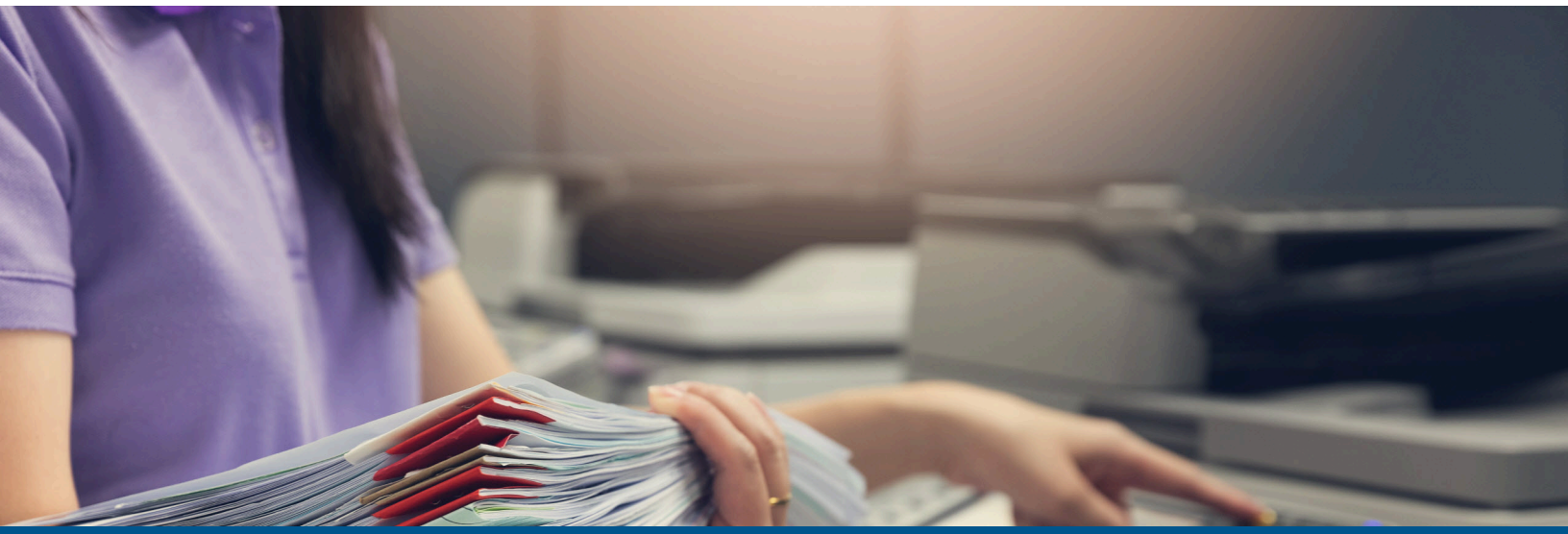


Ephesoft Transact
Installation Guide for Linux

Version: 2023.1.00

Date: 2023-08-18

EPHESOFT
a KOFAX company

Table of Contents

Preface

This guide contains essential information and procedures for super administrators who are responsible for installing or upgrading Ephesoft Transact in a Linux environment. The guide also explains key details related to licensing, configuration, and working with your database, and more.

Related documentation

The documentation set for Ephesoft Transact is available online: [1]

https://docshield.kofax.com/Portal/Products/Transact/2023.1.00-oismpn77w5/Transact.htm

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

Ephesoft Transact Getting Started Guide
Contains general information about using Ephesoft Transact.

Ephesoft Transact Installation Guide for Windows
Includes instructions on how to install and upgrade Ephesoft Transact on Windows.

Ephesoft Transact Developer's Guide
Provides resources related to scripting in Transact, resources for developers to create and manage custom plugins, along with Transact Web Services API.

Ephesoft Transact Administrator's Help
Offers detailed online assistance for Ephesoft Transact users assigned to the administrator role. Use this guide to get assistance in managing batch classes and batch instances.

Ephesoft Transact User Help
Offers detailed online assistance for Ephesoft Transact users assigned to the operator role.

Ephesoft Transact System Configuration Help
Provides assistance for users who are assigned to the super administrator role. Super administrators complete system-level operations, installations, and system configuration.

Ephesoft Transact Release Notes
Use this document to learn what is new with the latest Transact release, identify outstanding defects and workaround solutions where applicable, and learn which defects the release fixes.

Ephesoft Transact Technical Specifications
Use this document to learn about supported operating systems and other system requirements.

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

Training

Kofax offers both classroom and computer-based training that will help you make the most of your Ephesoft Transact solution. Visit the Kofax Education Portal for details about the available training options and schedules.

Getting help with Kofax products

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

To access the Kofax Knowledge Portal, go to https://knowledge.kofax.com.

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

The Kofax Knowledge Portal provides:

- Powerful search capabilities to help you quickly locate the information you need.
  Type your search terms or phrase into the **Search** box, and then click the search icon.
- Product information, configuration details and documentation, including release news.
  To locate articles, go to the Knowledge Portal home page and select the applicable Solution Family for your product, or click the View All Products button.

From the Knowledge Portal home page, you can:

- Access the Kofax Community (for all customers).
  On the Resources menu, click the **Community** link.
- Access the Kofax Customer Portal (for eligible customers).
  Go to the Support Portal Information page and click **Log in to the Customer Portal**.
- Access the Kofax Partner Portal (for eligible partners).
  Go to the Support Portal Information page and click **Log in to the Partner Portal**.
- Access Kofax support commitments, lifecycle policies, electronic fulfillment details, and self-service tools.
  Go to the Support Details page and select the appropriate article.

Chapter 1

Introduction

With Ephesoft Transact, you can scan and extract data from documents that arrive in formats such as paper or email attachments. Transact automates the end-to-end document processing workflow with minimal operator interaction.

This guide provides important information about installing and upgrading Ephesoft Transact on Linux, including:

- Preparations, decisions, precautions, settings, and tips to help you successfully and efficiently install or upgrade Transact
- Database management requirements
- Instructions for installing and upgrading Transact in silent mode

The primary source of information about supported versions and other Transact requirements is the *Ephesoft Transact Technical Specifications* document which is available on the Ephesoft Transact Product Documentation site.

Proceed to one of the following chapters according to your requirements:

- Installation instructions
- Upgrade instructions

Chapter 2

Installation instructions

This chapter provides important information about installing Transact in the following environments:

- Operating system: Red Hat Enterprise Linux (RHEL)
  For information about the supported versions, see *Ephesoft Transact Technical Specifications*.
- Environment types: Single or multi-server
- Installation types: Normal or silent

Installation overview

Transact installation process follows this general sequence of tasks. Before you proceed, see *Ephesoft Transact Release Notes2023.1.00*.

Installation task	General scope of activity
Installation prerequisites	Prepare for the installation by gathering installation resources and verifying that the environment is supported.
Download and run the Transact installer	Run the Transact installer in the command line interface.
Select Normal installation or Silent installation	Determine if you are performing a normal or silent installation and follow the steps for your selected option.
License and launch Transact	Perform these steps to complete the install for Transact 2023.1.00.

Installation prerequisites

Perform these steps to prepare for a successful software installation and startup:

1. Determine if you need to perform a single-server or multi-server installation.

   Installation steps unique to a multi-server installation are identified where applicable.

2. Verify that your database version is supported.
   For more information, see the *Ephesoft Transact Technical Specifications* document.

3. The following database information is required when you run the installer:
   - User name and password
   - Database connection parameters

   The Transact installer does not install any database management systems (DBMS). You need to install and configure any relevant DBMS prior to installing Transact. If you are installing Transact for the first time using MariaDB, see Install and migrate to MariaDB for Linux for additional information.

4. Verify that the Internet connectivity is available for this installation.nm-online.

   The installation will be interrupted if the Internet connection is unavailable because some software requires updates or installation from the operating system repository.

5. If you are installing Transact with Microsoft Active Directory (MSAD), MSAD must already be installed and configured prior to installing Transact.
6. Verify that you have super-user (root) permissions. If you are not a super-user, execute the following command to gain super-user permissions: `sudo su root`

   The installation script must be run with super-user permissions. Otherwise, an error occurs and the script execution stops.

7. See How to Manually Install Microsoft TrueType Core Fonts and complete the steps for your Linux distribution.

   Transact requires Microsoft TrueType Core (msttcore) fonts to be installed when converting PDF to TIFF files. The msttcore fonts must be installed on the same processing servers as Transact.

Download and run the Transact installer

Perform these steps to run the Transact installer.

1. To obtain the Transact installer:
   a. Visit Customer Support Portal. This portal includes download links for full installers as well as service packs and related information.
   b. Registration is required. Contact the Support team for credentials to the Customer Support Portal.
2. Extract the Transact installer by navigating to the folder containing the .zip file and execute the following command:

```
unzip
    Ephesoft_Transact_<Version Number>_Linux.zip
```

   If the `unzip` command is not installed on your Linux system, use the `sudo yum install` unzip command.

```
-rwxr-xr-x. 1 root root 2923759719 Aug  2 10:33 LINUX_Ephesoft_Transact_2023.1.00_13618.zip
[root@ip-10-127-1-30 2023.1.00]# unzip LINUX_Ephesoft_Transact_2023.1.00_13618.zip
Archive:  LINUX_Ephesoft_Transact_2023.1.00_13618.zip
 extracting: Ephesoft_2023.1.00.tar.gz
 extracting: install
 extracting: uninstall
 extracting: install-helper
   creating: Response-Files/
 extracting: Response-Files/config.properties
 extracting: Response-Files/PKI-config.properties
 extracting: Response-Files/compatible-os.properties
 extracting: Response-Files/version-alias.properties
   creating: Response-Files/upgrade/
 extracting: Response-Files/upgrade/replace_new_files.properties
   creating: Response-Files/product_captions/
 extracting: Response-Files/product_captions/captions.properties
[root@ip-10-127-1-30 2023.1.00]#
```

3. Run the following command to make the files executable:

```
chmod 777 install install-helper uninstall
```

4. Run the `./install` command to start the installation process.

   If the Transact installer stops or fails during any step of the installation process, contact Support at tickets@ephesoft.com and provide the following files and details:

   - Your distribution and version of Linux
   - `var/log/install-ephesoft.log`
   - `/etc/Ephesoft/Ephesoft.conf`

     Only the root user has access to this folder. If the file does not exist, send only the first file.

5. When prompted, select one of the following options.
   - For a normal installation, select n and proceed to Normal installation.
   - For a silent installation, select y and proceed to Silent installation.

Normal installation

1. The installer will check the Internet connection.
2. After the installer runs a check on the Linux operating system, you are prompted to change the detected operating system. In most cases, users select the operating system detected by the installer. Select `n` to keep the detected operating system.

```
========== Starting Ephesoft Transact installation ==========
Checking for Internet connection. Please wait...
RED HAT Operating system has been detected by installer. Do you want to change the detected operating system(y/n)?
n
```

3. While you must be the root user to install Transact, you do not have to be the root user to run the application. You are prompted to decide whether to run Transact as either root or non-root user with one of the following:
   - `Do you want to run Application as a non-root user?`
   - `Application will run as root. Do you want to change it?`
   - `Application will run as <current user>. Do you want to change it?`
4. Select `n` for any option to proceed as a root user.
5. Select `y` to change the user and provide the required information, as prompted by the installer.

The following list further describes the configurable properties:

- **New username**: Username for a new user to run the application
- **Password**: Valid password for a new user to run the application
- **Primary group**: Primary user group for a new user, which assigns the required permissions (read, write, and execute). If the group does not exist, it will be created with the provided name.

6. Input the path for the target installation directory.
   The default option is `/opt`. We recommend keeping the default directory, but you can change the directory by editing the text line if needed.
7. Press the Enter key to confirm the listed path. The installer extracts the Ephesoft .rar file and copy the Ephesoft folder to the installation directory. This may take some time.

> Never install Transact in the `/home` directory for a user, or in the `/root`, `/bin`, `/etc`, `/sbin`, `/usr`, or `/boot`.

Create SharedFolders

1. When prompted, determine whether you want to use an existing instance of SharedFolders.
   If you are installing Transact on a single-server environment, or if you are installing the first server in a multi-server environment, you need to install SharedFolders for Transact to function properly.

   > For Transact to function properly, SharedFolders must be accessible on the local server. If you are installing the SharedFolders directory on a remote server `(network path)/NAS/SAN`, advise your system administrator to mount the share locally to your server and use the path they provide during the installation.

   - Select n if you are installing on a single-server environment, or if you are installing the first server in a multi-server environment.
   - Select y if you are installing the second or subsequent server in a multi-server environment.
2. Specify where to install SharedFolders.
   The recommended option is the default `/opt/Ephesoft`.
   - Select n to keep the default `/opt/Ephesoft` option.
   - Select y to designate a different folder and provide the chosen location. For single server installation, enter a local server directory path. For a multi-server installation, enter the path to a shared location.

   ```
   SharedFolders will be installed at /opt/Ephesoft. Do you want to change the SharedFolders path (y/n)?
   y
   Please enter the path for the SharedFolders.
   /opt/Shared9420
   Given directory doesn't exist at specified path. Hence creating directory at the required path.
   Directory successfully created at specified path.
   Assigning read, write and execute permissions to SharedFolders. Please wait...
   Copying SharedFolders to the required path.
   ```

3. Press the Enter key to confirm the selected folder.
4. Confirm the server name that is saved in the `properties` files.
   The default server name is the OS hostname, which is automatically identified by the installer.

If you want to confirm your host name, run the host name command. It displays the current host name of your Linux system.

- Select `y` to change the default server name.

  If you change the server name, it must be to a fully qualified domain name (FQDN) that your Transact users have access to. This allows browsers to resolve images correctly.
  For example, if your Linux host name is `server01` but you want users to access Transact by going to http://transact.ephesoft.com, change the server name to `transact.ephesoft.com`.

- Select `n` to keep the default server name.

Select and set up the database

This topic includes the information about the available options for your database type.

When prompted, select the database type.

- MariaDB
- Oracle

For your database type supported versions, see *Ephesoft Transact Technical Specifications*.

MariaDB configuration

The installer does not install MariaDB as part of the installation process. You need to configure the database for MariaDB prior to running the Transact installer.

The installer allows you to connect to an existing MariaDB server during the installation of Transact. For the latest information about MariaDB version support and MariaDB installation, see:

- Install and Migrate MariaDB for Linux
- *Ephesoft Transact Technical Specifications*

Follow these steps when setting up an existing MariaDB database during the installation of Transact.

1. Select MariaDB by typing `1` and pressing the Enter key.
2. Press `y` if you want to change the details, press `n` to continue.
3. Provide the required details, as explained in the following table.

In the table, the configurable properties are listed exactly how they display on the screen.

Maria DB property	Description
`system IP`	The hostname/IP address on which MariaDB is installed.
`database username`	Enter root. This is the user name for the administrator of the three Ephesoft databases (ephesoft, report, and report_archive).

Maria DB property	Description
`Admin password`	This is the password you created when installing MariaDB. This password is used to log in as a database administrator.
`application database name`	Default database name is `ephesoft`. This name can be changed as needed. Do not include special characters besides underscore "_".
`report database name`	Default report database name is `report`. This name can be changed as needed.
`report archive database name`	Default report archive database name is `report_archive`. This name can be changed as needed.
`database port number`	Default port number is `3306`. This port is used to access the database.

4. Press `y` to change any details.
   Otherwise, press `n` to continue.

You have successfully configured MariaDB. Proceed to Run or decline the database patch.

Oracle database configuration

1. Select Oracle by typing `2` and pressing the Enter key.
   - Press `y` to create a new database schema. You are prompted to configure properties for the database. See the following table for the details on configurable properties.

```
Please select database type you want to use ?
1. MariaDB (10.6 series, recommended version 10.6.8)
2. Oracle
2
Do you want to create Oracle database schema(y/n)? Press y to create new Oracle database schema or n to use existing Oracle schema.
y
Enter the oracle hostname/IP:
10.127.1.74
User Name:
sys
Password:

Please re-enter the password:

Port:
1521
Please select the connection mode you want to use ?
1. Oracle SID
2. Service Name
2
Service Name:
RSIL19CPDB
Application DB Schema:
ephesoft
Application DB Schema Password:

Please re-enter the password:

Report DB Schema:
report
Report DB Schema Password:

Please re-enter the password:

Report Archive DB Schema:
report_archive
```

   - Press `n` to use an existing database. Provide the required details, as explained in the table.

In the table, the configurable properties are listed exactly how they display on the screen.

Oracle schema property	Description
`oracle hostname/IP`	Host name/IP for accessing the Oracle database.
`User Name`	Username for the user of the Oracle database.
`Password`	Password that is used to access the Oracle database.
`Port`	Port that is used to access the Oracle database.
`connection mode`	Oracle SID: Oracle system identification used to uniquely identify the database on a system. Service Name: TNS alias used to remotely connect to the database.
`Application DB Schema`	Default application schema is `ephesoft`. This name can be changed as needed. Do not include special characters besides underscore "_".
`Application DB Schema Password`	Password that is used to access the Application database
`Report DB Schema`	Default report schema is `report`. This name can be changed as needed.
`Report DB Schema Password`	Password that is used to access the Report database
`Report Archive DB Schema`	Default report archive schema is `report_archive`. This name can be changed as needed.
`Report Archive DB Schema Password`	Password that is used to access the Report Archive database.

