ELO server – Installation and operation

Repository and documents

Table of contents

Paths and URLs

Introduction

ELO uses different paths and URLs depending on the purpose and range of tasks.

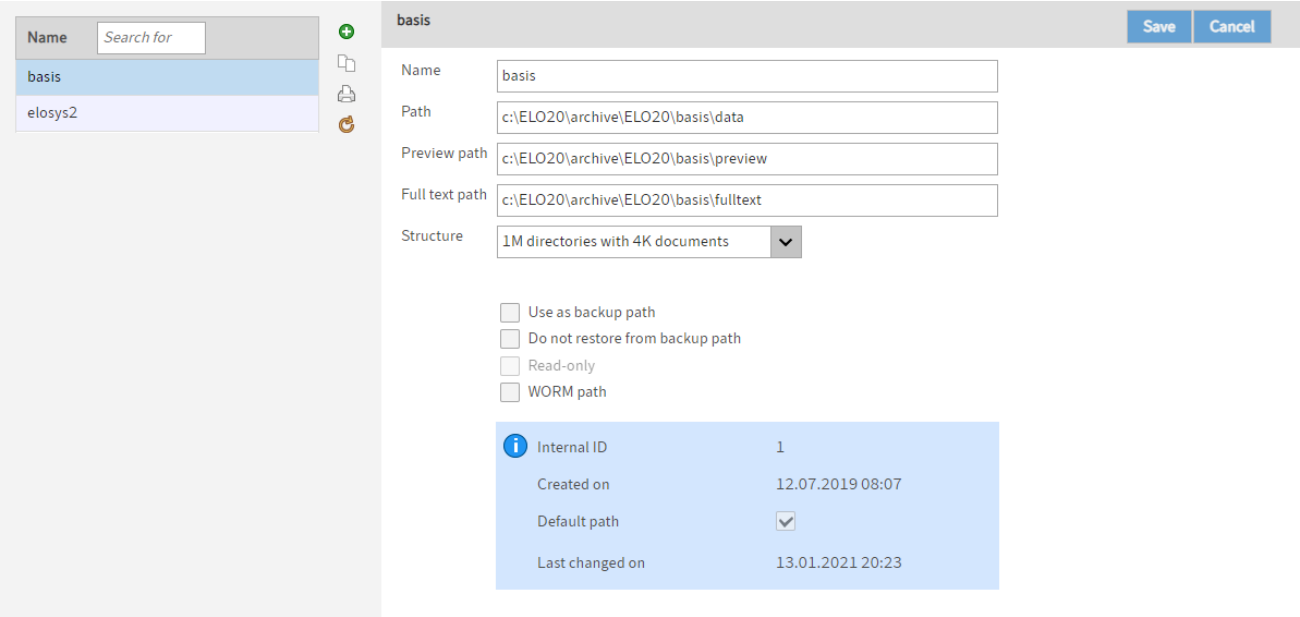
This documentation covers the following topics:

- Document paths
- Default document paths
- Manage URLs

Document paths

ELO manages storage media (physical storage) using document paths. In the *Document paths* area of the ELO Administration Console, you can set up new media, make moved media accessible again, or check the free storage space on a medium. The document path specifies where the documents are stored physically.

> **Information**
>
> You can specify a separate document path for each document when entering metadata. However, this is only possible if you selected *No fixed assignment* as the document path when the metadata form was created.



> **Information**
>
> You need to have the permission *Change document paths* to edit document paths. Your system administrator can assign this right to you.

Creating a new document path

1. Click *Add new document path* (green plus icon).

   The fields for a new document path appear in the right-hand program pane.

2. Enter the name of the document path to the *Name* field.

3. Define other options.

   Path: Enter the path on the file system that will be used to store the files.

Preview path: If you want to save the preview files separately from the documents, enter the path here.

Full text path: If you want to store full text files separately from the documents, enter the path here.

Structure: Define here how ELO stores the documents. Open the drop-down menu to view the options you can select, such as Flat, no child directories, for ELO to store all documents to the same directory.

Example

- If you select *Flat, no child directories*, ELO will put all documents in a single directory with no limits.
- For *64k directories with 64k documents*, ELO will file a maximum of 64,000 documents in any one of up to 64,000 directories.

> **Information**
>
> The best setting depends on your preferred directory structure and which storage medium you have in use.

Use as backup path: If you select the check box, the path can be used to back up data. The option is available in the *Restore path* field in the *Default document paths* area.

> **Please note**
>
> A backup path is not a substitute for actual backups!

Do not restore from backup path: The path is not used to restore documents.

Read-only: A path with the status "read-only" can no longer be written to.

> **Please note**
>
> You should not store documents with an expiration date on read-only media. Doing so could lead to inconsistencies when permanently deleting expired documents.

WORM path: WORM is the abbreviation for: *write once read many*. If this option is selected, the path can be used for applications such as jukebox storage.

ELO automatically creates the following fields in this dialog box:

- Internal ID
- Default path
- Created on
- Changed on

The internal identification number is displayed when the path was created or changed.

> **Information**
>
> The *Delete permanently* function does not check whether the documents are located at a WORM path. The document path setting does not affect the document metadata.

> **Please note**
>
> Documents stored on WORM media can also be deleted from the repository. This means that access via the system is no longer possible.

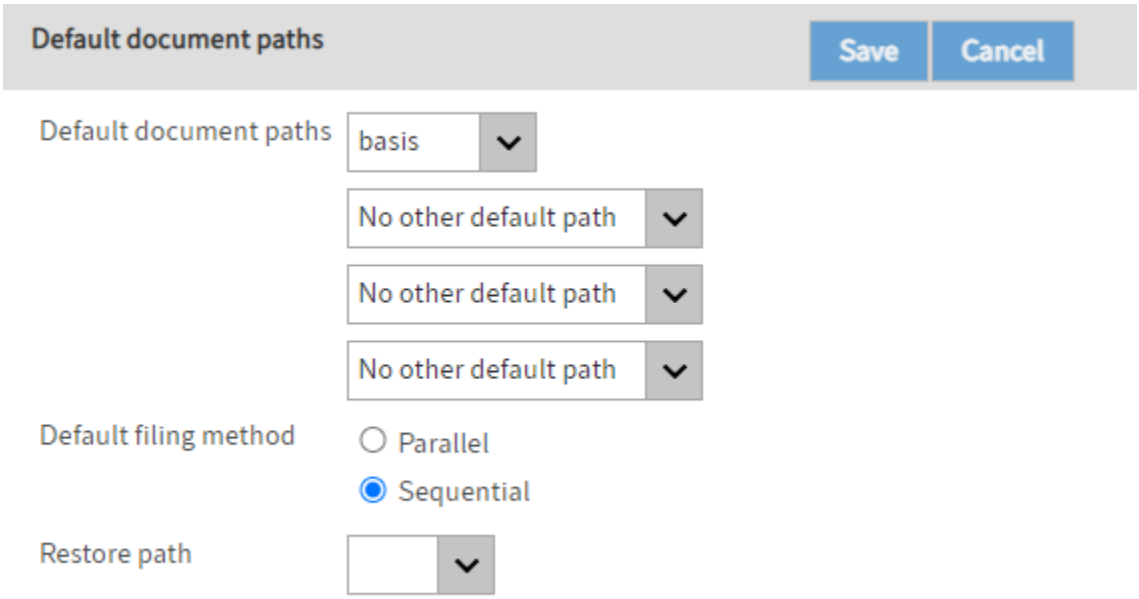
4. Click *Save* to confirm your entries.

   The new path shows up in the list on the left-hand side.

All document paths will now be used according to the applied settings to save and restore documents.

Default document paths

In the *Default document paths* area of the ELO Administration Console, you specify which paths to use as document paths or restore paths.



Default document paths: Use the *Default document paths* drop-down menu to select the main document path.

No other default path: If required, you can use the fields marked *No other default path* to add document paths.

Default filing method: These radio buttons enable you to specify how to distribute the entries to the document paths.

Restore path: Use the *Restore path* drop-down menu to select the backup path to be used.

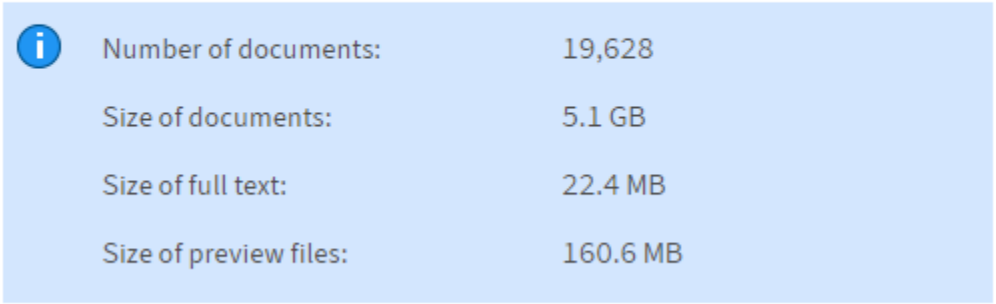
Move document files

In the *Move document files* area, you can move files, file versions, attachments, and/or attachment versions to a different document path. The repository structure remains the same.

Source path: In the *Source path* drop-down menu, you can choose whether to move document files from all paths or only from a selected path.

Target path: Select the desired source path from the *Source path* drop-down menu. You may need to create the path first in the *Document paths* area.

Filing date range: You can use the *from* and *to* date fields to restrict the action to a specific period. If you define a period, only document files filed within the specified period will be moved. Otherwise, all document files on the selected path will be moved.



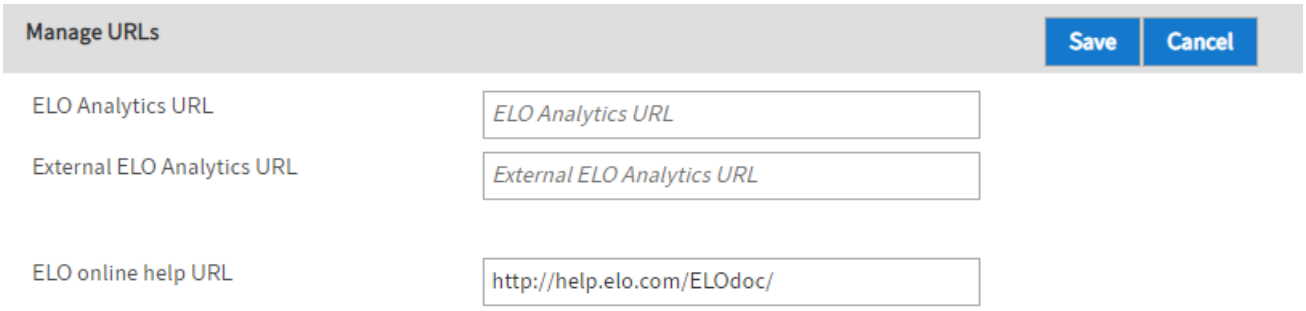
Count: Click the *Count* button to generate a report on the number and size of document files that would be moved according to your settings.

Move: Click the *Move* button to start the move action.

Restore default settings: Click the *Restore default settings* button to restore the default settings in the *Move document files* area.

Manage URLs

In the *Manage URLs* area of the ELO Administration Console, you enter the URLs for different ELO modules.



ELO Analytics URL: The ELO Analytics URL is automatically entered by the ELO Server Setup.

External ELO Analytics URL: Enter the external URL used to make ELO Analytics available externally in this field.

Please refer to the separate documentation on ELO Analytics for more information on configuring and installing ELO Analytics.

ELO online help URL: The ELO Server Setup enters the URL to the help portal here.

By default, this is the address:

```
https://docs.elo.com/
```

ELO OCR Service

Information

Please note

Starting with ELO 21.4, ELO Textreader (gen. 2) replaces the previous ELO Textreader (ELOtr), ELO Preview Converter (ELOpreview), and ELO OCR Service (ELOocr).

For more information, refer to the *ELO Textreader (gen. 2)* documentation.

