Introduction to Data Archiving (CA-ARC)

Release 4.6C

SAP™

Copyright

Icons

Icon	Meaning
⚠	Caution
🗏	Example
💡	Note
🧭	Recommendation
SYN	Syntax

Inhalt

Introduction to Data Archiving (CA-ARC)

Data Archiving removes mass data from the database that the R/3 System no longer needs online, but which must still be accessible at a later date if required. The following graphic illustrates the archiving process: Archiving objects are used to write documents to archive files, which can be stored on other media.
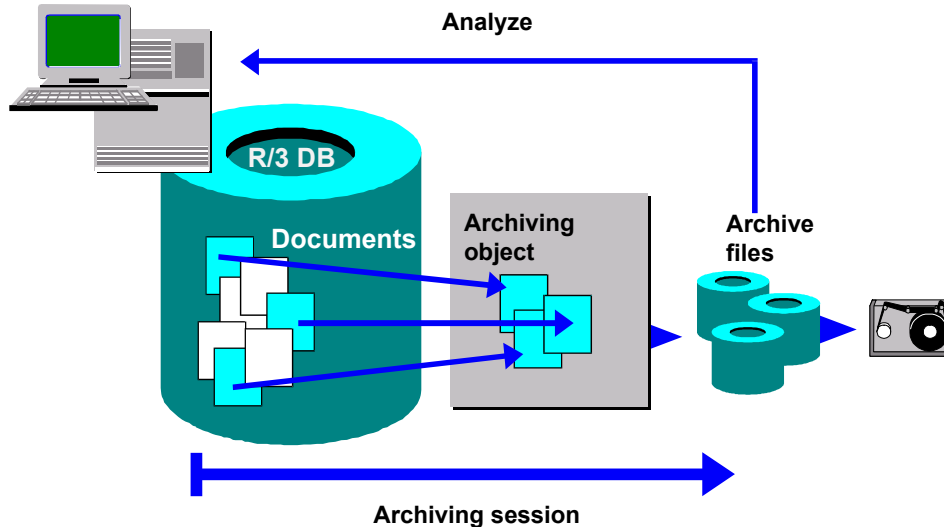
Data in the R/3 Database can only be archived using **archiving objects**, which describe the data structure and context.

> Financial Accounting documents are, for example, archived using the archiving object FI_DOCUMNT. It includes the document header, company code-dependent postings, change documents, SAPscript texts, and other elements.

Integration

The SAP Data Archiving concept is based on the Archive Development Kit (ADK). The ADK provides the technical basis for the archiving transaction (*SARA*). To call the archiving transaction, choose *Tools → Administration → Management → Data Archiving*, or directly from the application component. If archive management is called from the application component, application-specific settings (such as programs and archiving objects) are activated automatically.

Archiving objects for each application component are predefined in the system. Their structures are described in the application-specific sections.

Features

The archiving procedure is divided into three main steps:

- **Create archive files**: The data to be archived is written sequentially to a newly created archive file.

- **Store archive files**: The newly created archive files can then be moved to a storage system or copied to a tape. The removal to an external storage system can be triggered manually or automatically.

- **Run delete program:** The delete program reads the data from the archive files and then deletes it from the database.

You can schedule archiving programs as background tasks or run them during normal online operations.

Background Information

This section gives you additional background information about SAP Data Archiving:

Reasons for Archiving Data [Seite 9]

Archiving Requirements [Seite 10]

Basic Archiving Terms [Seite 11]

Reasons for Archiving

There are both technical and legal reasons for archiving application data. SAP Data Archiving:

- Resolves memory space and performance problems caused by large volumes of transaction data

- Makes master data easier to handle and to keep up-to-date

- Ensures statutory data retention rules are observed

- Ensures that data can be reused at a later date, for example, in new product development

See also:

Basic Archiving Terms [Seite 11]

Archiving Requirements

Data archiving is intended to more than just save the contents of database tables. Archiving must also meet the following requirements:

- **Statutory requirements**
  Data must be archived in such a way that it can be analyzed at any time in the future. In some countries, such as the USA, the tax authorities require that the data be stored transparently so they can analyze the data with their own computer systems.

- **Hardware independence**
  Because the encoding of numerical fields, such as integers depends on the hardware being used, archiving must ensure that information about hardware is appended to the archived data so that the data can be displayed later with different hardware.

- **Release dependence**
  Because the data structure may depend on the version of R/3 you are using, record structure and field definition information must also be archived.

- **Data dependencies**
  Data objects often depend on other data objects. Consequently, in order to remove a specific data object from the system, you must determine whether other data objects must already be archived, or must be archived at the same time.

- **Enterprise and business structure**
  Some data is only of use if you are familiar with an enterprise's organizational structure, such as how it is divided into different areas for sales. Archiving must therefore ensure that this information is also archived.

The above list shows that data archiving requires a detailed knowledge of data semantics. For this reason, R/3's application-integrated archiving approach is superior to archiving products that are not integrated into R/3 (database tools).

Basic Archiving Terms

This section defines some basic SAP Data Archiving terms:

Optical Archiving [Seite 12]

Reorganization [Seite 13]

Residence and Retention Periods [Seite 14]

Backup/Restore [Seite 15]

Optical Archiving

When using a storage system, it is important to differentiate between the storage of original documents, such as scanned incoming invoices, and the storage of archive files that contain application data.

Document archiving means storing scanned original documents, outgoing documents, or R/3 printlists in an attached storage system. You can display these documents and lists at a later date, but you cannot analyze them with R/3 tools or reload them into the R/3 System.

Archive files containing data objects that were created by SAP Data Archiving can, with the help of the Content Management Service (CMS), be transferred to an external storage system and be made available in the file system.

See also:

Storing Archived Files [Seite 72]

Retrieving Stored Archive Files [Seite 75]

Reorganization

The term **reorganization** comes from R/2, where data was removed and then reloaded in order to optimize the physical data distribution on the disk. During this procedure, unnecessary data was often archived and deleted. Reorganization has nothing to do with SAP Data Archiving using the Archive Development Kit (ADK).

Residence and Retention Periods

The **retention period** is the entire time that data spends in the database before it is archived. The **residence time** is the minimum length of time that data **must** spend in the database before it meets the archivability criteria.

If the residence time is a month, data that has been in the system for two months will be archived. Data that is only three weeks old remains in the database.

Backup/Restore

A **backup** is a copy of the database contents that is made so you can restore the database if part or all of the data is lost or damaged during a system breakdown. Backups are usually made at regular intervals according to a standard procedure. Reloading the saved data into the file system is called **restoring** the data.

Releases 2.1 and 2.2 of R/3 required you to backup the database before archiving data. This safety measure is no longer required from Release 3.0.

Archiving Features

The key features of SAP Data Archiving are:

Data Security During Archiving [Seite 17]

Link to Optical Archive [Seite 23]

Data Compression [Seite 18]

Archiving Without Database Backup [Seite 20]

Accessing Archived Data [Seite 43]

Converting Old Archive Files [Seite 22]

Data Security During Archiving

Archiving is a two-step procedure (a third step, the archive file storage, is optional). In the first step, the data is written to archive files. In the second step, the system reads the archived data from the archive files and deletes it from the database.

This two-step process guarantees data security if problems occur during the archiving process. For example, the procedure identifies network data transfer errors between the database and the archive file. If an error occurs, you can restart the archiving process at any time because the data is still either in the database or in an archive file. This means that you can usually archive *parallel to the online application*, that is, during normal system operation, without having to back up the database first.

You can further increase data security if you store the archive files in an external storage system before you delete the data from the database. This guarantees that the data from the database will only be deleted after it has been securely stored in an external storage system. You can define the storage time in archiving object-specific Customizing.

Data Compression

During archiving, data is automatically compressed by up to a factor of **5**. However, if the data to be archived is stored in cluster tables, no additional compression takes place.

Memory Space Gained by Archiving

Increased storage space in the database and the resulting performance gains in the application programs are the most important benefits of data archiving. Therefore it is useful to know how much space the data to be archived takes up in the database.

Note that *cluster* tables are stored in a compressed form in the database.

It may also help to know in advance how much space the archive files that you create will need.

Data is compressed before it is written to the archive file. The extent of the compression depends on how much text (character fields) the object contains. Optimal compression can achieve a **factor of five**.

Estimates of the size of an individual data object are provided in the application-specific sections of this documentation. You can, however, also make a **rough approximation** of how much space the data to be archived occupies in the database and how much space the archive files will require.

For further details, see Calculating Storage Space Gained [Seite 83]

See also:

Archive Management [Seite 33]

Archiving Without Database Backup

You can execute SAP Data Archiving without backing up the database first. However, we recommend that you backup archive files before storing them.

Accessing Archived Data

Because archived data has only been removed from the database and not from the application component itself, the data is always available. Archive management allows three types of access:

1. (Read) access to a single data object, such as an accounting document
2. Analysis of an archive file (sequential read)
3. Reload into the database (not possible for all archiving objects)

See also:

Reloading Data [Seite 76]

Converting Old Archive Files

When archived data is read, the system automatically makes the conversions required by hardware and software changes.

When old archive files are accessed, the Archive Development Kit (ADK) can make allowances for changes to database structures (field types, field lengths, new fields, and deleted fields) after the data was archived and for changes to hardware-dependent storage formats. This is only done during read access. The data in the archive file is not changed. The following items are changed (if necessary) during automatic conversion:

- Database table schema (new and deleted columns)

- Data type of a column

- Column length

- Type of file (ASCII, EBCDIC, and so on)

- Number format (such as the use of the integer format on various hardware platforms)

If database structures in an application have undergone more changes than the ADK can handle (for example, if fields have been moved from one table to another or if one table has been divided into several tables), then a program is provided by the application for the permanent conversion of existing archive files.

Link to External Storage System

Content Management Service

Archive files created by SAP Data Archiving can be stored on tertiary storage media, such as WORMs, magnetic-optical disks, and tapes using the Content Management Service (CMS). This can be done manually or automatically.

> From Release 4.6C, the Content Management Service replaces the SAP ArchiveLink in the Data Archiving context.

Hierarchical Storage Management Systems (HSM Systems)

Archive files can also be transferred to an HSM system simply by storing them in the file system of the HSM system. For storage, the HSM system can also use tertiary storage media, such as MO-disks.

See also:

Storing Files [Seite 72]

Retrieving Archive Files [Seite 75]

The Archiving Procedure

Purpose

This process describes the basic archiving procedures.

Process Flow

Archiving is carried out in three steps:

Step 1: Create Archive Files [Seite 25]

Step 2: Store Archive Files [Seite 26]

Step 3: Execute Delete Program [Seite 27]

> You can also opt to store the archive files after the deletion step: To do this you must flag the checkbox *Deletion run before file storage* in archiving object-specific customizing.
>
> If security is your main concern, then you should not run the deletion program until after the archive files have been stored. In this way you know that the data will only be deleted from the database after the archive files have successfully been moved to the external storage system. In addition, you can set the system to read the data from the storage system and not from the file system.
>
> However, if your main concern is the performance of the archiving programs, then you should schedule the deletion program first and then store the files.

