Kofax RPA

Installation Guide

Version: 11.1.0

Date: 2020-09-16

KOFAX

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Preface

This guide, which explains how to install Kofax RPA in a development environment, covers both interactive and "silent" installation procedures for Windows, as well as standard and "headless" procedures for Linux.

Note If you plan to install Kofax RPA in a production environment, see the *Administrator's Guide*.

In a production environment, we strongly recommend deployment of the Management Console on a stand-alone Tomcat server. This recommendation is based on, but not limited to the following.

- Derby is used as a system database in embedded mode, which is not recommended for production environment.
- Management Console on Tomcat:
  - Can use an enterprise class database for improved performance and data security.
  - Can integrate with LDAP and SAML.
- Tomcat can be configured to customer requirements.

Before installing Kofax RPA, you must decide whether to install the 32-bit or the 64-bit version. The key issues to consider are:

- Your operating system may only support one of the versions. 64-bit Windows supports both. On Linux, only the 64-bit version is supported.
- The 64-bit version is mainly useful on servers where you want to run a RoboServer that uses significant RAM. (You will need to configure the allowed amount of RAM after installation, as described in the "Changing the RAM Allocation" section in the *Administrator's Guide*).

This guide describes:

- How to install Kofax RPA, either interactively or "silently" (without user interaction).
- How to enter license information so that you can start Kofax RPA.
- How to configure Kofax RPA.
- How to set up Kofax RPA server applications to start automatically when the computer restarts.

Related Documentation

The documentation set for Kofax RPA is available here:[1]

https://docshield.kofax.com/Portal/Products/RPA/11.1.0_vwsnqu4c9o/RPA.htm

[1] You must be connected to the Internet to access the full documentation set online.

You can also access individual guides and online help directly from your Kofax RPA installation. When you click the help button in Design Studio, Management Console, Desktop Automation Service, and Process Discovery, online documentation appears in a new browser window.

Note If the security policy for your organization restricts Internet access or the Internet connection is not stable, you can access the documentation in offline mode while using the product.

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

Kofax RPA Release Notes

Contains late-breaking details and other information that is not available in your other Kofax RPA documentation.

Kofax RPA Technical Specifications

Contains information on supported operating systems and other system requirements.

Kofax RPA Upgrade Guide

Contains instructions on upgrading Kofax RPA and its components to a newer version.

Kofax RPA Administrator's Guide

Describes administrative and management tasks in Kofax RPA.

Help for Kofax RPA

Describes how to use Kofax RPA. The Help is also available in PDF format under the title of *Kofax RPA User's Guide*.

Kofax RPA Best Practices Guide for Robot Lifecycle Management

Offers recommended methods and techniques to help you optimize performance and ensure success while using Robot Lifecycle Management in your Kofax RPA environment.

Kofax RPA Getting Started with Desktop Automation Guide

Provides a tutorial that walks you through the process of using Kofax RPA Desktop Automation to build a robot.

Kofax RPA Getting Started with Document Transformation Guide

Provides a tutorial that explains how to use Document Transformation functionality in a Kofax RPA environment, including OCR, classification, extraction, field formatting, and validation.

Kofax RPA Desktop Automation Service Configuration Guide

Describes how to configure the Desktop Automation Service required to use Desktop Automation on a remote computer.

Kofax RPA Developer's Guide

Contains information on the API that is used to execute robots on the RoboServer.

Kofax RPA Integration API documentation

Contains information about the Kofax RPA Java API and the Kofax RPA .NET API, which provide programmatic access to the Kofax RPA product. The Java API documentation is available from both the online and offline Kofax RPA documentation, while the .NET API documentation is available only offline.

Note The Kofax RPA APIs include extensive references to RoboSuite, the original product name. The RoboSuite name is preserved in the APIs to ensure backward compatibility. In the context of the API documentation, the term RoboSuite has the same meaning as Kofax RPA.

Offline Documentation

To make the documentation available for use in offline mode, obtain the documentation files from the Kofax RPA product package that you downloaded from the Kofax Fulfillment Site. The product package includes the following documentation files for offline use:

- KofaxRPADocumentation_11.1.0_EN.zip
  Contains the entire Kofax RPA documentation set in English.
- KofaxRPADocumentation_11.1.0_JA.zip
  Contains the entire Kofax RPA documentation set in Japanese.

After you install the Kofax RPA product, extract the contents of the documentation .zip files for the languages you require. The .zip file for each language contains the following folders:

- API
- Best Practices
- Design Studio
- Desktop Automation Service
- Management Console
- Process Discovery

After you extract the files, the documentation folder for Design Studio, Desktop Automation Service, and Process Discovery will have the following structure:

- `EN` and/or `JA` (for English and Japanese, respectively)
  - `print` and/or `help` (for PDF documentation and Help for Kofax RPA, respectively)

For Management Console, there are no documentation or language code folders, and only the `ManagementConsoleHelp.war` file will be added to the Management Console program files.

When the offline documentation is installed for an RPA component according to the instructions below, the component will use the offline version of the documentation by default, even if an active Internet connection exists.

Offline API documentation

The API folder contains the API references in English.

1. Copy the API folder from the English .zip file extracted above to any folder on your computer.
2. In this folder, double-click **Overview.html** to open the API documentation.

Offline documentation for Design Studio

1. Open the `Design Studio` folder from the English .zip file extracted above and copy the `EN` folder to one of the following folders, depending on your installation:
   - `C:\Program Files(x86)\Kofax RPA 11.1.0.0 x32\documentation`
   - `C:\Program Files\Kofax RPA 11.1.0.0 x64\documentation`
2. If you require the Japanese documentation, open the `Design Studio` folder from the Japanese .zip file extracted above and copy the `JA` folder to the same location.
3. Start Design Studio and navigate to **Settings** > **Design Studio Settings**.
4. On the **General** tab, in **Documentation location**, select **Offline** in the list.
5. Save the changes.

To switch to online mode, select **Online** in **Design Studio Settings** and save the changes.

Note If you try to access the online documentation from Kofax RPA without Internet access, the **Retrieving help and documentation** warning is displayed. If you select **Do not show this notification again** and later you want to reset this option, select **Show documentation retrieval notifications** on the **General** tab in **Design Studio Settings**.

Offline documentation for Management Console

1. Open the `Management Console` folder from the English .zip file extracted above and copy the `ManagementConsoleHelp.war` file to:
   `C:\<Tomcat installation folder>\Tomcat <version>\webapps`

   Note The English and Japanese .zip files contain the same .war file, which includes both English and Japanese documentation. If you copied the .war file from the English .zip file and you require the Japanese version of documentation, no further actions are needed.

2. Start Management Console.
3. In the **Settings** section, open the **Base URL** settings.
4. Select **Use local documentation**. In **Local documentation base URL**, specify the URL to the Tomcat website containing the documentation.
   Example: `http://localhost:8080/ManagementConsoleHelp/`
5. Save the changes.

You may need to refresh Management Console for the changes to take effect.

To switch to online mode, clear **Use local documentation** in the Base URL settings and save the changes.

Offline documentation for Desktop Automation Service

1. Navigate to the folder `documentation` that resides in:
   `C:\Program Files(x86)\RPA DesktopAutomation 11.1.0.0 x32`
2. Open the `Desktop Automation Service` folder from the English .zip file extracted above and copy the `EN` folder to the `documentation` folder.
3. If you require the Japanese documentation, open the `Desktop Automation Service` folder from the Japanese .zip file extracted above and copy the `JA` folder to the same location.

To switch to online mode, delete or move the `documentation` folder from the `RPA DesktopAutomation 11.1.0.0 x32` folder.

Offline documentation for Process Discovery

1. In each of the following folders, create a new folder called `documentation`.
   - `C:\Program Files (x86)\Kofax RPA Process Discovery Agent 11.1.0.0 x32`
   - `C:\Program Files (x86)\Kofax RPA Process Discovery Analyzer 11.1.0.0 x32`
2. Open the `Process Discovery` folder from the English .zip file extracted above and copy the `EN` folder to the newly created `documentation` folders.
3. If you require the Japanese documentation, open the `Process Discovery` folder from the Japanese .zip file extracted above and copy the `JA` folder to the same locations.

To switch to online mode, delete or move the `documentation` folder from the `Kofax RPA Process Discovery Agent 11.1.0.0 x32` and `Kofax RPA Process Discovery Analyzer 11.1.0.0 x32` folders.

Offline documentation for Kapplets

The offline documentation for Kofax RPA Kapplets is contained in the same .war file as for Management Console, which you have already copied from the English.zip file to the required location on your computer (Tomcat installation folder). To use the Kapplets documentation in offline mode, follow these steps.

1. Depending on whether Kapplets are installed in embedded mode, on Tomcat, or on Docker, configure the required properties in a respective configuration file. For information on each installation scenario, see "Install Kapplets" in the *Kofax RPA Installation Guide*.
   - Embedded mode. Create an `application-help.properties` using the following template and place it next to the `application.properties` file in the folder from where Kapplets are run.

```
kapplets.services.mc.connection.url=http:// <host-url>:<port>/ManagementConsole
kapplets.services.mc.connection.username=<username>
kapplets.services.mc.connection.password=<password>
kapplets.services.help.languages-map[en]=EN
kapplets.services.help.languages-map[ja]=JA
kapplets.services.help.base-url=http://<host-url>:<port>/ManagementConsoleHelp/
@@language@@/help/kap_help/kapplets
```

```
kapplets.services.help.landing-url=http://<host-url>:<port>/
ManagementConsoleHelp/@@language@@/help/kap_help/kapplets/c_rpakappletsmain.html
```

Note In this scenario, the offline documentation can be used only if the Management Console is deployed on Tomcat.

- On Tomcat. To the `kapplets.xml` file, add the following properties at the end of the file.

```
<Environment name="kapplets.services.help.languages-map[en]" value="EN"
 type="java.lang.String" override="false"/>
<Environment name="kapplets.services.help.languages-map[ja]" value="JA"
 type="java.lang.String" override="false"/>
<Environment name="kapplets.services.help.base-url" value="http://<host-
url>:<port>/ManagementConsoleHelp/@@language@@/help/kap_help/kapplets"
 type="java.lang.String" override="false"/>
<Environment name="kapplets.services.help.landing-url" value="http://<host-
url>:<port>/ManagementConsoleHelp/@@language@@/help/kap_help/kapplets/
c_rpakappletsmain.html"   type="java.lang.String" override="false"/>
```

- On Docker. In the `docker-compose.yml` file, add the following properties to the `environment` section at the end of the file.

```
 - KAPPLETS_SERVICES_HELP_LANGUAGES-MAP[en]=EN
 - KAPPLETS_SERVICES_HELP_LANGUAGES-MAP[ja]=JA
 - KAPPLETS_SERVICES_HELP_BASE-URL=http://<host-url>:<port>/
ManagementConsoleHelp/@@language@@/help/kap_help/kapplets
 - KAPPLETS_SERVICES_HELP_LANDING-URL=http://<host-url>:<port>/
ManagementConsoleHelp/@@language@@/help/kap_help/kapplets/c_rpakappletsmain.html
```

2. Save the file. You may need to restart the Tomcat server for the changes to take effect.

To switch to online mode, delete the four properties from the configuration file, save the changes, and restart the server.

Training

Kofax offers both classroom and computer-based training to help you make the most of your Kofax RPA solution. Visit the Kofax Education Portal at https://learn.kofax.com/ for details about the available training options and schedules.

Also, you can visit the Kofax Intelligent Automation SmartHub at https://smarthub.kofax.com/ to explore additional solutions, robots, connectors, and more.

Getting help with Kofax products

The Kofax Knowledge Base repository contains articles that are updated on a regular basis to keep you informed about Kofax products. We encourage you to use the Knowledge Base to obtain answers to your product questions.

To access the Kofax Knowledge Base, go to the Kofax website and select **Support** on the home page.

Note The Kofax Knowledge Base is optimized for use with Google Chrome, Mozilla Firefox or Microsoft Edge.

The Kofax Knowledge Base provides:

- Powerful search capabilities to help you quickly locate the information you need.

  Type your search terms or phrase into the **Search** box, and then click the search icon.
- Product information, configuration details and documentation, including release news.

  Scroll through the Kofax Knowledge Base home page to locate a product family. Then click a product family name to view a list of related articles. Please note that some product families require a valid Kofax Portal login to view related articles.
- Access to the Kofax Customer Portal (for eligible customers).

  Click the **Customer Support** link at the top of the page, and then click **Log in to the Customer Portal**.
- Access to the Kofax Partner Portal (for eligible partners).

  Click the **Partner Support** link at the top of the page, and then click **Log in to the Partner Portal**.
- Access to Kofax support commitments, lifecycle policies, electronic fulfillment details, and self-service tools.

  Scroll to the **General Support** section, click **Support Details**, and then select the appropriate tab.

Chapter 1

Dependencies and Prerequisites

This chapter lists components and required configuration settings to use different Kofax RPA features. For information on supported platforms and versions, see the *Kofax RPA Technical Specifications* document on the Kofax RPA Product Documentation site.

Real-time data: If you have a solution where users are waiting for results in real-time, CPU speed is normally the bottleneck, and you should buy the fastest CPU available for your hardware platform.

Dedicated hardware: For best performance, we recommend that you always run RoboServer, Management Console, or Document Transformation Service each on dedicated hardware. That means that you should not run database servers and other services on the same hardware with your RoboServer, Management Console, or Document Transformation Service.

Any email field in Kofax RPA can contain up to 255 characters. Do not exceed the number of characters in the email field.

Windows installation prerequisites

If you get the error: "Module <modulename> not found," install the following update.

https://support.microsoft.com/en-us/kb/2999226

Note that <modulename> can be "`automationnative`", "`cef`" or any other Kofax RPA module name.

If the Windows update is not available on your system, use the following workaround.

1. Create a `c:\temp\976571` folder.
2. Use the following command to extract the contents of the MSU file:

   ```
   Expand -F:* c:\kb976571\Windows6.1-KB976571-v2-x64.msu c:\temp\976571
   ```

   This command extracts multiple files, from `Windows6.1-KB976571-v2-x64.cab`.
3. Run the following command:

   ```
   DISM.exe /Online /Add-Package /PackagePath:c:\temp\976571\Windows6.1-KB976571-v2-x64.cab
   ```

For more information, see *How to use DISM to install a hotfix from within Windows* on the Microsoft Technet website https://blogs.technet.microsoft.com.

