

**Best-Practice Document**  
**Data Management Guide for**  
**SAP Business Suite**  
**Version 6.8**

Dietmar-Hopp-Allee 16

D-69190 Walldorf

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Run	
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Generic	Data Volume Management



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## 1 Management Summary/Introduction

### 1.1 Motivation

An efficient data management strategy is an important part of trying to maintain good system performance and keep the total cost of your system in check. This is particularly relevant for applications that generate large amounts of data, such as the two environments we describe in our examples: retail and consumer products. However the information and recommendations in this guide are not limited to these two areas. The guide covers the entire component spectrum of SAP Business Suite and SAP NetWeaver.

### 1.2 Contact SAP

Nevertheless, due to the large number of components and application scenarios of SAP Business Suite, it is impossible to cover all tables in detail. We make every effort to continuously upgrade and expand this guide to include other critical tables from different components. Your feedback is a very important part of this process.

If you notice that a table is missing from our list or that the information for a certain table can be improved, feel free to contact us at [ilm@sap.com](mailto:ilm@sap.com) or [data\\_volume\\_management@sap.com](mailto:data_volume_management@sap.com).

### 1.3 SAP Data Volume Management (DVM)

SAP Data Volume Management (DVM) is a framework that helps the solution operations team of an SAP-centric solution to balance the need of business' access to a wealth of data and IT efforts to maintain storage, databases, and applications.

The methodology provided in this framework consists of best practices, tools, and SAP services along all stages of the DVM life cycle, from initial identification of the challenges all the way through to continuous improvement. It also supports the deployment and operation of a DVM strategy.

It covers concepts for control center for data discovery (alerting, monitoring) and data profiling (analyzing), data management and data archiving for reduction of data volume size and growth (managing the Information Lifecycle), and efficient data storage utilization (database management, data aging) in accordance with legal requirements and corporate policies.

SAP DVM is an essential part of the SAP Active Global Support (AGS) engineering services.



For important information relating to SAP Data Volume Management, see the following link:

<http://wiki.scn.sap.com/wiki/display/TechOps/Data+Volume+Management>

#### How does DVM support you?

SAP supports your implementation of a data management and data archiving strategy with a Guided Self-Service for Data Volume Management (DVM), which is an SAP tool-based approach powered by SAP Solution Manager.

The self-service generates a best-practice document that describes how to handle your largest data objects using the methodologies of data avoidance, summarization, archiving, and deletion, and combines this guidance with a detailed analysis of the data on your system.

The **Data Volume Management work center** in SAP Solution Manager offers capabilities to gain insights into the source of data volume movements in single landscape environments and especially in multisystem landscape environments. The solution is based on SAP Business Warehouse (SAP BW) and provides a holistic landscape overview of your data. This analytical and reporting infrastructure from SAP provides you with a rich array of functions and features that allow you to:

- Get transparency of system landscape data consumption at different levels.



- Reveal potential for creating/optimizing a data volume management strategy.
- Leverage best-practice documents to drive your data volume management strategy.
- Simulate different data volume scenarios (for example, moderate versus aggressive archiving).
- Provide monitoring and reporting capabilities for technical KPIs across a system landscape.
- Provide a compliance check of a corporate data volume management strategy.

SAP offers an expert-guided session on usage of the DVM self-service and setting up the Data Volume Management work center.



For a detailed schedule and registration, see the Expert Guided Implementation Calendar :  
(<https://service.sap.com/Expert-Guided-Implementation>)

## **DVM Enterprise Support Value Map:**

The SAP Enterprise Support Value Map for Data Volume Management is a social collaboration platform offered by SAP Enterprise Support. The value map provides information on each step involved in SAP Data Volume Management from initial assessment, through implementation, to improvement. It provides details of the Enterprise Support services that can assist you and also a forum where you can ask questions and create discussions. SAP Focus Advisors who have experience with DVM are available to assist you with your queries.

Other customers also participate in the value map, so they may be in a position to share their experiences and areas of shared interest with you.

If you are interested in joining the SAP Enterprise Support value map, either register at <https://support.sap.com/valuemaps> or contact your local SAP Enterprise Support Advisory Center.

## **1.4 Data Volume Management Guide for SAP Banking Services 6.0**

You can find more information about data volume management especially for SAP Banking Services 6.0 within the following document, available in Enterprise Support Academy as a best-practice document:

[https://service.sap.com/sap/bc/bsp/spn/esa\\_redirect/index.htm?gotocourse=X&courseid=70193436](https://service.sap.com/sap/bc/bsp/spn/esa_redirect/index.htm?gotocourse=X&courseid=70193436)

Document name: Data Volume Management: Guide SAP Banking Services 6.0

The document helps you in the following topics:

- Know archiving and deletion processes in a Banking Services 6.0 system that is used for account management.
- Understand dependencies between the different objects and the commonly used residence times for the objects.
- Learn how analyze the system and the biggest growing objects.

## **1.5 SAP Information Lifecycle Management (SAP ILM)**

Information has a life cycle. It is created, it lives within databases and systems, it changes, and it is archived and eventually deleted. With SAP Information Lifecycle Management (SAP ILM) companies can meet their data retention, data destruction, and system decommissioning requirements and obtain compliance with legal and regulatory mandates. As a result, SAP Information Lifecycle Management (SAP ILM) helps companies streamline their technical infrastructure, reduce IT costs, and improve IT risk and compliance management.

SAP Information Lifecycle Management (SAP ILM) is based on the following pillars:



- Data archiving (active data and system):
  - Analyze data volumes.
  - Securely move data from database to archive.
  - Access archived data conveniently.
- Retention management (end-of-life data):
  - Define and manage all retention policies across the enterprise.
  - Manage destruction of data responsibly based on policies.
  - Enforce retention policies.
  - Use secure information lifecycle management– aware storage (partner offerings).
  - Perform e-discovery and set legal holds.
- System decommissioning (end-of-life system):
  - Decommission SAP and non-SAP legacy systems to a central retention warehouse.
  - Enforce retention policies on data from shut-down system.
  - Run reporting on data from shut-down system (SAP Business Warehouse (SAP BW) and local reporting).
  - Use predefined business warehouse queries for reporting.
  - Interpret and understand data in archives without help of original system.

To learn more about SAP Information Lifecycle Management (SAP ILM), please contact your SAP representative, write to us at [ilm@sap.com](mailto:ilm@sap.com), or visit us on the Web at <http://scn.sap.com/community/information-lifecycle-management>.

## 1.6 Examples of Data Growth in SAP Systems

### 1.6.1 Retail

In the retail environment, data growth is strongly affected by such factors as the number of articles or stores of a company, which can reach the following orders of magnitude:

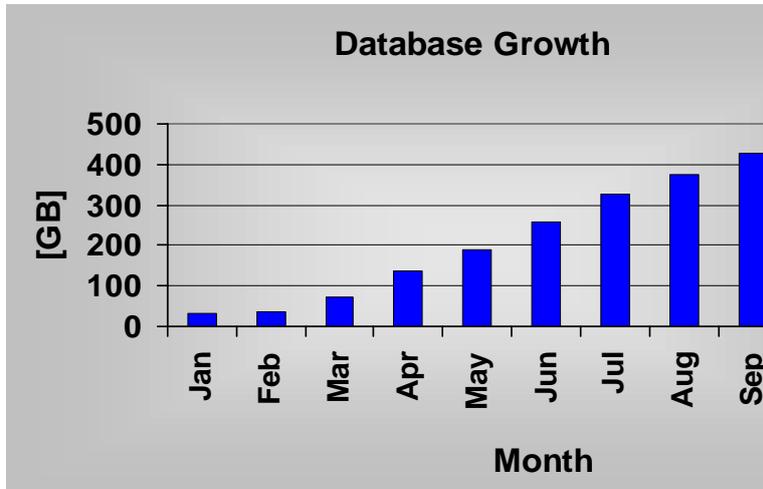
- Number of articles = 10<sup>5</sup>
- Number of stores = 10<sup>3</sup>

Because much of the data is processed and updated on article or store level, this order of magnitude can reach 10<sup>8</sup>. An update of a given product can affect several different areas:

- Article data at store level (such as stock or valuation data)
- Listing conditions
- Processing of sales data from stores using POS inbound (which can result in inventory corrections and revenue postings)

Depending on the master data, Customizing settings, and business processes, data growth in this type of environment can reach several gigabytes a day.

The following diagram shows the monthly data growth in the database for a new retail installation.



Month	Size (in GB)	Monthly Growth (in GB)
January	33.17	

The statistics in this example reflect the following:

- In January and February, the project was still being implemented.
- In March, a noticeable increase in data volume was recorded. This could be due to the following:
  - The customer started live operations in certain stores.
  - Legacy data was copied from previous systems.
- The data volume increased dramatically during subsequent months for the following reasons:
  - Live operations are running normally.
  - Additional stores have gone live.
- The monthly data growth has stabilized at a normal level.
- In October, the data growth dropped off considerably. It increased slightly in November, but not at the same aggressive rate as in previous months. Assuming that business continued under normal conditions, the notable decline in data growth can be attributed to the following factors:
  - The updating of data not important from a business point of view, was reduced.
  - Data from completed business processes was archived.
  - Data that was no longer needed was deleted from the database.

Based on the behavior of the data in this example, we can draw the following conclusions:

- In some installations, data growth can begin to increase sharply only a short time after the system has gone live, and the appropriate measures have to be taken to reduce this growth. Thus, how long a system has been productive is not always the best point of reference for deciding whether or not to begin to archive or prevent data. The only reliable indicators for making this decision are the actual amount of data in your system and the growth rate of this data.



- To make sure that your data volumes do not grow too large, too quickly, you must implement data management measures, such as data archiving and data avoidance, as soon as possible after go-live

## 1.6.2 Consumer Products

The following table shows the largest database tables used by a consumer products (CP) installation:

Name	Size (in GB)	Monthly growth (in GB)	Description
FILCA	83.97	7.18	Line items for consolidation
GLPCA	78.41	5.81	Actual line items in Profit Center Accounting
ACCTIT	63.99	5.23	Intermediate data from Material Management for subsequent postings to FI.
COEP	53.76	4.32	CO object: Line items
GLFUNCA	42.47	3.37	Actual line items for FI
BSIS	22.73	1.84	Open line items for G/L accounts
$\Sigma$	344.33	27.75	
		Size (in GB)	Monthly growth (in GB)
<b>Total of database tables including indexes</b>		<b>626.00</b>	<b>50.55</b>

- The data contained in the table was gathered on a key date.
- The monthly growth figure is an average calculated over several months.
- As the data presented here relates to a CP installation, the sequence of tables differs somewhat from the sequence of tables used by a typical retailer. This is particularly true, for example, of the tables for FI consolidation and the special ledger.
- The monthly increase in data in the FI tables represents a large proportion of the total volume on the database, thus making performance-related measures unavoidable if the increase of data on the database is to be reduced.

Based on the data in this scenario, we can draw the following conclusions:

- Data archiving can be most effective in reducing data volumes if it targets specific critical tables with the help of the relevant archiving objects. Therefore, it is important that you implement the archiving objects that affect the most critical tables first.
- Which tables are the most critical depends largely on the installation of each individual customer. Therefore, it is impossible to say which archiving objects would be best to use and when to use them.

## 2 Goal of Using this Best-Practice Document

This document provides SAP customers and consultants with information about tables that may show a strong growth in data volume. Additional table information is also provided, for example, about how to deactivate updating, whether you can summarize (aggregate) data, and how data can be removed from the tables. Furthermore, we provide hints and recommendations on performance-critical processes and how they can be improved by decreasing data volumes.



For important information relating to performance issues, see the following quick link in SAP Service Marketplace:

<http://service.sap.com/performance-scalability>

You can find the Data Management Guide document via the following link:

<http://service.sap.com/ilm> → *Data Archiving* → *Media Library* → *Literature & Brochures*.

We recommend you set the following priorities:

### 1. Data prevention/data avoidance

Technically, it is possible to deactivate updating for certain types of data. If, from a business point of view, you do not require this data, you should deactivate updating.

**Example:** Switch off updating for table ACCT\*

### 2. Data aggregation/data summarization

In some cases, data can be aggregated/summarized at a higher level, for example, by generating totals. You should use aggregated/summarized data if it provides you with the sufficient level of information that you require for your business processes.

**Example:** Aggregate profit center accounting data (table GLPCA). For retail customers, line items are usually not necessary because their data volumes are too high for reporting.

### 3. Deletion

You can delete a lot of data that you do not want to archive soon after it has been created in your system.

**Example:** Spool data (for more information, see [Housekeeping](#)).



Before you delete data records from the system, make sure that they are no longer referenced to any other data that requires that these records remain in the system. If so, do not delete the data records.

### 4. Archiving

Data archiving handles data that cannot be prevented or easily deleted. You should examine archiving possibilities as early as possible in the implementation process (blueprint project preparation), and long before you go live.

Check how long you want to retain your data in your system. You should only archive data that you no longer require for live operations. Archiving can only, therefore, be used in a limited context when reducing the amount of data in your system.

**Example:** Archiving of accounting documents using archiving object FI\_DOCUMNT. This archives header data (table BKPF) and items data (cluster RFBLG).



**Note:**

- The measures in the aforementioned examples were applied in actual projects (for details, see the section for each table). Before you adopt any of these measures, make sure that it can be applied to your business context.
- Check SAP Notes regularly to find out about any new data archiving developments. You can use the terms Archiving, ADK, or the name of the relevant archiving object when searching for any new developments in SAP Notes.
- If you are new to data archiving and want to familiarize yourself with this topic, you can read the document "Introduction to SAP Data Archiving" in the SAP Service Marketplace. This document provides an excellent overview of the technology behind data archiving and discusses the relevant processes and settings.
- You can find this document at <http://service.sap.com/ilm> → Data Archiving → Media Library → Literature & Brochures.
- For a comprehensive description of individual archiving objects, see the SAP Library under:
  - SAP R/3: Cross-Application Components → Archiving Application Data (CA-ARC)
  - SAP R/3 Enterprise: Scenarios in Applications → Data Archiving
  - SAP ERP: SAP ERP Central Component → Scenarios in Applications → Data Archiving

(Address: <http://help.sap.com>)



### 3 Which Tables Are Examined?

The following tables are commonly associated with high data growth in customer production systems. The table below shows if it is possible to avoid, aggregate (summarize), delete, or archive data in each of the listed tables. For more information, see the detailed description of the table in question or the relevant SAP Notes.



- This guide does not include all tables for which an archiving solution exists. Rather, it deals with those tables for which data growth may be a problem.
- The tables are listed in alphabetical order. If more than one table belongs to a table family, then the sort order is based on the main table (if known).
- Much of the information is release-specific and cannot be applied to all releases.
- Deletion is marked as not being possible if this is done only in the context of archiving.

**Legend:**

- ✓ = possible
- ✗ = not possible
- BW = SAP Business Warehouse (SAP BW)
- BKM = SAP for Banking
- CRM = SAP Customer Relationship Management (SAP CRM)
- ERP = mySAP ERP/SAP R/3 Enterprise/SAP R/3
- EWM = SAP Extended Warehouse Management (SAP EWM)
- HK = Housekeeping measures (see [chapter 'Housekeeping'](#))
- ISU = SAP for Utilities
- NW = SAP NetWeaver/SAP Basis
- ST = SAP Solution Manager tool
- SRM = SAP Supplier Relationship Management (SAP SRM)

	Table	Description	Component	Avoidance	Summarization	Deletion	Archiving	Last Changed in Version
1.	/BA1_R4_REC_BP	Result record header table balance processor	BKM	✗	✗	✗	✓	5.9
2.	/VIRSA/ZFFTNSLOG, /VIRSA/ZFFCDHDR, /VIRSA/ZVIRFFLOG	Firefighter Logs for governance, risk and compliance	NW	✓	✗	✗	✓	6.3
3.	/SCWM/DOOR_SRACT, /SCWM/TDOOR	Door activities within SAP EWM	EWM	✗	✗	✗	✓	6.6
4.	/SCWM/TU_SR_ACT, /SCWM/TU_STATUS	Transportation units within SAP EWM	EWM	✗	✗	✗	✓	6.6
5.	/SCWM/WAVEITM, /SCWM/WAVEHDR	Wave management within SAP EWM	EWM	✗	✗	✗	✓	6.6



	Table	Description	Component	Avoidance	Summarization	Deletion	Archiving	Last Changed in Version
6.	/SCWMWHO	Warehouse order processing within SAP EWM	EWM	x	x	x	✓	6.6
7.	AABLG	Cluster table for CO settlement documents (tables AUAA, AUAB, AUAO, AUAS, AUAT, AUAV, AUAW, AUAY)	ERP	✓	x	x	✓	5.4
8.	ACCTHD, ACCTCR, ACCTIT	Follow-up posting data from MM	ERP	✓	x	✓	✓	6.1
9.	ADQUINDX	Business addresses INDX	NW	x	x	✓	x	6.7
10.	APQD, APQI, APQL	Batch input directory	NW	✓	x	✓	✓	6.1
11.	ARFCSDATA	Outgoing RFCs	NW	✓	x	✓	x	5.4
12.	BALHDR*, BALDAT, BALC, BAL_INDEX, BALM*	Application log: Log messages	NW	✓	x	✓	✓	6.7
13.	BBP_TRANSXSTRING	Temporary working storage for attachments	SRM	x	x	✓	x	6.4
14.	BBPCONT	SAP SRM attachments	SRM	✓	✓	✓	x	6.4
15.	BBPD_PD_INDEX_I, BBPD_PD_INDEX_H	SAP SRM index tables	SRM	x	x	✓	✓	6.4
16.	BDCP, BDCPS	Change pointers	NW	✓	x	✓	x	4.6
17.	BKPF, RFBLG (esp. BSEG, BSEC, BSED, BSET), and BSIS, BSAS, BSIM	RFBLG = Cluster for FI documents (BSEG = FI document items, BSEC = CPD data, BSED = bill of exchange fields, BSET = tax data), secondary indexes (BSIS = G/L accounts – open items, BSAS = G/L accounts – cleared items, BSIM = article documents in retail)	ERP	✓	✓	x	✓	6.1
18.	BTC*	Tables for background processing	HK	x	x	✓	x	6.7



	Table	Description	Component	Avoidance	Summarization	Deletion	Archiving	Last Changed in Version
19.	CE(1-4)xxxx (xxxx = operating concern)	Results tables and profitability analysis (for example, CE1xxxx line items)	ERP	✓	✓	✗	✓	5.7
20.	CDHDR, CDCLS	Cluster structure for change documents	NW	✓	✗	✓	✓	6.8
21.	CKIS	Items unit costing/itemization product costing	ERP	✓	✗	✓	✓	4.5
22.	CKMI1	Index for accounting documents for material/article	ERP	✗	✗	✗	✓	5.3
23.	COEJ	Plan line items in cost accounting	ERP	✓	✗	✓	✓	5.1
24.	COEP	CO object: Line items (by period)	ERP	✗	✓	✗	✓	4.5
25.	COSB	Total variances/results analyses for CO Object	ERP	✓	✗	✗	✓	5.0
26.	COSS, COSP	Cost totals in cost accounting	ERP	✓	✗	✓	✓	4.5
27.	CRMD_MKTTG_TG_*	SAP CRM marketing target groups	CRM	✗	✗	✓	✓	6.7
28.	CRMD_ORDER_INDEX	Index for SAP CRM business transaction	CRM	✗	✗	✗	✓	5.2
29.	CRMD_ORDERADM_*	SAP CRM documents	CRM	✗	✗	✗	✓	6.7
30.	CRMD_PARTNER, BBP_PDIGP	SAP SRM business documents	SRM	✗	✗	✗	✓	6.4
31.	CRMD_SCHEDLIN	Schedule lines for items of a SAP CRM business transaction	CRM	✗	✗	✗	✓	5.2
32.	CRM_JEST	Status information for SAP CRM business object	CRM	✗	✗	✗	✓	5.2
33.	D010* ((D010L, D010TAB, D010S, D010Q, D010INCA)	ABAP Dictionary tables	NW	✗	✗	✗	✗	4.9



	Table	Description	Component	Avoidance	Summarization	Deletion	Archiving	Last Changed in Version
34.	DBERDL, DBERDLB, DBERDZ and ERDK, ERDB, ERDO, DBERDR, DBERDU	Print document line items and headers	ISU	✓	✗	✓	✓	5.5
35.	DBTABLOG	Table change logs	NW	✓	✗	✓	✓	6.6
36.	DBERCHZ1-8, DBERCHZ, and ERCHC (also ERCHO, ERCHP, DBERCHU)	Billing document line items and headers	IS-U	✓	✗	✓	✓	6.8
37.	DDLOG	Buffer synchronization data	NW	✓	✗	✓	✗	4.8
38.	DFKKOP, DFKKOPK, DFKKKO	Contract accounting documents	ERP	✓	✗	✗	✓	5.5
39.	DFKKRDI	Revenue distribution FI-CA	ERP	✓	✗	✗	✓	6.7
40.	DPAYH, DPAYP	Payment program FI-CA	ERP	✗	✗	✓	✗	6.0
41.	DSVASRESULTS*	Service sessions in SAP Solution Manager	ST	✓	✗	✓	✓	6.8
42.	DYNPLOAD, DYNPSOURCE	Screen loads, screen source information	NW	✗	✗	✗	✗	6.7
43.	E070, E071, E071K	Change and Transport System	NW	✗	✗	✗	✓	6.2
44.	EABL, EABLG	MR documents	ISU	✗	✗	✗	✓	6.8
45.	EDI40, EDIDS	IDoc data and status records	NW	✗	✗	✓	✓	5.3
46.	EIPO, EIKP	Import/export data in foreign trade	ERP	✗	✗	✗	✓	5.6
47.	EKKO, EKPO, EKBE, EKKN	Purchasing tables	ERP	✓	✗	✗	✓	5.8
48.	ERCH	Billing document headers	ISU	✗	✗	✓	✓	6.6
49.	ERDK	Print document headers	ISU	✗	✗	✓	✓	6.6
50.	FAGLFLEXA	FI General Ledger Accounting (new): Actual line items	ERP	✓	✓	✗	✓	6.1



	Table	Description	Component	Avoidance	Summarization	Deletion	Archiving	Last Changed in Version
51.	FAGL_SPLINFO, FAGL_SPLINFO_VAL	FI General Ledger Accounting (new): Splitting information	ERP	✓	✓	✗	✓	6.2
52.	FILCA	Actual line items in consolidation	ERP	✓	✗	✓	✓	4.5
53.	FMIFIIT	FI line items in funds management	ERP	✗	✗	✗	✓	6.5
54.	GLPCA	Profit center line items	ERP	✓	✓	✓	✓	4.6
55.	GREP	File of stored reports for Report Writer	ERP	✓	✗	✓	✗	6.0
56.	IDOCREL, SRRELROLES	Object link data	NW	✗	✗	✓	✓	6.3
57.	INDX	System table INDX	NW	✗	✗	✓	✗	6.7
58.	JEST	Status control data	ERP	✓	✗	✗	✓	6.0
59.	LIPS	Delivery items	ERP	✗	✗	✓	✓	4.5
60.	LTAP	Transport order item	ERP	✓	✗	✗	✓	4.7
61.	MAPR, PROP, WFCS_WRFT	Sales forecast	ERP	✓	✗	✓	✗	4.9
62.	MARC, MARD, MBEW	Material master data at plant level (plant, storage location, valuation)	ERP	✓	✓	✗	✓	4.7
63.	MBEWH	Material valuation – history	ERP	✓	✓	✗	✓	4.7
64.	MSEG	Article document items	ERP	✗	✗	✗	✓	6.1
65.	NAST, CMFP, CMFK	Message and error management tables	ERP	✓	✗	✓	✓	5.4
66.	PCL2	RP Cluster 2: Different HR data (mainly payroll and time evaluation data)	ERP	✗	✗	✗	✓	4.5
67.	PCL4	RP Cluster 4: Different HCM data (including remuneration statement, short and long-term documents for infotype changes)	ERP	✓	✗	✓	✓	6.8



	Table	Description	Component	Avoidance	Summarization	Deletion	Archiving	Last Changed in Version
68.	PPFTTRIGG, PPFTMETHRU	Post Processing Framework	CRM	✓	✗	✓	✓	6.3
69.	PPOIX, PPOPX	Posting index of payroll results	ERP	✓	✗	✓	✓	5.8
70.	PRCD_COND	Conditions for SAP CRM business transaction )	CRM	✓	✓	✗	✓	5.2
71.	PROF, PROH, PRON , PROP, PROW	Forecast	ERP	✓	✗	✓	✗	5.0
72.	REGUH, REGUC	Tables for payment data	ERP	✓	✗	✓	✗	5.1
73.	REPOLOAD, REPOSRC, REPOTEXT	Report objects	NW	✗	✗	✓	✗	6.7
74.	RESB, RKPF	Reservations and dependent requirements	ERP	✓	✗	✗	✓	5.6
75.	RSBERRORLOG	Log entries for erroneous DTP data records	BW	✓	✗	✓	✗	5.8
76.	RSDDSTATAGGRDEF	Statistics data OLAP: Navigation step/aggregate definition	BW	✗	✗	✓	✗	6.3
77.	RSMON* and RS*DONE	Request administration data	BW	✗	✗	✗	✓	6.8
78.	RSPCLOGCHAIN und RSPCPROCESSLOG	BW process chain	BW	✗	✗	✓	✗	5.7
79.	RSRWBSTORE	Objects in binary format	BW	✗	✗	✗	✗	4.8
80.	SACONT01, SASACONT1	Document management in SAP Solution Manager	ST	✗	✗	✓	✓	6.5
81.	SADLSTRECB	Dynamic part of an address	ERP	✗	✗	✓	✗	5.0
82.	SALRT*	Alert management data	NW	✓	✗	✓	✗	6.3
83.	SBCMCONT1	Table for document contents (import/export)	NW	✓	✗	✓	✗	6.4
84.	SE16N_CD_DATA, SE16N_CD_KEY	Table display – Change documents	NW	✓	✗	✓	✓	6.6



	Table	Description	Component	Avoidance	Summarization	Deletion	Archiving	Last Changed in Version
85.	SGOSHIST	generic object services: object history data	NW	✓	x	✓	x	6.7
86.	SMO*, CDB*	SAP CRM mobile application data	CRM	✓	x	✓	x	6.7
87.	SMOKONV	Conditions for SAP CRM business transaction (CRM Middleware)	CRM	✓	x	x	✓	5.2
88.	SOC3 (SOFD, SOFM, SOOD, SOFFCONT1, SOOS, SOST)	Business Workplace/ SAPoffice objects	NW	✓	x	✓	✓	5.3
89.	SM* (SMMAIN, SMPARAM, SMSELKRIT)	Schedule Manager tables	ERP	x	x	✓	x	5.6
90.	SMO8	CRM Middleware tables	HK	x	x	✓	x	6.7
91.	SMW3_*	CRM Middleware tables	HK	x	x	✓	x	6.7
92.	SMW3_BDOC*	CRM Middleware/BDOcs	CRM	x	x	✓	x	6.7
93.	SMWT_TRC	CRM Middleware tables	HK, CRM	✓	x	✓	x	6.7
94.	SNAP	ABAP/4 snapshot for runtime errors	HK	x	x	✓	x	6.7
95.	<i>Snnn</i>	RIS – Information structures	ERP	✓	✓	✓	✓	4.9
96.	SO33	Logistics Information System (LIS) information structure S033	ERP	✓	x	x	✓	5.4
97.	STERM_*	SAP terminology	NW	x	x	✓	x	6.7
98.	STXH, STXL	SAPscript texts	NW	✓	x	✓	✓	5.8
99.	SWW_*, SWWWIHEAD, SWWLOGHIST, SWPNODELOG, SWPSTEPLOG	Work items	NW	✓	x	✓	✓	6.4
100.	SWFRXIHDR, SWFRXICNT, SWFRXIPRC	XI adapter	NW	x	x	✓	x	6.6

	Table	Description	Component	Avoidance	Summarization	Deletion	Archiving	Last Changed in Version
101.	SXMSCLUR, SXMSCLUP	XML message of the Integration Engine	NW	✓	✗	✓	✓	6.8
102.	SXMSPFRAWH	PI SXMS performance data	NW	✓	✓	✓	✗	6.8
103.	SXMSPHIST, SXMSPHIST2	Historical XML messages	NW	✗	✗	✓	✗	6.4
104.	TBTC*	Background jobs tables	HK	✗	✗	✓	✗	6.7
105.	TPRI_PAR	ABAP print parameter storage	HK	✗	✗	✓	✗	6.7
106.	TSP*	Spool tables	HK	✗	✗	✓	✗	6.7
107.	TST01	TemSe: List of objects and parts	HK	✗	✗	✓	✗	6.7
108.	TST03	Spool data from the print and output controller	NW	✓	✗	✓	✗	6.7
109.	TXMILOGRAW	External job scheduling tools logs	HK	✓	✗	✓	✗	5.6
110.	VARI	ABAP/4: Variant storage	HK	✗	✗	✓	✗	6.7
111.	VBDATA	Update request data	NW	✓	✗	✓	✗	5.4
112.	VBFA	Sales document flow	ERP	✓	✗	✗	✓	5.0
113.	VBFS	Collective processing logs	ERP	✓	✗	✓	✗	5.0
114.	VBRP	Billing items	ERP	✓	✗	✗	✓	4.7
115.	VBOX	Rebate processing	ERP	✓	✗	✓	✗	6.3
116.	VEKP	Header table for handling units	ERP	✗	✗	✗	✓	5.6
117.	WLK1	Listing conditions	ERP	✓	✗	✓	✓	4.9



Some of the above-mentioned tables can be archived using several different archiving objects. Archiving and deleting data that was created during different time periods can lead to a fragmentation of the database tables. The affected data blocks can only be used for new data if you perform a reorganization.

Using the **table analysis tool** (transaction TAANA), you can analyze the distribution of table entries based on specific fields (for example, organizational unit, time periods).



This helps you decide which archiving objects to use to achieve the greatest benefit through data archiving. The fields for carrying out a table analysis are determined via an analysis variant. If part of the standard, these variants are listed in the documentation for the corresponding table under the data archiving section.

For more information on table analyses, see the documentation in the SAP Library for SAP NetWeaver 7.0 (2004s) under *SAP NetWeaver by Key Capabilities → Solution Life Cycle Management by Key Capabilities → Data Archiving → Introduction to Data Archiving → Table Analysis*.

## 4 Best-Practice Document: Housekeeping

You can delete some types of data from your system very soon after it has been created. You should carry out deletion at regular intervals for the data discussed in this section. See SAP Note 16083 (release-independent). When performing our recommendations, use the recommended job names within the single chapters, as they can be used to check if the jobs have already been active in your system.

Where applicable, we have included a section on the deletion of data under the table-specific sections of this document.

### See also SAP Notes:

- 16083 (release-independent): Standard Jobs, Reorg Jobs
- 48400 (SAP\_BASIS 46B – 710): Reorganization of TemSe and Spool
- 706478 (release-independent): Preventing strong growth of basis tables
- 800927 (SAP\_APO 30A – 310, SCM 400 – 700): Standard jobs in the SCM/APO area
- 1034532 (SAP\_BASIS 640 – 720): Changes for standard jobs
- 1411877 (SAP\_BASIS 46C – 730): New standard jobs
- 1829728 (SAP\_BW 700 – 740): BW Housekeeping Task List

### 4.1 Housekeeping for Background Jobs

#### 4.1.1 Administration Data for Background Jobs

- Program: RSBTCDEL2
- Reorganized tables: BTC\*
- Job scheduling: Daily (with variants)
- Recommended job name: SAP\_REORG\_JOBS

This report deletes old background jobs.

### See also SAP Notes:

- 784969 (SAP\_BASIS 46C - 640): Program RSBTCDEL2
- 852351 (SAP\_BASIS 46C – 711): Program RSBTCDEL2: Enhancement (2)
- 1893670 (SAP\_BASIS 700 – 740): Problems with RSBTCCNS (SM65)



**Important recommendation:** Please ensure that report RSBTCDEL2 is replacing the former report RSBTCDEL. Please make sure that you reschedule your jobs with the new report name.

#### 4.1.2 Print Parameters for Background Jobs

- Program: RSBTCPRIDEL
- Reorganized tables: TPRI\_PAR
- Job scheduling: monthly (with variants)
- Recommended job name: SAP\_REORG\_PRIPARAMS

### See also SAP Notes:

- 759682 (SAP\_BASIS 620 - 640): Performance problems when scheduling batch jobs
- 1407635 (SAP\_BASIS 700 – 720): Unnecessary database accesses in RSBTCPRIDEL

#### 4.1.3 Runtime Statistics for Background Jobs

- Program: RSBPSTDE

- Reorganized tables: BTCJSTAT\*
- Job scheduling: monthly (with variants)
- Recommended job name: SAP\_REORG\_JOBSTATISTIC

This report deletes old data from the job runtime statistics.

#### 4.1.4 Consistency Check for Administration Tables of Background Jobs

- Program: RSBTCCNS
- Reorganized tables: TBTC\*
- Job scheduling: daily (with variants)
- Recommended job name: SAP\_BTC\_TABLE\_CONSISTENCY\_CHECK

This report checks the consistency of job definitions and repairs erroneous entries.

#### See also SAP Notes:

- 1549293 (SAP\_BASIS 700 - 740): SM65: Improvements in consistency check
- 1893670 (SAP\_BASIS 700 – 740): Problems with RSBTCCNS (SM65)

#### 4.1.5 Orphaned Temporary Variants in Table VARI

- Program: BTC\_DELETE\_ORPHANED\_IVARIS
- Reorganized tables: VARI
- Job scheduling: weekly (with variants)
- Recommended job name: SAP\_DELETE\_ORPHANED\_IVARIS

If you schedule a report as a background job, the system generates a variant called &0000000000xxx for the report. However, if an error occurs during scheduling, the generated variant is not deleted.

#### See also SAP Notes:

- 1021775 (SAP\_BASIS 46C – 711): Orphaned temporary variants in the table VARI

## 4.2 Housekeeping for Spool Data

#### 4.2.1 Spool Data and Administration Data for Spool Jobs

- Program: RSPO1041
- Reorganized tables: TSP\*
- Job scheduling: Daily (with variants)
- Recommended job name: SAP\_REORG\_SPOOL

This report deletes old spool data.

#### See also SAP Notes:

- 130978 (SAP\_BASIS 46A - 710): RSPO1041 - Replacement for RSPO0041



**Important recommendation:** Please ensure that report RSPO1041 is replacing the former report RSPO0041. Please make sure that you reschedule your jobs with the new report name.

#### 4.2.2 Spool Data Consistency Check

- Program: RSPO1043
- Reorganized tables: TSP\*, TST01, TST03
- Job scheduling: Daily (with variants)
- Recommended job name: SAP\_SPOOL\_CONSISTENCY\_CHECK



Report RSPO1043 enables continuous monitoring of inconsistent spool objects (example: no entries in TST01 but entries in TST03 for a selected spool are available). Just as in RSPO0043, the write locks are analyzed and, if necessary, deleted. In contrast to report RSPO0043, report RSPO1043 can run parallel to the other activities in the background. To do this, the report must run daily.

**See also SAP Notes:**

- 98065 (SAP\_APPL 40A - 604): Spool consistency check with RSPO1043 as of 4.0A
- 1748033 (SAP\_BASIS 46C – 740): RSPO1043 does not delete all inconsistencies



**Important recommendation:** Please ensure that report RSPO1043 is replacing the former report RSPO0043. Please make sure that you reschedule your jobs with the new report name.

### 4.2.3 Orphaned ADS Spool Files

- Program: RSPO1042
- Job scheduling: Daily (with variants)
- Recommended job name: SAP\_ADS\_SPOOL\_CONSISTENCY\_CHECK

The DIR\_GLOBAL directory or in the client-specific ADSP subdirectories contain files starting with SPOOL. Some of them may be very old. Usually, these files are removed by deleting the relevant spool request. However, under certain circumstances, these files may remain in the system as "orphaned" files. To reorganize these files, you can use report RSPO1042.

**See also SAP Notes:**

- 1440439 (SAP\_BASIS 700 – 740): New Standard Jobs (2)
- 1493058 (SAP\_BASIS 700 – 740): Orphaned ADS files

### 4.3 Orphaned Job Logs

- Program: RSTS0024
- Reorganized tables: TST01
- Job scheduling: Weekly (with variants)
- Recommended job name: SAP\_REORG\_ORPHANED\_JOBLOGS

The TST01 table can contain job log headers or files that are older than the jobs in the TBTCO table. To delete such "orphaned" job logs, you can use report RSTS0024.

**See also SAP Notes:**

- 666290 (SAP\_BASIS 46B – 710): Deleting "orphaned" job logs
- 1293277 (SAP\_BASIS 46C – 720): Report RSTS0024 runs for a very long time
- 1436325 (SAP\_BASIS 46C – 720): TemSe objects JOBLGX\_ZOMBIE
- 1605708 (SAP\_BASIS 46C – 802): RSTS0024 terminates with COMPUTE\_INT\_TIMES\_OVERFLOW

### 4.4 TemSe: File System Against TST01

- Program: RSTS0043
- Job scheduling: Weekly (with variants)
- Recommended job name: SAP\_REORG\_ORPHANED\_TEMSE\_FILES

Files (for example, spool requests, job logs, batch input logs) are stored on the file system but the relevant entries are missing in table TST01.

**See also SAP Notes:**



- 936049 (SAP\_BASIS 46C - 711): TemSe: Consistency check, file system against TST01
- 1246731 (SAP\_BASIS 640 – 731): RSTS0043: Some of the job logs are not recognized
- 1272528 (SAP\_BASIS 46C – 711): RSTS0043: All orphaned logs are not deleted
- 1676870 (SAP\_BASIS 46C – 731): RSTS0043 incorrectly deletes files

## 4.5 Administration Data for Batch Input

- Program: RSBDCREO or  
RSBDC\_REORG from release 4.6D onwards (different selection screen)
- Reorganized tables: BDC\* and APQ\*
- Job scheduling: daily (with variants)
- Recommended job name: SAP\_REORG\_BATCHINPUT

This report deletes old batch input sessions.

### See also SAP Notes:

- 147354 (release-independent): Batch input: Reorg. and delete sessions and logs

## 4.6 ABAP Short Dumps

- Program: RSSNAPDL  
RSNAPJOB (program to schedule report RSSNAPDL as a job)
- Reorganized tables: SNAP
- Job scheduling: daily (with variants)
- Recommended job name: SAP\_REORG\_ABAPDUMPS

This report deletes old ABAP short dumps.

### See also SAP Notes:

- 11838 (release-independent): Deleting short dumps from the SNAP table
- 1091769 (SAP\_BASIS 700 – 710): RSSNAPDL deletes too many short dumps

## 4.7 External Job Scheduling Tools

- Program: RSXMILOGREORG
- Reorganized tables: TXMILOGRAW
- Job scheduling: weekly (recommended)
- Recommended job name: SAP\_REORG\_XMILOG

If you use external job scheduling programs, XMI log entries are written to table TXMILOGRAW. As a result, this table can grow quite large and should be reorganized periodically.

As of SAP R/3 4.6C, program RSXMILOGREORG is available as part of the standard. For earlier releases, see SAP Note 182963 (SAP R/3 3.1I – SAP NetWeaver AS 6.40). This report deletes XMI logs.

A weekly reorganization of your tables should delete any entries that are older than seven days. If the table is already large, we recommend that you use the reorganization method TRUNCATE at database level. This can be done without any negative consequences because the table does not have any dependencies to other tables. For more information, see SAP Note 182963.

SAP Note 852933 (SAP NetWeaver AS 6.40 – 7.00) provides information about how to speed up the deletion process when you are using reorganization program RSXMILOGREORG.

### See also SAP Notes:

- 182963 (SAP\_APPL 31G – 46B): Huge increase in Table TXMILOGRAW
- 852933 (SAP\_BASIS 620 – 700): XMILOG-Reorg: Performance optimization
- 1715863 (SAP\_BASIS 46C – 731): Entries too frequent in XMI log

## 4.8 Checking Database Indexes

If your system has very slow response times, check whether your database indexes are fragmented in any way. If your system is showing signs of fragmentation, regenerate your indexes or defragment them. If changes are made to tables on a regular basis, we recommend that you regenerate your indexes or defragment them on a regular basis, such as once a week.



**Important recommendation:** Indexes should be regenerated regularly in retail if your database does not do so automatically (for example, Oracle databases cannot perform this function).

## 4.9 Housekeeping for SAP CRM

### 4.9.1 SAP CRM Inactive Products

- Program: COM\_PRODUCT\_DELETE\_INACTIV
- Recommended job name: SAP\_REORG\_CRM\_PRODUCTS\_INACTIV

You can use report COM\_PRODUCT\_DELETE\_INACTIV to delete the inactive products indicated for deletion in SAP CRM.

#### See also SAP Notes:

- 432875 (BBPCRM 20C - 300): Deleted inactive product cannot be created again

### 4.9.2 CRM Middleware Tables

- Program: SMO6\_REORG  
SMO6\_REORG2 (as of SAP CRM 4.0 support package 6)
- Reorganized tables: SMO8\* (SAP CRM 2.0B and 2.0C)  
SMW3\_\* and SMWT\_TRC (both as of SAP CRM 3.0)
- Job scheduling: daily (with variant SAP&\_MW\_REORG)
- Recommended job name: MW\_REORG

In Customer Relationship Management (SAP CRM) and Supplier Relationship Management (SAP SRM), it is common to see strong growth of BDoc and trace tables in CRM Middleware. This could have a negative impact on performance during the processing of BDocs.

You can delete processed BDocs using transaction SMO8REORG. As a general rule, you should schedule report SMO6\_REORG as a background job and run it on a daily basis to reorganize your trace data and processed BDocs regularly.

#### See SAP Note:

- 206439 (BBPCRM 2.0 – 4.0): Reorganization of tables in CRM Middleware
- 675725 (BBPCRM 3.1 – 4.0): Unnecessary BDocs in SAP SRM (EBP) from CSA\_MASS\_BUPA Queue
- 713173 (BBPCRM 4.0 – 5.0): Update of the CRM Middleware reorganization
- 1876287 (BBPCRM 5.0 – 7.13): Performance Optimization Of SMO6\_REORG



**Important recommendation:** As of SAP CRM 4.0 Support Package 6, there is a new report available: SMO6\_REORG2 (please see also SAP Note 713173, BBPCRM 4.0 – 5.0). This report



can be scheduled on a daily basis like report SMO6\_REORG, but please take care that only one report is executed.

