

1637145 - SAP BW on HANA: Sizing SAP In-Memory Database

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Language	English	Master Language	English
Priority	Recommendations / Additional Info	Category	Customizing
Release Status	Released for Customer	Released On	25.10.2016
Component	HAN-DB (SAP HANA Database)		

Please find the original document at <https://launchpad.support.sap.com/#/notes/1637145>

Symptom

You intend to use the BW on SAP In-Memory Database (SAP HANA) and need information about sizing.

Other Terms

Sizing, SAP In-Memory Database, SAP HANA, SAP In-Memory Computing, BW HANA Sizing, Orange sizing, scale-out

Reason and Prerequisites

Do not use this note anymore for SAP BW on HANA sizing! Please refer to SAP note 2296290 for the sizing tool that is mandatory for migration sizing.

Starting with version 7.30 SP5 you can run SAP Business Information Warehouse (SAP BW) on SAP HANA as database platform. This enables you to leverage the In-Memory capabilities of HANA and the SAP-HANA-optimized BW objects. Note that for a stand-alone version of SAP HANA (i.e. HANA without BW) separate sizing information is available in note 1514966.

Solution

Sizing SAP BW on HANA In-Memory Database

Important note: If you want to migrate an existing SAP NetWeaver BW system from any database platform to HANA, **using the ABAP sizing report for SAP NetWeaver BW described in SAP note 2296290 is mandatory.** This report

- provides much better accuracy of sizing results,
- handles source database compression auto
- uses table type specific compression factors
- considers sizing effects of the concept of non-active data
- produces much more detailed results than the attached database specific scripts, facilitating the selection of a suitable hardware configuration.

Please be aware that none of these feaatures mentioned for the ABAP report will be ported to the database specific scripts. Due to their complexity, an

implementation of these features in SQL language would not be feasible.

If you want to obtain sizing information for a system that has not yet been implemented, you should use the SAP QuickSizer in this case. Please go to <http://service.sap.com/quicksizer> for further details. Using SAP QuickSizer, you will get information on both the SAP HANA In-Memory Database and the SAP NetWeaver BW application server.

Please note that this section describes the sizing of the SAP BW on HANA In-Memory Database only. Other applications running on top of SAP HANA may have application specific sizing algorithms. A comprehensive overview of the key sizing guidelines can be found in the attached slide deck "SAP_BW_on_HANA_Sizing".

An SAP BW on HANA sizing consists of:

- Memory Sizing:
 - Memory for column store
 - Memory for row store
 - Memory for caches and additional components
- Disk Sizing
 - Disk sizing for data files
 - Disk sizing for log files
- CPU sizing

Memory Sizing

While memory requirements for caches and additional components are more or less fix (currently about 50 GB), column and row store sizes heavily depend on the amount of data that is to be stored. The compression ratio - i.e. the size of the uncompressed unicode tables without their indexes in a database system divided by the amount of memory needed for these tables in HANA - of both storage types differs (column store data can be compressed more effectively than row store data), so it has to be determined which tables go where. Average compression factors for both column and row store can be obtained from the attached slide deck "SAP_BW_on_HANA_Sizing". Database platform specific scripts have been attached which analyze the database catalog and determine the overall database tables footprint for both row store and column store. Please refer to the attachment "get_size.zip" for a set of database specific shell scripts. Please make sure that you extract the platform specific script along with the file "load_RowStore_List.sql" before you execute the script. Note that for the DB platform DB2 on z/OS we have provided an ABAP report instead of a shell script. Please create and run this report in your source BW system.

Important Note: Please be aware that in case of database platforms which intrinsically deploy data compression the total calculated size of data tables might even be larger than the database footprint on disk, depending on the source database compression factor. Only the database platforms of the DB2 family (DB2 for Windows/Linux/Unix, DB2 for iSeries and DB2 for zSeries) provide information about data compression factors in their catalog. This information is evaluated by the sizing scripts for DB2, DB4 and DB6, so that the resulting size figures refer to the estimated uncompressed data size. For all other platforms, the size figures produced by the corresponding sizing scripts need to be multiplied with a database platform specific average compression factor before they are applied to the sizing formula or entered into QuickSizer. In case of

doubt on the average compression factor, please contact your DB administrator.

Scale out

If memory requirements exceed the available memory of a single server node, a scale out solution consisting of multiple server nodes can be deployed. The architecture of a scale-out solution consists of a master node which stores the row-store data, and several slave nodes which hold partitions of business data tables (InfoCubes, DSOs, PSA tables). By increasing the number of slave nodes, additional storage capacity must be added to the system as needed. For more detailed information please refer to the attached slide deck 'HANA_BW_Scale_Out.pdf'.

Disk Sizing

Please refer to attached slide deck "SAP_BW_on_HANA_Sizing" for details of disk sizing.

CPU Sizing

Sizing for SAP BW on HANA is dominated by memory sizing, i.e. the amount of memory defines the appropriate hardware configuration from the list of certified configurations. The number of CPUs / cores increases with the amount of memory for all these configurations, and it is safe to assume that enough CPU power is available.

Important Note

Before obtaining the current size of your business data by applying the appropriate sizing script for your database platform, make sure that you cleanse your system to avoid including unnecessary data in the sizing. Please refer to note 1634681 to identify large tables that go into row store, and to note 706478 for reducing the size of housekeeping tables which usually grow very quickly. A comprehensive summary of additional activities to reduce the data volume can be found in SDN:

<http://www.sdn.sap.com/irj/sdn/go/portal/prtroot/docs/library/uuid/70ef2f01-641a-2d10-c59e-cf6d9e673926>

Other Components

Component	Description
XX-SER-LAS	License Auditing Services
HAN-DB-ENG-BW	SAP HANA BW Engine

This document refers to

SAP Note/KBA	Title
1855041	Sizing Recommendation for Master Node in BW-on-HANA

1793345	Sizing for SAP Suite on HANA
1736976	Sizing Report for BW on HANA
1714013	BPC 7.53 NW on SAP BW 7.3 powered by HANA DB

This document is referenced by

SAP Note/KBA	Title
2451926	Installing or upgrading SAP TDF Support Packages
2551355	SAP HANA Platform 2.0 SPS 03 Release Note
2656575	SAP HANA Platform 2.0 SPS 04 Release Note
1736976	Sizing Report for BW on HANA
1793345	Sizing for SAP Suite on HANA
1964437	SAP HANA on AWS: Supported AWS EC2 products
1514966	SAP HANA 1.0: Sizing SAP In-Memory Database
1923480	BPC 7.54 NW on SAP BW 7.40 powered by HANA
1906096	BPC 7.50/7.54 NW on SAP BW 7.31 powered by HANA
1855041	Sizing Recommendation for Master Node in BW-on-HANA
1714013	BPC 7.53 NW on SAP BW 7.3 powered by HANA DB

Attachments

File Name	File Size	Mime Type
HANA_BW_Scale_Out_V1_2.pdf	381	application/pdf
get_size.zip	60	application/x-zip-compressed
SAP_BW_on_HANA_Sizing_V1_7.pdf	566	application/pdf