SAP NetWeaver How-To Guide

How To... Archive PSA data in SAP NetWeaver BI

Applicable Releases:

SAP NetWeaver 7.0

IT Practice:

Business Information Management

IT Scenario:

Enterprise Data Warehousing

Version 1.01

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THE BEST-RUN BUSINESSES RUN SAP™

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Document History

Document Version	Description
1.00	First official release of this guide
1.01	23.12.2008 Limitations section added

Typographic Conventions

Type Style	Description
Example Text	Words or characters quoted from the screen. These include field names, screen titles, pushbuttons labels, menu names, menu paths, and menu options.
	Cross-references to other documentation
Example text	Emphasized words or phrases in body text, graphic titles, and table titles
`Example text`	File and directory names and their paths, messages, names of variables and parameters, source text, and names of installation, upgrade and database tools.
`Example text`	User entry texts. These are words or characters that you enter in the system exactly as they appear in the documentation.
`<Example text>`	Variable user entry. Angle brackets indicate that you replace these words and characters with appropriate entries to make entries in the system.
`EXAMPLE TEXT`	Keys on the keyboard, for example, `F2` or `ENTER`.

Icons

Icon	Description
	Caution
	Note or Important
	Example
	Recommendation or Tip

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1. Business Scenario

Data volumes in the entry layer (Persistent Staging Area - PSA) of the SAP BI systems are very often heavily increasing over time. But since the data might be needed for further requirements and / or can not be re-loaded from the original source systems, it can not be deleted from the SAP BI system for good. For data targets like InfoCubes and DataStore Objects, the standard feature of *Archiving in BI* can be used to delete the data from the SAP BI system and reload it on demand, and hence reducing the required data base sizes for these objects. Yet PSA data cannot be archived with this feature.

If you want to archive the data from the PSA of the SAP BI system, you have basically three options:

1. Create a proper (additional) entry layer in the SAP BI system. This layer would typically consist of DataStore Objects, which can be archived using the standard BI archiving features. For detailed information on how to create such a layer (or a layered scalable architecture), please refer to the existing literature about this topic and Enterprise Data Warehousing.

2. There exist solutions to archive the PSA data by some of the 3rd party software vendors. For details on these solution and vendors, please check with the respective vendors directly. An overview of SAP's partners can be obtained from http://www.sap.com/ecosystem/customers/directories/searchpartner.epx

3. If none of the above solutions apply or they are not feasible, you can implement the solution described in this document.

DISCLAIMER:

Please do test the solution carefully before using it in productive mode. The deletion of PSA data can potentially lead to inconsistencies in data and the control tables of the SAP BI system. SAP is not taking any responsibilities for data loss or inconsistencies caused by the solution described in this document.

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2. Background Information

This HowTo document describes a solution for the archiving of PSA data on a request (and data package) basis. The solution allows executing the archiving session based on the input of the DataSource, the Source System and the date up to which the data from the respective PSA should be archived. All requests that fulfill the entered criteria are archived and deleted from the SAP BI data base. The status and control table entries for the request handling are also deleted for these requests (for consistency reasons the solution deletes / reloads only on a complete request basis). The data object for the archive files is not the request, but the data package. This should prevent extended memory consumption for the archiving process by very large requests.

The solution is based on the standard ADK interfaces and the respective features provided by these interfaces. A similar implementation has been delivered by SAP for the archiving object BC_SFLIGHT.

The solution provides the following features:

- PSA Archiving based on request basis with data object based on the single data packages of the requests.

- All requests are archived, which are existing in the SAP BI system up to a date that the end user has entered in the selection screen of the write program.

Note

> The date that the end user provides on the selection screen determines the date of the requests to be archived, i.e. the date the request has been loaded. It does not define a date in the data, like the calendar day, purchase day, etc.

- The solution provides programs for the writing of archive files, the deletion of the data from the SAP BI data base, and the reload of the archived data back into the original PSA tables. The naming convention for the delivered programs is ZRS_PSA_ARCH_* with the endings WRI for the write, DEL for delete and REL for the reload program.

- The delete program does also delete the status and control table entries for the archived requests.

