Inware Technologies
Email Shuttle Exchange Extractor

Contents

Introduction

Thank you for choosing the Inware Email Shuttle as your email migration solution. This manual, as well as the software described in it, is furnished under license and may only be used or copied in accordance with the terms of such license. The information in this manual is furnished for informational purposes only, is subject to change without notice, and should not be construed as a commitment by Inware Technologies, Inc. Inware Technologies, Inc. assumes no responsibility or liability for any errors or inaccuracies that may appear in this manual.

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If you need assistance or have questions, please do not hesitate to contact us.

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Architechture

The Inware Email Shuttle was designed with pure performance and data fidelity at the core. Our solution provides an industrial strength tool for managing migrations. The Inware Email Shuttle considers a migration to consist of two parts – the email system migrated from and the e-mail system migrated to. The Inware Email Shuttle has a corresponding component for each of these two parts – an Extractor to perform the migration from the legacy system and a Loader to perform the migration to the target system.

Inware Email Shuttle Extractor

The Inware Email Shuttle Extractor extracts data from the legacy e-mail system. After defining users to migrate and the specific location and requirements of data on the legacy system, the Inware Email Shuttle Extractor automatically retrieves the data and places it on a local or network drive.

Inware Email Shuttle Loader

The Inware Email Shuttle Loader loads data to the target e-mail server or cloud based email system. After defining the specific locations and requirements of data on the legacy system, the Inware Email Shuttle Loader automatically retrieves the data from the local or network drive and populates the target e-mail system.

Figure 1- Inware Email Shuttle Architecture

Prerequisites and System Requirements

The amount of time that it takes to install the Inware Email Shuttle is heavily dependent on the email systems involved, as well as the environment and the configuration of your migration system. Installation and end-to-end testing can take as little as a half an hour or it could take days. Inware Technologies, Inc. makes no claim as to the amount of time required for installation, testing and production migrations. Should it be required, Inware Technologies Support will make reasonable efforts to assist you in the configuration of each machine within your environment, so that the installation goes as quickly as possible.

The prerequisites listed below must be met according to which system you are migrating to and from. For example, when migrating from Lotus Domino to

Microsoft Exchange, be certain that the prerequisites for each of these systems as listed below are met.

This initial configuration is ultimately the hardest part of the process. Once configured and running, sit back and watch the Inware Email Shuttle migrate your data. If you experience problems after meeting these prerequisites, contact our technical support team.

If you have already installed the product, then it is likely that you have met each of the software prerequisites. The key prerequisite remaining will be to ensure that you have administrative access (with an account/profile) to the mailboxes for migration from the legacy system and administrative access (with an account/profile) to the mailboxes for migration to the target system.

Minimum System Requirements

To use the Inware Email Shuttle Lotus Domino Extractor, you need to meet the following minimum system requirements:

- Inware Email Shuttle may be installed on a PC with Windows XP Pro, Windows Vista or Windows 8-32 bit.

- If the IMAP-4 server is LDAP enabled run the Inware Email Shuttle through Launchpad as usual (User will need to know the details of their LDAP directory for required attributes). Otherwise, configure shuttlin file manually, configure extractor through Mission Control and launch extractor manually.

- The most recent service pace for the version of Windows installed on your migration PC. If running Windows 2000, then Windows 2000 Security Rollup Package, January 2002 or Service Pack 3 (WLDAP32_VERSION "5.0.2195.4436" or higher)

- 100 MB available hard-disk space for minimum installation.

  Optimally,sufficient Hard Disk space should be available on the Migration PC to contain all user data to be migrated. If this is not possible, configuration changes can be made to require less space or a mapped network drive can be used to contain this data, but these measures can reduce performance speed.

Migrating to Microsoft Exchange-

Prerequisites

Prior to running the LaunchPad, the destination accounts must exist in the Active Directory, and must be mail enabled, with Exchange mailboxes. The mailboxes **ARE NOT** automatically created.

1. Setup a migration machine running Windows 2000 Professional, Windows XP Professional or Windows Vista.

2. Sufficient Hard Disk space should be available on the Migration PC to contain all user data to be migrated. If this is not possible, configuration changes can be made to require less space or a mapped network drive can be used to contain this data, but these measures can reduce performance speed.

3. In Active Directory, create a mail-enabled user named "Eshuttle". This account will be given Service Account access rights to all mailboxes in your destination Exchange server.

Setting Permissions - Microsoft Exchange 2007/2010

An administrative account must be established in the Active Directory. Open the PowerShell on your Exchange 2007 server and run the following command line:

Get-mailboxserver <servername> | add-adpermission -user eshuttle -accessrights GenericRead, GenericWrite -extendedrights Send-As, Receive-As, ms-Exch-Store-Admin

The parts in <> should be changed to represent the indicated values in your environment.

Setting Permissions - Microsoft Exchange 2013

PowerShell on your Exchange 2013 server and run the following command line:

Get-Mailbox -ResultSize unlimited -Filter {(RecipientTypeDetails -eq 'UserMailbox') -and (Alias -ne 'Admin')} | Add-MailboxPermission -User eshuttle -AccessRights fullaccess -InheritanceType all

Setting Permissions - Office 365

The Eshuttle account must be given access rights of a User Management Admin or higher to allow access to the destination mailboxes.

Migrating to an IMAP-4 System -

Prerequisites

There are no prerequisites for migrating to an IMAP-4 compliant system. The GeM Shuttle Manager can function properly with these minimum requirements. Depending on the volume of e-mail and the desire for increased speed and performance, the requirements can change.

Installing the Inware Email Shuttle

First launch the setup.exe that can be downloaded from the Inware Technologies website. Follow the steps below to progress through the Wizard.

1. Welcome screen – Click "Next".

2. License Agreement – Select agree and click "Next".

3. Customer Information – Enter your user name, your company name and click "Next".

4. Choose Destination Location – Choose your installation directory root level. C:\eshuttle is recommended and used throughout this documentation.

5. Select Options – Choose whether to install an extractor, a loader or both. It is strongly recommended that you install both even if you only intend on this pc doing only either extracting or loading. To install both the extractor and loader on a pc without the appropriate clients, cancel the Wizard and re-launch it from a command prompt by running: **setup.exe –noprereq**

6. Select Extractor Component – Select your source system or systems and click "Next".
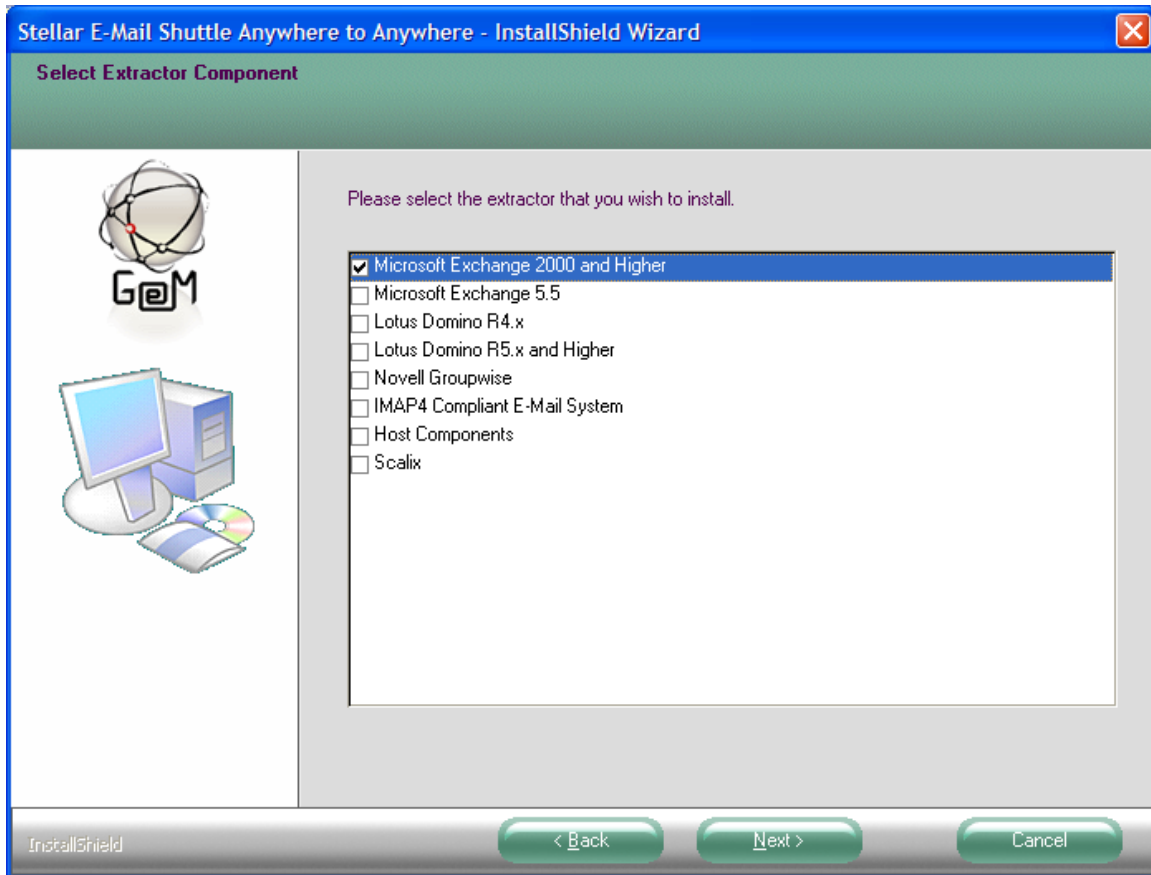
7. Select Loader Component – Select your destination system or systems and click "Next".

