



# Kofax Transformation Modules

## Thin Client Server Installation Guide

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**KOFAX**

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# Preface

This guide is a supplement to the *Kofax Transformation Modules Installation Guide* and contains information about installing Kofax Transformation Modules - Thin Client Server. This guide assumes that you have a thorough understanding of Windows standards, applications and interfaces, Kofax Capture, and Kofax Transformation Modules.

This guide is for solution integrators who are installing Kofax Transformation Modules - Thin Client Server or who need a description of the installation procedures and requirements.

If you downloaded Kofax Transformation Modules from the Kofax Electronic Delivery site, you can extract the files from the ISO file. Refer to the instruction on the site. Or, you may have received Kofax Transformation Modules as a package that includes electronic media. In this guide, we refer to both the extracted files and the electronic media as the product files.

## Related Documentation

The following documentation is available in Kofax Transformation Modules 7.0.0.

### Guides

The following guides are available in Kofax Transformation Modules.

#### ***Kofax Transformation Modules Installation Guide***

The guide provides instructions for installing Kofax Transformation Modules. In addition, it contains information about installation requirements, important installation notes, modifying the installation, and uninstalling the product.

#### ***Kofax Transformation Modules Thin Client Server Installation Guide***

This guide provides installation instructions for Kofax Transformation Modules Thin Client Server. In addition, it contains information about installation requirements, important installation notes, modifying the installation, and uninstalling the product.

#### ***Kofax Transformation Modules Product Overview***

This guide provides a top-level overview about Kofax Transformation Toolkit and the new features for this version.

## Help

The following help systems are available.

### ***Kofax Transformation - Project Builder Help***

This help provides information for creating, configuring, and maintaining a transformation project.

### ***Kofax Transformation Modules Document Review Help***

This help contains information on how to review and structure documents using the Document Review module.

### ***Kofax Transformation Modules Correction Help***

This help contains information on how to correct extraction problems on documents using the Correction module.

### ***Kofax Transformation Modules Verification Help***

This help contains information on how to verify pieces of information on a document using the Verification module.

### ***Kofax Transformation Modules Validation Help***

This help contains information on how to validate problems on documents using the Validation module.

### ***Kofax Transformation Modules Thin Clients Help***

This help includes information on the following Thin Client user modules.

- Thin Client Correction. This section contains information on how to correct extraction problems on a document.
- Thin Client Verification. This section contains information on how to verify pieces of information on a document.

- Thin Client Validation. This section contains information on how to validate problems on a document.

***Kofax Transformation Modules Scripting Help***

This help provides scripting examples and how to use the supported script elements.

***Kofax Transformation Modules Server, Knowledge Base Learning Server, and Services Help***

This help provides information about how to use these tools when processing documents in your solution.

***Kofax Transformation - Synchronization Tool Help***

This help provides information for integrating Kofax Transformation Modules with Kofax Capture so that you can process batches.

***Kofax Transformation - XDoc Browser Help***

This help provides information on how to use the XDoc Browser.

***Kofax Transformation - Project Merge Tool Help***

This help provides information on how to merge two versions of the same project.

***Kofax Transformation - Image Classifier Help***

This help provides information about the image classification technology that is used by Statistics Viewer.

***Kofax Transformation - Statistics Viewer Help***

This help provides information about the various statistics that are collected for your solution.

More information on documentation can be found in [Access Thin Client Server documentation](#).

## Training

Kofax offers both classroom and computer-based training that help you make the most of your Kofax solution. To learn more about training courses and schedules, visit the [Kofax Education Portal](#) on the Kofax website.

## Getting 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.

Go to <http://www.kofax.com/support/> for:

- Access to product knowledge bases.

Click **KNOWLEDGE Base**.

- Access to the Kofax Customer Portal (for eligible customers).

Click **Kofax Customer Portal** 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*. The guide describes how to access the portal, 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.

- Product information and release news

Click **Transformation > Kofax Transformation Modules**.

- Downloadable product documentation

Click **Transformation > Kofax Transformation Modules > Documentation** and select a document.

- Access to support tools

Click **Tools** and select the tool to use.

- Information about the support commitment for Kofax products.

For more information on the support commitment, click **Learn More**.



## Chapter 1

# System requirements

For information on supported operating systems and other system requirements, see the *Kofax Transformation Modules Technical Specifications* document on the [Kofax Transformation Modules Product Documentation](#) site.

This document is updated regularly, and we recommend that you review it carefully to ensure success with Kofax Transformation Modules.

## Software prerequisites

Kofax Transformation Modules - Thin Client Server requires the following software to be installed:

- Kofax Transformation Modules 7.0.0
- Information Internet Services (IIS) 8 or higher with the following Server Roles for IIS enabled:
  - ASP.NET v4.0.30319
  - HTTP Redirection (Web Server (IIS)\Web Server\Common HTTP Features)
  - Windows Authentication (WebServer (IIS)\Web Server\Security)
  - WebSocket Protocol (Web Server (IIS)\Web Server\Application Development)
- The following is enabled via the Features step:
  - .NET Framework <version>\WCF Services\HTTP Activation

The version of the .NET Framework depends on your operating system. This is either version 4.5 for Windows Server 2012, version 4.6 for Windows Server 2016, or higher for later operating systems.

## Chapter 2

# Installation

This chapter describes how to install Kofax Transformation Modules - Thin Client Server and maintain an existing installation.

**i** The best practice is to use the Thin Clients over a Virtual Private Network (VPN) if you are working with sensitive data. Alternatively, configure IIS to run over a Secure Sockets Layer (SSL).

## Thin Client restrictions

This section explains the Thin Client restrictions and the differences between the Thin Clients and their corresponding Rich Client user modules.


The following restrictions apply to all of the Thin Clients:

- Partial batch export is not supported.
- Selecting multiple batch classes for filtering is not supported. You can select one batch class only.
- It is not possible for the Kofax Capture server to have a different time zone than the IIS server where the Thin Client Server is installed. It is necessary for both servers to use the same time zone. Because of this, the time on the client browser is depicted based on the time of the server.

Further restrictions are available for each of the Thin Client modules.

