

# Thin Client Server Developer's Guide

Version:

Date: 2019-04-01



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# Preface

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

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

If you downloaded Kofax Transformation Toolkit 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 Toolkit 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

In addition to this *Kofax Transformation Toolkit - Thin Client Server Installation Guide*, Kofax Transformation Toolkit - Thin Client Server includes the following documentation. For more information on other documentation included in Kofax Transformation Toolkit, please see the *Kofax Transformation Toolkit - Installation Guide*.

### ***Help for Kofax Transformation Toolkit Thin Clients***

You can access the Kofax Transformation Toolkit - Thin Client Help for Thin Client Validation and Thin Client Verification by clicking on the Help icon in the toolbar.

### ***Kofax Transformation Toolkit - Thin Client Server Developer's Guide***

For Kofax Transformation Toolkit - Thin Client Server additional documentation is available. The files are located in the <toolkit installation path>\Resources\Documentation folder.

### ***WCFValidationServer.DataLayer.chm***

This compile help file contains `WCFValidationServer.DataLayer` library information about the Thin Client Server and its `FileAccessBackend` sample.

## Training

Kofax offers both classroom and computer-based training that help you make the most of your Kofax solution. Visit the Kofax Web site at [www.kofax.com](http://www.kofax.com) for complete details about the available training options and schedules.

## Chapter 1

# System requirements

This section describes the installation prerequisites required for Kofax Transformation Toolkit - Thin Client Server.

Information about supported operating systems and other Kofax Transformation Toolkit requirements is available on the Kofax Support Web pages at [www.kofax.com](http://www.kofax.com).

**Important** Kofax Transformation Toolkit - Thin Client Server can support fifty users for every Kofax Capture installation.

## Software prerequisites

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

- Kofax Transformation Toolkit 6.3.0
- Information Internet Services (IIS)
  - ASP.NET v4.0.30319
  - HTTP Redirection

## Chapter 2

# Installation

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

**Important** 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).

## Important installation notes

This section lists important notes for installing Kofax Transformation Toolkit.

### Administrator Rights

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

### Command Line Installation

You can run the Kofax Transformation Toolkit - Thin Client Server installation from the command line by typing `KTS.msi`.

You can also use the command line installation if you do not want to install the FileAccessBackend sample and its documentation by typing the following command.

```
KTS.msi NOEXAMPLES=1
```

This command installs the Kofax Transformation Toolkit - Thin Client Server components, but does not install the sample, the FileAccessBackend zip file, or the Thin Client Server Developer's Guide documentation. If you need the sample at a later time you can copy the sample zip file and the documentation from the installation media (`Thin Client Server\Resources\Examples` and `Thin Client Server\Documentation`).

### Kofax Transformation Toolkit and Thin Client Server Upgrades

Kofax Transformation Toolkit and Thin Client Server do not support automatic upgrades. To upgrade either of them, uninstall the older version and then install the new one.

### 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.

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

### Clear Browser History

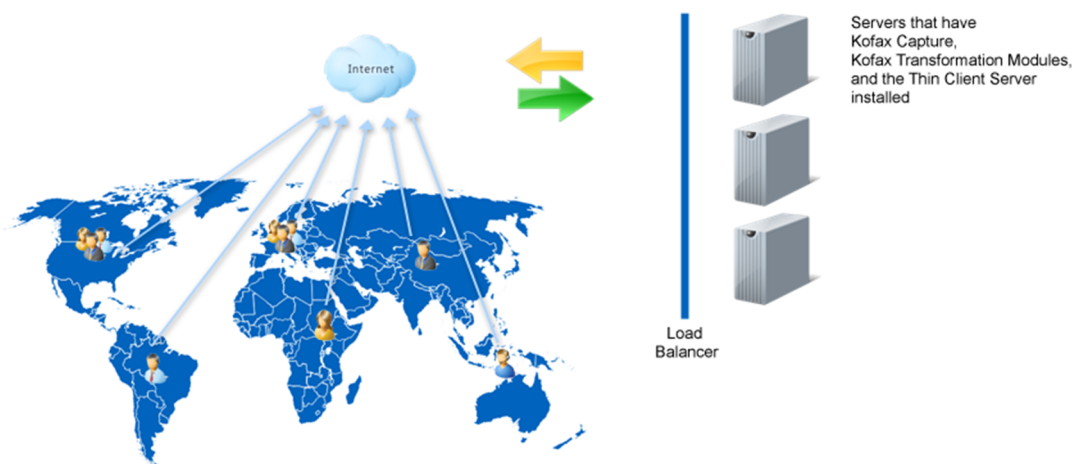
After a change, repair, or upgrade, clear the browser history and then restart IIS to ensure that old data does not cause problems.

