Disclaimer

This presentation is not subject to your license agreement or any other agreement with SAP. SAP has no obligation to pursue any course of business outlined in this presentation or to develop or release any functionality mentioned in this presentation. This presentation and SAP's strategy and possible future developments are subject to change and may be changed by SAP at any time for any reason without notice. This document is provided without a warranty of any kind, either express or implied, including but not limited to, the implied warranties of merchantability, fitness for a particular purpose, or non-infringement. SAP assumes no responsibility for errors or omissions in this document, except if such damages were caused by SAP intentionally or grossly negligent.
SAP BW/4HANA System Sizing

Resource requirements for SAP BW/4HANA systems are very close to the ones of an equivalent SAP BW system running on SAP HANA. In order to get a size estimate for your SAP BW/4HANA system, please proceed as follows (see SAP Note 2363248):

### New Installation
Sizing of new SAP BW/4HANA systems (greenfield)

- Supported by SAP QuickSizer
- Available online at http://service.sap.com/quicksizer
  Start “SAP HANA version”
  Select "SAP BW Powered by SAP HANA"

### System Conversion
Sizing of existing SAP BW systems to be converted to SAP BW/4HANA

- Supported by sizing program /SDF/HANA_BW_SIZING
- Available as part of ST-PI add-on or SAP Note
- For details, see SAP Note 2296290
System Sizing

New Installations
SAP BW/4HANA System Sizing
New Installations

1. Launch SAP QuickSizer landing page https://service.sap.com/quicksizer
2. Start “HANA Version” of QuickSizer
3. Read “QuickSizer for beginners” documentation
4. Enter customer number and project name
5. Create a sizing new project
6. Choose ‘SAP BW/4HANA’ questionnaire
7. Read ‘How to fill in questionnaire’ documentation

8. Fill out the different sections. Don’t forget to save your entries

“Table 4: Throughput - Definition of Advanced DataStore Objects in HANA” is the key driver for SAP HANA memory and disk size requirements
SAP BW/4HANA System Sizing
New Installations – Example Input

Table 1: Throughput - User Groups: Reporting & Analysis

<table>
<thead>
<tr>
<th>Element</th>
<th>Short name</th>
<th>A/P</th>
<th>TI</th>
<th>BI users</th>
<th>% Rep users</th>
<th>% OLAP Users</th>
<th>% Data explorer</th>
<th>*Start time</th>
<th>*End time</th>
<th>Your short text</th>
</tr>
</thead>
<tbody>
<tr>
<td>BW/4HANA INFO</td>
<td></td>
<td>A</td>
<td>S</td>
<td>5,000</td>
<td>60</td>
<td>30</td>
<td>09</td>
<td>09</td>
<td>18</td>
<td></td>
</tr>
<tr>
<td>BW/4HANA BUSINESS</td>
<td></td>
<td>A</td>
<td>S</td>
<td>1,000</td>
<td>60</td>
<td>50</td>
<td>09</td>
<td>09</td>
<td>18</td>
<td></td>
</tr>
<tr>
<td>BW/4HANA EXPERT</td>
<td></td>
<td>A</td>
<td>S</td>
<td>200</td>
<td></td>
<td></td>
<td>100</td>
<td>09</td>
<td>18</td>
<td></td>
</tr>
</tbody>
</table>

Table 2: Throughput - Data Upload to SAP NetWeaver BW

<table>
<thead>
<tr>
<th>Element</th>
<th>Short name</th>
<th>A/P</th>
<th>TI</th>
<th>Loaded data records</th>
<th>*Start time</th>
<th>*End time</th>
<th>Your short text</th>
</tr>
</thead>
<tbody>
<tr>
<td>BW/4HANA UPLOAD</td>
<td></td>
<td>P</td>
<td>P</td>
<td>100,000,000</td>
<td>01</td>
<td>06</td>
<td></td>
</tr>
<tr>
<td>BW/4HANA UPLOAD</td>
<td></td>
<td>P</td>
<td>P</td>
<td>20,000,000</td>
<td>02</td>
<td>06</td>
<td></td>
</tr>
<tr>
<td>BW/4HANA UPLOAD</td>
<td></td>
<td>P</td>
<td>P</td>
<td>10,000,000</td>
<td>03</td>
<td>04</td>
<td></td>
</tr>
</tbody>
</table>

