

SAP BW/4HANA

EDW Product Management
February 2017

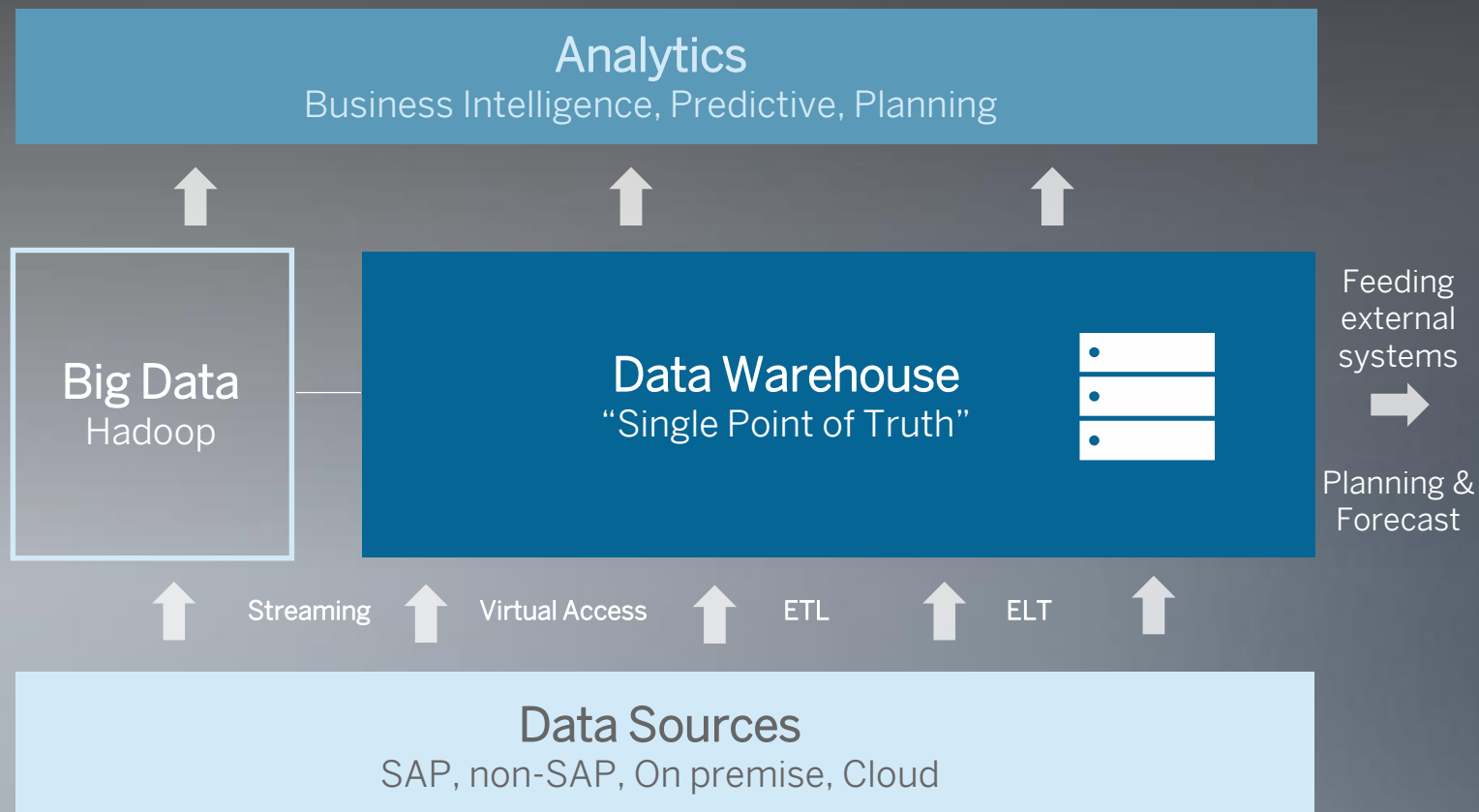


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What is an Enterprise Data Warehouse?

Functions of the Enterprise Data Warehouse (EDW)



Characteristics

- Consolidates data across the enterprise
- Standardized data model
- Supports decision making

Main Tasks

- Define common semantics
- Harmonize data values
- Establish a 'single version of truth'
- Provide a single, comprehensive source of current and historical information
- Keep copy of source data to ensure independency of source and support the unknown

Modern Challenges for Enterprise Data Warehouses



Data

- Different Locations – cloud, data lakes
- Additional Types – behavioral data, IoT (Structured and Unstructured)
- Higher Volumes – > 40% growth YoY

People

- Better Performance – real-time results
- Greater Scope – predictive, agile analytics
- Added Value – new & unused data (> 85%)

SAP Business Warehouse - Today

16000+

SAP BW Customers

Vast majority use SAP BW as central EDW, harmonizing many source systems

8000+

SAP BW 7.3 / 7.4 Customers

Embedded into mission critical business processes

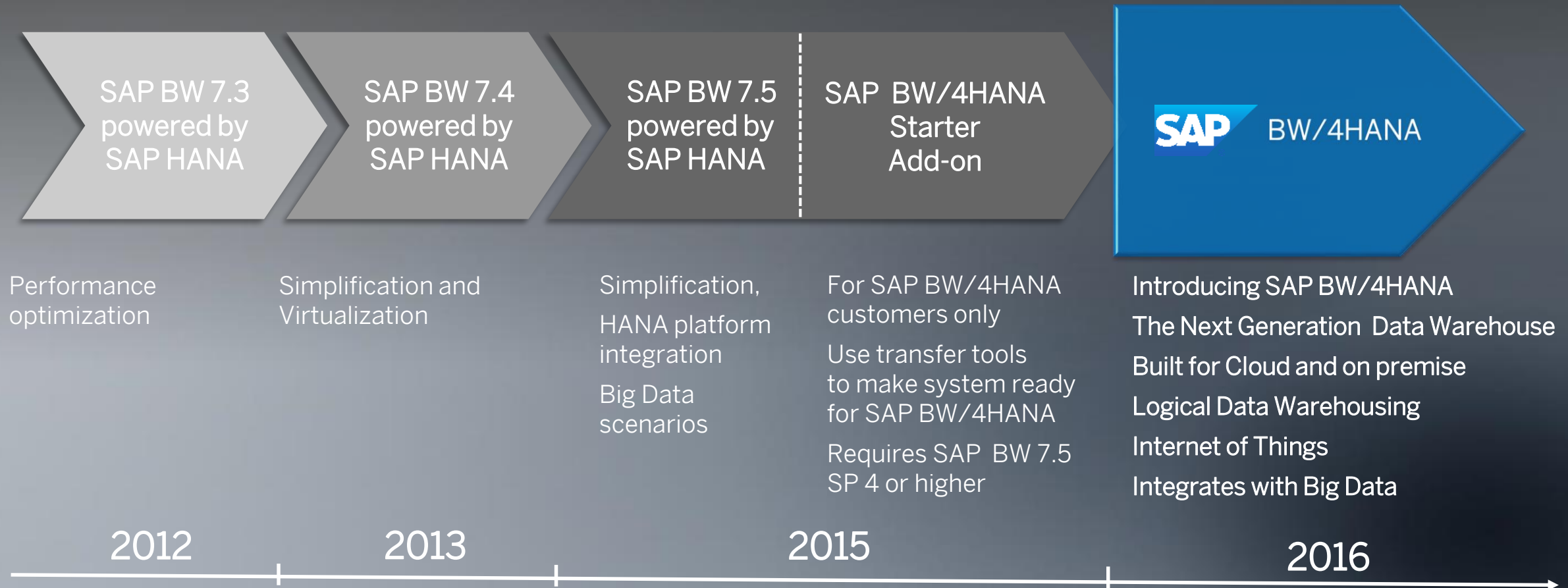
Continuously growing SAP HANA adoption

4000+

SAP BW on SAP HANA Customers

Strategy to run simple with SAP BW

SAP BW/4HANA – The Next Generation Data Warehouse

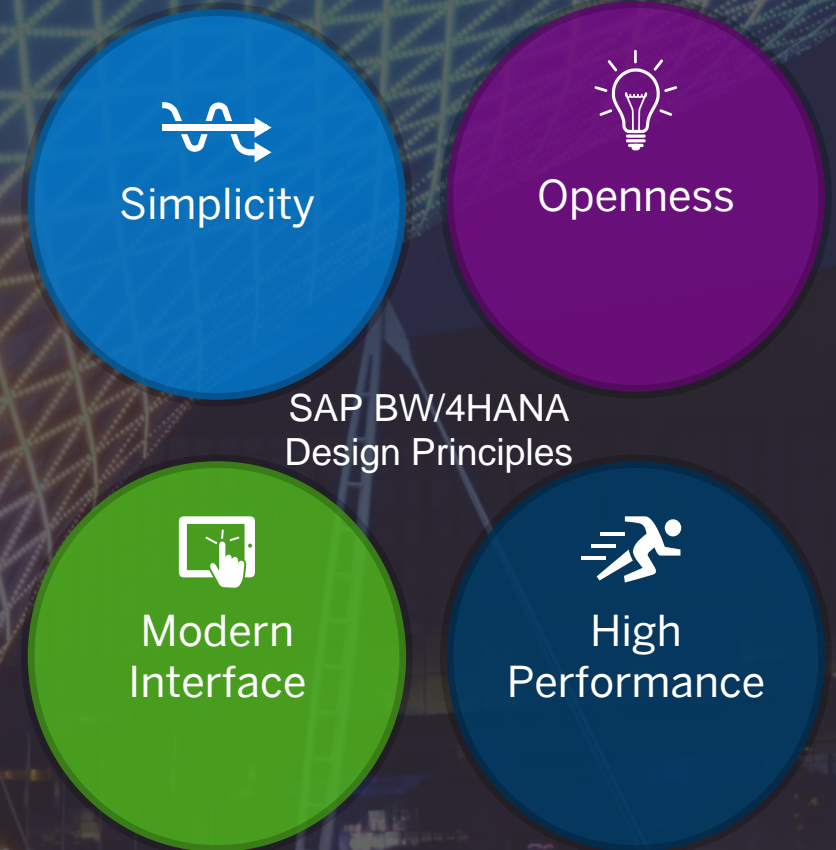


THE NEXT GENERATION DATA WAREHOUSE

ANNOUNCING SAP BW/4HANA

SAP BW/4HANA...

- is a new data warehouse solution
- is highly optimized for SAP HANA
- solves analytics problems in seconds that take other systems days
- accelerates solution development
- means you have one version of the truth
- is ready for the internet of things at petabyte scale



The transition from standard SAP BW to SAP BW/4HANA can be compared with the transition of the SAP Business Suite to SAP S/4HANA. As part of this transition, SAP BW/4HANA will drastically reduce the number of data objects to be stored and maintained, similar to the elimination of aggregates in SAP S/4HANA.

Benefit from SAP Modern Data Warehouse Capabilities



Business Agility

The flexibility to compete in real time



Cloud Ready

Prototype new ideas on a Cloud that grows with your business



Modern Data Warehouse

High performance, future-proof platform for all new challenges

SAP BW/4HANA Highlights

Simplicity

- Simplified Data Structures
- Simplified Data Flows
- Data Lifecycle Management



Openness

- Native SQL access
- Simplified Data Integration
- Consolidated Source Systems



Modern Interface

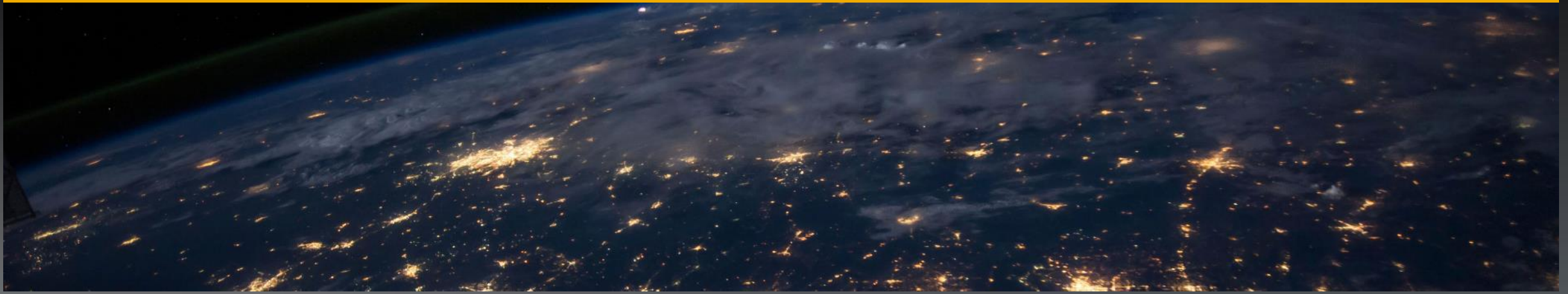
- New Business User UX
- New Modeler UX
- New Administrator UX



High Performance

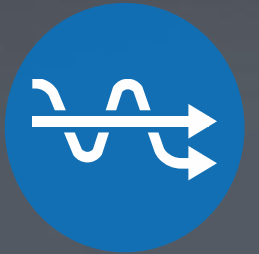
- In-Memory Data Warehousing
- Algorithm Pushdown
- Advanced Analytics