- The reload program restores also the entries in the status and control tables for the reloaded requests.

- The standard ADK archiving transaction SARA can be used for scheduling, monitoring, etc. of the archiving sessions.

Some restrictions might apply to the described solution. We are listing here some potential restrictions, which have either been not tested or not been implemented at all. We leave it to the end user to implement the restrictions if needed in their respective scenarios. If a restriction applies to your scenario, you might extend the provided solution.

- Changes to the data structures (especially to the PSA tables) might cause inconsistency in the data, since the solution is not taking care of these changes (though the ADK is capable of doing so to some extent). The ADK does handles structural changes as long as there remains a move-corresponding relationship (i.e. fields have still the same name). Therefore, major changes to the DataSource might lead to irreversible loss of data, since the data might not be able to be reloaded from the archive to the SAP BI system.

- The solution is not checking the status of the requests before they are archived, i.e. whether or not the requests have a successful status, are already written to an eventual data target, etc. This remains in the responsibilities of the organization using the solution.

- Apart from the log / protocol written for the archiving session, there is no tracking / monitoring of the requests that have been archived, i.e. after archiving there is no trace of the PSA request in the system any more. There is also no protection of the archived area, like it is provided by the standard *BI archiving* functionality.

- It has not been tested whether the reload of the archiving files has to be in the sequence they have been archived or any sequence is possible. Sample tests have shown that the reload can be executed independent of the sequence.

Note

> Please do test the solution carefully before using it in productive mode. The deletion of PSA data can potentially lead to inconsistencies in data and the control tables of the SAP BI system. SAP is not taking any responsibilities for data loss or inconsistencies caused by this solution.

3. Prerequisites

- Software
  SAP NetWeaver 7.0, Usage Type BI ABAP

- Hardware
  Not applicable

- Relevant SAP Notes

  13719   – Preliminary transports to customers
  1178734 - PSA Archiving

- Additional background/starting documentation (also provide a link)

  o Please see the '*Archiving Developer Guide*' for a detailed description of the interfaces used, and the potential usage of others not used in this solution
    https://www.sdn.sap.com/irj/sdn/devguide2004s (Fundamentals => Making Application Enterprise Ready => **Data Archiving**)

  o For further information about SAP archiving, please see the online documentation at
    SAP Online help - Data Archiving (CA-ARC)
    and the SDN at
    SAP Developer Network (SDN) - ILM (Archiving is covered in this area)

- Required/recommended expertise or prior knowledge

  o Some knowledge about standard SAP Archiving is beneficial

  o Minor knowledge in the IT Scenario '*Enterprise Data Warehouse*'

- Limitations

  o The Document describes a template solution. Any extensions have to be implemented as a customer project.

  o The HowTo guide covers the usage of SAP NetWeaver 7.0 DataSources. DataSources from prior releases are not covered.

4. Step-by-Step Procedure

You have 2 options to install the content of this HowTo paper:

1. Import the transport request included in the OSS note #1178734. Afterwards, check that all imported objects are active. If so, use the transaction SARA to schedule your archiving sessions. This process is described in the chapters 4.1 and 4.4 underneath.

2. Import the transport request included in the OSS note #1178734. Use the imported objects as template for your own implementation. For any customer implementation or modification, you can refer to any of the chapters underneath.

Both options require the same proceeding:

1. Download the files from the OSS note and apply to your system

2. If required, define an archiving object(s) with transaction AOBJ

3. If required, Implement / modify the write, delete, and reload program

4. Schedule the archiving sessions with transaction SARA

4.1 Import of the transport files

In order to use the PSA Archiving solution (or parts of it), please import the transport request files included in the OSS note #1178734. For assistance on how to install the content of transport request files, please ask your administrator or use OSS note #13719 (instead of downloading the files from SAPSERV, you have to download the files from the OSS note #1178734).

4.2 Definition of the archiving object (AOBJ)

The archiving object is a central component of SAP Data Archiving. The archiving object specifies precisely which data is archived and how. It describes which database objects must be handled together as a single business object, and interprets the data irrespective of the technical specifications at the time of archiving (such as release and hardware). An archiving object has a name of up to ten characters in length. You need this name to carry out the archiving programs in archive administration (transaction SARA).