ELO Indexserver OCR

Information

This documentation has been moved.

You can now find the documentation on the ELO Indexserver page.

Textreader

Information

Please note

Starting with ELO 21.4, ELO Textreader (gen. 2) replaces the previous ELO Textreader (ELOtr), ELO Preview Converter (ELOpreview), and ELO OCR Service (ELOocr).

For more information, refer to the *ELO Textreader (gen. 2)* documentation.

Backup service

Backup

ELO Backup is a component within the ELO Document Manager (ELOdm), meaning that additional software does not need to be installed to use it.

Note on ELO Replication

If the *ELO Replication* module is in use and the Transfer DDS option is enabled in this module, the backup profile must always contain an SQL command under *SQL Select* in order to exclude certain temporary documents. You will find details in the section *Only backing up certain documents*.

Procedure

Check license

The ELOenterprise or ELOprofessional license file, which was uploaded on installation and that is used by the ELO Access Manager, must include an ELO Backup license.

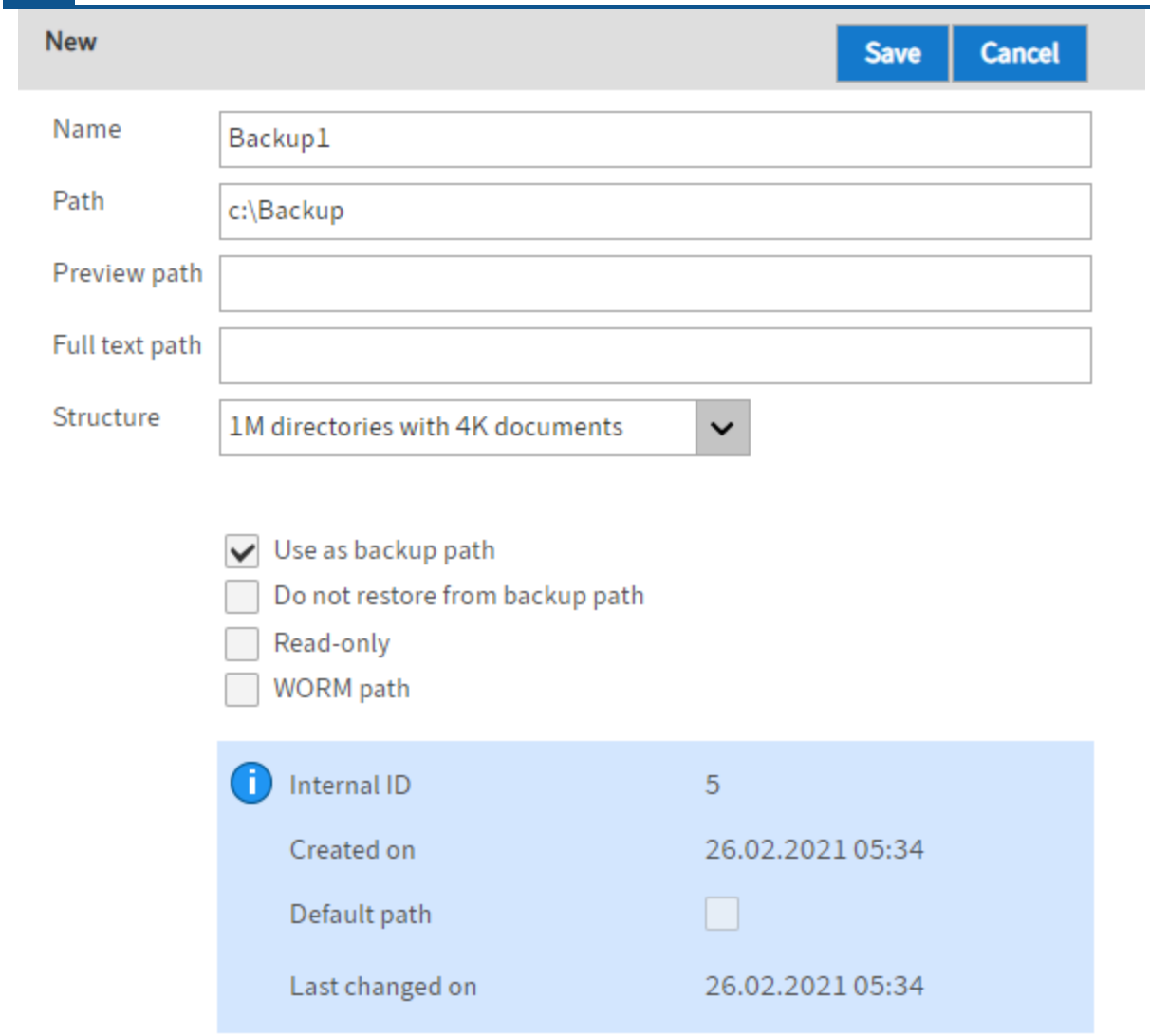
The license file can also be changed later. If you wish to do so, please send a request to the ELO order center.

Settings for Centera, NetApp, and DR550

If you wish to use a system based on EMC Centera, a NetApp system, or the IBM Tivoli Storage Manager (and/or a DR550), read the corresponding chapter as well.

Create a path entry

You need a path for a backup to indicate where the documents should be copied to. If a backup path does not yet exist, create it in the ELO Administration Console in the *Document paths* area.



Select the option *Use as backup path*.

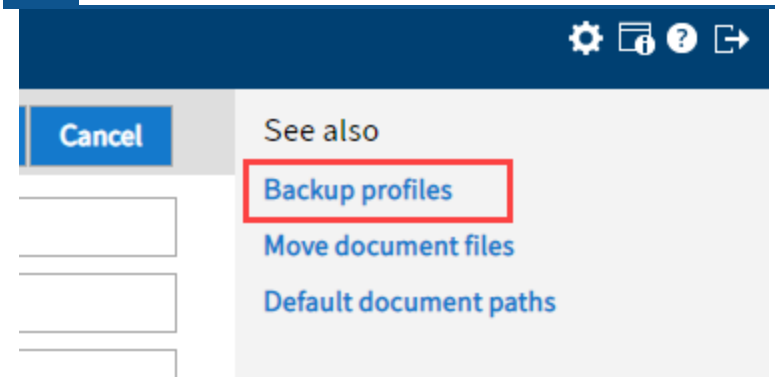
Leave the *Preview path* and *Full text path* fields blank. They will be ignored during backup.

Click *Save*.

After you have saved the path, the internal ID of the path is displayed.

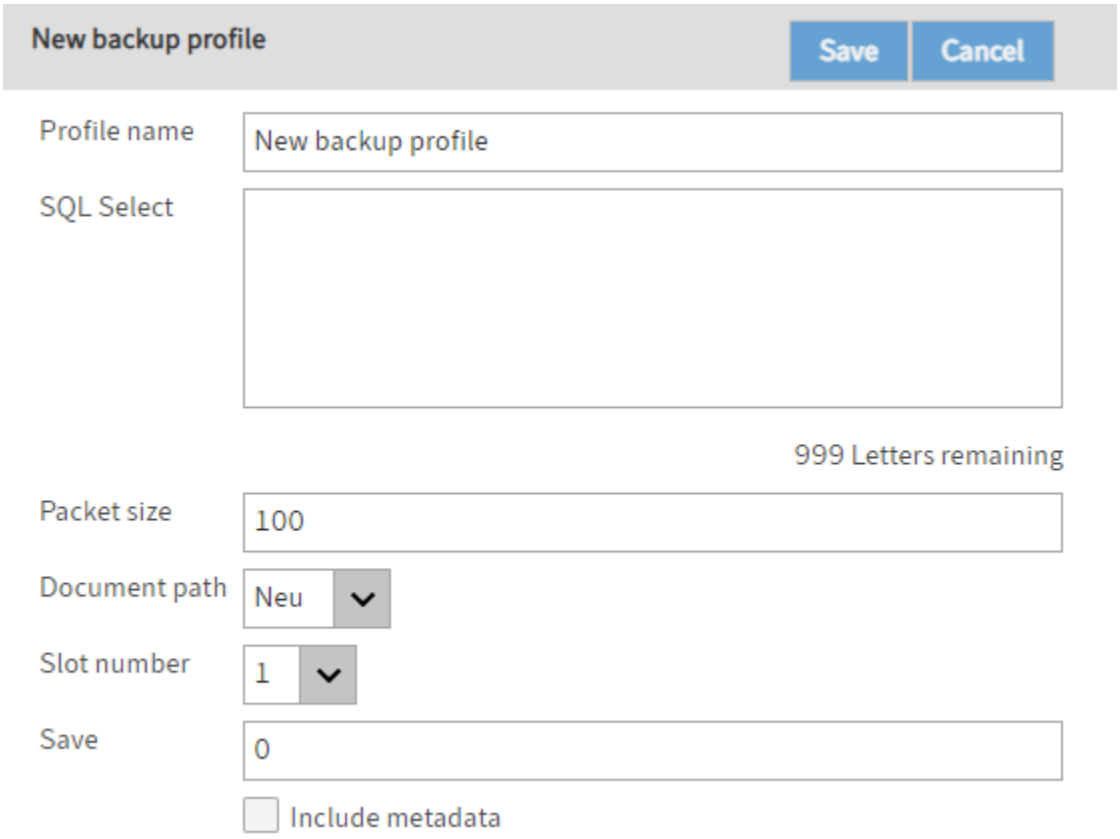
Create profile

One backup path is specified for each backup profile. The backup profiles are traversed and processed at specified intervals. Normally, one profile per path is sufficient.



In the ELO Administration Console, go to the *Document paths* area and click *Backup profiles*.

Click the green plus icon (*Create new backup profile*).



The *Create new backup profile* area appears.

Input field	Meaning
Profile name	Any unique profile name within the selected repository, with no spaces or special characters. The displayed profiles apply for the selected repository, and are managed by the corresponding ELO Document Manager.

Input field	Meaning
SQL Select	(Optional) SQL Select command used to determine which documents are filed. Normally, you do not need to make an entry here. A default value will be applied. See section *Backing up specific documents only*.
Packet size	Maximum number of files processed in each run: 100 (recommended). 0 is also possible, meaning that a default value of 1000 will be used. Otherwise, values from about 100 and up are recommended.
Document path	Select the desired backup path from the drop-down menu.
Slot number	Number of the backup slots from 1 to 4. 1 (recommended) means that slot 1 is used by this profile. See section *Backing up specific documents only*.
Retention	Deletion lock in seconds. Only considered by ELO Document Manager when using Centera (external storage medium).**0 (recommended)**means: No change to the lock defined in the ELO Document Manager *elodmopt* table. If a value greater than 1 is entered, it will be used when writing the backup.
Including metadata	If this option is selected, a metadata file (extension: *ESW*) is generated for each backed up file.

Click *Save*.

The profile is now available. The profile appears in the list on the left-hand side of the *Backup profiles* area.

