SAP BW/4HANA 2.0 – Overview & Roadmap
Lothar Henkes, VP Product Management EDW, SAP SE
Session ID #82491

May 7 – 9, 2019

Disclaimer

The information in this presentation is confidential and proprietary to SAP and may not be disclosed without the permission of SAP.
Except for your obligation to protect confidential information, this presentation is not subject to your license agreement or any other service
or subscription agreement with SAP. SAP has no obligation to pursue any course of business outlined in this presentation or any related document, or to
develop or release any functionality mentioned therein.

This presentation, or any related document and SAP's strategy and possible future developments, products and or platforms directions and
functionality are all subject to change and may be changed by SAP at any time for any reason without notice. The information in this presentation is not
a commitment, promise or legal obligation to deliver any material, code or functionality. This presentation 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.
This presentation is for informational purposes and may not be incorporated into a contract. SAP assumes no responsibility for errors or omissions in
this presentation, except if such damages were caused by SAP's intentional or gross negligence.

All forward-looking statements are subject to various risks and uncertainties that could cause actual results to differ materially from expectations.
Readers are cautioned not to place undue reliance on these forward-looking statements, which speak only as of their dates,
and they should not be relied upon in making purchasing decisions.

ASUG

Key Outcomes/Objectives

1. The difference between BW/4HANA 1.0 and BW/4HANA 2.0

2. Supported conversion options

3. The further Roadmap

aSUG

Agenda

Introduction and the evolution of SAP BW

SAP BW/4HANA 2.0 Web Administration Cockpit

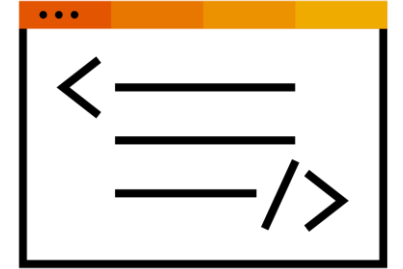BW Modeling Tools in Eclipse with SAP BW/4HANA 2.0

Data Integration with SAP BW/4HANA 2.0

Analytic Engine in SAP BW/4HANA 2.0 and SAP Analytics Cloud Integration
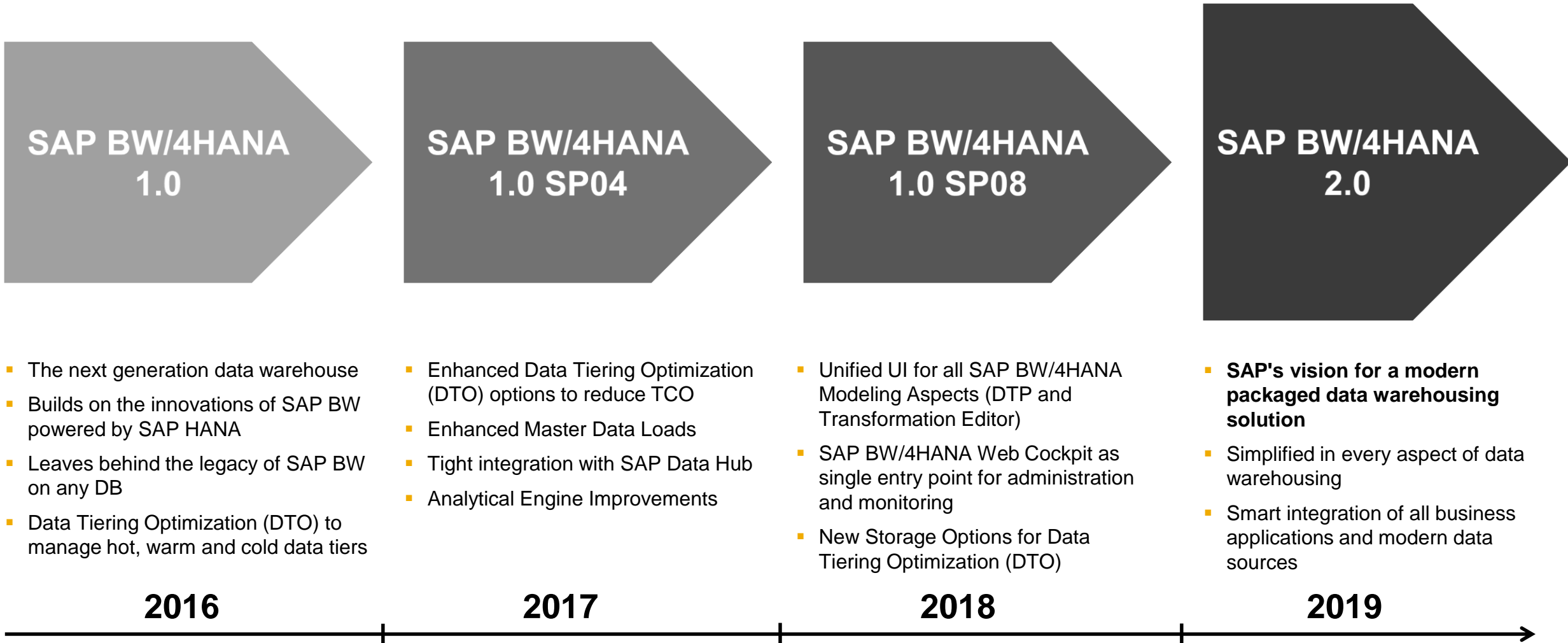
Data Protection Management in SAP BW/4HANA 2.0

Conversion

SAP BW/4HANA Roadmap

Introduction and the evolution of SAP BW

# SAP BW/4HANA – The Evolution From SAP BW/4HANA 1.0 to 2.0

SAP BW/4HANA 1.0

- The next generation data warehouse
- Builds on the innovations of SAP BW powered by SAP HANA
- Leaves behind the legacy of SAP BW on any DB
- Data Tiering Optimization (DTO) to manage hot, warm and cold data tiers

2016

SAP BW/4HANA 1.0 SP04

- Enhanced Data Tiering Optimization (DTO) options to reduce TCO
- Enhanced Master Data Loads
- Tight integration with SAP Data Hub
- Analytical Engine Improvements

2017

SAP BW/4HANA 1.0 SP08

- Unified UI for all SAP BW/4HANA Modeling Aspects (DTP and Transformation Editor)
- SAP BW/4HANA Web Cockpit as single entry point for administration and monitoring
- New Storage Options for Data Tiering Optimization (DTO)

2018

SAP BW/4HANA 2.0

- **SAP's vision for a modern packaged data warehousing solution**
- Simplified in every aspect of data warehousing
- Smart integration of all business applications and modern data sources

2019

SAP BW/4HANA 2.0 – Mission Statement

SAP BW/4HANA 2.0 is…

- SAP's vision for a modern packaged data warehousing solution

- highly optimized for SAP HANA

- simplifying every aspect of data warehousing

- capitalizing on all business applications and modern data sources via smart integration

