# Guidelines for Backing Up the OS|ECM Archive Environment

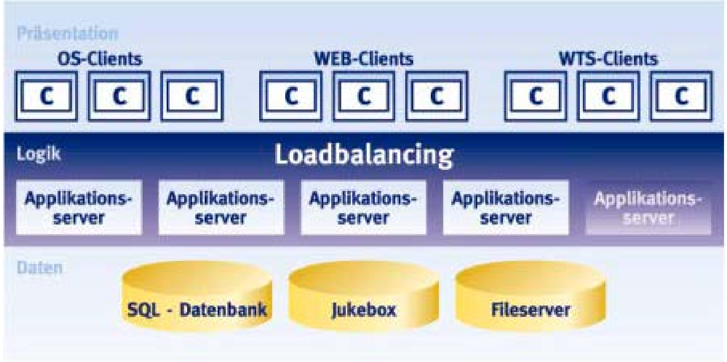
The following guidelines will enable you to create a comprehensive backup plan for your OS|ECM environment. This plan is necessary to allow the recovery of data and of the system in case of data loss (hardware failures, database problems, malicious deletion of data).

This document is addressed to administrators of OS|ECM systems, as well as administrators of the operating system and the database. To understand all described processes, detailed knowledge of OS|ECM is essential.

The following sections provide the required information to configure a full backup and to rebuild the system in the event of data loss.

## Overview of the OS|ECM Environment

OS|ECM is a complex system based on a three-tier architecture and consisting of numerous individual modules. The main modules are the application server (or an entire server family), client applications, administrative tools, the database and systems used for long-term archiving (WORM jukeboxes, WORM-TAPE systems).



All of these individual modules must be taken into account regarding the backup concept. To make a decision, document and information flows in OS|ECM must be examined.

## Document and Information Flows in OS|ECM

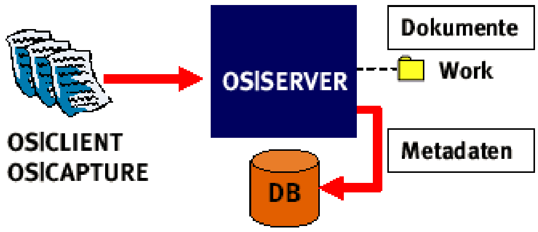
In the following, the two most important document flows will be examined:

- Capturing and editing documents
- Archiving of documents

When capturing documents with an OS|ECM client application (OS|CAPTURE, OS|CLIENT or OS|WebCLIENT), the client application creates a new object in the database and the captured metadata are written into the corresponding object table. Then, the client transfers the digital document to the application server. Next, the document is saved in the WORK directory. The application server creates a location in the WORK directory based on the object ID and the main type.

**2. Dokumentenfluss in OS|ECM**

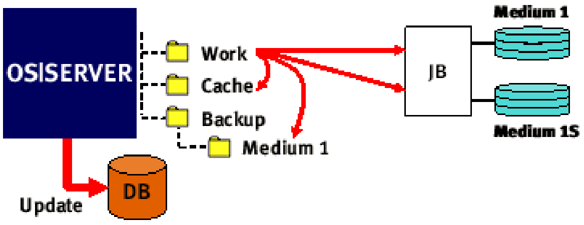
**a) Erfassen/Bearbeiten**



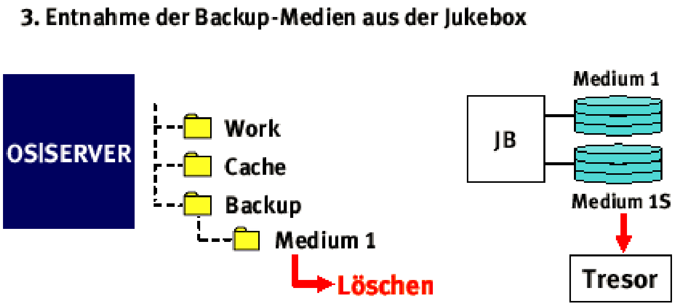
To archive documents, the application server copies them to the corresponding archive media and the archive media is noted in the database. If archive media mirroring is activated in the media administration of the application server, the document is written to the mirrored media, too. Additionally, the document is moved from the WORK directory to the CACHE directory with a hardlink.

If archive backup is enabled (see 'OS|ECM Server'), another document hardlink is created in the backup directory of the archive media. After the archiving process the document is available at four locations (media, mirrored media, CACHE directory, backup directory) with the CACHE directory and the backup directory being only temporary locations.

