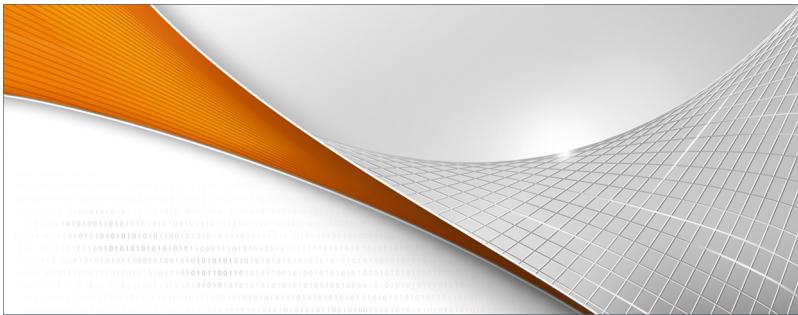


# ELO

Document Management and Archiving Software



# SERVER

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ELO Digital Office GmbH

<http://www.elo.com>

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# Preface

---

## Important Information

This manual is intended to be used by system administrators. It contains specific information which is intended for use by the administrator during program installation, system administration, and system security administration. The manual is not intended for end users of the software. Usage of the software is covered in detail in the ELO client manual.

There are also areas in ELO where access for end users should be restricted due to system security considerations. The main areas where this applies are the ELO Script administration, the document path administration, and the system security settings. These subjects are covered in detail in the SERVER manual, but are only briefly covered in the CLIENT manual. It is recommended that the administrator should have access to both the CLIENT and the SERVER manuals.

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## Disclaimer

Every effort has been made to ensure that this product is as accurate as possible. However, as we are continuously developing ELO SERVER and are undertaking development on several parallel versions, the program is subject to change without notice. In certain circumstances minor errors or inaccuracies may, therefore, occur in the content of this manual. We would like to apologise in advance for any inconvenience this may cause. Latest versions of documentation are available via the ELO website.

---

# Welcome

## The Ever Increasing Flow of Information

Experts estimate that the volume of information to be processed in the office could rise by up to 25% per year. Therefore help from technological means is, or will be, required to manage the ever increasing amount of office documents. Natural the introduction of electronic means of data storage leads to a far greater volume of saved data. This in turn means that the storage, organisation and retrieval of the data is also of great importance.

Interfaces to stored digital information are becoming more important than ever before. ELO Digital Office has been developed in order to take account of the changes in working practices and data management. For example, the barcode controlled index system Orgacolor or the document management and archiving systems *ELOenterprise* and *ELOprofessional* have both been designed to support daily office processes.

## ELO - The Leading Document Management Software

Whether documents are to be archived, searched for, forwarded or copied, ELO offers all of these options through fast and easy to use functions. This in turn leads to the reduction and elimination of reams of paper and documents in the office. However, ELO is more than just an electronic copy of a filing and archive system on the computer. The major advantages of an electronic document management and archive system lie in the optimum storage and structure of the data within the system.

The versatility of the system guarantees the fast and secure retrieval of the archived documents. This naturally leads to a significant saving in time. The term document is also not restricted to paper documentation. Video clips, pictures, emails, audio files and websites can all be stored and managed in the ELO document management system.

ELOalso improves the security and integrity of documentation through access control, copy protection and version control of the documents.

Through a direct connection to Microsoft Outlook emails can also be archived in ELO and with the additional modules Barcode, Cold and Fulltext the efficiency of the ELO archive can be optimised still further.

*ELOenterprise* and *ELOprofessional* are the tools for controlling the ever increasing current and future flow of documentation in the office. Savings in time, space and energy can all be achieved with ELO. The dream of a paper free office is one step nearer.

---

# Conventions

The manual contains numerous notes, instructions and suggestions for program dialog boxes, menu items and tips. The following conventions are followed in this documentation:

<b>Italics</b>	The names of menus, options, dialog boxes, folders, references to chapters, paths and file extensions are printed in <i>italics</i> .  Example: Click on the menu item <i>Options</i> and select the <i>Mail</i> index card.
<b>Upper case</b>	Key combinations are printed in UPPER CASE. A plus sign (+) between the key descriptions means they should be pressed simultaneously.  Example: Ctrl + C
<b>Bold</b>	Hyperlinks – such as <b>www.elo.com</b> – and <b>chapter headings</b> in running text – such as <b>references to the manual</b> – are highlighted in <b>bold</b> type.
<b>Underline</b>	<u>Parts of words, letters and other points to be emphasized</u> can be <u>underlined</u> where necessary.
<b>Courier bold</b>	<b>Text to be entered in ELO is shown in Courier bold font.</b>  Example: <b>[reg=] L4 (2,1)</b>
<b>Courier</b>	Program code, program outputs and scripts are shown in <b>Courier</b> font.  Example:  <code>Set Elo=CreateObject("ELO.professional")</code>



# ELO Server Structure

---

The ELO server components have been developed using Java servlet technology. Tomcat is used as ELO's Application Server and functions as a container for the servlets. Other servlet containers can be used although the installation and configuration of the `config.xml` (lowercase is mandatory) file must be manually carried out.

# Microserver Architecture

## Architecture

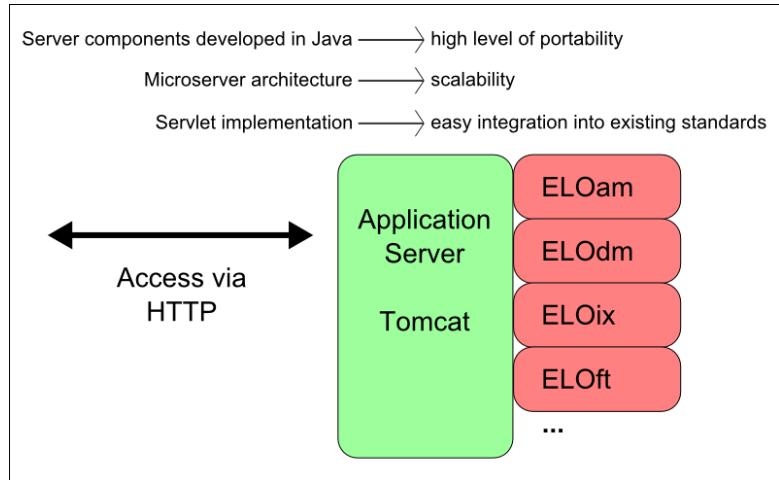


Fig. Server Component Architecture

## Logging On

The access manager is responsible for the central administration of the user list, the current log ons, the user rights and the key lists. Each client and each server process registers with the access manager when starting. The access manager then provides a ticket which identifies the client and is also required for communication with the ELO server processes.

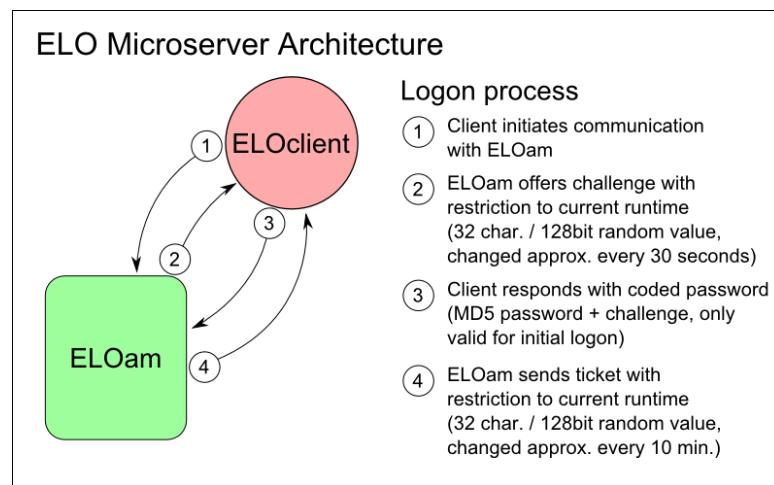


Fig. Client logon

## Document Storage

An individual document manager is required for each archive. The document manager is responsible for the saving, administration and delivering of the document upon request. When using Microsoft SQL an individual database will be created for each archive. When using Oracle SQL an independant user with the name of the archive is created for each of the archives.

The backup service and the EMC centera interface also belong to the document manager, depending upon the license being used.

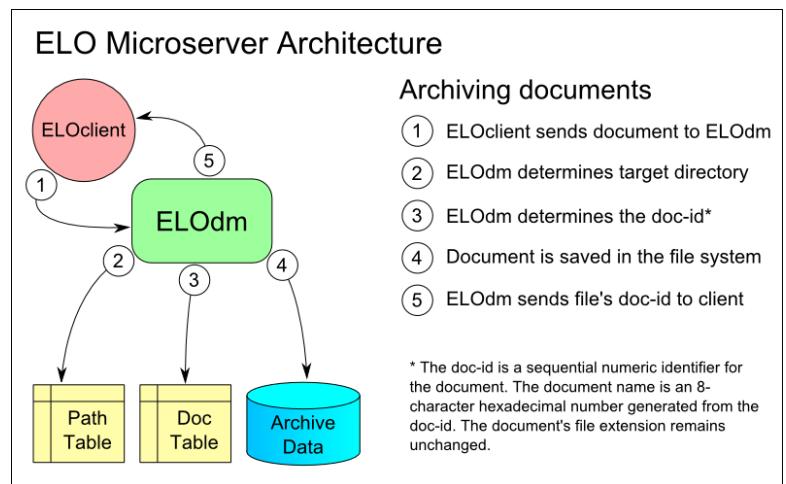
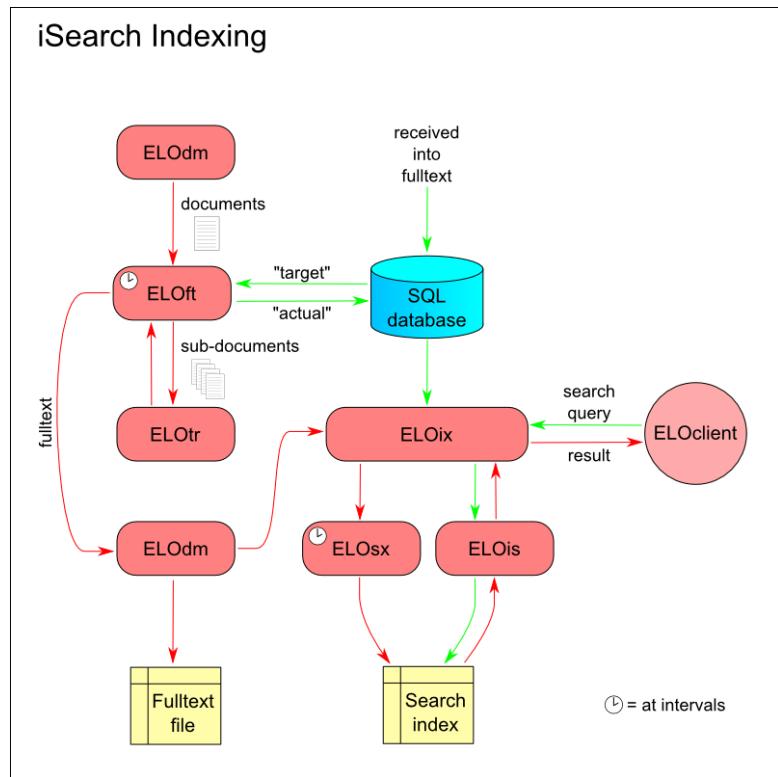


Fig. Archiving documents

## Fulltext

An optional fulltext module can be installed for each archive (document manager). If the fulltext module is required for more than one archive it must be installed once for each of the archives. The multiple instances can be installed on a single central computer or can be distributed between a number of computers. Each fulltext module also requires an individual textreader instance. The textreader instance or instances can also be installed on a central computer or distributed between a number of computers. Due to this reason the fulltext and textreader are installed separately.



## Fig. Fulltext Indexing

## Scalability

The ELOenterprise services are scalable. All of the services can be installed on a single computer or they can each be installed on a dedicated individual computer.

The location of the various services can be freely defined and any combination of the services can be installed on differing computers as required and depending upon the actual system requirements.

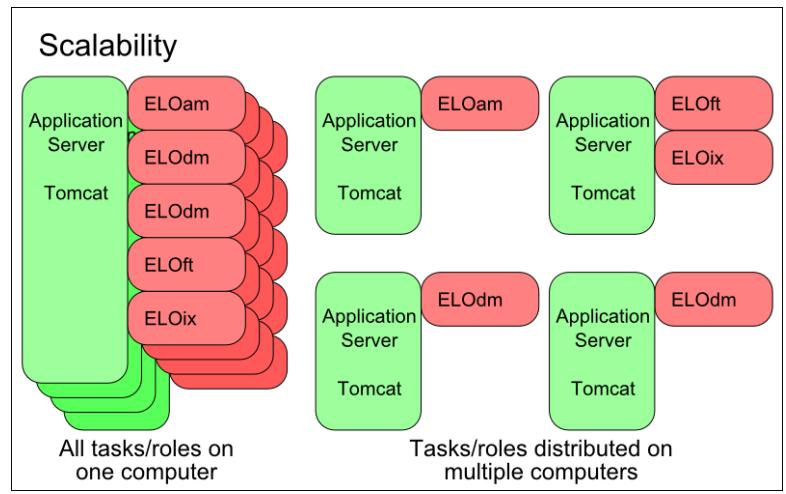


Fig. ELOenterprise Scalability



# Installation Preparation

---

## Operating System Information

The following installation guide is based upon the Microsoft Windows operating system. Although there are some differences when installing on a Linux or Solaris operating system, the installation procedure is principally the same. Detailed information about the installation under these operating systems is provided in the respective readme files: `readme.linux.txt` or `readme.solaris.txt`.

Differences in the installation procedures between operating systems will also be noted in these installation instructions, where appropriate.

## Windows Prerequisites

The following requirements must be fulfilled or be available during the installation.

Product	Version	Information
Java (Oracle)	6.0	To operate the ELO components under Windows, the Java Runtime Environment (JRE) is sufficient. A full developer version of Java (JDK) is not required, but can be used if already installed for other applications.
Tomcat	6.0, 7.0	For Windows the <i>Windows Service Installer</i> with the optional <i>Service Startup</i> must be used. The optional installation of the native DLL, however, should not be used.
3rd-party file extractor (optional)		When utilising the download version from the Internet, software is required for extracting ZIP files. Alternatively, the file extractor included with Windows can be used.

SQL Database, SQL Server	Microsoft SQL 2005, Microsoft SQL 2008, Oracle 10g, Oracle 11g, IBM DB2 9.5 for Linux\Unix\Windows	Care should be taken during the installation and configuration of the Oracle Server that the appropriate 8-Bit Windows character set is present (WE8MSWIN1252 for western europe).
Operating System	Windows XP, Windows Server 2003, Windows Server 2008	

#### Linux and Solaris Pre-requisites

The following requirements must be fulfilled or be available during the installation.

Product	Version	Information
Java (Oracle)	6.0	To operate the ELO components under Solaris or Linux, the Java Runtime Environment (JRE) is sufficient. A full developer version of Java (JDK) is not required, but can be used if already installed.
Tomcat	6.0, 7.0	
File extractor		Under Linux and Solaris a file extractor is required for unpacking TGZ files. <b>Note:</b> Under Solaris the TAR archive from Tomcat should only be extracted with <i>gtar</i> and not with <i>tar</i> which is used as standard. <i>Tar</i> is unable to handle the long file names correctly.
SQL Database, SQL Server	Microsoft SQL 2005, Microsoft SQL 2008, Oracle 10g, Oracle 11g, IBM DB2 9.5 for Linux, Unix and Windows	Care should be taken during the installation and configuration of the Oracle Server that the appropriate 8-Bit Windows character set is present (WE8MSWIN1252 for western europe).
Operating System	Linux (Suse, x86), Solaris (Sparc)	

#### User accounts

For system-management and security reasons it is recommended to run both the Tomcat and database services under a non-administrator account. A new user for this can be set up in the system's user management. Under Windows Server 2008 R2, a user can be created with the system's Computer Management application. In the group *Local Users and Groups* right-clicking the *Users* folder brings up a context menu for creating a new user.

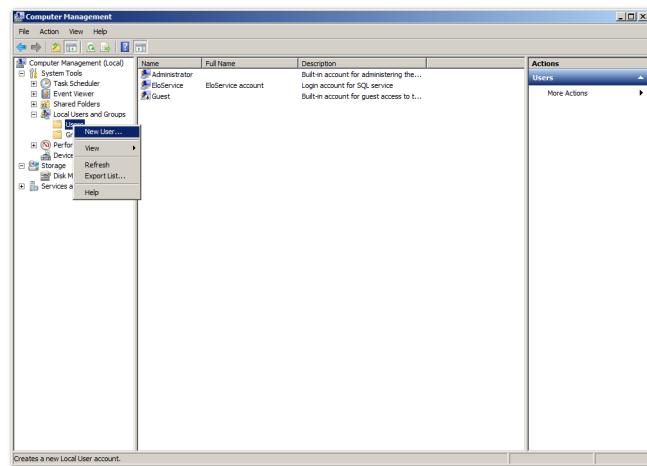


Fig. Creating a new user

In the *New User* dialog box which appears, enter a user name (for example, "EloService") and a password. Confirm with *OK*.

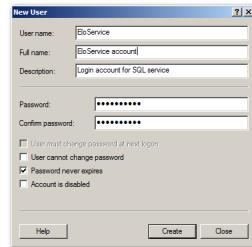


Fig. New User dialog box

---

# ELO Installation Software



If it does not run automatically after entering the DVD into the drive, the ELO server installation software can be opened by double-clicking the `Start.exe` file found on the installation CD or in the installation folder. The installation dialog box will open.

The program allows you to install whatever ELO Server components are needed. All ELO components for the server installation can be found in the *Server* section. The other sections can be used to install any additional programs, if required.

This manual guides you step by step through the server installation and includes screenshots to help orient you during the various procedures. However, due to differences in system settings and to the continuous development of ELO's software, the screenshots may not always exactly represent what you see when installing the software.



Java and Apache Tomcat only need to be separately installed before the installation of *ELOenterprise Server*. The installation of these components is already included in the setup procedure of *ELOprofessional Server*. Therefore, when installing *ELOprofessional Server*, the following installation instructions for Java and Tomcat can be ignored. For *ELOprofessional* it is only necessary to install a supported database instance beforehand (for example, Microsoft SQL Server). Instructions for the installation of SQL Server can be found later in this chapter.

---

# Java Installation



The following instructions for the Java installation are only required for ELOenterprise Server. If you are installing ELOprofessional Server, you can skip this section.

## Preparation

If the required JRE or JDK is already installed on the system it is not necessary to install it again. To check whether Java is installed and whether the required version is installed, enter

```
java -version
```

in the DOS command box. The currently installed Java type and version will be displayed. The JRE is sufficient for running ELOenterprise. The JDK does not need to be installed unless it is required by other applications.

If either Java is not yet installed or a newer version is required, then the JRE/JDK can be downloaded from Oracle's Java website, which can be found at <http://www.java.com> or which can be installed directly from the ELOenterprise DVD's installation dialog.

## The Java Installation Program

This section shows the installation procedure of the Java Runtime Environment. The first thing displayed is a welcome message with the opportunity to change the installation folder (if desired).



Fig. Java installation start screen

Click on the *Install* button to proceed. The Java installation will now begin. If any further information is required, it should be entered when requested.

Upon successful completion of the installation, a new dialog box will be displayed. Clicking *Close* completes the process.

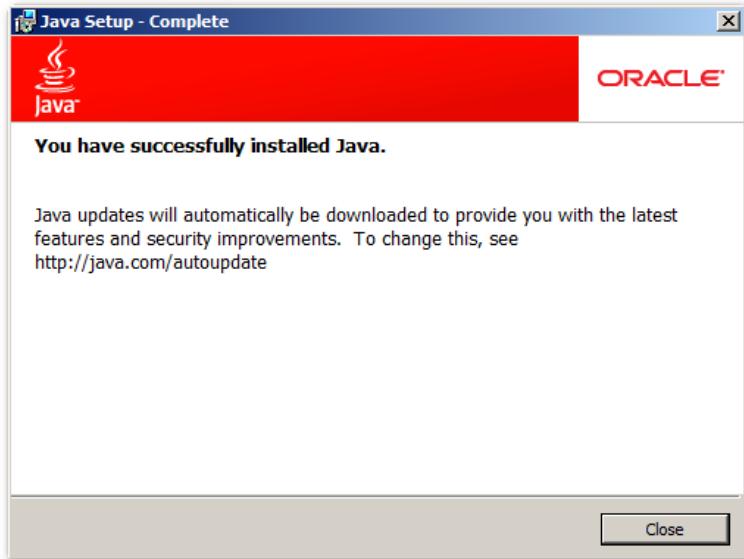


Fig. Java installation complete

Depending upon the system, a message box will usually appear which informs the user that the computer should be restarted. It is recommended to restart the computer at this time. After logging on again, the JAVA\_HOME variable can be set.

#### The JAVA\_HOME Variable

The JAVA\_HOME variable must be set so that the system knows where to look for Java. Under Windows Server 2008 R2, the function for setting this variable is located in the *System and Security* area of the *Control Panel*. After selecting *System* a click on *Advanced system settings* opens the *System Properties* dialog box.

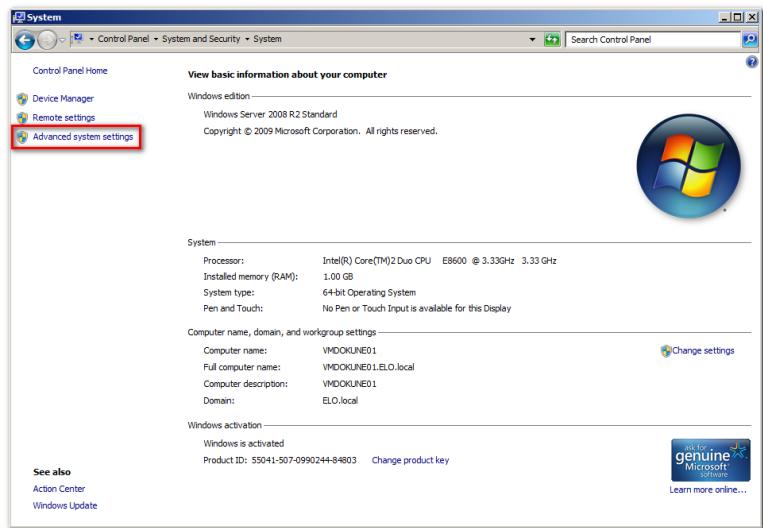


Fig. Opening advanced system settings

The button to open the *Environment Variables* dialog box is located under the *Advanced* tab.

