



BW Database Analyzer

Part B: User Manual

Compatible with SAP BW

- Release 3.0
- Release 3.1
- Release 3.5
- Release 7.0
- Release 7.3
- Release 7.4

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About This Manual

The modular manuals of PBS Software GmbH for the PBS BW Database Analyzer are composed of the partial manuals:

- Part A: Installation (in general)
- **Part B: Manual PBS BW Database Analyzer**

This manual is part B, describing the administrative tasks such as the layout of the analysis and evaluation.

Should you have questions or problems regarding the **PBS archive add ons**, please call directly the **Service Hotline of PBS Software GmbH**:

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Release Compatibility

The **PBS BW Database Analyzer** discussed in this manual runs with **BW release 3.x and 7.0** of SAP SE, 69190 Walldorf/Baden, Germany.

At present the database systems HANA DB, Sybase ASE, Oracle, Informix, ADABAS, DB2, DB400 and MS SQL Server 7 are supported.

1. Introduction

One main aspect which makes the usage of a Data Warehouse for a company so important is the transfer of reporting from OLTP systems to systems optimized for such purposes. Such a system, which enables a more efficient data analysis and at the same time relieves the OLTP system, is SAP AG's Business Information Warehouse. To enable this relief, it must be ensured that almost the complete reporting can be executed without having to access the original systems. This means that the complete relevant dataset of the OLTP systems should be kept in the BW.

On the basis of this fact it is obvious that the dataset in a BW system can grow very fast, which can result in unsatisfactory performance and extremely long response times during reporting. Archiving, as it is possible from SAP BW release 3 can solve this problem. This is particularly beneficial in conjunction with the **PBS archive add on CBW**, which allows the user to access archived InfoCube data and DataStore object data online, since both the requests of the users and database administrators are taken into account.

The PBS BW Database Analyzer is a tool that supports you when determining your archiving strategy for BW InfoProviders. It analyzes the InfoCubes, DataStore objects and PSA tables which exist in your system and enables a clear presentation according to different criteria.

This manual informs you extensively about the scope of service and the functionality of the PBS BW Database Analyzer.

Overview of the PBS BW Database Analyzer functionality

The PBS BW Database Analyzer is a tool that enables you to check InfoProviders (InfoCubes, DataStore objects) and PSA tables regarding their size in the database and in the Data Dictionary, and supports you when making the decision whether archiving is required.

The PBS BW Analyzer comprises the following functions:

- It analyzes the BasisCubes which are available in the system and additionally the AggregateCubes assigned to the InfoCubes. You can choose whether to take into account the fact tables or additionally all dimension tables of the InfoCubes.
- All relevant tables of existing ODS/DSO objects are analyzed, in addition to the active data also the activation queue and the change log.
- All PSA tables in the system are checked, whereby the versioning of tables is also taken into account. You can choose whether just active versions (within the validity period) or all PSA table versions should be taken into consideration.

2. Installation

2.1. PBS BW Database Analyzer Object Names

As already explained in the installation manual (part A), PBS Software GmbH has its own namespace. The programs and objects described in this manual have only names belonging to this namespace.

Object	Report / Transaction	Description
Program	/PBS/ANA_BW	Analysis of BW objects
Program	/PBS/ANA_BW_KAPAZITAET	Evaluation of analysis runs
Program	/PBS/ANA_BW_KAPAZITAET_VGL	Comparison of two analysis runs
Program	/PBS/ANA_BW_CLEAR	Deletion of analysis interval
Program	/PBS/ANA_BW_ADA	Analysis functionality for ADABAS database systems
Program	/PBS/ANA_BW_AS400	Analysis functionality for AS/400
Program	/PBS/ANA_BW_DB2	Analysis functionality for DB2 database systems
Program	/PBS/ANA_BW_DB6	Analysis functionality for DB6 database systems
Program	/PBS/ANA_BW_INF	Analysis functionality for INFORMIX database systems
Program	/PBS/ANA_BW_MSSQL	Analysis functionality for MSSQL database systems
Program	/PBS/ANA_BW_ORA	Analysis functionality for ORACLE database systems
Transaction	/PBS/ANA_BW	Analysis of BW objects
Transaction	/PBS/ANA_BW_KAP	Evaluation of analysis runs
Transaction	/PBS/ANA_BW_CLR	Deletion of an analysis interval
Transaction	/PBS/ANA_BW_VGL	Comparison of two analysis runs

2.2. Supplied Menus

The menu for the PBS BW Database Analyzer can be started via transaction /PBS/ANA_BW_ANA.

All programs described in this manual can be called from the menu.

3. Capacity Analysis of the Database and the Data Dictionary

The following chapter describes the analysis of BW objects. It covers the object-dependent functionality as well as the interpretation of displayed results.

3.1. The Capacity Analysis

Attention: Special features concerning individual database systems are described in the following chapters.

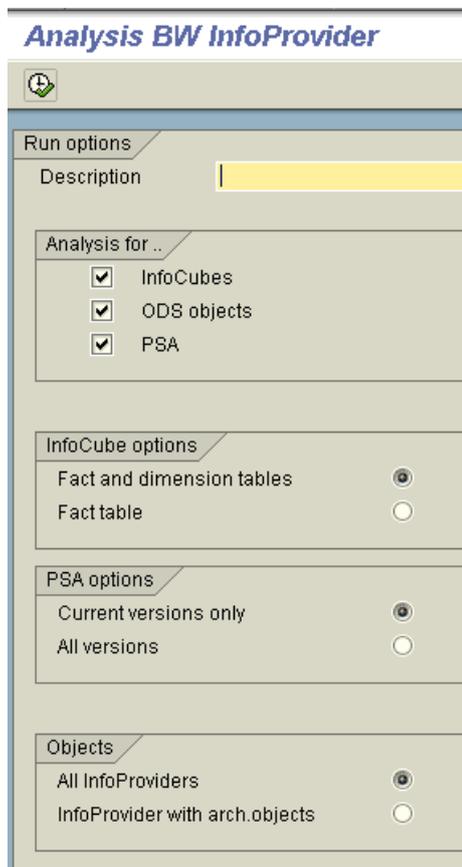


Diagram 1: Capacity Analysis

Depending on the database system, the report **/PBS/ANA_BW** starts a corresponding ABAP to construct the capacity analysis. It is *not* possible to start directly the report for a specific database type (for example **/PBS/ANA_BW_ORA** for Oracle databases)!

