

Kofax TotalAgility

Administrator's Guide

Version: 7.4.1

Date: 2017-10-26



Legal Notice

© 2017 Kofax. All rights reserved.

Kofax is a trademark of Kofax, Inc., registered in the U.S. and/or other countries. All other trademarks are the property of their respective owners. No part of this publication may be reproduced, stored, or transmitted in any form without the prior written permission of Kofax.

Table of Contents

Preface.....	6
Related documentation.....	6
Training.....	7
Get help for Kofax products.....	7
Chapter 1: About Transformation Server processes.....	9
High-priority incoming activities.....	9
Password-encrypted pdf files.....	9
Multiple instances of Transformation Servers.....	9
Transformation Server pools.....	10
Partially completed activities.....	11
Stopping the Transformation Server service.....	12
Chapter 2: Kofax Reporting for the Capture Client.....	14
Activities recorded.....	14
Keystrokes.....	15
Chapter 3: Kofax Message Connector.....	16
Deployment scenarios.....	16
Standalone scenario.....	16
Load-Balancing scenario.....	17
Failover scenario.....	17
High performance scenario.....	17
Advanced configuration of Message Connector features.....	18
Features and integration examples.....	18
Connect to Biscom server.....	18
Connect to Right Fax server.....	19
Connect to Kofax Communication server.....	21
Convert PST files.....	21
PDF normalization.....	22
Configure document preparation.....	23
Configure Kofax Converter.....	25
Import MSG and EML files from folder.....	28
Operation and maintenance.....	28
Log files.....	28
Kofax Message Connector status monitor.....	29
Send test messages.....	29

Message Connector storage.....	30
View messages in the storage.....	30
Manage failed messages manually.....	31
Chapter 4: Assign access permissions to different areas of TotalAgility.....	32
Chapter 5: Log on to TotalAgility in a recovery mode.....	33
Appendix A: Active Directory synchronization.....	34
Partitioned Active Directory.....	34
Active Directory domains.....	34
Network setup.....	34
Child domain.....	35
Additional domain (Cross domain).....	35
Forests and trees.....	35
LDAP (Lightweight Directory Access Protocol).....	35
LDAP query.....	36
Paged search.....	36
Referral chasing.....	36
Types of referral chasing.....	37
Syntax of filter.....	37
Active Directory attributes.....	38
Implement Active Directory synchronization.....	38
Synchronize active items.....	38
Synchronize deleted items.....	38
Synchronize root level.....	39
Synchronize middle level.....	39
Perform group search.....	39
Synchronize cross domains.....	39
Synchronize category within category.....	40
Synchronize groups within groups.....	40
Implement chase referral.....	40
Appendix B: Enable sticky session post installation.....	41
Appendix C: CoreWorkerActivityOrder setting.....	42
Appendix D: Cross Origin Resource Sharing setting.....	43
Appendix E: Logging.....	44
TotalAgility Web and Application Server.....	44
TotalAgility Transformation Server.....	46
Data Layer.....	49
Capture Client.....	50
TotalAgility Reporting Server.....	51

- Client-side reporting..... 52
- Web Capture logging..... 53
- Network logging..... 53
- License Server logging..... 53
- Appendix F: Performance counter usage..... 54**
- Installation..... 54
- Data collection..... 54
- Interpretation..... 54
- Locked automatic activities..... 55
- Worker tasks taken..... 55
- Active threads / Thread pools..... 56
- Items / Thread pool queue..... 56
- Uninstall..... 56
- Logging..... 56

Preface

Use the information in this guide if you are the administrator who will configure and maintain the TotalAgility installation.

Related documentation

The full documentation set for Kofax TotalAgility is available at the following location

https://docshield.kofax.com/Portal/Products/en_US/740-uc0n6j0c5s/KTA.htm.

In addition to this guide, the documentation set includes the following items:

- *Kofax TotalAgility Prerequisites Guide*: Provides system requirements for installing TotalAgility, instructions for running the prerequisite utility, and a software checklist for various installation types.
- *Kofax TotalAgility Installation Guide*: Describes how to install and configure TotalAgility.
- *Kofax TotalAgility Integration Server Installation Guide*: Describes how to install Kofax Integration Server and integrate it with other products.
- *Kofax TotalAgility On-Premise Multi-Tenancy Installation Guide*: Describes how to install and configure On- Premise Multi-Tenant system.
- *Kofax TotalAgility Configuration Utility Guide*: Explains how to use the Configuration Utility to update settings across various configuration files for different types of installation and deployment.
- *Kofax TotalAgility Architecture Guide*: Provides an overview of the TotalAgility architecture, covering various deployments for on-premise, on-premise multi-tenancy and Azure environments.
- *Kofax TotalAgility Best Practices Guide*: Describes the best practices you must follow when using TotalAgility to improve performance, cost, maintenance, availability and security.
- *Kofax TotalAgility Features Guide*: Provides an overview of the TotalAgility features.
- *Kofax TotalAgility Migration Guide*: Provides information on TotalAgility upgrades from different versions and post upgrade configuration.
- *Kofax TotalAgility Help*: Provides details about using TotalAgility to design business jobs and cases, assign resources, create forms, integrate with external applications, and more. Access the help from the TotalAgility application by clicking the Help button.
- *Kofax TotalAgility Workspace Help*: Describes how to use the Workspace to manage activities, jobs, and resources. Access the help from the TotalAgility Workspace by clicking the Help button.
- *Kofax TotalAgility On-Premise Multi-Tenant System Help*: Describes how to create and manage tenants using the TotalAgility On-Premise Multi-Tenant system.
- *Kofax TotalAgility Web Capture Control Help* : Provides details on using a Web Capture control in creating multi-page documents, creating a new document in a new folder, deleting pages that have been incorrectly scanned, and more; also, describes the buttons available in a Web Capture control toolbar.

- *Kofax Analytics for TotalAgility Product Features Guide*: Provides an overview of the dashboards that help you track data through the workflow, analyze the effectiveness of the processes and resources, and address business problems.
- *Kofax TotalAgility Tables*: Describes the Kofax TotalAgility tables and fields used by Kofax Analytics for TotalAgility.
- *Migration From Kofax Products Guide*: Provides information about migrating TotalAgility files and Kofax Transformation Modules projects to TotalAgility.

Training

Kofax offers both classroom and computer-based training that will help you make the most of your Kofax TotalAgility solution. Visit the Kofax website at www.kofax.com for complete details about the available training options and schedules.

Get help for Kofax products

Kofax regularly updates the Kofax Support site with the latest information about Kofax products.

To access some resources, you must have a valid Support Agreement with an authorized Kofax Reseller/ Partner or with Kofax directly.

Use the tools that Kofax provides for researching and identifying issues. For example, use the Kofax Support site to search for answers about messages, keywords, and product issues. To access the Kofax Support page, go to www.kofax.com.

The Kofax Support page provides:

- Product information and release news
Click a product family, select a product, and select a version number.
- Downloadable product documentation
Click a product family, select a product, and click **Documentation**.
- Access to product knowledge bases
Click **Knowledge Base**.
- Access to the Kofax Customer Portal (for eligible customers)
Click **Account Management** and log in.

To optimize your use of the portal, go to the Kofax Customer Portal login page and click the link to open the *Guide to the Kofax Support Portal*. This guide describes how to access the support site, what to do before contacting the support team, how to open a new case or view an open case, and what information to collect before opening a case.

- Access to support tools
Click **Tools** and select the tool to use.
- Information about the support commitment for Kofax products
Click **Support Details** and select **Kofax Support Commitment**.

Use these tools to find answers to questions that you have, to learn about new functionality, and to research possible solutions to current issues.

Chapter 1

About Transformation Server processes

TotalAgility uses the Transformation Server to process automatic activities (including Composite, Extraction, Classification, PDF Generation, and Image Processing). Multiple Transformation Servers can work within a single Kofax TotalAgility installation. It is server software that does processing of concrete tasks it supports (for example, Classification). It is designed as a separate component to remove CPU intensive processing from application and web servers on separate machines thus allowing these components to be more responsive.

Transformation Server connects with Kofax TotalAgility using direct database access with the SQL Server ADO.NET driver.

High-priority incoming activities

The Transformation Server normally uses an outgoing model where each Transformation Server periodically polls Kofax TotalAgility for new jobs. When a process requires an immediate response from a Transformation Server, create a job using the CreateJobAndProgress API. This performs a synchronous activity that executes all capture activities as quickly as possible through Transformation Server and then stops at the first manual activity in a process (such as Validation).

Transformation Server uses all available slots to process the pushed calls, you can add the reserved slots to increase responsiveness on push calls. Reserved slots only guarantees that processing can be started immediately. However, if all slots are busy (include reserved ones) the call still will wait.

Password-encrypted pdf files

You cannot use the Transformation Server to process password-encrypted PDF files. Decrypt the password-encrypted files before passing them to Transformation Server.

Multiple instances of Transformation Servers

You can run multiple instances of the Transformation Server as part of your TotalAgility environment. You can add or remove instances of the Transformation Server without reconfiguring Transformation Server and TotalAgility itself.

Transformation Server pools

In a system where all activities require a similar amount of processing time, use multiple Transformation Servers in a single pool. For greater control over more complex processes, use Transformation Server pools.

For example, in a medical claims processing solution, claims arrive in the following ways:

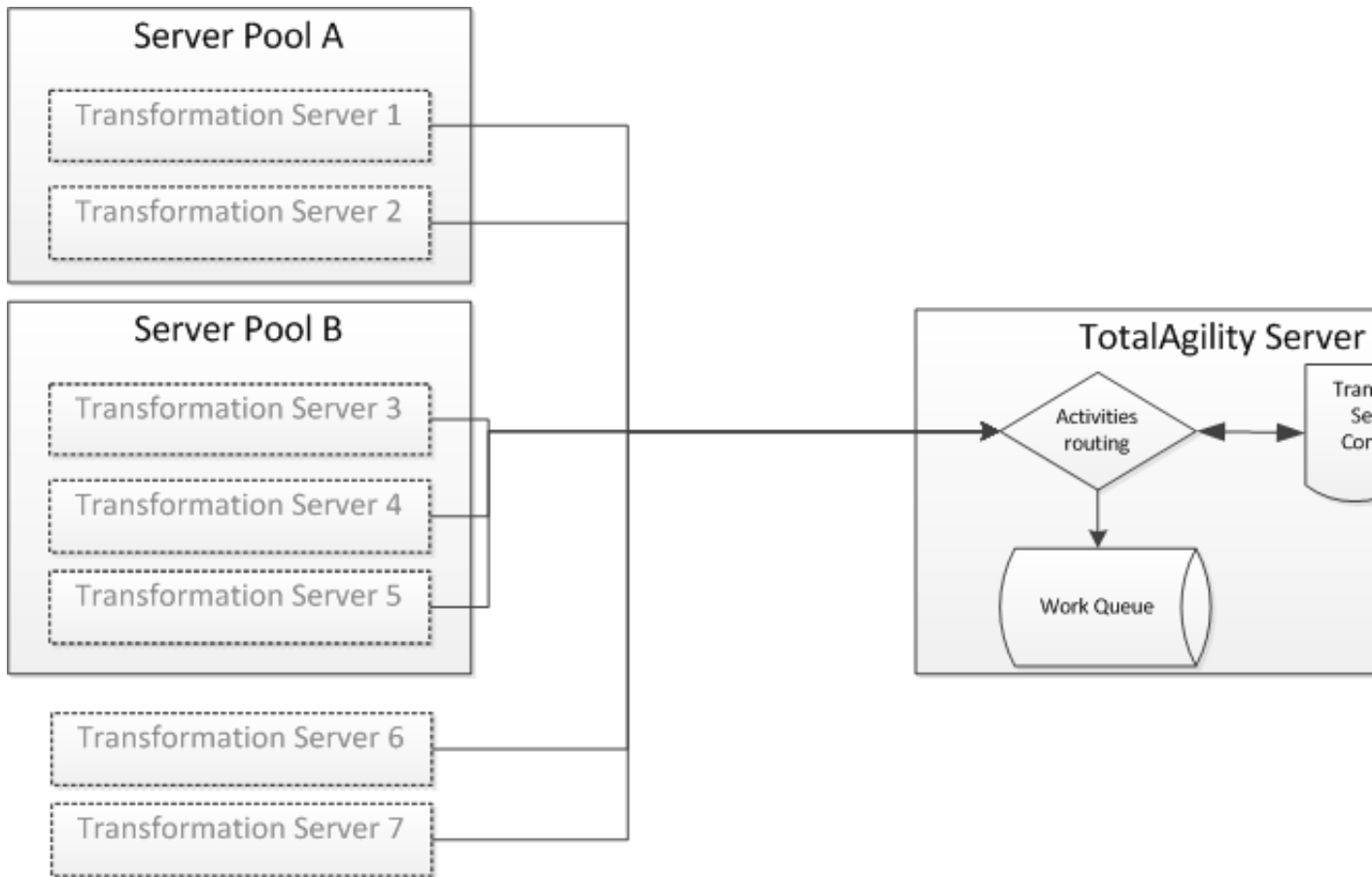
- Mail room: Large numbers of claims arrive through the mail room and are manually fed into high-speed scanners with 200 to 500 pages in each group. The system is continuously loaded.
- Internet Portal: Individual claims and small groups of claims arrive through the internet portal.
- Mobile Devices: Individual claims arrive through mobile devices.