- driving innovation with a unified data platform

modern data warehousing
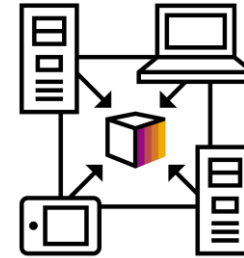
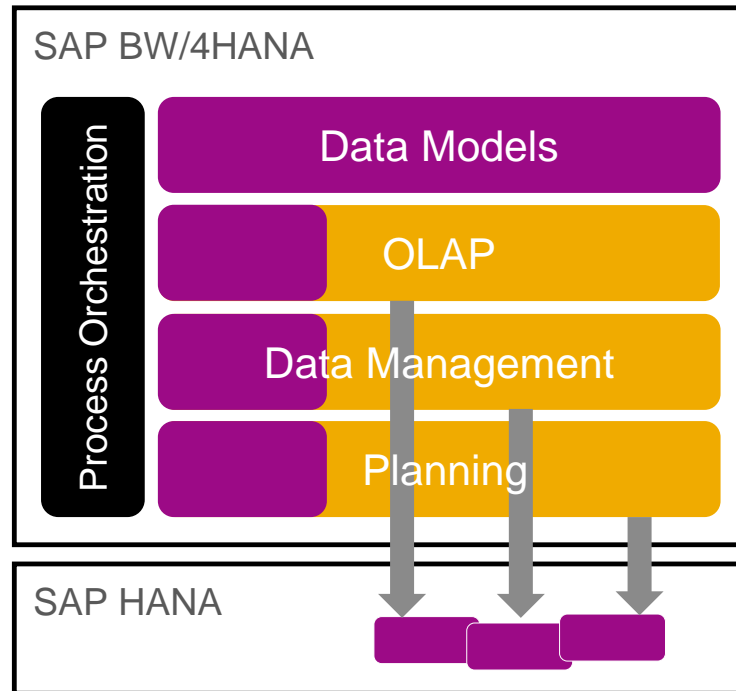**SAP BW/4HANA 2.0
Key Values**
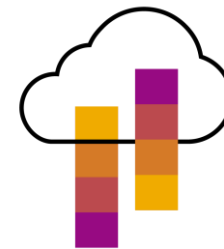
cloud ready

business agility

SAP BW/4HANA 2.0 – Simplify the provisioning of timely business insights

Web Cockpit

Data Flows

Data Tiering

Data Models

SAP BW/4HANA

Process Orchestration

Data Models

OLAP

Data Management

Planning

SAP HANA

SAP HANA Enterprise Cloud

Amazon Web Services

Google Cloud Platform
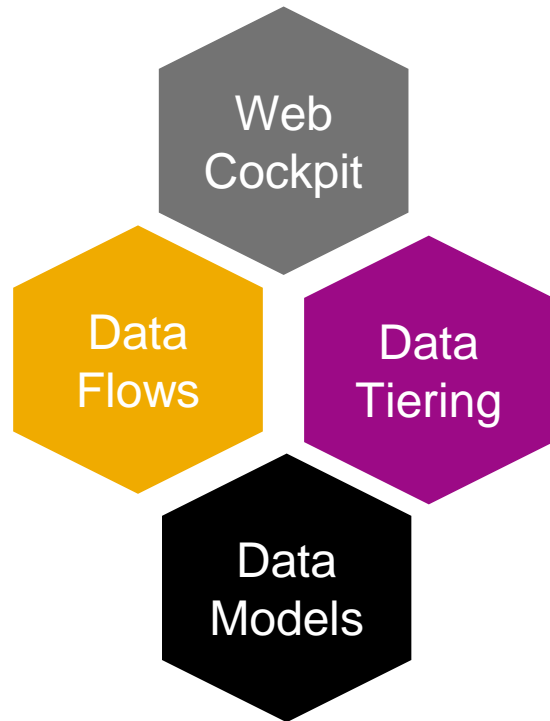
Microsoft Azure

Transform data practices to gain efficiency and agility

Deploy live immediate insights at scale

Get up and running quickly and easily in the cloud

SAP BW/4HANA 2.0
Web Cockpit

Modern UI: SAP BW/4HANA Web Cockpit

Overview

- Following SAP Fiori design patterns
- Single point of entry for administration tasks in SAP BW/4HANA
- Unified user experience
- Extensible for own applications and groups
- Modifiable for user context and authorizations

SAP BW/4HANA Web Cockpit

Modern UI: SAP BW/4HANA Web Cockpit

New Features Overview

- Simplified Search
- Personalization, Subscription & Notifications
- Enhanced Master Data Maintenance
- Data Volume & Data Selection Statistics
- Execute and Schedule Remodeling Requests
- Data Tiering Summary & Maintenance (partition management)
- Data Protection Management (Worklist & Notifications)
- Analysis Authorization Editor
- External SAP Hana View Management
- Enhanced Process Chain Maintenance (InfoArea)
- Direct File Upload to Data Store Objects

SAP BW/4HANA Web Cockpit

# Modern UI: ABAP CDS Views for SAP BW/4HANA Statistics

Feature Description

- SAP BW/4HANA application statistics available as ABAP CDS Views
- New Content to replace former Technical Content for:
  - Current query performance
  - Process Chain and Data Transfer Process
  - Data Volume Statistics & Data Store Object Request
- Delivered with SAP BW/4HANA 2.0:
  - Data Volume History statistics
  - Data Selection statistics
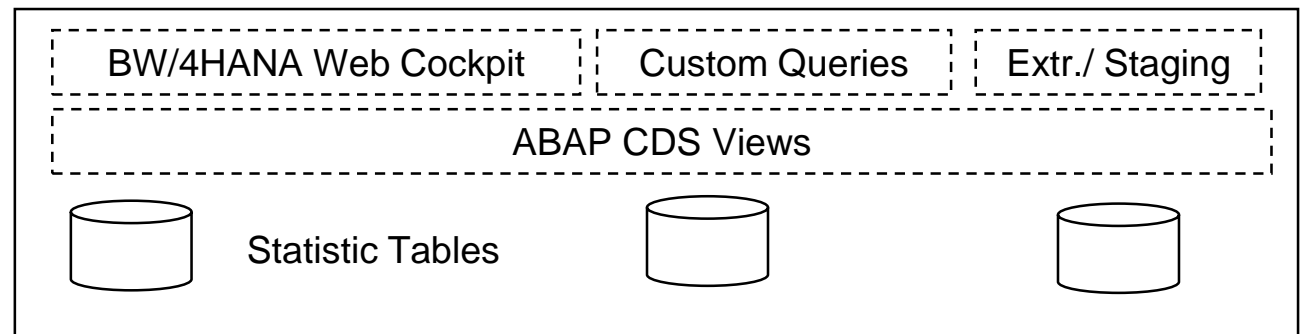 - Extraction/Staging support for statistics data

Benefits

- Out of the box access to SAP BW/4HANA application statistics
- Web UI accessible from multiple devices
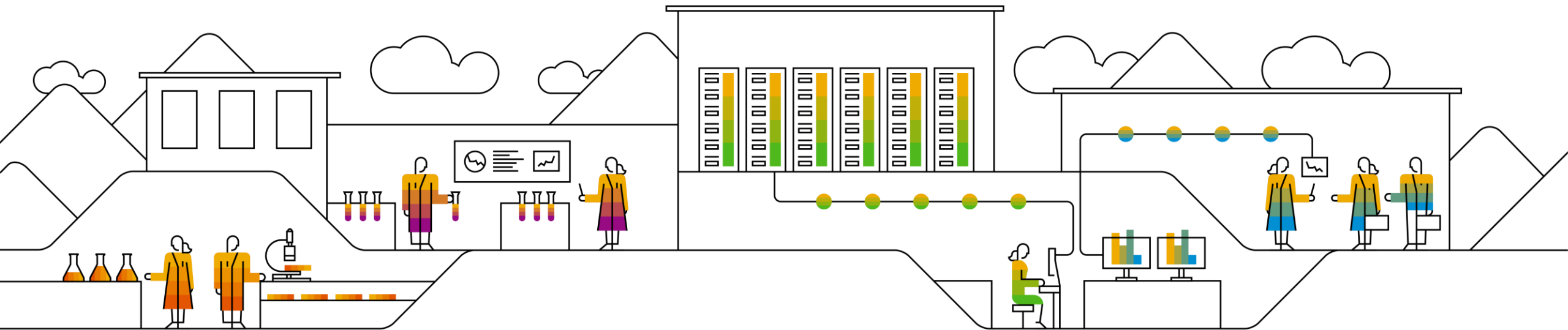- Configurable to build custom monitoring