8. Ready to Install the Program – Click "Install".

Exchange Extractor Configuration

The Exchange Extractor can be configured by launching the
ExchangeExtractor.exe and choosing Configuration from the menu.
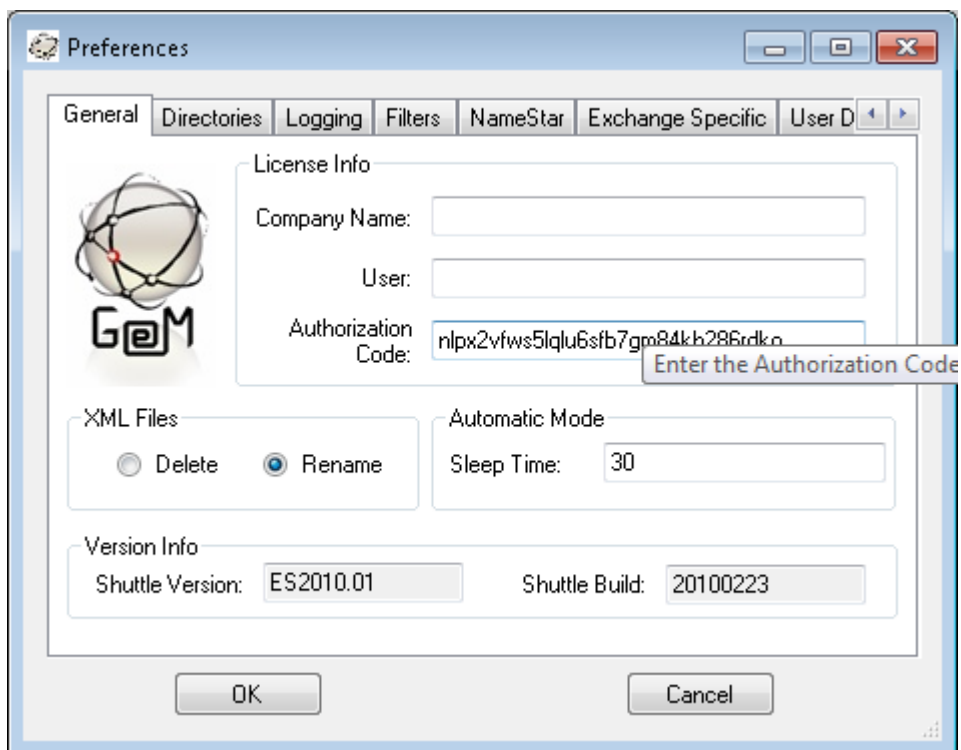
If you have licensed the full version of the Email Shuttle, fill in the Authorization
Code as provided by Inware Technologies here. If you are evaluating the trial
version of the Email Shuttle, leave this field blank. Be sure you use the correct
code as the Extractor code should always end with 'X'.

The Sleep Time specifies how long in seconds that the loader will wait before
checking the bay file directories for new inbound bay files to process.

XML File Disposition indicates if you want the metadata bay files to be deleted
after the loader processes them or if you would like them renamed instead.

The Input File Directory is where you will create the list of users to be migrated. Generating this list is detailed below under Migration User Selection.

The Content Directory should point to the Migrate directory of the extractor. This directory is where the meta-data bay files will be generated by the extractor.

The Log File Directory should reflect the directory where you want to receive your extractor log files.
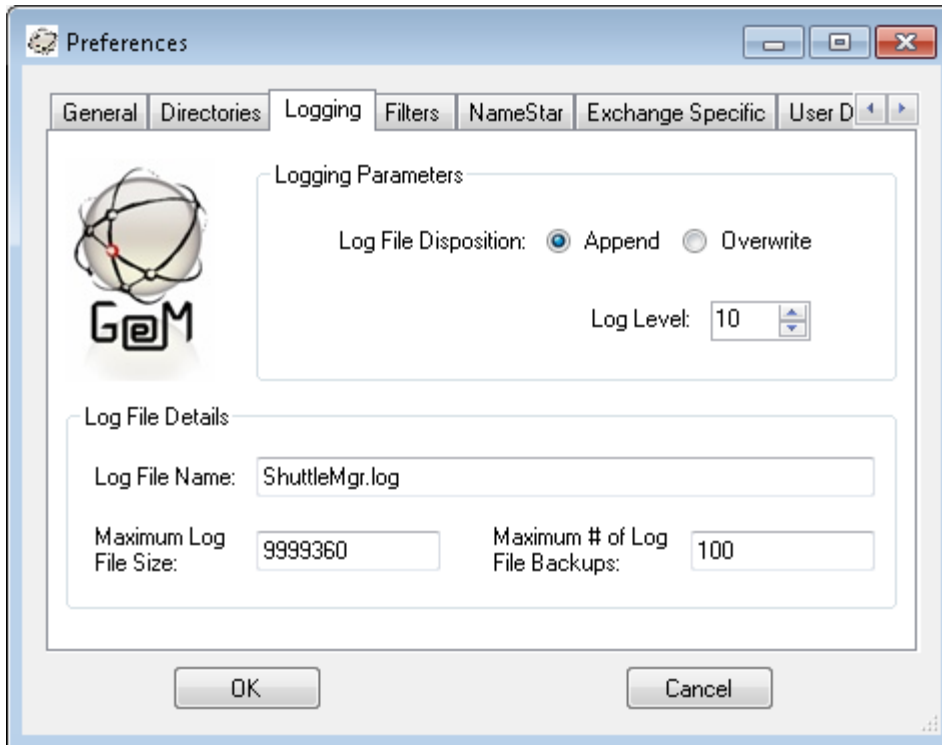
Setting the Log File Disposition to Append will cause each run of the Email Shuttle to add to the existing log where Overwrite will empty the log file for each new run.