The system must acknowledge receipt of claims that arrive from portal and mobile devices. Submissions through these devices are random and peaks are difficult to predict.

The large number of claims that arrive through the mail room can take longer to process than the individual claims and smaller groups that arrive through the internet and mobile devices. If the Transformation Server processes claims based on arrival time, an individual claim might be scheduled behind a large group of claims from the mail room. The processing time for the individual claim might be excessive.

Adding Transformation Server pools can prevent this problem. When designing TotalAgility workflow, create separate processes for urgent jobs from the internet portal and mobile devices, and long-running jobs from the mail room. Specify a Transformation Server pool for each Transformation Server supported activity, such as PDF Generation and Composite.

Example:



This example shows three pools:

- Pool A: Processes urgent jobs from the internet portal or mobile devices.
- Pool B: Processes long-running jobs from the mail room.
- Default Pool: Processes activities regardless of the assigned pool.

A Transformation Server can belong to only one pool.

- Transformation Server instances 1 and 2 are assigned to process activities from Pool A.
- Transformation Server instances 3 to 5 are assigned to process activities from Pool B.
- Transformation Server instances 6 and 7 are not assigned to a pool, so they execute all activities regardless of the assigned pool.

Partially completed activities

If you enable partial completion in a Transformation Server activity (including Composite, Extraction, Classification, and PDF Generation), the Transformation Server notifies TotalAgility when a document in a

folder is fully processed and ready for further processing, even though other documents in a folder are not yet ready for processing.

Note For an activity using the Partial Completion property, the folder structure validation logic is not executed by Transformation Server. For more information on the Partial Completion property, see the *TotalAgility help*.

Stopping the Transformation Server service

The Transformation Server Service can be controlled like other services from the command line or with Services under the Control Panel.

However, when the service receives the command to stop, the service is only allowed a limited time to end. The following steps occur when using the normal method of stopping the Transformation Server Service:

1. The service stops accepting or taking new work from the TotalAgility Core Worker.
2. The service continues to process unfinished activities for a limited time, which is usually less than two minutes.
3. Any activities that do not complete with this limited time are interrupted and suspended.
4. The service stops.

If you need more than a couple of minutes for activities to finish processing, you can send the following custom command to the service to stop it gracefully:

```
sc control KofaxTransformationServerService 186
```

When the service receives this custom command, the service may continue to run until it is idle. The following steps occur when you use the custom command to stop the Transformation Server Service:

1. The service stops accepting or taking on new work from the TotalAgility Core Worker.
2. The service continues to process unfinished activities for an indefinite time.
3. When all activities are complete, the service stops.

Note As hung background processes are not detected, the service may never end in this case. However, 24-hour timeouts are likely to end any hung processes.

If using the custom control command, we recommend to stop the service if it is still running after two hours. It is likely that a child background service is hung so using the normal stop command will end the process.

The service also allows Pause and Continue commands.

- Pause: The service continues to process current activities, but does not accept or take on new activities. The service eventually goes idle, but does not stop or exit.
- Continue: The service resumes taking new activities.

The command line syntax for all aspects relating to the Transformation Server service are as follows.

Syntax	Description
<code>sc start KofaxTransformationServerService</code>	The regular start command for the service.
<code>sc stop Kofax TransformationServerService</code>	The regular stop command for the service.
<code>sc control KofaxTransformationServerService 186</code>	The custom stop command that allows all current work to complete before the service stops.
<code>sc pause KofaxTransformationServerService</code>	The command to pause the service.
<code>sc continue KofaxTransformationserverService</code>	The command to start the service again after it has been paused so that the normal activity can resume.

Chapter 2

Kofax Reporting for the Capture Client

Kofax Reporting provides information about Kofax TotalAgility usage, including scanning, review, validation, verification, import, and export. This feature enables you to track the efficiency of the system and users.

The server records Capture Client activities and sends the information to the reporting library whenever an activity occurs that requires reporting.

Activities recorded

All document and page editing activities are recorded, including those performed by custom .NET activities. Recorded activities include:

- Document actions:
 - Create
 - Delete
 - Override/restore document problem
 - Reject/unreject document
- Page actions:
 - Annotate/Remove annotation
 - Delete
 - Rotate

The following Capture Client activities have special labels:

- Page creation activities (whether by scanning or importing) are recorded as "Page scan" actions.
- Moving a document within a folder, to a different folder, and moving a folder with a document generate a "Document move" action.
- Moving a page within a document generates a "Page move" action for the following operations:
 - Moving a page within a document.
 - Moving a page from one document to another.
 - Splitting a document with the MovePages parameter.
 - Combining documents.

Validation and Document Review modules maintain document separation statistics for the following activities:

- Correct splits
- Wrong splits

- Missing splits

These statistics are reported to the server when the activity is completed.

Keystrokes

Keystrokes are counted for documents and fields. A Complete activity causes the following to happen:

- Documents with positive key counts are included in the event data passed to the server.
- The keystroke counter is reset to zero.

Keystrokes used in folder operations are not reported.

The following rules determine how the system records keystrokes and whether the rules apply to documents or fields:

Recorded keystrokes on the document

- Field navigation keys (Tab, Up Arrow, and Down Arrow)
- Keystrokes on read-only and disabled fields
- Keystrokes that change a document field
- Keystrokes made on the Document Type field

Recorded keystrokes on the field

- Confirmation keys (Enter to confirm and Ctrl+Enter to force validation)
- When the focus is on the Navigator, Image View, Thumbnails, and Current Error panels, keys pressed to bring the focus to active field (as highlighted in yellow)—recorded as keystrokes on the field. The exception is Enter, which is recorded as a keystroke on the document.
- All other keystrokes that are sent to a field—recorded as keystrokes on the field and the document.

Keystrokes that are not counted

- Keystrokes made on the Folder and Activities tabs
- The Alt, Shift, Ctrl, and Print Screen keys

Chapter 3

Kofax Message Connector

Kofax Message Connector is a Windows service responsible for importing messages and files in many electronic formats. It retrieves documents from various sources and saves them in its internal storage making them available for retrieval through a web service interface. Kofax TotalAgility connects to the Message Connector web service interface and retrieves the documents for import.

Kofax Message Connector can import messages and files from:

- Email messages including attachments using various email protocols (SMTP, POP3, IMAP, EWS)
- Fax messages (through internal fax over IP server or external fax servers: Kofax Communication Server, RightFax, Biscom)
- Files from a local or network folder

This chapter provides important information about configuring and operating Kofax Message Connector, including:

- Instructions for configuring Kofax Message Connector.
- Instructions for integrating with third party environment, such as fax servers or email servers.
- Instructions for operating and monitoring Kofax Message Connector.

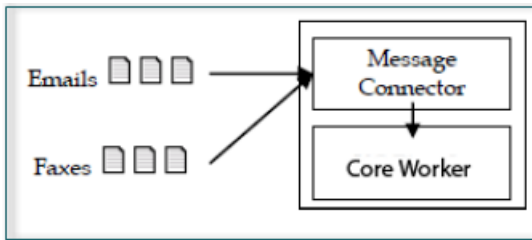
Note Kofax Message Connector is also used with slightly different functionality in other Kofax products.

Deployment scenarios

The two main components, Kofax Message Connector and Core Worker service can be installed on the same computer or on different computers. One Core Worker service can connect to multiple Message Connectors. However, a single Message Connector must not be polled by multiple Core Worker services. This section describes some of the most typical scenarios.

Standalone scenario

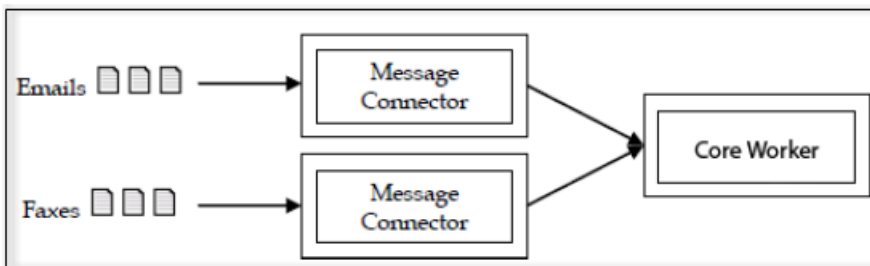
In this scenario, Message Connector and Core Worker service are installed on the same computer. This configuration does not offer any load balancing or failover mechanisms. You can easily run this on virtual environment for tests and demonstrations.



Load-Balancing scenario

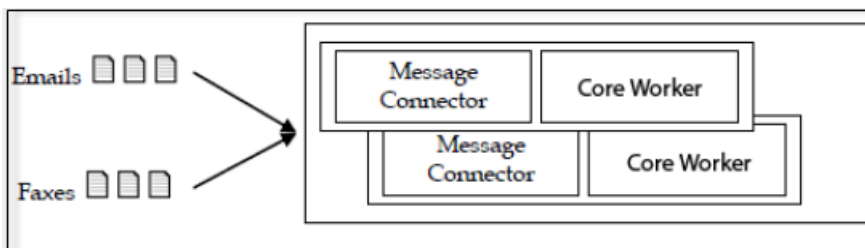
In this scenario, a single instance of Core Worker service connects to two (or more) Message Connector instances. Each instance runs on a separate computer. This configuration is recommended if you need to process many messages quickly. As document conversion can be time consuming having multiple Message Connectors, you distribute the conversion load to several computers.