Linux installation dependencies

When installing on Ubuntu, Ubuntu 14.04 LTS with the libqt5webkit5 library is required.

The minimal Linux installation must include the following libraries to be able to run robots created with the default browser engine.

- libX11.so.6
- libGL.so.1
- libXext.so.6

To use cross-platform authentication (Negotiate and NTLM protocols), your Linux installation must include these Generic Security Service API (GSS-API) libraries:

- libgssapi_krb5.so.2
- libgssapi.so.4
- libgssapi.so.2
- libgssapi.so.1

Note Kofax RPA supports libssl1.0.2 or below.

Use the `yum install` or `sudo apt-get` command to install necessary libraries on a Linux platform.

You must also install fonts on a headless Linux server for the WebKit robots to work.

- Instructions for installing fonts for CentOS / RedHat
- Instructions for installing fonts for Ubuntu

Databases

Important Please create and maintain the Kofax RPA product databases according to the recommendations in the product documentation. If you are considering database modifications or customizations, do not proceed without consulting Kofax; otherwise, the results are unpredictable and the software may become inoperable.

You can use Microsoft SQL Server with integrated Windows Authentication as a logging (logdb) database only in the following cases:

Important Microsoft SQL Server with integrated Windows Authentication cannot be used as a logging (logdb) database when you run Management Console and RoboServer in embedded mode.

Also, make sure that SQL Server Authentication of the Microsoft SQL Server is disabled.

- Both Management Console and RoboServer must run only on a Windows platform.
- Management Console must be installed on a Tomcat server.
- The JDBC driver, including DLLs, must be manually installed into both Management Console and all RoboServer installations without using the JDBC distribution mechanism in the Management Console.

Oracle Connection URL must use `${ServerName}:${Schema}`. Using `${ServerName}:${ServiceName}` is not supported.

You can use PostgreSQL database only for storing your data. PostgreSQL cannot be used as a Management Console system, logging, or audit database.

Be aware that loss of data may occur when storing data in Oracle, Sybase or MySQL. On Oracle, an empty string is converted to null. On Sybase, an empty string is converted to `" "` (a single space). On MySQL, millisecond precision is lost when storing dates. For details, see the ObjectKey Caveats section in the Storing Data in Databases topic in the Kofax RPA help.

Note For correct display of data in the Kofax Insight Dashboard, make sure Java correctly sets the time according to your time zone on RoboServers and computers running Management Consoles. See the *Timezone Data Versions in the JRE Software* on the Oracle web site for the latest updates in time zones. If necessary, use the *Timezone Updater Tool* to update the time zone information.

Document Transformation prerequisites and limitations

Install all the latest Windows updates before installing and using Kofax RPA Document Transformation.

Prerequisites

The maximum document size for transformation is 100 MB. Kofax RPA imposes a file size limit for a transformed document to enable protection against the denial-of-service attacks. You can lower the file size value to protect against such an attack. To change the document size limit, edit the following parameter in the `Web.config` file in the `Kofax DTS\Transformation Services` directory in the Kofax RPA installation folder.

```
<httpRuntime targetFramework="4.5.1" maxRequestLength="104857600"/>
```

The following are other requirements you need to observe.

- Do not install Kofax RPA Document Transformation on the computer running Kofax Transformation or Kofax TotalAgility.
- You can re-use existing KTM, KTT, and RTTI projects version 6.2 or earlier.
- You cannot re-use KTA projects, because KTA does not provide a way to export a KTA Extraction/Classification group to a complete `.fpr` file.

Limitations

The following Kofax Transformation features are not supported.

- Rich client user modules (Doc Review, Validation, Verification, Correction)
- ThinClient user modules other than validation (Verification and Correction)
- Multiple steps of Validation
- Configuration Sets for migration between systems
- A2iA engines
- Reporting settings

Desktop Automation requirements and prerequisites

The following sections list components that must be installed and configured on the automation devices (remote computers you want to automate) before you can use the Desktop Automation feature in Kofax RPA.

Java Access Bridge

To automate Java programs or Java applets on remote devices with Kofax RPA, install Java 32-bit on your device (JRE or JDK) and enable the Java Access Bridge in the Java Runtime Environment used by the application. We recommend using the latest available Java version.

For JRE 7 or Later

To enable Java Access Bridge for Java version 7 or later, navigate to the `bin` directory in the Java installation directory and run the following command.

```
jabswitch -enable
```

For JRE6

Follow this procedure to install Java Access Bridge 2.0.2 on a Windows 32-bit system. For older applications that require Java version 1.6, copy the following files to the specified destination directories, where %WINDOWSHOME% is the directory where Microsoft Windows is installed (for example, C:\WINDOWS), and %JAVAHOME% is the directory where your JDK or JRE is installed. The following are examples of directory names for Java SE 6 Update 24.

- `JDK: C:\Program Files\Java\jdk1.6.0_24\jre`
- `JRE: C:\Program Files\Java\jre6`

The following table lists Java Access Bridge Windows libraries and related files for Windows 32-bit systems.

Java Access Bridge File	Destination Directory
`WindowsAccessBridge.dll`	`%WINDOWSHOME%\SYSTEM32`
`JavaAccessBridge.dll`	`%JAVAHOME%\bin`
`JAWTAccessBridge.dll`	`%JAVAHOME%\bin`
`accessibility.properties`	`%JAVAHOME%\lib`
`access-bridge.jar`	`%JAVAHOME%\lib\ext`

Java Access Bridge File	Destination Directory
`jaccess.jar`	`%JAVAHOME%\lib\ext`

For more information, search the Downloads page on the Oracle web site (http://www.oracle.com/technetwork/java/javase/downloads/) to locate and download jab-2-0-2. For installation instructions, see "installing-jab-32-bit" on the http://docs.oracle.com website.

Perform the following to test that you have installed Java Access Bridge properly.

1. Run the SwingSet2 application and then run the JavaMonkey.exe application.
2. Select **File** > **Refresh Tree** in the Java Monkey application and the SwingSet2 application should appear.

Alternatively, you can use the JavaFerret.exe application.

WebDAV Redirector

When using the Robot File System on a computer where the Desktop Automation Service is installed, to be able to connect to the service, you require the WebDAV Redirector. Some operating systems do not include WebDAV by default, so you need to manually install it.

For example, to install it on a Windows Server 2008, 2008 R2, 2012, or 2012 R2, in the Windows Server Manager -> Features, check the Desktop Experience option. For a Windows Server 2016, check the WebDAV Redirector option.

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Requirements for Linux-based platforms

To use Desktop Automation, install the `libxslt1.1` package.

To use the built-in browser in Desktop Automation on Ubuntu-based distributions, install the following packages:

- gconf-service
- libasound2
- libatk1.0-0
- libc6
- libcairo2
- libcups2
- libdbus-1-3
- libexpat1
- libfontconfig1
- libgcc1
- libgconf-2-4
- libgdk-pixbuf2.0-0
- libglib2.0-0
- libgtk2.0-0
- libnspr4
- libnss3
- libpango-1.0-0
- libpangocairo-1.0-0

- libx11-xcb1
- libxcb1
- libxcomposite1
- libxcursor1
- libxdamage1
- libxfixes3
- libxi6
- libxrandr2
- libxrender1
- libxss1
- libxtst6
- Xvfb

To use the built-in browser in Desktop Automation on Red Hat and CentOS-based distributions, install the packages containing the following libraries:

- atk.x86_64
- gtk2.x86_64
- epel-release
- GConf2
- qt5-qtwebkit
- qt5-qtwebkit-devel
- qtwebkit-devel
- libX11.so.6
- libGL.so.1
- libXext.so.6
- libxslt
- libXtst.x86_64
- libXScrnSaver
- libX11-xcb.so.1
- libfontconfig.so.1
- libpango-1.0.so.0
- libpangocairo-1.0.so.0
- libcairo.so.2
- libXcomposite.so.1
- libXcursor.so.1
- libXdamage.so.1
- libXfixes.so.3
- libXi.so.6
- libXrender.so.1
- libXtst.so.6
- libXrandr.so.2

- libXss.so.1
- libgconf-2.so.4
- libgio-2.0.so.0
- libasound.so.2
- libcups.so.2
- libdbus-1.so.3
- libatk-1.0.so.0
- libgtk-x11-2.0.so.0
- libgdk-x11-2.0.so.0
- libgdk_pixbuf-2.0.so.0
- libnspr4.so
- libnss3.so
- libnssutil3.so
- libsmime3.so
- libexpat.so.1
- libxcb.so.1
- xorg-x11-server-Xvfb

To use the "Open" step action, which allows an application to open on an automated device with an RDP connection, install the packages containing the following libraries:

- libc.so.6
- libxcb.so.1
- libXext.so.6
- libdl.so.2
- libpthread.so.0
- libm.so.6
- libssl.so.1.1
- libcrypto.so.1.1.0
- libXau.so.6
- libXdmcp.so.6

For more information on this action, see "Open" in the Kofax RPA help.

Prerequisites for Internet Explorer
To automate Internet Explorer for use with the Desktop Automation feature, check the following requirements.

- In Internet Explorer 7 and higher on Windows 7, set the same value (either On or Off) in the Protected Mode settings for each zone. To open the Protected Mode settings in Internet Explorer, select **Tools** > **Internet options** and click the **Security** tab. For each zone, select the **Enable Protected Mode** option and select the same security level.
- For IE 10 and higher, disable the Enhanced Protected Mode in the Security settings on the Advanced tab of the Internet Options window.
- For IE 11 only, check that a `FEATURE_BFCACHE` subkey with a `DWORD` value named `iexplore.exe` is present in the registry on the target computer. This subkey enables the driver

to maintain a connection to the instance of Internet Explorer it creates. For 32-bit Windows, examine the `HKEY_LOCAL_MACHINE\SOFTWARE\Microsoft\Internet Explorer\Main \FeatureControl\FEATURE_BFCACHE` key in the registry editor. For 64-bit Windows, examine the `HKEY_LOCAL_MACHINE\SOFTWARE\Wow6432Node\Microsoft\Internet Explorer \Main\FeatureControl\FEATURE_BFCACHE` key. If the `FEATURE_BFCACHE` subkey is not present, create it and create a `DWORD` value named `iexplore.exe` with the value "0" in the key.

- Set the browser zoom level to 100% to align the native mouse events with the correct coordinates.

Note In some cases, out-of-browser Silverlight applications can interfere with Desktop Automation. The cause of the problem is the Internet Explorer subdriver. To disable the subdriver, clear the "Extended Internet Explorer Support" option on the **Windows** tab of the Desktop Automation Service configuration window.

SAP prerequisites

To automate an SAP application for use with the Desktop Automation feature, enable scripting on both the server and the client sides.

- On the client, go to **SAP GUI Options** and enable scripting. Also, turn off notifications, because they interrupt the automation process.
- To enable scripting on the SAP server, perform the following steps. Note that you must have administrative privileges to change the `sapgui/user_scripting` parameter.

  1. Log in to your SAP server.
  2. Run transaction RZ11. Specify the parameter name `sapgui/user_scripting` and click **Display**. If `Parameter name is unknown` appears in the status bar, it indicates that you are missing the current support package. Check your installed packages.
  3. Change the value to `TRUE`.
  4. Click **Save**.

Note that some elements, such as scroll bars, are only available if you run the SAP client on a machine with a Windows Classic desktop theme.

Chapter 2

Install Kofax RPA

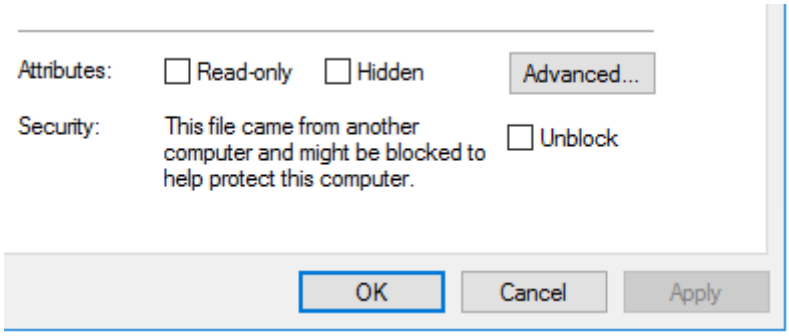
This chapter describes how to install Kofax RPA on a single computer in a developer environment. See the *Administrators Guide* for installation and deployment in a production environment.

The complete installer is delivered as a `.zip` file. For the Windows platform, Kofax RPA has five installers that install different components of the software:

- Kofax RPA Design Studio installer: Installs Design Studio, but does not install RoboServer, Management Console or API. Use this installer if you have a central Management Console/License Server and need a separate copy of Design Studio.
- Kofax RPA RoboServer installer: Installs RoboServer only and does not install Management Console or Design Studio. This installer is useful, if you need to set up dedicated RoboServer machines.
- Configurable full Kofax RPA installer: Installs all of the core components, including Git Synchronizer, or selected components that you specify.
- Kofax RPA Desktop Automation installer: Installs the Desktop Automation Agent to automate remote devices.
- Kofax RPA DTS (Document Transformation Service) installer: Installs the Kofax RPA Document Transformation components.

  This installer contains the following components required to run:
  - Document Transformation Project Builder
  - Kofax Licensing Server
  - Document Transformation Services
  - Document Transformation Thin Client Server
  - Document Transformation Standard Projects
  - Document Transformation Service Scheduler

Prerequisite: Prior to unzipping the software archive file, right-click the .zip file and unblock it to prevent issues during installation. Disregard this step if the **Unblock** option is not displayed.



Silent Installation

As another option, you can perform a silent installation. If you run a silent installation of the full installer, you get the "Typical" install. See Silent Installation on Windows for details.

For Linux, Kofax RPA provides a full installer as well as rpm and deb packages for installing RoboServer as a service. See Install on Linux for details.

Upgrade from Earlier Versions

In the interest of stability, different versions of Kofax RPA may be installed side by side on the same computer without interfering with each other (except that they must be configured to use different port numbers for the Management Console if run simultaneously). This means that you can install a newer version and get acquainted with it while still doing your daily work with the older version.