Setting the Log Level to 10 will result in the maximum logging information being captured in the log file. Setting it to 3 will result in only errors being captured. Set this value to 10 until you are sure the Email Shuttle is operating correctly.
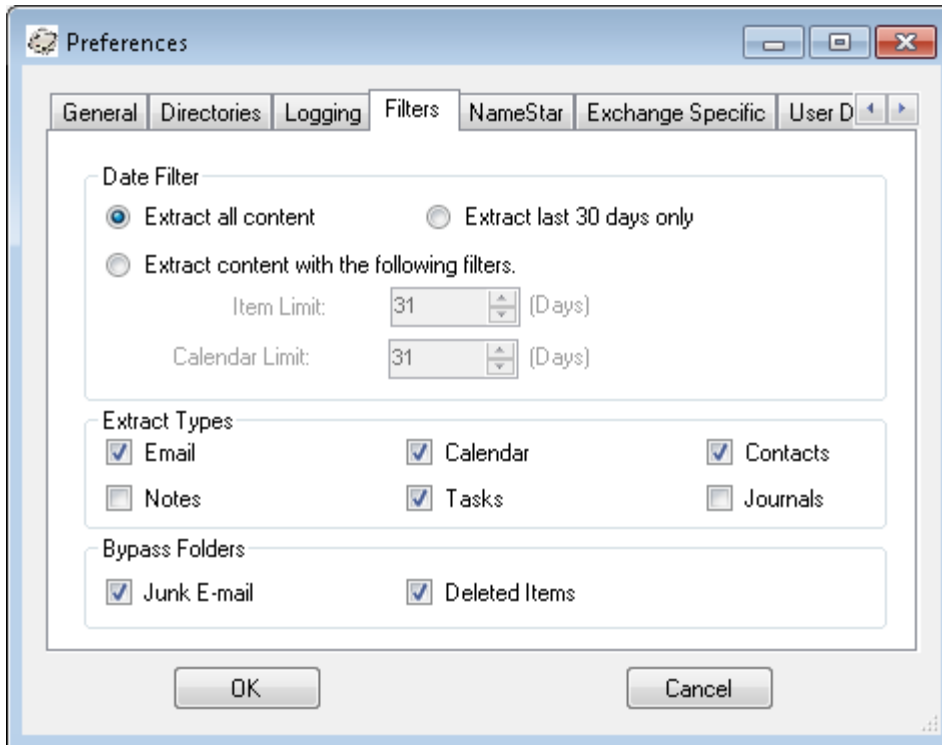
These values allow you to set how much data you wish to extract from the source mailboxes. You can specify that certain data types be omitted or that only email or calendar data more recent than a specific date be migration.
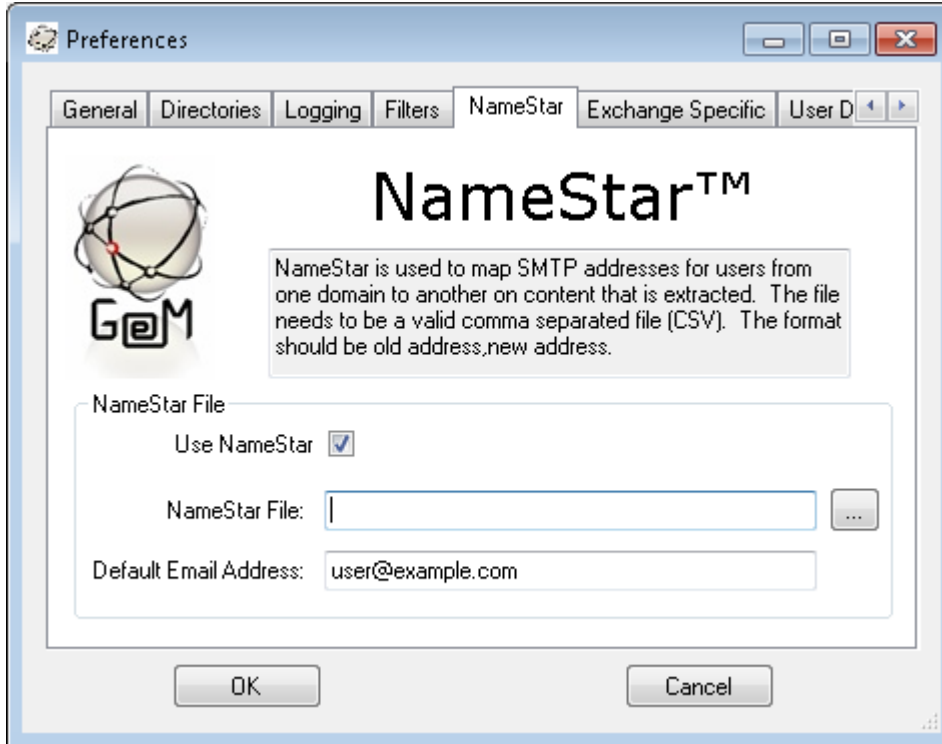
The NameStar process is used by the Extractor to resolve recipient names from their native AS400 format into SMTP format addresses that will resolve and be usable in any email platform. This applies specifically to any native users found in the To, From or CC fields of any mail being migrated. Checking the Use NameStar box allows this to take place. The file name and location are specified in the NameStar File blank. The Default Email Address is the value that will be substituted for the recipient email address if it is not already in SMTP format and if it cannot be found in the NameStar file. This prevents the recipient from being rejected entirely during the load as the Display Name of the recipient is preserved.
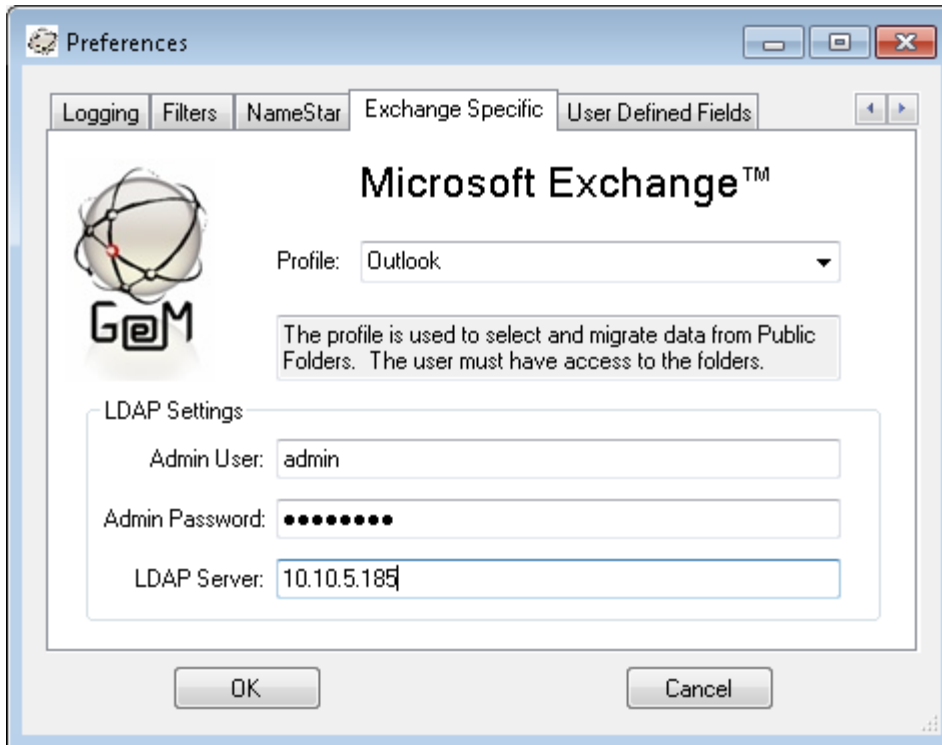
Here we will fill out the Exchange server information necessary to extract data. The Profile is the name of the Outlook Profile that points to the mailbox of the administrative Eshuttle mailbox that was given administrative permissions per the Setting Permissions steps above. It is also used when extracting public data such as public folders or Distribution Lists.