For more information on file storage, refer to **File Storage to the Storage System [Seite 61]**

Step 1: Creating (the First) Archive Files
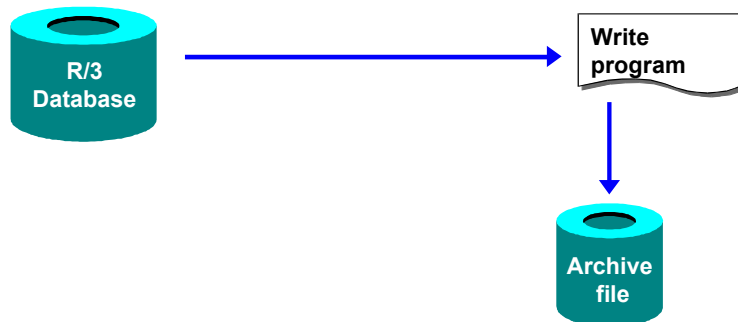
In step one, the archiving program creates an archive file. The data to be archived is then read from the database and is written to the archive file in the background. This process continues until one of following three events occurs:

1. All the data is written to an archive file
2. The archive file reaches the maximum size specified in Customizing
3. The archiving is not yet finished, but the archive file contains the maximum number of data objects specified in Customizing

> If in cases 2 and 3 there is still data to be archived, the system will create another archive file.

If the event 2 or 3 occurs, then archive management continues with the delete step (assuming that the following checkboxes are flagged in archiving object-specific customizing: *Start delete program automatically* and *Delete before storage*).

Write Run Followed by Event

After all archive files have been completely created for an archiving session, the ADK triggers the system event SAP_ARCHIVING_WRITE_FINISHED. By reacting to this system event, you have the option of scheduling archiving jobs automatically. This includes the rebuilding of indexes or input help, archive file backup before deletion, and so on. The event parameter is the number of the archive session.

You can define new jobs in transaction *SM36.* You maintain events in transaction *SM62*.

For more information see Creating Archive Files [Seite 70] and Archiving Object-Specific Customizing [Seite 58]

Step 2: Storing Archive Files
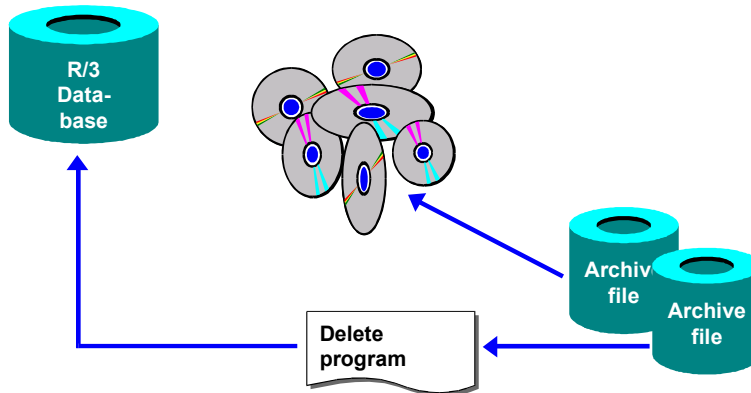
Once created by the write program, archive files can be stored in various ways.

- **Content Management Service**
  If a storage system is connected to the SAP system, and the write run has completed successfully (the corresponding settings are contained in Archiving Object-Specific Customizing [Seite 58]) the storage system is instructed to store the archive files. You can also store archive files manually.

- **HSM systems**
  If you maintain the file path of an HSM system in Customizing (transaction *FILE*), you don't need to communicate with the archive system using ArchiveLink because the HSM system stores the files autonomously.

- If you use an HSM system, it is sufficient to maintain the file name in Customizing (Transaction *FILE*). You do not then need to communicate with the storage system using the Content Management Service, because the HSM system stores the files on tertiary media according to access frequency and disk space.

- **Manual storage**
  Once the delete program has processed the relevant archive file, you can manually copy archive files to tape.

For more information, see Storing Archive Files [Seite 72]and Retrieving Archived Files [Seite 75]

See also File Storage in Storage System [Seite 61]

Step 3: Running Delete Programs
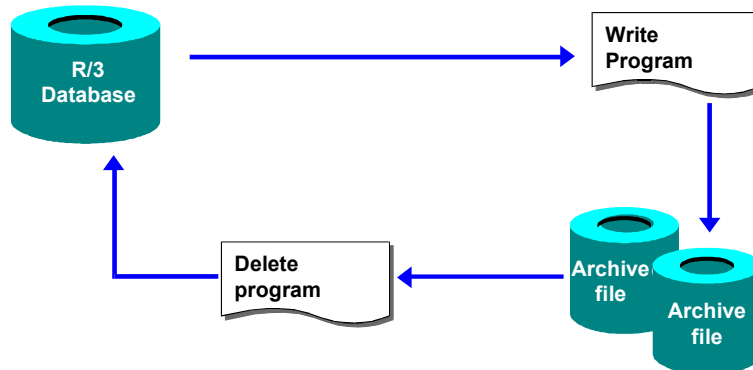
After closing the first archive file, the archive management system creates a new archive file and continues with the archiving process. While this happens, another program reads the archived data from the completed archive file and deletes it from the database. This procedure guarantees that only data that has been correctly saved in the archive file is deleted from the database.

> If you do not carry out deletion until after the data has been stored, you can make a setting in Archiving Object-Specific Customizing so that the system will read archive files the from the storage system during deletion. In this way, you can detect errors in good time which might arise when transferring or saving the archive files in the storage system.
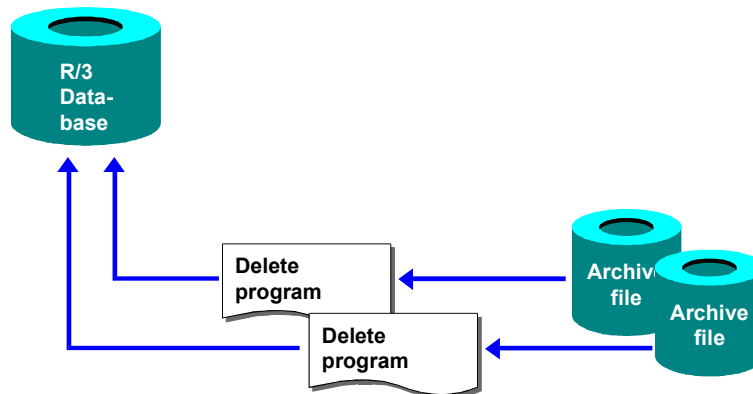
When the last archive file is closed, a delete program is also executed for this file. The graphic shows that several delete programs are running simultaneously. Because the archiving program makes no changes in the database, it creates new archive files faster than the delete programs can process them. This decreases the total archiving runtime because the database is used more efficiently.

Delete Run Followed by Event

After all archive files have been completely created for an archiving session, the ADK triggers the system event SAP_ARCHIVING_DELETE_FINISHED. By reacting to this system event, you have the option of scheduling archiving jobs automatically. This includes the rebuilding of indexes

Step 3: Running Delete Programs

or input help, archive file backup before deletion, and so on. The event parameter is the number of the archive session.

You can define new jobs in transaction *SM36.* You maintain events in transaction *SM62.*

You can also have *event-controlled* delete runs started automatically. You can define the event that triggers the delete program in the group box *Settings for the Delete Program* in Archiving Object Specific Customizing.

For more information, see <u>Deleting Data from the Database [Seite 73]</u>.

The Archiving Object

Definition

Archiving objects are the core of the SAP Data Archiving concept. The archiving object specifies which data is archived and how. It also describes which database objects must be handled together as a single business object and which must be interpreted independently.

Use

An archiving object has a name of up to ten characters in length. You need this name to access archiving for the object in archiving management. However, the function for calling archiving management is often integrated in the application menu, where the archiving object name is set as the default so that you do not need to enter it yourself.

Structure

The following programs must (or can) be assigned to an archiving object. (Archiving objects are defined using transaction *AOBJ*)

The SAP System contains programs (some of which are optional) for the following actions:

1. **Preprocessing** (optional)

    Some archiving objects require a program that prepares the data for archiving. This program marks data to be archived, but it does not delete any data from the database.

    Preprocessing programs must always be scheduled manually and are run from archive administration.

2. **Write**

    This program creates archive files and writes data to them. It does not delete the data from the database.

    You can specify in archiving object-specific Customizing whether the next phase (deletion) is to take place automatically after the archive files have been created. Delete jobs can also be event-triggered. To do this, you set up the trigger event in archiving object-specific Customizing.

3. **Delete**

    This function can include several processes. The processes are always dependent on the existing archive files.

    The data is usually deleted from the database, but in some circumstances, the archived data is only marked for deletion in the database.
    In archiving object-specific Customizing, you can specify that archive files, after successful processing, are to be transferred to an external storage system using the Content Management Service.

- **Postprocessing** (optional)

    The *Postprocessing* function can be performed asynchronously with the *Delete* program. This function is not available for all archiving objects. If the data has not yet been deleted from the database by the delete program, it is deleted by the postprocessing program. The postprocessing program can also perform other tasks. For more information, see the documentation for the specific object.

- **Reload archive** (optional)

    You can reload archived data from the archive files into the database using this function. It is not available for all archiving objects. To access this function, choose *Goto →Reload.*

- **Index (optional)**

  This function constructs (or deconstructs) an index that allows individual access. It is not included in every archiving object.

For more information on the definition of archiving objects, refer to **Defining the Archiving Object [Extern]**

Sample Data Description Used by the FI Document

The archiving object data structure is described here using Financial Accounting as an example. To archive FI documents so that they can be accessed in the future, you must make sure that the environment is stored in the archive file. This is ensured by the respective data description.

The archiving object for FI documents (*FI_DOCUMNT*) includes the following data:

- Document header

- Document segment accounting

- Document segment control data

- Posting procedures that depend on company codes

- Document segment variable data

- Document segment change data

- Change documents

- SAPscript texts

See also:

The Archiving Object [Seite 29]

The Data Object

Definition

A **data object** is the application-specific instance of an archiving object, that is, an archiving object filled with concrete application data.The archiving object only describes the data structure, that is, it determines which data belong logically together, whereas the data object contains real data from the database, such as all table entries belonging to an FI document.

Use

The ADK ensures that data objects are written sequentially to an archive file. All data objects in an archive file have the same structure, which is described in the archiving object.

See also:

The Archiving Object [Seite 29]

Archive Administration

Use

All interaction relating to data archiving takes place in the Archive Administration transaction (*SARA*)

The definition of an archiving object determines which functions are possible. Consequently, all archiving functions are not always available in the Archive Administration.

Features

Archiving

Enables a write program to be scheduled and run, whereby data is removed from the application database. The program writes the relevant data sequentially in archive files. See Creating Archive Files [Seite 70]

Deletion

Enables a deletion program to be scheduled and run, whereby data objects, which could be read from the previously created archive file, to be removed from the database. See Deleting Data from the Database [Seite 73]

Evaluation

Enables a program to be scheduled and run that analyzes archived data. See Analyze Archive Files [Seite 79]

Index

Enables an index to be constructed or deconstructed for existing archive files. The index is required to display individual documents belonging to several archiving objects. See Constructing an Index [Seite 77] and Deconstructing an Index [Seite 78]

Storage System

Enables archive files to be transferred to a connected storage system and enables stored archive files to be retrieved from the storage system. See Storing Archive Files [Seite 72] and. Retrieving Stored Archive Files [Seite 75].

Management

Offers an overview of archiving sessions. From here, you can display and analyze object-specific management information. See Archive Administration: Overview of Archiving Sessions [Extern] and Calling the Archive Session Management [Seite 80]

Preprocessing

Enables you to schedule and run preprocessing programs. Preprocessing programs prepare data objects for archiving, for example, by setting a deletion indicator. See Scheduling Preprocessing [Seite 69].