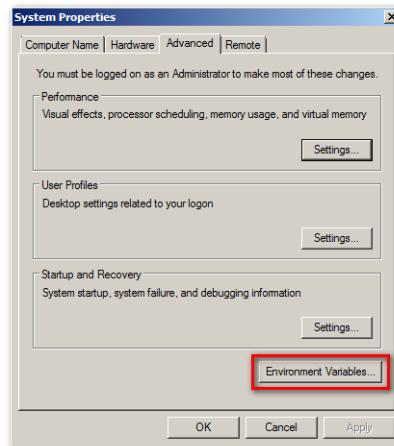


Fig. Opening "Environment Variables" in the system settings

The JAVA\_HOME variable can be added to either the user or system variables. If the variable needs to be available for more than one account, add JAVA\_HOME to the system variables. To create the variable, click the New button, enter JAVA\_HOME for the variable name, enter the full path of the Java folder for the variable value (e.g.C:\Program Files\Java\jre6), and confirm by clicking OK.

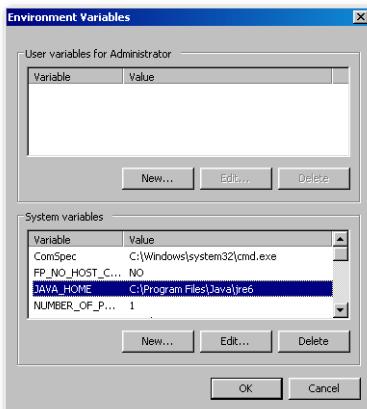


Fig. Adding JAVA\_HOME as an environment variable

As described at the beginning of this section, the success of the Java installation can now be tested by entering `java -version` in the DOS command box. If the correct version number is displayed, the installation was successful.

#### Linux

If the installed version does not meet the prerequisites, then a newer version should be downloaded and installed. Note that any symbolic links must point to the new installation.

#### Solaris

An existing version of Java is normally found in the `/usr` folder. A symbolic link called `java` also exists and points to a particular version. If required a new version should be installed, and the link should be checked and amended when necessary. The version of Java installed can be checked using the `java -version` command in the command line application.



When using Linux or Solaris, the corresponding *Readme* files should be read before proceeding with the installation.

# Apache Tomcat Installation



The following instructions for the Apache Tomcat installation are only required for ELO*enterprise* Server. If you are installing ELO*professional* Server, you can skip this section.

Tomcat can be installed from the ELO*enterprise* installation DVD, or you can download the installation file from the Apache homepage at <http://tomcat.apache.org>.

## Windows

Before installing Tomcat, it is important to first check whether Tomcat is already installed on the system and, if so, whether it is a supported version.

## Port 8080

It is also important to check whether port 8080 is available. Port 8080 is the standard port used by Tomcat. To check whether the port is available, open the DOS command box and enter the command `netstat -n`.

```
C:\Administrator: C:\Windows\system32\cmd.exe
Microsoft Windows [Version 6.1.7600]
Copyright (C) 2009 Microsoft Corporation. All rights reserved.

C:\Users\Administrator>netstat -n

Active Connections

 Proto  Local Address          Foreign Address        State
 TCP    127.0.0.1:49245       10.49.10.93:60834      ESTABLISHED
 TCP    127.0.0.1:4924       127.0.0.1:4924      ESTABLISHED
 TCP    127.0.0.1:49295       127.0.0.1:49294     ESTABLISHED
 TCP    127.0.0.1:49296       127.0.0.1:49297     ESTABLISHED
 TCP    127.0.0.1:49297       127.0.0.1:49297     ESTABLISHED

C:\Users\Administrator>
```

Fig. Displaying currently used ports

When executed the command returns a list of all ports which are currently occupied. When port 8080 is already occupied, a different free port can be selected later in the installation process.



Oracle 9 and 10 use port 8080 for XML access. This can be changed in the Oracle Enterprise Manager Console.

## Starting the Tomcat Installation



Tomcat can be downloaded from the Internet and installed, or it can be installed from the installation DVD supplied. This guide will show the installation from the DVD.

When installing a version that has been downloaded from the Internet, be sure to only use a version which has been thoroughly tested.

The installation is started by clicking the *Apache Tomcat* link in the browser.



Fig. Tomcat installation start screen

Clicking *Next* opens the *License Agreement* dialog box.

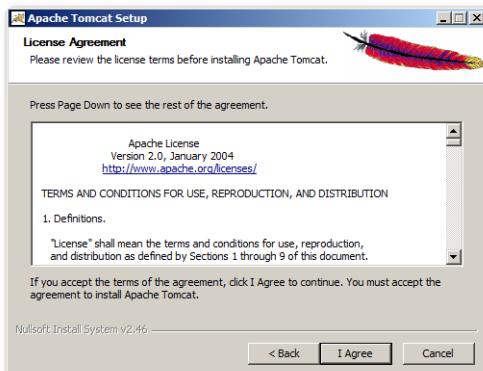


Fig. License agreement

To continue the installation, the terms and conditions in the *License Agreement* must be accepted by clicking *I Agree*. The user now has to select the components to be installed.

Under the component options the checkboxes for both the *Service Startup* and *Manager* components should be activated, and the checkbox for the *Native* components should be deactivated. When installing on a productive system, the *Examples* should also not be installed. Installing them can lead to security problems and other unpredictable behaviour. The other components can be activated or deactivated as desired. The selection of non-default components automatically switches the installation type to *Custom*.

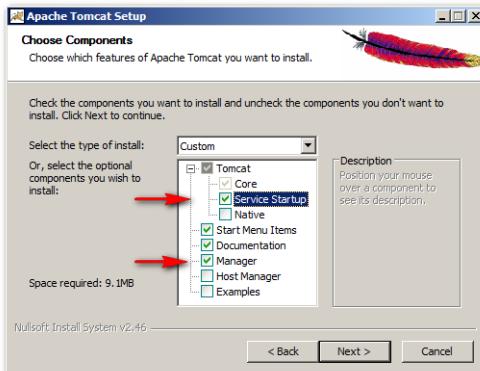


Fig. Choosing Tomcat components



Selecting the *Service* components installs Tomcat as a service and not as an application. This is the recommended method.

Once the appropriate components have been selected, clicking *Next* brings up Tomcat's configuration options.

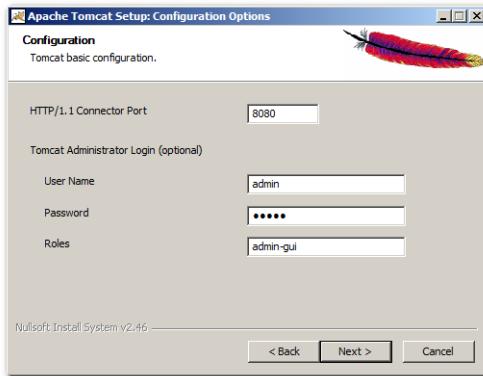


Fig. Configuring port and login options

The default value for the port is 8080 although this can be altered if necessary. A user name and password should be entered for the administrator. When the correct values have been entered, clicking *Next* will open the Java Virtual Machine dialog box.

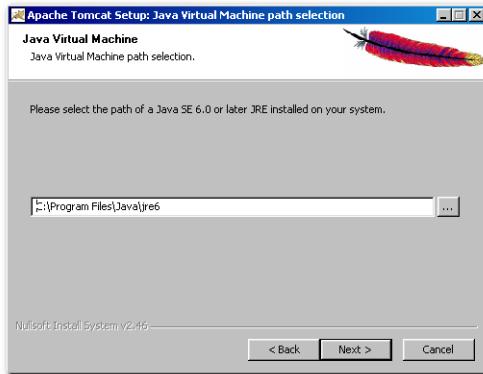


Fig. Path to Java Virtual Machine

This defines the program folder for the current Java JRE installation on the system. If the standard installation of the JRE has been used, then the default path will be correct. If another JRE installation is to be used, the appropriate path should be entered here. Clicking *Next* brings up the *Install Location* dialog box. Either the default location can be used, or a different location can be entered.

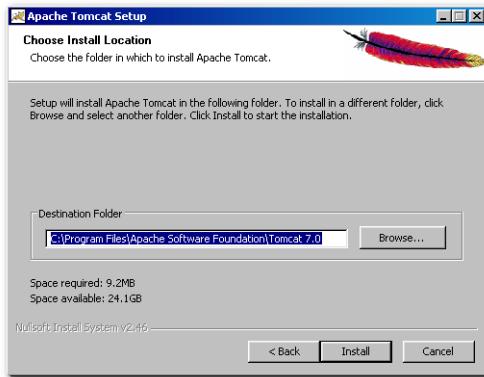


Fig. Tomcat installation directory



**Please note:** To avoid installation difficulties of ELO on newer Windows operating systems (after Windows XP), it is advisable to select an installation directory outside of the default *Program Files* directory.

The required information has now been entered, and the installation on the system will be carried out by clicking *Install*.

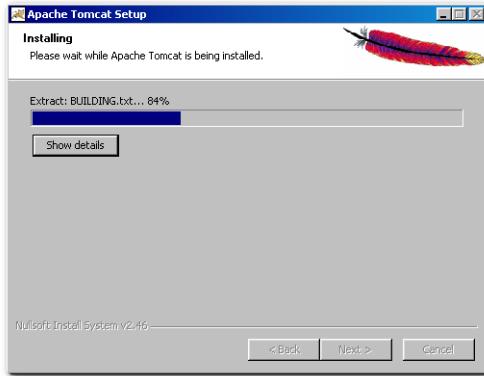


Fig. Installation progress

After the installation procedure is complete, be sure *Run Apache Tomcat* is selected in the final dialog box before clicking *Finish*.

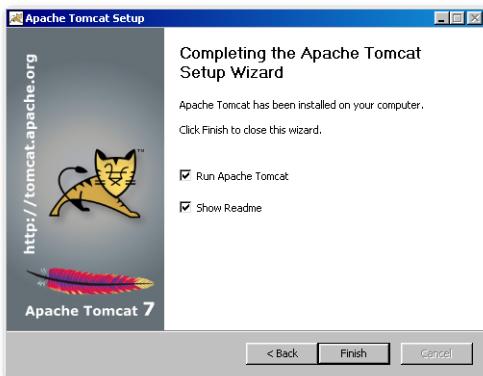


Fig. Completed Tomcat installation

Once Tomcat has started, its icon should appear in the notification area of the taskbar. A green arrow indicates that the service is running. If the icon is red, this means that the service is not running. In that case click the icon with the right mouse button and select *Start service* in the displayed shortcut menu.



Fig. Tomcat taskbar indicator: service stopped (left), service running (right)

## After the Installation

Once installed and running, Tomcat can now be tested by calling up the *Tomcat Manager* in a browser. To open the browser to port 8080, the following should be entered into the browser's address bar:

`http://localhost:8080/`

Tomcat's start screen should now be displayed.

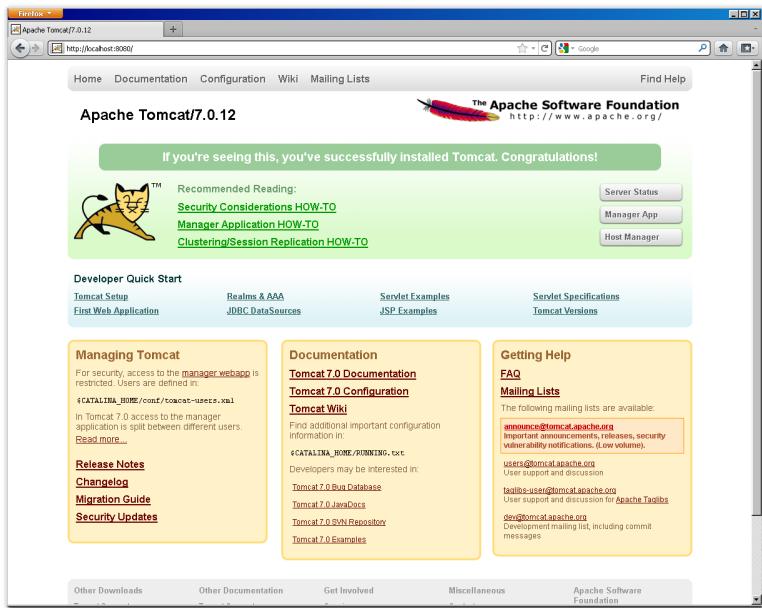


Fig. Tomcat start page in the browser

## Tomcat - Linux Installation

If not already included in the Linux distribution used, Tomcat for Linux can be installed from binaries downloaded from the Apache homepage. There are several methods for installing Tomcat. If a `.tar.gz` file is to be used, the instructions in the supplied `readme` files should be followed.

The binaries should be extracted with `gtar` into the desired folder, for example: `/opt`.

There are two methods of starting and stopping Tomcat under SuSE Linux.

As a **daemon** with the **root** user:

The commands `tomcat start` and `tomcat stop` can be executed by the **root** user. It should be checked whether the `tomcat` script can be found in the `/etc/init.d` folder. This is not the case with every version of Linux. If not present then the `start` script must be manually amended as required. A new `start` script can also be manually created.

As user **tomcat**:

Enter the command `su tomcat` and then in the `bin` folder start the execute `startup.sh` or `shutdown.sh`.

When starting Tomcat as a daemon it is possible that start error messages can be written in the log file. When using SuSE Linux the log file is found under:

```
/usr/share/tomcat/logs
```

The installation log file produced by Tomcat can also be found in the `/logs` folder.

To test whether the installation has been successful the Tomcat start screen should be called via a web browser using the following command:

```
http://localhost:8080/
```

The Tomcat start screen will be displayed if Tomcat has been correctly installed.



**Please note:** in order to start the *Tomcat Manager* with Tomcat 7.0 or later, a user with the role `manager-gui` must be present in the `tomcat-users.xml` file found in the `conf` folder. This user is created automatically when installed under Windows, but may need to be manually entered under Linux. When creating the user the following syntax should be used (with appropriate password):

```
<user username="adminscript" password="password"  
roles="manager-gui" />
```

## Solaris

The first step is to check whether a version of Tomcat has already been installed and enabled. Solaris 9 includes an older version of Tomcat with the Apache package, but it is not enabled by default. When using an older Tomcat version, it can be started with the start script located at `/etc/init.d/apache`. However, it is recommended to install a new version of Tomcat.

---

# Microsoft SQL Server 2008 R2

## Preparation

Microsoft SQL Server 2008 R2 is one of the database options for your ELO server installation. SQL Server 2008 R2 server requires Internet Explorer 6 SP1 or higher. It is recommended to install or update the browser before installing the SQL database. Use the server edition and license required for your environment.



**Please note:** You can purchase Microsoft SQL Server 2008 R2 including the appropriate licenses at ELO.



**Please note:** Server SQL 2008 R2 is available in both 32-bit and 64-bit editions.

## Installation

Before installing SQL Server 2008 R2 the system requires the installation of the *Microsoft .Net Framework* and an update of the *Windows Installer* components. The setup asks you for your confirmation with *OK* and downloads the necessary installation files from the Internet.



After the download has finished, the system extracts the files and starts installing the necessary components.



Please ensure that you have enough disk space on your computer.

The SQL server 2008 installation starts automatically. The first screen you will see when clicking the *setup.exe* file is the *SQL Server Installation Center*.

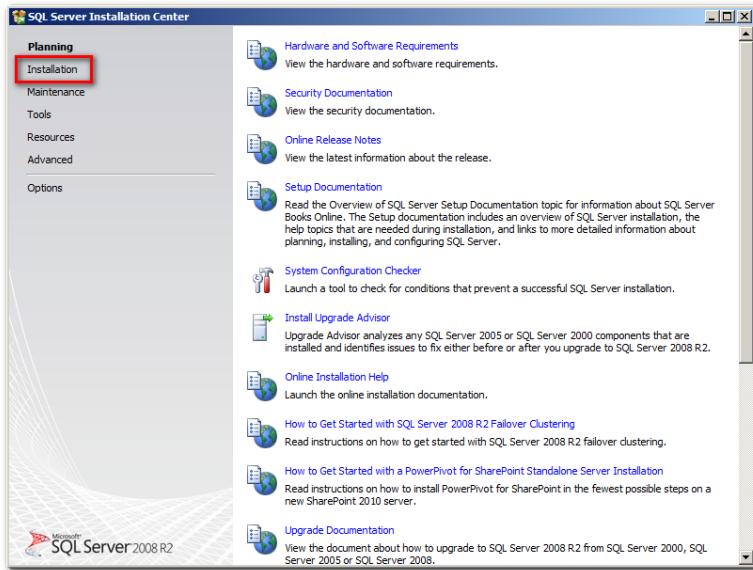


Fig. SQL Server Installation Center

After clicking *Installation* the required installation type can be selected. In this case a *New installation* will be chosen.

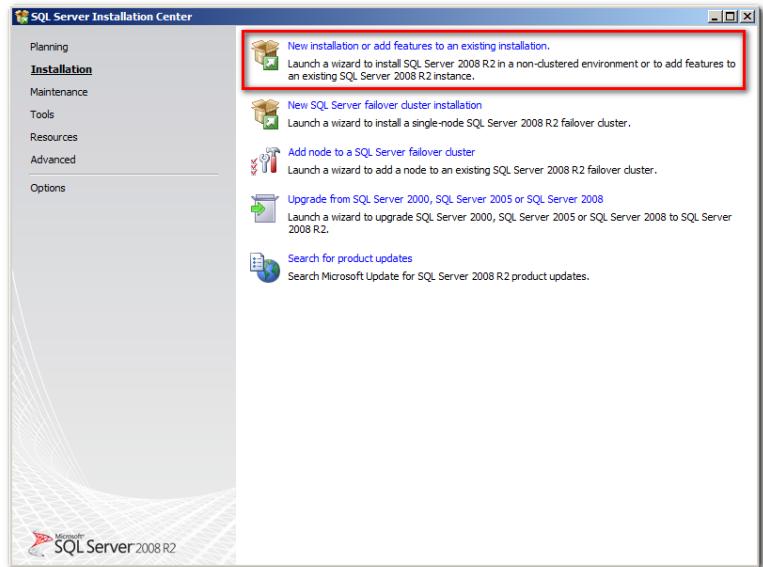


Fig. Installation of a new SQL server

After selecting the installation type, the *Setup Support Rules* screen appears. The installation procedure first checks whether all conditions are met for installing SQL Server 2008 R2. If any failures are reported, they must be corrected before proceeding with the installation.

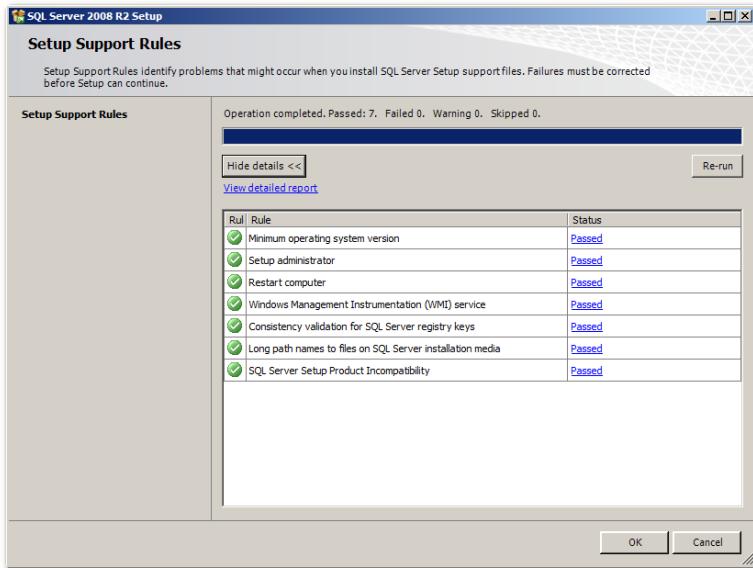


Fig. Completed check

Once the support rules have been successfully fulfilled, clicking *Next* activates the *Product Key* screen. A valid product key needs to be entered in the provide space before clicking *Next*.

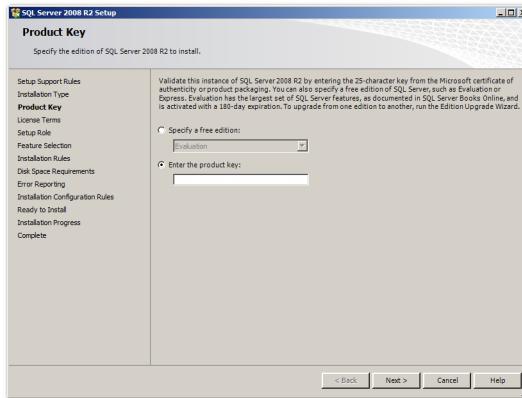


Fig. Entry of the product key

The next screen lists Microsoft's license terms. These should be accepted before proceeding with *Next*.

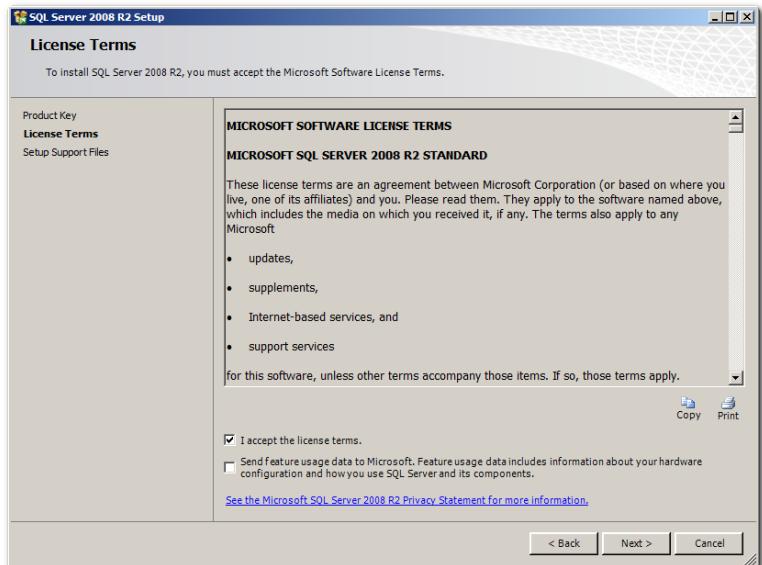


Fig. Microsoft license terms

After completion of the previous steps, *Setup Support Files* is displayed, indicating that the setup is ready to be configured for the SQL server installation. Clicking *Install* begins the configuration.