## 4.10 Housekeeping for SAP Solution Manager (BW Housekeeping for Diagnostics)

- Program: E2E\_HK\_CONTROLLER
- Job scheduling: daily
- Recommended job name: E2E BI HOUSEKEEPING

A central housekeeping process (report E2E\_HK\_CONTROLLER) runs on a daily basis on SAP Solution Manager ABAP. Please make sure that the following SAP Notes are implemented in your system:

### See SAP Note:

- 1480588 (Solution Manager ST 400 – 710): ST: E2E Diagnostics - BI Housekeeping - Information
- 1266915 (SAP BI\_CONT 703 – 705): ST: Housekeeping of BI Hashtables
- 1254977 (SAP BI\_CONT 703 – 704): ST: Memory Problem for E2E Housekeeping job
- 1510178 (SAP BI\_CONT 704, Solution Manager ST 400): InfoCubes remain in loading mode after Housekeeping
- 1510411 (SAP BI\_CONT 704, Supportpackage 09): Corrections for E2E BI Housekeeping
- 1794478 (ST 710): Monitoring and Reporting: High Redo log volumes

By default, E2E BI Housekeeping includes the following tasks:

- Aggregation of data, that is, data is transferred from InfoCubes with hourly resolution to those with only daily resolution (with ST400, aggregation of data to an hourly resolution is only supported for OSMD\_\* InfoCubes).
- Deletion of data, that is, data from the higher volume cubes is deleted if it is older than a specified period of days (default is 91 days).
- Update statistics (available with ST-BCO 7.10 [ST710]).
- Compress InfoCube (available with ST-BCO 7.10 [ST710]).
- Delete requests (Available with ST-BCO 7.10 [ST710]).

Logs of E2E BI Housekeeping can be found in the spool log of report E2E\_HK\_CONTROLLER as well as in the application log (TA SLG1) in the BW client (Available with ST400 SP24, Object/Subobject is BW\_PROCESS/REPORT [ext. number E2E\_HK\_CONTROLLER]).

Regarding Housekeeping for Service Sessions in Solution Manager, please find additional information in chapter [DSVASRESULTS\\*: Service Sessions in SAP Solution Manager](#).

## 4.11 Housekeeping for SAP BW Systems

For performing a regular housekeeping on your SAP BW system, please take care of SAP Note 1829728, which provides detailed information about regular tasks and tools.

### See SAP Note:

- 1829728 (SAP\_BW 700 - 740): BW Housekeeping Task List

## 4.12 Housekeeping for SAP EWM Systems

In addition to the above-mentioned standard jobs, you must schedule SAP EWM-specific jobs in your SAP system. To keep the SAP EWM application running smoothly, please ensure that the housekeeping tasks are scheduled regularly.

For details see the “Application Operations Guide, SAP™ Extended Warehouse Management Operations Guide” for SAP EWM in the SAP Service Marketplace: This link directs you to the Application Operations

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Guide for EWM 7.0 EhP2, but also for the later EWM releases a similar Application Operations Guide is available and can be accessed on the SAP Help Portal.

[https://websmp203.sap-ag.de/~form/handler? APP=00200682500000002672& EVENT=DISPLAY& SCENARIO=& HIER\\_KEY=501100035870000015092& HIER\\_KEY=601100035870000179414& HIER\\_KEY=601100035870000179427& HIER\\_KEY=601100035870000214478& HIER\\_KEY=701100035871000566961&](https://websmp203.sap-ag.de/~form/handler? APP=00200682500000002672& EVENT=DISPLAY& SCENARIO=& HIER_KEY=501100035870000015092& HIER_KEY=601100035870000179414& HIER_KEY=601100035870000179427& HIER_KEY=601100035870000214478& HIER_KEY=701100035871000566961&)



## 5 Best-Practice Document: Detailed Table-Specific Information

### 5.1 SAP NetWeaver

#### 5.1.1 ADQUINDX: Business Addresses INDX

Table ADQUINDX is used as INDX-type table for quarterly adjustment addresses. Quarterly adjustment is carried out if postal address validation using reference data is active.

Postal addresses can be validated using the standard SAP regional structure (city file) or via third-party providers.

When the quarterly adjustment is executed, the addresses of business partners in the SAP R/3 system are replicated in the SAP CRM system. When the quarterly adjustment is used and running, address changes are saved outside the usual object maintenance of the applications.

##### 5.1.1.1 Avoidance

Cannot be used

##### 5.1.1.2 Summarization

Cannot be used

##### 5.1.1.3 Deletion

Table ADQUINDX is populated by both RSADRQU1 and RSADRQU2 reports. If there is a large number of addresses in ADRC to be processed, the size of ADQUINDX will increase because RSADRQU1 will first write the indexed entries, then RSADRQU2 will write the modified data into this table. Finally, RSADRQU3 picks up data from ADQUINDX and writes into database (ADRC). Then it deletes all the entries from ADQUINDX.

So RSADRQU3 has to run for the entry in table ADQUINDX to be deleted.

##### 5.1.1.4 Archiving

Cannot be used

#### 5.1.2 APQD, APQI, APQL: Batch Input Folders

Batch input folders are stored in tables APQD (batch input object data), APQI (contents of queues), and APQL (links between the folders and the logs; the logs themselves are stored in the TemSe files; see also SAP Note 175596, SAP\_BASIS 46A - 700). Batch input folders are created in the background when data is transferred to an SAP system (for example, during a legacy data transfer). In the following cases, these folders remain in the tables:

- If they were not processed
- If they are corrupt
- If they were created with the KEEP indicator activated.

##### 5.1.2.1 Avoidance

You can keep these tables from growing unnecessarily large by deactivating the KEEP indicator when making the settings for the folder. If this indicator is deactivated, the folder will be automatically deleted after it has been processed. However, you will not be able to display this folder later, and would not be able to trace any activities that were executed in the past, for example. Nevertheless, this is rarely necessary; instead, you can view the batch input logs that are not automatically deleted.

**See the following SAP Notes:**



- 36781 (release-independent): Explains how you can reduce the size or curtail the growth of table APQD
- 24438 (release-independent): Contains tips for how to handle batch input folders and explains under which conditions these folders can be deleted

## 5.1.2.2 Summarization

Cannot be used

## 5.1.2.3 Deletion

You can delete processed folders and their logs by client, using program RSBDCREO (see SAP Notes 16083 and 25219). From SAP Basis 4.6D on, you can also use deletion report RSBDC\_REORG (see SAP Note 147354). You can choose whether the folders, the logs, or both should be deleted. When folders are deleted, data records are deleted from tables APQI and APQD. When logs are deleted, data records are deleted from table APQL. If you want to delete folders without logs (no APQI entry) data records will be deleted in APQL and in the TemSe entry.

It is also possible to delete logs that no longer have a folder with this program.

You can delete corrupted folders via transaction SM35.

### See the following SAP Notes:

- 16083 (release-independent): Standard jobs, reorganization jobs
- 25219 (release-independent): RSBDCREO and parametrization
- 147354 (release-independent): Batch input: Reorg. and delete sessions and logs

## 5.1.2.4 Archiving

Batch input folders cannot be archived. However, you can archive the logs of processed folders (status “processed”) with archiving object BDCLOGPROD, even if their folders have already been deleted. You can use transaction SARA to access the log archiving functions, or transaction SM35P using *Goto* → *Archive...*

### Overview of scenarios:

The following scenarios exist for deleting and archiving folders and their logs:

- A folder can be deleted regardless of whether the log has been archived or not.
- A log can be deleted when its folder has already been deleted.
- A log can be archived regardless of whether the folder has been deleted or not.

### Table analysis

If you want to run a table analysis (transaction TAANA) before data archiving (see [chapter 'Goal of Using this Best-Practice Document'](#)), the following analysis variant is offered for the corresponding tables:

Table	Analysis Variant
APQI	STANDARD
APQL	STANDARD

### Also see SAP Notes:

- 147354 (release-independent): additional information for the reorganization of folders and logs, and tips for RSBDC\_REORG.
- 175596 (SAP BASIS 46A - 700): improving runtime when large folders are processed or many folders are processed in parallel.
- 24438 (release-independent): finding and displaying already processed folders.

## 5.1.3 ARFCSDATA: Outgoing RFCs

Transactional RFCs (tRFCs) and queued RFCs (qRFCs) called in the sending system are stored in tables ARFCSDATA (data of the sent RFCs) and ARFCSSSTATE (status of the sent RFCs). After the RFC has been executed in the target system, the corresponding table entries are deleted. However, if an error or an exception occurs during the call, the system resets all database operations that were started by the previous call and writes a corresponding error message into the ARFCSSSTATE file.

### 5.1.3.1 Avoidance

In an SAP ERP-CRM scenario, it may occur that the OPEN FI Event 00501015 is run through in the ERP system, even if delivery-related SAP CRM billing is not used. This generates unnecessary entries in table ARFCRDATA in the SAP CRM system (data of the received RFCs). To prevent this data from being created, you can deactivate the event in the ERP system. For more information, see SAP Note 441352 (release-independent).

### 5.1.3.2 Summarization

Cannot be used

### 5.1.3.3 Deletion

In a normal work environment, this table should not get too large because the data is usually automatically deleted after the RFCs have been executed successfully. Entries are not deleted only during asynchronous processing, for example, when SAP CRM Mobile Sales is used, or when the RFC calls could not be processed due to an error. These tables can also grow quite large in development or test systems in which tRFC or qRFC errors are not corrected.

### Asynchronous processing

Queues with the status NOSEND in the qRFC monitor of the outgoing queue (transaction SMQ1) contain logical units of work (LUWs) that are not sent, but are retrieved by the receiving applications. These queues are only used internally at SAP (by SAP NetWeaver BW or SAP CRM in the communication with SAP CRM Mobile Clients). Even when an LUW was read by an application, this status does not change. Only when this application confirms the retrieval is the LUW deleted from the queue (group confirmation possible). Under no circumstances should this status be changed and the queue be activated using SMQ1! See SAP Note 378903 (release-independent).

### Errors by RFC processing

Unsuccessful tRFC calls can be analyzed, processed, and, if necessary, deleted using transaction SM58; unsuccessful qRFC calls can be handled using transaction SMQ1. Before you delete these entries, it is highly recommended that you notify users and system administrators (for example, workflow administration). Also, you should examine the reason for the error and try to eliminate or switch off the error to avoid a resumed growth of the table. A good source of information for this is SAP Note 337592. It describes common causes of errors for different SAP releases and scenarios (for example, when SAP Advanced Planning and Optimization [SAP APO] and SAP CRM Mobile Client are used). The note also provides possible solutions to these errors. These are listed separately according to outgoing and incoming tRFCs and qRFCs.

In SM58, you can delete the entries either individually (*Edit* → *Delete Entry*) or as a group (*Log File* → *Reorganize*). During this deletion, and also during the deletion of the log file (*Log File* → *Delete*), only tRFC entries are deleted.



After RFC requests have been deleted, you should perform a reorganization of the corresponding database tables to free up space.



## 5.1.3.4 Archiving

Cannot be used

### See also SAP Notes:

- 371068 (release-independent): tRFC/qRFC: Measures for better performance
- 81814 (release-independent): tRFC: Executed LUWs are not deleted
- 378903 (release-independent): Queue status in SMQ1, SMQ2 and table ARFCRSTATE
- 706478 (release-independent): Preventing strong growth of basis tables
- 375566 (release-independent): Large number of entries in the tRFC and qRFC tables

## 5.1.4 sBALHDR\*, BALDAT, BALC, BAL\_INDX, BALM\*: Application Log (Log Messages)

Events can be logged centrally within applications in the log for the application in question. Object logs consist of the following:

- Log header with a unique log number (information that clearly indicates who triggered which event with what program or transaction):
  - Prior to SAP R/3 4.6C: in tables BALHDR and BALHDRP
  - As of SAP R/3 4.6C: in table BALHDR
- As many log messages as you require, with their relevant status:
  - Prior to SAP R/3 4.6C: in tables BALM; BALMP, BALC and BAL\_INDX
  - As of SAP R/3 4.6C: in table BALDAT and BAL\_INDX

Logs are given expiry dates. The logs must remain on the database until these dates expire. After the expiry date has passed, the data is deleted from the database. There are often a large number of application logs in the database because no expiry dates are assigned to the logs. If no specific expiry date has been assigned to an application log, the system assigns a very late expiry date.

### 5.1.4.1 Performance-Critical Processes

Use the following message types to distribute or transfer material/article master data:

- MATMAS (IDoc type MATMASxx for material master data)
- ARTMAS (IDoc type ARTMASxx for article master data)

The application log is used to collect and save messages that are recorded when IDocs are edited. Both IDoc types use the same application log object (MATU) that was created solely for messages relating to material/article master data.

### 5.1.4.2 Avoidance

#### See the following SAP Notes:

- 451706 (SAP R/3 Release 4.6B – 4.6C, SAP BASIS 46D) for reducing the number of process messages and the deletion of process messages (component PP).
- 183960 (SAP R/3 Release 4.0A - 4.6C) for deactivating the application log for using ALE to edit material master data in the standard system.
- 460310 (SAP R/3 Release 4.6B – 4.6C) for deactivating the application log for using ALE to edit article master data in SAP Retail. The processing logs can be deactivated after successful test runs – particularly for the initial data transfer.
- 373688 (SAP R/3 Release 4.0B – 4.6C) on the reduction of logged messages when transferring/distributing material master data.
- 376555 (SAP R/3 Release 4.0B – 4.6C) on the reduction of logged messages when transferring/distributing article master data.



When the **event manager** is used (part of SAP SCM) with links to other SAP applications within SAP Business Suite, such as SAP ERP, SAP CRM, and SAP NetWeaver BW), an entry is generated in the application log for each item under every document type that appears in the event manager. Examples of these entries are goods movements and inbound and outbound deliveries. These kinds of entries are numerous and can cause the log tables BALHADR and BALDAT to grow very large. However, in general the log entries are not needed.

In SAP R/3 Enterprise, you can switch off the updating of these logs in Customizing for all objects (see SAP Note 815682, PI\_BASIS 2003\_1\_620 – 2004\_1\_640). However, keep in mind that this may stop the updating of some entries that could be necessary. Use the following path in the SAP Reference IMG (transaction SPRO):

*Integration with Other SAP Components → Event Management Interface → Define Application Interface → Define Used Bus. Proc. Types, Appl. Obj. Types and Evt Types*

In Customizing, select the desired *Business Process Type* and, in the dialog structure, double-click *Define Application Object Types*. Then double-click the desired *Application Object Type* and set the *AppLogDeactivation* indicator.

As of SAP ERP 6.0, you can switch off the updating of the application log in Customizing per application object type and/or event type. The path in Customizing is identical to the path named above. Then go through the following procedure to switch off log updating:

Select the desired *Business Process Type*, double-click *Define Event Types* and then double-click the desired assignment between *Business Processes* and *Event Type*. Then set the *AppLogDeactivation* indicator.

**Recommendation:** At the beginning, switch on the log update to determine for which objects you need to have the log entries. Then delete the application log (transaction SLG2), for example, after a maximum of five days. If the production system is running smoothly after the initial phase, you may be able deactivate the application log update completely.

### 5.1.4.3 Summarization

A different database interface is used for application logs as of SAP R/3 4.6C. Shortened logs are stored in table BALDAT, thus reducing the volume of data by factor of 5 to 10. Even if logs are stored in compressed form, this table can, over time, become large. It is therefore advisable to delete logs periodically from the table. You can do this in transaction SLG2. See also SAP Note 195157 (SAP R/3 3.0F – 4.5B, SAP\_BASIS 46A - 640).

### 5.1.4.4 Deletion

#### As of SAP R/3 4.6A:

SLG2 is the main transaction for deleting logs (report SBAL\_DELETE, available as of SAP R/3 4.6A). For information on using transaction SLG2, refer to menu path help → application help.

See SAP Note 211940 (SAP R/3 Release 4.6A – 4.6C): This supplies a correction for performance improvement when deleting logs.

#### Before SAP R/3 4.6A:

For releases prior to 4.6A, the following generic programs can be used to delete logs (these reports are also compatible as of SAP R/3 4.6A):

- Program RSSLG200: Deletes all logs with obsolete expiry dates



- Program RSSLGK90: Deletes all logs. Deletes all logs that do not have expiry dates or logs whose expiry dates are too far in the future. If the DEL\_BEFORE indicator is flagged, logs with later expiry dates are explicitly excluded from being deleted using a report. This report was enhanced to allow large volumes of data to be processed. For more information, see SAP Note 138715 (SAP R/3 Release 3.00 - 4.5B).

### Only important for SAP CRM systems:

In **SAP CRM systems**, application logs with a subobject type SINGLE must not be deleted with deletion report SBAL\_DELETE (see SAP Note 595856). Table entries with subtype SINGLE are deleted while archiving SAP CRM documents with the related archiving objects.

### See SAP Notes:

- 195157 (SAP R/3 Release 3.0F – 4.5B, SAP\_BASIS 46A - 640): gives information about combining RSSL\* deletion reports.
- 595856 (BBPCR 3.0 – 3.1): Frame log is stored although not required

### Other deletion programs:

There are other programs in the application development that only delete specific logs in the application areas. These programs are listed in a where-used list for the function modules BAL\_DB\_DELETE, APPL\_LOG\_DELETE, and APPL\_LOG\_DELETE\_WITH\_LOGNUMBER in the ABAP/4 Developers Workbench.

#### 5.1.4.5 Archiving

As of SAP R/3 Enterprise you can archive the application logs via archiving object BC\_SBAL. SAP Note 195157 (SAP R/3 Release 3.0F – 4.5B, SAP\_BASIS 46A - 640) describes how you can archive this data if you are using earlier releases.

### Table analysis

If you want to run a table analysis (transaction TAANA) before data archiving (see [chapter 'Goal of Using this Best-Practice Document'](#)), the analysis variant called STANDARD is offered for table BALHDR.

#### 5.1.5 BDCP, BDCPS – Change Pointers

Change pointers are used to keep track of changes to data (for example master data) and to distribute these changes in an Application Link Enabling (ALE) environment. Based on these change pointers, IDocs (report RBDMIDOC) are generated, which in turn transport changes to the appropriate systems.

The tables for logging the change pointers (BDCP and BDCPS) should be kept as small as possible. This is best done by generating as few change pointers as possible and deleting those that are no longer needed.

As of SAP Web Application Server 6.10, you can improve overall performance by switching your system over to using table BDCP2. SAP Note 305462 (release-independent) describes the migration of change pointers to this table.

### See SAP Notes:

- 513454 (release-independent): REP: High-performance operations with change pointers

#### 5.1.5.1 Performance-Critical Processes

##### Example: Assortment lists and POS interface - outbound

A lot of change pointers are normally generated for the assortment list and the point of sale (POS) interface – outbound in retail systems. The processes use the changed data and check if the articles have changed in the stores. This can be triggered, for example, by price changes or new article lists.



## 5.1.5.2 Avoidance

If you are not using change pointers at all, deactivate the updating of change pointers using BD61.

If you do not want the system to distribute certain message types using change pointers, you can deactivate them for these message types using transaction BD50. If you want to deactivate change pointer updating for selected message types only, you must set the *General* setting to active. You cannot deactivate change pointers for selected message types without already having done this.

You can make these and other settings in IDoc and ALE Customizing (transaction SALE).

In Customizing, choose *SAP NetWeaver Application Server* → *IDoc Interface / Application Link Enabling (ALE)* → *Modeling and Implementing Business Processes* → *Master Data Distribution* → *Replication of modified data*.

## 5.1.5.3 Summarization

Cannot be used

## 5.1.5.4 Deletion

After an IDoc has been created, the corresponding change pointers receive the “processed” status. These change pointers can then be deleted without any problems using report RBDCPCLR (transaction BD22). If you generate a lot of data, it is recommended that you schedule this report to run on a daily basis.

However, it may occur that some change pointers do not receive this status, even though they were processed correctly. You can also delete these obsolete change pointers using this report, for example, after six months. After this time period, you can assume that all regular jobs during which change pointers were processed have run successfully.

## 5.1.5.5 Archiving

Cannot be used

## 5.1.6 CDHDR and CDCLS: Change Document

Change documents are used to log changes to master records, tables, and documents. All changes in an article master, for example, are automatically updated in change documents. All changes to article master records during each process step are stored in the same change document. Changes that are made sequentially, but at different points in time, are stored in different change documents. Change documents are stored in tables CDHDR (header data) and CDPOS (items data). CDPOS is part of cluster CDCLS.

### 5.1.6.1 Performance-Critical Processes

#### **Example: Listing for stores using quantity- and value-based inventory management**

Change documents for listing conditions are created for all functions in which listing conditions are created or changed. Up to 50% of change documents can belong to listing conditions (object WLK1) in a retail system.

A lot of documents can also be generated when articles are changed (object MM\_MATNR).

### 5.1.6.2 Avoidance

Avoidance is not usually possible. However, SAP recommends that you deactivate the creation of change documents for tables WLK1 and MARC for the initial download of listing conditions.

Another exception is CO group changes (object class SETS). Change documents that log these changes, can be activated or deactivated in the IMG under *General controlling* → *Production Start-Up Preparation* → *Activate Change Documents for Groups*. By default, the change documents for CO groups are activated



(except for order groups). However, if you have large-scale master data changes for standard hierarchies, we recommend that you deactivate the generation of change documents to prevent large data volumes from causing performance problems. For example, when you unload CDCLS during a Unicode conversion, large data volumes may lead to too much memory allocation and, consequently, performance problems. Likewise, you may encounter dumps when you try to display change documents. For more information and recommendations see SAP Note 367073 (release-independent).

### 5.1.6.3 Summarization

Cannot be used

### 5.1.6.4 Deletion

You can delete change documents using report RSCDOK99 by selecting the data either via *Object Type* or *To Date*. Before you use this report, make sure you read the corresponding program documentation.

As of SAP R/3 4.6C, report SD\_CHANGEDOCUMENT\_REORG is available. This report can be used to remove change documents of already deleted sales documents from the system.

#### See the following SAP Notes:

- 527735 (SAP R/3 Release 4.6C – 4.70): Performance improvements during the deletion of change documents.
- 308531 (SAP R/3 Release 4.0B - 4.6C): Improves performance in material archiving by deleting internal buffers.
- 180927 (SAP R/3 Release 4.0B - 4.6B, SAP\_BASIS 46A - 640): Deleting change documents for addresses
- 183558 (release-independent): Change documents for sales and distribution documents

### 5.1.6.5 Archiving

Change documents are normally only archived using archiving class CHANGEDOCU together with application data for which they have been generated.

However, some application objects exist for a long time or are never deleted or archived (such as article masters). Therefore you can use the archiving object CHANGEDOCU if you need to archive change documents separately from the application data. For SAP R/3 3.11 – 4.6C you can implement this archiving object with SAP Note 140255.

The archiving object CHANGEDOCU should only be used to archive the change documents of master data. Change documents of transaction data records should still be archived together with the appropriate archiving object.

For archiving of archiving object CHANGEDOCU, you can use the following reports:

- RSSCD7AR (up to SAP BASIS 46D) and
- CHANGEDOCU\_WRI (from SAP BASIS 610 onwards)

Basically, change documents will be archived together with an object, for example, a material or invoice. It could be that you have the constellation of one header with many positions, many headers with one position, or one header with one position.

In case of small objects, that is, one header with fewer positions, use of report RSSCD7AR is recommended. On the other side, for archiving of huge objects, report CHANGEDOCU\_WRI is recommended.

#### See also the following SAP Notes:

- 967585 (release-independent): CD: Runtime error during CHANGEDOCU archiving
- 1050935 (SAP\_BASIS 700): CD: Read archived change documents from the application



## Table analysis

If you want to carry out a table analysis (transaction TAANA) before data archiving (see [chapter 'Goal of Using this Best-Practice Document'](#)), the following analysis variants are available for use with change document tables (see also SAP Note 689036, SAP\_BASIS 46D – 620):

Table	Analysis Variant
CDHDR	ARCHIVE
CDPOS	STANDARD1

With the OBJECTCLAS (change document object) field in table CDHDR, you can find out for which application object—for example, delivery or material master—a change document was generated. The corresponding plan text for an OBJECTCLAS entry can be determined using transaction SCDO. By choosing *Change document object* → *Display*, you can list the affected tables and from there deduce the archiving object. The table name is also listed in CDPOS. If it is possible to use several archiving objects for this table, you can use the TCODE (transaction code) field in CDHDR to trace the application in question and the corresponding archiving object.

### 5.1.7 D010\*: ABAP Dictionary Tables

The tables of table family D010\* (D010L, D010TAB, D010S, D010Q, D010INC) belong to the ABAP Dictionary and are therefore necessary for the Basis operations of an SAP system.

If these tables begin to grow in connection with a system installation, there is no cause for alarm, as this is a normal occurrence. When the development environment or transactions are called, the system may generate various reports that could initially cause strong growth of the D010L tables and others. However, after the upgrade, this should only occur occasionally or not at all, and the growth of these tables should slow down. (See SAP Note 010917 [release-independent].)

#### 5.1.7.1 Avoidance

Cannot be used

#### 5.1.7.2 Summarization

Cannot be used

#### 5.1.7.3 Deletion

Cannot be used

#### 5.1.7.4 Archiving

Cannot be used

### 5.1.8 DBTABLOG: Table Change Protocols

Changes to database tables are logged in table DBTABLOG. In a production system, this logging is generally only switched on for tax and Customizing tables, and the data volume produced through these logs is not significant. Existing logs can be displayed with transaction SCU3 (Table History). For tables that hold transactional data, this logging is not necessary because in these cases all changes are captured in change documents. You may have to switch on table logging only in some cases, such as for those documents for which no change documents are created. To avoid the unnecessary growth of DBTABLOG, you should only switch on logging for those specific tables.



Changes made to master data tables are made in the corresponding business area using change documents (tables CDHDR and CDCLS). See SAP Note 112388 (SAP R/3 3.0D – 604) for an overview of the tables for which changes need to be documented.

**See also the following SAP Notes:**

- 1916 (release-independent): Logging table changes in R/3
- 41300 (SAP\_APPL 22A – 45B, SAP\_BASIS 46A - 640): Table DBTABPRT or DBTABLOG is very large.
- 579980 (release-independent): Table logs: Performance during access to DBTABLOG
- 608835 (release-independent): Performance problems due to table logging?

### 5.1.8.1 Avoidance

As a rule, all Customizing tables are shipped with logging activated because the requirements of external auditors are inconsistent as regards table logging. Tables for master data and transaction data, on the other hand, are shipped without logging indicators. A high percentage of these tables are subject to mass changes that would cause performance problems if they were logged. Exercise caution if you want to log any of these tables.

Table changes are logged if the following criteria apply to a table:

1. The *Log Changes* indicator is selected in the technical settings (transaction SE11 or SE13).
2. Logging is activated in parameter rec/client in the system parameter client (transaction RZ11).

The values of profile parameter rec/client can be explained as follows:

- OFF: No logs are generally kept
- nnn: Logs are kept for client-specific tables for client nnn
- nnn, mmm: Logs are kept for the clients specified (maximum of 10)
- ALL: Logs are kept for all clients

Ensure that rec/client values are consistent across all servers.

Client-independent tables are always logged if rec/client is not set to OFF and logging is set as required in the technical settings for the tables. You can also activate logging for imports with R3trans, either by making an entry in the transfer profile or by calling R3trans directly as an option in the control file (SAP Note 84052). User actions can also be logged.



Existing logs can be displayed with transaction SCU3 (Table History).

Check whether changes need to be logged for all tables. In particular, check the settings for tables you created yourself (such as Y and Z tables).

It may happen that tables are flagged for logging by mistake. The following table provides **a list of tables for which logging should be deactivated** or may have been deactivated in the meantime by implementing Support Packages. Existing logs for these tables can be deleted.

SAP Note	Table(s)	Release
1303671	/SAPAPO/TSTROBJR	SCM 410 - 700
1598473	/VIRSA/ZFFCDHDR	Release-independent
1500422	/VIRSA/ZFFTNSLOG, /VIRSA/ZFFCDHDR, /VIRSA/ZVIRFFLOG	Release-independent
1524924	ALPFASSIGN	SAP_BASIS 640 - 730



SAP Note	Table(s)	Release
1395163	BKK40, BKK42, BKK45, BKK46, BKK98	EA-FINSERV 500 - 604
1622495	BKKSONT	EA-FINSERV 500 - 606
636216	COMM_*	BBPCRM 300 - 400
1071933	COMM_PRRDCATR	SAP_ABA 640 - 700
637065	CRMM_BUT_*	SAP_ABA 640 - 700
1225992	CRMM_PRP*	BBPCRM 400 - 600
1311786	DB6TREORG, DB6IREORG	SAP_BASIS 46B - 700
1084360	DFKKCOLL, DFKKCOLLH	FI-CA 464 - 602
732470	EVER	IS-U/CCS 464 – 472 IS-UT 600 - 605
661574	FMSNRULE, FMSNRULEC, FMDECKHK, FMDECKRG, FMDECKRGT, FMDECKUNG, FMUDRULE, FMUDRULEC	SAP_APPL 470 IS-PS 461A – 462 EA-PS 110 - 200
1589734	IST-TDATA	IS-T 472 IS-UT 600 - 605
672503	KONP	SAP_APPL 46B - 616
1567106	LOGIC_DEST	SAP_BASIS 640 - 730
781433	SKAT, SKAS (SKA1,SKB1)	Release-independent
1227243	SWD_HEADER	SAP_BASIS 700 - 711
434902	T811F, T811K, T811C, T811S, T811L, T811G, T811C	Release-independent
1685088	TE107	IS-UT 600 - 606
503637	TF260, TF261, TF270 and TF271	Release-independent
728141	TRACT_POSCONTEXT	EA-FINSERV 110 – 600 BANK/CFM 463_20
667979	TRLT_DERIVFLOWS	EA-FINSERV 110 – 200 BANK/CFM 463_20
1303588	TTSTR	SAP_BASIS 640 - 711
649904	VTBFHAPO, VTBFHAPO_UNFIXED, VTIFHA, VTIFHAPO, VTIFHAZU, VTIOF, VWPANLE	SAP_APPL 46B – 46C EA-FINSERV 110 – 200 BANK/CFM 463_20

## Implementation

For **general handling of table logging**, please check the following information: You can change the individual setting in transaction SE11 by deselecting the *Log Changes* indicator. If you decide to deactivate the logging mechanism for all tables, you can simply set the R/3 profile parameter rec/client to OFF (see SAP Note 001916). Please check also SAP Note 1497672: AIS Optimization of the report RDDPRCHK (SAP\_BASIS 700 – 730) and SAP Note 1653464 :Enable Change Log Monitoring by Activating Table (valid for: GRCFND\_A V1000).

### 5.1.8.2 Summarization

Cannot be used

### 5.1.8.3 Deletion

Data in table DBTABLOG can be deleted using deletion report RSTBPDEL according to period (end date) and table. If the end date is selected, all change documents with the same end date or earlier are deleted from table DBTABLOG. This report implements the "Delete Documents" administration function within the



table analysis function (transaction SCU3) and can also be used separately. For entries that can be deleted, deactivate logging in SE11 to avoid future logging.

## 5.1.8.4 Archiving

Data in table DBTABLOG is usually archived with archiving object **BC\_DBLOGS**. As of SAP NetWeaver 7.0 enhancement package 2, a new audit trail function allows audit trail data from table DBTABLOG to be archived with archiving object **S\_AUT\_LTXT**. Audit trail records are posted for changes to tables STXH and STXL.

### Table change protocols: archiving object BC\_DBLOGS

Archiving object BC\_DBLOGS is a cross-client object, which means that all log records are archived independently of the client in which the change log in table DBTABLOG was created.

Since the archiving object is cross-client, you only have to schedule an archiving run in one client and not in every client in which you have configured the Customizing settings.

The technical settings of a table in the ABAP dictionary contain a logging indicator that defines whether changes to the data records of a table are logged. If logging is activated, every change (with UPDATE, DELETE) to an existing data record made by a user or an application program is recorded in log table DBTABLOG in the database.

The logging indicator is set for Customizing tables in particular. The logs are used to document changes to the system and can be relevant for external audits. Especially in industries with strict internal process audits (such as Good Manufacturing Practice (GMP) in the pharmaceutical industry), these change logs must be kept on a long-term basis.

Archived change logs can be reloaded to the database or accessed directly using transaction SCU3.

### Recommendation

Archive the change logs on a regular basis. There are no application-specific prerequisites.

Best-practice documents recommend that you archive Table Change Protocols entries after 12 months, since they probably no longer need to be accessed frequently after this period of time.

### Table change protocols: archiving object S\_AUT\_LTXT

The logging of data that takes place in the SAP system as part of change document creation does not satisfy the requirements of some industries (e.g. pharmaceutical and chemical industries).

For this reason the **audit trail** function was developed. It extends the previously available options so that logging settings can be changed easily and without technical modifications, and that evaluations of the changed data can be carried out in line with FDA requirements.

### Prerequisites for archiving

Please delete long text logs that do not need to be archived before scheduling the archive jobs to avoid archiving of irrelevant data records.

### Preprocessing program

The date up to which all long text logs are archived needs to be defined. It must not be located in the future and also cannot fall in a period for which long texts were already archived.

If data exists that resulted from a previous preprocessing program, but was not archived, the preprocessing program cannot be restarted. A restart of the preprocessing program is only possible once this data has been removed from the system. This can be done either by ending the archiving cycle that was started (write program and deletion program) or by discarding the data of the preprocessing program using program **S\_AUT\_ARCH\_UNDO**.

Important: As there is only an up-to selection and no from-to selection, be careful when running preprocessing the first time and be sure to process only distinct chunks of data to avoid extensive runtimes in the following write job, which simply picks up all(!) pre-processed data.



## 5.1.9 DDLOG: Buffer Synchronization Data

For the system to make data that is often needed available more quickly to the applications, this data is buffered in the main memory of the application server. This buffer is also called the **client cache**, because it is implemented on the client, meaning on the application server. Each SAP instance (application server) is assigned its own buffer. Among the objects that are buffered are tables, such as Customizing tables, ABAP programs and screens, ABAP Dictionary data, and company-specific data. Normally, these objects remain unchanged during system operations.

However, should changes to a buffered object occur, these changes must be passed to the connected application servers to avoid data inconsistencies. This takes place through a buffer synchronization, which runs periodically. During this synchronization, the application servers read the changes logged in the central database table DDLOG and update their buffers accordingly.

### 5.1.9.1 Avoidance

After the synchronization, the obsolete DDLOG records are automatically deleted. This ensures that DDLOG does not get too big over time. However, in the short term, the table may contain an extremely high number of entries, for example, during times of high system traffic during which many changes are made to tables, such as when conditions or prices are updated. This should not be a cause for worry, because this table is emptied periodically.

However, if the number of table entries does not go down over a longer period of time, then it may be that the wrong tables are being buffered. Only those tables should be buffered which are not expected to change very often. You should check your system to make sure the correct tables are being buffered. You can use the analysis tool RSDBBUFF for this purpose. It also serves to view DDLOG and buffer contents.

### 5.1.9.2 Summarization

Cannot be used

### 5.1.9.3 Deletion

In terms of table size, you should note that deleting the table records does not influence the physical size of the table. The table shrinks in size only after a reorganization, which frees up the allocated database space.

The best way to run a reorg is online (depending on the database system you are using). However, if this is not possible and you must shut down the system, you can also delete the contents of the table using the appropriate database tools (for Oracle, for example, you can use the TRUNCATE TABLE DDLOG command.) See also the SAP Notes mentioned below.

### 5.1.9.4 Archiving

Cannot be used

**See also the following SAP Notes:**

- 36283 (SAP\_BASIS 46A - 711): Buffer Synchronization
- 706478 (release-independent): Preventing strong growth of basis tables
- 830965 (release-independent): VBDATA, DDLOG: Size and Growth

## 5.1.10 DYNPLOAD, DYNPSOURCE: Screen Loads, Screen Source Information

The content of tables DYNPSOURCE and DYNPLOAD contains the source and load of ABAP dynpros, which represent—roughly speaking—the UI of ABAP transactions and programs. These system tables hold the generated dynpro load and dynpro source of all dynpros in your system. Because there is a relationship between ABAP programs and generated dynpros, the table content depends on the number of ABAP

programs in your system. Furthermore, based on the type of your system, the number of transactions and programs can differ. Therefore there is no best-practice value for a normal size of these tables.

### 5.1.10.1 Avoidance

Cannot be used

### 5.1.10.2 Summarization

Cannot be used

### 5.1.10.3 Deletion

Cannot be used

#### See the following SAP Notes:

- 419990 (SAP\_APPL 46A – 470, SAP\_BASIS 46D – 730): Deleting AS/400 ABAP loads and screen loads in case they are not replaced correctly during regeneration
- 1953628 (SAP\_BW 700 – 740): Size of the DYNPSOURCE table (unused records): programm error when using transaction LISTCUBE, unused records in DYNPSOURCE and DYNPLOAD aren't be deleted correctly

### 5.1.10.4 Archiving

Cannot be used

## 5.1.11 E070, E071, E071K: Change & Transport System

In these tables, transport information is saved which is needed for the Change and Transport System (CTS).

In table E070, you can find relevant header information for transport requests, for example, date of transport release. The relevant objects can be found in table E071 and some of these objects have key entries in table E071K, that is, a consistent data record exists of request (table E070), objects (table E071), and key entries (table E071K). With respect to version management and history of objects, the request and object information is kept in system; normally this is not mass-relevant data. Only key entries in table E071K can be become quite big, for example, in central user management systems.

### 5.1.11.1 Avoidance

Cannot be used

### 5.1.11.2 Summarization

Cannot be used

### 5.1.11.3 Deletion

Deleting entries can lead to inconsistencies within Transport Management System; therefore, we do not recommend a deletion here.

Within a Unicode migration, you have the possibility to delete special entries of table E071K by using report RSDELE071K\_UNICODE.



Please note that this report can only be used for Unicode migration purposes!

#### See also SAP notes:

- 722443 (SAP Basis 620 – 640): Deleting E071K entries from the SAP delivery
- 723882 (release-independent): Deleting E071K entries of SAP delivery

### 5.1.11.4 Archiving

Entries of table E071K can be archived with archiving object BC\_E071K. With help of this, only entries in table E071K will be archived. Entries of tables E070 and E071 will be written in the archive file but not deleted from the database.

When you execute archiving, you have the option to select *Archiving timeframe*. This selects the time frame in which the requests were released. The selection itself is then using the field *date of last change* of table E070.

## See also SAP notes:

- 1340166 (SAP Basis 700 – 720): Archivingobject for E071K

### 5.1.12 EDI40, EDIDS – IDoc Tables

All applications that exchange data electronically, internally or between enterprises, write IDoc data records in table EDI40. In retail, constant monitoring of EDI40 is necessary because single IDocs send, for example, entire MARC segments, thereby triggering substantial data growth.

Table EDIDS is used to store the data for all the statuses that have been set for an IDoc since it was created.



In **retail**, you are **strongly advised** to regenerate your indexes on a regular basis.

Background: The IDoc interface consists of the definition of a data structure (IDoc) and a logic for processing this data structure. IDocs consist of the following record types:

- Management information  
For example: Sender and recipient; this information is used for technical processing.
- Application data  
This data is stored in the segments or segment fields.
- Status information  
Logs status information, processing status (for example, “12” means “Dispatch OK”, “11” means “Error during dispatch”) with detailed error information.

As of SAP R/3 4.0, the following system tables in the database contain IDocs:

- EDIDC (transparent table for control records)
- EDI40 (table cluster –contains the cluster table EDID4– with single line items from IDocs for all applications)
- EDIDS (transparent table for status records)

## Application object links:

The link between the IDoc and the application object (such as the original document generated by EDI) is stored differently, depending on the release that is being used:

- Up to SAP R/3 4.5B, in work item table SWW\_CONTOB. For more information, see the detailed description of [SWW\\_CONTOB](#) contained in this document.s
- As of SAP R/3 4.6A, tables IDOCREL and SRRELROLES can be used for this. Table IDOCREL contains references (GUIDs) to detailed data entries in table SRRELROLES.



Type C work items in POS interface – inbound (such as message types WPUUMS, WPUBON, WPUWBW) are excluded from this rule. Up to SAP R/3 4.6C, these are stored in SSW\_CONTOB. As of SAP R/3 Enterprise, application object links will be used also for the POS interface – inbound.

### 5.1.12.1 Performance-Critical Processes

## Example: Processing sales data using POS interface – inbound

When processing sales data using POS interface – inbound, you may need to include IDoc processing for store goods receipts and store physical inventory.



An enterprise with 1000 stores uses the POS interface to send inventory data for approximately 5000 to 10000 articles in IDocs from 10 stores on approximately 100 days per year. Each IDoc can contain a maximum of 1000 items.

### Deletion of object links (tables IDOCREL and SRRELROLES):

Deletion report RSRLDREL performs many cross-checks to avoid the deletion of link data that still may be required. The runtime of this report will increase with increasing size of tables SRRELROLES and IDOCREL. For this reason, it is vital to schedule this report right from go-live of a system on a regular basis to avoid running into runtime problems.

#### 5.1.12.2 Avoidance

Cannot be used

#### 5.1.12.3 Summarization

Cannot be used

#### 5.1.12.4 Deletion

You can only delete IDocs in the IDoc interface in an emergency and after close consultation with SAP. The data is therefore not archived. You must run archiving for IDocs on a regular basis.

If you want to delete obsolete IDocs from the database, you can temporarily set the archiving indicator (transaction WE47) for specific IDocs status. The temporary setting can then be removed again at a later date. For more information, see SAP Note 40088 (SAP R/3 Release 3.0A-4.6C).

#### 5.1.12.5 Archiving

You can restrict the growth of IDoc tables by ensuring the archivability of the IDoc status using transaction WE47. (See also SAP Note 179046 release-independent). IDoc data is archived using archiving object IDOC.

**Note:** As an approximate guide for archiving, IDocs can be archived one week after processing has been completed (for example, if they have the status 53, meaning “Application document posted” at POS interface – inbound). Follow-on documents are then created and the IDoc is no longer required. Entries that still have to be processed, such as IDocs that contain errors, can only be archived if they have been corrected. Alternatively, you can check if the IDoc is still required, and then delete it. It is also possible to archive IDocs separately according to message type. However, this type of differentiation is generally not necessary.

You can accelerate the archiving process for IDocs by deactivating logging using program RSEXARCA (intermediate status 38 or 73, meaning “IDoc archived” is not used). For more information, see SAP Note 133014 (SAP R/3 Release 4.0A - 4.6C). This can be used, for example, if you want to archive a large number of IDocs. A status update is generated for every IDoc that is archived, which could lower system performance.

#### Recommendation:

Archive completed IDocs, such as outgoing IDocs with status 12 (“Dispatch OK”) or incoming IDocs with status 53 (“Application document posted”), after a relatively short residence time.



Also check whether there are still old IDocs (older than 6 months) with a status that keeps them from being archived. To be able to archive these IDocs, you must release them for archiving. You can do this in transaction WE47 in the detail view for an IDoc (select *Poss*).

You can check the status of existing IDocs in the head table EDIDC. To analyze the IDocs, use transaction BALE.

For the processing of **outgoing IDocs**, you can determine whether the receiving system sends a status message or not when it receives the IDoc. An outgoing IDoc has the status 03 ("Data passed to port OK"). As soon as the receiving system sends a status message, the status of the IDoc changes. If the IDoc has been processed successfully, this status is 12. If the receiving system does not send a status message, the IDoc continues to have status 03. Remember to also archive these IDocs.



