



# Ephesoft Transact

## Release Notes

# Version 4.5.0.0

October 29, 2018

Document Revision 1.8

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## Welcome to Transact 4.5.0.0

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## Revision History

Date	Version	Rev.	Description
March 28, 2018 2:30pm, US Pacific	4.5.0.0 (Major)	1.0	Ephesoft Transact Release Notes published
March 29, 2018 4:30pm, US Pacific	4.5.0.0	1.1	Edited or added these topics: <ul style="list-style-type: none"> <li>• <a href="#">Installation   Installing Transact 4.5.0.0 with Named Instance</a></li> <li>• <a href="#">Licensing   Fixed-form Template Editor and CJKT Language Support</a></li> <li>• <a href="#">Installation   Database Pre-installation Prerequisite</a></li> </ul>
March 30, 2018 4:30 pm, US Pacific	4.5.0.0	1.2b	Edited these topics: <ul style="list-style-type: none"> <li>• <a href="#">Licensing   Licensing Policy Changes</a></li> <li>• <a href="#">Transact Integration</a></li> </ul> Added these topics: <ul style="list-style-type: none"> <li>• <a href="#">Logging   StdOut Log, log4j 2 Logging, and Batch Error Output</a></li> </ul>
April 4, 2018 4:00pm, US Pacific	4.5.0.0	1.3	Edited these topics: <ul style="list-style-type: none"> <li>• <a href="#">General Installation Sequence and Variations</a></li> <li>• “Performance Metrics” (removed)</li> </ul> Added this topic: <ul style="list-style-type: none"> <li>• <a href="#">Installation   MS SQL Server and Windows Authentication</a></li> </ul>
April 6, 2018 4:00pm, US Pacific	4.5.0.0	1.4	Edited this topic: <ul style="list-style-type: none"> <li>• <a href="#">Ephesoft Transact 4.5.0.0 Integration and Licensing</a></li> </ul>
April 14, 2018 4:00pm, US Pacific	4.5.0.0	1.5	Edited these topics: <ul style="list-style-type: none"> <li>• <a href="#">Installation Quick Start</a></li> <li>• <a href="#">Installation   MS SQL Server Integration with Installation</a></li> <li>• <a href="#">Transact Licensing</a></li> <li>• <a href="#">Licensing   Logi License Restriction</a></li> </ul> Added these topics: <ul style="list-style-type: none"> <li>• <a href="#">Installation   Configuring Logon User Credentials in Windows</a></li> <li>• <a href="#">Installation   Initial Logon after Installation or Upgrade</a></li> <li>• <a href="#">Installation   Installation Folder Name</a></li> <li>• <a href="#">Installation   Prerequisite — ODBC Driver 11 for MS SQL Server on 32 bit Windows 7 SP1</a></li> <li>• <a href="#">Upgrade   Prerequisite — Remove Query from pre-schema.sql in Oracle Database Prior to Upgrade</a></li> <li>• <a href="#">Language Support and CJKT   Batch Class Support</a></li> <li>• <a href="#">User Interface   File Upload Screen — Upload Time and Status</a></li> <li>• <a href="#">User Interface   Review Screen and Saving Changes</a></li> </ul>
June 14, 2018 2:00pm, US Pacific	4.5.0.0	1.6	Edited this topic to enhance snapshots: <ul style="list-style-type: none"> <li>• <a href="#">Extraction   Fuzziness for Dictionary Matching in Machine Learning</a></li> </ul> Added a new restriction with workaround: <ul style="list-style-type: none"> <li>• <a href="#">Extraction and OCR   Image Size Restrictions with Recostar for Windows</a></li> </ul>
September 6, 2018 6:00pm, US Pacific	4.5.0.0	1.7	Edited the following topic to provide additional information: <ul style="list-style-type: none"> <li>• <a href="#">Export   CSV Export</a></li> </ul> Updated the link for the separate document titled <a href="#">Licensing Ephesoft Transact 4.5.0.x</a> , cited in the following topic <ul style="list-style-type: none"> <li>• <a href="#">Transact Licensing</a></li> </ul>
October 29, 2018 4:00pm, US Pacific	4.5.0.0	1.8	Revised presentation of Machine Learning SDK and related APIs. This feature undergoing major revision for Release 4.5.1.0 (2019).

## Introduction

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This document describes the features and enhancements of Ephesoft Transact 4.5.0.0.

This document also provides an overview of installation, known issues and restrictions for Transact 4.5.0.0.

## Installation Quick Start

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The section describes a quick start guide for Transact 4.5.0.0.

For hardware requirements, see the [Hardware Requirements](#) topic later in this document.

1. Uninstall previous version of Transact 4.5.0.0. A clean installation is required.
2. Install Transact 4.5.0.0 using the installer.
3. Install the license.
4. IMPORTANT: Execute the Security Configuration Tool.

To execute the tool, Ephesoft recommends that you copy the tool inside the <Ephesoft Installation Directory>.

- a. Extract the attached Security.zip file and execute 'SecurityPatch/start.bat' as an administrator.
  - (start.bat is found in the SecurityPatch folder within the zip file.)
- b. Please delete this tool before scanning with the Black Duck security scanning utility. This step requires that you delete the entire SecurityPatch folder.
  - This is the final step needed to complete security compliance with Transact 4.5.

**Note:** Complete installation user documentation is available separately, and has been updated extensively for Transact 4.5.0.0.

<http://demo.ephesoft.com/products/ephesoft-transact/>

## Known Issues, Restrictions and Workarounds in Ephesoft Transact 4.5.0.0

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This section presents information that support or administration personnel may require during the installation or setup configuration of Transact 4.5.0.0:

- [Advanced Web Scanner | Resolving Invalid Access](#)
- [Batch Class Management | Batch Class Workaround for Adding Batch Classes](#)
- [CJK Language Support | Batch Class and Form Template Editor Support](#)
- [Extraction and OCR | Image Size Restrictions with Recostar for Windows](#)
- [Extraction | Table Extraction Restriction with Table Headers](#)
- [Import | Exchange Email Integration](#)
- [Installation | Prerequisite — Database Pre-installation](#)
- [Installation | Prerequisite — ODBC Driver 11 for MS SQL Server on 32 bit Windows 7 SP1](#)
- [Installation | Configuring Logon User Credentials in Windows](#)
- [Installation | Initial Logon after Installation or Upgrade on Windows](#)
- [Installation | Linux Installation with CentOS 6.9](#)
- [Installation | Installation Logging](#)
- [Installation | Linux Installation with MariaDB](#)
- [Installation | MS SQL Server Integration with Installation](#)
- [Installation | MS SQL Server and Windows Authentication](#)
- [Installation | New Instance of MS SQL](#)
- [Installation | Time Requirements](#)
- [Installation | Upgrade from 4.1.x.x. to 4.5.0.0 and Processing Time Requirements](#)
- [Installation | Zip File Extraction Prior to Execution](#)
- [Licensing | Logi License Restriction](#)
- [Licensing | Resolving Licensing Issues and Time Settings on Linux Server](#)
- [System Configuration | Connection Manager and Oracle Connection](#)
- [Upgrade | Prerequisite — Remove Query from pre-schema.sql in Oracle Database Prior to Upgrade](#)
- [User Interface | File Upload Screen — Upload Time and Status](#)
- [User Interface | Review Screen and Saving Changes](#)
- [Validation | Table View and Validation Screen Operations](#)

## Advanced Web Scanner | Resolving Invalid Access

If you experience INVALID ACCESS system messages when running the Advanced Web Scanner, follow these steps:

1. Stop the Ephesoft Scanner service.
2. Remove it from the Windows Control Panel.
3. Download and install the new service.
4. Ensure the service is started and the log confirms that the service has started properly.
5. Beginning scanning from the application, and operations should be normal.
6. If necessary, adjust the time and date settings on the system.

**Note:** The *Invalid Access Issue* was replicating, in instances where the machine on which the Advanced Web Scanner was installed is older than the time of machine on which the Ephesoft server is installed.

If the Transact server time is not set correctly, as per the time zone, follow these steps to resolve the issue:

- a. Reset the date time stamp on the server.
- b. Restart the Transact service.
- c. Restart the Advanced Web Scanner service.
- d. Also, ensure that the client machine has the correct time set.

With these steps, scanning functions should now be operational.

## Batch Class Management | Batch Class Workaround for Adding Batch Classes

Batch classes may not be added in certain conditions. To fix the batch class issue while adding batch classes, please **export BC1** and **replace** it with [Application/native/Zip\\_BC\\_DoNotDelete/BC1.zip](#).

## CJK Language Support | Batch Class and Form Template Editor Support

To enable a batch class to work with CJK (Chinese, Japanese or Korean) languages, perform the following steps to modify certain rsp configuration files in the batch class:

1. Make a copy (as a backup) of the batch class that you wish to use for CJK language support.
2. Navigate to the following path on the Transact server:

[Drive]:\{*Ephesoft Installation Folder*\}\SharedFolders\BCy\fixed-form-extraction

3. Delete or modify the following files:
  - Delete Frp.rsp.
  - Rename FPR\_AsiLanguage.rsp to Frp.rsp.
  - Rename FPR\_Barcode\_AsiLanguage.rs to FPR\_Barcode.rsp.
  - Rename Fpr\_MultiLanguage\_AsiLanguage.rsp to Fpr\_MultiLanguage.rsp.
  - Rename FPR\_Pdf\_AsiLanguage.rsp to FPR\_Pdf.rsp.

**Note:** Additional licensing requirements may apply if you intend to use CJK languages in Transact 4.5.0.0. Refer to the topic, [Licensing | Language and CJKT Licensing — Fixed-form Template Editor](#).

## Extraction and OCR | Image Size Restrictions with Recostar for Windows

Under certain conditions, when processing multiple images in a single batch, one or more images in that batch will not generate HOOCR files. The same images do generate HOOCR files correctly when the images are processed separately.

- *This apparent issue derives from the size of the original images, and corresponds to an operational restriction with Recostar.*

The Recostar OCR engine requires that all images fall within the following size restrictions:

- **Maximum image height** — 24000 pixels
- **Maximum image width** — 32000 pixels
- **Temporary image processing restriction** — During image processing, Recostar creates a temporary uncompressed image, and this image must not exceed 512MB. This restriction for the temporary file size has the following impact on image size restrictions:
  - A color image must not comprise more than 170 million pixels.
  - A grayscale image must not comprise more than 512 million pixels.

**Workaround** — To successfully process incoming image files that are too large in the original, perform one or more of the following steps to reduce image size and complete OCR functions correctly:

- Verify that the image DPI resolution is set to correct dimensions, and if necessary, reduce DPI resolution to fall within the maximum allowable image height and width.
- If the original images are in color, scan them to grayscale before running them as a batch in Recostar.

## Extraction | Table Extraction Restriction with Table Headers

Table extraction may fail in a specific circumstance where a table header is mistakenly interpreted to be regular expression (regex). Be aware of the following information about this restriction.

- If you encounter an unexpected error during table extraction, the cause may derive from Transact's ability to have multiple values that function as a table header.
  - For example, the term "Quantity" may be expressed as "Quantity," "Qty," or "Quant1ty," in the case of faulty OCR.
  - Regular expressions are helpful in such cases.
  - There are some cases when multiple tables headers have similar names.

In circumstances such as this, table extraction may fail, because it reads a table header as a regex expression. In such a case, Transact will report an error that suggests Transact is reading a table header as a regex expression.



*Error Message*

## Import | Exchange Email Integration

Ephesoft Transact 4.5.0.0 supports email import from cloud instances of Microsoft Exchange to Transact.

**Note:** On-premise integration from MS Exchange, imported to Transact, is under development for a future release or sub-release. Import with EWS (email headers) is not available in Transact 4.5.0.0.

Email import is one of the various ways to provide input files for processing in Ephesoft Transact.

In email import, an email account is configured for a batch class and then Transact monitors the configured email folder of that email account, retrieving and processing any new mail coming to that folder. Transact marks the email as read after importing into the system for processing.

For email import configuration details, refer to [this article on the Ephesoft wiki](#).

## Installation | Prerequisite — Database Pre-installation

- Pre-install SQL Server 2012, 2014 or 2016 prior to a new installation of Transact 4.5.0.0. Refer to the following Ephesoft wiki article for additional information:  
<http://wiki.ephesoft.com/installing-ephesoft-transact-v-4-5-0-0-on-windows-server-2012r2-windows-8-and-higher>
- Follow additional instructions in [Installation | SQL Server Implications](#).
- Refer to additional best practices for installation in [Transact 4.5.0.0 Installation Guidelines and Features](#).

## Installation | Prerequisite — ODBC Driver 11 for MS SQL Server on 32 bit Windows 7 SP1

If you are installing Transact 4.5.0.0 on a 32 bit Windows 7 system, with SP1 and MS SQL Server, please install the MS ODBC Driver 11 prior to installing Transact.

This workaround method adjusts the sequence of prerequisite configurations as follows:

1. Install Microsoft® ODBC Driver 13.1 for SQL Server® — Windows, Linux and MacOS.
2. Install MS SQL Server 2012 Native Client — QFE (Quick Fix Engineering).
3. Install MS Command Line Utilities 13.1 for MS SQL Server.

For additional information, please refer to the following Ephesoft wiki article:

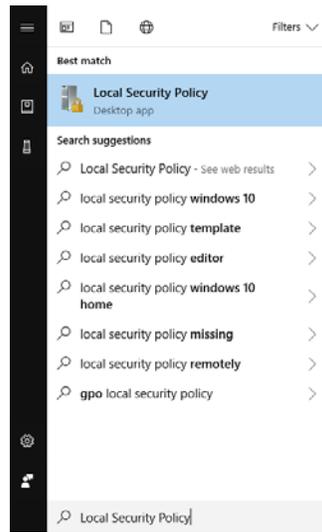
<http://wiki.ephesoft.com/installing-ephesoft-transact-v-4-5-0-0-on-windows-server-2012r2-windows-8-and-higher>

## Installation | Configuring Logon User Credentials in Windows

To ensure that the Transact service starts properly after installation, and to configure the credentials for Transact operation, perform these steps immediately after a successful installation or upgrade to Transact 4.5.0.0.

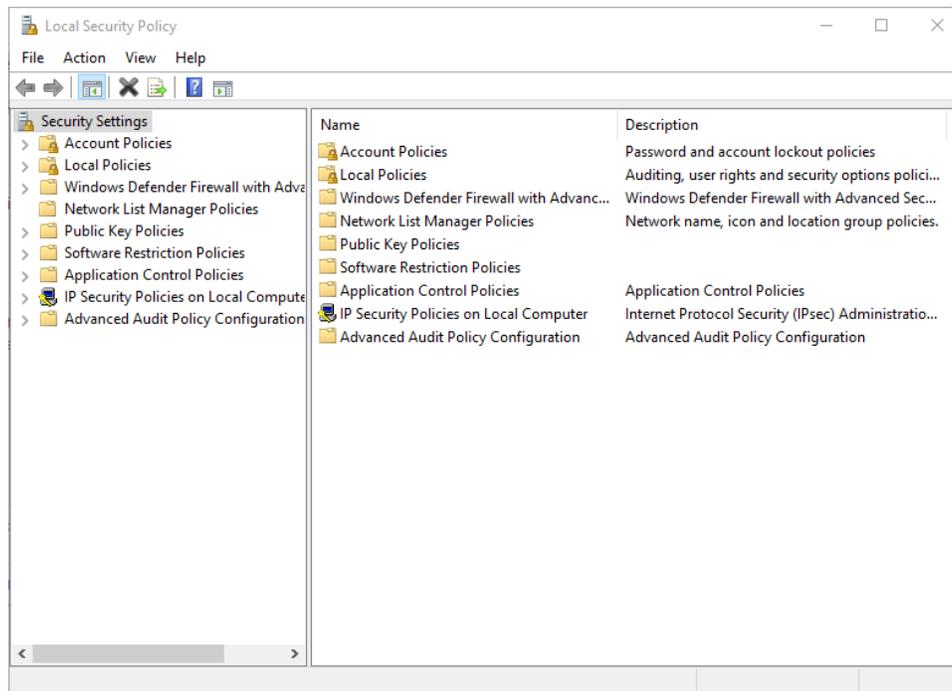
1. Click the Windows **Start** menu.

2. Type **Local Security Policy** without quotation marks. Windows displays the following menu as you type.



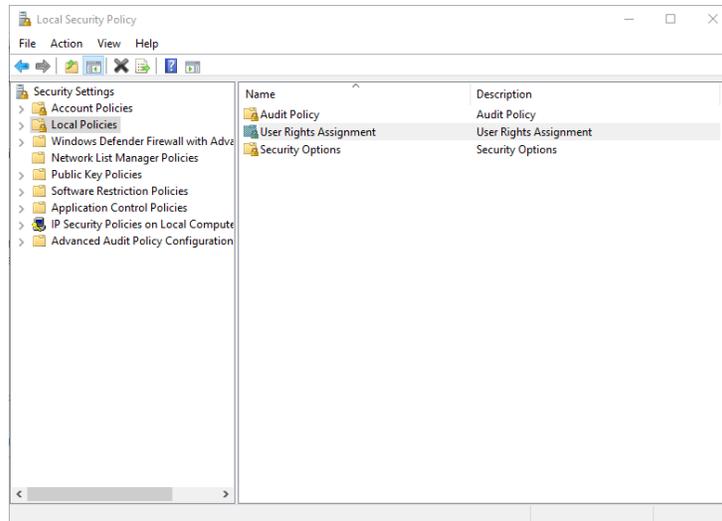
*Local Security Policy in Windows Start Menu*

3. Click **Local Security Policy**. The following dialog appears.



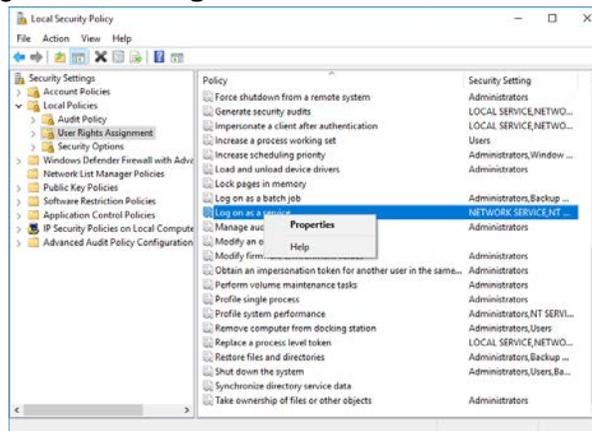
*Local Security Policy Dialog*

4. Open the **Local Policies** folder, and click **User Rights Assignment**.



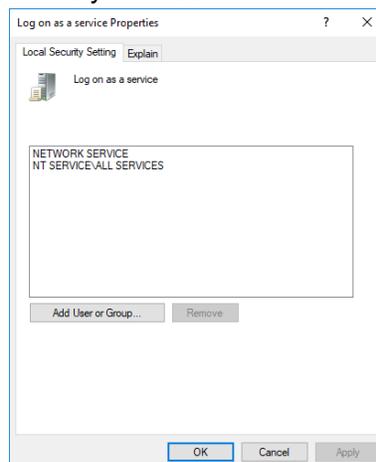
*Local Policies Folder*

- On the right panel, right click on **Log on as a service**, and select **Properties**.



*Log on as a server — click Properties*

- Click **Add User or Group**, and add your user.



*Log on as a service Properties Dialog*

- Click **OK**.

8. You may need to reboot your system after saving changes.

For additional information, refer to the following wiki article on the Ephesoft website:

<http://wiki.ephesoft.com/home/documentation/installer-log-on-service-user-credentials>

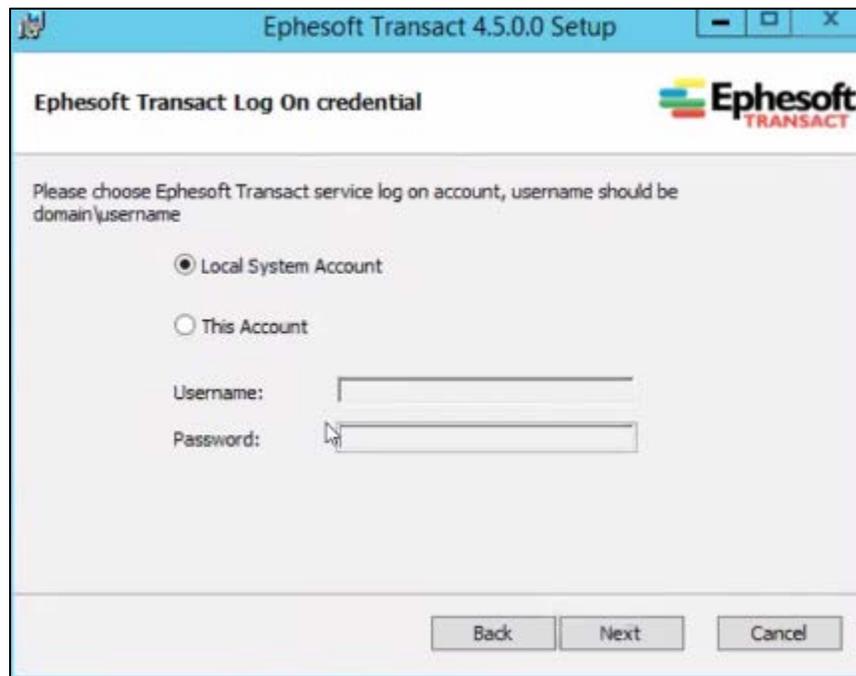
## Installation | Initial Logon after Installation or Upgrade on Windows

For complete and updated information about installing or upgrading Ephesoft Transact 4.5.0.0, refer to the following resource:

<http://wiki.ephesoft.com/microsoft-windows-transact-4-5-0-0-installation-guide-upgrade>

One potential issue might arise if the administration user who installs Transact mistypes the **Username** or **Password**. This topic describes the potential issue and the resolution.

During installation or upgrade of Transact 4.5.0.0, the system prompts you with the following dialog. This dialog allows the installation administration user to define the logon account information.



*Transact 4.5.0.0 Logon Account Screen*

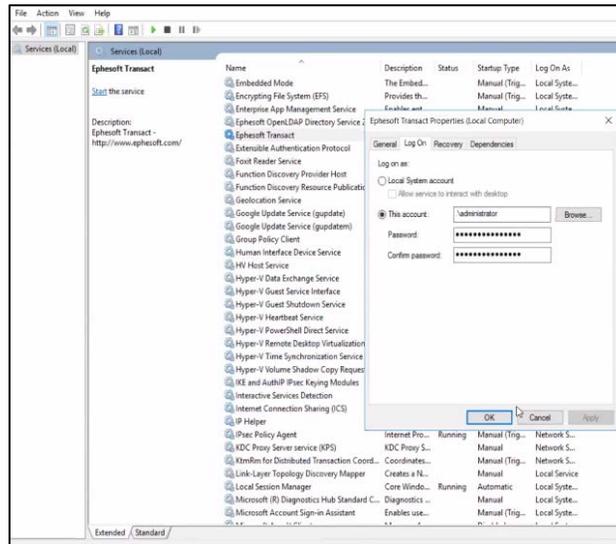
If you select **This Account**, then you must enter the **Username** and **Password** to log into Transact 4.5.0.0.

However, if you mistype either the **Username** or the **Password** on this screen, then you will not be able to log in to Transact after the installation or upgrade.

If you have mistyped either parameter during installation, or otherwise need to change the Username or Password for Transact login, follow these steps:

1. Connect to the Transact 4.5.0.0 server to be configured. You can access the installation components through a file manager utility or remove desktop connection manager.
2. Navigate to and select the server to be configured with login information.

3. Within the Local Services listed for the server, right click on **Ephesoft Transact**, then click **Properties**. The **Ephesoft Transact Properties (Local Computer)** dialog appears.
4. Navigate to the **Log On** tab within this dialog.



*Log On Dialog for Transact Server Properties*

5. Enter the correct password, and click **OK** to save the changes.
6. Logon to Ephesoft Transact with the correct **Username** and **Password**.

## Installation | Installation Folder Name

The default installation folder is case-sensitive. The folder titled “Ephesoft” must start with the upper-case E. For example:

C:\Ephesoft

## Installation | Installation Logging

Be aware that installation requires time, and the system may appear to be hung when it is progressing in fully operable state. Also refer to [Installation | Upgrade from 4.1.x.x. to 4.5.0.0 and Processing Time Requirements](#).

Installation time requirements can vary, based on number of batch classes and batch instances you have.

If you enable debug-level logs, the you can observe the upgrade is proceeding.

Also, you can access relevant logs for components that are being upgraded.

However, the ERRO level **ephesofttransact-stdout.xxxx-xx-xx** logs do not provide any indication of upgrade in progress. This logging capability will be enhanced with a future release.

## Installation | Installing Transact 4.5.0.0 with Named Instance

If you plan to install Transact 4.5.0.0 with a named instance in MS SQL Server, please follow the guidelines in this document:

- *Installation | Configuring Named Instance for MS SQL Server Prior to Installing Transact 4.5.0.0*

<http://wiki.ephesoft.com/home/documentation>

## Installation | Linux Installation with CentOS 6.9

Installation of Transact 4.5.0.0 on CentOS 6.9 fails installation, with an error, while creating the application and report database. This error occurs in the following step of such an installation:

- Exiting from script > Linux installer > The CentOS69 is already installed MySQL.

In this circumstance, the installer closes with Ephesoft Transact installer trying to install new instance. Follow the workaround steps with [Installation | New Instance of MS SQL](#).