One archiving object (ZRS_PSA) is provided with the transport request included in the OSS note #1178734. This archiving object is generic in the respect that it can be used to archive all DataSources, i.e. it has not defined a particular structure. The structure of the PSA tables is determined during runtime in the programs. In order to distinguish the different archiving runs for different DataSources, the comment field of the archiving write program can be used to identify the single archiving session. Per default, the archiving write program concatenates the values of the DataSource, the Source System and the provided date into the comment field and stores it together with the archiving sessions. This allow the user to identify (and pick) the respective archiving session for the delete, and especially reload run.

Alternatively, you can also define one archiving object per DataSource (or per set of DataSources). If you do so, you can use the archive object ZRS_PSA as template. In addition, you have to copy the provided programs and adjust the hard-coded archiving object in the source code (change the value for the variable GC_ARCHIVE_OBJ to the name of your archiving object).
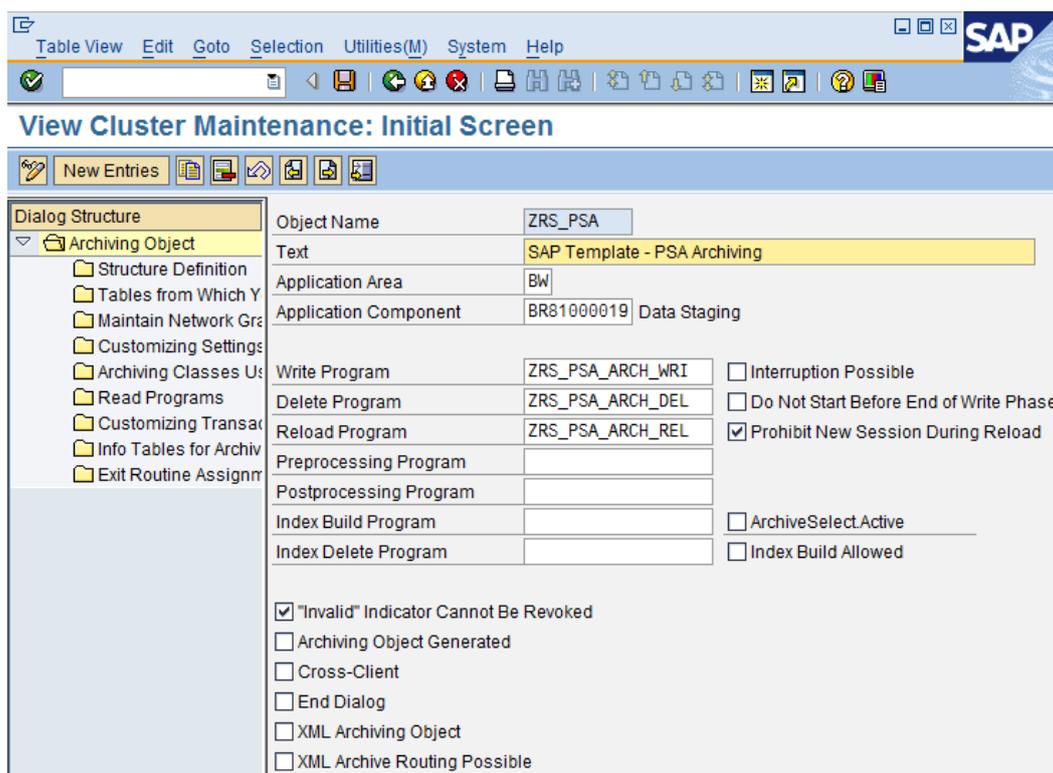
The definition of the archiving object ZRS_PSA (and your archiving object should be defined similarly) is aligned with the definition of the archiving objects for the standard BI archiving functionality. It is defined the following way:

1. Call transaction AOBJ

    Note

    > This transaction is client independent

2. Click on the button '*New Entries*' (or mark the entry with the name ZRS_PSA, and press the button '*Copy*').

3. Fill in the fields like depicted in the screen shot underneath.

4. Since the archiving object is defined independent of a specific DataSource, you do not have to define any structure. Continue, with the customizing settings by double-clicking on '*Customizing Settings*' in the navigation pane on the left hand side.
    The settings for the execution of the delete jobs can be adjusted to your need.

