SAP Data Archiving Using EMC Documentum Archive Services for SAP

Applied Technology

Abstract

This white paper explains a typical SAP Data Archiving scenario that involves an EMC® Documentum® content repository using EMC Documentum Archive Services for SAP. This paper details the archiving procedure and includes relevant use case scenarios. Details about the configurations involved, archiving procedures, and advantages are also discussed.

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# Table of Contents

**Executive summary** .................................................................................................................. 4  
**Introduction** ............................................................................................................................. 4  
  - Audience .................................................................................................................................. 4  
  - EMC Documentum terminology ............................................................................................... 4  
**SAP Data Archiving overview** ................................................................................................. 4  
  - Archiving SAP data .................................................................................................................. 5  
**Documentum Archive Services for SAP overview** ................................................................. 6  
**Implementing SAP Data Archiving** ......................................................................................... 7  
  - Pre-archive configuration ....................................................................................................... 7  
  - Creating logical and physical file paths ............................................................................... 7  
  - Configuring AS SAP ............................................................................................................... 7  
  - Creating and associating an SAP content repository and document type ......................... 8  
  - Sending and activating the SAP certificate ........................................................................... 9  
  - SAP archive administration .................................................................................................. 10  
  - Archiving Financial Documents ........................................................................................... 10  
  - Customizing the archive object ............................................................................................. 11  
  - Steps 1 and 2: Create an archive file and store in the Documentum repository .................. 13  
  - Step 3: Delete the archived Financial Document from the SAP database ....................... 16  
  - Reading the archived Financial Document ......................................................................... 17  
  - Disk space statistics ............................................................................................................... 18  
**Conclusion** ............................................................................................................................. 19  
**References** .............................................................................................................................. 19
Executive summary

SAP Data Archiving is a service provided by SAP NetWeaver that removes large volumes of data that are no longer needed in the SAP database. However, this data must still be accessible at a later date if it is required. EMC® Documentum® Archive Services for the SAP (AS SAP) provides an interface to archive this data into a Documentum content repository. Users can use AS SAP to archive data related to various SAP objects such as Financial Documents, HR, Material, Sales Orders, and so on, from the SAP database into a Documentum repository.

The core advantage of SAP Data Archiving is that it significantly reduces the SAP database footprint, improving the overall performance of SAP, and freeing up additional disk space on the SAP system.

Introduction

This white paper provides a brief introduction to SAP Data Archiving, explaining the various SAP object types that you can archive and the process of data archiving into a Documentum repository using AS SAP, with Financial Documents as an example. This paper references AS SAP version 6.5.

Audience

This white paper is intended for customers, partners, technical support, presales, sales, and engineering. It is assumed that the audience is familiar with Documentum Content Server, EMC Documentum Archive Services for SAP, and also with SAP to some extent.

EMC Documentum terminology

**AS SAP** – The Archive Services for SAP product enables archiving printlists, documents, and data (SAP transactional data) from SAP to a Documentum repository.

**CS** – Documentum Content Server is an application to create and access Documentum content repositories.

**CS SAP** – The Content Services for SAP product enables linking documents and images stored in a Documentum repository to SAP objects and vice-versa.

**DA** – Documentum Administrator is a WDK-based Documentum client application used to administer Content Server.

**DFC** – Documentum Foundation Classes is a Java client library that Documentum client applications use to access Content Server.

**Filestore** – A filestore is the physical location of file system maintained by Content Server. Filestores can reside on a physical drive or on a storage device.

SAP Data Archiving overview

Data Archiving is a service provided by SAP NetWeaver that removes mass data that is not required online by the system. However, this data must be accessible and retrievable at a later date, if required, from the database.

Data in the R/3 database can be archived only by using archiving objects that describe the data structure. Financial accounting documents, for example, are archived using the archiving object, FI_DOCUMNT, which comprises the document header, company-code-dependent postings, change documents, SAP script texts, and other elements. The application archiving objects are predefined in the system. The archiving programs are scheduled as background jobs, which can also run during online processing. However, it is not required to shut down the system.
The archiving procedure comprises the following steps:

1. **Creating archive files**: The data to archive is first written sequentially into a new “archive file” using the SAP Archive Development Kit (ADK). At the end of this step, you will have two copies of the same data in the database.

2. **Storing archive files**: The archive files are stored into an archive system through the SAP ArchiveLink interface. In this case, the archive files created are stored in the EMC Documentum repository through AS SAP.

3. **Executing the delete program**: The data in the archive files is removed from the database by the delete program.

Figure 1 illustrates the archiving steps of writing and deleting. The data written into the archive files is archived into the Documentum repository using AS SAP.