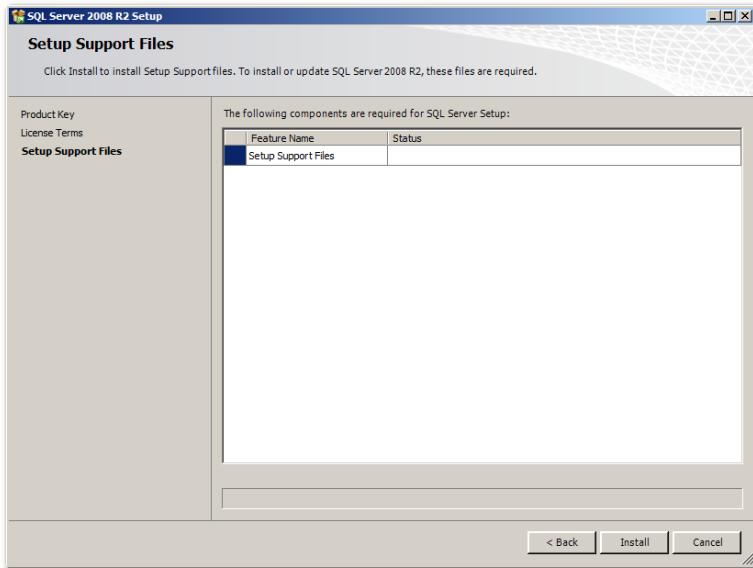
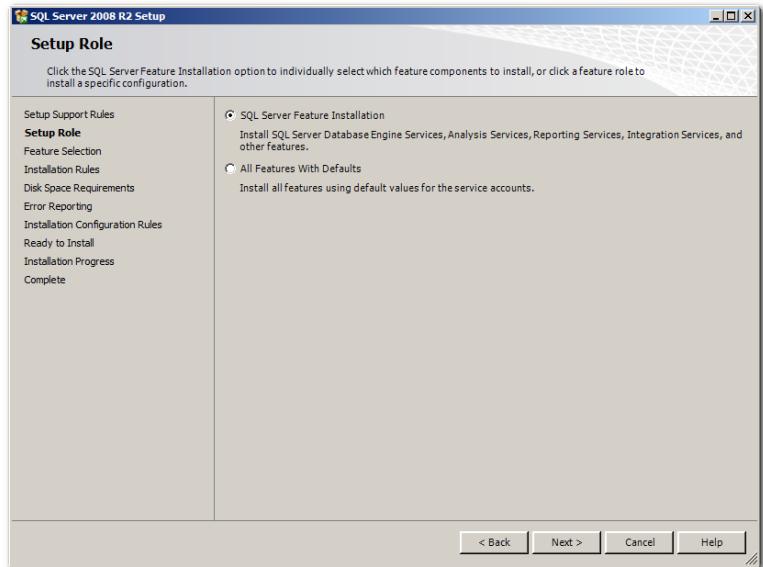


Fig. Setup ready for configuration



**Please note:** Before configuring the SQL server, it is recommended to create a separate user account for running the SQL server service. Instructions for doing this can be found at the beginning of the chapter under **User accounts**.

The setup initially checks the system and displays the *Setup Support Rules* again. After clicking *Next* the *Setup Role* screen is displayed. ELOenterprise Server only requires certain server features to be installed. Therefore *SQL Server Feature Installation* can be selected before clicking *Next*.



On the *Feature Selection* screen the installation paths can be modified and the specific SQL server components can be individually selected. ELOenterprise Server or ELOprofessional Server requires the installation of both the *Database Engine Services* and the *Management Tools - Complete*. The analysis and reporting services can be additionally installed if desired. Click *Next* to proceed.

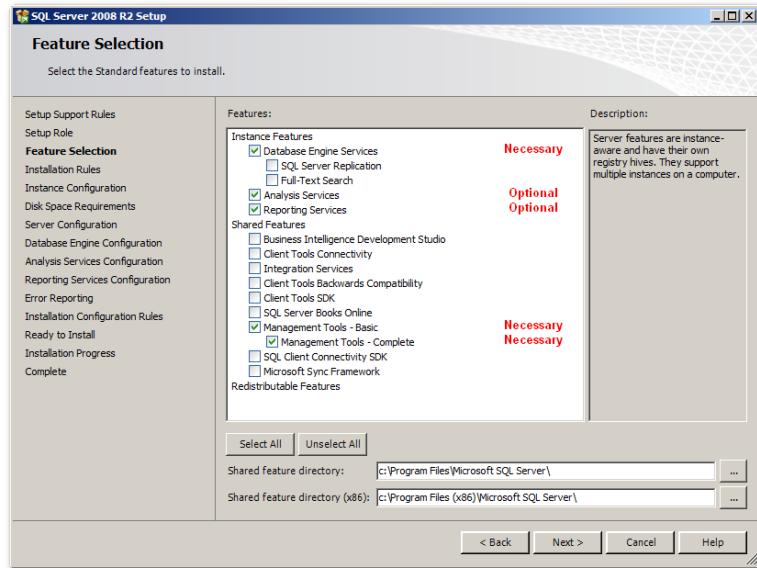


Fig. Selection of SQL server features

The display of the *Installation Rules* screen indicates that the setup has checked whether the desired features can be installed on the system. Proceed with *Next*.

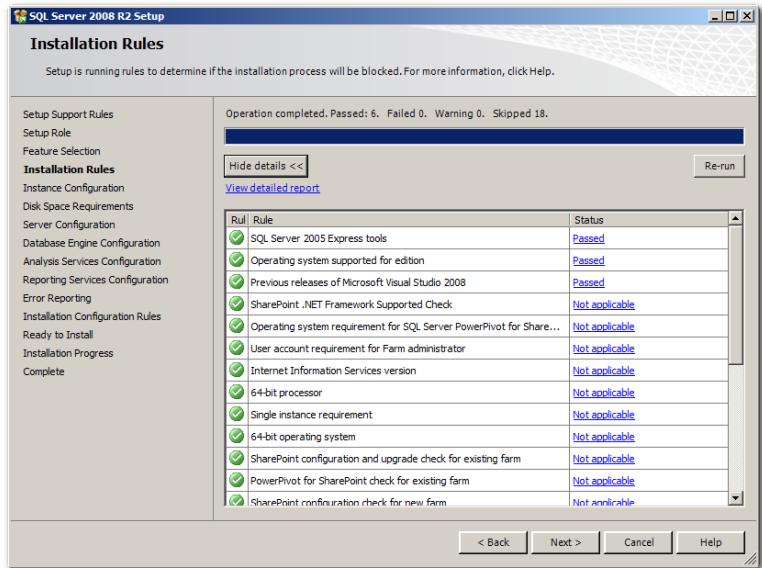


Fig. Testing the selecting configuration

On the Instance Configuration screen the instance name of the SQL server, the instance ID, and the path can be entered, or the default values can be used. Proceed with *Next*.

The next dialog displays the disc space requirements for the installation. If space is sufficient, clicking *Next* advances to the *Server Configuration* screen. Here account names and their corresponding passwords must be entered under which the services are to be run. As already noted, it is advisable to use non-administrator accounts for these services. There is a button for applying the same account settings to all services. After entering the required information, click *Next* to proceed.



**Please note:** Please use the SQL server preset of case insensitive (CI) collation here. Changing the collation after the SQL server is installed may require significant administrative effort.

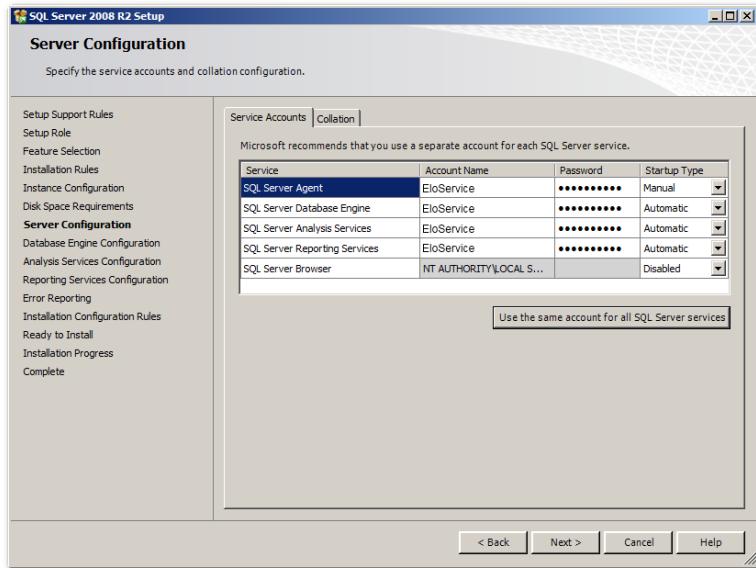


Fig. Configuring service accounts of the SQL server

The following dialog is the *Database Engine Configuration*. The *Mixed Mode (SQL Server authentication and Windows authentication)* should be selected for the Authentication Mode. It is also necessary to specify the administrator and the corresponding password for managing the SQL server.

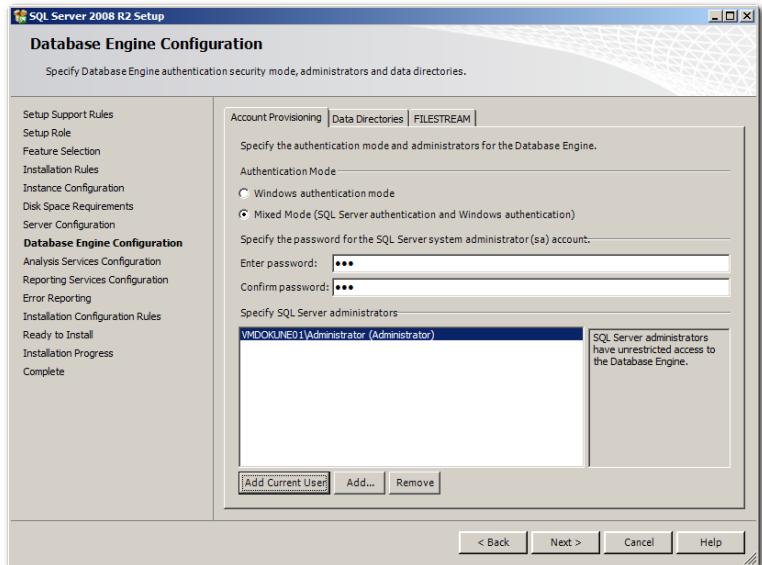


Fig. Configuring database authentication

Under the *Data Directories* tab the location of the default directories for the installation of this SQL server instance can be specified. The directories include Data Root Directory, System Database Directory, User Database Directory, User Database Log Directory, Temp DB Directory, Temp DB Log Directory, and Backup Directory. Either maintain the default directories or specify other directories according to individual requirements.



Please check if the data directories are inserted and have the correct target directories. If not insert the right directories.

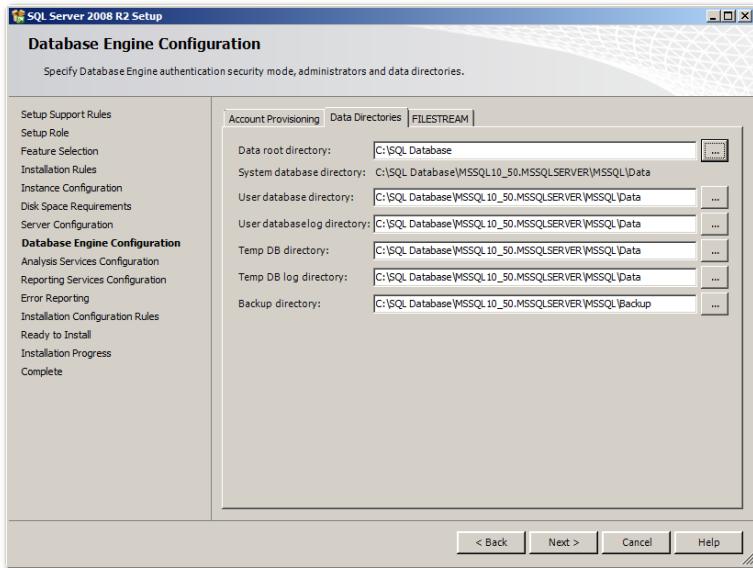


Fig. Server instance data directories

The next tab of the *Database Engine Configuration* is the *FILESTREAM*. *FILESTREAM* can be enabled if needed. If *FILESTREAM* is enabled, additional parameters must be entered such as Enable Filestream for File I/O Streaming Access, Windows Share Name, and whether to allow remote clients to have streaming access to filestream data.

After configuring the database engine, click *Next* to proceed.

If Analysis and Reporting Services were selected as features to be installed, the next dialogs require specifying their installation directories and corresponding authentication information. Microsoft also offers an opportunity to participate in automatic error reporting (optional). Clicking *Next* advances to the next dialog each time.

At this point the setup checks whether all conditions for a successful installation have been met. Assuming all tests are successfully passed (indicated by green check marks), click *Next* to proceed.

Clicking on the *Next* button opens the *Ready to Install* screen showing all the details regarding choices made during the installation.

Click *Next*. Use the *Installation Progress* page of the SQL 2008 server installation wizard to monitor the status of SQL Server Setup.

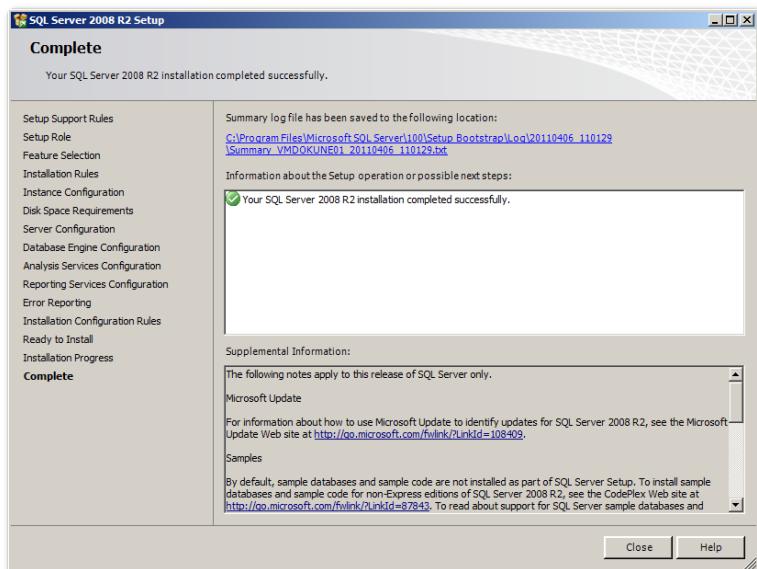


Fig. Completed SQL server setup

On the *Complete* page, review the location of the SQL server summary upgrade log file and additional items. Click *Close* to finalize the installation.



**Please note:** At this point the SQL server is fully installed. The following section "Creating database user *elodb*" should only be followed by those installing ELOenterprise. For the installation of ELOprofessional, skip the following section and proceed directly to the installation of ELO's access and document managers in chapter 3. (The database user *elodb* will be creating automatically during the installation procedure.)

## Creating database user *elodb*

Following a successful installation of the SQL server, it is important to create a database user which will be used for creating and accessing the ELO archive. To do this, start the Microsoft SQL Server Management Studio. After logging onto your SQL database, right-click *Logins* in the *Security* folder and select *New Login...*.

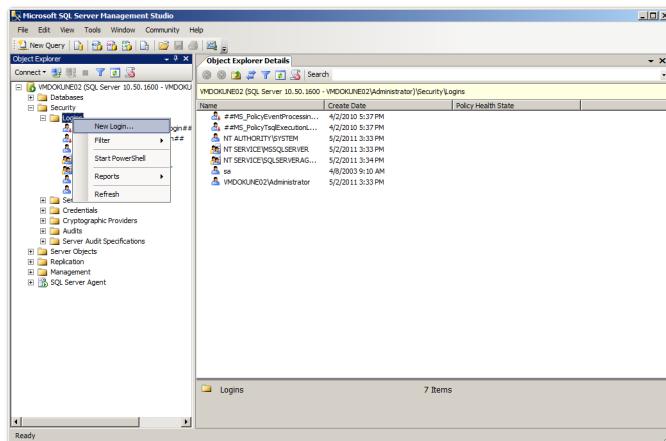


Fig. Creating database user EloDb

In the dialog which appears, enter *elodb* for the login name. Select *SQL Server authentication* and enter the password in the two appropriate spaces. Make sure that only *Enforce password policy* is active and not *Enforce password expiration*.

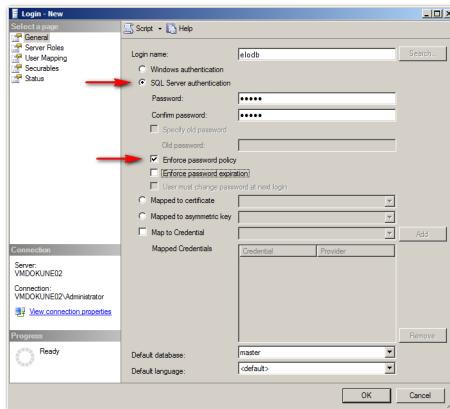


Fig. Login information for EloDb

Switch to the page *Server Roles* and activate the server role *dbcreator*. Clicking *OK* completes the creation of the database user *EloDb*.

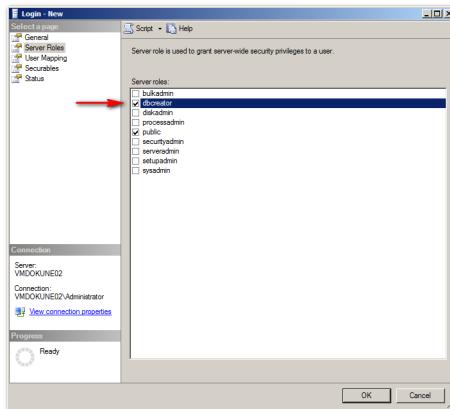
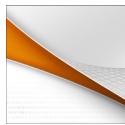


Fig. Assigning the server role dbcreator

The SQL management console can now be closed before proceeding with the installation of ELO's access and document managers.



# ELOprofessional 2011 Server

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## **ELOprofessional 2011 Server installation**

This chapter describes the steps for installing ELOprofessional 2011 Server. The instructions for installing the additional components on the installation medium can be found in their respective manuals.

After starting the server setup, a welcome dialog appears. Click **Next** to proceed with the installation.

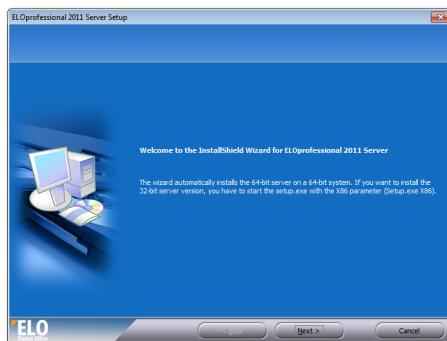


Fig. Installing ELOprofessional 2011 Server

The license agreement must be accepted before proceeding. Click **Yes** to accept.

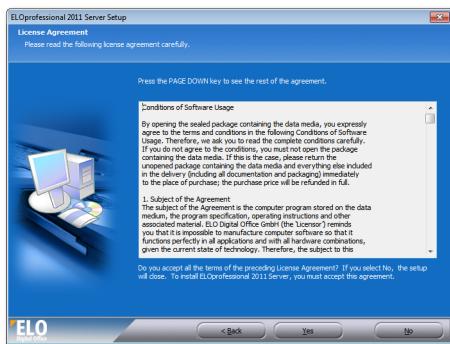


Fig. License agreement

Choose the installation directory. If a different directory than the default is desired, use *Browse...* to select another location. Click *Next* to proceed.

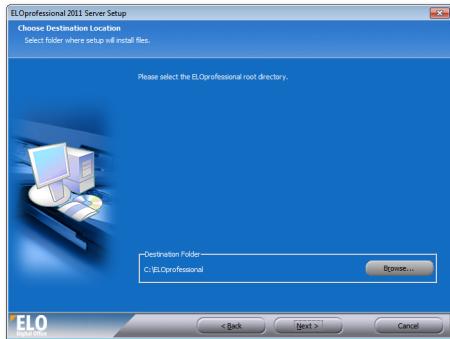


Fig. Installation directory

Either accept the default ports for the Application Server or enter different ones. The following dialog will provide an opportunity for opening port 9090 in the Windows Firewall. Click *Next* to proceed.

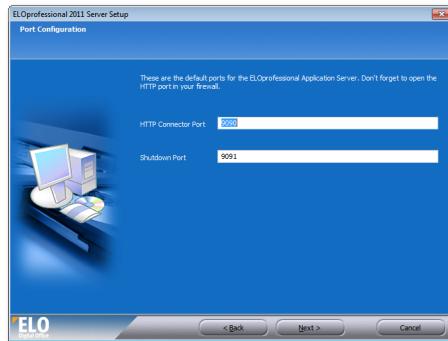


Fig. Port configuration

*Firewall Configuration* provides an opportunity to open port 9090 in the setup. Click *Next* to proceed.

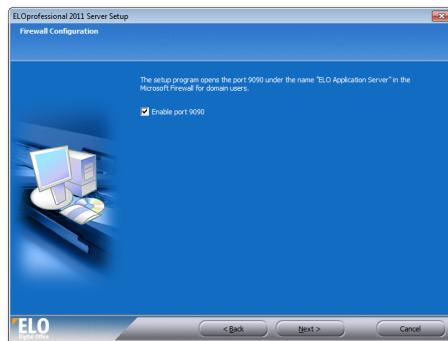


Fig. Enabling port 9090 in firewall

Under *User Configuration* enter the name and password for the ELO administrator to be created. Click *Next* to proceed.

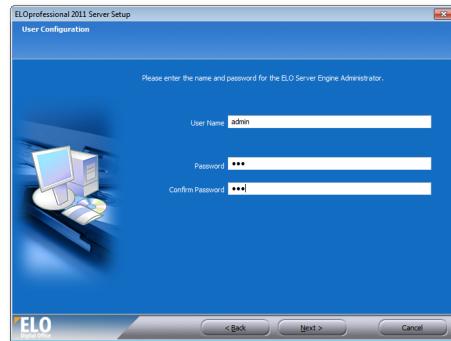


Fig. Authentication for server administrator

Select the languages to be recognized by the OCR component. Click *Next* to proceed.



Fig. Setting recognition languages

Select the directory for the Tomcat installation, which will be used by ELO as an Application Server. The default path is recommended, but it can be changed with *Browse...* if desired. Click *Next* to proceed.