Statistics
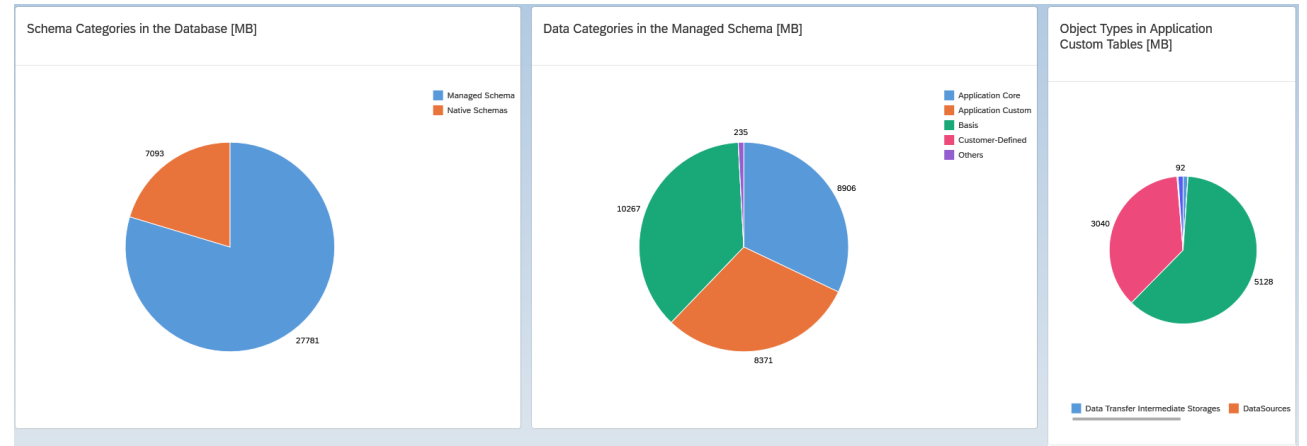
Data Volume Statistics Dashboard in the SAP BW/4HANA Web Cockpit

BW Modeling Tools in Eclipse with
SAP BW/4HANA 2.0

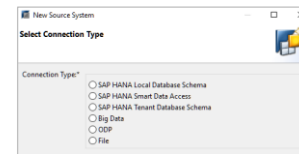# Modern UI: BW/4HANA Modeling Tools in Eclipse

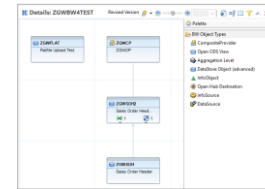Delivered Eclipse Editors in SAP BW/4HANA

Overview

- Unified UI for all BW/4HANA Modeling
- Single point of entry for modeling tasks in SAP BW/4HANA
- SAP GUI no longer required for modeling tools
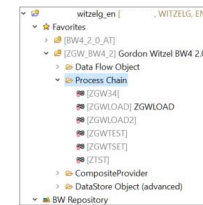
Benefits

- Reduced efforts and easy to use
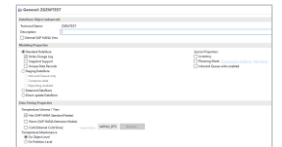- Faster time to value

Source System

Data Flow Object

Transformation

Data Transfer Process (DTP)
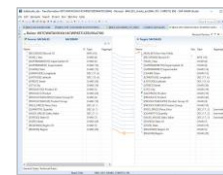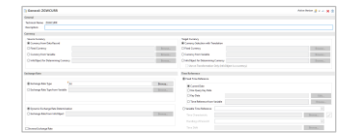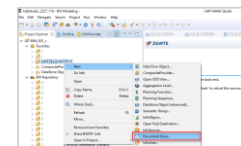
Document Store

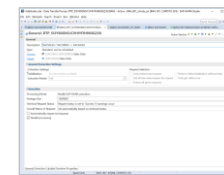**Application Component**

SAP BW/4HANA 1.0

Process Chain Integration

DataStore Object (optimized editor)

Currency Translation Type
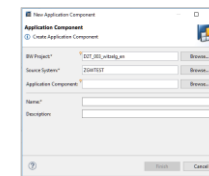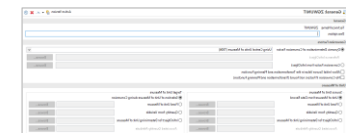
Unit Conversion Type
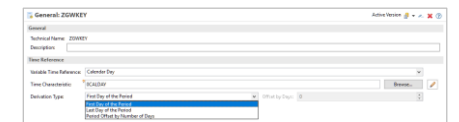
Key Date Derivation Type

SAP BW/4HANA 2.0

Modern UI: BW Modeling Tools in Eclipse

New Features Overview

- Enhanced Data Flow Copy (more than one copy, definition on object level)
- DataFlow: Display of HANA View(s) in CompositeProvider
- Optimized Data Store Object Editor
- Data Store Object remodeling in Eclipse and execution in SAP BW/4HANA Web Cockpit
- Data Tiering Optimization – cold store connection configurable on object level
- Simplified Search
- New Editors: Currency Translation Type, Unit Conversion Type and Key Date Derivation
- HDI consumption
- Asynchronous object activation – editor is not blocked during activation
- Process Chain Integration

SAP BW/4HANA Modeling Tools

Modern UI: New DataStore Object Remodeling Capabilities

Feature Description

- New option in DSO editor -> Remodeling

- Enables new modeling approaches (start agile and move to more guided data models EDW vs. DataMart)

- Available on Field or InfoObject selection in the Fields Tree

- Remodeling options:
  - Replace by InfoObject
  - Replace by Field
  - Fill with Value of InfoObject (must exist in current ADSO)
  - Fill with Value of Field (must exist in current ADSO)
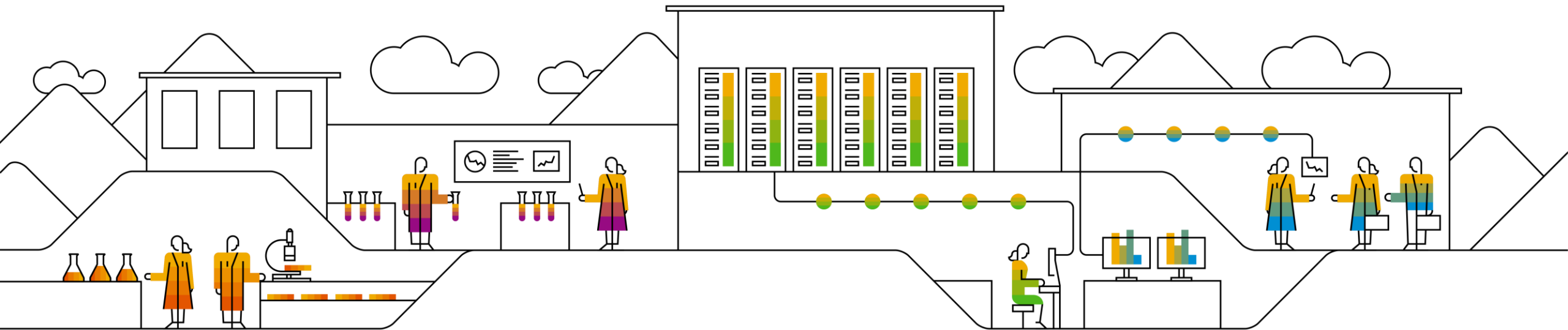 - Filled by Constant Value