You can also install multiple instances of Message Connector on a single computer. This does not speed up document processing but helps you to prioritize documents. For example, a customer needs two electronic imports, SMTP email and fax. Customer expects large volume of email traffic and fewer high-priority faxes. By assigning fax import to a dedicated instance of Message Connector, customer can ensure that faxes are not stuck in the queue behind emails.



Failover scenario

In this scenario, two or more computers with Kofax Message Connector are grouped in a Windows failover cluster. Documents are routed to the active node. When that fails, the next node continues without longer service interruption.



High performance scenario

In this scenario, multiple computers run in parallel and import documents from folder.

For optimal performance, install both Message Connector and Core Worker service on the same computer. Modify the value of the `Prefetched Messages` parameter in the Message Connector configuration to get additional performance. In our high-performance environment, the value 40 has yielded the best results.

Advanced configuration of Message Connector features

In most of the use cases it is sufficient to configure the import settings in the Kofax TotalAgility integration import configuration User Interface.

For specific use cases some advanced configuration parameters are available in a separate Message Connector configuration User Interface.

To open the Message Connector Configuration utility, from the Windows Start menu, select **All Programs > Kofax > Message Connector > Message Connector Configuration**. The Message Connector Configuration screen appears.

The following configuration parameters do not apply to Kofax TotalAgility.

Tab	Configuration Parameter
Security Options	<ul style="list-style-type: none"> Disable Web Service Input
Document Conversion	<ul style="list-style-type: none"> Image to Pdf
Web-Service Input	<ul style="list-style-type: none"> Local IP Address HTTP Port HTTPS Port KC Plugin URL MC Cluster Enabled Local MC Cluster IP Address MC Cluster Port MC Cluster Members

Features and integration examples

This section provides examples on how to integrate Kofax Message Connector with third party software and hardware, and describes some advanced features of the product.

Connect to Biscom server

In addition to configuring the connection to the Biscom fax server in TotalAgility Designer, install the Biscom client software and identify a user/extension on the fax server for use with Kofax Message Connector. Work with your fax server administrator to configure the Biscom server.

Configure Biscom server

1. On the Biscom fax server, start the FAXCOM Administrator tool.
2. Create (or reserve) a user/extension for use with Kofax Message Connector.
3. Enable the network share connection to the Biscom server and note the service path.
4. Close the tool.

Install FAXCOM client

Install the Biscom client software, the FAXCOM Client on the computer(s) in which Message Connector is installed.

1. Run the following command if the computer in which the FAXCOM Client is installed belongs to a Windows domain and the user does not have access rights to the Biscom share:

```
Net Use <Biscom_service_path> /USER:<Biscom_user> <password>
```

2. Start the FAXCOM Client from the FAXCOM group of the Windows Start menu.
3. Enter the logon information and click **OK**.
Upon logon, the FAXCOM Client window opens.



4. Close the client.

Connect to Right Fax server

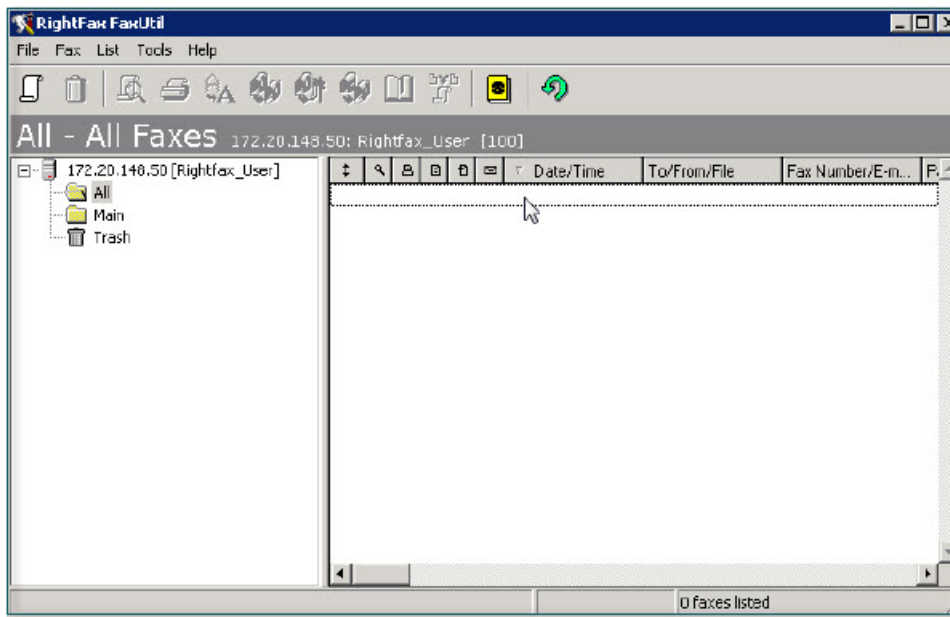
In addition to configuring the connection to the RightFax fax server in TotalAgility Designer, install RightFax client software and identify a user/extension on the fax server for use with Kofax Message Connector.

Configure RightFax server

1. On the RightFax fax server, start the **Enterprise Fax Manager** tool.
2. Create (or reserve) a user/extension for use with Kofax Message Connector.
3. Close the tool.

Install RightFax client

1. On the Message Connector computer(s), start the **RightFax Product Suite** setup.
2. When prompted to select the setup type, select **Typical Client**.
3. In the **RightFax Server Name** box, enter IP address or name of the fax server.
4. Click **Install**.
5. On the Windows Start menu, start **RightFax FaxUtil**.
6. Enter the logon information.
Keep the **Remember password** check box clear.
7. Click **OK**.
Upon logon, the RightFax FaxUtil window opens.



8. Close the client.

Forward faxes from multiple mailboxes to a single queue user

In Kofax TotalAgility, you can configure a single user for accessing RightFax. An administrator can have access to multiple mailboxes. If you do not want to use the administrator user for security reasons, consider setting up fax forwarding to a dedicated user, and use the credentials of this dedicated user in Kofax TotalAgility. Each fax user must configure fax forwarding using RightFax FaxUtil.

1. Start **RightFax FaxUtil** from the Windows Start menu and log on.
2. On the **Tools** menu, click **Options**.
3. On the **Receiving** tab, select **Forward Received Faxes to User**.
4. Select the dedicated user as the recipient of the forwarded faxes.
5. Confirm the changes and close FaxUtil.

Keep messages on RightFax server

By default, Kofax Message Connector deletes imported messages from the fax server. You can configure Message Connector to keep the messages on the fax server for processing later.

1. Navigate to the `MC\config` folder and open `SolutionConfig.xml` in an editor.
2. Add the following content between the `</SSL>` and `<CallPeerList>` lines:

```
<FaxServer>
<RFaxKeepMsgs>2</RFaxKeepMsgs>
</FaxServer>
```

3. Save and close the file.
Message Connector configuration now contains a new tab Fax Server with a single parameter “Keep messages on RightFax Server” set to “[2] yes”.
4. Start Message Connector configuration. Verify the value in the Fax Server tab.
5. Click **Save** and then click **Exit**.
Imported messages are no longer deleted from the RightFax server, instead, the text “KCFax:marked to delete” is added to the comment field and the flag FAXFLAG_GENERIC2 is set.

Connect to Kofax Communication server

In addition to configuring the connection to the Kofax Communication Server in TotalAgility Designer, identify a user/extension on the fax server for use with Kofax Message Connector.

1. On the Kofax Communication Server, start the **TCfW Communication Server Client**.
2. Create (or reserve) a user/extension for use with Kofax Message Connector.
3. Optionally, if you want to import faxes received by multiple KCS users, set up fax forwarding for each of the user and forward the faxes to the created user.
4. Close the client.

Convert PST files

Personal storage table (PST) files are used by Microsoft Outlook and other Microsoft products to store messages and other items. Use the following procedure to extract all messages from a PST file to a folder. Kofax Message Connector can then import the extracted messages to Kofax TotalAgility.

1. Start Windows Command Prompt in the Message Connector installation folder. The default location (for 64-bit operating system) is:

```
C:\Program Files (x86)\Kofax\KIC-ED\MC\bin\KFXConverter
```

2. Run the following command:

```
KFXConverter.exe -s <sourcepath>\<filename> -f <destinationpath>\ -type msg
```

3. Configure the following details:
 1. For `<source path>`, enter the folder where your PST is located.
 2. For `<filename>`, enter the name of the PST file to be converted.
 3. For `<destination>`, enter the folder where the MSG files should be extracted.

4. Once extraction is complete, move the extracted files to a watched folder to import them to Kofax TotalAgility.

Note

- You cannot import the MSG files where attachments have been removed by any Microsoft Outlook archive tool.
- You can convert multiple PST files simultaneously. However, when you run multiple KFXConverter instances in parallel, some information about the second and later instances might be missing from the log file. To ensure that your logs are complete, you can specify different log files for each instance using the command line switch: `-logfile <logfile>`

PDF normalization

When you select to normalize your message content to PDF, Kofax Message Connector actually normalizes all non-PDF parts of the message to an ISO-standardized version of PDF, the PDF/A. However, Message Connector can also normalize PDF parts to PDF/A.

Note

- If `Microsoft Office` is selected as normalization tool in **MS Office and selected Open Office documents**, normalization of excel documents result in PDF documents rather than PDF/A documents.
- Normalization to PDF/A depends on the normalization capability of Aspose, the 3rd party product used in Message Connector for this purpose. Given that and the complexity of the PDF/A document normalization in general, it cannot be guaranteed that compliance to PDF/A is achieved by 100 % for every normalized document.

Configure PDF variant

You can select one of several supported PDF variants by editing a batch file.

1. Open the folder `C:\Program Files (x86)\Kofax\KIC-ED\MC\Scripts` (assuming default installation path on a 64-bit operating system).
2. Edit the file `KFXConverter.bat` in a text editor.
3. Configure the type of PDF produced when converting non-PDF documents to PDF:

Note This step is required if you are using Kofax Converter for the normalization. If you are using a different converter, such as Microsoft Office, this setting does not modify the converted PDF type.

1. Find the string `IF %ConvertToType%== "PDF/A" (.`
2. Edit the line immediately below `set ConvertToType="PDF/A1B"`. The following values are supported:
 - PDF
 - PDF/A1A
 - PDF/A1B (default)
 - PDF/A2B

4. Configure the type of PDF produced when normalizing existing PDF documents:
 1. Find the string `IF %ConvertToType%== "PDFAn" (.`
 2. Edit the line immediately below `set ConvertToType="PDFA1BN"`. The following values are supported:
 - PDF (disables PDF normalization)
 - PDFA1AN
 - PDFA1BN (default)
 - PDFA2BN
5. Save the file and close it.

Configure document preparation

Kofax Message Connector can normalize text, HTML, OpenOffice.org, and Microsoft Office documents to PDF. The images are not normalized to PDF, but they are always imported in their original format.