**Figure 1. SAP Data Archiving procedure**

**Archiving SAP data**

You can archive SAP objects that are exposed as “Archive objects.” The transaction AOBJ in the SAP GUI lists all the archive objects.

Examples of archiving objects:

- SD_AGREEM (Sales and Distribution): Archive arrangements and associated conditions
- MM_EKKO (Material Management): Archive purchasing documents

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SAP Data Archiving Using
EMC Documentum Archive Services for SAP
Applied Technology 5
• SD_VBRK (Sales and Distribution): Archive customer billing documents
• FI_DOCUMNT (Finance): Archive credit memo, financial accounting documents
• PP_ORDER (Production): Archive production orders
• FI_ACCPAYB: Archive Vendor Master data
• PA_LDOC: Archive payroll long term documents
• PA_CALC: Archive payroll results

Benefits for Data Archiving from SAP
Application data archiving is an ongoing process that you must integrate into your organization to meet technical and legal requirements. Some of the numerous benefits of SAP Data Archiving include the following:

• Resolves memory space and performance problems caused by large volumes of transaction data
• Ensures that data growth remains moderate so that the SAP database remains manageable in the long term
• Enables companies to meet legal requirements for data storage in a cost-efficient manner
• Enables data to be reused at a later date, for example, in new product development
• Enables data compression. Data is automatically compressed up to a factor of 5 during archiving. However, no additional compression takes place if the data to archive is stored in cluster tables

Documentum Archive Services for SAP overview
AS SAP enables archiving of SAP data such as printlists, documents, and ADK files into the Documentum repository using the ArchiveLink interface provided by SAP. Documentum provides plug-ins to EMC Centera® that enable users to archive documents and data into EMC Centera.

This white paper deals specifically with the process of archiving files that are generated using ADK.

Figure 2. AS SAP overview
Implementing SAP Data Archiving

Pre-archive configuration
This section describes the tasks you must perform before you archive SAP data.

Creating logical and physical file paths
The SAP ADK creates the archive files on the SAP system. These files are archived into a Documentum repository using AS SAP later. Data files that are ready for archiving are created (and subsequently deleted) in a specific directory as described in the following procedure:

To create logical and physical file paths (specify “FILE” as the Transaction code):

1. Create a logical file path definition.
2. Assign a physical path on the SAP server to the logical file path.
3. Define a logical filename with details about the physical file naming convention.

Figure 3. Logical file path definition

Configuring AS SAP
After installing AS SAP WebAdmin on the supported application server, create an archive using WebAdmin as illustrated in Figure 4 and configure the archive. For more information about creating and
configuring the archive, see the “Configuring, viewing, and editing archives” section in the *EMC Documentum Archive Services for SAP Administration Guide*.

![Figure 4. Configuring AS SAP using WebAdmin](image)

**Creating and associating an SAP content repository and document type**

Create a content repository and associate it to the relevant document type in SAP for archiving the data.

This is explained in the following steps:

1. **Transaction oac0**: Create a content repository specifying the AS SAP server details. Ensure that the content repository ID matches the archive created in AS SAP. For more information, see the “oac0 — Configuring content repositories” section in the *EMC Documentum Archive Services for SAP Configuration Guide*.

2. **Transaction oac2**: Create a document type. For more information, see the “oac2 — Defining document types” section in the *EMC Documentum Archive Services for SAP Configuration Guide*.

3. **Transaction oac3**: Associate the content repository with the relevant SAP document type. For more information about defining links between an SAP object type and an SAP document type, see the “oac3 — Defining links” section in the *EMC Documentum Archive Services for SAP Configuration Guide*. 
Figure 5. Creating and associating the SAP content repository and document type

Sending and activating the SAP certificate

AS SAP uses an HTTP connection between the SAP server and the Web server (where AS SAP is installed). SAP R/3 uses this Internet-based protocol to send and receive information between R/3 and Content Server. However, before archiving can take place, a digital certificate must be generated from R/3 and installed in Content Server.

Perform the following tasks to send the certificate to AS SAP and activate it:

- Test the connection between SAP and AS SAP
- Send the certificate from the content repository in SAP
- Activate the certificate using WebAdmin
Figure 6. Sending and activating the SAP archive certificate

SAP archive administration
The SAP transaction used for data archiving is SARA.

The list of archive objects to administer and archive is available in the AOBJ transaction.

Consider the example of archiving Financial Documents.

Archiving Financial Documents
FI_DOCUMNT is the archiving object for Financial Documents. This section describes the process of archiving the FI_DOCUMNT data based on Step 3 in the SAP Data archiving overview section.
Use the \texttt{fb03} transaction to list the Financial Documents data in SAP. Before you archive a Financial Document, verify whether the relevant Financial Document can be archived using transaction \texttt{fb99}.