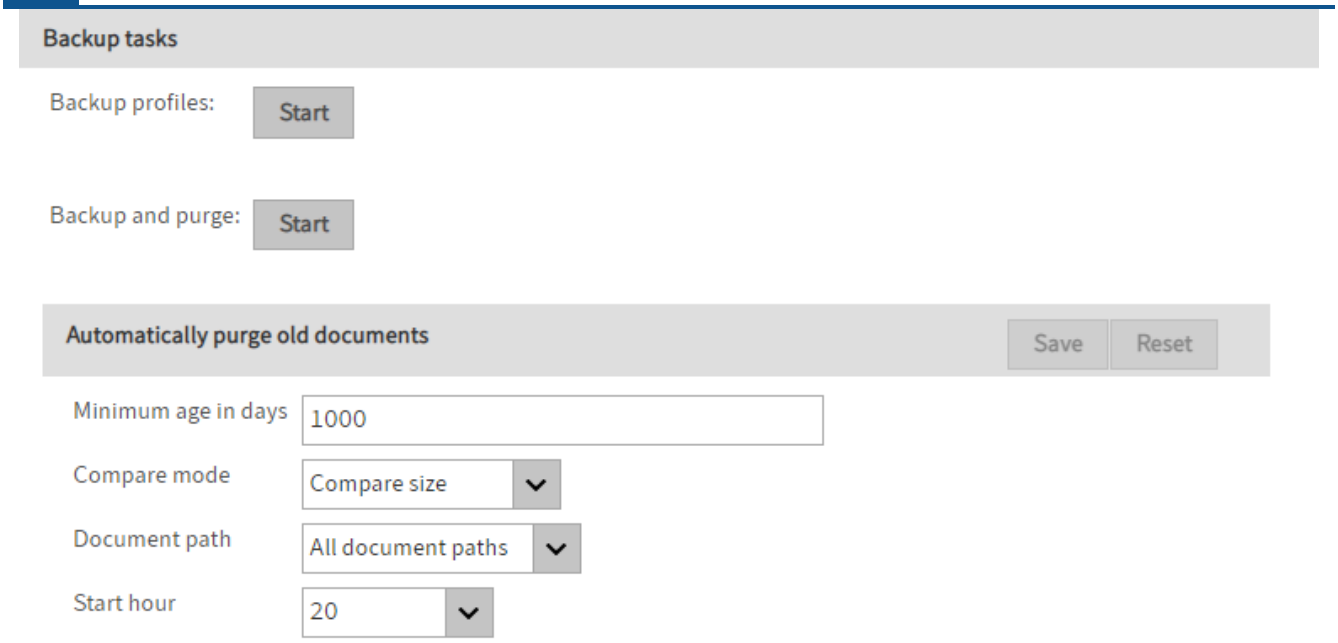
> **Information:**
>
> You may need to refresh the page to make changes visible.

Delete a profile by clicking the X icon.

Start backup

To start the backup, open the *Backup tasks* area under *Maintenance* in the ELO Administration Console.

You have the following options:



Option	Meaning
Backup profiles	Click *Start* to start the backup process using the settings from the most recently selected backup profile. (See the *Backup profiles* area). Click *Stop* to stop the backup immediately.
Backup and purge	Click *Start* to start the backup process using the settings from the most recently selected backup profile. (See the *Backup profiles* area). Old documents are also removed. The settings for this mode are located in the lower part of the *Backup tasks* area. See also the chapter Remove old documents. Click *Stop* to stop the backup immediately.
Click Save to confirm your entries.	Click *Save* to save the settings to automatically remove old documents.
Reset	Click *Reset* to reset the settings for automatic removal of old documents to the default values.
Minimum age in days	This value specifies after how many days old documents may be deleted. A value of 0 means that all old documents will be deleted.
Comparison mode	Select the method you want to use to search for old documents: Compare contents: A document is considered old if the backup contains a document with identical contents. No comparison: All documents are considered old documents. Compare contents: A document is considered old if the backup contains a document of identical size.
Document path	Select the document path from which old documents will be removed. It is possible to choose from all paths.

Option	Meaning
Start hour	Defines at which hour the deletion process will start each day, or if the deletion process should be run once every hour.

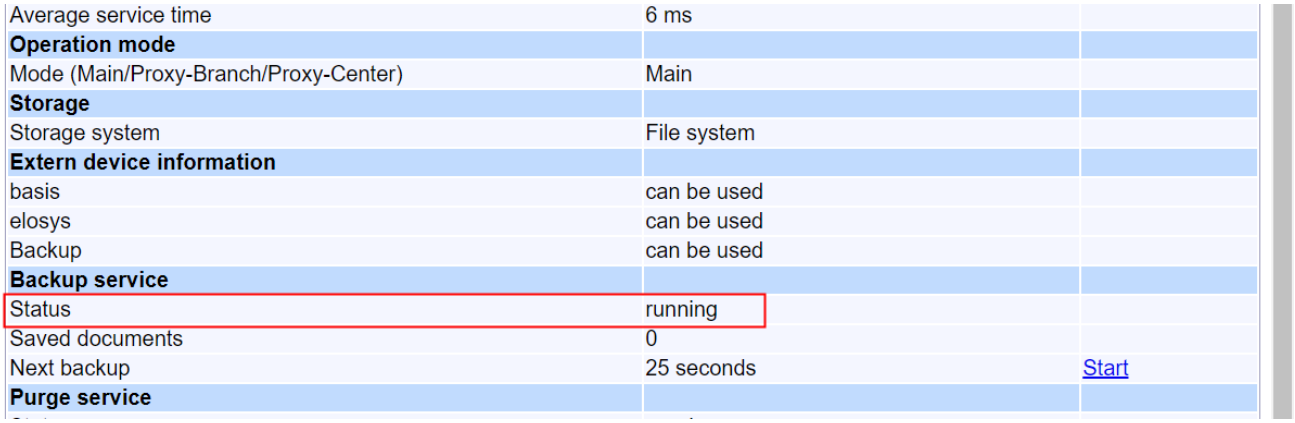
> **Information**
>
> The backup process always starts every time the Apache Tomcat server/the ELO Application Server is restarted.

Success check

Open the ELO Document Manager page in a browser and check whether the backup is running. You can access the status page from ELO 12 with the following navigation path: *ELO Indexserver status page > Configure Options > DM Status*.

Alternatively: You can access the status page of the ELO Document Manager with the following URL schema:

```
http://<server>:<port>/ix-\<repository name>/plugin/de.elo.dm.plugin/dm?\_cmd\_=status
```



If the backup is currently running, "running" is shown in the *Backup task* line. If not, check the ELO Document Manager log file for error messages.

Start prompts the system to check whether a backup is needed. The setting for execution time is ignored. This is useful, for example, for function tests.

Now, check whether the backup is working.

If your repository is still empty, file at least one document using the ELO client. A backup process always takes at least 30 seconds. Afterwards, the counter for *Saved documents* should increase and the document should be available on the computer at the selected backup path (assuming you are not using Centera or a TSM server).

If you have enabled the *Including metadata* option in the backup profile, an ESW file should be generated for each backed up document.

Path rerouting

When a backup path is full, another path can be written to automatically, and the existing path number will be replaced in the backup profile with the new path number.

Only paths created as backup paths are taken into account.

Additional backup paths must contain a number 1 higher than that of the previous path.

If the first backup path does not contain a number at the end of its name, the name of the next path must end with 2 (see example 2).

We recommend using leading zeros before the number. The zeros are taken into account (example 3).

Example 1:

The name of your backup path is *backup1*.

Now create an additional path titled *backup2*; which should point to another drive or another server.

This would be followed by *backup3* etc.

Example 2:

The name of your backup path is *xyz*.

The next path is *xyz2*, followed by *xyz3,* etc.

Example 3:

The name of your backup path is *b001*.

The next path is *b002*, followed by *b003,* etc.

After *b009* comes *b010*.

Path rerouting occurs when a path can no longer be written to. To force or to test path rerouting, all you have to do is change the rights to the relevant backup directory and its sub-directories such that the ELO Document Manager can no longer write to it. A corresponding message will then appear in the ELO Document Manager log file, and the next path will be used if possible.

If the path can no longer be written to, but no follow-up path is available, an error message will appear on the status page of the ELO Document Manager (in the browser), as well as in the log file. The backup program will pause for a period and then attempt a backup again.

In this case, create one or more follow-up paths.

Backup slots

One path number and backup slot are specified in each backup profile. This means that a document can be backed up to up to four paths, for example on various devices.

Examples

A backup profile called "Test profile" exists. Path number 2 and backup slot 1 are specified for this profile. This means that all documents are backed up on path 2. This path number 2 is entered in backup slot 1.

There are two backup profiles:

a) "Test profile1" with path number 2 and backup slot 1

b) "Test profile2" with path number 3 and backup slot 2

This means that all documents on path 2 and path 3 are backed up and are entered to slots 1 and 2.

If you use multiple backup profiles and you want to back up all documents for each profile, you should try to make sure that the profiles are clearly distinguished from one another. Each profile should use a different backup slot and path number, so that each slot and each path number occurs only once.

If you only want to back up certain documents, other settings are more helpful (see section *Only back up certain documents*).

When backup documents are no longer in the repository, meaning that they need to be recovered for access, the first occupied slot with the lowest slot number is always used. The fastest backup medium should therefore ideally be specified in the profile with the lowest slot number used.

In the *elodmdocs* database table, backup slot 1 corresponds to *pathid2*, slot 2 to *pathid3*, and so on.

Only back up certain documents (SQL Select)

To only back up certain documents, such as those with a certain file extension, you must enter a corresponding SQL command to the *SQL select* field when creating a backup profile.

If you don't enter anything, predefined SQL commands are used. In ELO Document Manager versions before 7.00.040, no backup could be created from another backup slot - only from the original. The document IDs of the documents set for backup have been collected with the simple SQL commands in the following table:

Backup slot	Simple SQL command (only backup from original)	Advanced SQL command (backup from backup slot also possible)
1 (pathid2)	`select docid from elodmdocs where pathid>0 and pathid2=0`	`select docid from elodmdocs where pathid2=0 and (pathid>0 or pathid3>0 or pathid4>0 or pathid5>0)`
2(pathid3)	`select docid from elodmdocs where pathid>0 and pathid3=0`	`select docid from elodmdocs where pathid3=0 and (pathid>0 or pathid2>0 or pathid4>0 or pathid5>0)`
3(pathid4)	`select docid from elodmdocs where pathid>0 and pathid4=0`	`select docid from elodmdocs where pathid4=0 and (pathid>0 or pathid2>0 or pathid3>0 or pathid5>0)`
4(pathid5)	`select docid from elodmdocs where pathid>0 and pathid5=0`	`select docid from elodmdocs where pathid5=0 and (pathid>0 or pathid2>0 or pathid3>0 or pathid4>0)`

Here, *pathid* is the path ID of the filing path. *Pathid2* to *pathid5* are the path IDs for the backup area, corresponding to backup slots 1 to 4.

A value of 0 means that no path ID has been entered, meaning there is no backup for that slot.

In the database table *elodmdocs*, a backup profile writing to backup slot 1 (i.e. pathid2) and entering path number 2 looks like this:

	pathid	pathid2	pathid3	pathid4	pathid5	crea
:39...	1	2	0	0	0	2011
)2...	1	2	0	0	0	2011
36...	1	2	0	0	0	2011

Recommendations for SQL command structure

ELO Document Manager 7.00.040 and higher uses the advanced SQL commands in the table above by default to enable backup of another backup slot. You can use the corresponding SQL command from the table above. However, it should always contain the following:

```
select docid from elodmdocs
```

Only then will the document IDs be returned.

Additionally, a condition should be specified that states a path ID is entered somewhere else (in the filing path or in another backup slot), which means a document exists that can be copied. For example:

```
where pathid>0
```

It is also useful to define a condition that states the path ID is still 0 from the backup slot in use (pathid2, pathid3, pathid4 or pathid5). For example:

```
pathid2=0
```

This condition ensures documents are only backed up once.

A simple example for specific documents in backup slot 1:

```
select docid from elodmdocs where pathid>0 and pathid2=0 and docid>1000
```

> **Please note**
>
> ELO Document Manager does not check whether the SQL command is correct or rational. Therefore, please check whether the SQL commands are executed correctly. Look at the ELO Document Manager log file and in the *elodmdocs* database table.

Using ELO Replication

This section addresses backup used in combination with the *ELO Replication* module.

If the *ELO Replication* module is in use and DDS transfer is enabled for replication, a command must always be entered to the profile under *SQL Select* ensuring that *DDS replacements that are only temporarily valid* will not be backed up.

When DDS files are transferred, ELO Replication creates small temporary files with the extension *TXT* before the original document is written. However, ELO Document Manager should not create backups of these temporary documents, as otherwise the original documents to be transferred at a later time by ELO Replication would no longer be backed up. If old documents are removed without backup control, only the backed up temporary file would still exist.

