CCU

the PBS archive add on

for master data changes

Manual Part B

- Administration –

Compatible with

- SAP R/3 4.x bis 4.6C

SAP® Certified
Powered by SAP NetWeaver®

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Introduction to the PBS ILM Concept

Information Lifecycle Management

Information Lifecycle Management (ILM) means the administration of information related to the time when it is used, taking into account its total costs and compliance. A conclusive, efficient ILM concept must, as a result, control data growth, manage retention rules, and also ensure compliant data storage. Furthermore, an easy access to archived data is decisive and, for example, its transfer during internal and external audits.

PBS ILM Concept

PBS software provides existing SAP customers extensive solutions to put into practice the requirements that were described above for a stringent and successful ILM concept. PBS is considered as an expert for complex, integrated data accesses to archived and database data and meanwhile, also to data that is located on decommissioned SAP systems. In addition to classical SAP data archiving, SAP BI-specific nearline storage is also supported.

PBS archive add ons®

PBS archive add ons always rely on SAP archiving having been carried out successfully. This is the basis for a permanently high-performing SAP system. In principle, you can indeed retain posted documents in the SAP database for a very long time due to a large database capacity. Depending on the document volume, this may result, however, in massive performance losses and, sooner or later, heavily increasing operation costs. The daily backup becomes difficult for large data stocks, for example.

A convenient display and evaluation of archived transaction data – as the SAP user is used to for database data – can often only be carried out in a very restricted manner using SAP standard means depending on the application module. This is particularly the case for large archive data stocks. The PBS archive add ons can be used here. They can be provided for nearly all SAP modules and release levels, and start with a "C" (for *Complete*) in their description. For example, PBS archive add on CCOPA for the SAP module COPA.

Using the PBS archive add ons you can quickly and easily access your archived data even after data archiving during your day-to-day business. The unrestricted data access is realized by an intelligent indexing concept. It extends the SAP archive infrastructure components and integrates itself optimally with SAP archiving. Archive data that has been indexed can still be provided after a release upgrade immediately, without restrictions, and without migration effort. The PBS archive index is stored in sequential files of the SAP file system in the same way as the SAP archive data. Afterwards, you can access the archive data online via the familiar transactions. The SAP user can display the data from the SAP database and the archive data simultaneously via the PBS archive add on index. For the user, it seems as though the archived data is still in the SAP database.

The deep integration of the PBS transactions also enables direct navigation to subsequent and previous documents both within the indexed SAP module as well as to linked documents from other SAP modules. This applies not only for resident but also without restrictions for archived data. The benefit for the user increases the more PBS archive add ons are used.

The potential benefits of the ILM concept raises substantially if you take into account the savings that result from the SAP mirror systems. There are usually at least two of them meaning that the saved disk storage can be tripled by performing data archiving. Thus, time is saved for the data backup.

Table of Contents

1. Introduction

The **PBS archive add ons** are constructed in modular form and cover the application modules FI, SD, MM, CO etc. with a special program package for exactly this application. You can easily see from the name which *PBS archive add on* belongs to which SAP module: CFI, CSD, CMM, CCO etc. All *PBS archive add ons* have in common that they can be easily installed in the SAP R/3 system via the SAP transport utilities **"tp"** and "SAINT". For installation details of the *PBS archive add ons* please see the specific installation manual (manual part A).

This administration manual was written to make construction and administration of the *PBS archive add on CCU* as easy as possible. At first, data archiving with transaction SARA is discussed; the second topic is the PBS index construction from the SAP archive files.

The modular user manual of each *PBS archive add on* is composed of partial manuals:

- Part A: Installation

- Part B: Administration, Archive Construction and Maintenance

- Part C: Application Programs / Transactions

- Part D: Migration Support R/2 => R/3 (if available)

There are additional manuals for the PBS utilities: Conversion Tool, Archive Browser, Translation Tool.

Should you have questions regarding the installation of the *PBS archive add ons* or if you have problems when installing the software please call directly the **Service Hotline of PBS Software GmbH**:

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Release Compatibility

The **PBS archive add on CCU** discussed in this manual runs with the basis programs of SAP AG, D-69190 Walldorf/Baden, R/3 system, **releases 4.0, 4.5, 4.6, correction levels a to z**.

2. Overview on the PBS archive add on CCU

2.1. Supplied Menus

Together with the *PBS archive add on,* a global menu for all products and utilities of PBS Software GmbH as well as a special menu for the *add on CCU* are supplied.

For the releases 4.0 to 4.5 the global menu is started via transaction /PBS/CCU. From release 4.6, area menus /PBS/PBS and /PBS/CCU are delivered, which can be included into the customer's roles or favorites.

All programs discussed in this manual are contained in this menu.
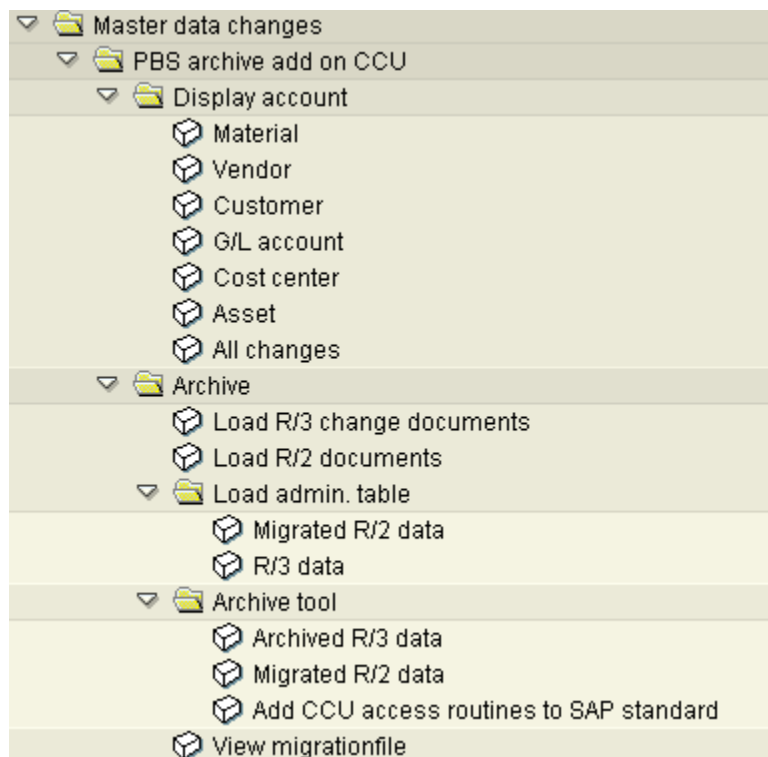
2.2. Basics on the PBS archive add on CCU

Change documents for master data of accounting, logistics and other organizational business areas guarantee a gapless documentation of the evolution of master data since this data has been created. They contain, for example in case of claims for compensation with material master data, important information which allow to reconstruct how the mater data was composed in past periods.

This version 2.0 of the *PBS archive add on CCU* allows you to display this information in the online operation even after the archiving via archive object CHANGEDOCU.

Of course, you can still use CCU as migration tool for R/2 master data changes.

Via the general transaction /PBS/ZU90, provided for the user in range menu /PBS/CCU, you can select a master record type, e.g. customer, vendor, G/L account or material and display the corresponding changes. It makes no difference if you are dealing with migrated change documents from R/2 or with archived R/3 changes.

The administrative tasks regarding the *PBS archive add on* is to construct and activate the PBS archive and, in case of problems, to analyze this archive with the supplied tools.

The precondition for construction and usage of the *PBS archive add on CCU* always is a successful data archiving with SAP means and the access to the archive file created this way.

3. Construction of the PBS archive add on CCU

3.1. Archived R/3 Change Documents (CHANGEDOCU)

3.1.1 Procedure

For the archiving of the change documents, at first, the SAP archiving tool is used to remove the data from the R/3 data base. The tool is called via the transaction SARA. The archiving object required CHANGEDOCU. The archived data is written by the SAP archiving program to sequential files outside the data base.

The reorganized data can no longer be reloaded into the data base and can only be evaluated sequentially. You can use the PBS Database Analyzer to see how the R/3 data base is relieved.

We recommend to parametrize the archiving of change documents in a way that no changes regarding the transaction data , like accounting-, sales- or purchasing documents, are archived. In view of a clear organization of the archive data, change documents regarding transaction data should remain with the corresponding original documents and be archived together with these documents within the corresponding archiving object, e.g. FI_DOCUMNT.

The created SAP archives are written with the PBS load program /PBS/CCU_LDR3 into the *PBS archive add on CCU*. The load program reads the SAP archive files, creates secondary indices and stores this as archiving object /PBS/CCU in ADK files outside the database. In table /PBS/CCUFILE those entries are generated which are the link between the online system and the PBS archive add on. The creation of such table entries can be started automatically by the load program as soon as the load run has been finished.

The archived change documents are thus available for online operations and can be evaluated in a comfortable way via the PBS transactions. With regard to the functionality, the PBS transactions are analogue to the SAP transactions, however, they can read and display the resident data in the R/3 data base and the archived data from the PBS archive add on.