The LDAP Settings are used for preforming an LDAP lookup of all source users to construct a list of users to be migrated. Fill in Primary Domain Controller in the Server blank, enter the email address and password of an account that has access to do an LDAP lookup into your Active Directory Environment.
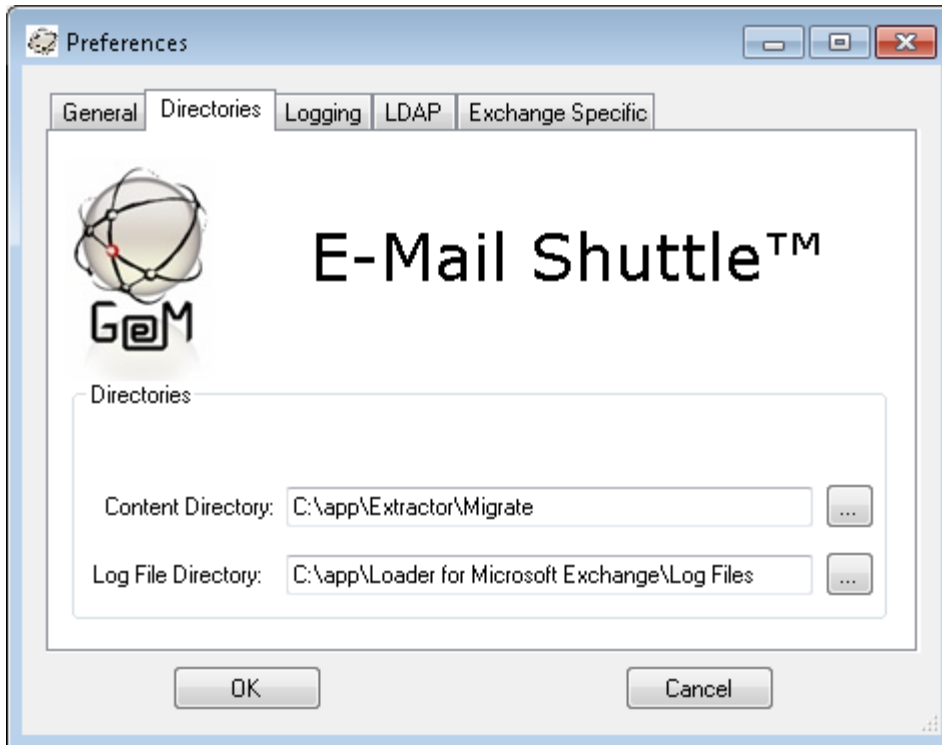
Exchange / Office 365 Loader Configuration

The Exchange Loader can be configured by launching the ShutExIM.exe and choosing Configuration from the menu.
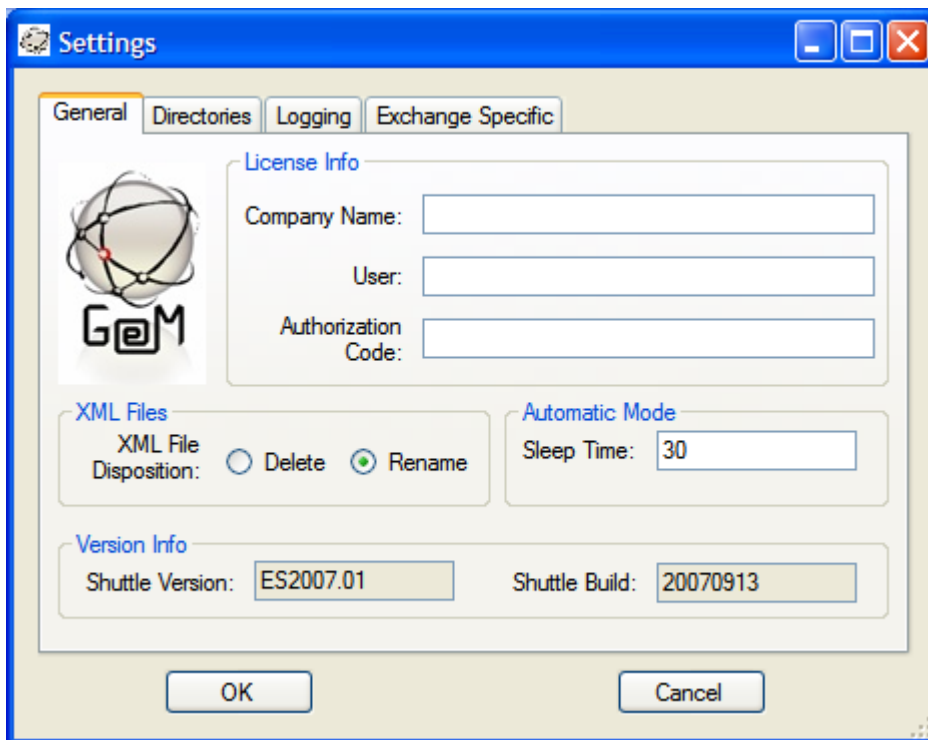
If you have licensed the full version of the Email Shuttle, fill in the Authorization Code as provided by Inware Technologies here. If you are evaluating the trial version of the Email Shuttle, leave this field blank. Be sure you use the correct code as the Loader code should always end with 'O'.
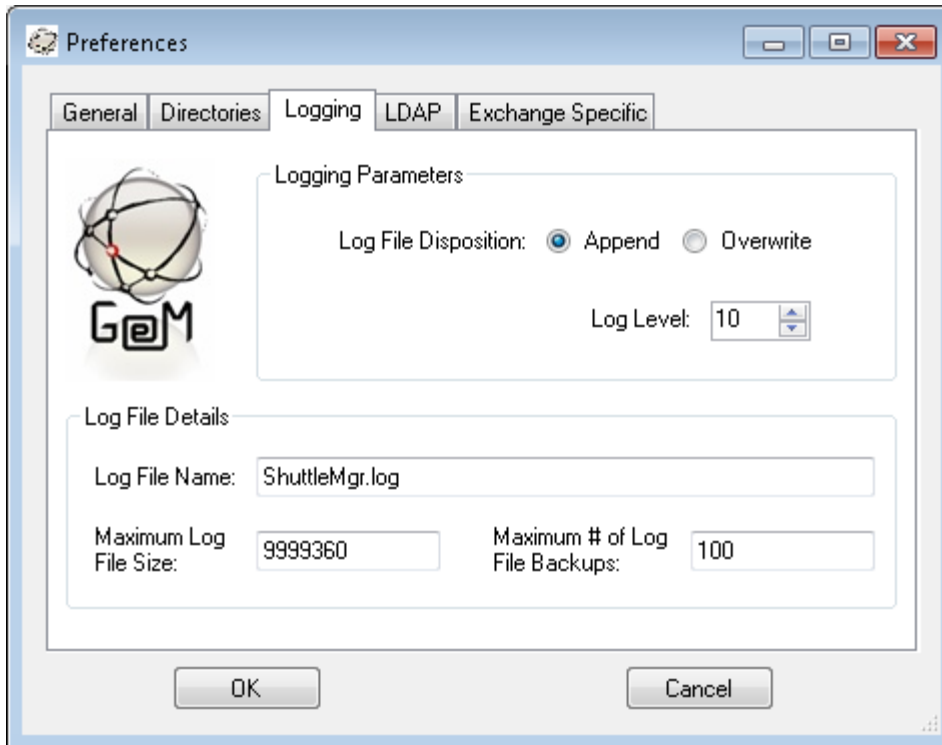
The Sleep Time specifies how long in seconds that the loader will wait before checking the bay file directories for new inbound bay files to process.

XML File Disposition indicates if you want the metadata bay files to be deleted after the loader processes them or if you would like them renamed instead.

The Content Directory should point to the Migrate directory of your Extractor. This path may differ depending on where you installed your Email Shuttle Extractor.

The Log File Directory should reflect the directory where you want to receive your loader log files.

Setting the Log File Disposition to Append will cause each run of the Email Shuttle to add to the existing log where Overwrite will empty the log file for each new run.