## Thin Client Correction restrictions


There are several differences between Correction and Thin Client Correction. The biggest difference is that Thin Client Correction runs in a Web browser while Correction requires software to be installed on a computer. Other differences with Thin Client Correction include:

- This is a Web-based application, so you may need to log on.
- There is no status bar at the bottom of the window. Instead, there is a status footer inside the Web browser window.
- Pressing F1 launches the *Web browser Help* and not the *Thin Client Correction Help*. To open the latter, you need to click the Help setting  inside the application or use the Ctrl, H keyboard shortcut.
- It is not possible to customize the toolbar or rearrange the order of the toolbar.
- It is possible to use the keyboard to process batches, but the keyboard shortcuts in Thin Client Correction are different because they use a modal system where Ctrl activates the keyboard shortcut mode. Once in the keyboard shortcut mode, press any of the relevant keyboard shortcut combinations to perform the needed action.

- Regular Expression Validation methods that contain dictionaries are not supported. If a validation method contains a dictionary, the only way for the correction operator to correct the field is to override it.
- Validation methods that include regular expressions may, on rare occasions, behave differently in Thin Client Validation. To ensure there are no problems, test all validation methods in both modules.
- The keyboard shortcut to allow Whole Field Correction is not F12, as this is a reserved key in the supported Web browsers. To enter Whole Field Correction mode, press F2.
- When in Full Image mode, pressing Enter saves the field and the user is returned to the default correction view. If field is valid, the next field is loaded automatically. If the field fails validation, the user needs to correct that field before processing the rest of the batch.
- Smart zoom is not available for images in Single Key or Whole Field mode.
- Right-to-left languages such as Arabic are not supported by the Thin Client Correction module.


## Thin Client Verification restrictions

There are several differences between Verification and Thin Client Verification. The biggest difference is that Thin Client Verification runs in a Web browser while Verification requires software to be installed on a computer. Other differences include:

- This is a Web-based application so you may need to log on.
- There is no status bar at the bottom of the window. Instead, there is a status footer inside the Web browser window.
- Pressing F1 launches the *Web browser Help* and not the *Thin Client Verification Help*. Instead, you need to click the Help setting  inside the application or use the Ctrl, H keyboard shortcut.
- Panes cannot be floated. Instead, unnecessary frames can be collapsed to maximize the space available to other frames.
- It is not possible to customize the toolbar, or rearrange the order of the toolbar.
- It is not possible to toggle automatic focus on and off.
- Script events that are based on focus, selection, and changes to the validation form are not supported. For more details refer to the *Kofax Transformation Modules Thin Client Server Help* and the *Kofax Transformation Modules Scripting Help* for more information.
- Page rejection is not supported. Instead, reject the entire document.

## Thin Client Validation restrictions

There are several differences between Validation and Thin Client Validation. The biggest difference is that Thin Client Validation runs in a Web browser while Validation requires software to be installed on a computer. Other differences include:

- This is a Web-based application so you may need to log on.
- There is no status bar at the bottom of the window. Instead, there is a status footer inside the Web browser window.
- Panes cannot be floated. Instead, unnecessary frames can be collapsed to maximize the space available to other frames.
- Pressing F1 launches the help for your Browser and not the *Thin Client Validation Help*. Instead, you need to click the Help image  inside the application or use the Ctrl, H keyboard shortcut.

- It is not possible to customize the toolbar, or rearrange the order of the toolbar.
- It is possible to use the keyboard to process batches, but the keyboard shortcuts in Thin Client Validation are different because they use a modal system where Ctrl activates the keyboard shortcut mode. Once in the keyboard shortcut mode, press any of the relevant keyboard shortcut combinations to perform the needed action.
- Keyboard shortcuts for custom buttons are not supported.
- Thin Client Validation does not have a separate batch editing mode. Instead, all supported batch editing operations are available at all times.
- Page rejection is not supported. Instead, reject an entire document.
- Thin Client Validation does not have the Confirm Document toolbar setting. All documents are automatically confirmed when modified during Batch Editing.
- Thin Client Validation does not display any of the summary information for table fields and the Detailed Field Status setting for the validation form layout has no effect. This means that there is no indication of invalid fields on a tab label, nor on the table title.
- It is not possible to create a folder by right-clicking on a document. Instead, you must right-click a folder or the root node of the batch.
- The "Create Document" from a page setting is not supported.
- Copying or adding documents or pages is not supported.
- It is not possible to select more than one document or folder in the Batch Content pane.
- Cut and Paste using the clipboard are not supported when editing a batch.
- It is not possible to toggle automatic focus on or off.
- Layout scripting is not supported. This means that it is not possible to set the background color of a table cell.
- It is not possible to double-click a word in the image to validate a field. However, clicking on the image still adds the text to the validation form field.
- Script events that are based on focus, selection, and changes to the validation form are not supported. For more details refer to the *Kofax Transformation Modules Thin Client Server Help* and the *Kofax Transformation Modules Scripting Help* for more information.
- Tables sums are not supported.
- The "Show Hidden Columns" feature is not supported by Thin Client Validation.
- There is no "Clear All Fields" toolbar setting in Thin Client Validation.
- Auto-folding is not supported.
- Modifying masked areas using a script is not supported by the Thin Client Validation.
- The Instant Search feature for database lookups is not supported.
- Thin Client Validation has a hard-coded limit of 1000 search results.
- Paging for fuzzy databases using navigation buttons is not available Thin Client Validation.
- There is no InPlace Editor.

## Important installation notes

This section lists important notes for installing Kofax Transformation Modules.

### **Administrator Rights**

To install the product, the logged-in user must have Administrator rights on the local computer.

### **IIS Application Pool User Permissions**

The user account that is assigned to the Application Pool in IIS requires the same permissions as any user account running a Kofax Capture module.

### **Logging Permissions**

In order for logging to successfully record errors for the Thin Client Server, the log file location (C:\YourLogPath by default) requires that the configured IIS user (IIS\_USR by default) has Full Control over the log file directory.