You can copy important data such as uploaded robots, execution schedules and so on from one version of Management Console to another by making a backup of the old installation and "restoring" it into the new one. Making a backup varies in different versions of Kofax RPA, so check help or *User's Guide* to learn how to create a backup.

For more information about upgrade procedures, see the *Kofax RPA Upgrade Guide*.

Note Effective since Kofax RPA version 10.3, any admin user can restore a backup created by any other admin user.

Install on Windows

The complete Kofax RPA installer provides the following installation options. Optional items are listed with an asterisk.

- Design Studio: Installs Design Studio and its required components
- RoboServer: Installs RoboServer
  - Embedded Management Console: Installs components needed to run an embedded Management Console on the RoboServer
- Management Console: Creates the WAR file for manual installation of the Management Console
- SQL scripts for database tables
- API*: Installs necessary API components

The following files install separate Kofax RPA components.

- If you are installing Design Studio only, download and save the `Kofax_RPA_DesignStudio_11.1.0.0_x32.msi` or `Kofax_RPA_DesignStudio_11.1.0.0_x64.msi` file to your hard disk. After the download is completed, run the file to start the installation and follow the installer prompts.
- To install a RoboServer, download and save the `Kofax_RPA_RoboServer_11.1.0.0_x32.msi` or `Kofax_RPA_RoboServer_11.1.0.0_x64.msi` file to your hard disk. After the download is completed, run the file to start the installation and follow the installer prompts.
- To install the Desktop Automation Service, download and save the `Kofax_RPA_DesktopAutomation_11.1.0.0_x32.msi`. After the download is completed, run the file on the computer you want to automate and follow the installer prompts. For more information, see Install Desktop Automation Service.

As another option, you can use the silent installation to automate the installation process.

Note You need administrator rights to install Kofax RPA on Windows.

Install Desktop Automation Service

To install the Desktop Automation Service, download and save the `Kofax_RPA_DesktopAutomation_11.1.0.0_x32.msi` file to your hard disk. After the download is completed, run the file on the computer you want to automate to start the installation. The Desktop Automation Service is installed in autostart mode. Note that you do not need to install the Desktop Automation Service to automate terminals.

Note

- To avoid the conflict of resources, the Desktop Automation Service must not be installed on the same local computer as the Design Studio, unless you intend to use the Local Desktop Automation feature, which was designed primarily for demonstration purposes. For more information on the latter, see *Help for Kofax RPA*.
- RoboServer cannot run a Desktop Automation robot more than once if it is installed on the same computer as the Desktop Automation Service. Therefore, the Desktop Automation Service must not be installed on the same local computer as the RoboServer that it connects to.

Install the virtual input driver

During the Desktop Automation Service installation, you can install the virtual input driver, which is a Windows device driver that simulates hardware keyboard and mouse. To install it, select **Install the virtual input driver** on the **Virtual input driver** step of the installer. The driver is supported by 64-bit versions of Windows 8.1 and Server 2012 or later.

The driver is not installed by default. To install the virtual input driver from command-line, such as during the silent installation, specify the `INSTALLINPUTDRIVER=1` parameter. Note that when the driver is installed for the first time, Windows prompts to confirm a device installation even when running as Administrator. To avoid this prompt during an unattended installation, add the certificate to the Windows Trusted Publishers store beforehand. You can install the certificate from the `InputDriver.cat` file, located in the `DesktopAutomationService\bin\inputdriver` directory under the Kofax RPA Desktop Automation Service installation directory.

To enable the virtual input driver for keyboard and mouse operations on the automated computer, set the environment variable `KOFAX_RPA_VIRTUAL_INPUT` to `Y`. To cancel the virtual input driver usage, set the environment variable to `N`.

For compatibility, the variable `KAPOW_KEYBOARD_INPUT_METHOD`, which was used to enable the keyboard, is preserved, but `KOFAX_RPA_VIRTUAL_INPUT` should be used instead.

To uninstall the driver and its devices, uninstall the Desktop Automation Service. Do not modify, disable or remove the devices through Windows Device Manager, as it may cause issues during robot runs.

Important The Desktop Automation Service version must match the version of other Kofax RPA components, such as Design Studio and Management Console.

The Desktop Automation Service creates two firewall rules:

- "Kofax RPA DA Service" that opens port 49998
- "Kofax RPA DA Service Stream" that opens port 49999

49998 is the default command port and 49999 is the stream port. If the Desktop Automation Service is started without being manually configured, it uses the default configuration and listens on the default 49998 port. Reassign the ports if necessary and edit the Desktop Automation Service configuration to use the appropriate ports. See Configure Desktop Automation Service in *Help for Kofax RPA* or in the *Desktop Automation Service Configuration Guide* for details.

When the Desktop Automation Service saves its configuration, the WebClient windows service is checked and, if necessary, the service is started and its startup type is changed to "auto."

Automatic Desktop Automation Service upgrade

Starting from version 10.7, new Desktop Automation Service version packages are installed automatically if the **Lock package** option is not selected on the **Windows** tab of the Desktop Automation Service window. The first time a newer version of Management Console (or Design Studio if a direct connection is used) tries to connect to the Desktop Automation Service, a new service version package is installed. The packages in ZIP files are installed to `C:\ProgramData\Kofax RPA` on the automated computer. The appropriate package is selected automatically depending on the Kofax RPA component version. For details see Windows tab options in the Configure Desktop Automation Service topic in *Help for Kofax RPA* or in the *Desktop Automation Service Configuration Guide*.

Install Components for Desktop Automation Service

Desktop Automation Service is designed to automate any work process involving computer applications on Windows systems. The following components and configuration steps are required for the Desktop Automation Service to access applications on Windows.

Make sure that the latest Windows operating system updates are installed. For Windows 7, 8, and 8.1, the KB2999226 update is required. If this update is not installed on your system, download it from the Microsoft website and install according to the provided instructions.

To work with Java applications, check the following.

- Install the latest Oracle Java 32-bit (JRE or JDK) that installs the Java Access Bridge 32-bit dlls. The Java applications started by the robots can run in a 64-bit JVM, but the 64-bit installer does not include the 32-bit dlls. If your corporate policy does not allow upgrading the Oracle Java, manually install the files needed for Java Access Bridge support as follows.

  Java Access Bridge Installation on Windows 64-bit

  1. Download Java Access Bridge 2.0.2 from the Java Access Bridge download page at the following URL:
     http://www.oracle.com/technetwork/java/javase/downloads/jab-2-0-2-download-354311.html
  2. Extract the Java Access Bridge to a folder in your drive and copy `WindowsAccessBridge-32.dll` to `[WINDOWSHOME]\SYSWOW64`. Where

WINDOWSHOME is the directory where Microsoft Windows is installed, for example, `C:\WINDOWS`.

Java Access Bridge Installation on Windows 32-bit

1. Download Java Access Bridge 2.0.2 from the Java Access Bridge download page at the following URL:
   http://www.oracle.com/technetwork/java/javase/downloads/jab-2-0-2-download-354311.html
2. Extract the Java Access Bridge to a folder in your drive and copy `WindowsAccessBridge-32.dll` to `%WINDOWSHOME%\SYSTEM32`. Where `%WINDOWSHOME%` is the directory where Microsoft Windows is installed, for example, `C:\WINDOWS`.

Note For detailed Java Access Bridge installation instructions, see Installing Java Access Bridge on the Oracle website.

- Enable the Java Access Bridge by selecting the Enable Java Access Bridge option in the **Control Panel** > **Ease of Access Center** > **Use the computer without a display** or by running the following command prompt command in the `bin` subdirectory of the Java JRE installation directory: `jabswitch.exe /enable`.

Install Document Transformation Components

This section describes how to install Kofax RPA Document Transformation components on one computer. See the Kofax Transformation product documentation for installation and configuration details.

Note Document Transformation Service product version corresponds to the Kofax RPA product version.

Kofax Transformation Toolkit product version used with Kofax RPA 11.1.0 is 6.3.1.

This Document Transformation installer contains the following components required to run. Before installing these components, you need to have Kofax RPA installed.

- Project Builder
- Kofax Licensing Server
- Transformation Services
- Thin Client Server
- Standard Projects
- DTS Scheduler

To access each component documentation, see the Related Documentation section in this document. See the Troubleshooting section below for resolving common issues.

By default, the Document Transformation folders are located in `c:\Document Transformation`.

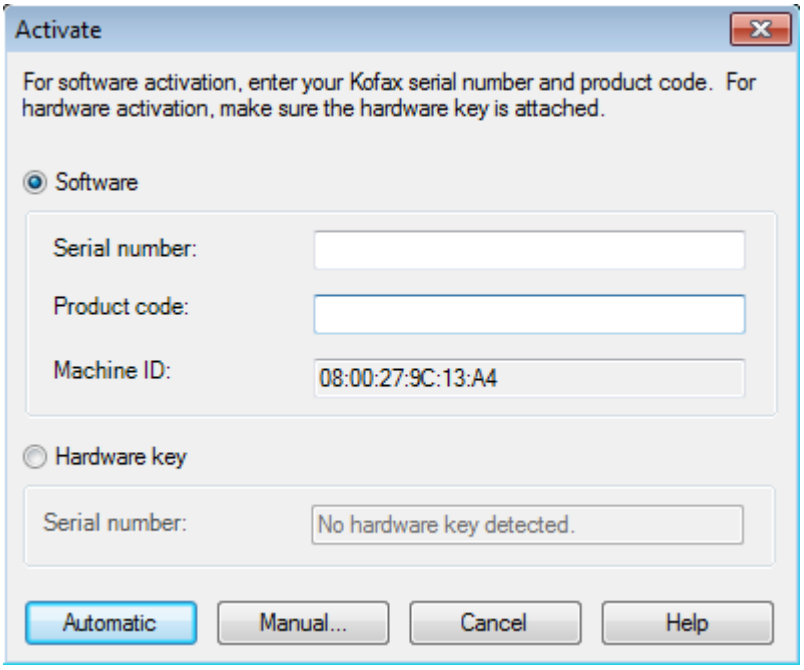
Important Kofax RPA Document Transformation Service and Document Transformation Thin Client Server require IIS (Internet Information Services) and ASP.NET to be installed. Depending on the version of Windows, these components are either a Windows feature that can be enabled in the Control Panel, or they are available as separate downloadable components. For installation and configuration instructions, see the *Kofax Transformation Toolkit Thin Client Server Developer's Guide*.

Requirements

- You must have administrator rights on the computer where the Kofax RPA is installed. Disable User Account Control (UAC) to minimize installation issues.
- Some Windows operating systems disable *localhost* mapping. Prior to starting this installation, either enable it by modifying your *hosts* file or use 127.0.0.1 where *localhost* is referenced. If you choose to keep the *localhost* mapping disabled, modify the `Web.config` files in the Document Transformation subfolders after installation is complete.
- Executing the PowerShell scripts, EnableDocumentTransformationWindows7.ps1 and EnableDocumentTransformationWindows10.ps1, requires PowerShell version 3, which is not always installed on Windows 7. You can install the required PowerShell version via the Windows Update. For more information on the scripts, see later in this section.
- Both IIS services, Kofax RPA Document Transformation Service and Document Transformation Thin Client Server, must have modification privileges on the folders used by the Document Transformation Service. The PowerShell scripts, EnableDocumentTransformationWindows7.ps1 and EnableDocumentTransformationWindows10.ps1, set these privileges automatically, but if the scripts are not used, the IIS application pool users must be explicitly assigned access to the Document Transformation folders.
- .NET version 4.7 and DirectX are required for the Document Transformation Service.
- 32-bit support must be enabled for the Document Transformation Service application pool.

1. Run the Document Transformation installer, read and accept the terms in the license agreement, and then enable all components (default) and let the installer run until you see the Kofax License Utility window.

2. Switch to the Kofax License Utility window and select **File** > **Activate**. In the **Activate** window, enter the serial number and product code that you have, and click **Automatic**.



   The Kofax License Utility is refreshed to list the available licenses. Close the window.

3. Let the installer wizard run until it is finished and click **Finish** on the last step.

4. To enable the Document Transformation Service, run the PowerShell script specific to your operating system.

   Note This script sets up the IIS services required to host the Thin Client. Optionally, you can manually configure the Thin Client Server by using the procedures in Install Thin Client Server .

   The scripts are located in the Kofax DTS installation folder (by default `c:\Program Files (x86)\Kofax DTS`).

   - **EnableDocumentTransformationWindows7.ps1** for Windows 7
   - **EnableDocumentTransformationWindows10.ps1** for Windows 10

   You need administrator rights to run the scripts. Perform the following steps to install the Document Transformation Service:

   a. Start Windows PowerShell with administrator rights.

   b. To allow script execution, run `Set-ExecutionPolicy remotesigned` in the PowerShell.

   c. Change the folder to `c:\Program Files (x86)\Kofax DTS`

   d. Execute the appropriate script.

   The following text is displayed after the script is executed.

```
Name  : Kofax RPA Document Transformation Service
State : Started


Name         : Kofax RPA Document Transformation Service
ID           : 2
State        : Started
PhysicalPath : C:\Document Transformation\Service
Bindings     : Microsoft.IIs.PowerShell.Framework.ConfigurationElement


Name  : Kofax RPA Document Transformation Client
State : Started


Name         : Kofax RPA Document Transformation Client
ID           : 3
State        : Started
PhysicalPath : C:\Document Transformation\Client
Bindings     : Microsoft.IIs.PowerShell.Framework.ConfigurationElement

*** 4) Starting the Server Scheduler service
WARNING: Waiting for service 'Document Transformation - Server Scheduler Service (Server Scheduler)' to
start...


PS C:\Program Files (x86)\Kofax DTS>
```

5. Restart your computer.

   Note If you need the Document Transformation Thin Client for manual document validation after transformation, see Install Thin Client Server .

For Kofax RPA you need to configure two websites using the Internet Information Services (IIS) Manager: one for the Document Transformation Service and the other for the Document Transformation Thin Client Server.

Default Web server locations:

- `C:\Document Transformation\Client`
- `C:\Document Transformation\Service`

Both websites have a `Web.config` file you need to modify.