Attention: The specified options are dependent to some extent on the database being used and may be displayed differently in the customer system.

Description: Free text for the analysis run description can be entered.

Analysis run for...: Please select for which BW objects an analysis should be carried out.

Fact and Dimension tables: One fact table and several dimension tables are assigned to each BasisCube. If you choose this option, fact tables as well as all dimension tables of the InfoCube are analyzed. *ATTENTION:* As up to 16 dimensions can be assigned to one InfoCube this option directly influences the runtime of the analysis program.

Fact table: Depending on the InfoCube design, the size of a dimension table can be very small compared to a fact table. If you choose this option, the dimension tables are not taken into account in the analysis.

Current versions only: PSA tables are not deleted automatically, for example, after a structural change. They still remain in the system although this might no longer be required. If PSA tables which are no longer required are deleted, you do not have to analyze them.

All versions: All PSA tables are analyzed independent of whether they are in the validity period or not.

All InfoProviders: All InfoProviders available in the system (InfoCubes, DataStore objects) and PSA tables are analyzed.

InfoProvider with arch. objects: Only those InfoProviders are analyzed for which archiving objects have already been created. This option can be used to help reduce the runtime of the analysis. However, it might be the case that not all InfoProviders are examined. Since there are currently no SAP archiving objects for PSA tables, they cannot be analyzed.

...PSA detailed analysis: Enables a more exact division of the PSA, by splitting up the quantity into corresponding requests.

...analyze index tables: Evaluates the index tables in addition to the data tables. The size of the index is added to the size of the data and is not shown separately.

...nearline database (RIQ): If the **CBW** solution is being used in addition to the BW Analyzer, the size of the InfoProviders can be determined on a connected nearline database (SAP IQ, DB2...). *WARNING:* Functions of the PBS RIQ interface are used to determine the table size. This means that only tables that can be addressed via the PBS RIQ connection can be analyzed.

The ABAP /PBS/ANA_BW should always run in the background. It is possible to check the progress in the system log entries of your own jobs.

3.1.1. Comments on AS/400 database

Before the database analysis in an AS/400 environment can be started via the ABAP /PBS/ANA_AS400, the database table DBSTATTD4 must first be updated. This is carried out via transaction DB02.

In the case of a program termination, a SAP correction order must be imported.

3.1.2. Comments on Oracle database

To determine the size of the tables, the PBS BW Database Analyzer uses the statistical data that was previously created for the InfoProviders. Please note that this information must be up-to-date in order to reap the maximum benefits of the PBS BW Database Analyzer.

3.1.3. Special features of ORACLE

If an Oracle database system is being used, the user has a number of additional options available when starting the program.

Diagram 2: ORACLE Capacity Analysis

In addition to the *InfoProvider types*, it is possible to limit the selection to names and tablespaces in which the tables reside. Limiting the names has the advantage, for example, that an analysis can be performed in steps (due to an otherwise long total runtime). When specifying the tablespaces, it should be noted that the InfoProvider tables can exist in several tablespaces. An InfoCube would therefore only be analyzed if both the tablespace of the fact table and the dimension table are specified.

As standard, the *actual* occupancy of a table is analyzed. If only the *reserved* size (standard view in SAP transaction DB02) is significant, the option **...Detailed analysis** should not be selected. The analysis is then carried out slightly quicker.

The indices belonging to the tables can be evaluated using the option **...Analyze index tables**. As is the case with the other options within the area *Analysis options*, you should however not underestimate the increase in runtime that this can result in.

The option **...size via DDIC (additionally)** should only be used if DB statistics were not set up. Using this function, the table size is determined via the length of a data record as defined in the Data Dictionary and the number of data records (SELECT-COUNT). The results represent rather a general overview of the sizes of the InfoProviders, and must on no account be compared with the results of the transaction DB02. This means with relation to the analysis results that the DDic analysis typically (sometimes significantly) returns *higher* values than the DB statistics analysis!