These temporary files always have the MD5 hash of 90F7168D4A2F4846E5846A75092F7C83 and the same contents ("DDS temporary replacement").

To prevent backup of these files, the entry for backup slot 1 would be as follows:

```
select docid from elodmdocs where pathid\>0 and pathid2=0 and md5 !=
'90F7168D4A2F4846E5846A75092F7C83'
```

In addition, the creation of MD5 hashes when creating documents must be enabled in ELO Document Manager. This is normally the case, and can only be disabled manually. Otherwise, the *md5* column in the *elodmdocs* table would not be filled, which would make a query to the database impossible.

EMC Centera

Procedure

If you wish to use an EMC Centera for your backup, you must do the following before creating a backup profile:

1. You require a Centera SDK from EMC that corresponds to the Document Manager (see following section Centera SDK and CentraStar versions). If you use Windows, Linux, or Solaris, you can find the SDK on the ELO DVD (for Windows, both 32-bit and 64-bit versions are available; otherwise a version for both 32-bit and 64-bit can be used).
2. Close the ELO client and stop the Apache Tomcat server/the ELO Application Server.
3. Remove the files for an old Centera SDK if any exist.
4. Install the SDK files as described in the *Installation* chapter of the instructions (PDF file) from EMC. In Linux and Solaris environments, a script must also be run. In Windows, extract the SDK to a temporary folder and copy (for SDK 3.2 p5) all 8 DLL files from the *lib32* or *lib64* directory into the Apache Tomcat/ELO Application Server directory *bin* (i.e. not the file with the extension *LIB*). Alternatively, you can use a different directory where the operating system can find the files.
5. Copy the *FPLibrary.jar* file from the SDK to the Apache Tomcat/ELO Application Server subdirectory *shared\lib*. If the file already exists from an older Centera SDK, replace it.
6.

Linux and Solaris: Check the environment variable *LD_LIBRARY_PATH*. This must be set in the profile for the account used to run Apache Tomcat.

Example (for Linux running a 64-bit version of Java):

```
LD_LIBRARY_PATH=/usr/local/Centera_SDK/lib/64
```

Java may not find the libraries, resulting in an *UnsatisfiedLinkError* upon the first Centera access. You must then additionally specify *java.library.path* for Apache Tomcat in the *CATALINA_OPTS* environment variable. For example:

```
CATALINA_OPTS="-Djava.library.path=/usr/local/Centera\_SDK/lib/64"
```

The variable can be defined in your script that calls the Tomcat start script, for example. The ELOenterprise DVD contains a small Java program from ELO in the Centera SDK directory that lets you quickly test Java access to the Centera libraries.

1. In the corresponding ELO Document Manager, enable the use of the Centera library. Do so with the following SQL command:

```
update elodmopt set optval='true' where optno=105
```

1. Specify a temporary directory for ELO Document Manager (to which Apache Tomcat has write access) with an SQL command. If your directory is *c:\temp*:

```
update elodmopt set optval= 'c:\temp' where optno=107
```

1. Check whether the preset of 600 seconds for retention in ELO Document Manager should be changed. The length of the deletion lock when writing documents on the Centera can be defined in three locations:
    - a) In the ELO Administration Console backup profile
    - b) In the *elodmopt* database table (optno=12)
    - c) In Centera itself

Within these three, a) has the highest priority, b) the second highest, and c) the third-highest. If a value greater than 0 is entered to the backup profile, this number will be used. If 0 is entered to the backup profile, the value will be used that is defined in the *elodmopt* table. If 0 is entered to the *elodmopt* table as well, the Centera preset will be used.

1. Start Apache Tomcat.

You now have to create an additional path entry in the ELO client.

1. In the *Access path* field, enter the IP address or the server name of the Centera, optionally followed by the port, separated by a colon (the default is *port 3218*).

Examples :

`100.100.100.1

Centera test: 3218'

You may specify multiple Centeras by separating each with a semicolon.

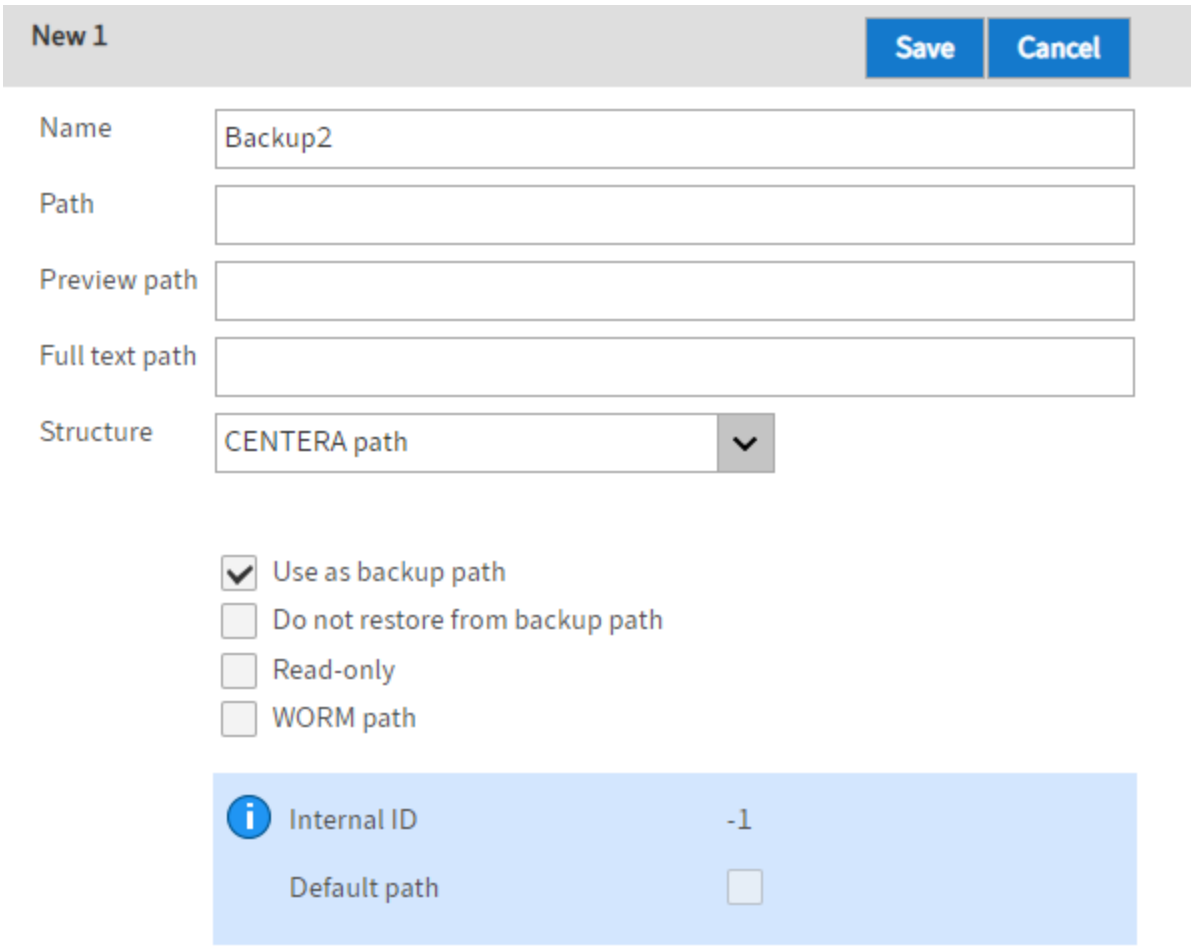
Example:

```
100.100.100.1:3218;100.100.100.2
```

You can also specify PEA files (see section Centera profile and PEA file).

1. Select the *Centera path* option in the *Structure* field. Also select the option *Use as backup path*.

An example:



Please note

Centera can only be used for backup paths. It can only be used for backup slot 1.

Older version of Centera SDK

> **Information**
>
> If ELO was already using an older version of Centera SDK: The Centera log file you could previously enter in the *elodmopt* table for logging reasons in older versions is no longer created starting with SDK 3.1p1. Use the following SQL command to see whether you have specified such a file:
>
> `select \* from elodmopt where optno=106` If this is the case, remove this file specification with the following: `update elodmopt set optval= '' where optno=106`

Centera SDK and CentraStar versions

If possible, use the version of the Centera SDK on the ELO DVD. The following table shows which alternative versions may be used.

In our experience, the version of CentraStar (which is the version of Centera itself) can also be higher, so for example an ELOdm and Centera SDK 3.2 will work alongside CentraStar 4.0.

ELO Document Manager	Centera SDK used	Other tested Centera SDKs	Tested CentraStar
From 4.0	2.3	3.1 p1	3.1
From 5.00.020	3.1 p1	3.2	3.1, 4.0
From 6.00.080	3.2	3.1 p1	4.0
From 8.00.012	3.2 p5	3.2	4.2

> **Please note**
>
> When using combinations that have not yet been tested (of ELO Document Manager, SDK, and CentraStar), you should perform tests before production use (backup, deletion of old documents, and restoration of documents).

Centera profile and PEA file

If your Centera uses a Centera profile, which requires the use of a PEA file for access, there are two possibilities.

In the document path

You can specify a PEA file when entering the document path.

Example:

```
100.120.140.1?D:\Centera\profil.pea
```

You may specify multiple Centeras by separating each with a semicolon.

```
100.120.140.1?D:\Centera\profil.pea;100.120.140.2?D:\Centera\profil2.pea
```

As environment variable

Create an environment variable named *CENTERA_PEA_LOCATION* that is recognized by the account under which Apache Tomcat/the ELO Application Server runs. If this runs on the *system* account in Windows, it must be a system variable. Enter the path and the name of the PEA file as the variable. For example:

```
d:\test\profil1.pea
```

If it is a system variable in Windows, you will have to restart your system, as otherwise the environment variable will not be activated.

The PEA file must not contain any deletion rights.

Possible error messages when using a Centera profile

- The error message "The use of this operation is restricted" means that a PEA file must be specified to access the Centera and no PEA file has been found.
- The error message "Failed to authenticate PEA data" can result in cases where the PEA file has not been found. In this latter case, check whether the PEA file is actually located in the correct location.

Other error messages

- java.lang.NoClassDefFoundError: com/filepool/fplibrary/FPPool
  - This message occurs in cases where the Centera Java file *FPLibrary.jar* has not been found. It must be placed in the Tomcat directory *shared\lib*. The directory must also be defined in the Tomcat file *catalina.properties*, which, however, automatically occurs during server setup.
- java.lang.UnsatisfiedLinkError: com.filepool.natives.FPLibraryNative.setLastError(I)V
  - This message occurs if the Centera libraries were not found.

NetApp storage system

The NetApp system can be used in ELO either as a standard filing path or as a path for backups.

> **Please note**
>
> When using the NetApp system, Apache Tomcat/the ELO Application Server cannot run on the *system* account. You must use an account that is able to access the other server. This account must have full access to the Tomcat/ELO Application Server directory, as well as to the configuration and data directories of the individual web applications. We recommend changing the owner of these directories and files accordingly.

With SnapLock

If you also want to use the SnapLock function, the hardware ensures that files can only be deleted after a period of time that you specify.

If you use the SnapLock functionality when backing up the ELO Document Manager, you have two ways of specifying the period in which a document is protected:

1. Use the *Default retention period* for the NetApp system
2. Set the retention period when filing to the ELO client. If the document is saved by the backup program in the ELO Document Manager, the latter date will be used. If this date falls outside an interval defined on the NetApp volume, it will be automatically modified by the NetApp system.

> **Information**
>
> When using SnapLock, enable the *WORM path* option in ELO when creating the document path.

NetApp system as default filing path

> **Please note**
>
> You should also enable the *WORM path* option when using it as the default filing path. However, this means the document status of *Version control disabled* (previously *Freely editable*) can no longer be used. Additionally, it is no longer possible to move paths and remove old documents. If the *WORM path* option is not enabled (not recommended), errors may occur when removing old documents. Conflicts may arise between the default settings for storage (default retention period) and the NetApp limit date. It is possible that database entries are changed, but the corresponding documents will not be able to be deleted.