## Load balancing

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

**Important** 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 Toolkit 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 Toolkit 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 on Windows Server 2008 R2 with SP1 or higher

The following section provides instructions for installing Kofax Transformation Toolkit - Thin Client Server on a Windows Server 2008 R2 with SP1 and IIS 7.5.

**Note** 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 Toolkit - Thin Client Server by following these steps:

1. On the workstation where Kofax Transformation Toolkit is installed, shut down any applications (including Control Panel, virus detection software, and toolbars) that are running.
2. Start the installation by running **KTS.msi** in the Thin Client Server folder of the product files. If you are running the installation from removable media, the installation should start automatically.
3. Click **Next** to install the software.  
If IIS is not yet installed, a message is displayed. You can ignore this for now and install IIS at a later time.
4. Read the End-User License Agreement and, if you agree with the terms, select the **I accept the terms in the License Agreement** option, and click **Next**. Otherwise, click **Cancel** to exit.
5. If necessary, change the default installation location or folder name, and click Next.
  - a. Click **Change**.
  - b. Browse to, or type the new location, and click **OK**.
6. Click **Install**.
7. When the installation is complete, click **Finish**.
8. Configure the Kofax Transformation Toolkit - Thin Client Server Web site using the Internet Information Services (IIS) Manager:
  - a. Expand the Sites folder.
  - b. Right-click the Default Web Site and select **Add Application** from the menu. This launches the Add Application window.
  - c. Type an Alias for your application, such as "ThinClientServer."
  - d. Select an Application pool. The DefaultAppPool is selected by default and click **OK**.
  - e. Browse to the location where you installed Kofax Transformation Toolkit - Thin Client Server in step 5 to set the path for this Web site, and click **OK**.
9. From the left **Connections** pane, select your newly added site a second time. A list of features is displayed in the middle pane.
  - a. From the IIS section, double-click the **Authentication** feature. A list of authentication types is displayed in the middle pane.
  - b. Select the ASP.NET Impersonation option and ensure it is **Disabled**.
  - c. Restart the World Wide Web Publishing Service.



10. To install the version v4.0.30319 of ASP.NET, open a Command Prompt window that is "Run as administrator."
  - a. At the prompt type `%windir%\Microsoft.NET\Framework\v4.0.30319\aspnet_regiis.exe -i` and press **Enter**. ASP .NET is installed. Close the Command Prompt window.
11. In IIS, click the **Application Pools** option above the **Sites** group. 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. Under the Process Model group, set the **Maximum Worker Processes** option to **1**. This is the default setting.
  - c. Optionally, if you are using an encrypted file system, you also need to click the **Identity** option that currently says **NetworkService**, 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 **NetworkService**. The **Application Pool Identity** window is displayed.  
Select the Custom account option, and click **Set**.  
Type a User name, Password, and Confirm password, and click **OK**.
  - d. Click **OK** to close the Application Pool Identity window, and again to close the Advanced Settings window.
  - e. Double-click the selected application pool.  
The **Edit Application Pool** window is displayed.
  - f. From the .NET Framework version list, select **.NET Framework v4.0.30319**.
  - g. Click **OK** to close the **Edit Application Pool** window.
12. If you are running a 64-bit operating system, set the following settings:
  - a. Click **Advanced Settings** on the shortcut menu by right-clicking on the application pool used in your application.
  - b. Set the Enable 32-bit Applications option to **True** in the General Settings, and click **OK**.
13. Ensure that the IIS user account **IUSR** is part of the **IIS\_IUSRS** group and grant that group full control for `<install drive>\ProgramData\Capture`.
14. Create a **KTSUsers** group. You can add Microsoft "default users" to that group as needed.
15. Open **Services** and ensure that the **World Wide Web Publishing Service** is set to start automatically.
16. Test that users can connect to the server by going to `http://localhost/<VirtualDirectory>/ValidationLogin.aspx`, `http://localhost/<VirtualDirectory>/VerificationLogin.aspx`, or `http://localhost/<VirtualDirectory>/CorrectionLogin.aspx`.

## Install on Windows Server 2012, 2012 R2, and 2016

The following section provides instructions for installing Kofax Transformation Toolkit - Thin Client Server on a Windows Server 2012, r Windows Server 2012 R2, and Windows server 2016.