Simplicity

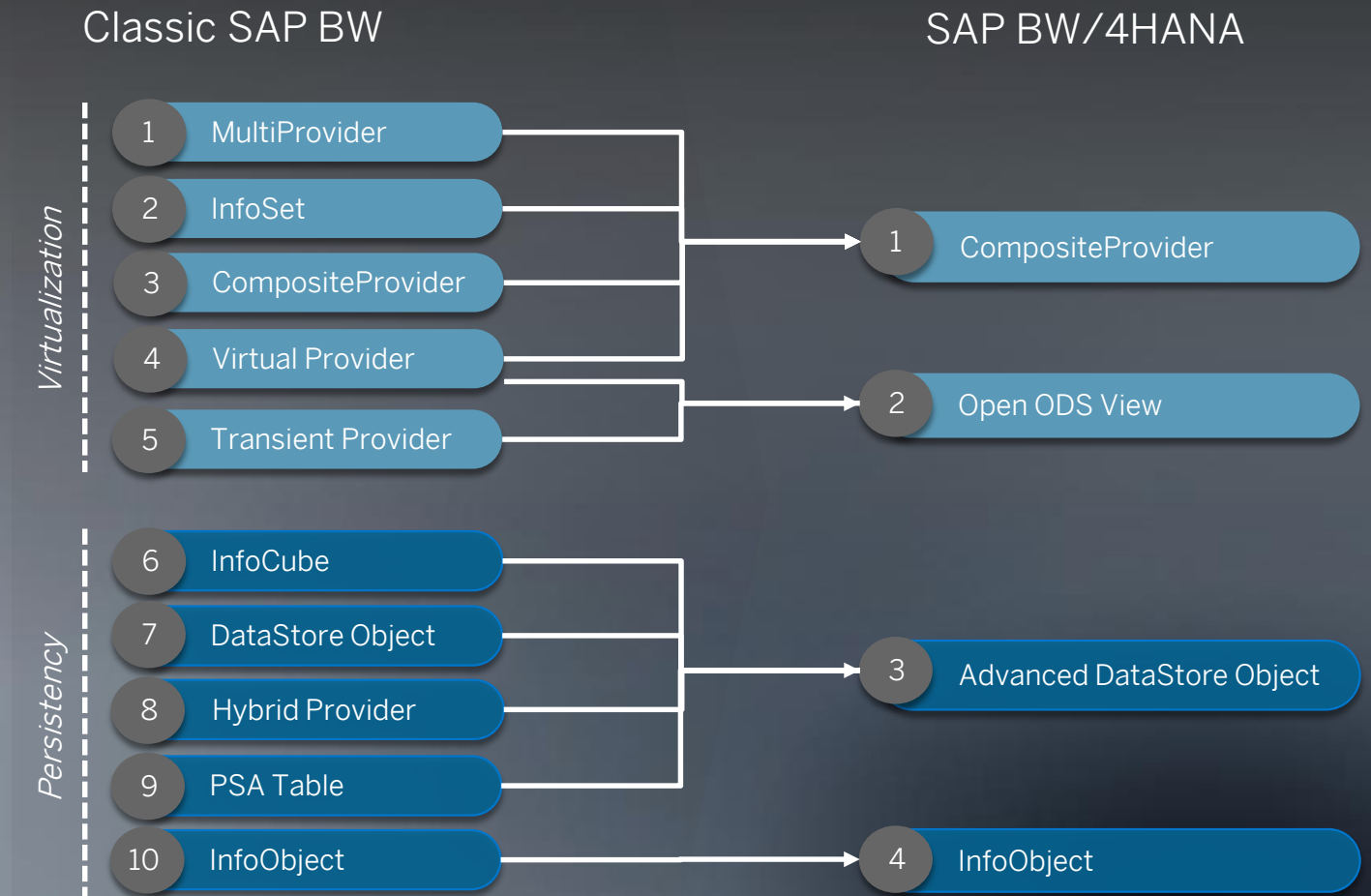
Simplified Data Structures
Simplified Data Flows
Data Lifecycle Management



SAP BW/4HANA – Simplified Data Structures

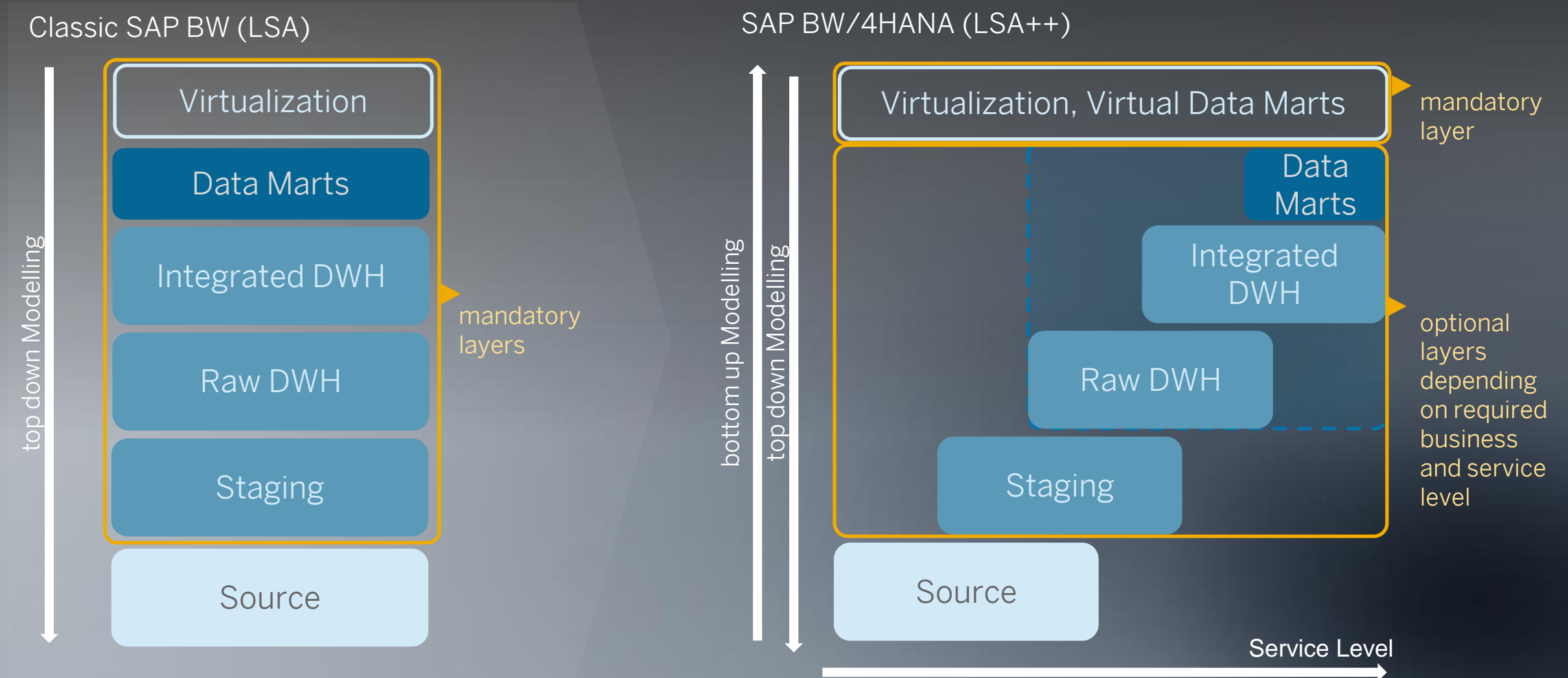


- Number of Modelling object types reduced from 10 to 4
- No complex data structures (extended star schema)
- Field or InfoObject based Modelling
- Greater control of data persistency and virtualization
- Support for external, structured and unstructured data



SAP BW/4HANA – Simplified Data Flows

From Layered Scalable Architecture (LSA) to LSA++

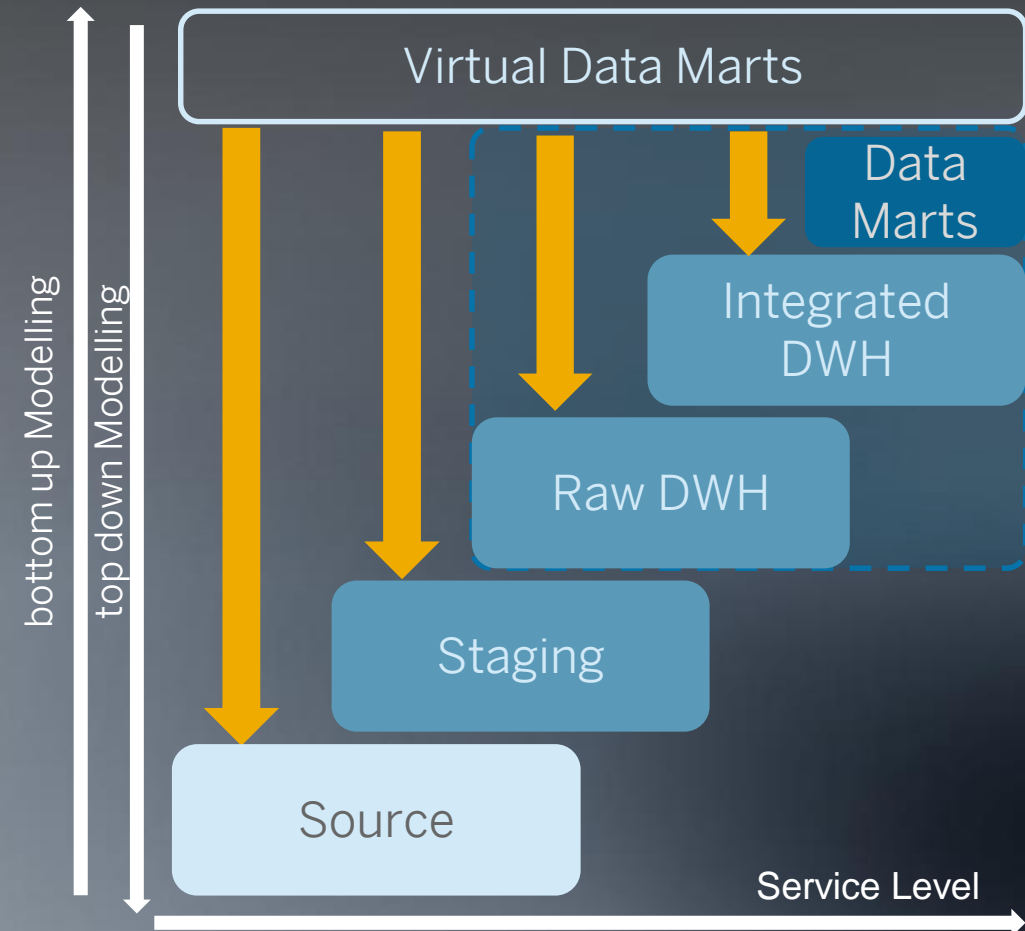


SAP BW/4HANA – Simplified Data Flows



- Report at any layer of the Data Warehouse with speed and flexibility

SAP BW/4HANA (LSA++)

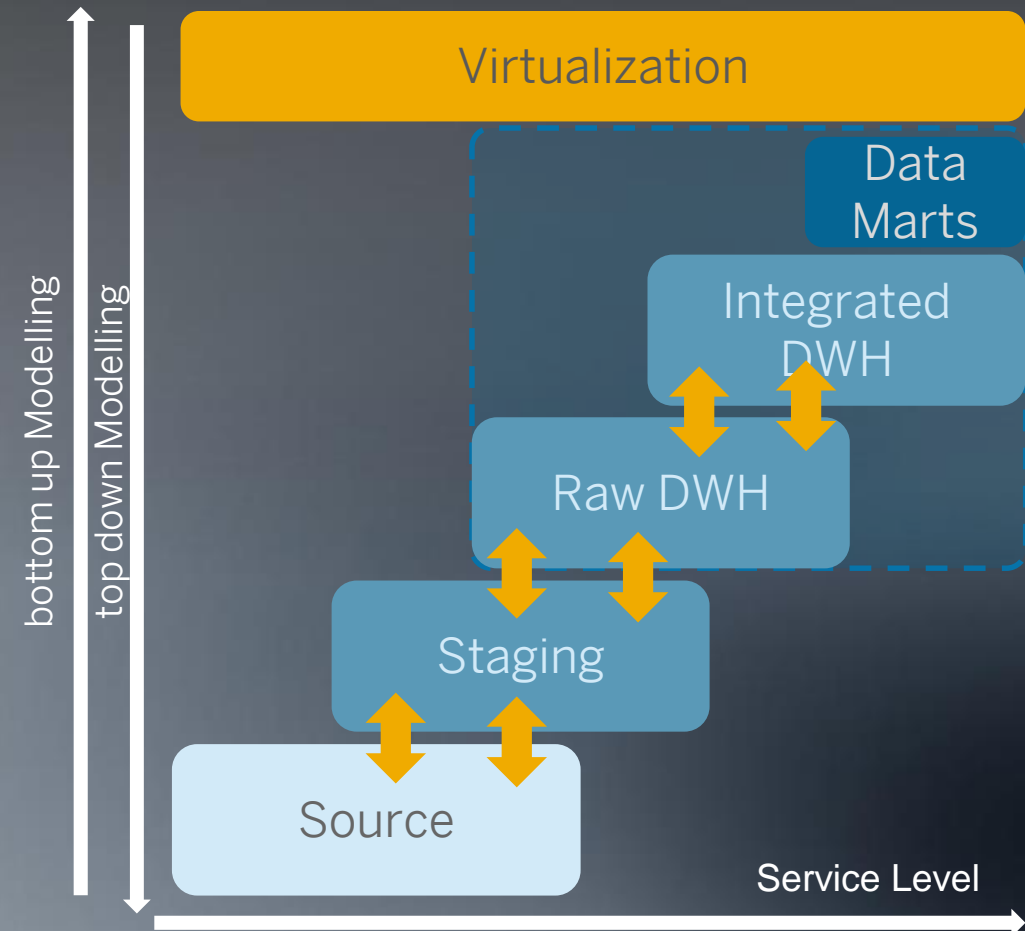


SAP BW/4HANA – Simplified Data Flows



- Report at any layer of the Data Warehouse with speed and flexibility
- Virtually combine data across layers