Backup function test with SnapLock

1. Create a backup path on the Network Appliance server.
2. Create the backup path in the ELO Administration Console. Enable the *WORM path* option.
3. Create a corresponding backup profile.
4. On the ELO Document Manager status page, check whether backup is running. If not, start it in the ELO Administration Console.
5. File a document in the ELO client.
6. Attempt to delete the backed up file in the file system. This should not be possible if SnapLock is working.

Using retention periods in the ELO client

If you want to set a *retention period* (in older versions: expiration date) in the ELO client, you must make some changes in the ELO Document Manager. The ELO Document Manager must be set to log the last access date for a document after the document has been backed up.

> **Information**
>
> The retention period is only set for the backup, not when using the NetApp system as the default filing path. You can specify NetApp date entries up to January 17, 2071 for the retention period. The ELO Document Manager automatically corrects later retention periods by setting them to the last possible date.

Procedure

1. In the database, enable the option to set the last access date on the backup (USE_BACKUP_LAST_ACCESS). Also, in the *elodmopt* database table, change the value for record *108* to *true* for the affected repository. You can use the following SQL command:

```
update elodmopt set optval='true' where optno=108
```

If the record does not yet exist, create it. Use the following SQL command to do so:

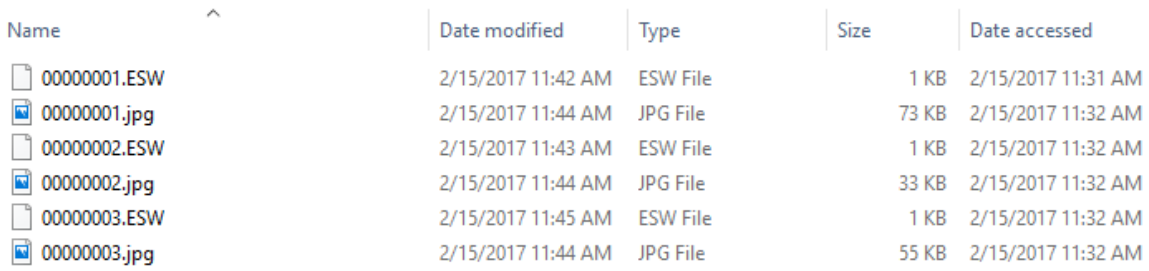
```
insert into elodmopt values (108,'true','USE\_BACKUP\_LAST\_ACCESS')
```

1. Restart Apache Tomcat.

Now the ELO Document Manager sets the last access date for documents on the backup. However, this is only the case if a document retention period has been set in the ELO client.

Function test

1. Create a backup path on the NetApp server.
2. Create the document path. Enable the options to *Use as backup path* and *WORM path*.
3. Set up the backup profile accordingly.



Name	Date modified	Type	Size	Date accessed
00000001.ESW	2/15/2017 11:42 AM	ESW File	1 KB	2/15/2017 11:31 AM
00000001.jpg	2/15/2017 11:44 AM	JPG File	73 KB	2/15/2017 11:32 AM
00000002.ESW	2/15/2017 11:43 AM	ESW File	1 KB	2/15/2017 11:32 AM
00000002.jpg	2/15/2017 11:44 AM	JPG File	33 KB	2/15/2017 11:32 AM
00000003.ESW	2/15/2017 11:45 AM	ESW File	1 KB	2/15/2017 11:32 AM
00000003.jpg	2/15/2017 11:44 AM	JPG File	55 KB	2/15/2017 11:32 AM

4. View the path in Windows Explorer. The date/time of the last access is not shown here by default. To change this, go to the *View* tab and add the *Date accessed* column.
5.

Open the ELO Document Manager status page to see if Backup is running. Start it if it is not.

6. File a document to ELO. Set a retention period some time in the future.
7. As soon as the file is saved to the backup path, check the date of last access in Windows Explorer. The date must match the retention period entered to ELO and must also lie in the future.
8. Check whether the file can be deleted. If SnapLock is working, it should not be possible to delete the file.

Possible problems

- If the last access time is not correct, check the ELO Document Manager log file to see whether the following line was set:

```
<Time> INFO (EswLastAcc.java) – backup: last access date was set
```

IBM DR550 and Tivoli Storage Manager

Software requirements

Either an IBM Tivoli Storage Manager (TSM) server or an IBM DR550 can be used. The TSM server software is installed on the DR550. This software must already be completely configured.

> **Information**
>
> A TSM server cannot be used as the default filing path.

Required software

- TSM server version 5.2.2 or higher (this is checked by the ELO Document Manager)
  - Tested versions: 5.3.3 (32-bit), 6.1.4.1 (64-bit)
- TSM client version 5.2.2 or higher (must be installed on the same server as the ELO Document Manager)
  - Tested versions: 5.3.2 (32-bit), 5.5.3.1 (64-bit), 6.1.4.0 (32-bit), and 6.2.1.0 (32-bit)
- Two TSM Java API files from IBM (located in the Apache Tomcat directory: *prog\serversetup\configdata\lib\tsm*):
  - TsmJavaApi.dll
  - TsmJavaApi.jar

Restrictions

The following restrictions can occur.

Only one Document Manager per Apache Tomcat

Only one ELO Document Manager per Apache Tomcat/ELO Application Server may access the TSM. Otherwise, the IBM library will return the error message:

```
error in tsmSetUp: ANS0238E (RC2041) The sequence of calls is invalid
```

If multiple repositories need access to the TSM, each ELOdm must be installed to a separate Apache Tomcat. However, only one ELO Access Manager is required.

Only with a 32-bit Java version

The TSM Java API files from IBM are only available for the 32-bit version of Java. The ELO Document Manager that accesses the TSM must be installed on a 32-bit version of Apache Tomcat/the ELO Application Server.

At present, access from ELOdm to the TSM server has only been tested in a Windows environment. For other operating systems, special conditions may need to be fulfilled.

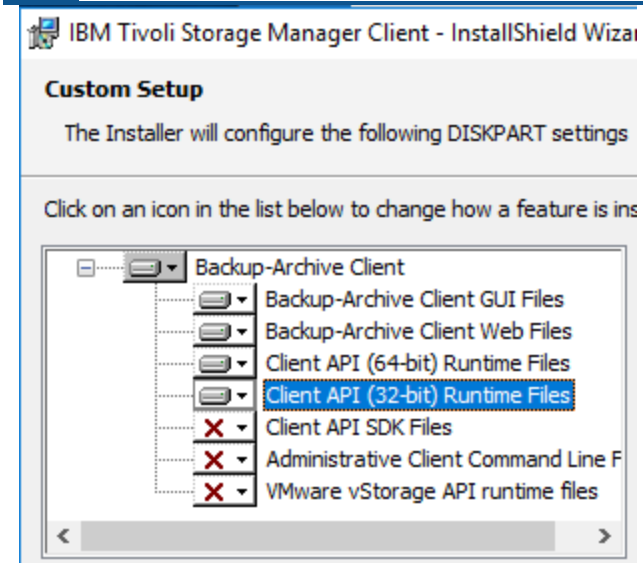
TSM server configuration

- The TSM server must be configured so data can be saved to it.
- A physical tape drive must not be used, as then the access times would be too long to work with the Document Manager.
- A primary storage pool is required. If you want to run more than one TSM session per ELO Document Manager, a storage pool with random access should be used (unit class: DISK). If subsequent media are defined, they must be of the same type, i.e. not with sequential access. Otherwise, simultaneous accesses would block each other until the end of the affected TSM session. More than one TSM session per ELO Document Manager is currently not recommended for production use, but it is at least possible for testing environments. With only one session, a storage pool with sequential access (unit class: FILE) can be used, such as for a virtual tape drive.
- A copy group of type *Archive* will be required (not *Backup*).
- In the used copy group, a value of *NOLIMIT* should be entered for *Retain Version* if possible, so that documents will not be deleted without the ELO Document Manager being notified of such.
- A client node with the corresponding password must be created for the ELO Document Manager that will access the TSM server. This password must not be set to expire. Any node name is possible, and it can be identical to the ELO repository name.
- Normally, only one mount point is required.
    - To create it, you can use the following command in the TSM console (*<name>* is the node name, *<password>* is the password):

```
register node <name> <password> passexp=0 domain=standard
```

Installing the software

1. Install the TSM client on the server that will also run the Document Manager.



Information

The 32-bit TSM runtime files are required on the server running the ELO Document Manager. This means that if a 64-bit version of Windows is running on the server, you can only install a 64-bit TSM client. To install it, use the adjusted setup and select the *Client API (32-bit) runtime files* feature.

1. If ELOdm is not yet installed, please install it on a 32-bit Apache Tomcat/ELO Application Server.
2. Stop Apache Tomcat/the ELO Application Server.
3. Copy *TsmJavaApi.dll* to the Apache Tomcat/ELO Application Server directory *\bin*.
    - Alternatively, you can use a different directory where the file can be found by the operating system in a specific path.
4. Copy *TsmJavaApi.jar* to the Apache Tomcat/ELO Application Server child directory *shared\lib*.
5. Enter any missing records to the *elodmopt* database table if needed. With older versions of the ELO Document Manager, these do not yet exist, especially the data set with optid=19.

SQL commands for the required new data sets (preset values):

```
insert into elodmopt values (19,'1','TSM SESSIONS');
insert into elodmopt values (109,'false','USE TSM');
insert into elodmopt values (110,'','TSM DSMI_CONFIG');
insert into elodmopt values (111,'','TSM DSMI_DIR');
insert into elodmopt values (112,'','TSM DSMI_LOG');
insert into elodmopt values (113,'','TSM CLIENT NODE');
insert into elodmopt values (114,'','TSM CLIENT NODE PWD');
insert into elodmopt values (115,'','TSM FILESPACE NAME');
```

```
insert into elodmopt values (116,'DEFAULT','TSM MANAGEMENT CLASS');
insert into elodmopt values (117,'true',
'TSM ARCHIVE RET PROTECTION');
```

1. Change the values in the *optval* column as described in the following section.

Records in the 'elodmopt' table

The following records in the *elodmopt* database table are meaningful when using TSM:

The ELO Document Manager reads the records at startup. Any time manual changes are made, the ELO Document Manager must be restarted. The entries in the *remark* column will not be evaluated by the ELO Document Manager, as they are only comments.

Optid	remark	Explanation for the optval column
19	TSM SESSIONS	Number of TSM sessions. More than one session is not recommended for productive use.
107	TEMP_PATH	An already existing directory for temporary files on the Document Manager, to which Apache Tomcat/the ELO Application Server has write access. The entry is already entered if Centera is in use, in which case no changes are necessary. For example:`c:\temp`
109	USE TSM	Determines whether TSM should be used (true or false). This allows the TSM to be turned on and off, regardless of whether the other data sets exist. However, if it is turned off, access to the TSM will no longer be possible.
110	TSM DSMI_CONFIG	TSM configuration file with path, such as: `C:\ELOenterprise\config\dm-elo\dsm.opt`(See the following section) The operating system environment variable with the same name will not be used.
111	TSM DSMI_DIR	Directory that contains the language files for the TSM client (in Windows this is *dscenu.txt*). Enter the corresponding child directory in the TSM client installation here. For example: `C:\Programme\Tivoli\TSM\baclien` The operating system environment variable with the same name will not be used.
112	TSM DSMI_LOG	Directory for the log file (*dsierror.log*). The operating system environment variable with the same name will not be used.
113	TSM CLIENT NODE	Name of the client node. This must exist on the TSM server.
114	TSM CLIENT NODE PWD	Password for the client node, in cleartext (will be encrypted when ELOdm next starts).
115	TSM FILESPACE NAME	TSM File space name. Recommendation: no special characters or umlauts. The name is converted to lowercase and ELOdm automatically places a backslash in front of the name.