2. Press `y` to change any details.
   Otherwise, press `n` to continue.

You have successfully configured the Oracle Database. Proceed to Run or decline the database patch.

Run or decline the database patch

The following steps vary depending on a single or multi-server installation. Carefully read the steps below before proceeding further.

- For single-server installation, press `y` to run the database patch. The database patch is mandatory for a single-server installation, or if you are installing the first server in a multi-server installation.
- For a multi-server installation, the database patch is only required for the first server in the installation. Press `n` for subsequent server installations.

If you run the database patch on the second or subsequent servers in a multi-server installation, you may corrupt the existing database.

Configure authentication mode

1. Select the **Authentication Mode** to use:
   - Press `1` for Standard Form Authentication. This is the default option.
   - Press `2` for PKI Authentication, and follow the steps listed in Configure PKI Authentication.
2. Select **Application Protocol**:
   - Press `1` for HTTP.
   - Press `2` for HTTPS, and follow the steps listed in Form Authentication with HTTPS.
3. Enter the port number on which you want to run the tomcat server:
   The default port number will display (8080 for HTTP).
4. You will be prompted to change any details. Press `y` if any changes are needed. Otherwise, press `n` to continue.

   If you press `y`, you will need to re-input all the information in Configure authentication mode.

Configure user connectivity settings

When prompted, configure the user connectivity settings.

```
User connectivity settings
Please select User Connection Type you want to use ?
1. LDAP
2. MS Active Directory
3. Tomcat
1
Connection URL:
ldap://localhost:389
Connection Name:
cn=Manager,dc=ephesoft,dc=com
Connection Password:

Please re-enter the password:

User Base:
ou=people,dc=ephesoft,dc=com
User Search:
cn={0}
User Subtree:
true
Role Base:
ou=groups,dc=ephesoft,dc=com
Role Name:
cn
Role Search:
uniqueMember={0}
Role Subtree:
true
Enter super admin group name:
admin
Press y if you want to change the details, press n to continue.
n
Updating realm settings...
```

The available user connection types are as follows:

- LDAP
- Microsoft ActiveDirectory (MSAD)
- Apache Tomcat (included with the Transact installer)

Apache Tomcat does not require any configuration. However, any changes to users (each time the user file is changed) require a restart of Transact.

LDAP

1. Select LDAP by typing `1` and pressing the Enter key.

2. Provide the required details, as described in the following table.

   In the table, the configurable properties are listed exactly how they display on the screen.

LDAP property	Description
`Connection URL`	A valid URL to connect to an LDAP server. The connection URL should be in the following format: `ldap://<server_address>:<port_number>`
`Connection Name`	A valid username to connect and access the LDAP server. This is the user name of the user responsible for interacting with the server.
`Connection Password`	The password for the user responsible for interacting with the server.
`User Base`	The relative path where all user information is located. This attribute defines where to look for a user.
`User Search`	Search string to look for users.
`User Subtree`	This attribute defines the search scope. • Set to `true` to search the entire subtree rooted at the user base entry. • Set to `false` to request a single-level search including only the top level.
`Role Base`	The relative path where all roles information is located. This attribute defines where to look for a role corresponding to a user.
`Role Name`	The role name defines which attribute is used for a role.
`Role Search`	Search string for searching roles.
`Role Subtree`	This attribute defines the search scope. • Set to `true` to search the entire subtree rooted at the role base entry. • Set to `false` to request a single-level search including only the top level.
`super admin group name`	The group name for users with super admin privileges, such as access to the entire functionality of Transact. The super admin users can assign the user roles from the **Access Manager** screen in Transact (**Home** > **System Configuration** > **Access Manager**)

3. Press `y` if you need to change any details.
   Otherwise, press `n` to continue.
4. Proceed to Install applications.

Microsoft Active Directory (MSAD)

1. Select MSAD by typing `2` and pressing the Enter key.
2. Provide the required details, as described in the following table.

In the table, the configurable properties are listed exactly how they display on the screen.

MSAD property	Description
`Connection URL`	A valid URL to connect to the Active Directory server. The connection URL should be in the following format: `ldap://<server_address>:<port_number>`
`Connection Name`	A valid username to connect and access the Active Directory server. This is the user name of the user responsible for interacting with the server.
`Connection Password`	The password for the user responsible for interacting with the server.
`User Base`	The relative path where all user information is located. This attribute defines where to look for a user.
`User Search`	Search string for looking for users.
`User Subtree`	This attribute defines the search scope. • Set to `true` to search the entire subtree rooted at the user base entry. • Set to `false` to request a single-level search including only the top level.
`Role Base`	The relative path where all role information is located. This attribute defines where to look for a role corresponding to a user.
`Role Name`	The role name defines which attribute is used for a role.
`Role Search`	Search string for searching roles.
`Role Subtree`	This attribute defines the search scope. • Set to `true` to search the entire subtree rooted at the role base entry. • Set to `false` to request a single-level search including only the top level.

MSAD property	Description
`MS AD Group Search Filter`	This attribute helps to filter search results and can have the following operators: • `|` (OR) • `&` (AND) • `!` (NOT) Example: `((!cn=a*))(|cn=Ephesoft*)(&(cn=b*)))` This parameter is optional and can be left empty.
`super admin group name`	The group name for users with super admin privileges, such as access to the entire functionality of Transact. The super admin users can assign the user roles from the **Access Manager** screen in Transact (**Home** > **System Configuration** > **Access Manager**)

3. Press `y` if you need to change any details.
   Otherwise, press `n` to continue.
4. Proceed to Install applications.

Apache Tomcat

1. Select Tomcat by typing `3` and pressing the Enter key.
2. Press `y` if you need to change any details.
   Otherwise, press `n` to continue.
3. Proceed to Install applications.

Install applications

1. When prompted to disable the firewall for the Transact port, select one of the following options.
   - Press `y` if the user wants Transact to disable the firewall.
   - Press `n` if the user wants to disable the firewall manually.
2. When prompted to install Tesseract (an OCR engine), select one of the following options.

   Tesseract is optional and not recommended but has the option to support more languages. The recommended OCR engine is OmniPage, which is installed automatically later.

   - Press `n` to decline installing Tesseract.
   - Press `y` to install Tesseract.
3. Provide the registration information, which will assist with generating your license for Transact.
   - Press `y` to make any changes.
   - Press `n` to continue.

```
Registration Information
Name : test
Company : test
Department : test
Street : test
City : test
State : test
Country : test
Do you want to change the entered user registration information?(y/n)
n
```

4. The installer continues to automatically install and upgrade other applications used by Transact such as LibreOffice, ImageMagick, OmniPage, and Poco.

   This step may take some time depending on your server configuration. If the installation process is interrupted at any point due to the Internet connectivity issues, you can restart the installation process by running the `./install` command again. To check the installation logs and see the installation status, you can use the following command:

   ```
   tail -f /var/log/install-ephesoft.log
   ```

This completes the normal installation. Continue to License and launch Transact.

Silent installation

1. Open the `config.properties` file located in the `Response-Files` folder.

   ```
   [root@ip-10-127-1-30 2023.1.00]# cd /home/ec2-user/2023.1.00/Response-Files/
   [root@ip-10-127-1-30 Response-Files]# vi config.properties
   ```

2. Edit the values for the parameters in `config.properties` to reflect the required configuration for the install. See the table on configurable properties below for explanations of important parameters.

```
#This takes the input of service name.
input_service_name=ephesoft

input_offline_install_mode=n

#This takes the input if user wants to run application as non root user. User can provide new user/existing user details in corresponding parameters.
input_run_application_as_non_root_user=y
input_use_existing_user=n
input_application_user=ephesoft
input_application_user_password_required=y
input_application_user_password=ephesoft
input_application_user_group=ephesoft

#This takes the input of installation directory.
input_installation_directory=/opt

#This takes the input of whether to change shared folder path or not. 'y' [without quotes] changes the default shared folder path and 'n' [without quote
s] will install the shared folders at default path.
input_change_shared_folder_path=n
#If in above switch input_change_shared_folder_path value is 'y' then this will act as an input for shared folder path.
input_changed_shared_folder_path=/opt/Ephesoft

#This takes the input of tomcat port number.
input_tomcat_port_number=8080

#This takes the input whether to change the server name or not. 'y' [without quotes] changes the server name and 'n' [without quotes] do not change the
default server name.
input_change_server_name=n
#If in above switch input_change_server_name value is 'y' then this will act as an input for server name.
input_changed_server_name=turbo-VirtualBox

#Placeholder for type of database that will be configured or installed. It is 1 for MariaDB and 2 for Oracle.
input_database_type=1


#This specifies whether to create a new database or not. 'y' [without quotes] makes a new mariadb database and 'n' [without quotes] uses existing mariad
b database (generally used to install application in multi-server environment where database is already created by another installation).
input_new_database_instance=y
```

The upgrade may fail if any of the following settings in `config.properties` file are incorrect.

Configurable Property	Description
`input_database_patch_enable`	Select one of the following options depending on your server environment: For single-server upgrade, press y to run the database patch. The database patch is mandatory for a single-server upgrade, or if you are upgrading the first server in a multi-server installation. For a multi-server upgrade, the database patch is only required for the first server in the node. Press n for subsequent server upgrades.
`input_upgrade_application`	Select y to upgrade Transact from an older version.
`input_install_nftable`	Select `y` to disable the firewall for Transact.

3. Save the updated `config.properties` file to the same name in the `Response-Files` folder.
4. Navigate to the folder with the unzipped Transact installer and start the silent installation process by running the following command:

   ```
   ./install -silentinstall -product
   ```

   The installer will pick up all required details from the `config.properties` files.

The silent installation is complete. Proceed to License and launch Transact.

License and launch Transact

After installing the Transact service, you are ready to license and launch Transact.

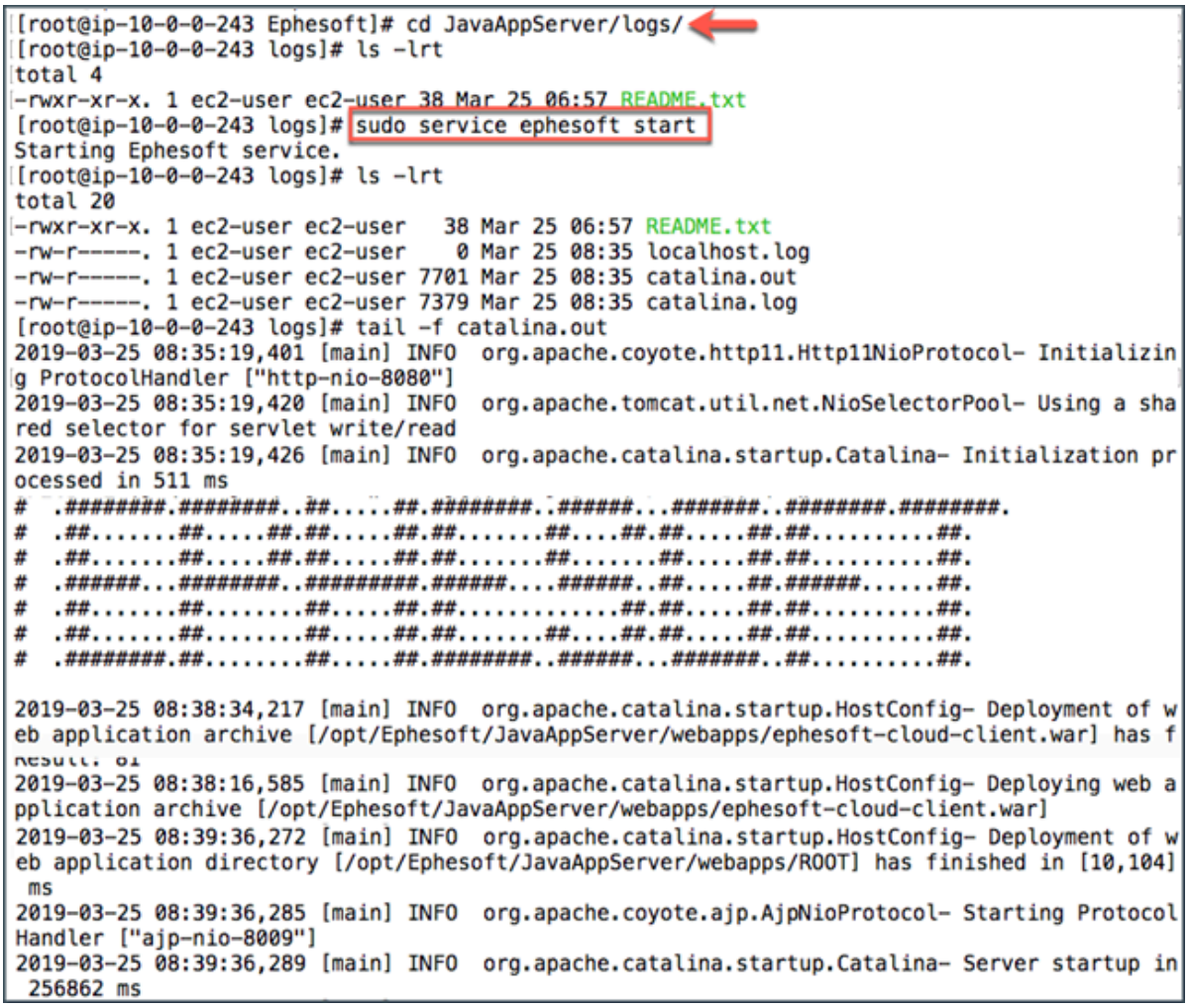
See Licensing Requirements to complete the installation. We recommend that you start the service after your license is installed.

1. Start the Transact service by running the following command:

   `service ephesoft start`

   You can track the service start-up process by opening the `catalina.out` file in the `/opt/Ephesoft/JavaAppServer/logs/` folder and running the following command:

   `tail -f catalina.out`



2. Open a web browser and enter the following Transact URL:

   `http://<servername>:<portnumber>/dcma/home.html`.

   The default port number is 8080. Allow time for the background configuration process to complete. The initial startup may require several minutes.

If you receive an error or connection warning, you need to open the firewall ports to connect to Transact.

3. The Transact home page displays. Select **Administrator** or **Operator** to log in.
4. Enter the user name and password. The default username is ephesoft and the default password is demo.

   The system may require additional time to complete the initial login.

This completes the installation process.

Chapter 3

Upgrade instructions

This chapter describes how to upgrade to Transact 2023.1.00 in the following environments:

- Operating system: Red Hat Enterprise Linux (RHEL)
  For information about the supported versions, see *Ephesoft Transact Technical Specifications*.

  Transact 2023.1.00 is only supported for these Linux distributions. The yum update upgrades the system to the latest RHEL version in the same series. Ensure that the latest version is in the supported Linux distributions list. For more information, see How to Update to a Previous Version of RHEL.

- Environments: Single or multi-server
- Installation types : Normal or silent

Upgrade overview

The upgrade to Transact 2023.1.00 follows this general sequence of tasks. Before you proceed, see *Ephesoft Transact Release Notes 2023.1.00*.

Installation task	General scope of activity
Upgrade prerequisites	Prepare for the upgrade by gathering the required resources and verifying that the environment and databases are supported.
Prepare the server for upgrade	Perform these steps to prepare the server for the upgrade installer.
Download and run the Transact installer	Run the Transact installer in the command line interface. For silent upgrade, provide the required configurations in the `config.properties` file.
Select Normal upgrade or Silent upgrade	Determine if you are performing a normal or silent upgrade and follow the steps for your selected option.
License and launch Transact after upgrade	Perform these steps to complete the upgrade for Transact 2023.1.00.

Upgrade prerequisites

Perform these steps for a successful software upgrade and startup:

1. Determine if you need to perform a single-server or multi-server upgrade.

   Steps unique to a multi-server environment upgrade are identified where applicable.

2. Verify that the existing installation of Transact is supported for a direct upgrade to Transact 2023.1.00.
   - If the system is currently running Transact version 2022.1.00, your system is supported for a direct upgrade to Transact 2023.1.00.

     After the upgrade, reinstallation is recommended for the Cloud OCR (Advanced HOCR) plugin.
   - If the system is currently running a release prior to Transact 2022.1.00, you need to upgrade to version 2022.1.00 before upgrading to Transact 2023.1.00.

     If you are required to perform an intermediate upgrade, then you must successfully start Transact 2022.1.00 before upgrading to version 2023.1.00 or the upgrade process will fail.

3. Verify that your database version is supported.

   For additional information, see *Ephesoft Transact Technical Specifications*.

   If you are upgrading to Transact 2023.1.00 with an existing version of MariaDB or MySQL database engine, refer to Install and migrate to MariaDB for Linux before proceeding any further with the upgrade.
4. Run the following command to verify that the Internet connectivity is available for this upgrade:

   ```
   nm-online
   ```

   The installation will be interrupted if the Internet connection is unavailable because some software requires updates or installation from the operating system repository.

5. Verify that you have super-user (root) permissions.

   If you are not a super-user, execute the following command to gain super-user permissions.

   ```
   sudo su root
   ```

   The installation script must be run with super-user permissions. Otherwise, an error occurs and the script execution stops.