SAP BW/4HANA (LSA++)

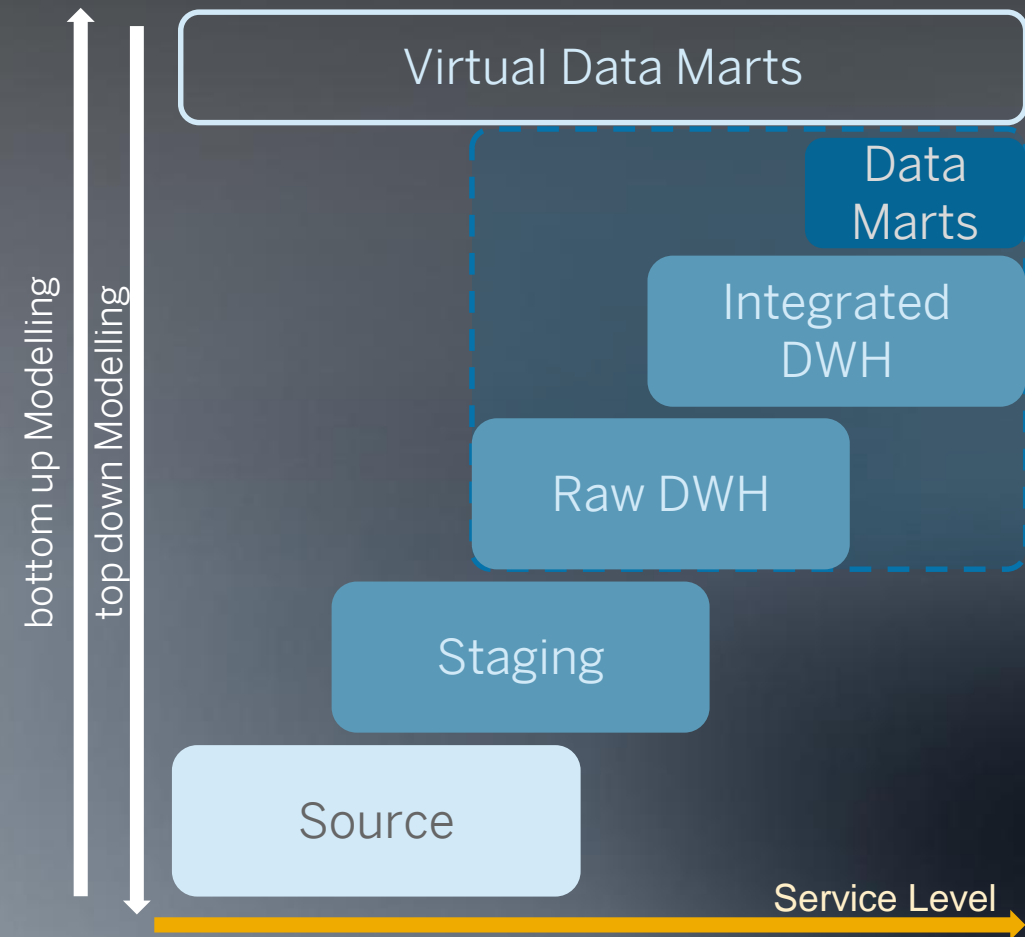


SAP BW/4HANA – Simplified Data Flows



- Report at any layer of the Data Warehouse with speed and flexibility
- Virtually combine data across layers
- Business and service level driven

SAP BW/4HANA (LSA++)

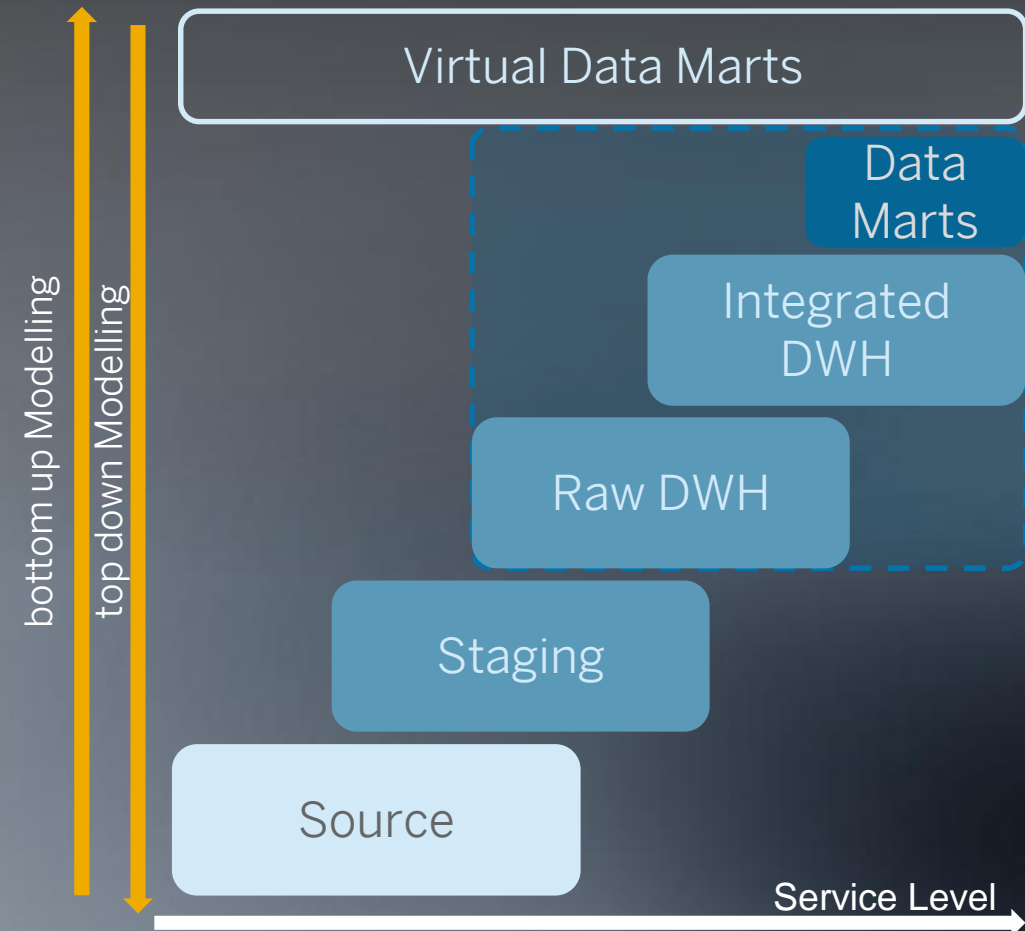


SAP BW/4HANA – Simplified Data Flows



- Report at any layer of the Data Warehouse with speed and flexibility
- Virtually combine data across layers
- Business and service level driven
- Combining bottom-up and top-down modelling approaches – allows for agile and flexible development

SAP BW/4HANA (LSA++)

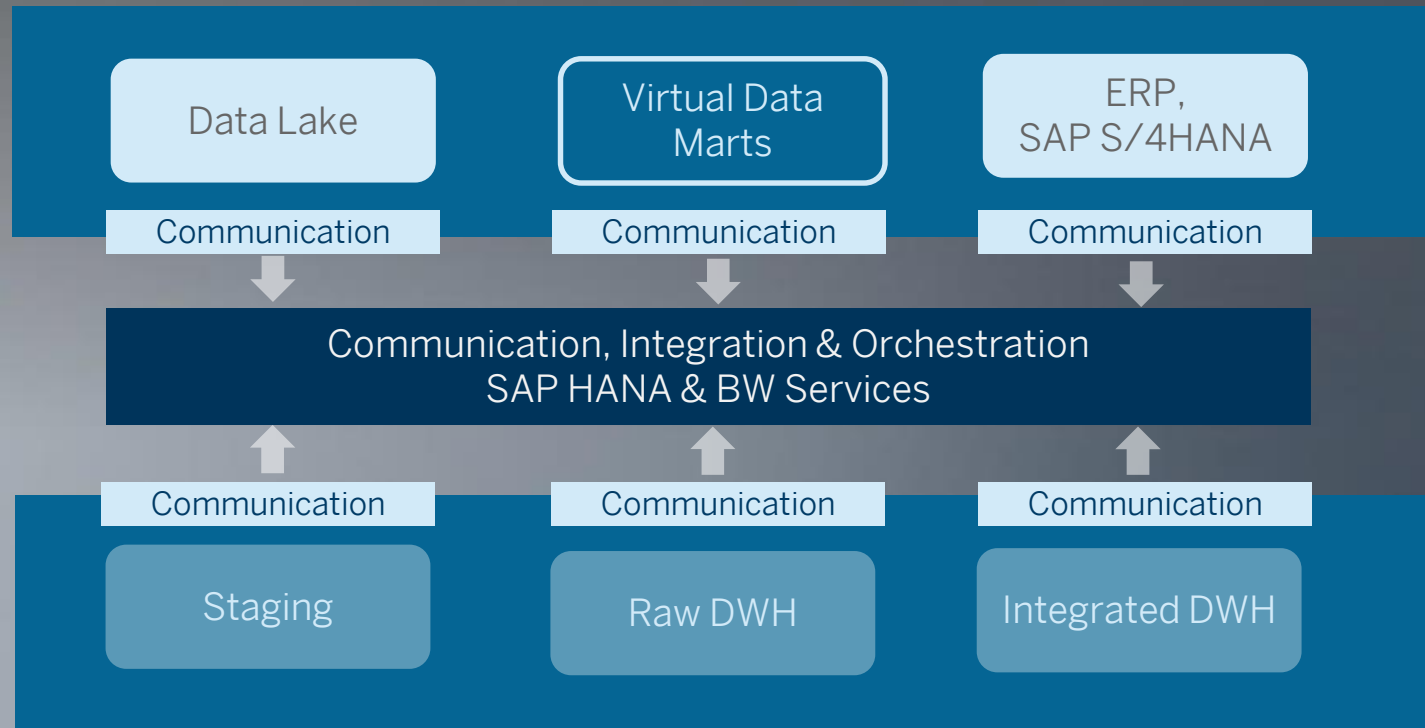


SAP BW/4HANA – Simplified Data Flows

Logical Data Warehousing with SAP BW/4HANA



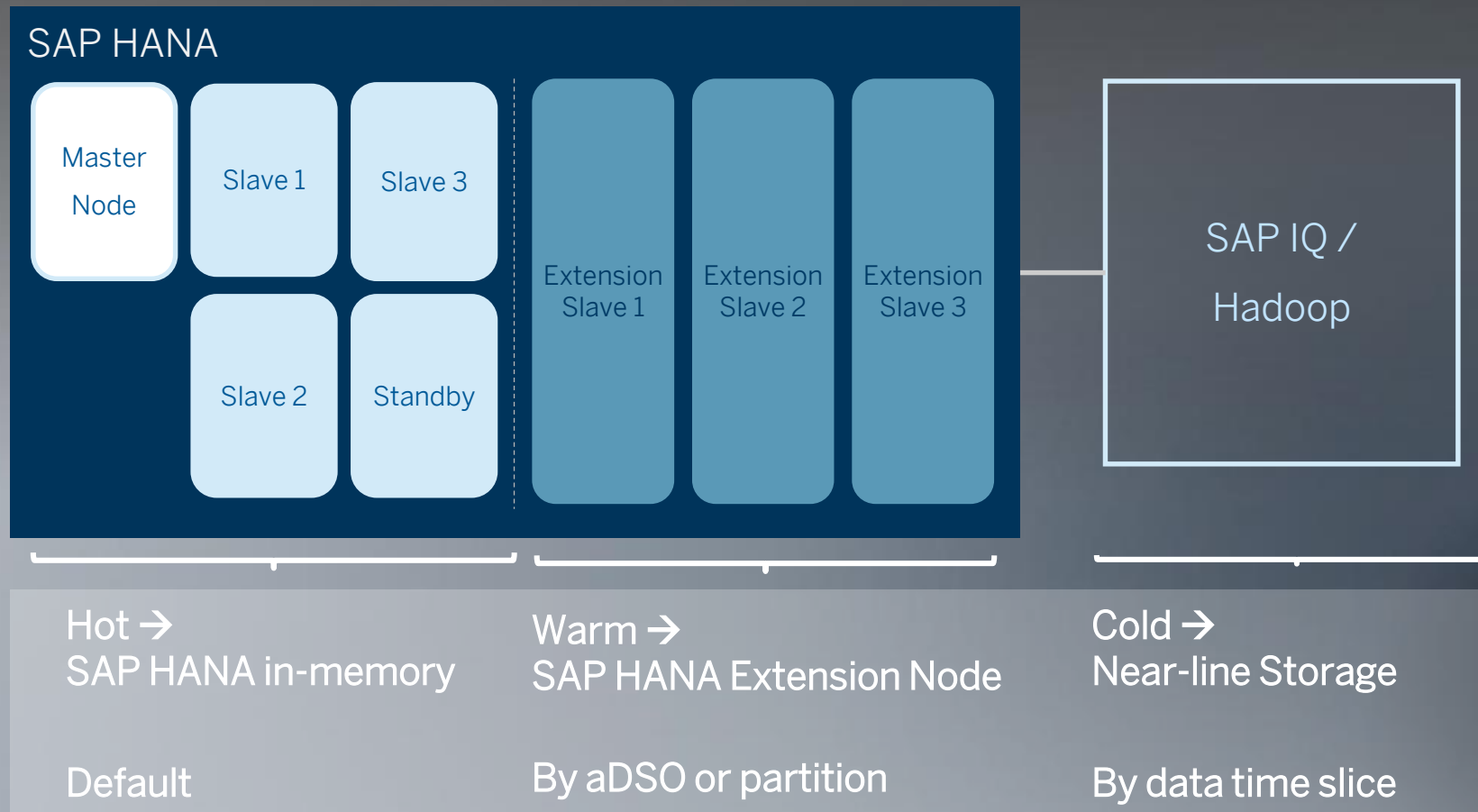
- Non-hierarchical, loosely coupled Information Areas
- Clear service definitions
- Communication, Integration, Orchestration rules

