1872170 - ABAP on HANA sizing report (S/4HANA, Suite on HANA...)

Version	82	**Type**	SAP Note
Language	English	**Master Language**	English
Priority	Recommendations / Additional Info	**Category**	Upgrade information
Release Status	Released for Customer	**Released On**	09.03.2020
Component	XX-SER-SAPSMP-ST (SAP Support Portal - Sizing Tools)		

Please find the original document at **https://launchpad.support.sap.com/#/notes/ 1872170**

Symptom

This SAP Note provides an ABAP report to estimate the memory and disk space requirements for the database tables of Business Suite on HANA, S/4HANA systems and any other ABAP-based systems running on HANA at the exception of BW. The result of the report should be cross-checked with the sizing method for HANA main memory described in SAP Note 1793345. The report output is only an estimation of the memory and disk requirements of HANA. SAP makes no waranties with respect to the accuracy of the result of the report. The customer is responsible for verifying any output and deciding on whether to implement any of the recommendations made by the report. The attached FAQ document and the included legal disclaimer must be read before implementing the Note.

The current version of the report is valid for sizing of HANA 1.0 and 2.0. Database statistics must be up-to-date in order to have a reliable sizing result.

Explanations and answers to most frequently asked questions are available in the attached document called "FAQ". Make sure you read this document before continuing with your sizing.

If your total memory sizing is above 8TB, the currently used sizing formulas might overestimate your memory requirements. Create a message in component XX-SER-SAPSMP-ST in order to involve SAP with finalizing your sizing.

Other Terms

HDB Sizing, SAP HANA memory sizing, SoH Sizing, SAP Simple Finance, S/4HANA.

Reason and Prerequisites

- With ST-PI 2008_1_[700-710] SP 09 or ST-PI 740 SP00 and higher, you install report **/SDF/HDB_SIZING**'s latest version by implementing Note 2810633 using transaction snote. This note contains the latest corrections. Depending on your current Support Package level, Notes 1995209, 2062017, 2080648, 2175150 , 2213586, 2303847, 2367595, 2462288, 2504480, 2621935, 2700437 and 2734952 might be automatically installed by snote also. There is one note per ST-PI Support Package. For example Note 1995209 contains the correction of ST-PI 2008_1_[700-710] SP 10 and ST-PI 740 SP01, Note 2062017 contains the one of ST-PI 2008_1_[700-710] SP 11 and ST-PI 740 SP02, etc...

Starting with Advanced correction 9 (Note 2504480) the prerequisites are higher than with Advanced corrections 1 to 8. It requires minimum ST-PI support package 740 SP02 or 700/710 SP12. If you cannot implement the Note, upgrade the ST-PI package level or implement report ZNEWHDB_SIZE as described below. In every cases, upgrading Support Packages is the recommended method compared to installing the Advanced Corrections with snote.

- If you do not have the required ST-PI and do not wish to install it, you can install the report **ZNEWHDB_SIZE** manually by following the steps described below in the "Solution" section. Prerequisite is SAP_BASIS 620.

- If you have already installed report ZNEWHDB_SIZE and want to update to a more recent version, make sure you **always** update the 3 attached programs with the latest code (LZHDBSIZINGTOP, ZNEWHDB_SIZE and Z_COLLECT_STATS). Be aware that new import parameters might have been added to FM Z_COLLECT_STATS in newer versions.

Note that reports ZNEWHDB_SIZE's and /SDF/HDB_SIZING's latest versions are always identical. Depending on your ST-PI Support Packages level, you use one or the other. If possible use /SDF/HDB_SIZING since the implementation requires minimal manual effort (automatic snote implementation with no manual activity).

Pay attention to the below common problems:

Analysed database	Symptom	Solution
Sybase ASE	Termination with message "SQL ERROR:[ASE Error SQL208:42000][SAP][ASE ODBC Driver][Ada" in the job log or as a pop-up.	SAP Note 2212071
MSSQL	Statistics (record count) collected are obviously incorrect.	SAP Note 1691513
MSSQL	Table analysis fails with message 'sap_get_table_size_info' or runtime is too high	SAP Note 2446530 and 2241493
DB2	Many tables could not be sized and are logged as error. All those tables are tables of type POOL.	Check FAQ document attached to SAP Note 1872170
any	Report terminates with IMPORT_ALIGNMENT_MISMATCH or CONNE_IMPORT_WRONG_COMP_TYPE.	SAP Note 2486479
any	Report terminates with MESSAGE_TYPE_X.	Check FAQ document attached to SAP Note 1872170
any	Report terminates with GETWA_NOT_ASSIGNED in CL_ADK_CCMS_GET_OBJECTS.	SAP Note 2000157
any	Version 64 terminates with CONVT_NO_NUMBER.	Latest sizing report Note
HANA (S/4)	Report terminates with TSV_TNEW_PAGE_ALLOC or any other ABAP memory related error.	Latest sizing report Note + Exclude empty tables

Solution

If you chose to install report ZNEWHDB_SIZE proceed as explained below. If you chose to use /SDF/HDB_SIZING, go directly to step 3 for the execution instructions (Also check the attached FAQ document).