6. Verify that SharedFolders is accessible on the server undergoing upgrade.

Prepare the server for upgrade

Perform these steps to prepare the server for an upgrade to Transact 2023.1.00.

1. Complete all in-flight batches.
   All batch instances must be in the **Finished** state for the upgrade to be successful.
2. Perform a complete backup of the following:
   - **Ephesoft**, **Report**, and **Report_Archive** databases
   - Batch classes
   - Ephesoft `SharedFolders` directory
3. Run all reports and ensure they are complete and in sync.
4. If the Apache Tomcat memory settings were changed from the default, make a note your current configuration so it can be restored after the upgrade.
   See Configuring Tomcat Memory Settings for additional information.
5. Run the following command to verify the registry information:
   ```
   /etc/.java/.systemPrefs/com/Ephesoft/license/core/annotation
   ```
6. Ensure the following paths and settings are properly configured:
   a. Check that the path for `sharedFolderDir` matches the SharedFolders path currently used by Transact.
   b. Check the registry settings to ensure that the DB Names and IP Address in Apache Tomcat `server.xml` and `registry database` entries match. If there are any changes in the database information, you will need to edit the appropriate settings in the `server.xml` and `registry database` to reflect those changes.
   c. Edit the `SelectedDb` entry in the registry to reflect the correct database type.
   d. Edit the number in the `Value data` field in the registry settings to match the database.
      - Select `1` for MariaDB Server(MySQL compatible).
      - Select `2` for Oracle Database Server.

   If the upgrade to Transact 2023.1.00 requires a database migration or database version upgrade, these changes must be made prior to starting the upgrade process. See *Ephesoft Transact Technical Specifications* for the supported versions and Install and migrate to MariaDB for Linux for additional instructions.

   We recommend testing any software upgrade with an existing application before moving the upgrade into production if the software that you upgrade is integrated with any other applications, systems, or workflows.
7. Stop Transact running as a service by running the following command:
   ```
   service ephesoft stop
   ```
8. Ensure that the target installation drive has enough space for the installation files. You may require up to 8 GB of space.

Download and run the Transact installer

Transact
Transact, finish processing for all batches.

If any unfinished batches exist after the upgrade, they must be reprocessed from the beginning as new batches.

1. To obtain the Transact installer:
   a. Visit the Customer Support Portal for your download needs. This portal includes download links for full installers as well as service packs and related information.
   b. Registration is required. Contact the Support team for credentials to the Customer Support Portal.
2. After you save the .zip file, extract the Transact installer:
   - `unzip Ephesoft_Transact_<Version Number>_Linux.zip`
   - If the `unzip` command is not installed on your Linux system, use the `sudo yum install` unzip command.

```
[ec2-user@ip-10-127-1-36 New Build]$ unzip LINUX_Ephesoft_Transact_2022.1.01_9420.zip
Archive:  LINUX_Ephesoft_Transact_2022.1.01_9420.zip
 extracting: Ephesoft_2022.1.01.tar.gz
 extracting: install
 extracting: uninstall
 extracting: install-helper
   creating: Response-Files/
 extracting: Response-Files/config.properties
 extracting: Response-Files/PKI-config.properties
 extracting: Response-Files/compatible-os.properties
 extracting: Response-Files/version-alias.properties
   creating: Response-Files/upgrade/
 extracting: Response-Files/upgrade/replace_new_files.properties
   creating: Response-Files/product_captions/
 extracting: Response-Files/product_captions/captions.properties
[ec2-user@ip-10-127-1-36 New Build]$
```

3. Run the following command to make the files executable:

```
chmod 777 install install-helper uninstall
```

4. Run the following command to start the installation process:

   `./install`

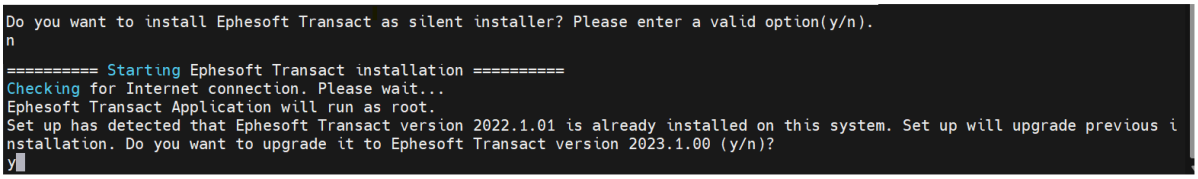
   If the Transact installer stops or fails during any step of the upgrade process, contact the Support team at tickets@ephesoft.com and provide the following files and details:
   - Your distribution and version of Linux.
   - `var/log/install-ephesoft.log`
   - `/etc/Ephesoft/Ephesoft.conf`

     Only the root user has access to this folder. If the file does not exist, send only the first file.

5. When prompted, select one of the following options.
   - For a normal upgrade, select n and proceed to Normal upgrade.
   - For a silent upgrade, select y and proceed to Silent upgrade.

Normal upgrade

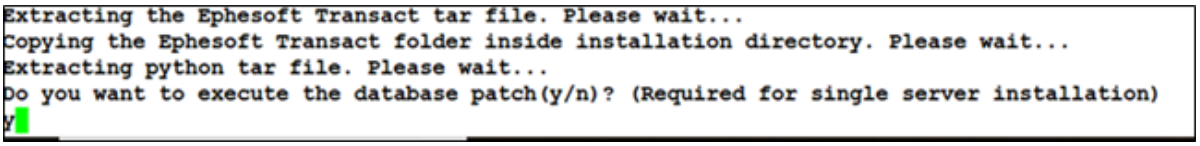
1. The following screen displays while the installer checks the internet connection. Press `y` to confirm that you want to upgrade.



2. When prompted to forcefully stop the Transact service if it is running, press `y` to stop the Transact service on all nodes.
   The upgrade process cannot proceed if the Transact server is running.

   The following steps vary depending on a single or multi-server installation. Carefully read the steps before proceeding further.

3. The following screen displays:



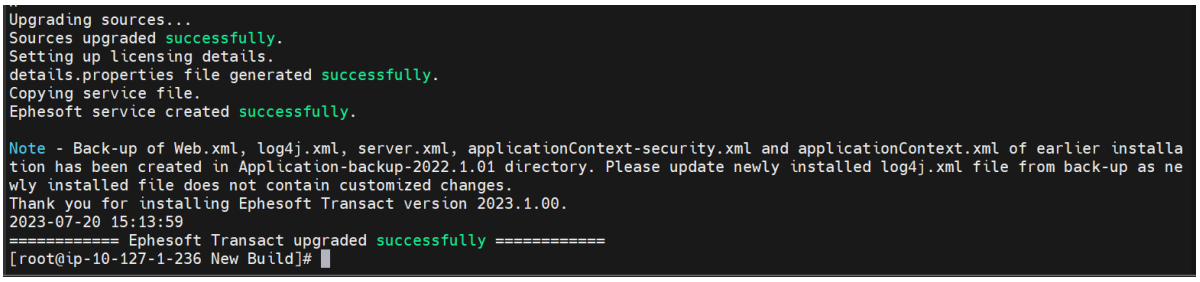
   - For single-server upgrade, press `y` to run the database patch.
     The database patch is mandatory for a single-server upgrade, or if you are upgrading the first server in a multi-server installation.
   - For a multi-server upgrade, the database patch is only required for the first server in the node.
     Press `n` for subsequent server upgrades.

     If you run the database patch on a second or subsequent server in a multi-server installation, you may corrupt the existing database.

4. If Tesseract (an OCR engine) was not installed with the previous installation, you are prompted to install it:
   - Select `n` to decline installing Tesseract.
     Tesseract is optional, and not required for Transact to function properly.
   - Select `y` to install Tesseract.
5. The installer starts upgrading sources. This may take some time.

6. Provide the registration information. This information is used to assist in the generation of your license for Transact.

   The following screen displays after the installer saves critical configurations, license files, and folders in the back-up directory for future reference. The only exception is the `log4j.xml` file that must be updated manually.



7. Update the `log4j.xml` file.

   The old `log4j.xml` can be found at `/opt/Ephesoft/Application-backup-<previous-version>/log4j.xml`.
8. Copy the old `log4j.xml` and replace the new `log4j.xml` with the old one at `/opt/Ephesoft/Application/log4j.xml`.
9. The upgrade is complete. Proceed to License and launch Transact after upgrade.

Silent upgrade

1. Open the `config.properties` file located in the `Response-Files` folder. To do so, open a text editor and run one of the following commands:
   - `vi config.properties`
   - `vim config.properties`
   - `nano config.properties`

   You can also use WinSCP to connect to your Linux server and open the file in any UI text editor application.

2. Edit the values for the parameters in `config.properties` to reflect the required configuration for the upgrade. If using vi editor, run the `i` command to enter `insert mode` and edit the content.

   See the table on configurable properties for explanations of important parameters.

   The upgrade may fail if any of the following settings in the `config.properties` file are incorrect.

Configurable Property	Description

`input_database_patch_enable`	Select one of the following options depending on your server environment: **a.** For a single-server upgrade, press `y` to run the database patch. The database patch is mandatory for a single-server upgrade, or if you are upgrading the first server in a multi-server installation. **a.** For a multi-server upgrade, the database patch is only required for the first server in the node. Press `n` for subsequent server upgrades.
`input_upgrade_application`	Select `y` to upgrade Transact from an older version.

3. Save the updated `config.properties` file to the same name in the `Response-Files` folder. If using the vi editor, press the **ESC** key to exit insert mode and use the :wq command to save and close the file.
4. Navigate to the folder with the unzipped Transact installer and start the silent installation process by running the following command:
   `./install -silentinstall -product`
5. The installer will pick up all required details from the `config.properties` files.

   When upgrading to the latest version of Transact, critical configurations, license files, and the `Certs`, `lib`, and `META-INF` folders are saved in the back-up directory for future reference.

```
[root@ip-10-127-1-236 New Build]# ll /opt/Ephesoft/Application-backup-2022.1.01/
total 240
-rwxr-xr-x.  1 root root 14832 Jul 20 14:55 applicationContext-security.xml
-rwxr-xr-x.  1 root root  4829 Jul 20 14:55 applicationContext.xml
drwxr-xr-x.  2 root root    24 Jul 20 14:55 Certs
-rwxr-xr-x.  1 root root   318 Jul 20 14:50 dependencies
drwxr-xr-x.  3 root root    21 Jul 20 14:50 JavaAppServer
drwxr-xr-x.  3 root root 16384 Jul 20 14:55 lib
-rwxr-xr-x.  1 root root  3590 Jul 20 14:55 log4j.xml
-rwxr-xr-x.  1 root root   121 Jul 20 14:50 logrotate.conf
drwxr-xr-x. 49 root root  4096 Jul 20 14:55 META-INF
-rwxr-xr-x.  1 root root 17583 Jul 20 14:55 server.xml
-rwxr-xr-x.  1 root root  2664 Jul 20 14:55 setenv.sh
-rwxr-xr-x.  1 root root 53074 Jul 20 14:55 web_sso.xml
-rwxr-xr-x.  1 root root 52992 Jul 20 14:55 web_std.xml
-rwxr-xr-x.  1 root root 52992 Jul 20 14:55 web.xml
```

6. All configuration files are automatically transferred to the newly upgraded application. The only exception is the `log4j.xml` file, which needs to be updated manually.
7. The old `log4j.xml` can be found at `/opt/Ephesoft/Application-backup-<previous-version>/log4j.xml`.
8. Copy the old `log4j.xml` and replace with the new `log4j.xml` at `/opt/Ephesoft/Application/log4j.xml`.

The silent upgrade is complete. Proceed to License and launch Transact after upgrade.

License and launch Transact after upgrade

To complete the upgrade, refer to Licensing Requirements.

We recommend restarting the service after your license registry is updated.

1. Compare the post-upgrade properties files against the pre-upgrade properties files.

   You must match the configuration settings of the post-upgrade property files to the pre-upgrade property files.

   The upgrade installer creates a backup folder to store the pre-upgrade configuration settings and components. Use the `diff` command to compare and merge the pre-upgrade configurations into the post-upgrade configurations. Original configuration files are backed up on the same server. Navigate to the folder where Transact is installed and find the backup folder of your previously installed version of Transact to get access to your prior configurations, files, and settings.

   Properties, file settings, or components that are unique to each deployment can include the following:

   - Computer names
   - Database paths
   - HTTPS (as applicable)
   - ImageMagick (as applicable)
   - JavaAppServer
   - Keystore location
   - Registry
   - Single Sign-On (SSO)
   - User connectivity for Microsoft Active Directory, Apache Tomcat, or LDAP

   See Ephesoft Folders with Customer-Specific Data for additional information.

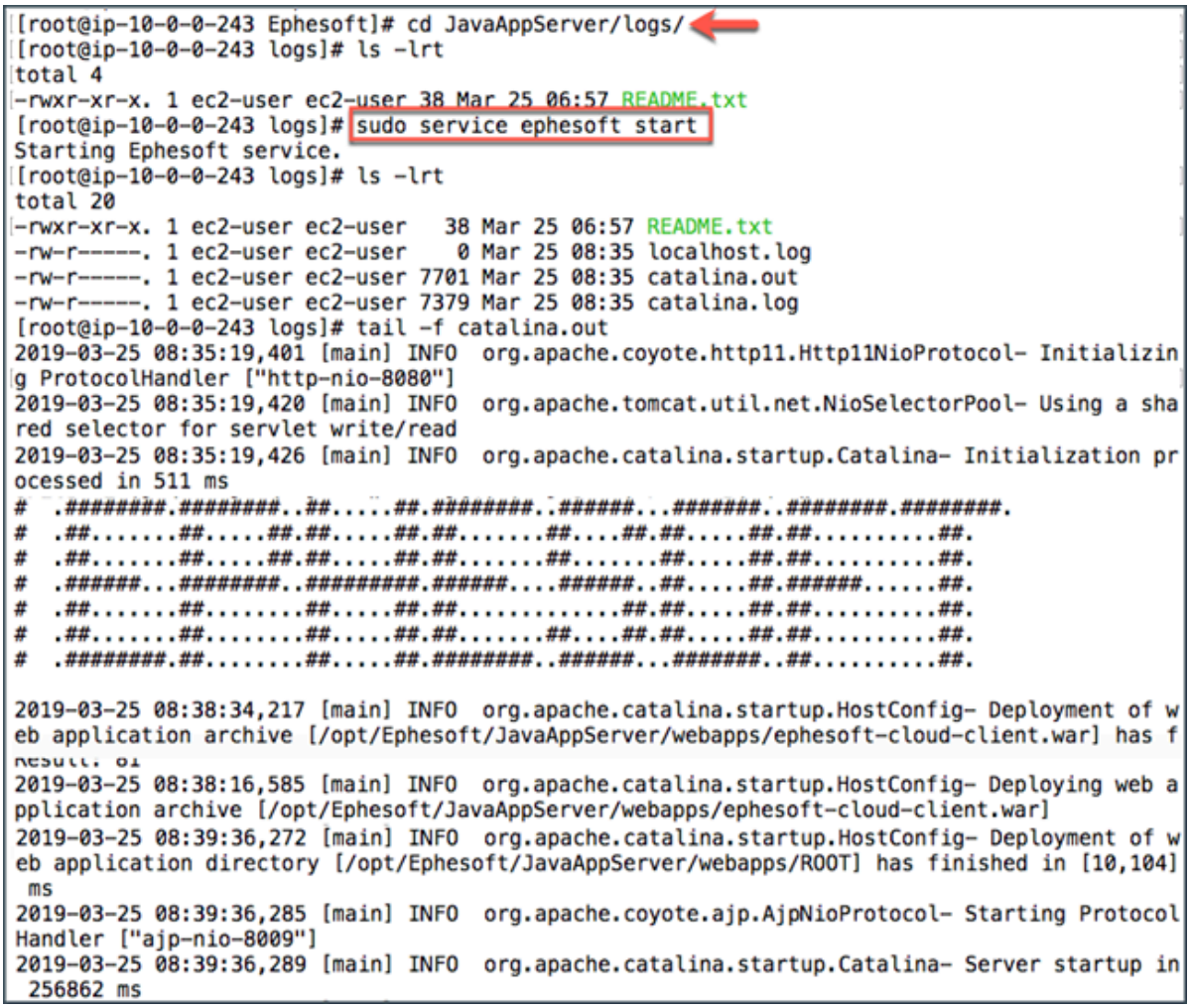
```
[root@ip-10-127-1-196 Application-backup-2022.1.00]# diff /opt/Ephesoft/Application-backup-2022.
1.00/log4j.xml /opt/Ephesoft/Application/log4j.xml
11c11
<                               <pattern>2022.1.00 ${sys:os.name} %d{ISO8601} %-5p %t %c - %m%n<
/pattern>
---
>                               <pattern>2022.1.01 ${sys:os.name} %d{ISO8601} %-5p %t %c - %m%n<
/pattern>
25c25
<                               <pattern>{"version":"2022.1.00", "os":"${sys:os.name}", "level":
"%p", "timestamp":"%d{ISO8601}", "thread":"%t", "event":%m}%n</pattern>
---
>                               <pattern>{"version":"2022.1.01", "os":"${sys:os.name}", "level":
"%p", "timestamp":"%d{ISO8601}", "thread":"%t", "event":%m}%n</pattern>
39c39
<                               <pattern>2022.1.00 ${sys:os.name} %d{ISO8601} %-5p %t %c - %m%n<
/pattern>
---
>                               <pattern>2022.1.01 ${sys:os.name} %d{ISO8601} %-5p %t %c - %m%n<
/pattern>
52c52
<                               <pattern>2022.1.00 ${sys:os.name} %d{ISO8601} %-5p %t %c - %m%n<
/pattern>
---
>                               <pattern>2022.1.01 ${sys:os.name} %d{ISO8601} %-5p %t %c - %m%n<
/pattern>
65c65
<                               <pattern>2022.1.00 ${sys:os.name} %d{ISO8601} %-5p %t %c - %m%n<
/pattern>
---
>                               <pattern>2022.1.01 ${sys:os.name} %d{ISO8601} %-5p %t %c - %m%n<
/pattern>
[root@ip-10-127-1-196 Application-backup-2022.1.00]#
```

2. Start the Transact service by running the following command:

```
service ephesoft start
```

You can track the service start-up process by opening the `catalina.out` file in the `/opt/Ephesoft/JavaAppServer/logs/` folder and running the following command:

```
tail -f catalina.out
```



3. Open a web browser and enter the following Transact URL: .
   `http://<servername>:<portnumber>/dcma/home.html`
   The default port number is 8080. Allow time for the background configuration processes to complete. The initial startup may require several minutes.