Optid	remark	Explanation for the optval column
116	TSM MANAGEMENT CLASS	TSM management class. This will be used when saving files. Please note that the desired storage pool will be used. Uppercase or lowercase does not matter. Example: DEFAULT
117	TSM ARCHIVE RET PROTECTION	Determines whether retention protection should be used, and if it should be checked that it is running on the TSM server (*true* or *false*). If using a DR550, *true* must be entered here.

TSM configuration file 'dsm.opt'

The TSM configuration file exists for additional settings for the TSM to be able to be set. The file can be empty.

Recommendation: Create the file in the configuration directory of the ELO Document Manager.

Example: `C:\ELOenterprise\config\dm-elo`

If a port needs to be entered for the TSM server, which is normally not necessary, you can do so in the file (the entry then refers to all TSM servers in use). For example: `TCPPORT 1500`

Create backup path

You must note the following options when you create a backup path with access to a TSM server:

- Enter the server name or IP address of the TSM server in the *Path* field.
- You can add relative path entries if you wish (they will be converted to lowercase). A question mark needs to be placed between the server ID and the relative path.

  Examples:

  - `dr550?abc` or
  - `192.168.60.2?abc/def`

  A forward slash may not be placed directly after the question mark. A forward slash at the end will be removed. If you create multiple DR550 paths, please ensure that you always use the same entry before the question mark, because at least one session will be created for each server name. Otherwise, this would cause multiple sessions to be established unintentionally. The used TSM server names can be seen on the Document Manager status page.

- Select the *TSM path* option in the *Structure* field.

> **Information**
>
> If you want to create more than one backup path to a TSM server per ELO Document Manager, use relative paths. Additional path entries with the same server name would still work, but still only one session for this server would be created. A TSM server should not be entered once using the server name and then in an additional entry, e.g. under its IP

address, as this would establish two sessions to the same server, which could block simultaneous accesses, depending on the storage pool in use.

Backup profile

Note the following information on using a backup profile with a TSM server:

- The default setting of 0 should be used in the *Retention* field.
- The TSM can be used in any backup slot.

Function tests

- Regularly check the status page and the ELO Document Manager log file, as well as the TSM server log file (*dsierror.log*, see table above).
- Check whether the ELO Document Manager starts at all. The TSM server is only accessed when documents are backed up or restored.
- Check whether the backup service is running (see section Check).
- Document backup to the TSM server should work without putting out error messages. If a connection to the TSM server cannot be established, another attempt will be made later.
- Test whether documents can be restored (not recommended for productive repositories!). Also test the purge documents feature. Use the current date as the expiration date. The backed up documents will first be deleted from the hard drive. After restarting the ELO client, the old documents should be restored from the TSM server when you attempt to access them.

Other notes

Please also note the following.

Filing structure of documents on the TSM server

If you intend to use more than one ELO Document Manager with a TSM connection, you should know the filing structure, in order to avoid writing in the same data range. If they write data in the same range, although no documents will be lost, various documents with various TSM object IDs will be created. This means it will be unclear which documents will be retrieved after a query. Incidentally, this can also occur if the *elodmdocs* table is manipulated in such a way that documents are stored a second time on the TSM.

The following values are decisive for the filing structure:

- Client node name

  The ELO Document Manager will log on to the TSM as a client node. A node does not normally see the files in another node.

- File space name

The file space name is roughly the same as the drive letter. It is defined in the *elodmopt* table. Example: *elofs1.*

- High level name

  The high level name is comparable to the directories. The ELO Document Manager uses the repository name, followed by a special directory name.

  Example (repository name = EXTEN1): *EXTEN1/upr00000*

  If relative path entries are used, the high level name is placed after the relative path, separated from each other with a forward slash.

  Example : *servername?abc* would turn into: abc/EXTEN1/upr00000

- Low level name

  The low level name is comparable to the file name, e.g. 00000001.jpg.

These three entries combine to form the following filing structure for the first document, when the file space name, high level name, and low level name are written in sequence:

```
/elofs1/EXTEN1/upr00000/00000001.jpg
```

With another ELO Document Manager, it looks like this (with the same file space name):

```
/elofs1/EXTEN2/upr00000/00000001.jpg
```

If each ELO Document Manager has its own node name, there should be no problems.

Alternatively (or in addition), you can also define a different file space name for each ELO Document Manager.

A name of a repository always refers to a specific ELO Document Manager.

Conclusion

Care should be taken in the configuration if, in addition to a server with a production system, a server with a test system with its own database is to be used, that however is to access the same TSM.

'Remove old documents' dialog box

If the ELO Document Manager only establishes one session per TSM server, only one access to the TSM server can take place at one time. Further access attempts must then wait. In this case, wait times may arise when restoring purged documents.

Additionally, the *Do not restore from backup* option should not be enabled in this case. That option can also result in wait times.

Information

The expiration date, which can be set for documents in the ELO client, is disregarded when using TSM.

'Remove old documents' dialog box

You can use this function to remove seldom-needed old documents from the filing path after a backup.

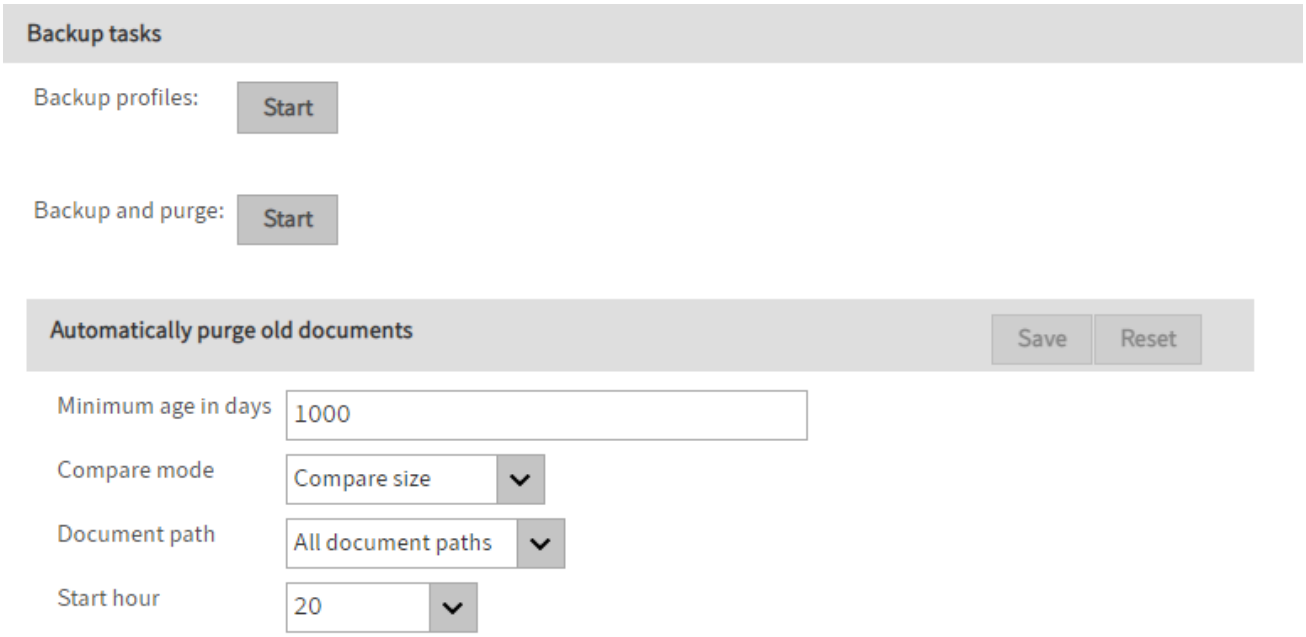
> **Please note**
>
> If the *WORM path* option is active for a path, no old documents will be removed.

Automatically remove old documents

It is also possible to remove old documents during the backup process.

Procedure

1. Open the *Backup tasks* area in the ELO Administration Console.



1. Select the desired settings.

Minimum age in days: This value specifies after how many days old documents may be deleted. A value of 0 means that all old documents will be deleted.

Compare mode: This is where you select the mode used to search for old documents.

- Compare contents: A document is considered old if the backup contains a document with identical contents.
-

No comparison: All documents are considered old documents.
- Compare contents: A document is considered old if the backup contains a document of identical size.

Document path: Select the document path from which old documents will be removed. It is possible to choose from all paths.

Start hour: Defines at which hour the deletion process will start each day, or if the deletion process should be run once every hour.

1. Click *Start* after the *Backup and purge* menu item to start the process.

Database settings

The settings for backup and automatic removal are also located in the *elodmopt* database table.

> **Information**
>
> After making a change to the *elodmopt* table, restart the ELO Document Manager or Apache Tomcat to apply the changes.

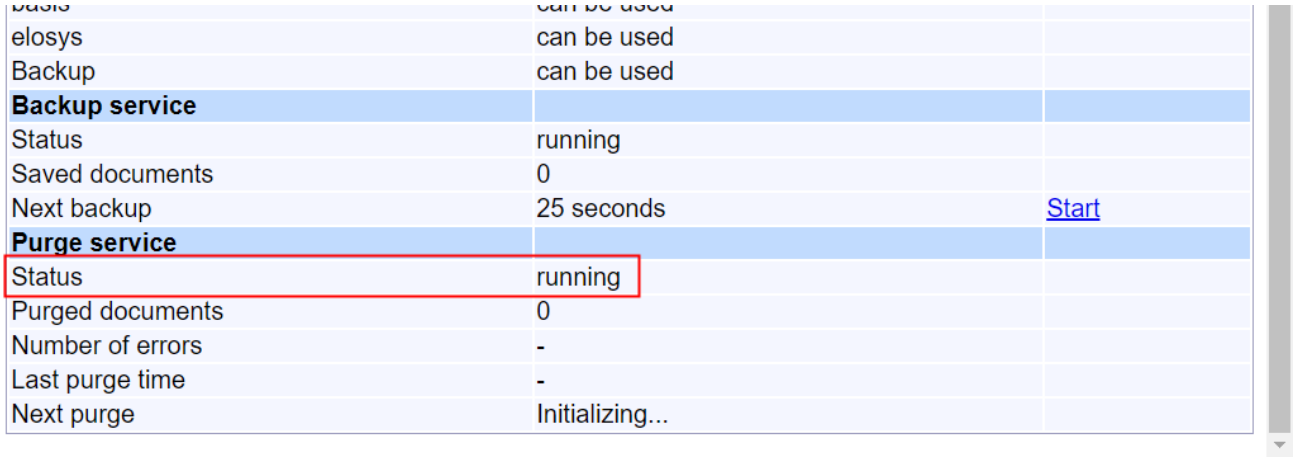
The table on the following page explains these values.

optno	optval	remark	Explanation
13	0	BACKUP_MODE	Please do not change this value. It will be set by ELOdm. 0 = Do not start backup 1 = Backup without deletion 2 = Backup with deletion
14	1000	PURGE_DAY_LIMIT	Number of days (from 0) before today. Examples : 365 = one year or older 0 = today or older (i.e. all documents) When using NetApp, be aware that documents can only be deleted after a certain period of time if you have set this option in NetApp. Example: If a half year has been set in NetApp, enter 183 here (always round up).
15	0	PURGE_PATH_ID	Possible path restriction for filing paths: 0 = include all paths 1 or higher = path with corresponding path ID
16	2	PURGE_FILE_CHECK_MODE	Comparison type: 2 = By file size 3 = By file content
17	20	PURGE_START_HOUR	When processing should take place: -1 = Every 60 minutes

optno optval remark	Explanation
	0 to 23 = Hour of the day, such as 20 for 8:00 p.m.

Control

Check that automatic deletion is running. Also check the ELO Document Manager status page. The value *running* should appear in the *Purge task* line. If not, check the ELO Document Manager log file for error messages.