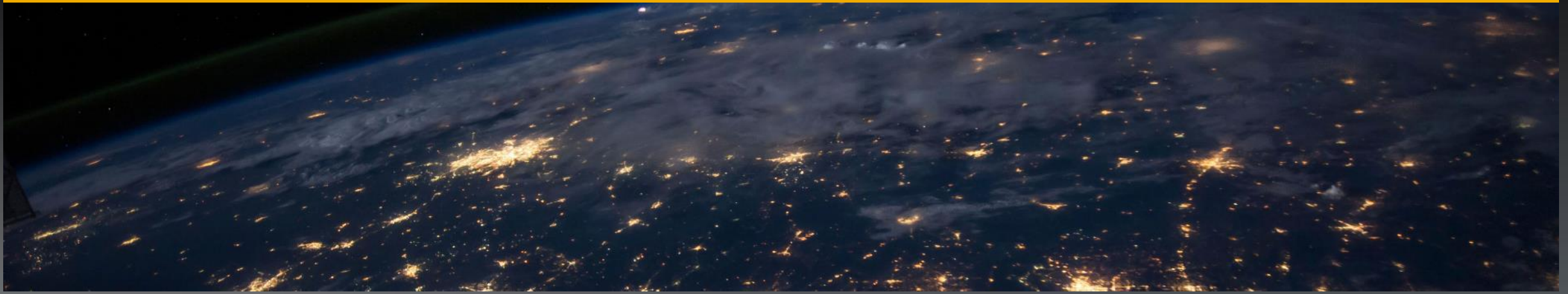


SAP BW/4HANA – Data Lifecycle Management



Scale SAP BW/4HANA using in-built data temperature management





Openness

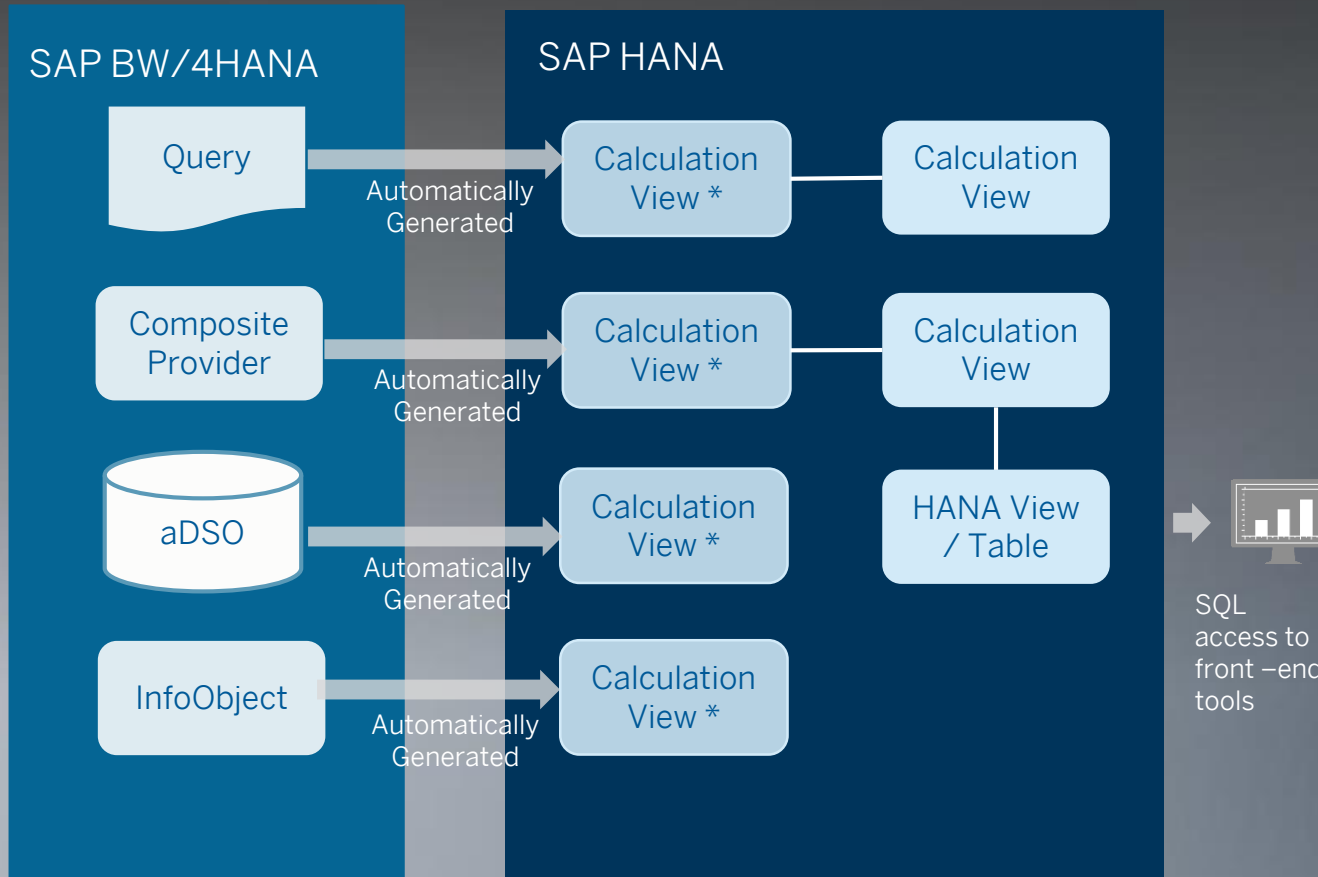
Native SQL access

Simplified Data Integration

Simplified Source Systems



SAP BW/4HANA – Native SQL Access



SAP BW/4HANA logic and data can be exposed to SAP HANA

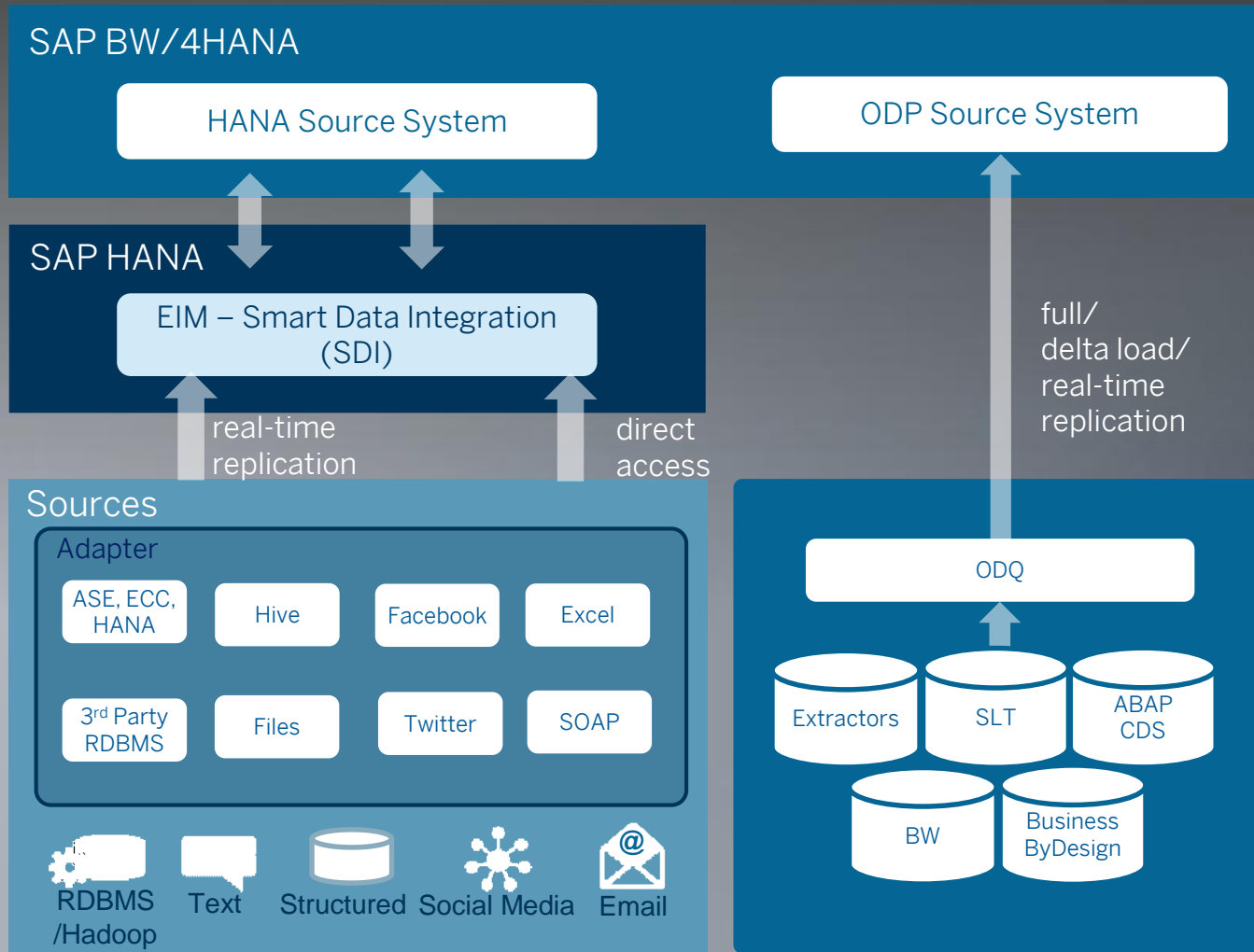
Automatic generation of SAP HANA views allows:

- SQL logic on top of generated views
- Combined data from native SAP HANA
- SQL access for front-end tools

Generated SAP HANA views are part of SAP BW/4HANA lifecycle *and* SAP BW/4HANA security