### Workaround

Follow these steps to implement the workaround for this issue:

1. Set the password for MySQL before running the Transact 4.5.0.0 installation on CentOS.

```
mysql -u root -p with enter password
mysql> use mysql;
Reading table information for completion of table and column names
```

2. To disable this feature, and experience a quicker startup, run these commands:

```
-A
Database changed
mysql> update user SET PASSWORD=PASSWORD("Tester007") WHERE USER='root';
Query OK, 3 rows affected (0.00 sec)
Rows matched: 3 Changed: 3 Warnings: 0
mysql> flush privileges;
Query OK, 0 rows affected (0.00 sec)
mysql> exit - CentOS 6.9 fails installation with Error occurred while
creating application and report database. Exiting from script CLOSED
```

## Installation | Linux Installation with MariaDB

The installer for Transact 4.5.0.0 has been observed to fail when MariaDB is already installed on the system. This occurs due to the default installation of the Microsoft SQL Server database. This issue only occurs with a fresh installation of Transact 4.5.0.0.

If users are installing Transact 4.5.0.0, after first uninstalling the default MySQL database, then the fresh installation of Transact 4.5.0.0 on a Linux system will not experience issues.

## Installation | MS SQL Server Integration with Installation

Please be aware of new pre-requisites that must be in place, for the connection from Transact 4.5.0.0 to the Microsoft SQL Server database.

<http://wiki.ephesoft.com/installing-ephesoft-transact-v-4-5-0-0-on-windows-server-2012r2-windows-8-and-higher>

**Note:** If you have an existing database, you can install or upgrade to Transact 4.5.0.0, and select the existing database for integration with Transact. If you are installing Transact 4.5.0.0 on Windows 7 or Windows 2008 R2 Server, the Transact installer can install Windows 2008 SQL Server Express Edition as an option. In this case, all other Windows OS options are grayed out in the Installer.

## Installation | MS SQL Server and Windows Authentication

The Windows installer for Transact 4.5.0.0 requires that SQL Server Management Studio (SSMS) be installed, to support MS SQL Server and Windows authentication.

During installation, if the administrator selects SQL and Windows authentication, the installation passes without any entries to the error log. However, in this scenario, no databases are created.

The cause of this issue is that quotes are missing from the bat file:

```
<Ephesoft-installation-folder>\Dependencies\MsSQLSetup\ephesoft-local-mssql-setup-WA.bat ->
```

Note line 6 at the end (highlighted with red font).

```
@echo off
echo MS SQL DB Setup
echo Do not close this window...
set PATH=%PATH%;
echo Configuring database on MS SQL on windows authentication...
sqlcmd -S localhost,1433 -i
C:\Ephesoft\Dependencies\MsSQLSetup\ephesoft-mssql-config-WA.sql -o
"C:\Ephesoft\Dependencies\DBinstall\installation-WA.log"
echo close this window...
```

Make the following change to line 6 (add the closing quotation marks):

```
@echo off
echo MS SQL DB Setup
echo Do not close this window...
set PATH=%PATH%;
echo Configuring database on MS SQL on windows authentication...
sqlcmd -S localhost,1433 -i
C:\Ephesoft\Dependencies\MsSQLSetup\ephesoft-mssql-config-WA.sql -o
"C:\Ephesoft\Dependencies\DBinstall\installation-WA.log"
echo close this window...
```

## Installation | New Instance of MS SQL

Transact 4.5.0.0 does not support a new instance of Microsoft SQL Server after Transact installation. After fulfilling the pre-requisite requirements cited in the previous topic, Transact 4.5.0.0 only supports an existing instance and connection. Please refer to the following document for additional information about pre-requisites:

<http://wiki.ephesoft.com/installing-ephesoft-transact-v-4-5-0-0-on-windows-server-2012r2-windows-8-and-higher>

## Installation | Preinstall MS SQL Server, or Installer default is 2008 Express Edition

**Note:** If you want to use MS SQL Server 2008, 2012, 2014, or 2016, they must be installed before you start the Transact installer. If not, you can use the Transact installer and it will install 2008 Express Edition for you.

## Installation | Upgrade from 4.1.x.x. to 4.5.0.0 and Processing Time Requirements

When upgrading to Transact 4.5.0.0 from an earlier release, the administrator is required to restart the Transact service. This launches the post-upgrade step. This post-upgrade step requires some time to process.

This may require from 45 minutes to two hours. The time requirement can vary, based on number of batch classes and batch instances that correspond to the upgrade.

If you enable debugging level logs for the upgrade, then you can observe that the upgrade is proceeding. However, logs that are relevant to “*ERRO level ephesofttransact-stdout.xxxx-xx-xx logs*” will not give any indication of an upgrade that is in progress.

Future Transact releases will improve logging for upgrade processes.

## Installation | Zip File Extraction Prior to Execution

**IMPORTANT:** When using the zip file to install Transact 4.5.0.0, ensure that you extract all files to a local folder before running the installation .exe file.

***Do not run the .exe file from within an unzipped file.***

The Ephesoft Website and Wiki have additional and complete information to support installation or upgrade to Transact 4.5.0.0.

## Upgrade | Prerequisite — Remove Query from pre-schema.sql in Oracle Database Prior to Upgrade

If you are upgrading to Transact 4.5.0.0 from a previous release, with an Oracle database, follow this step prior to performing the upgrade:

1. Remove the following query from the pre-schema.sql file in the Oracle database:
  - alter table kv\_extraction modify value\_pattern char(255);

This step will prevent operational issues with the **Review-Validate** screen during extraction of a standard batch class. This manual workaround will be resolved in Release 4.5.0.1.

## Logging | StdOut Log, log4j 2 Logging, and Batch Error Output

In Transact 4.5.0.0, after upgrading to the log4j 2 logging framework, the log4j 2 logging does not log to the console by default, as with previous releases. This is a known change with Transact 4.5.0.0:

- Be aware that logging to two output channels can degrade system performance.
- Therefore, Transact 4.5.0.0 removes this function with log4j 2.

If required, Ephesoft can enable log4j2 logging to the console. However, it is preferable to keep all Ephesoft logs in one location, such as the **ApplicationLogs** folder.

## System Configuration | Configuration File Password Encryption

When performing the steps in the following articles, you may experience a temporary issue with password encryption:

- <https://wiki.ephesoft.com/ldapad-password-encryption>
- <http://wiki.ephesoft.com/how-to-encrypt-sever-configuration-passwords>

If the steps above do not work correctly, then you may receive the following error that pertains to password encryption for Active Directory and database connectivity:

```
java.security.InvalidAlgorithmParameterException: Salt must be 8 bytes long
```

### Baseline Procedure

Perform the following steps to work around this temporary error message:

1. Run the Encryptor.sh file. It will ask for plain text password, and converts it into encrypted text. Ensure that you make a note of all the encrypted passwords in a text file that needs to be replaced.
2. The location to change the password is server.xml, user-connectivity, etl-properties, ftp.properties file.
3. Follow these steps to adjust LDAP and AD configuration in the server.xml file:
  - a. Add a comment to <Realm  
 className="org.apache.catalina.realm.UserDatabaseRealm"  
 resourceName="UserDatabase"/>
  - b. In the realm settings, change the value in the Realm Class name to <Realm  
 className="com.ephesoft.realm.EphesoftRealm"/>
  - c. Use the encrypted password generated for connectionPassword property when you configure AD in server.xml file.
4. Follow these steps to adjust the Oracle password encryption in the server.xml file:
  - a. Change the factory attribute in the Resource tag to  
 "com.zaxxer.hikari.encryption.EncryptedHikariJNDIFactory" and provide the encrypted password in the datasource.password attribute that was generated in Step 1.

```
<Resource name="jdbc/Ephesoft" auth="Container"  
factory="com.zaxxer.hikari.encryption.EncryptedHikariJNDIFactory"  
type="javax.sql.DataSource"  
minimumIdle="5"
```

```

maximumPoolSize="100"
connectionTimeout="3000000"
driverClassName="org.mariadb.jdbc.Driver"
jdbcUrl="jdbc:mariadb://localhost:3306/Ephesoft"
dataSource.implicitCachingEnabled="true"
dataSource.user="ephesoftsa"
dataSource.password="zTAF1LXC-hZheTlr61AJ0/oH1KZH-tCA"
connectionTestQuery="Select 1" />

```

5. Ensure that you make the required password changes to the encrypted password in all the properties files (user-connectivity, etl-properties, ftp.properties file).

6. Enable the encryption (that is, set the value to true in dcma-encryption.properties file).

The following wiki articles provide additional information for the configuration change:

- <http://wiki.ephesoft.com/how-to-encrypt-sever-configuration-passwords>
- <http://wiki.ephesoft.com/decryption-algorithm-parameter-is-invalid-error>
- <https://wiki.ephesoft.com/ldapad-password-encryption>
- <http://wiki.ephesoft.com/common-connection-pooling>

### Additional Procedure for Additional Settings

In cases where the “Baseline Procedure” does not resolve the error with password encryption, the following additional settings may be required:

1. Ensure the following settings are all defined as shown:

```

\\Ephesoft\Application\WEB-INF\classes\META-INF\dcma-encryption\dcma-
encryption.properties
password.use_encryption=true
\\Ephesoft\Application\WEB-INF\classes\META-INF\dcma-user-
connectivity\user-connectivity.properties
user.connectivity_password=<encrypted password>
\\Ephesoft\Application\WEB-INF\classes\META-INF\dcma-mail\mail.properties
mail.password=<encrypted password>
\\Ephesoft\Application\WEB-INF\classes\META-INF\dcma-ftp\dcma-
ftp.properties
ftp.server.password=<encrypted password>
\\Ephesoft\Application\WEB-INF\classes\META-INF\dcma-reporting\etl-
variables.properties
ephesoft.loginpassword=<encrypted password>
ephesoft.loginusername=<encrypted username>
\\Ephesoft\JavaAppServer\conf\server.xml

```

2. In the Resource tags, adjust these settings:

- Replace all instances of com.zaxxer.hikari.HikariJNDIFactory with com.zaxxer.hikari.encryption.EncryptedHikariJNDIFactory
- Put the encrypted password in: dataSource.password="<encrypted password>"

3. In the Realm tag, adjust these settings:

- Replace the org.apache.catalina.realm.JNDIRealm with com.ephesoft.realm.EphesoftRealm in the className field.

- Put the encrypted password for the Ephesoft Service account in the connectionPassword field.

### Encrypting Oracle and Active Directory Passwords in Ephesoft Transact 4.1.x.x. and Later

Perform the following steps for configuring encrypted database passwords for Oracle and Active Directory (AD) connections to transact. This configuration applies to the following environment:

- Operating System 3 Linux CentOS 6.8
- Database — Oracle 11.2g
- Active Directory — Win2012 R2

This configuration is set up for using the default Tomcat authentication:

1. Run the encryptor.sh in the **Application/native.encryption** folder and encrypt the plain text password.

- a. The following code sample illustrates the contents of this file:

```
<Resource name="jdbc/Ephesoft" auth="Container"
Factory="com.zaxxer.hikari.encryption.EncryptedHikariJNDIFactory"
type="javax.sql.DataSource"
minimumIdle="50"
connectionTimeout="3000000"
    driverClassName="oracle.jdbc.OracleDriver"
jdbcUrl="jdbc:oracle:thin:@centosoracle:1521:XE"
    connectionInitSql="ALTER SESSION SET CURRENT_SCHEMA = EPHESOFT"
    dataSource.user="EPHESOFT"
    dataSource.password="L0epDBA86coOd/Pk3+Ev5tpAMkeQDl1KzG1GismBAoQ="
dataSource.implicitCachingEnabled="true"
    connectionTestQuery="Select 1" />

    <Resource name="jdbc/reports" auth="Container"
Factory=.com.zaxxer.hikari.HikariJNDIFactory"
Type="javax.sql.DataSource"
minimumIdle="5"
maximumPoolSize="50"
connectionTimeout="300000"
    driverClassName="oracle.jdbc.OracleDriver"
jdbcUrl="jdbc:oracle:thin:@centosoracle:1521:XE"
    connectionInitSql="ALTER SESSION SET CURRENT_SCHEMA = REPORT"
    dataSource.user="REPORT"
    dataSource.password="PASSWORD123456789"
    dataSource.implicitCachingEnabled="true"
    connectionTestQuery="Select 1" />

<Resource name="jdbc/reports" auth="Container"
Factory=.com.zaxxer.hikari.HikariJNDIFactory"
Type="javax.sql.DataSource"
minimumIdle="5"
maximumPoolSize="50"
connectionTimeout="300000"
    driverClassName="oracle.jdbc.OracleDriver"
jdbcUrl="jdbc:oracle:thin:@centosoracle:1521:XE"
    connectionInitSql="ALTER SESSION SET CURRENT_SCHEMA =
REPORT_ARCHIVE"
```

- b. Comment out the tag `userDatabaseRealm`.
  - c. Repeat this step for `Report` and `Report_Archive` schemas.
2. Modify the `server.xml` for Active Directory connection. The following sample code illustrates the contents of this file:

```
<Realm className="com.ephesoft.real.EphesoftRealm"
        ConnectionURL="ldap://10.1.0.152:3268"
        connectionName="cn=steve t.,cn=users,DC=PSTEST,DC=com"
        connectionPassword="L0epDBA86co0d/pK3+Ev5tpAMkEQDl1KzG1GismBAoQ="
        userBase="DC+PSTEST,DC=com"
        userSearch="(sAMAccountName={0})"
        userSubtree="true"
        referrals="follow"
        roleBase="dc=PSTEST,dc=com"
        roleName="cn"
        roleSubtree="true"
        roleSearch="(member={0})"
/>
```

3. Make changes in the `dcma-encrypt` field. Note that the `password.encrypt` property changes to `false` after the service is restarted. In this example, this setting remains `true`.

```
#Password encrypted property disabled.
#Password encrypted property disabled.
Password.use_encryption=true
#Defines whether the passwords will be encrypted on application startup
# True, if passwords need to be encrypted
# False, otherwise
password.encrypt=false
#Defines the password suffix that will be used with passwords.
#Only change it once before applying this feature.
Password.encrypt_suffix==EPHESOFT##
~
~
```

4. Make changes in the `dcma-ftp` field. The following sample code illustrates the contents of this field.

```
ftp.server.url=ftp.yourFTPserver.com
ftp.server.username=ephesoft
ftp.server.password=04bNdbF0o/H7zCRH7CLQqa==
ftp.number_of_retries=3
ftp.upload_bass_dir=test
ftp.upload_troubleshoot_dir=troubleshoot
# timeout in milliseconds
ftp.data.timeout=600000
[root@centosoracle dcma-ftp]#
```

5. Make changes to `etl-variables.properties`. The following sample code illustrates the contents of this file.

```
# ephesoft.loginusername and ephesoft.loginpassword should be changed.
# if encryption switch is ON, then credentials should be encrypted.
ephesoft.loginusername=ephesoft
Ephesoft.loginpassword=D4NdbF0o/H7zCRH7CLQqa==
Ephesoft.cleanupBatchInstance=ON
```

```
Reporting.purge_duration=90
[root#centosoracle dcma-reporting]#
```

7. Make changes in user-connectivity. The following sample code illustrates this file.

```
#This Property defines which type of connectivity is used. Please enter
# 0 = LDAP
# 1 = MS Active Directory
# 2 = Tomcast
user.connection=1

# This property is defined common for all types connectivity
# LDAP/MS Active Directory

user.connectivity_url=ldap://1-.1.152:3268
user.connectivity_config=com.sun.jndi.ldap.LdapCtxFactory
user.connectivity_domain_component_name=PSTEST
user.connectivity_domain_component_organizatino=com
user.connectivity_cs=steve t., cn=users,DC=PSTEST,DC=com
user.connectivity_password= L0epDBA86coOd/Pk3+Ev5tpAMkeQDl1KzG1GismBAoQ
```

6. The following snapshot illustrates the user interface login in the browser address field.



Transact User Interface Login

## System Configuration | Connection Manager and Oracle Connection

In Transact 4.5.0.0, the Connection Manager connection to Oracle, using SID and Service name, might fail, even if using the correct credentials. This is a system configuration issue, and can be resolved with the following steps.

The following fields in the **Connection Manager** must be typed with upper-case characters. This is a restriction from Oracle.

Use upper-case letters to ensure that the connection to Oracle is successful.

- **DATABASE NAME**
- **USER NAME**

## User Interface | File Upload Screen — Upload Time and Status

Transact 4.5.0.0 may show 100% file upload status, in the **File Upload** screen, even if the file upload process is not complete. In particular, this may occur during the uploading of large files.

- When uploading files to Transact, the application first uploads files to a temporary directory, and this is the step in which the **File Upload** screen reports progress with a percentage.
- After the upload to the temporary directory, Transact then moves files to the target upload path from the temporary directory.
- Therefore, the upload process may still be in progress, though the **File Upload** screen indicates 100% complete status.

**Note:** In case of uploading a large file, the transfer from the temporary directory to the folder location may take some significant time, but this transfer process cannot be shown in the **File Upload** screen.

Be sure to allow sufficient time for file uploads, and do not assume the file upload process is complete, even if the **File Upload** screen reports 100% complete.

Verify completion of the file upload process by viewing the file in the target location.

## User Interface | Review Screen and Saving Changes

In the **Review** screen, Transact 4.5.0.0 does not support the **Ctrl + E** keyboard shortcut when saving changes directly to the xml file.

- If the **Review** button is red, and you leave the **Review** screen, the changes will not be saved to the xml file, even if you attempt to use the **Ctrl + E** keyboard shortcut.

Changes are saved only when the **Review** button on this screen becomes blue, and before you navigate away from the screen.

- Therefore, ensure the **Review** button is blue before leaving the **Review** screen, to verify that your changes are saved to the xml file.

## Validation | Table View and Validation Screen Operations

When using the Ctrl + M keyboard shortcut, it has been observed that the **Validation** screen may hang while in **Table View**. When this happens, the system may attempt to move to the next document. This behavior occurs when the user attempts to use the Ctrl + M keyboard shortcut in **Table View**.

Normally, the Ctrl + M keyboard shortcut allows a user to jump from the table in one document to the first table in the next document. However, in Transact 4.5.0.0, this keyboard shortcut may stall (or freeze) the screen, then continue to the next document without validating the original document.

In Transact 4.5.0.0, avoid using the Ctrl + M keyboard shortcut in the **Validation** screen. The validation process will validate documents properly, and table extraction should operate with no issues.

The Ctrl + M keyboard shortcut will be improved with an upcoming release.

## Ephesoft Transact 4.5.0.0 Integration and Licensing

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### Transact Integration

#### Integration (OS) | Windows Support

##### Server Environments

##### Operating Systems

##### Windows

Windows 7 SP1  
Windows 10  
Windows Server 2008 R2  
Windows Server 2012  
Windows Server 2012 R2  
Windows Server 2016

##### **Note:**

- Transact 4.5.0.0 and Recostar do not support Windows Server 2008 32 bit or 64 bit.
- Transact 4.5.0.0 and Recostar do support Windows Server 2008 R2.

##### Databases

##### Windows Only

MS SQL Server 2008 (all versions)  
MS SQL Server 2012 (64 bit) – All Versions  
MS SQL Server 2014  
MS SQL Server 2016 (4.1.2.0 or higher)

**Note:** If you have an existing database, you can install or upgrade to Transact 4.5.0.0, and select the existing database for integration with Transact. If you are installing Transact 4.5.0.0 on Windows 7 or Windows 2008 R2 Server, the Transact installer can install Windows 2008 SQL Server Express Edition as an option. In this case, all other Windows OS options are grayed out in the Installer.

##### Windows and Linux

MariaDB Server (MySQL compatible) – 10.0.19  
MySQL — 5.5  
Oracle Database Server -11.2.0.4 (Release 4.1 onward)  
Oracle Database Server -12.1.0.2.0 (Release 4.1 onward)

##### Application Server

Tomcat 7.0.5  
Tomcat 8.0.44 (4.1.3.0 onward)

Web Server	Apache 2.4.28 (httpd) <b>Note:</b> In Transact 4.5.0.0, Apache Web Server support is enhanced from Version 2.2 to Version 2.4.28.
Authentication	LDAP 2.2 LDAP 2.4 Active Directory
Java Platforms	Java 7 & Java 8 from Release 4.1 onward

Client Environments

Browser Support	Chrome Version 43.0.2357.124 m and above Firefox Version 38.0.1 and above MS Edge IE Version 10 and above MS IE Version 10 and above
Scanners	Fujitsu Scanners – Fujitsu fi-6130 – Fujitsu fi-6140z – Fujitsu fi-7160 Drivers – Twain driver – PaperStream driver
Advanced Web Scanner Support	Browser
Screen Resolution	1366*768 and above

**Integration (OS) | Linux Support**

Server Environments

Operating System	RHEL 6.8, 6.9, and 7.3 64 bit CentOS 6.9 and 7.3 64 bit Ubuntu 16.04 LTS (clean installation only)
Databases	<b><u>Windows and Linux</u></b> MariaDB Server (MySQL compatible) – 10.0.19 MySQL — 5.5 Oracle Database Server -11.2.0.4 (Release 4.1 onward) Oracle Database Server -12.1.0.2.0 (Release 4.1 onward) <b>Note:</b> If you want to use MS SQL Server 2008, 2012, 2014, or 2016, they must be installed before you start the Transact installer. If not, you can use the Transact installer and it will install 2008 Express Edition for you.

Application Server	Tomcat 7.0.73
Web Server	Apache 2.4.28 (httpd)
	<b>Note:</b> In Transact 4.5.0.0, Apache Web Server support is enhanced from Version 2.2 to Version 2.4.28.
Authentication	LDAP 2.2 LDAP 2.4 Active Directory
Java Platforms	Java 7 & Java 8 from Release 4.1 Onwards

Client Environments

Browser Support	Chrome Version 43.0.2357.124 m and above Firefox Version 38.0.1 and above Microsoft Edge IE Version 10 and above Microsoft IE Version 10 and above
Scanners	Fujitsu Scanners – Fujitsu fi-6130 – Fujitsu fi-6140z – Fujitsu fi-7160  Drivers – Twain driver – PaperStream driver
Screen Resolution	1366*768 and above

ECM Certification

Alfresco 5.1  
Alfresco 5.2

SSO Certification

ADFS 6.3.0.0  
Ping Federate  
Okta  
SSO Circle  
CAS 3.5.1, 4.0.1, 7.0.7,  
4.1.10 and 4.2.7

Additional information about browser support is available throughout user documentation during the general release.

- Release 4.5.0.0 resolves certain browser-specific operational limitations from previous releases.

- This release also widens consistent support across additional browsers, with improvements to multiple screens in the user interface.

**Note:**        *(repeated from earlier topics)*  
If you want to use MS SQL Server 2008, 2012, 2014, or 2016, they must be installed before you start the Transact installer. If not, you can use the Transact installer and it will install 2008 Express Edition for you.

### **Integration (Browser) | Chrome — Enhanced Support**

Transact 4.5.0.0 enhances support for multiple screens in Google Chrome. The primary screens with enhanced support include the **Review** and **Validation** screen.

Information about browser support will be widely available in user documentation for general release.

### **Integration (Browser) | Microsoft Edge — New Support**

Transact 4.5.0.0 introduces support for the Microsoft Edge Browser on Windows 10 systems. Transact supports IE throughout the user interface, to include landscape-oriented screens and the following specific screens:

- Batch Class Management
- Review/Validation
- Test Extraction
- Advanced Web Scanner

### **Integration (Browser) | Microsoft Internet Explorer — Enhanced Support**

Transact 4.5.0.0 enhances support for multiple screens in Microsoft Internet Explorer. The primary screens with enhanced support include the **Review** and **Validation** screen.

## Transact Licensing

For information about standard licensing of Transact 4.5.0.0, refer to the following Ephesoft wiki article:

- [Licensing | Licensing Ephesoft Transact 4.5.0.x](https://wiki.ephesoft.com/licensing-licensing-ephesoft-transact-4-5-0-x)  
<https://wiki.ephesoft.com/licensing-licensing-ephesoft-transact-4-5-0-x>

Separate from the document cited above, this section of the Release Notes describes release implications, licensing restrictions, and additional licensing information specifically for Transact 4.5.0.0:

- [Licensing | 32-Core Recostar License](#)
- [Licensing | Language and CJKT Licensing — Fixed-form Template Editor](#)
- [Licensing | License File Requirement during an Upgrade](#)
- [Licensing | Licensing a New Ephesoft Transact 4.5.0.0 Installation](#)
- [Licensing | Licensing an Upgrade to Ephesoft Transact 4.5.0.0](#)
- [Licensing | Licensing Policy Changes](#)
- [Licensing | License Notice Excel File Replaces the Notice.txt File](#)
- [Licensing | Linux Server Time Settings](#)
- [Licensing | Logi License Restriction](#)

### Licensing | 32-Core Recostar License

The Recostar engine, used by Transact for OCRing the documents in Windows environment, is a licensed tool. The license is provided on the “per-core” basis. That means it is based on the number of cores used to run the software, rather than the number of authorized users.

Previously, the full-page OCR on Ephesoft Transact servers was performed on the basis of an 8-core Recostar license. Thus, even if the server had 16 cores, the application could utilize only 8 cores for performing OCR functions. This impacted the performance of the entire system.