**b) Archivierung**



As part of the general administration routine the correct execution of the archiving progress should be verified. Sample checks for every archived document type should be performed. If an archive media is full (see 'Archive Media') the mirrored media can be removed from the jukebox and stored securely. Furthermore, the corresponding media directory in the backup directory of the application server can be deleted.



# Backup Guidelines

## File Server

The program files of OS|ECM client applications are located on the file server. By default, these files are located in the `...\<Servicename>\clients\...` directories.

The exact directory path depends on the installation.

The directories contain the program files along with a number of configuration files for additional modules. Depending on the installation, a backup of these directories may be required. If this is the case, a backup after the installation, update or modification of the configuration is sufficient.

## OS|ECM Server

In order to restore the entire system, a number of directories in the file system of the OS|ECM server, as well as paths in the registry database must be backed up.

The directories of the file system are explained below:

```
<Servicename>\server\WORK
```

As described in the first section, all documents captured in OS|ECM are saved in the WORK directory of OS|SERVER first. Once archived, documents are removed from the WORK directory. Therefore, the WORK directory is essential for a recovery of the entire system and must be backed up on a daily basis.

```
<Servicename>\server\CACHE
```

This subdirectory of the OS|ECM server serves as an output cache of the system. There are 2 options when data is written to it:

- In a multi-server system, when documents from another server group are requested.
- When archiving:
  - during the archiving process itself and
  - when requesting documents from archive media.

When a document is requested, it is copied by OS|SERVER from the archive media to the subdirectory before it is transferred to the client. Since the documents located here are already on audit-proof archive media, there is no need to back up this directory. However, a regular cleanup should be done. For this purpose, a recurring server job is set by default. It is also possible to set up an automatic action in OS|ADMINISTRATOR. Further information can be found in the OS|ADMINISTRATOR handbook.

`<Servicename>\server\ARCHIVE`

This directory is used for the creation of index data when archiving. Information on the object definition and index data is gathered here and after completing the archiving process, it is written to the `SYS` subdirectory on the archive media.

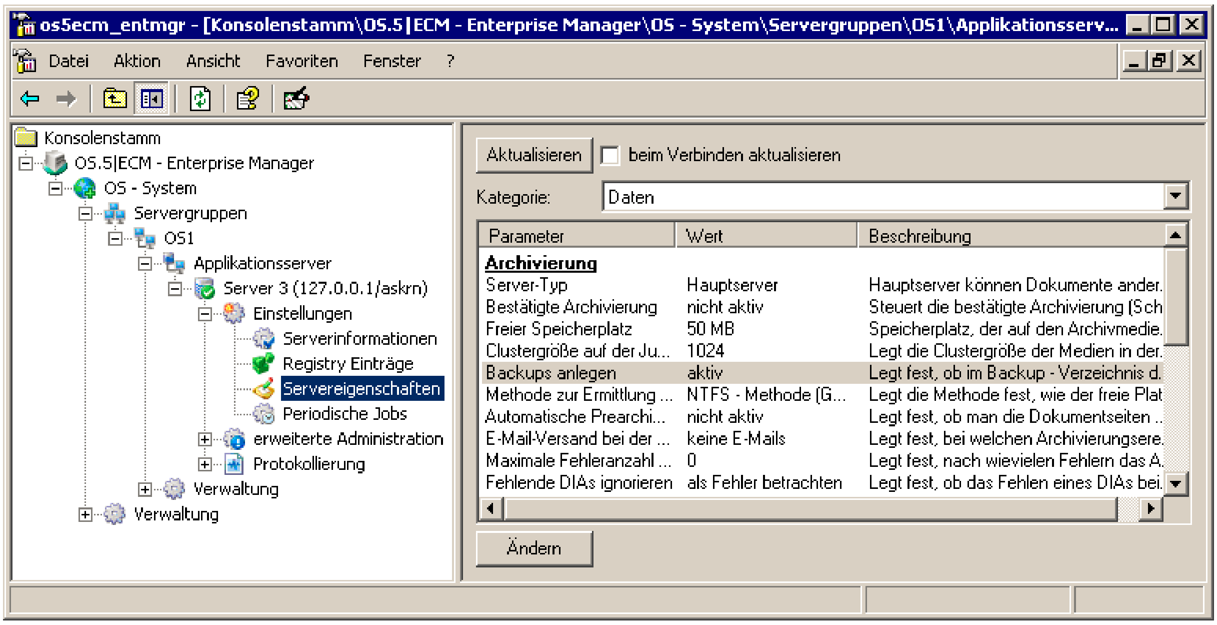
OS|SERVER creates a corresponding subdirectory within the `ARCHIVE` directory for every medium during archiving. The object definition and index data of the previous archiving process can always be found here. Data are numbered consecutively for every archiving process. This information is also written to this directory. Although it can be restored, this directory should also be backed up to save time.

