this registry key:

1. Run RegEdit.exe and navigate to HKEY LOCAL MACHINE\Software\Microsoft\MSOLCoexistence.
2. Add a new DWORD value named "ExportBatchSize."
3. Set the value to less than 20 and test synchronization again.
4. Continue reducing the value until synchronization succeeds.

E-Mail Migration

Exchange Online supports two types of e-mail migration:

- Migration from Internet-hosted POP3 or IMAP4 mailboxes
- Migration from local Exchange Server mailboxes

Migration from Internet-Hosted POP3 and IMAP4 Mailboxes

This section provides deeper information about migrating mailbox content from POP3 and IMAP4 mailboxes. <This section is not complete in this preliminary version.>

Internet Mailbox Folder Mapping

Default folders use special handling and are created automatically when a mailbox is created. The following default folders are supported in Exchange Online:

- Inbox
- Outbox
- Sent Items
- Drafts
- Deleted Items
- Junk E-mail
- Journal
- Notes
- Calendar

Custom folders are folders that are created by users after a mailbox is created. The Microsoft Online Services Migration Tools support mapping to default and to custom folders.

Map to Default Folders

The Foldermap.xml file contains the default folder mapping. The following example shows that Internet mailbox Spam folders will be mapped to the Exchange Online Junk E-mail folder.

```
<Folder path="Spam">  
<Property SpecialFolder="Junk E-mail" />  
</Folder>
```

You can modify the Foldermap.xml file to control how you Internet mailbox folders will be mapped to Exchange Online folders. For example, if the junk e-mail folder in your Internet mailbox is named Junk, you can edit the Foldermap.xml file to reflect the folder name on the source server, as shown in the following example:

```
<Folder path="Junk">
<Property SpecialFolder="Junk E-mail" />
</Folder>
```

Note:

You can add multiple Folder entries to map several Internet mailbox folders to the same default folder.

Map to Custom Folders

To create a custom mapping folder, modify the default folder mapping table that is installed with the Microsoft Online Services Migration Tools. By default, the folder mapping table is installed in the Program Files\Microsoft Transporter Tools\Config folder.

Before you create a custom folder map, identify the folder names that are used on your Internet mailboxes.

To create a custom folder map

1. Locate the default folder mapping table file, Foldermap.xml.
2. Copy the file and save it with a different file name.
3. Use a text editor or an XML editor to open the new file, and edit the names of the Internet mailbox folders that correspond to the Exchange Online default folders.
4. Save the file.

The following example shows you how to map an Internet mailbox folder named Important Mail to a custom Exchange Online folder named Important. This custom folder will be created in the Inbox folder.

```
<Folder path="Important Mail">
<Property Name="Inbox/Important" />
</Folder>
```

Migration From Local Exchange Server Mailboxes

This section provides deeper information about migrating mailbox content from local Exchange Server mailboxes. <This section is not complete in this preliminary version.>

Remove Forwarding

If, after establishing e-mail coexistence and migrating some of your local Exchange Server mailboxes, you decide to roll back your migration and return to your local Exchange Server environment, you can use the Remove Forwarding Wizard in the Microsoft Online Services Migration Tools to help remove the forwarding that was established on mailboxes that you migrated to Exchange Online.

To remove forwarding

1. Click **Start**, click **All Programs**, click **Microsoft Online Services Migration Tools**, and then click **Microsoft Online Services Migration Console**.
2. In the navigation pane under **Microsoft Exchange**, click **Mailboxes Already Migrated**, select the mailboxes to remove forwarding from, and then, in the **Actions** pane, click **Remove forwarding**.
3. On the **Review Mailboxes** page of the **Remove Forwarding Wizard**, verify the list of mailboxes from which to remove forwarding, and then click **Remove**.

Known Issues with E-Mail Migration

This section contains some common issues that customers have experienced with e-mail migration and suggested workarounds for these issues.

AutoArchive Does Not Work As Expected After Migration

The Outlook AutoArchive feature can be configured to regularly move old mailbox items to an archive folder. When mailbox items are migrated from your on premises Exchange Server to Exchange Online, they lose their original received date. The received date becomes the date that the mailbox item was migrated, so older mailbox items won't be archived until they have been in the Exchange Online mailbox for the full archive period.

Migration of Calendar Items to a Non-Calendar Folder Is Not Supported

When migrating mailbox items from a POP or IMAP mailbox, migration will fail when trying to migrate calendar items to a folder that is not a Calendar folder. For example, if you have deleted calendar items in your deleted items folder, the Migration Tools will attempt to migrate those deleted calendar items to the deleted items folder. Migration of the deleted calendar items will fail.

Migration CmdLet Reference

The Microsoft Online Services Migration Tools user interface installs the Migration Cmdlets. The Migration Tool interface calls these cmdlets when migrating mailbox contents. The user interface will perform most migration tasks, but if you want to script your migration or perform more advanced migration tasks, you can use the Windows PowerShell cmdlets. This section of the Microsoft Online Services Migration Tools documentation describes the PowerShell cmdlets.