Benefits

- Flexibility to enhance/change data models without reloading
- Low remodeling effort and easy to use
- Higher Productivity

DataStore Object Remodeling

Data Integration with SAP BW/4HANA 2.0

Openness: Data Integration SAP BW/4HANA 2.0

Feature Description

- New DataStore Object setting "Write Interface Enabled" to write directly into Inbound Queue

- Support for Standard- and Staging DataStore Objects

- Integration for:
  - SAP Data Services
  - SAP Cloud Platform Integration (CPI)
  - SAP NetWeaver PI (planned for Q2/2019)
  - SAP Data Hub Integration (planned for H2/2019)

- Successor for SAP Web Service and SAP Data Services Source System (manual conversion)

- No open support for ETL partners

Benefits

- Cost savings
- Simplification

Data Integration Scenarios

SAP BW/4HANA

Write Interface for DataStore Objects

Data Transfer Process

SAP HANA Source System

HANA Smart Data Access (SDA)

HANA Smart Data Integration (SDI)

Available in Q1 2019
SAP DS 4.2 SP11 Patch 4 (on premise)

SAP Data Services

SAP Data Hub
Plan: H2 2019

Plan: Q3 2019
CPI-DS*

Available in Q1 2019

SAP Cloud Platform Integration (CPI)

SAP NetWeaver Process Integration (PI)

SAP API Business Hub

Plan: Q2 2019
SAP NetWeaver PI 7.50 SP15

Clouds Applications

Databases

Sources

Other Sources

*SAP Cloud Platform Integration for Data Services

Openness: Data Integration SAP BW/4HANA 2.0 and SAP Data Hub

Feature Description

- Process Orchestration
  - **Execute new SAP Data Hub 2.x Pipelines and Workflows from SAP BW/4HANA***
  - Execute SAP BW (>= 7.4) and SAP BW/4HANA Process Chains from SAP Data Hub Workflows

- Data Management
  - **Direct write to Data Store Objects from SAP Data Hub pipelines***
  - Direct read from InfoProviders & Queries into SAP Data Hub Pipelines
  - BW Data Transfer Operator in SAP Data Hub
  - Big Data Source System in SAP BW/4HANA (SAP Vora and Spark)
  - Open Hub in SAP BW 7.50 and SAP BW/4HANA to Hadoop File System (HDFS)

- Meta Data Governance
  - Connect SAP BW and SAP BW/4HANA to the SAP Data Hub Meta Data Explorer

SAP Data Hub Integration
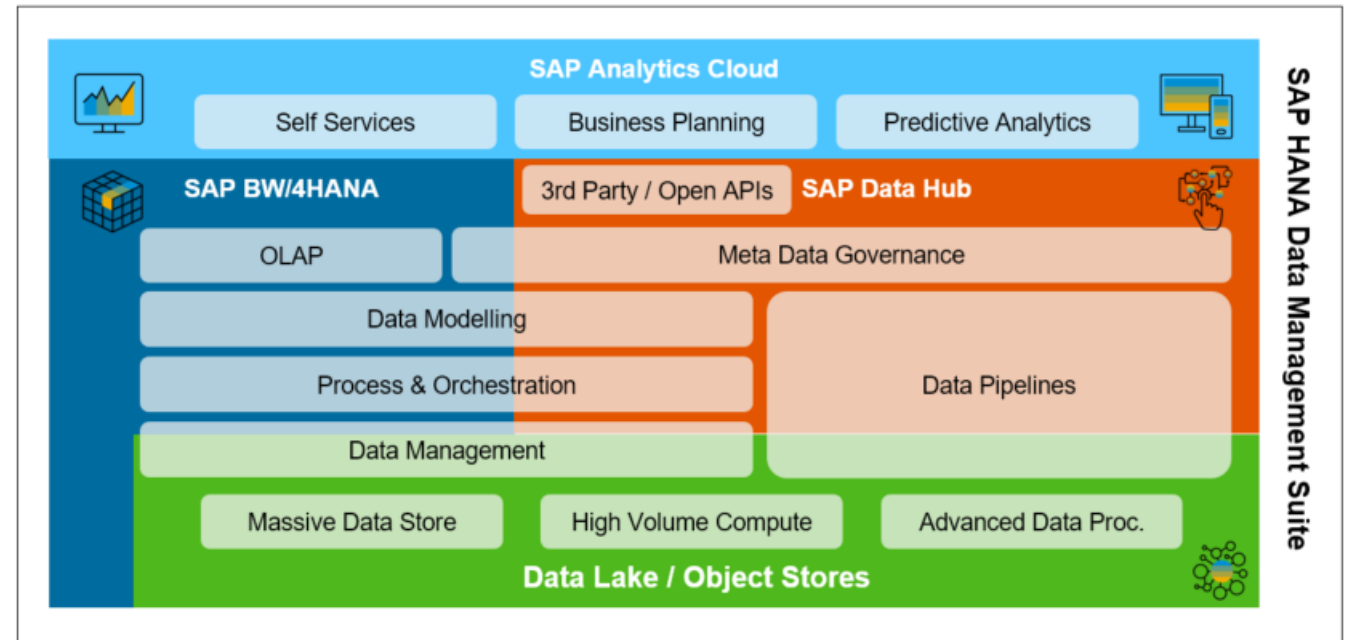
*New features in BW/4HANA 2.0 are **highlighted**

Openness: Data Integration from SAP S/4HANA Cloud to SAP BW/4HANA 2.0

Feature Description

- Technical framework and connectivity (HTTP / SOAP based) between SAP BW/4HANA and SAP S/4HANA Cloud (communication scenario)

- Application based ABAP CDS Content for extraction (e.g. financials, logistics, …)

- Planned for SAP S/4HANA Cloud 1905
  - Status Quo: see SAP Note 2674373
  - SAP Help Portal for further information