A cleanup of this directory is possible. However, all media that are not yet completely filled or flagged as 'free' must be maintained.

`<Servicename>\server\Backup`

This directory serves as an optional third backup media during archiving. If this option is enabled, OS|SERVER creates a corresponding subdirectory within the directory for every medium during archiving. Besides the actual medium and an optional mirrored medium in the jukebox, another backup path is available for archiving.

With your archiving strategy, you decide whether this directory is backed up. If you archive to a main and to a mirrored medium simultaneously, the backup option should be enabled, provided that main and mirrored media are not on different devices or in different locations (two separate jukeboxes). If you do not work with mirrored media, this option must be enabled. Considering currently available hard drive capacities and costs, OPTIMAL SYSTEMS recommends having the backup option enabled in any case.



□ beim Verbinden aktualisieren

Kategorie: Daten

| Parameter | Wert | Beschreibung |
|---|---|---|
| **Archivierung** | | |
| Server-Typ | Hauptserver | Hauptserver können Dokumente ander. |
| Bestätigte Archivierung | nicht aktiv | Steuert die bestätigte Archivierung (Sch |
| Freier Speicherplatz | 50 MB | Speicherplatz, der auf den Archivmedie. |
| Clustergröße auf der Ju... | 1024 | Legt die Clustergröße der Medien in der. |
| Backups anlegen | aktiv | Legt fest, ob im Backup - Verzeichnis d. |
| Methode zur Ermittlung ... | NTFS - Methode (G... | Legt die Methode fest, wie der freie Plat |
| Automatische Prearchi... | nicht aktiv | Legt fest, ob man die Dokumentseiten .. |
| E-Mail-Versand bei der ... | keine E-Mails | Legt fest, bei welchen Archivierungsere. |
| Maximale Fehleranzahl ... | 0 | Legt fest, nach wievielen Fehlern das A. |
| Fehlende DIAs ignorieren | als Fehler betrachten | Legt fest, ob das Fehlen eines DIAs bei. |

A cleanup of this directory is possible. However, all media that are not yet completely filled or flagged as 'free' must be maintained.

```
<Servicename>\server\NOTE
```

In OS|ECM, notes for documents can be filed in the file system or in the database. Since the option of filing notes in the database was introduced with version 4.00, all notes created in older versions are located in the file system. When installing version 4.x, make sure that the option of filing notes in the database is enabled. Transferring notes that are saved in the file system to the database is possible to a limited extent only. If you have any questions, feel free to contact our professional services team.

After enabling the option of filing notes in the database, a backup of this directory is not required as it is included in the database backup. If the option of filing notes in the file system is enabled, the directory must be backed up.

```
<Servicename>\server\etc
```

This directory contains all configuration files and document templates which are not stored in the database. All versions of configuration files are saved in the directory. OS|ADMINISTRATOR is used to manage these configuration versions. The `Templates` subdirectory contains all W-templates configured in the system. The `User` subdirectory contains a subdirectory with user-specific configurations for every user. Therefore, the `etc` directory is essential for a recovery of the entire system and must be backed up on a daily basis. With the help of the automatic action `axaccl.dll`, the directory can be cleaned on a regular basis. Further information can be found in the OS|ADMINISTRATOR handbook.

## Registry database

The registry entry of OS|SERVER must also be backed up. It is recommended to back it up after installation and after any change made to the configuration of OS|SERVER. Of course, information stored at this location can be restored by reconfiguring the system. However, a registry entry backup will save you a lot of time during the recovery process.

OS|ECM saves configuration data under the following path:

```
[HKEY_LOCAL_MACHINE\SOFTWARE\OPTIMAL SYSTEMS]
```

The backup can be performed with the registry database editor `regedit`. Select the path named above and select **Export** from the **File** menu. The created file `<name>.reg` can be backed up and reimported into the registry database by double-clicking it in the Windows Explorer.