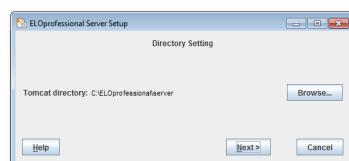


Fig. Directory for Tomcat

Select the language for database entries and click *Next* to proceed.



Fig. Language setting for database

Choose the database type (must already be installed). Click *Next* to proceed.

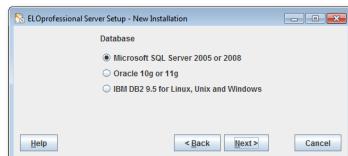


Fig. Database type

Enter the serial number for the licensed copy of *ELOprofessional 2011 Server*. Click *Next* to proceed.

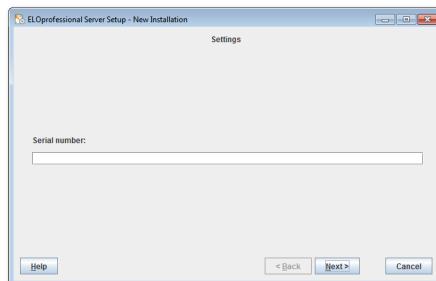


Fig. ELOprofessional serial number

## Microsoft SQL Server

Enter the authentication information for the database account to be used by ELO. It is standard to use `e1odb` for this account's name. To establish this user click *Create database account*.

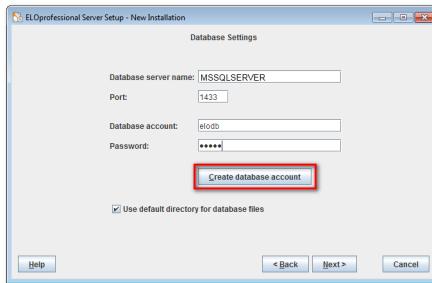


Fig. Database settings - Microsoft SQL Server

In the dialog which gets activated, the password for the new database user must be entered once again. It is also necessary to enter the authentication for the administrator account established when installing the SQL server. Click *OK* to close this dialog box, and click *Next* to proceed afterwards.



Fig. Authentication settings for creating new database user

## Oracle

Enter the database settings for Oracle and the password for the database account. Click *Next* to proceed.

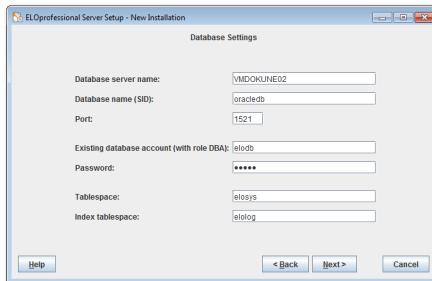


Fig. Database settings - Oracle

## IBM DB2

Enter the database settings for DB2 and the password for the database account. Click *Next* to proceed.

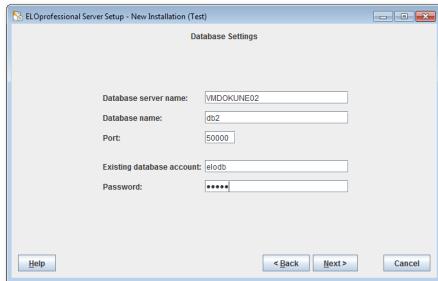


Fig. Database settings - IBM DB2

## All database types

Under *Settings* enter a name for the new archive. Before clicking *Next* to continue, either default or custom application settings can be chosen.

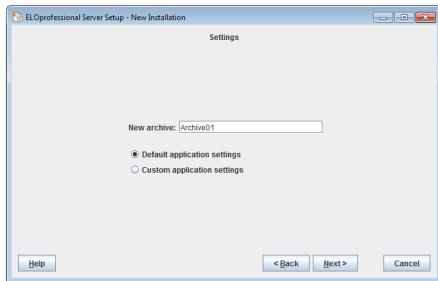


Fig. Default or custom application settings

If *Custom application settings* was chosen in the previous dialog, two extra dialog boxes appear. The first one provides fields for setting directory paths for data, the archive, and the search index and for adjusting the number of connections possible to each of these. Click *Next* to proceed.

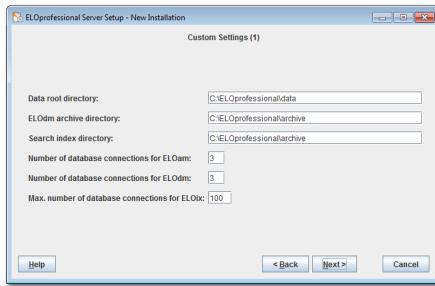


Fig. Custom settings (1)

The second *Custom Settings* dialog box allows adjustment of file sizes for both the Fulltext and Textreader components. The word used to replace words which the Textreader does not convert may also be changed here. It is also possible to choose whether the XML import should delete files after importing their contents into the archive and whether the import should be initiated by a signal file.

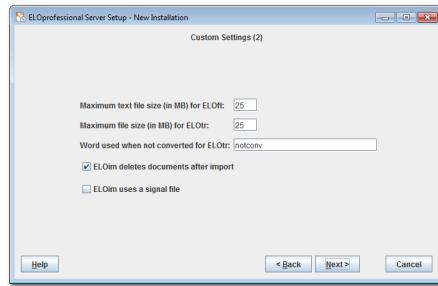


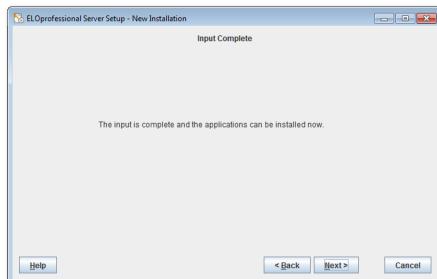
Fig. Custom settings (2)

After the custom application settings have been entered (if that option was selected) or directly following the *Settings* dialog box (if default values were selected), a password needs to be entered for the ELO administrator.



Fig. Password for ELO administrator

When *Input Complete* appears, the installation can be started by clicking *Next*.



Once the installation has reached an end, the final dialog can be closed by clicking *Finish*. This completes the installation of *ELOprofessional 2011 Server*.

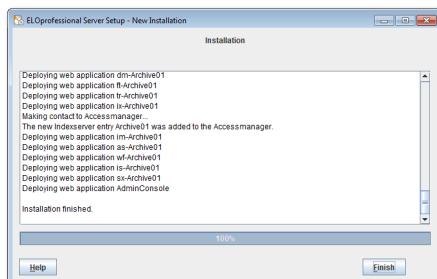


Fig. Installation complete

Additional components can be installed from the installation medium as required.



# ELOenterprise 2011 Server

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## Access and Document Managers

### Installation

Before the Document Manager and Access Manager can be installed the Tomcat service must be stopped.

# Access and Document Manager Installation

The first stage is to select either *Installation under Windows*, *Installation under Linux*, or *Installation under Solaris*, depending upon the operating system, from the *ELOenterprise Server Installation* screen.

## Windows

When installing the components for Windows the contents of a compressed file must be extracted. The installation is started by running the file `setup.bat` from the extracted data.

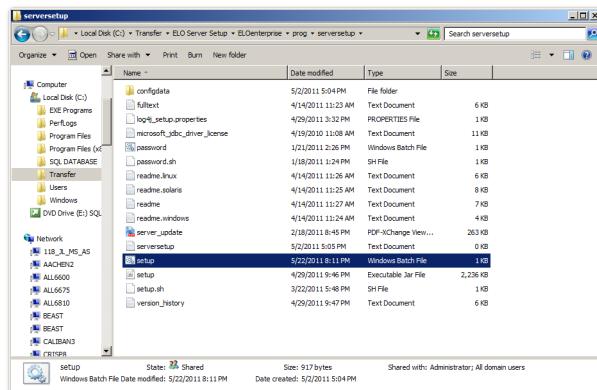


Fig. setup.bat

## Linux and Solaris

For Linux and Solaris the installation is started by running the script `setup.sh` in the console.



The ELOenterprise serial number is required during the setup and should be available before the installation procedure is started.



The screenshots in the following section have been taken using a Windows operating system.

## Installation

The installation type—whether a new installation or an update of a previous installation—appears first. In this case *Install a new application* is selected. As with all of ELO's installation dialog boxes, *Next* advances to the next dialog box in the installation process. *Back*, when available, returns to the previous dialog box.

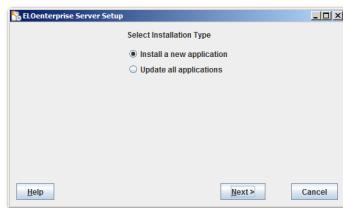


Fig. Select installation type

The next step is to install the access manager and the document manager. For an initial installation both an access manager and a document manager are required. For multiple archives additional document managers are required.

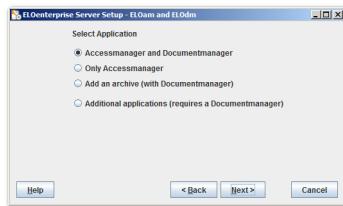


Fig. Application selection



**note:** a separate document manager is required for each archive

The language for the installation needs to be selected next. This is the language used in the database and for the files in the access manager data directories. This should generally match the installation language of the clients to be used.



Fig. Language selection

The type of database must now be selected. Only the databases displayed are supported. The database can also be located on a separate computer. The database engine must be fully installed.



Fig. Database Type

The location of the Tomcat installation directory must now be entered. If the default value is not correct, the appropriate path can be selected with the *Browse...* button. The location can be on a separate computer.

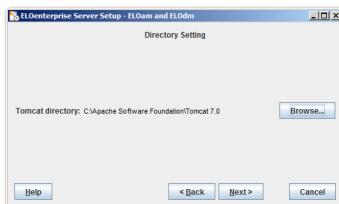


Fig. Tomcat directory

The location for ELO's log files must be entered next. The default location in a subdirectory of Tomcat can generally be accepted.

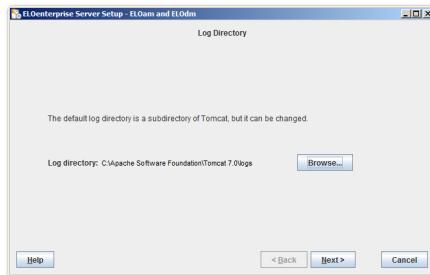


Fig. Tomcat log directory

The data directories for ELO are entered in the next screen.

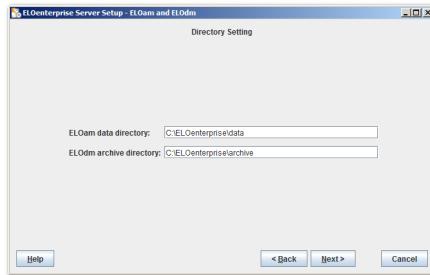


Fig. Directory settings

**ELOam data directory:** this is the directory for Access Manager data. Mailbox files are stored here, for example.

**ELOdm archive directory:** this is the directory for documents.

When installing on a Windows system, UNC paths can be utilized. In this case it is required that the account under which Tomcat runs has write access to the directory. Neither of the two directories should already exist.

The database settings are entered in the next step and depend upon the type of database being utilized.

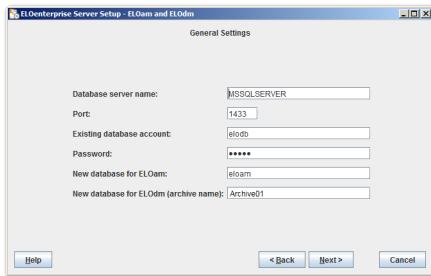


Fig. General settings - Microsoft SQL Server

## Microsoft SQL values

**Database server name:** Name or IP address for the database server in the network. This can also be the local computer. When a non-standard installation of Microsoft SQL Server is being used, the instance name must also be entered, separated from the server name by a backslash (\) according to standard conventions.

**Port:** Port for the database. The existing value in the text field is the default value from Microsoft for its SQL server. The validity of this entry should be checked and amended as required.

**Existing database account:** An existing account, (e.g. elodm) with the right to create databases. This account is used by the setup program, Access Manager and the Document Manager. The standard account name is elodm.

**Password:** Password for the database account.

**New Database for ELOam:** the database name for the access manager could be eloam. Alternative names should only be used when an access manager already exists on the current SQL server. (for example multi-client operation or development and test environments)

**New database for ELOdm (archive name):** the database for the document manager will be named after this value, which will be the archive name. The standard value elo can be altered as required (in this example the dm name is Archive01). The name should consist only of alphanumeric characters. Special characters should not be used in the archive name.

## Oracle values

The following values are required in the *General Settings* when using Oracle.

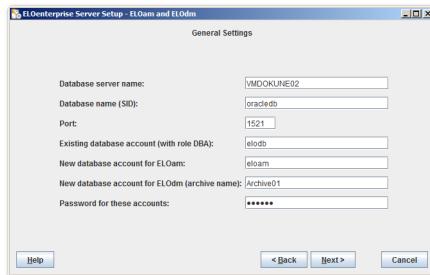


Fig. General settings - Oracle

**Database server name:** Name or IP address for the database server in the network. This can also be the local computer.

**Database name (SID):** Name of the existing database instance. The Oracle SID (system identifier) should be entered here and not the global database name. An entry in the oracle file `tnsnames.ora` is not required. This name can be freely assigned and is not restricted.

**Port:** Port for the database. The value in the text field is the standard value from Oracle for databases. The validity of this entry should be checked and amended as required.

**Existing database account (with role DBA):** This account must already exist and is used by the setup program to administer the accounts with the appropriate tables. The separate document `ELO_Oracle.pdf` should be consulted when setting up this user. The file is supplied with the installation CD and explains the various rights that the user requires.

**New database for ELOam:** the database name for the access manager should be `eloram`. Alternative names should only be used when an access manager already exists on the current SQL server (for example, in multi-client operation or in development and test environments).

**New database for ELOdm (archive name):** the database for the document manager will be named after this value, which will be the archive name. The standard value `e1o` can be altered as required. The name should consist only of alphanumeric characters. Special characters should not be used in the archive name.

**New database account for ELOdm (archive name):** this is the account which should be created for ELOdm.

**Passwords for these accounts:** the passwords must be the same because the passwords of the ELOdm account should be identical to the password of the account to be used by the ELO Client.

Upon clicking on *Next* the name for the access manager will be checked against existing databases. If the name already exists an error message will be displayed and a new name must be entered. It is advisable that unique and easily identifiable names are used for the databases and the archives.

## IBM DB2 9.5 values

The following values are required in the *General Settings* when using DB2.

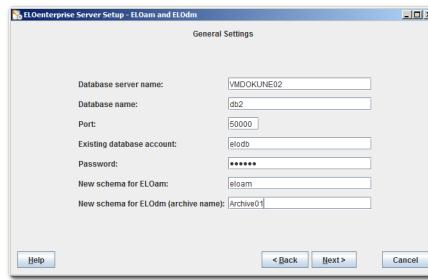


Fig. DB2 database settings

**Database server name:** name or IP address for the database server in the network. This can also be the local computer.

**Database name:** name of the existing database instance. The DB2 should be entered here and not the global database name.

**Port:** Port for the database. The value in the text field is the standard value from DB2 for databases. The validity of this entry should be checked and when necessary amended as required.

**Existing database account:** this account must already exist and is used by the setup program to administer the accounts with the appropriate tables.

**Password:** password for the database account.

**New schema for ELOam:** the database name for the access manager should be eloam. Alternative names should only be used when an access manager already exists on the current server (for example multi-client operation or development and test environments).

**New schema for ELOdm (archive name):** this is the account which should be created for ELOdm.

The number of database connections must be entered now.

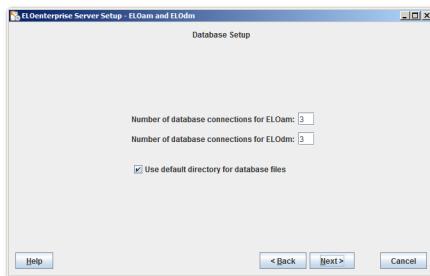


Fig. Database connections

**Number of database connections for ELOam and Number of database connections for ELOdm:** determines the number of database connections permanently used in the connection pool by the access manager and document manager respectively.

The server builds multiple connections to the databases in order to ensure optimal multithreading performance with the SQL server. As a general guide for the number of connections approximately 1 to 3% of the number of expected parallel users should be used. The default value of 3 should be used as an absolute minimum, otherwise certain processes can reduce the performance for other users.

The number of connections should not exceed the maximum number of connections available from the SQL server.

In the next dialog the serial number, the access manager server name and the access manager Tomcat port must be entered.

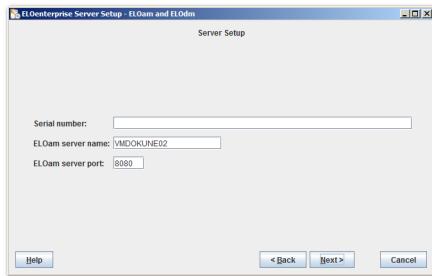


Fig. Insert serial number



The serial number must be a valid ELOenterprise number. ELOprofessional serial numbers cannot be used.

The password for the ELO administrator must be entered next. This is the password used by the administrator when logging on to ELO.



Fig. Administrator password

The next dialog indicates that all entries necessary for the installation have been successfully made. Before clicking *Next* Tomcat should be stopped so that files can be copied to the Tomcat directory.

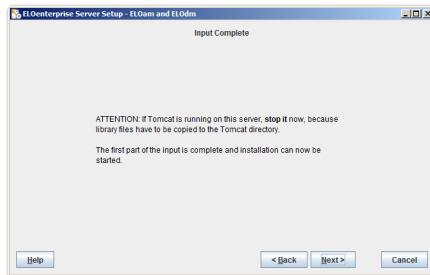


Fig. Database Paths - Microsoft

If successfully installed, the following dialog appears, indicating that the first part of the installation is complete.

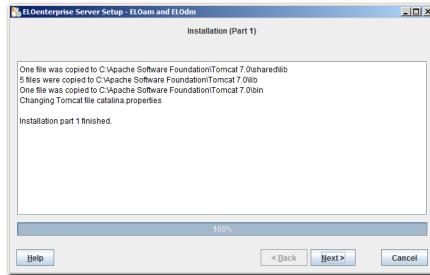


Fig. Completed first part of installation

Before proceeding with the next part of the installation, a connection test is required. Before clicking *Next* Tomcat should be restarted.

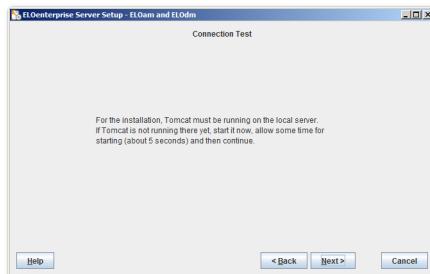


Fig. Connection test

The setup is now ready to finish the installation process. Click *Next* to proceed.

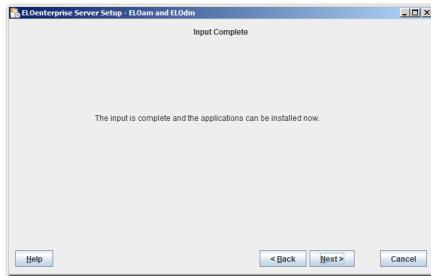


Fig. Prepared to finish installation

Assuming no errors occur, the following dialog appears. Click *Finish* to close the dialog box.

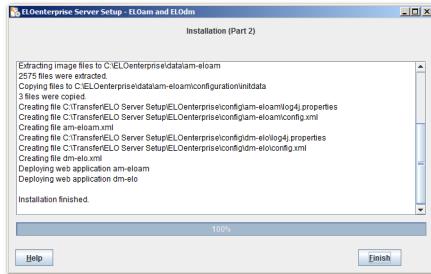


Fig. Second part of installation complete

## Check installation

If desired, the success of the installation can be verified by logging onto the Tomcat application manager with a browser pointed at the address: `http://localhost:8080/manager`. After entering the login credentials (as established during the Tomcat installation), the browser should display a list of installed applications including the ELO Access Manager and the ELO Document Manager.

The screenshot shows a Firefox browser window displaying the Tomcat Web Application Manager. The URL is [http://localhost:8080/manager/html/org.apache.catalina.filters.CSRF\\_Nonce-121749C36717990501603E304FC68EB](http://localhost:8080/manager/html/org.apache.catalina.filters.CSRF_Nonce-121749C36717990501603E304FC68EB). The page header features the Apache Software Foundation logo and a cartoon cat icon.

**Manager**

Applications		Path	Version	Display Name	Running	Sessions	Commands
		/	None specified	Welcome to Tomcat	true	1	Start Stop Reload Undeploy Expire sessions with idle ≥ 30 minutes
		/am-eolam	None specified	ELO Accessmanager	true	0	Start Stop Reload Undeploy Expire sessions with idle ≥ 30 minutes
		/dm-eol	None specified	ELO Documentmanager	true	0	Start Stop Reload Undeploy Expire sessions with idle ≥ 30 minutes
		/docs	None specified	Tomcat Documentation	true	0	Start Stop Reload Undeploy Expire sessions with idle ≥ 30 minutes
		/manager	None specified	Tomcat Manager Application	true	1	Start Stop Reload Undeploy Expire sessions with idle ≥ 30 minutes

**Deploy**  
Deploy directory or WAR file located on server

Fig. ELOam and ELOdm in Tomcat's application manager

In the event of errors the report data contained in Tomcat's log directory should be consulted. The appropriate detailed information about the error messages can be found within this directory (for example, false database password or invalid serial number).



# ELO Fulltext

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**Please note:** The instructions for the installation of this component only apply to ELOenterprise.

## Basics

The ELO FULLTEXT module is an optional module which can be utilized with the ELOprofessional and ELOenterprise systems. When the FULLTEXT module is installed a second database for the Fulltext information is created alongside the existing standard ELO database.

The ELO FULLTEXT module provides all the necessary functionality to enable the complete indexing of the textual content from documents.

The Fulltext component runs as a server based process and is installed on the archive server. The indexing of the Fulltext information from the archived documents then takes place automatically at regular intervals. This offers the advantage that the process does not interfere with the operation of the clients and avoids any significant decrease in system performance. The indexing process involves transferring all of the search relevant information from a document into the Fulltext database. Each word within the document then receives an index value. The index values are internally structured so that each word can be rapidly located during the search process.

---

# The Fulltext Indexing Process

The process for indexing documents in the Fulltext database varies depending upon the type of document being processed. Two types of document can be processed, those made up of individual characters which can be read directly by the computer and those made up of graphical information which cannot be read directly by the computer. If the computer can read the characters directly then this is known as Coded Information (CI). Graphical files contain Non Coded Information (NCI) which cannot be read directly by the computer.