The Microsoft Online Services Migration Tools include the following cmdlets:

- [Add-XsExchangeForwardingAddress](#)
- [Add-XsExchangeOnlineItem](#)
- [Add-MicrosoftOnlineExchangeItem](#)
- [Get-ImapMailbox](#)
- [Get-ImapMailboxData](#)
- [Get-InternetMailbox](#)
- [Get-PopMailbox](#)
- [Get-PopMailboxData](#)
- [Get-XsActiveDirectoryUser](#)
- [Get-XsExchangeMailboxData](#)
- [Move-XsExchangeMailboxToExchangeOnline](#)
- [Move-XsImapMailboxToExchangeOnline](#)
- [Move-XsPopMailboxToExchangeOnline](#)
- [Remove-XsExchangeForwardingAddress](#)
- [Search-XsMicrosoftOnlineDirectory](#)
- [Export-TransporterBinary](#)
- [Import-TransporterBinary](#)

Add-XsExchangeForwardingAddress

Establishes mail forwarding from an on-premises Microsoft Exchange Server account to the corresponding mailbox in Microsoft Exchange Online. The cmdlet cleans up local mailboxes.

E-mail forwarding is performed by setting up an alternate recipient, or through the target address on a mail-enabled user. This task uses a directory object or a mailbox meta object as input. It then matches with an existing account in Exchange Online service, and establishes a mail forward to that account.

Syntax

```
Add-XsExchangeForwardingAddress [-TransporterObject  
<Microsoft.Exchange.Transporter.IAlienDataObject>] [[-TargetIdentity]
```

<String>] [-Confirm] [-DisconnectMailbox] [-ForwardOnly] [-TargetCredential <PSCredential>] [-Quiet] [-WhatIf] [-GlobalCatalog <String>].

Parameters

Parameter	Required	Type	Description
Confirm	No	System.Management.Automation.SwitchParameter	This is a switch parameter. If /Confirm is specified, then the cmdlet prompts the user for confirmation before executing the task. The confirmation is received through the following choices: [Y] Yes [A] Yes to All [N] No [L] No to All [S] Suspend [?] Help (default is "Y").
DisconnectMailbox	No	System.Management.Automation.SwitchParameter	Disconnect the local mailbox prior to creating a forward.
ForwardOnly	No	System.Management.Automation.SwitchParameter	Do not leave a copy of mail in the local mailbox.
GlobalCatalog	No	System.String	Specific Microsoft Active Directory server to query for user information.
Quiet	No	System.Management.Automation.SwitchParameter	Suppresses feedback during task actions.
SourceCredential	No	System.Management.Automation.PSCredential	Specific credentials used to access the local Active Directory.
SourceIdentity	yes	System.String	Identity of Active Directory user object that will have the mail forwarder.
TargetCredential	No	System.Management.Automation.PSCredential	Specific credentials used to access Exchange Online.
TargetIdentity	No	System.String	Identify of the Exchange Online mailbox where mail will be forwarded to.
TransporterObject	No	Microsoft.Exchange.Transporter.IMailboxDataObject	Used to pass in Transporter objects through the Windows PowerShell pipeline.
WhatIf	No	SwitchParameter	If specified, then the cmdlet does not actually perform the action, but only emits the criteria.

Example

This deletes the current mailbox and sets up a mail-enabled user with a mail forward set to Exchange Online.

```
Add-XsExchangeMailForwarder -SourceIdentity JimC@Contoso.com -
DisconnectMailbox -TargetCredential $Creds
```

Comments

Mailbox cleanup is an option in this cmdlet instead of a separate cmdlet because there are no scenarios where a mailbox cleanup would not be performed without also establishing a mail forward to Exchange Online.

Add-XsExchangeOnlineItem

Injects mailbox data items into Microsoft Exchange Online.

Syntax

```
Add-XsExchangeOnlineItem -TransporterObject  
<Microsoft.Exchange.Transporter.IAlienDataObject> [-Quiet] [-MaxThreadCount  
<UInt32>] -Identity <String> -Credential <PSCredential>
```

Parameters

Parameter	Required	Type	Description
Credential	Yes	System.Management.Automation.PSCredential	The credential object that contains a user name and password.
Identity	Yes	System.String	Identity of Active Directory user object.
MaxThreadCount	No	System.UInt32	The maximum number of threads to allocate to this task.
Quiet	No	System.Management.Automation.SwitchParameter	Suppresses feedback during task actions.
TargetClientAccessServer	No	System.String	The target client access server in Exchange Online.
TargetMapping	No	System.String	NA
TransporterObject	No	Microsoft.Exchange.Transporter.IAlienDataObject	Used to pass in Transporter objects through the Windows PowerShell pipeline.