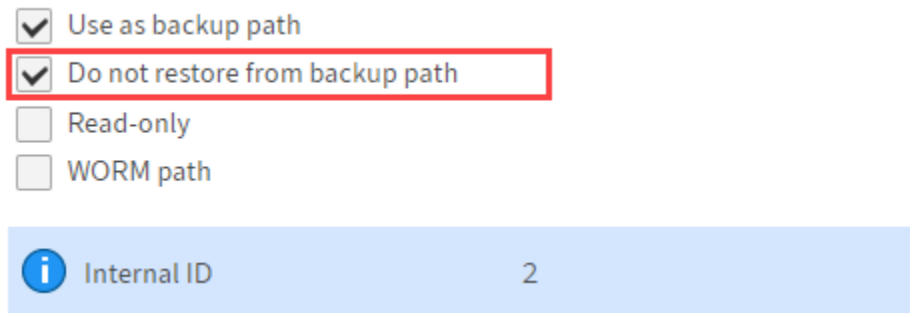
elosys	can be used	
Backup	can be used	
Backup service		
Status	running	
Saved documents	0	
Next backup	25 seconds	Start
Purge service		
Status	running	
Purged documents	0	
Number of errors	-	
Last purge time	-	
Next purge	Initializing...	

If the check for automatic deletion finds matching documents, the number after *Purged documents* should increase.

The *Last purge time* row shows you the last time documents were removed.

The *Next purge check* row shows you when the next check for old documents will be performed.

Do not restore documents



Whenever a user views a file removed from the filing path (old document removed) in the ELO client, the file is restored from the backup path. If you want to prevent this, enable the *Do not restore from backup* option when creating the backup path.

Deleting backup documents

Activation

The *Delete permanently* function does not affect old documents when used with default settings. This means that old documents will not be deleted permanently. However, the function can be extended correspondingly.

> **Please note**
>
> The expansion is not possible for paths with the *WORM path* option enabled.

The expansion of the *Delete permanently* function occurs through the *elodmopt* database table. The value of the *optno=20* record is decisive here. If it does not exist, you can create it with the following SQL command:

```
insert into elodmopt values (20,'0','DELETE_BACKUP_FILE_MODE (0=off, 1=file system, 2=extern storage devices, 3=all)')
```

> **Please note**
>
> If deletion protection is enabled, for example on Centera or NetApp, deletion will not be possible. Use values of 1 or 2 as alternatives.

optno	optval (default)	remark	Explanation
20	0	DELETE_BACKUP_FILE_MODE	0 = do not delete backup files 1 = only delete backup files on the file system 2 = only delete backup files on external data storage devices (such as Centera or Azure Blob) 3 = delete backup files

> **Information**
>
> Backup documents that have been backed up using the Activator interface can only be deleted if the newer Activator libraries (after 2009) are used.

Restriction with MD5 paths

With MD5 paths, only one original copy may exist for each file. If an identical file is used somewhere else, it is considered as a reference to the original file. Thus, when deleting documents from MD5 paths, the ELO Document Manager must check whether a file is still in use somewhere else. For each backup slot, a check will be performed to see if a file may be deleted.

If, however, the same MD5 path is used in multiple backup profiles, a file may occur in multiple backup slots. In this case, deletion must be prevented from that path. There are a few ways to achieve this:

- Disable deletion of backup documents (a value of 0 for the *optno 20* record).
- Only delete backup files on external storage devices like Centera or Azure Blob (a value of 2 for the *optno 20* record), but only if no MD5 path is used.
- Set the affected MD5 path as a WORM path. In that case, however, no temporary files will be used with the backup.

Manual deletion

> **Important**
>
> No files can be deleted manually on the file system or on external data storage devices, since these are still stored in the database.

If a backup device fails completely or becomes unusable in such a way that the backed up documents no longer exist on a backup slot, this must be applied to the database. To do so, the backup service must be stopped and the path column must be set to *0* for the affected backup slot in the *elodmdocs* database table (slot *1* corresponds to the *pathid2* column, slot *2* corresponds to *pathid3*, and so on).

Sample SQL command for backup slot 1:

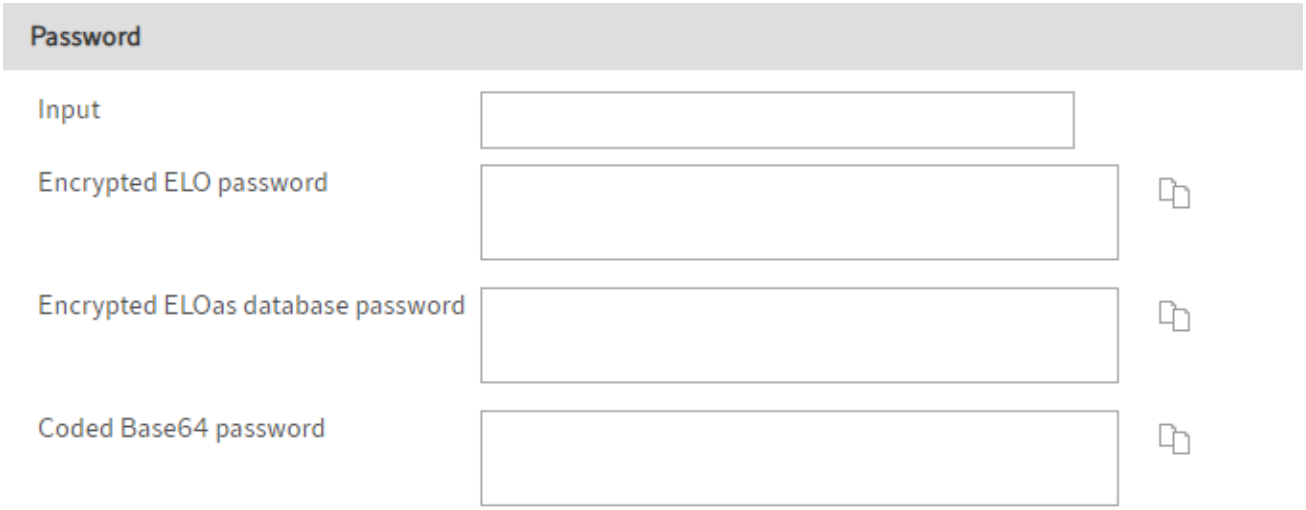
```
update elodmdocs set pathid2=0
```

Additionally, the backup profile in use should be deleted if the backup device is no longer available.

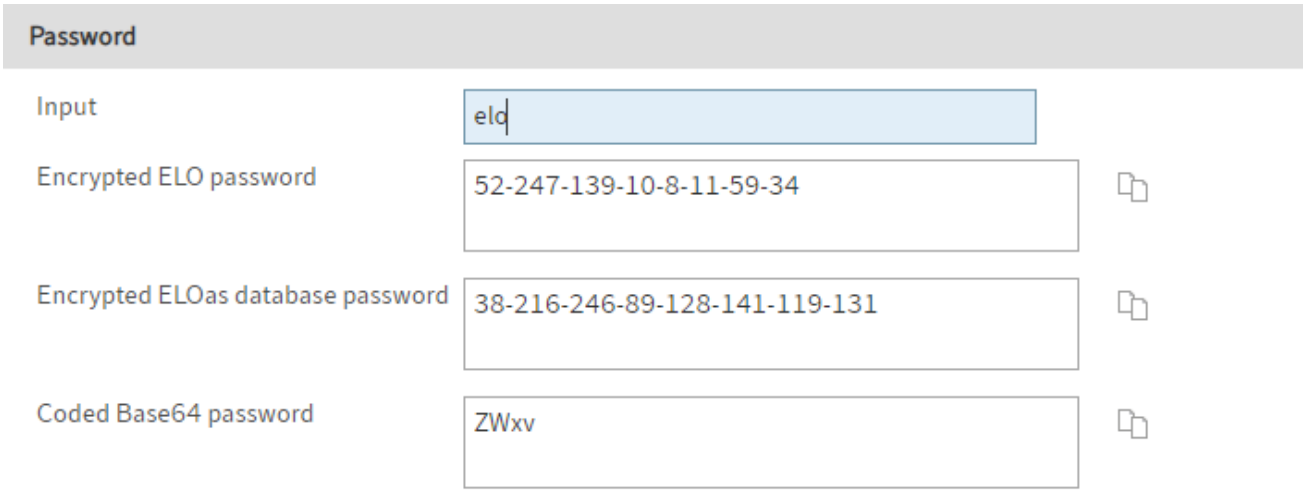
Passwords

Creating encrypted and encoded passwords

In the *Create password* area of the ELO Administration Console, you can create encrypted/encoded passwords for ELO.



Input: Enter the unencrypted password in the *Input* field.



The encrypted/encoded passwords appear automatically in the *Encrypted ELO password*, *Encrypted ELOas database password*, and *Encoded Base64 password* fields.

Click the document icon to the right of the fields to copy the field contents to the Windows clipboard.

Preview documents

Information

Please note

Starting with ELO 21.4, ELO Textreader (gen. 2) replaces the previous ELO Textreader (ELOtr), ELO Preview Converter (ELOpreview), and ELO OCR Service (ELOocr).

For more information, refer to the *ELO Textreader (gen. 2)* documentation.

Document redaction

Introduction

This document describes how to configure the ELO Document Manager to use the redaction feature in ELO, which allows the user to redact parts of TIFF documents in the repository using a black rectangle. This does not change the original document. The user can configure permissions to only allow specific users or groups to see the area underneath the black rectangle.

The ELO Document Manager performs redaction on the original image file provided to the client application. This means that it is not possible for users without the required permissions to view or copy the text behind the redaction mark.

> **Please note**
>
> Before you can use the redaction tool, you need to make changes in SQL Server. For more information about the entries in SQL, refer to the chapter Activation on the server. This is also necessary if you can click the *Redaction* function in the viewer toolbar.

Requirements

- ELOenterprise or ELOprofessional 6.00.080 or higher (server version).
- Apache Tomcat version 6.0.20 or higher. If Apache Tomcat 6.0.24 or higher is used, you must use version 7.00.020 or higher of the ELO Document Manager.
- Uncompressed TIFF files, or TIFF files with LZW, packbits, CCITT, or ZIP compression. JPEG compression in TIFF files is not supported. Some older compression settings are also unsupported. In this case, the image is not created.
- Server: Windows, Linux (Mac OS is not supported).

Warning

If you use document redaction with file formats other than those listed here, redaction may not work properly and text may still be visible.

In addition, configuration errors can disable document redaction.

Only use document redaction in controlled environments.