Setting the Log Level to 10 will result in the maximum logging information being captured in the log file. Setting it to 3 will result in only errors being captured. Set this value to 10 until you are sure the Email Shuttle is operating correctly.
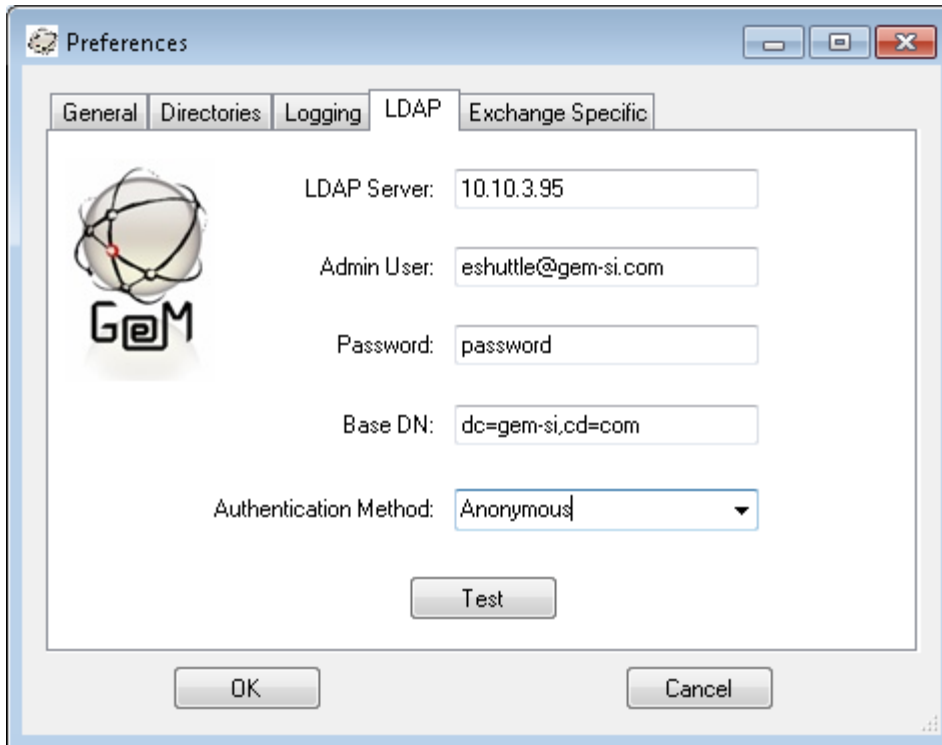
Here we will fill out the LDAP information for the Active Directory domain where your Exchange mailboxes reside. LDAP Server should be set to your Primary Domain Controller. Admin User and Password should be set to your Eshuttle administrative account. Base DN should reflect the root level of your Active Directory tree. Authentication Method should be set to as necessary for a successful LDAP bind in your environment.
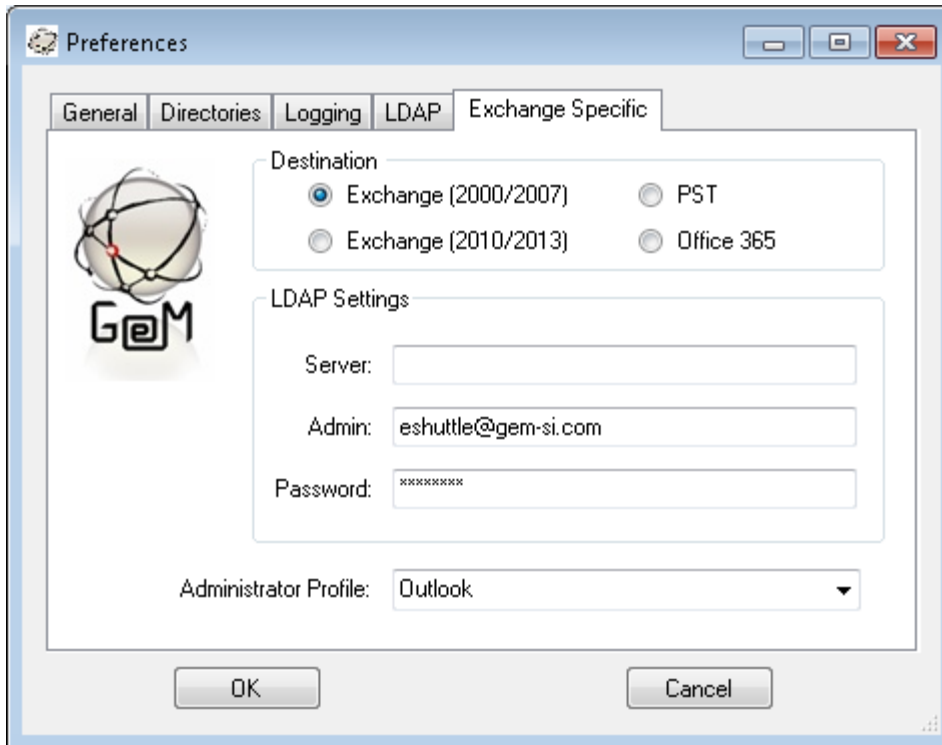
If loading into Exchange 2000 or 2007, choose this Destination option and fill in Primary Domain Controller in the Server blank, enter the email address and password of an account that has access to do an LDAP lookup into your Active Directory Environment. You will also want to create an Outlook profile that points to your Eshuttle account mailbox (that has permissions set as listed above) and set Outlook to use that profile by default in the Control Panel.
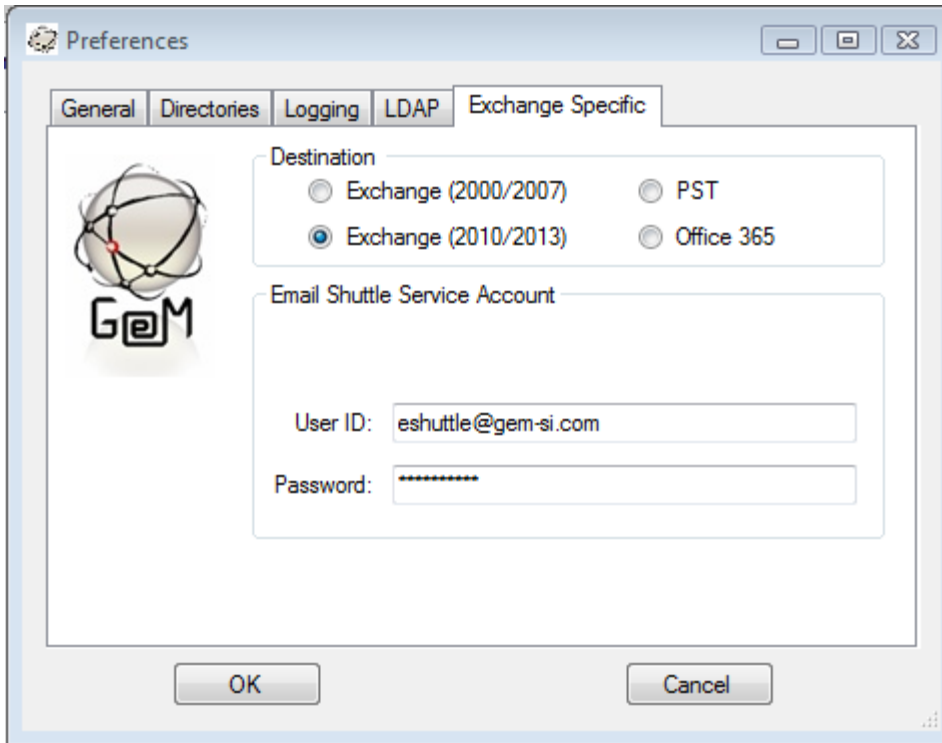
If you are loading into Exchange 2010 or 2013, choose this option and fill in the User ID and Password of the Eshuttle administrative account that was given Service Account access rights.
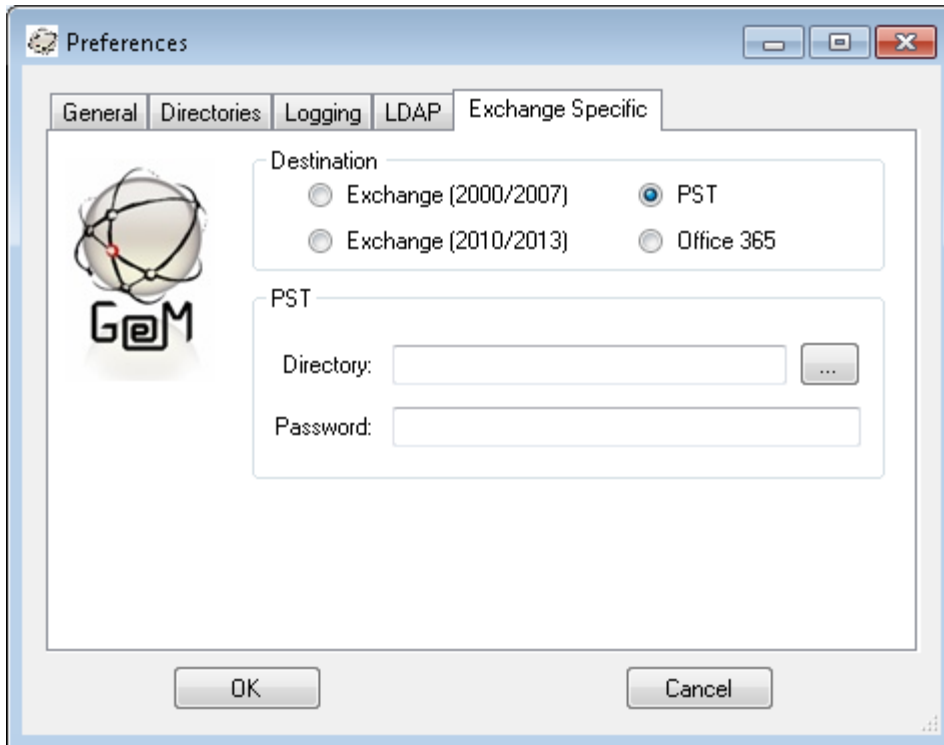
If you are loading into PST files, select the PST option here. Loading into PST files requires no special permissions for the Eshuttle account. The Directory specified is where the destination PST files will be created. If a Password is provided, the PST files will be created and locked by the specified password. If the Password field is left blank, the PST files will not be password protected.
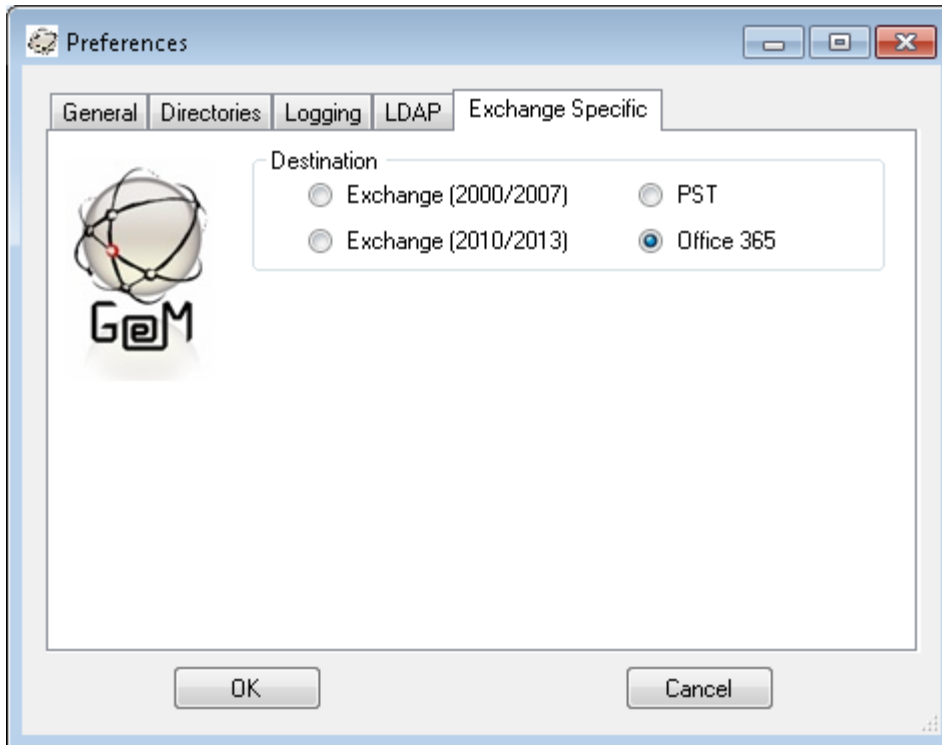
If you are loading into Office 365, select the Office 365 option here. Loading into Office 365 requires no special permissions for the Eshuttle account. The user credentials will need to be specified in the destination information fields during the Migration User Selection step below.