**i** Logging is enabled via the Thin Client Server [configuration files](#).

### **Clear Browser History**

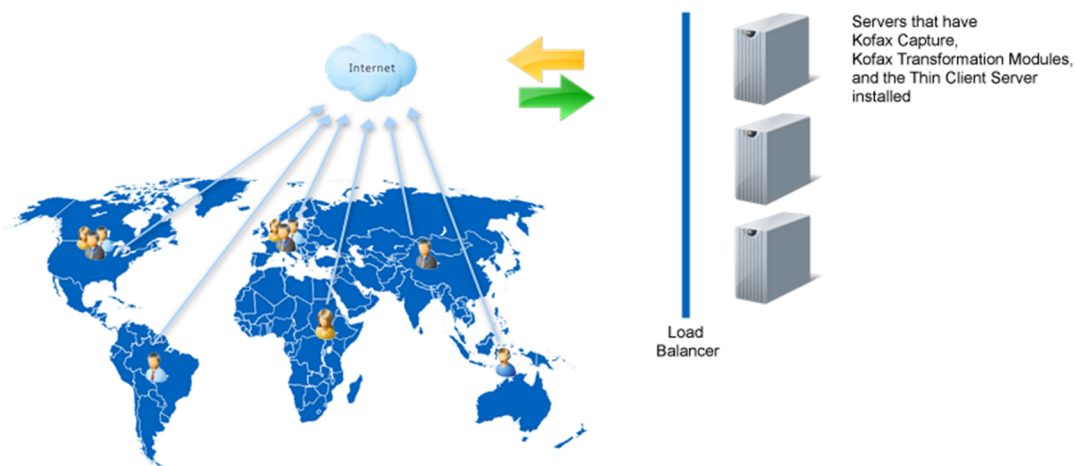
After a change, repair, or upgrade, clear the browser history and then restart IIS to ensure that old data does not cause problems.

## Load balancing

To support a cluster environment with multiple Thin Client Servers, a load standard balancer needs to be placed in front of the cluster, and then all clients use the URL of the load balancer to connect to the Thin Client Server.

**i** Any software or hardware-based load balancing solution can be used, as long as it supports sticky sessions. For the best results, use a Microsoft Load Balancer or Apache Tomcat for load balancing.

The Thin Client Server cluster requires sticky sessions to be enabled on the load balancer, as user sessions are not replicated inside the cluster. Sticky sessions are needed to ensure that an established connection between a user and the server always redirects http requests from one particular user to the same server within the cluster. This ensures that the user is always directed back to the correct batch and document they are correcting, validating, and verifying.



Each physical server running the Thin Client Server requires one Kofax Capture and one Kofax Transformation Modules instance to be installed on the same machine. This means that if you want to include multiple physical Thin Client Servers in a single cluster or web farm, you need to have the same number of Kofax Capture and Kofax Transformation Modules to be installed inside the cluster, one per server. All of these servers must be configured to use a shared database and a shared file system, which is a Kofax Capture requirement.

## Install the Thin Client Server

The following section provides instructions for installing Kofax Transformation Modules - Thin Client Server.

**i** If you are upgrading from a previous version, some of these steps may have already been performed. If this occurs, skip the step and continue with the next relevant step.

These instructions assume that you have installed all necessary [prerequisites](#).

You can install the Kofax Transformation Modules - Thin Client Server by following these steps:

1. On the workstation where Kofax Capture is installed, shut down any applications (including Control Panel, virus detection software, and toolbars) that are running.
2. Mount the `KofaxTransformationModules-7.0.0` image file.  
The contents of the image file are loaded automatically.
3. Open the Thin Client Server folder and then double-click on **Setup.exe**.  
The Thin Client Server installer window is displayed.
4. After the Setup Wizard confirms that there is enough space on your computer, click **Next**.  
The **End-User License Agreement** step is displayed.
5. On the **End-User License Agreement** step, select **I accept the terms in the License Agreement** and then click **Next**.  
The **Destination Folder** step is displayed.

6. Optionally, edit the installation path by clicking **Change**.  
The **Change destination folder** step is displayed.
  - a. Using **Browse** button, navigate to the path to where you want to install the Thin Client Server.  
Create folders as needed.
  - b. Optionally, edit the **Folder name** field directly
  - c. Click **OK**.The installation path is updated.
7. Click **Next**.  
The **Ready to install Kofax Transformation Modules - Thin Client Server 7.0** page is displayed.
8. Click **Install**  
Kofax Transformation Modules - Thin Client Server is installed.
9. Optionally, if upgrading to a newer version of Kofax Transformation Modules - Thin Client Server, you are notified if there are any merge [conflicts](#). These conflicts need to be fixed before continuing with the rest of the installation.
10. [Integrate](#) your system to use IIS for Kofax Transformation Modules - Thin Client Server.

## Integrate the Thin Client Server with IIS

After installing Kofax Transformation Modules - Thin Client Server, it is necessary to integrate your installation using IIS so that the individual Thin Clients work as expected.

You can configure your Kofax Transformation Modules - Thin Client Server installation by following these steps:

1. Open the **Internet Information Services (IIS) Manager**.
2. Configure the Kofax Transformation Modules - Thin Client Server feature delegation.
  - a. In the **Connections** pane, select the Home node for your server.  
The central panel is updated to include a list of settings for your Home node.
  - b. In the central panel, under the **Management** group, double-click **Feature Delegation**  
The Feature Delegation page is displayed.
  - c. In the **Group by** drop-down list at the top of the page, select **Delegation**.  
The list of settings is updated and the authentication settings are read-only.
  - d. From the list of read-only settings, select **Authentication - Windows**.  
A list of settings for the selection is displayed in the right panel.
  - e. Select **Read/Write**.  
The setting is moved to the Read/Write category.
3. Create an application pool for the Kofax Transformation Modules - Thin Client Server Web site.
  - a. From the Connections page, select **Application Pools**.





7. Click the **Application Pools** setting from the Connections pane. A list of application pools is displayed on the right.
  - a. Right-click the application pool you selected when adding your application and select **Advanced Settings**.  
The **Advanced Settings** window is displayed.
  - b. In the General group, set **Enable 32-Bit Applications** to True.
  - c. In the Process Model group, set the **Maximum Worker Processes** setting to **1**. This is the default setting.
  - d. Optionally, if you are using an encrypted file system, you also need to click the **Identity** setting from the Process Model group and change it to a custom account. This custom account needs to have the same permissions as the NetworkService account.  
Click the button to the right of Identity value. The **Application Pool Identity** window is displayed.  
Select the Custom account setting, and click **Set**.  
Type a User name, Password, and Confirm password, and click **OK**.  
Click **OK** to close the Application Pool Identity window, and again to close the Advanced Settings window.
  - e. Click **OK** to close the **Edit Application Pool** window.
8. Ensure that the IIS user account `IUSR` is part of the `IIS_IUSRS` group and grant that group full control for `<install drive>\ProgramData\Kofax\CaptureSV`.

**i** Since the Thin Client Server is a Kofax Capture custom module, the IIS user requires the same user permissions that are needed to run a Kofax Capture module. For more information about the user account requirements, please see the documentation provided with your Kofax Capture installation.