Table 3: Throughput - BW on HANA Row Tables Footprint and Column Tables Footprint

<table>
<thead>
<tr>
<th>Element</th>
<th>Short name</th>
<th>A/P</th>
<th>TI</th>
<th>Column store tables footprint (report)</th>
<th>Raw store tables footprint (report)</th>
<th>Your short text</th>
</tr>
</thead>
<tbody>
<tr>
<td>BW/4HANA TABLES</td>
<td></td>
<td>A</td>
<td>N</td>
<td></td>
<td>100</td>
<td></td>
</tr>
</tbody>
</table>

Table 4: Throughput - Definition of Advanced DataStore Objects in HANA

<table>
<thead>
<tr>
<th>Element</th>
<th>Short name</th>
<th>A/P</th>
<th>TI</th>
<th>Numeric fields</th>
<th>Text fields</th>
<th>Average length of character fields in DSO</th>
<th>Write optimized</th>
<th>Compression factor Disk -&gt; Memory</th>
<th>Initial load/Min</th>
<th>Periodic load / 1000</th>
<th>Periods</th>
<th>Your short text</th>
</tr>
</thead>
<tbody>
<tr>
<td>ADSO</td>
<td></td>
<td>A</td>
<td>10</td>
<td>5</td>
<td>30</td>
<td>□</td>
<td>4</td>
<td>100</td>
<td>20,000</td>
<td>36</td>
<td></td>
<td></td>
</tr>
<tr>
<td>ADSO</td>
<td></td>
<td>A</td>
<td>10</td>
<td>10</td>
<td>20</td>
<td>□</td>
<td>4</td>
<td>1,000</td>
<td>10,000</td>
<td>34</td>
<td></td>
<td></td>
</tr>
<tr>
<td>ADSO</td>
<td></td>
<td>A</td>
<td>100</td>
<td>10</td>
<td>30</td>
<td>□</td>
<td>4</td>
<td>200</td>
<td>5,000</td>
<td>500</td>
<td></td>
<td></td>
</tr>
<tr>
<td>ADSO</td>
<td></td>
<td>A</td>
<td>15</td>
<td>25</td>
<td>30</td>
<td>□</td>
<td>4</td>
<td>5,000</td>
<td>1,000</td>
<td>60</td>
<td></td>
<td></td>
</tr>
<tr>
<td>ADSO</td>
<td></td>
<td>A</td>
<td>5</td>
<td>40</td>
<td>15</td>
<td>□</td>
<td>4</td>
<td>300</td>
<td>200</td>
<td>36</td>
<td></td>
<td></td>
</tr>
<tr>
<td>ADSO</td>
<td></td>
<td>A</td>
<td>10</td>
<td>10</td>
<td>30</td>
<td>□</td>
<td>4</td>
<td>500</td>
<td>2,000</td>
<td>36</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
9. Important Notes
   - Don’t change the default compression factor (unless you know what you are doing)
   - Column ‘Number of numeric fields’: These are all fields of the DSO (including key and data fields) except those of type CHAR
   - Column ‘Number of text fields’: These are all fields of type CHAR (including key and data fields)
   - Column ‘Average length of character fields’: Default is 30 bytes (1 letter = 1 byte)
   - Required memory for master data is automatically added (30% uplift)

10. When done with data entry, select “Calculate Results”. A good view is result level “Software Components”
SAP BW/4HANA System Sizing
New Installations – Example Results

Throughput Results for SAP Business Solutions

<table>
<thead>
<tr>
<th>Solution</th>
<th>Solution</th>
<th>GPU cat.</th>
<th>SAPS (total, 2-tier)</th>
<th>Memory Cat.</th>
<th>Memory (total, 2-tier, MB)</th>
<th>DB Memory</th>
<th>DB Disk cat.</th>
<th>DB Disk (GB, total)</th>
<th>SCU Class</th>
</tr>
</thead>
<tbody>
<tr>
<td>BW4HANA2</td>
<td>SAP BW4 HANA</td>
<td>XS</td>
<td>24,000</td>
<td>XL</td>
<td>4,133,600</td>
<td>4,017,152</td>
<td>L</td>
<td>4,004</td>
<td>A</td>
</tr>
</tbody>
</table>