3.2. Evaluation of Analysis

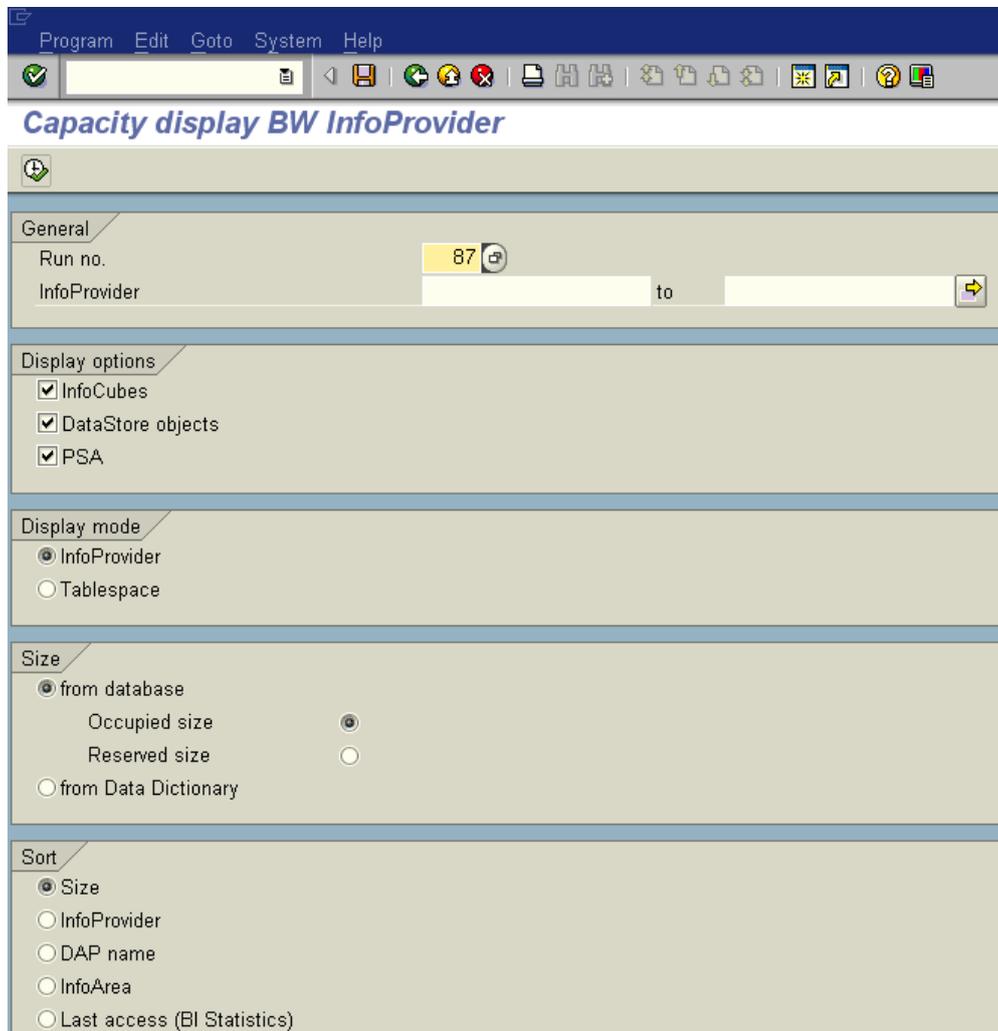


Diagram 3: Evaluation of Analysis (ORACLE)

After starting, you have the possibility to select the number of a run that was carried out. To open a list showing the current capacity runs, press function key F4 to select the requested run.

You can define the sequence of the InfoProviders that should be displayed in the area "Sorting". Using the option "*Last access (BW statistics)*" you can display the InfoProviders in the sequence of their last access (for example: query...). The prerequisite for this is that SAP BW statistics have been activated for the InfoProviders via the *Data Warehousing Workbench (Menu "Tools -> Settings for BW Statistics")*.

"*Last data change*" sorts the InfoProviders according to the point in time at which the content of the InfoProvider changed (e.g. loading of a request...). The criterion "*InfoProvider subtype*" groups the InfoProviders according to their particular characteristic (e.g. standard InfoCube, non-cumulative cube, Hana-optimized cube...).

Show aggregates separately: By setting this option, aggregates are listed separately beneath their InfoProvider.

Display InfoProvider with size 0: Enables InfoProviders that do not contain any data to be displayed/hidden.

Display size in nearline DB (if available): If the nearline database (IQ, DB2...) was analyzed in addition to the primary database, the size of an InfoProvider in the nearline memory can also be displayed.

Merge status: **[ONLY HANA!]** Using a HANA DB, the date of the last MERGE operation can be displayed. If an InfoProvider contains several tables (e.g. fact and dimension tables), the date of the table with the oldest MERGE run is displayed.

Screen / AIS export: Defines where the result should be output. The data is written into an AIS file via the AIS export and in this way can be processed using external software.

3.2.1. Selection of the size to be displayed

The size of the analyzed InfoProviders can be displayed in two ways:

- The size on the database
- The size in the data dictionary

Please note that both values, although they refer to the same table, might differ significantly from one another.

Size on the database: It corresponds to the actual disk space taken up on the database. The evaluation algorithm depends significantly on the database system used and reflects the capacity utilization of the database.

Size in Data Dictionary: It corresponds to the size of all fields in one data record multiplied by the number of lines. For the calculation, the data size (field length) is used as it is defined in the Data Dictionary. This option should be used, for example, if statistical information is not up-to-date. To determine the actual size, select the size on the database. Both values (DB / DDIC) might differ from one another. For example, the fill level of Pages or the compression in the DDIC specification is not taken into consideration.

While the page header display serves to give a general overview on the analysis, the display differs only slightly depending on the InfoProviders.

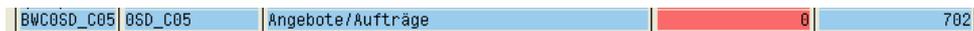
PBS BW ANALYZER: Disk space occupancy of infoproviders		Time 11:01:39	HEMMING
Capacity run no. 0047 of 27.10.2003 :		Date 03.12.2003	
ANALYSE ALLE INFOPROVIDER		Capacity of analyzed	156.734 KB
InfoCube option:	Fact- and dimension tables		
PSA options:	Only current version		
Infocubes:	analyzed	Total fact-/dimension tables (DB):	135.108 KB
ODS-objects:	analyzed	Total data in ODS-objects (DB):	5.360 KB
PSA-tables:	analyzed	Total current PSA-tables	16.266 KB

Diagram 4: Header Information of the Analysis

The marker “analyzed“ is displayed for all InfoProviders that were taken into consideration during the analysis run. As a consequence, data of the corresponding InfoProviders is available.

3.2.2. Errors during the table analysis

In each database system there are differences regarding the table analysis. Therefore, it might be the case that an error occurred during a table analysis (for example, because no statistical information was available for one table under Oracle).



BWCO5D_C05	OSD_C05	Angebote/Aufträge	0	702
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Diagram 5: Error during analysis

Diagram 5 shows that an error occurred during the analysis of the fact table for InfoCube *OSD_C05*. The entry is marked red. Please check whether the job log of the analysis run provides more detailed information concerning this error. It is possible that transaction RSRV can help you.

3.2.3. Navigation

To navigate quickly between objects, there are three buttons in the application toolbar which you can use to switch quickly to the required object type.

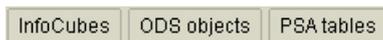


Diagram 6: Quick navigation

One click on the button and you immediately go to the page on which the output of the analysis results of the requested type starts.

3.2.4. Special features of ORACLE

As a result of the additional options that can be specified during creation of the analysis, further possibilities are supported during the evaluation of the data.

In the area *Display mode*, the option **Tablespace** is available. The InfoProviders are displayed in separate groups according to the tablespace. Since tables of an InfoProvider can exist in several tablespaces, they are displayed more than once under some circumstances. The line that is displayed in green shows the total size of the data capacity occupied by the InfoProviders.

The reserved size of a table can differ significantly from the size that is actually occupied. In the area *Size*, the user therefore has the possibility to choose between the two values.

In addition, it is possible to analyze index areas of data tables. This can, however, extend the runtime.