    Note

    > The Test and Production Mode variants have to be defined for the delete program before you can enter them in this step.
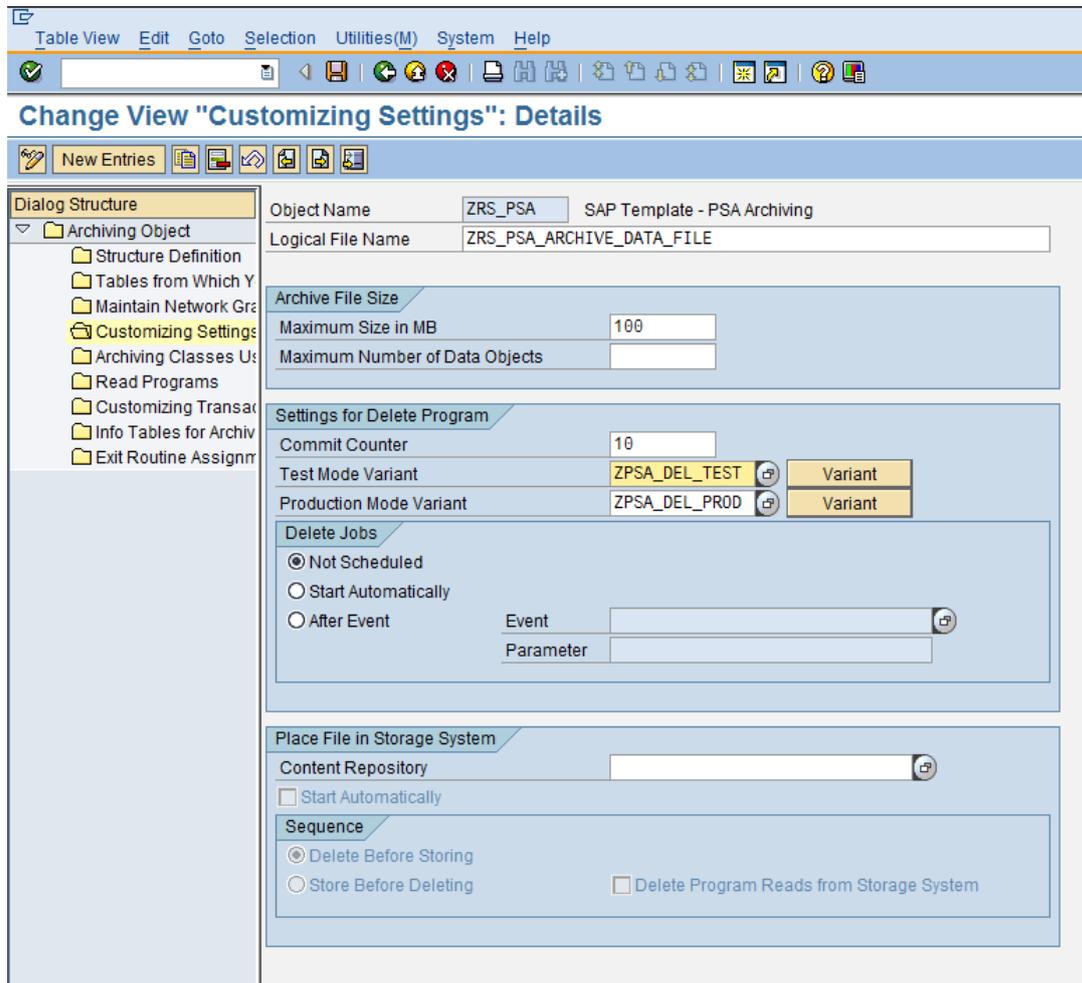
5. You can either use an existing logical file name for the storage location of the archive files or define an own logical file in the transaction FILE. As an example, please see the definition of the logical file name used in the delivered solution.
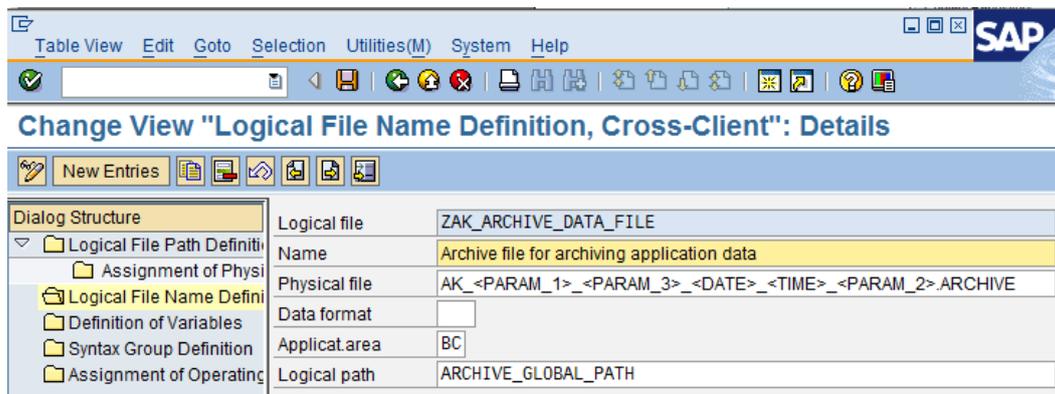
4.3   Implementation of the programs

