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Agenda

Introduction
EDW with BW on HANA
BW Integrated Planning
Enhanced Mobile Enablement
BW Content optimized for HANA
Outlook
Agenda

Introduction
EDW with BW on HANA
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Outlook
SAP BW Today (September 2013)

**14500+ Customers**

Vast majority: Central EDW, harmonizing many source systems

**200 New Installations/Month**

Embedded into mission critical business processes

**3500+ BW 7.3 Customers**

**500+ BW on HANA Customers**
SAP BW on HANA – Smarter, simpler, more efficient
How Does BW running on RDBMS differ from BW running on HANA?

Customer value of SAP BW powered by SAP HANA
- Excellent query performance for improved decision making
- Performance boost for Data Load processes for decreased data latency
- Accelerated In-Memory planning capabilities for faster planning scenarios
- Flexible combine EDW with HANA-native data for real-time insights and decision making
- Data persistency layers are cut off and reduced administration efforts
- Simplified data modeling and remodeling

Data intensive functions are pushed down from BW to HANA

HANA as the Primary Database for BW and Foundation for new Applications
SAP’s strategic EDW solution
SAP BW 7.4 on HANA

Only the combination of BW and HANA enables us to

... simplify the data modeling processes

... increase the agility of the Enterprise Data Warehouse

... reduce the complexity of the EDW landscape

... combine the strengths of an SQL oriented approach with an Integrated EDW application

One common modeling environment
Seamless consumption of data
Process large amounts of data faster
Reuse BW services to manage and analyze the data
SAP BW 7.4, SP5 – Overview
Planned with SAP BW 7.4, SP5 on HANA

Enhanced Data Modeling
- Common Eclipse based Modeling Tools
- BW/HANA Smart Data Access providing the logical EDW
- Easy integration of external data models with Open ODS Layer
- Further reduce data layers in BW via Operational Data Provisioning

Push down further processing logic to HANA
- BW Analytic Manager
- HANA Analysis Processes
- BW Transformations
- PAK – Pushing down more planning semantics

Enhanced mobile enablement

Converged planning solutions

BW Content optimized for HANA
Agenda

Introduction – evolving BW on HANA to HANABW

EDW with BW on HANA

BW Integrated Planning
Enhanced Mobile Enablement

BW Content optimized for HANA

Outlook
Eclipse based Modeling Tools
Common modeling tools
Planned with SAP BW 7.4, SP5 on HANA

Common user experience via a central, unified modeling environment

- Attractive, flexible and simplified BW modeling tools
- Harmonization BW and HANA modeling environments
- Integration of BW and HANA models in one modeling approach
- Integrated development & modeling environment across
  - SAP HANA Modeler,
  - BW Modeling
    - New developed native Eclipse based modeling tools for Open ODS View and New CompositeProvider
  - ABAP Development Tools
  - …
Modeling Tools – Maintenance CompositeProvider
Planned with SAP BW 7.4, SP5 and on HANA

Common user experience via a central, unified modeling environment

- New metadata object CompositeProvider as abstraction object of the query to the underlying technical persistence objects
- Left:
  - Scenario definition (Join, Union)
- Right:
  - Join condition
  - Mapping of Source Objects to Target Output structure
Modeling Tools – Open ODS View
Planned with SAP BW 7.4, SP5 and on HANA

Common user experience via a central, unified modeling environment

New metadata object
- OpenODSView to integrate external data models into BW

Left
- technical Information about Source Fields

Right
- General information
- Associations to OpenODSViews or InfoObjects
- Characteristic-specific Properties such as Authorization relevance and Referential Integrity
- Reporting Properties such as Display and Query Filter behavior
HANA Smart Data Access for SAP BW
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Smart Data Access
Planned with SAP BW 7.4, SP5 on HANA

Enhanced Business Flexibility by providing “the logical EDW”