**FB99**

\textbf{Check Whether Documents can be Archived: Check Result}

<table>
<thead>
<tr>
<th>Document overview</th>
<th>Line item</th>
<th>Document type life</th>
<th>Account type life</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Summary</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Test result:</td>
<td>Document can be archived</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Time limit</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Min days in system</td>
<td></td>
<td>22.00.2000</td>
<td></td>
</tr>
<tr>
<td>Key date</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Document header</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Doc. Number</td>
<td>1988888882</td>
<td>Company code</td>
<td>1800</td>
</tr>
<tr>
<td>Doc. Date</td>
<td>28.02.2001</td>
<td>Posting date</td>
<td>28.02.2001</td>
</tr>
<tr>
<td>Fiscalyear</td>
<td>2001</td>
<td>Period</td>
<td>2</td>
</tr>
<tr>
<td>Test result:</td>
<td>Document can be archived</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Line items</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Line P. Bu..</td>
<td>AcctNo</td>
<td>Account name</td>
<td>Inspection result</td>
</tr>
<tr>
<td>1 317000 0000160000</td>
<td>AP-domestic</td>
<td>Raw material 2 cons.</td>
<td>Document can be archived</td>
</tr>
<tr>
<td>2 407000 0000460010</td>
<td>Raw material 2 cons.</td>
<td>Document can be archived</td>
<td></td>
</tr>
<tr>
<td>3 407000 0000464000</td>
<td>Spare Parts</td>
<td>Document can be archived</td>
<td></td>
</tr>
<tr>
<td>4 407000 0000415000</td>
<td>External procurement</td>
<td>Document can be archived</td>
<td></td>
</tr>
<tr>
<td>5 40 0000154000</td>
<td>Input tax</td>
<td>Document can be archived</td>
<td></td>
</tr>
</tbody>
</table>

\textbf{Figure 7. Check whether documents can be archived}

**Customizing the archive object**

Ensure that cross-archiving object customizations are performed as per the requirement. For more details about the relevance of each parameter click the following link: \[\text{http://help.sap.com/saphelp_erp60_sp/helpdata/EN/2e/9396345788c131e10000009b38f83b/frameset.htm}\]

Change the archiving object-specific customization to reference the relevant Logical filename and the content repository. For more information see the Pre-archive configuration section. In addition, if you are running Data Archiving in production mode, ensure that the production mode variant is enabled.

Consider the sample customizations implemented on a development system as illustrated in the following figures. The settings may vary as per requirements.
Figure 8. Archive Administration – Cross-object customization
Steps 1 and 2: Create an archive file and store in the Documentum repository

The following steps explain the process of creating an archive file and store in the Documentum repository:

1. The SAP transaction is SARA. The object is FI_DOCUMNT.
2. Create a variant specifying the boundary conditions.
Create Variant for FI_DOCUMENT

3. Schedule an archive job associating the appropriate document type and object type, performed as part of the prerequisite tasks.

Figure 10. Archive Administration – Create a variant

SAP Data Archiving Using
EMC Documentum Archive Services for SAP
Applied Technology 14
4. Execute the job. The data file is created in the physical path configured in SAP.

5. The document is archived and stored in the Documentum repository successfully. Use Documentum Administrator to verify if the operation is successful.
Figure 14. Archived data in Documentum can be seen using Documentum Administrator

Step 3: Delete the archived Financial Document from the SAP database
Delete the Financial Document from the SAP database after the document is archived. This task can be scheduled or performed manually from the SARA transaction. The data file created in the physical path is also deleted. In addition, the header file is archived into the repository.
Figure 15. Delete the archived Financial Document from the SAP database

Reading the archived Financial Document

Select the relevant data source to read the archived document from SAP. Since the Financial Document is no longer available in the SAP database, select the archive into which the transactions are archived.
Disk space statistics
A considerable amount of disk space is saved on the SAP database after archiving data into the Documentum repository and deleting data from the SAP database. You can verify the available disk space in the SARA transaction.
Figure 17. Archive Administration – Disk space statistics

**Conclusion**

Customers can leverage EMC Documentum Archive Services for SAP to archive data from SAP into the EMC Documentum repository. The process of accessing data that is archived from SAP is seamless with the many benefits as explained in this white paper.

**References**

- Access the following path on Powerlink for more information about EMC Documentum Archive Services for SAP:
  Support > Technical Documentation and Advisories > Software ~ D ~ Documentation > Documentum A-B > Archive Services for SAP

- Access the following link on the SAP website for more information about SAP Data Archiving:
  http://help.sap.com/saphelp_erp60_sp/helpdata/EN/2e/9396345788c131e10000009b38f83b/frameset.htm