In Ephesoft Transact v.4.5.0.0, the Recostar OCR engine allows utilization of 32 cores with an upgrade from an 8-core to a 32-core Recostar license. This is done to improve performance and ensure that all available resources are used with maximum efficiency and productivity.

**Important:** If you are using three or more servers in a cluster, the number of IO operations on the SharedFolders with a 32-core Recostar license may increase and create a bottleneck, leading to a performance drop.

To reduce this IO load from the SharedFolders, Ephesoft recommends that you move the UNC folder to a separate disk (other than the one where the SharedFolders are installed).

Additional information about this feature is available on the Ephesoft website.

### Licensing | Language and CJKT Licensing — Fixed-form Template Editor

The fixed-form template editor in Nuance does not support CJKT languages (Chinese, Japanese, Korean, and Thai).

Additionally, and for Recostar and Nuance, if you wish to use Chinese, Japanese, Korean, Thai, or Arabic, special licensing is required, and additional license costs apply.

## Licensing | License File Requirement during an Upgrade

If you are upgrading to Transact 4.5.0.0 from a previous Transact installation, you must obtain a new license file as part of the upgrade process.

Note that Windows will give the new license file a new file name if it discovers the existing license file from the previous installation, as follows:

- Original license file name — ephesoft.lic
- Automatically generated new license file name — ephesoft.lic(1)(2)

To complete the licensing setup, ensure that the new license file retains the original file name (not an automatically modified file name).

## Licensing | Licensing a New Ephesoft Transact 4.5.0.0 Installation

When installing Transact 4.5.0.0 with a new installation, refer to the following wiki articles:

- Licensing | Licensing Ephesoft Transact 4.5.0.0  
<http://wiki.ephesoft.com/home/documentation/licensing-policy-changes>
- Licensing | License Installation  
<http://wiki.ephesoft.com/ephesoft-license-installation>
- Licensing | Windows Licensing  
<http://wiki.ephesoft.com/how-to-install-the-ephesoft-enterprise-license-windows>

## Licensing | Licensing an Upgrade to Ephesoft Transact 4.5.0.0

When upgrading to Release 4.5.0.0 from a previous Transact release, follow these steps.

1. Request and obtain a new license and license file that is compatible with the new 4.5.0.0 release.
2. When a previous Transact license exists, Windows renames the new license file, and retains the name of the previous license file.

This file-renaming requires a manual workaround to support the upgrade.

- a. The new license file for Transact 4.5.0.0 will be renamed to — ephesoft (2) (2).lic.
  - b. Remove the old license file — ephesoft.lic.
  - c. Rename the new license file from ephesoft (2) (2).lic to ephesoft.lic.
  - d. Ensure that the new license file is located in the application **license-util** folder.
    - This folder holds all the dependencies needed in order to properly install the licensing file and successfully activate transact. This folder should always be present when running the license installation procedure.
3. Once the new license file has been renamed, execute the Transact 4.5.0.0 License Utility.
    - It may be necessary for Ephesoft Technical Support to enable or verify Web Service calls checks, as a part of the upgrade.

## Licensing | Licensing Policy Changes

Previously, the Ephesoft Transact license was not OS specific. The same license could be used for both Windows and Linux. The license was issued for a specific period of time, during which the user could freely upgrade to any new minor or major version.

Effective with Ephesoft Transact v.4.5.0.0, the licensing policy has been improved in the following ways:

- The Transact license is now OS-specific. Separate licenses are now issued as follows:
  - Windows
  - Linux
  - Both operating systems

Additional information about licensing is available on the Ephesoft wiki website.

## Licensing | License Notice Excel File Replaces the Notice.txt File

Effective with Release 4.5.0.0, Transact now includes the License Notice Excel file, which replaces the notice.txt file that was used in previous releases. This new Excel file includes all updated and accurate information for Transact 4.5.0.0 licenses. This License Excel file now contains the following types of third-party component information:

- Component name
- Component version
- Component home page
- License name used by component
- License version
- Source of license information/ License home page
- Updated license file(s)
- License information is also published over the Ephesoft-internal Confluence [page](#) and contains the following:
  - Third Party Component(s) Details i.e. License Notice Excel file
  - License Details

This file can be exported as a CSV file. The complete list of possible licenses with a Transact deployment may include any of the following.

License Name	License Version
Apache License	2.0.
Berkeley Software Distribution (BSD) License	Clause 1, Clause 2
Boost Software License	1.0.
Common Development and Distribution License (CDDL)	1.0.
Common Development and Distribution License (CDDL) and GNU General Public License(GPL) with Classpath Exception License	CDDL 1.1 & GNU GPL 2.0
Common Public License (CPL)	1.0.
Creative Common License (CCL)	1.0., 3.0.
CUP Parser Generator Copyright Notice License	Generic

Eclipse Public License	1.0.
GNU Affero General Public License (AGPL)	3.0.
GNU General Public License(GPL)	2.0,3.0
GNU Lesser General Public License (LGPL)	2.0,2.1,3.0
Image Magick License	Generic
Indiana University Extreme Lab Software License	1.1.1
Massachusetts Institute of Technology (MIT) License	Generic
Microsoft JDBC Driver for SQL Server CTP Pre-Release License	4.0.
Microsoft JDBC Driver for SQL Server License	4.0.
Microsoft SQL Server R2 Express License	2012
Microsoft Visual Studio License	2013
Mozilla Public License	1.1,2.0
OpenLDAP Public License	Generic
Oracle JDK License	Generic
Oracle Technology Network Development and Distribution License Terms	Generic
OSGI License	2.0.
Public Domain License	Generic
Python Software Foundation License	2.0.
SIL Open Font License	1.1.
Sun Microsystems, Inc. Binary Code License Agreement	Generic
Sun Public License	1.0.
University of Illinois/NCSA Open Source License (NCSA)	Generic

## Licensing | Linux Server Time Settings

There may arise a circumstance, when installing Transact 4.5.0.0 on a Linux Server, where Transact 4.5.0.0 generates a license error upon startup.

To work around this issue, on the license server, create the license using the US client, with the correct date and time. Fixing the server time will resolve this license issue.

## Licensing | Logi License Restriction

For users who require report functions in Transact 4.5.0.0, the **Reports > Dashboard Reports** screen may display the following notice:



This issue has been resolved. If you encounter this message, please note that Transact 4.5.0.0 logging functional are still operational, but you must implement a workaround.

In this instance, replace the old license file with new license file (**lgx110102.lic**) in this folder:

**C:\Ephesoft\EphesoftReports.**

Please access and implement the workaround that is available in the following article:

- <http://wiki.ephesoft.com/known-issue-logi-license-expiration>
- [System Configuration | Connection Manager and Oracle Connection](#)

## End of Life Statements

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### **Notification of End of Life (EOL) for Ephesoft Transact 4.0.x**

Transact 4.5.0.0 is a major release of the Transact product. With this milestone, we would like to announce the end of life (EOL) for Ephesoft Transact 4.0.x.

Our policy here at Ephesoft is to support two major releases of Transact concurrently. This means that our Support team will be providing service for any 4.1.x or 4.5.x version of Transact now that 4.5.0.0 is generally available.

Ephesoft will provide a grace period for Transact 4.0.x support until September 30th, 2018. At that time, a limited support extension will be available for Transact 4.0.x at an additional cost for those needing additional time to plan their upgrade.

For more information please contact our sales team at [sales@ephesoft.com](mailto:sales@ephesoft.com).

### **Notification of End of Support for Ubuntu 14.04 LTS**

Ubuntu will be ending the life of their 14.04 LTS operating system next year. More information on supported Ubuntu releases and end of life dates can be found here:

<https://www.ubuntu.com/info/release-end-of-life>

This is a courtesy notice that Ephesoft Transact will no longer support the Ubuntu 14.04 LTS operating system. This change will take effect once Ephesoft Transact 4.5.0.0 becomes generally available in the coming weeks.

The Ubuntu 16.04 LTS release has been available since 2016 and will be supported by Ubuntu into 2021. We encourage you to take a closer look at Ubuntu 16.04 LTS. Information on this release can be found at the following link:

<https://www.ubuntu.com/server>

## Transact 4.5.0.0 Installation Guidelines and Features

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Ephesoft Transact is a thin client, browser-based solution that runs on Windows or Linux platforms. Once the installation is complete, Ephesoft Transact will be accessible via a supported web browser (Firefox, Chrome, IE, Safari). Silent installers are available for both Windows and Linux.

Ephesoft Transact can be installed on your premises or in your own cloud environment.

**Note:** You do not need to perform incremental upgrades to Release 4.5.0.0 if upgrading from dated releases. For example, you can upgrade directly to Release 4.5.0.0 from a 4.0.x release without having to upgrade to a 4.1.x release as an incremental step.

The Transact server installation includes the following components:

- Web server – Apache Tomcat will be installed by default but IIS can be used if desired
- Database – MariaDB/MySQL, Microsoft SQL, Oracle
- Application – Java-based server application
- Reporting – standard and advanced reporting
- Web Service APIs

### Best Practices for Installation

**IMPORTANT:** When using the zip file to install Transact 4.5.0.0, ensure that you extract all files to a local folder before running the installation .exe file. Do not run the .exe file from within an unzipped file.

- Pre-install SQL Server 2012, 2014 or 2016 prior to a new installation of Transact 4.5.0.0. Follow additional instructions in [Installation | SQL Server Implications](#).
- Install Transact 4.5.0.0 on new, clean server equipment or a new VM.
- Set up Transact 4.5.0.0 as an unrestricted service account with full local admin rights.
- The default installation folder is case-sensitive. The folder titled “Ephesoft” must start with the upper-case E. For example:

C:\Ephesoft

- Once installed, any anti-virus services with real-time scanning must be disabled for all Ephesoft folders (Ephesoft Folder, SharedFolders, all UNC import and export paths and the System Temp folder).

**NOTE:** Form authentication is supported for the Linux installer.

### Best Practices for In-Place Upgrade

- **Time Requirements** — Be aware that the time required to execute a successful upgrade can differ, according to the following known factors:
- The number of batch classes in your deployment
- The number of document fields
- Additional configurations and fields in the batch class

The heavier the batch class in the installation, the more time will be required for upgrade. Please note that Ephesoft has integrated several optimizations and performance upgrades in Release 4.5.0.0, but heavier batch classes may still have some impact on time requirements.

Ephesoft recommends that you keep active batch classes to a minimum during upgrade. Please delete unused or inactive batch classes prior to the upgrade.

## General Installation Sequence and Variations

The general installation procedure has not changed, but several specific parameters have changed.

The general installation procedure is as follows:

- Download the zip file and extract the contents.
- Set up the Config.properties file first. Note that the code comments (green) have useful information. Note that the installation user needs to add the Oracle Database Server, in addition to keeping the MariaDB Server (MySql compatible).
- Run the commands.

Additional information about installation and upgrade for Transact 4.5.0.0 is available with [Product Documentation and Resources](#).

## MS SQL Server Implications

### Installation | Preinstall MS SQL Server, or Installer default is 2008 Express Edition

**Note:** If you want to use MS SQL Server 2008, 2012, 2014, or 2016, they must be installed before you start the Transact installer. If not, you can use the Transact installer and it will install 2008 Express Edition for you.

#### Restriction 1

The following restriction applies to new installations of Release 4.5.0.0. New installations now include the **New SQL Server** option. Please note the following information and requirements:

Problem	From Ephesoft Transact 4.5.0.0, we remove the support for SQL Server 2008 by default with selecting " <b>New SQL server</b> " option. Until Release 4.1.3.0, SQL Server 2008 was installed by default when you select the <b>New SQL Server</b> option.
Solution	With Ephesoft Transact 4.5.0.0, Ephesoft requires that SQL Server 2012, 2014 or 2016 be pre-installed before starting the Ephesoft Transact 4.5.0.0 installer. Then select the option " <b>existing MS SQL Server instance</b> " during the installation to proceed using MS SQL Server with Ephesoft Transact 4.5.0.0.

## Installer Rollback Support

Ephesoft Transact v.4.5.0.0 installer supports the full rollback, taking backup of the entire current application as well as the registry before installing a new version. Now, if any error occurs during the upgrade, the new installation will be completely rolled back, and the previous version will be reinstated. This feature is applicable only to upgrade cases. Supported OS - Windows.

The installer rollback is initiated in the following cases:

- If the user clicks Cancel at any point of User Interaction sequence explained below.
- If any error occurs during the upgrade, which prevents successful installation of a new version, for example:
  - Exception while updating the placeholder
  - Exception while merging property file
  - Exception while merging web.xml
  - Exception while merging applicationContext.xml
  - Exception while merging server.xml
  - Exception while copying jdk folder for 64/32 bit
  - Exception while copying ghostScript folder for 64/32 bit
  - Error while executing DB script

Every time the installer rollback is initiated the following automated processes occur:

- All the new files and folders copied during the upgrade will be deleted.
- Old files from the full backup will be copied back to the installation folder.
- Registry entries will be deleted for the new version.
- Registry entry will be restored from full backup.
- Entry from the components (add/remove programs) will get reverted.
- New shortcuts from the **Program** menu will be deleted and old shortcuts from the full backup will be copied to the program menu.
- All the services (Ephesoft Transact / Open LDAP, etc.) will get started.

## Linux Installation Notes

- **Linux | HTTPS Installer Support** — Release 4.5.0.0 supports HTTPS with Linux installations. This enhancement relates to form authentication in the following ways:
  1. server.xml — The connectors, valve, listener will be updated if form authentication is selected.
  2. dcma-batch.properties — Entails batch.base\_http\_url use of https and the corresponding port number in the case of form authentication.
  3. web.xml — Covers authentication mode, Tomcat port, HTTPS context param, login-config.
  4. dcma-workflows — The wb.hostURL uses HTTPS and the corresponding port number.
- **Linux | Recovery from Interrupted Installation** — With previous releases, if a user cancelled out of an installation in progress, the Installer would not start in the appropriate place if attempting a new installation. Release 4.5.0.0 resolves and optimizes Linux installation issues.
- **Oracle on Linux Installation** — Release 4.5.0.0 streamlines Oracle installation under the silent installation feature. The user is not prompted to provide as much information. Additional information about this feature is available on the Ephesoft website.

## Windows Installation Notes

### Windows | UAC, IPv6, Environment Variables Check in Ephesoft Transact Installer for Windows

Ephesoft Transact v.4.5.0.0 installer now performs the check of the UAC, IPv6 and environment variable settings to ensure successful installation of the application and its license. For that, a new Ephesoft Prerequisites Check screen has been introduced in the Windows installer. Additional information is available on the Ephesoft website.

### Windows | Logon Service User Credentials during Upgrade and Fresh Installation

Previously, the Ephesoft Transact installer created a Windows service that would default to start as the local logged on user. If the user wanted to change the account, the user needed to do it manually.

In Ephesoft Transact v.4.5.0.0, you can select whether to install the service with the local system account or another account. A new section has been added to the installer with two options: Local System Account and This Account. If you select the first option, the system will automatically pick up the credentials and create a service for the local system account. This is the same as previous functionality.

More information about this feature is available on the Ephesoft website.

### Windows | Match Registry Database Type in Server.xml and Windows Registry in Upgrade

In previous versions of Transact, the database details in the server.xml file and Windows registry were not matched during installation of an upgrade. Thus, the installation would proceed normally, but the user could face some difficulties later when he tried to use the updated application.

Whenever Transact is installed, database information is stored both in the server.xml file and Windows registry. If required, the user can change the database for Ephesoft Transact and update the database details in the server.xml configuration file. However, the Windows registry will still contain entries created at the time of installation. While this does not have any consequence for current system operation, it used to create problems after the application was upgraded. During the upgrade, the system picks up the details from the registry and automatically updates the server.xml file. As a result, the upgraded application could refer to a database that was no longer present and go into an error state.

In Ephesoft Transact v.4.5.0.0, the database details in server.xml are matched with the corresponding registry entries every time you upgrade the application. If these parameters match, the installation will proceed. If these parameters don't match, the system will stop the installation with the error message "Installer has detected difference in selected database type in Windows Registry and Server.xml. Please update the configuration in registry to match the server.xml and re-try the installation".

Additional information about this feature is available on the Ephesoft website.

### **Windows | Additional Installation Features**

Release 4.5.0.0 enhances the operation of multiple components in Windows installation. Such improvements include profile updates, token updates and folder renaming. Also refer to the [Installer | Installer Rollback Support](#) feature.

### **Oracle Installer Features**

#### **Installer | Oracle Connectivity during Installation**

Release 4.5.0.0 resolves connectivity issues that were observed on silent installations from prior releases.

#### **Installer | Oracle Connectivity during Installation**

Release 4.5.0.0 resolves issues with Oracle database connectivity. In prior releases, Oracle database connectivity experienced occasional issues on fresh installations on virtual machines.

#### **Installer | Oracle and SQL Script for Oracle**

The Installer supports the SQL script for Oracle and is compatible with the upgrade. Refer to [Installation | SQL Server Implications](#) for additional information.

### **Unclassified Features of Installation & Upgrade for Release 4.5.0.0**

- **Apache Codec 1.10** — Release 4.5.0.0 integrates the Apache Codes in EphesoftReports/WEB-INF/lib and JavaAppServer/lib. This improves security.
- **Deletion of Old Licensing Information** — There are two types of licenses provided for Ephesoft Transact. One type is for 3.x versions and another type for 4.x versions. Licenses for Transact v.4.x can be applied to all 4.x versions (i.e. 4.0.6.0, or 4.1.2.0, etc.). But Transact v.3.x licenses do not work on the latest releases.

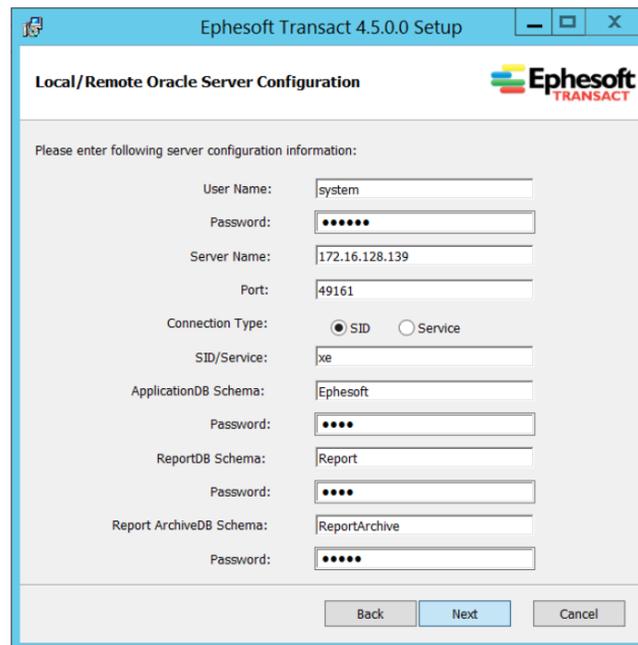
Previously, when the user upgraded Transact from v.3.x to any 4.x version, old license information remained in the Windows registry, causing licensing conflicts. The user was not

able to log in to the system after the upgrade as the old license would not work for a new system. This particularly impacted troubleshooting and upgrades in clustered environments.

Now, old license information is deleted from the registry by the installer. If you upgrade your application from v.3.1.2.14 to any 4.x version, all license files will be removed. The Ephesoft Support team will provide a new license which you can then install on your server. The Linux Installer has been updated to behave the same way.

Additional information about this feature is available on the Ephesoft website.

- **details.properties File** — Release 4.5.0.0 resolves issues with the details.properties file not populating the MAC address correctly, during upgrade from Release 4.1.3.0.
- **English Only** — The Transact Installer is only available in English. IN Release 4.5.0.0, additional languages are not supported for the Installer.
- **Form Authentication** — The 4.5.0.0 installer supports form authentication for both Windows and Linux.
- **Install/Configure Database Screen** — Release 4.5.0.0 improves the installer performance during the processing on this screen and the OpenOffice port screen.



- **Redist Installer Screen** — Release 4.5.0.0 improves the behavior and visibility for this screen during prerequisite installation.
- **Libreoffice Error Capture Logging** — Release 4.5.0.0 now logs any errors that may occur during Folder Import module with Libreoffice. These errors are logged under the Ephesoft error logs with detailed description.
- **Logging | Installation Logs** — The Installer now provides the user with a message to check the installation logs, in any case in which the installation is not successful.
- **Multi-server Setup** — Release 4.5.0.0 resolves certain issues observed with multi-server setup during installation.

- **Import | PIV/CAS Certificate Import with Installer** — Release 4.5.0.0 allows user to configure PIV/CAC authentication manually during installation, in which the installer skips the manual configuration required for previous releases. If the user chooses the PIV/CAC authentication type during installation, the installer prompts the user to import the required certificates during the installation flow. Certificate mappings are then done automatically.  
Additional information about this feature is available on the Ephesoft website.
- **jna jar File** — Release 4.5.0.0 upgrades the jna jar file from 3.0.9 to 4.5.0. This jar file contains upgrades in the Advanced Web Scanner. This improves security.
- **Performance** — The time required for installation has been reduced significantly in Release 4.5.0.0. The optimization of the backup file increases performance and reduces time required for processing.
- **PIV/CAC Config File Selection during Installation** — Release 4.5.0.0 adds an option in the Installer in which the user can select a config file for auto-fill-in, for the fields of PIV/CAC configuration.
- **Pre-installation Checks** — The Installer performs a series of pre-installation checks to verify that various system settings, status and other prerequisites are met prior to beginning the installation. These checks include IPv6, and additional components.
- **Registry** — The Installer has required Registry permissions for installation of the Transact folders and license configurations.
- **Upgrade Detection** — When upgrading to Release 4.5.0.0 from an earlier release, the installer now detects whether the upgrade is from a 3.x release. The installer deletes old license information from the registry during installation so that there are no conflicts in clustered environment.
- **Variables** — If the Installer detects variables such as JAVA-HOME, environment variables, and others such as Java overwrites, the Installer will notify the user for any case in which the variables are to be overwritten.

## Workflow Features and Enhancements in Transact 4.5.0.0

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### Overview of Transact Workflow Modules

This section presents features and enhancements for the eight modules in the typical Transact workflow:

1. [Folder Import Module](#) — New Features and Enhancements
  - Describes multiple new features that enhance or are accessed from the Folder Import module, to include CMIS import, email import, multipage files, and more.
2. [Page Process \(Capture\) Module](#) — New Features and Enhancements
  - Describes encryption, temporary files, web scanning image caching and additional enhancements to the Page Process module.
3. [Document Assembler and Review Module](#) — New Features and Enhancements
  - Describes new enhancements that are visible in the Document Assembler module, such as support for hidden documents, line-item matching (LIM), keyboard shortcuts and additional enhancements
4. [Extraction Module](#) — New Features and Enhancements
  - Describes many extraction, OCR and table extraction features in the Extraction module of Release 4.5.0.0.
5. [Automated and Manual Validation Modules](#) — New Features and Enhancements
  - Describes line-item matching (LIM), dictionary mapping, machine learning and additional features for the Automated Validation module in Transact 4.5.0.0.
6. [Export \(Delivery\) Module](#) — New Features and Enhancements
  - Describes the many export features and plugins of Transact 4.5.0.0.

There are certain features that span two or more modules, or which pertain to other Transact deployment features. In this case, refer to the chapter, [Additional Features and Enhancements in Transact 4.5.0.0](#).

## 1. Folder Import Module — New Features and Enhancements

This section describes the primary features and enhancements introduced to the **Folder Import** module in Transact 4.5.0.0.

### Import | Integrated Platforms

Transact 4.5.0.0 supports import functions from the following platforms.

Platform	Import?
<b>Alfresco 5.1 and 5.2</b>	Yes, is supported via the CMIS import plugin capabilities. See <a href="#">Import   Content Management Interoperability Services (CMIS) Import Configuration</a> .
<b>CMIS</b>	Yes, is supported as the CMIS_PLUGIN, with enhancement in Transact 4.5.0.0. See <a href="#">Import   Content Management Interoperability Services (CMIS) Import Configuration</a> .
<b>Documentum</b>	Yes, is supported via the baseline CMIS import capabilities. See <a href="#">Import   Content Management Interoperability Services (CMIS) Import Configuration</a> .
<b>Email Import</b>	Yes, is newly supported in Transact 4.5.0.0. <a href="#">Import   Email Import Enhancements</a>
<b>FileBound</b>	Yes, is supported via the baseline CMIS import capabilities. See <a href="#">Import   Content Management Interoperability Services (CMIS) Import Configuration</a>
<b>HP</b>	Yes, is supported via the baseline CMIS import capabilities. See <a href="#">Import   Content Management Interoperability Services (CMIS) Import Configuration</a>
<b>Hyland OnBase</b>	Yes, is supported via the baseline CMIS import capabilities. See <a href="#">Import   Content Management Interoperability Services (CMIS) Import Configuration</a>
<b>IBM CM</b>	Yes, is supported via the baseline CMIS import capabilities. See <a href="#">Import   Content Management Interoperability Services (CMIS) Import Configuration</a>
<b>IBM FileNet</b>	Yes, is supported via the baseline CMIS import capabilities. See <a href="#">Import   Content Management Interoperability Services (CMIS) Import Configuration</a>
<b>Nuxeo</b>	Yes, is supported via the baseline CMIS import capabilities. See <a href="#">Import   Content Management Interoperability Services (CMIS) Import Configuration</a>
<b>NSI</b>	Yes, is supported via the baseline CMIS import capabilities. See <a href="#">Import   Content Management Interoperability Services (CMIS) Import Configuration</a>

## Import | CLEANUP Plugin Enhancements

Transact uses the CLEANUP plugin to delete system files and UNC folder data once all the processing on the batch has been completed. Enable and configure this plugin from the **Administrator > Batch Class Management** screen.