If you are loading into a cloud based email platform other than Office 365, please install and use the IMAP Loader to complete your migration.

IMAP / Cloud Loader Configuration

The IMAP Loader can be configured by launching the ShutImapIM.exe and choosing Configuration from the menu.
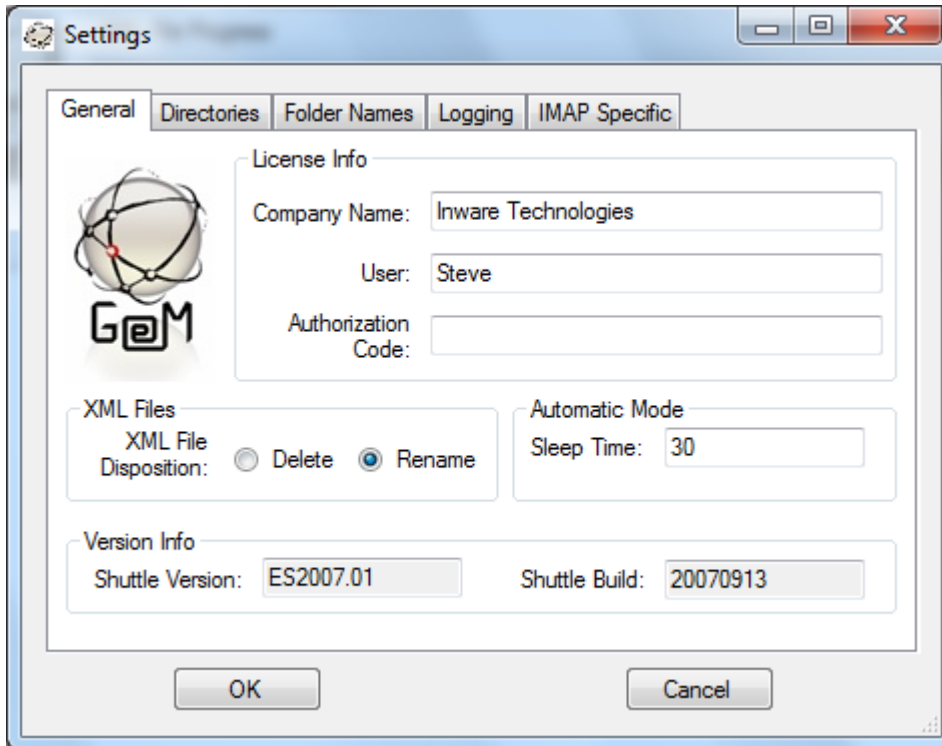
If you have licensed the full version of the Email Shuttle, fill in the Authorization Code as provided by Inware Technologies here. If you are evaluating the trial version of the Email Shuttle, leave this field blank. Be sure you use the correct code as the Loader code should always end with 'O'.

The Sleep Time specifies how long in seconds that the loader will wait before checking the bay file directories for new inbound bay files to process.

XML File Disposition indicates if you want the metadata bay files to be deleted after the loader processes them or if you would like them renamed instead.
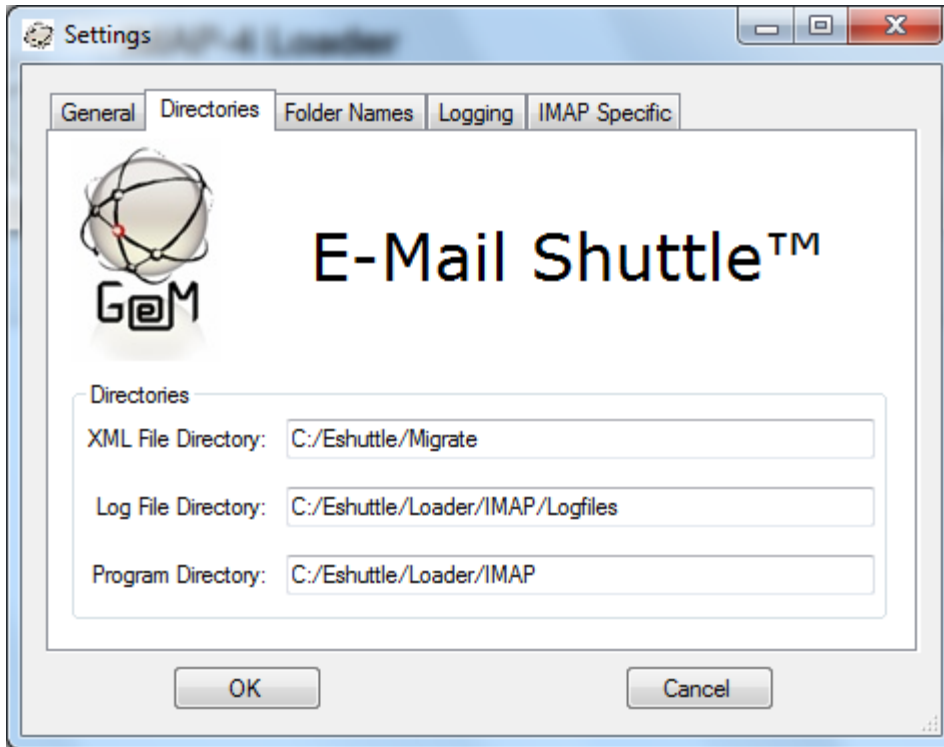
The XML File Directory should point to the Migrate directory of your Extractor. This path may differ depending on where you installed your Email Shuttle Extractor.