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

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

1. On the workstation where Kofax Transformation Toolkit is installed, shut down any applications (including Control Panel, virus detection software, and toolbars) that are running.
2. Start the installation by running **KTS.msi** in the Thin Client Server folder of the product files. If you are running the installation from removable media, the installation should start automatically.
3. Click **Next** to install the software.  
If IIS is not yet installed, a message is displayed. You can ignore this for now and install IIS at a later time.
4. Read the End-User License Agreement and, if you agree with the terms, select the **I accept the terms in the License Agreement** option, and click **Next**. Otherwise, click **Cancel** to exit.
5. If necessary, change the default installation location or folder name, and click Next.
  - a. Click **Change**.
  - b. Browse to, or type the new location, and click **OK**.
6. Click **Install**.
7. When the installation is complete, click **Finish**.
8. Configure the Kofax Transformation Toolkit - Thin Client Server Web site using the **Internet Information Services (IIS) Manager**.
  - a. From the Connections pane, expand the **Sites** folder.
  - b. Right-click the Default Web Site and select **Add Application** from the menu. This launches the Add Application window.
  - c. Type an Alias for your application, such as "ThinClientServer."
  - d. Select an Application pool. The "DefaultAppPool" is selected by default and click **OK**.
  - e. Browse to the location where you installed Kofax Transformation Toolkit - Thin Client Server earlier in step 5 to set the path for this Web site, and click **OK**.
9. From the left **Connections** pane, select your newly added site a second time. A list of features is displayed in the middle pane.
  - a. From the IIS section, double-click the **Authentication** feature. A list of authentication types is displayed in the middle pane.
  - b. Select the ASP.NET Impersonation option and ensure it is **Disabled**.
  - c. Restart the World Wide Web Publishing Service.
10. Click the **Application Pools** option 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** option to **1**. This is the default setting.
- d. Optionally, if you are using an encrypted file system, you also need to click the **Identity** option 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 option, 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. Double-click the selected application pool.  
The **Edit Application Pool** window is displayed.
  - f. From the .NET CLR version list, select **.NET Framework v4.0.30319**.
  - g. Click **OK** to close the **Edit Application Pool** window.
11. Ensure that the IIS user account `IUSR` is part of the `IIS_IUSRS` group and grant that group full control for `<install drive>\ProgramData\Capture`.
  12. Create a `KTSUsers` group. You can add Microsoft "default users" to that group as needed.
  13. Open **Services** and ensure that the **World Wide Web Publishing Service** is set to start automatically.
  14. Test that users can connect to the server by going to `http://localhost/<VirtualDirectory>/ValidationLogin.aspx`, `http://localhost/<VirtualDirectory>/VerificationLogin.aspx`, or `http://localhost/<VirtualDirectory>/CorrectionLogin.aspx`.

## 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.

**Important** Ensure that you run the Command Prompt as an Administrator.

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 then press **Enter**.  
The Command Prompt window is displayed.
3. Change to the folder that contains the Thin Client Server MSI file.
4. Run the installer from the command line using the following command.

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

The Thin Client Server installs quietly.

## Upgrade to Kofax Transformation Toolkit - Thin Client Server 6.3.0

If you upgrade from Kofax Transformation Toolkit - Thin Client Server 6.0 or earlier, you need to remove the earlier version before installing Kofax Transformation Toolkit - Thin Client Server 6.3.0.

If you upgrade from Kofax Transformation Toolkit - Thin Client Server 6.1 or later, you can install the new version over top of the existing installation.

When upgrading a previous version of Kofax Transformation Toolkit - 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.

**Important** Before you can upgrade the Thin Client Server, 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 instruction for one of the following to upgrade the Thin Client Server.
  - [Windows Server 2008 R2 with SP1 or later](#)
  - [Windows Server 2012, 2012 R2, and 2016](#)
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.

## Uninstall Kofax Transformation Toolkit - Thin Client Server

You can repair or remove (uninstall) Kofax Transformation Toolkit - Thin Client Server using the Kofax Transformation Toolkit - Thin Client Server Setup Maintenance program.

Alternatively, you can remove Kofax Transformation Toolkit - Thin Client Server using Add or Remove Programs from Control Panel.

1. On the workstation where Kofax Transformation Toolkit is installed, shut down any applications including Control Panel, virus detection software, and toolbars that are running.

2. Remove the Kofax Transformation Toolkit - Thin Client Server Web site from IIS:
  - a. Open IIS, right-click the Kofax Transformation Toolkit - Thin Client Server virtual directory, and select **Remove**.
  - b. Click **Yes**.
3. Double-click **KTS.msi** in the Kofax Transformation Toolkit - Thin Client Server installer, and click **Remove**.
4. Click **Remove** to delete Kofax Transformation Toolkit - Thin Client Server.
5. When complete, click **Finish** to exit the installation.