Step 1. Create function module Z_COLLECT_STATS.

Step 1a. Create function group ZHDBSIZING.

In the ABAP Workbench (Transaction SE80), create function group ZHDBSIZING with short text "Sizing of

Suite on HANA and S/4HANA".

Step 1b. Create function module Z_COLLECT_STATS.

In function group ZHDBSIZING create function module Z_COLLECT_STATS with short text "Read size in bytes per columns"
Go to tab Attributes and choose "Remote-enabled Module".
Go to tab "Import" and enter:

Parameter name	Typing	Associated Type	Default	Optional	Pass Value
PRECISION	TYPE	DTPRECINT	'M'	X	X
MODE	TYPE	STRING		X	X
LOAD	TYPE	BOOLEAN		X	X
HL	TYPE	BOOLEAN		X	X
MAC	TYPE	BOOLEAN		X	X
CLUSTPREC	TYPE	DTPRECINT		X	X
MSHL	TYPE	BOOLEAN		X	X
DAAG	TYPE	NUMC3		X	X
FORCE_COUNT	TYPE	BOOLEAN		X	X
STAT_AGE	TYPE	INT4	5	X	X
MIN_REC_CNT	TYPE	INT4	100000	X	X
HDB_EMPTY_TABLES	TYPE	BOOLEAN		X	X

Go to tab "Changing" and enter:

Parameter name	Typing	Associated Type	Pass Value
DATA	TYPE	XSTRING	X

Go to tab "Exceptions" and enter:
SYSTEM_ERROR

Go to the tab "Source code" and copy-paste the corresponding code source in attachment.
Save the function module (Do not activate yet).

Note: You can rename the function module's name to your convenience however make sure the name is changed accordingly in the report. If you do change the function module's name you must change also the report's name.

Step 1c. Copy the code of include LZHDBSIZINGTOP.

Go to include LZHDBSIZINGTOP and copy-paste the corresponding code source in attachment.
Save and activate the function module and the top include.

Step 2. Create report ZNEWHDB_SIZE.

Create program ZNEWHDB_SIZE with no top include and short text "SoH and S/4HANA Sizing"
Copy-paste the corresponding code source available in attachment, save and activate.

Note that the report can be renamed to your convenience. However, if you do so, the report is no longer able to check itself if the installation is done correctly.

Step 3. Execution.

To run the report for all tables, run it in background mode. Note however that the parallelism is achieved via RFC calls, it is therefore still using dialog work processes. On large systems, parameter rdisp/max_wprun_time should be set to at least to 7200 seconds. For single table or a small range of tables, the report may be run in the foreground.

Programs ZNEWHDB_SIZE and /SDF/HDB_SIZING have the following parameters:

List of tables
It is possible to enter a selection of tables to get their size estimations in HANA. If you like to get the size estimation of the entire system, leave the table selection empty.

Size data that is currently unloaded (only visible when running the report on HANA)
Choose this option if you want the table to be fully loaded to memory before being measured. Choose this for newly installed system.
Uncheck this parameter if you do not want to size objects that are currently unloaded. Typically, you do so on an already live system if you consider that the unloaded objects are not to be sized since they are not used. Unchecking this parameter improves the performance.

Size hybrid lobs (only visible when running the report on HANA)
When running on HANA, the sizing report reads the size of hybrid lob on disk. If your system has large hybrid lob, this can make the report very slow. By deactivating this checkbox, the hybrid lobs size is no longer read. This improves greatly the performance of the report (on HANA) but the hybrid lob information does not appear in the output. For an efficient method to size hybrid separatly, see the FAQ document attached to this Note.

Merge and compress if necessary (only visible when running the report on HANA)
When running on HANA, the sizing report can detect if a large column is not compressed or not merged optimally. If the report detects that it could influence the total result, it will start a merge or a compression run before measuring the size.

Choice of the Sizing scenario
In this selection list, you must specify what sizing you want to perform. The visible options in this list will be different from one product to another as only sizing scenario relevant to the system are displayed on the selection screen. For example, no S/4HANA sizing will be available on a Solution Manager system.

Choice of HANA version (only visible when running the report on a non-HANA database)
Specifiy the target HANA version with this parameter.