The write, delete and reload programs have been implemented based on the interfaces described in the '*Archiving Developer Guide*'.

Some details about the implementation of the programs are:

- ➢ We have tried to use the same naming convention for the three programs, i.e.

  - Variables start with the letter 'g' if they are global, with a 'l' if they are local

  - All initial processing has been encapsulated in separated FORM routines (for the archive sessions as well as for the selection screen)

- ➢ Some settings for the general archiving session might not be used, yet have been kept in the coding to show their usage or to allow programmers to easily use them in their own / modified implementation.

- ➢ The Selection screen have partially remained in the standard fashion for archiving sessions, e.g. name of the archive session, processing options, log definition, etc. These settings have been passed to the archiving framework to the best knowledge. Optimizations have to be implemented by the respective implementation of the customer.

- ➢ The structure of the programs has been derived from the template program BC_FLIGHT_*, which have been delivered with the archiving object BC_SFLIGHT. New customer implementation can either be based on this templates or on the solution delivered with this HowTo Document.

- ➢ Per default, the archiving write program concatenates the values of the DataSource, the Source System and the provided date into the comment field and stores it together with the archiving sessions. This allows the user to identify (and pick) the respective archiving session for the delete, and especially reload. The value in the comment field can also be populated by the end user. If you intend to do so, you should delete the initializing part of the write program, which is concatenating the values. Otherwise, your entry will be overwritten by pressing the ENTER button.

- ➢ All programs provide a log about the activities performed. The level of detail for the write and reload program is on the request and data package (since this is also the granularity the program is working on), whereas the delete provides only information based on the request level (since the delete program is only deleting complete requests, not single data packages).

4.4 Scheduling the archiving session (SARA)

You use the transaction SARA to schedule the archiving sessions for the PSA Archiving solution. For general proceeding for using the transaction SARA, please refer to the online documentation (SAP Online help - Data Archiving (CA-ARC)). This HowTo document does only describe the process specific to the PSA Archiving solution.

Write archiving session (creation of archive file)

1. Enter the transaction SARA, and provide the name of the SAP template archiving object (ZRS_PSA) or the name of the one you have defined.

2. Choose the push button '*Write*' to schedule the write archiving session.

3. Maintain the variant, start date and spool parameters. In the variant you have mainly to define the DataSource, the Source System and the date up to which the data should be archived.