* SAP BW/4HANA Generated HANA view

SAP BW/4HANA – Simplified Data Integration



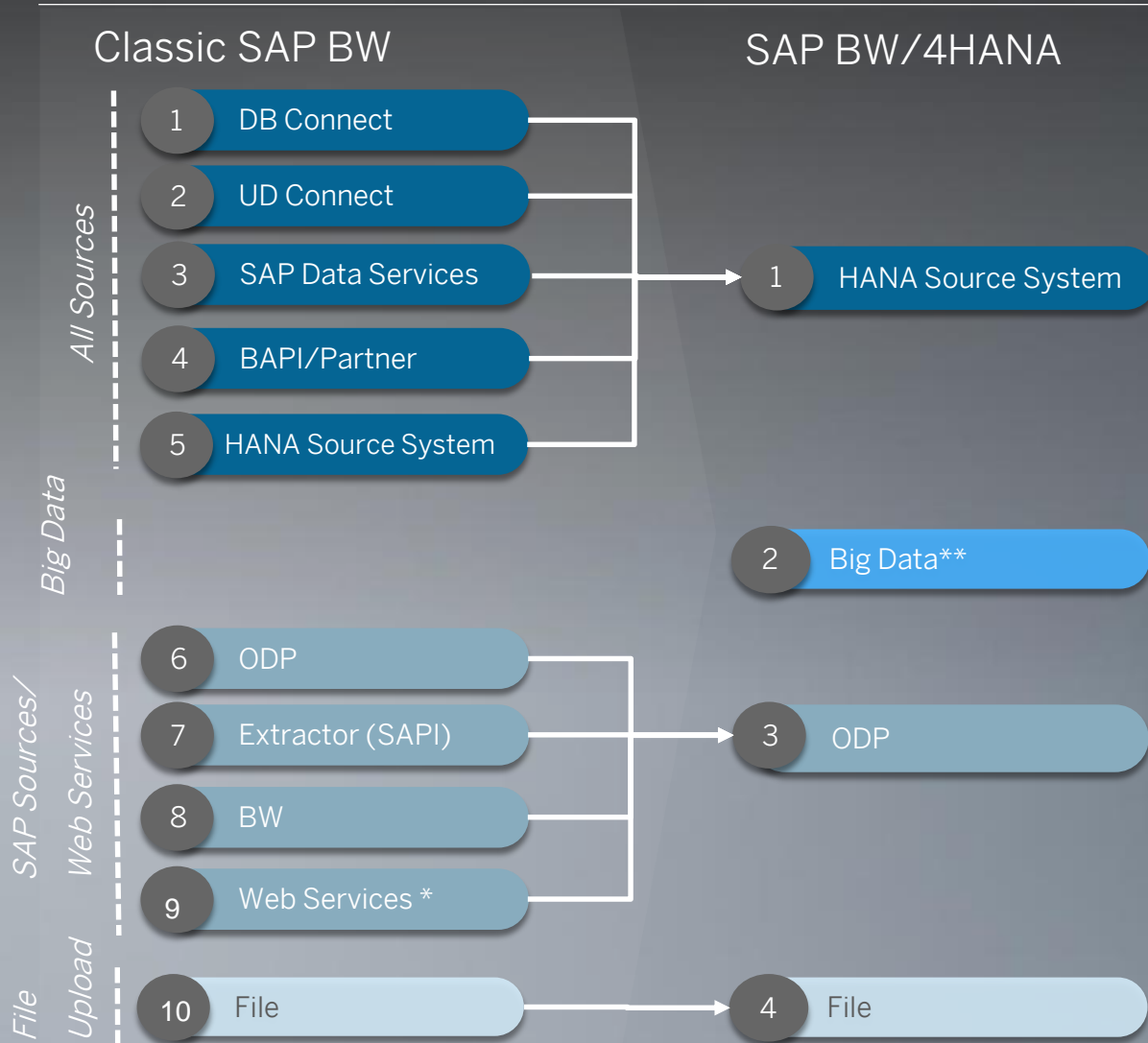
Check full list of supported SDI sources [here](#)

Leverages SAP HANA EIM to provide new data provisioning opportunities

- Replicate data in real-time (HANA SDI based replication or via ODP - especially with ODP-SLT)
- Access data virtually
- Load data using optimized processing

Or automatically switch between the different methods

SAP BW/4HANA – Simplified Source Systems

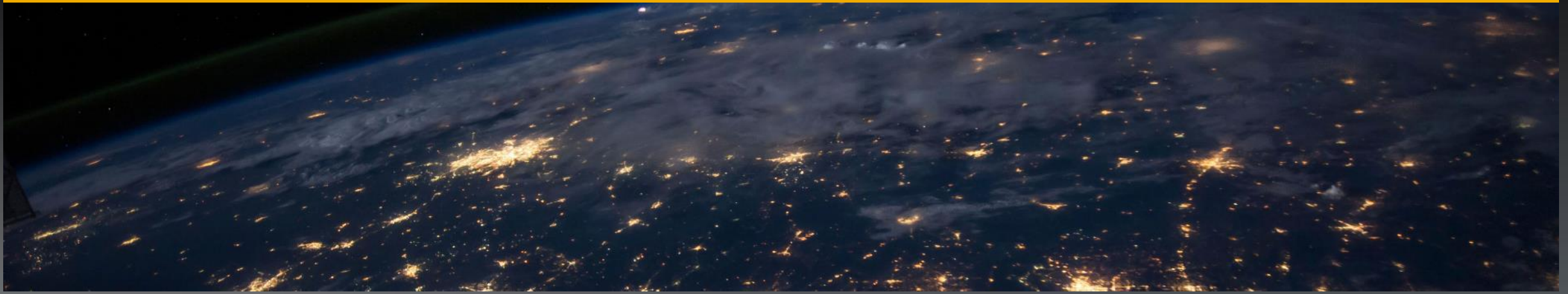


Number of Source System Types reduced from **10 to 4**

- HANA Source System for all database and file connectivity
- ODP Source System for SAP backend systems and SLT
- File Source System
- Big Data Source System

* Planned

** Connectivity to Spark (SQL) Destination already possible with the HANA Source System in BW 7.50 on HANA



Modern Interface

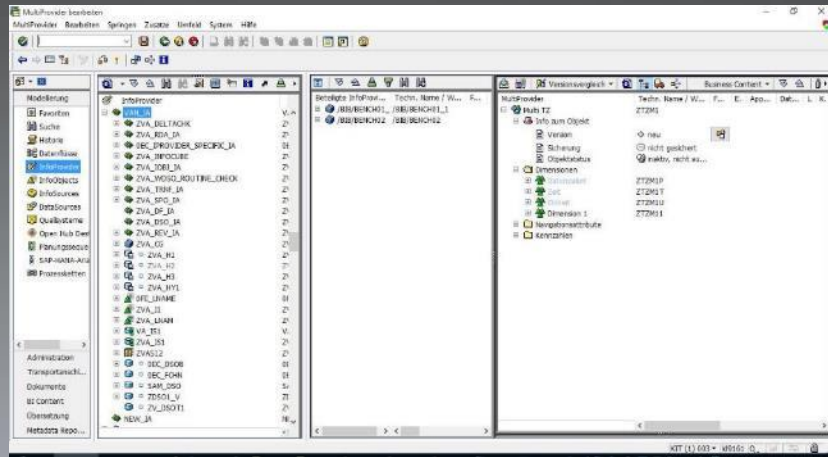
New Business User UX

New Modeler UX

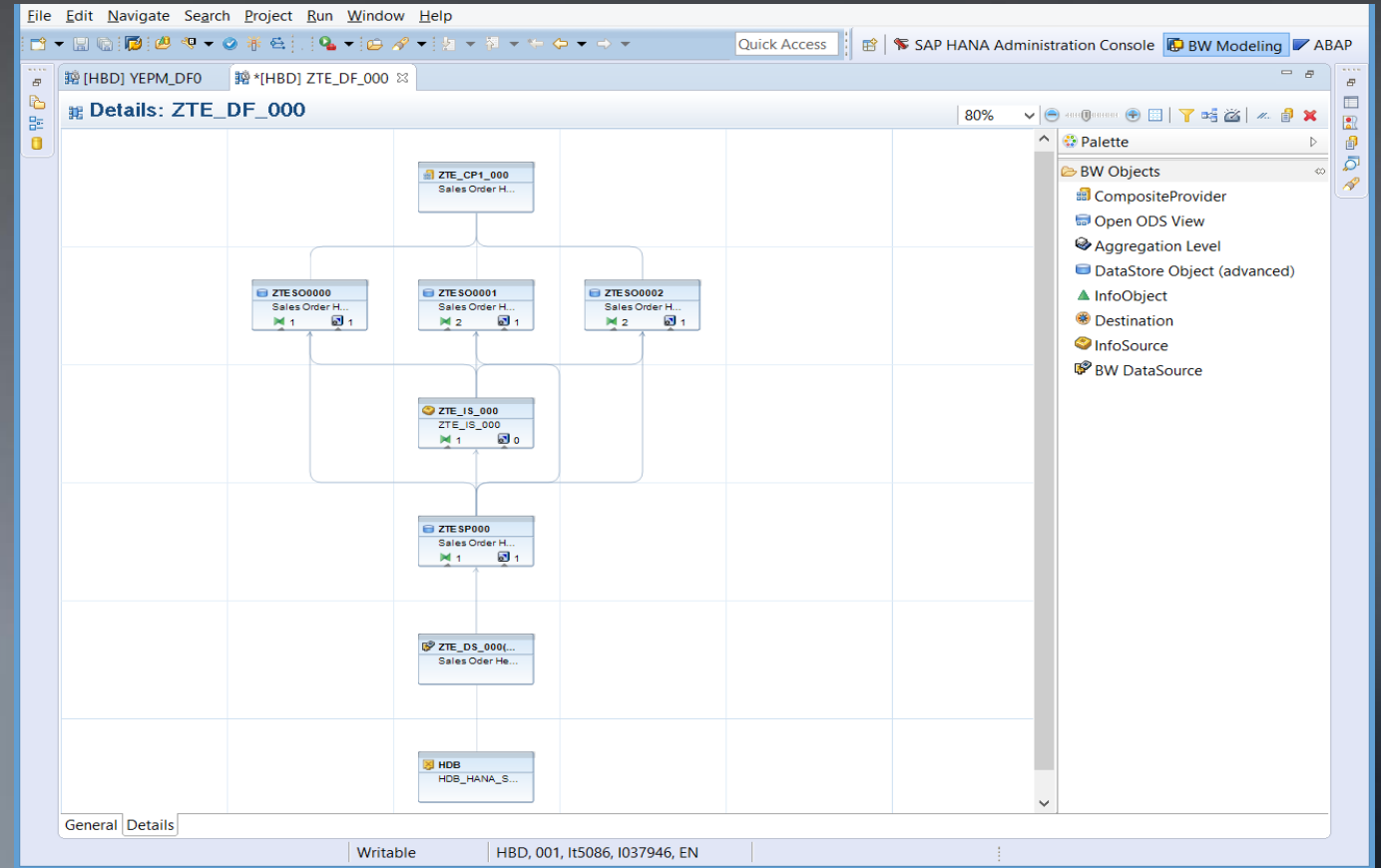
New Administrator UX



SAP BW/4HANA – New Modelling User Interface



SAPGUI



SAP BW/4HANA Modelling Tools
integrated with SAP HANA Studio

SAP BW/4HANA – New Business User Interface

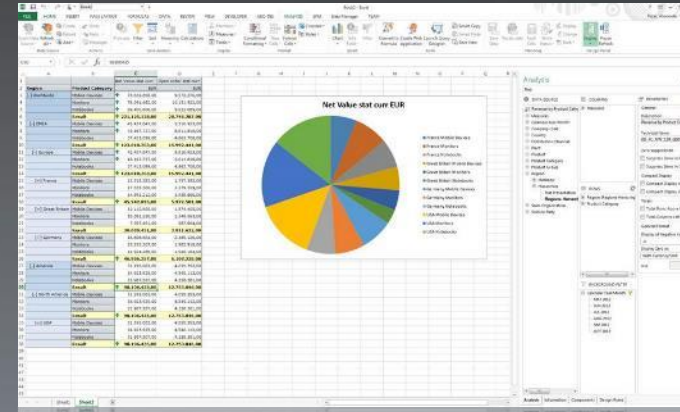


Rohertrag pro Monat

Neue Analyse | Öffnen | Sichern als | ... | Information | Senden | Druckversion | Export nach Excel | Kommentare

Spalten: Kennzahlen, Ziele, Kalenderjahr, Artikelgruppe, Artikel, Freie Merkmale, Auftragsnummer, Kundengruppe, Positionnummer, Spalte, Verkaufsorganisation, Vertriebsweg, Warenempfänger

Zeilen	Kalenderjahr a	Artikelgruppe a	Artikel a	Umsatz ¹	Kosten des Umsatzes ¹	Rohertrag ¹		
				EUR	EUR	EUR		
2008	91	Einzelgemüse	91041	Bohnen M	560.000,00	483.112,50	76.887,50	
			91081	Champignons M	939.864,00	816.751,10	123.112,90	
			91022	Erbisen L	425.200,00	369.849,60	55.350,40	
			91021	Erbisen M	407.099,00	358.085,40	51.013,60	
			91031	Kartoffeln M	522.060,00	452.087,00	69.973,00	
			91091	Linsen M	473.200,00	405.797,60	67.402,40	
			91012	Mais L	549.059,00	479.873,25	69.185,75	
			91011	Mais M	477.776,00	413.535,20	64.240,80	
			91051	Rotkraut M	627.878,00	545.152,10	82.725,90	
			91071	Tomaten M	272.562,00	234.856,00	37.706,00	
			91061	Weißkraut M	810.280,00	704.041,20	106.238,80	
			Ergebnis	6.065.648,00	5.261.120,95	804.527,05		
		92	Mischgemüse	92012	Erbisen + Karotten L	501.870,00	434.784,45	66.885,55
			92011	Erbisen + Karotten M	629.392,00	548.468,15	80.923,85	
			92032	Mexicana Mix L	585.200,00	513.552,90	71.647,10	
			92031	Mexicana Mix M	676.188,00	596.678,40	79.509,60	
			92022	Moderner Entopf L	896.300,00	612.711,00	83.589,00	

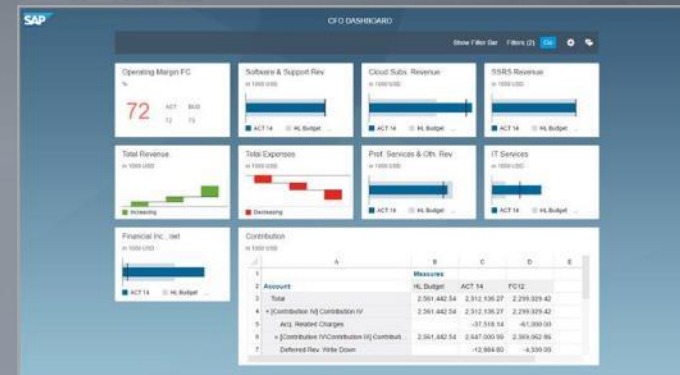


SAP BusinessObjects Analysis Office



SAP BusinessObjects Cloud

BW Business Explorer (BEx)