3.2.5. InfoCubes

System Help

Capacity display BW InfoProvider

InfoCubes ODS objects PSA tables

PBS BW ANALYZER: Disk space occupancy of InfoProviders Time 11:07:37 HEMMING
 Capacity run no. 0047 of 27.10.2003 : Date 04.12.2003
 ANALYSE ALLE INFOPROVIDER Capacity of analyzed 156.734 KB
 InfoCube option: Fact and dimension tables Page 1
 PSA options: Only current version InfoCubes: analyzed Total fact/dimension tables (DB): 135.108 KB
 ODS objects: analyzed Total data in ODS objects (DB): 5.360 KB
 PSA tables: analyzed Total current PSA tables 16.266 KB

Object	InfoCube	Name InfoProvider	Size (KB) Fact. table	Size (KB) Dim. tables
InfoCubes				
BWCZMM_05	ZMM_05	ZMM_05	66.771	30.830
BWCZMM_11	ZMM_11	(empty)	10.296	55
BWCZFI_03	ZFI_03	(empty)	6.484	6.771
BWCOSD_C05	OSD_C05	Offers/Orders	5.437	702
BWCZFI_04	ZFI_04	DOCUMENTS	3.468	329
(n/a)	ZSD_C05	(empty)	1.696	169
(n/a)	OSD_C01	Customer	1.574	5
BWCZMM_03	ZMM_03	Purchase Orders R/3	59	55
BWCZMM_03	100003	(empty)	58	1
(n/a)	ZMM_20	ZZASUG SAP AS Demo	48	128
(n/a)	YYTST2	(empty)	45	2
BWCZTST_01	ZTST_01	(empty)	21	1
BWCZTST_01	100000	(empty)	0	0
BWCZIMPTST	ZIMPTST	(empty)	7	16
(n/a)	ZZTEST_IC	(empty)	7	6
BWCZFI_05	ZFI_05	(empty)	2	3
BWCZFI_05	100001	(empty)	3	0
BWCZFI_05	100002	(empty)	0	0
BWCPBS_B~C	PBS_BW_IC	(empty)	1	3

Diagram 7: Evaluation of the Analyzed InfoCubes

Object: The archiving object assigned to the InfoCube.

InfoCube: InfoCube name

Name InfoProvider: The name of the analyzed InfoProvider

Size (KB) fact table: Size of fact table in KB

Size (KB) Dim. tables: Size of all dimensions available in the InfoCube in KB

During the analysis, both BasisCubes and AggregateCubes are considered. However, since the aggregates are assigned to one BasisCube, they are directly displayed below the BasisCube marked in light blue.

BWCZFI_05	ZFI_05	(empty)
BWCZFI_05	100001	(empty)
BWCZFI_05	100002	(empty)

Diagram 8: Display of BasisCubes and corresponding aggregates

3.2.6. DataStore Objects

The screenshot shows the 'Capacity display BW InfoProvider' window. It includes a menu bar (System, Help), a toolbar, and a main content area. The main content area is divided into sections: 'InfoCubes', 'ODS objects', and 'PSA tables'. The 'PSA tables' section displays the following information:

PBS BW ANALYZER: Disk space occupancy of InfoProviders Time 11:07:37 HEMMING
 Capacity run no. 0047 of 27.10.2003 : Date 04.12.2003
 ANALYSE ALLE INFOPROVIDER Capacity of analyzed 156.734 KB
 InfoCube option: Fact and dimension tables Page 3
 PSA options: Only current version
 InfoCubes: analyzed Total fact/dimension tables (DB): 135.108 KB
 ODS objects: analyzed Total data in ODS objects (DB): 5.360 KB
 PSA tables: analyzed Total current PSA tables 16.266 KB

Below this information is a table with the following columns: Object, ODS object, Name InfoProvider, Size (KB) act., Size (KB) queue, and Size (KB) CLog.

Object	ODS object	Name InfoProvider	Size (KB) act.	Size (KB) queue	Size (KB) CLog
ODS objects					
BW0ZODS_-1	ZODS_FI1	(empty)	2.318	0	3.042
BW0TESTODS	TESTODS	(empty)	0	0	0
BW0ZKTST	ZKTST	(empty)	0	0	0
BW0ZBIGODS	ZBIGODS	(empty)	0	0	0
(n/a)	ZATRTEST	(empty)	0	0	0
(n/a)	ZATR2	(empty)	0	0	0

Diagram 9: Evaluation of analyzed DataStore objects

Object: The archiving object which is assigned to the InfoCube.

DataStore object: Name of DataStore object

Name InfoProvider: Name of the analyzed InfoProvider

Size (KB) Act.: Size of active data in DataStore object in KB

Size (KB) Queue: Size of data in activation queue of DataStore object in KB

Size (KB) CLog: Size of data in ChangeLog of DataStore object in KB

3.2.7. PSA Tables

System Help

Capacity display BW InfoProvider

InfoCubes ODS objects PSA tables

PBS BW ANALYZER: Disk space occupancy of InfoProviders Time 11:07:37 HEMMING
 Capacity run no. 0047 of 27.10.2003 Date 04.12.2003
 ANALYSE ALLE INFOPROVIDER Capacity of analyzed 156.734 KB
 InfoCube option: Fact and dimension tables Page 4
 PSA options: Only current version Total fact/dimension tables (DB): 135,108 KB
 InfoCubes: analyzed Total data in ODS objects (DB): 5,360 KB
 ODS objects: analyzed Total current PSA tables 16,266 KB
 PSA tables: analyzed

Object	InfoSource	Name InfoSource	Size (KB) act.	Size (KB) others
PSA tables				
(n/a)	0FI_AR_3	Customers: Item	6.278	0
(n/a)	2LIS_01_S001	Customer	5.131	0
(n/a)	8Z0DS_FI1	(empty)	3.042	0
(n/a)	ZZTEST_IS	(empty)	850	0
(n/a)	8V0SD_C05	(empty)	463	0
(n/a)	8ZMM_03	(empty)	288	0
(n/a)	AUFTAG_2_INFOSOURCE	(empty)	57	0
(n/a)	2LIS_02_S012	Purchasing	48	0
(n/a)	8ZMAT_01	(empty)	45	0
(n/a)	AUFTRAG_INFOSOURCE	(empty)	39	0
(n/a)	ASUGDEMO	ASU6 SAP AS Demo	16	0
(n/a)	PBS_BW_INFOSOURCE	(empty)	5	0
(n/a)	FLATTEST	(empty)	4	0
(n/a)	8ZKTST	(empty)	0	0
(n/a)	8ZFI_04	DOCUMENTS	0	0
(n/a)	8ZBI60DS	(empty)	0	0
(n/a)	8ZATRTST	(empty)	0	0
(n/a)	8ZATR2	(empty)	0	0
(n/a)	8VZ0DS_FI1	(empty)	0	0
(n/a)	8VBS_BW_IC	(empty)	0	0
(n/a)	2LIS_01_S264	SD - Quotation	0	0
(n/a)	8TEST0DS	(empty)	0	0
(n/a)	2LIS_13_VDHDR	Billing Document Header Data (As of 2.08)	0	0