Retention time in days
This is the number of days you plan to configure for data aging of technical objects (iDocs, Application log, Workflow documents, Change documents).

Number of parallel dialog processes
This defines the parallelism level. The number should be as high as possible but not higher than the available number of dialog work processes for RFC. Check transaction sarfc to find out what is this maximum number and choose a smaller value.

Server group
Use the F4 help to specify a server group where the report will run. If left empty, the report use all available instances.

Size of the largest tables lists
This parameter indicates the number of tables in the lists of largest row store and largest column store tables.

Maximum size of sample
This defines the maximum number of records read during data sampling. Samples of 100.000 records are sufficient for a full database sizing.

Change to standard stores distribution
If you plan not to use the standard distribution of tables between the row and columns stores, you can specify the list of tables that will be moved from their standard location. Tables specified here are only taken in account if they are also part of the selection given in the "List of tables". If you want to use the default distribution, leave the fields empty.

The results of programs ZNEWHDB_SIZE or /SDF/HDB_SIZING are available in the spool request of the jobs.

Software Components

Software Component	Release
ST-PI	2008_1_620 - 2008_1_620
ST-PI	2008_1_700 - 2008_1_700
ST-PI	2008_1_710 - 2008_1_710
ST-PI	740 - 740
SAP_BASIS	620 - 620

Support Package

Software Component	Release	Support Package
ST-PI	2008_1_620	SAPKITLRB9
ST-PI	2008_1_700	SAPKITLRD9
ST-PI	2008_1_710	SAPKITLRE9

This document refers to

SAP Note/KBA	Title
2734952	HANA memory Sizing report - Advanced correction 12

2700437	HANA memory Sizing report - Advanced correction 11
2621935	HANA memory Sizing report - Advanced correction 10
2504480	Suite on HANA memory Sizing report - Advanced correction 9
2462288	Suite on HANA memory Sizing report - Advanced correction 8
2367595	Suite on HANA memory Sizing report - Advanced correction 7
2303847	Suite on HANA memory Sizing report - Advanced correction 6
2296290	New Sizing Report for SAP BW/4HANA
2213586	Suite on HANA memory Sizing report - Advanced correction 5
2175150	Suite on HANA memory Sizing report - Advanced correction 4
2080648	Suite on HANA memory Sizing report - Advanced correction 3
2062017	Suite on HANA memory Sizing report - Advanced correction 2
1995209	Suite on HANA memory Sizing report - Advanced correction 1
1850112	Changes to technical properties row/column store
1793345	Sizing for SAP Suite on HANA
1698281	Assess the memory consumption of a SAP HANA System

This document is referenced by

SAP Note/KBA	Title
2416490	FAQ: SAP HANA Data Aging in SAP S/4HANA
2610534	HANA BW Sizing Report (/SDF/HANA_BW_SIZING)
2704203	ORA-01455 - Report /SDF/HDB_SIZING fails with DBIF_DSQL2_SQL_ERROR
2758146	SAP Readiness Check 2.0 & Next Generation SAP Business Scenario Recommendations
2786237	Sizing SAP HANA with Persistent Memory
2408419	SAP S/4HANA - Multi-Node Support
2446530	Could not find stored procedure 'sap_get_table_size_info'
1825774	SAP Business Suite Powered by SAP HANA - Multi-Node Support
2043509	SAP HANA and SAP NetWeaver Java on a Single Host
2621935	HANA memory Sizing report - Advanced correction 10

2504480	Suite on HANA memory Sizing report - Advanced correction 9
1736976	Sizing Report for BW on HANA
1793345	Sizing for SAP Suite on HANA
2428711	S/4HANA Scale-Out Sizing
2062017	Suite on HANA memory Sizing report - Advanced correction 2
2080648	Suite on HANA memory Sizing report - Advanced correction 3
2175150	Suite on HANA memory Sizing report - Advanced correction 4
2213586	Suite on HANA memory Sizing report - Advanced correction 5
2303847	Suite on HANA memory Sizing report - Advanced correction 6
1995209	Suite on HANA memory Sizing report - Advanced correction 1
2462288	Suite on HANA memory Sizing report - Advanced correction 8
1698281	Assess the memory consumption of a SAP HANA System
1514966	SAP HANA 1.0: Sizing SAP In-Memory Database

Attachments

File Name	File Size	Mime Type
Carve-Out Sizing Guideline 1.0.pdf	921	application/pdf
LZHDBSIZINGTOP_V81.txt	8	text/plain
Z_COLLECT_STATS_V81.txt	85	text/plain
ZNEWHDB_SIZE_V81.txt	601	text/plain
FAQ_of_SAP_Note_1872170_v81.pdf	1047	application/pdf

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