## Coded Information

The process for inserting documents consisting of coded information into the Fulltext database is relatively straightforward. The Fulltext module copies the documents into one of a number of folders, depending upon the type of document, for example Microsoft Word files are copied into the .doc folder. The Textreader then collects the documents from the appropriate folders and translates the documents into pure text documents which are then saved in a .txt folder designated for text files. The Fulltext then transfers the contents of the text files into the Fulltext database and creates the appropriate indices.

## Non-Coded Information Documents

The process for the creating of Fulltext indices for a document consisting of non coded information is slightly different when compared to CI documents. NCI documents cannot be read by the computer because they are not in the form of character codes so to add the content of the NCI documents to the database optical character recognition (OCR) software is required. OCR software can recognize text based content in graphical files, such as scanned documents, and allows it to be transferred to the Fulltext database.

The processing is carried out in a similar manner. The graphical documents are transferred an appropriate folder, such as the .tiff folder, and are then collected from there by the Fulltext. Instead of using the standard Textreader the Fulltext then uses specialist OCR software, called the OCR Textreader, to extract the text content from the file. This is then stored in a pure text file which is in turn saved in the appropriate .txt folder. The Fulltext then transfers the contents of the text file into the Fulltext database and builds the appropriate indices.

## Automatic Keywording via Fulltext Indexing

### Example: Scanned Document

Step 1: Document is processed by the OCR function



Step 2: The Fulltext Indices are compiled and entered in the database

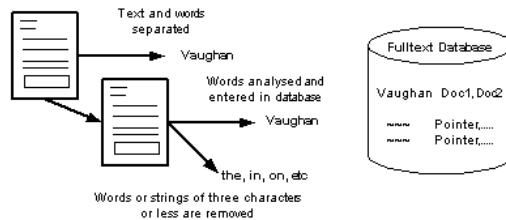


Fig. Fulltext Indexing with OCR

## OCR Analysis

There are two processes that are used by the OCR analysis, Pattern Matching and Feature Recognition.

- **Pattern Matching:** The white space around individual graphical elements is defined and then these elements are compared against existing pixel patterns corresponding to individual text characters. This makes the identification of any text characters possible and the graphical patterns can be transformed into text characters.
- **Feature Recognition:** Significant characteristics of the actual pixel patterns, as opposed to the white space around the patterns, are used to search for unmistakable properties which allow the identification of characters.

The ELO Fulltext uses a combination of these two processes for the OCR. Feature Recognition is utilized at the start of the process to convert the graphical NCI data into CI data. Any remaining graphical data, that could not be identified by the Feature Recognition process, is then analyzed by the Pattern Matching process in order that the remaining NCI data is converted into CI data. This two level OCR analysis results in an extremely high recognition rate.

The OCR analysis is not required for text documents, such as Microsoft Word files, as the documents are already in CI format and therefore can be read, by the computer, without any further processing.

The overall recognition rate is dependant upon the following factors:

- The (visual) quality of the original document
- Scanner resolution during scanning process
- The individual font used for the text
- The size of the text characters
- The number and type of special characters present
- The spacing of the characters
- The spacing of the words
- The spacing between the lines
- The background of the original document



The use of specialized character sets or fonts can dramatically increase the recognition rate when using OCR, so that recognition rates of almost 100% are possible. Specialized OCR character sets are available and have been certified by one of the various standards institutes as having a particularly high recognition rate when analyzed by OCR software.

## Keywording and Indices

The contents of the Fulltext indexed document can be searched through in exactly the same manner as the standard keywording information with the ELO search functions. The option of entering keyword information through self-defined keywording forms remains available to the users, in exactly the same manner as is usual when archiving documents with ELO.

Not all of the words contained in the documents are stored in the Fulltext database. Certain words are not stored in the Fulltext database as they reduce the quality of the search results. The minimum length of words can be defined so that words such as *and*, *of*, *the*, *in*, *on* etc. are not indexed. These words appear too frequently in documents and it does not make sense to search for such words as virtually all documents will be returned by the search, which makes the Fulltext superfluous and the performance will also suffer.

## Usage Example

A keywording form is created for the job applications received by a company. The documents receive manual keywording data upon being archived in the ELO archive. The keywording attributes include the following attributes Surname, Name, Address etc.

In addition the complete applications are entered into the Fulltext database via the OCR. When searching for the documents the user now has two possibilities. Either the manually entered keywording or the Fulltext data can be used to search for a relevant word or term.

## **Integration of the Database Index Information**

(Combined Indexing)

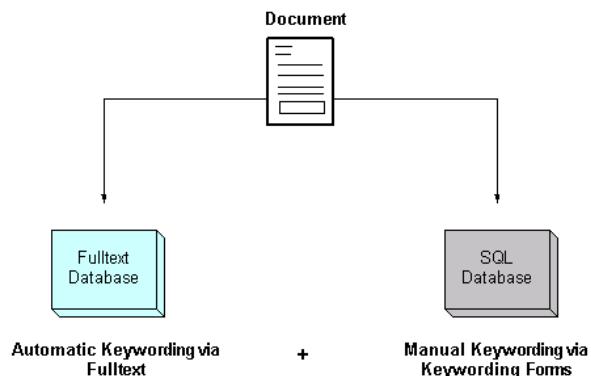


Fig. Database Index Information

### **Important**

The transfer of documents to the Fulltext database should only be carried out when required and after careful consideration. Entering documents in the Fulltext database should not be used in place of a structured archive and the appropriate manual keywording. The unnecessary transfer of documents into the Fulltext database leads to an unstructured database, which in turn leads to the chaotic filing of documents. This also leads to an expanded Fulltext database, which decreases the performance of the database and leads to a rapid increase in the number of documents returned for each search process. The critical volume of Fulltext indexed documents lies at approximately 1 million documents.

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# Installation Fulltext Module

This chapter covers the installation of the Fulltext module for ELOenterprise. The Fulltext module is automatically installed during the installation process of ELOprofessional.

Three different components have to be installed. The first is the ELO Fulltext, which runs on the server and controls the entire Fulltext archiving process and creates the extra Fulltext database. The second is the textreader for turning CI documents into text documents and the third component is the OCR software.

ELO Fulltext runs on the server and is responsible for transferring documents to be added to the Fulltext into the appropriate folders (export). Once the documents have been translated into text files by the textreader (installed separately), the Fulltext processes the text files from the appropriate text folder and adds them to the Fulltext database whilst compiling the appropriate indices (import).

The import and export components are provided by the Fulltext module. The textreader component is installed separately and is covered in the next section, *Textreader Installation*.

## Installation

The installation of various ELO components is carried out with the same installation program used for installing the access and document managers.

After running the setup file the *Select Installation Type* dialog appears. To add the Fulltext component select *Install a new application* and click *Next*.

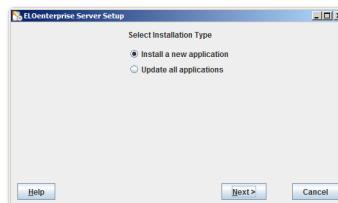


Fig. Selection of installation type

Under *Select Application* select *Additional applications (requires a Documentmanager)* and click *Next*.

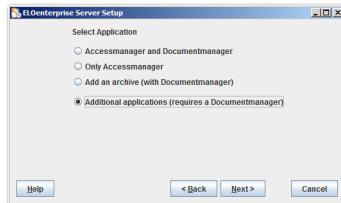


Fig. Installing additional applications

Under *Additional Applications* select *Fulltext (requires a Documentmanager)*. A separate Fulltext module must be installed for each archive that requires a Fulltext module. Click *Next* to proceed.



Fig. Selecting the Fulltext application

Under *Language for Database Entries* select the required language and click *Next*.



Fig. Selecting the language for the database

Under *Database* select the utilized database system and click *Next*.



Fig. Selecting the database type

Under *Directory Setting* the path to the Tomcat directory should be entered. If the displayed path is not correct, use *Browse...* to locate the Tomcat installation. Click *Next* to proceed.

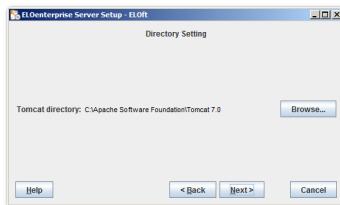


Fig. Location of Tomcat directory

Under *Log Directory* the log directory for the ELO Fulltext module should be entered. In general the default Tomcat subdirectory for log files is suitable. If the path displayed is incorrect, or if another directory for the log files is desired, use *Browse...* to locate it. Click *Next* to proceed.

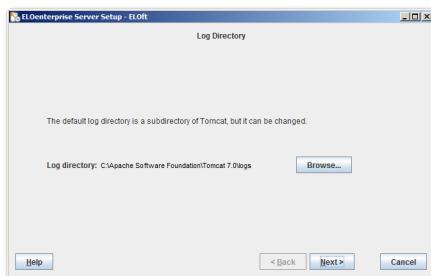


Fig. Log directory

An appropriate location for storing the Fulltext's data should be selected in the *Directory Setting* dialog. Click *Next* to proceed.

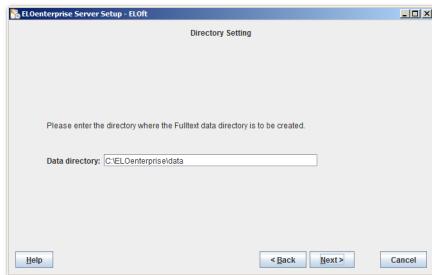


Fig. Entering the data directory for Fulltext



**note:** Depending upon the volume of documents, the folder used for Fulltext may require considerable storage volume. When existing archives are to be imported into the Fulltext or when other large importations of data are planned, then the size of this folder can grow substantially. It is therefore important to ensure that sufficient storage space will be available for this folder.

The *Maximum Text File Size* dialog box will be displayed next.

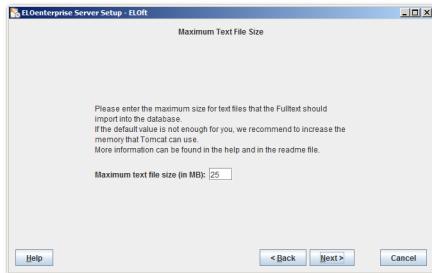


Fig. Text file size

The Fulltext service imports the contents of files into the database when the size of the *text* file does not exceed the value entered here. Files in other formats, such as PDFs, are translated beforehand into text files by the textreader (when installed). This value must not normally be increased and applies only to text files. It is set to ensure that sufficient memory is available for the Fulltext process.

It is also recommended that the maximum Java memory in Tomcat is increased, particularly when multiple Fulltexts will be installed on one server.

The *General Settings* for the access manager and Fulltext service are required next.

## Microsoft SQL Server

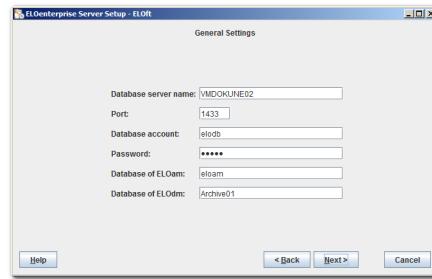


Fig. Database settings for Microsoft SQL Server

**Database server name:** Name or IP address for the database server in the network. This can also be the local computer. When a non-standard installation of Microsoft SQL Server is being used the instance name must also be entered, separated from the server name by a \ - as is standard in such cases.

**Port:** Port for the database. The existing value in the text field is the default value from Microsoft for the SQL server. The validity of this entry should be checked and when necessary amended as required.

**Database account:** An existing account, (e.g. elodb) with the right to create databases. This account is used by the setup program and new web applications. The account used for the access and document manager installation should be used. The standard account name is elodb.

**Password:** Password for the database account.

**Database of ELOam:** the name of the database used by the existing access manager. The database must already exist.

**Database of ELOdm:** name of the database used by the document manager, which will be the archive name. The database and all of the database tables must already exist. Note that one archive is always assigned to one and only one document manager.

## Oracle

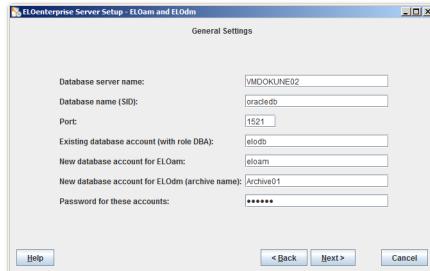


Fig. General settings under Oracle

**Database server name:** Name or IP address for the database server in the network. This can also be the local computer.

**Database name (SID):** Name of the existing database instance. The Oracle SID (system identifier) should be entered here and not the global database name. An entry in the oracle file `tnsnames.ora` is not required. This name can be freely assigned and is not restricted.

**Port:** Port for the database. The value in the text field is the standard value from Oracle for databases. The validity of this entry should be checked and when necessary amended as required.

**Existing database account (administrator):** This account must already exist and is used by the setup program to administer the accounts with the appropriate tables. The separate document `ELO_oracle.pdf` should be consulted when setting up this user. The file is supplied with the installation CD and explains the various rights that the user requires.

**Password:** Password for the database account.

**Database account of ELOam:** the database name for the already existing access manager. This account must already exist.

**Database account of ELOdm:** the existing database account used by the document manager. This account must already exist.

**Password for these accounts:** password for the existing database accounts.

## IBM DB2

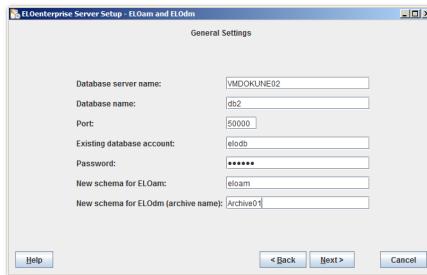


Fig. General settings under DB2

**Database server name:** Name or IP address for the database server in the network. This can also be the local computer.

**Database name:** Name of the existing database instance.

**Port:** Port for the database. The value in the text field is the standard value from DB2 for databases. The validity of this entry should be checked and when necessary amended as required.

**Existing database account (administrator):** This account must already exist and is used by the setup program to administer the accounts with the appropriate tables.

**Password:** Password for the database account.

**Schema of ELOam:** the database name for the already existing access manager. This account must already exist.

**Schema of ELOdm:** the existing database account used by the document manager. This account must already exist.

The Server Setup details have to be entered next.



Fig. Server setup

The server information for the access manager and document manager must be entered. The access manager and document manager do not have to be located on the same computer.



Fig. Connection test to Tomcat

A connection test will be carried out, and then the *ELO User* dialog box will be displayed.



Fig. ELO User for running Fulltext

An existing ELO user and password must be entered. The Fulltext must be logged on to the access manager in order to gain access to the documents. It is recommended that the administrator is not used as the administrator password is likely to be changed with time. The user account to be used can be created in the *ELO User Administration* before proceeding. The account used for the Fulltext can be changed at any time in the ELO Client.

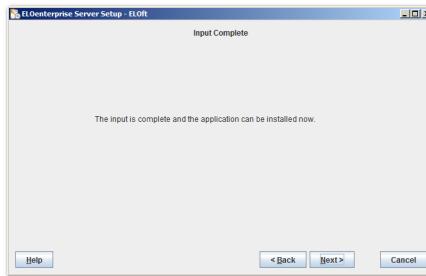


Fig. Input complete - ready to install Fulltext

The progress and various information is shown in a progress dialog box.

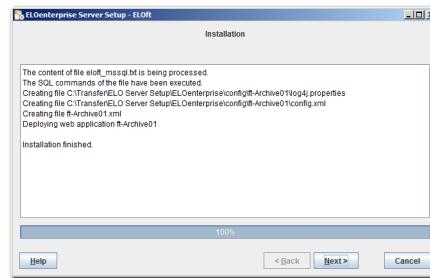


Fig. Completed installation

Once complete a list of newly created and registered directories will be displayed.



Fig. List of Fulltext directories

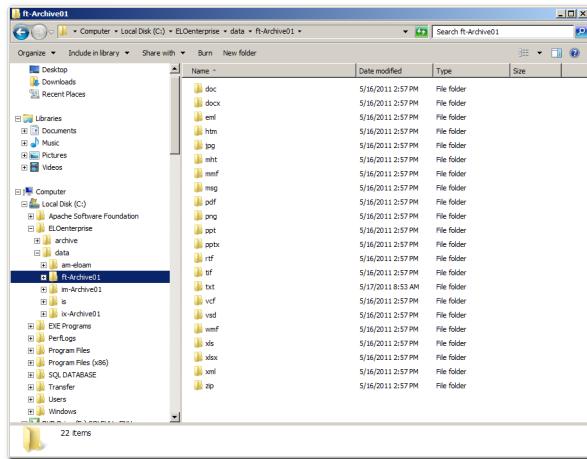


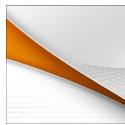
Fig. ELOft directories by document type

Path	Version	Display Name	Running	Sessions	Commands
/	None specified	Welcome to Tomcat	true	1	<a href="#">Start</a> <a href="#">Stop</a> <a href="#">Reload</a> <a href="#">Undeploy</a> <a href="#">Expire sessions</a> [with idle > 30] minutes
/am-sloan	None specified	ELO Accessmanager	true	0	<a href="#">Start</a> <a href="#">Stop</a> <a href="#">Reload</a> <a href="#">Undeploy</a> <a href="#">Expire sessions</a> [with idle > 30] minutes
/dm-Archive01	None specified	ELO Documentmanager	true	0	<a href="#">Start</a> <a href="#">Stop</a> <a href="#">Reload</a> <a href="#">Undeploy</a> <a href="#">Expire sessions</a> [with idle > 30] minutes
/dm-slo	None specified	ELO Documentmanager	true	0	<a href="#">Start</a> <a href="#">Stop</a> <a href="#">Reload</a> <a href="#">Undeploy</a> <a href="#">Expire sessions</a> [with idle > 30] minutes
/docs	None specified	Tomcat Documentation	true	0	<a href="#">Start</a> <a href="#">Stop</a> <a href="#">Reload</a> <a href="#">Undeploy</a> <a href="#">Expire sessions</a> [with idle > 30] minutes
ft-Archive01	None specified	ELO Fulltext	true	0	<a href="#">Start</a> <a href="#">Stop</a> <a href="#">Reload</a> <a href="#">Undeploy</a> <a href="#">Expire sessions</a> [with idle > 30] minutes
/manager	None specified	Tomcat Manager Application	true	5	<a href="#">Start</a> <a href="#">Stop</a> <a href="#">Reload</a> <a href="#">Undeploy</a> <a href="#">Expire sessions</a> [with idle > 30] minutes

Fig. ELO Fulltext in Tomcat's application manager

## **Additional Document Types**

Folders for the common document types are created automatically in the data directory. The folders are created for the document types supported by the Java textreader. If further document types are required, which generally only applies in special cases, then an appropriate textreader is required for each type. Textreaders for the additional types are not supplied by ELO and must be acquired from (or written by) third-party sources. The appropriate folders in the data directory have to be manually created and the file types must be entered in the Fulltext administration. When this has been done the Fulltext must be restarted.



# ELO Textreader

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**Please note:** The instructions for the installation of this component only apply to ELOenterprise.

## Installation

The textreader is used for the conversion of CI or text-based documents into text files. After the conversion the content of the documents is then available in text format for processing by the Fulltext module.

When installing a textreader for an archive the appropriate document manager and Fulltext service for the archive must be previously installed.

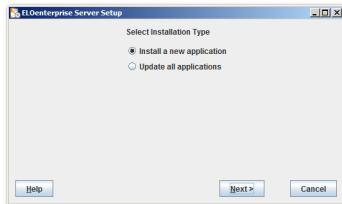


Fig. Installing the Textreader

The installation is started from the same application as the previous installations. The option *Additional applications* (*requires a Documentmanager*) must be selected.

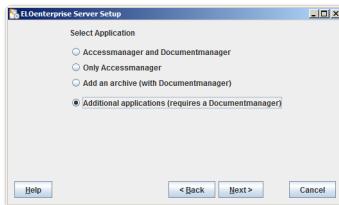


Fig. Additional applications

In the *Additional Applications* dialog box the *Textreader (requires Fulltext)* option should then be selected.

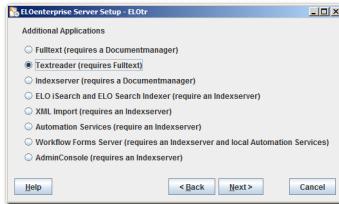


Fig. Textreader option

The type of database must then be selected.



Fig. Database selection

The Tomcat directory must be provided next. This can normally be accepted from the existing value. If the displayed directory is incorrect, use *Browse...* to locate the correct directory.

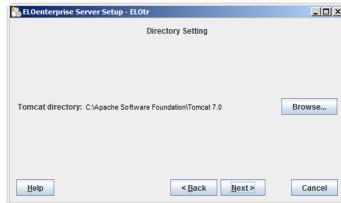


Fig. Tomcat directory

As previously the ELO Log directory must be entered.

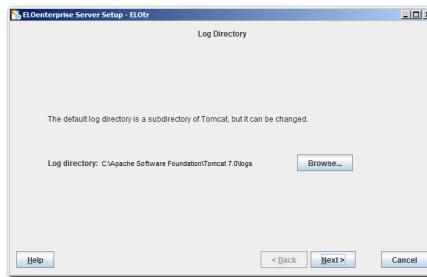


Fig. Log directory

After the *Log Directory* the *Data Directory* must be entered.

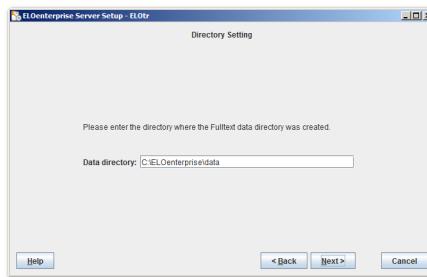


Fig. Data directory

The data directory is the directory entered for the Fulltext data directory. The entry provided here must match the data directory entered for the Fulltext service.

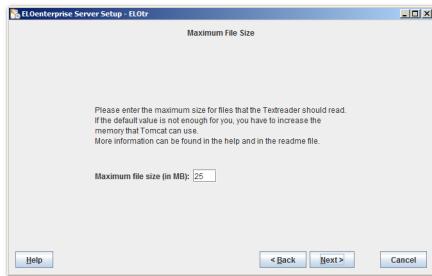


Fig. Maximum file size for Textreader

The maximum file size for the files must be entered next. If this value is increased a message will be displayed with the information that the Tomcat Java memory should possibly also be increased.

The *General Settings* have to be entered now. In this case the same screen is displayed regardless of the type of database being utilized.