Data Federation in diverse EDW landscapes
- Smart data access – read access to relational and non-relational sources via ODBC
- Enables access to remote data access just like “local” table
- Supports data location agnostic development
- No special syntax to access heterogeneous data sources
- BW based Analytic Services on external data

Scenario
- Make other DWHs transparent to HANA
- Non-disruptive evolution from virtual table to persistent structure by establishing ETL without major effort
- Consolidating / rationalizing the DWH landscape
- Consumption of HANA datamart scenarios from second HANA database
Field based modeling
Flexible consumption of external data models
Planned with SAP BW 7.4, SP5 on HANA

Flexible and easy consumption of external data models building a BW Open ODS Layer using field-based modeling

Consume & combine external data models for
- Direct query access (w/o replication)
- Staging scenarios
- Switch between both options

Agile modeling
- Field based modeling via Open ODS View and DSO (with fields *)
- Complementing InfoObject modeling
- Integrate with existing BW models
- Gradually build up models and architectures based on relational schemas
- Possibility to start modeling from facts developing towards the dimensions
- Enables rapid prototyping – quick ROI

Direct query access
- Integrated with BW authorization concept
- Combine with existing InfoObjects / DSOs

* Pilot only (Note 1922533)
Field based modeling in BW on virtual HANA Tables
Planned with SAP BW 7.4, SP5 on HANA

Open ODS View offers
- Metadata object as an abstraction layer for underlying source object
- HANA virtual tables as supported source objects via SDA
- Querying on field level
- Supported for Teradata, Sybase ASE/IQ, Hadoop
- Optimized Query execution by pushing down to HANA
- Supported scenarios:
  - Virtual Access
  - Persistent Access *
    - Switch from Virtual to Persistent *
    - Based on Field based DSO including DTP and Transformation
    - Direct staging into DSO bypassing PSA
    - No need to adjust existing queries

Easy assignment of semantics
- Underlying object (Table, DB View, DataSource) can be tagged as Text, Master data or Facts
- Single fields of the object can be linked to already existing Open ODS Views or InfoObjects

* Pilot only (Note 1922533)
Modeling Tools – Open ODS View
Planned with SAP BW 7.4, SP5 and on HANA

Common user experience via a central, unified modeling environment

New metadata object
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CompositeProvider
**CompositeProvider**
Planned with SAP BW 7.4, SP5 on HANA

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**Easier data modeling and reduction of InfoProvider types by enhancing the CompositeProvider**

**Supports**
- Consolidation of existing CompositeProvider, MultiProvider, TransientProvider on HANA Models, VirtualProvider on HANA Models* and InfoSet* into CompositeProvider
- Use CompositeProvider as single BW metadata object to combine data from other HANA based applications on the same instance of HANA (consumption of native HANA models or tables) with data in BW
  - Faster Implementations
  - More flexibility – Unions and Joins
  - Easier consumption of data
  - HANA optimized query runtimes
- Modern Eclipse based UI
- Option to include Inventory key figures
- Possibility to include in planning scenarios

* Planned for SP6
CompositeProvider
Planned with SAP BW 7.4, SP5 on HANA
HANA model generation
Automatic generation of HANA models
Planned with SAP BW 7.4, SP5 on HANA

Enhanced Metadata interoperability between BW and HANA

HANA Model generation
- Triggered from BW InfoProvider – push
  - Complements BW model import from HANA Modeler
  - Analysis Authorization: Automatic sync between HANA and BW
  - Object changes include HANA model impact analysis
- Direct consumption of BW data via generated HANA views
  - SAP Lumira, BO Explorer, SQL

Scenario
- Major footprint of scenario in BW
- Usage of generated view in HANA Studio to build own data models using BW data and HANA native algorithms
InfoObject Modeling
Characteristic Values > 60 Characters and Extra Long Texts
Planned with SAP BW 7.4, SP5 on HANA