Activation on the server

To enable document redaction on the server, you need to change two settings in the ELO Document Manager *elodmopt* table:

1. Enable TIFF redaction:

   First, check whether the required data set exists:

   ```
   select * from elodmopt where optno=122
   ```

   If the data set already exists:

   ```
   update elodmopt set optval='true' where optno=122
   ```

   If it doesn't exist:

   ```
   insert into elodmopt values (122, 'true', 'TIFF MASK ACTIVE')
   ```

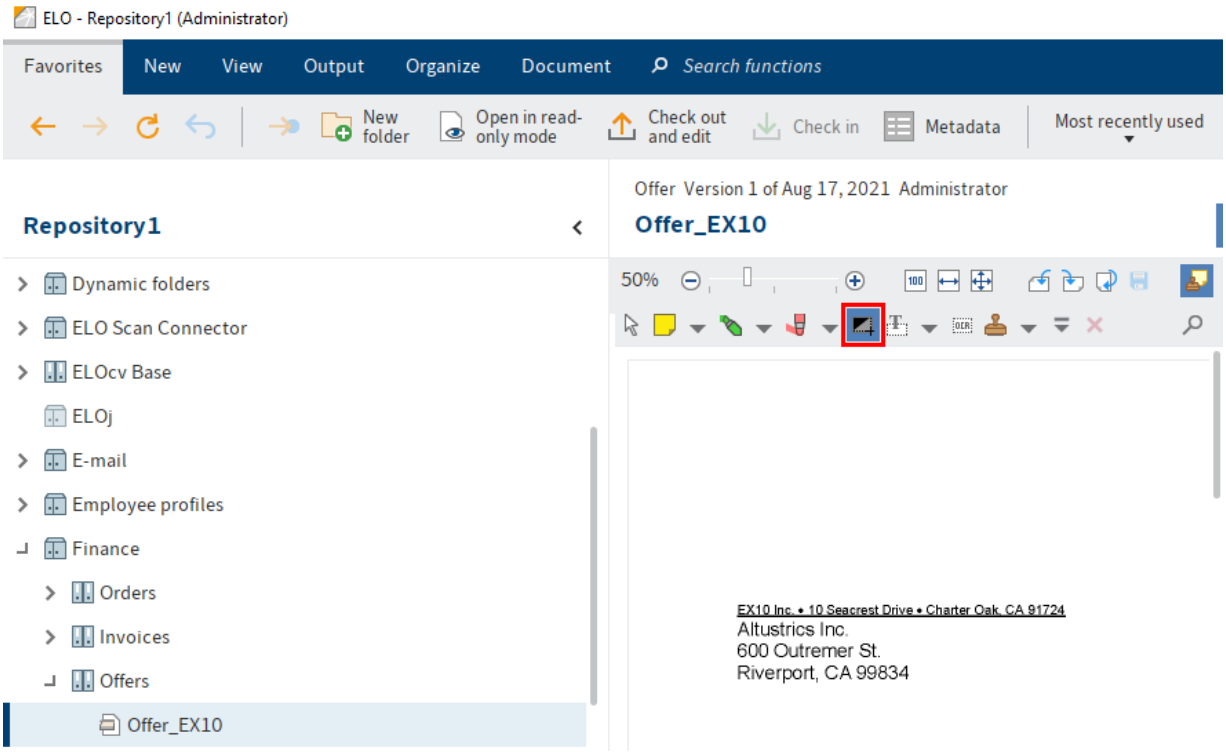
2. Define a temporary directory that must already exist. It is best to set a different directory for each ELO Document Manager, such as:

   ```
   update elodmopt set optval='c:\temp\elo\archive1' where optno=107
   ```

3. Restart the ELO Application Server running the ELO Indexserver.

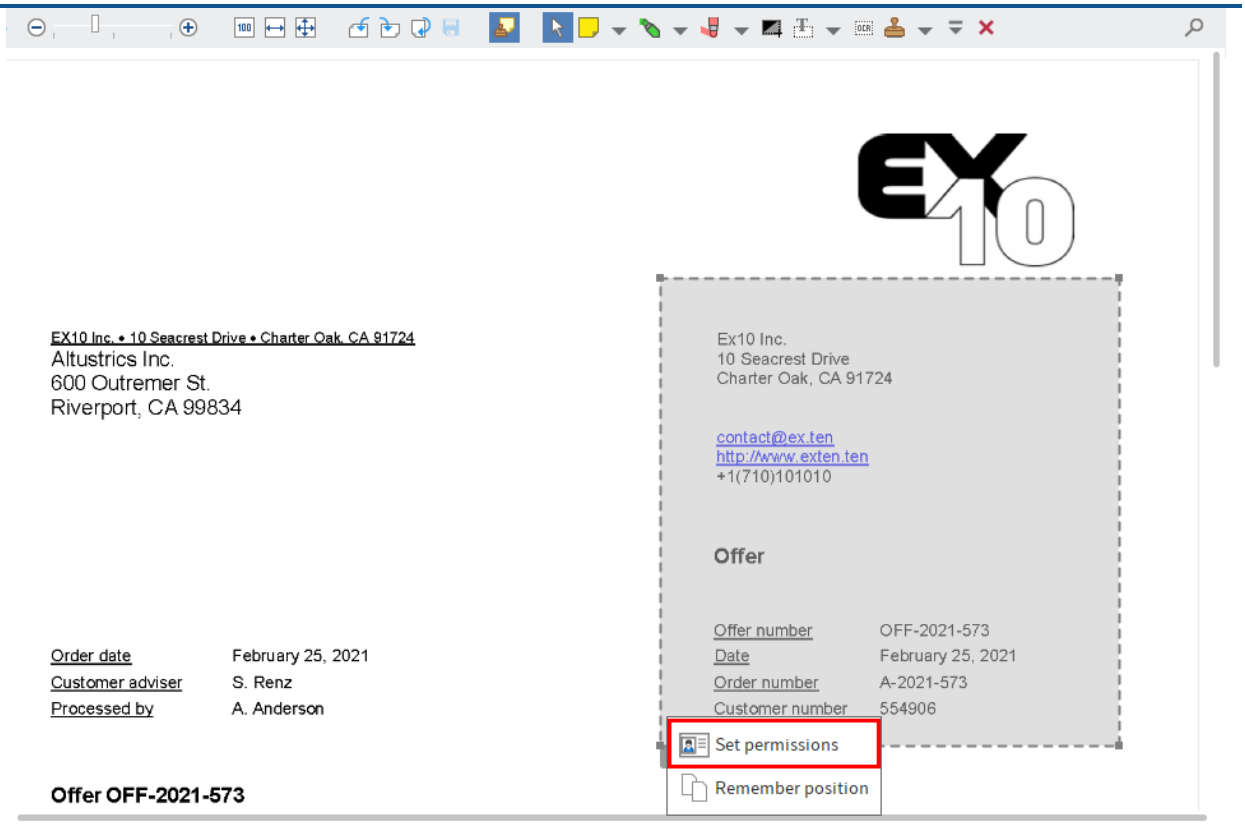
Test in the ELO client

1. Open a TIFF file in the repository.



2. In the document viewer toolbar, select the function *Redaction*.

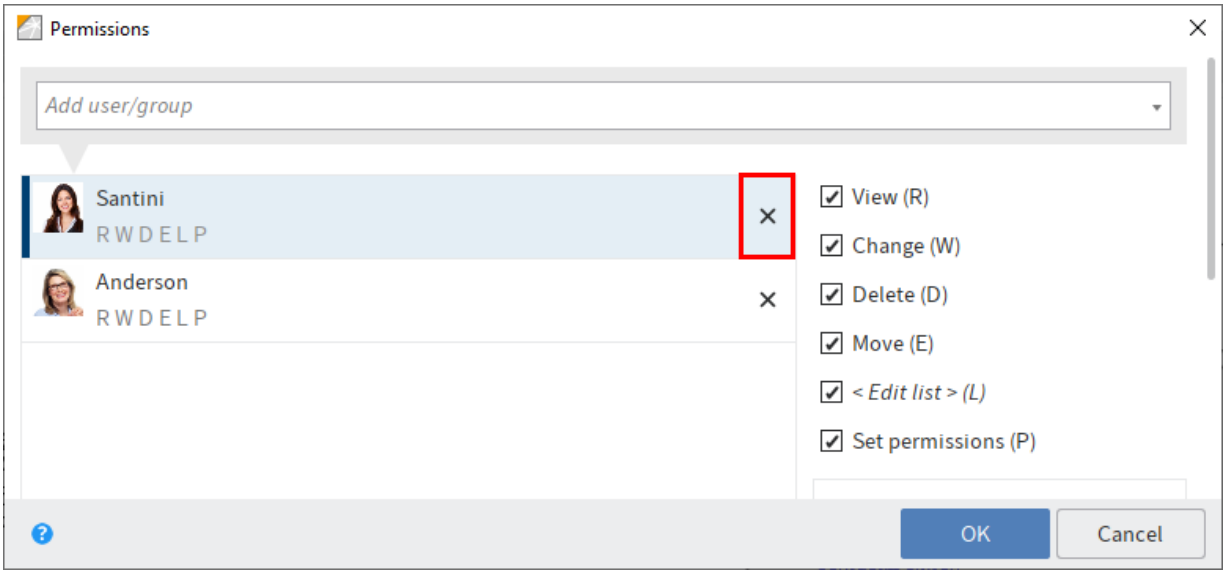
3. Use the mouse to drag a box around the part of the document you want to redact.



4. Now right-click and select the entry *Permissions*.

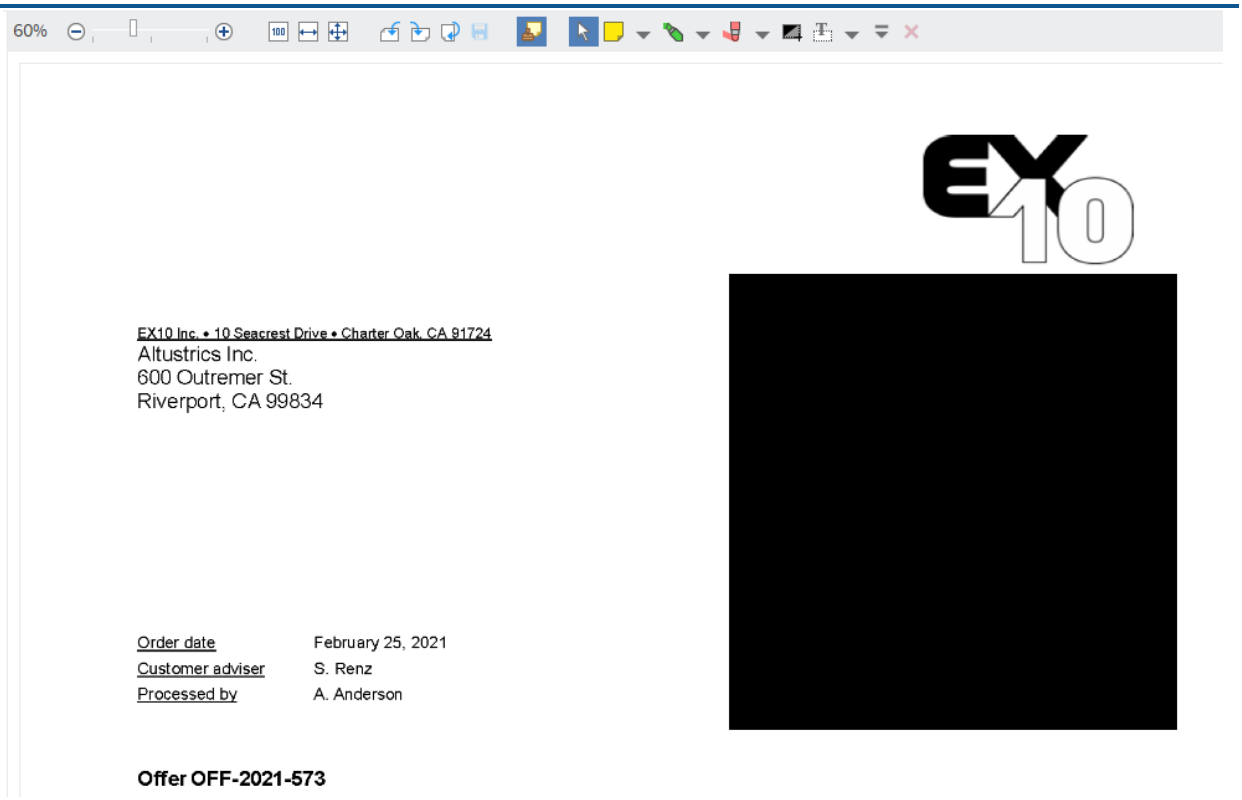
5. Select the users and/or groups who should be able to see the text.

   Option 1: Edit the permission settings for the users/groups.



   Option 2: Click the X icon to remove the selected user's permissions to the part that has been redacted. The user can no longer see the text on that part of the document.

6. Click *OK*.



The changes are applied. If a user logs on who does not have permissions to the redacted area, they will not be able to see the redacted information.

Other comments

- If a user without permission for the redacted part checks the document's checksum, an invalid status is shown, as the local version with redaction deviates from the original document.
- Redacted documents can only be edited by users with permission for the redacted parts. Users without permissions can check the documents out and view the redacted version. However, they are unable to check them back in.