Document Transformation Service Web.config

Edit the following settings:

- `BatchValidationFolder` specifies where to put documents for validation. This must correspond to the `BatchFolder` setting in the `Web.config` file for the Document Transformation Thin Client Server.
- `ProjectsFolder` specifies where the service looks for Document Transformation projects.
- `ValidationService` is the default location for the Document Transformation Thin Client Server and it is used if you have not specified it in the settings for the Document Transformation step.
- In the `Web.config` file, replace `localhost` with `127.0.0.1` if it is not mapped for your operating system.

  Optionally, you can change the `TransformationService` and `ValidationService` port numbers.

`Web.config` file example:

```
<TransformationService.Properties.Settings>
      <setting name="BatchValidationFolder" serializeAs="String">
        <value>C:\Document Transformation\Batch\Validation</value>
      </setting>
      <setting name="TransformationService" serializeAs="String">
        <value>http://localhost:50081</value>
      </setting>
      <setting name="ValidationService" serializeAs="String">
        <value>http://localhost:50082</value>
      </setting>
      <setting name="ProjectsFolder" serializeAs="String">
        <value>C:\Document Transformation\Project</value>
      </setting>
    </TransformationService.Properties.Settings>
  </applicationSettings>
```

The maximum document size for transformation is 100 MB. Kofax RPA imposes a file size limit for a transformed document to enable protection against the denial-of-service attacks. You can lower the file size value to protect against such an attack. To change the document size limit, edit the following two parameters in the `Web.config` file.

```
<httpRuntime targetFramework="4.5.1" maxRequestLength="104857600"/>
<requestLimits maxAllowedContentLength="104857600"/>
```

Document Transformation Thin Client Server Web.config

In the Document Transformation Thin Client Server configuration file, edit the `BatchFolder` setting to specify where the server looks for documents that are sent for validation.

```
<Kofax.KTS.Backend.Kapow.Properties.Settings>
      <setting name="ReportingEnabled" serializeAs="String">
        <value>False</value>
      </setting>
      <setting name="BatchFolder" serializeAs="String">
        <value>C:\Document Transformation\Batch</value>
      </setting>
</Kofax.KTS.Backend.Kapow.Properties.Settings>
```

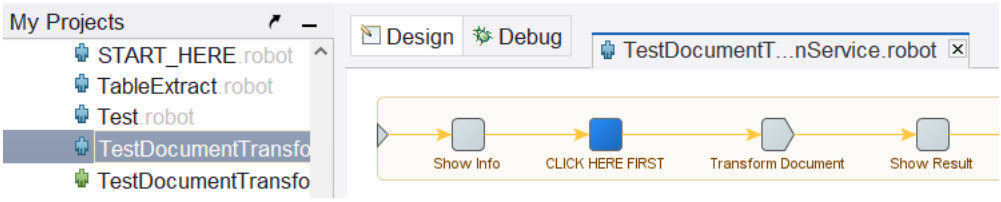
After installation, the built-in projects are located here:

```
C:\Document Transformation\Projects
```

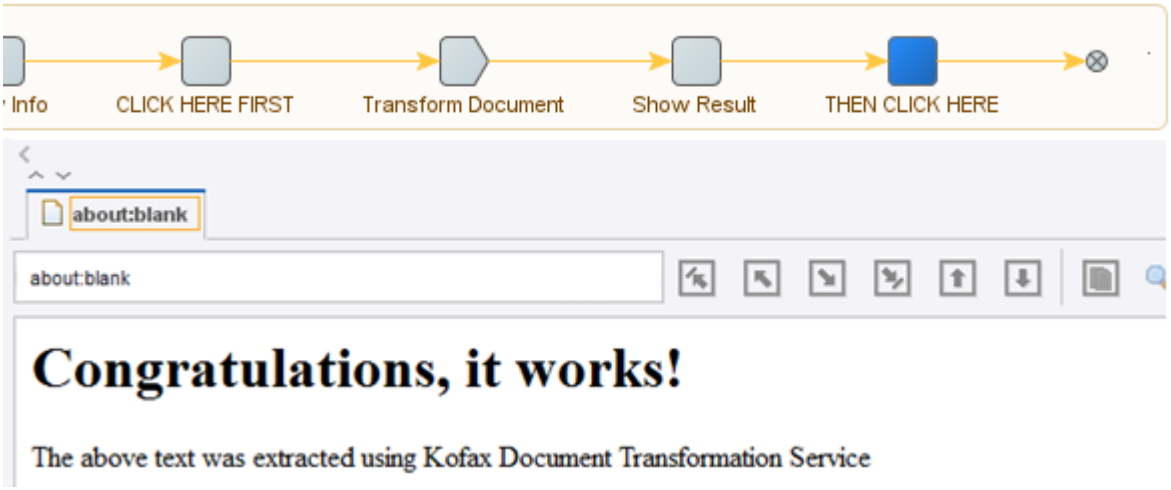
Test configuration

Now you are ready to verify that everything works. The Examples folder in the default Kofax RPA project contains a robot to test the Document Transformation Service.

1. Start the Management Console by selecting **Start Management Console** 11.1.0.0 from the Start menu. Make sure that `HTTP Connector started on port 50080` displays in the command window. The Management Console acts as license server for Design Studio that uses the license you activated earlier.
2. Open Design Studio by selecting **Design Studio 11.1.0.0** from the Start menu.
   In the **Enter License Information** window, select **License Server** and click OK.
3. In the **My Projects** view, expand **Projects** > **11.1.0.0** > **Examples** > **Robots** and double-click the **TestDocumentTransformationService** robot to open it.



4. To allow execution for the robot, click **Prepare Execution** .
   Select the **CLICK HERE FIRST** step, and after reading the message, select **THEN CLICK HERE**.
   If you see the "Congratulations, it works!" message in the main window, Document Transformation is configured correctly on your computer. If you do not see that message, Kofax Technical Support is available to help you identify the cause. See the Troubleshooting section in this document.

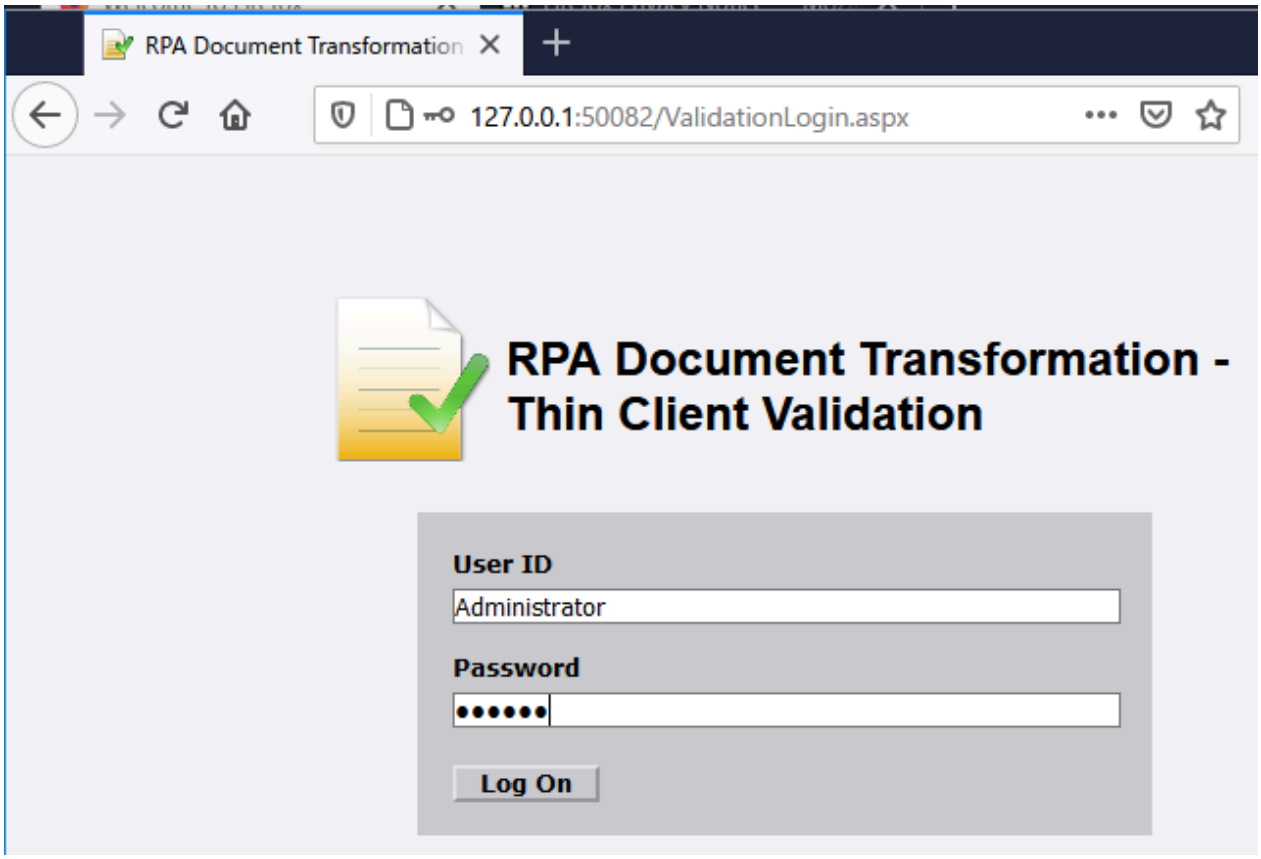


Use the Thin Client locally

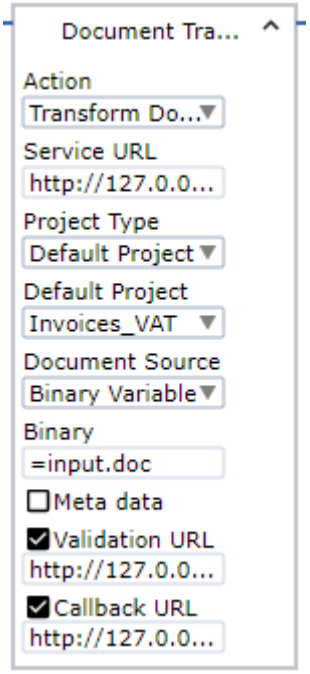
To get the Document Transformation Thin Client to work, add a local user group `KTSUsers` by following these steps:

1. Open the Run window by selecting **Start** > **Accessories** > **Run**.
2. In the Run window, type `compmgmt.msc` and click **OK**.
3. Expand **Local Users and Groups** in the left pane, right-click **Groups**, and select **New Group**.
4. Type **KTSUsers** in the **Group name** field, and click **Add** under members.
5. Add your own user into the new local group.

Now you should be able to log in to the Document Transformation Thin Client with the added user credentials.



Path to local Thin Client
The Thin Client is installed automatically and bound to IP address `127.0.0.1` port `50082`. If you want to use the Thin Client option in the **Document Transformation** step, enter `http://127.0.0.1:50082` in the **Thin Client URL** property when creating or editing this step in the Desktop Automation workflow.



Set up Online Learning

The Document Transformation Service provides a method of using unsuccessful extraction results to improve documents processed in the future. This feature is based on training the system to "remember" the layout of a sample document, such as an invoice. By using automatic field completion, manually typing or selecting the correct value in the transformed document, you can "train" the system to improve extraction results for a similar document next time.

You can configure this functionality on the **General** tab in the Document Transformation Service Project Settings. By default, this functionality is already enabled for the default invoice projects included in your installation package. When setting up the path to a folder to store training documents, ensure that the location already exists. If it does not exist, you need to create it. For your custom projects, you need to create such a folder for each project with Online Learning enabled. If the Document Transformation Service is installed on multiple servers, we recommend that you specify a network shared directory, so the documents can be accessed by all of the servers. Alternatively, you can make the default "Document Transformation" folder a shared folder and configure the Document Transformation services, Kofax RPA Document Transformation Service and Kofax RPA Document Transformation Client, to use the UNC path.

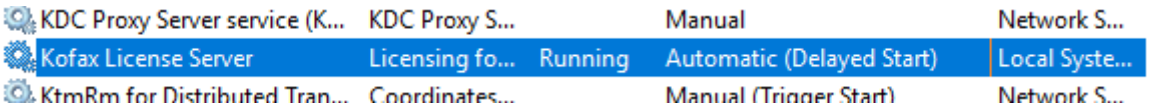
Also, the Document Transformation Service allows you to manually update a project by importing collected extraction or classification Online Learning data. For more information on Online Learning, see the Kofax Transformation documentation.

Note For validation purposes, when creating a new project to use with the Document Transformation Service, we recommend that you add a version number to the project name, such as Project_1. After importing collected Online Learning data, save this project as Project _2, and so on. This approach will allow the system to keep using the older project, Project_1, for the document validation. Afterward, update the respective robots to use the new project (Project_2).

When the validation is completed, you can delete the older project and continue using the newer one until a new set of learned data is imported.

Troubleshooting

License Utility-related errors
Check to make sure the Kofax License Server service is running. Also try starting the Kofax License Utility and verify your license information displays without errors.



Transformation Failed or Timed Out error after clicking "THEN CLICK HERE" step of robot

This section lists possible causes of the error.

- Document Transformation Service Scheduler is not running.
- Kofax Licensing Server is not running.
- `Web.config` file was not properly configured as described in the "Document Transformation Service Web.config" section of this document.
- Incorrect license was specified for your version.

Installation log files
Kofax RPA creates installation log files in `C:\Users\{UserAccount}\AppData\Local\Temp`. Review them for additional help or provide them to Kofax Technical Support when opening a Support Case.

Install Thin Client Server

The following sections provide instructions on how to manually install Kofax Transformation Thin Client Server, which may be required if you do not want to install a default setup described in Install Document Transformation Components. For the prerequisites, see the *Kofax Transformation Modules Thin Client Server Installation Guide*.

Install on Windows Server 2008 R2 with SP1 or higher

This section provides instructions for installing the Thin Client Server on a Windows Server 2008 R2 with SP1 and IIS 7.5.

1. 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.
2. 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.

3. 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.
4. 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**.
5. Click **Install**.
6. When the installation is complete, click **Finish**.
7. Optionally, if upgrading to a newer version of the 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. For more information, see "Resolve Upgrade Conflicts" in the *Kofax Transformation Modules Thin Client Server Installation Guide*.
8. Configure the 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 the Thin Client Server in step 4 to set the path for this website, 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.
14. Open **Services** and ensure that the **World Wide Web Publishing Service** is set to start automatically.

Install on Windows Server 2012, 2012 R2, and 2016

This section provides instructions for installing the Thin Client Server on a Windows Server 2012, Windows Server 2012 R2, and Windows server 2016.