Throughput Time Slot Results for SAP Business Solutions
SAP BW/4HANA System Sizing
New Installations

11. Results include application servers and SAP HANA database

“DB Memory” defines the recommended size of the SAP HANA database (in the example, 4 TB of total main memory are required)

<table>
<thead>
<tr>
<th>DB Memory</th>
<th>DB Disk cat.</th>
<th>DB Disk (GB, total)</th>
</tr>
</thead>
<tbody>
<tr>
<td>4,017,152</td>
<td>L</td>
<td>4,004</td>
</tr>
</tbody>
</table>

12. Contact the hardware or cloud vendors, for help with getting these requirements mapped to physical hardware or cloud infrastructure
System Sizing

System Conversions
SAP BW/4HANA System Sizing
System Conversions

1. Implement latest version of sizing program
   See SAP Note 2296290

2. Run program /SDF/HANA_BW_SIZING in batch mode
   (either in the production system or a copy of production)
3. Default settings on the selection screen are ok for most cases but you should include certain data volume growth (% or GB growth per year)

Check flag „Store output file“ to save output to specified file in the DIR_HOME work directory of the application server (transaction AL11). File name MUST begin with „HANA Sizing“

Specify number of parallel processes to analyze tables. Make sure you have enough free work processes

For execution on HANA only: If a table was completely unloaded, unload it again after analysis
4. Wait until job is finished and view results

Note: Online spool display is limited to 10 pages as a default but sizing output is often more pages (it also includes page breaks and headers). It’s better to download the results from the server (using transaction AL11).
5. Result screen of the Sizing Report contains very detailed information on the original system and its corresponding HANA sizing

- Overview of the size of the source database, based on sampled data (based on an ABAP internal representation of the data)
- Summary of the resources that this system at minimum requires when running on a HANA database
- Extrapolated resource requirements in future, based on specified growth rate
- Overall sizes for row and column store tables, both for master and worker nodes
- Detailed size information per table, including estimated ABAP size based on sample, derived HANA size, and record count. This detailed list can be used to directly determine database tables which should be targeted by housekeeping measures.

For a very detailed description of the report and results, please see the attachment to SAP Note 2296290
This section describes the contents of the source database as derived from data sampling. Figures refer to table sizes in ABAP and can vary from those reported by the source DB. Also note that indexes, temporary space, etc. of the source DB are NOT reflected here!

<table>
<thead>
<tr>
<th>Source DB Contents</th>
<th>ABAP Size Row Store: 43.8 GB</th>
<th>No. of tables: 2257</th>
</tr>
</thead>
<tbody>
<tr>
<td>ABAP Size Column Store:</td>
<td>4747.8 GB</td>
<td>33237</td>
</tr>
<tr>
<td>Total</td>
<td>35404</td>
<td></td>
</tr>
<tr>
<td>InfoCubes</td>
<td>3733.5 GB</td>
<td>3455</td>
</tr>
<tr>
<td>Std DSO</td>
<td>702.4 GB</td>
<td>233</td>
</tr>
<tr>
<td>Change Logs</td>
<td>0.4 GB</td>
<td>111</td>
</tr>
<tr>
<td>w/o DSO</td>
<td>1588.2 GB</td>
<td>56</td>
</tr>
<tr>
<td>PSA</td>
<td>18.8 GB</td>
<td>741</td>
</tr>
<tr>
<td>Master Data</td>
<td>180.4 GB</td>
<td>6456</td>
</tr>
<tr>
<td>Customer Tables</td>
<td>0.0 GB</td>
<td>0</td>
</tr>
<tr>
<td>Others</td>
<td>123.3 GB</td>
<td>22185</td>
</tr>
</tbody>
</table>

- **Shares of different table types that go to column stores (sizes in ABAP)**
- **Total number and size of all tables in source DB (as per data sampling) with shares for row and column store.**
- **Number of tables excluded from sizing (e.g. aggregates, dimension tables, etc.).**
# SAP BW/4HANA System Sizing

## System Conversions – Example Results

This section describes the minimum resource requirements for the system to run on a SAP HANA database. The memory requirements include space for the tables, indexes (where applicable), and space for temporary database objects (e.g. intermediate query results).