SAP BusinessObjects Design Studio

SAP BW/4HANA – New Interface for Administrators



Monitor List 1037946 of Process Chains

Es	Status Chain	Name	Date	Time	Streaming Time	Monitoring	Runtime	Status	Runtime Duration	Delay	Next Start
	00000000	00000000	01.08.2016	09:00:00							
	00000000	00000000	01.08.2016	09:00:00							
	00000000	00000000	01.08.2016	09:00:00							
	00000000	00000000	01.08.2016	09:00:00							
	00000000	00000000	01.08.2016	09:00:00							
	00000000	00000000	01.08.2016	09:00:00							
	00000000	00000000	01.08.2016	09:00:00							
	00000000	00000000	01.08.2016	09:00:00							
	00000000	00000000	01.08.2016	09:00:00							
	00000000	00000000	01.08.2016	09:00:00							
	00000000	00000000	01.08.2016	09:00:00							
	00000000	00000000	01.08.2016	09:00:00							
	00000000	00000000	01.08.2016	09:00:00							
	00000000	00000000	01.08.2016	09:00:00							
	00000000	00000000	01.08.2016	09:00:00							
	00000000	00000000	01.08.2016	09:00:00							
	00000000	00000000	01.08.2016	09:00:00							
	00000000	00000000	01.08.2016	09:00:00							
	00000000	00000000	01.08.2016	09:00:00							



ABAP Process Chain Monitor

ProcessChainMonitor

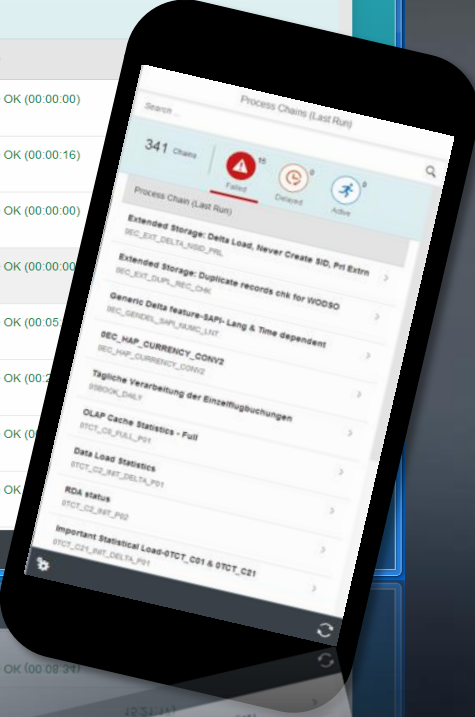
https://ld9460.wdf.sap.corp:44300/sap/bc/ui5_ui5/sap/rspcm_web/index.html?sap-client=000&sap-language=en

Process Chains (Last Run)

Search ...

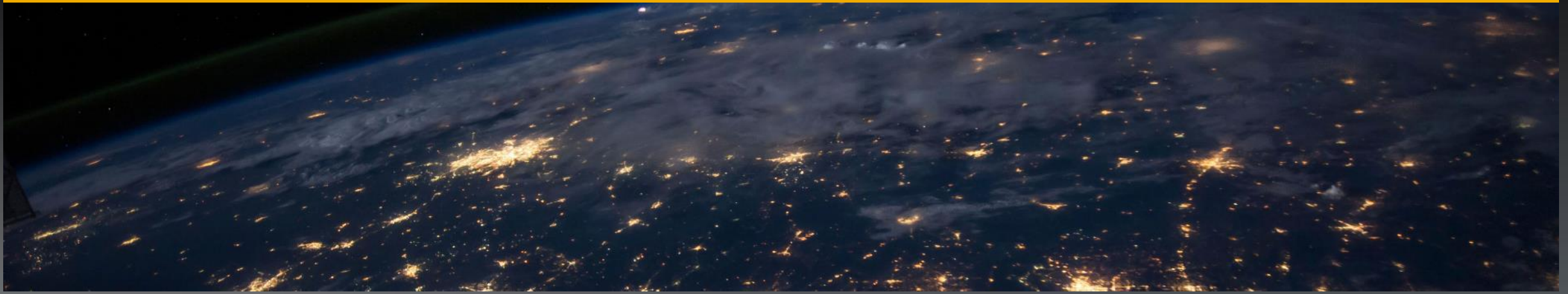
341 Chains Failed 13 Delayed 0 Active 0

S	Process Chain (Last Run)	Date	Runtime
	⚠️ Tägliche Verarbeitung der Einzelflughbuchungen 0SBOOK_DAILY	Jun 30, 2014, 4:37:46 PM	Runtime OK (00:00:00)
	⚠️ OLAP Cache Statistics - Full 0TCT_C0_FULL_P01	Jul 1, 2014, 1:00:48 AM	Runtime OK (00:00:16)
	⚠️ Data Load Statistics 0TCT_C2_INIT_DELTA_P01	Jul 1, 2014, 1:00:48 AM	Runtime OK (00:00:00)
	⚠️ RDA status 0TCT_C2_INIT_P02	Jul 1, 2014, 1:21:28 PM	Runtime OK (00:00:00)
	⚠️ Important Statistical Load-0TCT_C01 & 0TCT_C21 0TCT_C21_INIT_DELTA_P01	Jun 30, 2014, 3:21:22 PM	Runtime OK (00:05:00)
	⚠️ Database Volume Statistics 0TCT_C25_FULL_P01	Jun 27, 2014, 11:01:32 PM	Runtime OK (00:00:00)
	⚠️ SAP Netweaver BI Accelerator Statistics 0TCT_C3_INIT_DELTA_P01	Jun 30, 2014, 3:21:22 PM	Runtime OK (00:00:00)
	⚠️ Statistics for Selections 0TCT_C41	Jun 30, 2014, 3:00:46 PM	Runtime OK (00:00:00)



S	Process Chain (Last Run)	Date	Runtime
	0TCT_C01	Jun 30, 2014, 3:00:46 PM	Runtime OK (00:00:00)
	0TCT_C3_INIT_DELTA_P01	Jun 30, 2014, 3:21:22 PM	Runtime OK (00:00:00)
	0TCT_C21_INIT_DELTA_P01	Jun 30, 2014, 3:21:22 PM	Runtime OK (00:05:00)
	0TCT_C41	Jun 30, 2014, 3:00:46 PM	Runtime OK (00:00:00)