**Recommendation:** Archiving should be run in parallel as often as possible. The deletion procedure must be included if you want to generate separate jobs for archiving and deleting the archived IDocs.

## Archiving and deleting application object links:

Links still exist between application objects and IDocs (or between the application log and the IDoc) after the IDocs have been archived. These links must be deleted from the system. A distinction is made between:

- Type C work items

These work items are normally archived after the IDoc itself is archived (for more information, see SWW\_CONTOB).

When the IDocs are archived, the status of the relevant type C work items is set to READY or COMPLETED. You may experience poor system performance if you try to process an extremely high number of IDocs at the same time. To avoid poor performance, you can delete the type C work items that have READY status by running report RSWWCIDE. By deleting these work items, you can greatly improve the performance of the IDoc archiving session. For performance reasons, the status update can, if required, be suppressed. This enables the IDoc to be archived considerably faster. See also SAP Note 215982 (SAP\_APPL 40B – 45B, SAP\_BASIS 46B – 731).

- Application links stored in table IDOCREL.

Report RSRLDREL is used to delete these links and also partly deletes the IDOCREL-related records from table SRRELROLES (for example, records of role type: OUTIDOC, INIDOC, OUTBELEG, and so on). This report is available as of SAP R/3 4.6B. For more information, see SAP Note 149367 (release-independent). If report RSRLDREL is scheduled too late, that is, on already very big IDOCREL and SRRELROLES tables, the performance may no longer be sufficient. For this reason, report RSRLDREL2 (see SAP Note 853035 SAP\_BASIS 46C – 700) is available to perform a first cleanup of those tables.

As of SAP R/3 Enterprise, the IDoc archiving object will archive the application links. That is, it will write the information of tables IDOCREL and SRRELROLES into the archive file, but will not delete the corresponding records from the database. So report RSRLDREL is still required and should be scheduled **after** the IDoc archiving so that the data is still available on the database and the IDOC archive job can still access it.

### 1. Links of types IDC8 and IDCA

These links usually are no longer required after the IDocs have been successfully posted in the target system. Therefore the recommended timeframe to keep those links is 4 weeks.



Selection screen of report RSRLDREL:

Selection mode: Choose Selection using relationship type -> Enter and define a variant for the relationship types IDC8 and IDCA (one variant for each type)

Deletion criterion: Without existence check

Starting with SAP NetWeaver 7.00, these links will no longer be created. Instead this information is stored in the control record of the IDoc itself.

## 2. Deletion of linkages of types IDC0, IDC1, IDC4, and IDCB

Information that may be important for subsequent document tracing is lost. These links can be deleted if document tracing is not required for the linked business objects.

Mass processing: alternative report RSRLDREL2

In some cases, tables IDOCREL and SRRELROLES have already grown so much that report RSRLDREL will be too slow for cleaning up tables IDOCREL and SRRELROLES. The reason is that report RSRLDREL is designed for the general deletion of object links of all kinds and therefore performs many checks that are partly not needed for the deletion of IDoc linkage data.

For this purpose, report RSRLDREL2 is available, which does a reduced number of checks. Details can be found in SAP Note 853035.

Mass processing 2: alternative report RSRLDREL3

In exceptional cases, even report RSRLDREL2 may be too slow. In these cases, use report RSRLDREL3 (see SAP Note 1452578) In contrast to report RSRLDREL2 where the selection is based on the link table, for example, table IDOCREL, in report RSRLDREL3 the selection is done by the relationship type, for example, IDC4.

Background Information:

Table ORTBRELTYP gives a text description of all possible relationship types. In table ORBRELTYP you can look up which relationship type is used for which combination of roles and in which object relationship table this kind of relationship type is stored, for example, table IDOCREL, SRGBINREL.

## Additional information about POS interface – inbound:

- Archiving is particularly useful in POS interface – inbound as a large number of extensive IDocs can be stored in EDI40 in a very short time. This cannot, however, be done for most transaction data in retail (WP\*) because sales data, for example, is normally only needed for short periods in the system.
- After IDocs have been archived in POS interface – inbound, information can be deleted using the following reports:
  - Report RWPUDLST: This report deletes the messages that are not automatically deleted from table WPLST by the system. For more information, see SAP Note 563560 (SAP\_APPL 40A - 470).
  - Report RWPUDTST: This table deletes the relevant status information.
- Type C work items for POS interface – inbound do not have to be archived. They can be deleted immediately.

## Table analysis

If you want to run a table analysis (transaction TAANA) before data archiving (see [chapter Goal of Using this Best-Practice Document](#)), the following analysis variants are offered for the corresponding tables:



Table	Analysis Variant
EDIDC	STANDARD
EDI40	STANDARD
	ARCHIVE
IDOCREL	STANDARD
SRRELROLES	STANDARD
SWW_CONTOB	STANDARD

**For more information, see the following SAP Notes:**

- 69143 (release-independent): Avoiding cancellations when deleting data during archiving.
- 179046 (release-independent): strong growth of tables EDI40, EDI30C, SWW\_CONTOB

### 5.1.13 INDX: System Table INDX

Table INDX is an internal table that is filled by various application processes. It acts as a buffer and should be cleared by the single application processes. There are many different transactions and reports for which an export/import function is set up for table INDX.

#### 5.1.13.1 Avoidance

Cannot be used

#### 5.1.13.2 Summarization

Cannot be used

#### 5.1.13.3 Deletion

Entries in table INDX can only be deleted based on the application that created them. SAP Note 3992 contains an overview of the applications that write data to table INDX. It also contains further deletion options. Depending on the value of field RELID, you have different deletion options. You can find SAP Notes for them by searching with INDX and the corresponding RELID.

**See SAP Note:**

- 3992 (release independent): Purpose of the table INDX

#### 5.1.13.4 Archiving

Cannot be used

### 5.1.14 PPFTTRIGG, PPFTMETHRU: Post Processing Framework

Tables PPFTTRIGG and PPFTMETHRU are related to actions triggered during transaction processing. Actions refer to the Post Processing Framework (PPF) Basis components, which can automatically trigger output, follow-up activities, or workflows.

The PPF provides SAP applications with a uniform interface for the condition-dependent generation of actions (for example, printing delivery notes, faxing order confirmations, or triggering approval procedures). The actions are generated if specific conditions occur for an application document. They are then either processed directly or at a later time.

#### 5.1.14.1 Avoidance



Within the customizing of an action, a *Delete Actions After Successful Execution* indicator exists. The indicator controls whether actions of this action definition are automatically deleted after they have been successfully processed. If errors occur during processing, the actions are never automatically deleted.

The number of new entries in tables PPFTRIGG and PPFMETHRU can be reduced by setting this indicator, since the action is deleted after a successful processing.

To get an idea about the amount of data that could be prevented from being created, use transaction TAANA on table PPFTRIGG, field STATUS, and see how many records are in status 1, that is, successfully processed.

### 5.1.14.2 Summarization

Cannot be used

### 5.1.14.3 Deletion

To delete old actions from table PPFTRIGG, you can use report RSPFFCLEAN. The report can check on the existence of the application object, thus deleting all actions where the application object no longer exists.

On the selection screen of report RSPFFCLEAN, you can restrict the selection of the actions using their creation date or related application.

Another option would be to use selection report RSPFFPROCESS to delete actions. The report has a *delete* flag. If this is used, all actions selected will be deleted instead of processed. Therefore this job should be used with caution only.

### 5.1.14.4 Archiving

Entries in table PPFTRIGG and other related tables are archived when the related SAP CRM business transactions—for example, sales orders or SAP CRM activities—are archived with the relevant archiving object. (for example, CRM\_SALDOC or CRM\_ACT\_ON).

For further analysis, you can run an analysis with transaction TAANA on table PPFTRIGG, field APPLCTN, which gives the information about the linked application. Usually you will find CRM\_ORDER in there. In this case, you could use field PPFTRIGG-APPLOID and match some example records against table CRMD\_ORDERADM\_H field GUID to get more information on the business document that caused the actions.

## 5.1.15 REPOLOAD, REPOSRC, REPOTEXT: Report Objects

The report tables (REPO\*) are necessary for the basis of the ERP system and cannot be avoided, summarized, deleted, or archived by general mass operation reports. Deletion is only possible on the different application levels. These tables are used by for the generation of ABAP programs.

### 5.1.15.1 Avoidance

Cannot be used

### 5.1.15.2 Summarization

Cannot be used

### 5.1.15.3 Deletion

Report SDBI\_REPO\_CHECK or RSREPOSRCHECK (SAP Basis 7.10) can be used to find out whether report sources are readable (see SAP Notes 658169, 69871). Within table REPOSRC, the *program status* column indicates if it is A (active) or I (inactive). If there are a considerable number of inactive programs, check if some of them can be decommissioned.



## See SAP Note:

- 69871 (SAP\_APPL 300 – 46C): Checking and cleaning up development environment tables
- 658169 (SAP\_BASIS 610 – 711): Checking report sources
- 1582301 (SAP\_BW 700 – 730): Temporary RSDRD reports are not deleted

### 5.1.15.4 Archiving

Cannot be used

### 5.1.16 RSBERRORLOG (Log Entries for DTP Data Records with Errors)

Table RSBERRORLOG belongs to the SAP Business Warehouse (SAP BW) component and contains log entries about erroneous data records during uploads via the data transfer process (DTP). This technology is available as of SAP Business Warehouse (SAP BW) 7.0.

#### 5.1.16.1 Avoidance

Check whether you need the log entries for specific or all data transfer processes. You can use the DTP error processing function to determine how the system handles erroneous data records and to deactivate error handling, if necessary. For more information see [Handling of Data Records with Errors](#).

#### 5.1.16.2 Summarization

Cannot be used

#### 5.1.16.3 Deletion

You can use report RSB\_ANALYZE\_ERRORLOG to analyze which DTPs have generated error messages for data records and for how many records the messages have been created. You can use report RSBM\_ERRORLOG\_DELETE to delete the messages for requests up to a specified date for individual DTPs (SAP Note 1095924 SAP\_BW 700 – 710, SAP\_BW\_VIRTUAL\_COMP 700). Before you delete large data volumes, it is essential that you implement SAP Note 1144400 (SAP\_BW 700 – 711, SAP\_BW\_VIRTUAL\_COMP 700).

#### 5.1.16.4 Archiving

Cannot be used

### 5.1.17 RSDDSTATAGGRDEF (Statistics Data OLAP: Navigation Step / Aggregate Definition)

Table RSDDSTATAGGRDEF belongs to SAP Business Warehouse (SAP BW) and contains entries that are not linked to other entries from tables RSDDSTAT\* (BW statistics data).

#### 5.1.17.1 Avoidance

##### For SAP BW 7.0 or higher:

You can prevent SAP BW statistics data from being created as follows:

On the *Maintenance of Statistics Properties* screen (transaction RSDDSTAT, you can edit the statistics properties for individual objects as well as the default settings for the different object types.

Maintaining the statistics properties of a BEx Web template or a BEx workbook only has an effect on the creation of the respective front-end runtimes. However, maintaining the statistics properties for queries (or InfoProviders) only affects runtimes in the analytic engine and in the data manager. A complete recording of the runtime (data manager – analytic engine – front end) is, therefore, only guaranteed if the statistics properties are maintained for the relevant query and front-end objects.

**Note:** The system records a large amount of detailed runtime data as part of the BW query runtime statistics.



Recording the runtime of a navigation step for a query can generate on average 20 to 40 records, depending on the level of detail of the statistics.

**Deactivate the detailed runtime recording for all objects for which you do not require performance analyses.**

Refer to SAP Library for more information at

[http://help.sap.com/saphelp\\_nw70/helpdata/en/43/e37f8a6df402d3e10000000a1553f7/frameset.htm](http://help.sap.com/saphelp_nw70/helpdata/en/43/e37f8a6df402d3e10000000a1553f7/frameset.htm)

#### **For SAP BW 3.5 or lower:**

For each InfoCube and the areas of OLAP and warehouse management, you can individually activate and deactivate the processes for saving and transferring data. This keeps the time it takes to transfer and save BW statistics data to a minimum and avoids using memory space unnecessarily, even in large installations.

From the Modeling or Monitoring functional area of the Administrator Workbench.

Choose *Tools* → *BW Statistics for InfoCubes*. The *BW Statistics: Entry Mode* dialog box appears.

Set the indicator in the appropriate area (OLAP, WHM) for the InfoCubes for which you want to run BW statistics, or remove any indicators that are already set for InfoCubes for which you do not want to run BW statistics.

Refer to SAP Library for more information at

[http://help.sap.com/saphelp\\_nw04/helpdata/en/f2/e81c3b85e6e939e10000000a11402f/frameset.htm](http://help.sap.com/saphelp_nw04/helpdata/en/f2/e81c3b85e6e939e10000000a11402f/frameset.htm)

#### **5.1.17.2 Summarization**

Cannot be used

#### **5.1.17.3 Deletion**

##### **For SAP BW 3.5 or lower:**

The following deletion report exists for the BW statistics data tables:

RSDDK\_STA\_DEL\_DATA (see SAP Note 847388 SAP\_BW 30B – 700, SAP\_BW\_VIRTUAL\_COMP 30B, 700)

##### **For SAP BW 7.0 or higher:**

The following deletion report exists for the BW statistics data tables:

RSDDSTAT\_DATA\_DELETE

To delete BW statistic data manually, go to the *Maintenance of Statistics Properties* screen (transaction RSDDSTAT) and choose *Delete Statistical Data*.

Using the *Up to Day (Incl.)* field, you can enter a date up to which the system is to delete the statistics data. If you do not enter a date, all data is deleted. Since this can be executed with a command (TRUNCATE TABLE) and not using selective deletion in the database, this version is considerably faster.

By restricting to one day, packages of 1000 records only are always deleted from the tables; this is followed by a database Commit. This makes it possible to restart after a termination (resulting from a TIMEOUT, for example) without a need to redo previous work.

Please read also SAP Notes 934848 (SAP\_BW 700 – 711, BI\_CONT 702 – 704) (Collective Note: [FAQ] BI Administration Cockpit) and 1018114 (SAP\_BW 700 – 710, SAP\_BW\_VIRTUAL\_COMP 700) (Additional date restrictions for deleting statistics data).

Note: When using technical content, deletion of statistics recording for query runtime statistics (relevant for tables RSDDSTATHEADER, RSDDSTATINFO, RSDDSTATEVDATA, and RSDDSTATDM) is automated. Deletion takes place when the data is loaded into the InfoCubes of the technical content. The DataSources OTCT\_DS01, OTCT\_DS02, and OTCT\_DS03 automatically trigger a deletion of all data in the underlying statistics tables that are older than 14 days. This deletion is part of a delta upload. If necessary, this interval



can be defined on a customer-specific basis in table RSADMIN using the parameter TCT\_KEEP\_OLAP\_DM\_DATA\_N\_DAYS.

See SAP Note 891740 (SAP\_BW 700, SAP\_BW\_VIRTUAL\_COMP 700) for further details.

If you delete data from table RSDDSTATLOGGING and the system issues an error that is caused by database resources that are too small (space is too small), see SAP Note 1476860 (SAP\_BW 700 – 711, SAP\_BW\_VIRTUAL\_COMP 701 – 711) for further information.

#### Note:

Report RSDDSTAT\_DATA\_DELETE cannot be used to delete SAP BW 3.x statistical data in table RSDDSTATAGGRDEF and RSDDSTAT in SAP BW 7.x systems. See SAP Note 1510697 (SAP\_BW 350 – 702) for the available options for cleaning up obsolete entries from these tables.

#### 5.1.17.4 Archiving

Cannot be used

#### 5.1.18 RSMON\* and RS\*DONE (Request Management Data)

These tables hold the administration data of the requests executed in a BW system of the application component BWQ-WHM (Data Warehouse Management). Examples of these tables are RSMONMESS (monitor messages), RSELDONE (monitor: selections for executed requests), and RSREQDONE (header table for requests).

The system creates an entry in these tables for each request. As a result, they may grow very large and affect performance. In older SAP BW releases, it is not possible to reduce the size of the tables. **Do not delete the contents of these tables under any circumstances.** Doing so may lead to irreversible errors in the system (for possible consequences see SAP Note 694895 SAP\_BW 20B - 740).

##### 5.1.18.1 Avoidance

Cannot be used

##### 5.1.18.2 Summarization

Cannot be used

##### 5.1.18.3 Deletion

Cannot be used

##### 5.1.18.4 Archiving

As of SAP Business Warehouse (SAP BW) 7.0, the BW component of SAP NetWeaver 7.0, administration data of requests can be archived using the archiving object BWREQARCH. This can help to considerably reduce the size of tables RSMON\* and RS\*DONE. However, it is not possible to empty these tables completely because certain totals records are needed in BW so that the system does not have to set the status of a request to red due to missing information. Therefore, for every archived request, a data record remains in this table.

For more information on request archiving see the release information and the corresponding documentation in the SAP Library under *SAP NetWeaver by Key Capability → Information Integration by Key Capability → Business Intelligence → Data Warehouse Management → Archiving Request Administration Data*.

For system copies, please pay attention to the following: In case request information were already archived with BWREQARCH in the original system, then after the copy the archives files must be copied to a place, where they are accessible for the target system. The best solution for this would be an „XCOPY“ on OS level.



With this action several serious problems can be avoided, such as the problems from the SAP Knowledge Base Article [1812238](#).

**See SAP Note:**

- 886102 (release independent): System Landscape Cpy for SAP Business Warehouse (SAP BW)

## 5.1.19 RSPCLOGCHAIN and RSPCPROCESSLOG (BW Process Chains)

Tables RSPCLOGCHAIN (cross-table log ID to chain ID) and RSPCPROCESSLOG (chain process logs) hold information about the process chains of component BW-WHM-DST-PC.

### 5.1.19.1 Avoidance

Cannot be used

### 5.1.19.2 Summarization

Cannot be used

### 5.1.19.3 Deletion

As of SAP NetWeaver 7.0, you can delete obsolete process chain logs and corresponding process logs using report RSPC\_LOG\_DELETE. The report can be executed in the background (*Program → Run in Background*) and is therefore also suited for processing mass data.

You can use report RSPC\_INSTANCE\_CLEANUP (see SAP Note 1115243, SAP\_BW 30B – 710, SAP\_BW\_VIRTUAL\_COMP 30B - 700) to delete entries in tables RSPCINSTANCE and RSPCINSTANCET because when you delete a process chain, these tables remain and have to be deleted separately.

### 5.1.19.4 Archiving

Cannot be used

## 5.1.20 RSRWBSTORE (Objects in Binary Format)

Table RSRWBSTORE contains large objects (mainly Microsoft Excel work folders) that are saved in a binary format so that they can be more easily transported. This has mainly to do with the fact that these work folders are part of the BI business content that is initially shipped and that has to be transported. However, the folders can also be created by the users themselves using the BEx Analyzer (analytical reporting and design tool in the Business Explorer of SAP Business Warehouse (SAP BW)).

Because these work folders are accessed selectively via a GUID, they do not present a problem in terms of performance. Their size solely affects disc space.

We do not recommend that you delete any objects that are shipped as part of the business content, because this would be considered to be a modification and would negatively affect the analysis functions. The deletion of objects that were created by users, however, is possible. If table RSRWBSTORE is getting too large due to the number of created folders, you should check whether the user can reduce the creation of these folders.

### 5.1.20.1 Avoidance

Cannot be used

### 5.1.20.2 Summarization

Cannot be used

### 5.1.20.3 Deletion

Cannot be used

## 5.1.20.4 Archiving

Cannot be used

### 5.1.21 SALRT, SALRTCNT (Alert Management)

Alert Management (ALM) comes into play when business-critical problems occur. Within ALM, conditions for critical situations are predefined. When a situation occurs that meets these conditions, an alert is triggered and responsible or interested parties are determined and informed immediately. Examples of critical situations are an important customer terminating a contract or a budget being exceeded.

The alerts can be found in the universal worklist (UWL) of the SAP Enterprise Portal, application-specific display programs, or the alert inbox. These display programs can be personalized to the user's needs. In addition, the users can receive alerts as e-mail, SMS, and fax if these external methods of communication are configured in SAPconnect. End users can personalize their alert notifications, for example, create notification variants, or determine a substitute.

Alert Management helps prevent delays in the processing of critical situations because the time between discovering and responding to such situations is reduced considerably.

#### 5.1.21.1 Avoidance

Alerts of a particular category must be triggered by an application at runtime. This can be done in various ways, such as using a function module, an event linkage, or the Post Processing Framework (PPF).

To avoid certain alerts in the future, you can either remove the responsible triggers within the different applications directly or adjust the general alert processing in a way that no "final" alert is created within the central alert system.



For more information about the different possibilities to trigger an alert please see the SAP Library for SAP NetWeaver: *SAP NetWeaver by Key Capability → Application Platform by Key Capability → Business Services → Business Communication Services → Alert Management (BC-SRV-GBT-ALM)*.

#### 5.1.21.2 Deletion

If you use the local Alert Framework to generate alerts, for example, by using message-based alerting, you also have to consider deletion of alerts in your system. Otherwise, tables SALRT and SALRTCNT can grow significantly. To delete alerts, report RSALERTPROC has to be scheduled regularly.

In the top fields on the selection screen, you can enter the alert classifications and alert categories for which you want the report to become active. You can then choose if alerts are deleted after their expiry time. Alternatively to triggering the deletion based on the expiry time, it is also possible to delete old alerts or old logs and enter the number of days after which they are to be deleted. In the case of deleting old alerts, you can also choose to have only confirmed alerts deleted.

Please be aware that depending on the chosen selection criteria, report RSALERTPROC is not a pure deletion report but can also be used to trigger the escalation or repeated delivery of alerts.

**Note:** Report RSALERTCONS can also be used if the containers (stored within table SALRTCNT) of the alerts have not been deleted and remain in the system after running report RSALERTPROC. Please see SAP Note 940619 (SAP\_BASIS 620 – 700).

#### 5.1.21.3 Summarization



Cannot be used

#### 5.1.21.4 Archiving

Cannot be used

#### 5.1.22 SBCMCONT1: Table for Document Contents (Import / Export)

This table contains the converted MIME documents that are created during shipping or receipt via SMTP. These documents are required for analysis purposes only. This table is often growing on SAP SRM systems due to the intensive usage of sending documents (mails, faxes) to internal but also to external recipients.

##### 5.1.22.1 Avoidance

Check whether the MIME data is required. If this is not the case, you can deactivate the data storage in the database. To do this, call transaction SOST and choose *Utilities* → *MIME Settings* from the menu (alternatively, you can use report RSCONN06 to do this).

##### 5.1.22.2 Summarization

Cannot be used

##### 5.1.22.3 Deletion

A reorganization via report RSBCS\_REORG is possible. At this, MIME data will also be deleted. An explicit deletion of the MIME data is possible via report RSBCS\_DELETE\_MIME.

##### See also SAP note:

- 1253870 (SAP Basis 620 – 711): Table SBCMCONT1 is large

##### 5.1.22.4 Archiving

Cannot be used

#### 5.1.23 SE16N\_CD\_DATA, SE16N\_CD\_KEY: Table Display – Change Documents

While changing table entries via transaction SE16N, table change documents will be written. They will be saved in tables SE16N\_CD\_KEY (header information) and SE16N\_CD\_DATA (item information).

##### 5.1.23.1 Avoidance

Please check if all those changes really have to be done within transaction SE16N or if is possible to use other business transactions alternatively to do those changes. Please check if you can restrict the number of users that are authorized to perform those changes.

It is not possible to switch off the creation of those table change documents.

##### 5.1.23.2 Deletion

In releases up to SAP ERP 6.0 EHP 5 the table change documents can be displayed and deleted with reports:

- RKSE16N\_CD
- RKSE16N\_CD\_SHOW\_DELETE

With SAP ERP 6.0 EHP 5, both display reports became obsolete. Instead, report RKSE16N\_CD\_DISPLAY should be used.

##### See also SAP notes:

- 1263844 (SAP R/3 470 -604): CO-OM tools: SE16N: Deleting change documents
- 1275614 (SAP R/3 470 -604): CO-OM tools: SE16N: Deleting change documents in background



- 1360465 (release independent): SE16N: Archiving object CA\_SE16NCD

### 5.1.23.3 Summarization

Cannot be used

### 5.1.23.4 Archiving

Up to and including SAP ERP Central Component 604, you only have the option to use a report to delete these change documents (see SAP Notes 1263844 [SAP\_APPL 470 – 604] and 1275614 [SAP\_APPL 470 – 604]). To ensure a system can be audited, you must be able to document all changes. For this reason, SAP ERP Central Component 605 delivers archiving for the change document tables of SE16N.

Archiving is possible with archiving object CA\_SE16NCD. You can make a restriction according to date and table name. We recommend perform archiving with date intervals only. Evaluation of archives can be done by using report RKSE16N\_CD\_DISPLAY.

#### See also SAP note:

- 1360465 (release independent): SE16N: Archiving object CA\_SE16NCD

### 5.1.24 SGOSHIST: Generic Object Services Object History Data

The Generic Object Services functions are available in various SAP applications. These functions can be used to edit business objects. For example, objects can be sent and notes can be entered for an object.

Business objects represent concrete or abstract objects as well as activities or processes.

As of SAP Basis 4.6C, every user has an object history that logs the application objects displayed, changed, or created by the user. Which of these three actions is logged depends on the particular application. Each user can view the object history using the system menu.

The system writes an entry to the object history if a document is created, changed, or displayed. This means an entry is added to the history if the user accesses a document from the GUI.

#### 5.1.24.1 Avoidance

The object history can be deactivated depending on the release:

SAP R/3 4.6C and 4.6D: The object history cannot be deactivated (see SAP Notes 319792 and 492756). You can access the functionality of SAP R/3 6.10 by implementing the corresponding Support Packages. However, you can only deactivate the history centrally by using an additional modification.

SAP R/3 6.10 and higher: The object history can be activated or deactivated centrally (that is, for all users) using report RSSGOSHIRE (transaction SGOSHI). If the object history is activated, each user can deactivate it using the SOBJHIST user parameter.

#### See SAP Note:

- 319792 (SAP\_BASIS 46D): Performance problems with table SGOSHIST
- 492756 (SAP\_BASIS 46C – 640): Object history: Disk space performance

#### 5.1.24.2 Summarization

Cannot be used

#### 5.1.24.3 Deletion

The object history can be reorganized and deleted. This depends on the release, however (see SAP Note 492756).



SAP R/3 4.6C and 4.6D: The object history cannot be deleted using a standard report. The object history is reorganized if a user displays it. This ensures that the user has a maximum of 20 objects of each object type in the history.

SAP R/3 6.10: The object history can be reorganized and deleted using the RSSGOSHIRE (SGOSHI) report. The object history is reorganized if a user displays it. This ensures that the user has a maximum of 20 objects of each object type in the history.

SAP R/3 6.20 and above: The object history can be reorganized and deleted using the RSSGOSHIRE report. The object history is reorganized if a user displays it. This ensures that the user has a maximum of 20 objects of each object type in the history. The object history is not logged directly in the database (SGOSHIST table), but in the shared memory. The history is synchronized with the database when the user logs off the system.

**See SAP Note:**

- 492756 (SAP\_BASIS 46C – 640): Object history: Disk space performance

#### 5.1.24.4 Archiving

Cannot be used

#### 5.1.25 SOC3 (SOFM, SOOD, SOOS, SOST): SAP Business Workplace/SAPoffice Documents

Table SOC3 contains the contents of documents (excluding object types FOL and DLI), such as application mails, URLs, work item notes, PC documents, and so on, which are created and sent in **Business Workplace** (previously known as SAPoffice), and of documents that were created by **Generic Object Services (GOS)**. Therefore, the size of this table depends heavily on whether and how frequently these types of documents are sent within a system. The documents are stored in folders that can be accessed either from the user interface or only through the system (the latter are called “dark folders”).

The corresponding management data is stored in table SOOD. The folder management data is stored in table SOFM and the information of the send process is stored in tables SOOS (send procedure) and SOST (send history). The size of these tables, however, should generally be no cause for concern.



**Note:** Further developments of the current SAPoffice functionality were stopped with SAP NetWeaver Application Server (SAP NetWeaver AS). Maintenance on SAPoffice ended with the maintenance of SAP R/3 Enterprise. Therefore SAP recommends that you use SAPoffice only for the storage of temporary documents and that you store documents that have to be kept for the long term in storage systems using an appropriate technology such as ArchiveLink. No archiving functions are currently planned for SAPoffice.

If you are currently using SAPoffice as an internal communications platform, SAP recommends that you switch to an alternative mail system.

For more information, see the Development News “[Use of SAPoffice as an Office Application](#)“ for SAP Web AS 6.30 (2003).

##### 5.1.25.1 Avoidance

If no external storage system is being used, the system saves the office attachments in table SOFFCONT1. If used, this table can grow very large. To prevent this table from growing too large, SAP recommends that you use an external storage system.

Subsequently moving attachments from table SOFFCONT1 to an external storage system is only possible through a modification. For more information, see SAP Notes 389366 (SAP R/3 4.6B – SAP Web AS 6.10) and 445057 (SAP R/3 4.6B – SAP Web AS 6.10).



## 5.1.25.2 Summarization

Cannot be used

## 5.1.25.3 Deletion

If a user deletes documents or mails from a folder (with or without attachments), only the references between the folder and the documents are deleted at first. The content of the document remains in the database, including the header data and the send logs. This data can be physically deleted from the database (tables SOC3, SOST, SOOS, SOOD, SOFM, SOFFCONT1) using program RSBCS\_REORG (replaces program RSSORE00 used up to SAP Web AS 6.20, see SAP Note 966854 [SAP\_BASIS 620 – 700]).

Because archiving of Business Workplace objects is not possible, it is very important for users to regularly delete their old documents manually.

If you want to delete Business Workplace objects, we recommend that you use the delete programs and follow the procedure below:

1. Delete the folder references (table SOFM).

Use the following programs:

Program	What does it delete?	Note
RSSOTRCL	Data in the general wastebasket	Ask your users to regularly delete the documents they no longer need. Then you can empty the general trash can using report RSSOTRCL.
RSSO_DELETE_PRIVATE	User folders: inbox, outbox, express mails, and so on.	This program can be used to delete all the objects of a specific user, for example, when he or she leaves the company. See also SAP Notes 862985 (SAP_BASIS 46B – 640) and 922671 (SAP_BASIS 46B – 700).
RSSOEXDA	Obsolete documents in the outbox	Instead of this program, you can also use RSSO_DELETE_PRIVATE. See also SAP Note 431801 (SAP_APPL 40A – 46C, SAP_BASIS 46D).
RSSODLWF RSSOREDF <sup>1</sup>	Workflow mails	This program deletes documents from the dark folder. See also SAP Notes 131031 and 569123.
RSSORESN	Successful send processes	Dark folders

<sup>1</sup> With version 14 of SAP Note 567975, report RSSODFRE was a completely revised. As of that date, you do not need any other programs besides RSSODFRE to reorganize the dark folders. Reports RSSODLWF (SAP Note 131031), RSSORESN (433457) and RSSOREDF (516110) are obsolete as of then and should no longer be used. The corresponding SAP Notes were also marked as obsolete.

2. Completely delete an object using RSBCS\_REORG.



SAP recommends that you schedule this program regularly as a background job. If you execute the program after a lot of data has accumulated, you can expect its runtime to be accordingly long.

If you want to delete objects that were created using Generic Object Services (GOS), SAP recommends the following procedure:

1. Delete the object references using program RSGOSRE01.
2. Delete successful send orders using program RSBCSRE03 (only for SAP R/3 Enterprise; for SAP NetWeaver 7.0, this program was replaced by RSBCS\_REORG; see SAP Note 966854 [SAP\_BASIS 620 – 700]).

You should use this program *before* the general reorganization program RSBCS\_REORG.

3. Completely delete a document using RSBCS\_REORG.

**See also SAP Notes:**

- 966854 (SAP\_BASIS 620 – 700): Reorganization - New Report
- 881594 (SAP\_BASIS 46C - 700): Default expiry date for office document of workflow
- 988057 (SAP Web AS 6.20 – 7.00): Reorganization - information

**5.1.25.4 Archiving**

It is possible to move the document contents (document types RAW and SCR) from table SOC3 to an archive using transaction SOY8 or program RSSOAPUT. All other SAPOffice tables are not affected by this operation, meaning that the reference data is not archived at the same time. Program RSSOAPUT is designed to archive mass data.

It is not possible to archive SOFFCONT1 data records—it is only possible to delete them and reorganize the mailbox.

**Table analysis**

If you want to run a table analysis (transaction TAANA) before data archiving (see [chapter Goal of Using this Best-Practice Document](#)), the following analysis variants are offered for the corresponding tables:

Table	Analysis Variant
SOC3	STANDARD
SOFM	STANDARD
SOST	STANDARD
SOOD	AD-HOC (fields: OBJTP, OBJJR, OBJSND, EXTCT, FILE_EXT)

**5.1.26 STERM\_\*: SAP Terminology**

The SAP terminology tables (STERM\_\*) are necessary for the basis of the SAP ERP system, and cannot be avoided, summarized, deleted, or archived by general mass operation reports. Deletion is only possible on user level. The SAP Terminology database can be maintained (create, change, delete) with transactions STERM, STERM\_EXTERNAL, or SAPTERM. You can find more details in the online documentation.

**5.1.26.1 Avoidance**

Cannot be used

**5.1.26.2 Summarization**

Cannot be used

**5.1.26.3 Deletion**



The SAP terminology and glossary data is managed by status indicators. Status indicators are used to track changes in the terminology database. Superusers set status indicators separately for each term and for each language to indicate the review status of a term.

If a term is to be deleted, and has a glossary entry, the system sets the term to status 4 (pending deletion). Terms with status 4 are then deleted at regular intervals by the SAPterm administrator. If no glossary entry exists for this term, the system deletes the term and its concept.

Index table STERM\_INDX can be deleted with transaction TERM\_RESET\_INDX. In this case, all table entries with RELID = CP will be deleted. The content of this table is created by transaction STERM.

#### 5.1.26.4 Archiving

Cannot be used

#### 5.1.27 STXH, STXL: SAPscript Texts

SAPscript texts, such as those created for customer documents in SD, are contained in tables STXH (text file header) and STXL (text file items). Table STXL is dependent on table STXH.

##### 5.1.27.1 Avoidance

Texts from preceding documents, customer master and/or material master can be transferred to a document via the SD text determination function (see SAP Note 548517, release-independent). In Customizing, you can determine, per text type, whether the transferred text should be referenced or copied. If the texts are copied, the system writes a record to the database for each text in every document. This can considerably increase the growth of tables STXH and STXL.

In addition, the tables contain several **phantom texts**, which are texts that no longer have a document they can be mapped to. These are generally temporary texts that could no longer be accepted by the system due to an extraordinary event, such as program terminations. Phantom texts can also contribute to strong table growth.

##### Recommendations:

- Avoid copying texts as much as possible. Use references instead. We recommend that you switch as many text types as possible from copy to reference.
- In the case of phantom texts, you should first try to determine why they were created. In most cases, they are generated when postings are terminated. Try to make sure that in the future only very few phantom texts are generated.

##### 5.1.27.2 Summarization

Cannot be used

##### 5.1.27.3 Deletion

- A delete program to delete entries in table STXH and STXL is not available.
- Phantom texts can be deleted with program RVTEXTE. See SAP Note 413096 (SAP R/3 3.11 – 4.6C).

##### 5.1.27.4 Archiving

SAPscript texts are created in different applications, which means that there are several archiving objects available for archiving entries in tables STXH and STXL. You can determine the archiving objects using transaction DB15 (tables and archiving objects) (in the *Objects for Table* field, enter the value STXH.)

To determine which archiving objects would be the most useful, try to analyze table STXH with respect to attribute TDOBJECT by using transaction TAANA. The short texts in table TTXOB (transaction SE16) will



then give you information about the application involved, which will help you determine the archiving object. When you use these archiving objects for archiving, the SAPscript texts will automatically be archived via archiving class TEXT (via the structures THEAD and TLINE).

## Table analysis

If you want to run a table analysis (transaction TAANA) before data archiving (see [chapter Goal of Using this Best-Practice Document](#)), the analysis variant called STANDARD is offered for table STXH.

### 5.1.28 SWFRXIHDR, SWFRXICNT, SWFRXIPRC: XI Adapter

Data used for the XI adapter is stored in tables SWFRXIHDR, SWFRXICNT, and SWFRXIPRC (\*HDR: Header Data, \*CNT: XML Container, \*PRC: Process-dependent message data).

Business Process Management provides the SAP NetWeaver Exchange Infrastructure with functions for stateful message processing: The status of an integration process is persisted on the Integration Server. This means that you can specify how long an integration process must wait for further messages to arrive, for example. Furthermore, this enables you to process messages within an integration process further still; for example, you can collect certain messages and then send them in a particular order.

Cross-component Business Process Management (ccBPM) is integrated in the SAP Exchange Infrastructure: Integration processes are objects in the Integration Repository or Integration Directory and are integrated with the other objects, such as message interfaces and so on.

#### 5.1.28.1 Avoidance

Cannot be used

#### 5.1.28.2 Summarization

Cannot be used

#### 5.1.28.3 Deletion

For performance reasons, data records in these tables are only marked as erasable when they are no longer required, instead of being deleted immediately.

Use report RSWF\_XI\_INSTANCES\_DELETE to finally delete data records (which are flagged as erasable) from the ccBPM message persistence. To do this, restrict the number of deleted messages using the interface (*Message definition*), the time the message was generated, and the time the message was flagged for deletion (that is, the end time of the processes that were using it). Bear in mind the following: The report deletes the data without any further confirmation or consultation if you execute it from the selection screen. However, you cannot use this report to delete any data required for the execution of relevant processes because the dataset deletion indicator is only set once the corresponding processes have ended. You must bear in mind, however, that monitoring data is also deleted so that only a restricted amount of data is then available in the process log. If you want to examine the data before the report deletes it, you can call report RSWF\_XI\_INSTANCES\_SHOW, which you can use to display and examine the erasable messages. Execute the report regularly, for example, whenever you archive work items.

#### Procedure:

1. Start the RSWF\_XI\_INSTANCES\_SHOW report to determine which data is deletable.
2. On the selection screen, specify the required selection criteria, such as the creation date or the date of the deletion indicator.
3. Check the results returned by the report and change the selection criteria if required.

4. If you want to delete the data listed, start the RSWF\_XI\_INSTANCES\_DELETE report using the same selection criteria.



Note that when you execute the RSWF\_XI\_INSTANCES\_DELETE report, the system deletes the data without further confirmation.

### See also SAP Notes:

- 874708 (SAP\_BASIS 640 – 720): BPE HT: Deleting message persistence data in SWFRXI\*

### 5.1.28.4 Archiving

Cannot be used

### 5.1.29 SXMSCLUR, SXMSCLUP: XML Message of the Integration Engine

The Integration Engine, as a runtime component of SAP Exchange Infrastructure, has the task of receiving, processing, and forwarding XML messages. During message processing, collaboration agreements are evaluated, the receivers are determined, and mapping activities are executed.

The XML messages are stored in tables SXMSCLUR and SXMSCLUP and some other tables.

#### 5.1.29.1 Avoidance

By default, only asynchronous messages are persisted on ABAP and Java side.

Synchronous messages will only be persisted if an error occurs during processing or if the parameter LOGGING\_SYNC (ABAP only) is set. To adjust the logging, use the configuration of the Integration Engine (transaction SXMB\_ADM)

To avoid data for **synchronous** messages, set the Logging\_Synch parameter accordingly:

Logging\_Synch = 0: no messages will be logged

Logging\_Synch = 1: several versions will be logged

For successful **asynchronous** messages, you can configure how many versions of a message will be logged:

Parameter Logging = 0: only 3 versions will be logged

Parameter Logging = 1: several versions will be logged

#### 5.1.29.2 Summarization

Cannot be used

#### 5.1.29.3 Deletion

Data deletion is the default method and usually can be applied to the majority of processed XML messages. By default, no deletion is carried out in the Integration Engine and Business Process Engine (BPE) automatically. Therefore the deletion report RSXMB\_DELETE\_MESSAGES has to be scheduled by the system administrator to set up a suitable deletion strategy.

Prerequisites for deletion:

- Only messages in a final status (MSGSTATE = 3 Processed successfully) can be deleted.
- Messages (from outbound IDoc adapter or ccBPM) with a final adapter status (ADAPT\_STAT = 6) can be deleted.
- Messages with errors have to be cancelled first. After that, they will not be deleted; they can only be archived.



- Messages with a valid status will be deleted if the defined retention period is expired. (See transaction SXMB\_ADM → *Define Interfaces for Archiving and Retention Periods* → *Retention Periods*.)

**See also SAP Notes:**

- 861846 (SAP\_ABA 620): Troubleshooting Archiving and Deletion in XI 2.0
- 872388 (release independent): Troubleshooting Archiving and Deletion in PI

## 5.1.29.4 Archiving

To archive XML messages of interfaces in the Integration Server with archiving object BC\_XMB, the interfaces have to be defined for archiving via transaction SXMB\_ADM → *Define Interfaces for Archiving and Retention Periods*. These messages will only be removed from the database via the archiving procedure. Deletion procedures will not affect them.

Prerequisites for archiving:

- Asynchronous messages in a final status (MSGSTATE = 3 Processed successfully) can be archived.
- Messages (from outbound IDoc adapter or ccBPM) with a final adapter status (ADAPT\_STAT = 6) or error status 7 can be archived.
- Messages with errors have to be cancelled first. After that, they will be archived (default).
- Messages with a valid status will be archived if the defined retention period is expired! (SXMB\_ADM → *Define Interfaces for Archiving and Retention Periods* → *Retention Periods*.)

Display functionalities:

Archived data can be accessed by read programs RSXMB\_READ\_ARCHIVED\_MESSAGES or RSXMB\_GET\_ARCHIVED\_MESSAGES. Both reports can be started by transaction SXMB\_MONI. Alternatively, the technical view in Archive Information System can be used.

Please take care about the following working procedure when archiving XML messages:

The message header, the manifest and the payload of a message are contained in 4 internal tables. During persisting, the content of these internal tables is saved as a compressed binary data stream in the database tables SXMSCLUP and SXMSCLUR (or SXMSCLUP2 and SXMSCLUR2 if you have selected the switch procedure for the deletion of messages and the secondary data container is active).

Archiving works on the internal tables; this means that the content of the database tables SXMSCLU\* is first read, decompressed and assigned to the 4 internal tables before the archiving writes the content of these internal tables to an archive file. Caused by the different ways of data saving (compressed on database versus de-compressed in internal structures), archive files can even become bigger than the original tables before.

### Table analysis

Header table SXMSPMAST can be used for TAANA analysis, but using report RSXMB\_SHOW\_REORG\_STATUS is much more convenient as it directly evaluates how many messages can be deleted and how many can be archived. Report RSXMB\_SHOW\_STATUS also provides information on the overall situation and regarding number of messages and their related tables.