   If you receive an error or a connection warning, you need to open the firewall ports to connect to Transact.

4. When the Transact home page appears, select **Administrator** or **Operator** to log in.
5. Enter the user name and password. The default user name is ephesoft, and the default password is demo.

   The system may require additional time to complete the initial login.

Chapter 4

Licensing

The licensing model for Transact is based on either a core or consumption-based sales model. Additional Transact features can be purchased as add-ons to a core-based license, or are available for consumption-based licenses depending on the bundle you have purchased.

The following table provides additional details on add-ons and their availability for each license type.

Feature	Core sales model	Consumption sales model		
		Standard	Professional	Enterprise
Advanced Reporting	$	✓	✓	✓
Cloud HyperExtender Plugin	✓ *	✓ *	✓	✓
Web Services APIs	$		✓	✓
ID Extraction Plugin	$	$	$	$

The * symbol denotes 1,000 images free when you self-register.

The *$* symbol denotes a premium add-on.

If you purchase the Professional or Enterprise bundle, please self-register for Cloud HyperExtender and submit a license request to expand the 1,000 images to the amount that was purchased.

To obtain additional licenses for these features, log in to the Customer Support Portal and go to **Licenses**.

Licensing prerequisites

The following list outlines prerequisites required to obtain the Transact license.

- An installed instance of Transact: If you have not yet completed this step, see Installation instructions for your version of Transact.
- Transact license server: The number of cores in the Transact environment is used to configure the license. See How to Set Up an Ephesoft License Server for more information.
- For multi-server environments, a server failover mechanism is required. For more information about the configuration, see License Server Failover Mechanism.

Obtain a Transact license

To obtain a license for your version of Transact whether it is a core or consumption-based license, you need to determine your server core count. See License details for instructions to access this information.

Retrieve the details.properties file

To complete your license request, you need to submit your `details.properties` file to Transact from the Customer Support Portal. To prepare the `details.properties` file, follow these steps:

1. Retrieve a copy of the `details.properties` file from the Transact installation folder.
   This folder is located in the following path: `/opt/Ephesoft/Dependencies/licensing LINUX`
2. Ensure each MAC address for your system is included in the file.

   If the Device Address is missing or incorrect, it must be manually populated. See License details for instructions on locating the MAC address for your system.

3. Navigate to the Customer Support Portal and log in. In the **Licenses** request form, complete the required fields and upload the `details.properties` file to submit a license request.

Install the Transact license

To install the license file for either a new installation or an upgraded version of Transact, execute the following steps:

These steps must be performed from a Linux root user account.

1. The Transact licensing team sends you a file named `ephesoft.lic`. Place this file in the `/opt/Ephesoft/Dependencies/license-util/ephesoft-license-installer` folder.
2. Run the following command in the folder mentioned above:

   ```
   ./install-license.sh
   ```

3. Run the `./install-license.sh` command a second time to ensure the license is installed correctly.

To access your license information once installed, see License details.

License details

Verify server core count

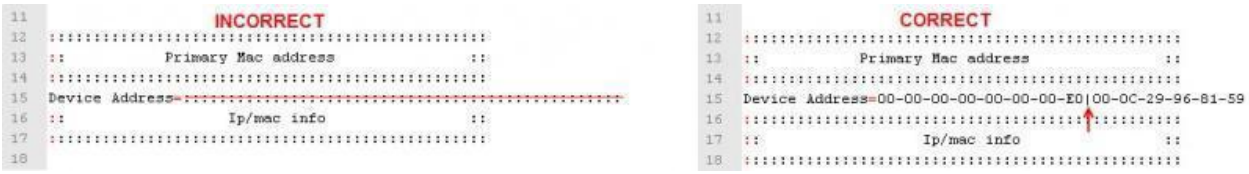
To determine the number of server cores that require licensing, identify your operating system and follow the steps below:

There are two methods to obtain the number of cores in your Linux server.

- Option 1: Enter `lscpu` at the command prompt of the Linux terminal.
  The Core(s) per socket value indicates the number of cores in this deployment.
- Option 2: Enter `nproc` in the terminal. This command returns the number of cores as an output.

Obtain MAC Address

When retrieving the `details.properties` file, the MAC address(s) should resemble the format illustrated on the right side of the following figure:



If the **Device Address** is missing or appears incorrect, the file must be manually populated. To obtain the MAC address(es) for your system, follow these instructions:

1. Type `ifconfig -a`.
2. From the displayed information, find `eth0`: this is the default first Ethernet adapter.
3. Locate the number next to `HWaddr`. This is the MAC address.
4. Paste the MAC address(es) into the `details.properties` file.
5. Save the changes in the properties file.

View license details in Transact

For both informational and troubleshooting purposes, perform the following steps to access the License Details screen in Transact.

The following example uses an Transact 2019.2 release version with a 4.5.0.0 license file installed. Your version may appear differently, depending on your version of Transact.

1. Log in to Transact with Super Administrator privileges. Expand the navigation pane on the left and click **System Configuration**.
2. Click **License Details** to view the contents and settings of the current license.
   The following table describes how each of the licensing items is used within the product.

Field or Switch	Description
Account Name	The name of the company on the license.
Server Type	Production or nonproduction.
Sales Model	Core or consumption-based license. For more information on consumption-based licenses, refer to the *License Consumption Report* in the System Configuration document
Application Version	Displays the Transact version that is installed on the environment. This field might contain a software version that is more recent than the original software version when the license was purchased.
License Version	Displays the version of the license generator schema. License version schemas are compatible with multiple versions of Transact, and may not exactly match your version of Transact.
License ID	The unique identifier assigned to each Transact license.
License Expiry Date	Displays the date on which this Transact license expires.
License Expiration Display Message	Displays the number of days before license expiration. This is when the system will begin to prompt users about upcoming license expiration.
Reporting License Type	Identifies the type of reporting functions that are supported in this license. The three options for this field are as follows: • Standard: only Dashboard and Throughput reports are displayed in the user interface. • Advanced: this setting includes Throughput reports and Correction reports. • Advanced with Custom Reporting: this setting includes everything from Advanced, with the additional ability to create a completely different user interface, using the Logi library. This is a development license.
Web Service License Type	Identifies the use of Web Services by (1) Image Count or (2) service hits per day.
Web Service Hits Per Day	If the above field is set to "Web Service hits per day", the number of daily Transact Web Service requests displays here.
Additional OCR Language Pack	Lists the language packs that are supported by OCR engines in this installation.

Field or Switch	Description
Image Count	Displays the image count for this license, which may be one of the following: • Annual total • Subscription total for the life of the subscription, if different than an annual total • Unlimited
Overage Image Count	The number of images that a user can process after they've exceeded the image count specified in their contract.
Remaining Number of Images	Specifies the remaining number of images that can be processed before Transact stops if the license is image count based.
Handwriting Recognition+ Switch	Currently not in use.
Handwriting Recognition+ Expiry Date	Currently not in use.
Handwriting Recognition+ Image Count	Currently not in use.
Handwriting Recognition+ Remaining Number of Images	Currently not in use.
Identification Extraction Switch	Indicates the status of the Identification Extraction plugin as either **ON** or **OFF**.
Identification Extraction Expiry Date	Displays the date when this Identification Extraction license expires.
Identification Extraction Image Count	Displays the image count for the Identification Extraction license, which may be one of the following: • Annual total • Subscription total for the life of the subscription, if different than an annual total • Unlimited
Identification Extraction Remaining Number of Images	Specifies the remaining number of images that can be processed with the Identification Extraction plugin if the license is image count-based.
Remaining Hits Per Day	Specifies the number of remaining Web Service hits allowed in the day if the license is Web Service by hits per day.
Web Service Switch	Indicates whether web service API calls are enabled for service. • This value is set to **ON** if this installation supports using API service calls. • This value is set to **OFF** if this installation does not use API service calls.
Verify Platinum Switch	Indicates whether this installation includes multi-server connectivity (**YES**) or single-server deployment (**NO**).

Field or Switch	Description
High Performance Switch	Any installation of 8 cores or more allows this switch to be enabled (**ON**). Enabling high performance allocates half of the available cores for OCR functions: • 8-Core Transact license: 4 OCR Cores • 16-Core Transact license: 8 OCR Cores • 32-Core Transact license: 16 OCR Cores
MAC Address	Lists the MAC address(es) associated with this installation. If there are multiple cores, each MAC address is separated by the pipe (|) symbol.
Number of Cores	Cites the number of cores for this licensed installation.
Operating System	Identifies the operating system for this installation and license.

Chapter 5

Additional resources

This section includes additional resources articles to assist with the installation and upgrade process for Ephesoft Transact.

Transact Linux uninstallation procedure

Prerequisites

- Ephesoft Transact is installed on the system.
- In a multi-server installation scenario, unmount SharedFolders before proceeding with uninstallation.

Uninstallation steps

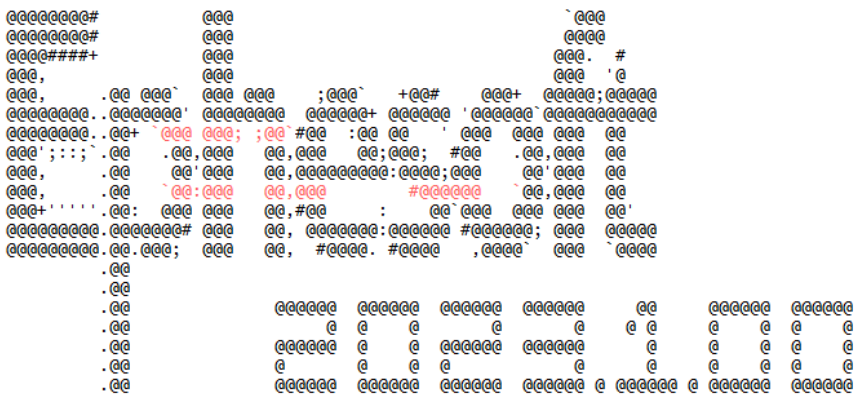
Follow the step-by-step uninstallation of Ephesoft Transact on the Linux operating system through command line installer:

1. Run the uninstallation script using the command `./uninstall`. The script must be run by a super admin.
2. The uninstallation script identifies whether the Ephesoft server is running or not. You have an option to forcefully stop the server. It is always recommended to stop the server before proceeding with the uninstallation.

```
[root@ip-10-127-1-30 2023.1.00]# ./uninstall
2023-08-02 12:34:40
```

```
========== Uninstalling Ephesoft application ==========
Ephesoft server is already running. Do you want to forcefully stop the server? Please enter a valid option(y/n).
y
```

3. Selecting `y` option forcefully stops the Ephesoft server. After that, it uninstalls the Ephesoft Transact application from the system completely.
4. Then the script uninstalls the SharedFolders. You have an option `y` or `n` for uninstalling SharedFolders.
5. Once Ephesoft SharedFolders is uninstalled successfully, the uninstallation script starts uninstalling the dependent software installed at the time of installation. First, you are prompted to uninstall Imagemagick. Select `y` to uninstall the Imagemagick from the system as shown in the following screen shot:

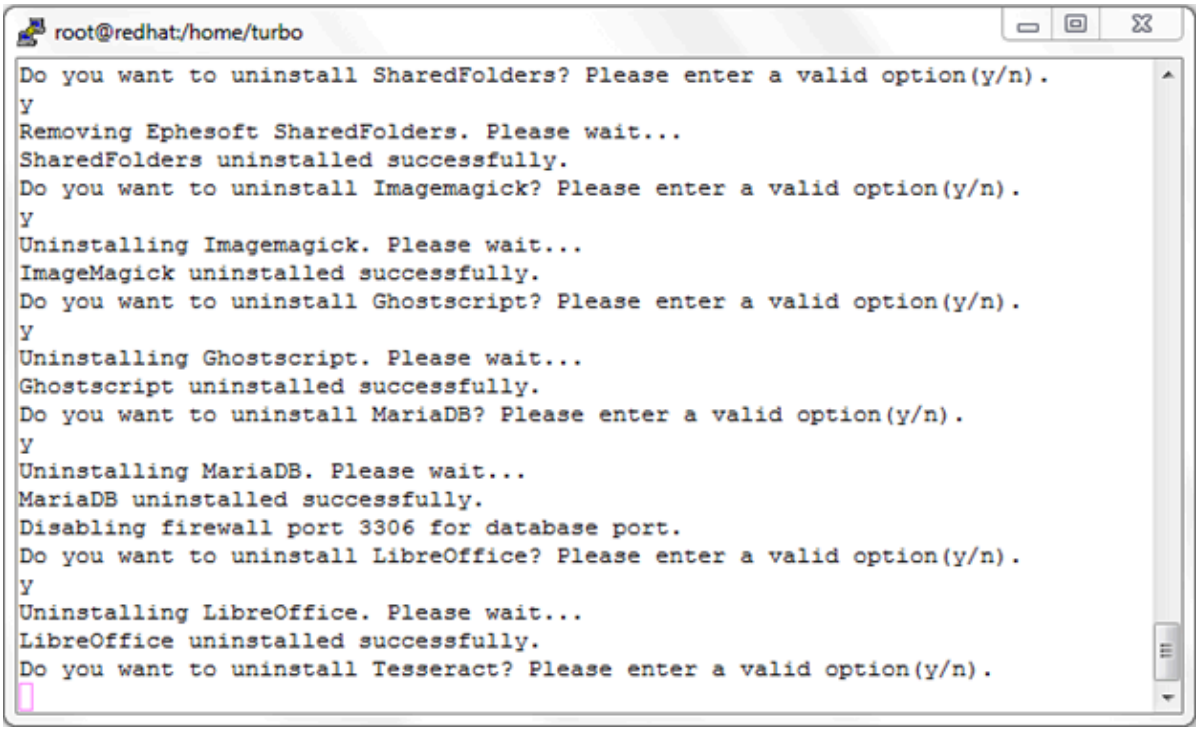


```
========== Uninstalling Ephesoft application ==========
Ephesoft server is already running. Do you want to forcefully stop the server? Please enter a valid option(y/n).
y
Removing Ephesoft application. Please wait...
Ephesoft application uninstalled successfully.
Do you want to uninstall SharedFolders? Please enter a valid option(y/n).
y
Removing Ephesoft SharedFolders. Please wait...
SharedFolders uninstalled successfully.
Do you want to uninstall Imagemagick? Please enter a valid option(y/n).
y
Uninstalling Imagemagick. Please wait...
ImageMagick uninstalled successfully.
```

6. Uninstallation script asks for the uninstallation of LibreOffice from the system as shown in the following screen shot:

```
========== Uninstalling Ephesoft application ==========
Ephesoft server is already running. Do you want to forcefully stop the server? Please enter a valid option(y/n).
y
Removing Ephesoft application. Please wait...
Ephesoft application uninstalled successfully.
Do you want to uninstall SharedFolders? Please enter a valid option(y/n).
y
Removing Ephesoft SharedFolders. Please wait...
SharedFolders uninstalled successfully.
Do you want to uninstall Imagemagick? Please enter a valid option(y/n).
y
Uninstalling Imagemagick. Please wait...
ImageMagick uninstalled successfully.
Do you want to uninstall Graphicsmagick? Please enter a valid option(y/n).
y
Uninstalling Graphicsmagick. Please wait...
GraphicsMagick uninstalled successfully.
Do you want to uninstall LibreOffice? Please enter a valid option(y/n).
y
Uninstalling LibreOffice. Please wait...
LibreOffice uninstalled successfully.
```

7. Selecting `y` option removes the LibreOffice from the system. Uninstallation script then asks for the uninstallation of Tesseract from the system as shown in the following screen shot:



8. While uninstalling Tesseract, Leptonica is also uninstalled. Once Tesseract is uninstalled successfully, the script then uninstalls Leptonica. Uninstallation script then asks for the uninstallation of OmniPage from the system.
9. While uninstalling OmniPage, first POCO is uninstalled.
10. Once POCO is uninstalled successfully, the script then uninstalls OmniPage from the system.
11. Ephesoft Transact is successfully uninstalled from the machine.