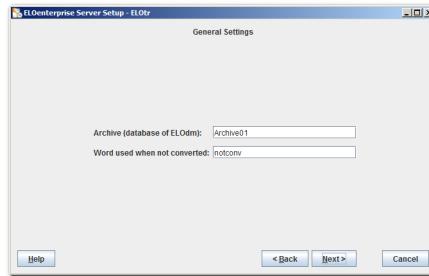


Fig. General database settings

**Archive (database of ELOdm):** the name of the archive/document manager for which the textreader is required.

**Word used when not converted:** if the textreader cannot convert a file for whatever reason (due to an invalid format, an error in the file etc.) then a text file will be created containing the text entered here. This file will then be read by the Fulltext importer so that the file can be used to inform the user of the document that could not be taken into the Fulltext. The document can be then be found in the ELO client and any appropriate action can be taken.

The directories for the various document types have to be configured in the next step. The data for all of the document types must be entered but as the same details are required for each of the types only the screen for doc files will be shown.

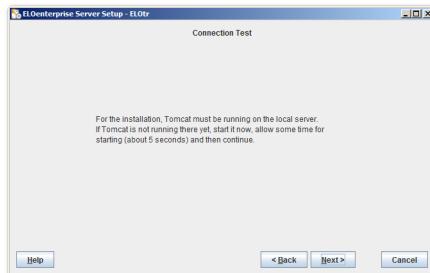


Fig. Testing connection to Tomcat

The next screen provides the information that Tomcat must be running.

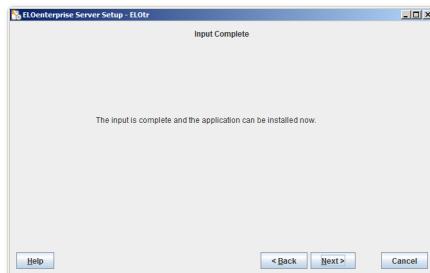


Fig. Input complete - ready to install Textreader

The input is now complete and the textreader installation can now be carried out.

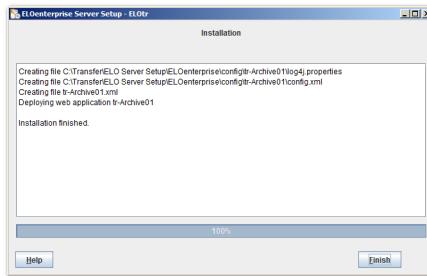


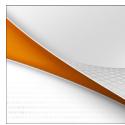
Fig. Installation complete

Clicking on *Finish* will complete the installation.

The screenshot shows a Firefox browser window titled "manager" with the URL "http://localhost:8080/manager/html/list". The page header includes the Apache Software Foundation logo and a cartoon cat icon. The main content is the "Tomcat Web Application Manager" interface. It lists various applications under the "Applications" section, each with columns for Path, Version, Display Name, Running, Sessions, and Commands. The "ELO Textreader" application, located at the path "/tr-Archive01", is highlighted with a red border. The "Commands" column for this application includes buttons for Start, Stop, Reload, Undeploy, and Expire sessions (with idle ≥ 30 minutes).

Applications					
Path	Version	Display Name	Running	Sessions	Commands
/	None specified	Welcome to Tomcat	true	2	<a href="#">Start</a> <a href="#">Stop</a> <a href="#">Reload</a> <a href="#">Undeploy</a> <a href="#">Expire sessions</a> (with idle ≥ 30 minutes)
/am-elbam	None specified	ELO Accessmanager	true	0	<a href="#">Start</a> <a href="#">Stop</a> <a href="#">Reload</a> <a href="#">Undeploy</a> <a href="#">Expire sessions</a> (with idle ≥ 30 minutes)
/dm-Archive01	None specified	ELO Documentmanager	true	0	<a href="#">Start</a> <a href="#">Stop</a> <a href="#">Reload</a> <a href="#">Undeploy</a> <a href="#">Expire sessions</a> (with idle ≥ 30 minutes)
/dm-ala	None specified	ELO Documentmanager	true	0	<a href="#">Start</a> <a href="#">Stop</a> <a href="#">Reload</a> <a href="#">Undeploy</a> <a href="#">Expire sessions</a> (with idle ≥ 30 minutes)
/docs	None specified	Tomcat Documentation	true	0	<a href="#">Start</a> <a href="#">Stop</a> <a href="#">Reload</a> <a href="#">Undeploy</a> <a href="#">Expire sessions</a> (with idle ≥ 30 minutes)
/ft-Archive01	None specified	ELO Fulltext	true	0	<a href="#">Start</a> <a href="#">Stop</a> <a href="#">Reload</a> <a href="#">Undeploy</a> <a href="#">Expire sessions</a> (with idle ≥ 30 minutes)
/manager	None specified	Tomcat Manager Application	true	11	<a href="#">Start</a> <a href="#">Stop</a> <a href="#">Reload</a> <a href="#">Undeploy</a> <a href="#">Expire sessions</a> (with idle ≥ 30 minutes)
<b>/tr-Archive01</b>	None specified	<b>ELO Textreader</b>	true	0	<a href="#">Start</a> <a href="#">Stop</a> <a href="#">Reload</a> <a href="#">Undeploy</a> <a href="#">Expire sessions</a> (with idle ≥ 30 minutes)

Fig. Textreader in Tomcat application manager



# ELO Indexserver



**Please note:** The instructions for the installation of this component only apply to ELOenterprise.

## The Indexserver

The IndexServer provides a SOAP interface which allows certain ELO functionality to be utilized by other applications. In this respect it operates in a similar manner to the *OLE Automation Interface*. The installation is started in the same manner as the previously installed ELOenterprise server components.

After clicking *Installation under Windows* under *Server Installations* on the installation medium, or after directly running the set-up file, the *Select Installation Type* dialog box appears. Select *Install a new application* and click *Next* to proceed.

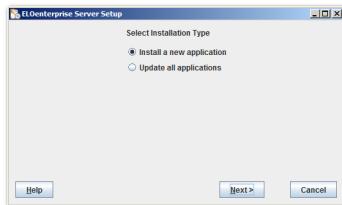


Fig. Installing the Indexserver

Under *Select Application* choose *Additional applications (requires a Documentmanager)* and click *Next* to proceed.

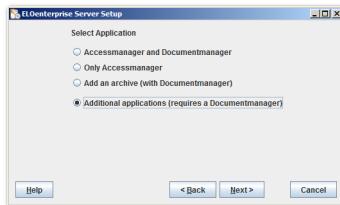


Fig. Select application

Under *Additional Applications* select *Indexserver (requires a Documentmanager)* and click *Next* to proceed.

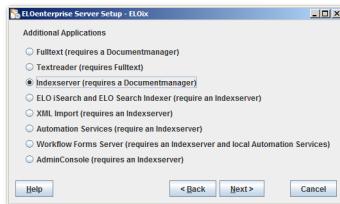


Fig. Selecting Indexserver to install

Choose the appropriate language for the database and click *Next* to proceed.



Fig. Selecting the database language

Under *Database* select the database system which will be utilized and click *Next* to proceed.



Fig. Selecting database Type

Under *Directory Setting* the path to the Tomcat directory needs to be entered. If the displayed path is incorrect, use *Browse...* to find the correct location. Click *Next* to proceed.

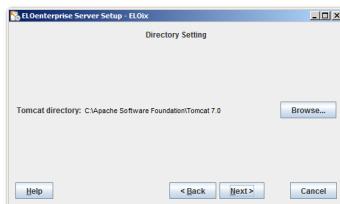


Fig. Path to Tomcat directory

The default location for the Indexserver's log directory is the Tomcat log directory. If another location is desired, use *Browse...* to change the path setting. Click *Next* to proceed.

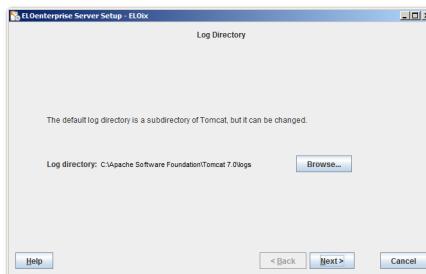


Fig. Setting the log directory

The next step is to select the data directory for the Indexserver. The data directories for the Indexserver will then be created under this directory. Click *Next* to proceed.

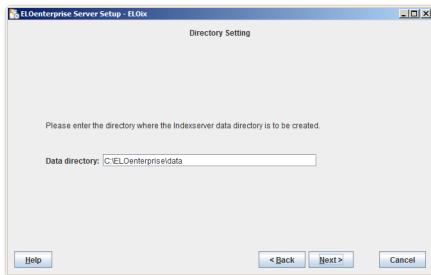


Fig. Setting the Indexserver's data directory

## Microsoft SQL Server

If Microsoft SQL Server is being used for the database, the following settings need to be entered:

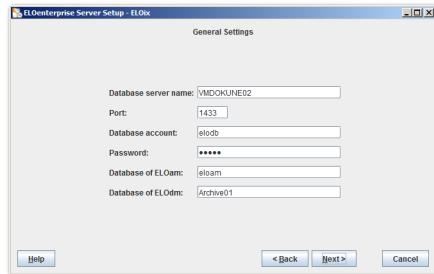


Fig. General Settings - Microsoft SQL

**Database server name:** Name or IP address for the database server in the network. This can also be the local computer. When a non-standard installation of Microsoft SQL Server is being used the instance name must also be entered, separated from the servername by a \ (backslash) - as is standard in such cases.

**Port:** Port for the database. The existing value in the text field is the default value from Microsoft for the SQL server. The validity of this entry should be checked and when necessary amended as required.

**Database account:** An existing account, (e.g. elodb) with the right to create databases. This account is used by the setup program and new web applications. The account used for the access and document manager installation should be used. The standard account name is elodb.

**Password:** Password for the database account.

**Database of ELOam:** The name of the database used by the existing access manager. The database must already exist.

**Database of ELOdm:** The name of the database used by the document manager, which will be the archive name. The database and all of the database tables must already exist. Note that one archive is always assigned to one and only one document manager.

Click *Next* to advance to an additional setup dialog for SQL Server.

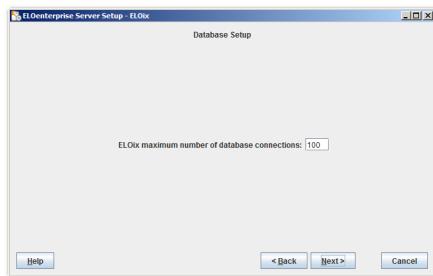


Fig. Database Connections - Microsoft

For SQL Server the maximum number of database connections should now be entered. This is the number of database connections which will be permanently used by the Indexserver in its connection pool. The number of connections must be restricted. As a general rule one to ten percent of the total number of simultaneous users should be used. The default value is 100. Click *Next* to proceed.

## Oracle

If Oracle is being used for the database, the following settings need to be entered:

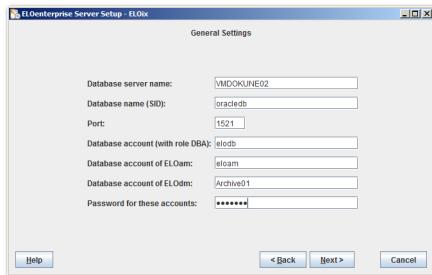


Fig. General Settings - Oracle

**Database server name:** Name or IP address for the database server in the network. This can also be the local computer.

**Database name (SID):** Name of the existing database instance. The Oracle SID (system identifier) should be entered here and not the global database name. An entry in the oracle file `tnsnames.ora` is not required. This name can be freely assigned and is not restricted.

**Port:** Port for the database. The value in the text field is the standard value from Oracle for databases. The validity of this entry should be checked and amended as required.

**Database account (with role DBA):** This account must already exist and is used by the setup program to administer the accounts with the appropriate tables. The separate document `ELO_oracle.pdf` should be consulted when setting up this user. It explains the various permissions which are required for the user. The document can be found on the installation medium.

**Database account of ELOam:** the database name for the already existing access manager. This account must already exist.

**Database account of ELOdm:** the existing database account used by the document manager. This account must already exist.

**Password for these accounts:** password for the existing database accounts.

Click *Next* to advance to an additional setup dialog for Oracle, in which the following entries are made:

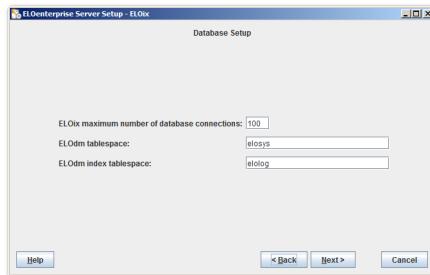


Fig. Database setup - Oracle

**ELOix maximum number of database connections:** The number of database connections which will be permanently used by the Indexserver in its connection pool. The number of connections must be restricted. As a general rule one to ten percent of the total number of simultaneous users should be used. The default value is 100.

**ELOdm tablespace:** The predefined table of the document manager. This tablespace must already exist.

**ELOdm index tablespace:** The predefined table of the document manager's index. This tablespace must already exist.

## IBM DB2

If DB2 is being used for the database, the following settings need to be entered:

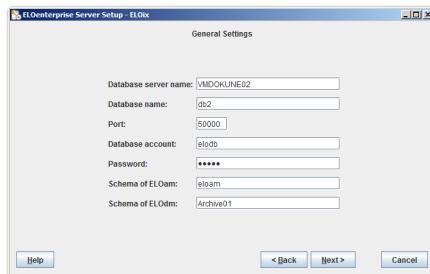


Fig. General settings - DB2

**Database server name:** Name or IP address for the database server in the network. This can also be the local computer.

**Database name:** Name of the existing database instance.

**Port:** Port for the database. The value in the text field is the standard value from DB2 for databases. The validity of this entry should be checked and when necessary amended as required.

**Database account:** This account must already exist and is used by the setup program to administer the accounts with the appropriate tables.

**Password:** Password for the database account.

**Schema of ELOam:** the database name for the already existing access manager. This account must already exist.

**Schema of ELOdm:** the existing database account used by the document manager. This account must already exist.

Click *Next* to advance to an additional setup dialog for DB2.

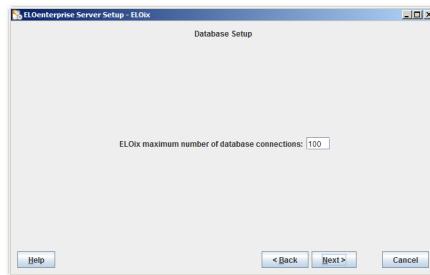


Fig. Database Connections - Microsoft

For DB2 the maximum number of database connections should now be entered. This is the number of database connections which will be permanently used by the Indexserver in its connection pool. The number of connections must be restricted. As a general rule one to ten percent of the total number of simultaneous users should be used. The default value is 100. Click *Next* to proceed.

#### All database types

Under *Server Setup* enter the server names and port numbers for both the ELO Application Manager and Indexserver. Continue with *Next*.

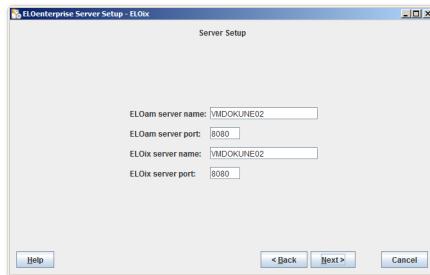


Fig. Server names and ports for ELOam and ELOis

Under *Fulltext Mode* select yes if iSearch will be installed for the archive.



Fig. Fulltext mode

Under *Server Setup* either accept the default values for the ELOis server or change them as required. Continue with *Next*.

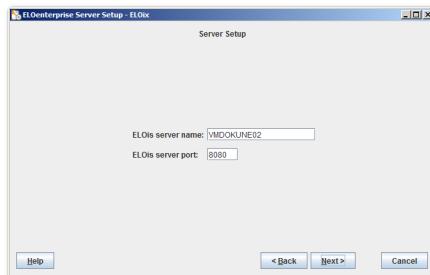


Fig. ELOis server setup

A connection test is now necessary before installing. Be sure Tomcat is running before clicking *Next*.

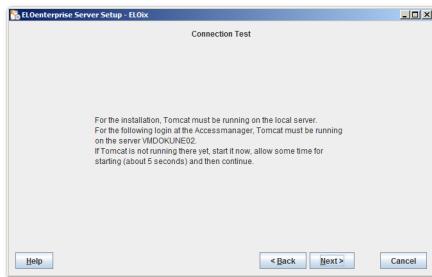


Fig. Connection test to Tomcat

The ELO server setup created a user named "ELO Service" with the same password as the administrator (not to be confused with the system user account *EloService* which was recommended for running Tomcat and the database). This user will now be used by the Indexserver. Under *ELO User* enter the password for the user. Click *Next* to proceed.



Fig. User authentication for the Indexserver

Under *ELO Administrator User* the user name and password of the user with administrator rights should be entered. This user was created during the server installation. Click *Next* to proceed.

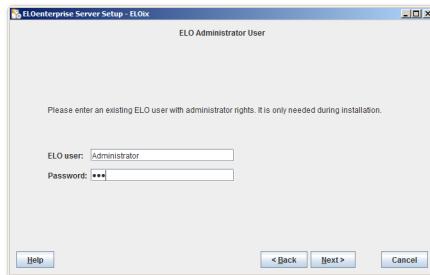


Fig. Authentication for ELO administrator

The installation of the Indexserver can now be started by clicking *Next*. The progress will be displayed on screen.

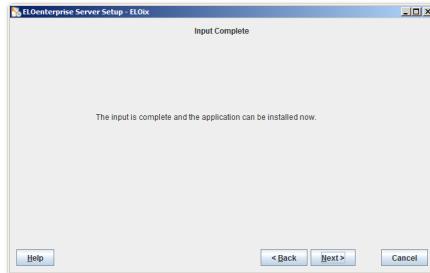


Fig. Input complete - prepared to install Indexserver

Once the *Installation* dialog has reached 100 percent, clicking *Finish* will close the dialog box.

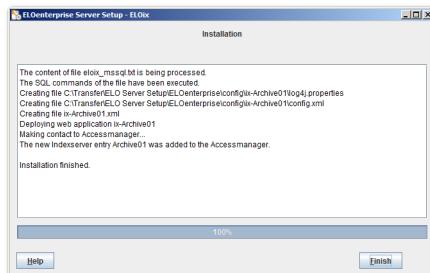


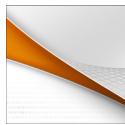
Fig. Installation completed

In Tomcat's application manager the success of the Indexserver installation can be verified in the application list.

The screenshot shows a Firefox browser window displaying the Tomcat Web Application Manager at <http://localhost:8080/manager/html/list>. The Apache Software Foundation logo is at the top left, and a cartoon cat icon is at the top right. The main title is "Tomcat Web Application Manager". A message box says "Message: OK". Below it is a "Manager" header with tabs for "List Applications", "HTML Manager Help", "Manager Help", and "Server Status". The "List Applications" tab is selected, showing a table of applications:

Path	Version	Display Name	Running	Sessions	Commands
/	None specified	Welcome to Tomcat	true	2	<a href="#">Start</a> <a href="#">Stop</a> <a href="#">Reload</a> <a href="#">Undeploy</a> <a href="#">Expire sessions</a> [with idle ≥ 30 minutes]
/am-elbam	None specified	ELO Accessmanager	true	0	<a href="#">Start</a> <a href="#">Stop</a> <a href="#">Reload</a> <a href="#">Undeploy</a> <a href="#">Expire sessions</a> [with idle ≥ 30 minutes]
/dm-Archive01	None specified	ELO Documentmanager	true	0	<a href="#">Start</a> <a href="#">Stop</a> <a href="#">Reload</a> <a href="#">Undeploy</a> <a href="#">Expire sessions</a> [with idle ≥ 30 minutes]
/dm-sla	None specified	ELO Documentmanager	true	0	<a href="#">Start</a> <a href="#">Stop</a> <a href="#">Reload</a> <a href="#">Undeploy</a> <a href="#">Expire sessions</a> [with idle ≥ 30 minutes]
/docs	None specified	Tomcat Documentation	true	0	<a href="#">Start</a> <a href="#">Stop</a> <a href="#">Reload</a> <a href="#">Undeploy</a> <a href="#">Expire sessions</a> [with idle ≥ 30 minutes]
/ft-Archive01	None specified	ELO Fulltext	true	0	<a href="#">Start</a> <a href="#">Stop</a> <a href="#">Reload</a> <a href="#">Undeploy</a> <a href="#">Expire sessions</a> [with idle ≥ 30 minutes]
/ix-Archive01	None specified	ELO IndexServer	true	0	<a href="#">Start</a> <a href="#">Stop</a> <a href="#">Reload</a> <a href="#">Undeploy</a> <a href="#">Expire sessions</a> [with idle ≥ 30 minutes]
/manager	None specified	Tomcat Manager Application	true	16	<a href="#">Start</a> <a href="#">Stop</a> <a href="#">Reload</a> <a href="#">Undeploy</a> <a href="#">Expire sessions</a> [with idle ≥ 30 minutes]

Fig. IndexServer in Tomcat application manager



# ELO iSearch

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**Please note:** The instructions for the installation of this component only apply to ELOenterprise.

## iSearch and Search Indexer

ELO iSearch is a new component which introduces simplified, yet highly flexible, methods for locating documents in the archive. Its installation requires the Indexserver.

As with the other components the iSearch installation begins by running the ELO setup file. Under *Select Installation Type* select *Install a new application*. Click *Next* to proceed.

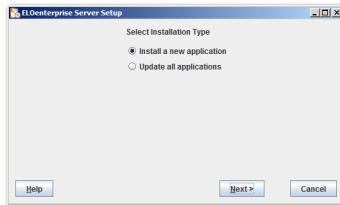


Fig. Installing iSearch

Under *Select Application* choose *Additional applications (requires a Documentmanager)* and click *Next* to proceed.



Fig. Additional applications

Under *Additional Applications* select *ELO iSearch and ELO Search Indexer* (requires an *Indexserver*) and click *Next* to proceed.



Fig. Selection of iSearch and Search Indexer

Choose the appropriate language for the database and click *Next* to proceed.



Fig. Selection of database language

Under *Database* select the database system which will be utilized and click *Next* to proceed.



Fig. Selection of database type

Under *Directory Setting* the path to the Tomcat directory needs to be entered. If the displayed path is incorrect, use *Browse...* to find the correct location. Click *Next* to proceed.

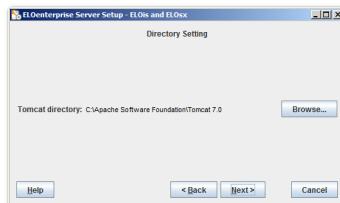


Fig. Tomcat directory

The default location for iSearch's log directory is the Tomcat log directory. If another location is desired, use *Browse...* to change the path setting. Click *Next* to proceed.