## Chapter 3

# Thin Client Server source code sample

Kofax Transformation Toolkit - Thin Client Server provides a source code sample `FileAccessBackend` that allows you to access and store batches processed by the Thin Clients modules. This sample is written in C# and is compatible with Microsoft Visual Studio 2010 that can be used to guide you in creating your own file back end solution. The Thin Client Server example is located in the Kofax Transformation Toolkit Examples folder:

```
<Program Files>\Kofax\Transformation Toolkit\Resources\Examples
```

This sample is used with the `Web.config` settings file so that batches can be processed by Thin Client Correction, Thin Client Validation and Thin Client Verification. The `Web.config` file contains information about the location where batches are stored, created during installation.

For reporting, the source code sample shows how batch details are set during logon and batch selection. However, the reporting is done by the central process (`WFCValidationServer`) that gathers and sends all statistical data to the reporting platform. The central process also manages the batch restructuring actions in the `Batch_Open` and `Batch_Close` events. This means that no further implementation is needed to use this feature. For more details about the statistical data that is reported, see *Kofax Reporting for KTT Getting Started Guide*.

The `FileAccessBackend` sample does not provide a workflow integration or a batch locking mechanism for multiuser processing. In addition, it does not check the option whether a batch is enabled for thin clients (see Project Builder Project Settings - General Tab - Thin Clients group) or whether it is processed for multiple validation instances. That means that all batches are listed in the Available Batches window though not all can be used together with thin client modules. Any batch that is not enabled for Thin Clients cannot be loaded instead an error message is displayed.

In order to run the Thin Client Server sample the following prerequisites have to be considered and special settings need to be defined in the `Web.config` file.

### User management

In order to log on to a thin client module a `KTSUsers` group is required. You can add Microsoft "default users" to that group as needed. To log on to a client module, open the web site and type the user name and password.

### BatchRoot properties

This sample uses a predefined folder structure for the batches that are processed using a thin client module. Therefore, the `BatchRoot` folder is created during installation in the `<ProgramData>\Kofax\Transformation Toolkit\Thin Client Server\` location. The `Web.config` file enables you to define the input and the output folder for each thin client module. In addition, you can configure an error folder for batches that are terminated abnormally or a ready folder for those that are processed completely.

The `Web.config` file contains the following properties that relate to batch handling when using the `fileAccessBackend`.

```
<setting name="BatchListRootFolder" serializeAs="String">
  <value>C:\XDocSamples</value>
</setting>
<setting name="ErrorOut" serializeAs="String">
  <value>Error</value>
</setting>
<setting name="CorrectionIn" serializeAs="String">
  <value>ForCorrection</value>
</setting>
<setting name="CorrectionOut" serializeAs="String">
  <value>ForValidation</value>
</setting>
<setting name="ValidationIn" serializeAs="String">
  <value>ForValidation</value>
</setting>
<setting name="ValidationOut" serializeAs="String">
  <value>ForVerification</value>
</setting>
<setting name="VerificationIn" serializeAs="String">
  <value>ForVerification</value>
</setting>
<setting name="VerificationOut" serializeAs="String">
  <value>Ready</value>
</setting>
```

The folders that are available for each module are located in the `In` and `Out` folders for the corresponding user module. The `Out` folder is used when `SaveData="True"` only. In this case, the batch is handled similar to a basic queue, providing a very basic workflow.

The batch folders are placed inside these `In` and `Out` folders using the following structure.

- BatchFolder
  - Project
  - Docs

The contents of the `Docs` folder must be `.xfd`, `.xdoc`, or subfolders containing `.xdoc` files.

### Project files

The project file that corresponds to a batch must be located in the `BatchFolder` folder as described above.

### SaveData property

The `SaveData` property in the `Web.config` file defines whether changes applied by a thin client module are stored when the batch is closed or suspended. By default, no changes are saved. If the property is set to `True` the changes are stored and the completed batch is moved to the output folder so that it can be processed by the next module.

**Important** You need to assign the IIS user the necessary permissions to save the batches to the `Thin Client Server\BatchRoot` folders.

### ConfigSetName property

This property is listed in the `Web.config` file and 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.

**Note** For the best results, you do not open more than one Thin Client session at the same time, even if you are using a Web browser that supports multiple tabs, as this may cause loss of data.