<table>
<thead>
<tr>
<th>Memory Requirement (Minimum Total)</th>
<th>Total Memory</th>
<th>Disk Space Requirement - data (Minimum Total)</th>
<th>Total Disk Space</th>
<th>Disk Space Requirement - logs (Minimum Total)</th>
<th>Total Logs Disk Space</th>
<th>Number of Nodes incl. master (Minimum Total)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>2048 GB</td>
<td>1799 GB</td>
<td>512 GB</td>
<td>512 GB</td>
<td>5</td>
<td></td>
</tr>
<tr>
<td></td>
<td>1024 GB</td>
<td>1799 GB</td>
<td>512 GB</td>
<td>512 GB</td>
<td>3</td>
<td></td>
</tr>
</tbody>
</table>

**NOTE:**
- Please carefully read documentation attached to SAP Note 1736876 for a detailed description of the sizing procedure and its results!
- Disk space requirement calculations no longer includes space for backup dumps, etc. This space has to be provided on additional disk volumes.

Guidance for sizing these additional requirements is described within documentation attached to SAP Note 1736876.

---

**Minimum vs. Recommended:** SAP HANA prefers a small set of nodes with less memory over a single node with more memory for cost effectiveness / flexibility reasons.

Minimum memory amount is determined by requirements for master node. For scale-out landscapes with more than 8 nodes, the next larger server configuration is used (if available).
Data Tiering

Multi-temperature Data Tiering

Data Tiering Optimization
The Data Growth Challenge

SAP HANA as In-Memory Database

Strong coupling between data and hardware
- More data → more RAM → more CPUs
- Impacts on hardware configuration

Growing SAP HANA hardware
- Scale-up ends at 4 (analytical) or 8-20 (transactional) TB
- Larger systems require scale-out hardware

Challenges for Very Large Systems
- Does all my data justify hardware and license cost?
- Can we de-couple hardware growth from data growth?
SAP HANA Data Tiering
Technology

Data Tiering is the assignment of data to various tiers/storage media based upon data type, operational usefulness, performance requirements, frequency of access, and security requirements of the data.

- **“Hot”** This tier is used to store mission critical data for real-time processing and real-time analytics.
  - Data is retained “In-Memory”.

- **“Warm”** This tier is used to store data with reduced performance SLAs, which is less frequently accessed.
  - Data is stored on dedicated “In-Memory” nodes (Extension Nodes) with a relaxed sizing ratio.

- **“Cold”** This tier is used to store voluminous data for sporadic or very limited access.
  - Data is stored on disk, in columnar structures on SAP IQ or in Hadoop HDFS.
SAP BW/4HANA Data Tiering Technology

**Data Prioritization**

- **Hot**
  - Data is read and/or written frequently
  - SAP HANA In-memory
  - No restrictions, all features available
  - Recent data

- **Warm**
  - Infrequent access
  - SAP HANA on disk or SAP HANA on “extension node”
  - No restrictions, all features available
  - Less recent / important data

- **Cold**
  - Sporadic access
  - Not stored in HANA: stored in SAP IQ
  - Restricted to NLS capabilities
  - Typically read-only
  - Historic data

**Data Archiving**

- Dynamic Tiering (based on Extension Nodes)
- Non-Active Data Concept

**Data Volume**

- Planning
- Reporting

**Performance**

- Consolidation
- Harmonization

**Usage in Data Warehouse**

- History
- Acquisition

**Near-line Storage with SAP IQ**

**Near-line Storage with Hadoop**

© 2017 SAP SE or an SAP affiliate company. All rights reserved.
Scale SAP BW/4HANA using in-built data temperature management

- **Hot** → SAP HANA in-memory
- **Warm** → SAP HANA Extension Node
- **Cold** → Near-line Storage