## Database

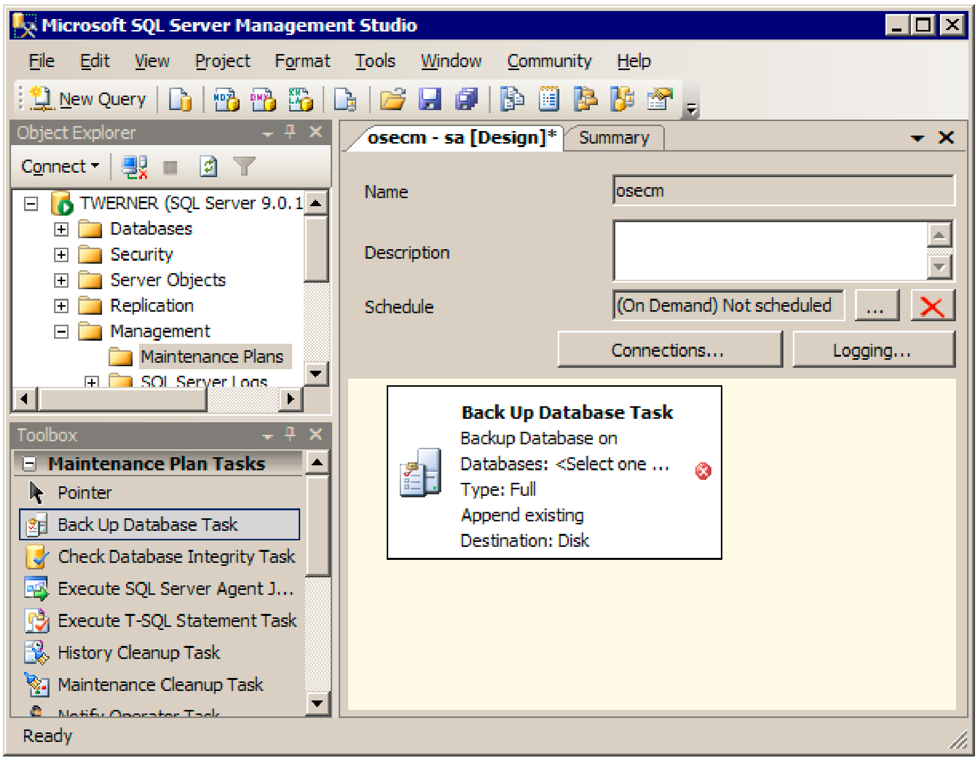
The database should always be saved together with the WORK directory of the application server to avoid inconsistencies between index data and physical documents.

There are many ways how to back up the database. A backup can be performed with tools integrated in the database or with the backup agent of your backup software. An example of an online backup of the MS SQL Server is described below. Information on databases and backup agents of other backup solutions can be found in the documentation of the respective manufacturer. Especially in the case of MS SQL databases, it is important to make sure that transaction logs are backed up and truncated on a regular basis. Otherwise a shortage of disc space as well as errors may occur during backup. Consequently, database recovery is no longer guaranteed.

## Configuration of an Online Backup for the MS SQL Server

Backups are configured as maintenance plans in the Microsoft SQL Server. Depending on the MS SQL Server version, setting up and enabling the backup can be different. Detailed information on each operation can be found in the documentation of the installed Microsoft SQL Server.

For each maintenance plan, a job schedule can be configured which allows you to control the time and frequency of the backup. The following example is taken from MS SQL Management Studio found in **Administration > Maintenance plans:**



Name: osecm

Description:

Schedule: (On Demand) Not scheduled

**Back Up Database Task**
Backup Database on
Databases: <Select one ...
Type: Full
Append existing
Destination: Disk

## Archive Media

Archive media like WORMs, DVDs and CDs should also be backed up to be protected against mechanical failure and theft.

There is a number of ways to achieve this:

- Always mirror with the application server if two write/read drives are available in the jukebox
- Backup with a jukebox management system if two drives are available in the jukebox
- Copy the archive media in Windows Explorer
- Backup on tape/DVD of the respective media
- Execute automatic actions in OS|ADMINISTRATOR to verify the archiving process

OPTIMAL SYSTEMS highly recommends creating backup media during archiving. Although media manufacturers offer 30 years of warranty, media can be damaged due to improper treatment, fire or theft which justifies additional costs for creating mirrored media. A backup or mirrored media should be stored in a secure location, e.g. a vault.

## Additional Components

OPTIMAL SYSTEMS offers a number of additional components and services. The configuration files of these components and services must be backed up. Certain components require a backup of saved data.