Example

```
$TargetCreds = Get-Credential # provide target credentials  
  
$Mail = Get-XsImapMailboxData -SourceIdentity user1@contoso.com -SourceServer  
Server1.com -SourceLoginId user1 -SourcePassword Migration!1 -TargetIdentity  
user2@contoso.com  
  
$Mail | Add-XsExchangeOnlineItem -TargetCredential $TargetCreds
```

Add-MicrosoftOnlineExchangeItem

Injects mailbox data items into Microsoft Exchange Online.

Syntax

```
Add-MicrosoftExchangeOnlineItem -TransporterObject  
<Microsoft.Exchange.Transporter.IAlienDataObject> [-Quiet] [-MaxThreadCount  
<UInt32>] -Identity <String> -Credential <PSCredential>
```

Parameters

Parameter	Required	Type	Description
Credential	Yes	System.Management.Automation.PSCredential	The credential object that contains a user name and password.
Identity	Yes	System.String	Identity of Active Directory user object.
MaxThreadCount	No	System.UInt32	The maximum number of threads to allocate to this task.
Quiet	No	System.Management.Automation.SwitchParameter	Suppresses feedback during task actions.
TransporterObject	No	Microsoft.Exchange.Transporter.IAlienDataObject	Used to pass in Transporter objects through the Windows PowerShell pipeline.

Example

```
$TargetCreds = Get-Credential # provide target credentials

$Mail = Get-ImapMailboxData -SourceIdentity user1@contoso.com -SourceServer
Server1.com -SourceLoginId user1 -SourcePassword Migration!1 -TargetIdentity
user2@contoso.com

$Mail | Add-MicrosoftOnlineExchangeItem -TargetCredential $TargetCreds
```

Get-ImapMailbox

Gets the properties for the specified IMAP mailbox.

Syntax

```
Get-ImapMailbox [-SourceRootFolder <String>] [-SourcePort <UInt32>] -
SourceServer <String> [-GlobalCatalog <String>] [-DisplayName <String>] [-
MatchToMicrosoftOnline] [-Quiet] [-MatchToMicrosoftExchange] [-
TargetCredential <PSCredential>] [-FolderMapFile <String>] -SourceIdentity
<String> -SourceLoginID <String> [-TargetIdentity <String>] [-SourcePassword
<String>]
```

Parameters

Parameter	Required	Type	Description
DisplayName	No	System.String	The display name for an object. This is usually the combination of the user's first name, middle initial, and last name.
FolderMapFile	No	System.String	The file that contains the mapping information of IMAP folders to Microsoft Exchange Server folders.
GlobalCatalog	No	System.String	Specific Active Directory server to query for user information.
MatchToMicrosoftExchange	No	System.Management.Automation.SwitchParameter	NA

Parameter	Required	Type	Description
MatchToMicrosoftOnline	No	System.Management.Automation.SwitchParameter	NA
Quiet	No	System.Management.Automation.SwitchParameter	Suppresses feedback during task actions.
SourceIdentity	Yes	System.String	Unique SMTP e-mail address that is used to identify the mailbox that is being moved and to match it with an existing Exchange Server 2007 mailbox.
SourceLoginID	Yes	System.String	The user logon ID of an individual source IMAP mailbox.
SourcePassword	No	System.String	The password for the user logon ID that is used in the SourceLoginID parameter.
SourcePort	No	System.UInt32	The port that is used to connect to the source IMAP server.
SourceRootFolder	No	System.String	Used to indicate the root of an IMAP mailbox.
SourceServer	Yes	System.String	The IMAP server to extract mailbox content from.
TargetCredential	No	System.Management.Automation.PSCredential	Specific credentials used to access Microsoft Exchange Online.
TargetIdentity	No	System.Management.Automation.PSCredential	The SMTP address that is used to indicate a specific Exchange Server mailbox to inject mailbox content into.

Example

```
Get-ImapMailbox -SourceIdentity user1@contoso.com -SourceServer Server1.com -
SourceLoginId user1 -SourcePassword Migration!1
```

Get-ImapMailboxData

Get Microsoft Exchange Server mailbox data from the specified mailbox.

Syntax

```
Get-ImapMailboxData [-SourceRootFolder <String>] -SourceLoginID <String> [-
SourcePassword <String>] [-SourceServer <String>] -SourceIdentity <String> [-
SourcePort <UInt32>] [-EmailEnd <DateTime>] [-TargetIdentity <String>] [-
Quiet] [-EmailStart <DateTime>] [-FolderMapFile <String>] [-
SourceAdminCredential <PSCredential>] [-AllowUnsecureConnection]
```