1. Start Message Connector Configuration utility from the Kofax group in the Windows Start menu.
2. Expand the **Document Conversion** tab.
3. If you want extract documents from compressed files, select **Enable Decompression**. The following formats/extensions are supported: zip, rar, 7z, tar, gzip. Extraction happens before document normalization, that is, a Word document extracted from a zip file can be further normalized into PDF. Extraction is repeated if the extracted file is another compressed file (such as zip within zip) until all compressed files are extracted. Zip file containing multiple files with same name is also extracted. The following restrictions apply:
 - Password-protected compressed files are not extracted.
 - Archives split to multiple volumes are not supported.
 - EML documents from compressed files are not subject to further extraction/document normalization.
 - If the extraction ends without error, the compressed file is discarded. When archiving to folder is enabled, the extracted files are archived, not the compressed ones.
4. Select the tool for converting Microsoft Office documents.
5. Select the tool for converting HTML documents.
6. If you selected **OpenOffice.org** in step 3, make sure that you have installed the necessary extension. See section [Third-Party software](#).
7. If you selected **Microsoft Office** in either step 3 or step 4, and you are using the operating system Windows Server 2008 R2, Windows Vista, or later, you need to select the Windows user account to be used for Microsoft Office DCOM automation. For initial tests and troubleshooting, you may use the interactive user. For production use, you must specify an administrator user.
8. Click **Advanced**. In the **Security Options** tab, verify that document conversion is not disabled.
9. Click **Save**. Click **Exit and restart service**.

Configure Microsoft Office

Message Connector can use Microsoft Office for document normalization.

- Install a supported version of Microsoft Office on the same computer as Message Connector.
- Make sure that at least one printer is installed (required for Microsoft Excel document conversion).

- Start all applications (Word, Excel, PowerPoint) at least once and respond to the initial prompts.
- If you are using 64-bit version of Microsoft Office, create the folder `C:\Windows\System32\config\systemprofile\Desktop`.


Note Customers are responsible for providing appropriate licenses for third-party software.

Configure OpenOffice.org extension

Kofax Message Connector supports the normalization of Microsoft Office documents using Microsoft Office or OpenOffice.org. In case of OpenOffice.org, you need to install the Message Connector OpenOffice.org extension.

Note This component must be installed on the same computer as Message Connector.

1. Install a supported version of OpenOffice.org. Refer to [Third-Party software](#) for supported versions.
2. Shut down all OpenOffice.org processes (including Quickstarter).
3. From the installation media, browse to the `TotalAgility\KIC\Export\MC\OpenOfficeExtension` folder and start `setup.exe`.
4. Click **Browse**. Windows explorer displays the content of the installation folder.
5. Go to the folder `MC\OpenOfficeExtension` and start `Install.bat`.
6. Wait until the extension is installed.

You can manage installed OpenOffice.org extensions by selecting **Tools > Extension Manager** from any OpenOffice.org application menu. The extension list should include "Kofax Conversion for OpenOffice 1.0.". A properly installed extension has the symbol  indicating that this extension is installed for all users.

Configure Total HTML ConverterX

Message Connector can use Total HTML ConverterX for converting HTML documents, such as email messages in HTML format. Note the following:

- Download the software from <http://www.coolutils.com/TotalHTMLConverterX>. You can start with the trial version for initial testing.
- Install Total HTML ConverterX on the same computer as Message Connector. Use the default installation path.

Note Customers are responsible for providing appropriate licenses for third-party software.

Third-Party software

The following information applies to third-party software:

- Customers are responsible for providing appropriate licenses for third-party software.
- Install third-party software to their default installation path.

- Install the following third party application versions as required:
 - For normalizing Microsoft Office files, you can use the internal conversion tool (KFXConverter) or one install of the following:
 - OpenOffice.org (certified version 3.2)
 - Microsoft Office 2010
 - Microsoft Office 2013
 - Microsoft Office 365
 - For normalizing HTML files, you can use the internal conversion tool (KFXConverter) or install one of the following:
 - Microsoft Office 2010
 - Microsoft Office 2013
 - Microsoft Office 365
 - Total HTML ConverterX

Note

- Do not install OpenOffice.org and Microsoft Office 2013 on a same computer. Document normalization using Microsoft Office 2013 may fail.
- Use Internet Explorer to access Message Connector user interface.
- Third-party software such as Microsoft Office requires appropriate license. These licenses are not included in the Message Connector license.

Configure Kofax Converter

You can configure the advanced settings of the Kofax Converter (KfxConverter) by editing the file KFXConverter.ini in a text editor. This ini file is located in the same folder as the Kofax Converter executable, by default: `C:\Program Files (x86)\Kofax\KIC-ED\MC\bin\KFXConverter\.`

Message Connector installs the file KFXConverter_Default.ini to the same folder. When Message Connector starts and KFXConverter.ini does not exist, the file is created (a copy of KFXConverter_Default.ini). An existing KFXConverter.ini is not modified by setup.

The following parameters are available:

Note Fix the line breaks if you copy and paste the code from this guide.

Group	Parameter name	Default Value	Description
EML2PDF	EnableMargin	False	If set to True, KfxConverter will consider the margin parameters and the parameter PgNmDistFromHeader.
	LeftMargin	3.175 cm	Left margin of page (in centimeters).
	RightMargin	3.175 cm	Right margin of page (in centimeters).
	TopMargin	2.54 cm	Top margin of page (in centimeters).

Group	Parameter name	Default Value	Description
	BottomMargin	2.54 cm	Bottom margin of page (in centimeters).
	PgNmDistFromHeader	1.3 cm	Page number distance from header (in centimeters).
	EnableFontSize	False	If set to True, KfxConverter will consider the "FontSize" parameter and all the converted PDF file will be of the same font size.
	FontSize	12	Font size in points.
	DateFormat		<p>Defines the date format. If empty, the default date format is used. Examples:</p> <ul style="list-style-type: none"> <code>DateFormat="dd-MMM-yy"</code> <code>DateFormat="yyyy-MM-dd"</code> <p>For more information, see http://msdn.microsoft.com/en-us/library/8kb3ddd4(v=vs.110).aspx</p> <p>Note Depending on the regional settings of your operating system, certain separators are not available. For example, a forward slash configured in the ini file might be replaced with a hyphen as date separator.</p>
PDF2PDF	ALCWebServiceTimeout	1200 sec	Adobe LiveCycle web service timeout in seconds.
TEXT2PDF	FontType	Arial Unicode MS	Specify the font type for the generated PDF. The font must be installed on the computer on which KFXConverter is used.
EXCEL2PDF	FitAllColumnsToOnePage	True	If set to True, all the columns are set to one page.
	PaperOrientation	-1	Defines the paper orientation. Default is -1, for Landscape 0, for Portrait 1
	PaperSize	Default	Disables the papersize setting.

Group	Parameter name	Default Value	Description
	ConvertSheets	All	<p>KFXConverter will convert the pages according to the values specified in field. Possible values are All, Active, 1, 2, 3 etc. Specify the values as comma separated values.</p> <p>For example: ConvertSheets=Active,1 This is will convert the first page and the active page. ConvertSheets=All This is will convert all the pages.</p> <div style="border: 1px solid gray; padding: 5px; background-color: #f0f0f0;"> <p>Note If a blank page is selected for conversion and no printable area is selected in excel, KFXConverter will ignore this page at the time of conversion. But, if a blank page with defined printable area is selected for conversion, KFXConverter will convert this page into pdf.</p> </div>
	EnableMargin	False	If set to True, KFXConverter will consider the margin parameters.
	LeftMargin	1	Left margin of page (in centimeters).
	RightMargin	1	Right margin of page (in centimeters).
	TopMargin	1	Top margin of page (in centimeters).
	BottomMargin	1	Bottom margin of page (in centimeters).
HTML2PDF	EnableMargin	False	If set to True, KFXConverter will consider the margin parameters.
	LeftMargin	0.3528 cm	Left margin of page (in centimeters).
	RightMargin	0.3528 cm	Right margin of page (in centimeters).
	TopMargin	2.54 cm	Top margin of page (in centimeters).
	BottomMargin	2.54 cm	Bottom margin of page (in centimeters).
MHT2PDF	EnableMargin	False	If set to True, KFXConverter will consider the margin parameters.
	LeftMargin	3.175 cm	Left margin of page (in centimeters).
	RightMargin	3.175 cm	Right margin of page (in centimeters).
	TopMargin	2.54 cm	Top margin of page (in centimeters).
	BottomMargin	2.54 cm	Bottom margin of page (in centimeters).

Group	Parameter name	Default Value	Description
EXTERNAL RESOURCE LOADING	LoadExternalResources	True	If set to False, when converting EML or MSG documents, KFXConverter does not download any externally linked resource. For example, it will not download an image from an internet hyperlink.
GENERAL	OriginalDocumentFolder		If document conversion fails and path is valid, original file is saved at this path.
	EnablePageHeader	True	If set to false, it will disable the page number displayed on top of each page.

Import MSG and EML files from folder

When you import MSG and EML files from a folder, these email messages are treated as received emails. The metadata, such as subject, to, from, date, are extracted directly from the email message. All content selection and conversion options, such as converting to TIFF, adding a message header, importing only body or attachments, apply to the MSG or EML file.

Note If you are not importing MSG and EML files from a folder directly, but are using a controlling XML file which links these email documents, only the email body is converted and imported. The attachments are discarded, unless you select to include original content.

Operation and maintenance

This section contains information about operating and maintaining Kofax Message Connector.

Log files

Message Connector provides log files that can help for troubleshooting. Log files are stored in the application / program data folder of all users. The default path is `C:\ProgramData\Kofax\KIC-ED`.

Manage logs in Message Connector

To manage logs in Message Connector

1. Start Message Connector Configuration utility from the Kofax group in the Windows Start menu.
2. Click **Advanced** to display additional configuration options.
3. Edit the settings on the **Advanced** tab.
 - The default values (TraceLevel 10 and MessageTraceSize 1) provide basic trace information (usually sufficient) without negatively impacting the performance.
 - Troubleshooting values (TraceLevel 40 and MessageTraceSize 100000) provide lot of information; these are more suitable when duplicating error situations in controlled environment.

Refer to Message Connector Help for more information about the parameters.

4. Find log files in `<path>\MC\log`

5. Click **Save** and then click **Exit and restart service**.

Manage logs in KFXConverter

The default name of the log file is KFXConverter.log. The default location is `C:\ProgramData\Kofax\KFXConverter`. The maximum log file size is 5 MB. The file is overwritten when the maximum size is reached. You can specify another log file using the command line option `-logFile <path>\<filename>`. For example `-logFile C:\temp\mylog.log`.

In Message Connector, for PDF/A normalization using **Standard** option in **PDF to PDF/A conversion engine**, conversion results are logged in StandardPDFEngine.log.

Kofax Message Connector status monitor

Message Connector provides a monitoring interface with the following main functions:

- Sending test messages
- Viewing documents in storage
- Managing failed documents
- Monitoring Message Connector status

Send test messages

Use this section to verify the functionality of the Message Connector by sending a test fax or an email. To verify both tests, send a message in a loop (Message Connector --> Message Connector). Core Worker service will then import the message to Kofax TotalAgility.

Send a test fax

1. On the Windows **Start** menu, click **Kofax > Message Connector > Message Connector Monitor**.
2. On the **Menu**, click **Test Fax**.
3. In the **Number to Dial** box, enter a number.
4. Click **Send Fax**.
The "Server returned ok!" message appears.
5. On the **Menu**, under **Outbound Status**, click **Processed** to find the sent fax.
6. Optionally, click **Inbound > Pending** and view the message, if the Kofax TotalAgility service is not running.

Send a test mail

1. On the Windows **Start** menu, click **Kofax > Message Connector > Message Connector Monitor**.
2. On the **Menu**, click **Test Mail**.
3. In the **To** box, enter an email address.
4. Click **Send Email**.
The "Server returned ok!" message appears.

Message Connector storage

Message Connector stores all messages and files received from various sources to its internal storage before they are imported to Kofax TotalAgility.