Diagram 10: Evaluation of Analyzed PSA Tables for InfoSources

Object: The archiving object which is assigned to the PSA table (as no SAP archiving objects exist at the moment, this field is always empty)

InfoSource: The InfoSource which is assigned to the PSA table

Name InfoSource: The InfoSource name

Size (KB) Act.: Size of the active PSA table for the InfoSource in KB

Size (KB) others: Size of inactive PSA tables for the InfoSource in KB

The size of the InfoSources is made up of the PSA tables, which were filled under some circumstances by DataSources of different source systems. For this reason, a detail view is displayed after double-clicking:

PBS BW Analyzer: Detailanzeige für InfoProvider

Detailanalyse der PSA-Requests						
InfoSource: PBS_BW_INFOSOURCE					Gesamtgröße:	43 KB
PSA	Quellsyst.	DataSource	Datum	Request	Größe KB	
ZPBS_BW_DATASOURCE_BA	T90CLNT090	ZPBS_BW_DATASOURCE	03.06.2002	REQU_3LYVVS8YU1UMC0KE56MX8R004	5,0	
ZPBS_BW_DATASOURCE_BA	T90CLNT090	ZPBS_BW_DATASOURCE	03.06.2002	REQU_3LYX785PR20ZNO0W26FZSHT0	5,0	
ZPBS_BW_DATASOURCE_BA	T90CLNT090	ZPBS_BW_DATASOURCE	03.06.2002	REQU_3LY0B0XRF30MXMS48VKLC0Z6S	5,0	
ZPBS_BW_DATASOURCE_BA	T90CLNT090	ZPBS_BW_DATASOURCE	03.06.2002	REQU_3LY0ICCB0JLXG4XYWJAPWYL6	5,0	
ZPBS_BW_DATASOURCE_BA	T90CLNT090	ZPBS_BW_DATASOURCE	03.06.2002	REQU_3LYY4Q96INUG0VNT7ZH3MPKX0	5,0	
ZPBS_BW_DATASOURCE_BA	T90CLNT090	ZPBS_BW_DATASOURCE	03.06.2002	REQU_3LY0C30EPPH4LXZ8VYXG2CL5W	5,0	
ZPBS_BW_DATASOURCE_BA	T90CLNT090	ZPBS_BW_DATASOURCE	04.06.2002	REQU_3LZ61606F10FZA0TXB1GTZP00	5,0	
PBS_BW_INFOSOURCE_AB	SSTEST	PBS_BW_INFOSOURCE	24.09.2002	REQU_3N7672RNL6YPMDF6K5N98J6S	7,7	

Diagram 11: Detail View of the PSA Analysis

It is possible to perform a more flexible analysis of the PSA data using BW queries on the PBS InfoCube **/PBS/ANA_PSA**. More detailed information on this can be found in Chapter 6.

3.3. Comparison Analysis

To check the growth of InfoProviders or the success of archiving, it is possible to compare two capacity runs. This can be done using the report /PBS/ANA_BW_KAPAZITAET_VGL (transaction /PBS/ANA_BW_VGL).

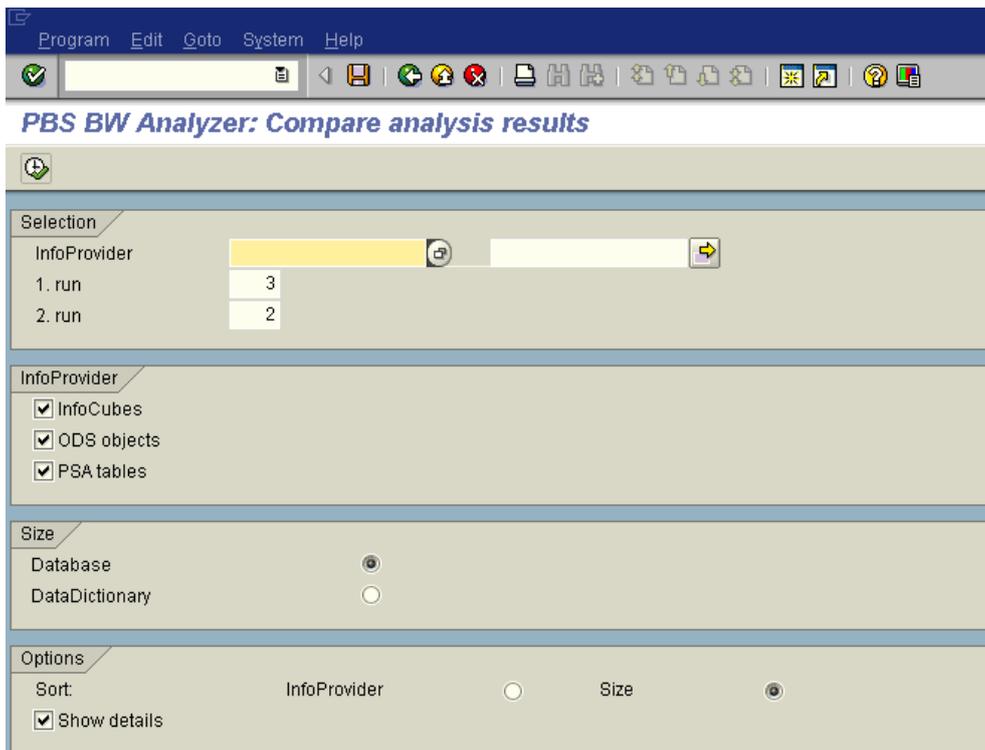


Diagram 12: Comparison Analysis

The options of the comparison analysis can be compared to those of the single analysis. In addition to the data of the compared runs you can set in the area “Options” whether the output should contain detailed information, for example, on the fact tables (InfoCubes) or the activation queues (DataStore objects).

