SAP Datasphere for Beginner - Hands On Workshop -

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Las Vegas

2024

SAPinsider

SAP Datasphere is the foundation for a business data fabric architecture

Data consumers

Planning and analytics

Intelligent data apps

Data science

SAP Datasphere running SAP BTP

Security

Access control

Availability

Discovery, consumption, sharing & self-service
space, data product, marketplace

Governance
cataloging, metadata management, lineage, privacy, quality

Business semantics
semantic onboarding, entity import, business content

Modelling
relational & rich analytic models, lifecycle management, authorizations

Data integration & preparation
real-time replication & federation, transformation, scheduling, monitoring

SAP and non-SAP data

Applications

On-premises Data Warehouses

Cloud Data Warehouses and Lakehouses

Relational Databases

Unstructured/ Semi-structured Data

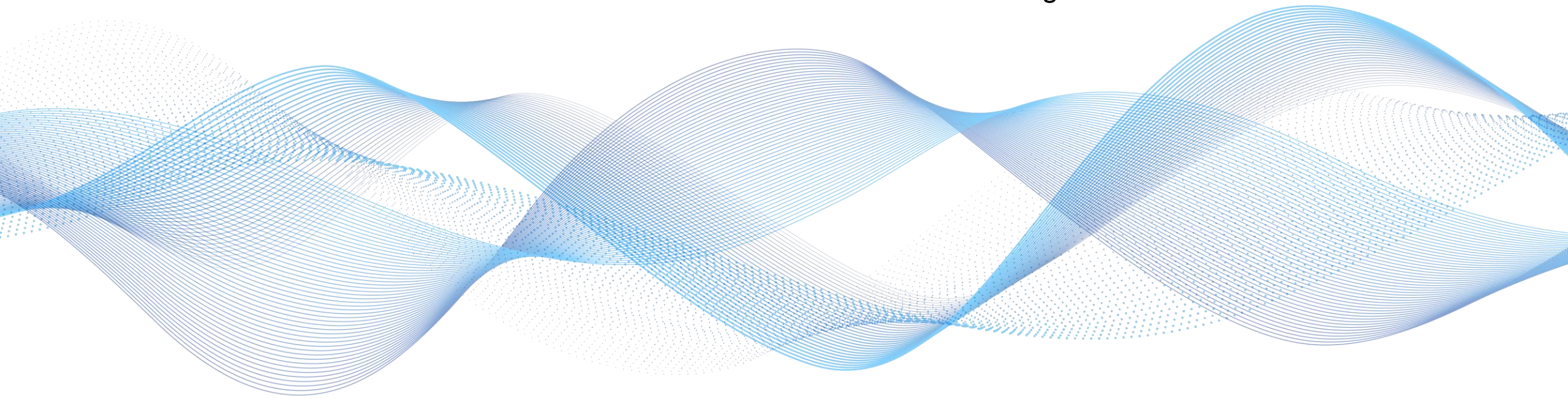
Why a business data fabric

Self-service access to trusted data breeds agility and accelerated, accurate decisions

Comprehensive data governance assures every stakeholder that private data stays private

Real-time data, infused throughout your data architecture helps business users, partners, and employees make in-the-moment improvements

A **simplified data landscape** reduces costs and technical debt while maximizing current investments



Unleash the power of business data with SAP Datasphere

Access authoritative data

Deliver business data in its business context

Make it effortless to model your business

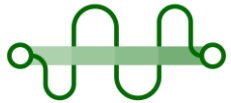
Ensure governance throughout the data lifecycle

Enrich all data projects

Virtually access or physically store data from anywhere

Leverage trusted data partners and securely share data across the organization

Integrate with industry-leading data and AI platforms to capitalize on data investments