1. 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.
2. 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.
3. 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.
4. 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**.
5. Click **Install**.

6. When the installation is complete, click **Finish**.
7. Optionally, if upgrading to a newer version of the 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. For more information, see "Resolve Upgrade Conflicts" in the *Kofax Transformation Modules Thin Client Server Installation Guide*.
8. Configure the 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 the Thin Client Server earlier in step 4 to set the path for this website, 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.
12. Open **Services** and ensure that the **World Wide Web Publishing Service** is set to start automatically.

Install Kapplets

This section describes how to install and configure Kofax RPA Kapplets.

It includes the following installation details:

- General Settings
- Embedded Mode Installation
- Tomcat Server Installation
- Docker Installation

General Settings

To configure a Kofax RPA Kapplets installation, make a copy of the **application.properties** file under `C:\Program Files\Kofax RPA 11.0.0.0 x64\WebApps\kapplets.war`, configure it in accordance with each installation scenario, and place it in the corresponding directory. Accordingly, in the embedded mode Installation scenario create the **application.properties** file, in the Tomcat Server installation scenario create the **kapplets.xml** file, and in the Docker Installation scenario configure the **env.variables** file.

- Configure Management Console settings:
  - Configure Management Console connection credentials:

```
kapplets.services.mc.connection.url=http://<ip_adress>:8080
kapplets.services.mc.connection.username=<username>
kapplets.services.mc.connection.password=<password>

kapplets.services.mc.connection.proxy.host=<ip_adress>
kapplets.services.mc.connection.proxy.port=8888
kapplets.services.mc.connection.proxy.username=<proxy-user>
kapplets.services.mc.connection.proxy.password=<password>
kapplets.services.mc.connection.proxy.enabled=false
```

  - Configure the auto-refresh-functions (in seconds):

    The following functions cache a list of robots and projects to ensure a quicker access to it. Values in the functions must be the same. If you specify zero (0), caching is disabled and each user query to get a robot list is sent directly to the Management Console, which greatly increases the load.

```
kapplets.services.mc.caching.descriptions.life-time=300
kapplets.services.mc.caching.robots.life-time=300
```

    The following auto-refresh function reloads the list of robots and projects to keep it up-to-date. Do not alter its value without consulting with Kofax support.

```
kapplets.services.mc.caching.auto-fetch-interval=10
```

- Configure Excel export format settings for English and Japanese languages:

```
kapplets.services.result.xls-export-formats[ja].number-format=#,##0.00
kapplets.services.result.xls-export-formats[ja].integer-format=#,#
kapplets.services.result.xls-export-formats[ja].date-format=yyyy/m/dd h:mm:ss

kapplets.services.result.xls-export-formats[en].number-format=#,##0.00
kapplets.services.result.xls-export-formats[en].integer-format=#,#
```

```
kapplets.services.result.xls-export-formats[en].date-format=mm/dd/yyyy h:mm:ss
```

- Configure Kapplets execution queue settings:
  - Number of robots executing simultaneously:

    ```
    kapplets.services.execution.max-pool-size=100
    ```
  - Maximum number of robots waiting for the execution on Kapplets server:

    ```
    kapplets.services.execution.task-queue-limit=1000
    ```
  - Default cluster name to execute robots on:

    ```
    kapplets.services.execution.cluster-name=Production
    ```
- Configure Kapplets execution watching service settings (in minutes):
  - Maximum Kapplet execution time to mark the execution failed:

    ```
    kapplets.services.execution.watcher.timeout=190
    ```
  - Maximum execution time used to execute a robot on the RoboServer:

    ```
    kapplets.services.execution.max-robot-execution-time=180
    ```
  - Automatically clean all execution records older than set amount of days:

    ```
    kapplets.services.execution.purge.timeout=365
    ```
- Configure Kapplets brute force protection settings (in minutes):

  ```
  kapplets.services.auth.login.brute-force-protection.enabled=true
  kapplets.services.auth.login.brute-force-protection.attempts-count=3
  kapplets.services.auth.login.brute-force-protection.lock-period=10
  ```

Kapplets support various databases. See the list of supported databases with corresponding database settings below:

- MySQL 5:

  ```
  spring.datasource.username=<username>
  spring.datasource.password=<password>
  spring.datasource.url=jdbc:mysql://database-service:3306/<database-name>?
  autoReconnect=true
  spring.datasource.driverClassName=com.mysql.jdbc.Driver
  spring.jpa.database-platform=org.hibernate.dialect.MySQL55Dialect
  ```

  Note If you need to use supplementary characters, use MySQL 5.7 or later.

- MySQL 8:

  ```
  spring.datasource.username=<username>
  spring.datasource.password=<password>
  spring.datasource.url=jdbc:mysql://database-service:3306/<database-name>?
  autoReconnect=true
  spring.datasource.driverClassName=com.mysql.cj.jdbc.Driver
  spring.jpa.database-platform=org.hibernate.dialect.MySQL8Dialect
  ```
- Oracle 12c:

  ```
  spring.datasource.username=<username>
  spring.datasource.password=<password>
  spring.datasource.url=jdbc:oracle:thin:@database-service:1522:<database-name>
  spring.datasource.driverClassName=oracle.jdbc.driver.OracleDriver
  spring.jpa.database-platform=org.hibernate.dialect.Oracle12cDialect
  ```
- SQL Server 2012:

  ```
  spring.datasource.username=<username>
  spring.datasource.password=<password>
  ```

```
spring.datasource.url=jdbc:sqlserver://database-service:1433;database=<database-
name>;SelectMethod=cursor
spring.datasource.driverClassName=com.microsoft.sqlserver.jdbc.SQLServerDriver
spring.jpa.database-platform=org.hibernate.dialect.SQLServer2012Dialect
```

- Postgres 10:

```
spring.datasource.username=<username>
spring.datasource.password=<password>
spring.datasource.url=jdbc:postgresql://database-service:5432/<database-name>?
currentSchema=<schema-name>
spring.datasource.driverClassName=org.postgresql.Driver
spring.jpa.database-platform=org.hibernate.dialect.PostgreSQL10Dialect
```

- JNDI:

```
spring.datasource.jndi-name=jdbc/kapow/kapplets
```

Database initialization in Kapplets includes two operating options:

- Automatic initialization: Occurs on application start (when a provided database user has access privileges and a database exists).
- Manual initialization: Performed by using SQL scripts (when a kapplets server database user has no access privileges and a database structure does not exist). See Embedded Mode Installation scenario for more details.

Important We recommend that you use **utf-8** collation with case insensitiveness.

In MySQL databases, use **utf8mb4** encoding instead of **utf-8** to work with supplementary characters (for example, hieroglyphics).

Embedded Mode Installation

This scenario requires an installed instance of Kofax RPA and a running Management Console.

Perform the following steps to install Kofax RPA Kapplets in the embedded mode:

1. Create a new folder on your computer. For example, `C:\Kapplets`.
2. Navigate to `C:\Program Files\Kofax RPA 11.0.0.0 x64\WebApps` and copy the **kapplets.war** file to the `C:\Kapplets` folder.
3. In the `C:\Kapplets` folder, create two files:
   - **application.properties**: Create this file using the below template to specify the credentials for Kofax RPA Kapplets to connect to the Management Console and to the database.

```
spring.datasource.url=jdbc:mysql://<db-host>:<port>/<db-name>?autoReconnect=true
spring.datasource.username=<db-user-name>
spring.datasource.password=<db-user-password>
spring.datasource.driverClassName=com.mysql.cj.jdbc.Driver
spring.jpa.database-platform=org.hibernate.dialect.MySQL8Dialect

#e.g. http://<mc-host>:8080/ManagementConsole
kapplets.services.mc.connection.url=<mc-url>
kapplets.services.mc.connection.username=<mc-kapplets-service-user>
kapplets.services.mc.connection.password=<mc-kapplets-service-user-password>

kapplets.services.mc.connection.proxy.host=<proxy-host>
kapplets.services.mc.connection.proxy.port=8888
kapplets.services.mc.connection.proxy.username=<proxy-user>
kapplets.services.mc.connection.proxy.password=
```

```
kapplets.services.mc.connection.proxy.enabled=false

#cluster name to execute kapplets on
kapplets.services.execution.cluster-name=Production

# maximum robot execution time, in minutes
kapplets.services.execution.max-robot-execution-time=180
kapplets.services.execution.watcher.timeout=190

# days to keep the old executions for
kapplets.services.execution.purge.timeout=365

# Set to enable debug logs.
#debug=true

logging.file=logs/kapplets.log
management.endpoint.logfile.external-file=logs/server.log
```

Note The template above shows a configuration with a MySQL 8 database.
See the complete list of Kofax RPA Kapplets supported databases in General Settings section.

- **standalone_run.bat**: Create this file using the following line (or simply use the same line in the command line) to execute the Kofax RPA Kapplets.

```
java -jar kapplets.war
```

4. Create a `C:\Kapplets\lib` folder.
5. Put a JDBC driver for the selected database in the `C:\Kapplets\lib` folder.
6. Fill the database using the following scripts from `C:\Program Files\Kofax RPA 11.0.0.0 x64\documentation\sql\kapplets`:
   - create-kapplets.sql
   - create-quartz.sql
   - create-session.sql

   Note that each database has its own scripts located in the corresponding folder under `C:\Program Files\Kofax RPA 11.0.0.0 x64\documentation\sql\kapplets`.
7. Run the **standalone_run.bat** file and wait until it starts (or start the Kapplets using `java -jar kapplets.war` command in the command line).
8. Navigate to Kofax RPA Kapplets page using the default URL: `http://<ip_adress>:8080/kapplets`

Tomcat Server Installation

This scenario requires:

- Installed and configured Tomcat server
- Installed and configured instance of Kofax RPA on the Tomcat server
- Running Management Console

Perform the following steps to install Kofax RPA Kapplets on the Tomcat server:

1. Create a **kapplets.xml** file under `C:\Program Files\Apache Software Foundation\Tomcat 8.5\conf\Catalina\localhost` using the below template:

```
<Context useHttpOnly="true">
    <!-- Default set of monitored resources -->
    <WatchedResource>WEB-INF/web.xml</WatchedResource>

         <Resource name="jdbc/kapow/kapplets"
         auth="Container"
         type="javax.sql.DataSource"
         initialSize="5"
         maxTotal="100"
         maxIdle="10"
         maxWaitMillis="-1"
         validationQuery="/* ping */"
         testOnBorrow="true"
         testWhileIdle="true"
         username="<username>"
         password="<password>"
         driverClassName="com.mysql.jdbc.Driver"
         url="jdbc:mysql://<ip_address>/kapplets?
autoReconnect=true&amp;useSSL=false&amp;
         useLegacyDatetimeCode=false&amp;serverTimezone=UTC"/>

         <Environment name="spring.datasource.jndi-name" value="jdbc/kapow/
kapplets"   type="java.lang.String" override="false"/>
         <Environment name="spring.jpa.database-platform"
 value="org.hibernate.dialect.MySQL8Dialect"   type="java.lang.String"
 override="false"/>

         <Environment name="kapplets.services.mc.connection.url" value="http://
<ip_address>:<port>/ManagementConsole/"   type="java.lang.String"
 override="false"/>
         <Environment name="kapplets.services.mc.connection.username"
 value="admin"   type="java.lang.String" override="false"/>
         <Environment name="kapplets.services.mc.connection.password"
 value="admin"   type="java.lang.String" override="false"/>
</Context>
```

   Note The `com.mysql.jdbc.Driver` class name in the template is used for the JDBC connectors of 5.1 version.

   Use the `driverClassName=com.mysql.cj.jdbc.Driver` line for the JDBC connectors of 8.0 version.

2. Edit the **kapplets.xml** file to match your settings. For example, edit an IP address and credentials.
3. Navigate to `C:\Program Files\Kofax RPA 11.0.0.0 x64\WebApps` and copy the **kapplets.war** file to the `C:\Program Files\Apache Software Foundation\Tomcat 8.5\webapps` folder.
4. Make sure that `C:\Program Files\Apache Software Foundation\Tomcat 8.5\lib\` folder contains a relevant JDBC connector that corresponds to the selected database.
5. Open MySQL and create a "kapplets" schema.
6. Run the Tomcat server (or restart an already running instance of the Tomcat server).

7. Navigate to the Kofax RPA Kapplets page using default URL: `http://<ip_adress>:8080/kapplets`

Docker Installation

This scenario requires an installed and configured Docker and installed instance of the Kofax RPA Design Studio.

Perform the following steps to install Kofax RPA Kapplets on Docker:

1. Create a docker-compose file using the following template to configure the file.

   Note In a docker-compose file, configuration property name is converted to the upper case and the "**.**" character is replaced with the "**_**" character in comparison with other templates.

```
# example docker-compose file, that brings up a MySQL instance,
# and a Kapplets server
version: '2'
networks:
  net:

services:
  mysql-service:
    image: mysql:5
    environment:
      - MYSQL_ROOT_PASSWORD=<root-password>
      - MYSQL_DATABASE=<kapplets-database>
      - MYSQL_USER=<kapplets-user>
      - MYSQL_PASSWORD=<kapplets-user-password>
    networks:
      - net

  kapplets-service:
    build:
      context: .
      dockerfile: docker/kapplets/Dockerfile
    image: kapplets:11.0.0.0
    depends_on:
      - mysql-service
    networks:
      - net
    ports:
      - 8080:8080
    environment:
      - SPRING_JPA_DATABASE_PLATFORM=org.hibernate.dialect.MySQL5InnoDBDialect
      - SPRING_DATASOURCE_DRIVERCLASSNAME=com.mysql.jdbc.Driver
      - SPRING_DATASOURCE_URL=jdbc:mysql://mysql-service:3306/<kapplets-database>?
autoReconnect=true
      - SPRING_DATASOURCE_USERNAME=<kapplets-user>
      - SPRING_DATASOURCE_PASSWORD=<kapplets-user-password>
      - KAPPLETS_SERVICES_MC_CONNECTION_URL=http://<managementconsole-service-url>
      - KAPPLETS_SERVICES_EXECUTION_CLUSTER_NAME=<kapplets-cluser-name>
      - KAPPLETS_SERVICES_MC_CONNECTION_USERNAME=<mc-kapplets-service-user-name>
      - KAPPLETS_SERVICES_MC_CONNECTION_PASSWORD=<mc-kapplets-service-user-
password>
```

```
      - SLEEP_DELAY=30s
```

Note The `- SLEEP_DELAY` configuration makes it possible to stagger the launching of database and Kapplets containers: A container with Kapplets starts assigned amount of seconds after the container with a database. This time shift makes the launching procedure more predictable and avoids the situation when kapplets try to connect to the database, which is not initiated.