This plugin brings the following benefits to batch class operations:

- Improves the conversion process.
- Improves system performance.
- Reduces server maintenance over time, by automatically eliminating temporary files that otherwise accumulate over time.

Transact 4.5.0.0 enhances the CLEANUP plugin in two primary ways:

- Introduces support for this plugin in the **Folder Import** module, and continues support for this plugin in the **Export** module. You can run this plugin after every conversion to clean up any temporary files on the server.
- Improves the process switch for very large multi-page TIFF files (TIFF files over 15MB in size).

## Import | Configure Batch Description as an Editable or Non-Editable Field in Upload Batch and Advanced Web Scanner

In previous versions of Transact, Batch Description was an editable field on the **Upload Batch** and Advanced **Web Scanner** interface. There was no way to make this a non-editable field. In Transact 4.5.0.0, a property has been added in the application.properties file to configure the **Batch Description** field as editable or non-editable on the **Upload Batch** and Advanced **Web Scanner** interface. You can set the property value as **True** or **False**.

Additional information about this feature is available on the Ephesoft website.

## Import | Content Management Interoperability Services (CMIS) Import Configuration

In previous versions of Transact, there was no provision to temporarily stop an existing CMIS (Content Management Interoperability Services) import configuration from the application interface. Once the CMIS import configuration was applied to a batch class, the system continued to fetch the documents from the target repository unless the configuration was deleted from the UI or backend.

In Transact 4.5.0.0, a new checkbox (**Enable**) has been introduced to the **CMIS Import** configuration screen. The user can now select or clear this checkbox to enable or disable the import of files from the CMIS repository at the batch class level.

Additional information about the CMIS plugin feature is available on the Ephesoft website.

- <http://wiki.ephesoft.com/cmisis-import>
- <http://wiki.ephesoft.com/cmisis-import-2>
- <http://wiki.ephesoft.com/cmisis-import-3>
- <https://wiki.ephesoft.com/cmisis-import-plugin>

## Import | Conversion of Multicolumn Excel Files into PDF

In previous Transact releases, when the user uploaded Excel files into Ephesoft Transact, they were converted into PDF format with a JOD converter using LibreOffice. Due to some limitations in the default conversion parameters, there were layout issues with Excel spreadsheets which contained multiple columns. After conversion of .xls files into PDF format, some columns would overflow on to the next page.

Effective with Release 4.5.0.0, Transact uses Apache OpenOffice SDK API methods to convert the files. Corresponding changes have also been made in the `dcma-open-office.properties` file to configure the PaperFormat, PaperOrientation, ScaleToPagesX, and ScaleToPagesY properties.

Additional information about this feature is available on the Ephesoft website.

## Import | IMPORT\_MULTIPAGE\_FILES Plugin Enhancements

Transact 4.5.0.0 enhances the IMPORT\_MULTIPAGE\_FILES plugin, which operates with the **Folder Import** module. Use this plugin when running a batch that contains multipage images. The plugin divides multipage PDF or TIFF files into multiple single-page TIFF files. The plugin uses GhostScript, Recostar or ImageMagick, in varying combinations, depending on the format of the incoming files.

In previous releases, users only had the option of configuring a few properties of this plugin. The properties supported in previous Transact releases are described in these locations:

- Release 4.0.0.0 (September 2014) — <http://wiki.ephesoft.com/import-multipage-files-plugin>
- Release 4.0.4.0 (November 2015) — <http://wiki.ephesoft.com/import-multipage-files-plugin-4040>
- Release 4.1.x.x (August 2016) — <https://wiki.ephesoft.com/import-multipage-files-break-multipage-tiff>
- Release 4.1.3.0 Logic Workflow (July 2017) — <https://wiki.ephesoft.com/logic-workflow-import-multipage-files>

Release 4.5.0.0 retains several previous plugin features, and enhances this plugin further in the following ways:

- Improves the user interface so that the plugin options are populated on the basis of the conversion tool selected (whether Recostar or GhostScript). The screen provides a more efficient auto-population of certain fields. This is a continuation of the enhancement introduced in 4.1.3.0.
- Improves the logical sequence of parameters that the user defines on the **Plugin Configuration** screen. This is new in Release 4.5.0.0.
- The plugin does not change the image dimensions, for the images that are converted via Recostar. This is new in Release 4.5.0.0.
- The Libtiff element has been upgraded. This is new in Release 4.5.0.0.

The configuration screen for this plugin now has the following properties:

Multi Page Import:*	YES
IM Convert Input Image Parameters:	-limit area 100mb
IM Convert Output Image Parameters:	-compress LZW
GhostScript Image Parameters:*	-dNOPAUSE -r300 -sDEVICE=tiffscaled24 -sCompression=lzw -dBATC
PDF To TIFF Conversion Process:*	Ghostscript
Recostar Compression Ratio:*	70
GM Convert Output Image Parameters:*	-compress LZW
GM Convert Input Image Parameters:*	-limit memory 100mb
Image Conversion Process:*	IMAGE_MAGICK
Optimized Tiff Conversion Switch:*	OFF

Field	Description
<b>Multi Page Import:*</b>	YES
<b>IM Convert Input Image Parameters:</b>	-limit area 100mb
<b>IM Convert Output Image Parameters:</b>	-compress LZW
<b>GhostScript Image Parameters:*</b>	-dNOPAUSE -r300 -sDEVICE=tiffscaled24 -sCompression=lzw -dBATC
<b>PDF To TIFF Conversion Process:*</b>	Ghostscript
<b>Recostar Compression Ratio:*</b>	70
<b>GM Convert Output Image Parameters:*</b>	-compress LZW
<b>GM Convert Input Image Parameters:*</b>	-limit memory 100mb
<b>Image Conversion Process:*</b>	IMAGE_MAGICK
<b>Optimized TIFF Conversion Switch:*</b>	OFF

Additional information about this feature is available on the Ephesoft website.

## Import | Email Import Enhancements

In Ephesoft Transact 4.5.0.0, the email import functionality has been enhanced in several ways:

1. Now, the system supports one more security type: STARTTLS (in addition to PLAINTEXT and SECURED previously configured via an SSL checkbox).
2. While Ephesoft Transact already supported connection to Exchange servers via IMAP and POP3, now the system provides a third way to access them, i.e. via Exchange Web Services (EWS).
3. The Microsoft down-level logon name format is now supported. This format is used to define a domain and a user account in that domain, for example, DOMAIN\UserName.
4. This feature supports multiple security types in classification and processing email.

Additional information about email import enhancements is available on the Ephesoft website.

## Import | Ghostscript Upgrade

Release 4.5.0.0 upgrades Ghostscript from v9.05 to v9.22. This script applies when doing PDF to TIFF conversion in the Folder Import Module, and this upgrade also enhances the Export module.

## Import | ImageMagick Upgrade

Release 4.5.0.0 updates ImageMagick from Version 7.0.4-0 Q8 to 7.0.6.0. This enhancement supports image conversion during Folder Import, and also with the Create Multipage Files feature in the Export module.

## Import | PDF Portfolio File Support

In previous releases, when the user tried to process PDF Portfolio files, the batches went into error at the Folder Import stage. The system used to break the PDF Portfolio into TIFF files successfully, however, PDF page count was always calculated only for the first embedded file. Since the Portfolio usually includes two or more files, the generated TIFF pages count was not equal to the input PDF page count, so the application used to go into error (“Exception in breaking the input file. Converted TIFF files count not equal to the TIFF pages count”).

In Ephesoft Transact v.4.5.0.0, PDF Portfolios are supported. You can now successfully process batches with this type of files as well as test your classification and extraction results. PDF Portfolios upload is also supported for creating KV Extraction Rules, Cross Section Extraction Rules, Paragraph Extraction Rules, Barcode Extraction Rules, and Table Extraction Rules.

**Note:** PDF portfolio is an integrated PDF unit containing several individual files. The files within the PDF Portfolio can have one or several pages.

For example, the PDF Portfolio described in additional feature documentation includes 3 PDF files: the first file contains two pages, the second file contains four pages, and the third file contains one page.

Additional information about using this feature is available on the Ephesoft website.

## Import | Script Omits Compression when File Import Contains an Image

Transact 4.5.0.0 now supports the new ImageScript.java script file that is available for the File Import module. This script will prevent the File Import module from performing compression on an incoming file if the input file contains an image. This script ensures smooth processing for such input files throughout the Transact workflow, and prevents exported files from becoming prohibitively large.

## Import | Set Batch Instance Priority from Advanced Web Scanner and Upload Batch Screens

In previous versions of Transact, the user could change the default priority of a batch instance only from the Batch Instance Management screen.

In Ephesoft Transact 4.5.0.0, you can also set the batch instance priority when creating batches on the Advanced Web Scanner and Upload Batch screens. The priority of a batch instance is a numerical value from 1 to 100, with 1 being the most urgent case and 100 being the least urgent. By default, all batch instances receive the priority defined for a batch class on the Batch Class Management screen.

A batch can have the following priorities:

Value	Priority
1 - 25	Urgent
26 - 50	High
51 - 75	Medium
76 - 100	Low

When processing batches with different priorities, the system will pick up the higher priority batches first.

When processing batches with same priority, you can use one of the two workflow batch picking algorithms: Round Robin (default) and FIFO, which can be selected in the **application.properties** file.

### Round Robin

Here, batch instances are processed in a cyclic manner. Suppose you have two batch classes, each having two batch instances. The system will pick up the batch instance for batch class 1, then move on to pick up the batch instance for batch class 2. This process will continue, with system picking one instance of each batch class at a time in a circular manner.

### FIFO (BatchInstancePriority)

Here, batch instances are processed in the order they have been created as new, irrespective of their batch class. Batches that have been created earlier will be picked up first, followed by batches that have been created later.

You can also change the Batch Instance priority on the Batch Instance Management screen by clicking on the BI priority cell and entering the appropriate number. If you enter any invalid value, the cell will be highlighted and an error message “Priority should be between 1 and 100” will be displayed as a tool tip.

If you change the priority of a RUNNING batch, the change will take effect from the next Ready state. This means that the new priority will be reflected in batch processing after completion of the currently running **Review** phase or **Validation** phase. The new priority will also be applied if the batch is restarted from any selected module.

Additional information about this feature is available on the Ephesoft website.

### Import | SplitMultipageFile API

Use the splitMultipageFile API with ImageMagick, Ghostscript and Recostar for splitting the input file to a single-page TIFF file.

In Transact releases prior to 4.5.0.0, the splitMultipageFile API only supported ImageMagick or Ghostscript for the PDF-to-TIFF split. In previous releases, the Web service took a flag to check if Ghostscript needed to be used.

Release 4.5.0.0 enhances this API to add support for Recostar. Release 4.5.0.0 adds an optional parameter in the web service to support Recostar during the PDF-to-TIFF conversion.

This API has the following parameters for configuration.

Web Service URL: [<http://{serverName}:{port}/dcma/rest/splitMultipageFile>]

## 2. Page Process (Capture) Module — New Features and Enhancements

This section describes the primary features and enhancements introduced to the Page Processing module in Transact 4.5.0.0.

### Page Processing | Editing Files in the Folder Management Screen

It is now possible to edit files from the **Folder Management** screen.

Previously, the **Folder Management** section could be used only for browsing and viewing the files in the SharedFolders directory. There was no option to edit their content. If the user wanted to introduce any changes, he had to go back to the Ephesoft Transact server and modify the backend files.

In Ephesoft Transact v.4.5.0.0, you can edit the properties and .txt files directly from the Folder Management interface. For that, a new button called **Edit** has been added to the menu of the **Folder Management** screen. The button becomes enabled upon selection of properties file or .txt file, otherwise it is disabled. You can open the properties/txt file by clicking **Edit**, by double clicking the properties/txt file, or by right clicking on it and selecting **Open**. To change any value in the file, you can simply click in the text field, which will then become editable.

Additional information about this feature is available on the Ephesoft website.

### Page Processing | Encryption of Temporary Files for Advanced Web Scanner

The user has the option to encrypt Advanced Web Scanner files if they are stored on their local disk.

In earlier versions of Transact, if the user chose to store the display images on the local machine during scanning, these images were stored in unencrypted format.

In Ephesoft Transact v.4.5.0.0, you can configure the application to encrypt the images stored on your local machine. A new checkbox field called **Encrypt Temporary Images** has been added to the **Scanner Profiles** configuration screen.

### Page Processing | Multidimensional Classification

Ephesoft introduced its patented multidimensional classification mechanism in Transact Release 4.1. This feature improves the accuracy of classification in the Page Processing module. This capability is supported with the MULTIDIMENSIONAL\_CLASSIFICATION\_PLUGIN.

This plugin classifies documents across various dimensions, and then combines the score of each dimension to give better accuracy and confidence in learning. This classification mechanism works on supervised learning, and uses the learning to classify the pages in the given batch.

Transact 4.5.0.0 enhances this feature by improving the proprietary classification algorithms and improving the user interface in the **Page Processing** module.

### Learning with Multidimensional Classification in v4.5.0.0

Multidimensional classification can be described as “page classification learning combined with search classification learning.” This classification mechanism works on supervised learning.

- The user begins this process by importing documents, then moving to the Page Processing module and clicking **Learn Files** to update learning for page and search classification.
- The plugin uses learning to classify the pages in the given batch, and simultaneously learns search classification.
- The plugin takes the sample of search classification and makes corresponding updates to the page-classification learning.

### Phases of Multidimensional Classification in v4.5.0.0

Click Learn Files to begin the learning phase. A single model file is kept per batch class. In the learning phase for a document, the system performs calculations and saves the model file. Each document page type (first page, middle page and last page) saves multiple types of information.

During the batch execution phase, the pages in the batch are classified according to learning.

When Transact performs auto-learning of the document type, along with the indexes for search classification, Transact also updates the model file for multidimensional classification.

During the document assembly phase, this plugin works in the same way as for search classification.

For additional information about multidimensional classification, refer to the Ephesoft Wiki:

### Page Processing | New Functions in the Line Item Matching, Review and Validation Screens

- Refer also the topic [Encrypt Temporary Files for Advanced Web Scanner](#).
- Refer also to the topic [Barcode Extraction: Define Value Pattern and Test Barcode Extraction](#).
- **Hidden Documents** — The **Review** and **Validation** screens allow documents to be marked as hidden.
- **Internet Explorer Support** — The **Review** and **Validation** screens have been enhanced to work better with the IE browser.

### Page Processing | OCR Language Selection from the User Interface

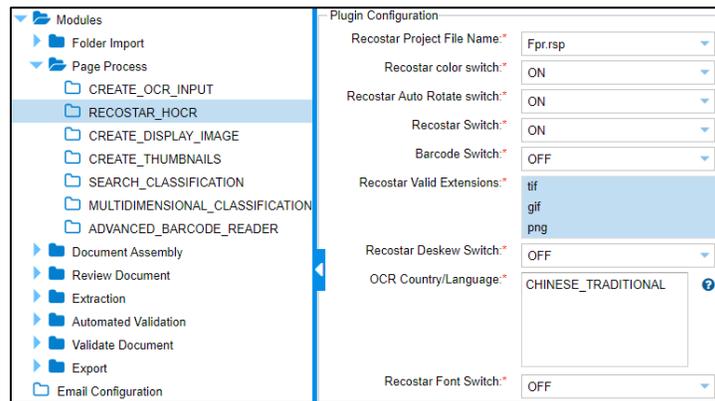
In previous Transact releases, to define OCR languages for Recostar or Nuance, the user had to find the required backend folders on the server and manually edit the OCR input file. The user could specify the Tesseract OCR language from the UI, in that the language name had to be manually typed in the corresponding field.

Transact 4.5.0.0 supports language selection from the user interface for three OCR engines, depending on preferences and system requirements:

- Tesseract
- Recostar (for Windows)
- Nuance (for Linux)

In Transact v.4.5.0.0, a new multi-select-suggestion widget has been added to the **Plugin Configuration** screen for all three OCR engines under the **Page Process** module.

- Using this widget, you can select the language(s) and update the OCR engine input file automatically from the UI rather than doing it manually.
- The name of the new **Plugin Configuration** field for Nuance and Tesseract OCR engines is **OCR Language**.
- The Recostar OCR engine, on the other hand, takes only the country name as the language input, the same field in the Recostar HOCR plugin is called **OCR Country/Language**.
- The following snapshot illustrates plugin configuration for the RECOSTAR\_HOCR plugin on a Windows system:



*OCR Country/Language Selection on Recostar*

## Page Processing | Fraud Detection using FONT Switch

In Ephesoft Transact 4.5.0.0, a new Font Recognition switch has been introduced to detect potential fraud and tampering with processed documents. The HOCR file reflects the font style (Bold, Italics, and Underline) and font size if the Font switch is turned ON in the RECOSTAR\_HOCR or NUANCE\_HOCR plugins. This allows the user to detect any data that has been manually altered or added to the documents. By default, the Font switch is set to OFF.

For example, the original amount of a field in a document is “1000” and the font size is 11. Assume this value is manually changed to “41000” and the “4” is written in a size 12 font. The system will recognize the font size and style in the HOCR file. This will help the user identify that the document has been tampered with.

**Note:** Tesseract does not provide any information on font detection. This feature is available only in the Recostar and Nuance OCR engines.

Additional information about this feature is available on the Ephesoft website.

## Page Processing | Upload Error in Internet Explorer

In previous releases, Internet Explorer would generate an error when uploading PDF files in cases where the filename had one or more accents in the filename. This error did not occur in Chrome or other browsers. Release 4.5.0.0 resolves this issue.

## Page Processing | Advanced Web Scanner Module (WIKI update)

The previous Web Scanner mechanism did not support multiple logins by the same user at the same time. The Advanced Web Scanner Service installed on one client machine can only be run by one user at a time.

Once the operator starts the scanning job, an entry was created in the `webscanner_users` table in the database.

Now, every time you try to initiate scanning, Ephesoft Transact checks the database to determine whether an Advanced Web Scanner session with the same user ID is already running. If it is not, the application opens the Advanced Web Scanner screen. If the Advanced Web Scanner session with the same user ID is already open and active, you will see a warning message.

Additional information about this feature is available on the Ephesoft website or wiki.

## Page Processing | Advanced Web Scanner Caching Improvement

In previous versions of Transact, in some cases display images stored in the temp folder of the Web Scanner Service installation directory were not deleted due to specific browser issues.

In Ephesoft Transact 4.5.0.0, image caching for the Advanced Web Scanner Service has been improved. Browser caching for the Advanced Web Scanner is now disabled. Specific meta-tags have been added in the HTML files of the Advanced Web Scanner:

```
<meta http-equiv="Cache-Control" content="no-cache, no-store, must-revalidate, max-age=0"/>
<meta http-equiv="Pragma" content="no-cache"/>
<meta http-equiv="Expires" content="0"/>
```

In addition, the temp folder in the Ephesoft Advanced Scanner Service directory is now hidden to ensure additional security of processed data and the `WebScannerToolkit-0.0.1-SNAPSHOT.jar` (which contains scanner code) is signed with the Ephesoft jar signing utility.

Additional information about using this feature is available on the Ephesoft website.

## 3. Document Assembler, Review and Validation Modules — New Features and Enhancements

This section describes the primary features and enhancements introduced to the Document Assembler, Review and Validation modules in Transact 4.5.0.0.

### Documents | Support for Hidden Document in Document Types

Ephesoft Transact 4.5.0.0 includes a new Hidden Document feature. It is useful when you do not want the documents to be classified into a particular document type.

To implement this feature, a new field called Hidden has been added in the Additional Configurations dropdown list on the Document Types screen under the Batch Class. The Hidden Document Types will still be picked up and displayed in the dropdown list present in the middle pane of the Review-Validate screen. However, such documents will be marked in red in the left pane. The operator will have to change the Hidden Document Type to a non-hidden one to proceed with the review process. If the operator tries to use the Hidden Document Type, the document will remain marked in red and the error message will be displayed saying "Document cannot have hidden document type".

Please note that if the Batch Class contains only one Document Type and it is marked as Hidden, the batch processing workflow would stop at the Review stage. To ensure complete and successful batch processing, you will need to add other Document Types or "unhide" the existing Document Type.

### Document Review | Pop-out User Interface Support in Line Item Matching, Review and Validation Screens

This feature adds the ability to use the LIM table with other tables on Validation for the same document type.

In previous versions of Transact, the user could pop-out the image in a new window by manually selecting the **Pop-out Image** option on the Review, Validation and LIM screens.

In Ephesoft Transact 4.5.0.0, the pop-out action is saved in the browser's cookies once the user manually performs the pop-out operation. Thereafter, the pop-out operation is enabled by default, and the image opens in a new window every time the user navigates to the Review, Validation or LIM screens. Moreover, if the user is working with two or more batches, the latest pop-out image overrides any previously opened pop-out cookie.

### Document Review | Keyboard Shortcuts

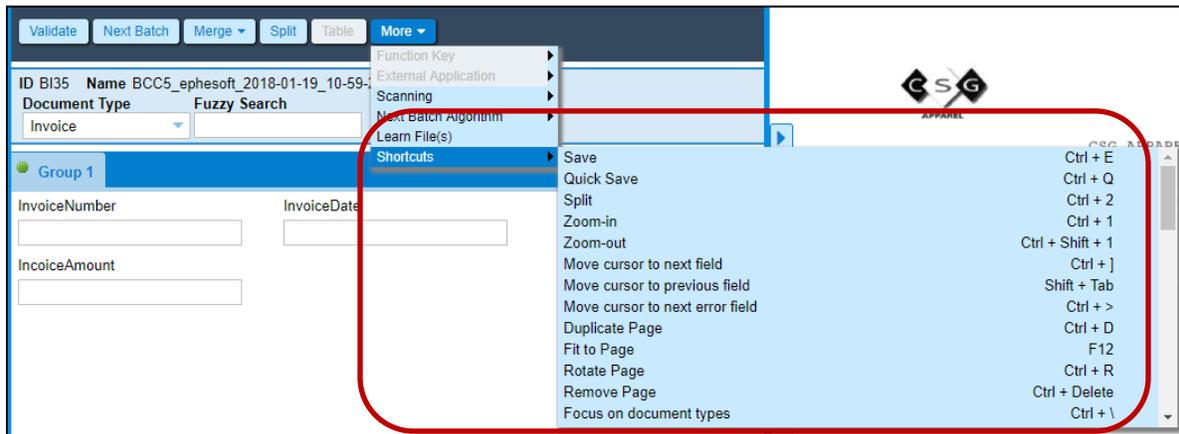
Transact 4.5.0.0 enhances the default keyboard shortcuts available in the batch **Review** and **Validation** operator screens.

Release 4.5.0.0 also allows you to create custom keyboard shortcuts for up to four levels of support. You can define how widely custom keyboard shortcuts are made available, with these levels of application:

- application-wide
- language-wide, when the corresponding language is set in the browser
- a single batch class
- a single batch class, using the language set in the browser

Follow these steps to access the user screens that have keyboard shortcuts. These screens will display default configurations unless you create custom shortcuts.

1. Log into Transact.
2. Navigate to any of the following screens:
  - Operator > View My Batches — select a batch and click Open Or...
  - Operator > Open Next Batch
3. In the **More** dropdown menu, click **Shortcuts**.



*Shortcuts Menu*

Additional information about this feature, and about making custom keyboard shortcuts, is available on the Ephesoft website.

## 4. Extraction Module — New Features and Enhancements

This section describes the primary features and enhancements introduced to the Extraction module in Transact 4.5.0.0.

### Extraction and Validation | Auto-Extraction of Tables

Transact 4.5.0.0 enhances the automatic extraction of tables, to improve performance in detecting and validating document tables, as recognized during OCR by auto-extraction and recognition of rows and columns. Additional feature information is available on the Ephesoft Wiki:

- [Product Documentation and Resources](#)

### Extraction | Barcode Extraction for QR Codes

Transact 4.5.0.0 improves the performance of barcode extraction with QR codes, and implements a permanent fix to instances that created errors in a previous release.

### Extraction | Barcode Extraction: Define Value Pattern and Test Barcode Extraction

In previous versions of Transact, the barcode extraction rule worked only with overlays drawn on the barcode. If there was more than one barcode of the same type on the page, there was possibility that the application could extract a value for the barcode other than the one which was required.

In addition, there was no provision to test the extraction results at the time of creation of the barcode extraction rule. Test extraction was allowed on the Document Type list page.

In Ephesoft Transact 4.5.0.0, the barcode extraction feature has been enhanced to extract the barcode with a matching pre-defined value pattern. A new input field (Value Pattern) has been added in the left panel of the **Barcode Extraction Rule** screen where the user can create or define the value pattern for the barcode to be extracted.

### Extraction | CJKT Language Support for OCR in Nuance on Linux

Transact 4.5.0.0 sets the target language automatically based on selected languages, when setting up Nuance in a Linux environment. Language support is available in English and CJKT languages.

**Note:** CJKT Refers to Chinese, Japanese, Korean and Thai languages.

### In Prior Releases

In some cases, the SETTING.STS properties component works best with CKJT documents when performing OCR in non-English settings. This properties component may not work as well with the English language.

Also, some documents may contain multiple languages while most documents use only a single language. This environment requires changes in the SETTING.STS file.

**Note:** The user must change the SETTING.STS file manually to define this setting.

Also, because the SETTING.STS file is maintained at the batch class level, a non-admin user will not be able to make these configurations per document type.