Form Authentication and HTTPS support

The Ephesoft Transact installer supports Form Authentication both for HTTP and HTTPS protocols. The application can be set up to authenticate users on the basis of data provided during the installation itself. If you are installing Ephesoft Transact on a secure server, you can also specify SSL Certificate details. All provided data will be saved/updated/mapped automatically in the following files:

- `server.xml` (`<Ephesoft Installation Directory>JavaAppServerconf`)
- `web.xml` (`<Ephesoft Installation Directory>JavaAppServerconf`)
- `dcma-user.connectivity.properties` (`<Ephesoft Installation Directory>ApplicationWEB-INFclassesMETA-INFdcma-user-connectivity`)
- `dcma-batch.properties` (`<Ephesoft Installation Directory>ApplicationWEB-INFclassesMETA-INFdcma-batch`)
- `config.properties` (included in the Ephesoft Transact installation package)

If you are installing Ephesoft Transact with HTTPS protocol, the keystore file with SSL certificate details is copied to the Certs folder of Ephesoft Installation Directory.

Linux installer:

1. Form Authentication with HTTP
2. Form Authentication with HTTPS
3. Form Authentication for silent installation

For Form Authentication for the Windows installer, see *Ephesoft Transact Installation Guide for Windows*.

Use Form Authentication with HTTP

1. Start the installation process by executing the installer. When offered to install the system using silent installer, select `n`.
2. Follow the installation process until you reach the **Authentication Configuration** section.
3. Enter `1` to select the **Standard Form Authentication** mode.

   - When Form Authentication is selected, the users are required to provide a username and password to log on to the application. This Authentication Mode is used by default.
   - PKI Authentication (Public Key Identification) option is provided if you want to use PIV cards and related certificates.

4. Select the **Application Protocol** you want to use. Available options:
   - HTTP
   - HTTPS

   a. Select the first option.

```
========== Authentication Configuration ==========
Please select Authentication Mode you want to use ?
1. Form Authentication
2. PKI Authentication
1
Please select Application Protocol you want to use ?
1. HTTP
2. HTTPS
1
```

5. Specify the port on which you will be using your application.

```
Please select Application Protocol you want to use ?
1. HTTP
2. HTTPS
1
Please enter the port number on which you want to run the tomcat server.
8080
```

6. Fill the **User Connectivity Settings** section. In this case, we select 2 for **MS Active Directory**.

Connection details must be provided only for LDAP or MS Active Directory. Tomcat does not require connection configuration.

```
User connectivity settings
Please select User Connection Type you want to use ?
1. LDAP
2. MS Active Directory
3. Tomcat
2
Connection URL:
ldap://52.172.36.111:3268
Connection Name:
CN=test,CN=Users,DC=ephesoft,DC=com
Connection Password:

Please re-enter the password:

User Base:
DC=ephesoft,DC=com
User Search:
cn={0}
User Subtree:
true
Role Base:
ou=groups,dc=ephesoft,dc=com
Role Name:
cn
Role Search:
uniqueMember={0}
Role Subtree:
true
MS AD Group Search Filter:
```

Connection configuration

Configurable property	Description
User Connection Type	The type of connection you want to use for the application. • 1 for LDAP • 2 for MS Active Directory • 3 for Tomcat

Configurable properties common for both LDAP & MS Active Directory

Configurable property	Description
Connectivity URL	A valid URL to connect to LDAP/Active Directory server. The connection URL should be in the following format: `ldap://<server_address>:<port_number>`.
Connection Name	A valid username to connect and access LDAP/Active Directory server (the username of the user responsible for interacting with the server).
Connection Password	A valid password to connect and access LDAP/Active Directory server (the password of the user responsible for interacting with the server).
User Base	The relative path under which all the users' information will be located. This attribute defines where to look for a user.
User Search	A search string for searching users.
User Subtree	This attribute defines the search scope. Set to `true` to search the entire subtree rooted at the User base entry. Set to `false` to request a single-level search including only the top level.
Role Base	The relative path under which all the roles information will be located. This attribute defines where to look for a role corresponding to a user.
Role Name	Role name defines which attribute is used for a role.
Role Search	A search string for searching roles.
Role Subtree	This attribute defines the search scope. Set to `true` to search the entire subtree rooted at the Role base entry. Set to `false` to request a single-level search including only the top level.

Properties specific to MS Active Directory configuration

Configurable property	Description
MS AD Group Search Filter	This attribute helps to filter search results and can have the following operators: |(OR), &(AND) and !(NOT). Example: `((!(cn=a*))(|(cn=ephesoft*)(&(cn=b*)))` This parameter is optional and can be left empty.

7. Confirm that provided details are correct by entering `n`. If you want to update the details, press `y` and change the information as needed.
   Once the connectivity information is confirmed, realm settings are updated automatically and authentication configuration is successfully completed.
8. Proceed with the installation process.

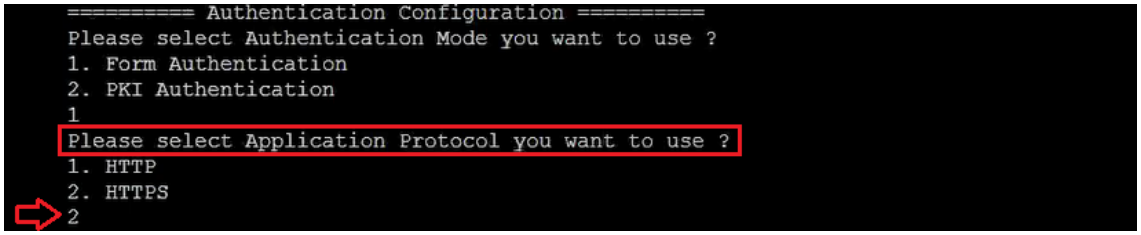
Use Form Authentication with HTTPS

1. Start the installation process by executing the installer. When offered to install the system using silent installer, select `n`.
2. Follow the installation process until you reach the **Authentication Configuration** section.
3. Enter `1` to select the **Standard Form Authentication** mode.

   - When Form Authentication is selected, the users are required to provide a username and password to log on to the application. This Authentication Mode is used by default.
   - PKI Authentication (Public Key Identification) option is provided if you want to use PIV cards and related certificates.

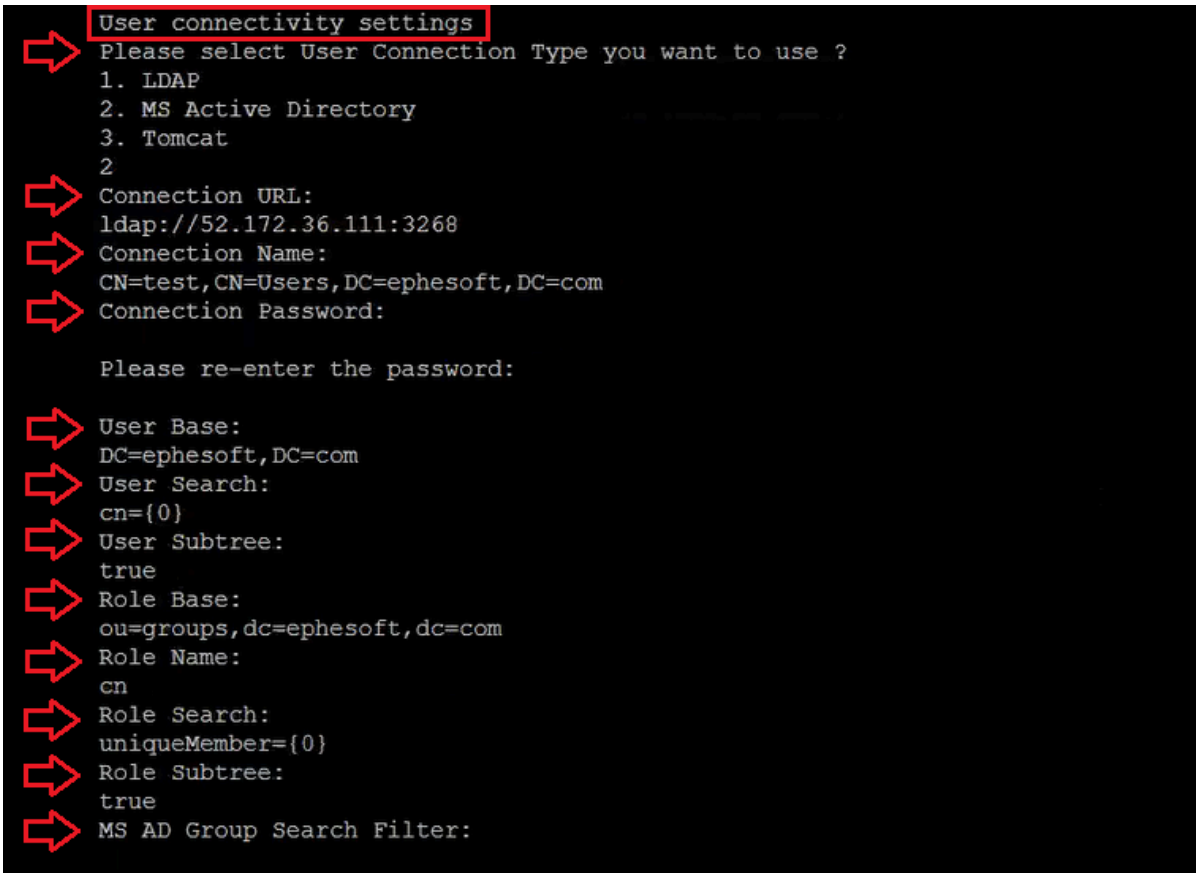
4. Select the **Application Protocol** you want to use. Available options:
   - HTTP
   - HTTPS

   a. Select the second option.



5. Provide details for SSL certificate.
   a. Specify the location of the keystore file.
   b. Provide and confirm the password for the keystore file.
6. Confirm that provided details are correct by entering `n`. If you want to update the details, press `y` and change the information as needed.
7. Specify the port on which you will be using your application.
8. Fill the **User Connectivity Settings** section. In this case, we select `2` for **MS Active Directory**.

   Connection details must be provided only for LDAP or MS Active Directory. Tomcat does not require connection configuration.



Connection configuration

Configurable property	Description
User Connection Type	The type of connection you want to use for the application. • 1 for LDAP • 2 for MS Active Directory • 3 for Tomcat

Configurable properties common for both LDAP & MS Active Directory

Configurable property	Description
Connectivity URL	A valid URL to connect to LDAP/Active Directory server. The connection URL should be in the following format: `ldap://<server_address>:<port_number>`.
Connection Name	A valid username to connect and access LDAP/Active Directory server (the username of the user responsible for interacting with the server).

Configurable property	Description
Connection Password	A valid password to connect and access LDAP/Active Directory server (the password of the user responsible for interacting with the server).
User Base	The relative path under which all the users' information will be located. This attribute defines where to look for a user.
User Search	A search string for searching users.
User Subtree	This attribute defines the search scope. Set to `true` to search the entire subtree rooted at the User base entry. Set to `false` to request a single-level search including only the top level.
Role Base	The relative path under which all the roles information will be located. This attribute defines where to look for a role corresponding to a user.
Role Name	Role name defines which attribute is used for a role.
Role Search	A search string for searching roles.
Role Subtree	This attribute defines the search scope. Set to `true` to search the entire subtree rooted at the Role base entry. Set to `false` to request a single-level search including only the top level.

Properties specific to MS Active Directory configuration

Configurable property	Description
MS AD Group Search Filter	This attribute helps to filter search results and can have the following operators: |(OR), &(AND) and !(NOT). Example: `((!(cn=a*))(|(cn=ephesoft*)(&(cn=b*)))` This parameter is optional and can be left empty.

9. Confirm that provided details are correct by entering `n`. If you want to update the details, press `y` and change the information as needed.

   Once the connectivity information is confirmed, realm settings are updated automatically and authentication configuration is successfully completed.
10. Proceed with the installation process.

Configure Form Authentication for silent installation

1. Open the **config.properties** file shipped along with the installer.
2. Configure the below mentioned parameters.

config.properties

```
#This takes the input of whether to use FORM(default) authentication mode or PKI authentication mode. For FORM authentication mode, this value should be 1 and for PKI authentication mode this value should be 2.
input_authentication_mode=1

#For FORM authentication mode
#This takes the input whether to use HTTP or HTTPS communication protocol for FORM authentication mode. For HTTP this value should be 1 and for HTTPS this value should be 2.
input_application_communication_protocol=1

#For HTTPS FORM authentication mode
input_form_https_keystore_cert_path=/opt/certs/cert.keystore
input_form_https_keystore_cert_password=changeit
```

config.properties

```
#This takes input whether to use LDAP user connectivity, Active Directory or tomcat. For LDAP, this value should be 1, for Active Directory this value should be 2 and for Tomcat this value should be 3. In case of PKI authentication mode, tomcat option is invalid.
input_connectivity_user_connection=1

#Common for LDAP and AD.
input_realm_connection_url=ldap://localhost:389
input_realm_connection_name=cn=Manager,dc=ephesoft,dc=com
input_realm_user_password=secret
input_realm_user_base=ou=people,dc=ephesoft,dc=com
input_realm_user_search=cn={0}
input_realm_user_sub_tree=true
input_realm_role_base=ou=groups,dc=ephesoft,dc=com
input_realm_role_name=cn
input_realm_role_search=uniqueMember={0}
input_realm_role_sub_tree=true
```

Connectivity details must be provided only for LDAP or MS Active Directory. Tomcat does not require connection configuration.

Configurable property	Description
`input_authentication_mode`	The type of authentication mode you want to use. • 1 for Form Authentication • 2 for PKI Authentication
`input_application_communication_protocol`	The communication protocol, which will be used for Form Authentication. • 1 for HTTP • 2 for HTTPS
`input_form_https_keystore_cert_path`	The path to the keystore certificate with SSL information. Required only if HTTPS is selected.

Configurable property	Description
input_form_https_keystore_cert_password	The password for the keystore certificate with SSL information. Required only if HTTPS is selected.
input_connectivity_user_connection	The type of connection you want to use for the application. • 1 for LDAP • 2 for MS Active Directory • 3 for Tomcat
input_realm_connection_url	A valid URL to connect to LDAP /Active Directory server. The connection URL should be in the following format: ldap://<server_address>:<port_number>
input_realm_connection_name	A valid username to connect and access LDAP/Active Directory server (the username of the user responsible for interacting with the server).
input_realm_user_password	A valid password to connect and access LDAP/Active Directory server (the password of the user responsible for interacting with the server).
input_realm_user_base	The relative path under which all the users' information will be located. This attribute defines where to look for a user.
input_realm_user_search	A search string for searching users.
input_realm_user_sub_tree	This attribute defines the search scope. Set to true to search the entire subtree rooted at the User base entry. Set to false to request a single-level search including only the top level.
input_realm_role_base	The relative path under which all the roles information will be located. This attribute defines where to look for a role corresponding to a user.
input_realm_role_name	Role name defines which attribute is used for a role.
input_realm_role_search	A search string for searching roles.
input_realm_role_sub_tree	This attribute defines the search scope. Set to true to search the entire subtree rooted at the User base entry. Set to false to request a single-level search including only the top level.

3. Save the changes.

Install and migrate to MariaDB for Linux

Introduction

This section provides information on important changes related to MariaDB and MySQL on Linux.

- The Ephesoft Transact installer does not install any database management systems (DBMS).
- Ephesoft Transact does not support MySQL databases.

For more information on supported database versions, see *Ephesoft Transact Technical Specifications.*

Install Ephesoft Transact

Follow these instructions if you are installing Ephesoft Transact for the first time.

To perform the steps listed in this document, you will need super-user (root) permissions. If you are not a super-user, execute the following command to login as the root user:

```
sudo su root
```

Check for MariaDB

1. Check your system for an existing instance of MariaDB before installing Ephesoft Transact, as some Linux operating systems include MariaDB.
   - If you do not have an existing instance of MariaDB, proceed to Install MariaDB.
   - If you have an existing instance of MariaDB that is supported for Ephesoft Transact 2023.1.00, you can return to the Linux install guide for your version.
   - If you have an existing instance of MariaDB that is not supported for Ephesoft Transact 2023.1.00, you will need to uninstall your instance of MariaDB and install a supported version.

   This removes all data from your database. It is recommended to take a backup of your database by running the following command:

   ```
   mysqldump --all-databases --single-transaction --quick --lock-tables=false > full-backup.sql -uroot -p<password>
   ```

2. Refer to your operating system below and run the listed command.

   Ubuntu:

   ```
   sudo apt-get remove MariaDB-server
   ```

   CentOS or RHEL:

   ```
   sudo yum remove MariaDB-server
   ```

3. Proceed to Install MariaDB.

Upgrade Ephesoft Transact

Follow these instructions if you are upgrading Ephesoft Transact. This section provides instructions on how to upgrade or migrate your database in the following cases:

- Existing MariaDB
- Existing MySQL

Existing MariaDB

If you have an existing instance of MariaDB, ensure that your instance of MariaDB is a supported version before upgrading Ephesoft Transact. For more information, see *Ephesoft Transact Technical Specifications.*

- If your instance of MariaDB is supported for upgrade to Ephesoft Transact 2023.1.00, you can return to the Linux upgrade guide for your version.
- If your instance of MariaDB is not supported for upgrade to Ephesoft Transact 2023.1.00, proceed to Upgrade MariaDB.