The storage is managed automatically. Files and messages that are correctly imported to Kofax TotalAgility are marked for deletion and they are removed when the storage is full. Files and messages that are not correctly imported to Kofax TotalAgility may fill the storage. See [Manage failed messages manually](#).

The storage includes multiple folders.

- Under **Inbound Status**, click **Active** to list documents that are active and have been received by Message Connector but not yet delivered to Kofax TotalAgility. When the "archive to folder" function is activated, documents remain in this folder until the archiving has been concluded.
- Under **Inbound Status**, click **Active > Failures** to list documents that have been received by Message Connector but are not delivered to Kofax TotalAgility. Documents appear in this folder only if the Keep Failed setting is selected in configuration. When the archive to folder function is activated, documents remain in this folder until the archiving has been concluded.

Note Documents remain in this folder until they are handled manually by an operator (reactivated or deleted). If not monitored, this can cause full storage and stop processing of documents.

- Under **Inbound Status**, click **Processed** to list documents delivered to Kofax TotalAgility. If Keep Failed is cleared, this folder also contains documents that permanently failed to import to Kofax TotalAgility. Processed documents are deleted automatically from the storage when space for active messages is needed.
- Under **Inbound Status**, click **Processed > Failed** to list documents that permanently failed to import to Kofax TotalAgility (ensure that the Keep Failed setting is clear). These documents are deleted automatically from the storage when space for active documents is needed.
- Under **Outbound Status**, click **Active** to list test fax messages which are queued for sending or are currently being sent.
- Under **Outbound Status**, click **Processed** to list test fax messages which are queued for sending or are currently being sent.
- Under **Outbound Status**, click **Processed > Failed** to list test fax messages that could not be sent.

View messages in the storage

1. On the Windows **Start** menu, click **Kofax > Message Connector > Message Connector Monitor**.
2. On the **Menu**, go to any of the storage folders (**Inbound Status** or **Outbound Status**).
3. Select the message and click the **View / Save** command.
 - Email messages are available as EML files. You can view these files in Outlook Express or Windows Live Mail or any other mail client that supports EML.
You can also view EML files in Microsoft Outlook. To view an EML file in Outlook 2007, follow the instructions from Microsoft documentation available at the Microsoft website. Outlook 2010 can directly open these files.
 - Fax messages are available in multipage TIFF format. You may need a special viewer to view this format properly.

Manage failed messages manually

Use this section, to manually manage messages that could not be delivered to Kofax TotalAgility. Depending on the Keep Failed configuration in the Message Connector Configuration User Interface, problematic messages can be found in either storage folder:

- Inbound > Active > Failures
- Inbound > Processed > Failures

Reactivate messages

In particular, it is important to monitor the Inbound > Active > Failures folder, as messages in this folder can potentially fill in the entire storage. These messages can be reactivated and Kofax Message Connector will retry to import them to Kofax TotalAgility.

1. On the Windows **Start** menu, click **Kofax > Message Connector > Message Connector Monitor**.
2. On the **Menu**, under **Inbound Status**, click **Active > Failures**.
You can view the contents of a message to investigate the problem.
3. Click **View / Save**.
4. You can either reactivate the message or delete it.
A reactivated message is moved back to the "Inbound Status > Active" folder. A deleted message is moved to the "Inbound Status > Processed > Failures" folder.

Rerun messages

The "Inbound Status > Processed > Failures" folder contains messages that are already marked for deletion. When the storage gets full, these messages are lost. However, as long as they are available, you can rerun them and create a copy of the message-as if it had just arrived-in the "Inbound Status > Active" folder.

1. On the Windows **Start** menu, click **Kofax > Message Connector > Message Connector Monitor**.
2. On the **Menu**, under **Inbound Status**, click **Processed > Failures**.
3. Click **View / Save** to view the contents of a message.
You cannot delete these messages; they are already deleted. However, you can try to rerun the message. A copy of this message is created in the "Inbound Status > Active" folder.

Chapter 4

Assign access permissions to different areas of TotalAgility

The following table lists the default full control access permissions for different areas of TotalAgility.

Process	Designers
Business Rule	Designers
Resource	Designers
Settings	Administrators
Work Type	Designers
Lock Status Search	Designers
Job Clear Down	Administrators
Capture	Designers
Persona	Designers
Designer	Designers
Devices	Device Users
Capture Design	Designers

Chapter 5

Log on to TotalAgility in a recovery mode

To log on to TotalAgility in a recovery mode, you should have full control or read write permissions. Alternatively, you can log on to TotalAgility in a recovery mode by using the recovery mode session ID in the TotalAgility URL.

To obtain or update the recovery mode session ID:

1. Run the configuration utility from your installed location.

Note The configuration utility is available on the installation media and must be manually copied to your Kofax TotalAgility server.

2. On the **App** settings tab, locate the `RecoveryModeSessionId` key.

By default, the key has a session ID that can be used to logon. You can change the session ID as required.

3. Copy the session ID and paste it in the TotalAgility URL.

`http://<server name>/TotalAgility/Designer/Default.htm?sessionId=<sessionid>`

4. Click **Save**.

Appendix A

Active Directory synchronization

Kofax supports the following features in Active Directory synchronization.

Partitioned Active Directory

- To easily access and efficiently manage data.
- To better distribute load (load balancing).
- To reduce search and update costs.

Active Directory domains

A domain is a group of computers that share a common directory database.

A domain name must be unique. For example, you cannot have two kofax.com domains, but you could have a kofax.com parent domain with irvine.kofax.com and bedford.kofax.com child domains.

Each domain has its own security policies and trust relationships with other domains.

Domains can span more than one physical location, which means a domain could consist of multiple sites and those sites could have multiple subnets.

A domain directory database consists of objects defining accounts for users, groups, and computers as well as shared resources, such as printers and folders.

An Active Directory service provides both logical and physical structures for network components.

Network setup

A typical network setup consists of the following structures:

- **Physical:** These include:
 - Subnets: A network group with a specific IP address range and network mask.
 - Sites: One or more subnets used to configure directory access and replication.
- **Logical:** These include:
 - Domains: A group of computers that share a common directory database.
 - Domain trees: One or more domains that share a contiguous namespace.
 - Domain forests: One or more domain trees that share common directory information.

- Organization units: A subgroup of domains that often mirrors the business or functional structure of the company.

Child domain

Parent domains can be divided into sub-domains which are also called child domains. For example, the host name for a computer in Irvine office could be abc.irvine.kofax.com where abc is the computer name, Irvine is the child domain and kofax.com is the parent domain. These domains in turn can have subdomains.

Additional domain (Cross domain)

Each Active Directory domain has a DNS domain name, such as kofax.com. When one or more domains share the same directory data, they are referred to as a forest. In the DNS naming hierarchy, a domain name within a forest can be:

- Contiguous (child domain)
- Discontiguous: They form separate domain trees within the forest. In this example, the msnbc.com and microsoft.com domains form the roots of separate domain trees in the same forest.

Forests and trees

Windows .NET and 2000 domains can be grouped into trees and forests.

The directory is structured like a tree of domains that collect Naming Contexts containing Active Directory data; each domain can include one or more DCs (replica DCs). From a system engineer's point of view, a tree is a collection of domains in one-way /two-way transitive or non-transitive trust, consequently the attention is focused on authentication and extension of the domain's physical boundaries.

However this topology also has a specific meaning with respect to LDAP: identification of a directory object is related to its position inside the tree and this dictates how to create a correct LDAP string for accessing and managing directory objects. If we can have multiple domain trees in an organization's directory, there must be some overall grouping. This grouping is called forest.

While two domain trees in the same forest do not share a DNS namespace, they must share the same schema and global catalogue. When you join domain trees, a trust relationship establishes between the root domains of each tree in a similar way when you join individual domains into domain trees.

LDAP (Lightweight Directory Access Protocol)

LDAP, Lightweight Directory Access Protocol, is an Internet protocol that email and other programs use to look up information from a server.

You can retrieve AD's information through some access points (services), called providers. These providers use different interaction protocols or correspond to different LDAP protocol:

- LDAP: Compatible with Lightweight Directory Access Protocol
- GC: Compatible with LDAP, connection request is specified with a Global Catalog server
- WinNT: Compatible with Windows NT/2000/XP/.NET systems

- NDS: Compatible with Novell NetWare Directory Service
- NWCOMPAT: Compatible with Novell NetWare 3.x implementations

Kofax TotalAgility uses the LDAP protocol that represents the protocol for .NET/2000 domains. LDAP allows creating, deleting and moving of an object, listing of a container's content, and so on.

The LDAP protocol lets you retrieve information related to objects contained in an AD using a specific syntax. This syntax allows searching for directory objects and selecting them on the basis of their attributes.

LDAP query

A well-formed LDAP query is an application message made up of a set of parameters that lead to the following search criteria:

- Search base (or base object): It defines the basic location, that is, the forest node or leaf, where the search must start; the location is defined by using an LDAP distinguished name. Search base is used to indicate the directory section where the search should take place.
- Scope: It specifies how deep the search should go. There are three kinds of scopes:
 - Base: Restricts the search to the search base; if, for instance, the search base is a container object, its attributes will be listed, but not its contents.
 - One level: Takes the search just beyond the base object, excluding the base object itself.
 - Subtree: Extends the search over the whole subdirectory (including the base object). A Filter is used to single out the required elements in the specified tree section.
- Selection (or attribute description list): It determines which attributes of the selected objects are important.

Paged search

Paging specifies how many rows at a time the server returns to the client. A page can be defined by the number of rows or a time limit. The ADSI COM object retrieves each page of results based on the following settings:

- ADS_SEARCHPREF_PAGESIZE: Specifies the number of rows to return in a page.
- ADS_SEARCHPREF_PAGED_TIME_LIMIT: Specifies the maximum time (in seconds) that the server should spend collecting a page of results before returning the page to the client. If the limit is reached, the server stops searching and returns the rows retrieved for the page up to that point.

If neither of search preferences is set, the default is no paging.

A search operation may return a big chunk of objects. This could downgrade the performance of the client and server as well as the network load. The Paged search can be used to prevent this. In a paged search, the client may select to accept results in smaller chunks. The size of a chunk is known as the search page size.

Referral chasing

A referral is the mechanism that a directory server uses to direct a client to another server when it does not contain sufficient information about the object(s) requested by a query.

In a one-level or subtree, referrals are returned for known, immediately subordinate domain, schema or configuration containers only (that is, child domains that are direct descendants).

In a directory, not all information is available on a single server; it is distributed over several different servers across the network. If the servers share the information that other servers provide, they can provide referrals to a client when a requested query cannot be resolved on the originating server. For example, when a client asks **Server A** to query a user object (U), then A can suggest that the client continue the search on **Server B** if U does not reside on A, but is known to be on B. The client has the choice to use the referral or not.

Search referrals free the client from possessing previous knowledge of the capability of each server. But the client must specify the type of referrals a server should make.

To enable referral chasing, use the ADS_SEARCHPREF_CHASE_REFERRALS preference with values from the ADS_CHASE_REFERRALS_ENUM enumeration.