9. Open **Services** and ensure that the **World Wide Web Publishing Service** is set to start automatically.
10. Test that Kofax Capture users can connect to the server by going to one of the following locations.
  - `http://localhost/<VirtualDirectory>/Validation.html`
  - `http://localhost/<VirtualDirectory>/Verification.html`
  - `http://localhost/<VirtualDirectory>/Correction.html`

## Silent installation

If you do not want to perform an interactive installation of the Thin Client Server by using the installer, you can use a silent installation via the Command Prompt. This type of installation does not display configuration, progress, feature information, or warning windows.

You can install the Thin Client Server using the command prompt by following these steps:

1. From the **Start** menu select **Run**.

2. Enter **cmd** and press Enter.  
The Command Prompt window is displayed.
3. In the command window, change to the folder that contains the Thin Client Server installation files.
4. Run the installer from the command line using the following command.  

```
setup.exe /quiet /log "[filename]"
```

 Alternatively, you can open the command line As an Administrator and then run the following command:  

```
msiexec /I KTS.msi /quiet /log filename
```

 Both commands result in the exact same installation.  
 The Thin Client Server installs quietly.
5. Reboot your sever for these changes to take effect.

## Configure Thin Client Server

To configure the Thin Client Server so that it works correctly for your environment, edit any of the following settings in the `Web.config` file that is located in the installation location.

Parameter	Description
<code>AjaxTimeout</code>	Enables you to define how long the Web browser waits for a response from the Thin Client Server before the request expires. The default value is two minutes.
<code>AllowRejection</code>	Enables you to control whether users are able to reject documents in Thin Client Validation or Thin Client Verification. This is set to True by default, meaning users are able to reject documents.
<code>AuthenticationAsSingleSignOnOnly</code>	By default, the value for this node is set to True. This means that a single sign-on is attempted and no additional log on windows are displayed. For more information, see <a href="#">Disable user credential requests in web.config</a> .
<code>ConfigSetName</code>	This property defines the name of the configuration set when loading the project. If this string is left empty, the default settings of the project are used. Refer to the Project Builder help for more information about configuration sets.
<code>CorrectionFieldsPerSave</code>	This property indicates the number fields that were changed by Thin Client Correction users and is sent as a bundle to the server. If you want to save each field, set this property to 1. The value for this setting is set to "10" by default. If there is a session timeout, any unsent fields are lost.

Parameter	Description
CustomModuleMaxNumber	Enables you to set the maximum number of users. This is the upper limit of users that can be supported by your system when it is running at its heaviest load.
CustomModuleMinNumber	<p>Enables you to specify the minimum number of users. If a user attempts to log in once the minimum number is reached, additional services are dynamically created.</p> <p>For the best results, set the minimum number of users to the typical number of users connecting to your system. This reduces log on time, as a service is already created.</p>
Debug	<p>Defines the level of logging. The value is set to False by default. The logging level must be set to "Information" in order for the logs to generate debug output.</p> <p>For more information on logging see <a href="#">Log Thin Client web server errors</a>.</p>
ForceDictionaryUpdate	<p>When enabled, this setting reloads the project when a dictionary is updated so that any combo boxes are updated accordingly. The value for this setting is set to "False" by default.</p> <p>Set this value to True in the following circumstances.</p> <ul style="list-style-type: none"> <li>• You dictionary is configured for auto-update.</li> <li>• Your dictionary is updated regularly.</li> <li>• You have combo boxes that use your dictionary on your customized validation form.</li> </ul> <p>Otherwise, leave this value False. This is because a True value can negatively impact performance when dictionaries are reloaded unnecessarily.</p>
ForceHttpsHosting	<p>This setting controls how web pages are served by the Thin Client Server. By default, this setting is set to False, which means pages are served over HTTP. If you want to use HTTP Strict Transport Security (https), set this value to True.</p> <p>In addition, use the following information to configure HSTS bindings in the web.config:</p> <pre data-bbox="857 1528 1463 1831"> &lt;security mode="Transport"&gt;   &lt;transport     clientCredentialType="Windows"/&gt; &lt;/security&gt;  &lt;httpsTransport   authenticationScheme="Negotiate"   allowCookies="True"&gt;   &lt;websocketSettings     transportUsage="Always"     createNotificationOnConnection="true"/&gt; &lt;/httpsTransport&gt; </pre>

Parameter	Description
HandleImagesBitonal	If this setting is set to TRUE, color images are converted to black and white. This decreases the amount of memory used to load a batch because color images require more memory than black and white images.
HelpIsFileBased	By default, the value for this node is set to False and the documentation is hosted online or configured to use an offline IIS application-based solution. On rare occasions, it is necessary to use offline file-based documentation. In this case, set the value to True. For more information on offline documentation, see <a href="#">Access Thin Client Server documentation</a> .
ImageExpirationTime	Enables you to define how long images are cached inside the browser before they expire. This configuration setting is set to 30 minutes by default. You can disable this setting using the <a href="#">Browser cache configuration</a> .
LogoutRedirectPage	By default, this node is set to "message.html", that defines what a users a user sees when the log out from the Thin Clients. If you want to change this to a custom html file, specify it here. For more information, see <a href="#">Configure log out redirection</a> .
LogPerformance	The default value for this node is set to False. When set to True, the server call timings are recorded in a log that contains the START entry for when a call is initiated. The END entry includes the duration of the call. Both are measured in milliseconds. Logging must be enabled and set to "Information" to use this feature. For more information on logging see <a href="#">Log Thin Client web server errors</a> .
MaxImageSizeBitonal / MaxImageSizeGrayscale / MaxImageSizeColor	These settings determine if an image of the corresponding type is scaled and then sent to one of the Thin Clients. A value of -1 means that there are no restrictions on the size of an image and no scaling occurs. This is the default value for this setting. If you specify a positive value such as 4000, this means that an image that has a height or width that is larger than 4000 pixels is scaled down so that the larger side of the image is now set to 4000 pixels.

**i** After changing any of the above settings, restart your server for the changes to take effect.

The following settings are located in the `KCThinClientModule.exe.config` file that is located in the bin folder of the Kofax Capture installation location.