4. Press the execute button.

5. Check the status or the program run and display the log output via the icon '*Job*'.
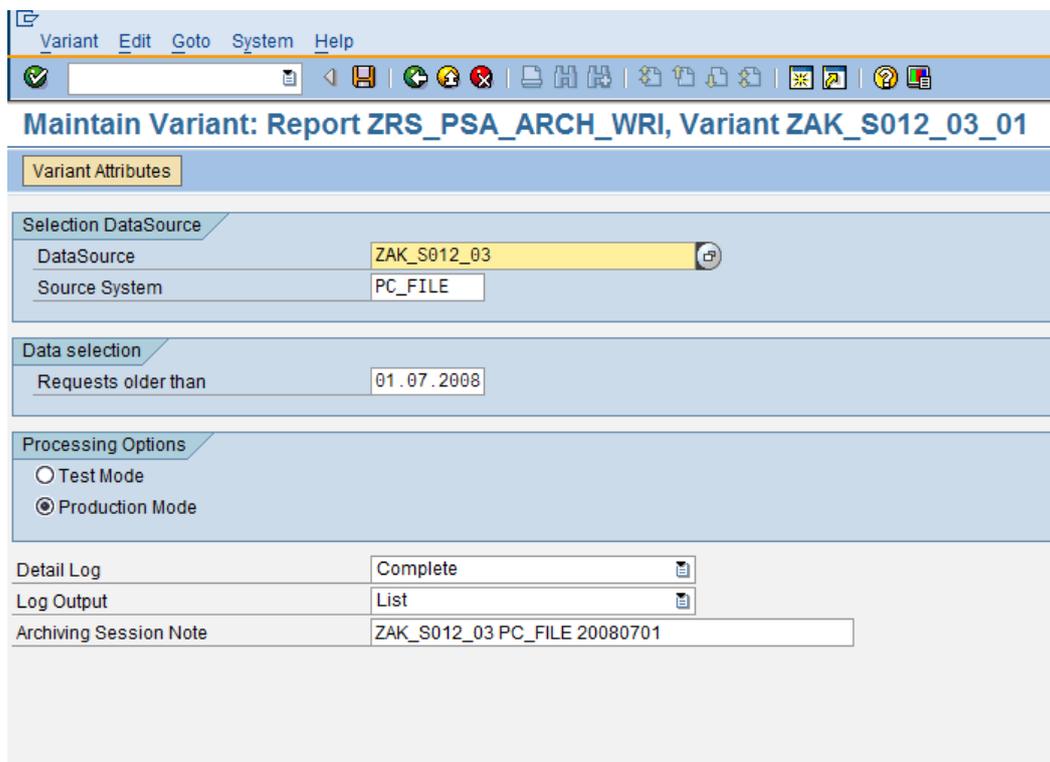
```
 Variant  Edit  Goto  System  Help

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 Maintain Variant: Report ZRS_PSA_ARCH_WRI, Variant ZAK_S012_03_01

 Variant Attributes

 Selection DataSource
  DataSource              ZAK_S012_03                    🔳
  Source System           PC_FILE

 Data selection
  Requests older than     01.07.2008

 Processing Options
  ○ Test Mode
  ⊙ Production Mode

 Detail Log               Complete                    🗐
 Log Output               List                        🗐
 Archiving Session Note   ZAK_S012_03 PC_FILE 20080701
```
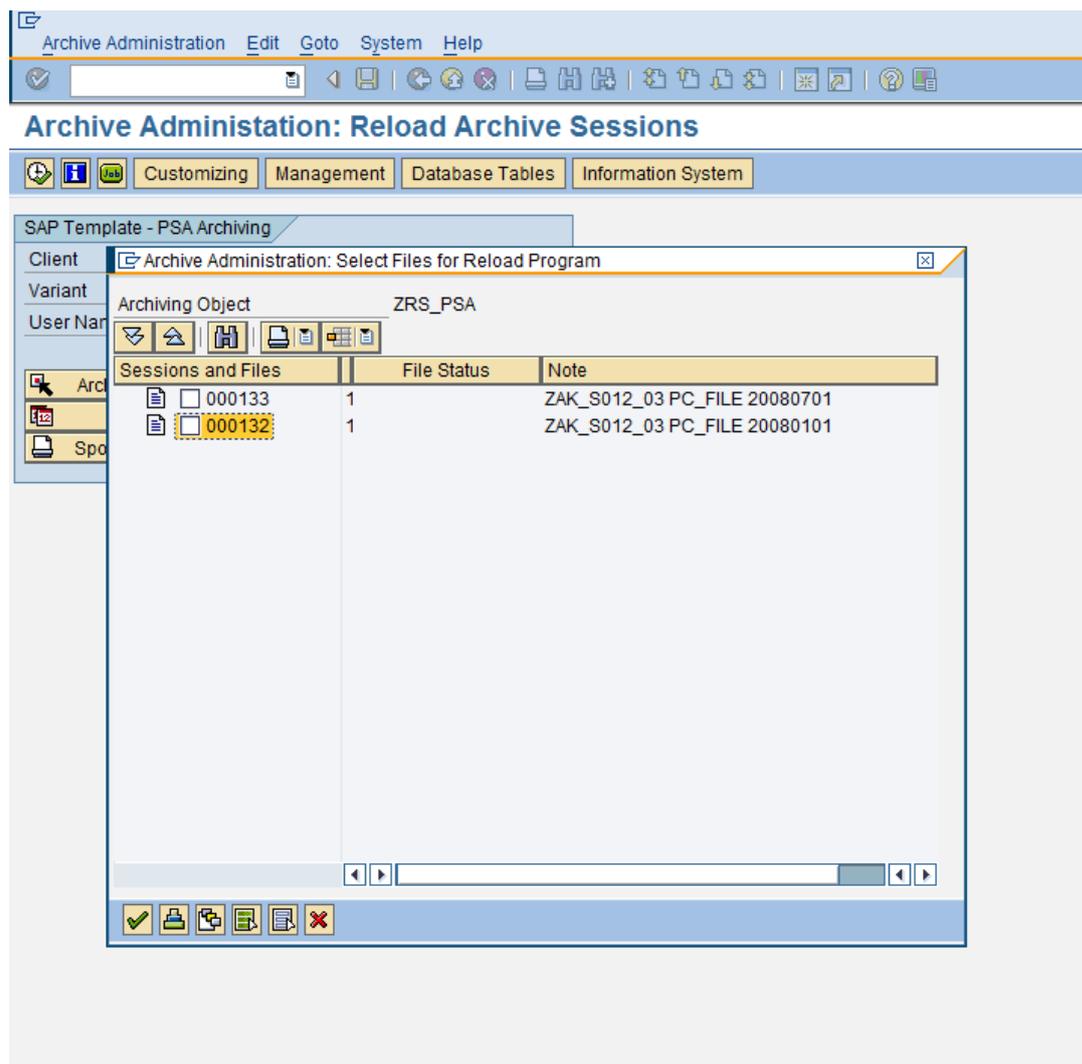
Delete archiving session