Existing MySQL

Follow these steps if you currently use MySQL with Ephesoft Transact.

1. Back up the **ephesoft**, **report**, and **report_archive** databases from the pre-existing MySQL database.
   a. Run the following command in the MariaDB installation bin folder, located in `<Transact Installation Folder>/Dependencies/mariadb/bin/`.

   ```
   mysqldump -u<root username> -p<root user password> -h<server hostname> -P<database port number> <Database name> --single-transaction --routines --quick --lock-tables=false > <Folder location>.sql
   ```

   Text listed in angled brackets are placeholders. Replace the placeholders with the relevant information. For `<Folder location>` include the full folder path where the backup file will be created.

   b. Run the mysqldump command for the **ephesoft**, **report**, and **report_archive** databases. Below are sample commands for each:

   ```
   mysqldump -uroot -p ephesoft --single-transaction --routines --quick --locktables=false > /opt/database_backup/ephesoft.sql
   mysqldump -uroot -p report --single-transaction --routines --quick --lock-tables=false > /opt/database_backup/report.sql
   mysqldump -uroot -p report --single-transaction --routines --quick-lock-tables=false > /opt/database_backup/report_archive.sql
   ```

2. Stop and disable the service for the MySQL database to prevent it from running.
3. Install a supported version of MariaDB. You can install MariaDB on the same server where Ephesoft Transact will be installed or choose a dedicated database server. Continue to Install MariaDB to proceed.

Install MariaDB

This topic provides information on how to install MariaDB on different Linux distributions: Ubuntu, CentOS, and Red Hat Enterprise Linux (RHEL). For more information on supported operating systems, see *Ephesoft Transact Technical Specifications*.

Follow the instructions for your specific Linux distribution, and proceed with the configuration.

RHEL or CentOS

1. Run the following command to add a MariaDB yum repository to your server:

   ```
   vi /etc/yum.repos.d/MariaDB.repo
   ```

2. Enter the following text in the MariaDB.repo file:

CentOS is not supported for Ephesoft Transact 2020.1 or above.

On RHEL 7:

```
[MariaDB]
name = MariaDB
baseurl = http://yum.mariadb.org/<MariaDB version>/rhel7-amd64
gpgkey=http://yum.mariadb.org/RPM-GPG-KEY-MariaDB
gpgcheck=1
```

On CentOS 7:

```
[MariaDB]
name = MariaDB
baseurl = http://yum.mariadb.org/<MariaDB version>/centos7-amd64
gpgkey=http://yum.mariadb.org/RPM-GPG-KEY-MariaDB
gpgcheck=1
```

3. Run the following command to manually create the cache so that future yum queries will be quicker:

   ```
   yum makecache fast
   ```

```
[root@localhost ~]# yum makecache fast
Loaded plugins: langpacks, product-id, search-disabled-repos, subscription-
              : manager
MariaDB                                                  | 2.9 kB     00:00
rhel-7-server-rpms                                       | 3.5 kB     00:00
MariaDB/primary_db                                         |  53 kB   00:00
Metadata Cache Created
```

Make cache fast

4. Once the MariaDB YUM repository has been added, you can install MariaDB with the following command:

   ```
   yum install MariaDB-server MariaDB-client
   ```

5. Run the following commands to start the MariaDB service and enable it to start automatically in the future:

   ```
   systemctl start mariadb
   systemctl enable mariadb
   ```

```
[root@localhost ~]# systemctl start mariadb
[root@localhost ~]# systemctl enable mariadb
Created symlink from /etc/systemd/system/mysql.service to /usr/lib/systemd/system/mariadb.service.
Created symlink from /etc/systemd/system/mysqld.service to /usr/lib/systemd/system/mariadb.service.
Created symlink from /etc/systemd/system/multi-user.target.wants/mariadb.service to /usr/lib/systemd/system/mariadb.service.
```

Start MariaDB service

6. Secure MariaDB by running the following command:

   ```
   mysql_secure_installation
   ```

```
[root@localhost ~]# mysql_secure_installation

NOTE: RUNNING ALL PARTS OF THIS SCRIPT IS RECOMMENDED FOR ALL MariaDB
      SERVERS IN PRODUCTION USE!  PLEASE READ EACH STEP CAREFULLY!
```

Secure installation

This prompts you to set the root password, disable remote root login, remove the test database and anonymous users, and reload privileges.

7. Use the table below to respond to the prompts as they are displayed.

Prompt	Description	Response
`Set root password? [y/n]`	Setting the root password ensures that nobody can log into the MariaDB root user without the proper authorization. Important: This password will be used to configure your MariaDB connection when installing or upgrading Ephesoft Transact.	`y`
`Remove anonymous users? [y/n]`	By default, a MariaDB installation has an anonymous user, allowing anyone to log into MariaDB without needing a user account created for them. This is intended only for testing, and to make the installation smoother. You should remove them before moving into a production environment.	`y`
`Disallow root login remotely? [y/n]`	Normally, root should only be allowed to connect from 'localhost'. This ensures that someone cannot guess at the root password from the network.	`y`
`Remove test database and access to it? [y/n]`	By default, MariaDB comes with a database named 'test' that anyone can access. This is also intended only for testing, and should be removed before moving into a production environment.	`y`
`Reload privilege tables now? [y/n]`	Reloading the privilege tables will ensure that all changes made so far will take effect immediately.	`y`

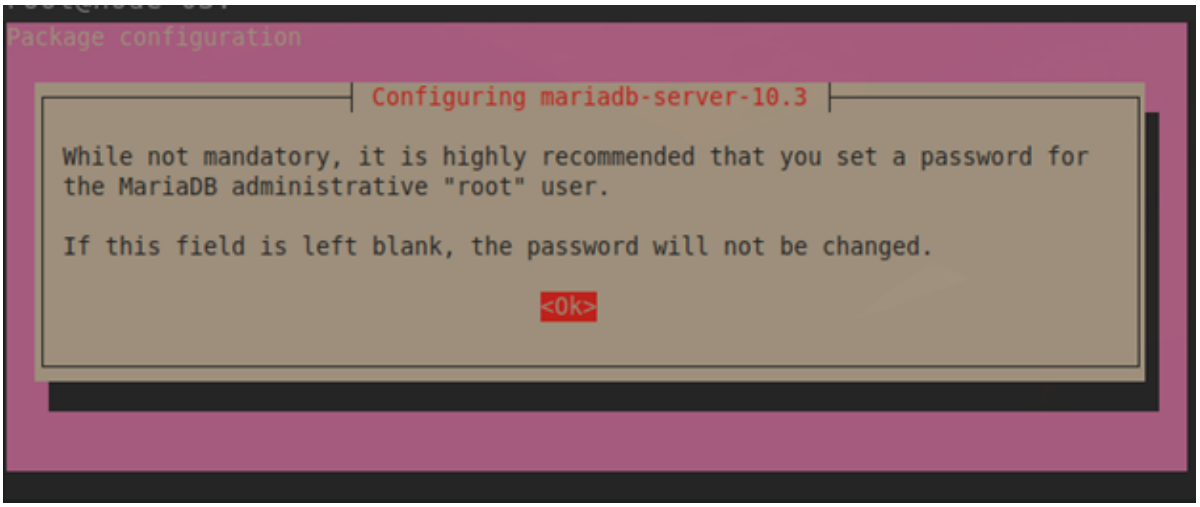
8. Verify that a supported version of MariaDB was installed with one of the following:
   a. Run the following command:
      `mysql -v`
      This returns the server version as a response.
   b. Log in to the MariaDB command shell by running following command and entering the root password:
      `mysql -u root -p`
      This logs in as the root user and returns the server version as a response.
9. If you are performing a fresh installation of Ephesoft Transact, you have completed the MariaDB installation. Return to Installation instructions. Otherwise, proceed to Create a new database to migrate an existing MariaDB environment.

Ubuntu

Ubuntu is not supported for Ephesoft Transact 2020.1 or above. You must have the software-properties-common library installed prior to installing MariaDB on Ubuntu. If the library is not installed, run the following command:

```
sudo apt-get install software-properties-common.
```

1. Run the following command to install GNU Privacy Guard (GPG) to Ubuntu:
   ```
   sudo apt install gnupg.
   ```
2. Run the following command to add the MariaDB GPG key:
   ```
   sudo apt-key adv --recv-keys --keyserver hkp://
   keyserver.ubuntu.com:800xF1656F24C74CD1D8
   ```
3. Run the following command to add an APT repository to your server
   ```
   sudo add-apt-repository 'deb [arch=amd64,arm64,i386,ppc64el] http://
   sfo1.mirrors.digitalocean.com/mariadb/repo/<MariaDB version>/ubuntu/
   xenial main'
   ```
4. Run the following commands to install a supported version of MariaDB:
   ```
   sudo apt-get update
   sudo apt-get install mariadb-server mariadb-client
   ```
5. When prompted, create a MariaDB root password. Keep the password in a safe location for future use.



Create password

6. Re-enter the password and select **<Ok>** to confirm.
7. Verify that a supported version of MariaDB was installed with one of the following:
   a. Run the following command:
      ```
      select version();
      ```

This returns the server version as a response.

b. Log in to the MariaDB command shell by running following command and entering the root password:

```
mysql -u root -p.
```

This logs in as the root user and returns the server version as a response.

8. If you are performing a fresh installation of Ephesoft Transact, you have completed the MariaDB installation. Return to Installation instructions. Otherwise, proceed to Create a new database to migrate an existing MariaDB environment.

Create a new database

Follow the steps in this section if you are migrating an existing MariaDB or MySQL environment into your new MariaDB environment.

Once you installed MariaDB, you need to create the following three databases for Ephesoft Transact: ephesoft, report, and report_archive.

1. Run the following commands on any MariaDB client tool, replacing the `<username>` with your username:

```
CREATE DATABASE IF NOT EXISTS ephesoft ;
CREATE DATABASE IF NOT EXISTS report ;
CREATE DATABASE IF NOT EXISTS report_archive ;
GRANT ALL PRIVILEGES ON ephesoft.* TO '<username>'@'%';
GRANT ALL PRIVILEGES ON report.* TO '<username>'@'%';
GRANT ALL PRIVILEGES ON report_archive.* TO '<username>'@'%';
GRANT ALL PRIVILEGES ON ephesoft.* TO '<username>'@'localhost';
GRANT ALL PRIVILEGES ON report.* TO '<username>'@'localhost';
GRANT ALL PRIVILEGES ON report_archive.* TO '<username>'@'localhost';
FLUSH PRIVILEGES;
```

When the `IF NOT EXISTS` clause is used, MariaDB returns a warning instead of an error if the specified database already exists.

2. Update the database details in all three resource tags in the **<Ephesoft Transact Installation Folder>\JavaAppServer\conf\server.xml** file. Refer to the image below for an example:

```
<Resource name="jdbc/ephesoft" auth="Container"
 factory="com.zaxxer.hikari.HikariJNDIFactory"
 type="javax.sql.DataSource"
 minimumIdle="5"
 maximumPoolSize="100"
 connectionTimeout="300000"
 driverClassName="org.mariadb.jdbc.Driver"
 jdbcUrl="jdbc:mysql://<host name>:<port number>/<Database name>"
 dataSource.implicitCachingEnabled="true"
 dataSource.user="<username>"
 dataSource.password="<password>"
 connectionTestQuery="Select 1" />
```

Update resource tags

3. You have successfully installed MariaDB. Continue to Restore MySQL backup if you previously performed a backup of your MySQL database. Otherwise, return to the Linux guide for your version of Ephesoft Transact to complete your installation or upgrade.

Restore MySQL backup

Perform these steps if you are migrating your database from MySQL. This section outlines how to restore your ephesoft, report, and report_archive databases that you backed up in the section titled Existing MySQL.

Ensure that the original MySQL database is stopped and disabled, and the new MariaDB database is running.

1. Use the following command to restore each database, replacing the placeholders in the angled brackets (< >) with the relevant details:

   ```
   mysql -u<root username> -p<root user password> -P<database server port>
   <Database name> < <Folder location>\database_backup.sql
   ```

   Below is a sample to restore each database:

   ```
   mysql -uroot -ppassword -P3306 ephesoft < ephesoft.sql\database_backup.sql
   mysql -uroot -ppassword -P3306 report < report.sql\database_backup.sql
   mysql -uroot -ppassword -P3306 report_archive < report_archive.sql
   \database_backup.sql
   ```

2. You have successfully restored the **ephesoft**, **report**, and **report_archive** databases in MariaDB. Return to the Linux guide for your version of Ephesoft Transact to complete your upgrade.

Upgrade MariaDB

This section provides instructions on how to upgrade your current MariaDB instance to a supported version. For more information on supported database versions, see *Ephesoft Transact Technical Specifications*.

1. Download a supported version of MariaDB from the MariaDB Foundation.
2. Run the following commands to stop the **ephesoft** and **mysql** services:

   ```
   service ephesoft stop
   ```

```
service mysql stop
```

3. Rename the existing MariaDB folder:
   ```
   mv /opt/mariadb /opt/mariadb-backup
   ```
4. Move the **.tar** file to the **/opt** folder:
   ```
   mv mariadb-xx.x.xx-linux-x86_64.tar.gz /opt/
   ```
   `xx.x.xx` is added as a placeholder. Replace with your current version of MariaDB.
5. Extract the .tar file:
   ```
   tar -xvzf mariadb-xx.x.xx-linux-x86_64.tar.gz
   ```
   `xx.x.xx` is added as a placeholder. Replace with your current version of MariaDB.
6. Rename the **mariadb-xx.x.xx-linux-x86_64** folder to **mariadb**.
   ```
   mv mariadb-xx.x.xx-linux-86_64 mariadb
   ```
   `xx.x.xx` is added as a placeholder. Replace with your current version of MariaDB.
7. Rename the **my.cnf** file to **my.cnf.backup**.
   ```
   mv /etc/my.cnf /etc/my.cnf.backup
   ```
8. Remove the **mysql** service:
   ```
   rm -rf /etc/init.d/mysqld
   ```
9. Open the **mariadb** folder:
   ```
   cd /opt/mariadb
   ```
10. Run the mysql_install_db script:
    ```
    ./scripts/mysql_install_db --basedir=/opt/mariadb --datadir=/opt/mariadb/
    data
    ```
11. Restore the **my.cnf** file:
    ```
    cp /opt/mariadb-backup/support-files/my.cnf /etc/
    ```
12. Restore the service:
    ```
    cp /opt/mariadb-backup/support-files/mysqld /etc/init.d/
    ```
13. Remove the old links:
    ```
    rm -rf /usr/bin/mysql
    rm -rf /usr/bin/mysqldump
    rm -rf /usr/bin/mysqladmin
    ```
14. Create new links:
    ```
    ln -s /opt/mariadb/bin/mysql /usr/bin/mysql
    ln -s /opt/mariadb/bin/mysqldump /usr/bin/mysqldump
    ln -s /opt/mariadb/bin/mysqladmin /usr/bin/mysqladmin
    ```
15. Run the following command to add MariaDB to the list of services that will start after system reboot. This command differs based on your Linux distribution:

    Ubuntu

    ```
    update-rc.d mysqld defaults
    ```

CentOS or RHEL:

```
chkconfig --add mysqld
```

16. Restore the data backups:

```
mv /opt/mariadb/data /opt/mariadb/data-backup
cp -r /opt/mariadb-backup/data /opt/mariadb/
rm -rf /var/lock/subsys/mysql
```

17. Allow permissions within the **my.cnf** file:

```
chmod -R 0777 /etc/my.cnf
```

18. Open the **my.cnf** file and insert the following comments:

```
#innodb_large_prefix=on
#innodb_file_format=barracuda
#innodb_file_per_table=true
```

19. Adjust the permissions within the **my.cnf** file:

```
chmod -R 0755 /etc/my.cnf
```

20. Start the database service:

```
service mysqld start
```

21. Run the upgrade:

```
./bin/mysql_upgrade -uroot -p<password>
```

The upgrade process is complete. Return to the Linux guide for your version of Ephesoft Transact to complete your installation or upgrade.

Conclusion

You have successfully configured MariaDB for Ephesoft Transact.

Linux installer update – silent

In Ephesoft Transact, the installer script reads the complete `config.properties` file, fetches all the parameters and only then validated defined values on the basis of database selection. If you want to install the application using an Oracle database, you can leave parameters dedicated to the MySQL database blank and vice versa.

The `config.properties` file contains "yes/no" switches that are used to define the parameters to be validated. The sets of governing and related parameters are given in the following table.

