SAP BW 7.4 SP8 powered by SAP HANA and Roadmap

Product Management SAP Business Warehouse, SAP SE
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SAP Business Warehouse Today

14,500+ Customers

200 New Installations/Month

4,000+ BW 7.3/7.4 Customers

Vast majority: Central EDW, harmonizing many source systems

Embedded into mission critical business processes

1200+ BW on HANA Customers
Simplification with SAP BW 7.4
What is different with SAP BW powered by SAP HANA?

Data intensive functions are pushed down from SAP BW to SAP HANA
- Performance boost for data load, query and planning processes

Simplified SAP BW
- Flexibly combine EDW with SAP HANA models
- Data persistency layers reduction
- Simplified data modeling and remodeling

SAP HANA as platform
- Offers functionality which can be leveraged in SAP BW
- E.g. predictive libraries integration
VIRTUAL DATA WAREHOUSE

SIMPLIFICATION

PERFORMANCE

BIG DATA

PLANNING

MISCELLANEOUS
The Virtual BW – Open ODS Views
Recap – Open ODS Views with SAP BW 7.4 SP5

Flexible and easy integration of external data models
• Consume external data of DB tables or views
• Agile modeling combining InfoObject and field based modelling
• Easy assignment of semantics (facts, master data)
• Integrated and modern modeling environment between HANA and BW

Enhanced Business Flexibility by supporting “the logical EDW”
• SAP HANA Smart Data Access leveraged by SAP BW
• Supports virtualized query access

Reduced data modeling efforts
New source objects for Open ODS Views
• Advanced DataStore Object (details in next chapter)
• BW Transformations (for type conversions, mappings, etc.)

Automated Data Flow generation to create a persistency in SAP BW
• Built-in support to switch from virtual access to managed persistence by single click for:
  – higher service level, delta enablement, . . .
• Automated creation of an Advanced Data Store Object corresponding to the view definition including data flow
The Virtual BW – CompositeProvider
Recap – CompositeProvider with SAP BW 7.4 SP5

The new CompositeProvider with SAP BW 7.4 SP5 – virtualization and consolidation
• Combine BW InfoProviders and HANA tables/views via UNION or JOIN
• Consolidation of existing InfoProvider types by new CompositeProvider
  – Successor to BW MultiProvider, BW InfoSet, existing CompositeProvider, TransientProvider on HANA Models, VirtualProvider on HANA Models

Faster Implementations of data model

More flexibility – additional business insights

Completely processed on SAP HANA
The Virtual BW – CompositeProvider
New with SAP BW 7.4 SP8

New use cases
- Supports planning functionalities for UNION Cases
- UNION between CompositeProviders

Optimized integration with Open ODS View
- allow JOINs of Open ODS Views
- Support of navigational attributes

Enhanced HANA View integration
- Support of input parameters
VIRTUAL DATA WAREHOUSE
SIMPLIFICATION
PERFORMANCE
BIG DATA
PLANNING
MISCELLANEOUS
Next generation of Data Store Object simplifies data modeling in SAP BW

- Consolidate DataStore Objects and InfoCubes
  - Single type of BW object
  - Settings to manage properties e.g. DSO like, InfoCube like
- Combine InfoObject and field based modelling
- New intuitive & modern modelling UI

Optimized DataStore services

- High frequent data loads - based on optimized request management
- Change of usage scenario without deletion of data
- Up to 120 key fields
- Optional SID entries for query performance optimization
Simplification – Advanced DataStore Object
New with SAP BW 7.4 SP8 – eclipse based modelling experience

Intuitive User Interface
- Aligned with CompositeProvider and Open ODS Views modelling

Benefits
- Supports agile data modelling
- Reduces implementation times massively
Simplification – Advanced DataStore Object
Planned future direction

**Future enhancements**

- Non-cumulative key figures
- Template based modelling
- Nearline Storage (NLS)
- Extended Table property for SAP HANA dynamic tiering
- Support of planning scenarios
- Support for direct update scenarios (write-APIs)
- Conversion tool for classic DataStore Objects and InfoCubes
- Real-Time enablement
- Additional Partitioning options
Simplification – Consolidation of BW Modeling Objects
New with SAP BW 7.4 SP8

SAP BW on RDBMS

CompiexProvider
MultiProvider
InfoSet
VirtualProvider

SAP BW 7.4 on HANA

CompositeProvider
Open ODS View

Virtual Layer

InfoObject
HybridProvider
InfoCube
DataStore Object
PSA

Persistence Layer

SAP BW 7.4 on HANA consolidates existing InfoProviders

• CompositeProvider as new object to define joins between InfoProviders
• Open ODS View for virtual access to external sources
• InfoObject to model semantically rich master data
• Advanced DataStore Object as the new object for persistence management

Traditional InfoProviders still exist but future innovations are focusing on the consolidated objects of SAP BW 7.4 on HANA
Simplification – Automated generation of HANA Models
New with SAP BW 7.4 SP8