As a sample use case, one document may be in Chinese while another document type is in English. An admin user can define the SETTINGS.STS file for either document type, but results may not be ideal for the non-target language.

### CJKT in Transact 4.5.0.0

- Transact 4.5.0.0 does SETTINGS.STS configuration automatically, based on the language selected in the Nuance OCR plugin, without requiring user to edit SETTING.STS manually.
- Release 4.5.0.0 also allows users to make Nuance configurations at the document level.

**Note:** Additional information is available in the Transact *Installation Guide* for Release 4.5.0.0.

### Extraction | Currency Support in Table Extraction and Validation

In previous versions of Transact, if the user applied currency configuration settings during table extraction, the table validation rules would fail. Since currency fields contained not only the numbers but also currency symbols, the system assumed it to be a string and highlighted them as not properly validated.

In Ephesoft Transact 4.5.0.0, table validation rules support currency formats. Now, the values in the currency fields are validated successfully according to the currency type selected.

Additional information about this feature is available on the Ephesoft website.

### Extraction | Custom Dictionary Support for Machine Learning

Dictionaries are a part of machine learning mechanism. They are created and used to extract those types of values, for which it is not possible to define any specific regex. Dictionaries contain sets of predefined values like US states, US cities, person names, and so on. One of these values is selected at the time of data extraction according to the system settings.

Previously, the dictionaries were provided at the application level and were stored in the META-INF folder (Ephesoft\Application\META-INF).

In Ephesoft Transact v.4.5.0.0, the default dictionaries have been moved to the Batch Class level. The current path for the machine-learning- dictionaries folder is Ephesoft\SharedFolders\BC\{Id}\machine-learning- dictionaries. Now, you can also add your own custom dictionaries. You can create the dictionaries at the time of DLF learning on the **Validation** screen. Additional information about this feature is available on the Ephesoft website.

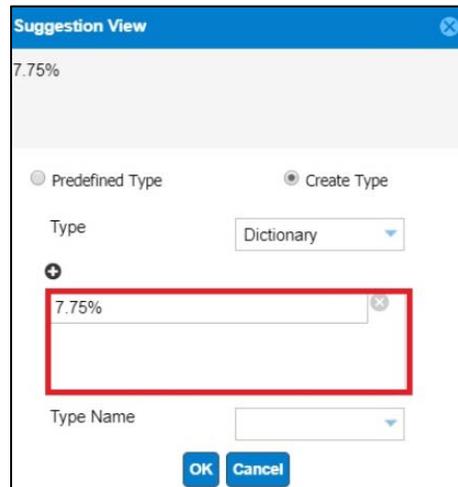
### Extraction | Custom Dictionary Features for Machine Learning

Transact 4.5.0.0 introduces several enhancements to machine learning, including support for custom dictionaries and dictionary features. This topic summarizes the primary dictionary-related machine learning features supported in Release 4.5.0.0:

**Auto-Suggest Window Layout** — In previous Transact releases, the user could update custom dictionaries from the suggestion box, but the set of values was not shown to the user in the suggestion box. Transact 4.5.0.0 has been enhanced as follows:

- Displays the set of custom dictionary values on the suggestion box user interface. Once the user selects a dictionary for update, all the dictionary values are available in the suggestion box.
- Also, the suggestion box is resizable.

The following snapshot illustrates this feature in the user interface of Transact 4.5.0.0:



**Auto-Suggest Window Sorting** — Transact 4.5.0.0 enhances the auto-suggest functions of the Suggestion View screen. It now lists and sorts unmatched predefined types in ascending alphabetical order. This feature is available in the **Auto Suggest** window.

**Enabling / Disabling Custom Knowledge Base Dictionaries** — Transact 4.5.0.0 enhances custom knowledge base dictionaries in the following ways:

- Allows users to enable or disable custom knowledge base dictionaries.
- Allows the user to disable one or all custom dictionaries.
- Removes disabled dictionaries from the Suggestion View screen.
- Does not load any disabled dictionaries into the memory while they are disabled.

**Error Handling** — Transact 4.5.0.0 improves the error handling functions if an invalid property is present in the dictionary-mappings.properties file. This feature is related to Custom dictionary support and the [import custom dictionary feature](#).

**Single Words** — Transact 4.5.0.0 now supports single words in organization-level dictionaries, so that organizations with a single-word name are supported in confidence thresholds in extraction.

**Stop Words in Dictionaries** — In computer search engines, a stop word is a commonly used word (such as "the") that a search engine has been programmed to ignore, both when indexing entries for searching and when retrieving them as the result of a search query.

In previous Transact releases, the language packs supported by the system included the list of all stop words for all languages. There was a need to enhance this capability further, to account for typographical errors and limitations with previous sets of stop words.

Transact 4.5.0.0 supports stop words for all language packs available under the machine learning dictionary. The following machine learning language packs in release 4.5.0.0 have the latest sets of stop words:

- Dutch
- French
- Italian
- English
- German
- Spanish

## Extraction | Fuzziness for Dictionary Matching in Machine Learning

Dictionaries are a part of machine learning mechanism. They are created and used to extract those types of values for which it is not possible to define any specific regex. Dictionaries contain sets of predefined values like US states, US cities, person names, etc. One of these values is selected at the time of data extraction according to the system settings.

In Ephesoft Transact v.4.5.0.0, this functionality has been expanded to include fuzzy matching as well. Fuzzy matching is a method which significantly improves the results of queries processing. It is applied whenever an exact match is not found for a word or a phrase due to misspelt, partial, incorrectly OCR'd data etc. In this case, the system will look for a match, which might not be 100% exact, however will still be above the threshold matching percentage set in the application. In Ephesoft Transact, this threshold is set at 67%.

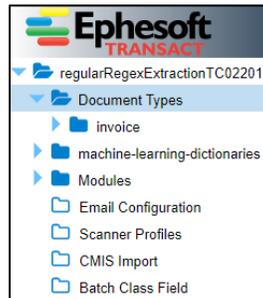
For example, if the input is “California” and the output is “Colifarnia”, the fuzzy matching confidence will be around 85%, which is greater than the threshold. Thus, “Colifarnia” will be extracted as a potential match but with confidence lower than 100%. If the output is “Coifofoiii”, then matching confidence will be much less than 67%. In this case, the value will not be considered as a potential match.

Fuzzy matching is applied to:

- Dictionary types (predefined and custom, containing tokens with single and multiple words)
- Composite block types (which include only the dictionary types in their definition)

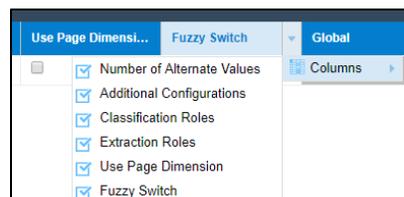
To implement this feature, a new **Fuzzy Switch** has been added to the **Document Types** screen. By default, the switch is **OFF**. Follow these steps to view or set this switch:

1. Log in to Transact as **Administrator**, and navigate to **Batch Class Management**.
2. Select the batch class, and click **Open**.
3. Navigate to the **Document Types** module.



*Document Types Module in Batch Class Management*

4. If you have at least one document type added, you can view the **Fuzzy Switch** column.
5. You can display or disable this column, with additional column options on this screen.



*Enabling Fuzzy Switch Column*

6. Check (enable) or clear (disable) this **Fuzzy Switch** setting for the document type or types on the screen.



*Fuzzy Switch Setting*

7. Click **Apply** to retain the changes. Click **Deploy** to activate the changes. Click **Close** to exit from this screen.

### Extraction | Fuzzy DB in Learning

In previous versions of Transact, occasional errors were observed during automated learning and validation, when Fuzzy DB was set up and enabled. The issue was not observed during manual learning of the database. The issue was derived from extracting incorrect data due to the tables being recreated. This issue has been resolved in Release 4.5.0.0, and the Fuzzy DB setup is retained across days, when enabled.

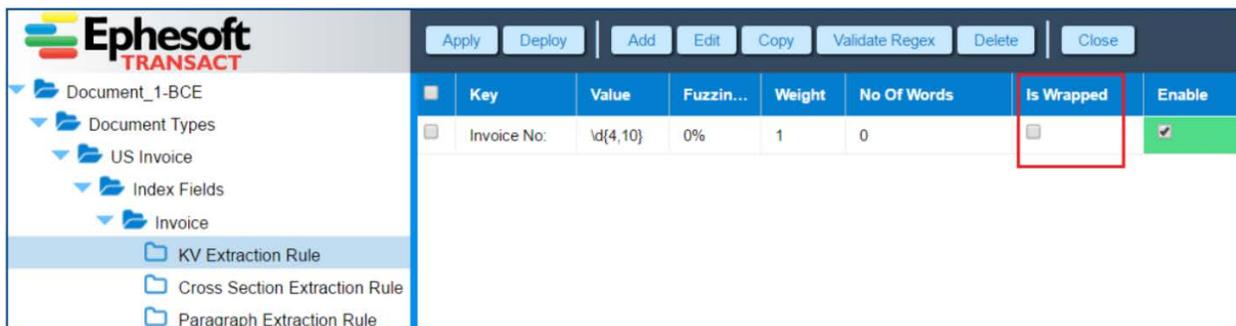
### Extraction | HOCR XML Parser

In previous versions of Transact, there were occasional errors encountered when parsing the HOCR file. The issue was rooted in an error that occurred during Folder Import. Resolution entails an enhanced validation function that validates the HOCR XML file when it is generated.

### Extraction | KV Extraction List Screen and Is Wrapped Feature

In previous versions of Transact, the 'Is Wrapped' checkbox was available on the advanced KV extraction screen. The user could not be sure which index field had Is-wrapped enabled from the KV extraction list page. The user had to edit the KV Extraction Rule to verify which index field was configured as Is-wrapped.

In Ephesoft Transact 4.5.0.0, a new column **Is Wrapped** has been added on the KV extraction list and the advanced KV extraction screen.



Additional information about this feature is available on the Ephesoft website.

### Extraction | KV Extraction and Validation with Overlay Onset in Image

In previous versions of Transact, some users experienced sporadic issues with KV Extraction and Validation screens. In certain circumstances, when keys and fields pulled data from below the selected values, the user interface was not consistent with where the user was to click.

In these circumstances, extraction operated properly when using regex for extraction, but the end user might have to click a short distance off the field for validation.

Release 4.5.0.0 resolves this issue by adding the overlay onset for images. This feature increases the accuracy of where a user should click when performing validation, immediately after KV extraction.

### **Extraction | KV Extraction Rule and Wrapping**

In previous versions of Transact, the system would create errors when importing a batch class, then editing and testing the KV rule when setting up the batch class.

If the expression extended past the end of the first line, the system would log an error and the KV rule would not execute properly.

Release 4.5.0.0 resolves this issue, and wrapped KV expressions function normally.

### **Extraction | Machine Learning Algorithm API and Improvements**

Transact 4.5.0.0 introduces notable improvements to the machine learning algorithm, to include calculation of confidence scores based on various dimensions, and to move multi-threading for extraction from the page level to the document level. These algorithm improvements result in improved performance for machine learning extraction.

### **Extraction | Machine Learning-based Extraction Improvement**

Previously, machine learning extraction mechanism used to search for the extraction candidate on all document pages. This could take time if the user was processing multi-page files. For example, if the required value was on page 20, the system would first go through all first 19 pages before reaching it. The opposite situation was also true: if the required value was located on page 1, the system would anyway keep looking for another possible value on all the remaining pages of the same document. Then, the system would pick the value with higher confidence score and show it as an extraction result. This reduced the efficiency of utilized resources.

In Ephesoft Transact v.4.5.0.0, the machine learning algorithm has been enhanced:

- A new property called “machine\_learning\_extraction\_threshold” has been added to the application properties file. This parameter is used to set a predefined confidence threshold for the extraction candidates. If the system finds a value with or above the predefined confidence, it will stop the extraction process and pick the given value for extraction.
- A new parameter called “Use Page Dimension” has been added to the Document Types screen. It allows you to save the number of the page, on which machine learning is performed. Then, the system will use this information at the time of extraction to search for configured values on the specified page.
- A new field with page information has been added to the JSON file with machine learning data.

Additional information about this feature is available on the Ephesoft website.

## Extraction | Machine Learning Classification and Extraction Roles

In previous versions of Transact, the administrator managed permissions for machine learning classification and machine learning extraction using a single configuration on the **Document Types** screen. The required roles were selected from the column “Roles of Machine Learning” and were applied to both machine learning classification and extraction.

In Ephesoft Transact 4.5.0.0, machine learning classification and extraction are handled separately. Two columns called “Classification Roles” and “Extraction Roles” have been added to the Document Types screen. Now, the administrator can separately assign the roles to perform machine learning classification and machine learning extraction. This feature is available in both Windows and Linux environments.

Roles selected for a Batch Class on the Batch Class Management screen are inherited by the Document Types added under this Batch Class. You can then edit the default roles populated for Classification and Extraction as required on the Document Types screen. Please note that roles assigned at the Batch Class level define general access to the Batch Class, while roles assigned at the Document Type level define permissions to perform machine learning.

**Note:** When the Batch Class is copied, all the roles defined at the Batch Class level and the Document Type level will be copied as well.

When the Batch Class is exported, all the information about defined roles will be exported as well.

When the Batch Class is imported, you can select whether to import it with or without defined roles using the checkbox “Roles” in the Import Batch Class popup window. If you select this checkbox, the Batch Class will be imported along with the roles. In this case, Batch Class roles will be inherited by the Document Types as well. If you leave the checkbox unselected, the Batch Class will be imported without roles.

Additional information about this feature is available on the Ephesoft website.

## Extraction | Machine Learning: Copy, Rename, Delete, Import and Export Operations

This feature focuses on machine learning data when performing Copy, Rename, Delete, Import and Export operations at the Document Type level or Index Field level.

If the user performs machine learning for a document, a new machine-learning-extraction subfolder is created in the Batch Class folder (SharedFolders/<Batch Class>) on the Ephesoft Transact server. This subfolder contains JSON files with machine learning data for each Document Type and Index Field.

Every time you delete, import or export a Document Type or an Index Field, the JSON files are deleted, imported and exported as well. Every time you copy or rename a Document Type or an Index Field, the JSON files are updated to include this new information.

**Note:** If you copy or rename a Batch Class, JSON files will remain unchanged.

## Extraction | Machine Learning of Global Document Types

The default Batch Class list in Ephesoft Transact includes a Global Batch Class. Here, you can create and configure Global Document Types which can then be inherited (along with all configuration details) by any other Batch Class.

Global Document Types can be configured and modified only in the Global Batch Class. Roles for machine learning are defined here as well:

- All users with assigned classification roles will be able to use machine learning at the Review stage.
- All users with assigned extraction roles will be able to use machine learning at the Validation stage.
- If there are no user roles assigned for a Document Type, it is assumed that machine learning is only enabled for super admin.

Previous Transact releases did not support machine learning of global document types.

Additional information about this feature is available on the Ephesoft website.

## Extraction | Machine Learning Support for Multilingual Files

In Ephesoft Transact v.4.5.0.0, machine learning functionality has been enhanced to provide multilingual support. Now, you can use machine learning to extract data from documents written not only in English but in any language supported by the underlying Transact OCR engine (RecoStar for Microsoft Windows and Nuance for Linux). The system will pick up the languages specified by the <LanguageCode> tag in the HOCR.xml file and will use this data to learn and extract values from the document.

**Note:** The default machine learning dictionaries included in the installer are currently provided only for English. If you need a dictionary for any other language, you can create it at the time of data extraction on the Validation screen (the overview of the process is provided below).

Additional information about using machine learning for multilingual files is available on the Ephesoft website.

## Extraction | NuanceOCR.cpp File and the SETTING.STS File

The NuanceOCR.cpp file has been updated to load the SETTING.STS file and populate the LanguageCode tag in HOCR.xml.

In SETTING.STS, you can select the languages to be used for OCR. Nuance will then auto-detect the defined languages and place a corresponding LanguageCode tag when creating the HOCR.xml file. This feature is available only for Ephesoft Transact on Linux.

You can find the SETTING.STS file in the fixed-form-extraction folder created for each Batch Class (UNC folder > fixed-form-extraction).

Additional information about this feature is available on the Ephesoft website.

## Extraction | OCR Classification

Transact 4.5.0.0 implements an improvement with Recostar. In prior releases, document classification would sometimes generate a blank HOCR for the image. This issue is resolved in 4.5.0.0.

## Extraction | ocrClassify, ocrClassifyExtract and initiateOcrClassifyExtract Web Service Enhancements with Multidimensional Classification

Transact 4.5.0.0 enhances Web Services to support format conversion, multidimensional classification and automatic classification.

Previously, the **ocrClassify** Web Service supported Search classification, Image classification, Keyword classification, and Barcode classification.

In Release 4.5.0.0, the **ocrClassify** API has been enhanced to support Multidimensional and Automatic classification as well:

- Multidimensional classification mechanism is used to classify documents across various dimensions and then combine the score of each dimension to give better accuracy and confidence. For more information, refer [here](#).
- In Automatic classification, Ephesoft Transact forms documents on the basis of top results from the page level fields populated by Search Classification (Lucene), Keyword, Barcode and Image classification as well as Multidimensional classification plugins in the Page Process module. For more information, refer [here](#).

Apart from that, **ocrClassifyExtract** and **initiateOcrClassifyExtract** Web Services now support format conversion. Format conversion allows you to configure formatting for different index fields in Ephesoft Transact. The values for which format has been configured are formatted after extraction. The formatted values are saved to the batch.xml file. For more information on format conversion, refer [here](#).

All three Web Services now also support HOCR encryption. All generated HOCR files will be encrypted if the batch class, for which API is run, is configured to use encryption. This feature is implemented to ensure additional security of your data. Please note that if you set “downloadHocr” parameter to true, the HOCR file in the Web Service response will Navigate to the **Format Conversion** screen under the corresponding Index Field and select the required format option. For more information on format conversion options, refer [here](#).

## Extraction | Recostar Version 7.5 OCR to Support Rotated Pages

Transact 4.5.0.0 reverts to using Recostar Version 7.5 for OCR on Windows. This Recostar version resolves observed difficulties with performing OCR with rotated images in Recostar Version 7.7. Key value extraction now supports rotated images. This improvement applies to the following modules and screens:

- Extraction
- Classification

Additional information about using this feature is available on the Ephesoft website.

## Extraction | Recostar Extraction and Deleted XML

Transact 4.5.0.0 has the option to retain the XML file generated during plugin execution RECOSTAR\_EXTRACTION and NUANCE\_EXTRACTION. The user is now able to configure the Extraction XML deletion from the UI at the batch class level.

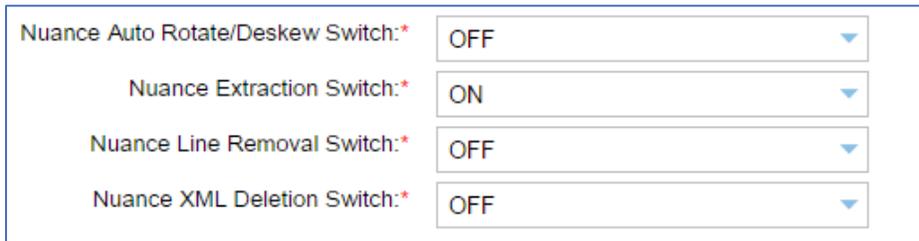
	Encrypted Batch Class	Unencrypted Batch Class
Recostar Extraction XML Deletion	User Defined	User Defined

The **Recostar XML Deletion Switch** has been added to RECOSTAR\_EXTRACTION as shown below:



Recostar Extraction color switch:*	OFF
Recostar Auto Rotate switch:*	OFF
Recostar Extraction Switch:*	OFF
Recostar XML Deletion Switch:*	OFF

The **Nuance XML Deletion Switch** has been added to NUANCE\_EXTRACTION as shown below:



Nuance Auto Rotate/Deskew Switch:*	OFF
Nuance Extraction Switch:*	ON
Nuance Line Removal Switch:*	OFF
Nuance XML Deletion Switch:*	OFF

## Extraction | Removing Duplicate Values for an Index Field

Transact can extract a maximum of five alternate values (by default) for an index field from different rules of the same extraction method or different extraction methods. The extracted values are first sorted by confidence level and the top five values are populated in the batch.xml file.

In previous versions of Transact, there was a possibility that the same values could be extracted and populated as alternate values under the batch.xml file.

Two alternate values are considered duplicates if they satisfy the following conditions:

1. Both have the same value.
2. Both values have the same coordinates.
3. Both values are extracted from the same page.

In Ephesoft Transact 4.5.0.0, the algorithm has been improved by adding another level of workflow for populating the extracted values into the batch.xml file.

Additional information about this feature is available on the Ephesoft website.

## Extraction | Retain Intermediate File Switch in Recostar and Nuance

In Release 4.5.0.0, Transact introduces a new **Retain Intermediate File** switch in RECOSTAR\_EXTRACTION (Windows) and NUANCE\_EXTRACTION (Linux).

This new switch or functionality is applicable to the following components in the Transact workflow:

- Add Batch Class — A new plugin configuration has been added for RECOSTAR\_EXTRACTION and NUANCE\_EXTRACTION.
- Copy Batch Class — A new plugin configuration has been added for RECOSTAR\_EXTRACTION and NUANCE\_EXTRACTION.
- Default Batch classes BC1, BC2, BC0 (Global batch class) — A new plugin configuration has been added for RECOSTAR\_EXTRACTION and NUANCE\_EXTRACTION.
- Encryption — A new plugin configuration has been added for RECOSTAR\_EXTRACTION and NUANCE\_EXTRACTION.
- Import/Export Batch Class — A new plugin configuration has been added for RECOSTAR\_EXTRACTION and NUANCE\_EXTRACTION.
- Patch — A new plugging configuration has been added for RECOSTAR\_EXTRACTION and NUANCE\_EXTRACTION.
- Text Extraction — The XML file will be deleted if the switch is enabled (on) and will be retained if the switch is disabled (off).
- Extraction module — A new plugin configuration has been added for RECOSTAR\_EXTRACTION and NUANCE\_EXTRACTION.

In RECOSTAR\_EXTRACTION, the new **Recostar XML Deletion Switch** is illustrated below:

Recostar Extraction color switch:*	OFF
Recostar Auto Rotate switch:*	OFF
Recostar Extraction Switch:*	OFF
Recostar XML Deletion Switch:*	OFF

In NUANCE\_EXTRACTION, the **Nuance XML DeletionSwitch** is illustrated below:

Nuance Auto Rotate/Deskew Switch:*	OFF
Nuance Extraction Switch:*	ON
Nuance Line Removal Switch:*	OFF
Nuance XML Deletion Switch:*	OFF

In both cases, this switch is enabled (ON) by default. The extraction XML file will be deleted during batch execution and extraction. If disabled, the XML file will be retained.

Refer to the extraction articles in the Ephesoft Wiki for additional information about extraction in Release 4.5.0.0.

## Extraction | Role-Based Table Machine Learning

In Ephesoft Transact 4.5.0.0, table machine learning is performed on the basis of assigned roles, same as machine learning of document level fields (DLF). This means that Extraction Roles defined at the Document Type level apply to both index fields and tables.

In general, the application allows you to assign roles at two levels:

- the Batch Class level (these roles define general access to the Batch Class)
- the Document Type level (these roles define permissions to use machine learning classification and extraction capabilities)

All roles selected for a Batch Class on the Batch Class Management screen are inherited by the Document Types added under this Batch Class. You can then edit the default roles populated for Classification and Extraction as required on the Document Types screen.

Additional information about this feature is available on the Ephesoft website.

## Extraction | View OCR Data on Table Extraction Rule and Review-Validation Screens

In previous versions of Transact, the ability to view the OCR data of an image was available on the following screens:

- KV Extraction Rule
- Cross Section Extraction Rule
- Paragraph Extraction Rule
- Barcode Extraction Rule

In Ephesoft Transact 4.5.0.0, OCR functionality is available for the **Table Extraction Rule** and **Review-Validate** screens as well. This feature is available both in Windows and Linux environments.

Additional information about this feature is available on the Ephesoft website.

## Extraction | View Complete Extracted Value

This feature allows you to view the complete extracted value on the **Test Extraction** and **Extraction Rule** configuration screens.

Ephesoft Transact offers extraction methods called "Paragraph Extraction" and "Table Extraction". They are used to extract paragraphs and tables according to the configured rules. Once the rules are defined, you have the following options to check the extraction results:

- For Paragraph Extraction:
  - Test the Paragraph Extraction option on the Paragraph Extraction Rule Configuration screen
  - Test the **Extraction** screen under the **Document Types** tab
- For Table Extraction:

- Test the Table option on the Table Extraction Rule Configuration screen
- Test the Table Extraction Rule option on the Table Extraction Rules screen
- Test the **Table** option on the **Tables** screen
- Test the **Extraction** screen under the **Document Types** tab

Previously, in all cases, the user was able to see only the first line of the extracted table or paragraph value, which made it difficult to confirm whether the data had been extracted in full.

In Ephesoft Transact 4.5.0.0, all Test Extraction screens adjust automatically to show the complete extracted value of the table or paragraph. If extracted value is larger than available screen area, a scroll bar will appear on the screen, which you can drag up and down to move through the data.

Additional information about this feature is available on the Ephesoft website.