- Easy to extend and support for custom ABAP CDS Views

Benefits
- Cost savings
- Simplification

SAP S/4HANA Cloud Integration

SAP BW/4HANA

ODP-CDS DataSource

ODQ | ODP

ABAP CDS View

Table
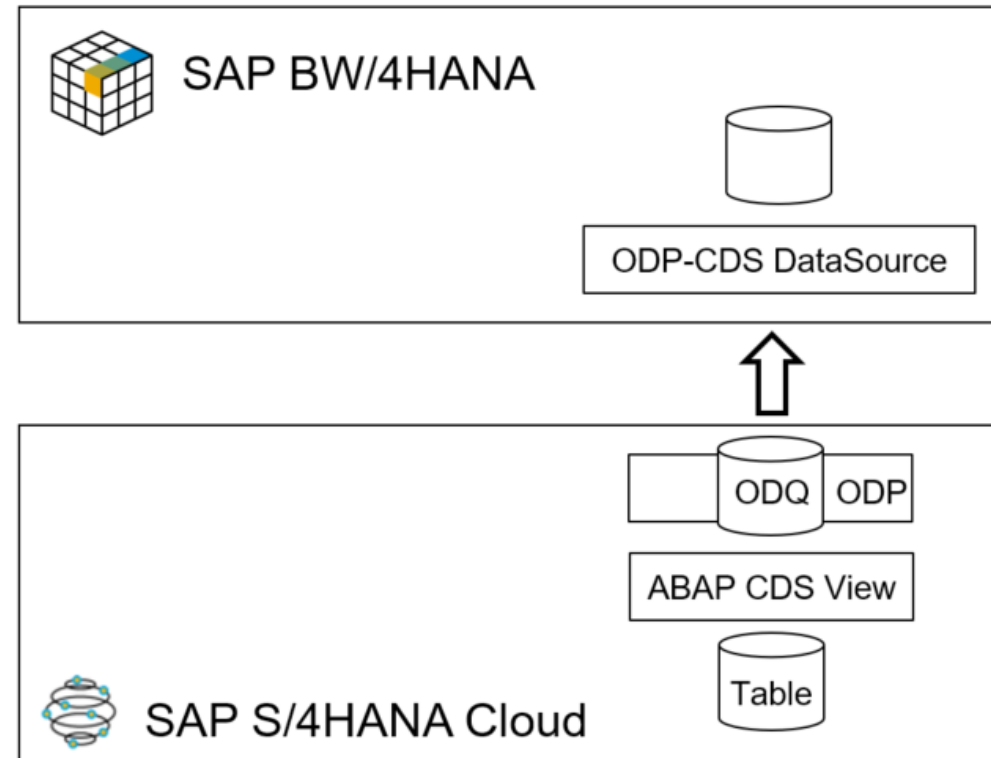
SAP S/4HANA Cloud

Customer availability planned for S/4HANA Cloud in 2019

Openness: SQL View for Look-ups on DataStore Objects

Feature Description

- SAP BW/4HANA 2.0 creates a External SAP HANA SQL View on ADSOs
 - Exposes only fields/InfoObjects of the ADSO, no join with text, master data
  - Also includes fields considered not reporting-relevant
  - AMOUNT fields included in internal and external format (i.e. with and without decimal shift)
  - Covers all ADSO partitions – hot, warm and cold
  - Automatically created for all ADSOs, no user maintenance required (/<Namespace>/A<adsonm>8)
  - More information available in SAP Note 2723506

Benefits

- Provides Access for Lookups, JOINs, etc. in SQL Transformations or for SAP HANA native access
- Enhanced support for mixed scenarios

DataStore Object Look-up SQL View
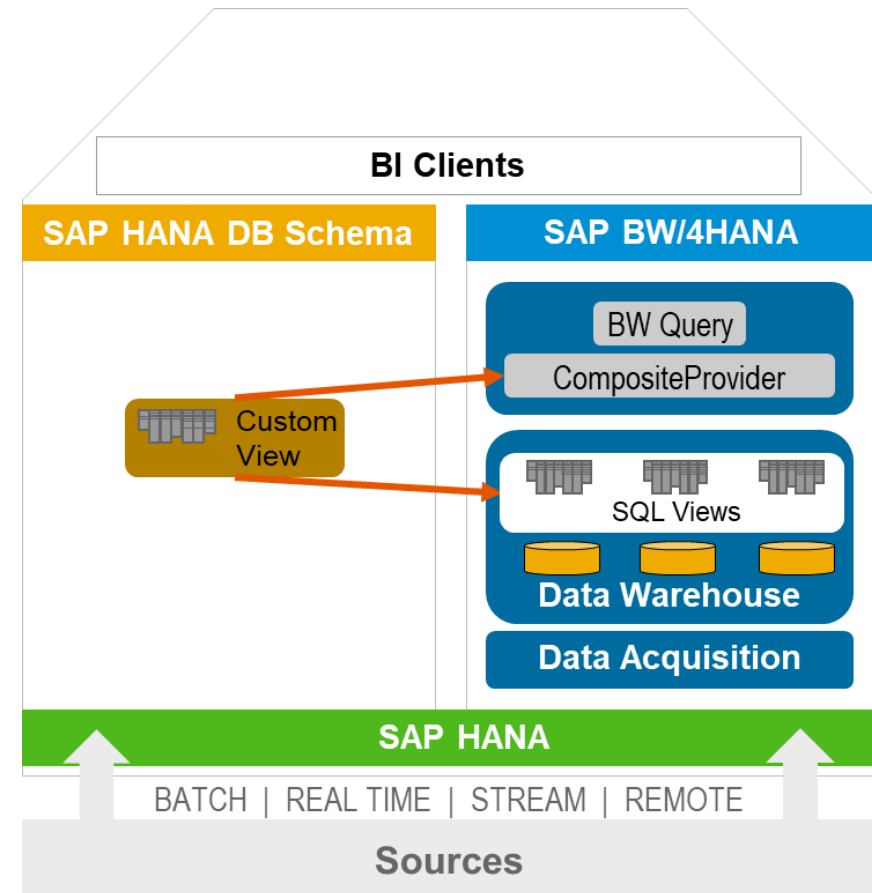
Analytic Engine and SAP Analytics Cloud Integration in SAP BW/4HANA 2.0
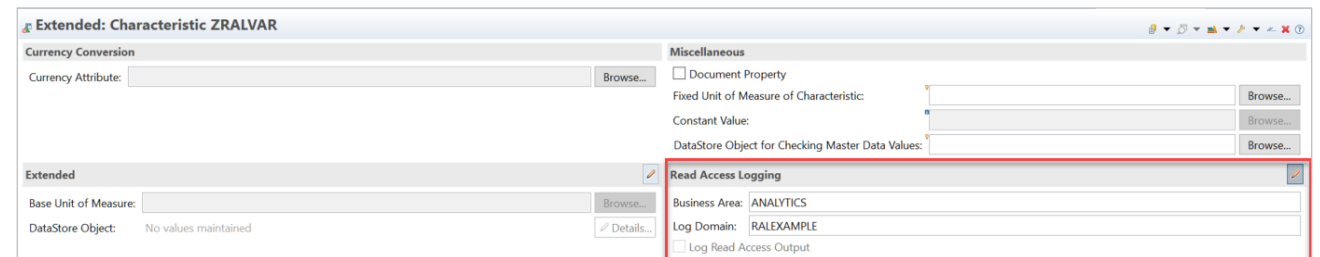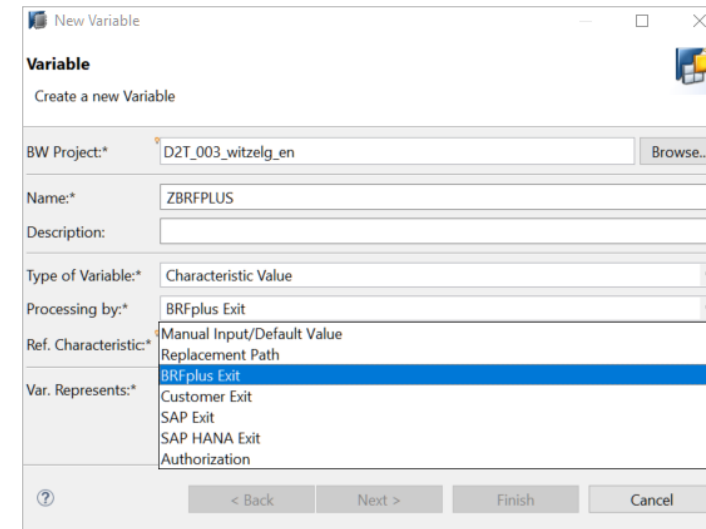
High Performance: Analytic Engine*

New Features

- Conditions calculated in SAP HANA (push-down)
  - TopN, BottomN, LessThan, GreaterThan, NotBetween, …
- RSECADMIN (maintain analytic authorization) in SAP BW/HANA Web Cockpit
- Variable Type BRF+ (used for customer defined validations, derivations and calculations)
- Read Access Logging (RAL) integration for advanced auditing
- Custom Exception Aggregation and IF Operator for Analysis Office and SAC
- SAP Analytics Cloud Adoption through SAP BW Live Connection including new Chart Support

Benefits

- Provides Access for Lookups, JOINs, etc. in SQL Transformations or for SAP HANA native access
- Enhanced support for mixed scenarios

Analytic Engine

[* A blog for detailed information is available](#)