**See also SAP Notes:**

- 861846 (SAP\_ABA 620): Troubleshooting Archiving and Deletion in XI 2.0
- 872388 (release independent): Troubleshooting Archiving and Deletion in PI
- 1798165 (SAP\_BASIS 640 – 740): PI cluster tables not contained in archiving object



## 5.1.30 SXMSPFRAWH: PI SXMS Performance Data

Table SXMSPFRAWH belongs to the Integration Engine and contains header table entries for raw data for performance evaluation. The performance monitoring is used to display statistical data on the performance of message processing. The performance monitoring is based on data collected from the Integration Server and the Process Monitoring Infrastructure (PMI) at runtime

### 5.1.30.1 Avoidance

Performance monitoring is based on data collected from the Integration Server and the Process Monitoring Infrastructure at runtime. On the Integration Server, the collection, aggregation, and reorganization of this data is controlled primarily by four configuration parameters of the PERF category. These are set in transaction SXMB\_ADM.

Measurement\_level determines which data is to be included in the performance header of the message:

- 0: Auditing data only
- 1: Runtime data (default)
- 2: Additional runtime data

Measurement\_persist determines whether the performance header is to be persisted or not:

- 0: Is not persisted
- 1: Is persisted

If you set this parameter to 1, you must schedule the jobs described below:

DAYS\_TO\_KEEP\_DATA, sub-parameter MEASUREMENT\_ITEMS

DAYS\_TO\_KEEP\_DATA, sub-parameter AGGREGATION\_ITEMS

### 5.1.30.2 Summarization

You should schedule job SAP\_XMB\_PERF\_AGGREGATE, which includes the step SXMS\_PF\_AGGREGATE and reads the persisted runtime data from the persistence layer and aggregates the data on an hourly basis.

### 5.1.30.3 Deletion

Deletion is possible with use of report SXMS\_PF\_REORG.

#### See also SAP Notes:

- 820622 (SAP\_BASIS 640 – 731): Standard jobs for XI performance monitoring
- 872388 (release independent): Troubleshooting Archiving and Deletion in PI

### 5.1.30.4 Archiving

Cannot be used

## 5.1.31 SXMSPHIST, SXMSPHIST2: Historical XML Messages

History entries are spots for observing XML message processing. They are generated by persisting at the end of a processing step for an XML message and contain the current status and the execution date stored in tables SXMSPHIST and SXMSPHIST2

History entries remain in the database for an unspecified length of time and must be deleted at some stage so that the database table does not overflow.

### 5.1.31.1 Avoidance

Cannot be used

## 5.1.31.2 Summarization

Cannot be used

## 5.1.31.3 Deletion

The deletion process (report RSXMB\_DELETE\_HISTORY) only deletes history entries for XML messages that have already been archived or deleted. The history entry is kept in the database for at least seven days after an XML message has been deleted. This is necessary since history entries are also required for the quality of service *Exactly Once*.

The default retention period is 30 days. You can change this value in the [configuration of the Integration Engine](#) by using the HISTORY subparameter of the PERSIST\_DURATION parameter in the DELETION category.

### Table analysis

Run report RSXMB\_CHECK\_HISTORY.

## 5.1.31.4 Archiving

Cannot be used

## 5.1.32 SWW\_\*, SWWWIHEAD, SWWLOGHIST, SWPNODELOG, SWPSTEPLOG: Work Items

Work items are updated by the applications via an event linkage. They are processed either automatically or manually by users who execute them in their SAPoffice inbox. The following tables are used to store work item data, and should be looked at if you want to prevent data.

- SWW\_CONTOB (object references)
- SWW\_CONT (object values)

These two tables are the work item container on the database.

- SWWWIHEAD (header table for all work item types)
- SWWLOGHIST (history of a work item)
- SWPNODELOG (instance data of the nodes of a workflow execution)
- SWPSTEPLOG (instance data of the steps of a workflow execution)

### 5.1.32.1 Avoidance

#### Workflow modeling

When you model a workflow, make sure that you do not save the same object attributes more than once in the container variables. This would unnecessarily increase the data volume in table SWW\_CONTOB.

#### Corrupt IDocs

For every corrupt IDoc, the system creates a message via the workflow. One option for preventing the creation of data in the workflow tables is to choose an alternative way to send corrupt IDocs, such as mail, which does not fill any work item containers.

It is possible to switch off workflow links, that is, the creation of work items. However, this is only useful in exceptional cases to improve performance and with the help of a consultant; see SAP Note 149368 (SAP R/3 4.0A – 4.6C).



Note for retail environments: Switching off workflow links does not affect type C work items that are created by POS inbound.

Before you switch off the workflow links, you must consider the following consequences:

- Loss of connection between IDoc and the application (if this occurs, it is impossible to trace the status of IDocs in case of errors)
- No auditing using message type ALE out
- It will no longer be possible to roll back linked systems in a consistent state

## Using conditions for the delivery of events

Another option for data avoidance is to link the delivery of events to a condition. The event is only delivered to the user (delivery means: 1 RFC + start of the linked workflow) if this condition is fulfilled. You can define these conditions using transaction SWB\_COND.

## Switching off the event trace

It is possible that when a work item is created, an event trace is started in the event manager (same as the term “event log” used up to SAP R/3 4.6A). The event trace can be used in the development phase of an application or of a workflow, or during support to customers, to log all events processed by the event manager. It is of **utmost importance** that in a production system the event trace is switched off to prevent the creation of data due to performance reasons. You can display the event trace with transaction SWEL, and switch it on or off with transaction SWELS.

For documentation on the above-named transactions, see *Help* → *Application Help*.

## Preventing log entries

You can use the workflow builder (transaction SWDD) to set the *Not in the Workflow Log* indicator for every step. If this indicator is set, log entries are not written for a specific step and the step is not displayed in the standard view of the workflow log or in the graphic workflow log.

## Automatic deletion of work items

The workflow system contains an exit technology that allows you to delete work items directly after they have been completed. From a technical point of view, an exit is an ABAP OO class that implements a hard-coded interface. This interface is made up of exactly one method, which receives the complete status of the workflow as the import parameter.

To delete these work items (step or flow) you can call the API function module SAP\_WAPI\_WORKITEM\_DELETE in UPDATE TASK as part of this exit method when the work item moves into status COMPLETED. This requires programming, which should be done during the workflow implementation system.



Carefully plan the deletion of individual work items, because missing work items may make the log meaningless or make it impossible to continue on with the remaining flow.

### 5.1.32.2 Summarization

Cannot be used

### 5.1.32.3 Deletion

#### Type C work items

These work items are only meant as temporary online links. That is why it is normally not necessary to archive type C work items, although it is technically possible. Type C work items of POS inbound, especially, can be deleted immediately instead of being archived. Therefore, make sure that you delete type C work items regularly every few months, or at least after you have deleted or archived their corresponding IDocs.



If you want to archive type C work items, they must have the status COMPLETED. They receive this status only after their corresponding IDocs have been archived. Therefore, we recommend that you first archive your IDocs and then your type C work items.

The **status change** to COMPLETED after IDocs are archived leads to a considerable loss in performance. If you decide not to archive type C work items, but to delete them instead, you can switch off this status change. To do this, see SAP Note 215982 (SAP\_APPL 40B – 45B, SAP\_BASIS 46B – 731).

It is not possible to perform targeted archiving of type C work items. If you only want to delete type C work items, use report RSWWCIDE. This is particularly recommended if the workflow was set up only for ALE in Customizing.

### Other work item types

Report RSWWWIDE deletes **all** types of work items. It should be used with great care, because it could also delete incomplete work items or part of a work flow in a production system.

Report RSWWHIDE deletes the history of work items. We recommend only deleting the history of work items that are older than three months because the history may be required for some error tracking.

### See also SAP Notes:

- 49545 (release-independent): Deletion of work items that are no longer needed

### 5.1.32.4 Archiving

When using transaction DB15 to determine the available archiving objects for the workflow tables, for example, SWWWIHEAD, you will see not only one single archiving object but a list of archiving objects. On SAP ERP systems, for example, you will see the archiving object for maintenance notifications (PM\_QMEL) or for quality notifications (QM\_QMEL) and some more. It is important to understand that all those archiving objects listed will copy work item-related data to the archive file, but **only** archiving object WORKITEM will finally delete the work item data from the database. All other archiving objects copy work item data to the archive file only for reference purposes, but not for the purpose of removing workflow data from the database. To achieve a reduction of workflow data in the database the only available archiving option is to use archiving object WORKITEM.

Work items can be archived when the top-level work item has the status COMPLETED (finished) or CANCELLED (logically deleted).

### Work item attachments

- In releases earlier than SAP Web AS 6.20, the object instance (the capsule around the actual attachment; type SOFM) is deleted during archiving. The attachment objects themselves (such as word documents or pictures) remains on the database and must be deleted through a separate SAPoffice reorganization session (report RSBCS\_REORG). After this, it is no longer possible to access the attachment through the archive display.
- As of SAP Web AS 6.20, all elements of an attachment are archived: the object instance, the object reference in the container, and the attachment object itself. This data is written to the archive in the binary format and read back into the system for display. Still, the attachment object itself is not deleted from the database by using archiving object WORKITEM and has to be deleted with report RSBCS\_REORG. But after the attachment has been deleted from the SAPOffice tables, it still can be accessed because its content is stored in the work item archive file.

### Display options

To display the archived flows (including work flows with saved attachments available as of SAP Web AS 6.20, see below) you have the following options:

- Read programs available in Archive Administration (transaction SARA):
  - RSWWARCR (Read Program for Work Items for Archiving), which returns the header data of work items (see SAP Note 49545 release-independent)
  - RSWWARCP (Archive Work Items: Read Program After Object and Task)  
You can also schedule this report by choosing Tools → Business Workflow → Development → Administration → Workflow Runtime → Reorganization → Display Workflows from Archive.
- It is possible to access an archived work item if SAP information structure SAP\_BO\_2\_WI\_001 (based on field catalog SAP\_BO2WI\_001) is activated by:
  - Archive Information System
  - Document Relationship Browser (DRB)  
Please note: It is not possible to retrieve the work item directly in the DRB. Instead, you can navigate to the work item starting at the related business objects.

## Dependencies on SAP SRM systems

If the application-controlled workflow (AC-WF) is used, the workflows **must not** be archived before the related SAP SRM document (for example, shopping cart or purchase order) has been archived, because, for example, the shopping cart archiving object saves the workflow data into the shopping cart archive file. The workflow data is required for a later integrated display of the shopping cart including the approval workflow. For details, see SAP Note 1038660 (SRM\_SERVER 500 – 550).

Ensure that approval workflows related to SAP SRM business documents, for example, shopping carts or purchase orders, are only archived **after** the corresponding SAP SRM business document has been archived. This allows the SAP SRM archiving objects to include workflow information in the SAP SRM-specific archive files. SAP Note 1038660 (SRM\_SERVER 500 – 550) provides a BAdI for this purpose. If you require an example implementation of the BAdI coding that checks the existence of a related SAP SRM document, for example, a shopping cart, please open a customer message on component SRM-EBP-ARV.

If the process-controlled workflow (PC-WF) is used, the archiving object WORKITEM (which archives records from the application-controlled workflow, that is, tables SWW\*) can be used independently from the archiving of the SAP SRM documents. That is, the SWW\* tables can be archived prior to the SAP SRM documents. The reason is that with process-controlled workflow, the relevant data for the approval workflow is stored in separate tables /SAPSRM/D\_WF\_\*, which are not removed by the archiving object WORKITEM.

## Table analysis

If you want to run a table analysis (transaction TAANA) before data archiving (see [chapter Goal of Using this Best-Practice Document](#)), the analysis variant called STANDARD is offered for table SWWWIHEAD.

### 5.1.33 TST03: Spool Data from the Print and Output Controller

Table TST03 is the database table of the TemSe (temporary sequential output file) component. This table is used to store the spool data from the print and output controller, such as spool requests and background job logs (among other data).



This table can also contain data such as different test data, intermediate HR data, data exports of the Audit Information System, and so on. We do not have any data management information regarding these other data types. Therefore, this section focuses only on spool data.

A helpful tool for analyzing table TST03 is transaction SP12 (Management of TemSE Data). For example, you can display the memory allocation for your TemSe objects by using *TemSe*

## *Data Storage → Memory Allocation.*

Although as of SAP R/3 4.0 the spool database has the capacity for 2 billion spool requests, we recommend that you take advantage of the following avoidance and delete options to avoid bottlenecks and performance problems.

### 5.1.33.1 Avoidance

The following three options help you avoid unnecessary entries in table TST03:

- **Deletion of spools automatically after output:** In the spool control you can set Delete after output as a default for all users. This causes all spools for all users to be deleted automatically after output if individual users do not explicitly select that their spools are saved.
- **Saving the spool data in the file system:** It is possible to set the spooler so that the data is not saved in table TST03, but in files in the file system. To do this, set the profile value for rspo/store location from db to G (see SAP Note 10551, release-independent). This option will improve performance during write and read operations for spool data because the system is generally faster than the database. The disadvantage of this option is that the data will not be backed up along with regular database backups.
- **Better use of tablespace:** If you change the LONG\_RAW parameter to a more favorable length (see SAP Note 140547, release-independent) there will be less waste when the data records are saved. SAP also recommends that together with this measure, you lower your PCTFREE parameter from 10 to 1 (see SAP Note 140547, release-independent). This means that less space needs to remain free in a data block when it is taken from the free list. However, this is only relevant for records that are newly written. This recommendation is valid for all databases; the potential for savings, however, is greatest with Oracle databases (see SAP Note 572060 release-independent).
- **Preventing the creation of spool request:** You can assign an output device with the name NULL, meaning that no spool requests are created for those users. This, however, is only valid for ABAP print lists and for SAPscript texts. When you use Smart Forms and SAP Interactive Forms by Adobe, spool data is created.  
If you do not want to output text from Smart Forms and SAP Interactive Forms by Adobe or keep the print data, create the spool request without immediate output and execute report RSP01041 daily.

### 5.1.33.2 Summarization

Cannot be used

### 5.1.33.3 Deletion

You can use programs RSPO0041 and RSPO1041 to delete old spool requests. These programs run in the background. RSPO1041 is part of the standard as of SAP R/3 4.6A and is an updated version of program RSPO0041 (see SAP Note 130978, SAP R/3 4.6A – 4.6B, 4.6C – 4.6D, SAP Web AS 6.10-6.40). Both programs have the same purpose, but RSPO0041 has some weaknesses with regard to restricting the selection of spool requests to be deleted. These weaknesses are no longer present in the new program. For information about program RSPO0041, see SAP Note 41547 (release-independent).

To check if there are spool inconsistencies (for example, no entries in TST01 but entries in TST03 for a selected spool are available), use report RSPO1043.



If you are using these programs, you should not, under any circumstances, activate the radio button to automatically delete old spool requests in the spool administration at the same time. (To find this function, go to *Tools → CCMS → Spool → Spool Administration*. On the *Admin.* tab, choose *Settings → Admin. → Automatically delete old spool requests.*) If the two functions run in parallel, they may cause serious database errors. For more information, see SAP Note



498668 (SAP R/3 4.6A – 4.6B, 4.6C – 4.6D, SAP Web AS 6.10 – 6.40).

## See also SAP Notes:

- 98065 (SAP\_APPL 40A - 604): Spool consistency check with RSPO1043 as of 4.0A

### 5.1.33.4 Archiving

Cannot be used

You can find additional information on the aforementioned topics in the following SAP Notes:

- 010551 (release-independent): Table TST03 is growing
- 020176 (release-independent): Where is the spool request saved?
- 019706 (release-independent): Tuning the Spooler
- 572060 (release-independent): Options in the Oracle database during archiving
- 48400 (SAP\_BASIS 46B - 710): Reorganization of TemSe and Spool

### 5.1.34 VBDATA: Update Request Data

Table VBDATA is one of the tables that is updated when update requests are created. It contains the data that is transferred to the modules (variables, structures, internal tables). Other update request tables are VBHDR (update headers), VBMOD (update modules), and VBERROR (error information when update is terminated). These tables, however, are not critical in terms of data growth.

An update request describes all data changes, which are bundled into an SAP LUW (logical unit of work) after an SAP application transaction is completed, and are executed as a whole in a single database LUW. For consistency, an update request is either executed completely or not at all (rollback request).

#### 5.1.34.1 Avoidance

Table VBDATA generally only sees strong growth if updates are terminated in large numbers. Here the primary action should be to analyze and resolve any update errors in the system. Program RSM13005 provides a tool for analyzing and processing update requests. It can also be used for collective runs.

If you are using SAP Business Warehouse (SAP BW) and the V3 update is activated, you may see a temporary growth of table VBDATA. This has to do with the fact that the data for the delta update to the SAP BI system is temporarily stored in VBDATA. After the data has been loaded into SAP Business Warehouse (SAP BW) by the delta extractors, this table should go down in size again. If an error occurs during the delta upgrade, for example, because of the termination of the extractors, then the delta records remain in table VBDATA. If this table is growing too fast, you should particularly check whether the delta upgrade is stuck. For more information about the V3 updates, see SAP Note 396647 (release independent): FAQ: V3 updates, questions and answers.

In addition, table VBDATA can often have a low fill rate, despite its size. The reason for this is that although the data was removed, the space that was needed for this data has not yet been released. This can only be remedied through a table reorganization via the appropriate database function.

For more information on updates see the SAP Library under [Updates in the SAP System \(BC-CST-UP\)](#). Here you can also find detailed information on how to analyze and treat update errors.

#### 5.1.34.2 Summarization

Cannot be used

#### 5.1.34.3 Deletion



**Keeping record of documents that were not updated:** To meet legal requirements with respect to documenting the assignment of accounting documents, we recommend that you regularly run program RFVBER00 (daily or weekly). It enables you to keep a record of all accounting documents that were left in table VBDATA after a terminated update run if the program is executed before the deletion of the documents that were not posted. For more information, see SAP Note 175047 (release-independent).

If a **terminated update** in the update control (transaction SM13) cannot be repeated via *Update Requests* → *Repeat Update*, then the update data has to be entered manually. After the data has been entered, the update record has to be deleted (*Update Requests* → *Delete*). Make sure that you do not delete any updates that have not been processed yet (status green), because this will erase the data that was supposed to be entered in the SAP system. Terminated updates (status *Error*) can be deleted by setting the main system profile parameter `rdisp/vbdelete` accordingly.

If requests created by collective runs were not deleted automatically, even if they have been processed completely, you can use program RSM13005 (see also SAP Note 385741 release-independent) to delete them.

If an SAP transaction terminates, there may be **incomplete update requests**. These are not displayed in the update control and cannot be executed. The records that are created during this process are written to tables VBDATA and VBMOD and use up space unnecessarily. By activating (V1) the main system profile parameter `rdisp/vbreorg`, you can trigger the update server to look for incomplete update records and delete them after the start of the update. Because there are no active users on the server during this time, there will be no system inconsistencies as a result.

For more information on the main system profile parameter, see the update documentation [System Profile Parameters for the Update](#)

#### 5.1.34.4 Archiving

Cannot be used

#### See also SAP Notes:

- 16083 (release-independent): Standard Jobs, Reorg Jobs
- 385741 (release-independent): Collective runs are not deleted
- 706478 (release-independent): Preventing strong growth of basis tables

#### 5.1.35 /VIRSA/ZFFTNSLOG, /VIRSA/ZFFCDHDR, /VIRSA/ZVIRFFLOG: Firefighter Logs

SAP Access Control for SAP enables superusers to perform emergency activities outside the parameters of their normal role, but to do so within a controlled, fully auditable environment. The application assigns a temporary ID that grants the superuser broad yet regulated access, and tracks and logs every activity the superuser performs using that temporary ID.

This logging information is stored in these tables:

/VIRSA/ZFFTNSLOG - Firefighter Transaction Log

/VIRSA/ZFFCDHDR - Firefighter Change Document

/VIRSA/ZVIRFFLOG - Firefighter Action Log

##### 5.1.35.1 Avoidance



Growth in these tables can be prevented by using the firefighter IDs as restrictively as possible. It is definitely not recommended to schedule background jobs that do mass updates using a firefighter ID.

## 5.1.35.2 Summarization

Cannot be used

## 5.1.35.3 Deletion

Cannot be used

## 5.1.35.4 Archiving

The following tables may be archived using transaction /VIRSA/FFARCHIVE:

/VIRSA/ZFFTNSLOG - Firefighter Transaction Log

/VIRSA/ZFFCDHDR - Firefighter Change Document

/VIRSA/ZVIRFFLOG - Firefighter Action Log

Please be aware that this is a different kind of archiving than you may know from other archiving objects that are developed based on the Archive Development Kit (ADK).

### See also SAP Notes:

- 1598473 (release-independent): Substantial growth of DBTABLOG table due to /VIRSA/ZVFATBAK
- 1041912 (release-independent): Firefighter Best Practice Archiving Strategy

## 5.2 SAP ERP

### 5.2.1 AABLG: Cluster for Settlement Documents

AABLG is the cluster for CO settlement documents. It contains the logical cluster tables AUAA, AUAB, AUAO, AUAS, AUAT, AUAV, AUAW, and AUAY. Settlement documents are created when orders, work breakdown structures (WBS) elements, sales orders, and cost objects, as well as assets under construction, are settled.

#### 5.2.1.1 Avoidance

During a settlement run, the system creates one or several entries in the corresponding dependent tables (AABLG, AUAK, COEP, COSS, and so on), grouped by period, fiscal year, cost element, and object number. If, in the same period, a new settlement run is executed, the system creates additional entries with the positive or negative difference. This means that each settlement run executed during a period generates new table entries. In addition, with each settlement reversal, a new reversal entry is created in the above-named tables. To avoid strong growth of these tables, we recommend that you refrain from executing too many settlement runs and rather limit them to once per period, for example, once per month, or wait until the first full settlement, for example, when a project has been completed, to run a settlement.

#### 5.2.1.2 Summarization

Cannot be used

#### 5.2.1.3 Deletion

Cannot be used

#### 5.2.1.4 Archiving

Entries in table AABLG or the corresponding logistical cluster tables can be archived using the following archiving objects:



Archiving Object	Archive Application Data
CO_KABR	Settlement documents
CO_KSTRG	Cost object: Master data and transaction data
CO_ORDER	Orders with transaction data
PM_ORDER	PM/SM orders
PP_ORDER	Production orders
PR_ORDER	Process orders
PS_PROJECT	Project status: Operative structures
RE_BUILDNG/REFX_BU*	IS-RE/RE-FX Real Estate: Buildings
RE_BUSN_EN/REFX_BE*	IS-RE/RE-FX Real Estate: Business entity
RE_PROPRTY/REFX_PR*	IS-RE/RE-FX Real Estate: Property
RE_RNTL_AG/REFX_RO*	IS-RE/RE-FX Real Estate: Rental object
RE_STLM_UN	IS-RE Real Estate: Settlement unit
REFX_CN*	RE-FX
SD_VBAK	Sales documents

*\*Archiving objects of the new real estate solution RE-FX*

The archiving object CO\_KABR archives the settlement documents independently from the corresponding settlement senders. As a result, the settlement documents and the documents themselves, such as production orders, can be archived separately, which is mainly meant as a measure against the settlement data tables growing too large. The other archiving objects named above archive the settlement documents together with the document data.

If table AABLG has gotten very large and you want to archive the settlement documents, you should determine which object types are the most common in table AUAK (document header for settlement) via the AUAK-OBJNR field. Then use the corresponding archiving objects for these object types. The plain text for the object IDs (for example, OR, AN, PR) is contained in table TBO01.

In light of the fact that a settlement may need to be reversed, remember that when you choose your residence times, the settlements can no longer be reversed once the corresponding settlement documents have been archived. Settlement documents should therefore only be archived when a settlement reversal is unlikely.

## 5.2.2 ACCTHD, ACCTCR, ACCTIT: MM Subsequent Posting Data

Inventory management and invoice verification documents in materials management (MM) do not contain all the information necessary for the updating of accounting records. Therefore, when goods movements and invoice entries are posted, additional information is saved in tables ACCTHD, ACCTCR, and ACCTIT. The data is required if, for example, data for special ledger accounting (FI-SL), profit center accounting (EC-PA), Controlling (CO), or public sector funds management (IS-PS-FM) is to be posted subsequently.

### 5.2.2.1 Avoidance

Under certain conditions, for example, if the subsequent posting can be carried out with the help of the FI document, the updating of the ACCTxx tables can be deactivated. For more information see SAP Note 48009 (SAP\_APPL 40A - 617) and SAP Note 1281616 (SAP\_APPL 500 - 617).

As an alternative solution, instead of deactivating the update for ACCT\* writing, you can archive records soon after their creation (for example, after six months) with archiving object MM\_ACCTIT.

## 5.2.2.2 Summarization

Cannot be used

## 5.2.2.3 Deletion

Before you delete, you must first deactivate the updating of the tables (see [above](#)). To delete data, you can either use database tools or a program described in SAP Note 48009 (SAP\_APPL 40A - 617).

## 5.2.2.4 Archiving

Archiving takes place via the archiving object MM\_ACCTIT. You can use the Archive Information System for read access to the archived data. To read the archived data, activate information structure SAP\_MM\_ACCTT02 and set up the archiving runs via SAP AS status management (it is important that you do this only when you actually want to read the data).

### Table analysis

Before archiving, you should analyze how data in tables ACCTIT and ACCTHD is distributed across organizational units and periods. See SAP Note 316468 (SAP\_APPL 30F - 606).

As of SAP R/3 4.6C you can use the table analysis function (transaction TAANA) (see [chapter Goal of Using this Best-Practice Document](#)) to carry out this analysis. The following analysis variant is offered for table ACCTIT:

- ARCHIVE

### See also SAP Notes:

- 83076 (SAP\_APPL 30C – 46C): Archiving tables ACCTHD, ACCTIT, ACCTCR. Contains information for importing the archiving programs and a detailed description of the programs.

## 5.2.3 BKPF, RFBLG, Secondary Indexes (BSIS, BSAS, BSIM): Accounting Document Tables

FI accounting document data is stored in different tables. The most important of these are the following:

- BKPF: Contains the head data of the accounting document
- RFBLG: The data for the document items is stored in this table cluster. The cluster includes the following tables:
  - BSEG (document line items and preliminary data)
  - BSEC (CPD data)
  - BSED (bill of exchange fields)
  - BSET (tax data)
- Secondary indexes for rapid data access:
  - BSIS (G/L accounts – open items)
  - BSAS (G/L accounts – cleared items)
  - BSIM (article documents in retail)



See also SAP Note 596865 (SAP R/3 4.6B – 4.70). It provides a solution in case you need to execute FI line item reports for archived documents whose secondary indexes have already



been deleted.

Other secondary indexes for customers (BSID, BSAD) and vendors (BSIK, BSAK) will not be considered here.

BSEG and the secondary indexes are particularly affected by data growth. Document items are open line items in table BSIS and are converted into entries for table BSAS after incoming payment, for example. This, however, is only true for entries for which the indicators *Display Line Items* and *Open Item Management* were set in the accounts master record. Table BSIS contains redundant data that is also found in table BSEG and which is processed in transaction *FBL3*.

The performance of automatic account balancing (program SAPF124) can be improved.



If you are using FI General Ledger Accounting (new) functionality, please also check [chapter FAGLFLEXA : FI General Ledger Accounting \(new\): Actual Line Items](#)

### 5.2.3.1 Avoidance

Use SAP Note 36353 (release-independent) to reduce updating. Note, however, that this only affects entries in table BSEG and relevant secondary index tables BSIS/BSAS.

In table CKMI1 (Index for FI documents for articles) only one line item is stored per reference document (for example, goods movement) line item. There is also a link between table CKMI1 and the RFBLG and ACCTIT tables : Article master data that is not contained in the accounting document is stored in the ACCT\* tables.

In addition to the above summarization, you can counteract the marked increase in data volume in tables BSIS and RFBLG by deactivating updating for line items in G/L accounts master data, because the line items they contain do not need to be updated, for example, for tax accounts, bank accounts, reconciliation accounts, all revenue accounts (if CO-PA is used), and all stock accounts.

Aggregating RFBLG also aggregates BSIS. SAP recommends that you activate or deactivate the updating of line items display and the administration of open items at the same time, if this is possible within your business context. See SAP Note 178487 (release-independent).

Transaction OBCY can be used to activate the summarization of FI documents depending on the procedure used, as stated in SAP Note 36353 (release-independent). SAP for Retail: Only articles can be aggregated.

### 5.2.3.2 Summarization

You can only aggregate data if the FI document is not the outbound document. Data is not updated to table BSIM if summarization has been activated. FI summarization (of an article document, for example) is possible if ACCTIT is maintained at the same time.

You can use program RSUMSIFI to simulate document summarization. Based on currently available documents, it calculates what the effect of summarization in the past would have been. This approximation is not useful if your business processes have changed (see SAP Note 310837 [SAP\_APPL 300 – 470]).

#### See SAP Notes:

- 310837 (SAP\_APPL 300 – 470): Simulation for document summarization in FI
- 36353 (release-independent): FI document items are only totaled if this has been set up in Customizing for the sending application, and if the items are the same in all account assignments. See SAP Note 117708 (release-independent).



### 5.2.3.3 Deletion

Cannot be used

### 5.2.3.4 Archiving

Before archiving, you can use the analysis transaction FB99 to check the archivability of individual documents. See SAP Note 99620 (release-independent).

Data is archived using archiving object FI\_DOCUMNT. FI documents can still be analyzed in their technical and business contexts. Secondary indexes are not archived. The data that is archived is the head data (table BKPF) and the items data (cluster RFBLG). Data from the secondary indexes is not archived. The postprocessing program for FI\_DOCUMNT, FI\_DOCUMNT\_PST (as of SAP ERP 6.0), deletes the secondary index tables for financial accounting and the archive indexes for financial accounting documents. Prior to SAP ERP 6.0, postprocessing program SAPF0481 was used.

BSAS entries can be deleted as soon as one of the line items from the settled item has been archived. BSIS entries can only be deleted if the line item indicator, but not the open item administration indicator, has been set for the related accounts.

In the case of archiving in the context of local currency conversion, you should ensure that you only archive correct open item management documents for G/L accounts with open line item management. See SAP Note 164481 (release independent).

### Application-specific archive index

For the single document display of archived FI documents, the application-specific archive index ARIX\_BKPF is used up to and including mySAP ERP 2004. As of SAP ERP 6.0, indexing occurs via an infostructure of the Archive Information System. This offers considerably more benefits than the previous archive index option. However, it is still possible to access documents indexed with ARIX\_BKPF from earlier releases

For older releases, SAP recommends that you use the Archive Information System instead of ARIX\_BKPF. For information on the prerequisites and how to switch to the Archive Information System, see SAP Note 807726 (SAP\_APPL 46C - 500).

### Table analysis

If you want to run a table analysis (transaction TAANA) before data archiving (see [chapter Goal of Using this Best-Practice Document](#)), the analysis variant called ARCHIVE is offered for table BKPF.

### 5.2.4 CE(1-4)xxxx (xxxx = Operating concern): Profitability Analysis Tables

If set up accordingly, the system can update data for both Profitability Analysis (CO-PA) and Profit Center Accounting (EC-PCA). You should deactivate updating for each application that you do not use in your live operations. Implementing CO-PA in the retail context and for processing sales data using the POS inbound can lead to extremely large data volumes. You are advised to discuss implementation with your consultant. If you implement CO-PA, ensure that you activate summarization.

When a line item in Profitability Analysis is updated, an entry is inserted in table CE1xxxx. A newly formed results object is entered in table CE4xxxx, and the related totals record is updated in table CE3xxxx. To ensure the best read-access performance, for example, in reporting using tables CE3xxxx and CE4xxxx in CO-PA, you can create a hierarchy of summarization levels. If an appropriate summarization level exists, the system reads from this hierarchy instead of from the tables CE3xxxx and CE4xxxx. The summarization levels can be updated separately so that reports reflect the most up-to-date data.

As of SAP R/3 4.5, you have an additional table called CE4xxxx\_ACCTIT. It contains the detailed account assignment information and can grow a lot faster than the actual database table CE4xxxx. For more information see SAP Note 199467 (SAP R/3 4.5 – SAP ERP 6.0). Another relevant table in this context is CE4xxxx\_KENC. It contains the changes to the profitability segments that may be needed for any possible reversals of changes.



For more information on the technical background and performance of CO-PA, refer to the SAP Library under *SAP ERP Central Component* → *Accounting* → *Controlling (CO)* → *Profitability Analysis* → *Technical Aspects of Profitability Analysis*.

## 5.2.4.1 Performance-Critical Processes

### Example: Processing sales data using POS inbound

#### 5.2.4.2 Avoidance

If you do not want to use Profitability Analysis in your live operations, do not assign any operating concerns to the controlling areas (transaction KEKK). If you use CO-PA, use transaction KEKE to activate only the forms of Profitability Analysis that you want to use in your live operations. Note that using account-based Profitability Analysis is usually very performance-intensive. Customers are advised to define their own operating concerns with characteristics and fields that conform to their own requirements. For example, retail-specific characteristics can be included in the material group in Profitability Analysis.

As the POS inbound creates billing documents and prepares CO-PA to update the billing documents, ensure, first of all, that the volume of data that is created in CO-PA can be processed:

- Activate summarization in the POS inbound so that as few billing documents as possible are created per store and per day. This ensures that the actual data update is aggregated (it aggregates per document, that is, in this case, per billing document).
- Activate summarization of actual data (transaction KE2S) for invoicing or for transaction SD00.
- In characteristics maintenance for CO-PA (transaction KEQ3), deactivate characteristic Article. If this does not result in a satisfactory data reduction, also deactivate the detailed characteristics shown in the material group hierarchy.  
You can estimate the document summarization from the relationship between the number of articles and the number of material groups (or the most detailed article-related characteristic that is not used for summarization) that occur within one of the billing documents that was created by POS inbound. The number of line items in CO-PA should be reduced by this factor (if within one billing document each article only occurs in one item).

You should also check whether or not you have activated the transfer of incoming sales orders (transaction type A) from SD to CO-PA. This function allows you to label incoming orders as “expected” orders and to use this information in an analysis to arrive at early estimates of expected revenues for specific business areas. This function is especially useful if there is a large time gap between the creation of the order and the creation of the invoice. However, usually this time gap is very short, so that this function does not provide any additional use during reporting.

If you do not need this function, you can deactivate it using the Customizing transaction KEKF. This allows you to prevent the creation of unnecessary entries (of transaction type A) in tables CE1xxxx and CE3xxxx. To check if these tables already contain such entries, use report RKE\_ANALYSE\_COPA (see SAP Note 537474 [SAP\_APPL 40B – 470]). You can archive old entries using archiving object COPA1\_xxxx.

#### 5.2.4.3 Summarization

- **Relating to data update**

You can activate the summarization of CO-PA line items in Customizing transaction KE2S. The required characteristics are set in transaction KEQ3. Summarization summarizes line items in one results object and thereby reduces the data volume in the line item table (CE1xxxx). This is particularly important when mass data is copied from third-party systems (for this, use IDoc ACLREC01 “Load Receivable” or the BAPI BILLING). You can update billing documents (transaction SD00), Financial Accounting documents (RFBU), and logistics documents such as incoming invoices in MM (RMRP), goods movements documents (RMWA), or goods receipt documents (RMWE) in a summarized form.

- **Relating to read access in CO-PA: summarization levels**

Analyze your specific access paths by multidimensional data in CO-PA (such as the reports including drilldown, reading reference data for assessment, or indirect activity allocation). In collaboration with your consultant, use your analysis to create appropriate summarization levels. Refer also to SAP Note 83204 and check the data volume, bearing in mind that the summarization levels can be updated regularly.

**See SAP Notes:**

- 83204 (SAP R/3 Release 3.00 - 4.6C): Usage Strategy for Summarization Levels
- 147139 (SAP\_APPL 30D - 470): Deals with problems relating to the building of summarization levels and contains a checklist of the most common performance problems and possible solutions.

#### 5.2.4.4 Deletion

To accelerate the realignment process during a profitability analysis, see SAP Note 504891 (SAP R/3 4.0A – 4.7). The profitability segments that were changed during a run are stored in table CE4xxxx\_KENC, which allows you to reverse any unsuccessful realignment runs. If you carry out a large number of realignments, this table can get rather large. If all realignments were successful and there is no need for a reversal of the run, the contents of table CE4xxxx\_KENC can be deleted. SAP Note 504891 describes this in more detail.

#### 5.2.4.5 Archiving

When an operating concern (xxxx = xxxx) is generated in CO-PA, the following archiving objects are generated.

- COPA1\_xxxx for the accrued operating concern
- COPAA\_xxxx
- COPAB\_xxxx
- COPA1\_xxxx
- COPA2\_xxxx for account-based Profitability Analysis
- For profitability segments: COPAC\_xxxx

 Archiving objects COPAA\_xxxx and COPAB\_xxxx have replaced archiving object COPA1\_xxxx.

Although it is still possible to use archiving object COPA1\_xxxx, we recommend that you only use the new archiving objects because they are the standard archiving objects used now. For example, IMG contains a Customizing activity only for the new archiving objects.

You can analyze CO-PA-Data using analysis program RKE\_ANALYSE\_COPA (see SAP Note 537474, [SAP\_APPL 40B – 470]). The program can be used before and after archiving and can help you get a better idea about the results of your archiving activities in CO-PA.

#### Tables CE4xxxx and CE4xxxx\_ACCTIT



If you implement SAP Note 383728 (SAP R/3 4.0A – SAP ERP 2004), you can use the generated archiving objects COPA1\_xxx and COPA2\_xxx to archive Profitability Analysis objects from tables CE4xxxx or, as of SAP R/3 4.5, CE4xxxx\_ACCT.

**See SAP Notes:**

- 127334 (SAP\_APPL 300 – 46C): The table for the profitability segment (CE4xxxx) cannot be archived.
- 755398 (release-independent): Info: CO-PA archiving and summarization levels
- 571189 (SAP\_APPL 46B - 605): Deactivation of CE4xxxx\_ACCTIT entries

## 5.2.5 CKIS: Items Unit Costing/Itemization Product Costing

Table CKIS stores items unit costing or itemization product costing data. It has several dependent tables: CKIT, KEKO, KEPH, and CKHS. Any SAP Notes or recommendations also pertain to these tables.

### 5.2.5.1 Avoidance

If your company works with a large number of materials for which you do not need to create cost estimates, and therefore no cost component split, make sure that your system only creates cost estimates for materials that require cost component splitting. For example, you only need cost estimates for material type ROH or material type HAWA if the transportation costs should be included via info records. You have the following options to prevent the creation of cost estimates for materials:

- In Customizing, set the corresponding material type so that the system does not create a costing view for this material.
- In the material master (transaction MM02, View: Cost Estimate 1), set the indicator do not cost for raw material. This excludes the raw material from the selection and structure explosion, and prevents a cost component split at the time of the cost estimate. If the material becomes part of another cost estimate as a valuation-relevant component, the valuation price will be determined via the valuation variant if a cost estimate with the same key does not exist for the material.
- Make sure that the corresponding materials do not enter a cost estimate run. The result also affects CKIS dependent tables, mentioned above.

### 5.2.5.2 Summarization

Cannot be used

### 5.2.5.3 Deletion

You can delete cost estimates via transaction CKR1. You can also archive them, although experience has shown that it is not necessary to archive this data because it is usually not needed anymore.

### 5.2.5.4 Archiving

CKIS table entries can be archived via several archiving objects, which mainly belong to CO. To find out which archiving objects will be the most useful to you, analyze the table to find the reference objects, because the object type to which a cost estimate (and, as a result, the CKIS records) belongs is coded into a reference object. For CKIS, this reference object is CKIS-BZOBJ. You can find a short text to the reference objects in table TCK23.

Find out which reference object has the most entries. The following table shows the reference objects with the most likely archiving objects that will archive or delete the entries in question:

Ref.Obj	Short Text	Archiving Object
0	Product Costing	CO_COPC



1	Base Planning Object	CO_BASEOBJ
2	Cost Center (all data)	CO_COSTCTR, CC_CCTR_PL
3	Internal Order	CO_ORDER
4	Customer Order/Offer	SD_VBAK
6	Project	PS_PROJECT
7	CO Production Order	CO_ORDER
9	Cost Object	CO_KSTRG
B	Customer Order/Offer	SD_VBAK
C	Cost Center Split	CO_CCTR_PL
D	Component	PS_PROJECT
E	General Costs Activity	PS_PROJECT
F	Production Lot	SD_VBAK, PS_PROJECT
H	Message	CM_QMEL, QM_QMEL

## Table analysis

If you want to run a table analysis (transaction TAANA) before data archiving (see [chapter Goal of Using this Best-Practice Document](#)), the analysis variant called ARCHIVE is offered for table CKIS.

### Also see SAP Notes:

- 515054 (SAP R/3 4.0B – 4.70): Performance improvement in the archiving of CO\_COPC
- 553698 (SAP R/3 4.6B – 4.70): Information about how you can reduce the runtime during archiving of CO\_COPC
- 178942 (release-independent): Archiving of cost estimates
- 532348 (SAP R/3 4.6B – 4.70): Explains how you can create a comment field in the selection screen of the CO\_COPC write program
- 559255 (release-independent): Explains what to do when you get the error message “Cost estimates not in archive”

## 5.2.6 CKMI1 – Index for Material/Articles Accounting Documents

### Notes for the use of table CKMI1:

If you aggregate FI documents at material level or, in retail, at article level, no BSIM records are generated for material and goods movements. Table BSIM contains the FI documents for a material. You cannot therefore use transaction MR51 (display material line items) for a material. Furthermore, when analyzing a material, it is not possible to determine the value of your stock from the FI documents. The analysis is particularly important in the case of data inconsistencies between MM-IM (Inventory Management and Physical Inventory) and FI. If summarization is activated, the inconsistency reports in MM refer to CKMI1. See also SAP Note 32236 (SAP\_APPL 40A – 603, SRMGP 600, SRM\_SERVER 600).

As of SAP R/3 4.0A, table CKMI1 is updated after every FI-relevant process is run for a material or article. Table CKMI1 is updated when FI summarization is run. The table contains the quantity and the stock value for the procedure.

#### 5.2.6.1 Avoidance



**Retail:** Material ledgers are not used in retail and therefore this table is not needed. You can deactivate this table. For more information, refer to SAP Note 1158752 (SAP\_APPL 46C – 605).

However, for active material ledgers, you should not deactivate the updating of this table. If you are using summarization for FI documents, it also not recommended that you deactivate the updating of FI-relevant processes in table CKMI1. For more information, refer to SAP Note 181030 (SAP\_APPL 40B – 470, EA-APPL 110).

### 5.2.6.2 Summarization

Cannot be used

### 5.2.6.3 Deletion

Cannot be used

### 5.2.6.4 Archiving

Object CO\_ML\_IDX is used for archiving. Before archiving, you should determine whether there are any data inconsistencies using report RM07MMFI (see SAP Note 32236 [SAP\_APPL 40A – 603, SRMGP 600, SRM\_SERVER 600]) and then remove these. If required, contact SAP for help. To remove data inconsistencies AFTER archiving, you need to reload the archived data. However, reloading archived data is not recommended and should only be carried out in emergency cases.