The Log File Directory should reflect the directory where you want to receive your loader log files.

The Program Directory should reflect the path that the Email Shuttle where the Email Shuttle IMAP Loader was installed.
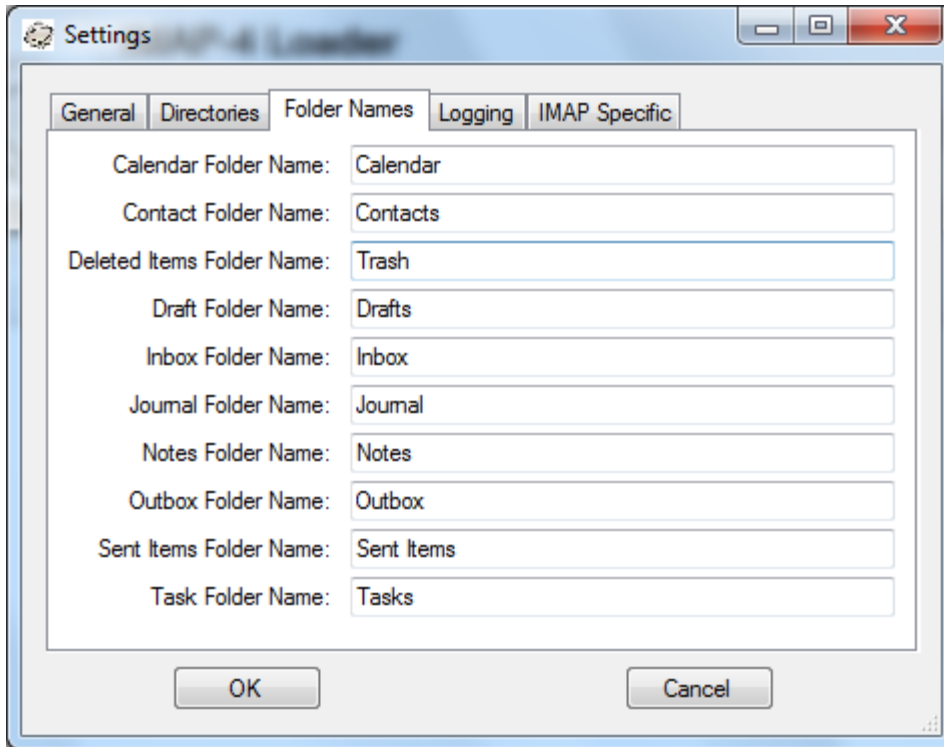
The Folder Names specified on this tab should be set to the names of the system folders for the destination email platform. These name will be used when loading data from source system folders. If after loading data into a mailbox you find that system folder data is loaded into a similar named non-system folder, then that value needs to be changed on this screen.
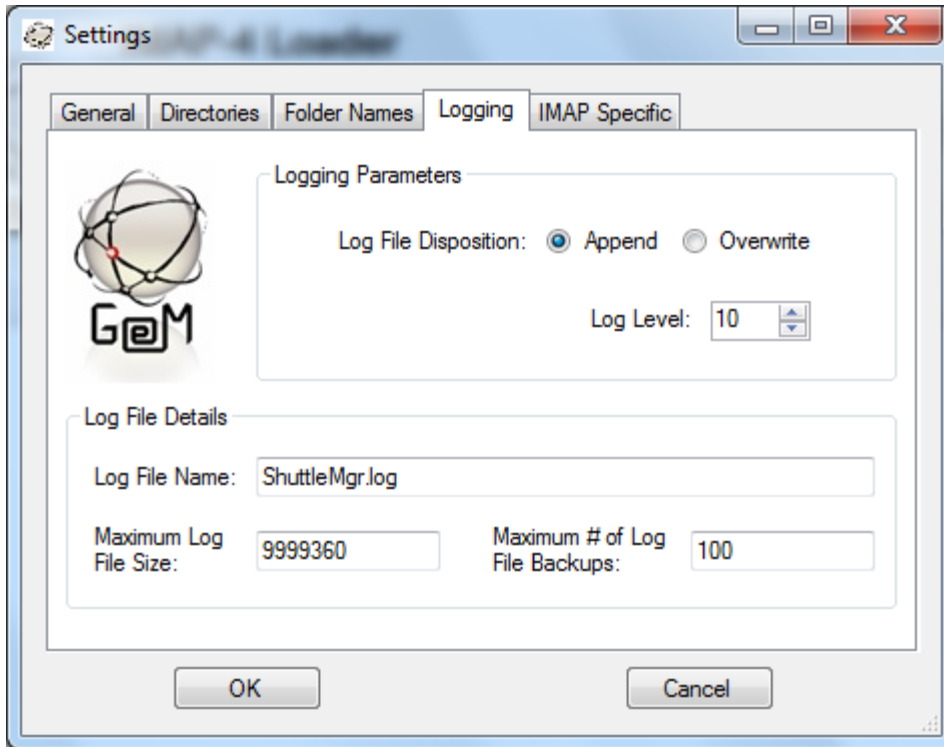
Setting the Log File Disposition to Append will cause each run of the Email Shuttle to add to the existing log where Overwrite will empty the log file for each new run.

Setting the Log Level to 10 will result in the maximum logging information being captured in the log file. Setting it to 3 will result in only errors being captured. Set this value to 10 until you are sure the Email Shuttle is operating correctly.
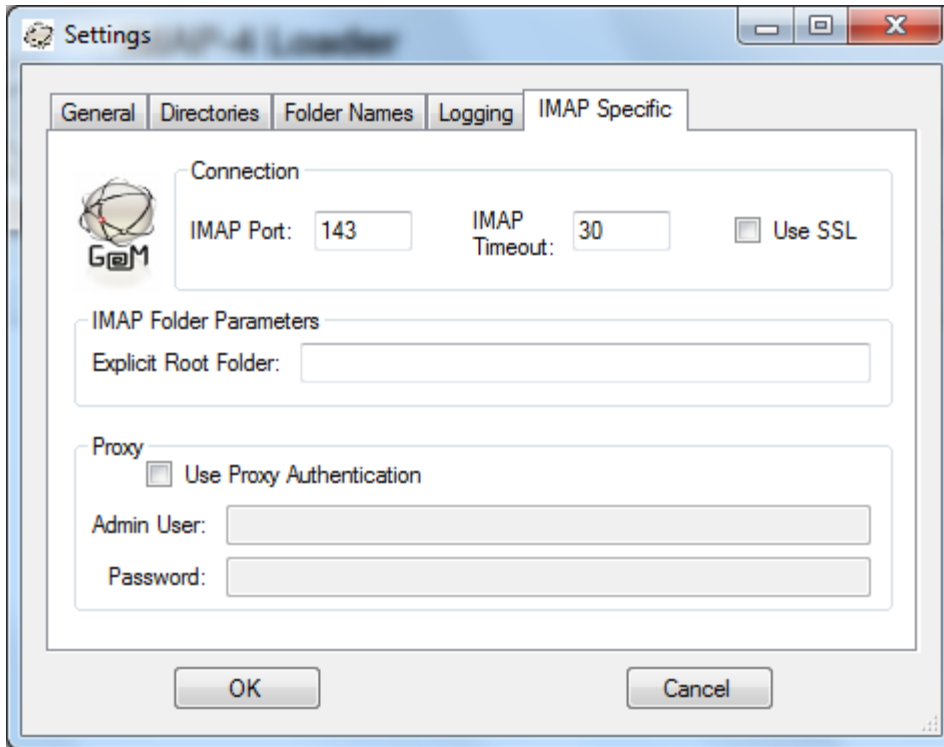
This page is reserved for specifying information on the destination IMAP server. If your destination IMAP server uses a port other than 143 or requires SSL to connect to a mailbox, specify that here.