System Help

PBS BW Analyzer: Compare analysis results

Infocubes ODS-objects PSA-tables

PBS BW ANALYZER: Comparison anal. Time 09:00:03 HEMMING
 Comparison of two anal. runs Date 04.12.2003

Capacity run no. 0003 from 13.11.2003 : NACH_AUFBAU_ZMM_02 Total (OB) : 176.832 KB
 Capacity run no. 0002 from 24.10.2003 : NUMMERO_DUO Total (OB) : 73.982 KB
 Difference: 102.850 KB

InfoProvider	Object name	Total (KB) (0003)	Total (KB) (0002)	Difference (KB)
Table				
ZMM_02	not found	108.832	0	108.832
Fact table		78.920	0	78.920
Dimension tables		29.912	0	29.912
ZMM_10	not found	640	0	640
Fact table		128	0	128
Dimension tables		512	0	512
ZMM_01	Purchase Orders R/3	104	236	132-
Fact table		60	192	132-
Dimension tables		44	44	0
0SD_C05	Offers/Orders	5	1	4
Fact table		0	0	0
Dimension tables		5	1	4
0CRM_C04	Opportunities	2	2	0
Fact table		0	0	0
Dimension tables		2	2	0
0CSAL_C01	Activities	1	1	0
Fact table		0	0	0
Dimension tables		1	1	0

Diagram 13: Result of Comparison Analysis

Diagram 13 displays a comparison analysis with details and sizes of the Data Dictionary. During the period from October 24, 2003 (run 2) to November 13, 2003 (run 3) the capacity of the InfoCube ZMM_05 increased. As a consequence the difference is marked in red.

3.4. Deleting Analyses

If a series of analyses were created, it might be desirable to remove old analysis results which are not needed any more. The ABAP /PBS/ANA/_BW_CLEAR (transaction /PBS/ANA_BW_CLR) can be used for this purpose.

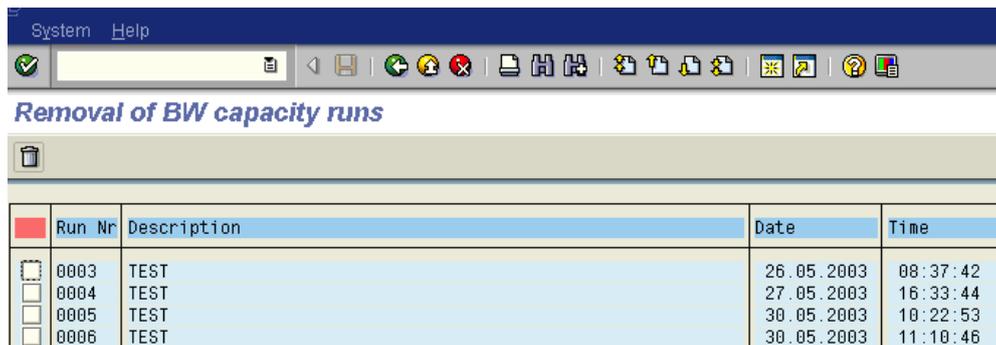


Diagram 14: Deletion of Analysis Runs

The analysis runs that are to be deleted can be selected and then removed using the trash can button. Afterwards, they are no longer available for evaluation.

4. Distribution according to Time Characteristic

Using a time characteristic that is defined in an InfoProvider a data record distribution for year and period can be set up. Thus, for example, you can define a calendar year if you have executed a capacity analysis run in advance. This can be very important for a planned archiving.

Please note that a distribution analysis might have long runtimes.

4.1. Distribution Analysis Setup

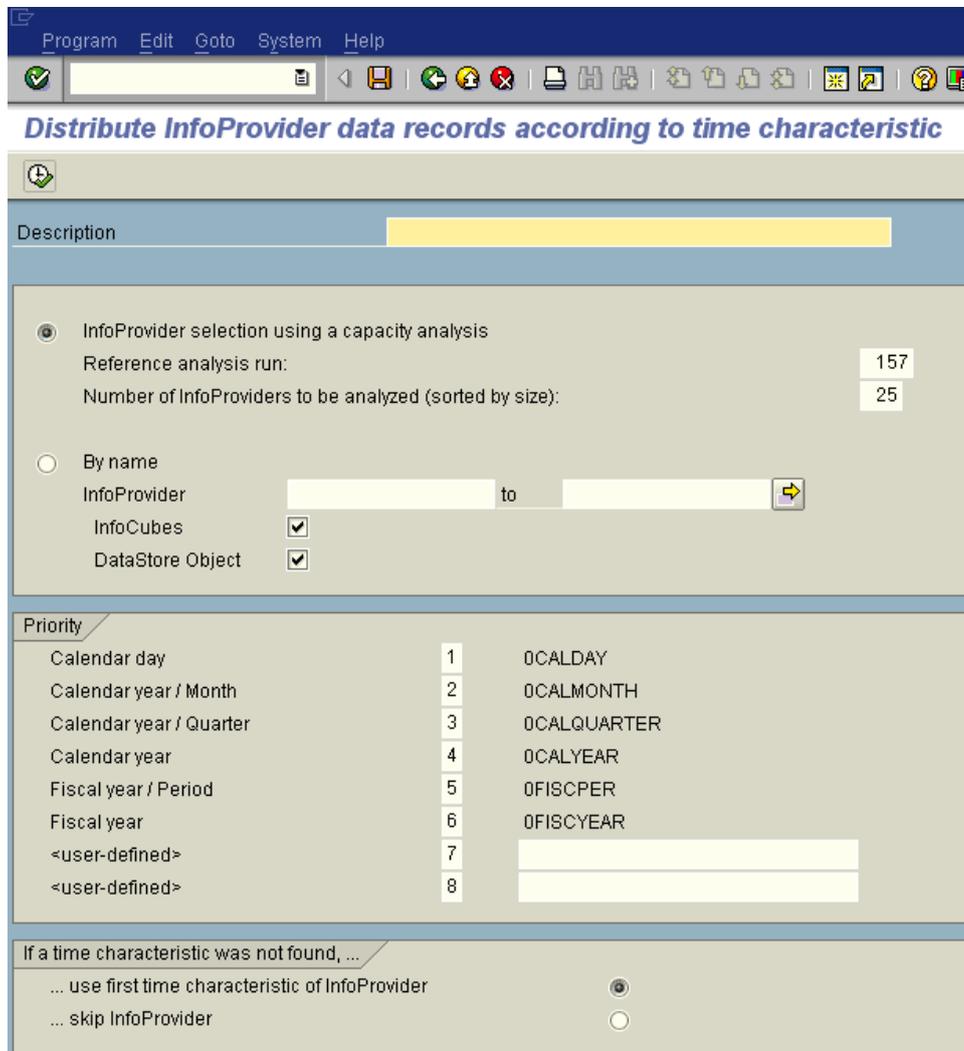


Diagram 15: Distribution analysis setup (Transaction /PBS/ANA_BW_T1)

In order to restrict the runtime of the distribution analysis in an acceptable manner, the InfoProvider can be selected automatically using a reference capacity analysis run. The InfoCubes and DataStore objects that require the most memory space can be determined from this run (based on the size of the fact tables and their aggregates for the InfoCubes and the amount of active data for the DataStore objects) and a distribution analysis created for the specified number of InfoProviders.