Simplicity: New Chart Types for SAP Analytics Cloud on SAP BW/4HANA

Feature Description

- Support for additional chart types with SAC Live connection
  - Waterfall Chart
  - Geospatial
  - Time Series
  - Variance Chart
  - Linked Analysis with more than one dimension
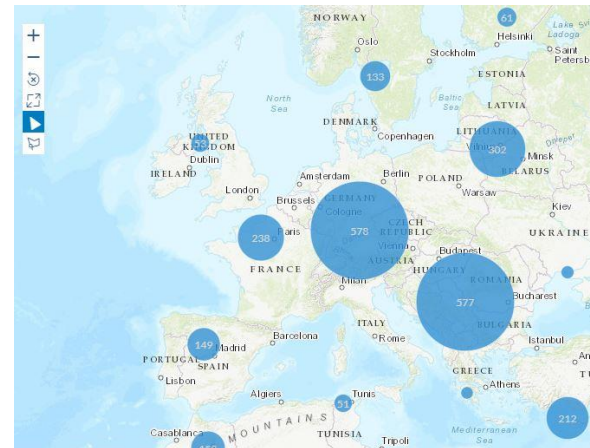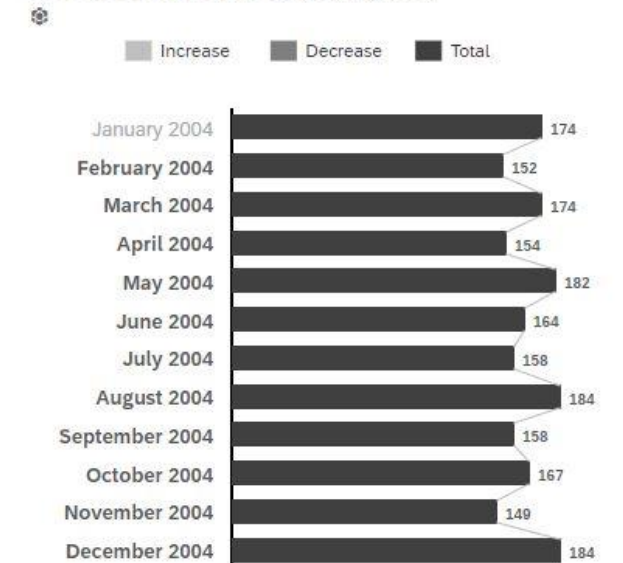 - Conditions
  - Tuple Filter

Benefits

- New visualization capabilities

New SAP Analytics Cloud Chart Types

Data Protection Management in
SAP BW/4HANA 2.0

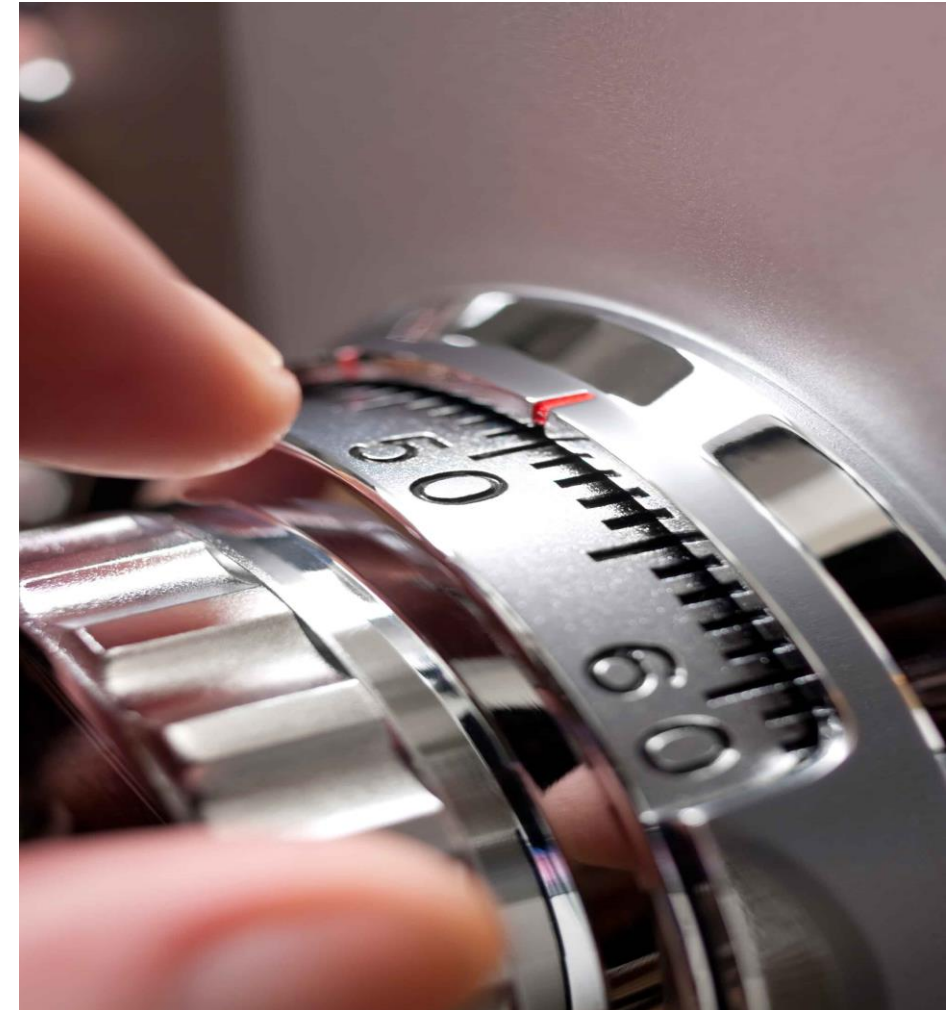# Data Protection & Privacy: Data Protection Workbench - Motivation

Situation today

- Personal data is increasingly protected by laws (e.g. EU GDPR)
- SAP BW/4HANA offers capabilities for Data Protection & Privacy support (see security guide SAP BW/4HANA)
- Generic deletion capabilities in SAP BW/4HANA are independent of Business Suite handling
- SAP ILM ensures retention management in operational systems and is used to support data protection & privacy compliance

Challenge

- Improved support and tight integration of SAP BW/4HANA with SAP ILM to delete replicated personal data in SAP BW/HANA after the end of purpose of the data.

Approach

- SAP ILM notification framework allows to persist notifications of deleted (personal) data during ILM processes
- Replicate notifications from SAP ILM to SAP BW/4HANA
- Data Protection Workbench supports:
    - Identify InfoProviders containing sensible data
    - Selective deletion of corresponding transactional- and master data records

Data Protection & Privacy: Data Protection Workbench - Process

Feature Description

SAP ILM

- SAP ILM persists events during SAP ILM processes (e.g. deletion of personal data)
- Mapping of SAP ILM object (e.g. ‚Sales Order') to SAP BW/4HANA DataSource allows identification of relevant data targets in SAP BW/4HANA

Data Protection Workbench

- Persist notifications from SAP ILM into a SAP BW/4HANA Data Store Object
- Seamless integration into Fiori-based SAP BW/4HANA Web Cockpit
- Grouping of notifications into worklists according to subject matters to orchestrate the deletion process
- Identification of InfoProviders along a data flow containing the data to be deleted
- Documentation of worklist processing status (for legal auditing)