Types of referral chasing

A client can choose any of the following four types of referral chasing:

- **Never:** The server does not generate a referral to a client even though it knows that another server holds the requested information. This is the default setting.
- **External:** The server generates referrals if the request can be resolved on another server of a different directory tree. For example, a client queries OU=Sales, DC=Microsoft, DC=COM on the msft01 server on the Microsoft.com domain. However, the object does not belong to msft01, but is known to be on the arc01 server on the Microsoft.com domain. Thus, msft01 will refer arc01 to the client.
- **Always:** The server generates referrals if the search can be resolved based on either the external type or the subordinate type.
- **Subordinate:** The server generates referrals if the request can be resolved on a server whose name forms a contiguous path from the originating server. The search scope must be at the subtree level.

Syntax of filter

```
([<operator>] (<filter>) [( <filter> ) ... ])
```

Where,

```
<filter> = (<attribute><operator><value>)
```

<attribute> is the attribute of an object

<operator> is one of the values listed in the following table

<value> is a value compatible with the attribute type

Operator	Description	Type it applies to
&	logic And	<filter>
!	logic Or	<filter>
"="	Equality	<attribute>
Greater Or Equal	<attribute>	

Operator	Description	Type it applies to
<=	Less Or Equal	<attribute>
~=	Approximately Equal to	<attribute>
*		

For example, &(objectCategory=person)(uSNChanged>100)!((CN='Test')(CN='Test1'))

Active Directory attributes

- ou (organizationalUnit)
- sAMAccountName
- cn
- dc (domainDNS)
- distinguishedName
- objectCategory
- objectClass
- objectGUID
- objectSid
- SID=S-1-5-21-3917318313-2927010959-1265295254-2115

Implement Active Directory synchronization

Synchronize active items

1. Create List of OUs.
2. Create List of Users in OU.
3. Create List of Groups in OU.
4. Get changed Users and Groups in the system.
5. Set the value of server variable, sAD_CHASE_REFERRAL to turn on or off referral chasing.
 - True: To enumerate resources from parent and external domains/forest.
 - False: To enumerate resource from parent and child domains.
6. To enumerate child and additional domain resources the "DC" string is modified based on resource's path where same server name is used for search.
7. To enumerate cross forest resources, account and domain information is retrieved from SID and LDAP query is rebuilt to point to new server.

Synchronize deleted items

TotalAgility supports delete synchronization for users, groups and categories.

To synchronize deleted items, set isDeleted=TRUE.

- AD server should be configured to add deleted resources to Delete container then only this feature will work.
- If resource is deleted from AD will be deleted from TotalAgility during delete synchronization only if resource is not in use.

Synchronize root level

- All the OUs and resources in AD server will be imported to TotalAgility.
- First synchronization will take more time, from next sync only newly added\deleted resources will be synchronized.
- The resources from User container will not be imported as they are not part of any OU. This is to restrict unwanted resources' import like computer, printer, domain controller and the rest.

Synchronize middle level

- Resources will be imported from specified OU and its children OUs.
- If target OU has parent OU then complete path should be specified for target OU (Test OU). For example, SERVER_NAME/OU=Test Parent, OU=Test OU

Note The resources from Test parent will not be imported as target OU is Test OU.

- The resources from User container will not be imported as they are not part of any OU; the only exception is when group search is specified.

Perform group search

- Specified group and its members will be imported to TotalAgility.
- Option is available only for group and not for user search.
- For root level sync, group is searched in complete AD server.
- For mid-level sync, group is searched in specified OU and its children OUs.
- Only for Group search, resources from User container will be imported to TotalAgility in default category.

Synchronize cross domains

Group members residing in different domains or forests can also be imported to TotalAgility.

- Domain should be fully trusted or at least have trust to allow LDAP search.
- Child Domain Sync: Regardless of Chase referral flag resources will always be imported.
- Sub domain Sync: Chase referral should be true to import resources.
- External Forest Sync: Chase referral should be true to import resources

Synchronize category within category

The OU structure in AD can be imported as is in TotalAgility.

- If category name length is more than allowed in TotalAgility or category with same name already exist in TotalAgility or any other database constraint, category will not be imported and error will be logged with exact cause. Resources to invalid category will be added to the default category.
- For example, if synchronizing Group "G1" which is in OU1 and some members of G1 are in different OUs and that OUs are not in current search path (that is, with mid level synchronization).
 - All the parent OUs for OU1 will be imported. For example, OU1- > Parent of OU1-> Parent of (Parent of OU1).

Note Only parent OUs will be synchronized not the resources inside those OUs.

- Group Members from different OUs that are not direct\indirect children of target OU will be imported only if chase referral is true.
- If members are imported then their parent OUs till root level will be imported same as point 1.

Synchronize groups within groups

The Group structure in AD can be imported as is in TotalAgility.

- Circular group synchronization is supported even within external domains. (such designs should be avoided)
- Groups within groups in cross domain is supported, that is, parent group in one forest and members are in child domain, sub domain or forest.
- If group or user name length is more than allowed in TotalAgility or any other database constraint, resource will not be imported and error will be logged with exact cause.
- The complete group structure from AD is retrieved in multiple parses through recursive call to LDAP Query. Each call to LDAP query returns single level group information and if group has subgroups then new query is fired on subgroup to retrieve its children and does until it finds the leaf node or circular group.

Implement chase referral

- The referral chasing will be turned on or off based on the value of server variable sAD_CHASE_REFERRAL.
- If it is on, resources from parent and external domains/forest will be enumerated, otherwise resource from parent and child domains will be enumerated.
- To enumerate child and additional domain resources, the "DC" string will be modified based on resource's path whereas same server name will be used for search.
- To enumerate cross forest resources, account and domain information will be retrieved from SID, and LDAP query will be rebuilt to point to new server.

Appendix B

Enable sticky session post installation

Sticky session allows fast response times for requests to the server. Using sticky sessions, the server can cache all data in memory since sticky sessions force all requests to go to the same server. However, caching of data in memory sometimes results in loss of data if the server serving the requests goes down. In such cases, it is up to the system administrator to make the decision to choose speed over the possible loss of some data.

The Sticky Sessions feature is only available with an all-in-one installation, for example, when both the Application Server and Web Server are installed on the same node. If the Application Server and Web Servers are on separate nodes, the Sticky Sessions feature cannot be enabled in TotalAgility.

Enabling sticky sessions in an NLB Cluster environment improves response time for operations, such as batch edit and validation, however it comes at a cost; if a node fails, the session and any changes made during that session are lost.

Note If the sticky session is enabled, the batch session time out does not work, instead idle time-out of TotalAgility Application Pool works in IIS.

See the following table for scenarios.

	NLB Cluster Environment	Batch Edit Operations Response Time	End User Session Fails Over To Other NLB Node
Sticky Sessions [Enabled]	Yes	Improved	No (End User loses any changes made during that session)
Sticky Session [Disabled]	Yes	Normal	Yes (End User's session data is retained)
Sticky Session [Enabled]	No	Improved	No (no failover without an NLB environment)
Sticky Session [Disabled]	No	Normal	No (no failover without an NLB environment)

If you did not enable the Sticky Session option during installation, you can do so by enabling sticky sessions in the NLB Cluster, and running the configuration utility post installation.

Note The configuration utility is available on the installation media and must be manually copied to your Kofax TotalAgility server.

1. Run the configuration utility from your installed location.
2. On the **Web** settings tab, select the **Enable Sticky Sessions** check box.
3. Click **Save**.

Appendix C

CoreWorkerActivityOrder setting

By default, the CoreWorker service retrieves processed automatic activities in the order of activity due date and priority. However, you can change the order of the activities by running the configuration utility.

Note The configuration utility is available on the installation media and must be manually copied to your Kofax TotalAgility server.

The possible values are as follows.

Value for Activity/Job	Description
0 (Activity Priority)	Process activities based on activity priority.
1 (ActivityDueDate)	Process activities based on activity due date.
2 (ActivityPriorityDueDate)	Process activities in the order of activity priority and activity due date.
3 (ActivityDueDatePriority)	Process activities in the order of activity due date and activity priority. (This is the default setting.)
4 (JobPriority)	Process jobs based on job priority.
5 (JobDueDate)	Process jobs based on job due date.
6 (JobPriorityDueDate)	Process jobs in the order of job priority and job due date.
7 (JobDueDatePriority)	Process jobs in the order of job due date and job priority.

1. Run the configuration utility from your installed location.
2. On the **Core Worker** settings tab, change the value for `CoreWorkerActivityOrder` as required.
3. Click **Save**.

Cross Origin Resource Sharing setting

Cross Origin Resource Sharing (CORS) in Kofax TotalAgility allows other domains to access the Kofax TotalAgility SDK APIs.

The `CorsAllowedOrigins` setting determines the origin or domains that can access the web server. You can enable CORS by running the configuration utility post installation.

Note The configuration utility is available on the installation media and must be manually copied to your Kofax TotalAgility server.

1. Run the configuration utility from your installed location.
2. On the **Web** settings tab, enter the value for `CorsAllowedOrigins` as follows.
 - To access two different domains using CORS, such as `CompName1.domain1.com` and `CompName2.domain2`, configure the value as follows:

```
http://CompName2.domain2,http://CompName1.subdomain1.domain1.com
```

Note Separate the two domains by a comma.

- To access all the origin or domains, use the following value: *
 - To disable CORS (default), do not enter any value.
3. **Save** the file.

Appendix E

Logging

Logging is used to record critical errors, such as database failures. All errors are written into the Windows Event log. This includes errors which occur in the services, and errors that occur when an SDK web service call is invoked.

TotalAgility uses the Unity logging framework which enables enhanced logging, through various configuration settings. The settings for logging are present but commented out in the configuration files. You can enable these settings to write logging to the configured files. The Unity logging framework allows configuration of logging output from a list of supported destinations.

You can enable Unity logging for the following server and services:

- Web Server
- Core Worker, Export Service, Streaming Service
- Transformation Server
- Reporting Server

You can configure logging to use different outputs, such as event log and log file. (Default: event log)

TotalAgility Web and Application Server

This section describes error logging configuration for the TotalAgility Application server.

