ESPRESSO TUTORIALS

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SAP® BW/4HANA and BW on HANA

- Migration, sizing, operation, data management with SAP BW/4HANA and SAP BW 7.5 on HANA
- New modeling options, mixed scenarios, LSA++, and differences compared to SAP BW 7.5
- The new central source systems SAP HANA and ODP
- The role of BW in operational SAP reporting

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2 Preparing for the conversion to SAP HANA

Before you make the decision to use SAP HANA as the database for your Business Warehouse—or at the latest when you actually make the decision—you should address topics such as the sizing, migration, housekeeping, and data center operation of SAP HANA as the database for your BW system.

Ideally, you will have discussed these topics before making the decision for SAP HANA. The *sizing*, for example, is a decisive factor not only for the size and number of servers required—depending on the licensing model, the size of the database may also influence the license costs. Regardless of the licensing model, you should establish *housekeeping* (see Section 2.3) as a permanent process in the company. This will allow you to keep system tables lean.

2.1 Sizing

In recent years, we have been involved in the sizing of many BW on HANA systems. By far the most common case is the migration of an existing BW system to SAP HANA, referred to as the *brownfield* approach. The *greenfield* approach, in which a new BW is considered only on an SAP HANA system is less frequent. The transfer of a non-SAP data warehouse (DWH) to a BW system is rare, and we therefore address this approach only very briefly.

It is important to make sure that you size the database server for SAP HANA correctly because many mistakes can be made at this point. To help you avoid this, Marc Bernard, Product Manager SAP EDW, has written a very good blog detailing the most common errors made when sizing a BW on HANA system.

Blog: How NOT to size an SAP BW system for SAP HANA

https://blogs.sap.com/2013/08/28/how-not-to-size-a-sap-netweaver-bw-system-for-sap-hana/

2.1.1 Sizing when migrating an existing BW system

When migrating existing BW systems to SAP HANA, we strongly recommend that you use the *ABAP sizing report* for the database sizing. This report guarantees more accurate results and it is independent of the database compression. It can also incorporate the concept of non-active data, extended tables (for details on both topics, see Section 4.1), as well as future growth. SAP Note 2296290 and the attachments to that note describe in great detail how to run the report and what the functions of the individual parameters are.

The sizing report is called /SDF/HANA_BW_SIZING and is delivered from Service plug-in ST-PI 2008_1_7xx SP8 or ST-PI 740 SP01. The minimum prerequisite for the report is NetWeaver BW 7.0 SP1. For BW 3.5 systems, there is a separate report (SAP Note 2021372).

You can use different parameters for the report, which means that you have good control over the required resources and thus the load on the system. The report also saves you a lot of work by, for example, considering influences such as the conversion to unicode and any potential compression of the source database automatically. You can also run the report just for certain subareas of the system if you are planning to migrate only part of your system.

We recommend that you run the report and specify growth values based on your experience from previous years. This will give you a better overview of the hardware requirement for the coming years. Experience shows that the usual values for annual organic growth are between 10% and 30%. We also recommend that you activate consideration of non-active data.

With regard to the precision level, **Low** is sufficient to give meaningful results. It is only for small systems with databases of less than 500 GB that we recommend you set this level to **High**.

As already mentioned, SAP Note 2296290 contains very good documentation with an example. It gives a detailed description of all input parameters, how the tool works, and the results. Therefore, we will not provide any further explanations or an example at this point. We will restrict ourselves to typical questions or important information that we often receive despite using the detailed sizing report.

Up-to-date database statistics

We strongly recommend that you run the sizing report only with up-to-date database statistics because otherwise the results will be incorrect.

With regard to sizing, one aspect that is often forgotten is that every server has an operating system with a certain main memory requirement. 10% of the first 64 GB and 3% of the remaining main memory is reserved for the operating system. Furthermore, 50 GB must be reserved for services and caches for each server node. This results in the values shown in Table 2.1 for the different server sizes currently available. The sizing report takes these values into account fully automatically.

Available Memory	Operating System	Available for HANA	Available for BW Data
256 GB	12 GB	244 GB	194 GB
512 GB	20 GB	492 GB	442 GB
1024 GB	35 GB	989 GB	939 GB
1536 GB	52 GB	1484 GB	1434 GB
2048 GB	66 GB	1982 GB	1932 GB
3072 GB	97 GB	2975 GB	2925 GB
4096 GB	127 GB	3969 GB	3919 GB

Table 2.1: Available main memory for different server sizes

Scale-out configurations for BW systems have at least three computer nodes. As a minimum, we strongly recommend two worker nodes for one master node. For more information about scale-out, see Section 2.4.2 on Scalability. Additional details about the sizing of the master node and the optimum number of scale-out nodes can be found in SAP Notes 1855041 and 1702409.

The sizing of the application server

With regard to the sizing of the application server, initially there is no change compared to a BW system with a different database. This applies to both ABAP application servers and JAVA application servers. You can use the Quick Sizer (see the next section) to work out the size for these servers.

Sizing additional applications and projects

If you want to operate further applications in BW (e.g., BPC) or on the same SAP HANA database (MCOD, see Section 2.4.3) in the future, you have to consider the main memory requirement for these applications in addition to the sizing of the BW system.

This also applies for new projects: in this situation, further data enters the system and you should include this in your considerations additively. If you are intending to consolidate multiple BW systems, you should also consider this additively.

A useful side effect of the sizing report is that it provides information about the volume of data in certain objects. In the case of very large row stores, change logs, or PSA tables, you can quickly see whether a system is well-maintained. For more on the topic of housekeeping, see Section 2.2.7.

Sizing reports for BW on HANA

Always use the latest version of the sizing report. The report is constantly being improved and only the most up-to-date version will guarantee the highest possible accuracy.

New sizing report for BW/4HANA:
https://launchpad.support.sap.com/#/notes/2296290

Sizing Report for BW on HANA (for BW 3.5 Systems):
http://service.sap.com/sap/support/notes/2021372

SAP HANA Academy: "BW on HANA" sizing video

This video provides a step-by-step procedure for using the sizing report: *https://youtu.be/-qq6d92YJek*

2.1.2 Sizing a new BW on HANA

When you are sizing a new system for BW on HANA, you should use the *Quick Sizer* (*http://service.sap.com/quicksizer*). There is a special version of the Quick Sizer for SAP HANA-based systems (*http://service.sap.com/hanaqs*). The tool will help you not only to determine the correct size for the database server but also the correct dimensions for the application server where necessary. SAP provides very good and detailed information and videos on this topic and therefore we will not provide any further explanations here.

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