### Main steps for FileAccessBackend

Step	Description	Location in Example Code
1	Log on a thin client module (for reporting AppID=KTT and additional details, such as the module type, are set)	See <code>Login (reportingSessionInfo)</code>
2	User has logged on successfully: Get batch list from the server  <b>Note</b> The Available Batches window displays the list of batches. To allow correct sorting of the Date column, the date values must be returned in milliseconds since 1.1.1970 and the name of the column must contain "date" (see <code>batchList.ExtraData.Add</code> ).	See <code>GetBatchList</code>
3	User requests a batch from the batch list: Gets a batch for processing and sets the batch details for reporting	See <code>GetBatch (batchToken.ExtraData)</code>
4	Process all documents of that XFolder object; in case the document or folder is changed or reclassified calls are made to store the changes	See <code>NotifyDocumentIsReclassified, NotifyDocumentIsValid, NotifyDocumentIsVerified, NotifyDocumentIsChanged and NotifyFolderIsChanged</code>
5	Commit batch; only if the property <code>SaveData</code> in the <code>Web.config</code> file is set to <code>TRUE</code> the <code>folder.xfd</code> file is stored and the batch is moved to the output folder	
6	Log off the thin client module	See <code>Logout</code>



## Chapter 4

# Configure the Thin Client Server and its Thin Client Modules

To configure the default number of services, the maximum number of allowed users, the number of batches in the batch list, and the session timeout value, you need to update the Web.config file located in the installation location.

There are several options that you can modify:

### **CustomModuleMinNumber**

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.

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.

### **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.

### **Timeout**

Enables you to change the length of time it takes a session to timeout before it suspends a batch and logs a user off.

### **AllowRejection**

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.

### **AjaxTimeout**

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.

### **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.

### **HandleImagesBitonal**

If this option is set to TRUE, color images are converted to black and white in Thin Client Validation or Thin Client Verification only. This decreases the amount of memory used to load a batch because color images require more memory than black and white images. PDF documents are not affected.

### **EnableLoginAutoComplete**

When the value for this option is set to On, autocomplete for the User ID field on the log on page is available. This means that if a user types one or two letters, suggestions are provided so that the user can

select their cached User ID rather than type it again. Change the value for this option to Off so that users are not presented with a list of suggestions.

**Note** Once the value for this option is set to Off, each user needs to clear their browser cache to remove any saved User IDs.

### **ForceDictionaryUpdate**

When enabled, this setting reloads the project when a dictionary is updated so that any combo boxes are updated accordingly. The value for this option is set to "False" by default.

Set this value to "True" in the following circumstances.

- You dictionary is configured for auto-update.
- Your dictionary is updated regularly.
- You have combo boxes that use your dictionary on your customized validation form.

Otherwise, leave this value "False." This is because a "True" value can negatively impact performance when dictionaries are reloaded unnecessarily.

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

The following option is also located in the Web.config file, but it does not require the server to be restarted.

### **LimitLoadedPageCount**

Enables you to specify how many recently accessed document images are stored in cache for Thin Client Correction and Thin Client Validation. This option is useful when a document has a large number of images that are not reviewed by operators.

To cache all images from the last three documents, use the default value of -1. If you need to cache a specific number of images, specify that value, such as 10 for the 10 most frequently accessed images. The maximum number of images that you can store in the cache depends on the image size and available memory. If you need to turn off the cache because of memory limitations, enter 0.

### **ListOfBatchesMaxNumber**

Enables you to set the maximum number of batches that are displayed in the Open Batch window. This is set to 100 by default.

## Load fields in Thin Client Correction

In addition to the preceding options, you can specify the number of correction fields that are loaded at one time. If a batch contains more than the specified number, the fields continue loading in the background while the operator processes the batch. This option is set to 50 by default.

To modify the default number of fields loaded at one time, edit the `CorrectionFieldsPerRequest` value in the Web.config file.

## Save fields in Thin Client Correction

You can also specify the number of corrected fields that are saved and sent back to the server in groups. This option allows groups of fields to be periodically sent back to the server rather than waiting until all fields are corrected. This is especially helpful for large batches. This option is set to 10 by default.

To modify the number of fields saved at one time, edit the `CorrectionFieldsPerSave` value in the `Web.config` file.