Postprocessing

Enables you to schedule and run postprocessing programs. Postprocessing programs carry out operations following an archiving session, such as updating statistics. See Scheduling Postprocessing [Seite 74].

Further Functions

Depending on the action you have selected, you can access the following menu options by choosing *Goto*.

- Network Graphic [Seite 86]

- Reloading [Seite 76]

- Customizing [Seite 51]

- Job overview: Provides an overview of all archiving jobs and the functions available to process them.

- Management [Extern]

- Stored files: Enables you to search for stored archive files according to selection criteria.

- Database Tables [Seite 38]

- Infosystem [Seite 88]

Activities

You can call the Archive Administration:

- By entering the transaction *SARA* in the command field

- By choosing *Tools* → *Administration* → *Management* → *Data Archiving*

- Directly from the application

If you choose an archiving function in the application, the relevant archiving object is automatically specified in Archive Administration. Otherwise, you must specify it manually.

The Archive Development Kit (ADK)

Definition

Archive management is based on the Archive Development Kit (ADK), which is located between the application and the archive. The ADK provides all the functions required for archiving data and accessing archived data.

Use

The ADK functions are required for archiving and subsequent access to archived data. The ADK automatically performs the hardware-dependent adjustments (such as codepage and number format) and structural changes that are required when archive files are created. It also temporarily converts data that was archived with previous R/3 releases (from 2.1) when that data is accessed later.

Integration

The following graphic illustrates the ADK and archive administration concept.
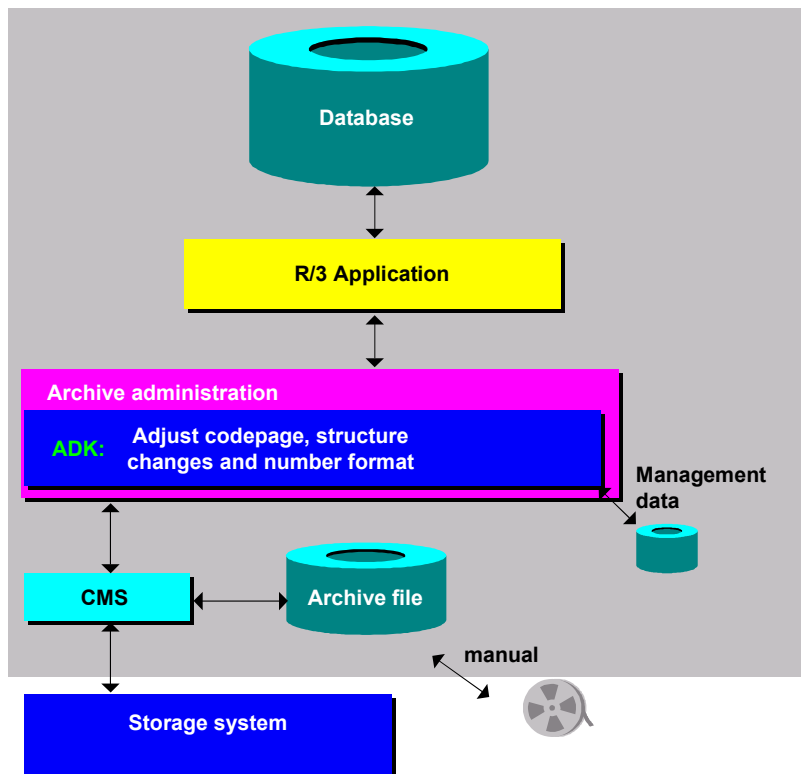
See also:

Data Archiving – ADK [Extern]

Content Management Service (CMS) [Extern]

User Authorization Checks

Definition

An authorization object (*S_ARCHIVE*) controls access to the programs for an archiving object. The ADK performs a check when an archive file is opened for one of the following actions:

- Write

- Delete

- Read

- Reload

Use

The following authorizations can be given per archiving object and application component, (such as FI, BC):

- **Everything is allowed**
  Write, read, and reload archives; execute delete programs; change mode in archive management

- **Change mode in archive management**
  Maintain notes

- **Read and analyze archives and display mode in archive management**

There may also be additional access authorization checks for specific application components.

DB Tables

Use

This function (transaction *DB15*) enables you to define all the archiving objects that archive the contents of a specific table, or enables you to display all of the tables for a specific archiving object. Furthermore, you can display information on storage space in the database or report existing statistics.

Scope of Functions

Archiving objects

You can determine all archiving objects belonging to a specific table.

Tables from which you are going to archive data

You can determine all tables that are linked to a specific archiving object, and from which data records will be deleted during an archiving session.

Storage space (online)

This transaction enables you to obtain detailed information on occupied storage space and additional general information on archiving sessions.

Storage space (statistics)

This transaction provides information from SAP tables that are filled by statistics determination runs.

DB15 is a *Computer Center Management Systems (CCMS)* transaction. For more detailed information, see the CCMS documentation in Data Archiving [Extern].

Maintain Start Date and Spool Parameters

Use

You can maintain the start date and the spool parameters on the following screens:

- Create archive files
- Preparation
- Postprocessing
- Reload archive
- Start analysis program

Features

The *Start date* and *Spool parameters* pushbuttons are followed by a traffic light icon and a note. The table lists the three possibilities.

Traffic Light	Note text	Meaning
●◯◯	Not maintained	The values are not maintained
◯●◯	Maintained	The values have already been maintained in this session, for the current action.
◯◯●	Maintained	The values are maintained.

See also:

Maintaining Spool Parameters [Seite 84]

Maintaining the Start Date [Seite 85]

The Network Graphic

Use

The network graphic displays the dependencies between archiving objects and schedules archiving sessions.

Features

You must account for dependencies between archiving objects in an archiving session. In general, you cannot archive data for an archiving object that has preceding objects until these preceding objects have been archived.

The network graphic tells you whether the archiving object has preceding objects that must be archived first. The nodes in the network graphic represent the archiving objects. A node displays the following information:

- Archiving object name

- Application component name

- Short description

- Date of the last archiving
  The date is displayed in one of three colors:
    - Green
      Archiving and deletion successful
    - Yellow
      Successfully archived, but not yet deleted, or
      Archiving still running, or
      Deletion running, or
      Deletion cancelled
    - Red
      Not yet archived, or
      Archiving cancelled

Activities

You can use the network graphic to call archive management at the same time as the required object name:

1. To call archive management, double-click on the action you want to perform (for example, archive or delete). You access archive management. The name of the archiving object is copied automatically.
2. You can now choose the action that you want to carry out and create the relevant background job.

For further information on the network graphic see Calling the Network Graphic [Seite 86]

See also:

Archive Administration [Seite 33]

The Standard Log

Definition

A **standard log** is usually created during the archiving session, but you can also create a log for application components. See the documentation on specific archiving objects for more information.

Structure

The standard log contains the following information on each archiving session or archive file:

- Number of data objects archived

- Tables involved

- Number of table entries processed

- File size

You can call the standard log from the screen *Archive Administration: Overview of Archiving Sessions*. Choose *Spool List*

Accessing Archived Data

Use

Data that has been archived using SAP Data Archiving has only been removed from the database, and not from the application component. Data is still available for read access and analysis. In some cases, archived data can even be reloaded into the database.

Prerequisites

A prerequisite of read access and reload access, is that the file can be found in the file system. You can check this in archive administration.

Features

The uses of archived data described here are technically possible, but are not currently implemented in all application components. For more information, refer to the specific application components.

Three types of access are possible:

- **Read access to a single data object (such as a posting document)**
  Direct access requires an index that can be constructed either during or after archiving . A complex search of the documents stored in the archive files, in which all orders of an article in a particular batch are required for a product recall action, is not possible.

- **Analysis of the archive file (sequential read)**
  The analysis can be of one or more archiving sessions. You can also link current data in the database and archived data.

- **Reload to the database**
  Archived data does not usually need to be reloaded because it remains accessible by the applications. There is also a lot of data that cannot be reloaded or for which reloading is inappropriate. For this reason, reload programs do not exist for all archiving objects.

Database Actions Before and After Archiving

Purpose

Archiving uses application software that depends on and affects the organization of the database. You should therefore organize the database before and after archiving.

Process Flow

Database Actions to Take Before Archiving

You should decide whether or not to archive after considering all the circumstances, because storing data places new demands on performance if, after archiving, access to the data is required.

To determine whether or not you should archive data, consider the following questions:

- **Can more memory be assigned to the table (MAXEXTENT, Tablespace)?**

   If the answer is yes, and if you will need to access the archived data and you have no performance problems, you should consider enlarging the table. This procedure is described in the BC Basis document *Database Administration* (SAPDBA for Oracle and Informix) or *ABAP/4 Dictionary*, section *Tablespaces and Extents* (database-independent parameters for ADABAS).

- **Will you need to access the archived data again? How often?**

   If you need to access the archived data often and there are no performance problems, assign more memory to the tables in question.

- **Is the data accessed using an optimal index?**
   An appropriate index may exist, but may not be used. This depends on the database optimizer.

   You can check which index is actually used to access data by Performing an SQL Trace [Seite 47].

   The BC Basis documentation *ABAP/4 Dictionary* contains more information about indices. Use the keyword "Index".

- **Does the application perform a full table scan on the tables that contain the data to be archived?**
   If the answer is yes and the table is fragmented, it may help to reorganize the table before archiving so that new records and any records that remain in the database are physically contiguous.

   ⚠️

   Reorganization takes a long time and may need to be repeated after archiving.

   Duration ca.:

- With export/import: approximately. 60 - 100 MByte/hour.

- With unload/load: approximately. 250-300 MByte/hour.

Database Actions to Take After Archiving or Deleting Data

Oracle and Informix: Reorganize index

If data has been archived or simply deleted and the associated tables were accessed via an index, the index should be reorganized. Deleting table entries leaves holes in the table which are still indexed. Reorganization can shorten the access paths, reducing response times.

For databases with a cost-based optimizer: update the database statistics

If your database uses a cost-based optimizer, you must choose *Update Statistics* to recalculate the access paths.

Oracle and Informix: Reorganize tablespace

Whether you should reorganize the tablespace depends on the reason for archiving.

- **Do you expect a lot of new data for the archived tables?**
  If so, you should not reorganize.
  If, on the other hand, you archived data that is no longer needed in the system and the table is otherwise rarely changed, you should reorganize.

- **Do you want to make space for other tables?**
  If so, you should reorganize the tablespaces of both the tables and the indices.

The procedure is described in the Basis document *Database Administration* (SAPDBA, for Oracle and Informix databases) or *ABAP/4 Dictionary*, section *Tablespaces and Extents* (database-independent parameterization for ADABAS).

Performing an SQL Trace

1. Open a new window and choose *System* → *Utilities* → *SQL Trace*.

    The *Trace requests* screen appears.

2. Choose *Trace on* to activate the trace.

3. Perform a typical database access in the first window (for example, an application transaction or the transaction SE16).

4. Choose *Trace off* and examine the SQL statement with *List Trace*.

5. Position the cursor on one of the PREPARE, OPEN, or REOPEN statements, and choose *Explain SQL*. The system displays detail information.
    The index used is specified in the line beginning with *Index*.

Archive Selection

Use

Provides context-specific access to archive files for performing archiving activities.