Overcome the 60 characters limitation for additional flexibility

Extend length for Characteristics values
- The maximum output length and attribute length can be <= 250
- 250 characters applies for the total (compound) length of the key

Extra long texts for Characteristics
- Long text can be stored as CHAR 60 (standard) or CHAR 1333 (option ‘Long text is XL’ set).
- No changes on frontends required
- Simple switch for existing Characteristics possible

Remark: Please check the impact on customer code (syntax-error, runtime-error) as the central data element RSCHAVL had to be changed from type CHAR60 to STRING 1333. See notes 1879618 and 1823174 for details.
Data Provisioning
Operational Data Provisioning (ODP) Technology
Planned with SAP BW 7.4, SP5 on HANA

Provider
- SLT
- SAP ERP Extractors
- HANA Views
- Source BW

Subscriber / Consumer
- SAP DataServices
- Target BW
- Embedded Analytics

Unified technology for data provisioning and consumption
- Enables extract once deploy many architectures for sources
- Unified configuration and monitoring for all provider and subscriber types
- Time stamp based recovery mechanism for all provider types with configurable data retention periods
- Highly efficient compression enables data compression rates up to 90% in Operational Delta Queue (ODQ)
- Quality of service: „Exactly Once in Order“ for all providers
- Intelligent parallelization options for subscribers in high volume scenarios

*) New with SAP BW 7.4
Simplified trigger based table replication to BW with SLT
Planned with SAP BW 7.4, SP5 on HANA

New source system type ODP-SLT
- SLT Real-Time push in Operational Delta Queue (ODQ)
- Direct Update to BW InfoProviders
  - Scheduled or real – time daemon
  - Automatic change notification for daemon
- Set up of SLT replication from SAP BW

Benefits
- Simplified data flow
- PSA no longer required
- Flexible recovery options
- Consumption of ODQ by multiple subscribers
- Reduced data latency

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Simplified data provisioning from SAP ERP and SAP BW
Planned with SAP BW 7.4, SP5 on HANA

Provider ERP Extractors
- Direct Update to BW InfoProviders – PSA not required
  - Scheduled or real – time daemon
  - Automatic change notification for daemon
- Consumption by multiple subscribers

Provider BW
- Enables direct staging between InfoProviders of source and target BW systems
- PSA not required
- Consumption of ODQ by multiple BW subscribers and SAP Data Services

Benefits
- Simplified data flow
- PSA no longer required
- Flexible recovery options
- Stream lined system communication
  - Synchronous RFC replaces ALE/IDoc
Analytic Manager
‘New’ functions in Analytic Manager
Planned with SAP BW 7.4, SP5 on HANA

Providing additional business insights

- Multidimensional exception aggregation
  - Simplified modeling
  - Enhanced performance
  - New insights e.g. average value for characteristic combinations

- New “CURRENT MEMBER” variable
  - Rolling window (e.g. average of last 3 months)
  - Comparison between month and previous month
  - Simplified modeling e.g.: Year To Date calculations

- FIX Operator
  - Supports scenarios with constant selection and exception aggregation in one query
    - Fix operator avoids constant selection gets overridden by exception aggregation
Push Down List
Planned with SAP BW 7.4, SP5 and future SPs on HANA

OLAP Features pushed down to HANA in BW 7.3x
- Hierarchy Handling Part I
- Restricted key figures
- Exception Aggregation CNT for quantity key figures without unit conversion
- Exception Aggregation of currency key figures with optional currency conversion

OLAP Features pushed down to HANA in BW 7.4 SP5
- Processing of further query scenarios in HANA (Joins, Union, etc.)
- Avoid intermediate result set materialization (e.g. Exception Aggregation)

OLAP Features pushed down to HANA in BW 7.4 SP6 and beyond
- Handling of inventory keyfigures
- Stock coverage keyfigure
- Hierarchy Handling Part II
- Formula exception aggregation

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HANA Analysis Processes
HANA Analysis Process
Planned with SAP BW 7.4, SP5 on HANA

Enhanced analysis capabilities

- Execute HANA-native functions directly on BW InfoProvider data e.g.:  
  - Clustering, association algorithms, regression analysis, anomaly detection, weighted score, exponential smoothing, etc.