## 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="myListener" traceOutputOptions="DateTime"
        type="System.Diagnostics.TextWriterTraceListener"
        initializeData="PATH_TO_FILE_WITH_ACCESS_RIGHTS">
        <filter type="System.Diagnostics.EventTypeFilter"
        initializeData="Verbose"/>
      </add>
    </listeners>
  </trace>
</system.diagnostics>
```

2. Edit the `initializeData="PATH_TO_FILE_WITH_ACCESS_RIGHTS"` attribute to modify the file system location and name of the log file.

**Important** 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 is set to "Verbose." You can change this attribute to one of the following values, keeping in mind that some options are a combination of the previous values.

### **Critical**

Outputs a fatal error or an application crash to the log file.

### **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.

**Verbose**

Outputs Critical messages, Error messages, Warning messages, Information messages, as well as debug information, to the log file.

For more information about the available options, see the Microsoft MSDN Trace and Debug Settings Schema at [http://msdn.microsoft.com/en-us/library/76dt1k3h\(VS.71\).aspx](http://msdn.microsoft.com/en-us/library/76dt1k3h(VS.71).aspx).

4. **Save** your changes and restart the IIS 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>/ValidationLogin.aspx?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.

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

Note that the `FileAccessBackendSample` does not contain any code for using multiple validation steps.

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;/ValidationLogin.aspx</code>
2	<code>http://&lt;server&gt;:&lt;port&gt;/&lt;virtualdirectory&gt;/ValidationLogin.aspx?step=2</code>
3	<code>http://&lt;server&gt;:&lt;port&gt;/&lt;virtualdirectory&gt;/ValidationLogin.aspx?step=3</code>
n	<code>http://&lt;server&gt;:&lt;port&gt;/&lt;virtualdirectory&gt;/ValidationLogin.aspx?step=n</code>

## Open batches directly via a URL

It is possible to open a batch directly by specifying the necessary information within a URL.

The syntax used is `http://<server>:<port>/ValidationLogin.aspx?batchid=<batchid>`, where `<batchid>` is the unique batch identifier.

Using this method of opening batches restricts the users so that they cannot open other batches. They are able to suspend or close the open batch only.

## Chapter 5

# Adapt the Thin Clients for your corporate identity

In many situations, Kofax Transformation Toolkit is only one step in the document capture workflow of an organization. If the default Thin Client user interface does not provide enough of a seamless user experience, you can adapt it to fit better with your corporate identity.

You can adapt the following Thin Client user interface elements:

- The [Thin Client modules Help](#)
- The [About window content](#)
- The [Thin Client icons](#)

**Note** All changes are made on the Thin Client Server, not the client. The results of these changes however, are visible on the Thin Clients.

The Thin Client Server is installed in the root folder of the Kofax Transformation Toolkit installation. The default path is `<Program Files>\Kofax\Transformation Toolkit\Thin Client Server`.

For the rest of this section, the installation path is referred to as `<root>`.

## Modify the FileAccessBackend sample and web help

Thin Client Server can be customized as follows:

### Software

An integrator-specific "Kofax.OEM.Product.dll" is provided that can be replaced by the corresponding integrator-specific one. The following location is relevant for the Thin Client Server:

`<Program Files>\Common Files\Kofax\Transformation Toolkit\Thin Client Server`

If you create your own setup, please ensure that this integrator-specific .dll is present at the specified location.

German resources (`de\Kofax.OEM.Product.resources.dll`) are also available for this dll.

### Web Help

By default, a Web Help is installed for the thin clients modules in the following location:

`<Program Files>\Common Files\Kofax\Transformation Toolkit\Thin Client Server\docs`

This Web Help is provided in English and German. You can customize the html files located in the folder by replacing the product name, company name and copyright information in the footer, and replace the

legal notice file. For English, the files are located at `docs\en\ThinClients`. The German files are located at `docs\de\ThinClients`.

## Modify the About Window content

You can modify the copyright and licensing information that is displayed in the About window by editing the following files:

### About window files

File	Description
<code>&lt;root&gt;\js\kofax\lang\lic.js</code>	Modify the contents of this file to change the text that is displayed in the scrollable text box in the About window.
<code>&lt;root&gt;\img&gt;About_Logo.png</code>	Replace this image file with your own to change the logo that is displayed in the About window.

**Important** The existing Kofax About\_Logo.png file is 160 pixels wide, 350 pixels in height, and has a resolution of 96 dpi. To avoid problems with window size or resolution, and for the best results, use these same measurements.

## Modify the Thin Client icons

The icons that are installed for Thin Client Validation, Thin Client Verification, and Thin Client Correction can be modified by editing the following files:

### Thin Client icon files

File	Description
<code>&lt;root&gt;\img\validation_icon.png</code>	Replace this image with your own to change the icon displayed on the log on page for Thin Client Validation. The existing validation_icon.png file is 83 pixels wide, 104 pixels in height, and has a resolution of 96 dpi. To avoid problems with window size or resolution, use these same measurements.
<code>&lt;root&gt;\img\verification_icon.png</code>	Replace this image with your own to change the icon displayed on the log on page for Thin Client Verification. The existing verification_icon.png file is 83 pixels wide, 104 pixels in height, and has a resolution of 96 dpi. To avoid problems with window size or resolution, use these same measurements.
<code>&lt;root&gt;\img\correction_icon.png</code>	Replace this image with your own to change the icon displayed on the log on page for Thin Client Correction. The existing correction_icon.png file is 83 pixels wide, 104 pixels in height, and has a resolution of 96 dpi. To avoid problems with window size or resolution, use these same measurements.

<b>File</b>	<b>Description</b>
<code>&lt;root&gt;\img\validation.ico</code>	<p>Replace this image with your own Thin Client Validation icon file to change the favicon, which is displayed in the Web browser next to the URL and on the Web browser tab.</p> <p>The existing validation.ico file is 16 pixels wide, 16 pixels in height, and has a resolution of 96 dpi. To avoid problems with window size or resolution, use these same measurements.</p>
<code>&lt;root&gt;\img\verification.ico</code>	<p>Replace this image with your own Thin Client Verification icon file to change the favicon, which is displayed in the Web browser next to the URL and on the Web browser tab.</p> <p>The existing verification.ico file is 16 pixels wide, 16 pixels in height, and has a resolution of 96 dpi. To avoid problems with window size or resolution, use these same measurements.</p>
<code>&lt;root&gt;\img\correction.ico</code>	<p>Replace this image with your own Thin Client Correction icon file to change the favicon, which is displayed in the Web browser next to the URL and on the Web browser tab.</p> <p>The existing correction.ico file is 16 pixels wide, 16 pixels in height, and has a resolution of 96 dpi. To avoid problems with window size or resolution, use these same measurements.</p>