2. Run the docker-compose file.
3. Navigate to the Kofax RPA Kapplets page using the default URL: `http://<ip_adress>:8080/kapplets`

Install on Linux

Kofax RPA provides two installers for Linux:

- A tar.gz file containing all the components.
- Kofax RPA RoboServer installer: Installs the `roboserver` service only.

Full Installation

The installation is performed by extracting the contents of the tar.gz file. In most Linux distributions, this can be done by right-clicking the file and selecting the appropriate extraction option. The file can also be extracted from the command line as follows:

```
$tar xzf Kofax_RPA_11.1.0.0_x64.tar.gz
```

Alternatively, to extract the file to a specific directory, use the following command:

```
$tar xzf Kofax_RPA_11.1.0.0_x64.tar.gz -C /destination_directory
```

When the file is extracted, run the following commands as a user with root privileges. The commands help manage chrome-sandbox file permissions and set the creator and owner of chrome-sandbox as the root to enable SUID mode.

The chrome-sandbox file resides in: `.../Kofax_RPA_<build number>/nativelib/hub/linux-x64/<build number>/node_modules/cef/chrome-sandbox`

- `chown root:root chrome-sandbox`
- `chmod 4755 chrome-sandbox`

Proceed to enter license information as described in Provide License Information.

Note You can install Kofax RPA as an unprivileged user on Linux.

Running RoboServer Installer

The RoboServer only installers are created for the deb and rpm packages. The default installation folder for these packages is `/opt/Kofax RPA/`.

Each of the RoboServer packages contains a RoboServer launcher that is used to run RoboServer as a Linux `/etc/init.d` service. This makes it automatically start on system boot.

The packages create a Kofax RPA user and group in the system used when running the RoboServer `/etc/init.d` service. The configuration files (most importantly `roboserver.settings`) for the

RoboServer service are located in the Kofax RPA users home directory (`/home/<username>/`) under the hidden directory `.Kofax RPA/<version>`.

The `roboserver.settings` file can also be accessed through `/etc/opt/Kofax RPA/RoboServer.conf`.

To see all available commands, just run RoboServer from `/etc/init.d` without any arguments.

By default, the RoboServer starts with an SSL port listening (the port number is defined in the `roboserver.settings` file). Keep in mind that this is a RoboServer only installation; it is not possible for the service to be configured to start a Management Console, such as with the -MC parameter, which is done via the full installation of Kofax RPA.

To run `roboserver` as a `init.d` service:

1. Install the RPM or DEB package.
2. Change the RoboServer configuration (optional).
3. Run `#service RoboServer start`, or restart the machine to start the service automatically.

Silent Installation on Windows

A silent installer runs without user interaction. This is convenient if, for instance, you need to automate the installation process in a script.

Using Full Installer

To perform a silent installation of Kofax RPA, run the following command with administrative rights. Note that commands are specified for the 32-bit installer versions. For 64-bit versions, use the same commands.

```
msiexec /qn /i Kofax_RPA_11.1.0.0_x32.msi
```

This command installs the program to the default location. To specify another location, use a command as follows:

```
msiexec /qn /i Kofax_RPA_11.1.0.0_x32.msi INSTALLDIR="dir"
```

where `"dir"` is the location where you want to install. For example:

```
 msiexec /qn /i Kofax_RPA_11.1.0.0_x32.msi INSTALLDIR="C:\Kofax_RPA 11.1.0.0 x64\"
```

To specify a file to log the installation process, use the following parameter:

```
msiexec /qn /i Kofax_RPA_11.1.0.0_x32.msi /l msilog.txt
```

After installation, proceed to enter license information as described in Provide License Information.

Using Limited Installers

The following are examples of using different installers in silent mode.

```
msiexec /qn /i Kofax_RPA_DesignStudio_11.1.0.0_x32.msi
```

```
msiexec /qn /i Kofax_RPA_RoboServer_11.1.0.0_x32.msi
```

```
msiexec /qb /i Kofax_RPA_DesktopAutomation_11.1.0.0_x32.msi
```

Install and Configure CyberArk

This section describes how to install and configure a CyberArk application.

To install the components of CyberArk, see the CyberArk documentation for end users, admins and security professionals.

To configure a CyberArk application, perform the following steps:

1. Obtain two keystores, each containing a certificate and a private key. These keystores (one keystore for each purpose) are intended to be used for the Central Credential Provider web service and for Kofax RPA (the client).

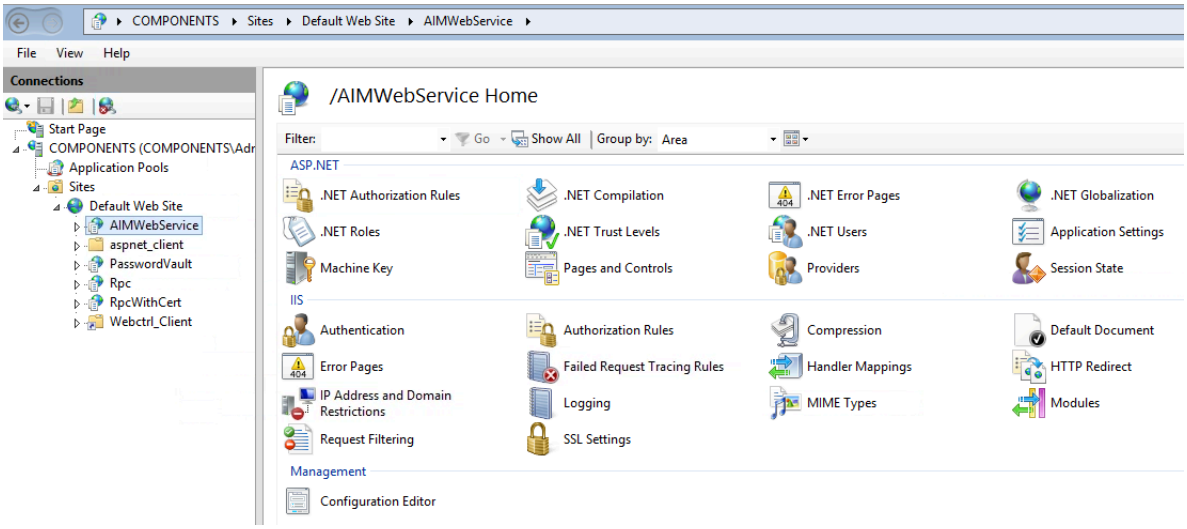
   To generate a keystore, you can use, for example, a Java Runtime Environment `keytool` or an OpenSSL library.

   Important Always use strong passwords for the keystores to ensure maximum security of your data.

   Then, extract the certificates from the keystores for further configuration.

2. Install the CyberArk Central Credential Provider application. See the CyberArk Central Credential Provider Implementation guide for more information on how to install the application.

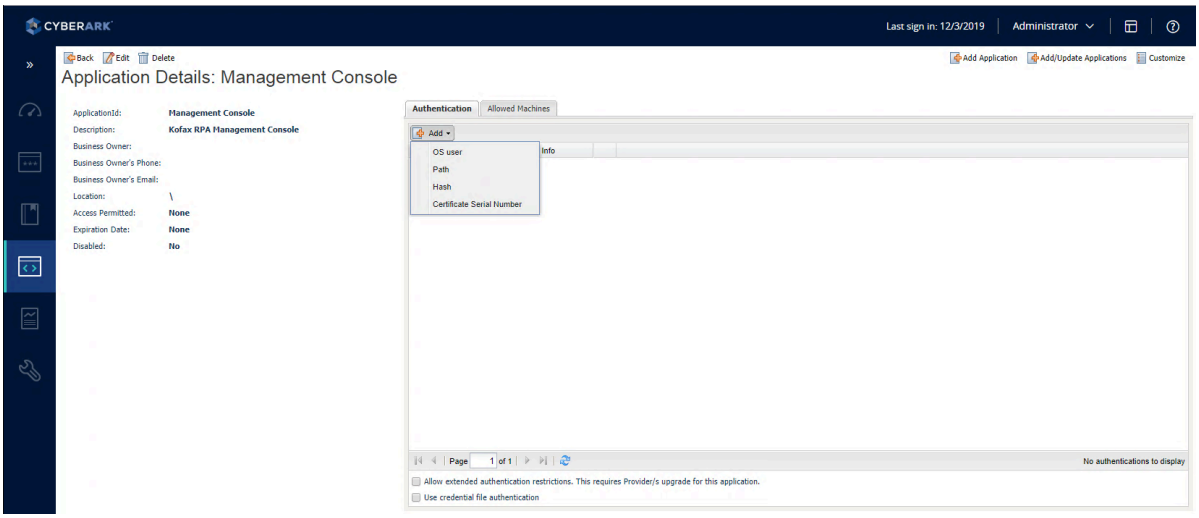
   By default, an instance of the installed application is titled *AIMWebService* and looks similar to the following:



   Note that Kofax RPA communicates with Central Credential Provider through TLS (SSL) using client authentication for Kofax RPA.

3. Configure the CyberArk Password vault. For example, you can configure it on the Password vault page of the CyberArk web interface.

   Add an application to use with Kofax RPA. Navigate to the Applications tab and click **Add Application** in the upper right corner of the page to add an application.

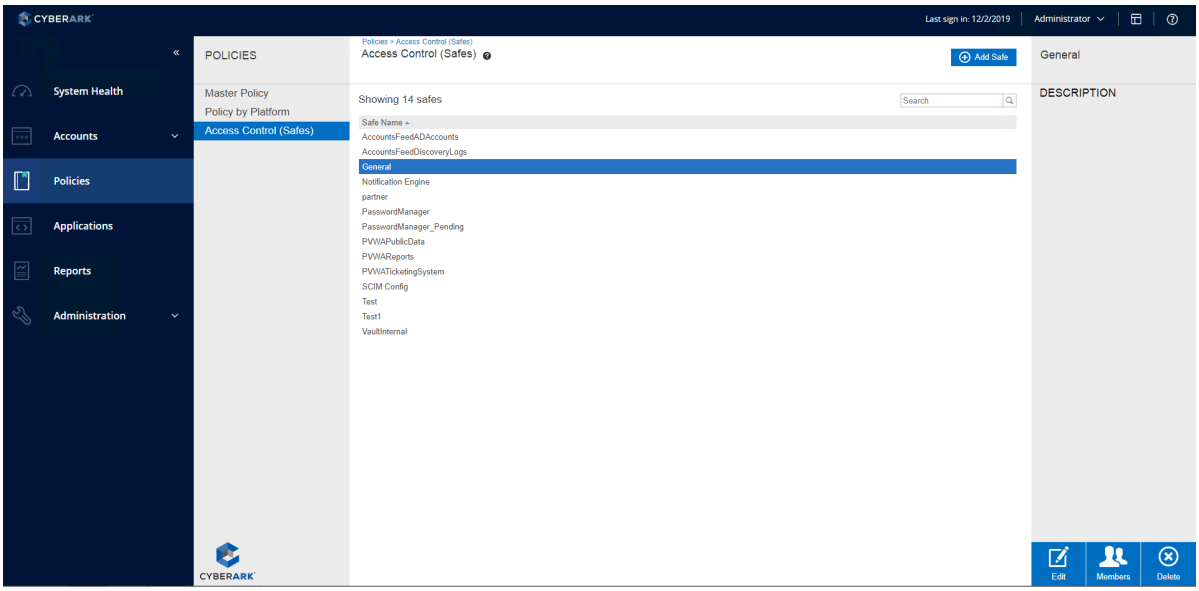


   CyberArk provides the following application authentication methods. We recommend that you use one of these authentication methods or both methods together:

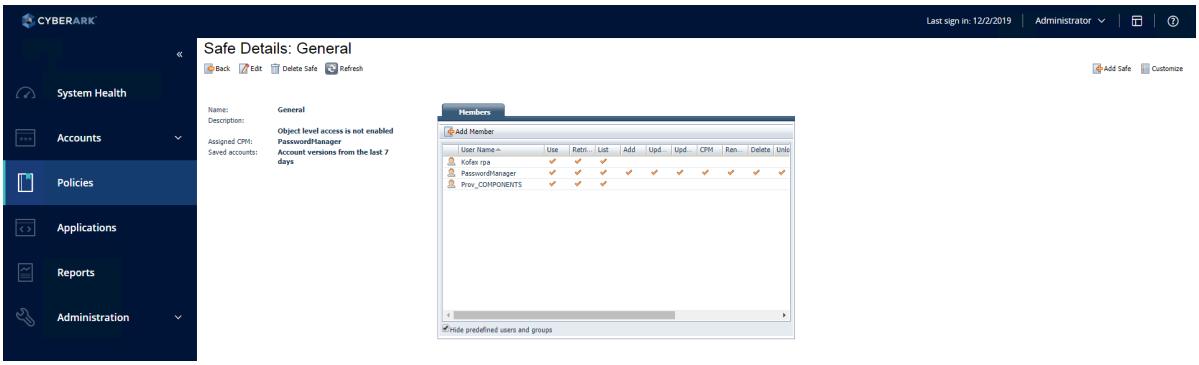
   - Client certificates: A signed certificate that enables Kofax RPA authentication of the requesting application against the Central Credential Provider web service. Applications can authenticate with either a self-signed certificate or a certificate signed by a Certificate Authority.
   - Allowed machines: The list of allowed machines, based on IP or DNS, from where an application can run. Multiple addresses can be specified for a single application ID, which enables multiple instances of a single application to run on different machines and use the same application ID.

The Central Credential Provider verifies the specified addresses each time it receives a request from the application.

Each application needs access rights to the account entry safe. To grant the rights, navigate to **Policies** > **Access Control (Safes)** and select an application to grant access rights to.



Click **Members** in the lower right corner of the page to provide a credential provider identificator for the safe record. Use the provider user name that you specified in the Credentials Provider installation. Then, provide the Application IDs to grant access rights to.