- Execute complex and data intensive processes on HANA without losing the integrity and integration with the BW environment

- Materialize the result of a HANA Analysis Process in HANA for further processing – automated

- Supporting also a scheduled batch processing use case

**Source**  
BW InfoProvider

**Function**  
AFL(PAL, …), Procedure, L-Script, R-Script

**Target**  
BW InfoProvider

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HAPs in details
Planned with SAP BW 7.4, SP5 on HANA

Sources
- Most BW InfoProvider
- Database tables

Supported procedures/algorithms
- AFL-functions (PAL, …)
- L-script, R-script, SQL-script procedure.

Supported output
- Analytic Index (modeled/generated/virtual),
- DSO, database table
- HAP Input (“stacked HAPs”)

Staging integration
- stand-alone,
- triggered via APIs from applications,
- process chain variant,
- source of a DTP
Transformations
SAP HANA optimized Transformations
Planned with SAP BW 7.4, SP5 on HANA

Next level of performance in data staging for BW on HANA

- Standard Transformations are gradually optimized to be processed directly in SAP HANA by generating according DB procedure
- First set of Transformations optimized i.e.:
  - Mappings
  - Conversions (time, currency, units)
  - Formulas
  - Read Master Data, Read from DSO
  - Expert routine for HANA SQL script...

- Sources:
  - PSA, DSOs, InfoCubes, SPOs, CompositeProvider, MultiProvider

- Targets: DSO
Agenda

Introduction – evolving BW on HANA to HANA BW
EDW with BW on HANA
**BW Integrated Planning**
Enhanced Mobile Enablement
BW Content optimized for HANA
Outlook
Push down of planning semantics
Planned with BW 7.4, SP5 on HANA

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

- Possibility to implement HANA SQL Script based user exits to be able to push down ABAP based user exits down to HANA
- Distribution of new planning records by key pushed down to HANA
- Additional planning functions
  - Physical delete of planning data records in DSOs rather than just zeroing-out facts
- Details about availability of already pushed down elements see SAP note 1637199
Planning
LOB enablement

Combine the best of three worlds to a unique planning solution (HANA, BPC, BW-IP)

Combines the
- …successful EPM Excel add-in
- …flexible BPC admin-UI
- …powerful BW-IP / PAK planning manager
- …super-fast HANA planning engine

Selected features
- Full PAK-model compatibility
- Business process flows (BPF)
- Work-status
- Data auditing
- Easy upload scenario
- LOB authorizations

Planning
LOB enablement

BPC NW
- user experience
- collaboration
- data flexibility

BPC NW ‘unified’ (10.1)

BW-IP
- EDW-integration
- Built-in functions

HANA
- Unprecedented speed
Agenda

Introduction – evolving BW on HANA to HANA BW
EDW with BW on HANA
BW Integrated Planning
**Enhanced Mobile Enablement**
BW Content optimized for HANA
Outlook
Enable home-grown, straight forward planning applications and embedded planning, e.g. on mobile devices

Easy to use

- Queries flagged as ‘OData’ in the BEXQuery Designer offer an external planning and reporting Service interface

Standard compliant

- Fully integrated into the ODATA specification

Robust and flexible

- Stateless cell-wise data input-protocol
Agenda

Introduction – evolving BW on HANA to HANA BW
EDW with BW on HANA
BW Integrated Planning
Enhanced Mobile Enablement
**BW Content optimized for HANA**
Outlook
New Business Content optimized for BW on HANA