## Chapter 6

# Access Thin Client Server documentation

By default, the Kofax Transformation Toolkit - 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 Toolkit, including documentation for the Thin Client Server is available from <https://docshield.kofax.com/Portal/Products/KTT/6.3.0-v15o2fs281/KTT.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. [Web-based offline help](#) that is visible to your intranet only.  
Kofax recommends this method.
2. [File system-based offline help](#) that is visible by all Thin Client Server users.  
If you cannot use the web-based implementation, you can use this method to install the help on a file system visible to all Thin Client Server users.

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

For example, download the `KofaxTransformationToolkitDocumentation_6.3.0_EN.zip` file. These files include the Thin Client Server documentation.

## Web-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 web-based hosted site, so if you require offline documentation, an internal web-based solution is best. If this is not possible, you can use [File system-based offline help](#).

**Important** If you have already implemented a web-based solution for the Kofax Transformation Toolkit offline help, there is no need to set up another solution for the Thin Client Server. Instead, skip to step 6 below.

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

1. If you have not done so already, download and extract the `KofaxTransformationToolkitDocumentation_6.3.0_EN.zip` file from the [Kofax Fulfillment Site](#).

The contents of the English zip file include three folders.

- `help`. This directory contains help for one or more modules.
- `print`. This directory contains administrative documents. Copy these manually to any suitable location on your network.
- `redirection`. This directory contains files necessary to implement web-based localization redirection for Kofax Transformation Toolkit.

2. Open **Internet Information Services (IIS)**.
3. The following step adds an application to the **Default Web Site** that displays the documentation on your network.

**Tip** Even though the following steps add an application to the Default Web Site, if necessary, you can create your own dedicated web site for the documentation. Modify the steps accordingly. Modifying the web site is useful if you have applications using the Default Web Site already.

- a. Expand the **Default Web Site** and add an **Application**.  
The **Add Application** window is displayed.
- b. To **Add Application** enter a value into the **Alias** field.  
The name of this application should be memorable and easily referenced. For example, `KTSDocs`.
- c. Choose an **Application pool**.  
Unless you have created a special application pool for the documentation, select the **DefaultApplicationPool**.
- d. Select the physical path for your help files.  
For example, `/inetpub/wwwroot/<Alias>`
- e. Click **OK**.

The Add Application window closes and your newly added application is listed under the Default Web Site.

4. Optionally, if you are using help in any of the supported languages other than English, perform the following steps to enable language redirection.
  - a. Navigate to the **redirection** folder included in the `KofaxTransformationToolkitDocumentation_6.3.0_EN.zip` file.
  - b. In a separate window, navigate to the application path that you just created.
  - c. Copy the `web.config` from the **redirection** folder to the root of your website.  
For example, `C:/inetpub/wwwroot`.

- d. Copy the **bin** folder from the **redirection** folder to the **bin** folder at the root of your website.

For example, `C:/inetpub/wwwroot/bin`.

Language redirection is now configured.

5. From the `KofaxTransformationToolkitDocumentation_6.3.0_EN.zip` file copy the entire directory called **help** to the physical path used by the application that you just created.

If you are planning on using the English files only, copy the extracted **help** directory directly to `/inetpub/wwwroot/<Alias>/`.

If you would prefer to have your English files located in its own language directory or you are planning on using additional languages, you need to create an **en\_US** directory and then copy the **help** directory to the language directory. You can copy additional language zip files using information in [Localized offline help](#).

**Note** If you set up the help for English only, and then decide to add other languages at a later time, it is necessary to reorganize the documentation into language directories.

Now that you have implemented the mechanism for offline help, you need to configure it.

6. In IIS, select your Thin Client Server application, and then select the **docs** folder.
7. From the central panel, under the **IIS** group, double-click on **HTTP Redirect**.  
By default, this points to [https://docshield.kofax.com/KTT/6.3.0-v15o2fs281\\$\\$SQ](https://docshield.kofax.com/KTT/6.3.0-v15o2fs281$$SQ).
8. Edit the URL so that it points to your application, including the **\$\$SQ** suffix.  
For example, `http://<WebServer>/<Alias>$$SQ`.  
No matter what URL you use here, always use the **\$\$SQ** suffix at the end of the URL.
9. In the **Actions** panel to the right, click **Apply**.  
The help application is set up.
10. 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.

## File system-based offline help

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

**Important** 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. If you have not done so already, download and extract the `KofaxTransformationToolkitDocumentation_6.3.0_EN.zip` file from the [Kofax Fulfillment Site](#).  
The contents of the English zip file include three directories.
  - **help**. This directory contains help for one or more modules.
  - **print**. This directory contains administrative documents. Copy these manually to any suitable location on your network.
  - **redirection**. This directory contains files necessary to implement web-based localization redirection for Kofax Transformation Toolkit.

**Note** The redirection directory is not required for Thin Client Server offline documentation.

2. Select the docs folder inside the IIS Thin Client Server application and then select **HTTP Redirect**. The default URL for hosted documentation is displayed.
3. In the **Redirect requests to this destination** field, remove the URL for hosted documentation.
4. Clear your browser cache and then restart the **World Wide Web Publishing** service.
5. Navigate to the physical path where the Thin Client Server is installed.  
By default, the path is <Program Files>\Kofax\Transformation Toolkit \ThinClientServer.
6. In Windows Explorer, open the **docs** folder from the Thin Client Server application and then create a directory called **en\_US**.
7. Copy the **help** folder from the extracted zip file to the newly created directory.

**Tip** The copied help folder contains all help for all modules. All but the Thin Client Server (TC) are configured elsewhere. As a result, you can delete everything but the **TC** folder without affecting the Thin Client Server help.

8. If you want to use additional languages, create a folder for that language and then copy in the help folder for that language.

The following are the supported languages for the help.

- Czech - cs\_CZ
- German - de\_DE
- English - en\_US
- Spanish - es\_ES
- French - fr\_FR
- Italian - it\_IT
- Japanese - ja\_JA
- Polish - pl\_PL
- Portuguese (Brazilian) - pt\_BR
- Russian - ru\_RU
- Swedish - sv\_SE
- Chinese (Simplified) - zh\_CHS

9. Navigate to where you installed the Thin Client Server.

By default, the installation path is <Program Files>\Kofax\Transformation Toolkit \ThinClientServer.

10. Open the **Web.Config** file for editing and locate the following setting.