Parameters

Parameter	Required	Type	Description
AllowUnsecureConnection	No	System.Management.Automation.SwitchParameter	Allows the task to connect to the source server over a non-Secure Sockets Layer (SSL) port to extract mail from an IMAP mailbox.
EmailEnd	No	System.DateTime	Used to specify the end date in a date range to filter mailbox content based on date.
EmailStart	No	System.DateTime	Used to specify the start date in a date range to filter mailbox content based on date.
FolderMapFile	No	System.String	The file that contains the mapping information of IMAP folders to Exchange folders.
Quiet	No	System.Management.Automation.SwitchParameter	Suppresses feedback during task actions.
SourceAdminCredential	No	System.Management.Automation.PSCredential	The credential object that contains a user name and password.
SourceIdentity	Yes	System.String	Unique SMTP e-mail address that is used to identify the mailbox that is being moved and to match it with an existing Exchange Server 2007 mailbox.
SourceLoginID	Yes	System.String	The user logon ID of an individual source IMAP mailbox.
SourcePassword	No	System.String	The password for the user logon ID that is used in the SourceLoginID parameter.
SourcePort	No	System.UInt32	The port that is used to connect to the source IMAP server.
SourceRootFolder	No	System.String	Used to indicate the root of an IMAP mailbox.
SourceServer	No	System.String	The IMAP server to extract mailbox content from.
TargetIdentity	No	System.String	The SMTP address that is used to indicate a specific Exchange Server mailbox to inject mailbox content

Parameter	Required	Type	Description
AllowUnsecureConnection	No	System.Management.Automation.SwitchParameter	Allows the task to connect to the source server over a non-Secure Sockets Layer (SSL) port to extract mail from an IMAP mailbox.
			into.
TransporterObject	True	Microsoft.Exchange.Transporter.IAlienDataObject	Used to pass in Transporter objects from the Get-ImapMailbox task through the Windows PowerShell pipeline.

Example

```
$Mail = Get-ImapMailboxData -SourceIdentity johnc@contoso.com -SourceServer
Server1.com -SourceLoginId user1 -SourcePassword Migration!1 -TargetIdentity
jc@contoso.com
```

Comment

Retrieves mailbox data for the mailbox associated with the target user.

Get-InternetMailbox

Get data describing an Internet mailbox.

Syntax

```
Get-InternetMailbox [-SourceRootFolder <String>] [-SourcePort <UInt32>] -
SourceServer <String> [-GlobalCatalog <String>] [-DisplayName <String>] [-
MatchToMicrosoftOnline] [-Quiet] [-MatchToMicrosoftExchange] [-TargetIdentity
<String>] [-FolderMapFile <String>] -SourceIdentity <String> [-
TargetCredential <PSCredential>] [-SourcePassword <String>] -SourceLoginID
<String>
```

Parameters

Parameter	Required	Type	Description
DisplayName	No	System.String	NA
FolderMapFile	No	System.String	NA
GlobalCatalog	No	System.String	Specific Active Directory server to query for user information.
MatchToMicrosoftExchange	No	System.Management.Automation.SwitchParameter	NA
MatchToMicrosoftOnline	No	System.Management.Automation.SwitchParameter	NA
Quiet	No	System.Management.Automation.SwitchParameter	Suppresses feedback during task actions.
SourceAdminCredential	No	System.Management.Automation.PSCredential	The credential object that contains a user name and password.

Parameter	Required	Type	Description
SourceIdentity	Yes	System.String	Unique SMTP e-mail address that is used to identify the mailbox that is being moved and to match it with an existing Microsoft Exchange Server 2007 mailbox.
SourceLoginID	Yes	System.String	The user logon ID of an individual source IMAP mailbox.
SourcePassword	No	System.String	The password for the user logon ID that is used in the SourceLoginID parameter.
SourcePort	No	System.UInt32	The port that is used to connect to the source IMAP server.
SourceRootFolder	No	System.String	Used to indicate the root of an IMAP mailbox.
SourceServer	No	System.String	The IMAP server to extract mailbox content from.
TargetCredential	No	System.Management.Automation.PSCredential	Specific credentials used to access the Microsoft Exchange Online mailbox.
TargetIdentity	No	System.String	Identity of the Exchange Online mailbox.

Example

```
Get-InternetMailbox -SourceServer "Contoso15" -SourceLoginID "JohnC" -
SourcePassword "Exchange%2" -Verbose -SourceIdentity "johnc@contoso.com" -
MatchToMicrosoftOnline
```

Get-PopMailbox

Get data describing a POP mailbox.

Syntax

```
Get-PopMailbox [-SourceRootFolder <String>] [-SourcePort <UInt32>] -
SourceServer <String> [-MatchToMicrosoftOnline] [-DisplayName <String>] [-
GlobalCatalog <String>] [-Quiet] [-MatchToMicrosoftExchange] [-
TargetCredential <PSCredential>] [-FolderMapFile <String>] -SourceIdentity
<String> -SourceLoginID <String> [-TargetIdentity <String>] [-SourcePassword
<String>]
```

Parameters

Parameter	Required	Type	Description
DisplayName	No	System.String	NA
FolderMapFile	No	System.String	NA
GlobalCatalog	No	System.String	Specific Active Directory server to query for user information.