Governing parameters	Related parameters
input_run_application_as_non_root_user	input_use_existing_user input_application_user input_application_user_group
input_run_application_as_non_root_user input_application_user_password_required	input_application_user_password
input_change_server_name	input_changed_server_name

Governing parameters	Related parameters
input_change_shared_folder_path	input_changed_shared_folder_path
input_existing_shared_folder	input_existing_shared_folder_path
input_install_multiserver	input_mounted_sharedfolder_path
input_database_type = 1(mysql)	input_new_database_instance input_system_ip_name input_database_username input_database_port_number input_database_password input_admin_database_username input_admin_database_password input_application_database_name input_report_database_name
input_database_type = 2(oracle)	input_new_database_schema input_oracle_database_username input_oracle_database_password input_oracle_database_server_name input_oracle_database_port_number input_oracle_database_sid_service input_oracle_database_application_db_schema input_oracle_database_application_db_password input_oracle_database_report_db_schema input_oracle_database_report_db_password input_oracle_database_report_archive_db_schema input_oracle_database_report_archive_db_password

If the value of the governing parameter is "y", then its related parameters are validated. If the value is "n", related parameters can be left empty or default.

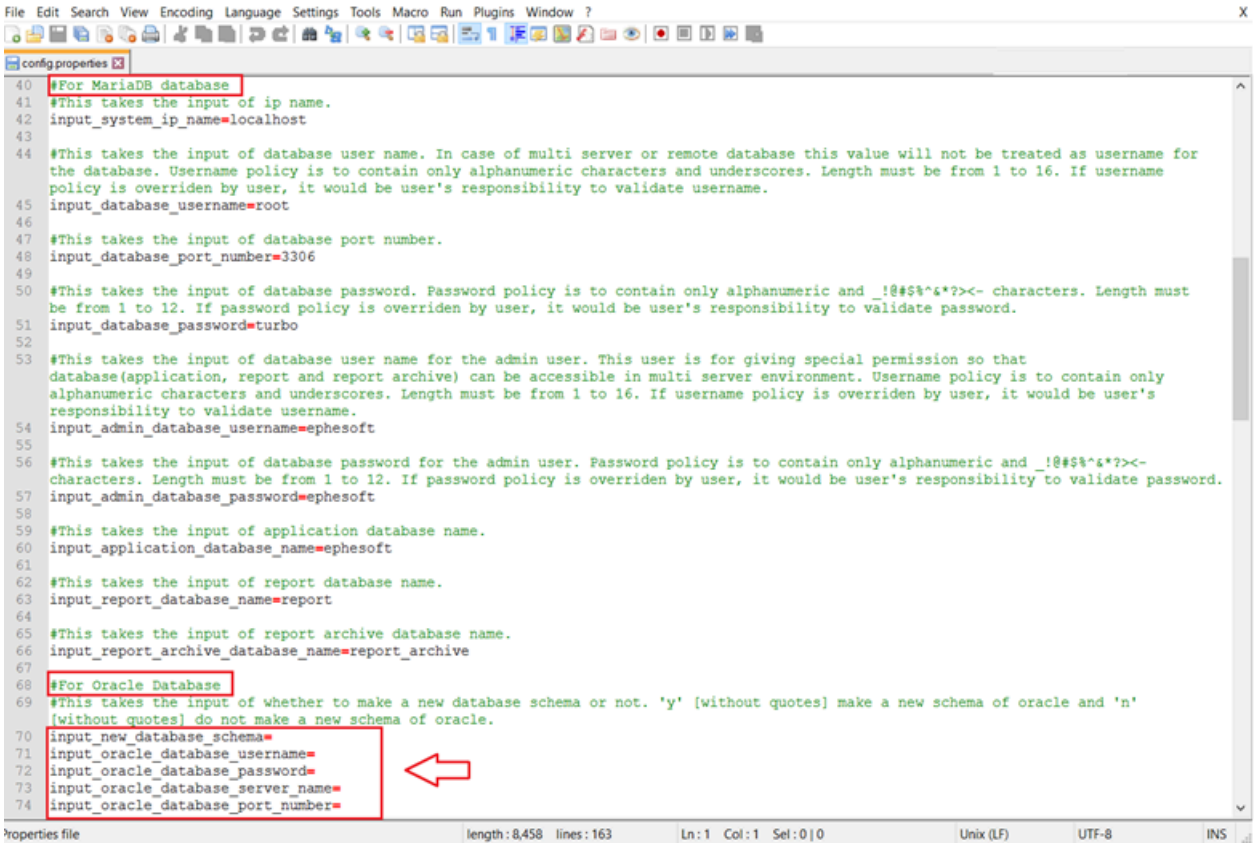
Consider the following example.

Suppose we install Ephesoft Transact using MariaDB in silent installation mode. To configure the parameters, open the `config.properties` file, which is located in the Response-Files folder of the application installer.

In this example, the value for `input_database_type` is "1" as we are using MariaDB.

```
#Placeholder for type of database that will be configured or installed. It is 1 for MariaDB and 2 for Oracle.
input_database_type=1
```

For database configuration, we provide the required values only for MariaDB, leaving the Oracle parameters empty.



Start the silent installation and when it is complete, a message appears saying that the installation was successful.

PKI authentication for Linux

Introduction

This page describes how to configure PKI (Public Key Infrastructure) authentication as the authentication type when installing Ephesoft Transact for Linux. You can select the PKI authentication type and import your PIV/CAC certificates during installation. All provided data are saved, updated, and mapped automatically in the following files:

- server.xml located in <Ephesoft_Directory>/JavaAppServer/conf
- web.xml located in <Ephesoft_Directory>/JavaAppServer/conf
- dcma-user.connectivity.properties located in <Ephesoft_Directory>/Application/WEB-INF/classes/META-INF/dcma-user-connectivity
- dcma-batch.properties located in <Ephesoft_Directory>/Application/WEB-INF/classes/META-INF/dcma-batch
- config.properties (included in the Ephesoft Transact installation package)

The imported certificates will be stored in the Certs folder of the Ephesoft Transact installation directory.

The Ephesoft Transact installer also provides an option to select a PKI-config.properties file to automatically fill the required fields for PIV/CAC configuration. You can provide PIV/CAC details in the properties file and then simply specify the file location during Transact installation.

ℹ The Ephesoft Transact installer is shipped as a zip file. To install the application, unzip the file and run the installer.

Prerequisites

There are no prerequisites for this article.

Configure PKI authentication

This section provides information on how to configure PKI authentication with two methods:

- Using the command-line interface (normal installation)
- Using the config.properties file (silent installation)

Use the command-line interface

Follow the steps below to configure PKI authentication using the Linux command-line interface to install Ephesoft Transact.

ℹ Follow these instructions when running a normal installation of Ephesoft Transact.

1. Start the installation process by executing the installer. When prompted to install the system using the silent installer, select `n`.
2. Follow the installation process up to the **Authentication Configuration** step.
3. Enter `2` to select the PKI authentication mode.
   The following PKI authentication options are available:
   - Import PKI configurations from the properties file
     Enter `y` to select this option and follow the instructions in Use the config.properties file.
   - Enter all required PIV/CAC authentication details using the command-line interface.
     Enter `n` to select this option and continue with the steps below.
4. Provide the certificate details as they are prompted in the command-line interface. Refer to the table below for more information on configurable properties.

Configurable property	Description
Username Retriever	One of the username retriever parameters from the certificate. • Press `1` for CN. • Press `2` for PrincipalName. • Press `3` for RFC822Name. • Press `4` for RegisteredID.

Configurable property	Description
Server Cert	A certificate that will be used to recognize your server.
Password	Password for Server Certificate.
CA Cert	The certificate that will be used to recognize the certification authority.
Password	Password for CA Certificate.
Alias Name	The name of your server certificate as specified in the Trusted Root Certification Authorities folder of the Windows Certificate Manager.

5. Press `y` to change any details. Otherwise, press `n` to continue.
6. Provide the connector settings as they are prompted in the command-line interface. Refer to the table below for more information on configurable properties.

Configurable property	Description
Port	Number of the PKI Connector Port.
SSL protocol	Protocol that will be used to secure connection between the client and the server.
SSL Enable Protocol	The supported versions of selected protocol.
Cipher Text	The algorithm of encryption that will be used between the client and the server.

7. Press `y` to change any details. Otherwise, press `n` to continue.
8. Select the user connection type you want to configure.
   a. Enter `1` for LDAP.
   b. Enter `2` for Microsoft Active Directory (MSAD).
9. Provide the settings for the realm you configured as they are prompted in the command-line interface. Refer to the table below for more information on configurable properties.

Configurable property	Description
Connection URL	A valid URL to connect to the LDAP server. The connection URL should be in the following format: ldap://<server_address>:<port_number>.
Connection Name	A valid username to connect and access the LDAP server (the username of the user responsible for interacting with the server).
Connection Password	A valid password to connect and access the LDAP server (the password of the user responsible for interacting with the server).
User Base	The relative path under which all the users' information will be located. This attribute defines where to look for a user.
User Search	A search string for searching users.
User Subtree	This attribute defines the search scope. Set to`true` to search the entire subtree rooted at the User Base entry. Set to `false` to request a single-level search including only the top level.

Configurable property	Description
Role Base	The relative path under which all the roles information will be located. This attribute defines where to look for a role corresponding to a user.
Role Name	Defines which attribute is used for a role.
Role Search	A search string for searching roles.
Role Subtree	This attribute defines the search scope. Set to true to search the entire subtree rooted at the Role Base entry. Set to false to request a single-level search including only the top level.
Microsoft Active Directory only	
MS AD Context Path	The directory where the intended user resides. This parameter is optional and can be left empty.
MS AD Group Search Filter	This attribute helps to filter search results and can have the following operators: |(OR), &(AND) and !(NOT). Example: ((!(cn=a*))(|cn=a*))(|(cn=ephesoft*)(&(cn=b*))) This parameter is optional and can be left empty.

10. Press `y` to make any changes. Otherwise, press `n` to continue.

You have successfully configured PKI authentication using the command-line interface.

Use the config.properties file

Follow the steps below to configure PKI authentication using the config.properties file.

Follow these instructions when running a silent installation of Ephesoft Transact.

1. Open the **config.properties** file included in the Ephesoft Transact installer.

   You can either provide the details in the config.properties file or copy the PIV/CAC configuration section and save it in a separate configurations file. For example, create a **PKI-config.properties** file.

2. Refer to the tables below to configure the details required to import PIV/CAC certificates during installation.

   Connection configuration

Configurable property	Description
input_pki_server_cert_path	Location of the server certificate.
input_pki_server_cert_password	Password for the server certificate.
input_pki_ca_cert_path	Location of the Certifying Authority certificate.
input_pki_ca_cert_password	Password for the server certificate.
input_pki_alias_name	Unique string to identify the keystore entity.
input_pki_connector_port_number	The number of the PKI connector port.

Configurable property	Description
input_pki_connector_ssl_protocol	The protocol that will be used to secure a connection between the client and the server.
input_pki_connector_ssl_enabled_protocol	The supported versions of the selected protocol.
input_pki_connector_chipper_text	The algorithm of encryption that will be used between the client and the server.
2019.1 and higher	
X509UsernameRetrieverParameter	One of the username retriever parameters from the certificate. • Press 1 for CN. • Press 2 for PrincipalName. • Press 3 for RFC822Name. • Press 4 for RegisteredID.

Authentication mode configuration

Configurable property	Description
input_connectivity_user_connection	The type of connection you want to use for the application. • Enter `1` for LDAP. • Enter `2` for MSAD. • Enter `3` for Tomcat. Apache Tomcat does not require configuration.

Realm and PIV/CAC certificate details

Configurable property	Description
input_realm_super_admin_group_name	Name of the super-admin group.
input_realm_connection_url	A valid URL to connect to LDAP /Active Directory server. The connection URL should be in the following format: ldap://<server_address>:<port_number>.
input_realm_connection_name	A valid username to connect and access the LDAP/Active Directory server (the username of the user responsible for interacting with the server).
input_realm_user_base	The relative path under which all the users' information will be located. This attribute defines where to look for a user.
input_realm_user_search	A search string for searching users.
input_realm_user_sub_tree	This attribute defines the search scope. Set to `true` to search the entire subtree rooted at the user base entry. Set to `false` to request a single-level search including only the top level.

Configurable property	Description
input_realm_role_base	The relative path under which all the roles information will be located. This attribute defines where to look for a role corresponding to a user.
input_realm_role_name	Role name defines which attribute is used for a role.
input_realm_role_search	A search string for searching roles.
input_realm_role_sub_tree	This attribute defines the search scope. Set to true to search the entire subtree rooted at the Role base entry. Set to false to request a single-level search including only the top level.
Microsoft Active Directory only	
input_msactivedirectory_group_search_filter	This attribute helps to filter search results and can have the following operators: |(OR), &(AND) and !(NOT). Example: ((!(cn=a*))(|(cn=ephesoft*)(&(cn=b*))) This parameter is optional and can be left empty.

You have successfully configured PKI authentication using the config.properties file.

Conclusion

You have successfully configured PKI authentication for Linux. Return to Installation instructions and proceed with the installation process.

View Linux upgrade or installation logs

If install logs are available, they are located at the following to aid troubleshooting:

/var/log/install-ephesoft.log

Copies of all settings used during updates after 3.1.2.2 can be found in the following file:

/etc/Ephesoft/ephesoft.conf

Samba Share

This section includes additional resources articles related to Samba Share:

Create Samba Share

Create Samba Share on RHEL 6.5 or higher

Create Samba Share on Ubuntu 13.10

Samba Share configuration in multi-cluster environment on Red Hat

Create Samba Share

Introduction

Samba is a file sharing service which is based on SMB/CIFS network file sharing protocols. SMB, stands for Server Message Block, is a protocol for sharing files, printers, serial ports, and communications abstractions such as named pipes and mail slots between computers.

Samba primarily consists of two key programs plus a few utilities. The two key programs are SMBD (Server Message Block Demon) and NMBD (NetBIOS Message Block Daemon). The main purpose of these two services is as follows:

1. File & print services
2. Authentication and authorization
3. Name resolution
4. Service announcement (browsing)

SharedFolders of Ephesoft Transact are network shared folders which can be accessed from different Ephesoft nodes in multi-cluster. Hence on Linux, Ephesoft Transact uses Samba Share to make SharedFolders accessible over network as a file share.

This section describes steps to install and configure Samba Share such that Ephesoft Transact SharedFolders can be accessible from different nodes in a multi-server cluster.

Samba installation

Most Linux systems already have a Samba service installed on the system. If Samba service is not installed on the system, it can be installed with the following steps:

Create Samba Share on RHEL 6.5 or higher

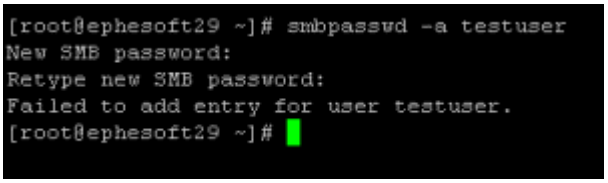
1. Make sure that Internet is available on the system.
2. Make sure that you have the proper permissions to install software on the system.

   To install software on Red Hat, you need to have super-user permissions, thus in order to install Samba, you must use `root` to install it.

   ```
   yum update
   yum install samba
   ```
3. Add a user to Samba and assign a password to that user.

   ```
   smbpasswd -a root
   ```
   - `-a` is for adding the user to Samba.
   - `root` is the username to be added to Samba.

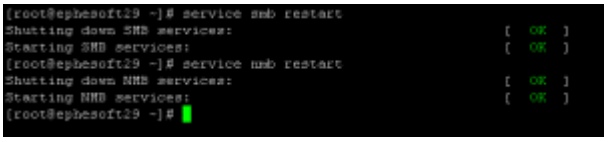
- `smbpasswd` adds the user to Samba and assigns a Samba password to that user. You will see an error message if the user does not exist in the Linux system.



Error adding user to Samba as user does not exist on Linux machine

4. Test Samba demons smb and nmb with the following commands:

```
service smb restart
service nmb restart
```



Restarting smb and nmb

Create Samba Share on Ubuntu 13.10

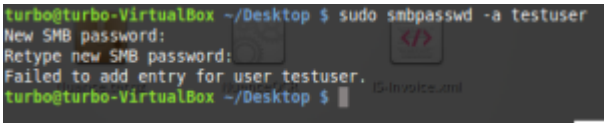
1. Make sure that Internet is available on the system.
2. Make sure that you have the proper permissions to install software on the system.

   To install software on Ubuntu, you need to have super-user permissions, thus in order to install Samba, you must use `sudo` to install it.

   ```
   sudo apt-get update
   sudo apt-get install samba
   ```
3. Add a user to Samba and assign a password to that user.

   ```
   sudo smbpasswd -a turbo
   ```

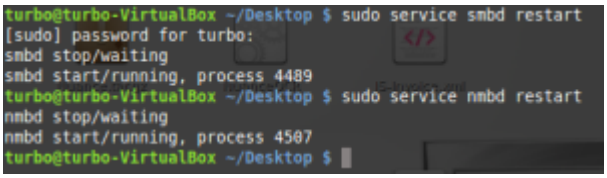
   - `-a` is for adding the user to Samba.
   - `turbo` is the username to be added to Samba.
   - `smbpasswd` adds the user to Samba and assigns a Samba password to that user. You will see an error message if the user does not exist in the Linux system.



Error adding user to Samba as user does not exist on Linux machine

4. Test Samba demons smbd and nmbd with the following commands:

```
sudo service smbd restart
sudo service nmbd restart
```



Restarting smbd and nmbd

Samba Share configuration in multi-cluster environment on Red Hat

Add a folder to network share

Samba shares can be configured through the /etc/samba/smb.conf file, which holds configuration details for the Samba server.