Parameter	Description
ListOfBatchesMaxNumber	<p>Enables you to set the maximum number of batches that are displayed in the Open Batch window. This is set to 100 by default.</p> <p>If you increase the maximum number of batches and receive an error related to the buffer size, there are two parameters in the <code>web.config</code> file that must also be increased.</p> <p>The <code>Kofax.KTS.Backend.Capture.BindingConfiguration</code> parameters for <code>maxReceivedMessageSize</code> and <code>maxBufferSize</code> are set to 250000 by default. Update these values to avoid the error message. Getting the values correct may require some trial and error.</p> <p>For example, if the <code>ListOfBatchesMaxNumber</code> is set to 1000, set both of the <code>maxReceivedMessageSize</code> and <code>maxBufferSize</code> parameters in the <code>web.config</code> file to 5000000.</p>
LogPerformance	<p>When set to True, the server call timings are recorded in a log that contains the START entry for the call initiation. The END entry includes the duration of the call. Both are measured in milliseconds.</p> <p>In order to use this parameters, logging must be enabled and set to "Information" in the <code>KCThinClientModule.exe.config</code> file of the <code>ThinClientModules.exe</code> file.</p> <p>This setting is set to False by default.</p> <p>for more information see <a href="#">Log Thin Client Process and Batch Errors</a>.</p>

## Enable SSL/HTTPS

Depending on how you want users to access the Thin Client Server it may be necessary to edit the `Web.config` file that is located in the installation location. By default, the communication method used by the Thin Client Server is set to HTTP.

You can configure your Thin Client Server installation to use secure (SSL/HTTPS) by following these steps:

1. Open the `web.config` file as an Administrator.
2. Search for the following comment:

```
<!--
```

```
Each service includes two authentication modes, one for http and another for SSL/https. By default, SSL/https is disabled. If you want to use SSL/https, comment out the mexHttpBinding endpoint and remove the comments around the mexHttpsBinding endpoint. Repeat this for each of the service entries.
```

```
-->
```

3. To enable SSL/HTTPS, remove the comments around the `mexHttpsBinding` endpoints and then comment out all of the `mexHttpBinding` endpoints.
4. Restart the World Wide Web service and try connecting to one of the Thin Client Server modules with https in the URL to ensure that everything works as expected.

## Disable Windows authentication

Depending on how you want users to access the Thin Client Server it may be necessary to edit the `web.config` file that is located in the installation location. By default, Windows authentication is used.

You can configure your Thin Client Server installation to not use Windows authentication by following these steps:

1. Open the `web.config` file as an Administrator.
2. Search for the `<security>` node in the `web.config` file.

```
<security>
  <authentication>
    <windowsAuthentication enabled="true" useKernelMode="false">
      <extendedProtection tokenChecking="None"/>
    </windowsAuthentication>
  </authentication>
</security>
```

In the default `web.config` file, this is located around line 90.

3. Disable Windows authentication by setting the `enabled` property to `false`. For example, `<windowsAuthentication enabled="false" useKernelMode="false">`
4. Search for the `<webHttpBinding>` node in the `web.config` file

```
<webHttpBinding>
  <binding name="Kofax.KTS.Services.BindingConfiguration"
  contentTypeMapper="Kofax.KTS.Services.JsonBehavior.JsonContentTypeMapper,
  Kofax.KTS.Services" maxReceivedMessageSize="5000000" maxBufferSize="5000000"
  receiveTimeout="00:20:00">
    <!--Activate this binding to use Basic Authentication / Windows
  Authentication without SSL-->
    <security mode="TransportCredentialOnly">
      <transport clientCredentialType="Windows"/>
    </security>
    <!--Activate this binding to use Basic Authentication / Windows
  Authentication with SSL-->
    <!--<security mode="Transport">
      <transport clientCredentialType="Windows"/>
    </security-->
  </binding>
</webHttpBinding>
```

5. Modify the appropriate `<windowsAuthentication>` parameter value to `<windowsAuthentication enabled="false" useKernelMode="false">`.
6. Locate the `<webHttpBinding>` entry with the `<transport clientCredentialType="Windows"/>` parameter and change the `clientCredentialType="None" />`
7. Search for the `<customBinding>` node in the `web.config` file:

```
<customBinding>
  <binding name="customMessageBinding" sendTimeout="00:22:00"
  receiveTimeout="00:22:00">
    <byteStreamMessageEncoding/>
    <!--Activate this binding to use Basic Authentication / Windows
  Authentication without SSL-->
    <httpTransport authenticationScheme="Negotiate" allowCookies="True">
```

```

        <websocketSettings transportUsage="Always"
createNotificationOnConnection="true"/>
    </httpTransport>
    <!--Activate this binding to use Basic Authentication / Windows
Authentication with SSL-->
    <!--<httpsTransport authenticationScheme="Negotiate"
allowCookies="True">
        <websocketSettings transportUsage="Always"
createNotificationOnConnection="true"/>
    </httpsTransport-->
</binding>
</customBinding>

```

In the default web.config file, this content is located around line 230.

8. Modify the appropriate `<httpTransport authenticationScheme="Negotiate" allowCookies="True">` parameter as follows:

```
<httpTransport authenticationScheme="Anonymous" allowCookies="True">
```

9. Save the web.config file.
10. Restart the World Wide Web publishing service and try to log on to one of the Thin Client modules.

## Session timeout configuration

In order to change the session timeout from the default of 20 minutes, it is necessary to make two changes to the web.config file.

### SessionState

Edit the "timeout" attribute as necessary. This represents the number of minutes.

```
<sessionState mode="Custom" cookieName="ktsSessionId"
regenerateExpiredSessionId="false" customProvider="KtsSessionStateStoreProvider"
cookieless="false" timeout="20"
sessionIDManagerType="Kofax.KTS.Services.Sessioning.KtsSessionIdManager">
```

### CustomBinding

The web socket cannot timeout before the session timeout. This means that this value must be at least 2 minutes longer than the session timeout.

Both the `sendTimeout` and the `receiveTimeout` attributes must be changed at the same time so that they have the same values.

For example, if `timeout="15"`, then the `sendTimeout` and `receiveTimeout` attributes must have a value of `00:17:00`. The format is `HH:MM:SS` for hour, minutes, and seconds.

```
<binding name="customMessageBinding" sendTimeout="00:22:00" receiveTimeout="00:22:00">
```

## Browser cache configuration

If you do not want to store data in the client Browser cache, it is possible to edit the web.config to disable this feature.

By default, the following content is found in the `<httpProtocol>/<customHeaders>` XML node of the web.config. If you want to disable the client Browser cache, edit the web.config file so that this content is no longer commented out.

```
<httpProtocol>
```

```

<customHeaders>
  ...
  <!--<add name="Cache-Control" value="no-cache, no-store, must-revalidate" />-->
  <!--<add name="Pragma" value="no-cache" />-->
  ...
</customHeaders>
</httpProtocol>

```

## Generate Batch Filtering URL Encoding

It is possible to provide the necessary filters to your users without requiring them to configure the filters themselves.