As the data contained in the archive add on cannot be changed anymore, a regular data back-up of the archive is not necessary. The SAP archive file created during the next reorganization of the database can be added to the existing PBS archive add on by using the load program PBS/ CCU_LDR3.

All transactions of the *PBS archive add on CCU* can be started via menu /PBS/CCU respectively from 4.6 via area menu /PBS/CCU.
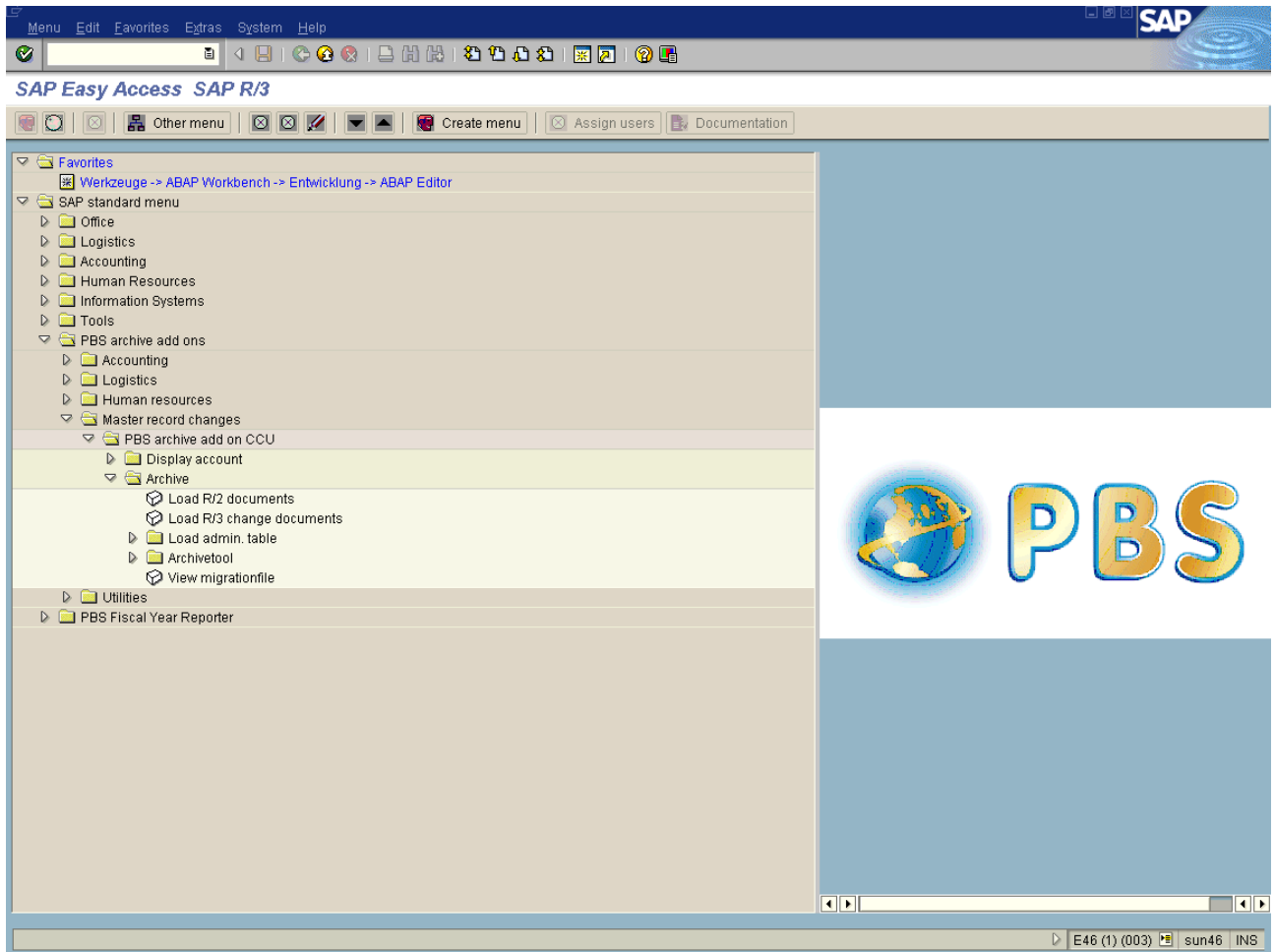
Diagram 1: Call of load program for archived R/3 change documents

3.1.2 Load Program /PBS/CCU_LDR3

/PBS/CCU_LDR3   The *PBS archive add on CCU* allows to keep change documents ar-
chived in R/3 available in the online operation. For this purpose, you
use load program /PBS/CCU_LDR3 to construct the *PBS archive add
on CCU* from the SAP archive files. As in chapter 3.2.8 we explain in
detail how the R/2 data is processed we do not discuss this topic any
further in this section. The selection screen of load program
/PBS/CCU_LDR3 with its delimitations is displayed in Diagram 2.

Diagram 2: Selection screen of load program /PBS/CCU_LDR3.

Below we discuss the delimitations and their effects when loading change docu-
ments into the archive add on CCU.

Manual selection ...

Automatic selection ...

Delete old run

Sel. SAP Archive   If the select button 'Manual selection' is pressed a window is opened
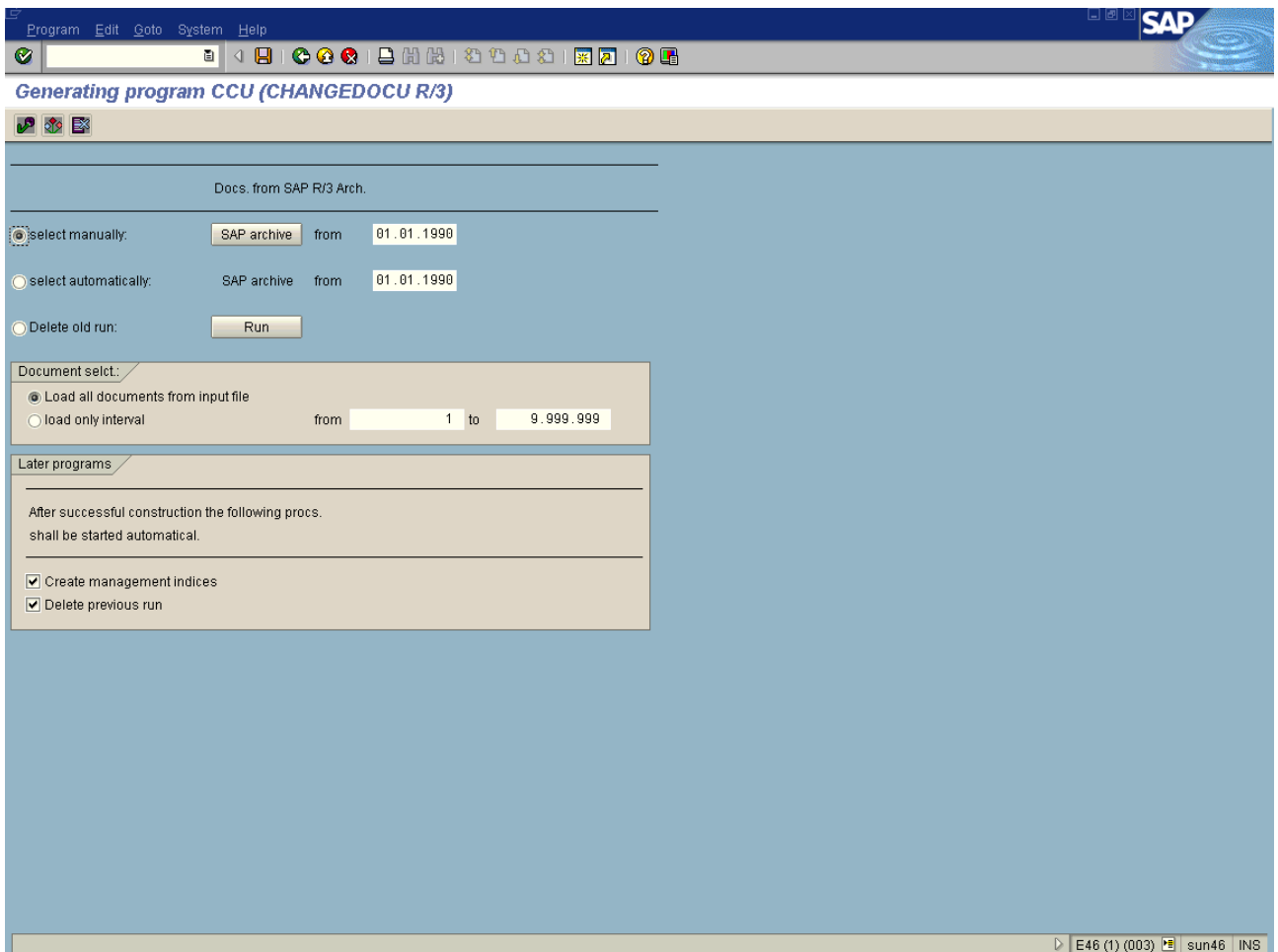displaying a list of the available SAP master data archives which have
been created after the indicated date (see Diagram 3)..