UI5-based Process Chain Monitor



High Performance

In-Memory Data Warehousing

Algorithm Pushdown

Advanced Analytics





Query all data at the speed of **SAP HANA**



No Aggregates or Roll-up Processes



No Performance Specific Objects

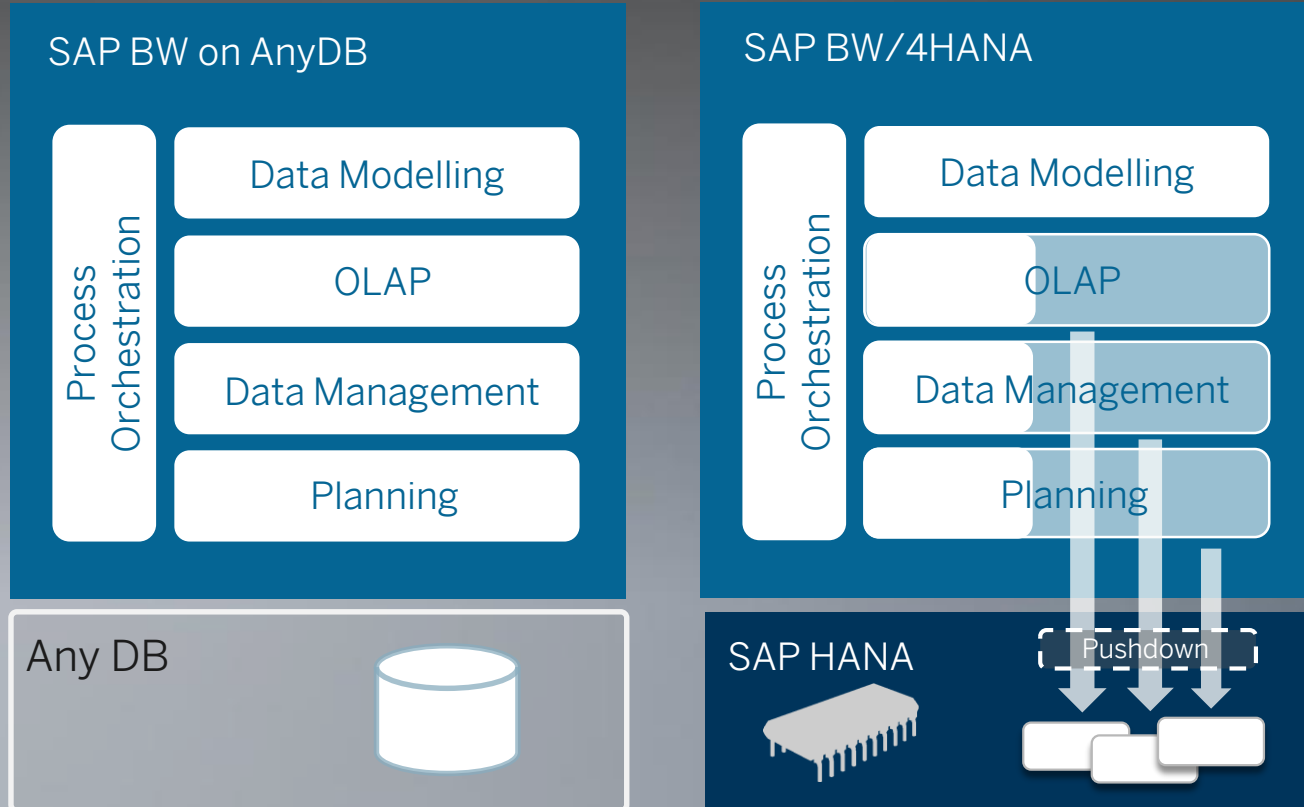


Fewer Indexes



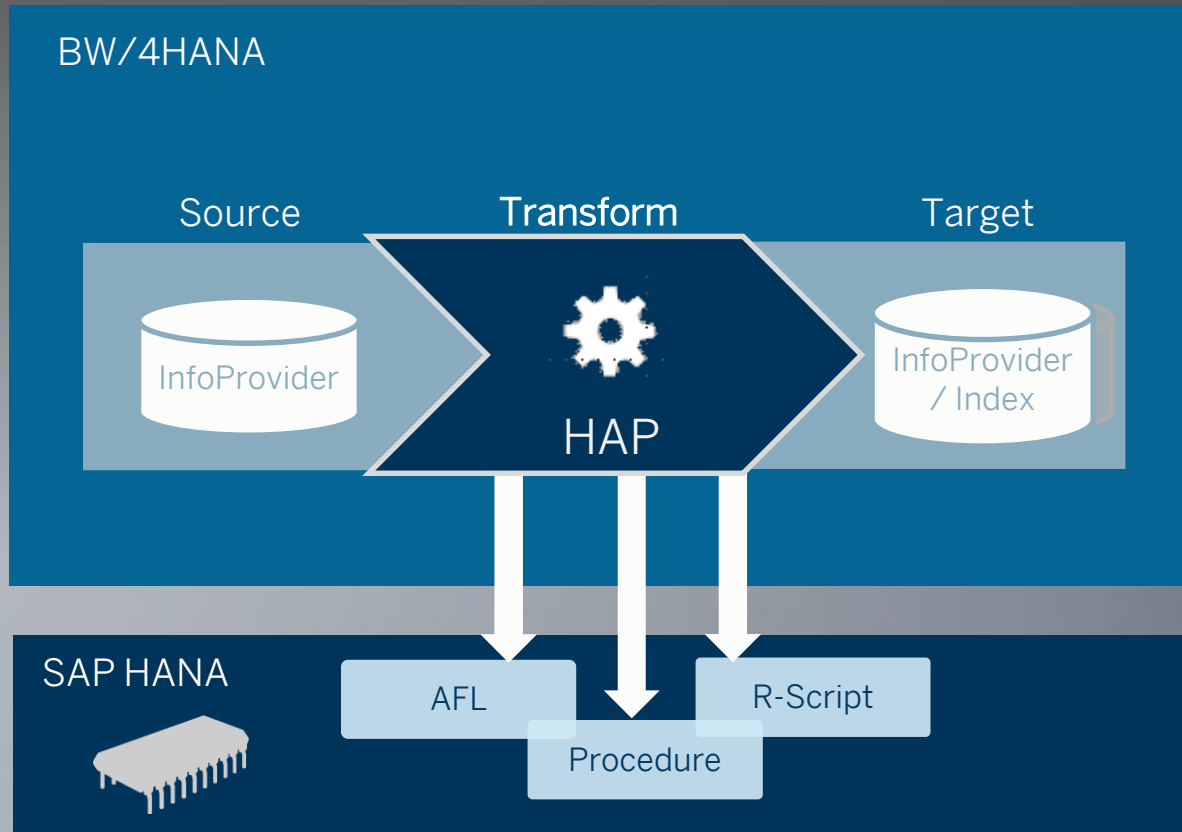
Faster Loading and Processing

SAP BW/4HANA – Algorithm Push-down



Significant performance gain through push-down of operations/calculations

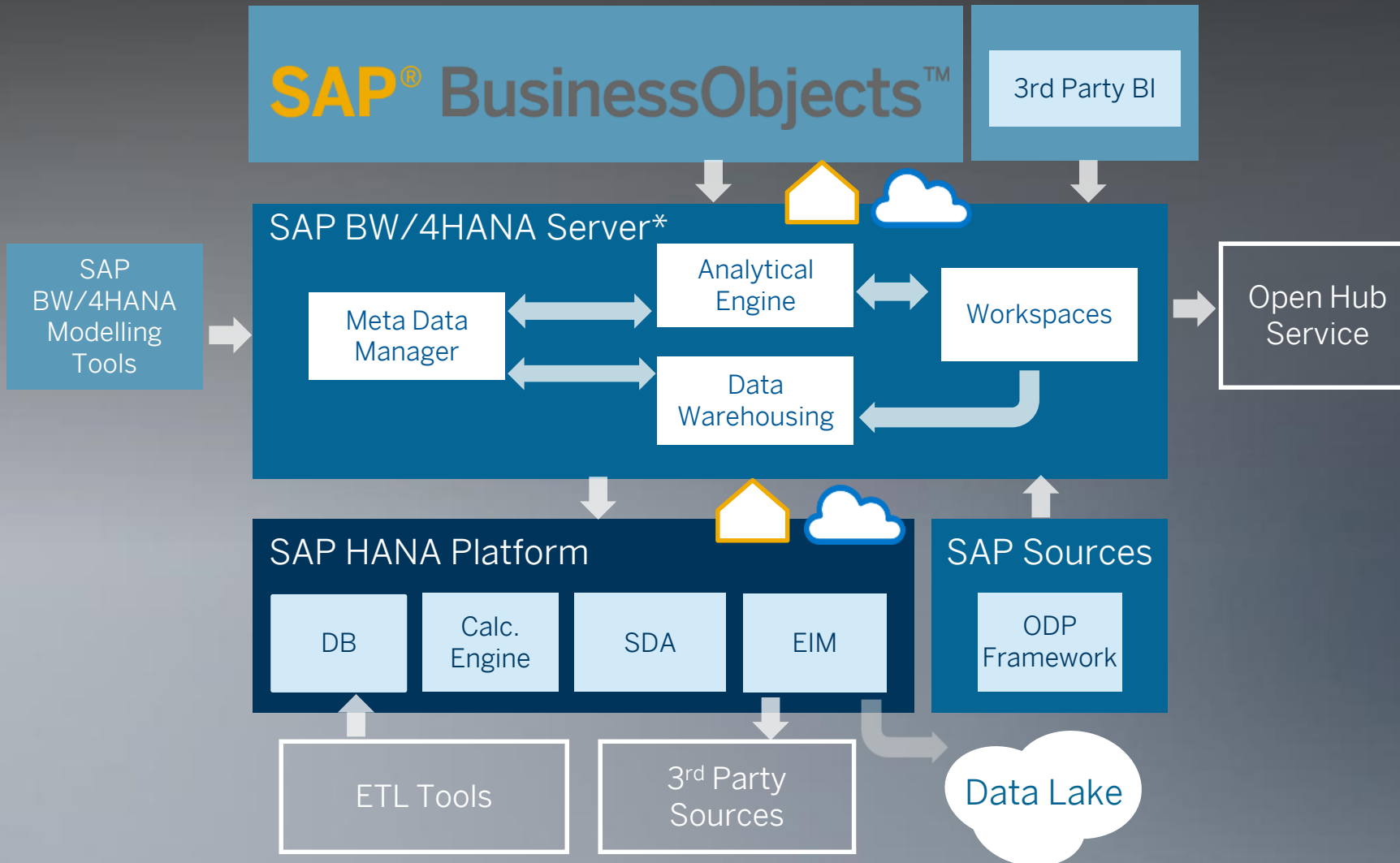
- OLAP Engine, complex query calculations (e.g. exception aggregation)
- Planning functions (e.g. disaggregation)
- Data management (e.g. transformation logic)



Enhance data with Advanced Analytics using HANA specific libraries (AFL), R-Script or a custom HANA procedure

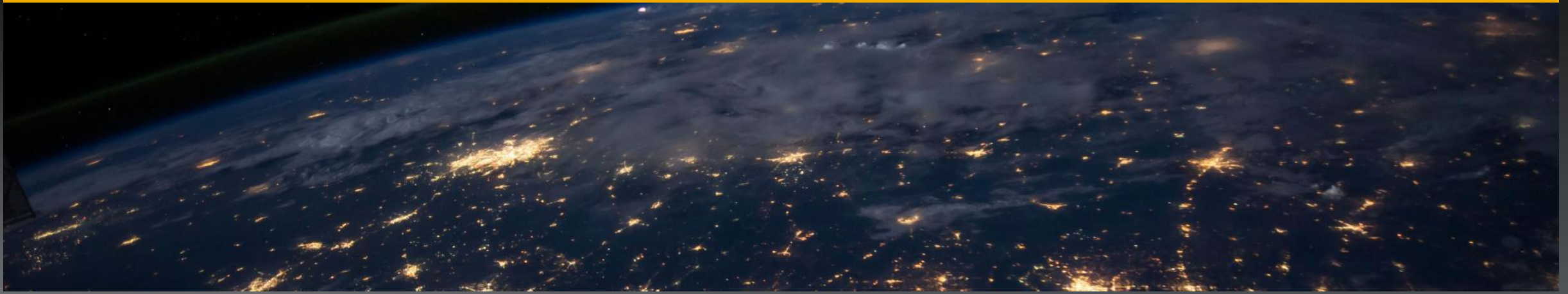
- Predictive
- Text Analysis
- Data Mining
- Machine Learning

SAP BW/4HANA – Architecture



Key Features

- Lean application server
- SAP BW/4HANA Modelling environment built to run on SAP HANA
- No Java stack required
- SAP BW/4HANA - On-Premise or in the Cloud



Paths to SAP BW/4HANA

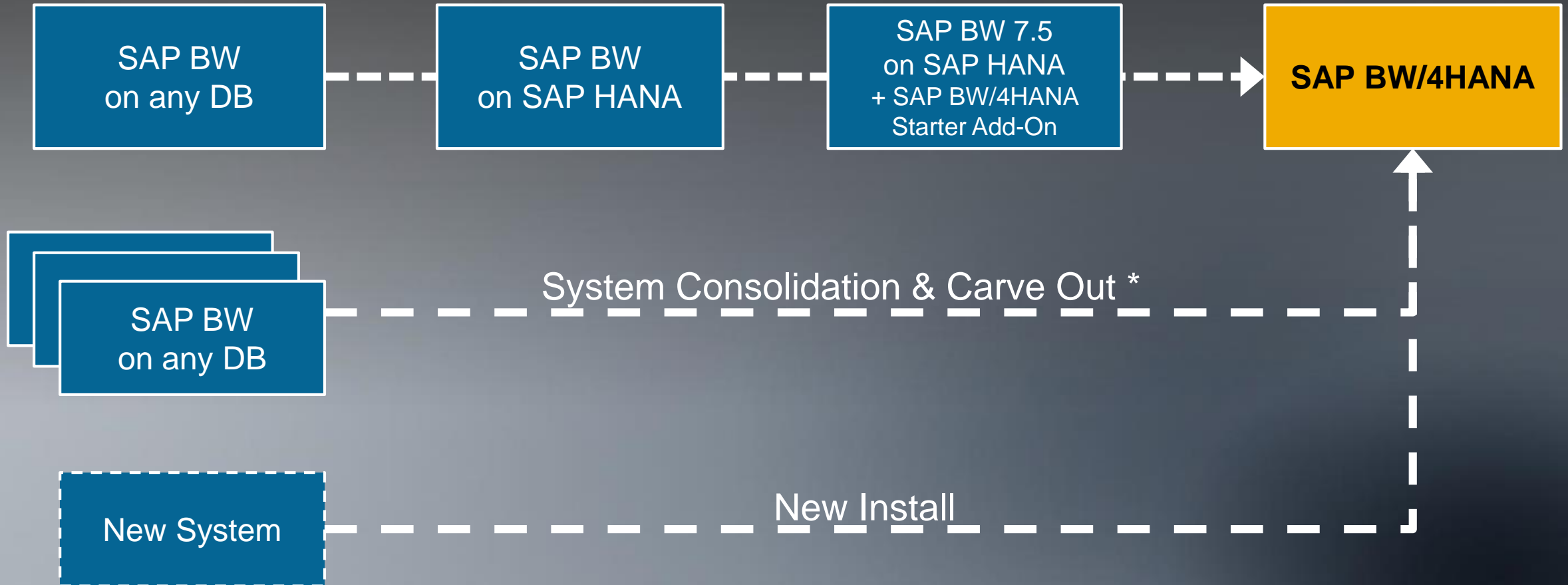
New Installation

System Conversion

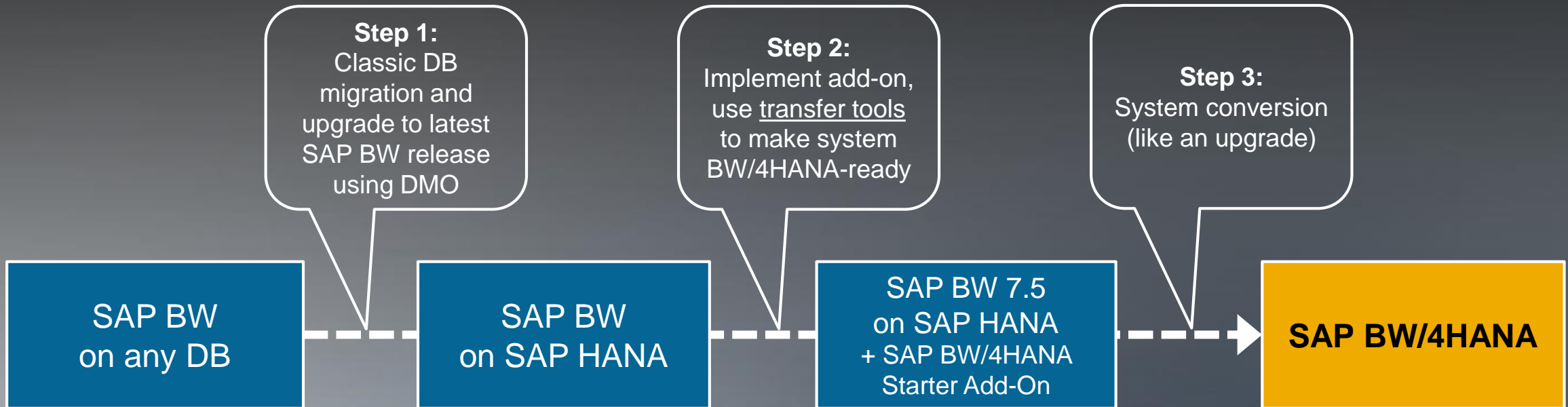
Landscape Transformation



Paths to SAP BW/4HANA



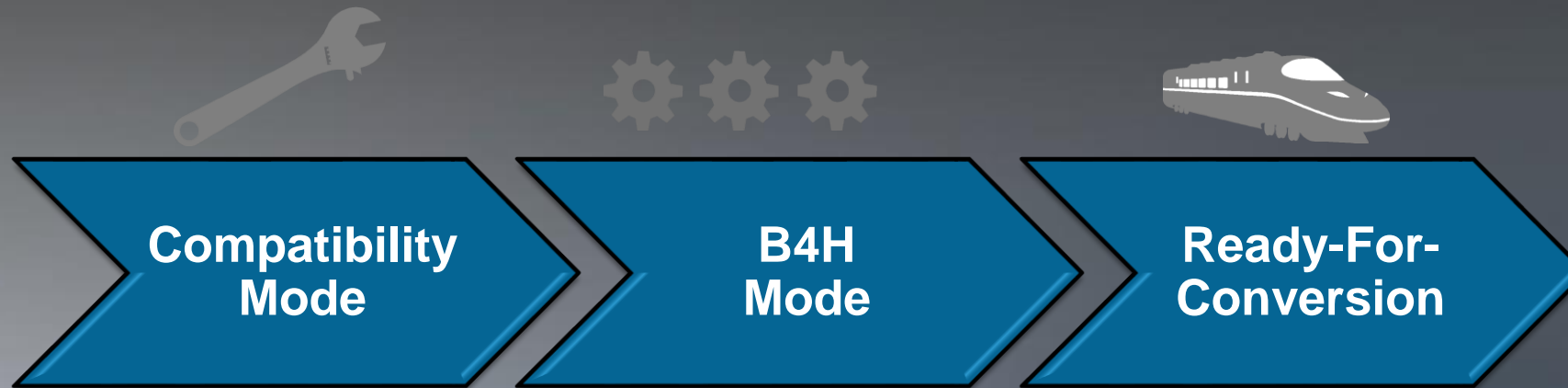
Path to Convert Your System



- All BW customers can start NOW
- Customers on SAP BW powered by SAP HANA have a head-start
- Customers can convert at their own pace – benefiting gradually from HANA-optimizations