**Default**

**By DataStore or Partition**

**By Data Time Slice**
SAP BW/4HANA Data Tiering Optimization (DTO)

Overview

One concept for Hot, Warm and Cold Data Based on SAP HANA Technology

• Data tiering based on Advanced DataStore Object Partitions
• Same concept for “warm data” (extension nodes) and “cold data” (external storage in IQ or Hadoop)
• Partition Temperature as local setting (no transport)
• Using HANA Technology such as SDA, Scale Out and disk storage in SAP IQ

Easy, Central Definition and Implementation

• Data Temperature defined in Advanced DataStore Object only
• No additional customizing of Data Archiving Processes

Displacement of Data as Simple and Periodic Housekeeping Activity

• Single data tiering optimization job that periodically moves data to defined storages
• No process chain or process variant modeling
SAP BW/4HANA Data Tiering Optimization (DTO) User Interface Perspective

### Advanced DataStore Object (“Plan”)

- **Data Tiering Optimization: Temperature Schema**
  - Standard Tier (Hot)
  - Extension Tier (Warm)
  - External Tier (Cold)

- **Data Tiering Optimization Job**

- **Partitioning Characteristic & Partition Ranges**

- **New: Temperature Schema**

### Physical Storage (“Actual”)

- **Standard Tier** (HANA Nodes)
  - Via ABAP runtime or HANA DDO

- **Extension Tier** (HANA Extension Node)
  - Via ABAP SQL runtime using SDA

- **External Tier** (SAP IQ or Hadoop)

### Data Tiering Optimization Job

- **New: Temperature Maintenance**
- **New: Partition Temperature Maintenance**
- **Changes Temperature = Data Tiering Optimization Job**

© 2017 SAP SE or an SAP affiliate company. All rights reserved.
SAP BW/4HANA Data Tiering Optimization (DTO)

General Positioning

The new, strategic SAP BW/4HANA Data Tiering Optimization approach will offer

- One data tiering approach for hot data (SAP HANA), warm data (Data Tiering with Extension Nodes) and cold data (External Storage in SAP IQ or Hadoop)
- Central definition of data temperature based on Advanced DataStore Object Partitions
- Displacement of data to defined storage as simple and periodic housekeeping activity (TCO reduction)
- Seamless conversion or co-existence with existing SAP BW NLS IQ / Hadoop approach (because of sharing technical concepts for cold data storage such as locking of archived data ranges)
SAP BW/4HANA Data Tiering Optimization (DTO)
Positioning with SAP BW Near-lines Storage

SAP BW Near-line Storage to SAP IQ and Hadoop

- ... are still supported in SAP BW/4HANA and will offer continuity for data archiving scenarios already implemented with SAP BW NLS IQ / Hadoop (protection of past investments) before adopting the new BW/4HANA Data Tiering Optimization. In addition, they offer support for advanced data archiving scenarios not (yet) in scope of SAP BW/4HANA Data Tiering Optimization.
SAP BW/4HANA Data Tiering Optimization (DTO)  
Positioning with the SAP HANA Data Warehouse Foundation (DWF)

SAP HANA Data Lifecycle Management (DLM)

- … can’t be used for data tiering requirements in SAP BW on HANA or BW/4HANA
- With SAP BW/4HANA DTO our aim is to combine available HANA Technology that are also used by HANA DLM (such as HANA Smart Data Access or external disk storage in SAP IQ) with specific consistency and modeling complexity requirements from our BW customers (such as consistent reporting on released data load requests and specific Advanced DataStore Object semantics and settings). HANA DLM will for sure continue to play its role in the context of implementing data tiering requirements for native HANA Data Warehouse objects.