Prerequisites

Archive selection appears at the following actions:

- Delete

- Read

- Construct Index

- Reload

- Postprocessing

Depending on the action, there are four different criteria for whether archiving sessions and archive files are displayed in the archive selection:

Criterion 1:

Archive file status

Action	Criterion
Delete	Archive file status *Archived* or *Stored* (if sequence "Store before deletion" has been selected in Customizing)
Read	Archive file status *Archived* or *Deleted* or *Saved*
Construct index	Archive file has the status *Deleted* and the file is in the file system
Reload	Archive file is in file system and the session has the corresponding status (see criterion 5)
Postprocessing	All archive files have status *Deleted*

Criterion 2:

The archive file must contain at least one data object. If you have performed an archiving session and maintained the variants so that no data objects were archived, the archive file is automatically deleted and no longer offered for selection.

Criterion 3:

If a file is not accessible in the file system, the file is not offered for selection. A file can only be read if all the files in a session are accessible.

While checking the accessibility of a file, the system performs a read access for each file. This check process can take a long time if there are a lot of files. To optimize this process the access

check can be de-/activated according to archive files in file system and archive files in an optical archive in <u>archiving object-specific Customizing [Seite 56]</u>.

Criterion 4:

For client-dependent archiving objects only the sessions for the current client are offered.

Criterion 5

An archiving session can only be reloaded if it has the status *Complete* or *Archiving session is reloaded*.

For more details, refer to <u>Selecting Archive Files [Seite 50]</u>.

Selecting Archive Files

Prerequisites

- You have chosen one of the following activities. You are now in the screen where you can execute the chosen activity:
  - Delete
  - Read
  - Construct index
  - Reload
  - Postprocessing

- At least one of the archiving selection criteria (see Archive Selection [Seite 48]) is valid for this action.

Procedure

1. Choose the function *Archive Selection*.

   The archive selection screen appears for the selected action.

2. To select all files belonging to an archiving session, mark the appropriate checkbox.

   As a confirmation, the small rectangle to the right of the checkbox is filled.

3. To select individual files belonging to an archiving session, expand the desired node, and mark the relevant checkbox.

   As a confirmation, the small rectangle to the right of the checkbox is only half filled.

   You can select all sessions or cancel the selection by simply using the pushbutton *Select all* or *Deselect all*.

   The reload program can only ever process complete archiving sessions. For this reason you cannot select individual files for reloading.

4. Confirm your file selection.

   You return to the initial screen.

Customizing

Purpose

Customizing for Archiving enables you to set parameters that affect the archiving process.

Prerequisites

- You have customizing authorization.

- Data types are maintained.

- Organizational data is maintained.

Process Flow

Customizing can be divided into the following areas:

- General Customizing [Seite 52]

- Cross Archiving-Object Customizing [Seite 56]

- Archiving Object-Specific Customizing [Seite 58]

-

> The application chapters contain information on customizing specific archiving objects.

General Customizing

Purpose

General Customizing is usually performed when the SAP System is installed.

Process Flow

All settings can be made with the Customizing function. You have the following options:

1. You make Customizing settings (such as setting the residence time) for specific application components.

    Criteria for archiving and deleting data for specific archiving objects are specified in Customizing for that object. Note that such criteria may not be set for all objects. The application component-specific sections of this documentation contain information on how to set the criteria.

2. You perform Customizing for Basis

    Cross-client and client-specific platform-independent file names are maintained Customizing for Basis (see Defining Logical File Names [Seite 53]).

    You are advised to maintain the platform-independent file names as cross-client.

If you want to transfer files to a storage system using the Content Management Service (CMS), ensure that the correct Content Repository is set up in archiving object-specific Customizing.

Defining Logical Path and File Names

Use

Archive files are stored in the file system under a physical path and file name that is derived from a user-definable logical path or file name. The definition can be divided into the following steps:

1. Definition of the logical path name
2. Definition of the logical file name
3. Assignment of the logical fine name for the archiving object

> The system uses the logical file name ARCHIVE_DATA_FILE and the path name ARCHIVE GLOBAL PATH as defaults, which cover must cases. Consequently, the names only need to be changed if they have to be adjusted to meet special requirements.

Prerequisites

- If you intend to transfer the archive files to a storage system using the *Content Management Service*, note that this storage system must have access to the archive files.
- In the case of hierarchical storage management (HSM) systems, you must ensure that the archive files can be written to the file system of the HSM system.

Defining Logical Path Names

1. Call the transaction *FILE*.

   Alternatively, from the initial screen for Archive Administration (transaction *SARA*), choose: *Customizing* → *Basis-Customizing* → *Cross-Client File Name/Paths* .

2. Mark an existing path name, such as ARCHIVE_GLOBAL_PATH, or choose *New entries* to enter a new path name - this should be as meaningful as possible.

3. Double click the dialog structure *Logical file path de*finition in the substructure *Assignment of Physical Paths to Logical Path*. Select a syntax group or create a new syntax group.

4. .Assign a physical path name to the logical path name.

   You can use the `F1` key in the *Physical path* field to obtain a list of all possible parameters.

   > ⚠️ When assigning path names, the symbol <FILENAME> must appear at the end. This symbol is replaced at runtime by the physical file (or path) name. No part of the physical file name in the path name must be defined.

   > You have created the subdirectory "data_archiving" for archive files in the global directory. You then specify a path name:
   > - <P=DIR_GLOBAL>/data_archiving/<FILENAME> (Syntax group UNIX)
   > - <P=DIR_GLOBAL>\data_archiving\<FILENAME> (Syntax group WINDOWS NT)

   In a heterogeneous system landscape (such as UNIX and Windows NT servers) all system specific syntax groups must be maintained. Ensure that the definitions for the various syntax groups point to the same directory.

5. Save your entries.

Defining Logical File Names

Logical file names can be defined as client-specific (transaction *SF01*) or client specific (transaction *FILE*). A client-specific definition always overrides a cross-client definition. Ensure, therefore, that in every client any unnecessary client-specific definitions are deleted.

The following describes the procedure for creating a cross-client definition using the transaction *FILE*. You create the client-specific definition in the same way using transaction *SF01.*

1. Call transaction *FILE* for cross-client file names.

   Alternatively, from the initial screen for Archive Administration (transaction *SARA*), choose: *Customizing → Basis-Customizing→ Cross-Client File Name/Paths*

   For client-specific definitions, from the initial screen for Archive Administration, choose: *Customizing → Basis-Customizing→ Client-specific File Names*

2. Mark an existing file name, for example ARCHIVE_DATA_FILE, or choose *New entries* to enter a new file name. The file name should reflect its function.

3. Double click on the dialog structure *Logical file name definition, cross-client*.
   You access the screen Change View "Logical file name definition, cross-client": Overview

4. Maintain the fields *Physical file* and *Logical path*.

   In the *Physical file* field, enter the required physical file name. For an overview of the possible parameters, refer to the `F1` help.

   The following parameters are of particular interest here:

   – **PARAM_1**: Two-character application abbreviation (for example, HR, CO, MM) for the classification of the archive files in the system. The value of the definition is determined from the relevant archiving object at runtime.

   – **PARAM_2**: Single-character alphanumerical code (0-9, A-Z). If, when creating a new archive file, an existing file with an identical physical name would result in a conflict, the ADK increases this value by 1. This value must, therefore, always be a part of the physical name.

   – **PARAM_3**: This parameter is filled with the name of the archiving object at runtime. In archive management, this enables you to check the file contents or to store the archive files by archiving objects.

      To enable maximum space in the name range for the archive file, the following entry is recommended:

      <PARAM_1>_<DATE>_<TIME>_<PARAM_2>.ARCHIVE

   In the *Logical Path* field, you assign the previously defined logical path name to the current logical file names. You can assign a logical path name to several file names.

5. Save your entries.

   To display the path name and file name definitions and their specifications for the relevant syntax groups, go to transaction *SF07*.

Assigning a logical file name to the archiving object

Once the logical path name and file name have been defined, the logical file name must be assigned to the archiving object. Proceed as follows:

1. In the Archive Administration initial screen (transaction *SARA*), enter the name of the archiving object and choose *Customizing*. Under *Archiving object-specific Customizing*, choose *Technical Settings.*
2. In the *Logical file name* field, enter the required logical file name.
3. Save your entries

Cross-Archiving Object Customizing

Use

The settings that you make here apply on a cross-application and cross-archiving object basis for all archiving objects.

Features

Data archiving monitor

Use this checkbox to activate or deactivate the data archiving monitor (transaction *SAR_SHOW_MONITOR*).

If you mark this checkbox before data archiving, archiving-relevant information on the write and deletion runs is updated. This information can be analyzed using the data archiving monitor. If there are errors, alerts are issued.

The data archiving monitor offers the following information:

- Overview of all the archiving objects that have been run
- Detailed information on the individual archiving sessions
- Processing status display
- Help on analyzing open alerts

The data archiving monitor is a part of SAP CCMS-monitor collection (transaction *RZ20*) and can be found under *SAP CCMS Monitor Templates → Database → Data Archiving*.

For more information, refer to [Data archiving monitor [Extern]](#).

Access check for archive selection

When selecting files for reading, deleting, analyzing or reloading, this function enables you to check for the existence of an archive file, that is, whether this archive file is accessible in the archive administration. You can use this function to check for stored archive files and archive files that still exist in the file system.

- By marking the *For Files in File System* checkbox, you specify the access check covers all archive files in the file system.
- By marking the *For Stored Files* checkbox, you specify that the access check covers all archive files in a storage system.

If an archive file is not found by the access check, the file is marked as "not accessible" in the selection screen.

> 💡
>
> In the case of an access check for stored files, access to the storage system is required. The check can therefore be very time consuming and should only be used if strictly necessary.

Verification of archive files

You can use this function to specify whether, during the writing phase, archive files are to be given verification information that is to be analyzed at a later point. Storing verification information does not affect the size of the archive files. The availability of verification information is a prerequisite for the subsequent evaluation when deleting, reading or reloading.

The system uses this information to verify the status of the archive files before accessing them. Incorrect files are recognized and reported immediately, and deletion from the database does not start.

You can specify whether the verification information is to be stored, and at what point (during deletion, read or reload phase) the information is to be analyzed.

- By marking the *Create Verifiable Files* checkbox, you specify that verification information is stored during the writing phase.

- By marking the *Deletion*, *Read* or *Reload* checkboxes, you specify the point at which the verification information is to be analyzed. This can be done during the deletion, read or reload phases.

See also:

General Customizing [Seite 52]

Archiving Object-Specific Customizing [Seite 58]

Archiving Object-Specific Customizing

Purpose

You can set parameters that apply only to a specific archiving object.

Process Flow

All parameters can be set using the *Customizing* function. You can set the following parameters:

- Logical File Name [Seite 59]
- Archive File Size [Seite 60]
- Deletion Program Settings [Seite 62]
- File System to Storage System [Seite 61]
- Postprocessing Settings [Seite 64]
- Server Selection [Seite 65]

Logical File Name

Use

Here, you specify which logical file name the archiving object is to use when storing the archive files in the file system. Both the physical name and the path - under which the archive file is created in the file system - are derived from this logical file name.

Features

Provided you have not defined a logical file name that differs from the standard, you do not need to make any further settings. For more information, refer to Defining logical path and file names [Seite 53].

Archive File Size

Use

This parameter specifies the maximum size that an archive file can reach when running a write program.

Features

You can specify:

- Maximum size in MB or
- Maximum number of Data Objects

The value that is reached first triggers the creation of a new archive file. If you leave both fields blank, a new archive file is created.

Note that the maximum size of an archiving file is limited by the operating system and also by the storage system if one is connected using the *Content Management Service*.

> Since the deletion program is automatically started for each archive file, you can carry out deletion and archiving activities in parallel if relatively small archive files are created. This parallel activity can have a positive effect on the runtime of an archiving session, as the database is used more efficiently. If a file is too small, the number of processes rises and the system is negatively affected.