Select now those SAP archives CHANGEDOCU (⊠) you want to load
into your *PBS archive add on CCU*.

In the **automatic** mode, without showing the list, all SAP archives are
selected which have been created at or after the date indicated here.
Archives of this period which have already been loaded into the ar-
chive add on are not selected.

Delete Old Run   Parameter 'Delete old run' allows you to delete complete load runs
from the archive add on CCU. When pressing the **Run** button an
overview of the runs carried out up to now is displayed from which you
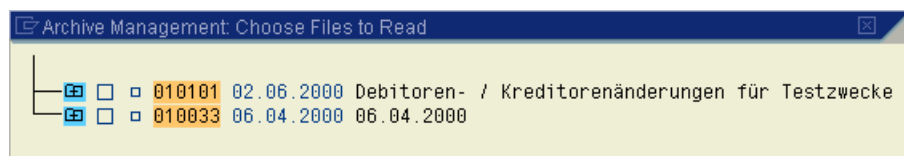can select the run to be deleted (Diagram 4).

**Diagram 3: Selection list of the SAP-CHANGEDOCU archives you can load into
the CCU archive.**

**Diagram 4: Overview of the runs carried out up to now. Run 2 was reset in run 3
and repeated in run 4. Therefore, you can select runs 1 and 4 for deletion.**

| **Process all documents from acquisition** |

Proc. All Docs. If this select button is active the selected SAP archives are completely loaded into the PBS archive add on. The possibility to load the same SAP archives several times is prevented by internal security mechanisms.

| **Process sequential number interval** |

Seq. No. Interval In case of very large SAP archives it may be useful to divide the load run into several smaller portions. In this case, the select button 'Process sequential number interval' must be activated and the corresponding interval limits must be entered.

| **Create administration indices** |

Administration Ind. Selecting this parameter, administration table /PBS/CCUFILE is updated as soon as the actual load run has been completed. If you want to carry out several load runs one after the other, this parameter should not be selected before the last run is started. If this parameter was not qualified or the entries in administration table /PBS/CCUFILE have been damaged you can construct at any time the administration indices separately via report /PBS/CCU3FILE, respectively menu point „Archive ➔ AdminTable ➔ R/3 Data".

Delete previous run

Del. Previous Run Selecting this parameter, the data of the previous run is deleted automatically if the current load run has been completed successfully. When starting to work with this software it is often useful not to qualify this parameter and to keep the previous run for safety reasons. Older runs can be deleted also separately at a later time via report /PBS/CCU3DELR respectively via menu point „Archive ➔ Archive Tools ➔ Archived R/3 Data".

3.1.3 First Load Procedure

If all necessary information has been entered in the selection screen of load report /PBS/CCU_LDR3, the selection screen can be saved as selection variant for the initial construction of the archive add on and the report can be started as background process.

Important:

The *PBS archive add on CCU* must be constructed separately **for each client**.

During the run time, the program generates the archive add on for change documents from the archive data.

Having successfully generated the PBS archive, program /PBS/CCU_LDR3 provides an archive selection statistic (Diagram 5).

```
Time statistic

Start of processing:              09:45:58
Start of sort:                    09:46:09
End of sort:                      09:46:09
End of processing:                09:46:11
```

```
Table statistic

Number CHANGEDOCU read:              61
Number CHANGEDOCU processed          61
```

```
Table           Records read

CDHDR                   61
CDPOS                  142
```

```
Index           read from stock
```

```
Index              written totally

CDHDR      TOTID              61
CDHDR      UDATE              61
CDHDR      USERNAME           61
```

```
Index table        exported tables

CDHDR                      3
```

```
Changes have been archived regarding the following object classes:
  DEBI
  KRED
  MATERIAL

Statistic of archived objects


Archive file:        010120-001/PBS/CCU   Number of objects:         6
Size in MB:                   0,015

  Table                              Number  Description

  /PBS/CCUCDHDR                         183  Sec. indices CDHDR (PBS archive
  /PBS/CCUCLASS                           3  Object classes in PBS archive add on
  /PBS/CCUHEAD                            6  Header structure of sec. indices
  /PBS/CCULAUF                            2  Run table of the last run of
  /PBS/CCULOG                            66  Structure of log table for the PBS




Archiving run:      010120 Number of objects:         6
Size in MB:                   0,015

  Table                              Number  Description

  /PBS/CCUCDHDR                         183  Sec. indices CDHDR (PBS archive
  /PBS/CCUCLASS                           3  Object classes in PBS archive add on
  /PBS/CCUHEAD                            6  Header structure of sec. indices
  /PBS/CCULAUF                            2  Run table of the last run of
  /PBS/CCULOG                            66  Structure of log table for the PBS


Generating program CCU (CHANGEDOCU R/3)

Construction PBS archive add on successfully completed !
```

Diagram 5: Selection statistic of /PBS/CCU_LDR3

3.1.4 Loading Administration Table /PBS/CCUFILE

If the parameter "Create Administration Indices" was not selected during the construction of the CCU archive, these indices can be created separately at any time via report /PBS/CCU3FILE, respectively menu point „Archive ➔AdminTable ➔ R/3 Data".

Diagram 6 shows the selection screen of this process.
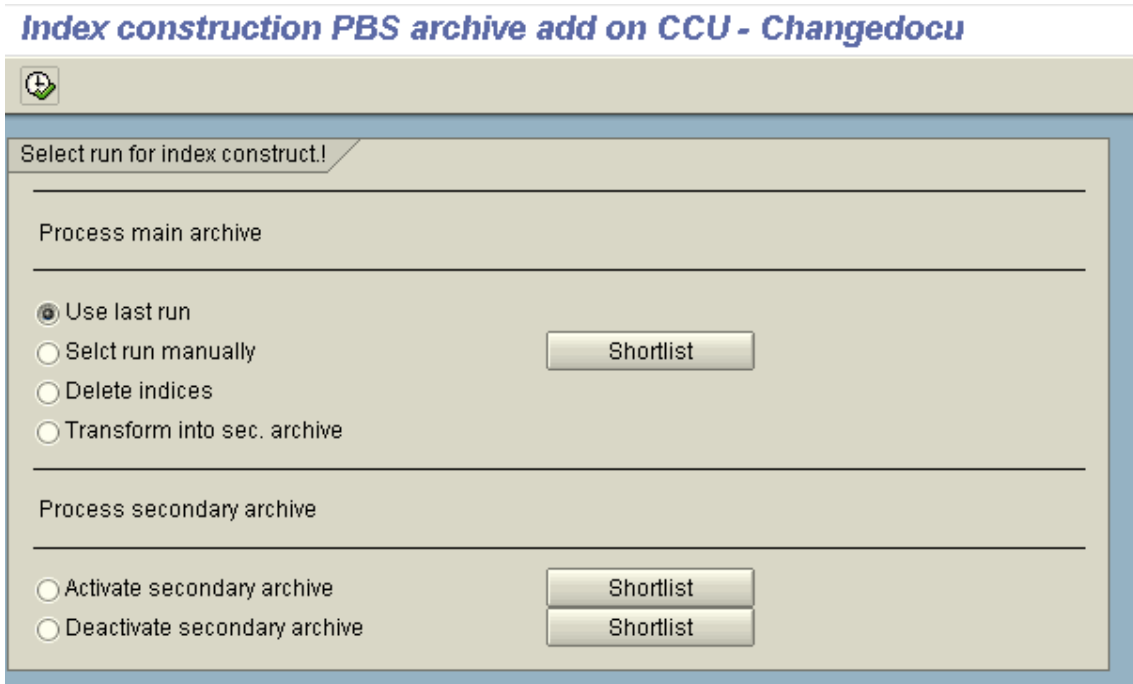
Diagram 6: Selection screen for the construction of the administration indices

Use last run

Marking this parameter, automatically the last run is used for the creation of the indices.

Select run manually

Especially during the introduction test period is may be useful not to delete older load runs but to keep them for a while. Via parameter „Select run manually" you can activate at any time an older run and construct the corresponding administra-

tion indices. A selection list as displayed when starting the manual mode is shown
in Diagram 7.

Diagram 7: Selection list for the construction of the administration indices for any run

After the construction of the administration indices a protocol is displayed (see Diagram 8).

Diagram 8: Protocol of an administration table construction

Delete indices

This parameter allows to delete the current indices without having to activate at the same time the indices of another load run.

3.1.5 Further Load Procedures

Merge   With the first load procedure a PBS archive add on was created. If you want to load further documents to the already existing archive add on stock this is carried out as described before – with a merge run.

/PBS/CCU_LDR3   For the import of further SAP archives you have to mark in the selection screen of report **/PBS/CCU_LDR3** in delimitation '**Select archives'** those SAP archive files you want to merge to the existing archive add on. If during the previous run a SAP archive file has already been loaded into the archive add on, this is recognized by the report and a warning message is displayed. Thus it is not possible that identical documents occur several times in the PBS archive add on.