Parameter	Required	Type	Description
MatchToMicrosoftExchange	No	System.Management.Automation.SwitchParameter	NA
MatchToMicrosoftOnline	No	System.Management.Automation.SwitchParameter	NA
Quiet	No	System.Management.Automation.SwitchParameter	Suppresses feedback during task actions.
SourceAdminCredential	No	System.Management.Automation.PSCredential	The credential object that contains a user name and password.
SourceIdentity	Yes	System.String	Unique SMTP e-mail address that is used to identify the mailbox that is being moved and to match it with an existing Microsoft Exchange Server 2007 mailbox.
SourceLoginID	Yes	System.String	The user logon ID of an individual source IMAP mailbox.
SourcePassword	No	System.String	The password for the user logon ID that is used in the SourceLoginID parameter.
SourcePort	No	System.UInt32	The port that is used to connect to the source IMAP server.
SourceRootFolder	No	System.String	Used to indicate the root of an IMAP mailbox.
SourceServer	No	System.String	The IMAP server to extract mailbox content from.
TargetCredential	No	System.Management.Automation.PSCredential	Specific credentials used to access the Microsoft Exchange Online mailbox.
TargetIdentity	No	System.String	Identify of the Exchange Online mailbox.

Example

```
Get-PopMailbox -SourceIdentity user1@contoso.com -SourceServer Server1.com -
SourceLoginId user1 -SourcePassword Migration!1
```

Get-PopMailboxData

Get POP mailbox data from the specified mailbox.

Syntax

```
Get-PopMailboxData -TransporterObject
<Microsoft.Exchange.Transporter.IAlienDataObject> [-SourceServer <String>] [-
EmailEnd <DateTime>] [-TargetIdentity <String>] [-Quiet] [-EmailStart
<DateTime>] [-FolderMapFile <String>] [-SourceAdminCredential <PSCredential>]
[-AllowUnsecureConnection]
```

Parameters

Parameter	Required	Type	Description
AllowUnsecureConnection	No	System.Management.Automation.SwitchParameter	Allows the task to connect to the source server over a non-Secure Sockets Layer (SSL) port to extract mail from a POP3 mailbox.
EmailEnd	No	System.DateTime	Used to specify the end date in a date range to filter mailbox content based on date.
EmailStart	No	System.DateTime	Used to specify the start date in a date range to filter mailbox content based on date.
FolderMapFile	No	System.String	The file that contains the mapping information of POP folders to Exchange folders.
Quiet	No	System.Management.Automation.SwitchParameter	Suppresses feedback during task actions.
SourceAdminCredential	No	System.Management.Automation.PSCredential	The credential object that contains a user name and password.
SourceIdentity	Yes	System.String	Unique SMTP e-mail address that is used to identify the mailbox that is being moved and to match it with an existing Exchange Server 2007 mailbox.
SourceLoginID	Yes	System.String	The user logon ID of an individual source POP3 mailbox.
SourcePassword	No	System.String	The password for the user logon ID that is used in the SourceLoginID parameter.
SourcePort	No	System.UInt32	The port that is used to connect to the source POP3 server.
SourceRootFolder	No	System.String	Used to indicate the root of a POP3 mailbox.
SourceServer	No	System.String	The POP3 server to extract mailbox content from.
TargetIdentity	No	System.String	The SMTP address that is used to indicate a specific Exchange mailbox to inject mailbox content into.
TransporterObject	True	Microsoft.Exchange.Transporter.IAlienDataObject	Used to pass in Transporter objects from the Get-PopMailboxData task through the Windows PowerShell pipeline.

Example

```
$Mail = Get-PopMailboxData -SourceIdentity johnc@contoso.com -SourceServer Server1.com -SourceLoginId johnc -SourcePassword Migration!1 -TargetIdentity jc@contoso.com
```

Get-XsActiveDirectoryUser

Get directory objects from Active Directory for the specified user.

Syntax

```
Get-XsActiveDirectoryUser -Filter <String> [-Quiet] [-Credential  
<PSCredential>] [-GlobalCatalog <String>]
```

Parameters

Parameter	Required	Type	Description
Credential	No	System.Management.Automation.PSCredential	Credentials for authenticating to Active Directory.
Filter	Yes	System.String	Selects objects based on the specified criteria.
GlobalCatalog	No	System.String	Specific Active Directory server to query for user information.
Identity	Yes	System.String	Selects a single user by name, email address, mail nickname, GUID, DN, or login ID.
ResultSize	No	Integer	The maximum number of entries retrieved from Active Directory in his call.
Quiet	No	System.Management.Automation.SwitchParameter	Suppresses feedback during task actions.

Example

```
Get-XsActiveDirectoryUser -Identity "Alex"
```

Returns a list of all users that have "Alex" in their GUID, Proxy, Mailnickname, UPN, DN or Common Name.

Comments

Complex selection, especially for multiple users, should be done using the Filter parameter.

Get-XsExchangeMailboxData

Get mailbox data from the specified Microsoft Exchange Server mailbox.