> The ideal size is between 20 and 100 MB. The size must not exceed 2 GB, or no index can be constructed, thereby preventing single document access.

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File Storage to Storage System

Use

Here, you can specify whether an archive file is to be transferred automatically after successful processing to a connected storage system. The storage is controlled by the *Content Management Service* (CMS). You an also specify the sequence of the deletion and storage phases.

Prerequisites

A storage system is connected to the SAP System.

Features

To start the automatic storage of archive files, mark the checkbox *Start Automatically* and choose the required Content Repository.

Under Sequence, you can specify when the storage is to take place:

- If you mark *Delete Before Storage*, the archive file is not stored until it was processed by the deletion program. If, however, the deletion program is run in test mode, automatic storage is not carried out. This option is advantageous from a performance point of view.

    With this setting, you can also perform storage manually if no deletion program has been run. In this case, the system informs you that this does not match the selected sequence. You must then ensure that the file is not stored at the same time as the delete program is active.

- If you mark *Store Before Delete*, the archive file is stored as soon as the write program has created the archive file, but still before the deletion program has edited it. The delete program can therefore only remove the contents of an archive file from the database once the archive file has been stored. The option offers enhanced backup, as the archived data is not deleted until it has been stored.

    With storage before delete, you can use the checkbox *Deletion Program Reads from the Storage System* to control the read behavior of the deletion program during the deletion process.

    – **Checkbox marked**: After storage, the stored archive file is deleted from the file system. Consequently, during the deletion phase, the delete program reads the archive file from the storage system. This ensures that the data is only deleted from the database if it was successfully stored in the storage system.

    – **Checkbox not marked**: After storage, the archive file is not deleted from the file system This setting results in improved performance of the delete program without neglecting backup considerations.

    If, in the settings for the delete program, the radio button *Start Automatically* is also selected, the delete program is started automatically following storage. It therefore makes no difference whether the delete program is run in test or live mode.

Similarly, if you select the radio button *After Event*, deletion events are scheduled, but they are not run until triggered by the event that has been set up in the settings for the delete program.

Settings for Delete Program

Use

Here, you specify several parameters for the delete program.

Features

- You can set up a *test run variant* by modifying the parameters accordingly. A test run variant does not delete data from the database.

- You can set up a *live run variant* by modifying the parameters accordingly. A live run variant deletes the archived data from the database.

  ⚠️

  > Delete program variants are client-specific. Consequently, you must make the variant settings in all the clients for which you want to carry out archiving sessions.

  > When archiving for the first time using a selected archiving object, the relevant test run and live run variants for the delete program must be fully maintained. Check whether both variants exist. Note especially, that if a live variant is not available, data is not deleted form the database when the delete program is run.

As a part of the delete job, you specify when the delete program is to be run in the background.

- If you activate the *Not Scheduled* radio button, the delete program is not run automatically. Instead, you can run the program at any time after archiving.

- If you activate the *Start Automatic*. radio button, the delete program is run automatically immediately after archiving. However, if it was specified in Customizing that the file storage is to take place before the delete phase, the delete program is not started until the file has been stored. See also Archive File Size [Seite 60].

  This radio button is of interest primarily if you want to save the archive files before the delete run. If there is a long time period between the write run and the delete run, there is a danger that the data could be changed before deletion, which means that the data in the archive and in the database are no longer the same. The delete run should therefore be carried out as soon as possible after the write run.

  💡

  > Since *Before Images* has been deactivated for the rollback segments, there ought to be enough space available (Oracle's Rollback Tablespace).

- If you activate the *After event* radio button, the delete program is run automatically once a specific event has occurred. You select the relevant event by using the input help for the *Event* field. If an event requires that a parameter be set (an argument), enter the required parameter in this field. A parameter qualifies an event. See also Background event [Extern].

  After the completion of all delete jobs for an archiving session, the ADK issues the event SAP_ARCHIVING_DELETE_FINISHED. The event number is the number of the archiving session. You can use this event for event-driven scheduling of accumulated archiving jobs. and the automatic backup of archive files using external tools.

  💡

  > You can use transaction *SM62* to display and maintain events.

- You can use the *Build index* indicator to specify whether an index is to be constructed for a particular archiving object. The index enables you to access specific data objects from the archive file.

We recommend that you use the single document access function in the Archive Information System (SAP AS) [Seite 88].

Customizing: Postprocessing Settings

Use

Here you can schedule a postprocessing program to run after a delete run.

Prerequisites

The archiving object being used has a postprocessing program.

Features

- Set the *Run automat.* flag to perform *Postprocessing* automatically after deletion.
- Specify the postprocessing program variant in *Variant*.

> The postprocessing program only runs when:
> - The last delete program in the archiving session is finished
> - No archive files have the status *Archived*, *Archiving* or *Deleting*.

Server Selection

Use

Server Selection allows you to define on which server(s) the archiving and delete programs should run as background programs.

Prerequisites

There must be active background processes running on the selected servers. Otherwise, the archiving or delete program will run on the database server (if a background process is available there) or on other selected application servers with active background processes.

Features

You can create an individual server group for each archiving object or you can select a single server group for all archiving objects.

You should decide when you save the selected server group:
Save for Object means that you create a server group for a selected archiving object, *Save for All Objects* means that you create a server group for all archiving objects.

If you do not select a server, or if you accidentally select a server on which there are no active background processes, then the archiving program will run on the database server if a background process is available there (network load reduction). Otherwise, both the archiving program and the delete programs will be scheduled randomly on application servers where active background processes exist.

If the database server has at least one active background process and is within the server group, the archiving program will automatically be scheduled on it to reduce network load.

> A reduction in the number of application servers can lead to an increase in the overall runtime of the whole archiving process, especially where there are less active background work processes than delete programs running.
>
> Only select servers on which there are active background work processes during archiving.

Activities

If you have created a server group, the system will also start other archiving-related activities within that server group, such as reloading, reading from archive files and constructing/removing indexes.

Archiving Procedure

Purpose

This process describes the basic procedures when performing an archiving session.

Process Flow

Observe the detailed Archiving Checklist [Seite 68] when archiving.

1. You can call Archiving in two ways:

   a. From the application

   From the application component menu, the system usually transfers the archiving object to the archive administration transaction (*SARA*) and this automatically accesses the action *Create Archive File* screen, where you can schedule the relevant job.

   Archiving is not integrated in the menus for all application components.

   b. From system management

   - Call the archive management transaction from system management and enter the object name (see Archive Administration [Seite 33]). You can display all available archiving objects using input help.

   - Choose *Enter* to display the actions available for the object.

     Alternatively, you can go to the network graphic for an overview of the available archiving objects, their status, and so on. You can access the initial screen by double-clicking an archiving object in the network graphic. The archiving object that you selected appears in the input field *Object Name*.

     System management usually calls archiving when tables have become too big. For more information, see System Manager [Extern].

2. You choose one of the activities available for the archiving object.

   After you have chosen an action, the system access the screen in which you can schedule the job for the chosen function.

   If you select *Goto → Program Doc.* the system displays the background technical information about the program. *Advice*, is often also offered, and provides general information about the use of the program. If *Advice* is available for the current program, an "i" icon appears. You can also call *Advice* by choosing *Goto → Advice.*

3. Schedule parameter variants. For more information see Maintaining the Start Date [Seite 85] and Maintaining Spool Parameters [Seite 84].

4. Finally, execute the archiving job.

   If you use an external storage system, you can, in archiving object-specific Customizing, specify whether archive files are transferred automatically to the storage system using the Content Management Service. You can display the ArchiveLink status of an archive file from the *Archiving Session Overview* screen.

See Transferring Files to ArchiveLink [Seite 72] and Retrieving Files from ArchiveLink [Seite 75].

Archiving Checklist

Purpose

This checklist helps to ensure that you complete the necessary archiving steps and that you perform them in the correct order.

Process Flow

Before the first archiving session

1. Check the general Customizing. Are the logical file names maintained?
2. Check cross-archiving object Customizing. Is the Central Repository for storage maintained using the Content Management Service?
3. Check Customizing for specific application components. Are residence times maintained?

Before using an archiving object for the first time

Check Customizing for the archiving object:

- Was the file name is correctly assigned?
- Are the deletion program variants maintained? (Note that the variants are client-specific)
- Is the archive file size correctly set?
- Is the deletion program run automatically?
- Will the index will be created?

For each archiving session

1. Ensure that the specialist department and system management coordinate their activities.
2. Determine whether interdependencies exist by checking the network graphic. (Do other data objects have to be archived first?)
3. Schedule the archiving session (maintain variant).
4. If the deletion program is not run automatically, run the delete program manually.
5. If the archive files are to be stored using the Content Management Service, carry out the storage manually.
6. If the storage is manual:
    - Copy the files to tape.
    - Note the name of the tape in archive management.

Scheduling Preprocessing Program

Prerequisites

You are in the *Archive Administration: Initial Screen* (transaction *SARA*), and the name of the object name appears in the *Object Name* field.

> Preprocessing programs prepare the data in the database for archiving. The archive files are not accessed. Preprocessing is not usually necessary.

Procedure

1. Choose *Preprocessing*.
   This takes you to the *Schedule Background Job* screen.

2. Choose a variant using input help. If there are no existing variants, choose *Variants* to create an appropriate variant.

   > You can only use a variant in **one** job. Otherwise, data could be archived more than once. If you use a variant again, a dialog box notifies of this. Choose *Jobs with selected variant* to access the overview of all jobs that already have variants created. In the job overview, you can delete jobs using a specific variant.

3. Maintain the Start Date [Seite 85] and the Spool Parameters [Seite 84].

   > The *Archive Directory* function enables you to establish how much free memory space there is in the current object-specific archive directory.

4. You have now entered all the data required for the background job. Choose *Create Job* to create the job.

Creating Archive Files

Prerequisites

You are in the screen *Archive Administration: Initial Screen* (transaction *SARA*), and the name of the object name appears in the *Object Name* field.

Procedure

1. Choose *Archive.*

   You access the screen for scheduling a background job.

   ⚠️

   If the object has already been archived and there are unprocessed archive files, a dialog box will warn you of this.

   In this case, you must ensure that the new job to be scheduled does not select the same data that the unprocessed archive files contain.

   💡

   If the variant that you have selected is already being used for other jobs, you can display these jobs using the *Jobs with Selected Variant* pushbutton, and if required, delete these.

2. Choose a variant using input help. If there are no existing variants, choose *Variants* to maintain the desired variant.

   ⚠️

   If the option *Exec. autom.* is set for the deletion program in Customizing for archiving objects and a live archiving program variant is chosen, the deletion program is also executed with its live variant. In other words database deletions are made after the archiving session.

3. Maintain the Start Date [Seite 85] and the Spool Parameters [Seite 84].

   ⚠️

   The *Archive Directory* pushbutton enables you to establish how much free memory space there is in the current object-specific archive directory.

4. You have now entered all the data needed for the background job. Choose *Create Job* to create the job.

   💡

   After all archive files have been completely written for a run, the system event "SAP_ARCHIVING_WRITE_FINISHED" is started by the ADK. This triggers subsequent processes, such as file backup using external tools.

Storing Archive Files

Use

If you have not specified in archiving object-specific Customizing that archive files are to be transferred automatically after their creation to a connected storage system, you can store the archive files afterwards using the *Content Management Service* (CMS).

Prerequisites

- An external storage system is linked to your SAP System.