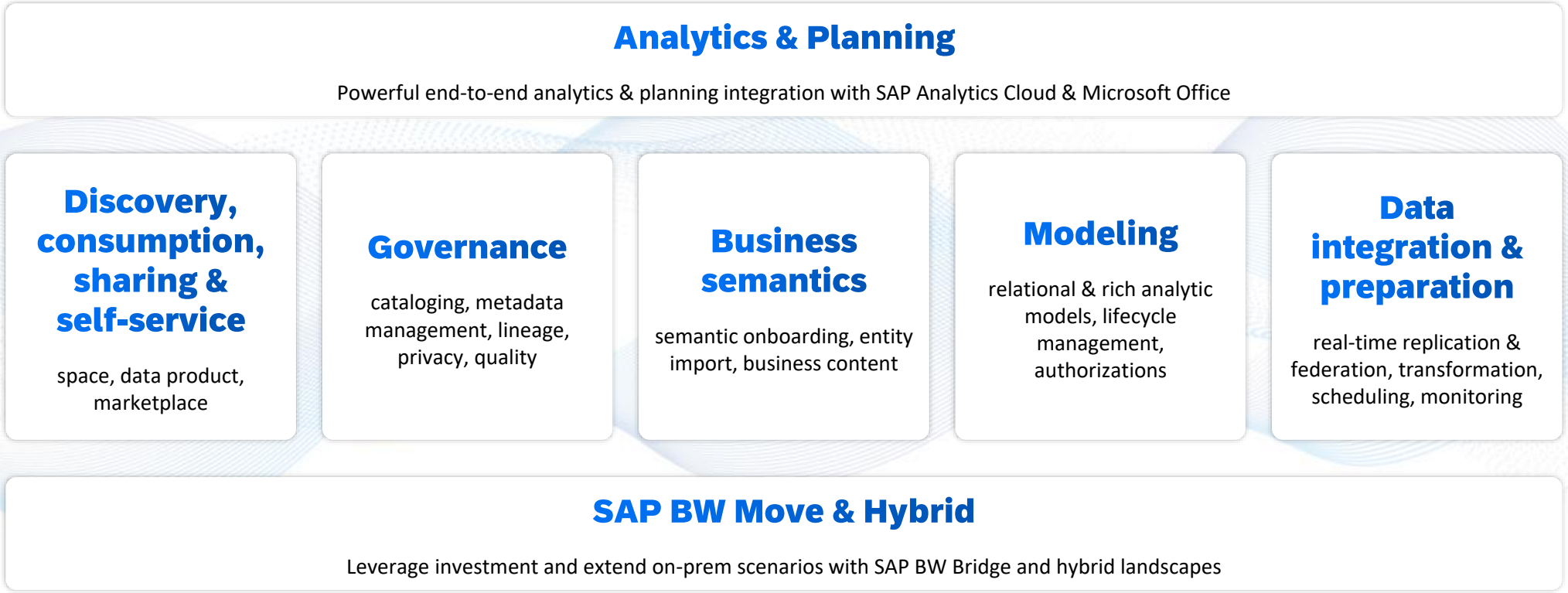
Simplify the data landscape

Innovate across hybrid architectures leveraging existing SAP models

Enable self-service data access

Leverage existing SAP BW models and transformations to innovate in the cloud

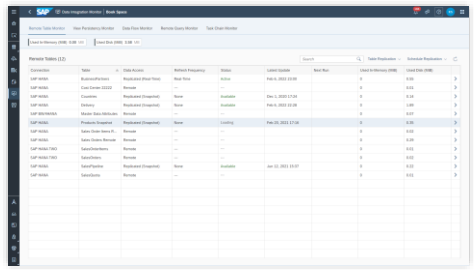
SAP Datasphere provides capabilities for a complete Business Data Fabric architecture



Integrate

Integrate. Open for Virtual Access and Persistence

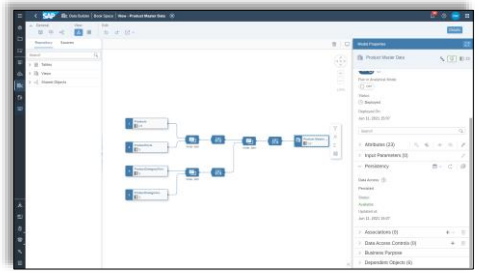
Virtual Access



Remote table federation

- Leave data in the source system and access remotely in real-time when needed
- No upfront data movement
- Federation is supported across various sources and hyperscalers