**For more information, see the following SAP Notes:**

- 181030 (SAP\_APPL 40B – 470, EA-APPL 110): Details how to use table CKMI1 and why the volume of data in the table grows so quickly
- 158519 (release-independent): Details performance optimization in invoice verification for Logistics
- 1158752 (SAP\_APPL 46C – 605): Deactivation of the update of the CKMI1 table.

## 5.2.7 COEJ: Plan Line Items in Cost Accounting

Table COEJ contains the plan posting line items in cost accounting (CO).

### 5.2.7.1 Avoidance

Unlike in actual (table COEP), in plan you can partially switch off the creation of line items. Some (mainly automatic) transactions always write entries into table COEJ because they need this information for the reversal of the posted data. Here you can switch off the creation of line items only by using the *Test Mode* option instead of multiple postings/reversals. For most other transactions, you have the following options to prevent entries in table COEJ:

#### Deactivating integrated planning

In CO Customizing (transaction OKEV) for every plan version, you can determine whether a specific version is to be incorporated into integrated planning during any particular fiscal year. This includes the transfer of CO planning information to other applications (such as Profit Center Accounting, special ledger). All CO account assignment objects that are incorporated into the Integrated Planning process of Cost Center Accounting take part in this functionality. When the *Integrated Planning* indicator (corresponds to database field TKA07 – RWOINKZ) is active, plan line items are created in table COEJ (and in other plan line item tables COEJL, COEJT, and COEJR, which, however, are not critical because they have a relatively low data volume). In other words, the activation of integrated planning and line item updating is controlled with one common indicator.



If (at least in certain planning versions) you do not need integrated planning and can do without line items, make sure that the corresponding indicator is not activated. Keep in mind that the indicator cannot be deactivated in the standard system to avoid data incongruences (deviations between line items and totals records). The indicator must therefore be set to inactive at the beginning of the fiscal year.

It is also possible to activate the indicator after the beginning of the fiscal year. If it has been activated at the beginning of the fiscal year, every individual plan posting is updated and transferred as a line item. However, it may be sufficient for you to transfer only the result at the end of the year. If this is your case, you can switch on integrated planning (retroactively) at any time using transaction KP96. Of course, it is not possible to reproduce line items for the postings that have taken place up until then; instead, the system creates and transfers one line item per totals record in the same amount. It is then still possible to reconcile this data with the other applications. This is another option for reducing the number of entries in table COEJ. However, keep in mind that if you use this option, you may not notice that some of the settings in integrated planning were wrong (for example missing or locked profit center) until the end of the year.

## Line item updating for internal orders and WBS elements

Not all CO account assignment objects participate in the line item logic of integrated planning. This logic is mainly for cost centers and business processes, while internal orders and WBS elements have their own processes: An internal order/WBS element can be integrated into Cost Center Accounting through a two-step process. In this case, the conditions described under the “Deactivating integrated planning” section, above, would apply to the object. The two steps involve the two Customizing indicators, which both have to be set to active so that the object can be integrated into Cost Center Accounting. One of the indicators can be found in the master record of the order (transaction KO01/KO02, *Control data* tab, *Plan-integrated order* indicator; corresponds to the database field AUFK-PLINT) or WBS elements (transaction CJ01/CJ02, *Control data* tab, *Plan-integrated order* indicator; corresponds to database field PRPS-PLINT). The other indicator can be found in the plan version (transaction OKEV, *Planning* tab, *Integrated Planning with Cost Center/Bus. Processes*; corresponds to the database field TKA07-PLICC). This means that you can switch off integration either across the board directly in the master record or only for a specific plan version in which the orders/WBS elements are to be included in planning, for example, for test purposes. For more details, see SAP Note 201162 (release-independent).

If for some orders/WBS elements you do not require line items or updating to other applications, you can switch these settings to inactive using the aforementioned indicators. However, before you do so, make sure that the settings are correct, because they cannot be changed later (see SAP Notes 34927 [SAP\_APPL 300 – 606], 84275 [release-independent], and 139297 [SAP\_APPL 300 – 606]). In other words, only deactivate the two indicators if you are absolutely certain that you do not need line item/integrated planning (across the board for the object or the version/fiscal year in question).

For all internal order and WBS elements that are not integrated in Cost Center Accounting because of the Customizing settings of the plan version, the following logic applies: Line items are only updated if, in the master record of the object, a user status has been saved that requires the posting of plan line items (the business process KEPP must be set to active). If you do not require any line items (either way, data is not transferred to other applications for objects that are not integrated), do not set any corresponding status.

### 5.2.7.2 Summarization

Cannot be used

### 5.2.7.3 Deletion



In addition to archiving line items, it is also possible to completely delete (manually scheduled) line items that are no longer needed. You can do this either on the level of a single planning combination (year/version/CO object/ e.g. cost center) (to do this during your manual job scheduling, select the data you want to delete and choose *Delete*) or use transactions KP90/KP91. However, if you delete by version level, please consider that ALL relevant CO Objects will be deleted that are integrated with Cost Center Accounting. The reason for this is that you cannot restrict your selection only for a SINGLE cost center.

**See also SAP Note:**

- 779408 (release-independent): KP90, KP91: What is deleted?
- 520890 (SAP R/3 4.5B – 4.70): KP96, KP91: Profitability segments not taken into account

### 5.2.7.4 Archiving

You can use the analysis program in SAP Note 138688 (SAP\_APPL 30D – 470) to determine which archiving objects are available for archiving COEJ entries. Follow the same procedure as described under table COEP (see [chapter COEP: CO Line Items](#)).

**See also SAP Notes:**

- 200480 (release-independent): Archiving CO\_ITEM: Too few or nothing archived
- 200513 (release-independent): When is table COBK deleted?

For comments about performance during data archiving using CO\_ITEM, see also the [chapter COEP: CO Line Items](#).

### 5.2.8 COEP: CO Line Items (by Period)

The system automatically creates a CO line item for every process in which an object belonging to Controlling (for example, a sales order or cost center) is used. The line items are created in addition to the documents for settlement or financial accounting.

**See SAP Notes:**

- 178921 (release-independent) gives an overview of what you can do if table COEP experiences a rapid increase in the volume of data it contains.
- 138688 (SAP\_APPL 30D – 470) can be used to upload analysis programs RARCCOA1 and RARCCOA2 in your system. The two programs allow you to do the following:
  - The programs can tell you how much data exists for an object type, a controlling area, and a fiscal year.
  - You can define which archiving object should be used to remove CO data. The entries in the CO tables (COEP, COSP, COEJ...) are counted and clearly assigned to an archiving object.



Even if the results of the analysis performed with programs RARCCOA1 or RARCCOA2 also include archiving object CO\_COSTCTR, you should not use this archiving object to archive line items that belong to cost centers. Use archiving object CO\_ITEM instead. CO\_COSTCTR is not a good option for reducing the size of table COEP (also true for table COEJ).

#### 5.2.8.1 Performance-Critical Processes

Updating can be triggered by various processes, such as goods receipts and invoices. Depending on the settings in Customizing, at least one entry is generated in table COEP for each document item in the original document.

#### 5.2.8.2 Avoidance

- It is possible to deactivate the updating of line items and totals records of reconciliation objects to tables COEP or COSP. See SAP Note 182496 (SAP\_APPL 30F – 606).

- When you carry out variance or work in process (WIP) calculations for a new period, a large number of new data records is updated in CO for every production order. You can avoid this by removing several configuration indicators, as described in SAP Note 393686. This will also improve the performance of the archiving object for production orders, PP\_ORDER. Records that have already been written can be deleted via a special delete program. See SAP Note 310089 (SAP\_APPL 30F – 600).

### 5.2.8.3 Summarization

You can activate summarization for line items. Summarization does not have an immediate effect on data because it only refers to future postings. Old documents are not affected, so archiving may still be required.

You can use line item summarization to ensure that the system does not generate an original document (for example, a material posting) for every line item in CO. Line item summarization ensures that selected fields no longer appear in the line item report. No other effects can be expected because the fields do not directly affect cost accounting.



You cannot use line item summarization if you use transfer prices.

SAP Note 195480 (SAP R/3 3.1I - 4.70) contains a program that simulates document summarization, thereby enabling you to establish whether it is worthwhile aggregating documents or not.

Using inappropriate characteristics in the hierarchy definition can increase the size of tables COSP and COSS unnecessarily. Especially the key fields of the summarization objects, such as *order number*, can influence table size. That is why before each summarization you should check which fields are actually needed in the hierarchy. Only the fields that are really needed should be part of the summarization. In some cases you may also be able to remove entire hierarchy levels from the hierarchy.

### 5.2.8.4 Deletion

~~Cannot be used~~ In general SAP recommends to archive data rather than to delete it. However, there are a number of possibilities for deleting CO Line Item data.

- COEP - Delete target costs/variances after deactivating the line item update
- COEJ - Delete Planning Data

### 5.2.8.5 Archiving

You can use the analysis programs in SAP Note 138688 (SAP\_APPL 30D – 470) to define which archiving objects can be used to archive the entries in table COEP. Proceed as follows:

- 1) Only use the archiving objects that cover the largest amount of data. Under normal conditions, 2 to 3 archiving objects will cover 90% of the relevant data.
- 2) One of the relevant objects is already used (regularly). If this is the case, you should proceed as follows:
  - a) Repeat the table analysis after using this object for archiving. To do this, run program RARCCOA1 again. This should mean that considerably less data for this object will appear in the list for program RARCCOA2.
  - b) If, however, the same amount of data appears for the object in the list for RARCCOA2, you should try to enhance archiving by using the object in question. Change some data, for example, by reducing the residence time or extend your selection criteria. Before doing this, however, you must contact the departments concerned.
  - c) If the previous point does not improve the situation and you no longer require the CO line items for the relevant object type, you should mark the object type for archiving with CO\_ITEM.



- 3) If required, you could schedule archiving for one of the objects. Bearing the data in table COEP in mind, you should give this archiving job greater priority. Using CO\_ITEM would probably be more time consuming.
- 4) If archiving object CO\_COSTCTR appears, you should also consider archiving object CO\_ALLO\_ST. Proceed as follows:
  - a) Schedule program RARCCOAA as a background job to run at a time with a low posting load.
  - b) RARCCOAA generates a list of the entries in tables COEP and COEJ. The entries refer to allocation documents that have been cancelled. If the system returns a considerable number of entries, you should use archiving object CO\_ALLO\_ST.

CO\_ALLO\_ST can also be used when processing recent data. The archived documents are canceled cost accounting documents. They do not influence your data in any way. These documents are created when, for example, data is redistributed or re-assessed.

- 5) If a considerable number of entries remains in the list for program RARCCOA2 or if you have selected object types for running archiving with CO\_ITEM, you could consider implementing this archiving object.

Create a list of object types that can be archived using CO\_ITEM. You can use the list for program RARCCOA2 when generating the list of object types, excluding everything that has already been covered by different archiving objects.

### Table analysis

If you want to run a table analysis (transaction TAANA) before data archiving (see [chapter Goal of Using this Best-Practice Document](#)), the following analysis variants are offered for the corresponding tables:

Table	Analysis Variant
COEP	BUSINESS_TRANSACTION
COBK	REFERENCE

### See SAP Notes:

- 200480 (release-independent): Provides help if, when using CO\_ITEM, too little or nothing was archived because, for example, the wrong object type or the wrong logical system was set in Customizing
- 200513 (release-independent): Explains when entries are deleted from table COBK. In contrast to Financial Accounting, line items in CO are archived by object rather than document. It can therefore occur that many document line items (such as COEP and COEJ) were deleted, but not a single record from table COBK.

### Notes on performance when using object CO\_ITEM to archive data:

To achieve maximum performance in the write program:

1. Start the write program for a single object type only. Enter the object type in the selection screen.
2. Start the write program for a single object type only.
3. Archive as many periods as possible during one archiving session. We would recommend that you do not specify any data for “periods to” or “fiscal years to”. This means that only the residence times are used. We do not recommend that you run more than one archiving session for different “periods to” or “fiscal years to”. Restricting the period and fiscal year does not significantly improve the runtime.

➡ If you only want to archive plan line items (table COEJ) then it would not make sense to enter a period. Plan line items are always maintained on a year level and are only archived for fiscal years that fall into the selection completely. If, for example, you enter 2002 in *period to* and 6 in *posting period*, then the system only archives plan line items up to fiscal year 2001, because 2002 does not completely fall into the selection.



For more information about data management for table COEJ see [chapter COEP: CO Line Items](#)

4. Do not run an archiving session parallel to CO\_ITEM. Furthermore, do not start archiving sessions for CO\_ITEM in parallel to runs for other archiving objects that appear in the list for RARCCOA2.

Define the runtime according to “groups” or “sets”.

If the runtime for the write program is too long (for example, it exceeds a specified time range), you can further reduce the runtime by using the *Group or set* parameter. For more information, see the following documentation (depending on the release of the system in question, not all options may be available in the system):

- F1 help for the Group or set field, on the initial screen of the write program
- Documentation for archiving object CO\_ITEM

It is important that you have sufficient information about the business impact the different groups or sets may have for each object type. For more information, contact the relevant departments.

## 5.2.9 COSB: Total Variances/Results Analyses for CO Object

Table COSB is used to save the total variances and results analyses in cost accounting (CO object).

### 5.2.9.1 Avoidance

You can use the following options to prevent the creation of unnecessary entries in table COSB:

- Preventing the creation of unnecessary line IDs

Check this option in the implementation phase, because this measure is difficult to implement when the system is already up and running. In version 0, the number of line IDs is often predetermined by the structure of the CO-PA; it is difficult to make any changes here. In the follow-up versions, however, the structure is only predetermined by the accrual/deferral postings of the financial statement. This requires fewer line IDs compared to version 0. If you are using follow-up versions, you may want to check whether your structure is the same in all versions. This may not be necessary, but in general we can say that fewer line IDs mean less information. It is difficult to make any suggestions that are valid for all situations.

- Avoid results analyses if they are not necessary

In the area of sales orders, you have the option to use valuated sales order stocks. Make sure you make this decision before going live, because changing this setting is difficult once the system is up and running. In addition, this would generate other data. You can also try to avoid accrual calculations for sales orders whose run time is short enough or that are less important. However, it requires some time and organizational effort to make and monitor these settings.

- Switch off variance categories

You can switch off individual variance categories via transactions OKVF (cost centers), OKVG (orders) and OKVH (cost objects).

- Minor difference

Make sure your minor difference (variance between target costs and actual costs) is set to an appropriate value, not 0 or blank. If you have specified a minor difference percentage, the system summarizes all amounts that fall below this value and updates the sum as a remaining variance. As a consequence, the minor difference values are not updated individually.

- Switch off scrap

Switch off scrap using transactions OKV0, OKV1 and OKV2.

- Selectively set the origin indicator for material master data

The setting of the origin indicator for materials in the costing view of the material master (see [chapter COSP, COSS: Cost Totals in Cost Accountings](#)) also affects the data volumes in table COSB. You



should therefore check for which materials the origin indicator is really necessary and deactivate the indicator for the rest.

See also SAP Note 352610 (release-independent).

## 5.2.9.2 Summarization

Cannot be used

## 5.2.9.3 Deletion

Cannot be used

## 5.2.9.4 Archiving

You can use several different archiving objects, mainly from the areas CO, PM, PP, PS, and SD, to archive COSB data. If you include tables COSP and COSS in your CO archiving sessions (see below), then the CO-relevant data from table COSB will most likely also be taken care of.

## 5.2.10 COSP, COSS: Cost Totals in Cost Accounting

Tables COSS (internal postings) and COSP (external postings) contain the cost totals in cost accounting. As with line items, these totals records are stored in the same tables for all applications. For example, the totals for primary costs are always stored in table COSP, no matter in which application they originate.

### 5.2.10.1 Avoidance

You can get an overview of the data contained in these tables by performing a table analysis using programs RARCCOA1 and RARCCOA2 (see [chapter COEP: CO Line Items](#)). It is also useful to perform an analysis based on procedures (VRGNG field). From the procedure, you can usually deduce the function from which the data originated. We can provide concrete recommendations for data avoidance for the following procedures:

- **SDOR:** This procedure comes from the Project System (PS) and can mainly be found under object type VB. If this procedure has a large number of records, the relationships between the SD and CO components may be configured incorrectly. Check whether it is really necessary to keep cost records under sales order positions.
- **KKKS and KKKP:** This procedure has to do with “costs to be controlled” during the cumulative processing of variance calculations in Cost Object Controlling. They can be switched off in the report parameters (TKKBU-PPDATA).

### Origin indicators:

For materials for which the *Material Origin* indicator in the material master is set, or for materials that use an origin group (MBEW-HKMAT), the cost totals are updated for each material individually (tables COSS and COSP). This increases the number of data records in the cost totals. An indication that this flag is set is, for example, a high number of COSP records with COSP-HRKFT not equal to <empty>. The indicator is mainly used for finished or semi-finished products, not for raw materials.

Check if you can activate the *Material Origin* indicator only for important materials. Keep in mind that if you change the *Material Origin* indicator, the target costs will be affected at the time of cost calculation. In the case of actual costs, changing this indicator has an immediate effect. This can lead to unwanted deviations in the variance calculation. Therefore, it is best that you first contact the relevant user department and jointly decide on a date and time for changing this indicator.

In addition, keep in mind that for production orders that involve a large number of materials, the number of lines in an actual cost report increases with the number of materials for which the *Material Origin* indicator has been set. If, for example, you have a bill of material with 200 materials, and the *Material Origin* indicator

has been set for all of the materials, then the actual cost list report for this production order will have 200 lines for materials used. As a result, the report could be impossible to read.

We recommend the following procedure for reducing the number of materials that use this indicator.



For quantity-based overhead costs, the indicator must be set.

1. First divide the materials into three categories, such as A, B, and C. Class A contains all materials for which the origin indicator is relevant, for example, because of the existence of corresponding revenue. This should apply to about 10% to 20% of the materials. For another 20% to 30% of the materials, it is not necessary to use the highest level of specificity with respect to their origin; these belong to class B. The rest of the materials belong to class C.
2. Then use transaction MM02 (change material) for each material in question. Go to the *View Cost Estimate 1* for a specific material and, for type A materials, set the *Material Origin* indicator if it has not been set. For materials of type B, enter an origin group. For all other materials (type C), neither of these two criteria should contain a value.

Through this procedure, you can make sure that the consumption update of table COSP only takes place for those materials for which it is necessary. For more information about the origin indicator, see SAP Note 393686 (release-independent).

### Target cost versions:

Target cost versions are used to control which material costings or sales order costings are used for comparisons. You can make these settings in Customizing for Cost Object Controlling.

You can find target cost versions in COSP/COSS-VERSN, and the value type for target costs is COSS/COSP-WRTTP = 5. The more target cost versions you have, the higher the number of data records. Check if you really want to calculate and analyze all target cost versions. It may be enough to only calculate target cost version 0 (make sure you coordinate this with the relevant user department) in the variance calculation.

You can set target cost versions in Customizing for the following transactions:

- OKV5 (cost centers)
- OKV6 (production orders)
- OKV7 (cost object hierarchy)

### Cost centers/activity type combination:

You can prevent some of the entries in table COSP by reducing the number of cost center/activity type combinations. Only permit those combinations that you actually need.

### Update of reconciliation objects:

The through-posting to cost accounting (CO) from external accounting systems causes many line items and totals records to be written for reconciliation objects. The growth of database tables COEP (see [chapter COEP: CO Line Items](#)) and COSP is sharply increased by this large number of postings to reconciliation objects (see SAP Note 178921, release-independent). SAP Note 182496 (SAP\_APPL 30F – 606) explains under which conditions you can switch off the updating of reconciliation objects in CO. This, however, will have more of an effect on line items (table COEP) than on totals records (table COSP).

### Product costing:

Although no line items are written for this object type, it can strongly increase totals records, which could negatively affect your system's performance. As of SAP R/3 4.5A, cost accounting tables (COKA, COSP, COSS, COSL) are no longer updated during product costing. Table entries with object numbers that begin



with EK can then only have originated in earlier releases. A delete program is not available for these objects; however, they can be archived using archiving objects SD\_VBAK and CO\_COPC.

## Summarization objects:

In CO, summarization is used to maintain CO reports on a more general level than at the level of the CO objects themselves. Since it is not possible to archive summarization objects, you should try to keep the amount of data that is summarized as low as possible by deleting old data and data that you no longer need (see below).

Check if you really need all the fields in a hierarchy. The key fields of objects (such as order number), particularly, can be problematic. You have the following options:

- You may be able to delete entire hierarchies. If you have, for example, a hierarchy with the fields company code, plant, and profit center, and another one with company code, profit center, and plant, you should decide on one and delete the other one.
- You can delete single objects, such as order number, from the hierarchy. You can double-click on the objects in the summarization report to display them.
- It is possible to restrict which totals records tables take part in the summarization. It is also possible to carry out the summarization via other fields besides the key field of the objects, such as AUFNR. As of SAP R/3 4.0 you can make specific settings for summarization in customizing.

### 5.2.10.2 Summarization

Cannot be used

### 5.2.10.3 Deletion

#### Planned records:

To delete planned records, you have the following options:

- Use transaction KP90 to delete specific primary cost elements or revenue elements, or all primary cost elements and revenue elements in your version. This is useful if you want to renew the planning of your primary cost elements.
- If you want to set up an entirely new plan, you can delete all planning data, such as costs, services, resources and key figures, as well as prices in your version for a given fiscal year. You can do this using transaction KP91.

#### Summarization objects:

Although an explicit reorganization is not part of summarization, it is possible to carry out a deletion run and to refill the hierarchies for the fiscal years or periods that you still need.

During the deletion run, only the data is deleted, not the definitions. This means that it is possible to carry out a new summarization run immediately after the deletion run. The deletion and summarization functions are contained in the info systems of each application (for example internal orders) under *Tools* → *Summarization*.

### 5.2.10.4 Archiving

Entries in table COSS and COSP can be archived using a number of different archiving objects, mainly from CO. Before archiving, you should use analysis program RARCCOA2 (for more information see [chapter COEP: CO Line Items](#)) to determine which CO archiving objects appear to be the most useful. If the results list is empty or not up to date, you can first run program RARCCOA1 to update the statistics. For more information, see SAP Note 138688 (SAP\_APPL 30D – 470).

#### Cost centers:

Entries that belong to cost centers are displayed in the results list for archiving object CO\_COSTCTR. Cost center data is usually composed of long-standing master data objects. Because of this, it is generally not



recommended that you archive the cost center in its entirety (including cost center data, line items, totals records, and so on). Planning records can be archived using archiving object CO\_CCTR\_PL. Actual totals records can be archived using archiving object CO\_TOTAL (see SAP Notes 565132 [SAP\_APPL 46B – 470] and 564967 [SAP\_APPL 46B – 470]). When you use archiving object CO\_CCTR\_PL, you can also use the analysis program RARCCOAP, which will provide you with pointers as to which selection criteria to use for your archiving sessions.

## Internal orders:

Totals records for internal orders, including the order itself, can be archived using archiving object CO\_ORDER.

## Table analysis

If you want to run a table analysis (transaction TAANA) before data archiving (see [chapter Goal of Using this Best-Practice Document](#)), the following analysis variants are offered for the corresponding tables:

Table	Analysis Variant
COSS	BUSINESS_TRANSACTION
COSP	BUSINESS_TRANSACTION

### 5.2.11 DFKKOP; DFKKOPK, DFKKKO: Contract Accounting Documents

Tables DFKKOP, DFKKOPK, and DFKKKO are part of contract accounting (component XX-PROJ-FI-CA) and are used by different industry solutions, such as SAP for Public Sector, SAP for Media, SAP for Utilities, and so on. The table entries are from billing and payment runs and form payment lot processing. The tables are updated during the dunning run. The contract accounting document line items are stored in tables DFKKOP and DFKKOPK, and table DFKKKO contains the corresponding document headers.

#### 5.2.11.1 Avoidance

The growth of these tables depends directly on the number of used FI-CA sub-transactions. Check whether all of the existing sub-transactions are really necessary. If not, you can eliminate some of them (SAP reference IMG: *Financial Accounting (New) → Contract Accounts Receivable and Payable → Basic Functions → Postings and Documents → Document → Maintain Document Assignments → Maintain Sub-Transactions*).

In the case of SAP for Utilities (IS-U), a large part of table entries come from budget billing plans. Check whether or not you really need all the line items in the budget billing plans. Reducing the number of document line items here will help you reduce the size of your contract accounting tables.

#### 5.2.11.2 Summarization

Cannot be used

#### 5.2.11.3 Deletion

Cannot be used

#### 5.2.11.4 Archiving

Table entries from tables DFKKOP, DFKKOPW, and DFKKKO are archived using archiving object FI\_MKKDOC. There are no dependencies to any other archiving objects. You must only keep to the archiving sequence of FI\_MKKDOC:



1. Clearing documents and statistical documents (payments, transfer postings, dunning notices)
2. Other documents (bills, credit memos)

**See also SAP Notes:**

- 950328 (FI-CA 646 – 600): FI\_MKKDOC: Incorrect Archiving of Installment Plans
- 927259 (FI-CA 646 – 600): FI\_MKKDOC: Collective Bill References Open Original Items
- 860657 (FI-CA 646 – 472): Reversal, Reset Clearing, Returns During Archiving

## **5.2.12 DFKKRD: Revenue Distribution FI-CA**

Within the classic revenue distribution area, you manage receivables for third parties and want to forward incoming payments to the final recipients. By using transaction Mass Activity: Revenue Distribution, select the payments in the system to be distributed to the final recipients and, for example, select the open receivables for final recipients caused by a clearing reset. The system creates a history that updates the table DFKKRD. . When a payment is distributed, the system adds an entry with an empty correction indicator to the history table. After a clearing reset for a payment that has already been distributed, an entry with correction indicator X is added with an opposite +/- sign, since this amount has to be recovered from the final recipient. For a reversal and write-off of original receivables, the system creates an entry with correction indicator R in the history table. The entries in the history are not included in the distribution posting to the final recipient. They are used as a comment and can be evaluated using customer-specific programs.

### **5.2.12.1 Avoidance**

Table DFKKRD is only filled when using functionality of revenue distribution.

### **5.2.12.2 Summarization**

Cannot be used

### **5.2.12.3 Deletion**

Cannot be used

### **5.2.12.4 Archiving**

Table entries from table DFKKRD can be archived with archiving object FI\_MKKREVD.

Report RFKKAR33 performs the first step in archiving the revenue distribution table (DFKKRD): Creation of an archive.

The second step is performed by report RFKKAR34, which deletes the entries in the revenue distribution table based on the archive.

## **5.2.13 DPAYH & DPAYP: Payment Program FI-CA**

Tables DPAYH and DPAYP are used for payment runs in application Contract Accounts Receivable and Payable (FI-CA) and modules based on FI-CA.

The result of a payment run is a quantity of payments (table DPAYH) and a quantity of settled items (DPAYP). The system generates this payment data in the simulation run and for payment orders as well. This is the basis for the settlement list and for the generation of the payment media.

### **5.2.13.1 Avoidance**

Cannot be used

### **5.2.13.2 Summarization**

Cannot be used



### 5.2.13.3 Deletion

A deletion of the entries is possible. A deletion will be executed with report RFKPYD00.

Prerequisites for deleting the entries are:

- The payment run data must lie at least 14 days in the past.
- The payment run must be finished.

Report RFKPYD00 deletes the data from tables DPAYP and DPAYH. After the deletion of the data, it is not possible to create any more payment medium data. Please consider also that this data may be needed for the creation and processing of the returns lot. If no entries in table DPAYH are available anymore, it might be possible that the bank data for the business partner is not filled automatically, since it cannot be read from the actual data because it might have changed since the payment run.

### 5.2.13.4 Archiving

Cannot be used

### 5.2.14 EBAN: Purchase Requisition

Table EBAN contains purchase requisitions which are created in ERP every day. 90% of such purchase requisitions are APO related.

#### 5.2.14.1 Avoidance

Cannot be used

#### 5.2.14.2 Summarization

Cannot be used

#### 5.2.14.3 Deletion

Cannot be used

#### 5.2.14.4 Archiving

Entries in table EBAN are archived using archiving object MM\_EBAN.

Please see SAP Note 615795 - MM\_EBAN: Additional selection criteria for source system for new selection criteria to select only APO generated purchase requisitions.

### 5.2.15 EIPO: Items for Import/Export Data in Foreign Trade

Table EIPO contains the items for import and export data from application SAP's Foreign Trade / Customs (FT). The header data is stored in table EIKP. The items table is generally much larger than the header table and is therefore relevant in the context of data management.

#### 5.2.15.1 Avoidance

Cannot be used

#### 5.2.15.2 Summarization

Cannot be used

#### 5.2.15.3 Deletion

Cannot be used

#### 5.2.15.4 Archiving



Entries in tables EIPO and EIKP are archived together with their corresponding primary documents using the following archiving objects:

Archiving Object	Archived Application Data
MM_EKKO	Purchasing documents
RV_LIKP	Deliveries
SD_VBRK	Billing documents

You can run a TAANA analysis on field EIKP-AHBAS (document category). This will indicate which archiving object is the most appropriate to use, that is, which application caused which portion of records in table EIKP.

**See also SAP Notes:**

- 426324 (SAP R/3 3.1I – 4.6C): Foreign trade data deleted in delivery archiving
- 952286 (SAP R/3 4.6A – SAP ERP 6.0): Runtime problems during archiving (invoices)

## 5.2.16 EKKO, EKPO, EKBE, EKKN: Purchase Order Items

Tables EKKO (header), EKPO (items), and EKBE (document history) contain purchase order items and belong to materials management (MM). Table EKKN is dependent on EKPO and contains account assignment data.

### 5.2.16.1 Avoidance

The best way to combat strong growth of these tables and the other tables in this family is by archiving the purchase orders (see below). If the table continues to grow despite regular archiving, check the following:

- Purchase order monitoring

Due to business process reasons (such as invoicing problems on the side of the vendor or open items that have not been cleared) it may be that the quantity of goods received of an order item does not coincide with the quantity of goods invoiced by the vendor. In this case, the purchasing document is not closed and can therefore not be archived. If these business process issues are not resolved accordingly, over time you may end up with many documents that are not archivable.

Therefore, make sure your business process includes a complete and regular monitoring of the orders and invoices, and that the open items on your GR/IR account are cleared.

- Delivery Completed indicator has not been set

If the *Delivery Completed* indicator is not set automatically or manually for order items, the orders cannot be archived. Over time, this leads to a buildup of orders in your system that are not archivable. The *Delivery Completed* indicator is not set, for example, if the indicator is generally switched off in Customizing (*Materials Management* → *Inventory Management* → *Goods Receipt* → *Set "Delivery Completed" Indicator*). Or if the underdelivery tolerance in the material master (Purchasing view) has been set so low that in the case of an underdelivery, the underdelivery tolerance is not reached.

Therefore, make sure that the *Delivery Completed* indicator is set automatically or manually. You can also set it later with the help of a correction program (see SAP Note 104475 [SAP\_APPL 31I – 604]).

- Unfavorable combination of material master indicators



The indicators for a specific material may not be set to the most optimal combination. As a consequence, it may be that in your system many orders are created for small amounts instead of few orders for large amounts. This is especially the case if the most commonly purchased materials are involved.

If you are using manual or automatic reorder point planning together with an exact lot size, you should define either a minimum lot size, a rounding value, or a rounding profile.

- Residence times have not been defined in Customizing

Residence times have not been defined in Customizing for a specific combination of document type and items type. This can occur, for example, when customer-specific document types are introduced, but the residence times are not entered accordingly. As a result, all the orders that are based on this kind of combination cannot be archived with the regular archiving sessions running in your system.

To archive purchase orders, enter the appropriate residence times in Customizing using transaction OMEY.

### 5.2.16.2 Summarization

You can aggregate the EKBE table entries using transaction ME87, which moves the EKBE table entries to table EKBEH. You can undo the summarization at any time. This means that the purpose of the summarization is not actually the reduction of storage space, but rather the improvement of performance.

### 5.2.16.3 Deletion

Cannot be used

### 5.2.16.4 Archiving

Orders can be archived with archiving object MM\_EKKO, which archives the header and items data from tables EKKO and EKPO, as well as entries from EKKN and EKBE.

### Table analysis

If you want to run a table analysis (transaction TAANA) before data archiving (see [chapter Goal of Using this Best-Practice Document](#)), the analysis variant called STANDARD is offered for table EKPO.

### See also SAP Note:

- 456129 (release-independent): FAQ: Archiving in Purchasing

## 5.2.17 FAGLFLEXA : FI General Ledger Accounting (new): Actual Line Items

Table FAGLFLEXA is used in FI to store line item information of FI documents.

With the introduction of the General Ledger Accounting (new) General Ledger Accounting (new) (as of SAP ECC 5.0), an additional set of tables was introduced that increases the functionality of the general ledger (classic G/L) to include, for example, parallel accounting and segment reporting.

This enhanced functionality may cause a larger volume of data to be generated and stored in the live system.

Tables BKPF, RFBLG, BSEG, and BSEG\_ADD contain the current line items for accounting. The system automatically creates an entry for every business process in which an account is used.

Line item data from table BSEG or BSEG\_ADD is copied to table FAGLFLEXA. Every BSEG/BSEG\_ADD record has at least one corresponding FAGLFLEXA record after new G/L is activated. For BSEG records created before the activation of new G/L, table FAGLFLEXA is not updated retroactively.

- BSEG is updated via postings to a leading ledger
- BSEG\_ADD is updated via postings to a non-leading ledger (if no leading ledger is involved).



When using document splitting functionality, please also read chapter 5.2.18 FAGL\_SPLINFO, FAGL\_SPLINFO\_VAL: FI New GL: Splitting Information.

## 5.2.17.1 Avoidance

Data volumes in new G/L are heavily influenced by the Customizing adopted during the implementation phase. From a business point of view, the General Ledger Accounting (new) is a general ledger and thus is the legal equivalent of the classic general ledger, ledger 00, with totals table GLT0. An audit is therefore required.

This auditing requirement means that before changes can be made to Customizing for the General Ledger Accounting (new) or document splitting, you should take care these actions don't influence already posted documents. Such business effects also involve technical restrictions. Together, these factors prevent most changes from being made, even if they are not intercepted by error messages in the relevant Customizing path. As a result, implementation or changing of functions in the General Ledger Accounting (new) should be connected to a migration project.

Data avoidance in an already productive new G/L generally requires changes to be made to the configuration settings. It may therefore be necessary to consider this in the context of a migration project.

**For more information, see the following SAP Note:**

- 891144 (SAP\_APPL 500 - 605): New GL/Document splitting: Risks w/ subsequent changes

### **Avoidance: Ledger**

In general ledger accounting, you can use several ledgers in parallel. This allows you to produce financial statements according to different accounting principles, for example. As ledger is a key field in table FAGLFLEXA, it can lead to an increase of entries in relevant tables like FAGLFLEXA and FAGLFLEXT (totals table).

### **Avoidance: Scenarios and Fields**

A scenario defines which fields are updated in the ledger(s) during posting from other application components. The fields that are updated can then be used to model certain business circumstances, such as segment reporting. Please check carefully which fields are really needed because updating them leads to increased data volume.

### **Avoidance: Document Splitting**

You can use the document splitting (online splitter) procedure to split up line items for selected dimensions (such as receivable lines by profit center) or to achieve a zero-balance setting in the document for selected dimensions (such as segment). This generates additional clearing lines in the document, meaning that more entries are written to table FAGLFLEXA. The document splitting procedure is both a prerequisite and essential tool for drawing up complete financial statements for the selected dimensions at any time.

## 5.2.17.2 Summarization



### Background Information

Updating Financial Accounting data from the upstream modules in too much detail can increase the amount of data in your SAP system unnecessarily. When you post documents via the FI/CO interface (from SD, MM, or other applications), items appear in the FI document that are identical in all or almost all fields. This can also trigger error message F5727 (Maximum number of items in FI reached). The system issues this error if more than 999 items occur in a FI document.



In such cases, FI document summarization can be useful. The system summarizes items in the FI document only if you configured the relevant settings in Customizing. Summarization is not carried out for documents entered in application FI (object type BKPF) or for invoice verification documents (transaction MR01 with object type BKPF).

The system can only summarize items in the FI document if they have the same account assignments and only their value fields contain different entries. It is therefore not possible to carry out summarization across different G/L accounts.

You can simulate FI document summarization with report RSUMSIFI. When new G/L is in use, start the report without the fields used in document splitting to obtain an accurate overview of potential improvements.

**For more information, see the following SAP Notes:**

- 117708 (release independent): A maximum of 999 items can be posted in the FI document
- 36353 (release-independent): AC interface: Summarizing FI documents



Take the following information into account before using summarization in your productive environment:

- Summarization is achieved by deleting specific fields from all items (this can be configured in Customizing). These fields will then no longer contain data in the FI document. They are therefore no longer available for selection, clearing, or reconciliation with other applications.
- Summarization CANNOT be set up for fields used in document splitting for the ledgers used.
- To determine the impact this will have on your business, set up a detailed test phase in a test environment.

## Summarization - Splitting Information



### Background Information

Using inheritance or a constant for document splitting can result in too many entries being written to tables FAGL\_SPLINFO and FAGL\_SPLINFO\_VAL.

To overcome this issue, SAP provides a compression program that must be implemented and tested separately. Make sure a system backup is performed before you run report FAGL\_SPLINFO\_COMPRESS. Refer to SAP Notes 1067344 (SAP\_APPL 500 – 602) and 1151204 (SAP\_APPL 500 – 603).

Sales and distribution documents with multiple tax lines cause tables FAGL\_SPLINFO and FAGL\_SPLINFO\_VAL to grow rapidly. SD creates a tax item containing the material number for each revenue item in the billing document. The problems mentioned above can occur because the document splitting tool splits each of these tax items. SAP Note 1137444 (SAP\_APPL 470 – 603) provides a solution to this issue.

**For more information, see the following SAP Notes:**

- 1067344 (SAP\_APPL 500 – 602): Too many entries in FAGL\_SPLINFO or FAGL\_SPLINFO\_VAL
- 1151204 (SAP\_APPL 500 – 603): Compression of equal entries in FAGL\_SPLINFO\* tables
- 1137444 (SAP\_APPL 470 – 603): TSV\_TNEW\_PAGE\_ALLOC\_FAILED in G\_BEB\_SPLIT\_DOCUMENT\_CALC

### 5.2.17.3 Deletion

Cannot be used

### 5.2.17.4 Archiving



Further information can also be found in chapter 5.2.3.4 Archiving

Financial accounting documents are archived, deleted and reloaded using archiving objects FI\_DOCUMNT and FI\_TF\_GLF.

The data of the FI document header (table BKPF) and line items (tables RFBLG, BSEG, BSEG\_ADD, and FAGLFLEXA) is archived with archiving object FI\_DOCUMNT.

The data of the FI document totals (FAGLFLEXT) is archived with archiving object FI\_TF\_GLF.

Before archiving can take place, document-specific settings must be configured in Customizing for Financial Accounting. You have to configure settings for index management, document type life, and account type life.

In general, it is recommended to:

- Retain FI documents from the current and previous fiscal year in the system (archiving all FI documents older than the previous fiscal year)
- Retain secondary indexes of archived FI documents in the system for three years (deleting the secondary indexes of archived FI documents after three years)

A number of conditions must be met to ensure that only documents no longer required in the online system are archived. To determine whether a document can be archived, the archiving program checks the document header and line items. If the checks show that one of the prerequisites has not been fulfilled, the document is not archived. The main check criteria for archiving FI documents are as follows.

The following conditions relate to the document header:

- The document life must have been exceeded.
- The document must have been in the system for at least the minimum period.
- Documents with withholding tax (field BSEG-QSSKZ) must fulfil country-specific retention requirements.
- Sample, recurring, and parked documents are not included.

The following conditions relate to line items:

- The document must not contain any open items.
- The account life must have expired.

#### **Recommendation:**

Before archiving, you can use analysis transaction FB99 to check whether individual documents can be archived.

**For more information, see the following SAP Notes:**

- 99620 (release-independent): SAPF048 seems to archive too many/too few FI\_DOCUMNT

#### **Table analysis**

If you want to run a table analysis (transaction TAANA) before data archiving (see [chapter Goal of Using this Best-Practice Document](#)) the analysis variant called ARCHIVE is offered for table BKPF.

## 5.2.18 FAGL\_SPLINFO, FAGL\_SPLINFO\_VAL: FI New GL: Splitting Information

With the introduction of the General Ledger Accounting (new) (as of SAP ECC 5.0), an additional set of tables was introduced that increases the functionality of the general ledger (classic G/L) to include parallel accounting, legal and management reporting, or segment reporting. Furthermore, new functionalities were implemented, for example, document splitting/online splitter, which uses new tables.

Especially for document splitting, new tables to save the splitting information are needed. These are the following tables:

- FAGL\_SPLINFO: Splitting Information of Open Items
- FAGL\_SPLINFO\_VAL: Splitting Information of Open Item Values



For systems that are already live, bear in mind that any configuration changes recommended will probably have to be linked with a migration project and will therefore involve further, specific constraints. In addition, these should be reconciled with internal/external auditors.

Because tables FAGL\_SPLINFO and FAGL\_SPLINFO\_VAL are related to table FAGLFLEXA, please also see chapter 5.2.17 FAGLFLEXA : FI General Ledger Accounting (new): Actual Line Items

### 4.2.16.1 Avoidance

You can use the document splitting (online splitter) procedure to split up line items for selected dimensions (such as receivable lines by profit center) or to achieve a zero-balance setting in the document for selected dimensions (such as segment). Both options can create more entries in table FAGLFLEXA. In particular, the splitting tables FAGL\_SPLI\* can grow rapidly if the *zero-balance* option is activated because additional clearing lines may be created automatically by the system.

Individual company codes can be explicitly excluded from document splitting. However, it is then no longer possible to create cross-company-code transactions containing company codes that have different settings for document splitting.

**For more information, see the following SAP Note:**

- 1352620 (SAP\_APPL 500 - 604): avoidance of superfluous rows in FAGL\_SPLINFO\*

### 4.2.16.2 Summarization

Summarization in FI on fields that are used as dimensions for online splitter is not possible.

Using inheritance or a constant for document splitting can result in too many entries being written to tables FAGL\_SPLINFO and FAGL\_SPLINFO\_VAL.

To overcome this issue, SAP provides a compression program that must be implemented and tested separately. Make sure a system backup is performed before you run report FAGL\_SPLINFO\_COMPRESS. Refer to SAP Notes 1067344 (SAP\_APPL 500 – 602) and 1151204 (SAP\_APPL 500 – 603).

Sales and distribution documents with multiple tax lines cause tables FAGL\_SPLINFO and FAGL\_SPLINFO\_VAL to grow rapidly. Please check SAP Note 1137444 (SAP\_APPL 470 – 603).