- The Content Repository, to which you want to pass the file, has been maintained in Customizing for the archiving object.

- You are currently in the *Archive Administration: Initial Screen* (transaction *SARA*). The name of the archiving object is in the *Object Name* field.

Procedure

1. Choose *Storage System*.
   The *Store/Retrieve Archive Files* menu box appears

2. Choose *Store Files*.
   The *Archive Administration: Store Files* screen appears.

3. Using *Archive Selection*, choose the archive files you want to store and define when you want the storage to commence.

4. To confirm your entries, choose *Execute*.
   The selected archive files will be transferred to the storage system at the specified time.

See also:

Retrieving Stored Archive Files [Seite 75]

Deleting Data from the Database

Prerequisites

- You are in the *Archive Administration: Initial Screen* (transaction *SARA*) and the name of the archiving object appears in the Object Name field.

- The delete function is only available when there are archive files for deletion.

    If the delete program is not called automatically after the archive action has completed (see Delete Program Settings [Seite 62]), you must wait until the archiving program has completed. Only then can you schedule this step.

    You then have the option of editing a whole archiving session with all archive files or of selecting individual archive files for editing.

Procedure

1. Activate the *Delete* function. You access the screen for scheduling a background job for this function.

    If you only want to run the deletete program for test purposes (so that the data is not deleted from the database), choose the option *Test run*.

2. Choose Archive *selection*. You access a dialog box with the archiving sessions that are available for the archiving object. Usually, this is only the latest session that was run.

3. If you want to edit a complete archiving session, select an archiving session and choose *Continue*. This takes you back to the original screen.

    If you want to edit one or several specific archive files, choose *Display Files*. You obtain a list of unedited archiving sessions with their archive files. Mark the required archive files and choose *Continue*.

4. Maintain the Start Date [Seite 85] and the Spool Parameters [Seite 84].

5. You have now entered all the data required for the background job. To create the job, choose *Execute*.

    When all the deletion jobs are completed for the run, the system event "SAP_ARCHIVING_WRITE_FINISHED" is started by the ADK. This triggers subsequent processes, such as file backup using external tools.

The *Goto* menu offers access to the following:

- Customizing [Seite 51]
- Job Overview: Offers an overview of all archiving jobs and the functions available for processing them.
- Management [Extern]
- Database Tables [Seite 38]
- Infosystem [Seite 88]

See also:

Archive Selection [Seite 48]

Scheduling Postprocessing

The **postprocessing program** performs housekeeping functions on the data in the database after the archiving session without accessing the archive file. Postprocessing is usually not necessary.

1. Select *Postprocessing*.
   This takes you to the *Background job scheduling* screen, in which you can schedule a batch job for the program.

2. Select a variant with the F4 key. If there are no existing variants, choose *Variants* to maintain the desired variant.

   You can only use a variant in **one** job. As long as a job with this variant exists this variant cannot be used in another job -- even if it has already run successfully.

3. Maintain the Start Date [Seite 85] and the Spool Parameters [Seite 84].

   The *Archive Directory* pushbutton enables you to establish how much free memory space there is in the current object-specific archive directory.

4. You have now entered all the data required for the background job. Choose *Create job* to create the job.

See also:

Archive Selection [Seite 48]

Retrieving Archived Files

Use

Archive files stored in a storage system can be retrieved for example, for analysis using the *Content Management System* (CMS) .

Prerequisites

- You are currently in the *Archive Administration: Initial Screen* (transaction SARA). The name of the archiving object is in the *Object Name* field.

- The archive files you want to retrieve can be accessed in the ArchiveLink.

Procedure

1. Choose *Storage System*.
   The *Store/Retrieve Archive Files* menu box appears.

2. Choose *Retrieve Files*.
   The *Archive Administration: Retrieve Files* screen appears.

3. Using *Archive Selection*, choose the archive files you want to store and define when you want the retrieval to commence.

4. To confirm your entries, choose *Execute*.
   The selected archive files will be retrieved at the specified time.

See also:

Storing Archive files [Seite 72]

Reloading Data

Prerequisites

- You are currently in the *Archive Administration: Initial Screen* (transaction SARA). The name of the archiving object is in the *object name* field.
- Archive administration has access to the archive files you want to reload.

   When reloading data, the system can only process complete archiving sessions.

Procedure

To reload data:

1. Choose *Goto → Reload*
   This takes you to the *Archive Administration: Reload Archive* screen, where you can schedule a background job.
2. Choose *Archive Selection*.
   A window containing the archiving sessions that have already been processed by the delete program appears.
3. Mark the desired archiving session and choose *Continue*.
   You return to the initial screen.
4. Maintain the start date and the spool parameters.
5. You have now entered all the data needed for the background job. Choose *Create Job* to create the job.

   Reloading archived data to the database can cause problems, therefore you should only do this in an emergency. For example, if you establish immediately after archiving that you have archived the wrong data or too much data. You should, wherever possible reload this data immediately after archiving.

See also:

[Archiving Data [Seite 70]](#)

[Archive Selection [Seite 48]](#)

Constructing Indexes

To construct an index:

1. Choose *Index.*
   The *Direct Access* dialog box appears.

2. Choose *Construct Index*.
   The *Archive Management: Construct Index* screen appears.

3. Maintain the variants, the archive selection, the Start Date [Seite 85] and the Spool Parameters [Seite 84].

4. Choose *Execute*.

See also:

Removing Indexes [Seite 78]

Archive Selection [Seite 48]

Removing Indexes

Prerequisites

You are in the *Archive Administration; Initial Screen* (transaction *SARA*), the name of the archiving object is entered in the *Object name* field.

> The Remove index function is only active if an index exists.

Procedure

1. Choose *Index.*
   The *Direct Access* dialog box appears.
2. Choose *Remove Index*.
   The *Archive Management: Remove Index* screen appears.
3. Maintain the variants, the Start Date [Seite 85] and the Spool Parameters [Seite 84].
4. Choose *Execute*.

See also:

Constructing Index [Seite 77]

Archive Selection [Seite 48]

Analyzing Archive Data

Use

In addition to the data in the online database, archived data can also be analyzed. In this process, the data is read sequentially and elementary information such as item number, customer and order date. It is possible to run an analysis for one or several archiving sessions.

Prerequisites

* You are in the *Archive Administration: Initial Screen* (transaction *SARA*); You have entered the name of the data object in the *Object Name* field

* The archive files for analysis are available in the Archive Administration.

* There is at least one read program for the selected archiving object.

Procedure

1. Choose the action *Analyze*.

   You access the screen *Archive Administration: Execute Analysis Program*, where you can schedule your job.

2. In the *Batch/Dialog* field, specify whether the analysis program is to run in the background (batch) or online (dialog).

3. In the *Read Program* field, select a program and choose *Execute*.

   Depending on the selected archiving object, you access a specific selection screen. For more information, refer to the documentation on the specific archiving object.

4. Enter your selection, and choose *Execute*.

   You access the dialog box *Archive Management: Choose Files to Read*. For more information on file selection, refer to Archive Selection [Seite 48]

5. Select the archive file that you want to analyze and confirm the selection by choosing *Continue*.

By choosing *Goto*, you can access the following menu options:

* Customizing [Seite 51]

* Job Overview: Provides an overview of all archiving jobs and the functions available to process them.

* Management [Extern]

* Database Tables [Seite 38]

* Infosystem [Seite 88]

See also:

Archive Information System (SAP AS) [Seite 88]

Analyzing Information Structures [Seite 94]

Call Archive Session Management

Prerequisites

- You are in the Archive Management initial screen (transaction SARA).

- The archiving object for which you want to retrieve information is entered in the *Object Name* field.

Procedure

1. Select the function *Management*.

   The Archive Management: Archiving Session Overview [Extern] screen is displayed.

2. You can now perform the following activities:

   - Displaying Archiving Session Details [Seite 81]

   - Displaying Archive File Details [Seite 82]

   - Passing Files to ArchiveLink [Seite 72] or Retrieving Files from ArchiveLink [Seite 75] provided that an archiving system is connected

Displaying Archiving Session Details

Details [Extern]

To display the status of an archiving session:

1. Choose *Management*.
   The *Archive Management: Archiving Session Overview* screen appears.
2. Position the cursor on the session you want to look at.
3. Choose *Choose*.

See also:

Archive Management: Archiving Session Overview [Extern]

Displaying Archive File Details

Details [Extern]

To display the status of a file:

1. Choose *Management*.
   The *Archive Administration: Archiving Session Overview* screen appears.
2. Position the cursor on the session.
3. Choose *Expand Subtree*.
4. Position the cursor on an archive file.
5. Choose *Choose*.

See also:

Archive Administration: Archiving Session Overview [Extern]

Calculating Storage Space Gained

Prerequisites

You have found out the tables involved. For more information, see the application-specific documentation for the archiving objects. You can also use the function *DB Tables* (see Define Linked Tables [Seite 87]).

1. Call the Data Dictionary by choosing *Tools → ABAP Workbench → Development → Dictionary*.

2. Enter the name of each table and choose *Display*.

   Detailed information about the table is displayed:

   – The table type is displayed next to the table name.

   – The length of the table fields in bytes is displayed in the column *Length*.

   ⚠

   You must multiply the values for tables containing dependent positions by a factor that reflects their actual business use.

See also:

Storage Space Gained by Archiving [Seite 19]

Maintaining Spool Parameters

Prerequisites

Spool parameters only need to be maintained during the first step of an archiving session. They remain valid until the end of the session.

The traffic light and the note text describe the status of the spool parameters.

Traffic light	Note	Meaning
🔴⚪⚪	Not maintained	The spool parameters must be maintained.
⚪🟡⚪	Maintained	The spool parameters have already been maintained, but they still contain the old values.
⚪⚪🟢	Maintained	The spool parameters contain up-to-date values.

Procedure

1. Choose the *Spool Params.* function*.* The *Background Print Parameters* screen is displayed where you can control the printout of the archiving log.

2. Maintain the parameters for the output device, the spool request, the spool control, and the output format.

   You can accept the field default values by choosing the *Set Default Value* function.

   Save your entries with *Save*.

See also:

Maintaining the Start Date

Prerequisites

The **start date** only needs to be maintained during the first step of an archiving session. It remains valid until the end of the session.

The traffic light and the note text describe the status of the start date.

Traffic light	Note	Meaning
🔴⚪⚪	Not maintained	The start date must be maintained.
⚪🟡⚪	Maintained	The start date has already been maintained, but it still contains the old values.
⚪⚪🟢	Maintained	The start date contains up-to-date values.

Procedure

1. Choose the *Start Date* function*.* The *Start Time* screen is displayed where you can maintain the start date values.

2. Choose one of the buttons for fixing the desired start date, and maintain the parameters in the fields available.

   To schedule periodic jobs, use the *Period Values* function.

   The *Restrictions* function allows you to fix the start date.

3. Save your entries with *Save*.

See also:

Maintaining Spool Paramaters [Seite 84]

Calling the Network Graphic

Prerequisites

You are on the *Archive Administration: Entry Screen* (transaction SARA).

Procedure

If you want to display the network graphic for all archiving objects, leave the archiving object name field empty.

If you want to display all the predecessors of a particular object, enter the name of the archiving object in the archiving object name field.

To call the network graphic:

Choose *Goto* → *Network graphic*. The network graphic is displayed.

If you have called the network graphic for all archiving objects, you can increase the display area by enlarging the rectangle in the bottom right-hand corner of the screen. Use the mouse to change the rectangle.