Persistence



Remote table replication

- Real-time replication or snapshots using single entities

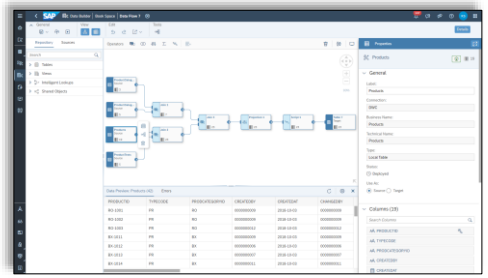
Replication flow

- Replication with multiple entities and flexible targets

View Persistence

- Materialize view output results in a stable persistence

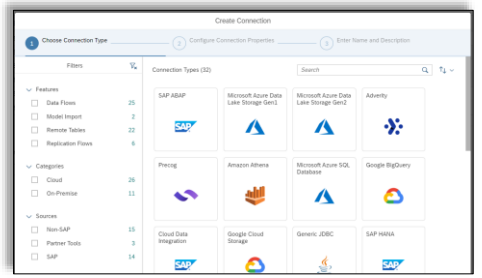
Data Flow



Batch loads & transformations

- Combine structured and semi structured data while defining ETL processes
- Advanced transformation capabilities leveraging Python 3
- Schedule in task chains

External Tools



Integrate with all data sources

Allow external data movement tools like SAP Data Services, SAP Data Intelligence, SAP OpenConnectors, SnapLogic, Precog, Adverity, etc. to bring data into the system using SQL interfaces and the open SQL schema

Integrate. Data Sources Overview

SAP Applications

- SAP S/4HANA
- SAP S/4HANA Cloud
- SAP ECC
- SAP ABAP
- SAP BW/4HANA Model Transfer
- SAP BW
- SAP HANA Data Lake
- SAP HANA, Data Lake Files
- SAP SuccessFactors
- SAP Fieldglass
- SAP Marketing Cloud

Databases & Generic Connections

- SAP HANA on-prem & Cloud
- Oracle
- Microsoft SQL Server
- Generic JDBC
- Generic OData
- Generic SFTP
- Local CSV File
- Generic Cloud Data Integration
- Adverity
- Precog

Hyperscaler & Cloud Apps

- Google Cloud Storage
- Google BigQuery
- Azure SQL Database
- Azure Blob Storage
- Azure Data Lake Store Gen1
- Azure Data Lake Store Gen2
- Amazon S3
- Amazon Athena
- Amazon Redshift
- HDFS
- SAP Open Connectors

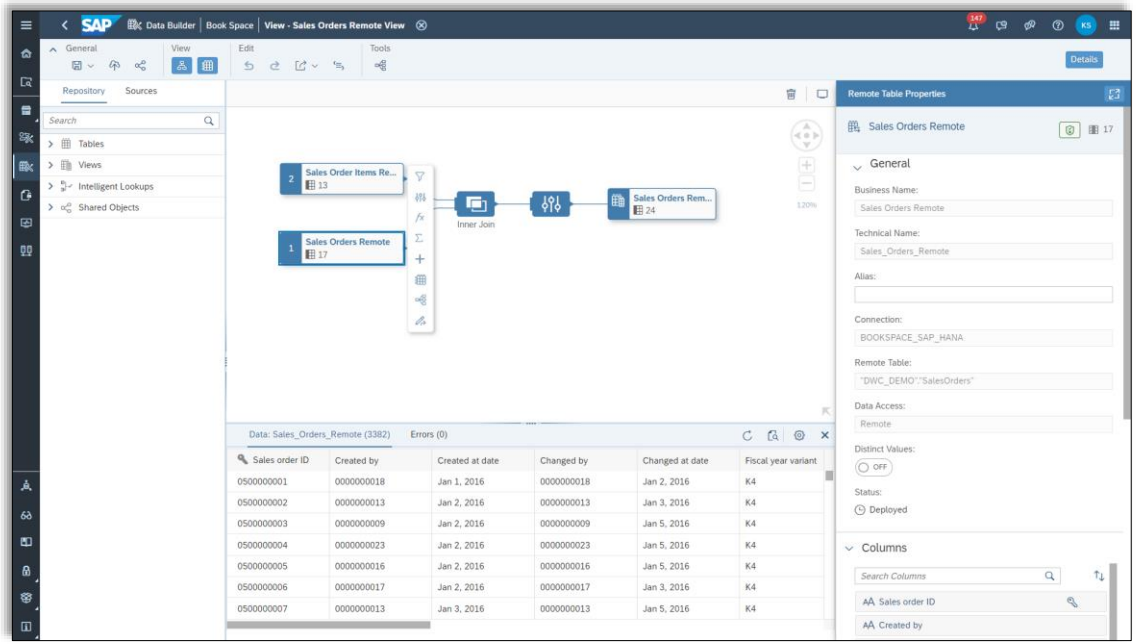
Outbound Targets

- SAP Datasphere
- SAP HANA on-prem & Cloud
- SAP HANA, Data Lake Files
- Amazon S3
- Azure Data Lake Store Gen2
- Google Cloud Storage
- Google BigQuery