**For more information, see the following SAP Notes:**

- 1067344 (SAP\_APPL 500 – 602): Too many entries in FAGL\_SPLINFO or FAGL\_SPLINFO\_VAL
- 1137444 (SAP\_APPL 470 – 603): Usage of BAdIs GLT0\_COMPRESS\_ITEM
- 1151204 (SAP\_APPL 500 – 603): Compression of equal entries in FAGL\_SPLINFO\* tables

## 4.2.16.3 Deletion

Cannot be used

## 4.2.16.4 Archiving

 You can find more information in chapter 5.2.3.4 Archiving.

As the tables FAGL\_SPLINFO and FAGL\_SPLINFO\_VAL can be archived by use of archiving object FI\_DOCUMNT (as well as table FAGLFLEXA), please check further information in chapter 0 Cannot be used Archiving

## 5.2.19 FILCA: Actual Line Items in Consolidation (FI-CL)

Table FILCA contains the actual line items of the consolidation component in financial accounting (FI-LC).

 Note that FI-LC is not part of SAP R/3 Enterprise and SAP ERP. For more information see SAP Note 458332 (release-independent).

### 5.2.19.1 Avoidance

For all consolidation ledgers, it is possible to switch off the updating of line items in table FILCA. Generally, line item updating is only activated in the case of an error analysis. Therefore, check whether or not you really need these entries. If not, you can switch off the updating of this data in Customizing at any time.

### 5.2.19.2 Summarization

Cannot be used

### 5.2.19.3 Deletion

Transaction data that is no longer required, such as test data, can be deleted from the ledgers using program RGUDEL00. If you have switched off the line item update function for certain consolidation ledgers, you can delete the items that were already written for these ledgers up until then from table FILCA using this program. Before you execute the program, make sure that only line items are marked because once the data has been deleted, it cannot be restored. Check SAP Note 320493 (SAP\_APPL 30C - 605) to see how you can use this program in the most effective way possible.

The program can also be used to delete the transaction data of an entire table group, including the totals table and its line item tables. If the data is to be deleted completely for all clients, you can use the database utilities (transaction SE14). Due to consistency reasons, you should also delete the corresponding entries in tables GLIDXA and GLIDXC as described in SAP Note 320493 (SAP\_APPL 30C - 605).

### 5.2.19.4 Archiving

Entries in table FILCA are archived using the following archiving objects:

Archiving Object	Archived Application Data
FI_LC_ITEM	FI-LC Line items
FI_SL_DATA	Totals records and line items in FI-SL

Data that was archived with the archiving object FLC\_OBJECT, no longer supported as of SAP R/3 4.6A, can only be reloaded and analyzed.

### Table analysis



If you want to run a table analysis (transaction TAANA) before data archiving (see [chapter Goal of Using this Best-Practice Document](#)), the analysis variant called ARCHIVE is offered for table FILCA.

**See also SAP Notes:**

178960 (release-independent): FI-SL Tables: How can I reduce the data volume?

## **5.2.20 FMIFIIT: FI Line Items in Funds Management**

Table FMIFIIT is used to store FI line items in Funds Management (FI-FM).

### **5.2.20.1 Avoidance**

Cannot be used

### **5.2.20.2 Summarization**

Cannot be used

### **5.2.20.3 Deletion**

Cannot be used

### **5.2.20.4 Archiving**

FMIFIIT entries are archived and deleted when FI posting documents in Funds Management are archived using archiving object FM\_DOC\_FI.

The FI postings in Funds Management are copies of accounting documents. You can only archive FI postings in Funds Management after the corresponding documents in Financial Accounting have been archived with archiving object FI\_DOCUMENT.

**See also SAP Notes:**

- 323030 (SAP\_APPL 45A – 46C, IS-PS 461A): Archiving in Funds Management (4.5A - 4.6C)
- 396878 (SAP\_APPL 45B – 46C, IS-PS 461A - 462): Performance improvement of archiving in Funds Management
- 1399185 (SAP\_APPL 46C, IS-PS 461A – 462, EA-PS 110 - 606): Archiving FI documents: Procedure in PSM
- 1518964 (EA-PS 600 - 605): You want to archive FI documents & you have activated FM
- 1597421 (EA-PS 500 - 606): Initial archiving run in FM: New reports

## **5.2.21 FMIOI: Commitment Documents Fund Management**

Table FMIOI is used to store FM commitments and fund transfers (FI-FM). The line items in FMIOI are updates from MM for purchase requisitions, purchase orders and delivery plans; trip commitments from Travel Management; and from FM for earmarked funds.

### **5.2.21.1 Avoidance**

Cannot be used

### **5.2.21.2 Summarization**

Cannot be used

### **5.2.21.3 Deletion**

Cannot be used

### **5.2.21.4 Archiving**

FMIOI entries are archived using archiving object FM\_DOC\_OI.



The relevant data of the tables listed below are written in an archive file.

<b>Table</b>	<b>Description</b>
FMIOI	Commitment Documents Funds Management
FMCCFD	Fiscal Year Change Documents (FM)
FMUDKBLPH	Addtl Info re Revenues Increasing Budget for Fcst of Revenue
FMUDKBLPP	Item Revenues Increasing Budget for Forecast of Revenue
FMUDKBLPS	Budget Increases for Reversal for Forecast of Revenues

### Dependencies to other Objects:

The commitment and funds transfers in Funds Management are copies of the financial accounting documents. You can not archive CO postings in FM until the corresponding external MM documents have been archived using the archiving object FI\_DOCUMNT

### 5.2.22 KBLK: Document Header: Manual Document Entry

When Contracts are created, an earmarked funds document gets created and updates the table KBLK with single primary key BELNR.

#### 5.2.22.1 Avoidance

Cannot be used

#### 5.2.22.2 Summarization

Cannot be used

#### 5.2.22.3 Deletion

Cannot be used

#### 5.2.22.4 Archiving

Earmarked funds documents which are no longer needed in the business process could be archived with the archiving object FM\_FUNRES.

### Dependencies to other Objects

In the end the individual business process will determine if the following dependencies are applicable and have to be considered:

- Earmarked funds documents which reference each other, such as where a funds commitment references a funds reservation, must be archived in the same archiving run.
- Other documents, such as invoices or purchase orders, which reference the earmarked funds to be archived, must be archived and deleted before you archive the earmarked funds themselves.

The table below lists common objects that you must archive before you archive FM Earmarked Funds documents, if they refer to an earmarked fund:

<b>Archiving Object</b>	<b>Object Description</b>
FI_DOCUMNT	Financial Accounting Documents
FI_MKKDOC	FI-CA Documents
MM_EBAN	Purchasing Requisitions
MM_EKKO	Purchasing Orders



## 5.2.23 GLPCA: Actual Line Items

Profit Center Accounting (EC-PCA) is often used as a substitute for Profitability and Sales Accounting in retailing. It enhances table KWER and enables you to include overhead costs and calculate profit margins.

EC-PCA is often used instead of Profitability Analysis (CO-PA) because the structure of EC-PCA is normally well-matched to the structures that exist in the retailing enterprise. Only one profit center is normally created for each cost center. Profit centers are normally structured as follows:

- Each distribution center has at least one profit center.
- Each store represents at least one profit center.
  - In the case of small stores, the entire store normally represents one profit center.
  - In the case of large stores, each separate department can represent one profit center.
- Additional profit centers can be, for example, office blocks, gas stations, or car parks.
- In addition, departments operated by third parties (for example, a bake shop or restaurant) can also be run as profit centers.

SAP Note 217338 (release-independent) contains information about the recommended number of profit centers.

### 5.2.23.1 Performance-Critical Processes

#### Example: Processing sales data using POS interface – inbound

Profit Center Accounting is always updated **when FI documents are generated**. This means that all goods movements, invoices, and billing documents are updated. At POS interface – inbound, both the stock adjustment and revenue posting is updated in EC-PCA for each sale that is recorded.

### 5.2.23.2 Avoidance

To prevent unnecessary updating of entries in table GLPCA, check for which controlling areas and years you really need the line items. Use transaction 1KEF to activate updating only for those controlling areas and years you really need. Also check, in transaction 3KEH, whether the accounts whose transaction data also flows into profit center accounting are really needed.

#### See the following SAP Note

- 178919 (release-independent): Table GLPCA: How do I reduce the data volumes?

### 5.2.23.3 Summarization

If possible, activate summarization for line items here (transaction 0KE8, as of SAP R/3 4.5B). From the point of view of data avoidance, it is important for which processes and fields the summarization is activated. SAP recommends that you first carry out a simulation of the document summarization to determine the most effective summarization strategy for your needs. See also SAP Note 198519 (SAP\_APPL 40A - 604).

### 5.2.23.4 Deletion

You can delete test data in Customizing by choosing *Controlling* → *Profit Center Accounting* → *Tools* → *Prepare Production Start-Up* → *Delete Test Data*.

Data from production systems should be archived, not deleted.

### 5.2.23.5 Archiving

Up to and including SAP R/3 4.5B, archiving object PCA\_OBJECT is used to archive actual line items. PCA\_OBJECT can be used exclusively for analyzing data as of SAP R/3 4.6A.

As of SAP R/3 4.6A, the following archiving objects are used instead of PCA\_OBJECT:



- EC\_PCA\_ITM for line items in Profit Center Accounting
- EC\_PCA\_SUM for totals records in Profit Center Accounting

## Table analysis

Before archiving transaction data from Profit Center Accounting (tables GLPCA, GLPCP, and GLPCT), you should carry out an analysis as described in SAP Note 203545 (SAP\_APPL 30F – 604) to clarify the following questions:

- Which archiving objects can be used to archive the data?
- How is the data distributed in individual organizational units and periods?
- Which selection criteria should you use to archive what amount of data?
- What is the relationship between archiving objects PCA\_OBJECT, EC\_PCA\_ITM, EC\_PCA\_SUM and FI\_SL\_DATA?

The SAP Note 203545 discusses how analyses are to be carried out for each release and explains analysis transaction TAANA, which has been available since SAP R/3 4.6C, and programs ZAGLPCA1 and ZAGLPCA2, which have been available since SAP R/3 3.0F (and which can be used as an alternative to TAANA).

To carry out a table analysis (transaction TAANA) (see [chapter Goal of Using this Best-Practice Document](#)), the following analysis variant is offered for table GLPCA:

- ARCHIVE

### 5.2.24 GREP: File of Stored Reports for Report Writer

Report Writer is a reporting tool provided by SAP with which you can report data from the Special Purpose Ledger (FI-SL) and other application components. To reduce the necessary runtime for formatting report data when using Report Writer reports, you can create an extract when you execute a report. For next execution of this report, the created extract can be used and runtime reduced. The corresponding data will be saved in table GREP.

#### 5.2.24.1 Avoidance

Entries in GREP can be prevented by not creating extracts when executing the Report Writer reports.

#### 5.2.24.2 Summarization

Cannot be used

#### 5.2.24.3 Deletion

A deletion of the entries is possible:

- Transaction GRE0 can be used to delete entries in dialog mode
- Report GRIX\_DELETE\_RW\_EXTRACTS can be used for batch processing

Further information about deletion and a recommendation for deletion procedure can be found in SAP Note 1360071 (release-independent).

#### See also SAP Note:

- 892607 (SAP R/3 4.7 – 6.0): Report Writer: Deletion report for extracts
- 1360071 (release-independent): RW: Deletion of Extracts

#### 5.2.24.4 Archiving

Cannot be used



## 5.2.25 JEST– Status Control Records

Tables JEST, JCDS, JSTO, and JCDO contain status values as well as related change documents for various business objects, especially in the logistics area, for example, production orders, plant maintenance orders, or projects.

### 5.2.25.1 Avoidance

There is **no general** possibility to prevent the creation of object status information.

In the case of production or process orders, a modification (see SAP Note 304758 [SAP\_APPL 31H – 606]) is available to avoid entries in the status control tables.

As a result of the modification, the system no longer carries out a complete status history for material components.

In the case of status change documents (tables **JCDS and JCDO**) avoidance will be possible for specific business objects.

Business objects for which avoidance may be possible:

- For maintenance orders, the creation of status change documents could be avoided depending on order type and maintenance planning plant combination by Customizing setting. This is possible on order header level and as well on order operation level.  
In the Implementation Guide (IMG), the corresponding Customizing can be found by following the given path:
  - Plant Maintenance and Customer Service
  - Maintenance and Service Processing
  - Maintenance and Service Orders
  - Functions and Settings for Order Types
  - Define Change Docs, Collective Purc. Req. Indicator, Operation No. Interval
- For notifications, the creation of the status change documents could be avoided by using SAP enhancement QQMA0025 - PM/SM: Default values when adding a notification. Within this enhancement, the CHGKZ field of the corresponding entry in table (SAPLBSVA)JSTO\_BUF must be set to SPACE. Corresponding entries in the table can be determined by I\_VIQMEL-OBJNR.

### 5.2.25.2 Deletion

Cannot be used

### 5.2.25.3 Summarization

Cannot be used

### 5.2.25.4 Archiving

The status control tables are written by several application business objects. These entries are archived when the data of the relevant application business object is archived. There is no general archiving object for status control data.

To identify the most relevant application archiving object(s), it is necessary to analyze table JEST.

#### Table analysis

To determine the most relevant archiving object, run a table analysis (transaction TAANA) before data archiving (see [chapter Goal of Using this Best-Practice Document](#)). There is no predefined TAANA variant available.

Steps for the analysis:

- Define a virtual field on the first two characters of field OBJNR of table JEST. These first two characters give a hint on the related business object.



- Schedule a TAANA analysis on that virtual field. The result will provide a list of object type abbreviations, for example, OR (for orders) or NP (for project-related networks).
- Look up the description text for those object type abbreviations in table TBO01 or TBO00. Based on the description text, you will get an idea of which business object the JEST records are related to.

## 5.2.26 LIPS – Delivery Items

 The information in this section does not pertain only to retail. It includes all processes where deliveries are used. The retail examples are only used as a means to illustrate the concepts.

### Store procurement using distribution centers (DC)

When stores are supplied via distribution centers, warehouse orders are generated for the stores. The orders are generated for a distribution center. Deliveries are generated for the warehouse orders (or for sales orders) before picking is done in the DC.

Warehouse orders can be generated as follows, for example:

- As follow-on documents for allocation tables (push)
- As follow-on documents for replenishment (pull)
- From purchase requisitions that were generated as follow-on documents for time-phased materials planning

You can estimate the total number of purchase order items as follows:

Total number of warehouse order items = total number of stores x average number of replenished articles per store

Normally, one delivery item is generated for every purchase order item. Various delivery items can be generated from a purchase order item if partial quantities are delivered on various occasions.

#### 5.2.26.1 Avoidance

Cannot be used

There are different methods for improving system performance (see composite Note 154091 [SAP\_APPL 40B – 500]).

#### 5.2.26.2 Summarization

Cannot be used

#### 5.2.26.3 Deletion

You cannot simply delete deliveries after picking has begun. If running time problems occur when posting sales and distribution documents, it may have to do with incorrect index entries. SAP Note 103212 (release-independent) details how to reorganize the index if necessary.

#### 5.2.26.4 Archiving

Deliveries are archived using archiving object RV\_LIKP.

Every day, distribution centers usually handle many new deliveries. These deliveries are part of a document chain, such as stock transport order, delivery, transport order, material document, invoice. When the delivery is processed, a statistic is usually updated. After a few days, the delivery itself is of no relevance. For this reason, you should **archive deliveries as soon as possible**.

### Table analysis



If you want to run a table analysis (transaction TAANA) before data archiving (see [chapter Goal of Using this Best-Practice Document](#)), the analysis variant called STANDARD is offered for table LIPS.

**For more information, see the following SAP Notes:**

- 138666 (SAP\_APPL 30D - 604): Details prerequisites for archiving deliveries

## 5.2.27 LTAP – Transfer Order Items



The information in this section does not pertain only to retail. It includes all processes where transfer orders are used. The retail examples are only used as a means to illustrate the concepts.

### 5.2.27.1 Performance-Critical Processes

#### Store procurement using a distribution center (see table LIPS for a process description)

Transfer orders are used if you use the Warehouse Management (WM) component. The following scenarios are possible:

- Activation of all WM functions

You manage your inventory in the DC for individual storage bins using WM.

- Activation of Lean WM for inbound/outbound deliveries with transfer orders.

Inventory is not managed at storage bin level. You do, however, generate transfer orders for deliveries.

- Activation of Lean WM for merchandise-driven flow-through

Inventory is not managed at storage bin level. You do, however, use distribution orders for distributing goods using merchandise-drive flow-through (Note: Technically speaking, a distribution order is the same as a transport order). You can only use this method if you use Lean WM.

One transfer order item is normally generated for every purchase order item. Various delivery items can be generated from a transfer order item if partial quantities are picked at different times.

#### 5.2.27.2 Avoidance

If you use WM in one or more of the scenarios listed above, you must generate transfer orders.

You can prevent an increase in transfer orders by not splitting orders. It may be necessary to split the order for business reasons (for example, picking areas are split for organizational reasons).

#### 5.2.27.3 Summarization

Cannot be used

#### 5.2.27.4 Deletion

Cannot be used

#### 5.2.27.5 Archiving

Transfer orders are archived using archiving object RL\_TA.

Daily retail distribution centers have a large number of new deliveries. Transfer orders form part of a document chain that could include the following documents, for example: stock transport order from the store, delivery, transfer order, material document, invoice. The transfer order itself loses its relevance after a few days, which is why it should be archived as quickly as possible.

This archiving object is not dependent on any other archiving objects. Dependencies within the process itself (delivery, transfers, goods receipt, goods issue) can be controlled through setting confirmations and through the runtime.



## Displaying archived transfer orders

Archive administration offers an analysis program for archived transfer orders. The archive files to be read can be selected manually and are read completely sequentially. The selection can be made via warehouse number, transaction number, stock category, special stock, plant, storage bin, and transaction date.

For data access to archived transfer orders via the Archive Information System (transaction SARI), SAP provides the field catalog SAP\_RL\_TA and the infostructure SAP\_DRB\_RL\_TA.

### 5.2.28 MAPR, PROP, WFCS\_WRFT: Sales Forecast

SAP for Retail uses the sales forecast function to make forecasts based on past sales figures. It uses the following tables to make the forecast:

- MAPR material index for forecast
- PROP forecast parameters
- WFCS\_WRFT time series for the past and for forecasts

In addition to these tables, the system also needs master data from tables MARA and MARC, as well as Customizing settings for the article master.

The data volume growth here may be considerable, especially in table WFCS\_WRFT.

#### 5.2.28.1 Performance-Critical Processes

For materials planning, the system calculates forecast values for all article/store combinations.

#### 5.2.28.2 Avoidance

- Generate forecasts only for relevant articles.
- Make sure your forecast horizon is not too broad.

#### 5.2.28.3 Summarization

Cannot be used

#### 5.2.28.4 Deletion

You can delete the forecast data for the master data using transaction MPR2. For earlier releases, see SAP Note 363284 (SAP R/3 4.0B - 4.6C).

You should regularly delete transaction data that is no longer current from table WFCS\_WRFT using transaction WFCS02. Keep in mind that for articles for which forecasts are to be carried out, the table must contain a sufficient number of time series values.

#### 5.2.28.5 Archiving

Cannot be used

#### See also:

- Chapter 5.2.29 MARC, MARD, MBEW – Material Master Data at Plant Level
- Chapter 5.2.30 MBEWH: Material Valuation - History

### 5.2.29 MARC, MARD, MBEW – Material Master Data at Plant Level



If not specified, the information in this section refers to the material master (industry) and to the article master (retail). If you are using SAP for Retail, then simply substitute the term “article” for the term “material”.



All the information a company needs to administer a material is organized in a data record in the material master, according to different criteria. The tables that have the potential for the strongest growth in this context are the following:

- MARC (plant data of material)
- MARD (storage location of material)
- MBEW (material valuation)

## 5.2.29.1 Performance-Critical Processes

### Listing for stores using quantity and value-based inventory management (retail)

Use the following formula to calculate the expected volume of data:

*Total number of listed articles x total number of stores*

(for example, 100,000 x 1000 = 100,000,000).

#### Note:

- In SAP for Retail, each site normally has only one storage location. It may be the case, however, that more than one MARD record exists for each MARC record, for example, if distribution centers are used.
- If separate valuations are run, there may be more than one MBEW record assigned to the MARC record in question.

## 5.2.29.2 Avoidance

In SAP for Retail, it is very important that articles are **only** listed for stores in which the articles in question are actually sold. This can be ensured by using a suitable listing check.

## 5.2.29.3 Summarization

Retail: For merchandise categories for which inventories do not need to be tracked on an article basis (such as fruits and vegetables) you can use the **non-article-based inventory management** (value-only article inventory management). Tables MARC, MBEW, and MARD are only to be used for value-only articles, therefore, once only in each merchandise category. These segments are not used for single articles.

Using inventory management on a value only basis can affect articles:

- MRP (material requirements planning) can no longer be used when planning store requirements. You can use replenishment planning as an alternative method in which the necessary data is managed using table WRPL.
- If you decide to reevaluate your data (for example, if your stock is recalculated), the articles affected have to be counted beforehand. Information about quantities is required before data can be reevaluated.

## 5.2.29.4 Deletion

Cannot be used

## 5.2.29.5 Archiving

Material master records are archived using archiving object MM\_MATNR.

To archive material master records, the master record has to first be marked for deletion ("logical deletion"). In retail, this is achieved by running a discontinuation. When you run the discontinuation, deletion indicators are set in the material master (at the appropriate level, such as plant or sales organization). When you are running article discontinuation, however, you must keep in mind the constraints for data integrity, for example, ensuring that you delete all the records in table MARD that relate to table MARC. Records that have been marked for deletion can then be archived ("physical deletion").



Material masters (industry) do not have a residence time. For article masters (retail) the number of days between the logical and physical deletion can be determined for each article type. You can make this setting in Customizing of the article master under *Article Type Properties*. During archiving, we recommend that you create a variant for article masters and that you start this variant periodically.

Archiving material masters is a complex task that has to be planned carefully. It is, for example, necessary to archive all other objects (such as purchasing documents) that refer to the material to be archived, due to existing dependencies between these documents. When correcting errors, viewing the log may be a helpful task. When a material master on a specific organizational level cannot be archived or deleted, the cause is noted in the log (for example, because an order still exists for the material). The log also contains technical data, such as the number of read or deleted material master records.

#### See SAP Notes:

- 192129 (SAP\_APPL 40A -600): Composite Note Archiving Material Master. Contains both error corrections and performance notes for archiving materials.
- 327964 (SAP\_APPL 45B – 46C): MM\_MATNR – Archiving MBEWH entries
- 547867 (release-independent): FAQ: MM\_MATNR archiving of materials
- 548268 (release-independent): FAQ: Performance MM\_MATNR

#### See also:

- Chapter 5.2.28 MAPR, PROP, WFCS\_WRFT: Sales Forecast
- Chapter 5.2.30 MBEWH: Material Valuation - History

### 5.2.30 MBEWH: Material Valuation - History



If not specified, the information in this section refers to the material master (industry) and to the article master (retail). If you are using SAP for Retail, then simply substitute the term “article” for the term “material”.

Table MBEWH is used to update historical valuation data for each material and site.

The number of data records that table MBEWH contains is calculated by multiplying the total number of records in table MBEW by the total number of historical periods (normally expressed as months) in which goods movements were recorded. A new record is created at the beginning of every new month and when a goods movement is recorded for a material in the new month. The system automatically saves the data from table MBEW to a new data record for table MBEWH.

#### Note:

- Historical data records were normally generated every time data was written to the period closing program. The new procedure has the advantage that historical records can only be generated for months in which goods movement have been recorded.
- If separate valuations are run, the total number of data records for table MBEW increases, as does the data volume in table MBEWH.

The historical valuation data for both previous months is extremely important for your current business activities (for example, for posting a goods receipt to the previous month) as are the historical valuation data for the last month in the previous fiscal year. Historical data records that are older than one year are normally no longer required.

#### 5.2.30.1 Performance-Critical Processes

##### Example: Processing sales data using POS interface – inbound (retail)



When processing sales data, goods issues are posted for the articles that are sold. For inventory management in the stores, new data records are automatically created for table MBEWH when the first sales in the new month has been recorded and the first goods issue in the new month has been posted.

Use the following formula to calculate the expected volume of data:

Total number of listed articles x total number of stores x total number of months with recorded goods movements

For example,  $100,000 \times 100 \times 12 = 1,200,000,000$ . We are assuming in this example, however, that one goods movement was recorded for every article in the last twelve months.

## 5.2.30.2 Avoidance

See table [MARC](#).

## 5.2.30.3 Summarization

See table [MARC](#).

## 5.2.30.4 Deletion

The standard system does not support the deletion of MBEWH records. Instead, these are archived (see [chapter archiving](#)). SAP Note 320665 (SAP\_APPL 45A - 470, deleting MBEWH records of archived materials) includes a program that enables you to delete MBEWH entries for which an MBEW record no longer exists.

## 5.2.30.5 Archiving

Archiving is carried out using archiving object MM\_HDEL. However, up to and including SAP R/3 4.6C, MM\_HDEL is **not** suitable for archiving **large volumes** of data. All the data that you want to archive is loaded into the main memory when the data is read. If you cannot store all the data in the main memory, data segments are moved in and out of the memory to create capacity ("swapping"), which in turn leads to longer runtimes. SAP Note 178954 (SAP R/3 4.5A - 4.6C) contains corrections for archiving object MM\_HDEL. As of SAP R/3 Enterprise, the implementation of this SAP Note is no longer necessary.

Up to and including SAP R/3 4.6C, MBEWH records are not taken into account during the archiving of material master records. Therefore, it is possible that records that are no longer needed remain in table MBEWH, although a corresponding MBEW record no longer exists. If you implement SAP Note 327964 (SAP\_APPL 45B – 46C), the MBEWH entries are archived at the same time as the MBEW entries. As of SAP R/3 Enterprise, the relevant MBEWH records are deleted when you archive material master records using archiving object MM\_MATNR. This comes about because during archiving, MBEW is reconciled with the corresponding historical records, which are then no longer needed.

## Recommendation

In general it should be sufficient to archive historical data records together with the material master. This also is advantageous, because all data belonging to the material master is archived in a single archiving session. This helps avoid the administrative effort needed for scheduling two archiving objects. Early archiving of historical data records using MM\_HDEL should only be necessary if table MBEWH is showing strong growth, but the material master cannot be archived yet.

## See also the following SAP Notes:

- 532734 (SAP\_APPL 45B – 470, IS-OIL 46B - 472): Reorganization of historical stock data tables in MM
- 320665 (SAP\_APPL 45A - 470): Deleting MBEWH records of archived materials



- 828058 (SAP\_APPL 46C -500): MM\_HDEL: Write program terminates: DBIF\_RSQL\_INVALID\_CURSOR
- 859420 (SAP\_APPL 46C - 600): No comment with MM\_HDEL and MM\_INVBEL

## See also:

- Chapter 5.2.28 MAPR, PROP, WFCS\_WRFT: Sales Forecast
- Chapter 5.2.29 MARC, MARD, MBEW – Material Master Data at Plant Level

## 5.2.31 MSEG – Document Segments: Material and Articles

Table MSEG contains material document items. In retail, this is called article document line items. The document headers reside in table MKPF.

### 5.2.31.1 Avoidance

It is not usually possible to deactivate the updating of documents. You can, however, restrict the growth of document data in MM-Inventory Management.

Refer to SAP Note 195247 (SAP\_APPL 310 – 46C): Large table growth in MM inventory management. The Note includes the recommendation that you maintain the settings for document life in Customizing (transaction OMB9). You should avoid follow-on postings and cancellations and you should keep the number of stock transfer postings to a minimum.

### 5.2.31.2 Summarization

Cannot be used

### 5.2.31.3 Deletion

Cannot be used

### 5.2.31.4 Archiving

See SAP Note 194026 (SAP\_APPL 40B - 470): Advance Archiving for POS Sales (workaround).

Article documents are normally archived using archiving object MM\_MATBEL.

If you want to upload sales data using POS inbound, many of the documents generated can be archived very shortly afterward.

Because MM\_MATBEL does not allow you to run a targeted selection using POS documents, you can enhance the program for reading documents using SAP Note 194026 (SAP\_APPL 40B - 470).

A prerequisite of this is that you modify updating for the documents that are generated using POS inbound, as described in the Note. By modifying the updates, you can select the documents for archiving and identify the documents at header level, as they are marked as being “POS Documents”.

The archiving sessions that are generated are found in archiving object MM\_MATBEL. Archiving object MM\_MATBEL will adopt the function of MM\_MATBEL2 (from SAP Note 194026 [SAP\_APPL 40B – 470]) in future releases.

The new write program RM07MARC\_POS can only archive data that is generated after modifications have been made, as detailed in SAP Note 194026 (SAP\_APPL 40B - 470). All older data must be archived as before, using MM\_MATBEL.



If you archive MM documents using archiving object MM\_MATBEL, you cannot subsequently reset the MM number range if you have not deleted or archived the corresponding data from the ACCT\* tables. Otherwise, this could lead to inconsistent data when a new MM document is



created if the ACCT\* tables in which the MM document information is updated already contain an entry with this document number (see SAP Note 83076 [SAP\_APPL 30C – 46C]).

According to SAP Note 194026 (SAP\_APPL 40B - 470), during advance archiving of cash sales, the POS documents are included in an active archive info structure. As a result, the size of the corresponding database table (ZARIX\*) may increase sharply. You can prevent the updating of POS documents by using a new info structure that is based on the virtual field catalog SAP\_MM\_MATBEL03. For more information on this, see SAP Note 745522 (SAP\_APPL 470).

SAP Note 1306620 (SAP\_APPL 500 – 604): By implementing this note, you will get the new functionality to see MM documents via transaction MIGO which are included in archive info system (as of SAP ECC 6.0).

### Application-specific archive index and material short documents

The new archiving programs introduced with SAP R/3 Enterprise (see SAP Note 591198 [SAP\_APPL 470]) no longer support the direct update of the application-specific archive index MKPF\_ARIDX and of material short documents in table MARI. Up to SAP R/3 Enterprise 4.70, this data was necessary for the single document display using transaction MB51 or report RM07DOCS. As of 4.70 indexing for single document display occurs via the archive information structure SAP\_MATBEL\_MARI, which offers more advantages than the common archive index. SAP Note 599966 (SAP\_APPL 470) explains how you can switch to the new method.

SAP recommends that you fill archive info structure SAP\_MATBEL\_MARI also for already existing archive files. For these files, you can then delete the corresponding entries in tables MARI and MKPF\_ARIDX using the index build program RM07MAID. If the info structure is completely built for all archive files, you can delete the entries in tables MARI and MKPF\_ARIDX completely. It is also possible for you to define your own info structure instead of using the standard info structure SAP\_MATBEL\_MARI, so that you can adapt the field structure more to your needs. See SAP Note 599966 (SAP\_APPL 470) for more information on how to do this.

### Table analysis

If you want to run a table analysis (transaction TAANA) before data archiving (see [chapter Goal of Using this Best-Practice Document](#)), the analysis variant called STANDARD is offered for table MSEG.

### 5.2.32 NAST, CMFP, CMFK: Message and Error Management Tables

Table NAST is used to save the status records from **message management**. Message management is used by the SD application (for example, sales, shipping, invoicing, transportation and handling units), MM (for example, inventory and purchasing) and retail, among others. You can see which application created a message in the NAST-KAPPL field. You can view the plain text for the application ID via transaction NACE.

Tables CMFK (memory structure for the head of the error log) and CMFP (log data) are used to store **processing logs** for message management and **error logs** from the applications. The table entries are organized according to their application IDs. Error logs in this table are updated by the applications material ledger (AT), material calculation (CK), price updating (CKPF), product cost accounting (KKP), and controlling summarization (KKR), among others. You can see which application created the error log in the CMFK-APLID field. Data records that have APLID = WFMC originate in message management and generally appear the most frequently.

Often, tables NAST and CMFP are two of the largest and fastest growing tables in the ERP system.



To maintain data consistency, these tables may only be emptied in conjunction with the corresponding application objects. This means that when the application objects are archived or deleted, the corresponding NAST, CMFK, and CMFP records are also archived or deleted.

The following table is an overview of which archiving objects archive or only delete NAST, CMFK, or CMFP records:

Archiving object	Application <sup>1</sup>	NAST		CMFK		CMFP	
		Write	Delete	Write	Delete	Write	Delete
MM_EKKO <sup>2</sup>	EA, EV, EF, EL	✓	✓	x	x	x	x
MM_MATBEL	M1, ME, MD	x	✓	x	x	x	x
MM_REBEL	MR	x	✓	x	x	x	x
RV_LIKP	V2	✓	✓	x	✓	x	✓
SD_VBAK	V1	✓	✓	✓	✓	✓	✓
SD_VBRK	V3	✓	✓	x	✓	x	✓
SD_VBKA	V4	✓	✓	x	x	x	x
SD_VTTK	V7	✓	✓	x	✓	x	✓
LE_HU	V6	✓	✓	x	x	x	x
W_PROMO	W*	✓	✓	x	x	x	x
CO_COPC		x	x	✓	✓	✓	✓

NAST records with KAPPL = V5 (SD collective processing) can only be deleted with the program for deleting collective processing data. CMFK and CMFP records with APLID # WFMC are archived and deleted together with archiving object CO\_COPC (product costing). In a few exceptional cases, table CMFP may grow quite large and you may have to delete the table entries that are causing this growth. In this case, you would not use CO\_COPC because this would also delete entries from other tables, such as CKHS, CKIS, or CKIT. These entries would then not be available anymore for transaction CK13N. ACT entries can be deleted using transaction CKMLPROT (program CKML\_DELETE\_PROTOCOLS), and CK entries with transaction CK44. For more information see [chapter deletion](#).

### 5.2.32.1 Avoidance

To avoid unnecessary growth of tables CMFP and CMFK, you can prevent the creation of processing logs by following these steps:

1. Call up transaction NACE (Conditions for Output Control).
2. Choose the desired applications and then *Output Types*.

<sup>1</sup> Is defined via the parameter KAPPL-ID in table NAST.

<sup>2</sup> When purchasing documents are archived, the status records (table NAST) are also archived. However, the corresponding error logs remain in the database and, as a result, tables CMFK and CMFP could become very full. It is possible to delete these log records using program RSCLCMFP (see SAP Note 52114 [SAP\_APPL 300 – 470]). You can find the program correction in SAP Note 617634 (SAP\_APPL 46B - 470).



3. Double-click on the output type to go to the detail view where you can make the necessary settings. To make the settings, you must enter change mode.
4. Set the *do not write processing log* indicator and save your settings.

This setting is only applicable to the individual application and output type. If it is set, processing logs will be collected in the main memory, but they will not be written to the database. Other output types are not affected by this setting. You have to repeat the aforementioned steps for each output type individually. It is not possible to switch off the processing log for all output types at the same time. For more information on the *do not write processing log* setting, see the corresponding documentation.

### 5.2.32.2 Summarization

Cannot be used

### 5.2.32.3 Deletion

To delete table entries in tables NAST or CMFK/CMFP, we recommend that you follow these steps:

1. Archive or delete the application as usual, using the relevant archiving objects or delete programs. This usually includes the corresponding NAST and CMF\* records (for the exception, see above).
2. If the NAST or CMF\* tables are growing rapidly or if the application data cannot be archived or deleted due to business-related reasons, you can also delete NAST and CMF\* records independently from application data. The following section describes the different options for deleting these records separately.

### RSCLNAST

You can use this program to explicitly delete NAST records and the corresponding CMF\* records. First, you should analyze the NAST table to see which records exist for which applications. You should concentrate on those applications that only delete their NAST data during archiving. For all other applications, you should only use the delete program if the data growth is such that deletion is unavoidable.

### RSCLNAFP

You can use this program to delete your log entries if your CMF\* table (APLID = WMFC) is growing rapidly. The corresponding NAST records remain intact. This mainly affects applications that only delete their CMF\* data (transport, invoices, deliveries) during archiving. For all other applications the delete program should only be used if deletion is absolutely necessary.

Log entries are usually only deleted during the reorganization of the message status records (table NAST). This is part of the reorganization of the application documents that use message management. Independently of this reorganization, however, we recommend that you delete the log entries regularly, using program RSCLNAFP, to keep table CMFP small.

### RSCLCMFP

You can use this program to delete logs that should have a NAST record (APLID = WFMC), but for unknown reasons do not ("phantom logs"). This can be tested best by running the program in test mode.

### See SAP Note:

- 52114 (SAP\_APPL 300 - 470): Table CMFP has too many entries for APLID = WFMC

The entries in table CMFP are linked with the application object in which they originate, for example, production orders, calculations, or deliveries. When these objects are archived using the relevant archiving objects, the corresponding entries in table CMFP are also archived.

### Z\_CMF\_KKS\_DELETE



Tables CMFK and CMFP are not linked to archiving objects CO\_ORDER, PR\_ORDER, PP\_ORDER, and CO\_KSTRG. Therefore, log entries from applications (APLID =) KKS (variances collective processing), KKS1 (variances individual processing), and KKP (product cost accounting and repetitive and process manufacturing) are not archived nor deleted. However, you can delete these entries manually using delete program Z\_CMF\_KKS\_DELETE. To use the program, follow the instructions in SAP Note 627257 (SAP\_APPL 31I - 616). Make sure that you take the restrictions that are listed in this SAP Note into account!

## SAPKKA05

You can use this program to delete CMFK and CMFP records with APLID = KKA (Unit Costing: Analysis of Results) that are not archived by archiving objects CO\_ORDER, PR\_ORDER, PP\_ORDER, or CO\_KSTRG. These table entries originate from error logs for results and WIP calculations.

## CKMLPROT

To save space, you can delete old material ledger log entries from the database using transaction CKMLPROT (program CKML\_DELETE\_PROTOCOLS). Here you can choose whether to delete only the logs from the costing runs (transaction CKMLCP) or also other material ledger logs. For more information, see SAP Note 1032806 (SAP\_APPL 46C - 600).

## CK44

You can use transaction CK44 to reduce the size of table CMFP by deleting old material cost estimate (CK) costing runs. When you delete a costing run, the management data (name, description, selection, and structure explosion) and the corresponding log entries are deleted. The material cost estimates themselves are not deleted. Once the logs have been deleted, they can no longer be accessed.

### 5.2.32.4 Archiving

Entries in table CMFP are assigned to the archiving object in which they were created, such as production orders, cost estimates, or deliveries. When you archive these objects using the corresponding archiving object, their entries in table CMFP are also archived.

Archiving Object	Archived Application Data
CO_COPC	Product Costing
RV_LIKP	Deliveries
SD_VBAK	Sales Documents
SD_VBRK	Invoices
SD_VTTK	SD Transports

### Table analysis

If you want to run a table analysis (transaction TAANA) before data archiving (see [chapter Goal of Using this Best-Practice Document](#)), the analysis variant called STANDARD is offered for table NAST.

### See also SAP Notes:

- 540266 (SAP\_APPL 40B - 470): A solution for improving poor performance when you run RSCLCMFP with large data sets



## 5.2.33 PCL2: RP Cluster 2 (Human Resource Management)

PCL2 is a cluster table (RP Cluster 2) from SAP ERP Human Capital Management (SAP ERP HCM). The table is used to store several different record types, of which the largest groups are Payroll Accounting Results (cluster ID based on countries) and Time Evaluation Results (Cluster B2).

### 5.2.33.1 Avoidance

Cannot be used

### 5.2.33.2 Summarization

Cannot be used

### 5.2.33.3 Deletion

Cannot be used

### 5.2.33.4 Archiving

#### Payroll accounting results (country-specific clusters)

The payroll accounting results of the different countries are saved in country-specific clusters. For the United States the cluster is RU, for Germany RD, and for Mexico, MX, for example. To archive payroll accounting results, use archiving object PA\_CALC.

#### Cluster B2:

Cluster B2 is used to save time evaluation results. Data of cluster B2 is archived using archiving object PA\_TIME.

You can find a detailed description of the archiving process in HR and information about the different archiving objects in the SAP Library under SAP ERP at *ERP Central Component* → *Scenarios in Applications* → *Data Archiving* → *Human Resources*.

#### Table analysis

If you want to run a table analysis (transaction TAANA) before data archiving (see [chapter Goal of Using this Best-Practice Document](#)), the analysis variant called ARCHIVE is offered for table PLC2.

## 5.2.34 PPOIX/PPOPX: Posting Index of Payroll Results

Tables PPOIX and PPOPX belong to the index that is updated when the payroll results are posted to financial accounting. The index creates a link between the employee-related payroll results and the data of the settlement document. The index information is necessary for the description of the posted items. Moreover, during the posting of retroactive accounting differences, the index information helps you determine what was posted originally.

Both tables can grow quite large, depending on the number of employees being processed, the number of payroll results per employee, the number of postings per payroll result, and the posting procedure (number of simulation runs, number of deleted production runs).

### 5.2.34.1 Avoidance

If production runs are executed and deleted often, a lot of index information is created. If the index information is not deleted when the runs are deleted, because a description may be needed later on, the index entries remain in the system. To keep the number of unnecessary production runs as low as possible, we recommend that you check the correctness of the documents through one or several simulation runs, which you should then delete. AS of SAP R/3 4.5, it is possible to delete the index information of deleted runs using a special delete program (see below).



## 5.2.34.2 Summarization

Cannot be used

## 5.2.34.3 Deletion

### Simulation runs

A reason for the strong growth of tables PPOIX and PPOPX could be the large number of simulation runs, because index information is updated during these runs. Because the run is only a simulation, however, this index information is not used for the determination of retroactive accounting differences. It is only used in the short term to explain posted items. Therefore, we recommend that you delete simulation runs that you no longer need using program RPCIPQ00. This deletes both the document line items and the index information.

### Posting runs that are no longer needed

You can delete posting runs that you no longer need from within transaction PCP0 (display of posting runs) by choosing *Edit* → *Delete run*. Keep in mind that the deletion takes place via the posting and that you may encounter performance problems or even program dumps during the deletion of mass data. If you have large amounts of data to delete, use program RPCIPDEL. This does not generate any update processes and should only be run in the background.

After the deletion of the posting runs, you should delete the detail information, as described in the next section. Otherwise, this data would remain in the database.

### Detail information for posting runs

Detail information for simulation runs or deleted production runs can be deleted with program RPCIPQ00. This will help reduce the size of tables PPOIX and PPOPX. If you try to delete a large number of posting runs using RPCIPQ00, you may encounter performance problems. To avoid this, follow the recommendation in SAP Note 428767 (SAP\_HR 40A – 470).

## 5.2.34.4 Archiving

Entries in table PPOIX and PPOPX are archived using the following archiving objects:

Archiving Object	Archived Application Data
PA_PIDX	HR: Index files for posting to accounting

Index files can only be archived after the payroll results have been archived using archiving object PA\_CALC. After that, index files can be archived up to the retroactive accounting date.