Benefits

- Integrated solution to consistently delete replicated data from supported operational SAP source systems to reduce administration effort
- Modern UI seamlessly integrated in SAP BW/4HANA Web Cockpit
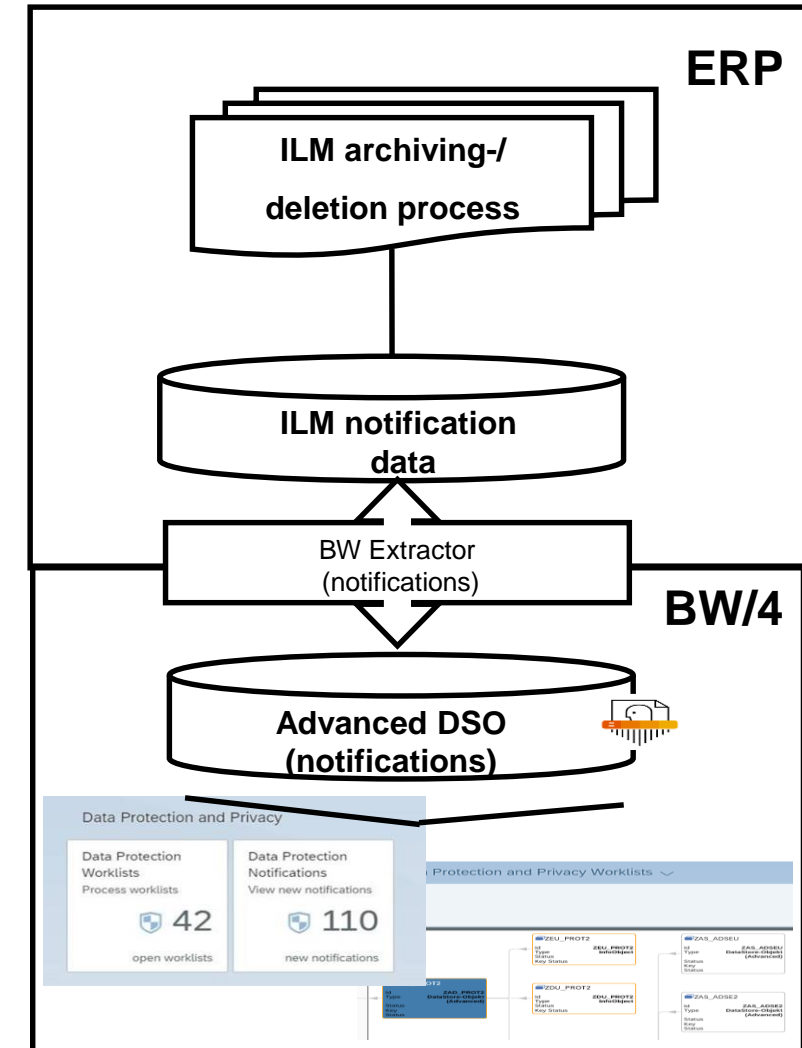
SAP BW/4HANA Conversion options
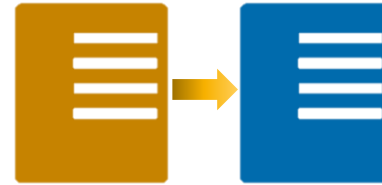
SAP BW/4HANA Conversion

SAP BW/4HANA

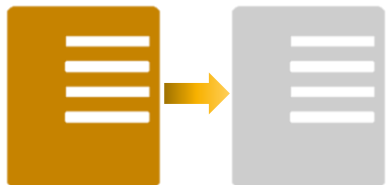**SAP BW**

In-Place Conversion

- Full system conversion of an existing SAP BW installation (keep same SID)

- Step-by-step in-place transfer of classic objects into their HANA-optimized counterparts

- Followed by a system conversion to SAP BW/4HANA

- Minimum start release: SAP BW 7.5 SP 5 powered by SAP HANA

SAP BW   **SAP BW/4HANA**

Remote Conversion

- Start with SAP BW/4HANA as green field installation (new SID)

- Support of carve-out and consolidation scenarios

- Transport data models and remote data transfer (including Unicode conversion)

- Risk mitigation due to parallel system

- Minimum start release: SAP BW 7.3 or higher on any DB *

SAP BW   **SAP BW/4HANA**

Shell Conversion

- Similar to Remote Conversion but *without data transfer*

- Accelerate greenfield approach by transferring and converting data models and flows

- Minimum start release: SAP BW 7.0 or higher on any DB *

* Including SAP BW 7.5 and including SAP HANA

Availability Matrix

Last update: 2019-04-01

	SAP BW 7.0	7.01	7.02	7.3	7.31	7.4	7.5
Preparation (Checks, Operating Modes)	Released (General Availability)						
In-Place Conversion							Released (General Availability)
Remote Conversion				Released (General Availability)			
Shell Conversion	Released (General Availability)						

Preparation: Install via SAP BW Note Analyzer (SAP Note 2383530)

In-place + Shell Conversion: Install via SAP BW Note Analyzer (SAP Note 2383530)

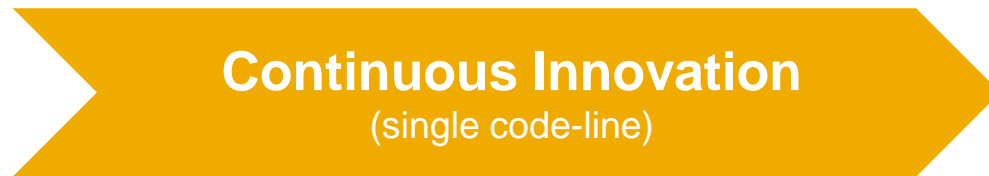Remote Conversion: Install via SAP BW Note Analyzer (SAP Note 2383530) and DMIS Add-on (SAP Note 2513088)

SAP BW/4HANA Roadmap
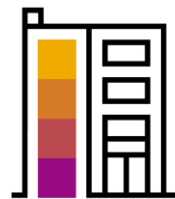
One Code-line, Two Ways to Innovate

Data Warehouse as a Service
featuring Project Blueberry
(public cloud)

Initial Focus
- Highly Standardized
- Fiori Admin UIs
- Integrated with SAP Analytics Cloud, SAP Data Hub(aaS) and SAP HANA(aaS)

Continuous Innovation
(single code-line)

Joint Focus
- Cloud connectivity
- Data modeling enhancements
- Data Privacy Workbench

SAP BW/4HANA 2.0
(on-premise, private cloud)

Continued Focus
- Integration with SAP Data Hub
- SQL + ML
- Large Systems

SAP BW/4HANA Roadmap – Recent Innovations

Delivered in February 2019 – SAP BW/4HANA 2.0

Simplicity

- DataStore Object write interface for SAP Data Services
- Data Protection Workbench
- Data Tiering Optimization (DTO)
  - Cold Store connection configurable on object level
  - Inventory ADSOs
  - Support for several external storage destinations

Modern Interface

- SAP BW/4HANA Modeling Tools
  - Mass-modeling for objects in Data Flow and Semantic Groups
  - Planning tools (planning functions)
  - Data Flow Documentation Generation (HTML)
- Web-based Administration & Monitoring e.g. DTO temperature maintenance cockpit

Openness

- Integration with SAP Data Hub
  - BW/4 Metadata integration enabling lineage/impact analysis
  - DataStore Object write interface for SAP Data Hub
- Integration with SAP Cloud Platform
  - Availability of SAP BW/4HANA APIs
- SQL View for Lookups on advanced DataStore Objects
- Integration with SAP Cloud Solutions via SAP Cloud Platform Integration (CPI)

High Performance

- Further Push-down of OLAP Capabilities
  - Conditions (having, ranking, …)
  - Dedicated performance optimization for SAC

SAP BW/4HANA Roadmap – Planned Innovations

Planned for 2020 – SAP BW/4HANA 2.0

Simplicity

- Data Tiering Optimization (DTO)
  - Updates to cold data (external storage)
- Data Protection Workbench
  - Automated processing
  - Processing of notifications from non-SAP Sources