### Extraction | Zoom Overlay Support

A toggle has been added on the **Validation** screen to zoom the **Index** Field, wrapped, paragraph, and table data in the image. The zoom feature makes it easier for the user to spot and validate the extracted values.

This feature is available for the following extraction types:

- Wrapped data extraction
- Paragraph extraction
- Table extraction

Additional information about using this feature is available on the Ephesoft website.

### Table Extraction | Auto-Suggestion for Table Extraction

Transact 4.5.0.0 introduces auto-suggestion for tables, supporting table extraction. This feature can provide an auto-suggested table on an image for extraction in certain cases.

This feature is available in the **Batch Class Management**, and **Review** and **Validate** screens. This feature only supports simple invoices, with the following conditions:

- Multiline table headers
- Wrapped data
- Unaligned data

This feature does not support the following conditions:

- Tables that span across multiple pages
- Multiple-layout tables
- Unaligned table headers
- Horizontal data

## Table Extraction | Auto-Table Extraction of Tables Plugin

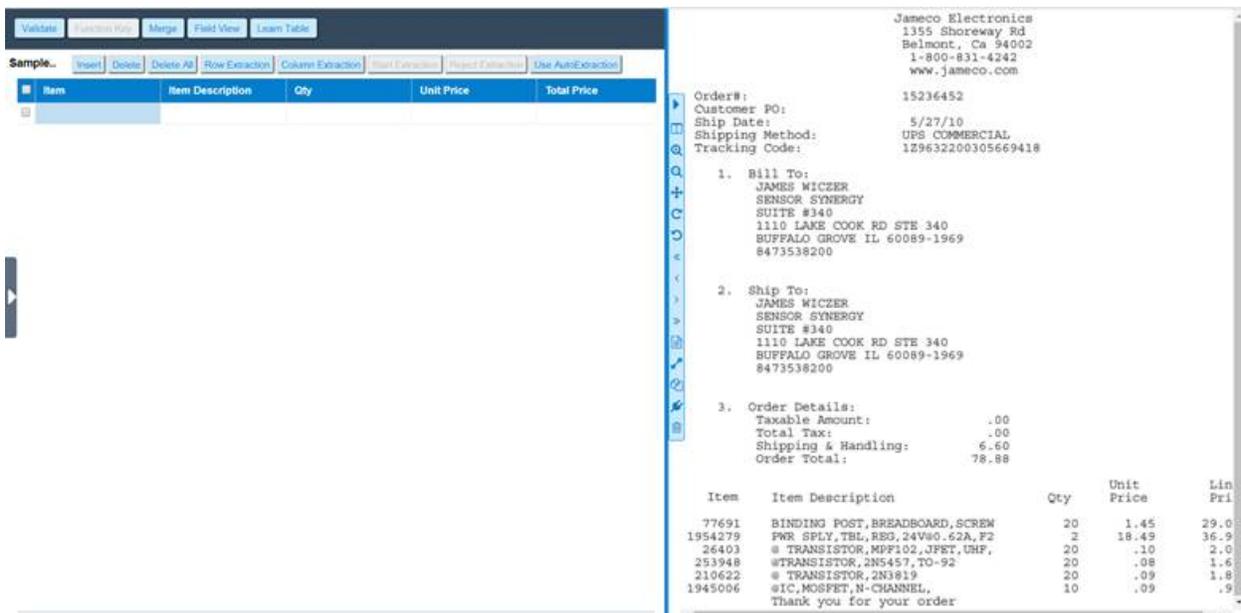
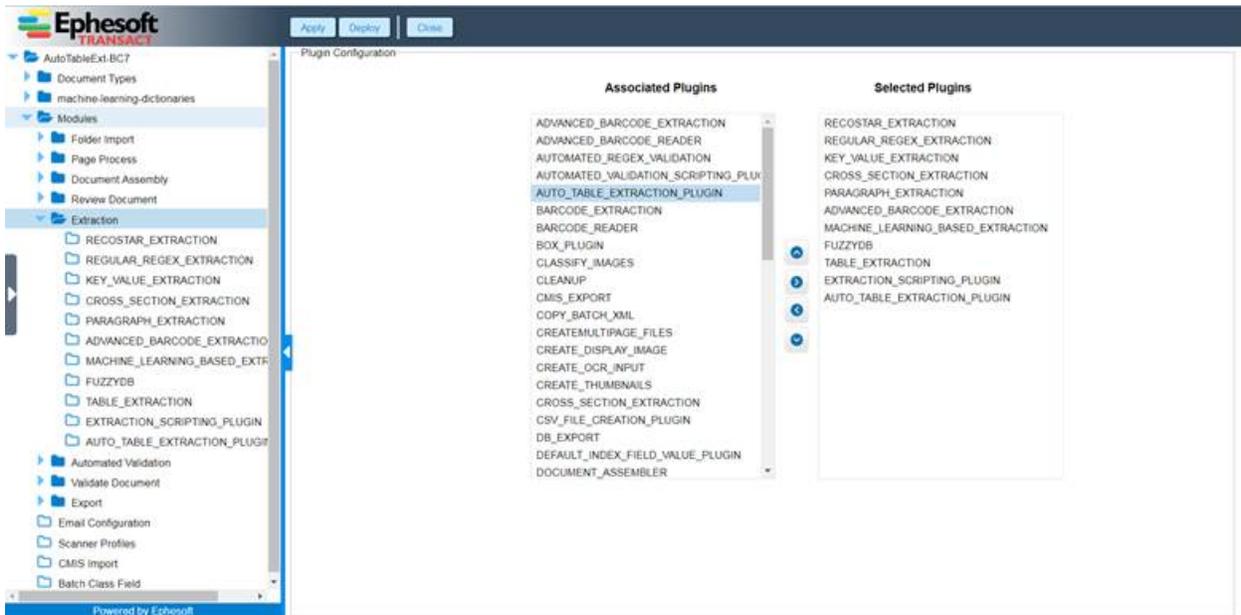
Transact 4.5.0.0 introduces a new plugin for the auto-extraction of tables:

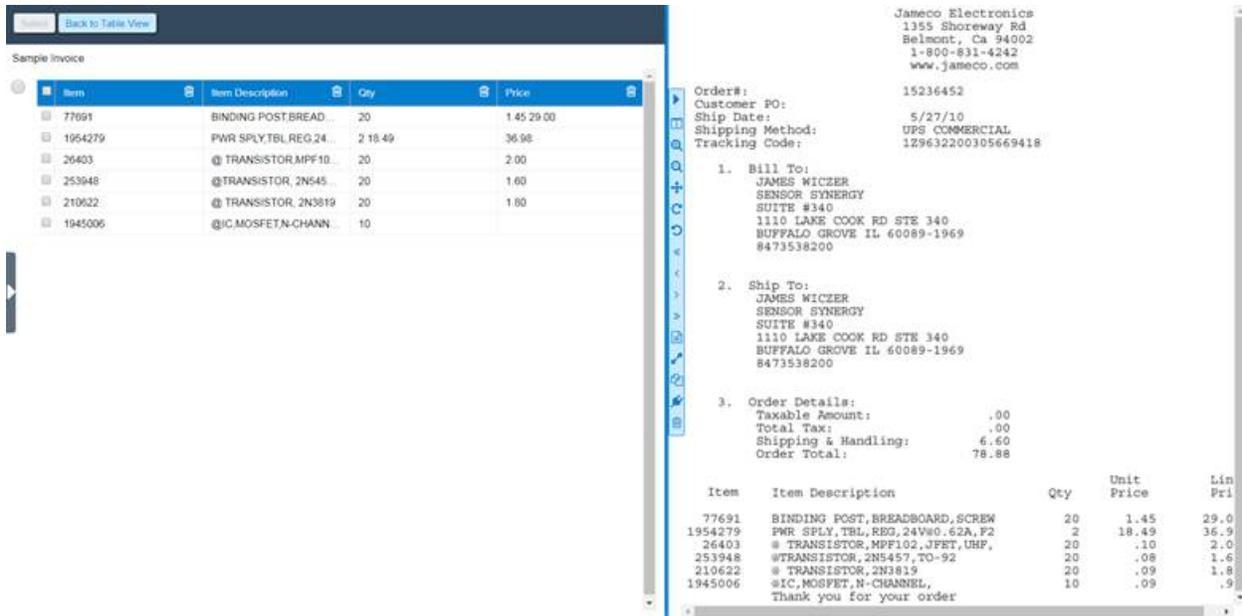
- AUTO\_TABLE\_EXTRACTION\_PLUGIN

This feature makes the following changes to the user interface:

- Updates the **Table Extraction** and **Review/Validation** screens
- Updates the **New Document Type** dialog
- Updates the **Classification Training** screen and the Classification Testing screen.

The following sample snapshots illustrates the implementation of this feature. Please note that the release-level user interface may differ from the illustrations shown below.





## Table Extraction | Copying Table Extraction Rules

Table extraction rules can be copied in Release 4.5.0.0.

In previous versions of Transact, the user could copy the table, however there was no provision for copying separate table extraction rules. So, every time the user needed a similar rule with only few minor changes, they had to create it all over again.

In Ephesoft Transact v.4.5.0.0, you can now copy your table extraction rule along with all its configurations and then edit it according to your requirements. To implement this feature, a new button called **Copy** has been added to the **Table Extraction Rules** screen.

Additional information about this feature is available on the Ephesoft website.

## Table Extraction | Machine Learning of Tables

Transact 4.5.0.0 enhances machine learning with table extraction. With this enhancement, Transact now discards unnecessary data before a table header, when extracting table data using machine learning. This enhancement is available for data extraction for differing types of files having tables, and for complex documents that have data in different format, apart from tables.

Transact merges data with the batch class learning once the batch crosses into the Validation stage.

## Table Extraction | Smart Table Extraction

Transact 4.5.0.0 makes table extraction smarter, and is able to run all rules to pick the highest confidence level.

## Table Extraction | Support for 2-Column Layout

In previous versions of Transact, table extraction was allowed for tables with a single column layout. If the data was wrapped into multiple columns with repeating headers on the same page or extending from one page to another, table extraction failed to extract all data.

In Ephesoft Transact 4.5.0.0, table extraction in a 2-column layout is supported. For this purpose, a checkbox called **2-Column Layout** has been added to the **Table Extraction Rule** screen.

You can use 2-column layout extraction in the following cases:

- to extract data from the table only in the right column of the page
- to extract data from the table extending from the left column to the right column on the same page
- to extract data from the table starting in the right column of the first page and extending to the left column of the second page.

The following configurations are required prior to performing table extraction:

- Make sure to add the **Table Extraction** plugin in the Extraction module.
- Turn-on the **Table Extraction** switch on the **Table Extraction Plugin Configuration** screen.

It is also important to make sure that the page is divided into two columns before using the 2-Column Layout option for table extraction. In the below example, the table contains data segregated into two columns with repeating headers.

Additional information about this feature is available on the Ephesoft website.

## Table Extraction | Upload and Test Sample Files on Table Extraction Rules Screen

In previous versions of Transact, the user could not test the extraction results for sample files on the **Table Extraction Rule** screen. The user had to navigate to the Tables screen to upload and test the sample file via the Test Table option.

In Ephesoft Transact 4.5.0.0, an upload panel has been added to the **Table Extraction Rules** screen. You can now configure the extraction rule, upload a sample file, and test the extraction results for a single rule defined on the **Table Extraction Rules** screen.

## 5. Automated and Manual Validation — New Features and Enhancements

This section describes the primary features and enhancements introduced to the Automated or Manual Validation modules in Transact 4.5.0.0.

### Validation | @ Symbol Integration

During validation, users may need to input the @ symbol for entering email addresses. However, in previous Transact releases, using the keyboard shortcut of Alt-GR + Q to input the @ symbol would close the application.

Transact 4.5.0.0 resolves this issue, and allows for using conventional keyboard shortcuts in all languages to input the @ symbol.

### Validation | Arrange the Predefined and Custom Types in the Alphabetical Order

Ephesoft Transact v.4.5.0.0 gives the user the possibility to utilize predefined machine learning types as well as to create their own custom dictionaries, regex and composite custom block types during the Validation stage. These types are used by machine learning engine to learn and then to identify and extract required values automatically.

To see the predefined types or to create new custom types, you have to use the auto-suggest widget on the Validation screen – the Suggestion View window. This window will open when you click any overlay drawn on the image in the right pane of the Validation screen. Now, both suggested types, which appear at the top of the list, as well as all other predefined/existing custom types are displayed alphabetically in the ascending order. This helps to ensure clarity and consistency and to simplify the search for the required type.

Additional information about this feature is available on the Ephesoft website.

### Validation | Auto Image Pop-out on Review-Validate and LIM Screen

The **Line Item Matching**, **Review** and **Validation** screens now offer enhanced support for the pop-out user interface.

In previous versions of Transact, the user could pop-out the image in a new window by manually selecting the **Pop-out Image** option on the **Review**, **Validation** and **Line Item Matching** screens.

In Ephesoft Transact 4.5.0.0, the pop-out action is saved in the browser's cookies once the user manually performs the pop-out operation. Thereafter, the pop-out operation is enabled by default, and the image opens in a new window every time the user navigates to the Review, Validation or LIM screens. Moreover, if the user is working with two or more batches, the latest pop-out image overrides any previously opened pop-out cookie.

### Validation | Concurrent Validation Error Resolution

In previous versions of Transact, validation would sometime experience errors based on field values being updated concurrently. This issue had an impact on successful execution of validation, under certain circumstances. This issue has been resolved in Transact 4.5.0.0.

## Validation | Custom Types (Dictionary, Composite, Regex) Saved Post Validation

In Ephesoft Transact v.4.5.0.0, the user can create their own custom dictionaries, regex, and composite custom block types during the Validation stage. This expands machine learning capabilities and provides flexibility of machine learning based extraction.

To create new custom types, you must use the auto-suggest widget on the Validation screen – the Suggestion View window. This window will open when you click any overlay drawn on the image in the right pane of the Validation screen. The Suggestion View window includes two sections: Predefined Type containing all predefined dictionary, composite, and regex types, and Create Type, which allows to create new custom types.

## Validation | Dictionary-mappings.properties File Error Handling

Release 4.5.0.0 improves error handling if there is an invalid property present in the dictionary-mappings.properties file. In prior releases, if the properties file existed for which the mapped files did not exist, learning and extraction would not occur and this would impact the dictionary for machine learning.

For additional information about the general operations of machine learning and dictionaries, refer to the feature documentation available on the Ephesoft website.

## Validation | Hidden Column Feature in Table Validation

In Ephesoft Transact 4.5.0.0, table columns have a new additional configuration called **Hidden**. It allows you to hide any specific column or columns from the **Validation** screen. This new option is now included in the **Additional Configurations** dropdown list on the **Table Columns** screen. By default, this field is left unchecked, i.e. all available table columns will be visible on the **Validation** screen unless configured otherwise.

Once you mark any column as hidden, this setting has the following characteristics:

- It will not be displayed on the **Validation** screen.
- It will be excluded from the list of available table columns on the **Table Validation**.

This behavior applies to the Rules screen as well as from the dropdown list of auto-suggested table columns if you are using the AUTO\_TABLE\_EXTRACTION plugin.

If you choose to hide all columns, the **Table View** of the **Validation** screen will be disabled altogether and it will not be possible to define or apply any table validation rule.

At the same time, the values in hidden columns will be extracted and saved in the batch.xml file for the running batch along with all other values (path: Ephesoft\SharedFolders\final-drop-folder).

## Review Validation | Hidden Document Feature

Ephesoft Transact v.4.5.0.0 includes a new Hidden Document feature. It is useful when you do not want the documents to be classified into a particular Document Type. To implement this feature, a new field called Hidden has been added in the Additional Configurations dropdown list on the Document Types screen under the Batch Class. The Hidden Document Types will still be picked up and displayed in the dropdown list present in the middle pane of the Review-Validate screen, however such documents will be marked in red in the left pane. The operator will have to change the Hidden Document Type to a non-hidden one to proceed with the review process. If the operator tries to use the Hidden Document Type, the document will remain marked in red and the error message will be displayed saying "Document cannot have hidden document type".

Please note that if the Batch Class contains only one Document Type and it is marked as Hidden, the batch processing workflow would stop at the Review stage. To ensure complete and successful batch processing, you will need to add other Document Types or "unhide" the existing Document Type.

Additional information is available on the Ephesoft website.

## Validation | Line Item Matching (LIM) Enhancements

Line Item Matching (LIM) is the feature that allows application users to match and verify the processed Invoices with their corresponding Purchase Orders on the Validation Screen. For more information about the functionality, refer to this article on the Ephesoft website:

- <http://wiki.ephesoft.com/line-item-matching>

In Ephesoft Transact v.4.5.0.0, the LIM feature has been improved in several ways (all improvements are described in detail below):

- Changes on the RV screen are automatically saved and reflected in the LIM view (no warning message is now shown to the user to save the data before proceeding).
- LIM UI has been updated.
- The Save button has been removed.
- The Update PO Table button has been changed to the Refresh button.
- The columns in both PO and Invoice Tables can now be resized, and the new column width will be saved.
- Document level fields can be configured so that LIM screen shows their name or description.
- The table columns can be set as hidden, and will not be displayed on the LIM screen.
- Copying mechanism from PO Table to Invoice Table has been improved.
- Currency support has been updated.
- Several known issues have been fixed:
  - The issue where the first line appeared white instead of green, even when the data is matched.
  - The issue with incorrect images shown on the LIM screen. These improvements are available in the **Validate** screen.

Additional information is available on the Ephesoft website.

## Validation | Machine Learning of Tables

In previous versions of Transact, and in all cases when table data was not extracted or was incomplete, the user had to manually change or add the data on the **Validation** screen for every batch.

In Transact 4.5.0.0, the system can capture and learn characteristics of the table you define on the **Validation** screen. This information is then used to automatically extract tabular data in further batches. To implement this feature, the **Learn Table** button has been added in the **Validation** screen and a new **Machine Learning Based Table Extraction** switch has been included in the **Machine Learning Based Extraction** plugin.

Machine learning for tables will work in both of the following cases:

- When the user defines table extraction rules but they fail to produce required results, and
- When the user does not define any table extraction rule and specifies only the table columns.

Additional information about this feature is available on the Ephesoft website.

## Validation | Regex\_mappings.properties File Parameters to Identify Custom Types

In Ephesoft Transact v.4.5.0.0, the user can create their own custom dictionaries, regex, and composite custom block types during the Validation stage. This expands machine learning capabilities and provides flexibility of machine learning based extraction.

In order to differentiate between predefined and custom regex types, a new parameter “Type flag” has been added to the regex\_mappings.properties file (path: (Ephesoft Installation Directory)/Sharedfolders/ BC{Id}/machine-learning- dictionaries/knowledge-base/regex):

There are two available values for the type flag:

- 0 – for the predefined regex
- 1 – for the custom regex

## Review Validation | Review-Validate Screen Changes

Release 4.5.0.0 adds the **Split** button and shifting **Delete Image** button on the toolbar.

Previously, the **Split** and **Delete Image** buttons on the toolbar of the **Review-Validate** screen were positioned very close together. This made it easy to use the wrong button by mistake. Besides, the set of options on the top panel included only the **Merge** button.

For splitting the document, the user had to look for the corresponding option on the toolbar.

In Ephesoft Transact v.4.5.0.0, the top panel on both **Review** and **Validate** screens now also includes the **Split** button. It is positioned next to the **Merge** button to ensure ease and convenience of operation. Apart from that, the **Delete Image** button on the toolbar has been shifted to the bottom, while the **Split** button remains on top. Now, it is much more convenient to restructure the batch document, whenever it is required.

Additional information is available on the Ephesoft website.

## Validation | Validation Screen: Display Index Fields (DLF) by Name or Description

In previous versions of Transact, document-level fields were shown by the field description on the **Validation** screen. In Ephesoft Transact 4.5.0.0, a new property (`field.display_property`) has been added in the `application.properties` file to display document level fields by field name or description on the **Validation** screen.

Additional information about this feature is available on the Ephesoft website.

## 6. Export (Delivery) Module — New Features and Enhancements

This section describes the primary features and enhancements introduced to the Export module in Transact 4.5.0.0.

### Export | Overview of Integrated Platforms

Transact 4.5.0.0 supports export integration with the following third-party platforms.

**Note:** There are many additional third-party data store houses and cloud-based resources that might integrate with Transact 4.5.0.0, through generic CMIS compliance. This list summarizes only those platforms that have been specifically developed or certified for this release, according to the plugin functions cited in the list below.

Transact 4.5.0.0 Export Method	Description
<b>Alfresco 5.1 and 5.2</b> <a href="#">CMIS-EXPORT plugin</a>	<ul style="list-style-type: none"> <li>• Transact 4.5.0.0 exports CMIS-compliant PDF or TIFF files to Alfresco with the <a href="#">CMIS-EXPORT plugin</a>. Alfresco is a CMIS-compliant repository.</li> <li>• General CMIS_EXPORT now includes support for multi-property values into a repeating field property in CMIS-compliant repositories.</li> </ul>
<b>Box Export</b> <a href="#">Export   Box Export Plugin</a>	<ul style="list-style-type: none"> <li>• Release 4.5.0.0 introduces support for export to the Box file sharing data platform.</li> <li>• To enable and configure the BOX_PLUGIN feature, open the batch class and navigate to the Export module.</li> </ul>
<b>CMIS Export</b> <a href="#">Export   CMIS: Export of Values into Multiple Attribute Fields</a>	<p>Release 4.5.0.0 continues support for the CMIS_EXPORT plugin.</p> <ul style="list-style-type: none"> <li>• Release 4.5.0.0 resolves the cause of errors in earlier releases, and enhances multi-property support for exported PDF or TIFF files.</li> <li>• The general CMIS_EXPORT plugin now includes support for multi-property values into a repeating field property in CMIS-compliant repositories.</li> <li>• Transact 4.5.0.0 supports CMIS-compliant file export to the following CMIS-compliant repositories:                         <ul style="list-style-type: none"> <li>• Alfresco</li> <li>• Nuxeo</li> <li>• SharePoint</li> <li>• IBM CM</li> <li>• IBM Filenet</li> <li>• Documentum</li> <li>• all other CMIS-compliant repositories</li> </ul> </li> </ul>

Transact 4.5.0.0 Export Method	Description
<b>CSV Export</b> <a href="#">Export   CSV Export</a>	<ul style="list-style-type: none"> <li>Release 4.5.0.0 enhances the CSV_FILE_CREATION_PLUGIN, which exports a Comma Separated Value (CSV) file to a user-specified location.</li> <li>This plugin includes new extraction options.</li> <li>To enable and configure the CSV_FILE_CREATION_PLUGIN, open the batch class and navigate to the Export module.</li> <li>See also:                             <ul style="list-style-type: none"> <li>CSV File Creation Plugin  <a href="http://wiki.ephesoft.com/csv-file-creation-plugin-2">http://wiki.ephesoft.com/csv-file-creation-plugin-2</a></li> <li>How do you configure the CSV Export Plugin?  <a href="https://wiki.ephesoft.com/how-do-you-configure-the-csv-export-plugin">https://wiki.ephesoft.com/how-do-you-configure-the-csv-export-plugin</a></li> <li>How to Export CSV  <a href="https://wiki.ephesoft.com/kb0009628-ephesoft-4-how-to-export-csv">https://wiki.ephesoft.com/kb0009628-ephesoft-4-how-to-export-csv</a></li> </ul> </li> </ul>
<b>DB Export</b>	<ul style="list-style-type: none"> <li>Release 4.5.0.0 continues support export to an external database via the Database Export Switch.</li> <li>To enable, disable or configure the DOCUSHARE_EXPORT plugin feature, open the batch class and navigate to the Export module.</li> </ul>
<b>Documentum Export</b> <a href="#">CMIS-EXPORT plugin</a>	<ul style="list-style-type: none"> <li>Transact 4.5.0.0 exports CMIS-compliant PDF or TIFF files to Documentum with the <a href="#">CMIS-EXPORT plugin</a>.</li> <li>Also, the <a href="#">CMIS-EXPORT plugin</a> includes support for multi-property values into a repeating field property in CMIS-compliant repositories.</li> </ul>
<b>DocuShare Export</b> <a href="#">CMIS-EXPORT plugin</a>	<ul style="list-style-type: none"> <li>Release 4.5.0.0 continues support for export to DocuShare.</li> <li>To enable the DOCUSHARE_EXPORT plugin feature, open the batch class and navigate to the Export module for a batch class.</li> <li>The <a href="#">CMIS-EXPORT plugin</a> also includes support for multi-property values into a repeating field property in CMIS-compliant repositories.</li> </ul>