4. Finally, edit the `Configuration.xml` file located under `/WEB-INF` to use CyberArk as an external password manager instead of the Kofax RPA built-in password manager.

   By default, the configuration is as follows:

```
<bean id="passwordStore" class="java.lang.String">
        <constructor-arg value="STANDARD"/>
    </bean>
```

   Change it to:

```
<bean id="passwordStore" class="java.lang.String">
        <constructor-arg value="CYBERARK"/>
```

```
    </bean>
```

Save the `Configuration.xml` file to complete the configuration.

Note The **Account Name** of a CyberArk account, which corresponds to the **Account Name** field in the Management Console, is displayed on the **Accounts > Accounts View (Classic UI)** tab of the CyberArk web interface.

See *Help for Kofax RPA* for more details.

For further information on using CyberArk with Kofax RPA, see *Help for Kofax RPA*.

When Kofax RPA is deployed using Docker, specify the following variables in the environment section of the Management Console service of docker-compose file:

```
environment:
- CONFIG_PASSWORDSTORE=CYBERARK
- SETTINGS_CYBERARK_URL=https://localhost
- SETTINGS_CYBERARK_PORT=443
- SETTINGS_CYBERARK_IISAPPLICATIONNAME=AIMWebService
```

For the configuration with a self-signed certificate, specify the following additional environment variable:

```
environment:
- SETTINGS_CYBERARK_CERTIFICATEPATH=/usr/local/tomcat/root.cer
```

Important Folders in Kofax RPA

We recommend that you become familiar with the folders and files described in this section.

Installation Folder

The installation folder is the folder where Kofax RPA is installed. On Windows, the installation folder defaults to:

`C:\Program Files\Kofax RPA 11.1.0.0`

On Linux it will be a directory named `Kofax_RPA_11.1.0.0` in the directory where you extracted the archive.

The installation folder contains the following important folders:

bin

Contains all executable programs for Kofax RPA.

API

Contains files related to the Kofax RPA Integration APIs.

lib on Windows and lib/jdbc on Linux

Contains the installed JDBC database drivers. These drivers are always available in Kofax RPA applications. Normally, you should manage JDBC drivers as described in the Database Drivers topic in the Management Console section of the *Help for Kofax RPA*.

Project Folder

The project folder contains your library of robots and types, as described in the Design Studio help topic. Configure the location of the project folder with the Settings application as described in the Working with

Projects and Libraries topic of the Design Studio *Help for Kofax RPA*. On Windows, the default location is similar to the following, depending on your Windows version:

```
C:\Documents and Settings\username\My Documents\My Robots\11.1.0.0
```

```
C:\Users\username\Documents\My Robots\11.1.0.0
```

Default project directory location for Linux:

```
~/Kofax RPA/11.1.0.0
```

The project directory must contain a single subdirectory named Library.

Application Data Folder

The application data folder contains files that are private to the Kofax RPA but which differ for different users of the same computer. On Windows, the application data folder is (depending on your Windows version):

```
C:\Documents and Settings\username\Local Settings\Application Data\Kofax RPA
\11.1.0.0
```

```
C:\Users\username\AppData\Local\Kofax RPA\11.1.0.0
```

Application data directory for Linux:

```
~/.Kofax RPA/11.1.0.0
```

To change the location of the application data folder, you can edit the `common.conf` file in the `installation\bin` folder. Add the following two lines:

- `wrapper.java.additional.<NUMBER>=-Dkapow.applicationDataFolder="Folder containing Configuration folder"`
- `wrapper.java.additional.<NUMBER>.stripquotes=TRUE`
  Where `<NUMBER>` is a unique integer.

Make sure that the user running Kofax RPA has read and write access to the folder.

Under normal circumstances, you should never modify or delete files or folders within this folder directly; the GUI tools should be used instead. The application data folder contains the following important folders:

Certificates

Contains the HTTPS certificates known by Kofax RPA. See the "Certificates" section in the *Administrator's Guide* for more information.

Configuration

Contains configuration files, which are maintained as described in the section Configuring Kofax RPA.

Data

Contains the embedded Derby database used by the Management Console (except when installed as a web application in a Tomcat web server). See "Management Console on Tomcat" chapter in the *Administrator's Guide*.

DemoDatabase

Contains the Development Database that you can also use in "toy projects" during your introduction to Kofax RPA.

Logs

Contains log files.

White-label Kofax RPA

Use the following procedure to white-label Kofax RPA.

Requirements

- A ZIP file provided by Kofax containing files required for white-labeling
- A Design Studio or a complete MSI installer
- A set of images for replacement as listed below
- PowerShell version 5 installed
- Java Development Kit with jar.exe

1. Create a working directory. The new directory needs to be located close to the root directory because file paths may get close to Windows limits.
2. Extract the ZIP file to the new directory.
3. Edit the **updateMsi.ps1** file in the following way:
   - `$msiFile` variable must point to the MSI file to white-label.
   - `$wdir` variable must point to the working directory.
   - `$pathtojarexe` variable must point to jar.exe in your JDK installation.
   - `$imagesjar` variable must point to a JAR file containing images (for the specification, see the Word document included in the ZIP file).
   - `$pathToBanner` variable must point to a BMP file of size 493x58 to use in the installer.
   - `$pathToDialog` variable must point to a BMP file of size 493x312 to use in the installer
   - `$help_logo` variable must point to an image to use for the online documentation (both Design Studio and Management Console)
   - `$favicon` variable must point to an ICO image to use for Management Console.
   - `$mclogo` variable must point to a logo to use for Management Console.
   - `$companyName` and `$companyUrl` variables replace the company name and URL in the About dialog boxes.
4. Execute the following PowerShell script to update the MSI file:

   ```
   .\updateMsi.ps1
   ```

Kofax RPA is now white-labeled. Additionally, use the custom library of robots provided in the product for the white-labeling purpose.

Chapter 3

Provide License Information

The first step after basic installation is to enter license information. The Management Console in Kofax RPA can work in two different ways. In a development environment, you enter the development license information in Design Studio. In enterprise mode, a shared Management Console is used as a license server. This chapter provides information about the development environment license. See the *Administrator's Guide* for using the Management Console as a license server in the enterprise environment.

Note that it is not necessary to enter license information in RoboServers, as they automatically receive the necessary license information from Management Console.

To use the Desktop Automation feature, obtain a separate license for this feature from Kofax.

License Keys

There are three different kinds of license key:

Production key

Permits production use of the Kofax RPA system.

Non-Production key

Permits use of the Kofax RPA system for non-production purposes, such as testing and staging.

Developer Seat key

A special kind of non-production key that allows you to run all the Kofax RPA programs on your own computer as part of the same installation. There are, however, some performance limitations, as this key is intended to be used only for development or with a trial installation.

Each type of license key describes which Kofax RPA features you have and how many robots can run in a cluster.

If you have both a Production key and a Non-Production key, you may install them into the same Kofax RPA system (that is, in the same Management Console). You may also choose to set up one system for each key. In both cases, you need to set up at least two different clusters (either on the single system or one cluster on each of the two systems), configured as Production and Non-Production, respectively. The KCUs in your licenses can then be assigned to these clusters.

Do not use one key in more than one Management Console.

Concurrent Robot Execution License

The Kofax RPA Concurrent Robot Execution (CRE) licensing centers around a Kofax RPA Robot license, where the Kofax RPA Robot license controls how many robots can execute on a Kofax RPA RoboServer at one time concurrently. For example, if an organization is licensed for five Kofax RPA Robots, then five robots can be executed concurrently.

There is no limit to the number of robots that can be designed and deployed into production, and robots can be as simple or complex as they need to be. For example, a robot can consist of a few or many steps that execute a set of business workflow actions, such as inputting and outputting data, transforming data, writing data to an Excel worksheet or calling a RESTful Service API.

When you add a CRE-based license, you need to assign licenses to a cluster. To adjust the number of CREs, in Management Console > **Admin** > **RoboServers**, in the **Action** column for the cluster, from the ⋮ context menu for a cluster, click **Assign CRE**. This action opens the Assign license units pane where you can adjust the number of license units and see how many units are available in total and how many remain. Depending on the selected license distribution mode, licenses are distributed between RoboServers as in the following table.

Option	Description
Static	In this mode, CREs in a cluster are distributed evenly between online RoboServers in the cluster. A CRE is an integral unit, and you cannot split one CRE among multiple RoboServers. For example, if you have 9 licenses that you assigned to a cluster and there is one RoboServer in the cluster, the RoboServer can run nine robots. If there are two RoboServers, they can run four robots each, because a CRE license cannot be split. If you start three RoboServers, each can run three robots. **Note** The number of CREs in a cluster must be equal to or bigger than that of RoboServers. If you assign fewer CREs to a cluster than the number of RoboServers present in the cluster, the cluster is disabled.
Dynamic	In this mode, RoboServers receive the licenses from the cluster per request. A RoboServer can get as many licenses as it requests if they are available. In this mode, RoboServers communicate only with the Management Console and block other requests, such as API calls. **Important** Dynamic license distribution mode is supported by Kofax RPA version 10.3 and later. Version 10.7 and later support this mode immediately after installation. To use dynamic license distribution, in versions 10.3 to 10.6, install the latest fix pack for the corresponding version. See Enable Dynamic License Distribution Mode in the *Kofax RPA Upgrade Guide*.

Kofax RPA licensing is available on a perpetual or annual term basis. Kofax RPA licensing is independent of the target hardware environment and physical CPUs, and a robot license is not tied to a physical desktop or virtual machine, allowing you the flexibility to choose cloud-based or on-premise, as well as virtualized or physical CPU environments.

Learn more about Kofax RPA licensing at https://www.kofax.com/

Kofax RPA Compute Units

Another way to license Kofax RPA is to use capacity-based pricing based on Kofax RPA Compute Units (KCUs). This pricing model is completely independent of the chosen hardware configuration.

What are KCUs?

A KCU is a Kofax RPA Compute Unit and is defined as a unit of measure for how many operations (or steps) a Kofax RPA RoboServer can perform in one second (which is unrelated to underlying server capacity).

A step is the smallest unit of action that can be performed within a RoboServer. Examples of steps are loading a web page, writing a data record to a database, or performing a transformation on a data element.

One KCU represents a total of 5000 KCU points per second. The number of Kofax RPA steps that make up one (1) KCU depends on the type of Kofax RPA steps involved, as each step consumes a different amount of the KCU. The steps are divided into groups, and the most important groups are listed here:

1. Steps that both do I/O and execute JavaScript that cost 10,000 KCU points, such as 2 page loads per second with 4 KCUs
2. Steps that do either I/O or execute JavaScript (but not both) that cost 1000 KCU points, such as 20 Call REST Web Service Steps per second with 4 KCUs
3. Extraction and transformation steps that cost 1 KCU point, such as 40,000 extract or assign steps per second with 4 KCUs
4. Desktop Automation step that costs 5000 KCU points.
5. Looping in Desktop Automation that costs 5000 KCU points per iteration.

The complete KCU list is available in Design Studio by clicking **Help** > **Show KCU Information**.

You should have enough CPU power and sufficiently low response time from the source server.

Note We have empirically measured the average page load time to be 6.7 seconds on a powerful CPU over the 23,000 most visited web sites.

The total number of KCUs a robot uses can be seen in the Design Studio Debugger Summary information after running the robot.

Deploying and Assigning KCUs

With KCUs we can deliver the needed computing capacity independent of the target hardware environment and physical CPUs. This approach allows the flexibility of choosing cloud-based or on-premise, virtualized or physical CPU environments without the need to control the number of allocated CPUs.

The available KCUs are assigned to the RoboServer clusters in Management Console and automatically distributed among the RoboServers available within the cluster.

To adjust the number of KCUs, in Management Console > **Admin** > **RoboServers**, in the **Action** column for the cluster, from the ⋮ context menu for a cluster, click **Assign KCU**. This action opens the Assign license units pane where you can adjust the number of license units and see how many units are available in total and how many remain.

Enter License in Design Studio

If Design Studio is not already started, do as follows:

Windows

Use the **Design Studio** item from the Start menu.

To start Design Studio from the command line, run the following command in the bin subfolder of the installation folder.

```
DesignStudio
```

Linux

Start Design Studio from the command line by launching the `DesignStudio` program in the bin directory under the installation directory (see Important Folders in Kofax RPA) as follows:

```
$./DesignStudio
```

On the next screen, enter your license information. You have three choices, depending on what information you have been provided from Kofax RPA and/or your system administrator.

License Server

If your administrator provided you with the URL to a central license server (Management Console) that administers the license for all Design Studio users, select **License Server** and enter the URL and credentials for that server. If you enter the URL without specifying a port, the default port 80 or 443 will be used for HTTP or HTTPS, respectively.

The license server must be running and have available Design Studio seats for you to use Design Studio. If your policies forbid storing the license server password, clear the **Remember Password** option and you will have to type your password every time you open Design Studio.

See the *Administrator's Guide* for information on using Management Console as a license server.

Developer License

The developer license is a combined license key for both Management Console and Design Studio. You can either enter the license key in your local (embedded) Management Console, or use the dialog box in Design Studio. Whenever you start Design Studio, Management Console will automatically start as well.

Trial License

For the trial license you only need to provide the name, email, and company. You do not enter a license key. Design Studio starts without contacting Management Console and with limited capabilities. This license is intended for short-time use for trial/demonstration purposes.

Normally, Design Studio displays the **Enter License Information** dialog box only the first time it is started. It will, however, display this dialog box again if the license server cannot be contacted because it has been moved, is not running, or is unavailable for another reason.

Chapter 4

Switch Display Language for Management Console and Design Studio

Follow this procedure to change the display language for Management Console and Design Studio. The examples in this procedure use the Japanese language.

Note On your computer, ensure that the language setting for non-Unicode programs is set to the applicable language. The steps to take depend on your operating system.