Load program **/PBS/CCU_LDR3** must be started again as batch process. A new PBS archive is constructed from the existing archive add on and the new documents. Archives from previous runs are automatically deleted if the switch „Delete previous run" is qualified. PBS master data change archives from previous runs can also be deleted separately at a later date via report /PBS/CCU3DELR (call via Archive➔Archive Tools➔Archived R/3 Data).

If all other further procedures have been completed please load, as described in chapter 3.1.4, administration table /PBS/CCUFILE into the SAP R/3 system by using report /PBS/CCU3FILE. This step is not necessary if parameter "Create Administration Indices" was selected during the last run.

3.1.6 Archive Utilities

For the test of the *PBS archive add on CCU* the following ABAP/4 reports are available which can be started via the menu path ‚Archive ➔ Archive Tools ➔ Archived R/3 Data.

Report /PBS/CCU3SCAN
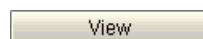
This report allows a technical view into the *PBS archive add on CCU*. A special feature is the possibility to view the statistics of the current load run and of all previous load runs. Diagram 9 illustrates the selection screen of the program /PBS/CCU3SCAN.

Diagram 9: /PBS/CCU3SCAN selection screen

With the radio button 'Log Tables' the program /PBS/CCU3SCAN displays the statistics of the current and the preceding load runs. Diagram 10 illustrates a master index-table and Diagram 11 lists the archived change documents of the current archive file.

Diagram 10: Archive files of the master index

Diagram 11: List of change documents of an archive file

The archived tables which belong to a change document are displayed in Diagram 12. The contents of these tables are accessible via double-click (see Diagram 13)

Diagram 12: Tables of a change document

Diagram 13: Content of the change document table CDPOS

Report /PBS/CCU3TEST

This report allows the sequential reading of archived change documents and the reading of the different indices.

3.2. Migrating R/2 Change Documents

The *PBS archive add on CCU* supports the migration of master data change documents to SAP R/3. These documents can be originated from the SAP R/2 archive of the change documents and directly from file ABEZ.

SAP Migration   A SAP standard migration of master data change documents does not exist. If the SAP user wants to access the master data change documents for evaluation purposes after the migration of the productive system to R/3, he is therefore forced to keep the SAP R/2 system parallel to the R/3 system for some time.

The migration of archived master data change documents is only possible via the creation of lists which are transferred to microfiches or optical archives. The access to data archived this way requires a lot of time and is expensive, thus not providing the comfort of a R/3 online transaction.

PBS Migration   By using the *PBS archive add on CCU* as migration tool this situation can be considerably alleviated. The product contains PBS migration programs for the migration of the SAP R/2 archive tapes and of the ABEZ data into the R/3 archive add on. During this process the R/2 data is converted into real R/3 structures and transferred into the *PBS archive add on CCU*. After such a migration the former R/2 data can be displayed in the R/3 system with the PBS transactions. The user is thus of the impression as if the data is originated from the R/3 and not the R/2 system.

3.2.1 Program Installation in R/2

The following object types are provided:

Assembler Source   **1.**   Member **ZSC2COMP** converts the data from EBCDIC code to ASCII code and decompresses the extracted data. It is to be integrated as Copy-Book into data base access routine SAPDBRS of SAP AG, Walldorf, Germany. If this member has already been installed via another PBS migration tool this step is not necessary.

File name on the CD ROM: **R50\ZSC2COMP.SOU**

The 5.0 version of program ZSC2COMP is stored on the CD ROM under the name ZSC2COMP.SOU in directory R50. Please import the

file via the file transfer of your operating system (by converting of ASCII-TEXT to HOST-EBCDIC-TEXT and qualifying CRLF) into a source library file (e.g. into the MOD.SOURCE of the SAP system). As source library name ZSC2COMP must be used.

To activate this routine the SAP original member SAPDBRS must be modified as follows:

```
********************************                    SIK30492
*       AENDERN PROFILE        *                    SIK30492
********************************                    SIK30492
        COPY  DBRPROFI                              SIK30492
        EJECT
*-------------------------------------------------*  PBSR140496
*       COPY FUER KOMPRIMIERUNG                  *  PBSR140496
*-------------------------------------------------*  PBSR140496
        COPY  ZSC2COMP                              PBSR140496
        EJECT 1                                     PBSR140496
```
Then member SAPDBRS must be assemblied and loaded again.

ABAP/4 Programs

For the transport of the R/2 documents to a sequential dataset the following ABAP/4 programs are provided:

ZUC2TRAN is the main program extracting the R/2 documents to sequential files. This report is started via a SAPREPU job.

ZUC2TUYS is a copy of main program ZUC2TRAN and can be started in the online or batch operation for testing purposes.

ZUC2STRU is the first include program for ZUC2TRAN and contains the structures ZZUK, ZZUP and ZZU1 to be transported. The include also exist under R/3 under the name **/PBS/CCU_ST50**.

ZUC2MOVE is the second include program for ZUC2TRAN and contains the regulations stating how the structures ZZUK, ZZUP, ZZU1 to be transported and ZZBS, defined in ZUC2STRU, are filled from the original SAP tables ABLK, ABLP and ABLF.

File name on the CD ROM: **R250\ZUC2CODE.NCD**

The file can be installed via the SAP PC connection or a HOST file transfer.

- Installation via PC connection

If the file is installed via **SAP-PC-UPLOAD**, the PC file **ZUC2CODE.PBS** must be transferred with the SAP standard report **RSPCUP00** via transaction ABAP respectively TM38 into the SAP system (enter 'PCON' in the OK code).

- Installation via HOST file transfer.

If SAP-PC-UPLOAD is not available, at first, file ZUC2CODE.PBS must be stored in a sequential file via file transfer on the Host. When defining the files please take care that the record format is '**fix**' and the record length '**80**' (control block ATABUS).

As soon as the sequential file is available you can start with the import into the SAP system. You must use the SAP spool utility **SAPSP10** to make the files available in the SAP spool file.

Important:

The R/2 programs supplied must be installed in client 00.

For this purpose, please enter the following in the batch frame:

```
//SP10              EXEC PROC=nnnnnn
//ATABUTI   DD DSN=xxxxxxxx,
//                  DISP=OLD
//SYSIN             DD *
$ MANDANT yy
$SAPSP10   EXEC
$          SPOOL ON
$ATABUS    SET SCP=(LT01,ATABUS,H,D)
$ATABUS    SET RLEN=80
$          GO

SP10 INPUT        ATABUT
SP10 OUTPUT       ATABUS
/*
```

nnnnnn   = Name of batch procedure
xxxxxxxx   = Name of sequential file
yy   = Client

When transferring the sequential file to the online operation, SAP spool file has to be closed for a short period of time. Via transaction SP01 the spool number which has been created for the migration programs must be determined and report RSCONR00 must be started by entering the determined spool number. This report converts the PBS migration programs from the spool file into file DLIB.

Table CAL   For member **ZSC2COMP.SOU** please enter by hand the following assembler CALL into table TCAL/Client 00:

```
Table display                    CLIENT  00     DATE  01.07.96
CAL  SAP call interface
```

```
----------------------------------------------------------------
PGM NAME MODULE  TYPE PARAMETER
----------------------------------------------------------------

SAPDBRS  ZSC2C    S  RETC,RECI,RECO,ASCI,CODP
```

Table RCL/T For the specification of the program class in the following entry has to be made by hand in tables TRCL and TRCLT in client 00:

```
Table display            RCL   ABAP/4 program classes              -----
-------------------------------------------------------------
Class  Application                                               -----
-------------------------------------------------------------
ZZCU   S
```

```
Table display            RCLT  ABAP/4 program class text
--------------------------------------------------------------------
Lg Class  Text
--------------------------------------------------------------------
D  ZZCU   PBS migration master data changes
```

Now the installation of the R/2 part is complete.

3.2.2 PBS Migration Objects

All master data change documents of the SAP archive tapes (SAPB80U, archive 'change documents') and the document file (ABEZ) can be transferred into the PBS R/3 archive.

Used R/2 tables

- ABLK   document header   ➔   PBS table
- ABLP   document item   ➔   PBS table ZZUP
- ABLF   document sub-item   ➔   PBS table ZZU1

PBS uses own structures for the data migration. These structures only differ in the filed formats from the original structures. PBS only uses fields in the character format to guarantee a consistent data migration (e.g. for R/2 HEX fields).

Used R/3 tables

- CDHDR   change document header
- CDPOS   change document item

3.2.3 Conversion Program /PBS/CCU_MV50

Report /PBS/CCU_MV50 contains the migration rules, i.e. the regulations stating how the transferred R/2 fields are translated into the corresponding R/3 fields.