Syntax

```
Get-XsExchangeMailboxData -TransporterObject  
<Microsoft.Exchange.Transporter.IAlienDataObject> [-Credential  
<PSCredential>] [-ExcludeTask] [-Quiet] [-MaxThreadCount <UInt32>] [-  
SourceLocation <String>] [-EmailEnd <DateTime>] [-EmailStart <DateTime>] [-  
ExcludeEmail] [-ExcludeSchedule] [-ExcludeContacts]
```

Parameters

Parameter	Required	Type	Description
Credential	No	System.Management.Automation.PSCredential	PSH credential object consisting of Notes ID file and password.
EmailEnd	No	System.DateTime	End date for mail to be migrated.
EmailStart	No	System.DateTime	Start date for mail to be migrated.

Parameter	Required	Type	Description
ExcludeContacts	No	System.Management.Automation.SwitchParameter	Do not migrate contacts items.
ExcludeEmail	No	System.Management.Automation.SwitchParameter	Do not migrate e-mail items.
ExcludeJournal	No	System.Management.Automation.SwitchParameter	Do not migrate journal items.
ExcludeNotes	No	System.Management.Automation.SwitchParameter	Do not migrate notes items.
ExcludeSchedule	No	System.Management.Automation.SwitchParameter	Do not migrate calendar items.
ExcludeTask	No	System.Management.Automation.SwitchParameter	Do not migrate to-do items.
Identity	Yes	System.String	SMTP address of the source mailbox.
MaxThreadCount	No	System.UInt32	Maximum number of threads allocated to this task
Quiet	No	System.Management.Automation.SwitchParameter	Suppresses feedback during task actions.
SourceLocation	No	System.String	Allows a specific DAV root URL to be specified.
TransporterObject	Yes	Microsoft.Exchange.Transporter.IAlienDataObject	The TransporterObject parameter is the receptacle for iAlienDataObjects of type message from the pipeline.

Example

```
Get-XsExchangeMailboxData - Identity "JohnC" -AllowUnsecureConnection -
GlobalCatalog XYZServer -SourceLocation "http://contoso49/exchange" -
Credential $cred
```

Move-XsExchangeMailboxToExchangeOnline

Migrates mailbox data from Microsoft Exchange Server to Microsoft Exchange Online.

Syntax

```
Move-XsExchangeMailboxToExchangeOnline -TransporterObject
<Microsoft.Exchange.Transporter.IAlienDataObject> [-GlobalCatalog <String>]
[-ExcludeSchedule] [-ExcludeContacts] [-ExcludeEmail] [-SourceLocation
<String>] [-ExcludeNotes] [-ExcludeJournal] [-ExcludeTask] [-TargetIdentity
<String>] [-EmailEnd <DateTime>] [-EmailStart <DateTime>] -TargetCredential
<PSCredential> [-SourceCredential <PSCredential>] [-MaxThreadCount <UInt32>]
[-Quiet]
```

Parameters

Parameter	Required	Type	Description
EmailEnd	No	System.DateTime	End date for mail to be migrated.
EmailStart	No	System.DateTime	Start date for mail to be migrated.

Parameter	Required	Type	Description
ExcludeContacts	No	System.Management.Automation.SwitchParameter	Do not migrate contacts items.
ExcludeEmail	No	System.Management.Automation.SwitchParameter	Do not migrate e-mail items.
ExcludeJournal	No	System.Management.Automation.SwitchParameter	Do not migrate journal items.
ExcludeNotes	No	System.Management.Automation.SwitchParameter	Do not migrate notes items.
ExcludeSchedule	No	System.Management.Automation.SwitchParameter	Do not migrate calendar items.
ExcludeTask	No	System.Management.Automation.SwitchParameter	Do not migrate to-do items.
GlobalCatalog	No	System.String	Identifies the Active Directory server.
MaxThreadCount	No	System.UInt32	Maximum number of threads allocated to this task.
Quiet	No	System.Management.Automation.SwitchParameter	Suppresses feedback during task actions.
SourceCredential	No	System.Management.Automation.PSCredential	The credential object that contains a user name and password.
SourceIdentity	Yes	System.String	SMTP address of the mailbox to migrate.
SourceLocation	No	System.String	Specifies root URL for the source mailbox.
TargetCredential	Yes	System.Management.Automation.PSCredential	Specific credentials used to access Exchange Online mailbox.
TargetIdentity	No	System.String	Identify of the Exchange Online mailbox.
TransporterObject	Yes	Microsoft.Exchange.Transporter.IMAPMailboxDataObject	Used to pass in Transporter objects through the Windows PowerShell pipeline.

Example

```
Move-XsExchangeMailboxToExchangeOnline - SourceIdentity "JohnC" -
AllowUnsecureConnection - GlobalCatalog XYZServer -SourceLocation
"http://Contoso49/exchange" -TargetCredential $tcred -SourceCredential $scred
```

Comment

Passing mailbox data objects will cause this task to behave like Add-XsExchangeOnlineItem.