It is also possible to restrict InfoProviders by their technical name. If you do not enter a restriction, the system issues a warning that this might result in extremely long runtimes

As different time characteristics can be defined in an InfoProvider, you must determine which characteristic should be relevant in the analysis. The typical time characteristics 0CALDAY, 0CALMONTH, 0CALQUARTER, 0CALYEAR, 0FISCPER and 0FISCYEAR are used in the standard setting in exactly this sequence: If 0CALDAY is defined in the InfoProvider, it is used in the analysis, if this is not the case, 0CALMONTH is used.

Of course, the user is free to adapt the priority of these time characteristics to the actual requirements. Moreover, it is possible to apply characteristics that are based on these time characteristics as criteria (for example 0DOC_DATE, 0PSTNG_DATE, ...).

Priority		
	Calendar day	7 0CALDAY
	Calendar year / Month	8 0CALMONTH
	Calendar year / Quarter	3 0CALQUARTER
	Calendar year	4 0CALYEAR
	Fiscal year / Period	5 0FISCPER
	Fiscal year	6 0FISCYEAR
	<user-defined>	1 0DOC_DATE
	<user-defined>	2 0PSTNG_DATE

Diagram 16: Determination of user-defined distribution characteristics

If it is not possible to specify or determine priorities in general, the InfoProviders should be analyzed separately or in groups (InfoCubes, DataStore, ...).

If none of the defined time characteristics exists despite a determination, you can automatically choose the first time characteristic of the InfoProvider or skip the InfoProvider analysis.

For InfoCubes, the *first* time characteristic corresponds to the first time characteristic supported or the first characteristic based on a supported time characteristic, in the sequence of dimensions and items (compare transaction RSDCUBE).

For ODS/DSO objects the *first* time characteristic corresponds to the first supported (time) characteristic.

4.2. Distribution Analysis Evaluation

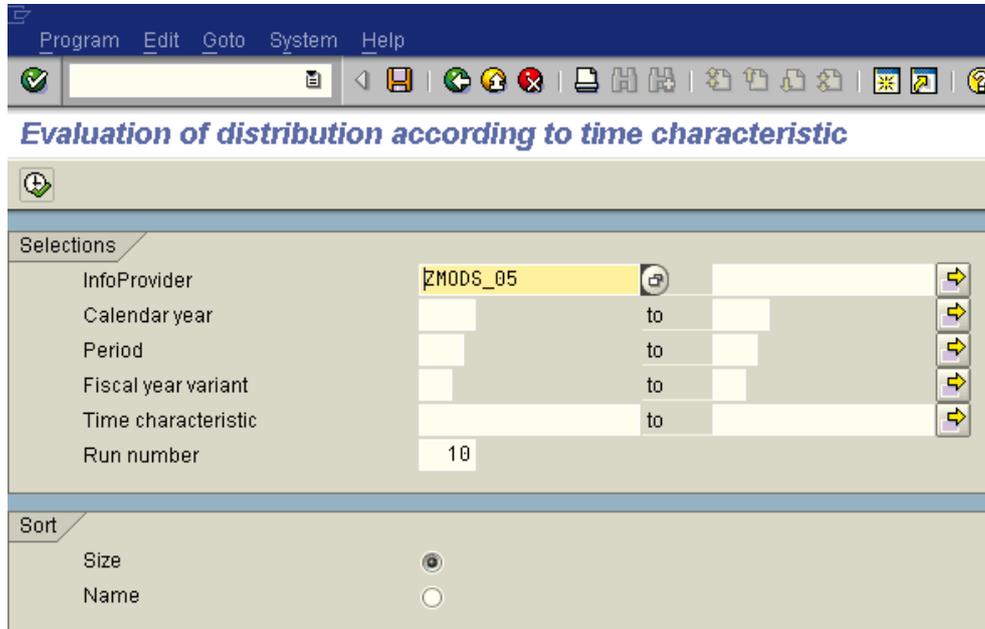


Diagram 17: Evaluation of the InfoProvider ZMODS_05

The distribution analysis which was set up previously can be easily evaluated using the transaction **/PBS/ANA_BW_T2**.

The evaluation takes into account the capacity analysis which was created previously. From this evaluation, the DB size of the fact tables is determined for InfoCubes or active/activation queue/change log tables for DataStore objects, the average data record size is calculated and taken into account in the evaluation.

List Edit Goto System Help
 Evaluation of distribution according to time characteristic

BW Analyzer: Distrib. acc. to time char. Run 0010 Test Page 1						Date: 28.02.2007 Run date: 04.01.2007			HEMING
InfoProvider	Table	Zeitmerkmal	Year	Period	FISCVARNT	Number	%	Size (KB)	
ZMODS_05		OCALDAY							
	Active table								
			1998	003		27.120	3,87	2.380,53	
			1998	004		28.137	4,02	2.469,80	
			1998	005		42.714	6,10	3.749,33	
			1998	006		95.598	13,64	8.391,37	
			1998	007		57.969	8,27	5.088,38	
			1998	008		51.189	7,30	4.493,25	
			1998	009		60.681	8,66	5.326,43	
			1998	010		78.748	11,24	6.912,31	
			1998	011		67.989	9,70	5.967,91	
			1998	012		75.004	10,70	6.583,67	
			1998	===		585.149	83,50	51.362,99	
			1999	001		115.599	16,50	10.147,01	
			1999	===		115.599	16,50	10.147,01	
	Active table (total)			====	===	700.748	100,00	61.510	
	ChangeLog								
			1998	003		27.120	3,87	3.585,46	
			1998	004		28.137	4,02	3.719,92	
			1998	005		42.714	6,10	5.647,10	
			1998	006		95.598	13,64	12.638,75	
			1998	007		57.969	8,27	7.663,92	
			1998	008		51.189	7,30	6.767,56	
			1998	009		60.681	8,66	8.022,47	
			1998	010		78.748	11,24	10.411,06	
			1998	011		67.989	9,70	8.988,64	
			1998	012		75.004	10,70	9.916,08	
			1998	===		585.149	83,50	77.360,97	
			1999	001		115.599	16,50	15.283,03	
			1999	===		115.599	16,50	15.283,03	
	ChangeLog (total)			====	===	700.748	100,00	92.644	

Diagram 18: Distribution analysis of DataStore object ZMODS_05

The evaluation for the DataStore object **ZMODS_05** is displayed in Diagram 18 as an example. The characteristic **OCALDAY** was used for the analysis.