3.2.4 Export of R/2 Data

For the extraction of the master data change documents (document category U) from the SAP R/2 archives and file *ABEZ* program **ZUC2TRAN** is provided. Diagram 14 explains the extraction of the documents into a transport file.
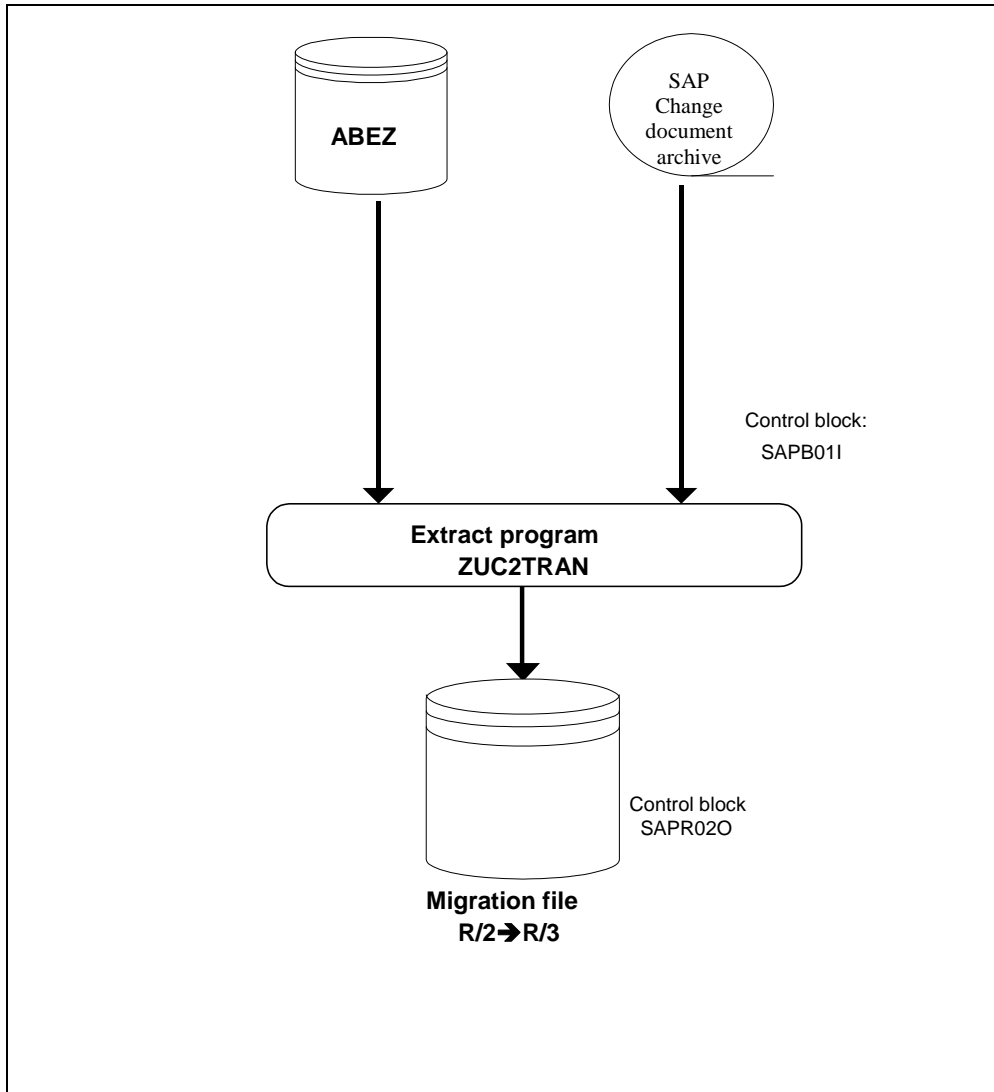
Diagram 14: Migration of master data change documents from SAP archive tapes and ABEZ with report ZUC2TRAN

Description   ABAP/4 program **ZUC2TRAN** reads the documents of the SAP ar-
                       chive and/or the master data changes from file ABEZ via logical data-
                       base VBF (control block: SAPB01I) and transfers them via SAPR02O
                       to the migration file.

Parameter   Below we explain the parameters of export program ZUC2TRAN.
                       Diagram 15 shows a possible delimitation for the migration of archive
                       documents.

```
PBS utility document extract for change documents R/2
-----------------------------------------------------------------------------

Document residence............                          Number archive tapes 01
Maximum number................ _
Transport from date........... _
X – with compression.......... X
Codepage (0100-IBM/0101-Siemen 0100
Protocol...................... X
File  (e.g. MARA, LIFA...).... _                  _                    _  _
Company code.................. _                  _                    _  _
Start with document curr. No.. _




OK _     PF: 6=Options  13=Start   14=Print   17=Value set  ..          1-100
```

Diagram 15: ZUC2TRAN with the PBS standard delimitations

Document Residence   You mark this parameter if documents are to be selected and mi-
                       grated directly from file ABEZ. Parallel reading of an archive type by
                       entering '01' at 'Number archive tapes' is not possible. In this case the
                       program would be terminated.

No. Archive Tapes   Here you enter the number of archives you want to process, normally
                       '01' to make sure that the selected data volume does not get too
                       large. The SAP archive 'Change documents' containing the master
                       data change documents must be allocated under control block
                       SAPB01I.

Maximum Number   With this parameter you can restrict the number of documents to be
                       selected for testing purposes or to avoid large data volumes. As in the
                       transport statistic the current number of the last document which has
                       been read but which has not been selected is shown, you can start in

the next run directly with this document, thus splitting the documents to several transport files. If this parameter is not specified the corresponding input file (ABEZ or archive tape) is processed to the end.

Transp.from Date   Only those documents are transported whose document date is higher than or equals the date indicated here.

X – with Comp.   Marking this parameter, the data can be transported in compressed form. The average size of a change document in the transport file is 2000 Byte in uncompressed for while it is reduced to 400 Byte in compressed form.

Codepage   Here you select the table used for the conversion from EBCDIC to ASCII.

Protocol   Marking this parameter, each transported document is registered with company code, document number, year and corresponding master file in LIST1SO.

File   This select option is used to restrict the selection to change documents of a definite master file.

Company Code   This select option restricts the selection to a company code or a company code interval.

Start at...   If you want to divide the migration data into several packages to be transported in several runs following each other, this parameter allows you to start with the change document which was the last document in the previous run. Each time, the number of change documents indicated under parameter 'Maximum Number' is selected.

3.2.5 Realization of the Extract Runs

Technically the possible number of documents which can be migrated during one migration run is determined by the disk space available for a temporary file under R/2 respectively under R/3. For an estimation of the disk space required you can take the average size per document of **400 Byte for a compressed document and 2000 Byte for an uncompressed one**.

You get the number of document header on an archive tape from the SAPB80U reorganization statistic.

To export the R/2 documents you must start report ZUC2TRAN via a SAPREPU job. If archive tapes are processed the tape name is allocated to control block SAB01I. The output is written to SAPR02O.

Please find below three examples, showing the jobs for the operating systems VSE, MVS and BS2000.

Procedure under VSE:

- When reading from tape Band

```
* $$ JOB JNM=SAPREPUE;CLASS=0,DISP=0,USER=PROOPER
* $$ LST DISP=D,LST=00E,CLASS=A,JSEP=1
// JOB SAPREPUE
* **----------------------------------------------------------**          * **
Create transport fiel
* **----------------------------------------------------------**          //
OPTION LOG,NODUMP
// ASSGN SYSLST,00E
// ASSGN SYS006,SYSLST
// ASSGN SYS007,SYSLST
// ASSGN SYS011,3A0
// ASSGN SYS012,3A1
// ASSGN SYS025,3A3
// TLBL SAPB01I,'ARCHIV-B'
// TLBL SAPR02O,'P.SAP.WORK',,,,,,2
// DLBL ROLL,'S43.ROLB',,VSAM,CAT=UCAT213
// EXEC PROC=S43ASGV
// EXEC PROC=S43ASGL
// EXEC SAPBTCH,SIZE=560K
$SAPS01 ASSGN SYS025
$SAPR02 ASSGN SYS011,SYS012
$ MANDANT 010
$SAPREPU EXEC
$       GO
REPU    PROT ON
REPU    SUBMIT  REPORT=<INLINE>
REPORT CUTR0010.
SUBMIT ZUC2TRAN USER 'LAUTENS'      LINE-COUNT 065   LINE-SIZE 079
  WITH SY-PRINT INCL    '41   X   PBS1            LIST1SX'
  WITH DY/ARCHN INCL '01'
  WITH DY/TAPNO INCL '00'
  WITH X_COMP   INCL 'X'
  WITH CODEPAGE INCL '0100'
  WITH PROTO    INCL 'X'.
/*
/&
* $$ EOJ
```

- When reading from ABEZ

```
In this case the SUBMIT command must be substituted as follows:
SUBMIT ZUC2TRAN USER 'LAUTENS'      LINE-COUNT 065   LINE-SIZE 079
  WITH SY-PRINT INCL    '41   X   PBS1            LIST1SX'
  WITH DY/MODEB INCL 'X'
  WITH DY/TAPNO INCL '00'
  WITH X_COMP   INCL 'X'
  WITH CODEPAGE INCL '0100'
  WITH PROTO    INCL 'X'.
```

Procedure under MVS:

• When reading from tape

```
//CETR01  JOB (7740000,SI13),'PBS',REGION=0M,
//             CLASS=A,MSGCLASS=X,MSGLEVEL=(1,1),
//             NOTIFY=XKE1146
//STEP10   EXEC PROC=E43BTCHP,PRTCL='*'
//BTCH.ROLL   DD  DISP=SHR,DSN=SAP.E43O.ROLB
//*** SERIELLE DATEIEN FUER REPU  COMPRESS + - EXPAND-FUNKTION**
//SAPS01I DD  DSN=XKE1146.ARCHIV,DISP=(SHR,KEEP,KEEP)
//SAPR02O DD  DSN=XKE1146.PBS.CUTRAN1,DISP=(NEW,CATLG,CATLG),
//             DCB=(LRECL=8300,RECFM=VB,BLKSIZE=27998),
//             SPACE=(CYL,(900,100)),UNIT=SYSDA,VOL=SER=(1BTE14)
//*** S O R T ***********************************************
//SORTWK01 DD  UNIT=SYSDA,SPACE=(CYL,(2,5))
//ABAT1SO  DD  DSN=&&SORT,DISP=(NEW,PASS),
//             SPACE=(CYL,(2,5)),UNIT=SYSDA
//SORTIN   DD  DISP=(SHR,PASS),DSN=&&SORT,VOL=REF=*.ABAT1SO
//SORTOUT  DD  DISP=(SHR,PASS),DSN=&&SORT,VOL=REF=*.ABAT1SO
//ABAT1SI  DD  DISP=(SHR,PASS),DSN=&&SORT,VOL=REF=*.ABAT1SO
//SYSOUT   DD  SYSOUT=*
//***********************************************************
//SYSIN    DD  *
$SAPREPU EXEC
$       GO
$ MANDANT 01
REPU     SUBMIT  REPORT=<INLINE>
REPORT CUTR0010.
SUBMIT ZUC2TRAN USER 'LAUTENS'     LINE-COUNT 065   LINE-SIZE 079
  WITH SY-PRINT INCL   '41   X   PBS1             LIST1SX'
  WITH DY/ARCHN INCL '01'
  WITH DY/TAPNO INCL '00'
  WITH X_COMP   INCL 'X'
  WITH CODEPAGE INCL '0100'
  WITH PROTO    INCL 'X'.
/*
//
```

• When reading from ABEZ

In this case the SUBMIT command must be substituted as follows:

```
SUBMIT ZUC2TRAN USER 'LAUTENS'     LINE-COUNT 065   LINE-SIZE 079
  WITH SY-PRINT INCL   '41   X   PBS1             LIST1SX'
  WITH DY/MODEB INCL 'X'
  WITH DY/TAPNO INCL '00'
  WITH X_COMP   INCL 'X'
  WITH CODEPAGE INCL '0100'
  WITH PROTO    INCL 'X'.
```

Prozedur im BS2000:

• When reading from tape

```
/.SAPREPUE LOGON
/          OPTION  DUMP=NO, MSG=FL
/          EXEC    $P43.SYSOUT
/          SKIP    .STEP01
/          STEP
/          SKIP    .ABEND
/.STEP01   REMARK
/          FILE    SAP.ABEZ,LINK=ABEZ0,SHARUPD=YES
/          :
/          :
/          FILE    SAP.ZACT,LINK=ZACT0,SHARUPD=YES
/          SKIP    .DATB1003
/.DATB1003 REMARK
/          CALL    $P43.ABAPSEQ
/          FILE    #ROLL,LINK=ROLL0,SPACE=(384,192)
/          FILE    PBS.LIST1SO,  LINK=LIST1SO, BLKSIZE=(STD,1),     -
/                  OPEN=OUTPUT,SPACE=(192,48)
/          FILE    ARCHIV.SONSTIGE,LINK=SAPS01I,OPEN=INPUT
/          HOLD    SAPS01I
/          FILE    PBS.CUTRAN1,  LINK=SAPR02O, BLKSIZE=(STD,2),     -
/                  OPEN=OUTPUT,SPACE=(16,16)
/          HOLD    SAPR02O
/          CALL    $P43.SAPASGL,PGM=SAPBTCH,ML=MOD
/          RESUME
$ MANDANT 01
$SAPVSFO  EXEC
$         GO
ROLL      FORMT RESET
$         END
$ MANDANT 01
$SAPREPU  EXEC
$         GO
REPU      PROT  ON
REPU      SUBMIT REPORT=<INLINE>
REPORT CUTR0010.
SUBMIT ZUC2TRAN USER 'LAUTENS'    LINE-COUNT 065   LINE-SIZE 079
  WITH SY-PRINT INCL   '41   X    PBS1              LIST1SX'
  WITH DY/ARCHN INCL '01'
  WITH DY/TAPNO INCL '00'
  WITH X_COMP   INCL 'X'
  WITH CODEPAGE INCL '0100'
  WITH PROTO    INCL 'X'.
/          SKIP    .STEP99,OFF=(15,16)
/          STEP
/          SKIP    .ABEND
/.STEP99   REMARK
/REMARK    +------------------------------------------------------------+
/REMARK    | STEP99    | ZKD-DR                                         |
/REMARK    |-----------|------------------------------------------------
/REMARK    | PGM / LIB |
/REMARK    |           |
/REMARK    |           |
/REMARK    |           |
/REMARK    |-----------|------------------------------------------------
/REMARK    | RESTART   | RESTART NACH FEHLERBEHEBUNG
/REMARK    |-----------|------------------------------------------------
/REMARK    | FUER JOB  | VON VORNE                                      |
/REMARK    | FUER STEP | AB STEP99                                      |
/REMARK    +------------------------------------------------------------+
/REMARK    PRINT   LIST1SO.ZEKUNLO2,FORM=STD,COPIES=0,PNAME=WILHELMP,  -
/REMARK            SPACE=E
/          FILE    PBS.LIST1SO,   SPACE=-192
```

```
/              CALL     END,F=SAPREPUE
/              CALL     $P43.MSG,(SAPREPU,'NORMALES ENDE SAPREPUE',ERR=N)
/              EXEC     $P43.SYSOUTR
/              LOGOFF   NOSPOOL
/.ABEND        REMARK
/              CALL     ABEND,F=SAPREPUE
/              CALL     $P43.MSG,(SAPREPU,'PROGRAMMABRUCH SAPREPUE')
/              EXEC     $P43.SYSOUTR
/              LOGOFF   NOSPOOL
```

- When reading from ABEZ

In this case the SUBMIT command must be substituted as follows:

```
SUBMIT ZUC2TRAN USER 'LAUTENS'      LINE-COUNT 065   LINE-SIZE 079
  WITH SY-PRINT INCL    '41   X    PBS1              LIST1SX'
  WITH DY/MODEB INCL 'X'
  WITH DY/TAPNO INCL '00'
  WITH X_COMP   INCL 'X'
  WITH CODEPAGE INCL '0100'
  WITH PROTO    INCL 'X'.
```

3.2.6 File Transfer from the R/2 Host to the R/3 Server

In general it is possible to keep the created R/2 extract stock on magnetic disks and to copy them into files of the R/3 operating system.

In the practical use, the data transfer via **FTP**, however, has proven to be easier and to cause less problems than the handling magnetic tapes. Therefore, we urgently recommend to implement a **TCP/IP** support already on the Host, allowing to carry out the file transfer from the Host directly into the file system of the R/3 system without having to use magnetic disks.

Important:

In case of a file transfer via FTP please take care that the transfer is made in the binary mode if parameter **'X – with compression'** has been qualified when creating the file with report ZUC2TRAN. In case the file is uncompressed the transfer must be made in the ASCII mode (exception: migration to AS400).

3.2.7 Import R/2 Archive Data in R/3

Control

Before you start to construct the *PBS archive add on CCU* we recommend to check the transport for completeness. For this purpose, we provide report **/PBS/CCU_INPT**. If the transport has been completed correctly the statistics of R/2 report **ZUC2TRAN** and R/3 report **/PBS/CCU_INPT** must agree. Diagram 16 shows the statistic of **ZUC2TRAN** and the corresponding **/PBS/CCU_INPT** statistic.

Report **/PBS/CCU_INPT**, in addition, allows to display some fields to the segment in question.