Automated HANA model generation for direct SQL consumption of BW Data
• Lifecycle: when the infoprovider changes the HANA model is automatically re-generated

HANA model generation for BW Queries
• Generate a SAP HANA model for a simple BW Query including security
• Supported features: currency/unit conversion, variables, restricted key figures, global restrictions, inventory key figure (closing balance)
• Generated SAP HANA model able to read the data from the Nearline Storage
  − Supports InfoCubes and DSO (with SID generation)
  − SAP HANA Smart Data Access with SAP IQ only
VIRTUAL DATA WAREHOUSE
SIMPLIFICATION
PERFORMANCE
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PLANNING
MISCELLANEOUS
Performance – SAP HANA Optimized Transformations
Overview & Update with SP8

Next level of performance in data staging for BW on HANA
- Standard Transformations are optimized to be processed directly in SAP HANA where possible

New with SAP BW 7.4 SP8
- Additional formulas pushed down to HANA
- ABAP managed database procedure (AMDP) integration for easy editing of HANA procedures
- Additional performance optimizations
Performance – Push-down of OLAP functionality
Overview & Update with SP8

OLAP Features pushed down to HANA since BW 7.4 SP5
• Processing of Unions and Joins in CompositeProvider
• Avoid intermediate result set materialization (e.g. Exception Aggregation)

New push down with SAP BW 7.4 SP8
• Handling of inventory key figures
• Unit conversion with Reference InfoObjects

Details about availability of pushed down OLAP functionality
• SAP Note 2063449 - Push down of BW OLAP functionalities to SAP HANA
Big Data – Multi Temperature Data Management in SAP BW

Overview

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

- **warm**
  - Infrequent access
  - SAP HANA on disk, only loaded to memory when accessed
  - No restrictions, all features available

- **cold**
  - Sporadic access
  - Not stored in HANA; stored in Nearline Storage
  - Restricted to NLS capabilities

Providing lower TCO by optimized SAP HANA RAM management
Big Data – Multi Temperature Data Management in SAP BW

Architectural Heat Map – temperature data distribution

- Hot Areas
  - heavy reporting and/or HANA-native operations (Delta, Transf.,...)

- Warm Areas
  - limited reporting, limited HANA-native functions

- Cold Areas
  - Archive, read-only data, different SLAs
Big Data – SAP HANA dynamic tiering for SAP BW
New with SAP BW 7.4 SP8 and SAP HANA SPS9

Warm store as dynamic extension to hot store and integral part of the HANA platform

- Reduced in-memory footprint
- Highly efficient compression and performance
- Unified Installation & Update Management
- One Backup & Recovery process

Can be set for Write Optimized DSOs and DataSources as extended table property

- Data load processes and queries are processed within the warm store
- Transparent for all operations, no change for BW processes required
- Conversion to move existing data to warm store
## Big Data – Multi Temperature Data Management in SAP BW

SAP HANA dynamic tiering and Nearline Storage for SAP BW

<table>
<thead>
<tr>
<th>SAP HANA dynamic tiering</th>
<th>SAP BW Nearline Storage with SAP IQ</th>
</tr>
</thead>
<tbody>
<tr>
<td>• Optimize RAM utilization within HANA</td>
<td>• Optimize data persistence in system landscape</td>
</tr>
<tr>
<td>• Integral part of the platform</td>
<td>• Independent server</td>
</tr>
<tr>
<td>• Complete data manipulation cap. (Create, Read, Update, Delete)</td>
<td>• Write once, read many</td>
</tr>
<tr>
<td>• Meets mission critical system SLAs</td>
<td>• Usually lower SLAs</td>
</tr>
<tr>
<td>• Complete tables (and partitions)</td>
<td>• Arbitrary (semantic) data slices</td>
</tr>
</tbody>
</table>

**Different types of data with different types of storage**
Big Data – Nearline Storage (NLS) with SAP IQ
New with SAP BW 7.4 SP8

Enhanced NLS operations
• Data Archiving proposals
• Automated data archiving process generation
• NLS integration in DBA cockpit

InfoCubes with non cumulative key figures

Query optimizations for NLS
• Query pruning based on time dimensions and archived time slices
• Push down of OLAP functions (Restricted Key Figures, Hierarchies,…) to HANA

HANA model generation includes NLS data
Planning – Push-down of planning semantics
Overview & Update with SP8

Next level of performance by pushing down further planning capabilities to HANA

New with SAP BW 7.4 SP8
- Planning application kit (PAK) feature completeness with BW-IP
- Enhanced FOX productivity and usability

Details about availability of pushed down Planning functionality see SAP Note 1637199
Planning – BW-IP/PAK Enhancements
New with SAP BW 7.4 SP8

Improved FOX Formula handling
• FOX able to replace custom developed ABAP planning functions
• Internal Table: Define a table via FOX coding, supports all table operations (e.g. read, insert, update . . )
• Access to ‘external’ data: Read data of any aggregation level out of the planning buffer
• New Syntax Highlighting in FOX editor
• FOX debugging via debugging script