SAP HANA Data Distribution Optimizer (DDO)

- … can be used in SAP BW on HANA or SAP BW/4HANA also in coexistence with the new Data Tiering Optimization. Data Movement in SAP BW/4HANA to SAP HANA Extension Nodes (warm data) can happen both ways:
  - DDO for reorganization and optimization projects in HANA Scale Out system landscapes
  - DTO for regular data movements processes for warm data in SAP BW/4HANA
SAP BW/4HANA Data Tiering

More Information

How to configure SAP HANA for extension nodes
• See SAP Note 2343647

Data Tiering for SAP BW/4HANA and extension nodes
• See SAP Note 2317200

Blogs about Data Tiering and SAP HANA Extension Nodes
• https://blogs.sap.com/2016/04/14/important-update-data-lifecycle-management-for-bw-on-hana/
• https://blogs.sap.com/2016/04/26/more-details-hana-extension-nodes-for-bw-on-hana/

SAP Near-line Storage Solution for SAP BW and SAP BW/4HANA
• https://blogs.sap.com/2016/10/12/sap-nls-solution-sap-bw/

Great resource
Additional Resources

Strategies for Size Reduction
Data Volume Management
Sizing Details and Expert Sizing
SAP HANA Hardware
Strategies for Size Reduction

Recommended and Best Practice

• Removal of Complete Data Layers
  – For example reporting off DataStore Objects instead of an InfoCube with the same or just aggregated data

• Usage of near-line storage solution (NLS)
  – Off load historical data to colder storage areas

• One time clean up and frequent housekeeping for large tables
  – How-To: Data Management for Technical Tables (See SAP Note 2388483)
  – Most Common Areas
    o Archiving BW Request
    o Deleting Application Log
    o Archiving IDocs

Optional

• More aggressive reduction of PSA, Change Log, Error Stacks
• Revisit data retention strategy and archiving
Data Volume Management

Additional Information on Data Volume Management:

- Optimization of Data Retention

- Data Management Guide (v7, December 2016)
  http://service.sap.com/ilm

- Data Volume Management Wiki
Sizing Details and Expert Sizing

How NOT to size a SAP BW system for SAP HANA (also applies to SAP BW/4HANA)


How to perform an Expert Sizing

- Usually recommended for comprehensive or high-volume sizing
- Use Quick Sizer functions for first estimate
- Determine data volume and sparsity based on sample data (using ABAP program)
- Conduct analysis in test or validation system with more realistic data volume and user activity
- Continuous validation of assumptions and improvements

For Expert Sizing we recommend the “Lego Approach"

- Use the QuickSizer as the basis to collect the key data
- For special data constellations or requirements perform separate sizing
- To record your custom sizing you may use the Quick Sizer function
SAP HANA Hardware

Certified and Supported SAP HANA Hardware

SAP HANA Hardware Certification Check Tool (HWCCT)
• See SAP Note 1943937

SAP HANA Tailored Data Center Integration FAQ
• http://go.sap.com/documents/2016/05/e8705aae-717c-0010-82c7-eda71af511fa.html

SAP HANA Support for virtualized / partitioned (multi-tenant) environments
• See SAP Note 1788665
SAP BW/4HANA

Further Information
More Information about SAP BW4/HANA

SAP BW/4HANA Landing Page
http://sap.com/bw4hana

SAP BW/4HANA Community / Product Page
http://sap.com/bw4hana10

SAP BW/4HANA Documentation
http://help.sap.com/bw4hana10

SAP BW/4HANA FAQ
http://go.sap.com/documents/2016/08/c4458a08-877c-0010-82c7-eda71af511fa.html

SAP First Guidance – SAP BW/4HANA complete functional scope (CFS)
http://www.sap.com/documents/2016/09/b001a9de-8a7c-0010-82c7-eda71af511fa.html

Why #BW/4HANA?
http://scn.sap.com/community/bw-hana/blog/2016/09/05/why-bw4hana

Replay of the SAP BW/4HANA Launch Event
Training for SAP BW/4HANA

BW462 – SAP BW/4HANA

- Classroom or Virtual Live Classroom
- Material in English; course in local language
- 5 days (available in several countries)
- Prerequisites:
  - Hands-on experience in data modeling with SAP BW 7.x
  - BW310 (SAP BW Enterprise Data Warehousing non-HANA)

For details, go to SAP Training

DBW4H – Data Warehousing with SAP BW/4HANA - Delta from SAP BW powered by SAP HANA to SAP BW/4HANA

- Classroom or Virtual Live Classroom
- Material in English; course in local language
- 2 days (available in several countries)
- Prerequisites:
  - SAP BW 7.4 / 7.5 and SAP HANA 1.0 knowledge is necessary
  - DBW74, BW362, HA100 or HA100e, BW310H