- If Management Console is run as an embedded component, follow these steps:
  1. In the folder `{path}\<Kofax RPA_installed_folder>\bin`, locate and create a backup copy of the file **common.conf**. Open the file with a text editor, such as Notepad. You may need to run the text editor as an administrator.
  2. Locate the setting `Wrapper Localization`, scroll down to the section `Java Additional Parameters`, and then make the following changes as applicable to the desired display language.

```
# Wrapper Localization
#*****************************************************************
# Specify the locale which the Wrapper should use.  By default the system
#  locale is used.
wrapper.lang=ja_JP # en_US or ja_JP

# Java Additional Parameters

wrapper.java.additional.2=-Duser.country=JP
wrapper.java.additional.3=-Duser.region=JP
wrapper.java.additional.4=-Duser.language=ja
```

  3. Save the changes.
- If Management Console is installed on a stand-alone Tomcat server that runs via startup/shutdown scripts, follow these steps:
  1. In your Tomcat installation, locate and open the file **catalina.bat**. You may need to run the text editor as administrator.
  2. Locate the setting `CATALINA_OPTS` and then make the following changes as applicable to the desired display language.

```
set CATALINA_OPTS="-Duser.language=ja" "-Duser.region=JP" "-Duser.country=JP"
```

  3. Save the changes.

- If Management Console is installed on a stand-alone Tomcat server that runs as a windows service, do the following:
  1. Run `tomcat9w.exe` from the `bin` subfolder of the Tomcat installation folder.
  2. In the Apache Tomcat Properties window, select the **Java** tab and add the following options to the **Java Options** section:

     ```
     -Duser.language=ja
     -Duser.region=JP
     -Duser.country=JP
     ```

     Click **OK**.
  3. Restart the server for the changes to take effect.

From the Kofax RPA 11.1.0 folder, run the following shortcuts: **Start Management Console** and **Start Development Database** in the Development Database folder. Leave the Command Prompt windows open while the applications are running.

When you start Management Console and Design Studio, the display language is changed to the desired display language. To switch back to English, close both Command Prompt windows. If required restore the backup copy of `common.conf`, and then restart both shortcuts.

Chapter 5

Kofax RPA Initial Configuration

After installing Kofax RPA, configure the installation to suit your needs. Some configuration is done using the Settings application as described in the "RoboServer Configuration" section in the *Administrator's Guide*.

Other configuration tasks, relevant mostly for administrators of the Kofax RPA system, are done with Management Console, more specifically in the **Admin** > **RoboServers** and **Projects** sections. It is especially important to set up the necessary RoboServers and clusters in the **RoboServers** section. See the Management Console chapter in *Help for Kofax RPA* for information on these sections.

Chapter 6

Quick Start Guide

This chapter explains how to start using Kofax RPA.

Prerequisites

- The examples below use a standalone Management Console (NOT deployed on Tomcat) and RoboServer that are on a different computer than Design Studio.
- This chapter assumes you have at least a non-production key for running Management Console.

Install the software

1. Make sure that the system requirements are met based on the information in Dependencies and Prerequisites.
2. Install the Kofax RPA software on the computer where you will use Management Console and RoboServer. Follow the instructions in Install Kofax RPA as applicable for your operating system.
3. Install Design Studio on the applicable computers. Use the installer for the Design Studio component, as described in the Install Kofax RPA chapter. In this chapter, Management Console is used for licensing.

Start Management Console and RoboServer

Before you start an embedded Management Console, configure the RoboServer. See Configure Management Console settings for details.

1. Start the RoboServer Settings application.
2. On the **General** tab, select **Register to a Management Console**, and supply all necessary information including the administrator name and password to connect to the Management Console. The default admin user name and password:
   - User name: `admin`
   - Password: `admin`

To start a Management Console, either run **Start Management Console** from the Start menu on Windows or run the following command from the bin folder of the Kofax RPA installation folder.

- On Windows: `RoboServer.exe -MC -p 50000`
- On Linux: `./RoboServer -MC -p 50000`

Notes

- All RoboServer command parameters are listed in the Runtime chapter in the *Administrator's Guide*.
- You can reach Management Console on `http://<ServerNameOrIP>:<port>`. Additional settings (different port, HTTPS usage, and so on) are available in the **RoboServer Settings** application from the Start menu.
- You can start RoboServer on different ports (default is 50000). By default, Kofax RPA registers the RoboServer on the port specified in the command for this Management Console.
- It is possible to start Management Console and RoboServer in separate JVMs by running the RoboServer command with separate parameters.

  See the RoboServer parameters in the *Administrator's Guide*.

  `RoboServer -MC` command starts Management Console only.

  `RoboServer -p 50000 -mcUrl http://admin:password@ServerName:port -cl "Production"` command starts a RoboServer on port `50000` and registers it to the Management Console at `ServerName:port` under the Production cluster with the specified user name and password.
- A Kofax RPA environment always has one Management Console that can control multiple RoboServers. Do not configure multiple Management Consoles to control the same RoboServer.
- It is possible to configure Kofax RPA Management Console and RoboServers to start automatically. See the Kofax RPA Initial Configuration chapter for more information.

Access Management Console and enter license key

Use your browser to open Management Console.

Example: `http://MCServer:50080`

The first time you open Management Console and log in using the default credentials, it prompts for the license key. Make sure that the keys and the company name match exactly the data you received from Kofax. The license data can later be replaced in the Management Console > **Admin** > **License**.

Tip Click the Help icon in any section to get more information about the opened section. The icon is usually located in the top right corner.

Configure Management Console settings

Management Console security settings are configured on the Management Console tab of the **RoboServer Settings** application. You can open the application from the Start menu or from the bin folder in the Kofax RPA installation folder.

Set the RoboServer to register to this Management Console as described in Start Management Console and RoboServer.

Important It is very important to run the RoboServer Settings application as the same user that runs Management Console. Otherwise, the changes are not applied.

Change Management Console port: change "HTTP Port Number"
To change the default port number, on the **Management Console** tab in the **RoboServer Settings** application, edit the **HTTP Port Number** property.

Upload JDBC driver

The JDBC Driver Upload option changes the way the JDBC drivers are uploaded. By default, only an admin user is allowed to upload a JDBC driver and only while accessing the Management Console on the computer it is running (localhost). If you are accessing Management Console from a different computer and if you need to upload JDBC drivers (to use with databases), change this option to **Admin from any host**.

More detailed information, including information about the other tabs in the RoboServer Settings application, is available in the "Runtime" section in the *Kofax RPA Administrator's Guide*.

Important Management Console and RoboServer must be restarted for changes done in the RoboServer Settings application to take effect.

Management Console authentication

Management Console prompts you for a user name and password when you connect to it. Either use the default `admin` superuser password or the one you set on the **Users & groups** page under **Admin** in the Management Console. When you are logged in, the user name is shown in the top right corner. For details, see "Users & groups" in *Help for Kofax RPA* or the *Kofax RPA User's Guide*.

Change the admin user password

Management Console provides the default `admin` superuser password for logging in (name - `admin`, password - `admin`). To change the `admin` user password, perform the following steps.

1. Expand **Admin** on the left pane and click **Users & groups**.
2. On the **Users** tab, select the admin user and click above the tab.
3. Type the new password, type it again to confirm, and click **OK**.

Create users and groups

Create new users and groups (or assign users to groups) from Management Console > **Admin** > **Users & groups**.

Note that there is no connection between users/groups and your Active Directory/LDAP/SAML/Domain users and groups. If users change their domain password, it has no effect on the user credentials for the Management Console.

Although it is possible to integrate Kofax RPA Management Console with LDAP, this is an advanced configuration that works when Management Console is deployed as a stand-alone application in a Tomcat web server. For details, see the Tomcat Management Console topic in the *Kofax RPA Administrator's Guide*.

Add users to groups
There are two ways to add users to groups.

- Select a user, click **Edit** from the ⋮ context menu and type the name of groups the user should be a member of.
- Select a group, click **Edit** from the ⋮ context menu and select users that should be members of this group.

Assign privileges to users

Important A user created in the Management Console is able to log in to the Management Console **only if** the user is part of a group that has been assigned rights to at least one project.

To assign a privilege to access projects, follow these steps:

1. Go to **Management Console** > **Admin** > **Projects**.
2. Create a project or open the existing project properties by clicking **Edit** from the ⋮ context menu.
3. On the **Permissions** tab, click the plus sign.
4. Select a project role in the **Project role** drop-down list.
   For a description of built-in roles, see "Manage Users and Groups" in Kofax RPA help or in the *Kofax RPA User's Guide*.
5. Select a group in the **Security group** drop-down list.
6. Add other groups if needed and click **Submit**.

Configure Management Console before running robots

JDBC database drivers
Kofax RPA has a default database that can be used for logging (logdb) and for robots to store data (objectdb). To use this database, start it from the Kofax RPA program group under (Start > Programs)

using Start Development Database. An executable is also available in the bin subfolder in your installation.

To use a custom database (which is recommended even when testing), do the following **first**.

1. Check Dependencies and Prerequisites to see the database systems that Kofax RPA supports.
2. Get the JDBC driver for the database. Kofax RPA does not provide these drivers, but you can download them from the database provider, such as Microsoft, Oracle, or other.
3. Upload the JDBC driver in the **Management Console** > **Settings** > **Database drivers** by clicking the **Upload driver JAR** button.

   Note If the Upload Driver Jar button is disabled, you might be accessing the Management Console from a different computer than the one on which it is running and you have not changed the setting to allow driver upload from a different computer. See "Upload JDBC driver" in the Configure Management Console settings and change the "JDBC driver upload" to "Admin from any host". Restart Management Console (the process itself) and the "Upload Driver JAR" button should be enabled.

4. Click **Save** to save the JDBC driver in Management Console. You can see it listed under "Database drivers."

To use multiple types of databases in the same Management Console, upload the driver they should use.

RoboServer log database

By default, the RoboServer log database in set to `logdb` (which can be accessed if you start the Development database only).

You can configure the RoboServer log database as a custom database. If the user you provide has rights to create tables in this database, Kofax RPA creates all the tables it needs.

If the user cannot create tables, a database administrator has to create them before the database is configured as a RoboServer log database. See "Scripts for Creating Database Tables" in *Help for Kofax RPA* or the *Kofax RPA User's Guide* to get the queries needed to create the log tables (make sure to get the one that applies to your database type).

Your user must be able to write to these tables.

After the RoboServer Log Database is configured, you can see all the logs in Management Console > **Log view**.

Harvest database
Robots can store data in databases or query tables for data. By default, `objectdb` is used (Development Database). To use a custom database, follow these steps:

1. In Management Console, go to **Admin** > **RoboServers > Cluster settings** from the cluster ⋮ context menu.
2. On the **Databases** tab, click **New database**.
3. Fill in the information, click **Test** to make sure Management Console connect to the database.

   Note The **Name** field here is the name of the mapping, not the database (you specify the actual database name in the Schema option). The mapping name differs from the database name and you can keep it different if you do not want robot developers to know the real name of the database. If security is not a concern, you can keep the mapping name the same as the database name (less confusion).

Data stored by robots in this database can be viewed from **Management Console** > **Data view** page. Only tables created from types are shown. If a table is created in SQL Manager, you will not see it in Management Console (even if you have robots configured to query it or add/change data in it).

Shared databases (between Management Console and Design Studio)
Management Console can push database mappings created in the cluster settings to Design Studio instances. If you have multiple clusters, only one cluster can push database mappings.

To configure shared databases, follow these steps.

1. Select which clusters will push the databases: go to **Management Console** > **Settings** > **Design Studio** and select the required cluster.
2. Create your database mappings in the cluster settings (see the "Harvest database" section above for details).
3. Assign database mappings to projects as follows:
   a. Go to **Management Console** > **Repository** > **Database mappings** and click the plus sign in the upper left corner to create a new database mapping.
   b. Fill in the information.
      - **Mapping name**: It can be the same as the name given when creating the mapping in cluster settings (it can be different too, but might cause more confusion).
      - **Project**: Set to the project where this mapping will be used.

        Note Keep in mind project permissions when using authentication (see Management Console authentication for details). If a mapping is assigned to a project, only users with rights to that project will be able to use it (and see its data when opening Management Console > Data view).

      - **Cluster**: Must be the same as the one you already set in **Settings** > **Design Studio**.
      - **Database**: Select the mapping created in the cluster settings from the drop-down list.
4. After you save these settings, the users that have Design Studio connected to this Management Console can right-click the Management Console connection under **My Projects**, refresh the data, and see the new mapping available.

Build Robots

Robots are built in Design Studio. See Enter License in Design Studio for more information on how to start Design Studio and configure a license for it.

In Design Studio, you can click the Help button to open the help and read more information about specific steps and configuration.

Design Studio also has a default project (its name is the name of the version, such as 11.1.0.0) where you can find robot examples for common operations.

Upload Robots

To upload a robot from Design Studio, right-click the robot under **My Projects** and select **Upload**. In the **Upload to Management Console** dialog box, select the Management Console and the project where the robot should be uploaded.

Notes

- You cannot create a project from this dialog box; it must be created in Management Console in advance.
- When using this option, you only need to select the robot. Design Studio automatically sends all the types and snippets that it uses.
- You can share a project between Management Console and Design Studio by selecting **Remember this (as a shared project)**.You can find more information about shared projects and how to work with them in the "Projects and Libraries" topic in *Help for Kofax RPA*.
- You can also upload the robot files directly in Management Console but you have to select the robot and each type and snippet one by one. In the Management Console, in **Repository**, you can use the plus sign in each section to add robots, types, snippets, and so on.

Run robots

Run robots from Management Console

Each robot in **Repository** > **Robots** has a **Run now** option in the ⋮ context menu. However, only robots that do not require input can be run this way. If your robots require input, they can only be run by a schedule (by Management Console), API, or REST/SOAP services. See the next sections for more information.

If you have multiple clusters, you will be asked to select a cluster on which to run.

Run robots from a schedule
You can create a schedule from the Management Console > **Repository** > **Robots** by right-clicking a robot and selecting **Create schedule** from the ⋮ context menu.

This action automatically adds the robot to the schedule. The other option (easier to use when you want to add multiple robots to a schedule) is to create a schedule using the plus sign in the Management Console > **Schedules** section.

Run robots via API
In the Management Console > **Repository** > **Robots** section, you can see the **API** option in the ⋮ context menu for a robot.

Clicking this option opens the sample code for Java and .NET APIs that you can use to call this robot. More information is available in the *Kofax RPA Developer's Guide*.

Run robots using REST/SOAP
In the Management Console > **Repository** > **Robots** section, from the ⋮ context menu for a robot, click **REST** or **SOAP** to get a service example that you can use to call that specific robot.