Use CompositeProvider for planning scenarios
• Support of planning scenarios based on Unions

Entering comments
• Available for SAP Analysis for Office, SAP Design Studio, BEx Analyzer, BEx Web
Planning - SAP Business Planning and Consolidation 10.1, version for SAP NetWeaver powered by SAP HANA

Enhanced analysis and planning capabilities
- Leverages BW Integrated Planning models and benefits from SAP HANA acceleration
- Adds new capabilities to existing BW-IP features e.g. business process flows, work status...
- Optimized planning functions leveraging SAP HANA for better, more timely decisions

Increased usability
- New HTML5 UI for easier navigation and cross-platform readiness

Selected features available with SAP BW 7.40 SP8
- Master data planning, e.g. entering new values
VIRTUAL DATA WAREHOUSE
SIMPLIFICATION
PERFORMANCE
BIG DATA
PLANNING
MISCELLANEOUS
Overcome the 60 characters limitation for additional flexibility

- Extend length for Characteristics values
  (Attribute length <= 250)
- Extra long texts for Characteristics
  (Long text type ‘Char 1333’)

**New with SAP BW 7.4 SP8: XXL - Attributes**

Possibility to load and store different Files types (MIME Types) as XXL-attribute into BW

- E.g. PDF’s, XML, Office Files, Images, Video-Files, Audio-Files

**Store very long strings as attribute in SAP BW**

- E.g. Twitter information (Tweets), File-paths, URL
Miscellaneous – BW Search, Remodelling Tool Box
Update with SP8

BW Search
• New Eclipse based UI
• Search based on object level
• No replication or copy of data
• Using SAP HANA search capabilities (or rather Attribute Views)

Re-modelling Tool Box
• Supports semantically partitioned objects

Operational Data Provisioning (ODP)
• Supports hierarchy loads
New with SAP BW 7.4 SP8

Easy monitoring – anytime anywhere
- Detect errors
- Analyze process and job logs
- Repair failed steps

Attractive, intuitive design based on SAP UI5 technology optimized for device screen size

Simple configuration
- Reuses settings of backend Process Chain Monitor
- Works directly on Process Chain logs – no data replication
SAP BW powered by SAP HANA
Product Roadmap Overview – Key Themes and Capabilities

SAP BW 7.4 SP8 on SAP HANA

Push down of data intensive functions to HANA
• Analytic Manager, Warehouse management processes and Planning Semantics

Simplified data modeling
• Open ODS View flexible integrating external data
• CompositeProvider consolidating existing InfoProviders
• Common Eclipse based modeling tools
• Advanced DSO to consolidate DSOs and InfoCube

BIG Data scenarios
• HANA dynamic tiering for Petabyte-scale storage
• NLS Storage enhancements

SAP HANA Enterprise Cloud
• Best practice for large scale BW migrations into the cloud

Exposing BW data models for SQL consumption
• Generation of HANA models from BW InfoProviders and simple BEx queries

“BPC Embedded Model”
• Integrating capabilities of BW IP, BPC and HANA

Mobile devices
• Easy mobile consumption using ODATA standard
• SAPUI5 based Process Chain Monitor

Today
(Release SAP BW 7.4 SP8)

Upcoming planned release

Push down of data intensive functions to HANA
• Hierarchy processing pushed down leveraging HANA technology

Simplified data modeling
• Additional CompositeProvider capabilities
• Eclipse based query designer
• Advanced DSO e.g. inventory key figures

BIG Data scenarios
• HANA dynamic tiering for Advanced DSO.
• NLS: Exceptional inserts, updates and deletes

SAP HANA Enterprise Cloud
• Enable fast and easy cloud deployment

Exposing BW data models for SQL consumption
• Support additional BEx query features for generation of HANA models

“BPC Embedded Model”
• Combining flexible planning functionality for Line of Business with governance of central IT

Planned Innovations
(Release SAP BW 7.4 SP9/SP10)

Future innovations

Integration with the HANA Platform
• Leverage HANA Information Management capabilities for BW
• Further pushdown of data intensive functions to HANA

Simplified and Streamlined User Experience
• Eclipse based Modeling for Data Flows
• SAPUI5 based Monitoring and Administration Tools

BIG Data scenarios
• Further evolve data lifecycle management with SAP IQ
• HANA dynamic tiering enhancements
• Further HADOOP/BIG Data integration

SAP HANA Data Warehousing Services
• Data distribution optimizer
• Data lifecycle management

SAP HANA Enterprise Cloud
• NLS as a Service in the HEC

BPC Embedded Model
• Local planning scenarios with BW Workspaces and BPC Embedded Model

Future Direction
SAP will continue to support RDBMS platforms

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Summary

• SAP BW 7.4 is THE go-to-release for running BW on HANA

• The SAP EDW platform evolves from SAP BW on HANA - the natural entry point to SAP’S EDW strategy

• Every new BW release will incorporate newest HANA features
THANK YOU

Questions?
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