**i** If you are using a project created with an earlier version of Kofax Transformation Modules, the old type of URL encoding used by previous releases is no longer supported. As a result, it is necessary to regenerate the URLs using the following steps.

You can generate batch filtering with URL encoding by following these steps:

1. Log on to the desired Thin Client application.
2. If the **Available Batches** window is not already open, click **Open Batch**.  
The **Available Batches** window is displayed.
3. Select the **Enable filtering** setting.
4. Click **Filters**.  
The **Filter Batches** window is displayed.
5. Add and configure the desired filter or filters, and test that these filters work as expected.
6. When you are happy with the results, and while still inside the **Filter Batches** window, hold down the Ctrl key and click the **Help** button.  
A small pop-up window is displayed that contains the necessary information to pass the filter through a URL.
7. Copy the entire contents of the window to the clipboard and click OK to close the window.
8. Log off of the Thin Client application.
9. Append a "?" and the contents of the clipboard to the URL already in the address bar and press Enter.

For example, the URL should look similar to the following URL:

```

http://198.162.1.106/ThinClient/Validation.html?batchfilter={%22criteria
%22%3A[ {%22enabled%22%3Atrue
%2C%22name%22%3A%22Batch%20name%22%2C%22field%22%3A%22%22%2C%22op%22%3A
%22Contains%22%2C%22value%22%3A%221%22} ] }

```

This URL filters the batch to display only those batches that contain a specific character in their batch name.

This reloads the page so you can log in and test the results in the **Available Batches** window.

**i** Once a user logs on with the filter criteria passed through the URL, it is not possible for them to change the applied filters. In order to allow users to edit the filters themselves, the filtering criteria must be removed from the URL and the user must log off and on again.



## Configure batch opening behavior

For the user modules, it is possible to configure hidden columns to appear on the Available Batches window by editing the `ACConfig.xml` file.

You can configure different columns for different user modules, or configure the same columns for all user modules.

The following table shows the user module and the corresponding module Id that is used in the configuration file.

Module name	Module Id name
*	All user modules
Validation	LCI.Validation
Validation - Step 2	LCI.Validation2
Validation - Step 3	LCI.Validation3
Validation - Step 4	LCI.Validation4
Validation - Step 5	LCI.Validation5
Correction	Kofax.Correction
Document Review	Kofax.DocumentReview
Verification	Kofax.Verification

If you want different columns for different user modules, it is necessary to have multiple `<Module ModuleId=Module Id name>` entries in the configuration file. If you want all user modules to have the same columns, set the `Module Id=*` and add columns.

You can add the following columns to the Available Batches window by adding them to the configuration file:

- TheColName
- ColBatchClass
- ColDate
- ColStatus
- ColPriority
- ColQueue
- ColErrorStatus
- ColStationId
- ColExternalBatchId
- ColScanStationId
- ColScanUser
- ColBatchField
- ColDocumentCount
- ColPageCount

The following example shows extra columns for two user modules:

```
<ACConfig>
.
.
.
<Transformation>
.
.
<Modules>
  <Module ModuleId=Kofax.Verification>
    <OpenBatchWindow>
      <HiddenColumns>
        <HiddenColumn Name=\"ColPageCount\"/>
        <HiddenColumn Name=\"TheColName\"/>
        <HiddenColumn Name=\"ColStatus\"/>
        <HiddenColumn Name=\"ColErrorStatus\"/>
      </HiddenColumns>
    </OpenBatchWindow>
  </Module>
  <Module ModuleId=Kofax.DocumentReview>
    <OpenBatchWindow>
      <HiddenColumns>
        <HiddenColumn Name=\"ColDocumentCount\"/>
        <HiddenColumn Name=\"ColPageCount\"/>
        <HiddenColumn Name=\"ColStatus\"/>
      </HiddenColumns>
    </OpenBatchWindow>
  </Module>
</Modules>
.
.
</Transformation>
.
.
</ACConfig>
```

## Log Thin Client web server errors

In order to troubleshoot errors with the web server that occur when using the Thin Client Server, you can enable trace logging by editing the `Web.config` file that is located in the installation directory.

You can enable web server trace logging in the Thin Client Server by following these steps:

1. Open the `Web.config` configuration file and remove the comments around the following code:

```
<system.diagnostics>
  <trace autoflush="true">
    <listeners>
      <add name="delimitedListener"
type="System.Diagnostics.DelimitedListTraceListener" delimiter=","
initializeData="<path>" traceOutputOptions="ProcessId, DateTime">
      <filter type="System.Diagnostics.EventTypeFilter"
initializeData="Warning"/>
      </add>
    </listeners>
  </trace>
</system.diagnostics>
```

2. Edit the `initalizeData="<path>"` of the added listener to modify the file system location and name of the log file.

**i** The logging folder security settings need to be modified so that the configured IIS user (IIS\_USR by default) has full control over the folder. Without this change, no log files are written because the IIS user does not have permissions to write to that folder.

3. By default, the `initializeData` value of the filter is set to "Warning." You can change this attribute to one of the following values, keeping in mind that some settings are a combination of the previous values.

**Error**

Outputs Critical messages as well as any recoverable errors, to the log file.

**Warning**

Outputs Critical messages, Error messages, as well as any noncritical problems, to the log file.

**Information**

Outputs Critical messages, Error messages, Warning messages, as well as informational messages, to the log file.

4. **Save** your changes and restart the IIS Server.

## Log Thin Client Process and Batch Errors

In order to troubleshoot process errors that occur when processing batches with the Thin Client Server, you can enable trace logging by editing the `KCThinClientModule.exe.config` file. This file is located in the bin folder of the Kofax Capture installation location.

Once trace logging is enabled in the `KCThinClientModule.exe.config` file, additional batch-level logging is enabled automatically. These batch-level log files are stored in a different location than the trace log path in the configuration file. Instead, the batch-level logs are stored the same location as your image files.

For example, `C:\ProgramData\Kofax\Capture\Images\0000030D\Log`.

For batch-level logging, the Thin Client Server creates a log file and writes entries when a batch is opened and processed by one of the Thin Client modules. Each batch processed by an individual Thin Client module has its own log file. The logs are named using the following format.

```
<Module>_<BatchID>.txt
```

Where the Thin Client modules are called `KTSVAL`, `KTSVER`, and `KTSCOR`.