The overall result of the table(s) of an InfoProvider is marked in green (it is only output if the table contains data records). The specified overall sizes correspond to the value which was determined from the capacity analysis. The period result is marked in light blue, dark blue is the overall result of a year. You can see from Diagram 18 that the period 006 with 95,598 data records and a capacity of 8,391 KB needs most of the space in the year 1998 in the active table. This corresponds to 13.64% of the capacity of the active table.

4.3. Deletion of Distribution Analysis

Distribution analyses which are no longer needed can be deleted. This procedure is described in chapter 3.4 "Deleting Analyses".

5. Procedure

The complete analysis of a BW system can be very time-consuming. A runtime of several hours is possible, which is why it is preferable to perform the analysis overnight or at weekends

In order to ensure that a specified timeframe is not exceeded, it might be necessary to split up the analysis into several steps. In this case, the capacity analysis should be performed first, followed by the distribution analysis. The advantage of this is that the results of the capacity analysis can be taken into account before the distribution analysis and the analysis can then be restricted to the most important InfoProviders.

The capacity analysis could also be split up into several runs that could be divided into areas, for example (ZMM*, ZSD*, ...).

You should also consider if the capacity analysis can be carried out for InfoProviders that belong together in several runs (for example OSD*, OMM*...).

As a time characteristic must be entered for the distribution analysis, a complete distribution analysis of the BW system is only useful in rare cases. A distribution should be made to single or a group of comparable InfoProviders if an appropriate and matching time characteristic has been selected previously.

The automatic time characteristic selection according to the default priority ranking order might not display the optimum result. We recommend using manual selection in most cases.

6. PBS AnalysisCube

The PBS BW Database Analyzer makes it possible for you to transfer analysis runs that have been performed into two InfoCubes that are supplied by PBS. This enables you to make use of the many analysis options that are available. These include, for example:

- User-defined access to relevant data using BW queries
- Use of external tools (for example, MS Excel and MS Internet Explorer) for easy evaluation and presentation of the data
- Archiving of analysis runs that are no longer needed.

For this purpose, PBS supplies the InfoCubes with the names **/PBS/ANA** and **/PBS/ANA_PSA**, which are *always* the target of the data transport. These are found in the InfoArea **/PBS/ANA_AREA**, which was also created automatically during the import of the transport order of the PBS BW Database Analyzer. Start the transaction **/PBS/ANA_BW_CUBE** and choose the analysis run that should be transferred into the InfoCube. Please note that an analysis run can *only exist once* in the InfoCube.

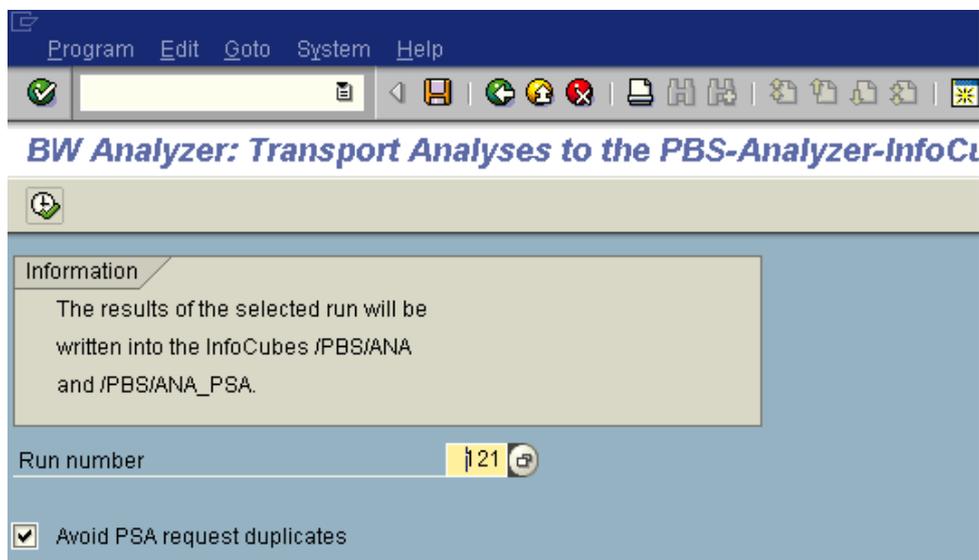


Diagram 19: Transport of the Analysis Results

The option of preventing the multiple transfer of identical PSA analysis results to the Analysis InfoCube also exists.

After selecting Start (function key F8), the corresponding transfer programs are generated and the InfoCubes are updated afterwards. Usually, it is not necessary to execute this as a background job.

6.1. Comments

The InfoCubes **/PBS/ANA** and **/PBS/ANA_PSA** that are supplied should be understood as templates, meaning that it is up to the user to freely split up the existing characteristics into as many more dimensions than those already defined.

It is also the responsibility of the user to define the queries. On the one hand, the user has the flexibility and the many possibilities open to him for defining queries as required. However, on the other hand the user should ensure that key figures of different classes (DB Size/DDic/Reserved) are not mixed inadvertently.

In contrast to transaction **/PBS/ANA_BW_KAP**, the size specified here is not in kilobytes (KB) but in bytes. Under some circumstances (for example, when defining or executing queries) this can result in an error message that the fixed unit "BYT" is not defined. This unit may also be displayed incorrectly. In this case, it should be checked whether the OSS note 400217 can be used to resolve the problem.

It may be possible that the execution of queries results in a system termination. In this case, it should be agreed with the Basis team whether the statistical information is available or can be extended for the InfoCubes **/PBS/ANA** and **/PBS/ANA_PSA**. This can be done, for example, in the administration of the data targets (SAP transaction **RSA1**).