Statistic of ZUC2TRAN in R/2.

```
Number extracted document headers:         62.892
Number extracted document items:          110.048
Number extracted sub-items:               110.048
File statistic:
ANLA                   1.938      =              3,1  %
BANF                     822      =              1,3  %
EINF                      40      =              0,1  %
GSSG                   2.137      =              3,4  %
KOST                     165      =              0,3  %
KUNA                   1.141      =              1,8  %
KUNB                   2.697      =              4,3  %
LIFA                   1.875      =              3,0  %
LIFB                     386      =              0,6  %
MARA                  20.440      =             32,5  %
MARB                   7.660      =             12,2  %
MARC                  19.681      =             31,3  %
MARD                     818      =              1,3  %
MBWT                      52      =              0,1  %
SKSA                   1.016      =              1,6  %
SKSB                     616      =              1,0  %
STAE                   1.408      =              2,2  %
Starting point for next run:                    68.975
```

Diagram 16: Statistic of /PBS/CCU_INPT in R/3.

```
Display sequential file

Contents of transport file for PBS archive CCU

Record type              Number

Document headers:    ANLA        1.938
Document headers:    BANF          822
Document headers:    EINF           40
Document headers:    GSSG        2.137
Document headers:    KOST          165
Document headers:    KUNA        1.141
Document headers:    KUNB        2.697
Document headers:    LIFA        1.875
Document headers:    LIFB          386
Document headers:    MARA       20.440
Document headers:    MARB        7.660
Document headers:    MARC       19.681
Document headers:    MARD          818
Document headers:    MBWT           52
Document headers:    SKSA        1.016
Document headers:    SKSB          616
Document headers:    STAE        1.408

Document headers total:          62.892
Document items:                 110.048
Sub-items:                      110.048
```

Diagram 17: Statistics of reports ZUC2TRAN and /PBS/CCU_INPT

3.2.8 Load Program /PBS/CCU_LDR2

R/2 Archive Data   As soon as the R/2 archive data has been transferred into the R/3 system you can load them via the central load program **/PBS/CCU_LDR2** into the archive add on file system by indicating the path name. For each created R/2 archive file a separate load process has to be carried out. The physical construction is mace by creating a variant regarding report **/PBS/CCU_LDR2** and planning the report as background process.

/PBS/CCU_LDR2   The *PBS archive add on CCU* offers the possibility to keep master data change documents available in the R/3 online system. For this purpose, you use load program /PBS/CCU_LDR2 to construct the *PBS archive add on CCU* from the migration files. Please see the selection screen of load program /PBS/CCU_LDR2 and its delimitations in Diagram 18.
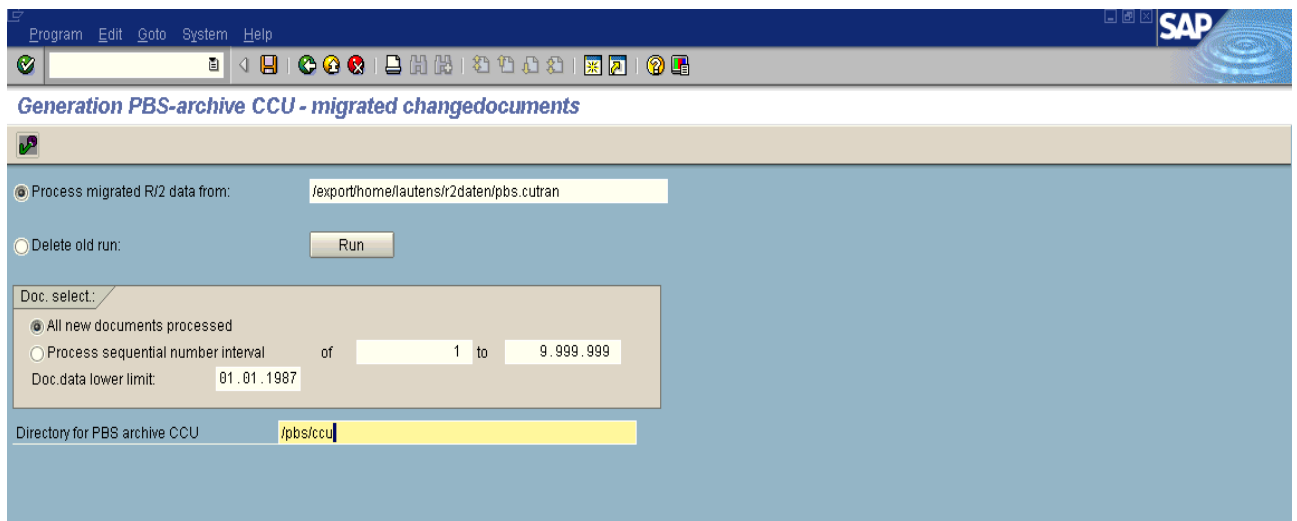

Diagram 18: Selection screen of load program /PBS/CCU_LDR2

Process migrated R/2 data from

Migr.Data from   This parameter mentions the file name where the transferred R/2 stock is located.

Delete old run

Delete Old Run   Parameter 'Delete Old Run' allows you to delete complete load runs from the archive add on CCU. When pressing the Run button an over-view of the runs which have been realized up to now is displayed. From this list you can then select the run to be deleted (Diagram 19).
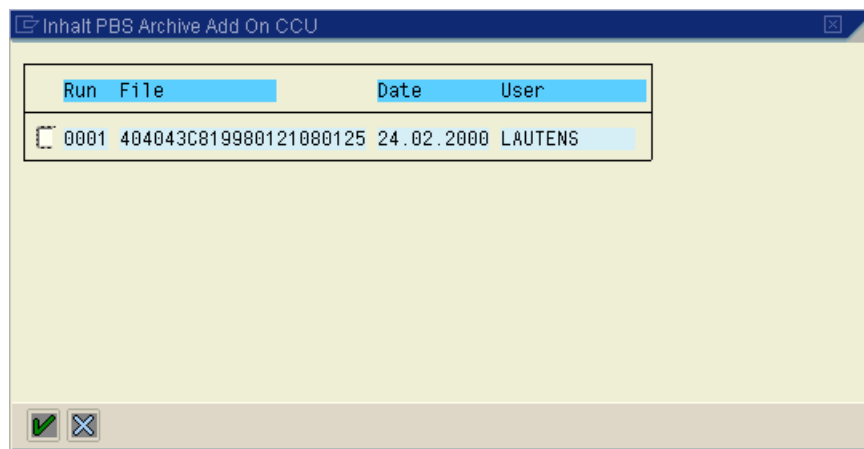

Diagram 19: Overview of the runs realized up to now.

Process all new documents

Proc. all Docs..   If this select button is active all documents in the migration file are loaded. Loading the same migration file several times is prevented by internal security mechanisms.

Process sequential number interval

Seq. No. Interval   In case of very large SAP archives it may be useful to divide the load run into several smaller portions. In this case the select button 'Proc-ess sequential number interval' must be active and the corresponding interval delimitations must be specified.

Document date lower limit

Load from Date   This parameter determines which documents are transferred into the new archive. Basis is the creation date of the change documents. Older documents in the *PBS archive add on CCU* or in the migration file are not transferred.

Directory for PBS archive CCU

Directory f. Archive   This parameter states the directory in which the *PBS archive add on CCU* is to be constructed.

Please take care that the path name is not longer than 60 characters. **It is important that this path exists in the system.** The path cannot be created by the load program.

If you use other PBS archives (CFI, CMM, CSD) in addition to CCU, please define a separate path for each archive.

After the successful run of the load program a list like in Diagram 20 is displayed. This list contains information on the load run and can be displayed at any time for each run via report /PBS/CCU_SCAN (Archive ➔ Archive Tools ➔ Migrated R/2 Data).

File Authorizations   Under Unix you have to see when defining the path name that the R/3 administrator <SID>adm is the owner of the indicated directory and has the corresponding reading- and writing authorization. For example, the writing authorization for directory pbs/cmm is activated with command **chmod u+w /pbs/cmm**. For a change of the owner, however, please turn to the system administrator.

```
10.12.97 Generating program PBS archive for R/2 master data change documents   1

This is run number   0001
*********************************************************************
* R2 Dataset /export/home/lautens/r2daten/pbs.cutran2   geöffnet   *
* Erstellt am: 23.10.1997 um: 11:07:12 R2-Release: 50C7            *
* R2-Daten sind komprimiert => Entkomprimierung wird aktiviert     *
*********************************************************************

D O C U M E N T   S T A T I S T I C


New documents read:                                   62.889
New documents written:                                62.889
New document items                                   110.045

Exported index cluster:
```

```
ANLA                    1.569
BANF                      801
DEBI                    2.862
EINF                       40
GSSG                    1.873
KOSTL                     119
KRED                    1.531
MATERIAL               32.685
MBWT                       50
SACH                      898
STAE                    1.191



S E C O N D A R Y   I N D E X   S T A T I S T I C


                                 New:     Stock old:         Stock new:
                                          read     archived  written

ANLA                             4.432       0         0      4.432
BANF                             1.856       0         0      1.856
DEBI                             7.900       0         0      7.900
EINF                               172       0         0        172
GSSG                             3.959       0         0      3.959
KOSTL                              301       0         0        301
KRED                             5.218       0         0      5.218
MATERIAL                        80.946       0         0     80.946
MBWT
  SACH


10.12.97 Generating program PBS archive for R/2 master data change documents   2

   STAE


Delimitations

Load from date                   01.01.1987
DELETE                           X
Creation date                        0000000000000000
Update administration table
X – Online test
Directory for archive            /export/home/lautens/ccu
Input file R/2 data              /export/home/lautens/r2daten/pbs.cutran2
max. number of documents to be read   00000000


Time statistic

Start of processing:             14:21:54
Start of sort:                   14:33:33
End of sort:                     14:34:12
End of processing:               14:41:36
```

Diagram 20: Selection statistic of /PBS/CCU_LDR2

Attention:

Please take care that after each successful load process a back-up of the PBS archive add on is made so that in case of a possible termination of a following merge run the original status can be reset.