For all third-party components, such as Fine Reader, LuraTech, etc. – detailed information on backup strategies can be found in the documentation of the respective manufacturer.

| Component | Backup Data |
|---|---|
| Full Text – Microsoft Indexing Service | ▪ Microsoft index database<br>▪ Full text export directory |
| Full Text – OSFTS Service | ▪ Configuration file in `Tomcat\webapps\osfts`<br>▪ Full text database<br>▪ Full text preview database<br>▪ Full text preview data<br>No backup required for the full text export directory and the OCR-WORK directory. |
| DocumentViewer/RenditionPlus | ▪ Configuration file in `Tomcat\webapps\osdocumentviewer`<br>▪ Configuration file in `Tomcat\webapps\renditionplus`<br>No backup required for the `CACHE` directory, it is set up automatically. |
| OS\|AppConnector | ▪ Configuration file in `Tomcat\webapps\osrest` |
| OSWEB | ▪ Configuration file in `Tomcat\webapps\osweb` |
| Web Services | ▪ Configuration file in `Tomcat\webapps\osws` |
| SAP Integration | ▪ Configuration file in `Tomcat\webapps\OSR3`<br>▪ Configuration and license files |
| Navision Integration | ▪ Configuration files in `client32` directory as well as all other configuration files |
| File Management System | ▪ Configuration files in `client32` directory as well as all other configuration files |
| Form Printing | ▪ Configuration files in `client32` directory as well as all other configuration files |
| OS[Exchange] | ▪ Configuration files in OSEXCHANGE server and admin directories as well as all other configuration files |
| OS-Communicator (OSC) | ▪ At least the `CFG` directory should be backed up.<br>▪ If you want to back up import data too, you should back up the configured `DAT` or `Journal` directory. |
| OS[Mailarchiver] | ▪ Configuration files in `osmailarchiver\Conf` and `osmailarchiver\apps\james\conf` |

# Backup Cycles

## After the Installation

| **Path** | |
|---|---|
| All program paths | Complete backup |
| <OS\|SERVER>\WORK | Complete backup |
| <OS\|SERVER>\ETC | Complete backup |
| <OS\|SERVER>\CACHE | No backup required |
| <OS\|SERVER>\BACKUP | No backup required |
| <OS\|SERVER>\ARCHIVE | No backup required |
| REGISTRY | Complete backup |
| Database | Complete backup |

## Adding and/or Changing Components/Scripts

| **Path** | |
|---|---|
| The individual tool and its configuration file(s) | Complete backup |

## Before Importing Licenses

| **Path** | |
|---|---|
| License | Export to the file system with OS\|enterprise-manager |

## During Operation

| Paths | Daily | Weekly |
|---|---|---|
| All program paths | Incrementally | Complete backup |
| <OS\|SERVER>\WORK | Incrementally | Complete backup |
| <OS\|SERVER>\ETC | Incrementally | Complete backup |
| <OS\|SERVER>\CACHE | No backup required | No backup required |
| <OS\|SERVER>\BACKUP | Incrementally | Complete backup |
| <OS\|SERVER>\ARCHIVE | Complete backup | Complete backup |

| | | |
|---|---|---|
| REGISTRY | When changed manually | When changed manually |
| Database | Complete backup | Complete backup |
| User settings (if centrally accessible) | Incrementally | Complete backup |

## After an Update

| **Path** | |
|---|---|
| All program paths | Complete backup |
| <OS\|SERVER>\WORK | Complete backup |
| <OS\|SERVER>\ETC | Complete backup |
| <OS\|SERVER>\CACHE | No backup required |
| <OS\|SERVER>\BACKUP | No backup required |
| <OS\|SERVER>\ARCHIVE | No backup required |
| REGISTRY | Complete backup |
| Database | Complete backup |

# What else is important?

To test new releases and features a dedicated test system should be set up. A single-user system is not sufficient for this purpose – a server installation including a database will be required. Free licenses for a test system can be obtained from OPTIMAL SYSTEMS. If you do not have a test system yet, but want to set one up, please contact your OPTIMAL SYSTEMS consultant or an OS sales partner.

Information on the design of a test system can be found in the 'System Handbook DMS'.

> OS|EDITOR is a powerful tool which should be operated by trained personnel only. Otherwise, the entire database may easily be deleted. Therefore, access to this tool must be restricted. A database adjustment should be performed only by trained personnel after having verified that an up-to-date (and working) database backup is available.

A full backup of the running system is recommended before every update.

## Security Advice

It is important to verify the functionality of your backups regularly by restoring the data. Additionally, the log files of your backup software should be verified after backup to take action immediately in case of errors.

Store your media at a location which is protected from water, fire and theft. This location should never be identical with the location of the backup creation.

## If you have any questions...

Please contact the support department of your OPTIMAL SYSTEMS partner or the helpdesk of OPTIMAL SYSTEMS (support@optimal-systems.com).