Logging can be enabled in the following configuration files:

- Web.config
- Agility.Server.Core.WorkerService.exe.config
- Agility.Server.StreamingService.exe.config
- Agility.Server.Core.ExportService.exe.config

```
<loggingConfiguration name=""
tracingEnabled="true" defaultCategory="General">
<listeners>
<add name="Event Log Listener"
type="Microsoft.Practices.EnterpriseLibrary.Logging.TraceListeners.FormattedEventLogTraceListener,
Microsoft.Practices.EnterpriseLibrary.Logging, Version=5.0.505.0, Culture=neutral,
PublicKeyToken=31bf3856ad364e35"
listenerDataType=
"Microsoft.Practices.EnterpriseLibrary.Logging.Configuration.FormattedEventLogTraceListenerData,
Microsoft.Practices.EnterpriseLibrary.Logging,
Version=5.0.505.0, Culture=neutral,
PublicKeyToken=31bf3856ad364e35"
source="Total Agility" formatter="Text Formatter" log="" machineName=""
traceOutputOptions="None" />
</listeners>
<formatters>
<add
```

```

type="Microsoft.Practices.EnterpriseLibrary.Logging.Formatters.TextFormatter,
Microsoft.Practices.EnterpriseLibrary.Logging,
Version=5.0.505.0, Culture=neutral,
PublicKeyToken=31bf3856ad364e35" template="Timestamp:
{timestamp}{newline}&#xA;Message:
{message}{newline}&#xA;Category:
{category}{newline}&#xA;Priority:
{priority}{newline}&#xA;EventId:
{eventid}{newline}&#xA;Severity:
{severity}{newline}&#xA;Title:{title}{newline}&#xA;Machine:
{localMachine}{newline}&#xA;App Domain:
{localAppDomain}{newline}&#xA;ProcessId:
{localProcessId}{newline}&#xA;Process Name:
{localProcessName}{newline}&#xA;Thread Name:
{threadName}{newline}&#xA;Win32
ThreadId:{win32ThreadId}{newline}&#xA;Extended Properties:
{dictionary({key} - {value}{newline})}"
name="Text Formatter" />
</formatters>
<categorySources>
<add switchValue="All" name="General">
<listeners>
<add name="Event Log Listener" />
</listeners>
</add>
</categorySources>
<specialSources>
<allEvents switchValue="All" name="All Events" />
<notProcessed switchValue="All" name="Unprocessed Category" />
<errors switchValue="All" name="Logging Errors & Warnings">
<listeners>
<add name="Event Log Listener" />
</listeners>
</errors>
</specialSources>
</loggingConfiguration>
<exceptionHandling>
<exceptionPolicies>
<add name="Agility Exception Policy">
<exceptionTypes>
<add name="All Exceptions" type="System.Exception, mscorlib,
Version=4.0.0.0, Culture=neutral, PublicKeyToken=b77a5c561934e089"
postHandlingAction="NotifyRethrow">
<exceptionHandlers>
<add name="Logging Exception Handler"
type="Microsoft.Practices.EnterpriseLibrary.ExceptionHandling.Logging.LoggingExceptionHandler,
Microsoft.Practices.EnterpriseLibrary.ExceptionHandling.Logging,
Version=5.0.505.0, Culture=neutral, PublicKeyToken=31bf3856ad364e35"
logCategory="General" eventId="100" severity="Error" title="Total Agility"
formatterType="Microsoft.Practices.EnterpriseLibrary.ExceptionHandling.TextExceptionFormatter,
Microsoft.Practices.EnterpriseLibrary.ExceptionHandling,
Version=5.0.505.0, Culture=neutral, PublicKeyToken=31bf3856ad364e35"
priority="0" />
</exceptionHandlers>
</add>
</exceptionTypes>
</add>
</exceptionPolicies>
</exceptionHandling>

```

This section describes the configuration to trace out calls to TotalAgility. To output tracing, you must update the relevant CONFIG file. If tracing web server calls, edit Web.config.

- To output tracing `Logger.Log()` or `Logger.LogMessage()` calls in TotalAgility to a text file, update the relevant CONFIG file with the following:

```

....
<trace autoflush="true">
  <listeners>

```

```

    <add name="Log" type="System.Diagnostics.TextWriterTraceListener" initializeData="c:
\temp\Trace.txt">
    </add>
  </listeners>
</trace>
....

```

For more information, see [Logging](#).

- To output tracing about all calls being made through Unity dependency injection to a text file, update the CONFIG file with the following changes in addition to the above changes:

```

....
<unity xmlns="http://schemas.microsoft.com/practices/2010/unity">
<container>
  <extension type="Agility.Server.Common.Logging.LogMethodRegistration,
Agility.Server.Common, Version=1.0.0.0, Culture=neutral, PublicKeyToken=d86c87abe4a71948" />

```

TotalAgility Transformation Server

This section provides logging diagnostic information for the TotalAgility Transformation Server. The logging configuration is stored in `Kofax.CEBPM.CPUServer.ServiceHost.exe.config`.

By default, the Transformation Server configuration file is located in the temporary folder. To save the log file in another location, such as `C:\logs\TS_Log`, do the following:

1. Stop the Kofax Transformation Server service.
2. Open "Kofax.CEBPM.CPUServer.ServiceHost.exe.config" in text editor.
3. Search for "CPUServerLogTxt" and modify the section after `initializeData` to the path you wish to save the log file. Example:

```

<add name="CPUServerLogTxt"
type="Kofax.CEBPM.CPUServer.Common.Diagnostics.DateTimeTaggedTraceListener,
Kofax.CEBPM.CPUServer.Common" initializeData="C:\logs\TS_Log\KofaxCPUServerLog.log" >
<filter type="System.Diagnostics.EventTypeFilter" initializeData="All"/> </add>

```

4. Restart the Kofax Transformation Server service and verify that the updated log file is written to the new directory.

You can configure logging to use different outputs, such as event log and log file. In the application configuration file, you can also specify the logging options.

Example: Log errors into the application event log

This example defines a simple logging configuration where all errors log into the application event log so they can be viewed using the Event Viewer utility.

It includes:

TraceLevelSwitch: This trace switch with a value "Verbose" traces verbose, information, warning and error messages. This switch is used for all Transformation Server modules. See the `switchName` attribute of the `<source>` tag.

initializeData="Error": This attribute specifies the tracing level in the trace listener.

```
<system.diagnostics>
  <trace autoflush="true" />
  <switches>
    <!--
      Off - None
      Error - Only error messages.
      Warning - Warning messages and error message.
      Information - Informational messages, warning messages and error messages.
      Verbose - Verbose messages, informational messages, warning messages and error
messages.
      All - All messages.
    -->
    <add name="TraceLevelSwitch" value="Verbose"/>
  </switches>
  <sources>
    <source name="Kofax.CEBPM.CPUServer.ServiceHost" switchName="TraceLevelSwitch" >
      <listeners>
        <clear />
        <add name="EventLogListener" />
      </listeners>
    </source>
    <source name="Kofax.CEBPM.CPUServer.Core" switchName="TraceLevelSwitch" >
      <listeners>
        <clear />
        <add name="EventLogListener" />
      </listeners>
    </source>
    <source name="Kofax.CEBPM.CPUServer.Common" switchName="TraceLevelSwitch" >
      <listeners>
        <clear />
        <add name="EventLogListener" />
      </listeners>
    </source>
    <source name="Kofax.CEBPM.DataLayer" switchName="TraceLevelSwitch" >
      <listeners>
        <clear />
    </source>
    <add name="xml" type="System.Diagnostics.XmlWriterTraceListener"
      initializeData="Kofax.CEBPM.DataLayer.log"/>
      </listeners>
    </source>
  </sources>
  <sharedListeners>
    <add name="EventLogListener" type="System.Diagnostics.EventLogTraceListener"
      initializeData="Application" >
      <filter type="System.Diagnostics.EventTypeFilter" initializeData="Error"/>
    </add>
  </sharedListeners>
</system.diagnostics>
```

Example: Logs in different formats

This example defines the logging configuration to log all messages to the text files and errors to the event log.

To have logs in different formats you must specify the Trace Listener in the <sharedListeners> section and reference it under all necessary sources in the <source> tag.

```
<system.diagnostics>
  <trace autoflush="true" />
  <switches>
    <!--
      Off - None
      Error - Only error messages.
    -->
```

```

Warning - Warning messages and error message.
Information - Informational messages, warning messages and error messages.
Verbose - Verbose messages, informational messages, warning messages and error
messages.
All - All messages.
-->
<add name="TraceLevelSwitch" value="Verbose"/>
</switches>
<sources>
<source name="Kofax.CEBPM.CPUServer.ServiceHost" switchName="TraceLevelSwitch" >
<listeners>
<clear />
<add name="CPUServerLogTxt" />
<add name="EventLogListener" />
</listeners>
</source>
<source name="Kofax.CEBPM.CPUServer.Core" switchName="TraceLevelSwitch" >
<listeners>
<clear />
<add name="CPUServerLogTxt" />
<add name="EventLogListener" />
</listeners>
</source>
<source name="Kofax.CEBPM.CPUServer.Common" switchName="TraceLevelSwitch" >
<listeners>
<clear />
<add name="CPUServerLogTxt" />
<add name="EventLogListener" />
</listeners>
</source>
<source name="Kofax.CEBPM.DataLayer" switchName="TraceLevelSwitch" >
<listeners>
<clear/>
<add name="xml" type="System.Diagnostics.XmlWriterTraceListener"
initializeData="Kofax.CEBPM.DataLayer.log"/>
</listeners>
</source>
</sources>
<sharedListeners>
<add name="CPUServerLogTxt"
type="System.Diagnostics.TextWriterTraceListener" initializeData="KofaxCPUServerLog.log" >
<filter type="System.Diagnostics.EventTypeFilter" initializeData="All"/>
</add>
<add name="EventLogListener"
type="System.Diagnostics.EventLogTraceListener" initializeData="Application" >
<filter type="System.Diagnostics.EventTypeFilter" initializeData="Error"/>
</add>
</sharedListeners>
</system.diagnostics>

```

Transformation Server has its own internal trace listener, `DateTimeTaggedTraceListener` which allows to have a text log with timestamps in different formats.

Optionally, you can specify different trace switches and assign them to different trace sources. For example, you can log all messages from `Kofax.CEBPM.CPUServer.Core` and log only errors from `Kofax.CEBPM.CPUServer.Common`.

For more information on tracing and tracing options, refer to Microsoft documentation available at the Microsoft website.

Example: Text log with timestamps in different formats

This example defines the configuration of `DateTimeTaggedTraceListener`.

```
<!--
    initializeData for DateTimeTaggedTraceListener should have the following format:
    initializeData="<file name>;<format>"
    or initializeData="<file name>"

    where:
    <file name> is the log file name;
    <format> is the desired date time format;

    If <format> is not specified, the default format, "MM/dd/yyyy hh:mm:ss.fff tt" is
    used.
    For more information on date time format strings, refer to Microsoft documentation at the
    Microsoft web site.
-->
<add name="CPUserverLogTxt"
type="Kofax.CEBPM.CPUserver.Common.Diagnostics.DateTimeTaggedTraceListener,
Kofax.CEBPM.CPUserver.Common" initializeData="KofaxCPUserverLog.log" >
<filter type="System.Diagnostics.EventTypeFilter" initializeData="All"/>
</add>
```

Data Layer

This section provides information on configuring error logging for the Data Layer.

The Data Layer uses the standard .NET logging. The logging configuration is stored in `TotalAgility Web.config`, `Agility.Server.Core.WorkerService.exe.config` and `Kofax.CEBPM.CPUserver.ServiceHost.exe.config`.

You can configure logging to use different outputs, such as event log and log file.

Multiple trace sources include:

- **Kofax.CEBPM.DataLayer**: The main Data Layer trace source that contains majority of the important log statements.
- **Kofax.CEBPM.DataLayer.Nhibernate**: The Supplementary NHibernate logging that contains a lot of information. Use with care.
- **Kofax.CEBPM.DataLayer.Imaging**: Contains information about the image processing operations.
- **Kofax.CEBPM.DataLayer.PdfLibrary**: Contains information about the PDF related operations.

Example: Logging configuration

```
<?xml version="1.0" encoding="utf-8" ?>
<configuration>
  <system.diagnostics>
    <trace autoflush="true"/>
    <sources>
      <!-- Main Data Layer trace source - contains majority of important log statements -->
      <source name="Kofax.CEBPM.DataLayer" switchValue="Warning">
        <listeners>
          <clear/>
          <add name="DataLayerAll"/>
        </listeners>
```

```

    </source>
    <!-- Supplementary NHibernate logging, use with care - it contains a LOT of information
-->
    <source name="Kofax.CEBPM.DataLayer.NHibernate" switchValue="Warning">
      <listeners>
        <clear/>
        <add name="DataLayerAll"/>
      </listeners>
    </source>
  </sources>
  <sharedListeners>
    <add name="DataLayerAll" initializeData="Kofax.CEBPM.DataLayer.log"
type="System.Diagnostics.XmlWriterTraceListener"/>
  </sharedListeners>
</system.diagnostics>
</configuration>

```

Capture Client

This section provides information on configuring error logging for Capture Client.