Openness

- Integration with SAP Data Hub
  - Common Meta Data Catalog & Repository
  - Streamlined Operations & Deployment
  - Simplified data integration & data volume management
- Integration with SAP Cloud Platform
  - Availability of CPI Source System in SAP BW/4HANA
- HDI support (View generation to HDI)

Modern Interface

- SAP BW/4HANA Modeling Tools
  - Content Activation
  - Mass Processing (Activation, Deletion)
- Enhanced Web-based Administration & Monitoring

High Performance

- Further Push-down of OLAP Capabilities
  - Current member
- SAP Analytics Cloud Integration & Advanced Analytics Environment

SAP BW/4HANA Roadmap – Product Direction

2021 and Beyond

Simplicity

- Data Tiering Optimization (DTO)
  - DTO automation – rules and statistics based
  - Further cloud storage options for cold data based on SAP Vora

Openness

- Further integration with SAP Data Hub providing Big Data Warehouse architectures
  - Tight repository interoperability (common transports & improved impact analysis)
  - Seamless data exchange
- Open Hub Modernization

Modern Interface

- System Health Monitoring and Prediction
- Machine-learning Based DW Administration

High Performance

- Leveraging new SAP HANA engine capabilities for Analytics and Transformations
- Leveraging new HANA elasticity and scalability enhancements

SAP BW/4HANA Roadmap – Product Vision

2022 and Beyond

Simplicity

- Data Tiering Optimization (DTO)
  - Machine Learning based automation

Openness

- Further integration with SAP Data Hub providing Big Data Warehouse architectures

Modern Interface

- Continued System Health Monitoring and Prediction
- Continued Machine-learning Based DW Administration

High Performance

- Leveraging new SAP HANA engine capabilities for Analytics and Transformations

Roadmap for SAP BW/4HANA Transfer & Conversion Cockpits

Previous Innovations (2017)

In-Place Conversion

Customers can convert an existing system **running on SAP HANA**

Will be made available via notes for **SAP BW 7.5 SP 5 or higher**

Legacy functionality gets transferred into HANA-optimized counterparts

Shared Features

Customer exits are scanned for incompatible usages

Remote Conversion

Customers can convert systems on **SAP BW >= 7.0** on **Any-DB**

Conversion projects will be driven by SAP Data Management & Landscape Transformation group

Recent Innovations (2018)

Release of **SAP BW/4HANA Transfer Cockpit**

Collection of **statistic data**

More tool-based guidance

New **Shell Conversion** path

Complete set of supported object types (Semantically Partitioned Objects, InfoSets, etc.)

Transfer of SAP BPC to **SAP BPC, version for SAP BW/4HANA** (see next slide)

Transfer of **standard authorizations**

Transfer Near-line-Storage based on **SAP IQ / Hadoop**

Enhanced monitoring capabilities

Simplified guided process steps

Product Direction (2019)

Focus on **stabilization and optimization** of tools

Redesign of **pre-check**
- Storage of check results
- New user interface for result display
- More detailed messages to allow customers a better effort and feasibility evaluation

Check and transfer tool for **Analysis Process Designer** (APD)

Support for **SEM-BCS** conversion

General release of **SAP BW/4HANA Conversion Cockpit** for customers and partners

Troubleshooting functions

SAP BW/4HANA

Home Page
https://sap.com/bw4hana

Community / Product Page
https://sap.com/bw4hana10

Documentation
https://help.sap.com/bw4hana10
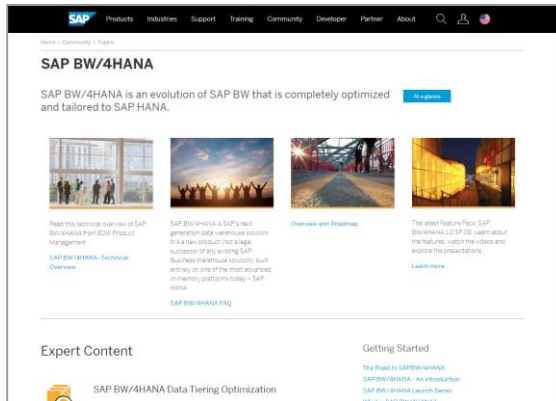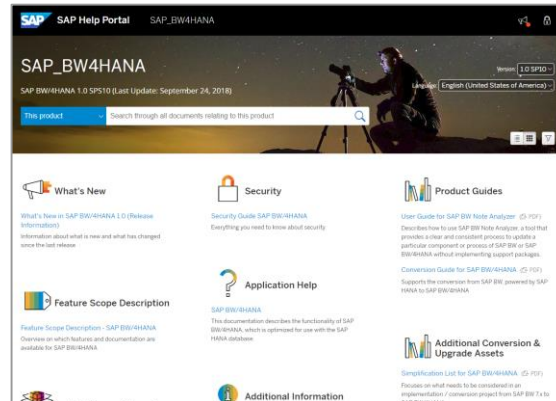
Product Roadmap
https://sap.com/roadmaps
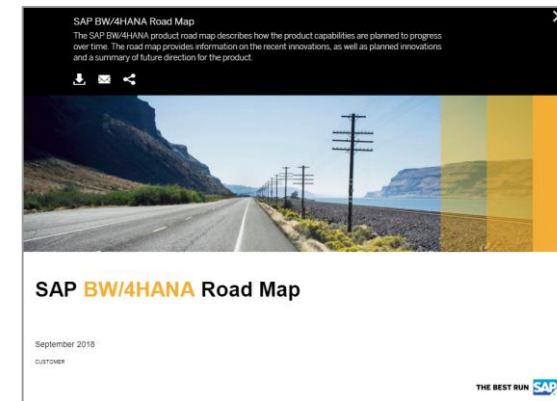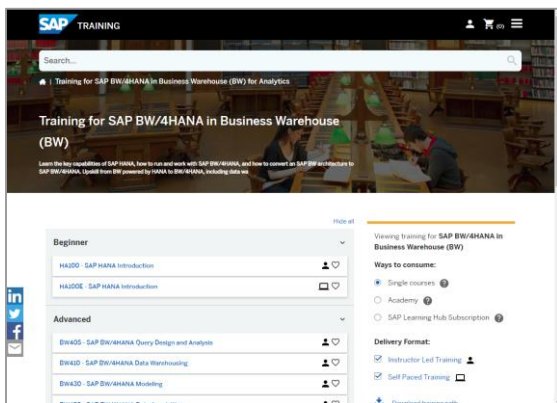
Training & Certification
https://training.sap.com/

Get Started
Free Learning @ openSAP, Free Trial

Get Help
FAQ, Q&A, Community Wiki, Support, Services, Availability

Read & Learn More
SAP Blogs, Community Blogs, Learning Journey

Transition from SAP BW
Blog, SAP Activate Roadmap, SAP Readiness Check

Related Solutions
SAP HANA, SAP Data Hub, SAP Analytics Cloud

Watch
Demos & Tutorials,
YouTube Channel,
SAP HANA Academy

Share & Follow
#BW4HANA,
#TheFutureofDW

Take the Session Survey.

We want to hear from you! Be sure to complete the session evaluation on the SAPPHIRE NOW and ASUG Annual Conference mobile app.

Presentation Materials

Access the slides from 2019 ASUG Annual Conference here:

http://info.asug.com/2019-ac-slides

Q&A

Contact information:

Lothar Henkes

VP, Product Management SAP EDW

Lothar.Henkes@sap.com

Let's Be Social.

Stay connected. Share your SAP experiences anytime, anywhere.
Join the ASUG conversation on social media: **@ASUG365**
#ASUG

Appendix

Follow us

THE BEST RUN **SAP**