For details, go to SAP Training

SAP BW/4HANA in a Nutshell

- Open Online Course
- English
- 4 Units – 2-3 hours in total
- No prerequisites
- Free participation & certification

For details, go to openSAP
Thank you
SAP BW/4HANA
Near-line Storage
Near-line Storage (NLS) with SAP IQ

Current Status with SAP BW/4HANA 1.0 or Higher

- NLS support for most Advanced DataStore Object types (see later slide)
- Reporting value help (F4) can display posted values from near-line storage for Advanced DataStore Objects
- CompositeProvider can use Advanced DataStore Objects with NLS in specific join scenarios
- BW process type to create database statistics for NLS accesses (via Virtual Tables)
- Partner Interface for Nearline Storage on Advanced DataStore Object
- Mass Maintenance Support including Data Archiving Processes of Advanced DataStore Objects
Near-line Storage (NLS) with Hadoop
Current Status with SAP BW/4HANA 1.0 or Higher

Near-line Storage (NLS) with Hadoop
- Available for all NLS supported BW Objects / Object Types (see next slide)
- Available for BW on HANA (query access via HANA SDA) and BW on RDBMS (no query access)
- BW only solution at this time
- Creation of Nearline Storage Table Definitions via HIVE
- Archiving of Data (file based, default format: ORC) directly to HDFS
- Restoring of Data via ReST API or HANA Smart Data Access (SDA)
- Querying via HANA Smart Data Access only

For more details, see SAP Note 2363218 - Hadoop NLS: Information, Recommendations and Limitations
# Near-line Storage for DataStore Objects (Advanced)

## Availability Overview for Specific Object Properties

<table>
<thead>
<tr>
<th>Activate Data</th>
<th>Setting</th>
<th>SAP BW 7.5 SP1</th>
<th>SAP BW 7.5 SP 4 SAP BW/4HANA SP 1</th>
<th>Future Direction</th>
</tr>
</thead>
<tbody>
<tr>
<td>Yes</td>
<td>Write Change Log</td>
<td>Available</td>
<td>Available</td>
<td>-</td>
</tr>
<tr>
<td>Yes</td>
<td>All Characteristics are Key</td>
<td>Available</td>
<td>Available</td>
<td>-</td>
</tr>
<tr>
<td>Yes</td>
<td>All Characteristics are Key, Planning Mode</td>
<td>In Staging Mode</td>
<td>In Staging Mode</td>
<td>-</td>
</tr>
<tr>
<td>Yes</td>
<td>Keep Inbound Data</td>
<td>N/A</td>
<td>N/A</td>
<td>Not planned</td>
</tr>
<tr>
<td>Yes</td>
<td>Inventory</td>
<td>N/A</td>
<td>N/A</td>
<td>Planned</td>
</tr>
<tr>
<td>No</td>
<td>None</td>
<td>N/A</td>
<td>Available</td>
<td>-</td>
</tr>
<tr>
<td>No</td>
<td>Direct Update</td>
<td>Available</td>
<td>Available</td>
<td>-</td>
</tr>
</tbody>
</table>
Near-line Storage Release Capabilities
Continuous Enhancements of SAP BW, SAP IQ and HANA

NLS Partner Add-on
- Detailed Query Analysis
- Fast Copy/Snapshot option
- Utilities for Planning NLS Projects
- Enhancements for PSA DAP
- Straggler Management

Advance DataStore Object
- Straggler Management

Inventory Cubes
- Smart Data Access

SAP-NLS Reporting Layer (MultiProvider)

SAP-NLS for InfoCubes, DSOs and non Reporting Layer (Corp. Memory)

Nearline Adapter (ABAP and Unicode based)

DBSL for Sybase ASE/IQ Kernel based; Open SQL + Native IQ SQL via ADBC

SAP IQ

SAP HANA

ODBC Driver from IQ
- DB Client

BW Porting

General Porting

Kernel
- 7.45
- from 7.0x onwards

© 2017 SAP SE or an SAP affiliate company. All rights reserved.