Move-XsImapMailboxToExchangeOnline

Migrates mailbox data from an IMAP server to Microsoft Exchange Online.

Syntax

```
Move-XsIMAPMailboxToExchangeOnline -TransporterObject
<Microsoft.Exchange.Transporter.IAlienDataObject> [-TargetMapping <String>]
[-TargetCredential <PSCredential>] [-TargetIdentity <String>] [-
MaxThreadCount <UInt32>] [-Quiet] [-TargetMode <String>] [-
AllowUnsecureConnection] [-SourceAdminCredential <PSCredential>] [-
FolderMapFile <String>] [-TargetClientAccessServer <String>] [-EmailEnd
<DateTime>] [-EmailStart <DateTime>]
```

Parameters

Parameter	Required	Type	Description
AllowUnsecureConnection	No	System.Management.Automation.SwitchParameter	NA
EmailEnd	No	System.DateTime	End date for mail to be migrated.
EmailStart	No	System.DateTime	Start date for mail to be migrated.
FolderMapFile	No	System.String	NA.
MaxThreadCount	No	System.UInt32	Maximum number of threads allocated to this task
Quiet	No	System.Management.Automation.SwitchParameter	Suppresses feedback during task actions.
SourceAdminCredential	No	System.Management.Automation.PSCredential	The credential object that contains a user name and password.
SourceIdentity	Yes	System.String	SMTP address of the mailbox to migrate.
SourceLoginID	No	System.String	The user logon ID of an individual source IMAP mailbox.
SourcePassword	No	System.String	Password for source mailbox.
SourcePassword	No	System.String	Password for source mailbox.
SourcePort	No	System.UInt32	Port on source server.
SourceRootFolder	No	System.String	Root folder for source mailbox.
SourceServer	Yes	System.String	Source mailbox server.
TargetClientAccessServer	No	System.String	Target Exchange Client Access server.
TargetCredential	No	System.Management.Automation.PSCredential	Specific credentials used to access the Exchange Online mailbox.
TargetIdentity	No	System.String	Identity of the Exchange Online mailbox.
TargetMapping	No	System.String	NA.
TargetMode	No	System.String	NA.

Parameter	Required	Type	Description
TransporterObject	Yes	Microsoft.Exchange.Transporter.IAlienDataObject	Used to pass in Transporter objects through the Windows PowerShell pipeline.

Example

```
$TargetCreds = Get-Credential # provide target credentials
Move-XsImapMailboxToExchangeOnline -SourceIdentity johnc@contoso.com -
SourceServer Server1.com -SourceLoginId user1 -SourcePassword Migration!1 -
TargetIdentity jc@contoso.com -TargetCredential $TargetCreds
```

Move-XsPopMailboxToExchangeOnline

Migrates mailbox data from a POP server to Microsoft Exchange Online.

Syntax

```
Move-XsPOPMailboxToExchangeOnline -TransporterObject
<Microsoft.Exchange.Transporter.IAlienDataObject> [-TargetMapping <String>]
[-TargetCredential <PSCredential>] [-TargetIdentity <String>] [-
MaxThreadCount <UInt32>] [-Quiet] [-TargetMode <String>] [-
AllowUnsecureConnection] [-SourceAdminCredential <PSCredential>] [-
FolderMapFile <String>] [-TargetClientAccessServer <String>] [-EmailEnd
<DateTime>] [-EmailStart <DateTime>]
```

Parameters

Parameter	Required	Type	Description
AllowUnsecureConnection	No	System.Management.Automation.SwitchParameter	NA
EmailEnd	No	System.DateTime	End date for mail to be migrated.
EmailStart	No	System.DateTime	Start date for mail to be migrated.
FolderMapFile	No	System.String	NA.
MaxThreadCount	No	System.UInt32	Maximum number of threads allocated to this task
Quiet	No	System.Management.Automation.SwitchParameter	Suppresses feedback during task actions.
SourceAdminCredential	No	System.Management.Automation.PSCredential	The credential object that contains a user name and password.
SourceIdentity	Yes	System.String	SMTP address of the mailbox to migrate.
SourceLoginID	No	System.String	The user logon ID of an individual source POP mailbox.
SourcePassword	No	System.String	Password for source mailbox.
SourcePort	No	System.UInt32	Port on source server.
SourceRootFolder	No	System.String	Root folder for source mailbox.

Parameter	Required	Type	Description
SourceServer	Yes	System.String	Source mailbox server.
TargetClientAccessServer	No	System.String	Target Exchange Client Access server.
TargetCredential	No	System.Management.Automation.PSCredential	Target mailbox credentials.
TargetIdentity	No	System.String	Identity of the Exchange Online mailbox.
TargetMapping	No	System.String	NA.
TargetMode	No	System.String	NA.
TransporterObject	Yes	Microsoft.Exchange.Transporter.IAlienDataObject	Used to pass in Transporter objects through the Windows PowerShell pipeline.