Another archiving object that is relevant in this context is PA\_PDOC. It is used to archive the settlement documents for posting to accounting (tables PPDIT, PPDIX, PPDMSG and PPSDST). Archiving with PA\_PDOC is very quick because no checks are run; however, it is not possible to process large amounts of data with this archiving object. In terms of the archiving sequence of the different data, keep in mind that if you archive payroll results early, you may encounter performance problems when you display the index data later on, because this kind of display always requires the document data as well.

**Recommendation:** Only archive with PA\_PDOC if the indexes that belong to this session are also being archived with PA\_PIDX.

### See also SAP Notes:

- 119865 (SAP\_APPL 40A - 500): Q&A concerning posting from payroll accounting in Rel. 4.x



- 25622: (release-independent): Archiving in HR (general information about archiving in HR)
- 922559 (SAP\_HR 46C - 600): PA\_PIDX Archiving (archiving posting runs before settlement runs)

## 5.2.35 PCL4: RP Cluster 4 (Human Capital Management)

PCL4 is an SAP ERP Human Capital Management (SAP ERP HCM) cluster table (RP Cluster 4) in which various record types are stored. The data within the table is stored in logically linked areas. These areas contain data clusters that are made up of fields, structures, and internal tables with data from personnel administration and payroll. The clusters areas are identified by a two-character ID, such as F1, F2, or LA.

Cluster	Record Type
F1	Remuneration statement for check printing (FI)
F2	Remuneration statement (garnishment) for check printing (FI)
LA	Long-term receipts for infotype changes for employees (PREL)
LB	Long-term receipts for infotype changes for applicants (PAPL)
NO	PS: Certificates/statements in pension administration
P1	Layout for log
PR	Logging of report start (T599R)
QT	Simulations of infotypes 0000, 0014, 0015, 0416 Note: Only valid for Australia
SA	Short-term receipts for infotype changes for employees (PREL)
SB	Short-term receipts for infotype changes for applicants (PAPL)
ST	PNP selection amount for status administration (FGr HRST)

If the log for long- and short-term documents is switched on, these change documents will make up the largest part of the table data in table PCL4.

### 5.2.35.1 Avoidance

#### Clusters LA and LB:

Check if, in your system, you need long-term documents for infotype changes (clusters LA and LB). If not, you can prevent these documents from being created by switching off the creation of infotype changes. This logging function is switched off in the standard system, meaning that it has to be explicitly turned on if you require this function.

#### Other clusters:

It is not possible to prevent the creation of other data, such as short-term documents.

### 5.2.35.2 Summarization

Cannot be used

### 5.2.35.3 Deletion

#### Clusters LA and LB:



You can use programs RPUAUDDL to delete logged changes of infotype data. SAP Note 375665 (SAP R/3 3.1I – 4.6C) contains information on how to improve performance during deletion.

#### **Cluster PR:**

You can use RPUPROTU to delete the single records of report start logs. To delete several records at a time, refer to SAP Note 157224 (SAP R/3 4.0B – 4.6C).

#### **Clusters SA and SB:**

You can also use program RPUAUDDL to delete short-term documents from the database. On the selection screen of the program, you can choose between short- and long-term documents via a radio button.

#### **Cluster ST:**

Entries in this cluster are deleted as soon as the process is deleted via the process manager. Therefore, it is not necessary to run a separate delete program. The processes themselves are not archived; they are simply deleted.

### **5.2.35.4 Archiving**

#### **Clusters LA and LB:**

Long-term documents for infotype changes can be archived using archiving object PA\_LDOC. When you create the archive files, you can choose whether you want to archive documents for employees or for applicants, or both. You can also choose the period for which data should be archived. The period refers to the date on which the document was written. Please take care that archiving object PA\_LDOC does not handle infotype IT0283 as there is no reference for a personnel number.

#### **Other clusters:**

It is not possible to archive other data saved in tables PCL4.

#### **Table analysis**

If you want to run a table analysis (transaction TAANA) before data archiving (see [chapter Goal of Using this Best-Practice Document](#)), the analysis variant called ARCHIVE is offered for table PLC4.

#### **For further information, see SAP Note:**

- 25622 (release-independent): Archiving in HR

### **5.2.36 PROF, PROH, PRON, PROP, PROW: Forecast**

The system uses the sales forecast function to make forecasts about sales figures during a specific period of time, based on past sales figures. It uses the following tables to make the forecast:

- PROF forecast error
- PROH historical values (basis for forecast): consumption or current value
- PRON follow-up on forecast errors and exception messages
- PROP forecast parameters
- PROW forecast values

The data volume growth here may be considerable, especially in table PROW.

#### **5.2.36.1 Performance-Critical Processes**

For materials planning, the system calculates forecast values for all material/plant combinations.

#### **5.2.36.2 Avoidance**

- Generate forecasts only for relevant materials.
- Make sure your forecast horizon is not too broad; in other words, your forecasts should be based on weeks or months, not days, if possible.



- If possible, deactivate the message log during the forecast run by not marking the Log Record field in the selection screen of transaction MP38 or MPBT.

### 5.2.36.3 Summarization

Cannot be used

### 5.2.36.4 Deletion

If the forecast model for a material is changed from a value not equal to zero to a value of zero (no forecast), some forecast data will remain in the system, even though it is no longer of interest to the user. This data can include forecast values and error messages that were produced during previous forecast runs.

Delete forecast data that is no longer needed using transaction MPR2 (as of SAP R/3 Enterprise 4.70). If you are working with an earlier release, see SAP Note 363284 (SAP R/3 4.0B - 4.6C). See also SAP Note 204916 (SAP\_APPL 300 - 600) for information on the deletion of forecast versions to reduce large data volumes.

### 5.2.36.5 Archiving

Cannot be used

## 5.2.37 REGUH, REGUC: Tables for Payment Data

The data generated by payment programs is saved in the payment data tables, so that lists and payment mediums can be generated later. The data is saved in different tables, for example:

- REGUH

Contains the relevant data for a payment

- REGUC

Table cluster REGUC contains table REGUP, which holds the data of paid items (invoices).

Tables REGUH and REGUC are particularly prone to rapid growth.

The payment information saved in the REGU\* tables is no longer needed if the corresponding payment run has been completed. Therefore, this data can usually be deleted (see below). For documentation or test purposes, it may be useful to keep the payment data of the payment run. The payment data list is created with program RFZALI20. Your company may have a rule for the creation of this list, for example, that it should be created and printed with every payment run or that it must be stored in a storage system. If necessary, you can create this list for every payment run you want to create. If you do so, you should coordinate with the person responsible for the business process.

### 5.2.37.1 Performance-Critical Processes

During the implementation of Support Package SAPKH46C36, you may encounter performance problems when working with table REGUP.

#### See SAP Note:

- 573338 (SAP R/3 4.6C): Problems with the REGUP table when importing SAPKH46C36
- 597984 (SAP R/3 4.6C - 4.70): SAPFPAYM – Performance problem for large data volume in REGUH: As of SAP R/3 4.6C, you may encounter performance problems during the creation of payment mediums via the Payment Medium Workbench (PMW) if you have large data volumes in table REGUH.

### 5.2.37.2 Avoidance

You can prevent large data volumes by regularly reorganizing your tables (see section 5.2.37.4 Deletion). Some customers use the payment data tables as a payment register to store the data that cannot be read



from the original document or the master data (historical address, selected bank details) and to have a record of all internally initiated payments. As of SAP R/3 4.6C, you have the option to store this data in the check register so that you can use it for payments via PMW and the IDoc interface (RFFOEDI1). Up to SAP R/3 4.6C, the check register is updated only through the check processes (RFFOUS\_C). After the payment data has been stored in table PAYR, you can reorganize the payment data tables.

#### See SAP Notes:

- 574350 (release-independent): F110: Reorganization of payment data
- 437942 (SAP R/3 4.6C): RFFOEDI1: Check number transferred in the IDoc
- 436091 (SAP R/3 4.6C): PMW – Generate check numbers for the file creation

### 5.2.37.3 Summarization

Cannot be used

### 5.2.37.4 Deletion

In tables REGUH and REGUP, the system saves payment proposal data and the payment runs themselves. Payment proposal data, however, can still be changed manually before the payment run. But generally only the data of the payment run is used to create the payment mediums, which is why this data is more important than the proposal data. If you want to keep down the volume of tables REGUH and REGUP, you can use program SAPF110R to limit the reorganization to include only the proposal data.

The payment data from old payment runs can be deleted if the data is older than 14 days. Use transaction F110 or F111, then in the menu choose *Payment run* → *Reorganization*.

If you do not use the option to store your data in the payment register PAYR (see section 5.2.37.2 Avoidance), you can at least delete the proposal data, which makes up more than 50% of the data volume.

When you delete the payment runs, you can also delete the payment medium files from the Data Medium Exchange (DME) administration (management data), although first make sure that you are fulfilling all legal data retention requirements for the original files. You can delete the payment medium files separately via transaction FDTA by selecting data (for example, according to execution date), marking all selected entries, and deleting them.

#### See SAP Note:

- 574350 (release-independent): F110: Reorganization of payment data

### 5.2.37.5 Archiving

It is not possible to archive payment data tables. If the payment data is stored in payment register PAYR (see section 5.2.37.2 Avoidance), then it may be useful to archive this data via archiving object FI\_SCHECK.

#### Table analysis

If you want to run a table analysis (transaction TAANA) before data archiving (see [chapter Goal of Using this Best-Practice Document](#)), the ARCHIVE analysis variant is offered for table REGUH.

### 5.2.38 RESB, RKPF: Reservations and Dependent Requirements

Table RESB contains reservations items (requests to the warehouse to reserve a material to be delivered at a later point in time) and dependent requirements (material or product requirements that are generated by superior assemblies and can be planned) used in Logistics. The corresponding header table is RKPF, which contains general information on reservations (creator, transaction type, account assignment) and does not grow as large as the items table.



The following table shows the reservation process for different dependent requirements.

Reservations of the dependent requirement	What happens with them
SB	Are deleted automatically as part of the business process as soon as they are no longer needed
AR	Can be archived using PM_ORDER, PP_ORDER and PR_ORDER. See below.
BB	Can be archived using MM_EKKO and MM_EBAN. See below.
MR	Are <i>not</i> archived. Reservations that are no longer needed can be deleted using program RM07RVER. (It is, however, not possible to only delete certain dependent requirements.)

### 5.2.38.1 Avoidance

#### Net change planning in the planning horizon

Through net change planning in the planning horizon (processing key NETPL), fewer dependent requirements are created because requirement coverage elements and dependent requirements are only created within this specific horizon.

You can maintain a planning horizon in Customizing at plant or posting control group level. This also means that only those materials are sent to planning that have seen an MRP-relevant change within the planning horizon. Make sure that despite this procedure, you still perform net change planning every once in a while, for example, on the weekend.

#### Defining a two-level lot size

In addition, you should consider whether it would make sense to use a two-level lot size for materials with many dependent requirements. You can make this setting in Customizing for lot sizes (transaction OMI4). This allows you to work with the more detailed lot sizes in the short-term horizon, and with the less detailed lot size in the long-term horizon, because it groups requirements and therefore generates fewer procurement proposals and dependent requirements.

#### Switching to bulk material

We recommend that you switch less costly materials of which large amounts are needed, such as screws, to bulk material in the material master. In addition, we recommend you set the *Excl. Bulk Material* indicator (see SAP Note 483672, release-independent) for the BOM explosion. This will prevent the updating of table RESB.

Cannot be used

### 5.2.38.2 Deletion

Cannot be used

### 5.2.38.3 Archiving

Entries from table RESB can be archived using the following archiving object:

Archiving Object	Archived Application Data
MM_EBAN	Purchase Requisitions



MM_EKKO	Purchasing Documents
PM_ORDER	Service and Maintenance Orders
PP_ORDER	Production Orders
PR_ORDER	Process Orders
PS_PROJECT	Operative Structures

Archiving production orders using archiving object PP\_ORDER is especially helpful if table RESB contains many order reservations (field BDART = AR). Archiving these noticeably reduces the data volume in RESB. This also improves the performance of reading order reservations.

A good indicator for deciding whether archiving table RESB would make sense or not is the number of “old” (for example older than three months) reservation entries for which the final issue indicator (field KZEAR – final issue) has been set. If your system has a large number of these kinds of reservations, you should check whether it would be possible to flag them for deletion and then remove them from table RESB when the production orders are archived.

Old reservations may exist in your system because of the following reasons:

- The production orders in your business take a long time to be completed. As a result, you may have old reservations that are still valid.
- You have some problems in your workflow. For example, it could be that users in the production department did not set the final issue indicator during goods issue posting, even though in the future no other goods issues will take place for this reservation. You need to investigate why this is the case and remove old reservations from your system.

**See also SAP Note:**

- 540834 (SAP\_APPL 46B - 606): FAQ: Order Archiving (PP\_ORDER and PR\_ORDER)

## 5.2.39 SADLSTRECB: Address List (Direct Mailing Campaigns)

Table SADLSTRECB contains the dynamic part of an address list. Entries in this table are not written when an address list is created for a direct mailing campaign in the SD application (component SD-CAS-SP).

### 5.2.39.1 Performance-Critical Processes

When the direct mailing is executed, the corresponding SADLSTRECB entries are deleted automatically. The data volume in table SADLSTRECB could become very large if one or more direct mailings with large address lists were created, but not yet executed.

If a direct mailing campaign is not executed it will not have the status Completed. This means that it cannot be archived. If this is the case and the direct mailing is no longer needed, it is possible to simply delete it (via transaction VC01N\_M). Direct mailings are archived via archiving object SD\_VBKA (although SADLSTRECB entries are not archived along with the other data).

### 5.2.39.2 Avoidance

Cannot be used

### 5.2.39.3 Summarization

Cannot be used

### 5.2.39.4 Deletion

If a direct mailing campaign with an address list was manually set to Completed, the SADLSTRECB entries will remain in the table. They will also remain if the direct mailing campaign was archived (archiving object SD\_VBKA) because it was manually set to Completed. However, it is possible for you to delete these entries

if you write your own deletion program and reconcile the entries in table SADLSTRECB with the entries in tables SADLSTRECH, VBKA, or VBUK.



If the direct mailing campaign still needs to be executed, the SADLSTRECB entries must not be deleted.

## 5.2.39.5 Archiving

Cannot be used

## 5.2.40 SM\*: Schedule Manager Tables

The Schedule Manager (transaction SCMA) enables you to monitor periodic tasks, such as period-end closings in Overhead Cost Controlling. In the Monitor (transaction SCMO), you can display information about all scheduled jobs. The Monitor is a component of the Schedule Manager. The tool saves the information in its own tables (SM\*), such as SMMAIN (main information about the entry), SMPARAM (processing parameters), and SMSELKRIT (selection criteria). These tables are prone to growing very large.

### 5.2.40.1 Avoidance

Cannot be used

### 5.2.40.2 Summarization

Cannot be used

### 5.2.40.3 Deletion

You can keep the size of Schedule Manager tables down by regularly deleting monitoring data that is no longer used. Once this data is deleted, you will not be able to monitor jobs that have already run. Therefore, it is essential that you only delete data that is no longer needed for monitoring, such as period-end closing data that is older than one year.

In the Schedule Manager, you can delete monitoring data per time unit for different task lists by using *Utilities* → *Delete Data*. Alternatively, you can use program SMAN\_ARCHIVE\_MONI\_DATA for the generic deletion of monitoring data that is no longer needed. Due to consistency reasons, deletion must always take place using a database commit. Therefore, only a limited amount of data can be deleted at once. If you want to delete a large amount of data, you can install a special program (Z\_SCMA\_DEL\_DATA) using SAP Note 803641 (SAP\_APPL 46C - 731). The program enables you to delete an interval of data.

You can delete old logs from material ledger costing runs using transaction CKMLPROT or program CKML\_DELETE\_PROTOCOLS (see also chapter 5.2.32 for more information on CKMLPROT). Because these logs are integrated in the Schedule Manager, the size of the corresponding SM\* tables is also reduced through these deletions. If you are using an older release you can install the program through SAP Note 548424 (SAP\_APPL 46B - 470). SAP Note 1032806 (SAP\_APPL 46C - 600) describes how you can use the program for deletion.

#### See also SAP Note:

- 731664 (SAP\_ABA 46C - 640): Selective deletion deletes all (corrects an error that leads to the deletion of all data when using selection deletion)

### 5.2.40.4 Archiving

Cannot be used



## 5.2.41 Snnn: LIS – Information Structures

### Note:

If you want to generate a data warehouse for long-term statistics (for example, for table KWER), you are advised to use SAP Business Warehouse (SAP BW) instead of the SAP information systems in SAP ERP because of the advantages offered by its extractors. However, certain operational functions in SAP ERP (for example, rough workload estimate, subsequent settlement, and OTB) also use the Retail Information System, even if SAP Business Warehouse (SAP BW) is being used.

If you execute the reports that are based on RIS information structures in SAP Business Warehouse (SAP BW), you can entirely avoid using storage space in the LIS structures. This reduces the overall load on the database of your OLTP system (data avoidance in the OLTP system).

SAP Business Warehouse (SAP BW) also offers you ample options for archiving your data. Moreover, for functions such as allocation table and market-basket price calculation, it is possible to access BI data directly from the OLTP system (close the loop). It is especially recommended that you use this technique if you are already using SAP Business Warehouse (SAP BW) for your other reporting requirements.

### 5.2.41.1 Performance-Critical Processes

RIS is updated from different processes in retail. The following processes, for example, generate large volumes of data:

- Processing sales data using POS interface – inbound

Structure S120 is particularly important here as it contains data as per receipts. Structures S121 and S122 can also be filled with data from POS.

If basket analysis is used, data is also copied to other structures (S117 and S119 in the standard system). The data involved should, therefore, be archived at regular intervals.

- Subsequent settlement (S074, S015, S111)

### See SAP Notes on LIS performance:

- 213546 (SAP\_APPL 600 – 602): HPR collective note: POS inbound: Database locks are a significant cause of performance problems that occur when updating the POS-inbound to the RIS.
- 207863 (SAP\_APPL 40B – 46C): Performance improvement in RIS data enhancement
- 130255 (SAP\_APPL 40A – 46C): Performance improvement in large info structures
- 181310 (SAP\_APPL 40A - 470): RIS: Optimize update performance

### 5.2.41.2 Avoidance

Most information structures in the standard system can be updated. Before beginning, you must decide exactly which master data and movement data you want to analyze. In doing so, you should cumulate as much data as possible and avoid updating at detailed levels (for example, at article level). In Customizing, deactivate updating for all structures that you do **not** require for analysis or ERP functions (*IMG* →: *Logistics General* → *Logistics Information System (LIS)* → *Logistics Data Warehouse* → *Updating* → *Updating Control* → *Activate Update*). Make the relevant settings for the LIS (transaction MCH6).

The following table gives an overview of the available Customizing transactions.

Component	Customizing Transaction
Sales and Distribution	OMO1
Purchasing	OMO2
Inventory Controlling / Warehouse Management	OMO9

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Production	OMOD
Quality Management	OMOR
Plant Maintenance	OMOS
External Data	OMO3
Retailing (RIS)	MCH6
Logistics - General	OMOZ
Warehousing & Shipping	OMOY

For performance reasons, you should use the RIS sparingly, and you should deactivate all unnecessary derivations and additional LIS characteristics by using Customizing transaction MCH\_.



The analyses delivered in the standard system are examples and should only be used for testing data. If a standard information structure provides you with the analyses you require, copy the information structure and delete all characteristics and key figures that you do not require. You can then use your own info structure.

Some retail processes are listed in the table below. If you use these processes, data must be updated in RIS. You cannot, therefore, deactivate updating if you are using these processes in a live system, as defined by SAP.

The list is in no way complete and only covers RIS (not the Purchasing Information System, the Sales Information System, or Inventory Controlling).

Process	Required Structures	Remarks
Subsequent settlement	S074 S015 S111	(see SAP Note 157433 release-independent) Updating for S074 and S111 is controlled in the application only and cannot be deactivated in Customizing for LIS. If your system performance allows it, SAP recommends that you do not deactivate updating for structure S015.
Replenishment forecast for inventory management on value basis	S130	If you use replenishment-based inventory management, you can run a forecast using the flexible planning functions. To do this, you must use updating for S130.
Allocation table	S077, S083 (The standard system considers the key figures. By customizing the allocation rules, settings can be made for other structures.)	The allocation table only uses the RIS in the following circumstances: <ul style="list-style-type: none"> <li>Allocation tables are created with reference to allocation rules.</li> <li>The allocation rules are generated with reference to RIS key figures.</li> </ul>
Calculating area profitability for sites	S083	The structure coding contains clear information on how to use the structure.



Open-to-buy (OTB)	S110	—
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### 5.2.41.3 Summarization

If necessary, you can update your data in detailed atomic structures. The data can then be extracted from these structures so that it can be processed further. To do so, proceed as follows:

1. Define one or two atomic info structures that contain all the information that you are interested in.
 

**Note:** Define one atomic structure for each application, for example, Purchasing, Sales and Distribution, Inventory Controlling. This avoids the need to include empty record areas that occur when using a cross-application atomic structure.
2. Configure updating so that all relevant application data is updated to the atomic structures. These structures are only used as a data pool and cannot be used when running analyses.
3. Create an extraction process that aggregates the data to other structures. You can extract the data in the following ways, depending on the number of extract structures you require.

Procedure	Advantages	Disadvantages
Copy Management (CM) (transaction MCSZ)	Easy to use if: <ul style="list-style-type: none"> <li>• You only require up to three extraction structures.</li> <li>• You want to extract by week, month, or posting period.</li> </ul>	<ul style="list-style-type: none"> <li>• Unsuitable for the daily construction of extract structures</li> <li>• When extracting, the whole data set for the ATOMIC structure is reselected for each summarization run (construction of a 1:1 relationship between source and target).</li> <li>• To use the CM, the data set must have been in the ATOMIC structure before the load program is used.</li> </ul>
Load program	<ul style="list-style-type: none"> <li>• Performance improvement</li> <li>• You can generate an individual update function module using the LIS inbound.</li> <li>• This is recommended if you require more than three extraction structures.</li> <li>• SAP templates enable easy creation. The sample coding makes it possible, for example, to automatically update in parallel according to various criteria (to avoid deadlocks).</li> <li>• When using the load program, a 1:n relationship is created between source and target. The data in the atomic structure is only selected once so that it can then be aggregated in n target structures.</li> </ul>	The customer must create the load program (which is considered a modification).

### 5.2.41.4 Deletion

Use Copy Management (transaction MCSZ) to delete any statistics data that you do not want to archive.

Whether you delete or archive data is an organizational question that you must settle on an individual basis.

Deletion is the preferred option for data that is only required temporarily, for example:

- Data for Inventory Controlling (S200) for complete physical inventories
- Historical data for estimating rough workloads (S150, S152, S153)

## 5.2.41.5 Archiving

Archiving is the preferred option for data that is required for a longer period and involves generating an archiving object for the relevant structure. The archiving object should contain the name of the structure in question (for example, object *MC\_Snnn* for table *Snnn*).

Use transaction *MCSX* to generate an archiving object for a specific info structure: *Retailing* → *Infosystem/Planning* → *Retailing* → *Environment* → *Archiving* → *Statistics*.



You can only reload the archived data if an error occurs. You should not upload archived data back into the system so that it can be re-used in analyses.

### See also SAP Note:

- 406735 (release-independent): No archiving of Infostructures possible

## 5.2.42 S033: Information Structure S033 - Logistics Information System (LIS)

Table S033 contains detailed transaction data for each document, material, and day from the standard information structure S033 of the Logistics Information System (LIS). Info structure S033 does not have an analysis report. It is used for detail display in all stock analyses.

### 5.2.42.1 Avoidance

Information structure S033 is related to info structures S032 and S031 in that S032 contains the current material stock. To facilitate a later analysis of material movements (depending on the context, also called goods or warehouse movement), info structure S031 contains the material movements by month. Info structure S033 is only updated if the user has chosen the *Detail Analysis* function in the standard analysis. It contains additional information collected on a daily basis, with the material number as the primary key. This means that all material documents are entered again in info structure S033, which explains why this table grows so much.

If table S033 is one of the tables that is growing too strongly in your system, you must check whether you really need detail information. If not, prevent the updating of this data in table S033 by using transaction *OMO9* (Updating – Inventory Controlling: Info Structures).

### 5.2.42.2 Summarization

Cannot be used

### 5.2.42.3 Deletion

Cannot be used

### 5.2.42.4 Archiving

Info structures can be archived using transaction *MCSX*. The archiving objects (*MC\_Sxxx*) for the individual info structures are generated at runtime.



## 5.2.43 SRMPROTOCOL : SRM Protocol entries

This table belongs to SAP Records Management respective the 'Case Management' which is one of the applications that make use of SAP Records Management. Entries in table SRMPROTOCOL are written by the CRM Case Management.

### 5.2.43.1 Avoidance

No information is available.

### 5.2.43.2 Summarization

Cannot be used.

### 5.2.43.3 Deletion

For this table no standard deletion report exists. But function module SRM\_PROTOCOL\_DELETE\_EXPIRY can be used to create a customer-own report to delete "expired" entries. Please see SAP Note 795613.

For further analysis, you can run an analysis with transaction TAANA on table SRMPROTOCOL using fields EXIPRY\_DATE and NOT\_DEL. If the expiry date has passed the record could be deleted in case the flag NOT\_DEL (Cannot be deleted, even after expiry data has passed) is set to X.

### 5.2.43.4 Archiving

Cannot be used.

## 5.2.44 VBAK, VBAP, VBEP, VBKD, VBPA: Sales Document Tables

A sales document is a contractual agreement between a sales organization and a sold-to party regarding the delivery of a specific quantity of products or services at an agreed price and time.

Sales-related business transactions are recorded in the system as sales documents. These are grouped into four categories:

- Pre-sales documents: inquiries and quotations
- Sales orders
- Outline agreements such as contracts and scheduling agreements
- Customer problems and complaints that lead to free-of-charge deliveries and credit memo requests

### 5.2.44.1 Avoidance

Cannot be used

### 5.2.44.2 Summarization

Cannot be used

### 5.2.44.3 Deletion

Cannot be used

### 5.2.44.4 Archiving

Entries in tables VBAK, VBAP, VBEP, and VBKD are archived using archiving object SD\_VBAK. Partner data (entries in table VBPA) can be archived using archiving objects SD\_VBAK, SD\_VBKA, SD\_VBRK, RV\_LIKP, and SD\_LIKP.



## 5.2.45 VBFA: Sales Document Flow

Table VBFA contains the links between the preceding documents and follow-on documents within a sales process, such as contract, release orders, purchase order, delivery, goods issue, or billing documents.

### 5.2.45.1 Performance-Critical Processes

If a document, such as a contract or an offer, is referenced by many follow-on documents, the document flow can get very large. This can also negatively affect performance during the processing of the document and its follow-up documents.

### 5.2.45.2 Avoidance

We recommend that you make the appropriate customizing settings for the copy control for sales documents via transaction VTAA to avoid the document flow and, as a result, keep table VBFA from growing too much. For more detailed information on how to do this, see SAP Note 105512 (release-independent). Although this note was written for contracts, the solution it presents can be used for all sales document types whose direct follow-on document is neither a billing document nor a delivery.

### 5.2.45.3 Summarization

Cannot be used

### 5.2.45.4 Deletion

Cannot be used

### 5.2.45.5 Archiving

Entries from table VBFA are archived via archiving objects SD\_VBAK, SD\_VBKA, RV\_LIKP, and SD\_VBRK.

A sales document does not only have a links record to its immediate follow-on document, but to all follow-on documents in the document chain. Because document flow records are archived together with their preceding documents, the archiving of orders has the biggest effect on the document flow.

### See also SAP Notes:

- 131051 (release-independent): VBFA records remain in the system after archiving
- 647775 (SAP\_APPL 46C 603): Missing test flag for report ARCHVBFA
- 74513 (SAP\_APPL 300 - 500): Correction program: document flow for non-existent delivery

## 5.2.46 VBFS: Collective Processing Logs

Table VBFS is used to save the log entries for collective runs in sales and distribution (SD). The records are mainly entries from collective delivery processing (transaction VL04) and collective billing processing (transaction VF04). It is also possible to have collective processing in other areas, such as picking (group type K), freight list (M), and cancellations (S). However, because they generate only small amounts of data volumes, they are not significant in this context.

To display the logs, you can use the following transactions:

- V\_SA (Deliveries)
- V.21 (Billing Documents)

Behind these transactions you have program SDSAMRPO, which generates the requested data according to group type (for example L for deliveries and F for billing documents).

### 5.2.46.1 Avoidance



To save table space, you can exclude individual messages (such as information messages, message category I) from the collective run log. You have to make the appropriate settings in Customizing under *Logistics Execution* → *Shipping* → *System Modifications* → *Specify Characteristics of System Messages* in the *Controllable Error Messages Shipping Processing* display view. However, you can only make these settings for deliveries. For billing documents, information messages are not written to table VBFS. Which error messages appear in the collective delivery processing log depends on the message category and, for message category I, on an additional setting that you have to make in Customizing under *Import type I messages into collective processing log* (or transaction OVM2).

## 5.2.46.2 Summarization

Cannot be used

## 5.2.46.3 Deletion

To delete old collective processing logs, use transaction VASK (program RVVBSKDL), which offers the following options, among others:

- *Delete after archiving*: Log entries (and groups) can only be deleted if the corresponding documents are no longer in the system, that is, they have already been archived.
- *Only delete logs*: Only the logs are deleted; the group headers and items remain intact.

## 5.2.46.4 Archiving

Cannot be used

## 5.2.47 VBOX: Rebate Processing

Table VBOX is a central database table for rebate processing. This table can have considerable data volume growth.

### 5.2.47.1 Performance-Critical Processes

- Settlement of agreements created or changed retroactively (old rebate procedure).
- Display of a rebate agreement drilldown (old rebate procedure)
- Update via transaction VBOF of agreements created or changed retroactively (new rebate procedure)

### 5.2.47.2 Avoidance

It is not possible to deactivate the updating procedure for table VBOX. However, it is possible to control the number of entries in this table in Customizing. For example, there will be an update for an invoice if, in Customizing the document type, the client and the sales organization are marked subject to volume-based rebate.

The number of entries in table VBOX for each invoice also depends on the customizing settings. The system will update one entry for every condition access marked subject to volume-based rebate in all access sequences marked subject to volume-based rebate, if all of the following conditions are met:

- The corresponding access sequence has been assigned to a rebate condition.
- No field of the document access is Initial.
- The condition of the access has been fulfilled.

To reduce the number of VBOX entries, check whether:

- The document type (transaction OVB0), the customer (table KNVV, field BOKRE), and the sales organization (transaction OVB1) are actually relevant for rebates.

If not, set them to not relevant.

- You actually need all rebate-relevant accesses and access sequences.



If not, make sure they are not assigned to a rebate condition type (V/06).

- Accesses can be given the appropriate conditions.

Accesses must be linked directly to the conditions because they cannot be used in the calculation schema.

### 5.2.47.3 Summarization

Cannot be used

### 5.2.47.4 Deletion

The system deletes the VBOX entries only when the corresponding invoices are archived. For further information, see SAP Note 376241 (SAP\_APPL 31I – 46C). Deleting these items before archiving is not recommended. It is possible to delete items earlier, but this should only be done in very rare cases after careful consideration. You can recreate deleted entries using program RV15B001.

### 5.2.47.5 Archiving

Archiving of VBOX entries is not being planned. The system will delete entries in table VBOX when you archive the corresponding invoices.

When you archive, you must ensure that the invoices relevant for rebates can only be archived if the rebate agreement has been settled and closed. Otherwise, these invoices can no longer be considered during subsequent settlements. For more information, refer to SAP Note 376241 (SAP\_APPL 31I – 46C).

#### See also SAP Note:

- 410579 (release-independent): FAQ Rebate Processing

## 5.2.48 VEKP: Handling Units Header Table

Table VEKP is used to store the header entries for handling units. Handling unit data is also stored in the following tables:

- VEPO Items
- VEVW Where-used list: history
- NAST Message control status records
- HUSSTAT Individual status per handling unit
- HUSTOBJ Data about the handling unit status object
- HUMSEG Reference from the handling unit item to the most recently posted material document item
- SER06 Document header for serial numbers of the handling unit contents
- CDHDR, CDCLS (Change document: Object code = HANDL\_UNITS)

### 5.2.48.1 Avoidance

Cannot be used

### 5.2.48.2 Summarization

Cannot be used

### 5.2.48.3 Deletion

Cannot be used

### 5.2.48.4 Archiving



As of SAP R/3 4.6C, handling units can be archived using archiving object LE\_HU. Before SAP R/3 4.6C, handling units were archived using archiving objects RV\_LIKP (deliveries) and SD\_VTTK (transports).

## Prerequisites and dependencies

A handling unit is archivable if the following prerequisites have been met:

1. All handling units in the hierarchy are archivable. This criterion is only relevant if the handling unit is included in a hierarchy (VEPO-UNVEL ≠ initial).
2. The residence time has been completed. This can be determined on the selection screen of the preprocessing and write program.
3. Customer-specific check criteria (if used) are met.

Moreover, the following exceptions apply to the archivability of handling units:

- Handling units with the movement status Deleted (internal value B) can be archived, regardless of whether or not they are linked to SD or work orders (process or production orders). This is valid for the following document types: customer order, inbound and outbound deliveries, transport and production orders (order type 10 or 40).
- Handling units with the movement status Goods issue posted (C) or not relevant (A) can be archived in the following cases:
  - The handling units are not linked to any SD or work order documents.
  - The handling units are linked to SD or work order documents, but these documents have already been archived (existence check in the corresponding table: VTTK, LIKP, VBAK, or AUFK).
- If handling units are linked to quality notifications, we recommend that you archive the handling units before the quality notifications.

## Handling units in SAP ERP and decentralized Warehouse Management systems (see SAP Note 607833 (SAP\_APPL 46C – 470))

After a handling unit has been created in the SAP ERP system and linked to, for example, an inbound delivery, it is transferred to the decentralized Warehouse Management (WM) system, which then manages the handling unit. The handling unit, if empty, can be deleted in the WM system. For as long as it is managed in the WM system, the status of the handling unit in the ERP system is the status it had before it was transferred to the WM system. As a result, if the handling unit is deleted in the WM system, it can neither be deleted nor archived in the ERP system.

For this reason you must execute report RHU\_AR\_DELETE\_DECENTRALIZED\_HU regularly in the ERP system. It checks the status in the WM system and updates the corresponding status in the ERP system.

We recommend you follow the order of the following steps:

Execute report RHU\_AR\_DELETE\_DECENTRALIZED\_HU in the ERP system.

Archive handling unit in the ERP system.

Archive handling unit in the WM system (selection settings as in ERP system).

## See also SAP Notes:

- 606963 (SAP\_APPL 470): Displaying archived HUs
- 553519 (SAP\_APPL 470): Interruption of Archiving Session LE\_HU ignores hierarchy of HUs



## 5.2.49 VBRP: Billing Item Data

### 5.2.49.1 Performance-Critical Processes

#### Example: Processing sales data using POS interface – inbound (retail)

Updating for billing items is active in Customizing for the POS interface – inbound profile in the standard system. Experience has shown, however, that most retail customers do not use these documents. The number of billing document items is calculated using the article items in the IDoc.

If you have activated rebate processing, data is also updated for rebate processing when billing items are generated. Table VBOX can grow as a result of this.

#### 5.2.49.2 Avoidance

In retail, the updating for billing documents using POS interface – inbound can be deactivated in Customizing for the POS interface – inbound profile. Check if you really do need to use billing documents, for example:

- You need billing documents for rebate processing in sales and distribution.
- You want to be able to run checks to ensure that billing documents are accurate.

You can deactivate updating, if necessary.

In Customizing, choose *Sales and Distribution* → *POS Interface* → *Inbound* → *Control Sales as per Receipts* and then change the relevant profile.

Avoid pricing procedures subject to volume-based rebate. In an SD document with 100 items, for example, five pricing procedures subject to volume-based rebate generate 500 lines in table VBOX.

For more information, see SAP Note 190627 (release-independent).

#### 5.2.49.3 Summarization

Cannot be used

#### 5.2.49.4 Deletion

Cannot be used

#### 5.2.49.5 Archiving

In this case, use archiving object SD\_VBRK for archiving. SD\_VBRK is also used for archiving the indexes for rebate processing (table VBOX). There are numerous SAP Notes about archiving. Use SD\_VBRK as your search string.

#### See SAP Notes:

- 488970 (release-independent): Archivability criteria for billing documents S3VBRKWR/S3VBRKPT: Describes the checks that are carried out during the archiving of billing documents. This information can help you if your billing documents are not archivable and you do not know why.
- 379406 (SAP\_APPL 3.11 – 4.6C): SD\_VBRK: Residence time calculation using change date: The residence time for billing documents is calculated from the difference between the current data and the creation date of the document. After you have implemented this SAP Note, you also have the option to use the date of the last document change as a basis for calculating the residence time. As of SAP R/3 Enterprise, this function is already included in the new programs.
- 322046 (SAP\_APPL 30D - 470): SD\_VBRK: Selection criteria enhancement: When you archive invoice documents, you can only select the documents to be processed based on document number. After you implement this SAP Note, you can select the invoices to be archived also based on creation date, invoice type, and sales organization. As of SAP R/3 Enterprise, this function is already included in the shipped programs.



- 376241 (SAP\_APPL 31I – 46C): Archiving of billing documents subject to rebates:  
Explains how to create a table and a report in the customer namespace so that all billing documents that have not been archived have an entry in the table. The table is read when billing documents are archived. If there is an entry in the table for a billing document, this billing document is not archived.
- 758952 (SAP\_APPL 46A - 602): SD\_VBRK: Tables CMFK and CMFP:  
During the archiving of billing documents, the message management log tables CMFK and CMFP (see chapter 5.2.32) are not included. After you implement this SAP Note, the log table entries are deleted together with the archiving of the billing documents that have messages assigned to them. Entries that have not been deleted (orphaned entries) can be deleted using program RSCLCMFP.

## 5.2.50 WLK1: Listing Conditions

### 5.2.50.1 Performance-Critical Processes

Identical to table MARC - **Listing for stores using article-based inventory management**

-  On the initial data transfer of listing conditions, you should, for performance reasons, deactivate the creation of change documents for WLK1 (and MARC) tables because in this case, the change documents are usually not required. For more information, refer to the section on table [CDCLS](#).

### 5.2.50.2 Avoidance

See table MARC.

### 5.2.50.3 Summarization

Cannot be used

### 5.2.50.4 Deletion

Deleting discontinued listing conditions is not critical. Even when you archive using W\_SOR, they are deleted rather than archived (see Archiving, below). To prevent the unnecessary growth of table W\_SOR, we recommend that you regularly schedule the use of delete program RWSORT53 (available as standard program as of SAP R/3 4.6C).

### 5.2.50.5 Archiving

Listing conditions are not archived. Listing conditions are deleted as listed below when assortment modules are archived using W\_SOR:

- Up to SAP R/3 4.6C: All expired listing conditions (independent of the archived assortment modules)
- As of SAP R/3 4.6C: Only listing conditions that are related to the archived assortment modules

#### See also SAP Notes:

- 717198 (SAP\_APPL 46C - 500): MM\_MATNR: Non-existing logistics data in the archive
- 750114 (SAP\_APPL 46C - 500): Archiving W\_SOR selected without assortment module header

## 5.3 SAP for Utilities (IS-U)

### 5.3.1 ERDK: Print Document Headers

A print document is created when a contract account is invoiced. A print document consists of a print header and document lines. Table ERDK contains the header data of the print document. DBERDL contains the print document line items. Both tables were created as part of a redesign process for SAP R/3 4.6 and replace table DBERDZ used up until that release. DBEOSB contains information regarding IS-U On-Site Billing.

#### 5.3.1.1 Avoidance

Cannot be used



## 5.3.1.2 Summarization

Cannot be used

## 5.3.1.3 Deletion

SAP report REA\_SIM\_DEL and IS-U transaction ESIMD are used to delete simulated print documents. Bear in mind that simulated print documents are not archived during the archiving run.

## 5.3.1.4 Archiving

Two archiving objects are relevant when archiving IS-U print documents:

- You can use archiving object ISU\_PRDOCH to archive print document header data that is no longer required from tables ERDK, ERDB, ERDO, DBERDR, and DBERDU.
- You can use archiving object ISU\_PRDOCL to archive print document line items that are no longer required from tables DBERDL and DBERDLB.

Before you archive the header data of print documents, you must archive the document line items. We recommend that you archive print documents in parallel on a regular basis (weekly) using transactions EAPDL and EAPDH.

Please consider the following prerequisites for archiving:

- Print document header does not have archive status 3 (print document line items deleted).
- Print document is from simulation.
- Retention period has not expired.

## 5.3.2 DBERDZ, DBERDL, DBERDLB: Print Document Line Items

DBERDL contains the print document line items. DBERDLB creates references between print document line items and billing document line items. Both tables were created as part of a redesign process for SAP R/3 4.61 and replace table DBERDZ used up until that release.

### 5.3.2.1 Avoidance

During the creation and clearing of partial bills, print document line items are generated per due date and sub-transaction. This information is, however, summarized in the printed invoice, so that only one amount is printed on the actual invoice form per contract. To save space in table DBERDL, it makes sense to use this summarization when the print document is created. In the case of a partial bill, all line items that belong to the same contract and have the same due date are summarized. In the case of a periodic bill, the line items are summarized per contract. For more information on how you can use summarization, and to view an example, see SAP Note 613520 (IS-U/CCS 463 – 471).

### 5.3.2.2 Summarization

Cannot be used

### 5.3.2.3 Deletion

Simulated print documents can be deleted with transaction ESIMD (program REA\_SIM\_DEL). Depending on the number of simulated print documents in the system, and assuming that they have a similar number of line items as actual print documents, you may use this method to considerably reduce the amount of storage space used. Simulated print documents are not taken into account during the archiving of print documents.

### 5.3.2.4 Archiving

Print documents can only be archived with the following two archiving objects: ISU\_PRDOCL archives the print document line items, and ISU\_PRDOCH archives the print document headers (tables ERDK, ERDB, ERDO, DBERDR, and DBERDU).

The advantage of this division is that print document line items, which make up the largest part of the data volume, can be archived much earlier than print document headers. Even if the print document line items have been archived, it is still possible to work on the print documents with IS-U standard transactions



because the document headers are still in the database. This is possible only if at least one active and filled archive information structure exists, based on the delivered field catalog SAP\_ISU\_PRDOCL. The only exception here is mass reversals, which are no longer possible after the print document line items have been archived. You should therefore only archive the line items of those print documents for which you do not need to perform any more mass reversals. You can still reverse individual print documents.

Print documents should be archived in the following order:

1. Print document line items (ISU\_PRDOCL)
2. Print document headers (ISU\_PRDOCH)

When you archive print document headers, the print document is completely deleted from the database and can later only be displayed. It can no longer be reversed after archiving. You must archive print document headers before you can archive billing document line items (see below).