```
<setting name="HelpIsFileBased" serializeAs="String">
```

By default, the value of this setting is set to False.

11. To enable file system-based offline help, change the value of this setting to **True**.
12. If you are providing help in languages other than English, locate the following setting.

```
<setting name="HelpLanguageSupported" serializeAs="String">
```

13. Modify the value of this setting so that all languages you are using are included in a comma-separated list.

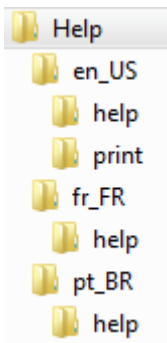
A list of supported languages is commented out below.

14. **Save** and close the Web.Config file.
  15. Restart your server for these changes to take effect.
  16. Once the server is back, test the help by opening one of the Thin Clients and then pressing the **Help** button.
- If there are issues, review the above steps and then try again.

## Localized offline help

Localized help is available for the Thin Clients help.

An example of the hierarchy needed to support multiple languages is as follows. For supported languages other than English, there is no print folder.



Copy the required languages using the above hierarchy as a reference. The country codes needed for the supported languages are as follows.

- Czech - cs\_CZ
- German - de\_DE
- English - en\_US
- Spanish - es\_ES
- French - fr\_FR
- Italian - it\_IT
- Japanese - ja\_JA
- Polish - pl\_PL
- Portuguese (Brazilian) - pt\_BR
- Russian - ru\_RU
- Swedish - sv\_SE
- Chinese (Simplified) - zh\_CHS

Once the necessary files are copied, offline help uses the Browser language to open the corresponding localized help. If a browser is set to an unsupported language, the help redirects to English.