See also:

The Network Graphic [Seite 40]

Determine Linked Tables

Prerequisites

You are in the *Archive Administration; Initial Screen* (transaction *SARA*). You have entered the name of the archiving object in the *Object Name* field.

Procedure

To determine which tables are linked to an archiving object, and therefore are archived by this object, proceed as follows (alternatively you can also use transaction *DB15*):

1. Choose *DB Tables.*
   The *Tables and Archiving Objects* screen appears. Within the scope of *Tables, from which You Want to Archive*, all of the database tables linked to this object are listed.

2. Using *Table <-> Object* you can change the perspective of the archiving objects (upper part of the screen). Here you can display all the archiving objects for a particular table.

"DB Tables" (transaction *DB15*) is a function of *Computer Center Management Systems (CCMS)*. For further information, see the CCMS Documentation in Data Archiving (ADK) [Extern]

Archive Information System (SAP AS)

Use

The Archive Information System (SAP AS) is an archiving environment-integrated generic tool for implementing searches in R/3 data archives. The search for and display of data follows rules set in the *Archive Information Structures*, which the user can define and fill with data from the archive.

> In this documentation, the terms **archive information structure**, **information structure** and **infostructure** are used synonymously.

Features

The SAP AS includes the following components:

Archive Retrieval Configurator (ARC)

The ARC enables you to create archive information structures with the help of field catalogs, and to fill the structures with data from the archive. The archive information structure, which represents a kind of archive index, provides the basis for archive data reporting.

Archive Explorer

The Archive Explorer enables fast searches of archived data. It does this by accessing the archive information structures that have been created and stored in transparent database tables using the Archive Retrieval Configurator. Furthermore, the Archive Explorer allows direct accesses of individual data objects in the archive, which can then be displayed in both technical and application-specific views.

Using the Archive Information System

Purpose

This process describes the step-by-step procedures for using the Archive Information System (SAP AS). The individual steps are introduced in the order in which the user would normally execute them.

> Reloading archived data can lead to problems with the Archive Information System, as the available information structures are not updated automatically. For more information, see .

Process Flow

1. Checking available information structures

First you should check if an information structure already exists that you could use for reporting. You can then change this information structure to suit your needs. If there is no information structure available that you can use, you can create a new one.

2. Creating the information structure

You define the information structure to be used for archive reporting. In doing this, you establish which source fields from the archive are carried over to which fields in the information structure. You do this with the help of application-specific field catalogs, which are included in the features of the Archive Information System.

An information structure is only ever valid for one archiving object. Several information structures can be defined for one archiving object. For more information, see under .

3. Activating the information structure

After you have created an information structure, you need to activate it. Alternatively you can use a standard information structure, provided that it fits your requirements.

At this stage, the system generates a transparent database table and the reporting program. For further information, see under .

4. Filling the information structure

During an archiving delete run all (activated) archive information structures belonging to an archiving object are filled automatically. Also the *Archive Development Kit (ADK)* passes all data records found in the archive to the SAP AS interface. According to the defined infostructure, the SAP AS filters the data from the data records passed and enters it in a transparent database table together with an access key. This table serves as the basis for later searches.

As well as the automatic fill using the delete program, an information structure can also be filled later for already available archives. This can be useful if you want to report data that was already archived or if you have changed the fields of an information structure. For more information, see .

5. Reporting of information structures

Use the Archive Explorer function to define the archiving object and the information structure from which you want to report. In the selection screen specify the display parameters for the archived data where necessary. Select a data object from the list of data objects and possibly

also define the view where it should be displayed. For more information, see Reporting Information Structures [Seite 94].

> As well as the standard reporting, there is also a special *ad-hoc reporting* function available that enables direct reporting from archives. Here, there is no need to fill the archive information structure with data from the archive.

Create Information Structures

To create a new information structure, proceed as follows:

1. In the Archive Retrieval Configurator (ARC) initial screen, choose *Archive Info Structure → Create*.

    This takes you to the *Archive Retrieval Configurator* dialog box.

2. Enter the required information.

    This should include the name of the new archive information structure, the name of the archiving object for which the information structure is intended and a field catalog, which you can select from a list using input help. In the box on the right you can also enter a text for the information structure

3. Select *Create*.

    This takes you to the dialog box *Archive Retrieval Configurator*.

4. In the right frame, select all the fields that you want to include in the information structure.

5. Press the pushbutton *Include Selected Fields*.

    The selected fields are included in the information structure in the left frame.

6. Save your entry. Select *Return* to go back to the ARC entry screen

See also:

Activate and Deactivate Information Structures [Seite 92]

Activate and Deactivate Information Structures

Prerequisites

- You are in the initial screen of the Archive Retrieval Configurator (ARC).

- You have already created the information structure to be activated, but you have not activated it yet.

Activate

Select *Archive Information Structure > Activate* from the menu to activate an information structure. This structure will now be filled automatically during the next delete run for this archiving object.

You can also fill an activated information structure later for already existing archives, see Fill and Empty Information Structures [Seite 93].

Additional consequences of activating are:

- The archive info structure can be reported by the Archive Explorer.

- You can display status information on this information structure.

- You cannot make any changes to the information structure.

Deactivate

Choose *Archive Information Structure > Deactivate* from the menu to deactivate an information structure

You have deactivated the information structure. This ensures that during the next archiving program delete run this information structure will be ignored.

> You can make changes to an inactive information structure. However, if you make changes, be aware that you might also have to regenerate the table. When doing this, you must delete the data in it. Finally, you must refill the information structure.

Fill and Empty Information Structures

Prerequisites

- You are in the entry screen of the archive information system.
- You have already created and activated the information structure to be filled.
- An information structure can only be filled for archive files that have already been processed by the delete program.

Fill

1. Select *Status*.

   This takes you to status management.

2. Enter the name of an archiving object for which you want to fill an information structure.

3. Select *Status per Info Structure*.

   This takes you to the selection screen for archive information structures. To find out which status information is displayed there, see under Status per Info Structure [Extern].

   When filling the info structure, you can also select individual archiving sessions. Select *Status per Archive*.

4. Select the archive info structures, which are to be filled with data from the archive.

5. Select *Fill Structures* and enter your chosen processing type in the dialog box that appears. Confirm your entry. The system will fill the information structure.

   Alternatively you can trigger the filling of an info structure from the Archive Retrieval Configurator entry screen. Enter the relevant information structure and then select *Environment > Fill Structur*e.

Empty

1. Select the archive information structures or archiving sessions that you want to empty.

2. Select *Empty Structures*.

   The system empties the information structures.

Reporting Information Structures

Prerequisites

- You have created and filled the information structure on which the reporting is based.
- You are in the Archive Explorer initial.

Procedure

1. Enter the name of an activated information structure.

   Alternatively you can also enter the name of an archiving object and use input help to display all active information structures belonging to the object.

2. Choose *Archive Info Structure* → *Reporting*.

   This takes you to the Archive Explorer selection screen.

3. Enter selection criteria to establish which data you want the reporting to read.

   If you do not want to restrict the choice, choose *Execute*.

4. Choose *Execute*.

   The system displays the archive information structure list. It contains all of the data which the reporting program has read from the fields contained in the information structure.

5. Double click on the entry you want to access the archive directly. If more than one view is defined for this object, a dialog appears with a choice of views.

   Depending on the archiving object, the dialog box offers a technical view or a business view or both. Several business views are also possible.

6. Select the view you want and choose *Continue*.

   This takes you to the table overview for the selected data object.

7. Click on the magnifying glass symbol for a table to display the table contents (similar to the display function in transaction *SE16*).

Result

You are now at the lowest level of data for the archiving object, the field level. You can take the information directly from the table.

See also:

Ad-Hoc Reporting [Seite 104]

Procedure for Reloaded Archives

Use

After archived data has been reloaded, the system does *not* automatically update the archive information structures, so the Archive Information System status display will show an error. You must therefore carry out the update manually.

Prerequisite

You have reloaded archives.

Step-by-step procedure

1. Use the *Status per Archive* view.
2. Flag all of the archiving sessions whose files were reloaded (these sessions are indicated by a red traffic light).
3. Empty the information structures for the reloaded archive files. You can usually do this online - scheduling as a background job is not necessary.

Result

The reloaded files have now disappeared from the display. You can find out from the following whether new archive files were created by the reload:

1. Continue to use the *Status per Archive* view.
2. Flag the archiving sessions which were created by the reload (these sessions are indicated by a red traffic light and carry the remark "Created by reload from *<session>*").
3. Fill the information structures for the newly created archive files.

   For more information, see Fill and Empty Information Structures [Seite 93].

   > If you approach this sequence in reverse order, in certain circumstances, the fill status of the newly created archive files can appear as *incorrect* . If this occurs, empty all of the information structures for which the fill status is incorrect. Finally, repeat the steps in the standard sequence.

Status

Use

The Status function allows you to check whether an information structure has already been filled. Using this information, you can then fill or empty specific information structures. Furthermore, you can check the actual indexing as well as the retention of archive files.

Integration

You can branch from the entry screen of the Archive Information System as well as from the Archive Retrieval Configurator (choose *Environment* → *Fill Information Structures*) to the status screen.

Prerequisites

There must be at least one activated information structure for the archiving object.

Features

Status per archive

This function provides a list of the available archiving sessions and the information structures assigned to them. You can see from the list for which archiving sessions the activated structures have been completely filled. To see the information displayed in detail, see Status per Archive [Extern].

Status per info structure

This function provides a list of the statuses of the activated information structures. From this, you can see whether an information structure has been completely filled with all archived data or data otherwise removed from the database. To see the information displayed in detail, see Status per Info Structure [Extern].

Check indexing

This function checks the actual indexing of an archive file, that is, it checks whether data has been passed from the source fields to the information structure. The affected archive files are marked accordingly. You can call the *Check Indexing* function from the *Extras* menu.

Display file residence

This function checks the residence of an archive file, that is, it checks whether a file is accessible by the ADK (Archive Development Kit). The affected archive files are marked accordingly. A file can only be used to fill an information structure if is accessible by the ADK. Otherwise direct access to the data object is only possible via the Archive Explorer.

Call the *Display File Residence* function from the *Extras* menu.

Activities

- You can use *Fill Structures* to fill information structures with data from the archive.
- Use *Empty Structures* to delete the contents of information structures.

You can find further information under Fill and Empty Information Structures [Seite 93].

If you want to reload archives, read the relevant Notes [Seite 95].

Archive Retrieval Configurator (ARC)

Use

The ARC allows you to create and configure information structures which are required by the Archive Information System (SAP AS) to execute archive searches.

Features

Create Archive Information Structure

With this function you create a new information structure based on application-specific field catalogs. You can find further information under Create Information Structures [Seite 91]

Activate Archive Information Structure

With this you can activate an available information structure so that during a subsequent archiving program delete run it automatically fills with data from the archive. You can find further information under Activate and Deactivate Information Structures [Seite 92]

Fill Information Structures

This function allows you to fill an information structure with data from the available archives if the delete program has already processed those archives. Normally this is not necessary because activated information structures are filled automatically during the archiving program delete run You can find further information under Fill and Empty Information Structures [Seite 93].

Field Catalogs

This function enables you to create new field catalogs or change customer-specific field catalogs. You can find further information under Field Catalogs [Seite 98].

Additional ARC functions allow you to empty, deactivate, change, display and delete archive information structures.

Field Catalogs

Use

With this function, you can create new field catalogs and maintain existing field catalogs. Defining the archive information structure always follows the definition of so-called Field Catalogs [Extern].