Transact 4.5.0.0 Export Method	Description
<b>Export Scripting Export</b>	<ul style="list-style-type: none"> <li>Release 4.5.0.0 continues support for the EXPORT_SCRIPTING_PLUGIN.</li> <li>To enable this plugin feature, open the batch class and navigate to the Export module for a batch class.</li> <li>For additional information, refer to these articles from the Ephesoft Wiki:                             <ul style="list-style-type: none"> <li>Optimize Ephesoft  <a href="https://wiki.ephesoft.com/optimize-ephesoft">https://wiki.ephesoft.com/optimize-ephesoft</a></li> <li>How to Export CSV (includes the EXPORT_SCRIPTING_PLUGIN)  <a href="http://wiki.ephesoft.com/kb0009628-ephesoft-4-how-to-export-csv">http://wiki.ephesoft.com/kb0009628-ephesoft-4-how-to-export-csv</a></li> </ul> </li> </ul>
<b>IBM CM Export</b> <a href="#">CMIS-EXPORT plugin</a>	<ul style="list-style-type: none"> <li>Transact 4.5.0.0 exports CMIS-compliant PDF or TIFF files to IBM_CM with the <a href="#">CMIS-EXPORT plugin</a>.</li> <li>Transact 4.5.0.0 continues support for export to IBM Content Manager. To enable the IBM_CM_PLUGIN feature, open the batch class and navigate to the Export module for a batch class.</li> <li>Also, the <a href="#">CMIS-EXPORT plugin</a> includes support for multi-property values into a repeating field property in CMIS-compliant repositories.</li> </ul>
<b>Infor Export</b> <a href="#">Export   Infor Export</a>	<p>Release 4.5.0.0 enhances support for integration of the Infor export plugins. Ephesoft provides two plugins to connect and export data to Infor tools. The two plugins created as a part of IDM installation process are:</p> <ul style="list-style-type: none"> <li><b>GENERATE_BOD_XML_PLUGIN</b>                      This plugin is responsible for mapping Ephesoft document types and fields with Infor document types and fields. Output of this plugin is XML file for each document which goes as an input to IDM_EXPORT_PLUGIN.</li> <li><b>IDM_EXPORT_PLUGIN</b>                      This plugin defines and uses the XML data which is generated as a part of the previous plugin, and then connects with and exports to Infor products. The plugin locates the document type and attributes, uploads the files and fills in the data in the attributes.</li> </ul>
<b>Nuxeo</b> <a href="#">CMIS-EXPORT plugin</a>	<ul style="list-style-type: none"> <li>Transact 4.5.0.0 exports CMIS-compliant PDF or TIFF files to Nuxeo with the <a href="#">CMIS-EXPORT plugin</a>.</li> </ul>

	<ul style="list-style-type: none"> <li>Also, the <a href="#">CMIS-EXPORT plugin</a> includes support for multi-property values into a repeating field property in CMIS-compliant repositories.</li> </ul>
<p><b>PDF 7.1 Export</b>  <a href="#">Export   Support for PDF Version 1.7</a></p>	<ul style="list-style-type: none"> <li>In Ephesoft Transact 4.5.0.0, higher PDF versions are supported for both import and export.</li> <li>In addition, the image conversion process from PDF to TIFF and TIFF to PDF have been enhanced.</li> </ul>
<p><b>SAP Export</b>  <a href="#">Export   Export to SAP</a></p>	<ul style="list-style-type: none"> <li>Release 4.5.0.0 adds support for export to SAP.</li> <li>To enable the SAP_ARCHIVELINK_PLUGIN feature, open the batch class and navigate to the Export screen for a batch class.</li> <li>Define the connection type and several additional SAP connection parameters.</li> </ul>
<p><b>Sharepoint Export</b>  <a href="#">Export   Export to SharePoint 2013 and 2016</a></p>	<ul style="list-style-type: none"> <li>Release 4.5.0.0 adds support for export to Sharepoint.</li> <li>To enable and configure the SHAREPOINT_365_EXPORT_PLUGIN feature, open the batch class and navigate to the <b>Export</b> screen for a batch class.</li> <li>Transact 4.5.0.0 can also export CMIS-compliant PDF or TIFF files to Sharepoint with the <a href="#">CMIS-EXPORT plugin</a>.</li> </ul>
<p><b>TABBED_PDF Export</b>  <a href="#">Export   TABBED_PDF Plugin and Ordering of Document Types</a></p>	<ul style="list-style-type: none"> <li>Release 4.5.0.0 continues support for the TABBED_PDF plugin, with an additional enhancement.</li> <li>When exporting multiple different document types, Release 4.5.0.0 allows users to specify which document type should come first, second and last in the TABBED_PDF plugin.</li> <li>This capability is available with the <b>Export-script.properties</b> file.</li> </ul>
<p><b>Web Services Export</b>  <a href="#">Export   Web Services Export Plugin</a></p>	<p>Release 4.5.0.0 enhancements the ability to export documents, images and metadata to any system or to cloud services using RESTful Web Services export.</p> <p>This feature allows an admin user to integrate with other systems via Web Services, without having to write code.</p>

## Export | Box Export Plugin

**Plugin Overview** — Transact 4.5.0.0 supports export to Box. This feature has the following functions:

- Document type-specific box connectors
- Two modes of authentication
- Developer token-based
- Oauth-based

The BOX-PLUGIN is user-configurable, to use the index field or the document name as desired. The user has the option to add the **Batch Class** field, with certain additional parameters.

- Additional information about using this feature is available in [Transact Product Documentation and Resources](#).

## Export | CLEANUP Plugin Enhancements

Transact uses the CLEANUP plugin to delete system files and UNC folder data once all the processing on the batch has been completed. Enable and configure this plugin from the **Administrator > Batch Class Management** screen.

This plugin brings the following benefits to batch class operations:

- Improves the conversion process.
- Improves system performance.
- Reduces server maintenance over time, by automatically eliminating temporary files that otherwise accumulate over time.

Transact 4.5.0.0 enhances the CLEANUP plugin in two primary ways:

- Introduces support for this plugin in the **Folder Import** module, and continues support for this plugin in the **Export** module. You can run this plugin after every conversion to clean up any temporary files on the server.
- Improves the process switch for very large multi-page TIFF files (TIFF files over 15MB in size).

## Export | CMIS\_EXPORT Plugin for CMIS-Compliant Data Repositories

**Plugin Overview** — The CMIS\_EXPORT plugin is used upload PDF/TIFF files that Transact exports to third-party data repository platforms.

- Transact generates PDF or TIFF files from the Export module during batch execution.
- Transact exports files to a CMIS-compliant repository as 'Document' object. Transact 4.5.0.0 exports CMIS-compliant files to the following CMIS-compliant repositories:
  - Alfresco 5.1 and 5.2
  - Documentum
  - Nuxeo
  - IBM CM
  - IBM FileNet
  - SharePoint
  - all other CMIS-compliant repositories

**Error Resolution** — In previous versions of Transact, the **CMIS Export** function would go into error state at the Export module. The following error was mentioned in the Transact log files:

```
3034_SP0++ 2013-06- 13 14:22:24,107 ERROR pool-1- thread-1
com.ephesoft.dcma.cmis.CMISExporter - Error while uploading document with
identifier: DOC1 for batch instance: BI5
java.lang.IllegalArgumentException: Property 'bf:documentProperty' is not
a single value property!
```

**Multiple Attribute Fields** — Transact 4.5.0.0 enhances the CMIS Export plugin to include multi-attribute property support. Now the user can configure CMIS export to populate Multiple/Repeating values into external repositories. Transact 4.5.0.0 successfully processes batches, and values are exported to the fields with the **Multiple** property set to **True** on the CMIS side.

- Transact only supports multiple value configuration for DLF-Attribute- mapping (document level field mapping).

Additional information about using this feature is available from this resource:

- Ephesoft Wiki Article — CMIS Export Plugin:

<http://wiki.ephesoft.com/cmris-export-plugin-3>

Additional information about using this feature is available in [Transact Product Documentation and Resources](#).

## Export | CSV Export

**Plugin Overview** — Transact 4.5.0.0 enhances the CSV\_FILE-CREATION plugin for CSV (comma separated value) export. The CSV\_FILE\_CREATION plugin transforms the batch XML file to an acceptable CSV file format enabling control of the output file location.

- The document-level field values present in the batch.xml are exported to the CSV file.
- This plugin then exports the file to the final CSV export folder location configured in the **CSV Creation Final Export Folder** property file. You can also specify the folder from the Plugin Configuration screen.
- Transact creates a CSV export file for the batch when the plugin switch is set to ON, which you set in the Plugin Configuration screen.

**Note:** Table extraction is not supported for CSV export. This plugin does not export table values to the CSV file.

In previous Transact releases, CSV export was available in one of two ways:

- In Release 4.0.0.0 — CSV\_FILE\_CREATION\_PLUGIN, Transact introduced the ability to export to a CSV file without requiring custom scripts.
- In Releases prior to 4.0.0.0 — Transact could only export to a Comma Separated Value (CSV) file by using a custom script.

Additional information about using this feature is available in the following Ephesoft Knowledge Base article:

- KB0009628 Ephesoft 4: How to Export CSV

<https://wiki.ephesoft.com/kb0009628-ephesoft-4-how-to-export-csv>

## Export | DocuShare Export

**Plugin Overview** — The CMIS\_EXPORT plugin is used upload PDF/TIFF files that Transact exports to third-party data repository platforms.

- Transact generates PDF or TIFF files from the Export module during batch execution.
- Transact exports files to a CMIS-compliant repository as 'Document' object. Transact 4.5.0.0 exports CMIS-compliant files to the following CMIS-compliant repositories:
  - Alfresco 5.1 and 5.2
  - Documentum
  - Nuxeo
  - IBM CM
  - IBM FileNet
  - SharePoint
  - all other CMIS-compliant repositories
- Additional information about using this feature is available from documentation to be accessed from [Transact Product Documentation and Resources](#).

## Export | Support Export of Values into “Multiple” Fields via CMIS Export Function

**Plugin Enhancement Overview** — In previous versions of Transact, the CMIS Export function did not support the export of index field values into CMIS fields with the “Multiple” attribute set to True. In such cases, batches formerly went into error state at the Export module and the following error was mentioned in the Transact

```
log files:
3034_SP0++ 2013-06- 13 14:22:24,107 ERROR pool-1- thread-1
com.ephesoft.dcma.cmis.CMISExporter - Error while uploading document with
identifier: DOC1 for batch instance: BI5
java.lang.IllegalArgumentException: Property 'bf:documentProperty' is not
a single value
property!
```

In Ephesoft Transact 4.5.0.0, the CMIS Export function has been enhanced to include multi-property support. Now, the batches are successfully processed and values are exported to the fields with the “Multiple” property set to True on the CMIS side. Support for a multiple value configuration is provided only for DLF-Attribute- mapping (document level field mapping).

The following table lists Ephesoft and Alfresco data types that support multi-property:

Ephesoft Data Type	Alfresco Data Type	Multi-property support
<b>STRING</b>	d:text	YES
<b>INTEGER</b>	d:int	YES
<b>FLOAT</b>	d:float	YES
<b>DOUBLE</b>	d:double	YES
<b>BOOLEAN</b>	d:boolean	YES
<b>LONG</b>	d:long	YES
<b>DATE</b>	d:datetime	NO

- Additional information about using this feature is available from documentation to be accessed from Transact Product Documentation and Resources.

### Export | IBM CM Export

**Plugin Overview** — The CMIS\_EXPORT plugin is used upload PDF/TIFF files that Transact exports to third-party data repository platforms.

- Transact generates PDF or TIFF files from the Export module during batch execution.
- Transact exports files to a CMIS-compliant repository as ‘Document’ object. Transact 4.5.0.0 exports CMIS-compliant files to the following CMIS-compliant repositories:
  - Alfresco 5.1 and 5.2
  - Documentum
  - Nuxeo
  - IBM CM
  - IBM FileNet
  - SharePoint
  - all other CMIS-compliant repositories
- Additional information about using this feature is available from documentation to be accessed from [Transact Product Documentation and Resources](#).

### Export | PDF Version 1.7 Export

**Overview** — In previous versions of Transact, the latest PDF version (i.e. PDF 1.7) was not supported for the export process. This could lead to errors during the import process if PDF files of a higher version (1.7) were provided as input.

In Ephesoft Transact 4.5.0.0, higher PDF versions are supported for both import and export. In addition, the image conversion process from PDF to TIFF and TIFF to PDF have been enhanced.

The following output PDF versions are supported in Transact 4.5.0.0:

- ITEXT – 1.5 to 1.7
- GHOSTSCRIPT – 1.4 to 1.7
- RECOSTAR – 1.4 to 1.7
- IMAGE\_MAGICK – 1.3
- Additional information about using this feature is available from documentation to be accessed from [Transact Product Documentation and Resources](#).

## Export | SAP Export Plugin

**Plugin Overview** — Release 4.5.0.0 introduces a generic SAP export feature, in which the user can export more than one field from Transact to SAP. This feature is available as a plugin that is fully integrated into Transact.

### SAP Overview

SAP is an enterprise resource planning (ERP) system.

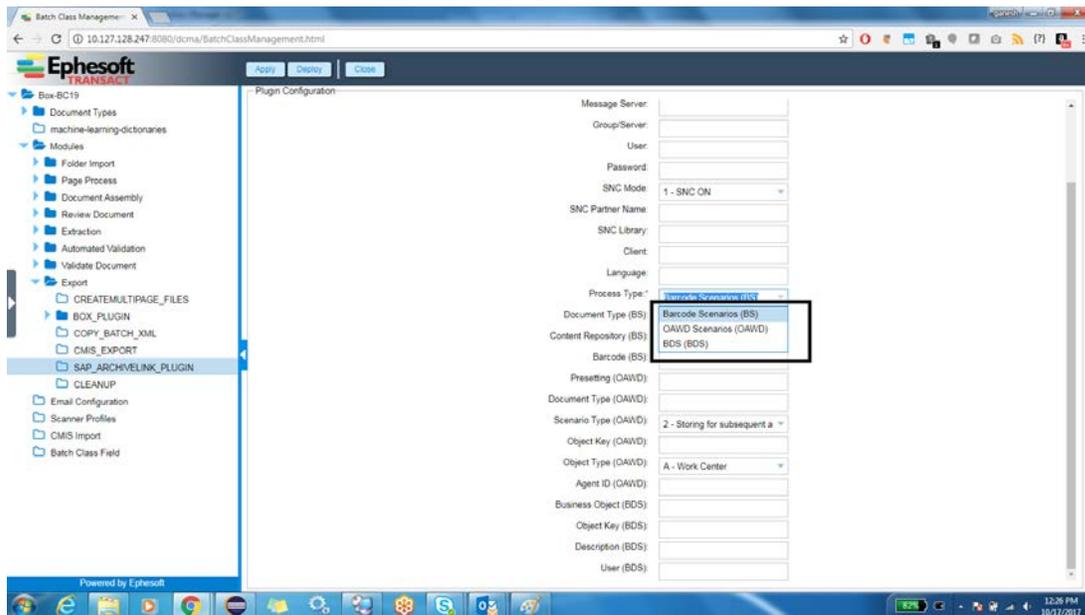
The SAP plugin provides export operations in the following three scenarios:

- **Barcode scenario** — This is the simplest way in which a user can create a business document, exported from Transact to SAP. In this scenario, Transact extracts the barcode value, then creates a business document, exported as TIFF or PDF. Both the business document and the electronic form of the original document are linked, exported and stored in the SAP repository.
- **OAWD (Optical Archiving Workflow document) scenario** — This scenario simulates the same process used for the barcode scenario, but can also initiate a workflow as well. After uploading the document to the SAP system, it triggers a workflow on that document. This allows for distributing the document to other personnel in the organization for their approval in a business process.
- **BDS scenario** — more information about this scenario is pending availability.

Each of these scenarios requires an RFC (Remote Function Call) to be installed on the SAP system.

The following sample screenshot indicates the predicted appearance of this feature:

**NOTE:** The user interface may differ from the prototype sample shown below.



Additional information about using this feature is available in [Transact Product Documentation and Resources](#).

## Export | SharePoint: Export to SharePoint 2013 and 2016

In previous versions of Transact, the user could configure the application to export the files to SharePoint Online (Office 365).

Ephesoft Transact 4.5.0.0 supports the export to SharePoint 2013 and SharePoint 2016 as well. You can configure the export for each Document Type and connection settings in both online and offline mode, but for exporting the documents, connection with the SharePoint account is required.

The PDF and TIFF files are exported to the SharePoint repository along with the configured metadata. Also, the failed batch instance (in ERROR state) can be restarted to resume the export. Resuming the export will override the already exported data to avoid duplicity.

To export documents to the SharePoint repository, you will have to configure SharePoint as well as the SharePoint 365 Export Plugin in the Ephesoft environment.

Additional information about using this feature is available from documentation to be accessed from [Transact Product Documentation and Resources](#).

## Export | TABBED\_PDF Plugin and Ordering of Document Types

**Plugin Overview** — Release 4.5.0.0 introduces an enhancement with the TABBED\_PDF plugin.

When exporting multiple different document types, you can specify which document type should come first, second and last in the TABBED\_PDF plugin. This capability is available with the **Export-script.properties** file. This file is located in the following path:

- C:\Ephesoft\SharedFolders\property\export.script.properties
- Additional information about using this feature is available from documentation to be accessed from [Transact Product Documentation and Resources](#).

## Export | Web Services Export Plugin

The Export to Web Service Plugin is enhanced for three types of authentication:

- Basic
- No Authorization
- OptionAuthorized

Export to Web services also allows Transact users to export the batches (PDF/TIFF and Batch XML files) to the configured Web Service path. To implement this feature, a new EXPORT\_TO\_WEB\_SERVICE plugin has been added to the Export module of Ephesoft Transact.

You can use the default functionality or modify it according to your needs.

Additional information about using this feature is available from documentation to be accessed from [Transact Product Documentation and Resources](#).

## Additional Features and Enhancements in Transact 4.5.0.0

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This section presents features and enhancements which extend beyond the scope of the Transact workflow.

### Apache Tomcat | Multiple Integration Improvements

Transact 4.5.0.0 has multiple improvements for the integration of Apache Tomcat. These include the following items:

- The following functionalities have been merged into a single Ephesoft-custom JAR file and module:
  - Realm (for encryption)
  - Authenticators (for Web Service authentication)
  - Image access (for stopping direct access to images)
  - Shutting down LibreOffice when shutting down Apache Tomcat
  - Transact resolves memory leak or server shutdown issues upon Tomcat shutdown.
  - Transact integrates multiple security enhancements to account for potential vulnerabilities.

Please contact Ephesoft if you need additional information about the above improvements for Transact integration of Apache Tomcat.

### Batch Class | Time Requirements for Processing Batch Class Changes

When making changes to a batch class, click the **Apply** button to register the changes, which is the standard process. Note that Transact may require approximately two minutes to process all batch class changes, depending on the scope of changes and the size of the deployment.

### Batch Instance Management | Workaround when Batch Instances Get Stuck in Page Processing

There may arise an issue with the KV Page Process module, in which batch instances get stuck while processing, and do not complete the processing. This issue has been observed when making a change in the Regex Expressions on page-level fields, after clicking **Apply**.

If you observe batch instances stalling in the Page Process module, when you have made changes in Regex Expressions, follow this workaround to resolve the issue:

1. Export and then reimport the batch class.
2. Restart the same batch and it should process normally, with no stalling.

### Batch Instance Management | Workaround when Long-running Queries Hamper Batch Instance Management

In some circumstances, there may arise an issue in which batch instance status is not updated due to a long-running SQL query. More specifically, the **Batch Execution Details** screen would not populate because it was overloaded with fetching results.

The root cause, with this issue, is with SQL query configuration.

The problematic query was as follows:

```
DELETE FROM ACT_HI_ACTINST
WHERE PROC_INST_ID_ = @P0
```

The reported error was as follows:

ERROR:

```
YYYY-MM-DD 06:36:35,863 [http-apr-8080-exec-1] ERROR
org.apache.catalina.core.ContainerBase.[Catalina].[localhost].[/dcma]- Exception while
dispatching incoming RPC call
```

In cases where the **Batch Execution Details** screen does not populate, review and adjust the configuration of SQL queries.

## Batch Instance Management | Workaround when a Finished Batch Instance is Picked up as New

In some circumstances, Ephesoft has observed an infrequent issue with batch instance processing, characterized by the following symptoms:

1. When a batch instance finishes processing, the result is a duplicated batch that immediately goes into error. When running the folder monitor, Transact might pick up the finishing batch as a new batch, in error.
2. The original batch finishes and cleans up its batch folder.
3. The new, duplicated batch attempts to process, finds that the watch folder is missing, and the duplicated batch goes into error.
4. In circumstances where this occurs, the duplicated batch would have the same name (the same UNC folder), and the second batch would start processing at nearly the same time as the original batch finished.

This issue can be resolved or prevented by enabling jNotify for folder monitoring.

## Batch Instance Performance | PDF to TIFF Conversion with Recostar

In a previous Transact release, it was observed that batch instances may experience errors if Recostar was the engine that performed PDF to TIFF conversion. Errors were not observed with GhostScript as the engine. This issue has been resolved in Transact 4.5.0.0.

## Batch Instance Management | Exception Handling and Batch Execution Details

In previous versions of Transact, default scripts did not include information on the exceptions thrown. If any default script went into error, the batch status reflected the "Error" but the "Error Cause" was not populated on the Batch Instance Management screen.

In Ephesoft Transact 4.5.0.0, the default scripts have been modified to include error comments. The administrator can also view script error details in the dcma-all and catalina logs in the Application folder.

Also, the Batch Execution Details on the Batch Instance Management screen includes the error message if the batch goes into error state at any level of the batch processing workflow.

Additional information about this feature is available on the Ephesoft website.

## Cloud Deployment | Display MSA/EULA Notice at Logon to Cloud Users

If Ephesoft Transact v.4.5.0.0 is deployed in a cloud, you can configure the application to display a Master Subscription Agreement / End User License Agreement (MSA/EULA) before granting access to the system management interface.

The implementation considers two roles supported in Ephesoft Transact — Super Administrator and Operator.

Additional information about this feature is available on the Ephesoft website.

## Developers | REST API Lookup

Ephesoft Transact 4.5.0.0 now supports REST API Lookup. It is used to extract the document-level fields of a document on basis of the Web Service response. With REST API Lookup, there is no need to provide direct access to the databases or create special scripts for REST API based extraction. Now, all configurations can be done directly from the user interface (UI).

This feature has been implemented as a separate extraction plugin at the Batch Class level, configuration section at the Document Type level and a lookup functionality on the Validation screen. It provides the same user experience as the Fuzzy DB Lookup. However, rather than extracting the index fields directly from the database, it is passing configured values to a REST Web Service in the customer environment and the Web Service returns XML/JSON response back to Ephesoft Transact. The application parses the response and extracts the required information according to the mapped XPath/JSONPath strings. The extracted values are then mapped to the index fields created for the document types.

REST API Lookup can be configured in two ways:

- REST URL based lookup, where the user provides REST URL, parameter and field mappings, as well as authentication details (username and password required to access the Web Service). The returned XML/JSON response will then be used to extract values on basis of the XPath or JSONPath.
- JAR based lookup, where the user provides their own custom implementation for authentication and API invocation. The Web Service should return API response (XML/JSON) back to Ephesoft Transact using this custom JAR. The response will then be used to extract values based on a specified XPath or JSONPath.

Additional information about this feature is available on the Ephesoft website.

## Developers | splitMultipageFile API

Use the `splitMultipageFile` API with ImageMagick, Ghostscript and Recostar for splitting an input file to a single-page TIFF file.

In Transact releases prior to 4.5.0.0, the `splitMultipageFile` API only supported ImageMagick or Ghostscript for the PDF-to-TIFF split. In these previous releases, the web service took a flag to check if Ghostscript needed to be used.

Release 4.5.0.0 enhances this API to add support for Recostar. Release 4.5.0.0 adds an optional parameter in the web service to support Recostar during the PDF-to-TIFF conversion.

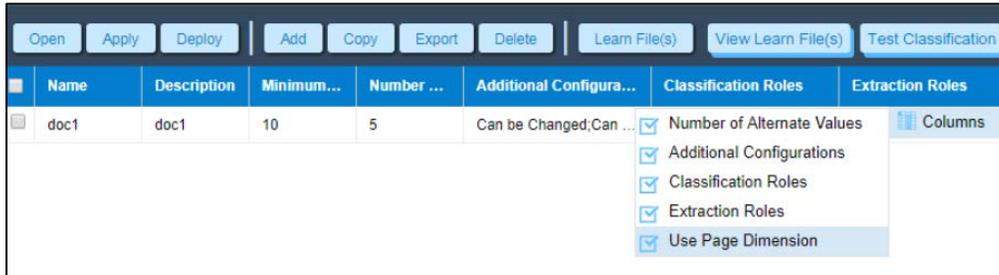
Additional information is available in the *Ephesoft Developers Guide* available online.

The **splitMultiPage API** is described on the Ephesoft Wiki website at this location:

- *Posts / Documentation / Developers Guide / Web Services API*  
<http://wiki.ephesoft.com/web-services-api>

### Document Screen | Use Page Dimension

Transact 4.5.0.0 improves consistent availability of the **Use Page Dimension** option on the **Document** screen. This option is available in the **hide/unhide** list of columns.



### Folder Management | Error with Folder Management Screen

Release 4.5.0.0 resolves an observed error with the **Folder Management** screen. In previous releases, batches would go into error with the Tabbed PDF plugin. The error was "Error in writing pdfMarks file." Note that as part of the resolution, quotation marks are used in Windows, but not in Linux.

### Folder Management | Edit properties and .txt files from Folder Management

Previously, the Folder Management section could only be used for browsing and viewing the files in the SharedFolders directory. There was no option to edit their content. If the user wanted to introduce any changes, he had to go back to the Ephesoft Transact server and modify the backend files.

In Ephesoft Transact v.4.5.0.0, you can edit the properties and .txt files directly from the Folder Management interface. For that, a new button called "Edit" has been added to the menu of the Folder Management screen. The button becomes enabled upon selection of properties file or .txt file, otherwise it is disabled. You can open the properties/txt file by clicking Edit, by double clicking the properties/txt file, or by right clicking on it and selecting Open. To change any value in the file, you can simply click in the text field, which will then become editable.