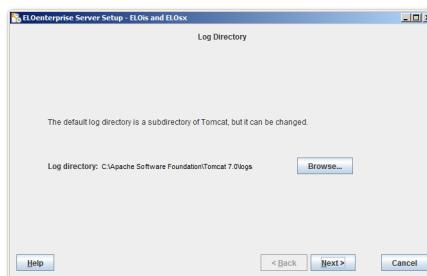


Fig. Selection of log directory

The next step is to select the data directory for iSearch. The data directories for the iSearch will then be created under this directory. Click *Next* to proceed.

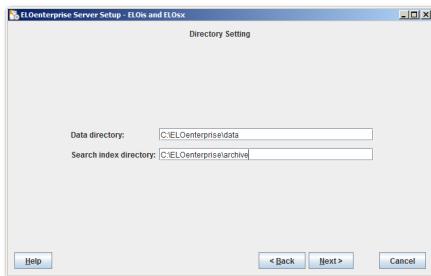


Fig. Selection of data directory

## Microsoft SQL Server

If Microsoft SQL Server is being used for the database, the following settings need to be entered:

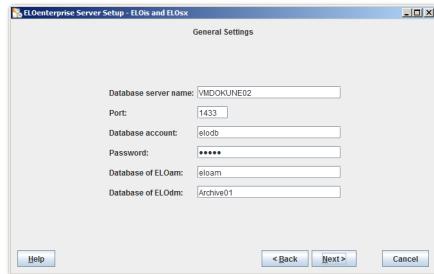


Fig. Database settings - SQL Server

**Database server name:** Name or IP address for the database server in the network. This can also be the local computer. When a non-standard installation of Microsoft SQL Server is being used the instance name must also be entered, separated from the servername by a \ (backslash) - as is standard in such cases.

**Port:** Port for the database. The existing value in the text field is the default value from Microsoft for the SQL server. The validity of this entry should be checked and when necessary amended as required.

**Database account:** An existing account, (e.g. elodb) with the right to create databases. This account is used by the setup program and new web applications. The account used for the access and document manager installation should be used. elodb is standard.

## Oracle

**Password:** Password for the database account.

**Database of ELOam:** The name of the database used by the existing access manager. The database must already exist.

**Database of ELOdm:** The name of the database used by the document manager, which will be the archive name. The database and all of the database tables must already exist. Note that one archive is always assigned to one and only one document manager.

If Oracle is being used for the database, the following settings need to be entered:

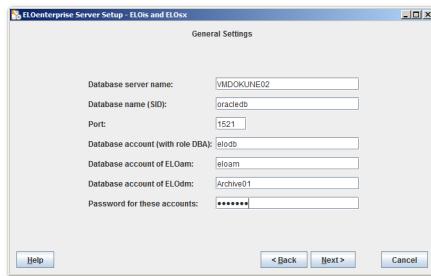


Fig. Database settings - Oracle

**Database server name:** Name or IP address for the database server in the network. This can also be the local computer.

**Database name (SID):** Name of the existing database instance. The Oracle SID (system identifier) should be entered here and not the global database name. An entry in the oracle file `tnsnames.ora` is not required. This name can be freely assigned and is not restricted.

**Port:** Port for the database. The value in the text field is the standard value from Oracle for databases. The validity of this entry should be checked and amended as required.

**Database account (with role DBA):** This account must already exist and is used by the setup program to administer the accounts with the appropriate tables. The separate document `ELO_oracle.pdf` should be consulted when setting up this user. It explains the various permissions which are required for the user. The document can be found on the installation medium.

**Database account of ELOam:** the database name for the already existing access manager. This account must already exist.

**Database account of ELOdm:** the existing database account used by the document manager. This account must already exist.

**Password for these accounts:** password for the existing database accounts.

## IBM DB2

If DB2 is being used for the database, the following settings need to be entered:



Fig. Database settings - DB2

**Database server name:** Name or IP address for the database server in the network. This can also be the local computer.

**Database name:** Name of the existing database instance.

**Port:** Port for the database. The value in the text field is the standard value from DB2 for databases. The validity of this entry should be checked and when necessary amended as required.

**Database account:** This account must already exist and is used by the setup program to administer the accounts with the appropriate tables.

**Password:** Password for the database account.

**Schema of ELOam:** the database name for the already existing access manager. This account must already exist.

**Schema of ELOdm:** the existing database account used by the document manager. This account must already exist.

## All database types

Under *Server Setup* enter the server names and port numbers for both the ELO Application Manager and Indexserver. Continue with *Next*.

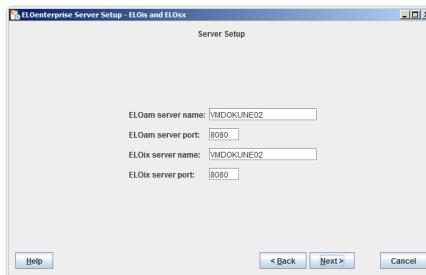


Fig. Server settings

A connection test is now necessary before installing. Be sure Tomcat is running before clicking *Next*.

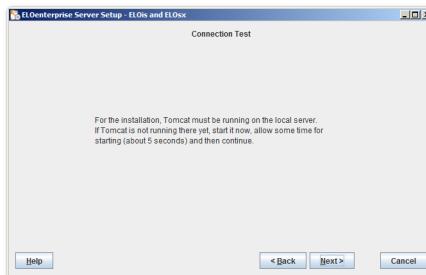


Fig. Connection test to Tomcat

The ELO server setup created a user named "ELO Service" with the same password as the administrator (not to be confused with the system user account *EloService* which was recommended for running Tomcat and the database). This user will now be used by the Indexserver. Under *ELO User* enter the password for the user. Click *Next* to proceed.



Fig. ELO user for iSearch

The installation of iSearch can now be started by clicking *Next*. The progress will be displayed on screen.

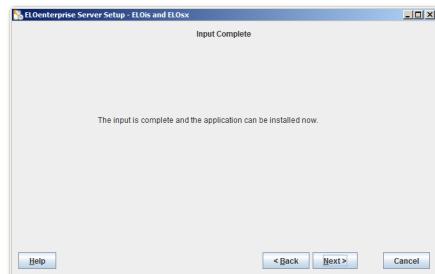


Fig. Input complete - prepared for installation

Once the *Installation* dialog has reached 100 percent, clicking *Next* will advance to the next dialog box.

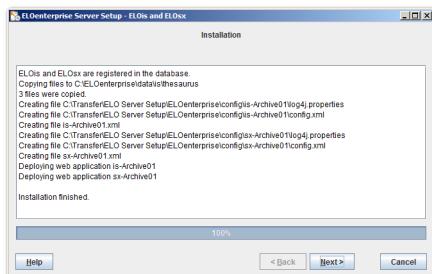


Fig. Installation complete

The final message advises you to check the status page of the application manager Tomcat to make sure that the connection to iSearch is working. This will be done after clicking *Finish*.



Fig. Error notice

In Tomcat's application manager the success of the iSearch installation can be verified in the application list. There should now be lines for both *ELO iSearch* and *ELO iSearch Indexer*.

Path	Version	Display Name	Running	Sessions	Commands
/	None specified	Welcome to Tomcat	true	1	<a href="#">Start</a> <a href="#">Stop</a> <a href="#">Reload</a> <a href="#">Undeploy</a> <a href="#">Expire sessions</a> [with idle > 30 minutes]
/AdminConsole	None specified	ELO Administration Console	true	0	<a href="#">Start</a> <a href="#">Stop</a> <a href="#">Reload</a> <a href="#">Undeploy</a> <a href="#">Expire sessions</a> [with idle > 35 minutes]
/am-eloatm	None specified	ELO Accessmanager	true	0	<a href="#">Start</a> <a href="#">Stop</a> <a href="#">Reload</a> <a href="#">Undeploy</a> <a href="#">Expire sessions</a> [with idle > 30 minutes]
/as-Archive01	None specified	ELO Automation Services	true	0	<a href="#">Start</a> <a href="#">Stop</a> <a href="#">Reload</a> <a href="#">Undeploy</a> <a href="#">Expire sessions</a> [with idle > 30 minutes]
/dm-Archive01	None specified	ELO Documentmanager	true	0	<a href="#">Start</a> <a href="#">Stop</a> <a href="#">Reload</a> <a href="#">Undeploy</a> <a href="#">Expire sessions</a> [with idle > 30 minutes]
/dm-elo	None specified	ELO Documentmanager	true	0	<a href="#">Start</a> <a href="#">Stop</a> <a href="#">Reload</a> <a href="#">Undeploy</a> <a href="#">Expire sessions</a> [with idle > 30 minutes]
/docs	None specified	Tomcat Documentation	true	0	<a href="#">Start</a> <a href="#">Stop</a> <a href="#">Reload</a> <a href="#">Undeploy</a> <a href="#">Expire sessions</a> [with idle > 30 minutes]
/ft-Archive01	None specified	ELO Fulltext	true	0	<a href="#">Start</a> <a href="#">Stop</a> <a href="#">Reload</a> <a href="#">Undeploy</a> <a href="#">Expire sessions</a> [with idle > 30 minutes]
/im-Archive01	None specified	ELO XML Importer	true	0	<a href="#">Start</a> <a href="#">Stop</a> <a href="#">Reload</a> <a href="#">Undeploy</a> <a href="#">Expire sessions</a> [with idle > 30 minutes]
/is-Archive01	None specified	ELO iSearch	true	0	<a href="#">Start</a> <a href="#">Stop</a> <a href="#">Reload</a> <a href="#">Undeploy</a> <a href="#">Expire sessions</a> [with idle > 30 minutes]
/ix-Archive01	None specified	ELO IndexServer	true	0	<a href="#">Start</a> <a href="#">Stop</a> <a href="#">Reload</a> <a href="#">Undeploy</a> <a href="#">Expire sessions</a> [with idle > 30 minutes]
/manager	None specified	Tomcat Manager Application	true	1	<a href="#">Start</a> <a href="#">Stop</a> <a href="#">Reload</a> <a href="#">Undeploy</a> <a href="#">Expire sessions</a> [with idle > 30 minutes]
/tax-Archive01	None specified	ELO iSearch Indexer	true	0	<a href="#">Start</a> <a href="#">Stop</a> <a href="#">Reload</a> <a href="#">Undeploy</a> <a href="#">Expire sessions</a> [with idle > 30 minutes]
/tr-Archive01	None specified	ELO Textreader	true	0	<a href="#">Start</a> <a href="#">Stop</a> <a href="#">Reload</a> <a href="#">Undeploy</a> <a href="#">Expire sessions</a> [with idle > 30 minutes]

Fig. iSearch and iSearch Indexer in Tomcat application manager

## Possible iSearch Error

After installing the Indexserver with the Fulltext mode set for using iSearch, the Indexserver will immediately start trying to connect to the ELOis service at regular intervals even though it does not yet exist. If the Indexserver tries (and fails) to connect to ELOis before it can be installed, an error will appear on its status page in the application manager.

To view the ELOix status report, click the Indexserver's link in the first column of the Tomcat application manager. A connection error to ELOis will look like this:

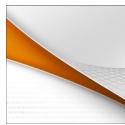
ELO-IX Status Report	
Running	
Date	Errors - must be fixed
2011-05-16 15:27:34	Message
	Connection to ELOis service failed, url<http://VMDOKUNEO2:8080/it-Archive01/it> java.io.IOException: HTTP Status Code 404
Version	8.00.000
Build	191
SDAS-Interface-Version	8.00.000

Fig. Connection failure in ELOix's status report (Tomcat)

To resolve this problem, either stop and then restart the entire Tomcat service, or alternatively, from within the Tomcat application manager, stop and then restart the Indexserver. The ELOix status report should now display no error.

/it-Archive01	None specified	ELO Fulltext	true	0	<input type="button" value="Start"/>	<input type="button" value="Stop"/>	<input type="button" value="Reload"/>	<input type="button" value="Undeploy"/>
					<input type="button" value="Expire sessions"/>	with idle < 100	minutes	
/is-Archive01	None specified	ELO iSearch	true	9	<input type="button" value="Start"/>	<input type="button" value="Stop"/>	<input type="button" value="Reload"/>	<input type="button" value="Undeploy"/>
					<input type="button" value="Expire sessions"/>	with idle > 30	minutes	
/ix-Archive01	None specified	ELO IndexServer	true	2	<input type="button" value="Start"/>	<input type="button" value="Stop"/>	<input type="button" value="Reload"/>	<input type="button" value="Undeploy"/>
					<input type="button" value="Expire sessions"/>	with idle > 30	minutes	
/manager	None specified	Tomcat Manager Application	true	13	<input type="button" value="Start"/>	<input type="button" value="Stop"/>	<input type="button" value="Reload"/>	<input type="button" value="Undeploy"/>
					<input type="button" value="Expire sessions"/>	with idle > 30	minutes	
/sx-Archive01	None specified	ELO iSearch Indexer	true	0	<input type="button" value="Start"/>	<input type="button" value="Stop"/>	<input type="button" value="Reload"/>	<input type="button" value="Undeploy"/>
					<input type="button" value="Expire sessions"/>	with idle > 30	minutes	
/tr-Archive01	None specified	ELO Textreader	true	9	<input type="button" value="Start"/>	<input type="button" value="Stop"/>	<input type="button" value="Reload"/>	<input type="button" value="Undeploy"/>
					<input type="button" value="Expire sessions"/>	with idle > 30	minutes	

Fig. Starting/stopping IndexServer in Tomcat



# ELO Client for Windows

---

Both ELOenterprise and ELOprofessional provide two ways of installing their respect client programs for Windows:

- Standard client installation using the installation DVD
- Automatic client installation over the network

Either method, or both, can be used in any given ELO environment. The choice in a particular situation primarily depends upon the size and complexity of the network. The great advantage of the automatic installation is that it saves you from needing to reenter the ELO Server's access data each time. This is particularly helpful in companies with a large number of workstations spread out over many rooms—or even in entirely different locations—where it would be extremely inconvenient to install the client software by using the standard method.

The following sections first describe the standard installation routine for ELO Client for Windows. Directly after this comes a description of the steps needed to set up the automatic client installation over a network.



**Please note:** ELO Client for Java can also be used in environments with either ELOenterprise Server or ELOprofessional Server. The installation instructions for this program are not included here. Please refer to the ELO Client for Java's user guide if you need help installing it.

# Standard Client Installation



**Please note:** The standard client installation is almost entirely the same for both ELOenterprise and ELOprofessional. The following instructions and screenshots will pertain directly to the client installation of ELOenterprise. Any deviations for the client installation of ELOprofessional will be duly noted.

## Preparation

The standard installation of ELO Client for Windows requires access to the DVD either on a local drive or one shared on a network. An operational installation of either ELOenterprise Server or ELOprofessional Server should also already exist and be accessible on the network. For systems using an Oracle database, the Oracle Client must first be installed on each computer.

## Installation

1. Enter the installation DVD in the computer's optical drive.

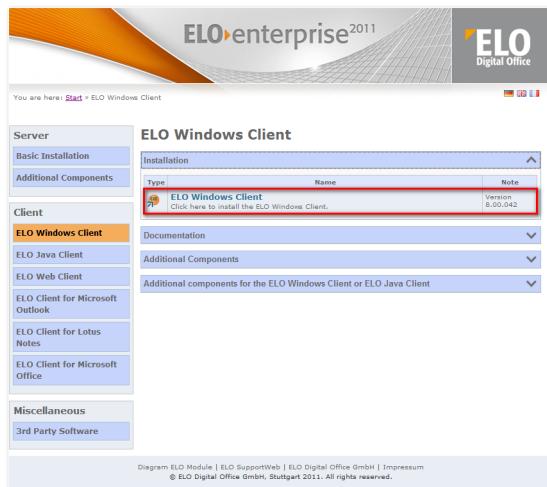


Fig. Welcome screen with link to ELO Client for Windows

2. Once the welcome screen appears after entering the DVD in the drive, click the link *ELO Windows Client* under *ELO Windows Client, Installation* in the *Client* section.



Fig. Installation wizard for ELOenterprise 2011 Client

3. When the Installation Wizard appears, click *Next* to start the installation procedure.



Fig. License agreement

4. The License Agreement will then need to be accepted before clicking *Next* to proceed.

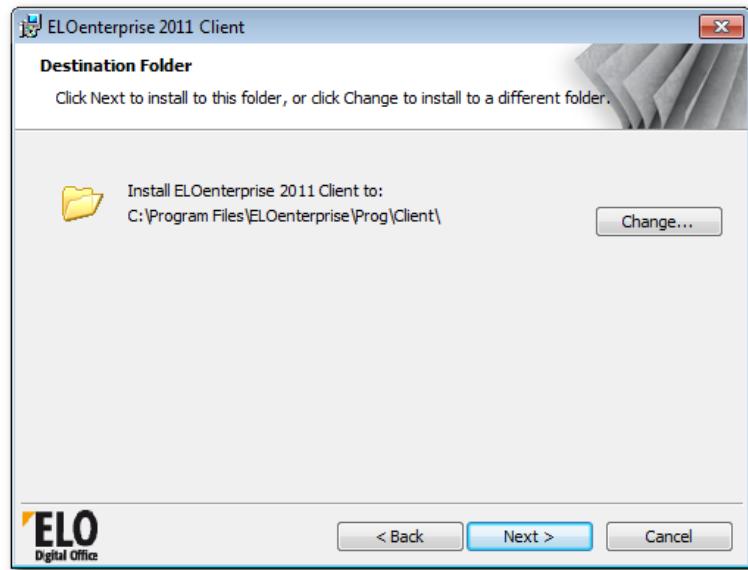


Fig. Destination folder for the installation

5. If desired, the destination folder for the installation can be changed in the next dialog box. Click *Next* to proceed.

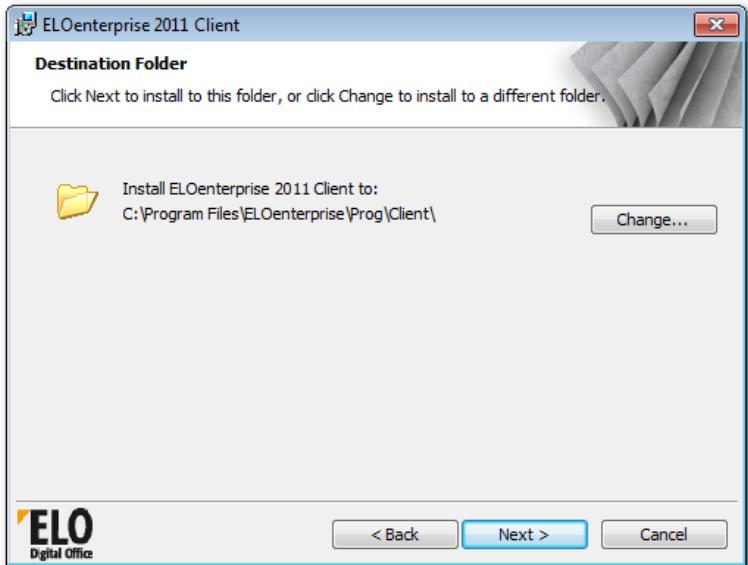


Fig. Access Manager settings

6. The next dialog box which appears is for entering the Access Manager's settings. Here you will need the name of the server on which the Access Manager runs, its port number ("8080" is the default setting for ELOenterprise, "9090" for ELOprofessional), and the name of the database instance (not applicable for ELOprofessional). After entering the correct information, click *Next* to proceed.

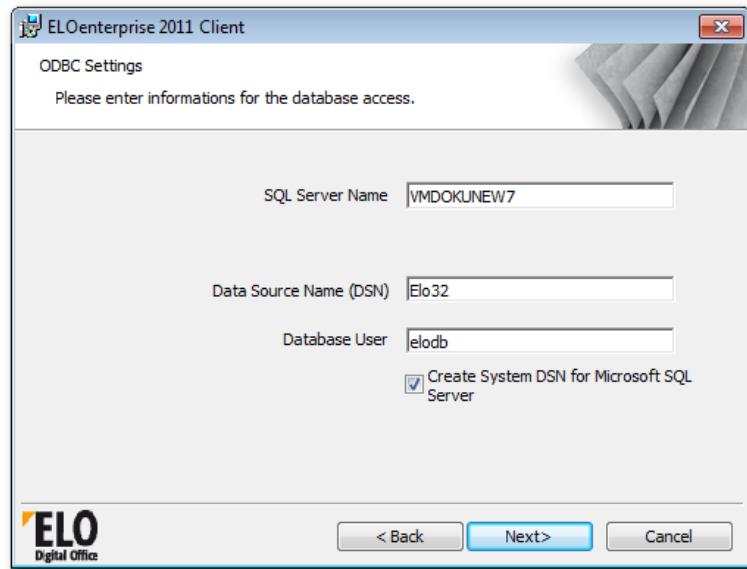


Fig. ODBC settings

7. The next dialog box which appears is for entering the ODBC settings to access the database. Here you will need to enter the name of the SQL Server, the Data Source Name, and the name of the database user. You also have the option of creating a System DSN for the SQL Server. Click *Next* to proceed.

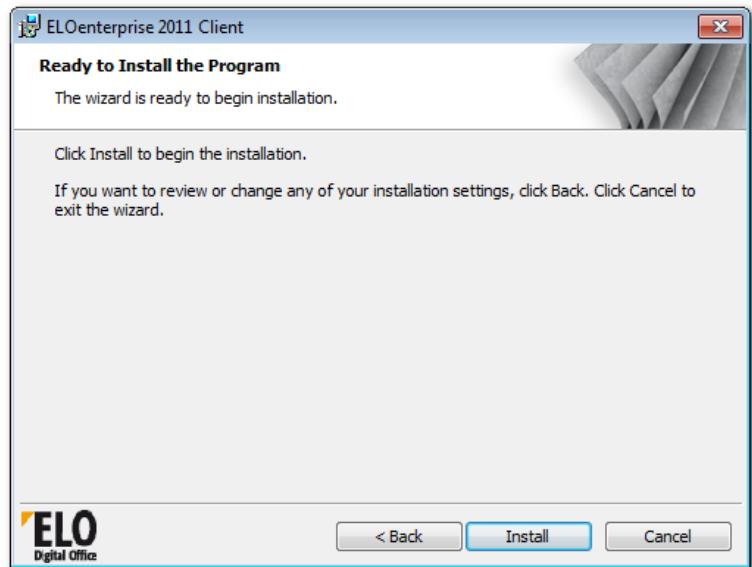


Fig. Ready for installing the client

8. You are now ready to begin the client installation. Click *Back* to review or change your settings. Otherwise, click *Install* to start the installation procedure.