> Standard catalogs are included within the scope of the SAP AS, which are designed to cover most application requirements. You should therefore only create your own field catalogs if the fields contained in the standard catalogs do not meet your requirements.

Prerequisites

> You need to have some expert knowledge to use this function. For example, you should be familiar with the data model of the archiving object up to table level.

Features

Maintain available field catalogs

You can change the definition of the available field catalogs, for example by adding further source fields or changing the allocation of data- and key fields. The procedures for creating field catalogs are applicable in this case (see below).

> You must copy a standard catalog from the SAP namespace into your own namespace before you make any changes to it, that is before you change it to a customer-specific catalog. All entries that begin with "SAP" belong to the SAP namespace and you should not make changes to them.

Create new field catalogs

When you create a new field catalog, you must decide whether to use fields from

- One source table
- More than one source table

For information on procedures, see Create Field Catalogs (one source table) [Seite 99].

To create field catalogs from more than one source table, see the additional Notes [Extern], which you must observe.

Deleting field catalogs

Before you delete a field catalog, you must first delete all of the archive information structures that use this field catalog. The deletion of catalogs that are still being used is prevented by a deletability check. If you try to delete an SAP standard field catalog, the system issues a warning message to this effect.

Create Field Catalogs (One Source Table)

1. In the Archive Retrieval Configurator (ARC) initial screen choose *Environment → Field Catalogs* and then *New Entries*.

2. Enter the name of the field catalog (it must not begin with SAP), a description, and the archiving object for which the field catalog is intended.

   In the fields *File in Index* and *Offset in Index*, you can specify how the name of the archiving file and the offset of the data object are included in the information structure.

   You can use the following values for the file names:

- 'D' - Includes the file name as a data field. This is the minimum value. It causes the archive file name to be entered in the data area of the structure table.

- 'K' - Includes the file name as a key field. Choose this value if the entries in the structure table would otherwise not be unique.

You can use the following values for the offset:

- 'D' - Includes the name of the Offset as a data field. This value is sufficient for a direct access to archived data.

- 'K' - Includes the name of the Offset as a key field. Choose this value if the entries in the table would otherwise not be unique.

- ' ' - (No value) The Offset will not be included in the structure table. Choose this setting if you do not want direct access. This allows you to reduce the size of the structure table.

   > If you include the Offset as a key field, you must also include the archive file as a key field, otherwise a clear distinction between archived objects by the Offset cannot be guaranteed.
   >
   > If an archived object, such as a sales document, has already been clearly identified by the document number in the field catalog key, then you do not need to include the Offset in the key.

3. To carry out the field assignment, first select the catalog and then the *Field Selection* function in the navigation area. Choose *New Entries* and enter the required data.

   > The use of additional fields from other source tables requires a logical link between these fields by means of a Join. Read the relevant Notes [Extern].

- You can choose the field number and target field. The name of the target field appears in the generated table and this name should have a meaning related to the reporting. The field number describes its position in the information structure and serves as a sort criteria.

- The source field must correspond with the actual field name from the source table.

- The source field entered directly in the field selection is also the reference field. The data type of the corresponding field in the information structure is derived from this reference field.

- The source table must be a table for which the archiving object in the information structure writes data to the archive. These tables are maintained in the transaction *AOBJ* for the archiving objects.

- If you mark a field *Key*, that field is included in the key to the structure table. A table's key fields must come at the beginning, that is, the field numbers of the key fields must be smaller than the field numbers of the data fields. Furthermore, the key fields must be connected, that is, no non-key fields are allowed to come between key fields.

Create Field Catalogs (One Source Table)

- The checkbox *mandatory key field* is only valid for key fields. If you mark this checkbox, the data record will only be included if the relevant field in the source table is not empty.

     Tables that are processed by archiving classes can also be used as source tables. However, here, you must create a normalized read function module for each archiving class used.

4. Save your entries.

Create Field Catalogs (More Than One Source Table)

Before you enter additional source fields, read the Notes [Extern]. The term "additional source fields" has the following meaning:

- For key fields, the system establishes field similarities between the join conditions of the different source tables.
- The system can fill data fields with data from different source tables in an archive information structure.

Prerequisites

- You have created a field catalog with at least one field.
- You are at the field selection for the field catalog.

Procedure

1. Select the field to which you want to add further source fields.
2. In the navigation space, select the node *Additional Source Fields*.
3. Choose *New entries* and enter the source table and the source field that you want to link with the target field.
4. Save your entries.

Result

There is now a logical link (join) for key fields between the target field and the additional source field. When the system fills the information structure, it moves the contents of the source fields assigned to the target field to the data fields.

Archive Explorer

Use

The Archive Explorer provides functionality to search for archived data and allows individual objects to be displayed from the archive.

Integration

You can go to the *Archive Explorer* from the Archive Information System: Central Management screen directly or from the Archive Retrieval Configurator (transaction SARJ), choose *Environment > Archive Explorer*.

Prerequisites

Before you can use the Archive Explorer functions you must:

- Create a suitable archive information structure
- Activate the information structure
- Fill the information structure

Features

The Archive Explorer uses the ABAP List Viewer (ALV) functions. The fields appear in the selection screen according to how they are stored in the archive information structure.

In the selection screen, you can set which archived data should be read by the Archive Explorer reporting program. An object list from the set information structure is displayed as a result of this selection, from which you can access single data objects in the archive.

A standard viewer is available to display the data objects. Independent of the underlying archiving object, there are also application-specific viewers. The interface used can also be used for customer-specific extensions.

Activities

See Reporting Information Structures [Seite 94]

See also:

Create Information Structures [Seite 91]

Activate and Deactivate Information Structures [Seite 92]

Fill and Empty Information Structures [Seite 93]

Reporting

Use

You can use this function to report from the archive information structure that was created for the selected archiving object.

Prerequisites

The archive information structure to be reported has been created and filled.

Features

Depending on the selection criteria entered in the selection screen, an object list is displayed for the set archive information structure. The standard functions of the ABAP List Viewer (ALV) is used to do this.

To display a data object, the system accesses the archive directly. If an application-specific view is realized for the archiving object used, a dialog box appears in which you can choose between the technical or the application-specific presentation of the data object.

Activities

Reporting Information Structures [Seite 94]

See also:

Ad-Hoc Reporting [Seite 104]

Ad-Hoc Reporting

Use

You can use this function to report from the archive information structure which was created for the selected archiving object, without this structure having to be filled first .

Prerequisite

You have created and activated the archive information structure to be reported.

Features

Depending on the selection criteria entered in the selection screen, an object is displayed for the set archive information structure. The standard functions of the ABAP List Viewer (ALV) is used to do this.

To display a data object, the system accesses the archive directly. If an application-specific view is realized for the archiving object used, a dialog box appears in which you can choose between the technical or the application-specific presentation of the data object.

Unlike the standard reporting function, which requires that the archive information structure is filled with data from the archive, the ad-hoc reporting function reads directly from the archive. This enables you test archiving and report archived data that has not yet been deleted from the database.

Activities

Reporting Information Structures [Seite 94]

See also:

Reporting [Seite 103]

Use of List Variants

Use

In the Archive Explorer, you can save list variants. You can use list variants to specify the fields that are to be used when a particular list is dsiplayed.

Integration

You can operate the variant functions via the standard menu entries and function buttons of the *ABAP List Viewer (ALV)*.

Features

You can create both user-specific and common list variants. You can do this where lists are implemented using the ABAP List Viewer (ALV), that is, for the display of

- Data belonging to an archive information structure

- Table contents for the technical view

List variants for archive information structures

In the display of information structure data (the first list in the Archive Explorer), list variants are stored per archive information structure. A list variant is only valid for the archive information structure for which it was created and cannot be used for other archive information structures.

Once an archive information structure has been changed (but has kept the same name), the accompanying list variants can still be used. However, a list variant can be invalid is invalidated by the change, for example where the field displayed in the list variant has been deleted from the archive information structure. You should therefore modify the list variants accordingly. Example:

> When displaying the archive information structure *CO_ORDER_001*, use the list variant *MY_VARIANT* to specify that the fields *AUFNR* (Order Number) and *KTEXT* (Short Text) are to be displayed. You cannot use these variants for the archive information structure *CO_ORDER_002*, even if both archive information structures have identical structures.
>
> If the archive information structure *CO_ORDER_001* is changed so that the fields *AUFK* and *KTEXT* no longer appear, then the list variant *MY_VARIANT* can still be used, but this would be pointless as no fields will be displayed. You can therefore modify these variants using the relevant function of the ALV to fit the changed archive information structure.
>
> For the archive information structure *CO_ORDER_002* you can also create a list variant called *MY_VARIANT*; however this is not identical to the list variant of the same name for *CO_ORDER_001*.

List variants for tables

The technical view for single document display is used to display the table contents for the selected data objects. You can save list variants per table here, which are independent of the archive information structure used. A list variant created for a specific table is only valid for this table and cannot be used for other tables. However, a list variant for a specific table is always independent of the archive information structure used. This is also valid where the archive information structure belongs to different archiving objects. It therefore does not matter which archiving object was used to archive the table entries. Example:

You are using the archiving objects *SD_VBAK* and *PP_ORDER* and the accompanying archive information structures *SD_VBAK_001* or *PP_ORDER_001*. Both archiving objects contain the table *COEP*. To display the table *COEP*, save the list variant *MY_VARIANT* in the Archive Explorer. In contrast to the above list variants, this variant is only assigned to the *COEP* table.

You can then use *MY_VARIANT* to display the *COEP* table, and it does not matter whether you enter the Archive Explorer via the archive information structure *SD_VBAK_001* or *PP_ORDER_001*.

Activities

In the Archive Explorer list display, you can access the list variant functions. Choose *Settings* → *Display variants*.

For more information on the use of list variants, see the documentation on the ABAP List Viewer.

Table Analysis

Use

The table analysis tool analyzes table contents. It counts table entries and assigns the number of found entries to specific field values (for example, organizational units).

💬 Example

The table BKPF contains document headers for Financial Accounting. Each document is assigned to a company code. The table analysis tool determines how many entries belong to each company code.

Integration

It is often necessary to analyze table contents for data archiving purposes.

Features

Table analysis displays the number of table entries for various field value combinations in a specific table. You specify the fields in an analysis variant.

Activities

The transaction *TAANA* accesses the table analysis function. To analyze a table, choose *Execute* . You access a dialog box in which you enter the table name. Depending on the table you enter, the system offers a selection of available analysis variants. The analysis variant DEFAULT is offered for all tables. If the table you want to analyze is client-specific, the client is displayed in the analysis variant DEFAULT. This mans that the total number of entries is determined in the table analysis.

To improve performance, we recommend that you conduct most of your table analysis in the background rather than online.

In the left area of the screen, the table with the selected analysis variant is displayed: During the table analysis, you can use the *Refresh* pushbutton to obtain the most up-to-date data. Once the table analysis has been executed, choose your analysis by double clicking and you access the table analysis display.

Depending on the analysis variant selected, you are offered various field values with the number of associated table entries in the analysis. The list is sorted in ascending order according to the number of table entries.

By choosing *Environment → Analysis Variants*, you access the display or the processing of the analysis variants. Choose a name (customer name range: Z_...) and save your analysis variant. When selecting, you should give preference to fields with a low selectivity, that is, we recommend that you select fields with as little various data as possible. Fields with a high degree of selectivity mean that the analysis tool creates a large amount of irrelevant data.

To mark and delete table analyses that have already been created, choose *Table Analysis → Delete.*