- New analytics combining capabilities of SAP HANA and SAP NetWeaver BW
- Provides additional analytic solutions for existing BW on HANA customers
- Follows the LSA++ architecture
- Provides higher level of details (line items, …)
- Implements mixed scenarios HANA Content + BW Content
- Provides optimized transformation for HANA
- Offers more flexibility in data acquisition and reporting
- Makes use of the consolidated InfoObjects
- Find further information in the SAP Help – BI Content documentation and see the extended presentations on the HANA optimized Business Content in SCN
Agenda

- Introduction – evolving BW on HANA to HANA BW
- EDW with BW on HANA
- BW Integrated Planning
- Enhanced Mobile Enablement
- BW Content optimized for HANA

Outlook
SAP NetWeaver BW
Product Roadmap Overview – Key Themes and Capabilities

SAP NW BW 7.3 on SAP HANA

SAP HANA specific features
• Performance boost for data loading, query response time and In-memory planning
• SAP HANA-optimized InfoCubes and Data Store Objects
• Simplified and faster data modeling/remodeling
• “Not active” data concept
• SAP NetWeaver BW and SAP HANA Mixed Scenarios (BO Explorer, BW Virtual Master Data, etc.)
• Support of Semantic Partitioned Objects and enhanced partitioning for write optimized DSOs
• Simplified system landscape

Platform independent highlights*
• Graphical data flow modeling and enhanced support of 3.x-> 7.x data flow migration
• Semantic Partitioned Objects (SPO)
• Rapid prototyping of Ad Hoc scenarios via BW Workspaces
• NLS based on Sybase IQ
• DSO planning
• Tighter integration with SAP Data Services

(Release SAP NW BW 7.3 SP9; SAP NW BW 7.31 SP7)

Upcoming planned release

Enhanced Data Modeling
• BW/HANA Smart Data Access providing the logical EDW
• Easy integration of external data models with Open ODS Layer
• Composite Provider for enhanced support of “Mixed Scenarios”
• Common Eclipse based Modeling tools

Push down further processing logic to HANA
• BW Analytic Manager
• HANA Analysis Processes
• BW Transformations
• BW Planning Semantics

Data Provisioning
• Operational Data Provider

Simplified High Performance Planning
• “BPC Unified”
• Capabilities of BW IP, BPC, and HANA

Mobile enablement
• Easy Mobile consumption using ODATA standard

Planned Innovations
(Release SAP NW BW 7.4 SP5)

Future innovations

Extend and Simplify Data Modeling
• Next Generation DSO Concept
• Evolution of CompositeProvider for simplified architecture and reduced TCO
• Add common data sources to HANA Smart Data Access
• Continuous unification of BPC, PAK, BW-IP to BPC unified

Enable Additional Big Data Scenarios
• OLAP and Planning features pushed down to HANA
• Further evolve data lifecycle management with Sybase IQ
• Enhanced HADOOP/Big Data integration

Extended Mobile enablement
• Planning function enablement

Optimized Cloud enablement
• Enable fast and easy cloud deployment

Future Direction

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* SAP will continue to support RDBMS platforms
Summary
Enterprise Data Warehousing with SAP BW 7.4 on HANA

Tight integration between SAP BW 7.40 SP 5 and HANA supports

… simplified and unified modeling

… reduced complexity of your EDW landscape

… pushing down additional processing logic to HANA

SAP BW on HANA is and will continue to be the cornerstone of SAP’s EDW strategy
SAP NetWeaver BW on SAP HANA
Get your own system today

Get your very own SAP NetWeaver BW on SAP HANA with SAP BI 4.x system today!

- Follow this link to go to SAP HANA Marketplace
  http://www.saphana.com/docs/DOC-3954

- SAP NetWeaver BW on SAP HANA Trial - First Steps Overview
- SAP NetWeaver BW on SAP HANA – Tutorials
- SAP Cloud Appliance Library

You will receive a SAP NetWeaver BW 7.3 on SAP HANA SP06 and SAP BusinessObjects BI 4.0 SP07 system as 30 day trial.
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