3.2.9 Procedure of the Migration and Construction

1 Use report ZUC2TRAN to create a transport file under R/2.

To make sure that under R/2 and R/3 enough disk space is available you should estimate before the size of the transport file. Guide values for the size of a document in the transport file are 400 Byte for a compressed document and 2000 Byte for an uncompressed document (see section 'Realization of the Extract Runs').

2. Transfer the transport file via FTP or a similar tool from the Host to the R/3 system. If the transport file is compressed the transfer must be carried out in the binary mode, if the file is uncompressed with ASCII conversion.

3. Read the transport file under R/3 via report /PBS/CCU_INPT and compare the exported statistic with the R/2 statistic (see section 'Import of R/2 Data). Both statistics have to agree.

4. Archive the R/2 data with the *PBS archive add on CCU* via report /PBS/CCU_LDR2 and compare the exported statistic with the statistic of the previous run. The read stock of the current run must agree with 'New Documents total' of the previous run.

The data of the *PBS archive add on CCU* is now available in the online system. For a first view to the archive data without any further SAP checks you can use report /PBS/CCU_SCAN (menu path: Archive ➔ Archive Tools ➔ Migrated R/2 Data).

3.2.10 Archive Utilities

The following ABAP/4 reports are available to test the *PBS archive add on CCU.*

Report /PBS/CCU_SCAN

This report allows a technical view into the *PBS archive add on CCU*. It is especially possible to display the protocols of the current load run and of all previous load runs. Furthermore, you can use this report to follow up the development of the disk usage of the PBS archive add on (see Diagram 21).
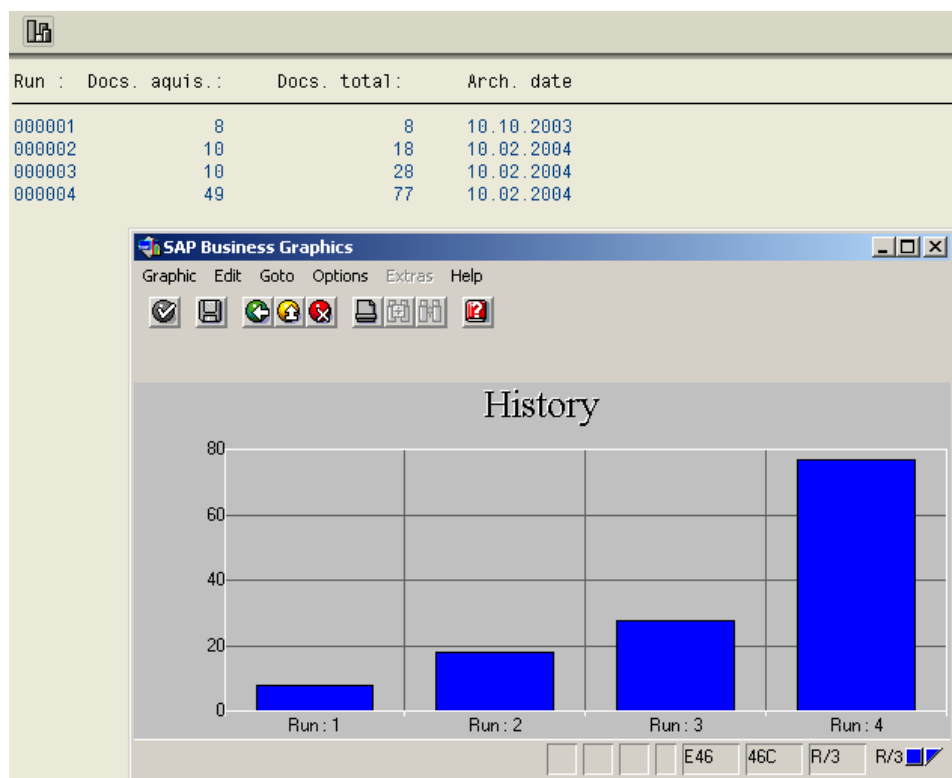

Diagram 21: Disk usage in dependency to the archiving runs which have been carried out

Report /PBS/CCU_ZUIN

This report allows the sequential reading of archived documents on item level.

Report /PBS/CCU_BELG

This report allows the sequential reading of archived documents on header level.

3.2.11 Requirements of Disk Space

The PBS archive add on for master data changes is constructed in file systems independent of the database. It is now the system administrator's task to reserve free memory capacities for the archive construction. For the reserved disk space a file path has to be created which can be used by the PBS archive programs. In addition, we recommend a restriction of the writing-/reading authorization to this file path which is only valid for the supplied PBS programs.

The disk space capacity to be provided depends on the number of documents to be kept in the archive. For each document (incl. Secondary index) you have to calculate a space requirement of ca. **300 Byte**.

4. Long-term archiving

4.1. In general

We recommend to make a new directory in which the data is loaded at regular intervals (e.g for each calendar year) in order to prevent an extremely increase in data in the directory of the archive add on. On the one hand, when doing this you can reduce the run time of the load run, as the time which is needed for the merging of the indices depends on the amount of indices already available. On the other hand, parts of the archive can be stored on other media such as tapes. So you are able to reduce the disk space which is permanently needed. If the data is required again in the SAP system, you only have to reload the directory, to enter the path in the control table and to update a management table. In that way the information stored outside is available online again. The transactions and the customer programs adapted to the PBS archive add on take both data sources into account.

4.2. Creation of secondary archives

If the run time is no longer bearable, e.g. it takes more than 10 hours, you can transfer the current active PBS archive for change documents into a so-called secondary archive with program **/PBS/CCU3FILE** and start the construction of a new main archive in the next load run. Diagram 22 displays the construction of the selection screen.

The current main archive and all active secondary archives are considered in the read accesses. As the PBS archives for change documents are stored in the **ADK format**, you can transfer older secondary archives, which are no longer accessed very often, in an optical archive.
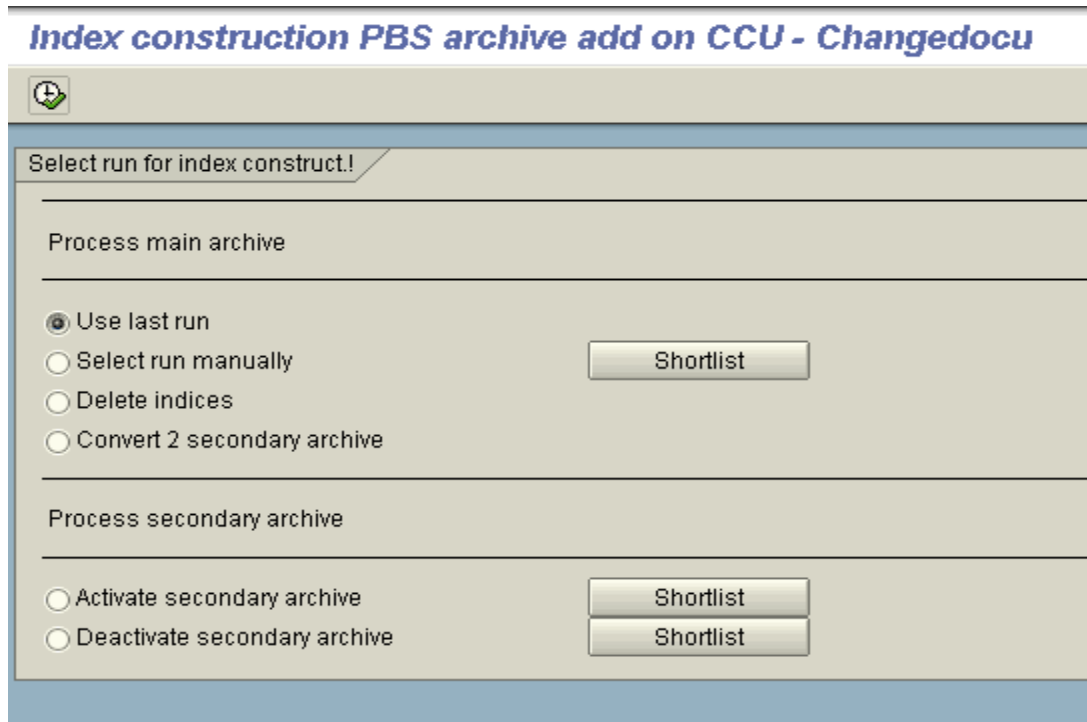
Diagram 22: Selection screen for the construction of management indices

Transform into secondary archive

If you select this parameter, the current main archive will be deactivated and at the same time activated as secondary archive.

Activate / Deactivate secondary archives

These two parameters enable you to activate PBS archives for change documents as secondary archives or to deactivate them. An overview of the available PBS archives for change documents is displayed by pressing button "Select list". You can select PBS archives which can be activated and those which are deactivated (see Diagram 23).

Diagram 23: Selection list for activating secondary archives