Capture Client uses the standard .NET logging. The logging configuration is stored in TotalAgility Web.config.

You can configure logging to use different outputs, such as event log and log file.

Example: Logging configuration

```

<system.diagnostics>
  <trace autoflush="true">
    <listeners>
      <add name="CaptureClientServer"
        traceOutputOptions="DateTime,ThreadId"
        type="System.Diagnostics.TextWriterTraceListener"
        initializeData="c:\CaptureClientServerLog.txt">
      <filter type="System.Diagnostics.EventTypeFilter"
        initializeData="Warning" />
      </add>
    </listeners>
  </trace>
</system.diagnostics>

```

Where,

- **traceOutputOptions:** Defines the additional data to each log statement (DateTime, ThreadId).
- **type:** Defines the type of logging, such as text file.
- **initializeData:** Defines the path to the log file.
- **(Filter) initializeData:** Defines the trace level (Off, Critical, Error, Warning, Information, Verbose or All).

TotalAgility Reporting Server

This section provides logging diagnostic information for the TotalAgility Reporting Server. The logging configuration is stored in the Kofax.CEBPM.Reporting.TAService.exe.config and Kofax.CEBPM.Reporting.AzureETL.exe.config files.

The logging mechanism is similar to Transformation Server or Data Layer that uses the Microsoft .NET diagnostics. The source name for the Reporting messages is "Reporting".

By default, both the files use customized trace listener Kofax.Reporting.Common.Logging.TenantBasedTraceListener. This listener allows automatic separation of logs by tenant.

The following XML displays the System.Diagnostics sections from Kofax.CEBPM.Reporting.AzureETL.exe.config and Kofax.CEBPM.Reporting.TAService.exe.config.

Example: System.Diagnostics in Kofax.CEBPM.Reporting.AzureETL.exe.config

```
<system.diagnostics>
  <trace autoflush="true"/>
  <switches>
    <add name="TraceLevelSwitch" value="Warning"/>
  </switches>
  <sources>
    <source name="Reporting" switchName="TraceLevelSwitch">
      <listeners>
        <clear/>
        <add name="TextDiagnostics"/>
      </listeners>
    </source>
  </sources>
  <sharedListeners>
    <!--Using customized Listener which can generate log file name based on tenant name (if
    used {0} placeholder in the name).
    By default, logs folder is C:\ProgramData\Kofax\TotalAgility\Reporting\Log-->
    <add name="TextDiagnostics"
    type="Kofax.Reporting.Common.Logging.TenantBasedTraceListener, Kofax.Reporting.Common"
    initializeData="C:\ProgramData\Kofax\TotalAgility\Reporting\Log\ETLApp_{0}.log">
    </add>
  </sharedListeners>
</system.diagnostics>
```

Example: System.Diagnostics in Kofax.CEBPM.Reporting.TAService.exe.config

```
<system.diagnostics>
  <trace autoflush="true"/>
  <switches>
    <add name="TraceLevelSwitch" value="Warning"/>
  </switches>
  <sources>
    <source name="Reporting" switchName="TraceLevelSwitch">
      <listeners>
        <clear/>
        <add name="ReportingLogTxt"/>
      </listeners>
    </source>
  </sources>
  <sharedListeners>
    <!--By default logs folder is C:\ProgramData\Kofax\TotalAgility\Reporting\Log-->
```

```

    <add name="ReportingLogTxt"
        type="Kofax.Reporting.Common.Logging.TenantBasedTraceListener, Kofax.Reporting.Common"
        initializeData="C:\ProgramData\Kofax\TotalAgility\Reporting\Log\WorkerRole.log">
        <filter type="System.Diagnostics.EventTypeFilter" initializeData="All"/>
    </add>
</sharedListeners>
</system.diagnostics>

```

You can change the logging detalization by changing the "TraceLevelSwitch" value to any of the following values: Off, Critical, Error, Warning, Information, Verbose, All

You can change the location of the log file by modifying the value of the "initializeData" attribute of the "ReportingLogTxt" shared listener. The default path for the log files is "ReportingLogTxt".

Client-side reporting

You can enable logging in the Reporting client-side library that is used in the TotalAgility components to report data into Reporting Server.

To enable the Reporting client-side logging for these components, you must extend the existing System.Diagnostics section of TotalAgility Web.config, Agility.Server.Core.WorkerService.exe.config and Kofax.CEBPM.CPUServer.ServiceHost.exe.config with the following switches, sources and shared listeners.

Example: System.Diagnostics changes for the client-side reporting

```

<system.diagnostics>
  <trace autoflush="true"/>
  <switches>
    <add name="TraceLevelSwitch" value="Verbose"/>
  </switches>
  <sources>
    <source name="Reporting" switchName="TraceLevelSwitch">
      <listeners>
        <clear/>
        <add name="ReportingLogTxt"/>
      </listeners>
    </source>
  </sources>
  <sharedListeners>
    <add name="ReportingLogTxt" type="System.Diagnostics.TextWriterTraceListener,
system, version=1.0.3300.0, Culture=neutral, PublicKeyToken=b77a5c561934e089"
initializeData="Kofax.Reporting.Integration.log" />
  </sharedListeners>
</system.diagnostics>

```

We recommend that you use different log names in different Application configuration files if they are modified on the same machine.

For example, use initializeData="Kofax.Reporting.Integration_web.log" for Web.config, and initializeData="Kofax.Reporting.Integration_CPU_server.log" for the Transformation Server.

This will prevent mixing information logged by different instances of client-side library in one file.

Web Capture logging

You can enable the javascript logs using the browser console by setting the following parameter:

```
Atalasoftware.TraceEnabled = true
```

You can enable the Web Capture Service logging using the following configuration files:

- Kofax.WebCapture.Host.exe.log.config
- Kofax.WebCapture.ScanWorker.exe.log.config

To log all statements, set the following parameters:

```
DisableLogging=false  
Filter="%Severity% >= trace"
```

Available log levels are trace, debug, info, warning, error and fatal.

Network logging

The third party utilities, Fiddler and Wireshark, and developer tools built into the various browsers offer useful features to trace out HTTP requests.

Such utilities enable you to troubleshoot potential network issues.

License Server logging

You can enable custom logging for the license server by adding the following parameters to win.ini available at C:\Windows.

```
[KDB]  
File=On  
filename=C:\licensedebug.log
```

Appendix F

Performance counter usage

The Performance Counters are used to record application states and activities. Many are already included as part of the Windows operating system, and additional counters may be created programmatically. Counters are written and placed in an application where specific measurements need to be made, such as rate of throughput, count of items and others.

Once the counters are installed on a target system, an application can write values to them. These values can then be read in real-time using the Windows Performance Monitor, a Microsoft Management Console (MMC) snap-in.

TotalAgility has a number of Performance Counters; the placement of these within the application are used to measure Key Performance Indicators (KPIs) of a number of critical services which are detailed below.

Before using the TotalAgility Performance Counters, see the following guides for more information on TotalAgility internals:

- *Kofax TotalAgility Features Guide* (See System Options > Settings > Thread Pools.)
- *Kofax TotalAgility Architecture Guide*

Installation

The Performance Counters are automatically installed on the target machine when the following services are installed:

- CoreWorker Service
- Export Service

The installation requires no input from the user.

Data collection

The Performance Counter data is collected using the Microsoft Performance Monitor. When the monitor is launched, the installed counters can be selected and added to the current monitoring session.

Interpretation

Many factors, such as hardware specifications, network topology, virtualization, nature and quantity of work being processed, and the deployment configuration of TotalAgility influence TotalAgility performance.

Performance counters therefore should be viewed as indicative and used in conjunction with other approaches, such as logging and monitoring, to determine system health.

The most likely scenario of using the Performance Counters is the TotalAgility deployment that is operating a heavy load. In this case, counters indicate several things:

- Some counters, such as locked automatic activities, should always be at their maximum value (as set by configuration). Dips in performance can indicate contention, overloading, network issues, and more.
- Some worker tasks, such as the Archive Jobs Worker, are executed according to a configurable schedule. The associated counter should reflect this scheduled activity; any other result indicates that the system is not performing as expected.
- Thread pools and thread pool queue counters can indicate if long-running tasks are blocking execution and require scaling.

Locked automatic activities

This counter indicates the number of automatic activities taken up by TotalAgility to execute from the TotalAgility database. This number corresponds to the `MaximumNumberOfActivitiesToLock` setting in the `CoreWorker` configuration file, which has a factory value of 32. This counter should be used in conjunction with other counters, such as the thread pool queues, to determine if the system is efficiently servicing the tasks. If queues are not being serviced in a timely manner, possible remediation includes reducing the `MaximumNumberOfActivitiesToLock` value and / or increasing the thread pool size. Counters are available for the following services:

- CoreWorker Service
- Export Service

Worker tasks taken

This counter indicates the number of jobs-related worker tasks of each type that are due to be processed. These tasks are performed in the job and process activities thread pools, whose sizes are governed by the relevant thread pool sizes in the TotalAgility System Settings. Counters are available for the following worker task types:

- Archive Jobs Worker
- Create Exceptions Worker
- Create Jobs Worker
- Evaluate Jobs Worker
- Process Activity Worker
- Process Capture Timeouts Worker
- Process State Actions Worker

A consistently high reading here may indicate that the thread pool value needs to be increased, although this requires experimentation to find the best value for any given scenario. Counters are available for the `CoreWorker` service.

Active threads / Thread pools

This counter indicates the number of active threads per thread pool for the CoreWorker service. A consistently high reading here may indicate that scaling may need to be considered to accommodate the workload, either horizontal or vertical. Counters are available for the CoreWorker service.

Items / Thread pool queue

This counter indicates the number of items queued in the CoreWorker service thread pool and waiting to be added. A consistently high reading may indicate that scaling is required to accommodate the workload, either horizontal or vertical. Counters are available for the following services:

- CoreWorker Service
- Export Service

Uninstall

The Performance Counters are automatically uninstalled on the target machine when the following services are stopped:

- CoreWorker Service
- Export Service

The uninstallation requires no input from the user.

Logging

In general, Performance Monitor samples the performance counters every one second. While this provides sufficient information for most purposes, some scenarios may require a deeper level of detail which can be viewed in the log file. You can log each performance counter in TotalAgility log file by enabling the logging function as follows:

Enable logging in the Core Worker Service and Export Worker Service configuration files as follows:

1. Open `Agility.Server.Core.WorkerService.exe.config` and `Agility.Server.Core.ExportService.exe.config` located in the `CoreWorkerService` folder available at your installation location, for example, `C:\Program Files\Kofax\TotalAgility\CoreWorkerService`

2. Under the `<appSettings>` section, change the following value to **true**:

```
<add key="PerformanceLoggingEnabled" value="false"/>
```

3. Uncomment the **<system.diagnostics>** section in the service configuration files:

```
<system.diagnostics>
  <trace autoflush="true" indentsize="4">
    <listeners>
      <add name="KTALog" type="System.Diagnostics.TextWriterTraceListener"
        initializeData="c:\temp\KTALog.txt">
      </add>
    </listeners>
```



```
</trace>  
</system.diagnostics>
```

Note Disable logging once finished, as continuous use will cause an unnecessary bloat in the log file.