1. Open **smb.conf** in /etc/samba/smb.conf using VI editor. Open the file with root permissions as you may need to edit the file.

   ```
   vi /etc/samba/smb.conf
   ```

2. To make SharedFolders present at /opt/Ephesoft/SharedFolders as shareable on Samba Share, do the following:

   a. Give read, write, and execute permissions to everyone on SharedFolders by executing the following command (by default, the Ephesoft Transact installer assigns rwx permission to everyone on SharedFolders):

   ```
   chmod -R 777 /opt/Ephesoft/SharedFolders
   ```

   b. Add the following lines to the end of **smb.conf** file:

   ```
   [ephesoft]
   comment=ephesoft
   path=/opt/Ephesoft/SharedFolders
   browseable=yes
   writable=yes
   create mode=0777
   directory mode=0777
   share mode=yes
   guest ok=yes
   valid users=root
   ```

   Details of parameters added to **smb.conf**:

Parameter	Description
`comment`	Comment for the shared folder.
`path`	Specifies the path of shared folder.
`browseable`	Enables browsing of the files from the file system.
`writeable`	Makes the shared folder writeable.
`create mode`	Create files with group=rw permissions.
`directory mode`	Create dirs. with group=rw permissions.
`guest ok`	Allows guest access.

Parameter	Description
`valid users`	Specifies list of valid users who can access the shared folder (users must be part of user-group assigned to the shared folder).
`share mode`	Assign multiple users to a list of valid users as one credential can be used by single machine at a time.

You must create the share with write, creation, readable and browseable permissions etc. The statements mentioned above ensure this.

3. Save the **smb.conf** file and restart smb and nmb demons by executing the following commands:

```
service smb restart
service nmb restart
```

You can now access this shared folder.

Access SharedFolders on different Ephesoft Transact nodes in a multi-cluster setup

In order to set up SharedFolders on different Ephesoft Transact nodes in multi-cluster setup, you need to mount the network share on a folder on every Ephesoft Transact Linux node, as Linux does not understand network paths as Windows does. On Windows, network share can be directly accessed using \ip -addr but on Linux, it can be done using Samba protocol, which works in a different manner.

The installer creates an empty folder at the same location on every Ephesoft Transact node other than the node on which the actual shared folder lies; i.e. path of empty folder is the same as path of actual shared folder on the machine where an actual shared folder lies. For example, in the above configuration, where SharedFolder was added to Samba Share, the actual folder resides at /opt/Ephesoft/SharedFolders, so an empty folder is created at the same path on each machine using the Ephesoft Transact installer.

Now you have to mount the SharedFolders network on every empty folder created by the installer on each Ephesoft Transact node.

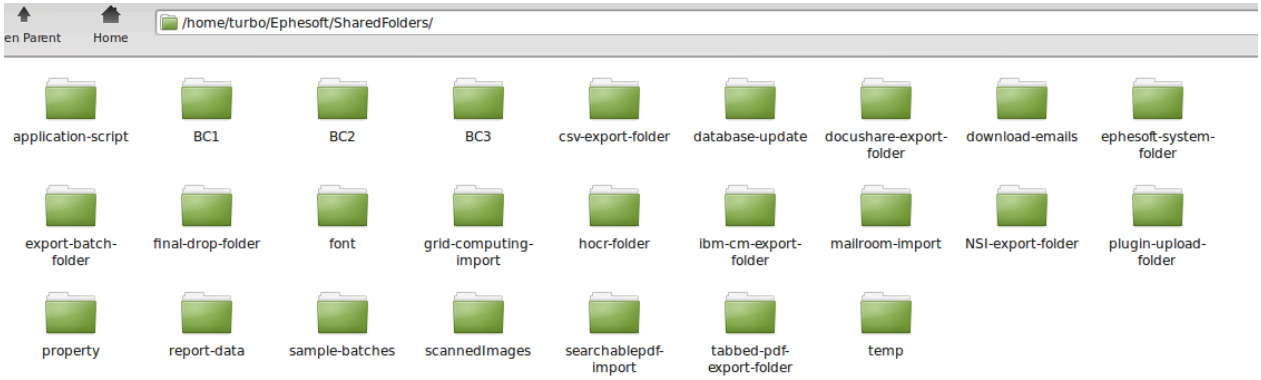
Mount network share on empty folders created by installer

You can mount the Samba Share over an empty folder by executing the following command:

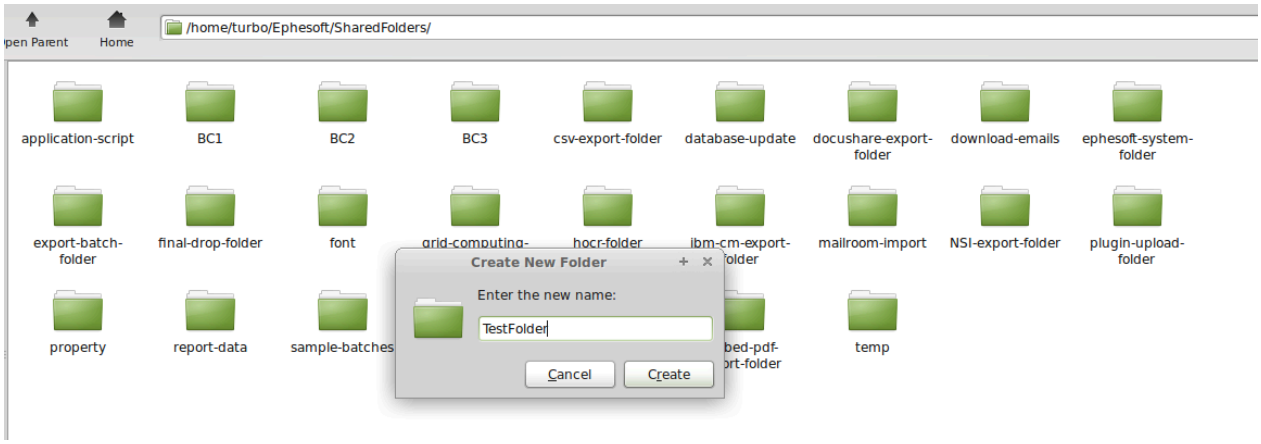
```
mount -t cifs -o user=root,password=root //<ip-address>/ephesoft /opt/
Ephesoft/SharedFolders
```

- `password` is the password of smbuser for which smbpasswd was set.

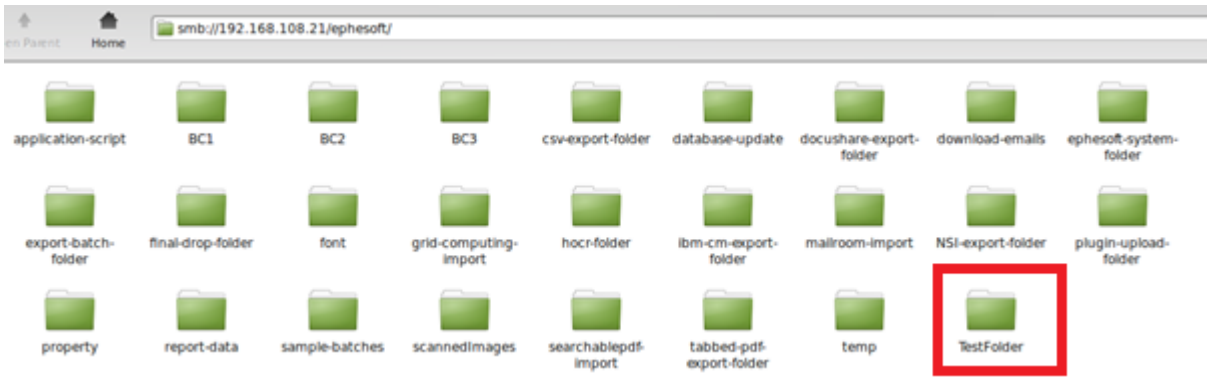
You can access the mounted shared folder locally by accessing `/opt/Ephesoft/SharedFolders` as this folder acts as a mount point for network share. You can create/modify files/folders locally on this path, and changes are reflected on the network share and on all the machines where this network share is mounted.



SharedFolders is available locally on mounted folder



Creating folder on the mounted folder



Changes of folder creation reflected on the network share

The Ephesoft Transact META-INF properties file contains the path of locally mounted folders and not the network path, as Linux does not understand network share like Windows does. Linux makes use of smb protocol to access the shared folder. Hence you have to mount network shared folders locally on your system so that Ephesoft Transact is able to see data on the same path on every system.

Samba Share configuration in multi-cluster environment on Ubuntu

Add a folder to network share

Samba shares can be configured through the /etc/samba/smb.conf file, which holds configuration details for the Samba server.

1. Open **smb.conf** in /etc/samba/smb.conf using VI editor. Open the file with sudo permissions as you may need to edit the file.

   ```
   sudo vi /etc/samba/smb.conf
   ```

2. To make SharedFolders present at /home/turbo/Ephesoft/SharedFolders as shareable on Samba Share, do the following:

   a. Give read, write, and execute permissions to everyone on SharedFolders by executing the following command (by default, the Ephesoft Transact installer assigns rwx permission to everyone on SharedFolders):

   ```
   sudo chmod -R 777 /home/turbo/Ephesoft/SharedFolders
   ```

   b. Add the following lines to the end of **smb.conf** file:

   ```
   [ephesoft]
   comment=ephesoft
   path=/home/turbo/Ephesoft/SharedFolders
   browseable=yes
   writable=yes
   create mode=0777
   directory mode=0777
   share mode=yes
   guest ok=yes
   valid users=turbo
   ```

   Details of parameters added to **smb.conf**:

Parameter	Description
`comment`	Comment for the shared folder.
`path`	Specifies the path of shared folder.
`browseable`	Enables browsing of the files from the file system.
`writeable`	Makes the shared folder writeable.
`create mode`	Create files with group=rw permissions.
`directory mode`	Create dirs. with group=rw permissions.
`guest ok`	Allows guest access.
`valid users`	Specifies list of valid users who can access the shared folder (users must be part of user-group assigned to the shared folder).
`share mode`	Assign multiple users to a list of valid users as one credential can be used by single machine at a time.

   You must create the share with write, creation, readable and browseable permissions etc. The statements mentioned above ensure this.

3. Save the **smb.conf** file and restart smbd and nmbd demons by executing the following commands:

   ```
   sudo service smbd restart
   sudo service nmbd restart
   ```

You can now access this shared folder.

Access SharedFolders on different Ephesoft Transact nodes in a multi-cluster setup

In order to set up SharedFolders on different Ephesoft Transact nodes in multi-cluster setup, you need to mount the network share on a folder on every Ephesoft Transact Linux node, as Linux does not understand network paths as Windows does. On Windows, network share can be directly accessed using \ip -addr but on Linux, it can be done using Samba protocol, which works in a different manner.

The installer creates an empty folder at the same location on every Ephesoft Transact node other than the node on which the actual shared folder lies; i.e. path of empty folder is the same as path of actual shared folder on the machine where an actual shared folder lies. For example, in the above configuration, where SharedFolder was added to Samba Share, the actual folder resides at /home/turbo/Ephesoft/SharedFolders, so an empty folder is created at the same path on each machine using the Ephesoft Transact installer.

Now you have to mount the SharedFolders network on every empty folder created by the installer on each Ephesoft Transact node.

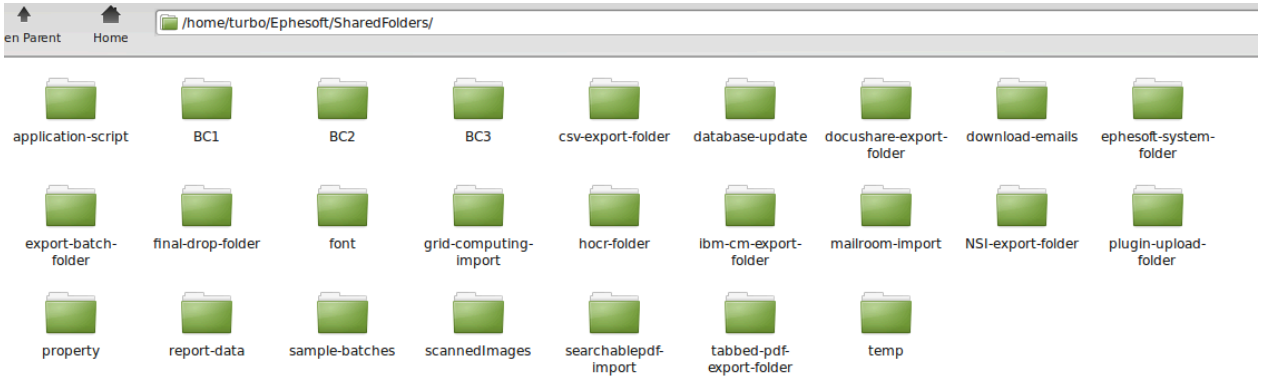
Mount network share on empty folders created by installer

You can mount the Samba Share over an empty folder by executing the following command:

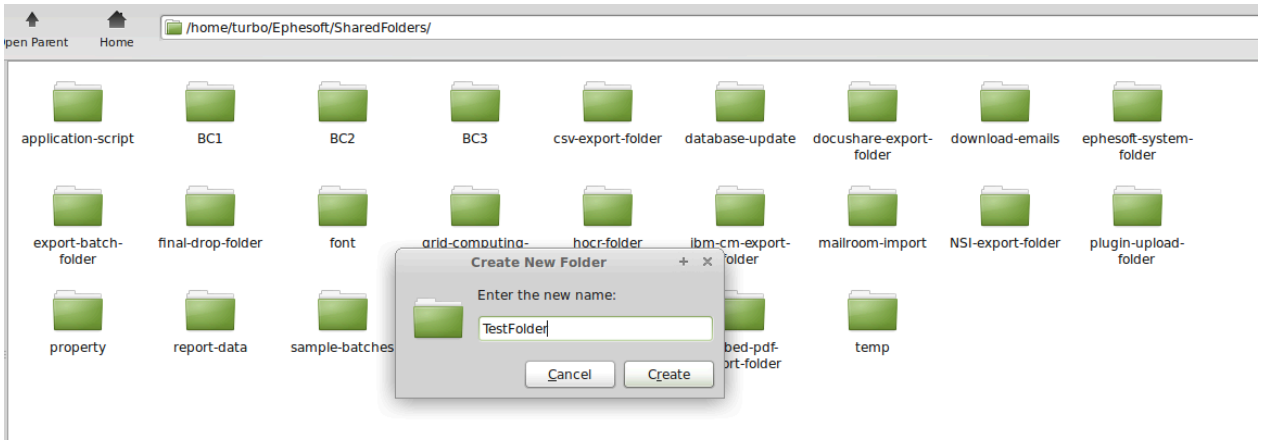
```
sudo mount -t cifs -o user=turbo,password=Passw0rd //192.168.108.21/ephesoft /home/turbo/Ephesoft/SharedFolders
```

- `password` is the password of smbuser for which smbpasswd was set.

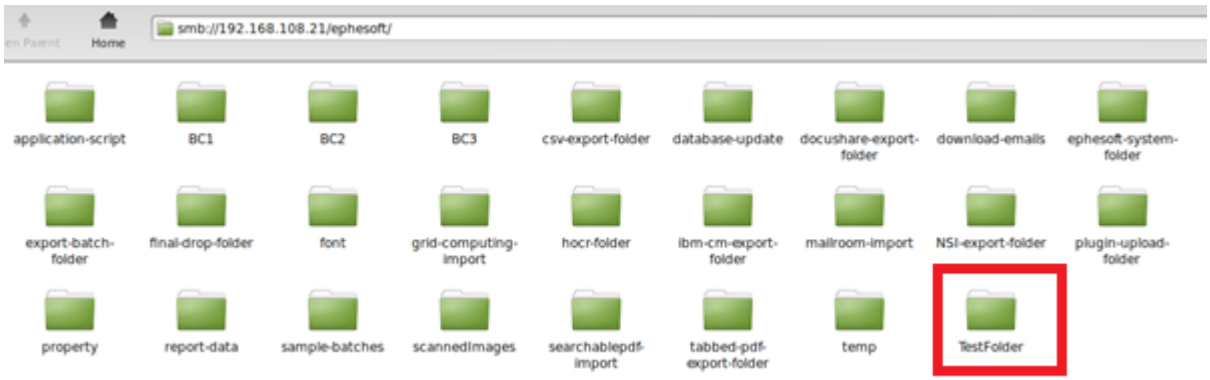
You can access the mounted shared folder locally by accessing `/home/turbo/Ephesoft/SharedFolders` as this folder acts as a mount point for network share. You can create/modify files/folders locally on this path, and changes are reflected on the network share and on all the machines where this network share is mounted.



SharedFolders is available locally on mounted folder



Creating folder on the mounted folder



Changes of folder creation reflected on the network share

The Ephesoft Transact META-INF properties file contains the path of locally mounted folders and not the network path, as Linux does not understand network share like Windows does. Linux makes use of smb protocol to access the shared folder. Hence you have to mount network shared folders locally on your system so that Ephesoft Transact is able to see data on the same path on every system.