If there are multiple steps of Thin Client Validation, the step number is included in the log file name. For example, `KTSVAL#1_00000005.txt`.

**i** If you want batch-level logging, it is necessary to enable trace logging.

You can configure the Thin Client Server to log process and batch errors by following these steps:

1. Open the `KCThinClientModule.exe.config` configuration file and remove the comments around the following code:

```
<system.diagnostics>
  <trace autoflush="true">
    <listeners>
      <add name="delimitedListener"
        type="System.Diagnostics.DelimitedListTraceListener" delimiter=","
        initializeData="<path>" traceOutputOptions="ProcessId, DateTime">
          <filter type="System.Diagnostics.EventTypeFilter"
            initializeData="Warning"/>
        </add>
      </listeners>
    </trace>
  </system.diagnostics>
```

2. Edit the `initializeData="<path>"` of the added listener to modify the file system location and name of the trace log file.

**i** The logging folder security settings need to be modified so that the configured IIS user (IIS\_USR by default) has full control over the folder. Without this change, no log files are written because the IIS user does not have permissions to write to that folder.

3. By default, the `initializeData` value of the filter is set to "Warning." You can change this attribute to one of the following values, keeping in mind that some settings are a combination of the previous values.

#### **Error**

Outputs Critical messages as well as any recoverable errors, to the log file.

#### **Warning**

Outputs Critical messages, Error messages, as well as any noncritical problems, to the log file.

#### **Information**

Outputs Critical messages, Error messages, Warning messages, as well as informational messages, to the log file.

**i** The `initializeData` value is for the trace logging level only. The amount of detail provided in the batch-level logs is the same as the level specified in the corresponding application log in the Service Configuration Tool.

For more information about the **Service Configuration Tool** and its settings, see the *Kofax Transformation Modules Server, Knowledge Base Learning Server, and Services Help*.

4. **Save** your changes and restart the IIS Server.

## Configure log out redirection

By default, when a user logs out of one of the Thin Client modules or there is an error, the user is redirected based on the `message.html` file that is part of the Thin Client Server installation. If an error is encountered, that error is displayed. A button to log back into the Thin Client module is always displayed.

If you do not want this default behavior, you can create your own redirection behavior that determines where a user is sent when they log out, by following these steps:

1. Open the Thin Client `web.config` configuration file and locate the following code:

```
<setting name="LogoutRedirectPage" serializeAs="String">  
  <value>message.html</value>  
</setting>
```

The `message.html` file is located in the root of the Thin Client Server installation location.

2. Edit this `web.config` entry one of the following ways.
  - Edit the existing `message.html` file for your needs.  
For example, with your own corporate branding and redirection path.
  - Create your own html file and point to it in the `<value>` tags.  
This file contains all of the necessary information needed for your redirection needs.
3. Save the `web.config` file.

## Resolve Upgrade Conflicts

On rare occasions there may be conflicts in the `Web.config` file because customizations are made to an setting that is also modified in the new Thin Client Server version. Similarly, the `KCThinClientModule.exe.config` file can also have conflicts.

These conflicts need to be resolved so the Thin Client Server behaves as it did before the upgrade.

1. View the `Web.config.merge.log` file located in the installation folder.
2. Using the log file and the backup `Web.config.ORIG_<version number>` file, update the current merged `Web.config` file as required to resolve the conflicts.
3. View the `KCThinClientModule.exe.config.log` file that is found in the bin folder of the Kofax Capture installation location.
4. Using the log file and the backup `KCThinClientModule.exe.config_ORIG_<version number>` file, update the current file as required to resolve the conflicts.
5. Finish [upgrading](#) the Thin Client Server.

## Multiple steps of Thin Client Validation

If you have configured multiple validation steps, you can use Thin Client Validation for any of them. To connect to the individual steps, use the following format for your URL:

```
http://<server>:<port>/Validation.html?step=<step>
```

Where `<server>` is the name of the server where the Thin Client Server is installed, `<port>` is the assigned number when IIS is configured, and `<step>` is the number of the current step.

**i** The first step of Thin Client Validation does **not** require a step number to be included in the Web address.

The best practice is to create a bookmark or a desktop shortcut for your Thin Client Validation operators. This ensures that operators validating a specific step are able to open the correct Web page. You can use the following examples to create the bookmarks:

### Links for Thin Client Validation Steps

Step	URL Link
1	<code>http://&lt;server&gt;:&lt;port&gt;/&lt;virtualdirectory&gt;/Validation.html</code>
2	<code>http://&lt;server&gt;:&lt;port&gt;/&lt;virtualdirectory&gt;/Validation.html?step=2</code>
3	<code>http://&lt;server&gt;:&lt;port&gt;/&lt;virtualdirectory&gt;/Validation.html?step=3</code>
n	<code>http://&lt;server&gt;:&lt;port&gt;/&lt;virtualdirectory&gt;/Validation.html?step=n</code>

## Single sign-on authentication

By default, users are automatically logged on to the Thin Clients using single sign-on, without having to manually provide user credentials.

**i** If there are authentication errors related to Windows Authentication, ensure that you perform the [integration](#) steps.

### Disable user credential requests in web.config

It is possible to configure how the Thin Client Server behaves with respect to single sign-on. The default behavior is to use single sign-on and no additional log on windows are displayed.

If the `web.config` entry is set to `False`, an additional log on window is available when single sign-on fails. The enables users to log on directly when necessary.

You can disable the single sign-on behavior by following these steps:

1. Open the `web.config` file, that is located in the installation directory.  
For example, the default installation path for the Thin Client Server is `<Program Files>\Kofax\Transformation\ThinClientServer`.
2. Locate the `AuthenticationAsSingleSignOnOnly` parameter and set it to `True` or `False` as required.
3. Save the `web.config` file.
4. Launch one of the Thin Client modules to test the log on behavior.

## Chapter 3

# Upgrade Kofax Transformation Modules

Before upgrading the Thin Client Server, you must first upgrade Kofax Transformation Modules. For more information, refer to the *Kofax Transformation Modules Installation Guide*.

## Chapter 4

# Upgrade Thin Client Server

You can upgrade the Kofax Transformation Modules - Thin Client Server by installing a newer version directly over the existing installation.

When upgrading a previous version of Kofax Transformation Modules - Thin Client Server, a backup copy of your existing `Web.config` and `KCThinClientModule.exe.config` [configuration](#) files is created automatically. This means that you can change the default settings of the newly installed files according to the customized settings stored in the backup files.