Example

```
$TargetCreds = Get-Credential # provide target credentials

Move-XsPopMailboxToExchangeOnline -SourceIdentity johnc@contoso.com -
SourceServer Server1.com -SourceLoginId user1 -SourcePassword Migration!1 -
TargetIdentity jc@contoso.com -TargetCredential $TargetCreds
```

Comments

Moves mailbox from the specified POP server to Exchange Online, using the source and target identities.

Remove-XsExchangeForwardingAddress

Removes any mail forwarders that may exist on users that have mail-forwarding enabled to Microsoft Exchange Online. See the Add-XsExchangeMailForwarder cmdlet for how to add a mail forwarder to Exchange Online.

Syntax

```
Remove-XsExchangeForwardingAddress -TransporterObject
<Microsoft.Exchange.Transporter.IAlienDataObject> [-Confirm] [-WhatIf] [-
Credential <PSCredential>] [-Quiet] [-GlobalCatalog <String>]
```

Parameters

Parameter	Required	Type	Description
Confirm	No	System.Management.Automation.SwitchParameter	This is a switch parameter. If /Confirm is specified, then the cmdlet prompts the user for confirmation before executing the task. The confirmation is received through the following choices: [Y] Yes [A] Yes to All [N] No [L] No to All [S] Suspend [?] Help (default is "Y").
Credential	No	System.Management.Automation.PSCredential	Specific credentials used to access the local Active Directory.

Parameter	Required	Type	Description
GlobalCatalog	No	System.String	The global catalog used to find and update user objects. If not supplied, the task will find the nearest global catalog in the same domain as the object that is being updated.
Identity	Yes	System.String	Identity of the user object that will be updated.
Quiet	No	System.Management.Automation.SwitchParameter	Suppresses feedback during task actions.
TransporterObject	Yes	Microsoft.Exchange.Transporter.IAlienDataObject	Used to pass in Transporter objects through the Windows PowerShell pipeline.
WhatIf	No	SwitchParameter	If specified, then the cmdlet does not actually perform the action, but only emits the criteria.

Example

`Remove-XsExchangeForwardingAddress`

Search-XsMicrosoftOnlineDirectory

Searches the Microsoft Online directory.

Syntax

```
Search-XsMicrosoftOnlineDirectory -TransporterObject
<Microsoft.Exchange.Transporter.IAlienDataObject> [-Quiet] -Credential
<PSCredential>
```

Parameters

Parameter	Required	Type	Description
Credential	Yes	System.Management.Automation.PSCredential	Specific credentials used to access Microsoft Exchange Online.
Quiet	No	System.Management.Automation.SwitchParameter	Suppresses feedback during task actions.
TransporterObject	Yes	Microsoft.Exchange.Transporter.IAlienDataObject	Used to pass in Transporter objects through the Windows PowerShell pipeline.

Example

`Search-XsMicrosoftOnlineDirectoryCONC`

Export-TransporterBinary

Use the Export-TransporterBinary cmdlet for writing Transporter objects to a file with the .tbin extension.

Parameters

Parameter	Required	Type	Description
MaxThreadCount	No	System.Management.Automation.SwitchParameter	Maximum number of threads to be allocated to this process.
Quiet	No	System.Management.Automation.SwitchParameter	Suppresses feedback during task actions.
TargetFilePath	No	System.String	The name of the directory where TBIN files will be generated.
TargetFilePrefix	Yes	System.String	Creates one file with the given prefix. By default, if a file with that name already exists, a suffix will be appended based on the current date and time.
TransporterObject	No	System.String	Receives iAlienDataObjects of type message from the pipeline.

Import-TransporterBinary

The Import-TransporterBinary cmdlet imports Transporter object data from files with the TBIN extension.

Parameters

Parameter	Required	Type	Description
MaxThreadCount	No	System.Management.Automation.SwitchParameter	Maximum number of threads to be allocated to this process.
Quiet	No	System.Management.Automation.SwitchParameter	Suppresses feedback during task actions.
SourceFileName	Yes	System.String	The path to a file with the TBIN extension which you previously created by using the Export-TransporterBinary cmdlet.

Appendix A: Sample Planning Documents

The [Microsoft Online Services Migration Toolkit](#), available from the Microsoft Download Center, contains sample planning documents and communication templates.

Appendix B: Other Sources of Information

Microsoft Online Services provides several different sources of information about migration, directory synchronization, and about the service in general. These sources are updated more often than this document, so they may contain information that is not included in this document. Some of these sources are listed below.

- [Business Productivity Online Standard Suite Help](#). Click the links in the Microsoft Online Services Administration Center to view the Help or click the preceding link to navigate directly to the Help library.
- [Microsoft Online Services TechNet Forums](#). These forums are available in English only.
- [Microsoft Online Services Team Blog](#). This blog is available in English only.