If user created folders in your destination IMAP environment are required to be created underneath a root level, such as Inbox, specify this root level in the Explicit Root Folder area. This is typically not the case with most IMAP platforms.

If your IMAP environment allows for Proxy Administrator Authentication to open all user mailboxes, check the Use Proxy Authentication box and specify the Admin User account name and Password here. This will allow you to load data into user accounts without needing to specify their destination mailbox passwords at the time of user selection. Keep in mind that not all IMAP environments support Proxy Administrator Authentication.

Migration User Selection

After the Extractor and Loader have been configured, you can use the Directory and Select Users button on the main page of the IMAP Extractor to select users for migration. This will create a list of all source mailboxes via an LDAP query using the parameters specified in the Extractor LDAP configuration section. Users can then be selected from this list for migration.

If you wish to specify bulk users to migrate without using a GUI you can specify the users to be migrated by creating a shuttling.xml file in the /Users directory of the Extractor. This can be done using either the InputFileCreator.exe to enter the users manually one at a time, or by creating and converting a csv file using the CSVtoInputFile.exe utility.

Start the Migration

After specifying which users to migrate, click the Extract button on the front screen of the Extractor to begin the migration. Then you can start the Loader by clicking on the Start button on the front screen of the Loader. The Loader should begin processing data once the first selected user has completed the extraction.

Mailbox Verification

Detailed mailbox verification
After migrating data for the first few users, we suggest verifying the fidelity of the mailbox data. Open up a destination mailbox and examine the mail content. Verify that the time and date on mail items are accurate, that message headers, body text and formatting are unchanged from the original messages. Also, verify that any message attachments are in place. Verify that personal folders were migrated successfully and compare the total number of messages in the source and destination mailboxes to make sure all mail was migrated.

Broad mailbox verification
Once you are satisfied that the first few users were migrated correctly, you can proceed with bulk migrations. When migrating large groups of users, pay close attention to the disposition of the bay files after migration. Prior to being loaded, user data will be stored in files with a .bay extension. After migration, the extension will be changed to either .shu if the loader encountered no errors or .bad if the loader had errors. Any user data files that have a .bad extension after migration should be subject to detailed mailbox verification or a closer examination of the loader log file to determine what errors were encountered and what further action is necessary. Errors can represent a range of problems from a single field of one email being corrupt to not being able to access to mailbox at all. You should not assume that encountering an error necessarily required re-migrating the mailbox.

Migration Flow Overview

Here is the general procedure for a standard production mail migration.

1. Create the destination mailboxes in Exchange.

2. Change the user mail routing for all incoming mail to flow into the users' new empty Exchange mailboxes.

3. Migrate the users' mailbox data using the Inware Email Shuttle.

4. Verify the migrated users' mailbox data.

Extracting from Outlook PST Files

By creating a specially formatted shuttlin file, it is possible to extract from Outlook PST files.

To extract from PST files, the shuttlin file is formatted exactly like normal, except for two parameters, which must contain special information:

Server: This parameter must contain the string "PST".

Canonical Name: (normally unused) this parameter must contain the full path to the Outlook PST file.

As stated above, all other parameters are filled in normally.

Sample of PST shuttlin layout
*ES_System^EXCHANGE^*
ES_Export^Callen^PST^^C:\Archives\callen.pst^^callen@test.compusven.
*com^Carol^Allen^ callen^COMPUSVEN_PO^COMPUSVEN_DOM^DBTitle^*
(Extract the data in the file callen.pst to a BAY file formatted for loading into a Novell GroupWise mailbox, where the GroupWise UserID is "callen", the GroupWise Post office is "COMPUSVEN_PO", and the GroupWise Domain is "COMPUSVEN_DOM".)

*ES_System^EXCHANGE^*
ES_Export^Callen^PST^^C:\Archives\callen.pst^^callen@test.compusven.
*com^Carol^Allen^ callen^Server3\Compusven^mail\callen.nsf^DBTitle^*
(Extract the data in the file callen.pst to a BAY file formatted for loading into a Lotus Domino mailbox, where the Domino UserID is "callen", the Domino server is "Server3\Compusven", and the Domino database file is "mail\callen.nsf".)

Frequently Asked Questions

Microsoft Exchange Extractor

Q. The Extractor is unable to login to mailboxes.
A. Make sure you are logged into Windows on your Migration PC as the Eshuttle administrative user created above. Make sure that the Eshuttle user is a member of the correct group and is also a member of the same domain as the destination mailboxes.

Q. The Extractor is unable to login under Exchange 2003
A. See the KB article above on setting correct rights for 2003. This can sometimes involve more than just setting the user in the Exchange Domain Servers group.

Q. The Extractor is unable to login and the GroupWise mail client is on the machine.
A. You may have to split the Exchange Extractor and GroupWise Loader onto two separate machines. To do this, copy the Eshuttle directory onto a machine without GroupWise and use it for your extractor machine. You will have to map a drive to the new machine from the loader machine and set the bay file directories to the new machine in order to run the extractor and loader simultaneously.

Microsoft Exchange Loader

Q. The Exchange Loader loads mail, but not calendar and a login popup window is
displayed when the Calendar Loader is run.
A. The user is most likely not logged on as the Eshuttle user or the Eshuttle user is not a member of the correct domain or the Exchange Domain Servers group. The different data types use different APIs to access the mailboxes so it is possible for mail to work correctly and calendar to have insufficient access rights.

Q. The Loader is unable to login to mailboxes.
A. Make sure you are logged into Windows as the Eshuttle user created above. Make sure that the Eshuttle user is a member of the correct group and is also a member of the same domain as the destination mailboxes.

Q. The Loader is unable to login under Exchange 2003

A. See the KB article below on setting correct rights for 2003. This can sometimes involve more than just setting the user in the Exchange Domain Servers group.

Q. When running under Exchange 2003, the Mail Loader loads for a while, then starts throwing error messages regarding active mail.
A. Consult the Microsoft KB article http://support.microsoft.com/default.aspx?scid=kb;en-us;830836 for increasing the default mail and folder quantity limits in Exchange 2003.

Q. When loading mail into PST files, the Mail Loader loads mail for a while, then stops.
A. Outlook 2000 has a 2 GB limit that might only allow for some of the data to be loaded when the bay file is larger than 2 GB. Outlook 2003 has no such size limit and can be used to circumvent this issue.

Q. When loading mail into PST files, the PST files are not being created.
A. Make sure you aren't running the GeM Shuttle Manager on the Exchange server or on a Windows server OS. These operating systems have documented problems with PST file creation.

Q. The Loader is unable to login and the GroupWise mail client is on the machine.
A. You may have to split the GroupWise Extractor and Exchange Loader onto two separate machines. To do this, copy the Eshuttle directory onto a machine without GroupWise and use it for your loader machine. You will have to map a drive to the new machine from the loader machine and set the bay file directories to the new machine in order to run the extractor and loader simultaneously. If GroupWise is not part of your migration, this problem can be fixed by uninstalling both the GroupWise mail client and Outlook and then reinstalling Outlook.

IMAP-4 Loader

Q. How can I configure multiple instances of the GeM Shuttle Manager to run simultaneously?
A. Copy the distribution into unique directories on the migration server. Each directory should contain the executable files as well as the distinct configuration files for that migration instance.
Be aware that running multiple copies of the GeM Shuttle Manager on a single PC will generally not help throughput due to bandwidth restrictions on a single NIC card.