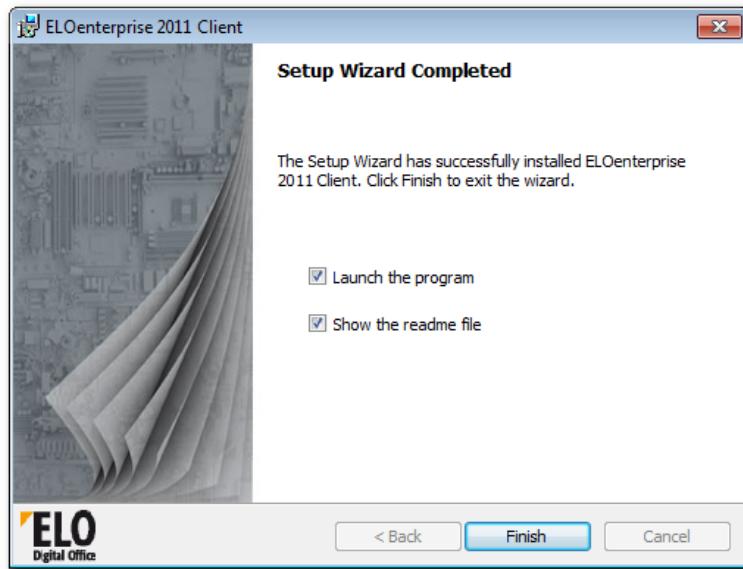


Fig. Installation completed

9. Once the installation is completed, a final dialog box provides you with the options of starting the ELOenterprise Client for Windows immediately and/or opening the readme file. Click *Finish* to close the dialog box.

---

# Automatic Client Installation

The automatic client installation creates a directory structure with all files and settings needed for installing the ELO Client for Windows on any computer which has access to that directory over the network. Unlike the standard client installation, no user input is required for the installation, which greatly simplifies the installation procedure when the software must be installed on a large number of computers.



**Please note:** The automatic client installation is identical for both ELOenterprise and ELOprofessional. The following instructions and screenshots will pertain directly to the automatic client installation of ELOenterprise, but are equally valid for the automatic client installation of ELOprofessional.

## Preparation

The automatic installation of ELO Client for Windows requires access to the DVD only for the initial creation of the directory structure. Afterwards this directory will be used for installing the client software on each computer. Therefore you need to first create a shared folder which will be used for this directory structure.

An operational installation of either ELOenterprise Server or ELOprofessional Server should also already exist and be accessible on the network. For systems using an Oracle database, the Oracle Client must first be installed on each computer.

## Installation

1. Enter the installation DVD in the computer's optical drive.

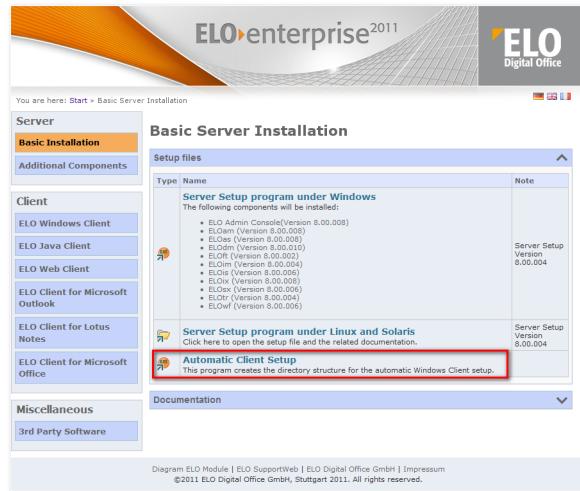


Fig. Welcome screen with link to the automatic client installation

2. Once the welcome screen appears after entering the DVD in the drive, click the link *Automatic Client Installation* under *Basic Installation, Installation Files* in the Server section.

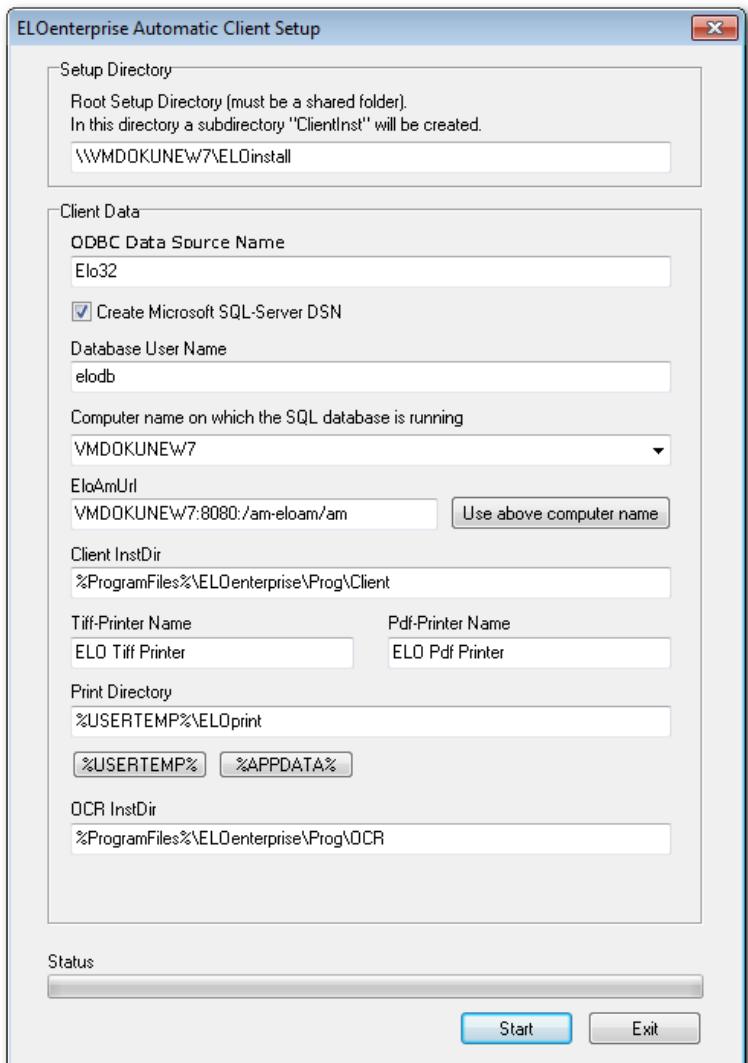


Fig. Automatic client installation settings

The *Automatic Client Setup* will open. The information required here includes the same entries which are needed for the standard installation along with a few additional items. The following describes the information which needs to be entered:

**Setup Directory:** This is the shared folder in which the directory structure will be created. It should be accessible from all computers on which the client installation should be run.

**ODBC Data Source Name:** This is the name that will be created for the ODBC data source (DSN), which will be used on Windows computers to access the SQL database (or other database) used by ELO. If ODBC data sources other than the ELO database also need to be accessed, be sure the DSN for ELO is different.

**Database User Name:** This is the user name for the database which was created when installing ELO Server.

**Computer name of SQL database:** This is the name of the computer on which the SQL database is located.

**EloAmUrl:** This is the URL to the ELO Access Manager.

**Client InstDir:** This is the path of the directory in which the client software will be installed on each computer. Environment variables (e.g. %ProgramFiles%) can be used.

**Tiff-Printer Name:** Here you can specify under which name the ELO TIFF Printer should appear.

**Pdf-Printer Name:** Here you can specify under which name the ELO PDF Printer should appear.

**Print Directory:** This is the path of the temporary directory used for printing on each computer. By clicking the buttons beneath the text box, the environment variable can be changed.

**OCR InstDir:** This is the path in which the OCR module will be installed. Environment variables (e.g. %ProgramFiles%) can be used.

3. Modify the default values as appropriate for your system and then click *Start*.

The files and folders needed for installing the client software will now be copied into the shared folder entered in *Setup Directory*.

4. Once the procedure has finished, click *Exit* to close the dialog box.

The *setup.exe* for the client program and other modules will now be available on the network in the subfolder *ClientInst* of the designated folder.

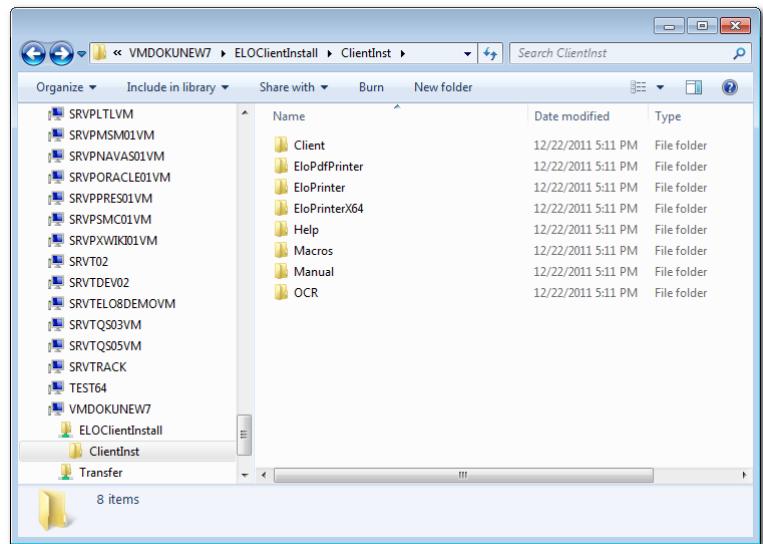


Fig. Subfolders created by the automatic client setup



# Appendices

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The following topics are covered in the appendices: *Additional Installation Information*, *Directory Access Rights*, *Parameters in the File config.xml*, *Log Files*, *Increasing Tomcat Memory*, and *Third-party Licenses*.

---

## Additional Installation Information

The installation of the ELO applications is designed to be flexible. Depending upon individual requirements, they can all be installed on a single computer or on a number of logical servers of a single computer in a multi-tenant system. Alternatively, the applications can each be installed on physically separate computers. The set-up program cannot cover all of the possible installation scenarios, and because of this, only the typical configurations are covered in this handbook. When special installation scenarios are required, the `config.xml` file can be adapted to such requirements. However, this requires detailed knowledge of *ELOenterprise* along with a thorough understanding of the Tomcat application server and the structure of the configuration files.

---

# Directory Access Rights

After a standard installation Tomcat runs as a service under the system account and has complete access to all local directories. Using this account has the disadvantage that directories on other servers, such as file servers, cannot be accessed and that the system account has a wide range of rights beyond what are needed for running Tomcat. Chapter 3 describes the procedure for creating an individual account for Tomcat under Windows. The section below describes the procedures for creating such an account under Linux and Solaris.

## Linux and Solaris

Under Linux or Solaris, Tomcat should have an individual account with restricted access rights instead of running under the *root* account. Suse Linux generally includes Tomcat and pre-configures it with the appropriate access rights.

When using Solaris it may be necessary to create a start script under `/etc/init.d` which sets the account for Tomcat. In addition an appropriate owner of the Tomcat directory must be set.

The *ELOenterprise* installation is carried out under *root* and the ownership of file and archive directories (including sub-directories and files) is normally set during the installation of an application. If this is not done, certain applications, such as the access manager, cannot write or create files due to insufficient access rights. This means that the configuration must be carried out manually. This applies to the following directories:

- Data directory (standard value: *ELOenterprise/data*)
- Archive directory (standard value: *ELOenterprise/archive*)

When installing under Linux and Solaris, the setup program informs the administrator at the end of the installation process about the ownership of the directories if they have not been correctly configured. For the access manager, fulltext, indexserver and XML import, this is the data directory, and for the document manager it is the archive directory.

**Example**

For Suse the name of the Tomcat account is *tomcat* (see file `/etc/init.d/tomcat`). There is also a group with the same name. From within the ELOenterprise directory the commands are as follows:

- For the data directory: `chown -R tomcat:tomcat data`
- For the archive directory: `chown -R tomcat:tomcat archive`

---

## Parameters in the File config.xml

Generally the `config.xml` file will be correctly configured with the appropriate values during the installation process and will not require manual changes. In special situations which demand a customized installation, the file must be manually changed. The following table includes a list of all of the parameters for the file.

The description of the `config.xml` files for the AdminConsole, the Workflow Form service, Automation Services, and the XML Importer is included in their respective manuals.

**ELOam, ELOdm,  
ELOix, and ELOft**

Parameter	Description
dbdriver	Java database driver (pure JDBC driver)
jdbcurl	Java database connection via JDBC.
database	Utilized database This parameter should only be set when a Microsoft SQL Server is used or a compatible database engine which allows switching between databases with the USE commands is utilised instead. When nothing is entered here then the database must be included in jdbcurl (Oracle).
dbconnections	Number of database connections that are permanently in use (not for ELOix).
dbuser	Name of the database user. When using Oracle an individual database account is used by the document manager of each archive.
dbpwd	Password of the database user. It is created in an encrypted form during the installation (multiple number separated by a hyphen), but can be used in a non-encrypted form.
eloftoptgroup	Group number for the values in the database table eloftopt. This should not normally be changed. (Only ELOft)
proxyslot	Slot number (1-4) of the branch office sharing the same ELOdm when proxy mode is used. "0" is for the main office. (Only ELOdm)

**Textreader (ELOtr)**

Parameter	Description
dirs_doc	Source and target directory for files with the .doc extension, separated by a pipe character.
dirs_docx	Source and target directory for files with the .docx extension, separated by a pipe character.
dirs_dot	Source and target directory for files with the .dot (Word templates) extension, separated by a pipe character.
dirs_pdf	Source and target directory for files with the .pdf extension, separated by a pipe character.
dirs_xls	Source and target directory for files with the .xls extension, separated by a pipe character.
dirs_xla	Source and target directory for files with the .xla (Excel add-in) extension, separated by a pipe character.
dirs_xlsx	Source and target directory for files with the .xlsx extension, separated by a pipe character.
dirs_htm	Source and target directory for files with the .htm extension, separated by a pipe character.
dirs_html	Source and target directory for files with the .html extension, separated by a pipe character.
dirs_mht	Source and target directory for files with the .mht extension, separated by a pipe character.
dirs_mmf	Source and target directory for files with the .mmf (COLD documents) extension, separated by a pipe character.
dirs_msg	Source and target directory for files with the .msg (Microsoft Outlook) extension, separated by a pipe character.
dirs_eml	Source and target directory for files with the .eml extension, separated by a pipe character.
dirs_pps	Source and target directory for files with the .pps (Powerpoint slideshow) extension, separated by a pipe character.

**Textreader (ELOtr),  
cont.**

Parameter	Description
dirs_ppt	Source and target directory for files with the .ppt (Powerpoint presentation) extension, separated by a pipe character.
dirs_pptx	Source and target directory for files with the .pptx extension, separated by a pipe character.
dirs_rtf	Source and target directory for files with the .rtf extension, separated by a pipe character.
dirs_vcf	Source and target directory for files with the .vcf extension (vCard), separated by a pipe character.
dirs_vsd	Source and target directory for files with the .vsd extension (Microsoft Visio), separated by a pipe character.
dirs_xml	Source and target directory for files with the .xml extension, separated by a pipe character.
dirs_zip	Source and target directory for files with the .zip extension, separated by a pipe character.
dirs_jpg & dirs_jpeg	The path for JPEG files extracted from text documents (e.g. PDF files).
dirs_png	The path for PNG files extracted from text documents (e.g. PDF files).
dirs_tif & dirs_tiff	The path for TIFF files extracted from text documents (e.g. PDF files).
file_max_error	If files of a particular type cannot be converted for any reason they remain in the appropriate directory. When the sum of files remaining in a particular directory reaches the value entered in file_max_error then the textreader will be stopped with an error message and the files must be manually removed from the directory.
file_max_size _MB	Maximum size in MB of the files that can be processed. If the size of the file exceeds this value they will not be processed but deleted. When a large value is entered here the Tomcat memory must be increased.

**Textreader (ELOTr),  
cont.**

Parameter	Description
file_err_move_dir	An existing directory can be entered here and any files that cannot be processed will be moved into this directory. If a value is not entered here the files will be deleted.
convert not possible value	Error value used when conversion fails.

**ELOsx and ELOis**

Parameter	Description
user	The account used for ELO iSearch and ELO Search Indexer. The default user created when initially installing ELOenterprise is <i>ELO Service</i> .
password	This is the password for the user account in encrypted form. (Passwords can be encrypted by using <code>password.bat</code> .)
ixurl	The URL of the IndexServer.

---

# Log Files

Various log files are written during ELO's installation as well as afterwards when using ELO applications like the Access Manager. These files are found in various locations depending upon whether ELOprofessional Server or ELOenterprise is used. The information contained in these files is useful not only when searching for errors, but also when analyzing the normal operation and status of the ELO applications.

<b>Tomcat</b>	The standard location for the log files of the Tomcat application manager is the sub-directory logs in either the Tomcat program folder (ELOenterprise) or in the same-named sub-directory in the ELO program folder (ELOprofessional). If another path was chosen for these files during installation, then they will be located there.
<b>tomcat7-stderr.*.log and tom- cat7-stdout.*.log</b>	These two log files save any messages received from Tomcat. Messages from ELO can also occasionally be found within these log files. Normally these logs must only be checked when problems have occurred.
<b>ELO Components</b>	Separate log files are written for each of the ELO applications. These are located either in Tomcat's sub-directory logs (ELOenterprise)or in the same-named sub-directory in the ELO program folder (ELOprofessional)
<b>am-*.*.log</b>	This log file contains the log data for the Access Manager.
<b>as-*.*.log</b>	This log file contains the log data for the Automation Services.
<b>dm-*.*.log</b>	This log file contains the log data for the document manager.
<b>ft-*.*.log</b>	This log file contains the log data generated when operating the Fulltext module.
<b>im-*.*.log</b>	This log file contains the log data for the XML Importer.
<b>is-*.*.log</b>	This log file contains the log data for iSearch.
<b>ix-*.*.log</b>	This log file contains the log data for the indexserver
<b>sx-*.*.log</b>	This log file contains the log data for the Search Indexer.
<b>tr-*.*.log</b>	This log file contains the log data for the textreader

<b>wf-* .log</b>	This log file contains the log data for the Workflow Form service.
<b>serversetup.log</b>	This log file contains the log data for the installation process and is located in the server installation directory.
<b>log4j</b>	The <i>log4j</i> library is used by web applications and controls the storage of data in the log files. Each log file has an individual configuration file, <i>log4j.properties</i> , and the format of the log data can be modified within this file. The default location for these files is the ELO sub-directory ... \prog\serversetup\configdata\templates. The protocol level for the log file can also be modified here by changing the level from <b>INFO</b> to <b>DEBUG</b> . It should be noted that considerable loss of performance may occur when this is done due to the increase in data being written to the log file, particularly when using the textreader. The log files should be saved in an area of the server where they cannot influence system performance by filling up hard drives, for example. New log files are started every day at midnight and the existing file is renamed with the appropriate date at the end of the name. These files can be deleted at any time. Normally no modifications to the configuration file of the log file are needed. Further information on this subject is included in the <i>log4j</i> manual, which is a third-party product and not from ELO.

# Increasing Available Java Memory in Tomcat

The increasing size of documents being processed with ELO and the large amounts of memory needed for handling large indexes—especially in regards to ELO's new iSearch component—place high demands on the Tomcat application server. In most cases the default settings will be inadequate, which will be evident by errors appearing in Apache's log file `stdout.log` such as:

```
java.lang.OutOfMemoryError: PermGen space
```

For this reason it is recommended to increase the Java memory available for Tomcat. Internal testing has shown that increasing the *Maximum memory pool* value to 1000 MB (default is 64 MB) and increasing the variable *MaxPermSize* to 350 MB (roughly one third of the other value) is adequate for typical usage. Total RAM available on the server should significantly exceed whatever value is entered for *Maximum memory pool*.

## Changing the Amount of Memory

**Windows:** The Apache Tomcat Properties application can be opened via the start menu or by right-clicking the Tomcat icon located in the notification area of the taskbar. The memory settings for Java are changed on the Java tab.

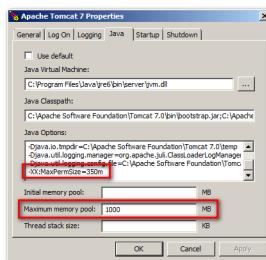


Fig. Changing Tomcat's maximum memory pool

Change *Maximum memory pool* simply by entering a number in the appropriate field (in MB). *MaxPermSize* is changed by adding a line to the text field under *Java Options*. To set its value to 350 MB, for example, add a line with the following text:

```
-XX:MaxPermSize=350m
```

**Linux and Solaris:** The memory settings for Java in Tomcat can be changed by modifying the system variable CATALINA\_OPTS. To modify this variable under SUSE Linux Enterprise Server 11, simply add a line to the tomcat6 file in /etc/sysconfig.

Example for setting the initial and maximum memory pool to 1000 MB and the MaxPermSize variable to 350 MB:  
CATALINA\_OPTS="-Xms1000m -Xmx1000m -XX:MaxPermSize=350m"

**Please note:** Tomcat will need to be restarted before the new settings take effect.



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# Third-Party Licenses

Comprehensive information to the licenses can be found on the ELOenterprise or ELOprofessional installation medium. For the Apache License see <http://www.apache.org/licenses>.

Library name	JAR-File	License
Log4j	log4j-1.2.8.jar	Apache SW Lic. 2.0
Jakarta Commons Logging	commons-logging.jar	Apache SW Lic. 2.0
Jakarta Commons HttpClient	commons-httpclient- 2.0.jar	Apache SW Lic. 2.0
JDOM	jdom.jar	JDOM License
Jakarta POI	poi-3.7-final.jar	Apache SW Lic. 2.0
Java Excel API	jxl.jar	GNU Lesser GPL
PDFBox	pdfbox-1.4.0.jar	Apache SW Lic. 2.0
JZlib	jxl.jar	BSD
Majix	majix.jar	Mozilla Public Lic. 1.1
Xp	xp.jar	Xp License
Xt	xt.jar	Xt License
Java Web Services Developer Pack 2.0	(diverse)	(siehe Textdatei auf der CD)
Microsoft SQL Server 2008 R2 JDBC Driver	sqljdbc4.jar	Microsoft
Oracle 11g JDBC Driver	ojdbc6.jar	Oracle
DB2 JDBC Driver	db2jcc.jar	IBM

---

## Internet presence

On the website for ELO Digital Office GmbH, you can find additional information on our software. This information can be useful for users, administrators and developers. There are areas that are accessible to everyone. For other information areas, you will require a login.

You can find our website on the Internet at:

**<http://www.elo.com>**

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