To prevent their database tables from getting too big, print document line items should be archived in relatively short intervals, especially if you are using short billing periods (monthly or bimonthly). You must set different retention periods for the print document line items and print document headers. When you enter the retention period for the print document headers, the system automatically checks whether it is greater than the retention period of the corresponding print document line items.

There are two options for defining your retention periods:

- In Customizing for the industry solution component Utilities under *Tools* → *Archiving* → *Define Retention Periods for Archiving Objects*
- In Archive Administration (transaction SARA) under *Customizing* → *Application-Specific Customizing*

We recommend that you enter a shorter retention period for reversed documents than for other print documents. This will help you clear out some data from the database as early as possible.

### 5.3.3 ERCH: Billing Document Headers

A billing document consists of both header and line item information. Table ERCH contains the billing document header information. Tables ERCHC, ERCHO, ERCHP, DBERCHV, and DBERCHU also belong to this family. Archiving object ISU\_BILL is used to archive billing document headers, and archiving object ISU\_BILLZ is used to archive billing line items.

#### 5.3.3.1 Avoidance

Cannot be used

#### 5.3.3.2 Summarization

Cannot be used

#### 5.3.3.3 Deletion

For billing document tables, you can take the following corrective actions to delete data from the tables:

- Simulated billing documents and print documents can be deleted with report REA\_SIM\_DEL. Note that simulated billing documents are not archived by the archiving run.
- Entries in the header table ERCH that originate from simulation can be deleted with transaction ESIMD when the simulated billing documents are outdated.

#### 5.3.3.4 Archiving

For the billing document header, archiving object ISU\_BILL exists because the header data has to stay in the system for at least one year. You can use archiving object ISU\_BILLZ to archive billing document line items that are no longer required. This differentiation allows you to archive the line items earlier.

To archive billing document headers and line items, you must define the residence time in IS-U-specific Customizing for archiving.



Billing documents can be archived after the print document headers have been archived. Please consider the following prerequisites for archiving with ISU\_BILL:

- No follow-on billing document
- Adjustment reversal; can only be archived with follow-on document

### 5.3.4 DBERCHZ, DBERCHZ1-8: Billing Document Line Items

As of SAP R/3 4.62, billing document line items are stored in tables DBERCHZ1–DBERCHZ4. These tables replace table DBERCHZ because that table had become difficult to handle due to large data volumes. The fields of table DBERCHZ were distributed across tables DBERCHZ1–DBERCHZ4 and the distribution is based on semantics. This implies that for one document line item, all tables are not necessarily updated.

In addition, we now have tables DBERCHZ5–DBERCHZ8, whose structure is exactly like the structure of the above-named tables. These additional tables are used for less important document line items that are not archived (for example counter readings, general calculation steps, and so on). The data in these tables can be deleted after the billing documents have been archived.

The billing document headers are stored in table ERCH. Tables ERCHC, ERCHO, ERCHP, DBERCHR, DBERCHT and DBERCHU also belong to this family.

#### 5.3.4.1 Avoidance

Experience has shown that in a production system, more document line items are usually written than are actually necessary. You should therefore check the importance of the document line items that are written in your system and perhaps reduce their number. This can help you considerably curtail the growth of the corresponding tables. As part of SAP extension EBIA0001, it is possible to delete line items that are not relevant for the creation of budget billing plans during the document creation stage. For more information, see SAP Note 613006.

In addition, you can set the *NOT\_ARCHIV* indicator for billing line items that should not be archived. Set the indicator in IS-U Customizing under *Tools → System Modifications → User-Defined Function Extension for Billing → User-Defined Variant Programs → Define Line Item Types*. If this indicator is set, the billing document line items for the specified line item type are saved in special files and will be deleted instead of archived after the bill printout. This helps reduce the amount of data that is to be kept in the system (for example, for the purpose of reversals) and the archiving processes can be sped up.

#### 5.3.4.2 Summarization

Cannot be used

#### 5.3.4.3 Deletion

Simulated billing documents and print documents can be deleted with report REA\_SIM\_DEL. Entries in the header table ERCH that originate from simulation can be deleted with transaction ESIMD when the simulated billing documents are outdated.

#### 5.3.4.4 Archiving

Billing document line items are archived using archiving object ISU\_BILLZ; billing document headers are archived with ISU\_BILL. Archiving should be done in the following order:

1. Print document line items (ISU\_PRDOCL)
2. Print document headers (ISU\_PRDOCH)
3. Billing document line items (ISU\_BILLZ)
4. Billing document headers (ISU\_BILL)

Billing documents with archived line items can only be displayed in the system. They cannot be reversed.

Set the retention period of billing document headers so that you do not have to perform reversals of the documents. Also make sure that at least one billing document of an earlier period remains in the system. The invoicing process requires such a document to determine the current billing period. We recommend that you



use a shorter retention period for reversed documents than for other print documents, to clear out the database as soon as possible.

Set the retention period in Customizing. You can find the path in the section [for print document line items](#).

Just like archived print documents (see above) archived billing documents can be displayed using the billing document display transaction (EA22). You can find the function for displaying print documents whose headers have been archived by choosing *Goto* → *Billing Document from Archive*.

#### See also SAP Notes:

- 1080838 (IS-U/CCS 472, IS-UT 600 – 602): SARI: Incorrect Display of Archived Budget Billing Plans
- 1088999 (IS-UT 600 – 602): ISU\_BILL: Error EARC 025 when displaying archived documents
- 878332 (IS-U/CCS 464 – 472, IS-UT 600 – 602): Archiving of Backbilling Documents

### 5.3.5 EABL: Meter Reading Documents

This table is used to store the meter reading (MR) documents. Another table in this table family is EABLG, used to store the MR reasons. For each installation, at least one meter reading result per register has to be entered in every billing period. In addition to this, a meter reading result is required for move-in/out and rate or device changes. Once the meter reading orders have been created, they must be printed or downloaded for output. The downloaded meter reading orders make up the data that the reader uses to enter the collected readings. Meter reading results are stored in table EABL.

#### 5.3.5.1 Avoidance

Cannot be used

#### 5.3.5.2 Summarization

Cannot be used

#### 5.3.5.3 Deletion

Cannot be used

#### 5.3.5.4 Archiving

MR documents are archived with archiving object ISU\_EABL. MR documents can only be archived after all the installations they provide with consumer information have been through invoicing.

Archiving should take place in the following order:

1. Print document line items (ISU\_PRDOCL)
2. Print document headers (ISU\_PRDOCH)
3. Billing document line items (ISU\_BILLZ)
4. Billing document headers (ISU\_BILL)
5. MR documents (ISU\_EABL)

You can display archived MR documents using the IS-U standard display transaction EL31. To be able to display these archived documents, you must have at least one archive information structure that has been activated and built based on the standard field catalog SAP\_ISU\_EABL.



## 5.4 SAP for Banking

### 5.4.1 /BA1\_R4\_REC\_BP: Results Record Header Table Balance Processor

In the Balance Processing process step of the Bank Analyzer IFRS application, the results items and data of the balance objects are persisted in the Result Database (RDB).

The following results types are persisted:

- Results items
- Results data of the balance objects
- Accounting totals

In addition to the above-named results records header table, other data from generated tables in the /BA1\_R4\_55\* namespace (key figures of the results database) and /1SGS/\* (characteristics of the results database) are also stored.

The results are persisted in the RDB after each balance processing operation and can be found using the key date and the corresponding BP-ID.

Table /BA1/B0\_BP\_BP provides an overview of all financial reporting processes.

Runtime problems may occur if you try to calculate financial accounting totals across several periods at once, because the system has to retroactively process line items.

#### 5.4.1.1 Avoidance

Cannot be used

#### 5.4.1.2 Summarization

Cannot be used

#### 5.4.1.3 Deletion

It is currently not possible to delete specific data from the RDB tables.

#### 5.4.1.4 Archiving

Using archiving object BA1\_R4\_055, you have the following options for archiving data stored in RDB:

- **Results line items/results data of results objects**

#### Archiving data with errors

For data with errors to be archived, the corresponding financial reporting process has to have the status ERR. You can check this status in table /BA1/B0\_BP\_BP and change it manually if necessary.

Determine which data of the financial reporting process is no longer needed and set it to ERR. This allows you to archive a large part of the RDB data.

Archiving must take place per reporting period and can be restricted through the BP\_ID. If you have several runs to archive per period, you must restrict the runs using BP\_ID, because too many runs may overload the system and lead to program termination, or the runtime of the archiving write job will become extremely high.

#### Archiving old data

You can use this archiving method to archive all results data of one period of the financial reporting process. You can archive all periods except for the last financial reporting process.

Archiving must take place per reporting period and can also be restricted through the BP\_ID. If you have several runs to archive per period, you must restrict the runs using BP\_ID because too many runs may overload the system and lead to program termination, or the runtime of the archiving write job will become extremely high.

#### Archiving based on residence time



You can use this archiving method to archive all results data based on residence time. In this case, runs can currently not be restricted using the BP\_ID.

- **Financial accounting totals**

### **Archiving data with errors**

For data with errors to be archived, the corresponding financial reporting process has to have the status ERR. You can check and change the status using transaction SE38 and program /BA1/RB1\_ACCT\_DIAGNOSTIC.

Evaluate which data of the financial accounting totals is no longer needed and give it the ERR status. This allows you to archive a large portion of the RDB data.

Keep in mind that the financial accounting totals are relevant later when you archive documents.

Archiving has to be done separately for each financial accounting period and cannot be restricted using the BP\_ID.

### **Archiving old data**

This archiving method enables you to archive all financial accounting totals of a period up to the last valid process necessary to calculate the financial accounting totals.

Archiving has to be done separately for each financial accounting period and cannot be restricted using the BP\_ID.

### **Archiving based on residence time**

This archiving method allows you to archive all financial accounting totals based on residence time. Archiving can currently not be restricted to specific periods. Keep in mind that you must already have archived all documents of a period and financial position balances have to have been generated.



## 5.5 SAP Solution Manager

### 5.5.1 DSVASRESULTS\*: Service Sessions in SAP Solution Manager

The content of the service session performed on your solution manager—for example, Early Watch Alert, Going Live Check, and so on—is stored in tables like DSVASRESULTSGEN, DSVASRESULTSATTR, and DSVASRESULTSSEL (see SAP Notes 1300107 [ST 400]).

#### 5.5.1.1 Avoidance

An Early Watch Alert (EWA) session is automatically created for all systems in all solution landscapes. By ensuring that a system is only assigned to one solution landscape instead of assigning it to many different solution landscapes, you can ensure that an Early Watch Alert session is only executed once per system.

#### 5.5.1.2 Summarization

Cannot be used

#### 5.5.1.3 Deletion

Old sessions can be deleted via standard report RDSMOPREDUCEDATA. After the deletion the sessions disappear from the Solution Manager and are irrevocably lost.

This report can be scheduled via transaction SOLMAN\_SETUP, choose scenario 'Basis Configuration' and step 'Configure Manually'. Here, you can choose the activity 'Delete Session Documents and Download' to schedule this report on a regular basis.

If a service session was not attached to a solution, report RDSVAS\_REDUCE\_DATA has to be used alternatively (see SAP Note 1799531).

#### 5.5.1.4 Archiving

Sessions can be archived by moving the data to an external content repository.

#### See also SAP Note:

- 546685 (ST 320 - 400): Archiving in Solution Manager (operation)

### 5.5.2 SACONT01, SASACONT1: Document Management in Solution Manager

In SAP Solution Manager, you can manage the documents that arise in the various project phases. Each SAP Solution Manager system has an internal SAP Knowledge Warehouse for storing documents created in a project, solution, or roadmap. The system puts the documents in the context in the Knowledge Warehouse, which you specified when you created the project, solution, or roadmap.

- Documents in projects, solutions, or project documentation in a roadmap with project link belong to document area IWBSOLAR.
- Roadmap documents (topics, accelerators) belong to document area IWBASAP.

The SAP Solution Manager system has its own Knowledge Warehouse to store documents, but you can also connect an external SAP Knowledge Warehouse.

A project can generate a lot of data because SAP Solution Manager saves every version of a document by default. You can relieve the database by moving the contents of documents that you have created in a project into another data repository. You can also delete old versions of documents that you no longer need.

Table SACONT01 basically contains document content belonging to SAP Solution Manager and stored using Knowledge Warehouse. These documents are created and managed in the implementation area (SOLAR01, SOLAR02) and, depending on the usage of projects, this table can grow very big. As long the documents are



being created and managed, every version of these documents is stored (you may access older versions through the document's history of changes). That is the main reason for the table growth.

Also, even if you don't use projects and have never created a project, this table will grow as long as you work with SAP Solution Manager implementation content (ST-ICO) packages. This package delivers content for the implementation area, and one example is the Business Process Repository (BPR) content. This includes many previously built business scenarios and documents for usage in projects.

Regarding table SASACONT1, it is very similar to SACONT01 but it is specifically for roadmap content. It handles the content created for roadmaps and content delivered by ST-ICO.

### See SAP Note:

- 966400 (Solution Manager ST 400): Solution Manager and Knowledge Warehouse

#### 5.5.2.1 Avoidance

Cannot be used

#### 5.5.2.2 Summarization

Cannot be used

#### 5.5.2.3 Deletion

Report SOLMAN\_DOCU\_VERSION\_DEL deletes older versions of documents in **all** data repositories. But only table SACONT01 is concerned. Please check SAP Note 1360436 for further information regarding this report.



If you are authorized, this program also deletes the contents of documents that you have moved into another data repository or archive with program SOLMAN\_DOCU\_VERSION\_ARCHIVE.

Report SOLMAN\_UNUSED\_DOCUMENTS searches for unused documents. A document is considered unused when it is not assigned to any project but it still exists physically. The report searches for all documents created by a user and checks whether they are used. The system issues documents for which it cannot find a record of use in a list. The listed documents can be selected individually and deleted if required. For further instructions on how to use this report, please check SAP Note 923203.

Please be aware that only table SACONT01 will be touched by these reports.

### See SAP Notes:

- 1360436 (Solution Manager ST 400): Error in the program SOLMAN\_DOCU\_VERSION\_DEL
- 923203 (Solution Manager ST 320 - 400): Deleting unused documents from the Solution Manager

#### 5.5.2.4 Archiving

For archiving of table SACONT01, please check use of report SOLMAN\_DOCU\_VERSION\_ARCHIVE. This report moves the contents of documents or older versions of documents into another data repository, for example, into an archive. The document header data and attributes are retained in SAP Solution Manager. The SOLMAN\_DOCU\_VERSION\_ARCHIVE program moves all document versions of the selected status values that were changed last by a person other than SAP, except for the most recent version in each language.

You can find further information and how to use this report in SAP Note 1360988.

### See SAP Notes:



- 1360988 (Solution Manager ST 400): Error in the program SOLMAN\_DOCU\_VERSION\_ARCHIVE
- 1773780 (Solution Manager ST 700 – 720): How to check if a document was successfully archived by SOLMAN\_DOCU\_VERSION\_ARCHIVE

As far as table SASACONT1 is concerned, the size of the table is either determined by use of a large number of own roadmaps or by the roadmap documents contained in ST-ICO.

Unfortunately, if you delete unused roadmaps, this does not delete the corresponding documents. There will be a deletion report in the future.

However, it is planned to reduce the size of future Support Packages of ST-ICO by deleting unused or outdated roadmap documents. This would be a solution if there is not an acute problem with table space but only concerns of further growth.

The usual way to reduce the size of this table is to move the content to an external content server.

In transaction OAC0, you can change the Customizing of a content repository and assign an external content server instead of the currently maintained DB table. This is explained in SAP Note 546685 and the detailed steps are contained in SAP Note 710711.

### See SAP Notes:

- 546685 (Solution Manager ST 320 - 400): Archiving in Solution Manager (operation)
- 710711 (Solution Manager ST 310 - 400): Solution Manager: Using a Content Server



## 5.6 SAP Supplier Relationship Management (SAP SRM)

### 5.6.1 BBP\_TRANSXSTRING: Temporary Working Storage for Attachments

In SAP Supplier Relationship Management (SAP SRM), files (PDF, XLS, and so on) can be uploaded from a file directory and attached to an SAP SRM document such as a shopping cart or purchase order. These attachments can later be edited and versioned.

During the upload process, the content of the files is temporarily stored in table BBP\_TRANSXSTRING before being stored in the final location, for example, a content server. After the data has been successfully stored on an external content server or internal table BBPCONT, it is deleted automatically from temporary table BBP\_TRANSXSTRING.

#### 5.6.1.1 Avoidance

Cannot be used

#### 5.6.1.2 Summarization

Cannot be used

#### 5.6.1.3 Deletion

A programming error by SAP causes the temporary storage that is used during upload of documents from the users' PCs to not be cleaned up properly. To correct this we recommend the following procedure:

1. Delete obsolete data with report RSBBPFREETRANSX, which deletes all records older than 2 hours, to avoid performance problems after the automatic deletion is working correctly.
2. Implement SAP Note 1489962: Table BBP\_TRANSXSTRING is not cleared.
3. Re-run RSBBPFREETRANSX to clean up the amount of data that was posted between the first cleanup and the note implementation.

#### 5.6.1.4 Archiving

Cannot be used

### 5.6.2 BBPCONT: SAP SRM Attachments

Table BBPCONT is used as a default storage location to hold the binary content of attached and uploaded files such as PDF files, Microsoft Excel files, and so on.

The binary content of the attachments to SAP SRM documents is stored using the Knowledge Provider (KPro). The default setup of the content repository for an SAP SRM document (document area BBP) causes the document content to be stored in the database table BBPCONT.

This default setup allows attachments to be used immediately without having to maintain any additional customizing and—most importantly—without having to have any external content server implemented.. However, a negative side effect of this approach is that the table may grow significantly.

#### 5.6.2.1 Avoidance

Users should only attach those documents that are really necessary for the business process.

#### 5.6.2.2 Summarization

In some cases, it may be useful to upload ZIP files instead of the original files if the upload is done manually. In the case of PDF attachments that are generated by the system automatically, compression is not an option.



## 5.6.2.3 Deletion

Individual attachments can be logically deleted and then physically removed with report RS\_REMOVE\_DEL\_ATT\_CONTENT. You can determine how many documents are flagged for deletion by running a TAANA analysis on table BBP\_PDATT, field DEL\_IND.

## 5.6.2.4 Archiving

There is no option for data archiving. That is, the archiving object for SAP SRM documents like shopping carts and confirmations will only archive the linkage information to the attachment but will leave the content of table BBPCONT untouched.

Future growth of this table can be avoided by changing the storage location of SAP SRM attachments from the database to an external content server.

There are no SAP standard tools for the migration of already existing documents from the database to an external content server. If this migration is required, please contact SAP partner company xft ([www.xft.de](http://www.xft.de)) to support you with the migration activities.

## 5.6.3 BBPD\_PD\_INDEX\_I, BBPD\_PD\_INDEX\_H: SAP SRM Index Tables

To allow faster access when working on large lists of documents, the core information of SAP SRM documents is stored redundantly to the original tables in indexing tables BBPD\_PD\_INDEX\_H (header information) and BBPD\_PD\_INDEX\_I (line item information).

Since the data model in SAP SRM is quite complex and the data is distributed across several tables, it is much faster to read one or two tables instead of reading all involved tables that are required to represent the full document.

### See SAP Note:

- 721358 (BBPCRM 400): Performance improvements for list displays

### 5.6.3.1 Avoidance

Cannot be used

### 5.6.3.2 Summarization

Cannot be used

### 5.6.3.3 Deletion

This index can be rebuilt to remove obsolete records with report BBP\_GETLIST\_INDEX\_FILL. Please test the runtime of this report, as it may run for several hours if not days.

### 5.6.3.4 Archiving

The index records are deleted by the delete jobs of the archiving objects for SAP SRM business documents, like BBP\_SC or BBP\_PO.

Please note: As the index records do not contain information of their own but only redundant information of the business document itself, the archive write job does not include this data in the archive files.

## 5.6.4 CRMD\_PARTNER, BBP\_PDIGP: SAP SRM business documents

These tables represent parts of the SAP SRM documents like shopping carts and purchase orders. CRMD\_PARTNER holds the links to the partners related to business activity. BBP\_PDIGP holds the purchasing information on line item level. An SAP SRM business document consists of records in many different tables, but these are those that usually show considerable growth.



### 5.6.4.1 Avoidance

Cannot be used

### 5.6.4.2 Summarization

Cannot be used

### 5.6.4.3 Deletion

Cannot be used

### 5.6.4.4 Archiving

To archive entries from these tables, the corresponding archiving objects for SAP SRM business documents like BBP\_SC (Shopping Carts) or BBP\_PO (Purchase Orders) have to be implemented.

Archiving is split into two steps. In the first step, a preprocessing job checks if the business documents are finally processed and fulfill the archiving criteria. If yes, the status value *can be archived* is set. In the second step, the data archiving process takes place (write and delete job) for all documents with status *can be archived*.

For a detailed description of the prerequisites, see the SAP Library for SAP Supplier Relationship Management → *Functions* → *Archiving*.

#### **Table analysis**

To determine which of the available archiving objects will have the biggest effect, you can run an analysis with transaction TAANA on the header table for SAP SRM documents: table CRMD\_ORDERADM\_H. Analysis variant STANDARD will reveal the most relevant archiving objects and the age of the data.

## 5.7 SAP Customer Relationship Management (SAPCRM)



The data management recommendations made for SAP Customer Relationship Management (SAP CRM) are valid as of SAP CRM 2.0.

### 5.7.1 CRMD\_MKTTG\_TG\_\*: SAP CRM Marketing Target Groups

Target groups are used to group business partners according to the marketing attributes maintained in the BP master data so they can be addressed accordingly during marketing campaigns.

Target groups are stored in tables CRMD\_MKTTG\_TG\_H (header data), CRMD\_MKTTG\_TG\_I (item data), and CRMD\_MKTTG\_TG\_T (text information).

#### 5.7.1.1 Avoidance

Cannot be used

#### 5.7.1.2 Summarization

Cannot be used

#### 5.7.1.3 Deletion

Up to SAP CRM 4.0, SAP Note 702490 provides the coding for deletion report CRM\_MKT\_TG\_DELETE. As of SAP CRM 5.0, report CRM\_MKTTG\_TG\_DELETE can be used to delete target groups. This report provides a selection screen on which you can select the target groups to be deleted.

#### See SAP Note:

- 702490 (BPPCRM 3.0 – 4.0): Deleting target groups and/or assigned business

#### 5.7.1.4 Archiving

As of SAP CRM 5.0, target groups can be archived with the archiving object CRM\_MKTTG.

#### See SAP Notes:

- 1093704 (BPPCRM 5.0 – 5.2): Archiving target groups: Missing tables
- 1150775 (BBPCRM 4.0 – 7.0): Composite SAP Note: Archiving in SAP CRM
- 1854383 (BPPCRM 7.01 – 7.13): Problems with archiving

### 5.7.2 CRMD\_ORDER\_INDEX: Index for SAP CRM Business Transaction

CRMD\_ORDER\_INDEX is the central index table used to search for SAP CRM business transactions. It contains an entry for every item-partner combination or header-partner combination of a business transaction and can therefore grow very large. If you want to search for business transactions quickly, you need additional indexes called secondary indexes. To keep the size of the secondary indexes as small as possible, make sure that when you create a secondary index, you only include fields that are actually needed as search criteria.

#### 5.7.2.1 Avoidance

Cannot be used

#### 5.7.2.2 Deletion

Cannot be used

#### 5.7.2.3 Archiving

Entries in central index table CRMD\_ORDER\_INDEX are archived and deleted when SAP CRM business transactions are archived.



**See SAP Note:**

- 540237 (BPPCRM 3.0 – 3.1): Archiving of table CRMD\_ORDER\_INDEX

### 5.7.3 CRMD\_ORDERADM\_\*: SAP CRM Documents

Within SAP application CRM-BTX (Business Transactions), the header and item information for business transactions is saved within tables CRMD\_ORDERADM\_H (header information) and CRMD\_ORDERADM\_I (item information).

#### 5.7.3.1 Avoidance

Cannot be used

#### 5.7.3.2 Summarization

Cannot be used

#### 5.7.3.3 Deletion

Cannot be used

#### 5.7.3.4 Archiving

Business transactions such as sales orders, activities, and service orders that are created in the SAP CRM system can be archived using the relevant archiving object (see list below).

The corresponding data is copied to archive files and then deleted from the database. Only business transactions with status *Can be archived* are archived. This status is set for business transactions that meet the archiving criteria.

In SAP CRM data archiving, you can make a clear distinction between when the archivability check is carried out and when the archive files are written.

The following archiving objects apply to SAP CRM objects:

Archiving Object	Business Transaction Type	Business Object (BOR)
CRM_ACT_ON	Activity	BUS2000110
CRM_ACT_ON	Task	BUS2000125
CRM_ACT_ON	Business Activity	BUS2000126
CRM_LEAD	Lead	BUS2000108
CRM_COMP	Complaint	BUS2000120
CRM_OPPT	Opportunity	BUS2000111
CRM_SRCONT	Service Contract	BUS2000112
CRM_LEAS	Leasing Contract	BUS2000114
CRM_SRVCON	Service Confirmation	BUS2000117
CRM_SACONT	Sales Contract	BUS2000121
CRM_SUR	Product Change Order	BUS2000210
CRM_SALDOC	Sales Order	BUS2000115
CRM_SERORD	Service Transaction	BUS2000116
CRM_IPMSAC	License Sales Contract	BUS2000230
CRM_IPMPUC	Purchasing License Contract	BUS2000231
CRM_IPMCON	License Usage Confirmation	BUS2000232

**See SAP Notes:**

- 890712 (BBPCRM 3.0 – 5.0): TAANA analysis variant for CRMD\_ORDERADM\_H in SAP CRM
- 996154 (BPPCRM 4.0 – 7.0): FAQ: AR: Archiving SAP CRM documents

## 5.7.4 CRMD\_SCHEDLIN: Schedule Lines of SAP CRM Business Transaction Items

This table is used to save the schedule lines of the items of a SAP CRM business transaction.



CRMD\_SCHEDLIN grows more quickly than similar ERP tables due to the design of the schedule lines. Schedule line structures in SAP ERP are very wide due to the large number of different appointment and quantity fields. The structure of CRMD\_SCHEDLIN is thin and contains one general appointment and quantity field. Dedicated quantities and appointments are displayed via the schedule line type, through which only one schedule line is produced per quantity type. Likewise, appointments that originate in scheduling (for example, material availability date or loading date) are stored in the SAP CRM order in the form of individual schedule lines.

### 5.7.4.1 Avoidance

Cannot be used

### 5.7.4.2 Summarization

Cannot be used

### 5.7.4.3 Deletion

Cannot be used

### 5.7.4.4 Archiving

Entries in table CRMD\_SCHEDLIN are archived and deleted when SAP CRM business transactions are archived with the relevant archiving objects.

## 5.7.5 CRM\_JEST: Status Information for the SAP CRM Business Object

For every status that a SAP CRM business object goes through during its life cycle, one entry is written to table CRM\_JEST (only once). Thus, the table contains the entire history of the status changes of a SAP CRM business object and can therefore grow very large.

The following tables belong to the same table family and must therefore be listed in this context:

- CRM\_JSTO (information about the status object)
- CRM\_JCDO (change documents for status object)
- CRM\_JCDS (change documents for system or user status)

### 5.7.5.1 Avoidance

Cannot be used

### 5.7.5.2 Summarization

Cannot be used

### 5.7.5.3 Deletion

Cannot be used

### 5.7.5.4 Archiving

Entries in table CRM\_JEST and its related tables are archived and deleted when SAP CRM data is archived with the corresponding archiving objects.

### See also SAP Notes:

- 689966 (SAP CRM 4.0): Archiving within SAP CRM send BDoc to R/3



- 704057 (SAP CRM 3.0 – 4.0): Archiving process does not need the entire BDoc
- 830398 (SAP CRM 4.0): Archiving service processes

## 5.7.6 PRCD\_COND: Conditions for a SAP CRM Business Transaction

This table is used to save the pricing conditions of a SAP CRM business transaction. Pricing conditions are the results of pricing. Tables PRCD\_HEAD (header) and PRCD\_ITEM (items) also belong to this table.

You can reduce the number of conditions on the clients by implementing SAP Notes 786555 (SAP CRM 4.0 – 5.0) and 707529 (SAP CRM 3.0 – 4.0). Although this does not directly affect the table family PRCD\_COND, it reduces the number of data records in table SMOCOND and the data volume on the clients.

### 5.7.6.1 Avoidance

Fewer entries are written to the previously mentioned tables if you use a simple pricing procedure. Therefore, check if you can do your pricing using a less complex pricing procedure. You can make the settings for the pricing procedure in Customizing under *Customer Relationship Management* → *Basic Functions* → *Pricing* → *Define Settings for Pricing* → *Create Pricing procedure*.

### 5.7.6.2 Summarization

PRCD\_COND was created as a transparent database table in SAP CRM. For very large documents (for example, in Leasing) the table can grow to several gigabytes very quickly. Therefore, we recommend that you change the table to a cluster table. Through the compression logic used in cluster tables, you can compress the data by a factor of 5 to 10. This also helps improve performance because it reduces the number of accesses to the hard disk.

However, keep in mind that the changeover of the tables can take several hours and that the system is not available during the changeover process. Generally, we recommend that you perform the changeover as early as possible, before the tables grow too large. For more information about how to change table PRCD\_COND to a cluster table, see SAP Note 580455 (release-independent).

### 5.7.6.3 Deletion

Cannot be used

### 5.7.6.4 Archiving

Entries in table PRCD\_COND are archived and deleted when the corresponding SAP CRM business transactions are archived and deleted with the relevant archiving object.

## 5.7.7 SMO\*/CDB\*: SAP CRM Mobile Application Data

The SAP CRM Mobile Client application is based on the consolidated database (CDB), which is a set of database tables that stores all business-relevant information in a structure similar to SAP R/3. Many tables based on the SAP R/3 structure can be found in the CDB with the prefix SMO (for example, SMOVBAK, SMOVBAP, and so on).

The SAP CRM online database structures are converted into CDB tables via the mobile bridge. After the CDB is updated, the replication and realignment (RR) process ensures that the data is distributed to the mobile clients according to the distribution model.

The message flow is technically realized via BDocs. When a SAP CRM online table is updated (for example, a sales order is created), a messaging BDoc (mBDoc) is created. BDocs are put into queues to ensure sequential processing via qRFC. Note that the sequence of updates (for example, a specific field in a sales order is updated twice) is important.

Within the replication process, function modules are called when the BDocs are processed, distributing the



data via adapter objects to the outbound queue. If the mobile clients are involved, the CDB has to be updated additionally using synchronization BDocs (sBDocs).

The RR process is based on lookup tables. These tables store information about which business data should be sent to which mobile clients according to the distribution model.

This distribution model is defined in Customizing (transaction SMOEAC) and contains several strategies that can be employed to control the data flow to the mobile clients. For example, data can be distributed in a "bulk" manner (sent to all mobile clients) or an "intelligent/dependent" manner (sent to specific clients depending on certain criteria).

General rules for identifying CDB tables (but some exceptions):

- Tables with prefix SMO\*
- Tables with prefix CDB\*

Table	Description
SMOCOND	Conditions (Procedure Data)
SMOVBFA	Sales Document Flow
SMOVBKA	Sales Activities
SMOVBEP	Sales Document: Schedule Line Data
SMOVBBAK	Sales Document: Header Data
SMOVBEP	Sales Document: Schedule Line Data
SMOVBBAK	Sales Document: Header Data
SMOVBEP	Sales Document: Schedule Line Data
SMOVBBAK	Sales Document: Header Data
SMOVBBAK	Sales Document: Header Data
SMOVBEP	Sales Document: Schedule Line Data
SMOVBEP	Sales Document: Schedule Line Data
SMOVBKD	Sales Document: Business Data
SMOVBKD	Sales Document: Business Data
SMOVBKD	Sales Document: Business Data
SMOVBKD	Sales Document: Business Data
SMOVBKD	Sales Document: Business Data
SMOVBAP	Sales Document: Item Data
SMOVBAP	Sales Document: Item Data
SMOVBAP	Sales Document: Item Data
SMOVBAP	Sales Document: Item Data
SMOVBAP	Sales Document: Item Data
CDBD_STATUS	CDB: Individual Object Status
CDBD_STATUS	CDB: Individual Object Status
CDBD_STATUS	CDB: Individual Object Status



Table	Description
CDBD_STATUS	CDB: Individual Object Status
SMODBLTXT	CRM MW CDB table for Long Text
SMODBLTXT	CRM MW CDB table for Long Text
SMODBLTXT	CRM MW CDB table for Long Text
SMODBLTXT	CRM MW CDB table for Long Text
SMODBLTXT	CRM MW CDB table for Long Text
SMODBLTXT	CRM MW CDB table for Long Text
SMOVBPA	Sales Document: Partner
CDBD_STATUS	CDB: Individual Object Status
SMOVBAK	Sales Document: Header Data

### 5.7.7.1 Avoidance

Data can be avoided in the CDB by enabling/disabling general data replication for specific application object types or by setting filters between SAP CRM and the CDB in the adapter object. Table TCMWC\_SMW shows if replication between SAP CRM online and the CDB is activated for mobile clients.

### 5.7.7.2 Summarization

Cannot be used

### 5.7.7.3 Deletion

Archiving objects are not available for the mobile application tables in the CDB. CDB tables are only deleted indirectly when data is archived in SAP CRM. This occurs when data in the online database (such as table CRMD\_ORDERADM\_H with archiving object CRM\_SALDOC) is archived. Deletion BDocs are sent to the CDB (tables SMOVBAK, SMOVBAP, SMOVBEP etc.) when the preprocessing program of archiving object CRM\_SALDOC is executed. The data records in the corresponding CDB tables are then deleted. If data distribution is active for mobile clients, deletion messages are also sent to those mobile clients that have a subscription for the deleted business object.

### 5.7.7.4 Archiving

Cannot be used

## 5.7.8 SMOKONV: Conditions for SAP CRM Business Transactions (Middleware)

This table is used to store the document conditions of SAP CRM business transactions. This data is replicated from table PRCD\_COND, and only mobile clients access it. It is made available to the mobile clients by the middleware.

### 5.7.8.1 Avoidance

If, in an ERP-CRM scenario, table SMOKONV is rapidly growing on the SAP CRM side even though no mobile clients are in use, it may be that the CDB service is unnecessary. Check your system configuration and follow the procedure described in SAP Note 586964 (SAP CRM 2.0C).

### 5.7.8.2 Summarization

Cannot be used

### 5.7.8.3 Deletion

Cannot be used



## 5.7.8.4 Archiving

Entries in table SMOKONV are deleted, but not archived, when SAP CRM business transactions are archived using the relevant archiving object.

## 5.7.9 SMW3\_BDOC\*: CRM Middleware / BDocs

Within SAP applications CRM-MW-SRV and CRM-MW-Mon, BDocs are used for the interface between SAP CRM and SAP R/3 and/or mobile clients. Updates and changes in SAP CRM are sent to these target systems by means of BDocs. The BDoc is a type of container (comparable to an IDoc) that transports information to target systems. Example: For every new business partner and service order created in SAP CRM, there is one single BDoc.

### 5.7.9.1 Avoidance

Cannot be used

### 5.7.9.2 Summarization

Cannot be used

### 5.7.9.3 Deletion

As soon as the BDoc has been sent correctly and posted in the target system, it can be deleted. You can delete BDocs using report SMO6\_REORG (old) or SMO6\_REORG2 (new). Report SMO6\_REORG2 is available with SAP CRM 4.0 SP06.

In addition to the BDoc, there is a link created between the application object (such as a business partner) and its corresponding BDoc. Since the BDoc should be deleted regularly by the above-mentioned report, this link becomes obsolete after the BDoc has been deleted. For this reason, we recommend that you also delete these links.

#### See SAP Note:

- 713173 (BBPCRM 4.0 – 5.0): Update of the CRM Middleware reorganization

### 5.7.9.4 Archiving

Cannot be used

## 5.7.10 SMWT\_TRC: CRM Middleware Trace

Data import runs in the background. Any errors that occur during the data import are logged into table SMWT\_TRC. After a data import is completed, the temporary table needs to be checked for the unextracted records.

### 5.7.10.1 Avoidance

Trace and log levels must be adjusted on the SAP CRM server so that system performance is not affected. Inadequate trace and log levels can lead to rapid and unnecessary database growth that also affects overall performance, causing a high I/O load.

One reason for too many entries in this table can be that a log level or trace level is activated that is too high, for example:

- Up to SAP CRM 3.0: Flow trace is activated/log level T is selected.
- As of SAP CRM 3.0: Trace level of middleware trace is higher than 1.

#### See SAP Note:

- 206439 (BBPCRM 2.0 – 4.0): Reorganization of tables in CRM Middleware



## 5.7.10.2 Summarization

Cannot be used

## 5.7.10.3 Deletion

The deletion of middleware trace entries is included in the general middleware reorganization reports SMO6\_REORG and SMO6\_REORG2.

### See SAP Note:

- 206439 (BBPCRM 2.0 – 4.0): Reorganization of tables in CRM Middleware
- 713173 (BBPCRM 4.0 – 5.0): Update of the CRM Middleware reorganization
- 1876287 (BBPCRM 5.0 – 7.13): Performance Optimization Of SMO6\_REORG

## 5.7.10.4 Archiving

Cannot be used



## 5.8 SAP Extended Warehouse Management (SAP EWM)

### 5.8.1 /SCWM/DOOR\_SRACT, /SCWM/TDOOR: Door Activities within SAP EWM

A door is a location in the warehouse where the goods arrive at or leave the warehouse. The door is an organizational unit that you assign to the warehouse number.

#### 5.8.1.1 Avoidance

Cannot be used

#### 5.8.1.2 Summarization

Cannot be used

#### 5.8.1.3 Deletion

Cannot be used

#### 5.8.1.4 Archiving

The relevant archiving object for door activities is WME\_DOOR. As prerequisites for archiving, please consider the following:

- Door activity must be completed.
- Residence time must be reached.
- All the assigned transportation unit activities for the door activity must be archived and deleted from the database before the door activity is archived.

Caution: Since the write program cannot restrict the number of processed records, we advise caution when scheduling the pre-processing report. Avoid creating an "overload" or "too long runtime" situation by dividing pre-processing into manageable chunks. Schedule the write program after the pre-processing run and before the next pre-processing run.

#### See SAP Notes:

- 1669731 (SCMEWM 510 – 712): Archiving in S&R
- 1814941 (SCMEWM 510 – 900): WME\_DOOR deletion report does not delete all entries

### 5.8.2 /SCWM/TU\_SR\_ACT, /SCWM/TU\_STATUS: Transportation Units Within SAP EWM

A transportation unit is the smallest loadable unit of a vehicle that is used to transport goods. The transportation unit (TU) can be a fixed part of the vehicle. You map transportation units as handling units (HUs) and assign packaging materials to them. By linking these packaging materials to means of transport, you define construction rules for your vehicles. In this way you define, for example, how many transportation units a vehicle is supposed to have and the order in which they are to be arranged.

#### 5.8.2.1 Avoidance

Cannot be used

#### 5.8.2.2 Summarization

Cannot be used

#### 5.8.2.3 Deletion

Cannot be used

#### 5.8.2.4 Archiving



You can use archiving to remove data records for shipping and receiving activities from the database that are no longer required in the system. Use the archiving object WME\_TU for archiving and deleting shipping and receiving activities for transportation units (TU activities). Each TU is connected to the stock information via a virtual handling unit. The system deletes this HU as soon as the TU has been deleted. The system does not archive the HU information.

TU activities must have the status Archivable in order for the system to be able to archive them. The system flags a TU activity with the status Archivable if the following conditions have been met:

- The activity end was at least 60 days ago (fixed value).
- No stock is still assigned to the TU activity in the Logistics Inventory Management Engine (LIME).

**See SAP Note:**

- 1570600 (SCMEWM 510 – 701): There is no BAdI for archiving object WME\_TU

### 5.8.3 /SCWM/WHO: Warehouse Order Processing Within SAP EWM

Extended Warehouse Management (SAP EWM) offers flexible, automated support for processing various goods movements and for managing stocks in your warehouse complex. The system supports scheduled and efficient processing of all logistics processes within your warehouse.

A warehouse order is a document that represents an executable work package that a warehouse employee should perform at a specific time. The warehouse order consists of warehouse tasks or physical inventory items.

#### 5.8.3.1 Avoidance

Cannot be used

#### 5.8.3.2 Summarization

Cannot be used

#### 5.8.3.3 Deletion

Cannot be used

#### 5.8.3.4 Archiving

Warehouse orders saved in SAP EWM a certain number of days ago (residence time) can be archived. Warehouse orders can be archived simultaneously for multiple warehouse numbers by archiving object WME\_WO. To determine whether a warehouse order can be archived, analyze table /SCWM/WHO. Please note the following prerequisites for archiving:

- The related warehouse tasks must have been archived with WME\_TO.
- The defined residence time must have been reached.
- The warehouse order must have the status Canceled or Confirmed.

**See SAP Note:**

- 1586212 (SCMEWM 510 – 701): No archiving BAdI for WME\_WAVE, WME\_TO and WME\_WO

### 5.8.4 /SCWM/WAVEITM, /SCWM/WAVEHDR: Wave Management within SAP EWM

A wave is a grouping of warehouse request items that is used to control warehouse activities, for example, picking or posting changes.



These groupings are then processed together in subsequent processes, for example, the transfer of all warehouse request items assigned to a wave at a certain point in time to warehouse task creation. The warehouse tasks created are then forwarded to warehouse order creation.

Extended Warehouse Management can combine warehouse request items and split items into waves on the basis of criteria such as activity area, route, or product.

Waves can be created automatically or manually with the use of existing wave templates.

### 5.8.4.1 Avoidance

Cannot be used

### 5.8.4.2 Summarization

Cannot be used

### 5.8.4.3 Deletion

Cannot be used

### 5.8.4.4 Archiving

Archiving object WME\_WAVE is used to archive and delete waves. A wave entry can be archived if it has the relevant status and has exceeded the residence time. The default value is 200 days. To determine the status of the wave entry, evaluate header table SCWM/WAVEHDR and field STATUS. Please consider the following prerequisites for archiving:

- The status of the wave header must be Released, Released with Defects, or Transferred to Subsystem.
- Read from table /SCWM/WAVEHDR and field STATUS (values R, E, or C).
- Residence time reached: Read from table /SCWM/WAVEHDR and field RELEASED\_AT.

#### See SAP Notes:

- 1517747 (SCMEWM 510 – 701): Entries are not deleted from /SCWM/WAVEITM after
- 1586212 (SCMEWM 510 – 701): No archiving BAdI for WME\_WAVE, WME\_TO and WME\_WO
- 1699322 (SCMEWM 510 – 712): Wrong archive statistics and log information for WME\_WAVE



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Data Management Guide for SAP Business Suite



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