**i** Before you can upgrade the Thin Client Server, Websockets and HTTP Redirection in IIS must be installed. The HTTP Redirection feature is needed to access the hosted documentation. Without HTTP Redirection you cannot access documentation for the Thin Clients.

1. Follow the [installation instructions](#) to upgrade the Thin Client Server.
2. Compare the new `Web.config` file and `KCThinClientModule.exe.config` files with the automatic `_ORIG` backup copies. Manually edit the new configuration files to contain any existing customizations.

The `Web.config` and the `KCThinClientModule.exe.config` files are located in:

```
<install path>\backup_<Major>.<Minor>_web.config
```

```
<install path>\backup_<Major>.<Minor>_KCThinClientModule.exe.config
```

3. Optionally, apply the customized settings once again to the newly installed `Web.config` and the `KCThinClientModule.exe.config` files so the Thin Client Server behaves as it did before the upgrade.
4. Clear the browser cache before you start a client module.



## Chapter 5

# Access Thin Client Server documentation

By default, the Kofax Transformation - Thin Client Server documentation is available online. However, if necessary you can also configure the Thin Client Server to use help offline.

## Default online documentation

The full documentation set for Kofax Transformation Modules, including documentation for the Thin Client Server is available from <https://docshield.kofax.com/Portal/Products/KTM/7.0.0-hyanwr9123/KTM.htm>.

To launch the online help for the installed version of the Thin Client Server, click Help from the menu of one of the Thin Clients.

## Use help offline

If you do not want to use the online hosted documentation, it is possible to configure the Thin Client Server to use help offline on your corporate network.

For Thin Client Server, implementing and configuring offline help is less complicated. As a result, there is only one step for the Thin Client Server, but that step depends on how you want to implement offline help.

1. **IIS application-based offline help** that is visible to your intranet only.  
Kofax recommends this method.
2. **File-based offline help** that is visible by all Thin Client Server users.  
If you cannot use the IIS application-based implementation, you can use this method to install the help on a file system visible to all Thin Client Server users.  
Change the web.config `HelpIsFileBased` setting to True.

To access the help offline, download it from the [Kofax Fulfillment Site](#).

For example, download the `KofaxTransformationModulesDocumentation_7.0.0_EN.zip` file. These files include the Thin Client Server documentation.

## IIS application-based offline help

Kofax recommends this method for offline documentation because it mimics the behavior of the hosted site. The Thin Client Server documentation is designed to use the hosted website online, so

if you require offline documentation, an internal IIS application-based solution is best. If this is not possible, you can use [File-based offline help](#).

**i** If you have already implemented a solution for the Kofax Transformation Modules IIS application-based offline help, there is no need to set up another IIS application for the Thin Client Server. Instead, skip to step 5 below.

You can configure the Thin Client Server offline help to use an internal web server by following these steps:

1. Open Internet Information Services (IIS) Manager.
2. Download and extract the `KofaxTransformationModulesDocumentation_7.0.0_EN.zip` file from the [Kofax Fulfillment Site](#).
3. Set up the folder hierarchy for the offline documentation.
  - a. Navigate to `C:/inetpub/wwwroot/` and create a folder called `Docs`.
  - b. Create a second folder under `C:/inetpub/wwwroot/Docs` called `KTM`.  
The result is the following folder structure: `C:/inetpub/wwwroot/Docs/KTM`.
  - c. Copy the contents of the extracted zip file to `C:/inetpub/wwwroot/Docs/KTM`.  
The result of this should be a list of language folders inside the `KTM` folder.

The folder hierarchy is set up.

4. Convert the existing folder hierarchy to an IIS application.
  - a. Expand the **Default Web Site**.  
The `Docs` folder is displayed.
  - b. Right-click on `Docs` and select **Convert to Application**.  
The **Add Application** window is displayed.
  - c. Keep all of the default settings and click **OK**.  
The **Add Application** window closes and the `Docs` folder is converted to an IIS application.
5. Configure your Thin Client Server application to use the IIS application-based offline help.
  - a. In IIS, select your Thin Client Server application, and then select the **docs** folder.
  - b. From the central panel, under the **IIS** group, double-click on **HTTP Redirect**.  
By default, this points to [https://docshield.kofax.com/KTM/7.0.0-hyanwr9123\\$\\$Q](https://docshield.kofax.com/KTM/7.0.0-hyanwr9123$$Q).
  - c. Edit the URL so that it points to your application, including the **\$\$\$Q** suffix.  
For example, `http://<WebServer>/Docs/KTM$$$Q`.

**i** No matter what URL you use here, always use the **\$\$\$Q** suffix at the end of the URL.

- d. In the **Actions** panel to the right, click **Apply**.  
The Thin Client Server application is now configured to use the IIS application-based offline help.
6. Test the help by opening one of the Thin Clients and then pressing the **Help** button.  
If there are issues, restart the World Wide Web Publishing Service and try again.
7. If you have not already configured redirection for Kofax Transformation Modules IIS application-based offline help, set up language [redirection](#).

## Localization redirection for IIS application-based solutions

If you are using a file system-based solution for offline documentation, the help is able to redirect automatically based on the Browser language. However, when you are using an IIS application-based solution, the help is not able to redirect you to your browser language automatically.

**i** Redirection to a localized copy of the help is available for user-modules only. However, if you are using English only, redirection is still required.

You can configure language-based redirection for IIS application-based solutions by following these steps:

1. Navigate to the **redirection** folder included in the `KofaxTransformationModulesDocumentation_6.3.0_EN.zip` file.
2. In a separate window, navigate to the application path that you created when you configured your IIS application-based offline help.
3. Move the `web.config` from the **redirection** folder to the root of your IIS application.  
For example, `C:/inetpub/wwwroot/Docs/web.config`.
4. Move the `redirection/bin` folder to the `Docs` folder to the root of your IIS application.  
For example, `C:/inetpub/wwwroot/Docs/bin/`.
5. Open a user module or a tool and test that the help displays the documentation for your browser language.  
Optionally, change your browser language to another language that you have installed to see if that language is displayed.

## File-based offline help

If you do not want to use an IIS application-based solution for your offline help, you can use a file-based solution instead.

**i** Ensure that each client system has a default browser configured on their machine.

You can configure the offline help to use a network directory by following these steps:

1. Open the Internet Information Services (IIS) Manager and configure the Thin Client Server application to work with file-based offline help.
  - a. Navigate to and expand your Thin Client Server application.