### Language Support | Enhanced User Interface and OCR Language Support

Transact 4.5.0.0 enhances language support in several ways. Primary language enhancements include the following:

- User interface language support for Dutch, English, German, French, Italian and Spanish
- Enhanced OCR support for CJKT languages — Chinese, Japanese, Korean and Thai
- Language selection controls in the user interface

Refer to additional features for more information:

- [Extraction | CJKT Language Support for OCR in Nuance on Linux](#)
- [Extraction | OCR Language Selection in the User Interface](#)

- [Extraction | ocrClassify, ocrClassifyExtract and initiateOcrClassifyExtract Web Service Enhancements with Multidimensional Classification](#)

## Logging | Enhance Logging for ERROR, INFO, and DEBUG

In Ephesoft Transact v.4.5.0.0, logging mechanism has been enhanced to provide more detailed and descriptive information. This will help to debug any possible issue faster and better. Enhanced logging has been implemented at the application code level controlled by different logging levels. This approach ensures more robust logging across the application with special attention to the following areas:

- Active Directory (logging in, logging out, current user, connecting to AD server etc.)
- Folder Monitor (firing of jnotify or cron, file detection, folder creation, database insert, etc.)
- Email Import (connecting to the email server, attachment download, email change to read, etc.)
- TIFF conversion (imagemagick, graphicmagick, libtiff).
- Pick Up Service (pickup server assignment, db query to BI table, insert to \*job table, individual servers locking records, start of workflow, etc.)
- ITEXT (start of the process, file detection, file output, etc.)
- LibreOffice (start of the process, file detection, file output, etc.).

Enhanced logging is now used for ERROR, INFO and DEBUG levels, with DEBUG level providing the most detailed information about the issue.

Additional information about this feature is available on the Ephesoft website.

## Performance | Batch Class Performance

Release 4.5.0.0 improves UI performance for large batch classes, and provides a friendlier multipage Import, with support for the folder input option.

## Performance | Recostar Performance

Windows Recostar performance is increased for 12 or more cores, and adds support up to 32 cores.

## Reporting | Reporting Optimization

Previously, the cron jobs for dashboard and advanced reporting used to coincide, which could cause a hike in CPU consumption. The dashboard reporting job was performed every 15 minutes, while advanced reporting job was executed every 6 hours. That means, every 6 hours both jobs would run simultaneously, and there could be a noticeable reduction of system efficiency.

In Ephesoft Transact v.4.5.0.0, the cron job for advanced reporting has been readjusted so that it never overlaps with dashboard reporting job. Now, it is set at 6 hours and 5 minutes in dcma-reporting.properties file (Ephesoft Installation Directory)\Application\WEB-INF\classes\META-INF\dcma-reporting) and will run 5 minutes after the dashboard reporting job.

Additional information about this feature is available on the Ephesoft website.

## Security | Black Duck Vulnerability Check Summary

Ephesoft has conducted a thorough security review and analysis of Transact 4.5.0.0 using the Black Duck vulnerability assessment software. Contact Ephesoft for additional information.

## Security | Nexpose Security Summary

Ephesoft has conducted a thorough security review and analysis of Transact 4.5.0.0 using the Nexpose vulnerability assessment software. Contact Ephesoft for additional information.

## Security | OWASP Zap Security Scan Summary

Ephesoft has conducted a thorough security review and analysis of Transact 4.5.0.0 using the OWAPS Zap security scanning software. Contact Ephesoft for additional information.

## Security | Password Encryption Improvement

Transact 4.5.0.0 includes improved password encryption for the Server.xml and Azure SQL connection. This release also encrypts keystore passwords contained in the security XML file that is used for SAML configuration.

## SSO | ADFS

Transact 4.5.0.0 supports SAML 2.0 with ADFS 6.3.0.0.

Upon login, Transact directs users to the SSO login page. This security feature is supported in a single server and a multi-cluster environment.

The primary steps to configure this feature are as follows:

1. Configure the Tomcat server in Transact, and additional configuration file settings.
2. Configure the ADFS server.
3. Export the certificate from the ADFS server.

For complete information, refer to the following Ephesoft Wiki:

- SSO Authentication with ADFS SAML 2.0  
<https://wiki.ephesoft.com/sso-authentication-with-adfs-saml-2-0>

## SSO | CAS-based SSO (Secure Sign On) Framework

SSO (Single Sign-On) is a mechanism of access control that can be applied on multiple related but independent software systems. This way, a user logs in once and gains access to multiple systems without being prompted to log in again for each individual application.

Previously, the SSO mechanism in Ephesoft Transact only supported integration of the SAML-enabled Spring Security framework. For more information on this feature, refer here.

In Transact 4.5.0.0, SSO functionality can also be implemented on the basis of CAS (Central Authentication Service). Now, you can configure Transact with Spring Security and CAS, both with and without CAS proxy support.

Additional information about this feature is available from the Ephesoft website.

## SSO | Multi-group Support for SSO Type 2 Authentication

In previous Transact releases, only one group was taken into consideration during SSO authentication.

Effective with Release 4.5.0.0, Transact now fetches all groups and uses all groups for resource authorization. When the system receives a request for a resource from a user, if the user belongs to a super admin group, the system grants that user access. Otherwise, the system will check all other groups to which the user belongs to verify access rights.

Therefore, this feature adds support for multi-group authentication, and this feature distinguishes between admin and operator groups.

## SSO | PingFederate

Ephesoft has certified Transact 4.5.0.0 as a security identity provider.

## SSO | SAML

SAML is a single sign-on (SSO) protocol.

Transact 4.5.0.0 supports SSO authentication using ADFS and SAML 2.0. This security feature is supported in a single-server and a multi-cluster environment. Additional information is available from the Ephesoft Wiki. Refer to the following documents:

- Spring Security & SAML Configuration
- Ephesoft Transact & Okta Configuration

In addition, Transact 4.5.0.0 improves integration with the third-party identity management system that the customer has in place.

Legacy information is available at this online location:

- <http://wiki.ephesoft.com/single-sign-on>

Updated information will be made available on the Ephesoft Wiki.

## System Operations | Display DOD Notice and Consent Banner at Logon

In Ephesoft Transact v.4.5.0.0, you can configure the application to display a Standard Mandatory DoD Notice and Consent Banner before granting access to the system management interface. This privacy and security notice is provided in accordance with applicable U.S. federal laws that state:

- users are accessing a U.S. Government information system;
- system usage may be monitored, recorded, and subject to audit;
- unauthorized use of the system is prohibited and subject to criminal and civil penalties;
- the use of the system indicates consent to monitoring and recording.

The click-through banner appears at successful logon, preventing any further activity in the application unless and until the user acknowledges his agreement with mentioned provisions.

Additional information about this feature is available on the Ephesoft website.

## System Operations | Log Event when Application is Stopped

In previous Transact releases, no logs were created when the application was stopped or when the same credentials were used to initialize concurrent sessions from different workstations.

In Ephesoft Transact 4.5.0.0, the application server generates log records every time.

Transact now offers a new system of alerts. All alerts are handled by the Log Monitoring Tool, which has been created specifically for this purpose. The tool is responsible for monitoring application logs and generating alerts based on the following factors:

<b>Log events</b>	the tool keeps record of log events and alerts the system administrator if the log event is not received within a predefined timeframe
<b>Log size</b>	the tool monitors the size of the log generated by the application and alerts the system administrator if the log size crosses a predefined threshold
<b>Log folder size</b>	the tool monitors the size of the application log folder and alerts the system administrator if the log folder size crosses a predefined threshold
<b>Log folder disk size</b>	the tool monitors the size of the disk which contains the log folder and alerts the system administrator if the disk size crosses a predefined threshold
<b>Connection timeout</b>	the tool alerts the system administrator if connection to the server cannot be established within a predetermined timeframe
<b>Connection error</b>	the tool alerts the system administrator if connection to the server cannot be established due to an incorrect configuration
<b>IO exception error</b>	the tool alerts the system administrator if an error occurred while trying to monitor the log folder (e.g. when the application does not have access to the log folder)

All alerts are sent via email. Additional information about this feature is available on the Ephesoft website.

## System Operations | Session Timeout Behavior

Previous Transact releases may have experienced premature session timeouts, even though operators were active in the application, during scanning, reviewing, and inserting images.

Previous Transact releases may have received timeout errors “while reading error stream of process.”

Transact 4.5.0.0 resolves dysfunctional session timeout behavior in all screens that may have experienced them in prior releases.

## User Interface | Keyboard Shortcuts and Custom Shortcuts

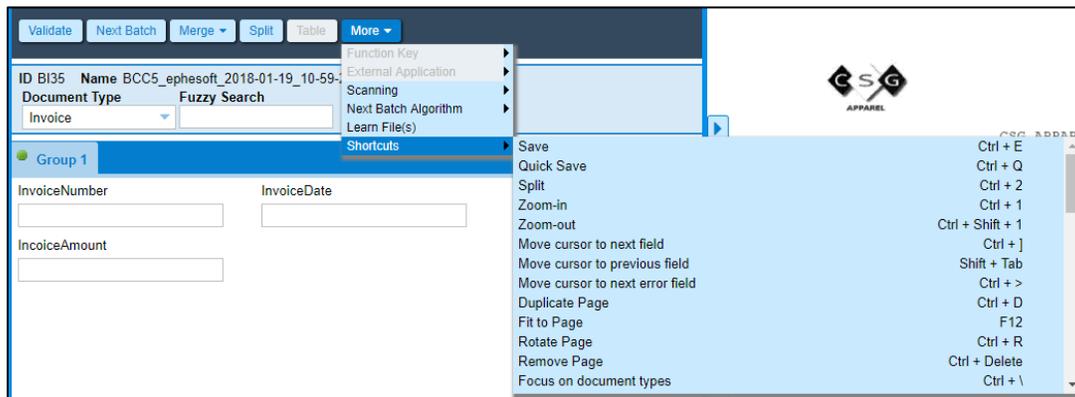
Transact 4.5.0.0 enhances the default keyboard shortcuts available in the batch **Review** and **Validation** operator screens.

Release 4.5.0.0 also allows you to create custom keyboard shortcuts for up to four levels of support. You can define how widely custom keyboard shortcuts are made available — whether

application-wide, language-wide, batch class-wide, or narrowed down to a specific batch class.. You make customizations with the Properties files.

Follow these steps to access the user screens that have keyboard shortcuts. These screens will display default configurations if you have not created any custom shortcuts.

1. Log into Transact.
2. Navigate to any of the following screens:
  - Operator > View My Batches — select a batch and click Open.
 Or...
  - Operator > Open Next Batch
3. In the **More** dropdown menu, click **Shortcuts**.



Shortcuts Menu

Additional feature information is available in Ephesoft [Product Documentation and Resources](#).

### Advanced Web Scanner Caching Improvement

In previous versions of Transact, in some cases display images stored in the temp folder of the Advanced Web Scanner Service installation directory were not deleted due to specific browser issues.

In Ephesoft Transact 4.5.0.0, image caching for the Advanced Web Scanner Service has been improved. Browser caching for the Advanced Web Scanner is now disabled. Specific meta-tags have been added in the HTML files of both the Web Scanner applet and Advanced Web Scanner.

### Advanced Web Scanner Installer Improvement

Previously, when the user installed the Ephesoft Advanced Web Scanner Service, he also had to manually install and map the following security certificates:

- Ephesoft-browser-cert.crt certificate generated by the Installer
- Certificates for PIV/CAC authentication if the service is being installed on a secure server (HTTPS)

In Ephesoft Transact v.4.5.0.0, the Advanced Web Scanner installer has been enhanced to import and map all the required certificates at the time of service installation. Now, all

certificates created during Advanced Web Scanner HTTPS installation and existing CA certificates are automatically mapped to their respective directories and folders.

For this purpose, a new step has been added to the Ephesoft Transact Scanner Service Setup Wizard, allowing you to specify the location of the CA certificate and password.

Additional information about this feature is available on the Ephesoft website.

## Web Services — New Features and Enhancements

The term Web services describes a standardized way of integrating Web-based applications using the XML, SOAP and other open standards over an Internet protocol backbone.

- XML is used to tag the data.
- SOAP is used to transfer the data.
- Additional protocols and standards are available for additional functions.

Web services allow Transact to communicate data easily to other IT systems behind a firewall.

Transact 4.5.0.0 introduces several new features or enhancements with Web services. Transact Web Services provide an extensive platform for developers to create unique document solutions. Our RESTful APIs provide both macro and micro services to meet your document capture, classification and extraction needs through our machine learning and analytics engine.

For additional information, refer to the following article:

<https://www.ephesoft.com/transact/web-services-apis/>

### Export | Web Services Export Plugin

The Export to Web Service Plugin is enhanced for three types of authentication:

- Basic
- No Authorization
- OptionAuthorized

Export to Web services also allows Transact users to export the batches (PDF/TIFF and Batch XML files) to the configured Web Service path. To implement this feature, a new EXPORT\_TO\_WEB\_SERVICE plugin has been added to the Export module of Ephesoft Transact. You can use the default functionality or modify the plugin according to your needs.

Additional information about using this feature is available from documentation to be accessed from [Transact Product Documentation and Resources](#).

### Extraction | ocrClassify, ocrClassifyExtract and initiateOcrClassifyExtract Web Service Enhancements, and Multidimensional Classification

Transact 4.5.0.0 enhances Web Services to support format conversion, multidimensional classification and automatic classification.

Previously, the **ocrClassify** Web Service supported Search classification, Image classification, Keyword classification, and Barcode classification.

In Release 4.5.0.0, the **ocrClassify** API has been enhanced to support Multidimensional and Automatic classification as well:

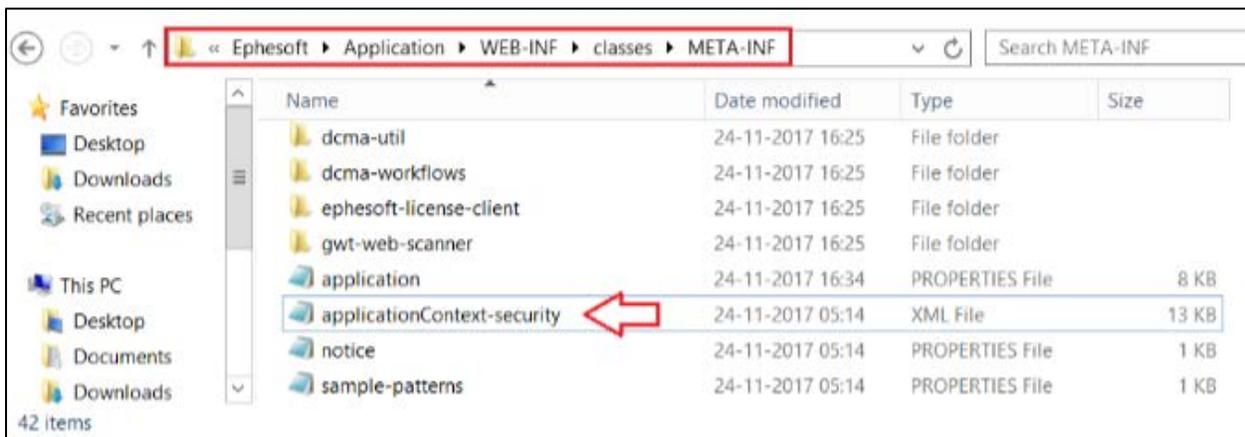
- Multidimensional classification mechanism is used to classify documents across various dimensions and then combine the score of each dimension to give better accuracy and confidence. For more information, refer [here](#).
- In Automatic classification, Ephesoft Transact forms documents on the basis of top results from the page level fields populated by Search Classification (Lucene), Keyword, Barcode and Image classification as well as Multidimensional classification plugins in the Page Process module. For more information, refer [here](#).

Apart from that, **ocrClassifyExtract** and **initiateOcrClassifyExtract** Web Services now support format conversion. Format conversion allows you to configure formatting for different index fields in Ephesoft Transact. The values for which format has been configured are formatted after extraction. The formatted values are saved to the batch.xml file. For more information on format conversion, refer [here](#).

All three Web Services now also support HOCR encryption. All generated HOCR files will be encrypted if the batch class, for which API is run, is configured to use encryption. This feature is implemented to ensure additional security of your data. Please note that if you set “downloadHocr” parameter to true, the HOCR file in the Web Service response will Navigate to the **Format Conversion** screen under the corresponding Index Field and select the required format option. For more information on format conversion options, refer [here](#).

## SAML | SAML and Configuration of applicationContext-security.xml during Upgrade

The applicationContext-security.xml file is used as a part of SAML configuration in Ephesoft Transact and is placed in the META-INF folder of the application directory (<EphesoftInstallation Directory>\Application\WEB-INF\classes\META-INF). For more information, refer to [this location](#) on the Ephesoft Wiki.



To ensure a smooth transition to Ephesoft Transact v.4.5.0.0 from earlier versions, the system will create a backup of the applicationContext-security.xml of ET-4.5.0.0 in the same folder and will name it as applicationContext-security.bak. During the upgrade, the application will compare the new file and the file used in the previous versions.

Additional information about this feature is available on the Ephesoft website or Wiki.

## Hot Fixes in Release 4.5.0.0

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**NOTE:** Contact Ephesoft for additional information for hot fixes that may pertain to your deployment.

## Hardware Requirements

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The hardware requirements for Ephesoft Transact are based on the license that will be installed on the server(s). Ephesoft Transact licenses are based on software cores, so the server will need to have the correct number of logical cores (as reported by the operating system) to ensure optimal performance and throughput is achieved.

The recommended minimum hardware requirements for the server(s) are listed below.

### Server

- 1 way 4-core CPU or 2 way 2-core CPU (Total 4 cores)
- 2.0 GHz or higher clock speed
- 2 GB RAM per Core
- NIC 1 GBPS
- 100GB minimum local hard drives (root and partition where application is to be installed)
  - \* Ephesoft strongly recommends using solid state drives.

### NAS/SAN

- SSD-based high I/O server cluster
- RAID 10 for increased performance

### Database

- 1 way 4-core CPU
- 16GB Memory
- NIC 1 GBPS
- 20GB storage reservation for the Ephesoft Application Database
- 20GB minimum for the Ephesoft Reporting Database
  - \* Special Note: MySQL must be set to use a case insensitive collation (i.e. SQL\_Latin1\_General\_CP1\_CI\_AS)

## Product Documentation and Resources

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Transact 4.5.0.0 has the following resources available for support, training and user reference.

### Ephesoft Demo

<ul style="list-style-type: none"> <li>• <b>Demo Home Page</b></li> </ul>	<a href="http://demo.ephesoft.com/">http://demo.ephesoft.com/</a> Registration is required.
<ul style="list-style-type: none"> <li>• <b>Dashboard landing page</b></li> </ul> <p>If you are not forwarded to the Dashboard automatically, then in the navigation pane on the left, click <b>Dashboard</b>.</p>	<a href="http://demo.ephesoft.com/dashboard/">http://demo.ephesoft.com/dashboard/</a> <ul style="list-style-type: none"> <li>• <b>Demo scripts</b></li> <li>• <b>Demo videos</b></li> <li>• <b>Sample images and document files</b></li> <li>• <b>Launch Ephesoft Transact to sample the user interface</b></li> <li>• <b>Reset batch classes</b></li> <li>• <b>Submit demo batches</b></li> <li>• <b>Web services demo</b></li> <li>• <b>SnapDoc for mobile application</b></li> <li>• <b>Ephesoft sizing calculator tool</b></li> </ul>
<ul style="list-style-type: none"> <li>• <b>Products landing page</b></li> </ul>	<a href="http://demo.ephesoft.com/products/">http://demo.ephesoft.com/products/</a>
<ul style="list-style-type: none"> <li>• <b>Transact Page</b></li> </ul>	<a href="http://demo.ephesoft.com/products/ephesoft-transact/">http://demo.ephesoft.com/products/ephesoft-transact/</a> <ul style="list-style-type: none"> <li>• <b>Installation and Upgrade</b></li> <li>• <b>Release Notes</b></li> <li>• <b>Workarounds</b></li> <li>• <b>Datasheets &amp; Quick Cards</b></li> <li>• <b>Technical Overview</b></li> <li>• <b>Videos</b></li> <li>• <b>Presentations</b></li> <li>• <b>Sales Tools</b></li> </ul>

## Ephesoft Wiki

<ul style="list-style-type: none"> <li>• <b>Wiki Home Page</b></li> </ul>	<a href="http://wiki.ephesoft.com/">http://wiki.ephesoft.com/</a>
<ul style="list-style-type: none"> <li>• <b>Knowledge Base</b></li> </ul>	<a href="http://wiki.ephesoft.com/home/knowledge-base">http://wiki.ephesoft.com/home/knowledge-base</a> <ul style="list-style-type: none"> <li>• <b>How to Articles</b></li> <li>• <b>Operator UI</b></li> <li>• <b>File Import</b></li> <li>• <b>Reporting</b></li> <li>• <b>Export</b></li> <li>• <b>Videos</b></li> <li>• <b>Documentation</b></li> <li>• <b>Other</b></li> <li>• <b>Classification</b></li> <li>• <b>Capture</b></li> <li>• <b>Security</b></li> <li>• <b>System</b></li> <li>• <b>Scripting</b></li> <li>• <b>Downloads</b></li> <li>• <b>Archive</b></li> </ul>
<ul style="list-style-type: none"> <li>• <b>Product Documentation</b></li> </ul>	<a href="http://wiki.ephesoft.com/home/documentation">http://wiki.ephesoft.com/home/documentation</a> <ul style="list-style-type: none"> <li>• <b>What's New</b></li> <li>• <b>Wiki articles covering several high-visibility features of the latest release (Wiki articles)</b></li> </ul>
	<ul style="list-style-type: none"> <li>• <b>General Documentation</b></li> <li>• <b>Developers Guide</b></li> <li>• <b>Release Notes</b></li> <li>• <b>Plugins</b></li> <li>• <b>Installation</b></li> <li>• <b>Folder Management</b></li> <li>• <b>Reports</b></li> <li>• <b>System Configuration</b></li> <li>• <b>Features</b></li> <li>• <b>Review Document</b></li> <li>• <b>Validation Document</b></li> </ul>
<ul style="list-style-type: none"> <li>• <b>Developers Guide Transact</b></li> </ul>	<a href="http://wiki.ephesoft.com/developers-guide">http://wiki.ephesoft.com/developers-guide</a> <ul style="list-style-type: none"> <li>• <b>Web Services</b></li> <li>• <b>Scripting Guide</b></li> <li>• <b>Custom Plugins</b></li> <li>• <b>External Applications</b></li> </ul>
<ul style="list-style-type: none"> <li>• <b>Download</b></li> </ul>	<a href="http://wiki.ephesoft.com/home/download">http://wiki.ephesoft.com/home/download</a> <ul style="list-style-type: none"> <li>• <b>Updates</b></li> <li>• <b>Security Patches</b></li> </ul>

## Transact Home Page (live installation)

If you have access to a live installation of Transact, you have access to the following resources on the Home page after initial login:

<ul style="list-style-type: none"> <li>• <b>Administrator Screens</b> <ul style="list-style-type: none"> <li>○ <b>Batch Class Management</b></li> <li>○ <b>Batch Instance Management</b></li> <li>○ <b>Folder Management</b></li> <li>○ <b>Reports</b></li> </ul> </li> </ul>	<ul style="list-style-type: none"> <li>• <b>Operator Screens</b> <ul style="list-style-type: none"> <li>○ <b>View My Batches</b></li> <li>○ <b>Open Next Batch</b></li> <li>○ <b>Scan New Documents</b></li> <li>○ <b>Upload New Documents</b></li> </ul> </li> </ul>
<ul style="list-style-type: none"> <li>• <b>Wiki</b> <ul style="list-style-type: none"> <li>○ <b>How to?</b></li> <li>○ <b>Video Tutorials</b></li> <li>○ <b>Tutorials</b></li> <li>○ <b>Downloads and Updates</b></li> </ul> </li> </ul>	<ul style="list-style-type: none"> <li>• <b>Documentation</b> <ul style="list-style-type: none"> <li>○ <b>Developer's Guide</b></li> <li>○ <b>What's New</b></li> <li>○ <b>Batch Class Management</b></li> <li>○ <b>Review</b></li> <li>○ <b>Validation</b></li> <li>○ <b>Mobile SDK</b></li> </ul> </li> </ul>
<ul style="list-style-type: none"> <li>• <b>Company</b> <ul style="list-style-type: none"> <li>○ <b>Certification and Training</b></li> <li>○ <b>Products</b></li> <li>○ <b>Contact Us</b></li> </ul> </li> </ul>	

## Developer Resources

<ul style="list-style-type: none"> <li>• <b>Ephesoft Web Services API Guide</b></li> </ul>	<p><a href="https://www.ephesoft.com/learn/developers/">https://www.ephesoft.com/learn/developers/</a></p> <p>Provides links to our Wiki and guides to the full range of APIs available for the Transact Capture Suite.</p> <ul style="list-style-type: none"> <li>• <b>1 Ephesoft Script Guide</b></li> <li>• <b>2 Ephesoft Plugin Dev</b></li> <li>• <b>3 Integrating External Applications with Ephesoft Validation</b></li> <li>• <b>4 Netbeans IDE Setup</b></li> <li>• <b>5 Web Services API</b></li> <li>• <b>Version 4.5 Latest Webservices</b></li> <li>• <b>Version 4.0 Latest Webservices</b></li> </ul>
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