1. Enter the transaction SARA, and provide the name of the SAP template archiving object (ZRS_PSA) or the name of the one you have defined.

2. Choose the push button '*Delete*' to schedule the delete archiving session.

3. Maintain the archive selection, start date and spool parameters. In the archive selection you can pick from the archive files / sessions written by the write program, yet not deleted from the database (i.e. the contents of the archive file). You can choose the archive file to be processed based on the note field, which provides information about the DataSource, the Source System and the date up to which the data should be archived of the respective archive file.

4. Press the execute button.

5. Check the status or the program run and display the log output via the icon '*Job*'.

Reload archiving session

1. Enter the transaction SARA, and provide the name of the SAP template archiving object (ZRS_PSA) or the name of the one you have defined.

2. Choose the menu entry 'Goto → Reload' to schedule the reload archiving session. Ignore the information pop-up.

3. Maintain the archive selection, start date and spool parameters. In the archive selection you can pick from the archive files / sessions. You can choose the archive file to be processed based on the note field, which provides information about the DataSource, the Source System and the date up to which the data has been archived of the respective archive file.

🔔 Note

You can pick multiple archive files / sessions, yet in this case only the oldest archive session is processed

4. Press the execute button.

5. Check the status or the program run and display the log output via the icon 'Job'.

www.sdn.sap.com/irj/sdn/howtoguides