SAP BW/4HANA Starter Add-On

Add-On “SAP BW/4HANA Starter” (f.k.a. “SAP BW, Edition for SAP HANA”) is prerequisite for In-Place Conversions



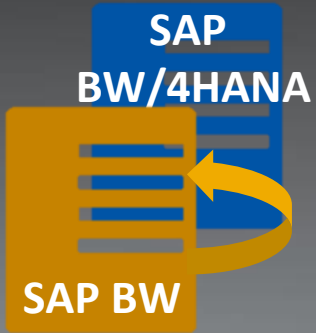
- Unsupported object types cannot be created
- Existing scenarios can continue running as before
- Unsupported objects can be changed when adding them to a white list

- No imports of unsupported object types
- White list is not relevant any more

- System is ready for component upgrade

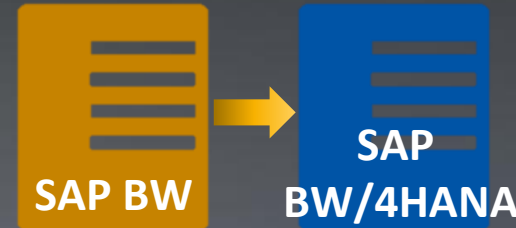
Next Steps

SAP BW/4HANA Transfer Toolbox *



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 component upgrade to SAP BW/4HANA
- Start release: SAP BW 7.50 SP 6 powered by SAP HANA



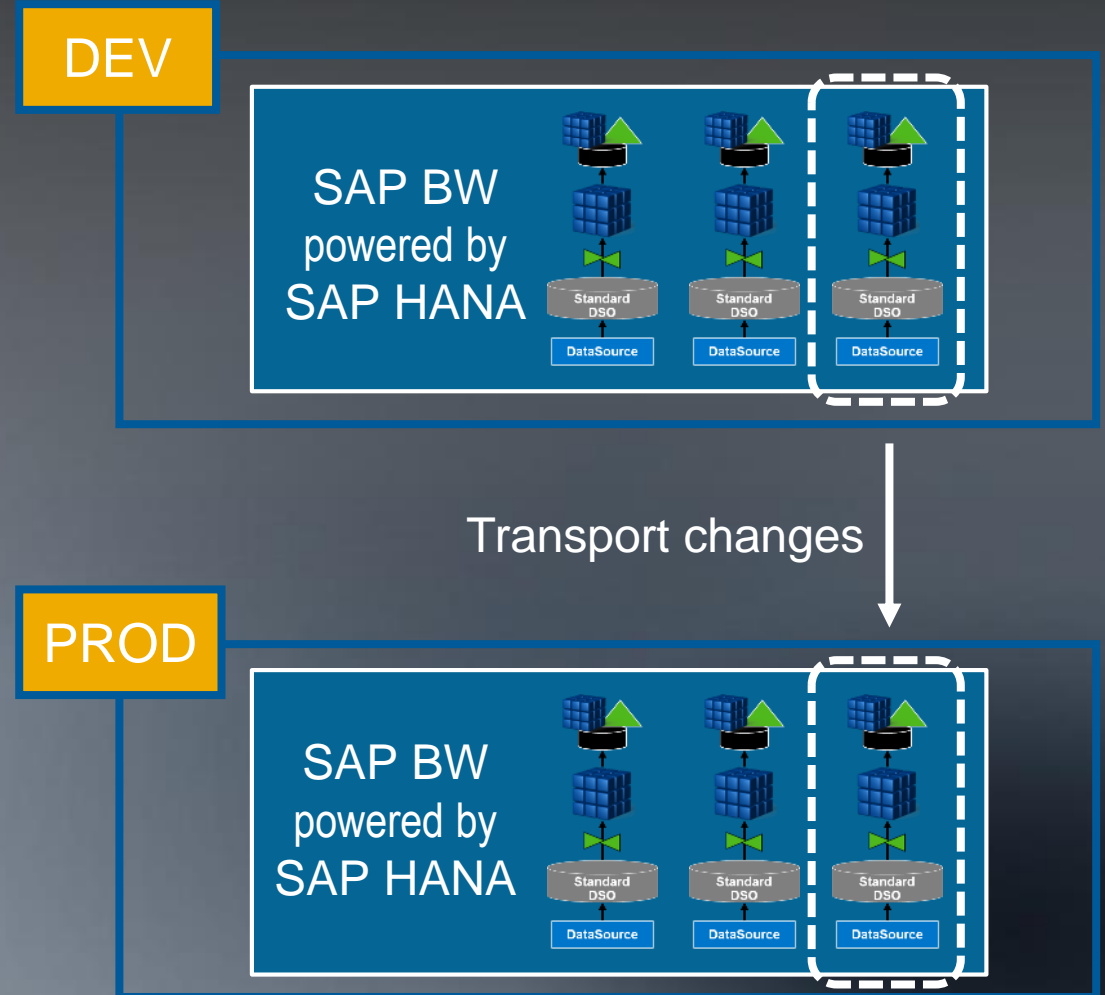
Remote Conversion

- 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
- Risk mitigation due to parallel system
- Start release: SAP BW 7.0 or higher on AnyDB

Migration to SAP BW/4HANA

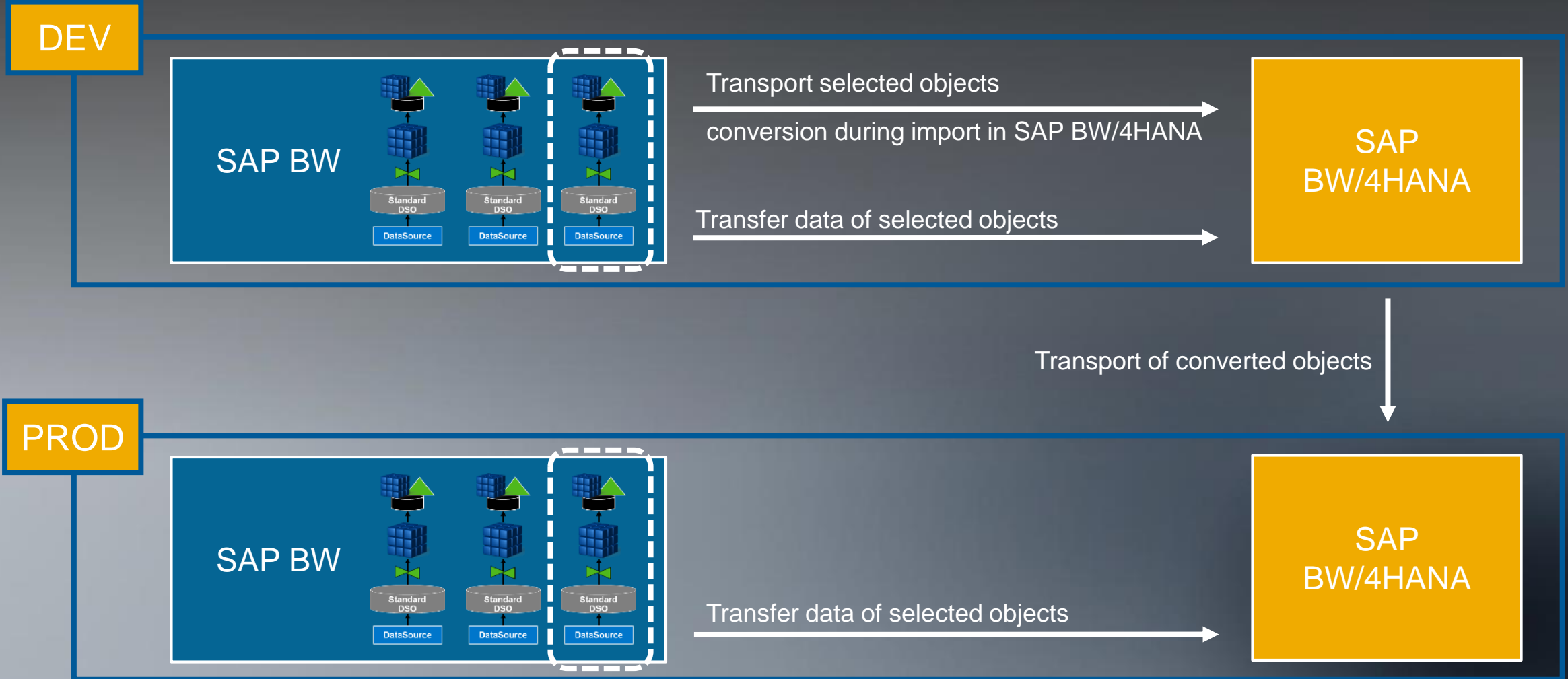
Outlook – Conversion Support – In-Place Conversion

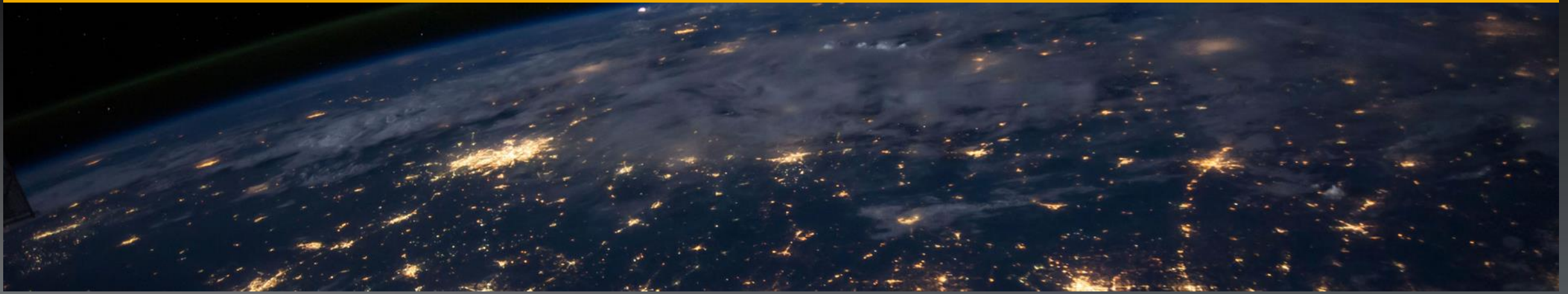
- Select scope
- Convert classic objects – including data – and adjust DTPs/Transformations
- System is ready for conversion? → Upgrade to SAP BW/4HANA
- Import transport – moving data to new objects
- System is ready for conversion? → Upgrade to SAP BW/4HANA



Migration to SAP BW/4HANA

Outlook – Conversion Support – Remote Conversion





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>

Why #BW/4HANA?

<http://scn.sap.com/community/bw-hana/blog/2016/09/05/why-bw4hana>

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>

Replay of the SAP BW/4HANA Launch Event

<http://events.sap.com/sap-amazon-web-services/en/home>



SAP BW/4HANA in a Nutshell

Ulrich Christ and Gordon Witzel



November 8, 2016 - January 18, 2017



English

SAP BW/4HANA in a Nutshell

- Starting November 8, 2016
- 4 Units – 2-3 hours in total
- Free Participation & Certification

<https://open.sap.com/courses/bw4h1>



Thank you

Abbreviations

ABAP	Advanced Business Application Programming	DWaaS	Data Warehouse as a Service	ODQ	Operational Delta Queue
ADSO	Advanced DataStore Object	ECC	Enterprise Core Component	ODS	Operational DataStore
AFL	Application Function Library	EDW	Enterprise Data Warehouse	OLAP	Online Analytic Processing
AGS	SAP Active Global Support	EIM	Enterprise Information Management	PSA	Persistent Staging Area
ASE	SAP Adaptive Server Enterprise Database	ELT	Extract, Load, Transform	RDBMS	Relational Database Management System
AWS	Amazon Web Services	ERP	Enterprise Resource Planning	SDI	SAP HANA smart data integration
BAPI	Business Application Programming Interface	ETL	Extract, Load, Transform	SLO	System Landscape Optimization
BEx	Business Explorer	FI,CO,SD,MM,HR	Financials, Controlling, Sales & Distribution, Material Management,, Human Resources	SLT	SAP Landscape Transformation
BI	Business Intelligence	HAP	SAP HANA Analytic Process	SOAP	Simple Object Access Protocol
BW	Business Warehouse	HEC	SAP HANA Enterprise Cloud	SP	Support Package
C4C	Cloud for Customers	HTML	Hypertext Markup Language	SPS	Support Package Stack
CRM	Customer Relationship Management	IQ	SAP IQ Database	SQL	Structured Query Language
DB	Database (Connect)	IoT	Internet of Things	SUM	Software Update Manager
DLM	Data Lifecycle Management	LSA	Layered Scalable Architecture	SWPM	Software Provisioning Manager
DMO	Database Migration Option	LSA++	Layered Scalable Architecture for SAP HANA	UD	Universal Data (Connect)
DSO	DataStore Object	ML	Machine Learning	UI	User Interface
DW	Data Warehouse	NLS	Near-line Storage	UI5	SAP UI Development Toolkit for HTML5
DWH	Data Warehouse	ODP	Operational Data Provisioning	UX	User Experience

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