SAP Help: [Connection Overview]

Integrate. Virtual Data Access

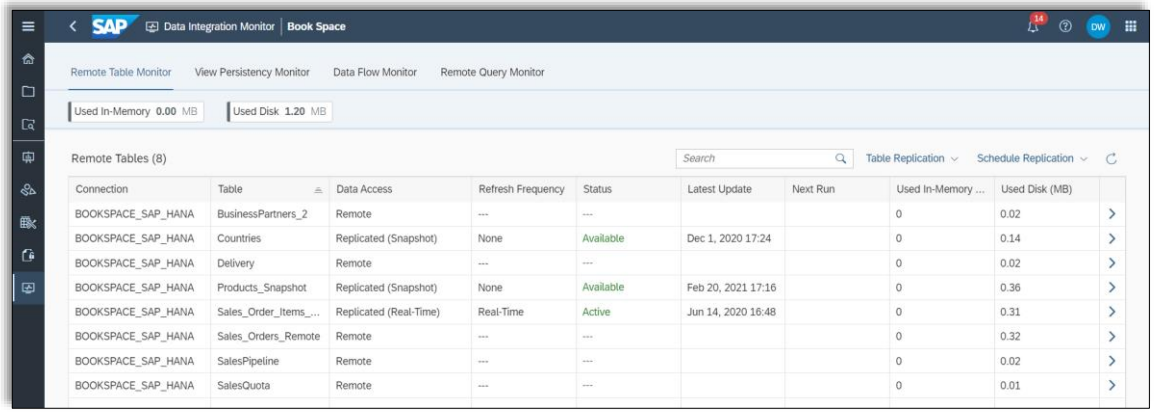
- Virtual Access using remote tables, which points to a table in an external system
- Access remote data as if it was stored in local tables
- Remote tables access data without copying the data
- Change the remote table connection and/or the remote table source object via a wizard or use the *Save As* button to create a new remote table based on an existing one
- Data is transferred through the network each time a query is executed
- Restrict data transfer using central filters and selected columns only*
- Seamless switching between remote access and data replication (or snapshots) without the need to change the data models

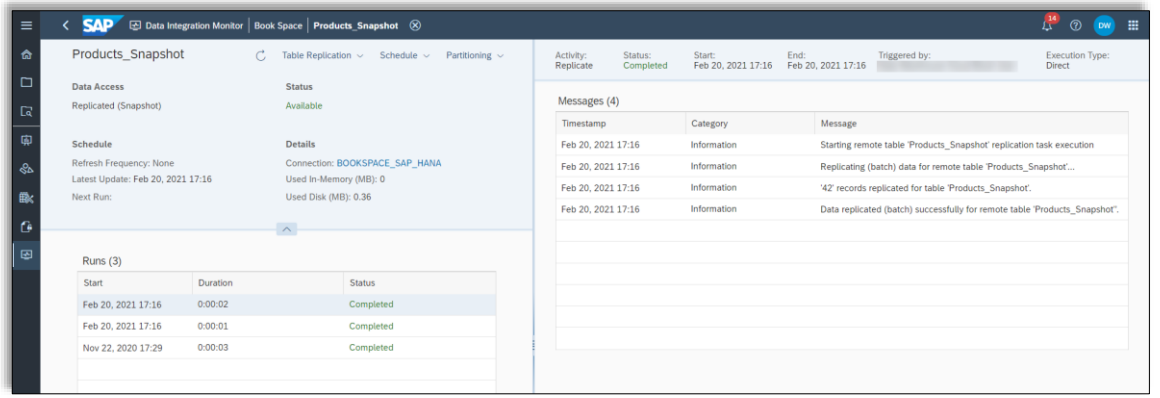


* Filtering depends on source connection and column data types. See more information in the online documentation.

Integrate. Real-time Replication & Snapshots via Remote Tables

- Switch from remote access to snapshots or real-time replication for change-data-capture (CDC) enabled tables
- Schedule snapshot loading for remote tables, orchestrated via task chains (optional)
- Create partitions for snapshot and real-time replication to split larger data transfers and execute these single transactions in parallel
- Ability to start & stop, pause & resume, and cancel real-time replication
- Restrict data transfer using central filters and selected columns only*
- Seamless switching between remote access and data replication or snapshots without the need to change the data models

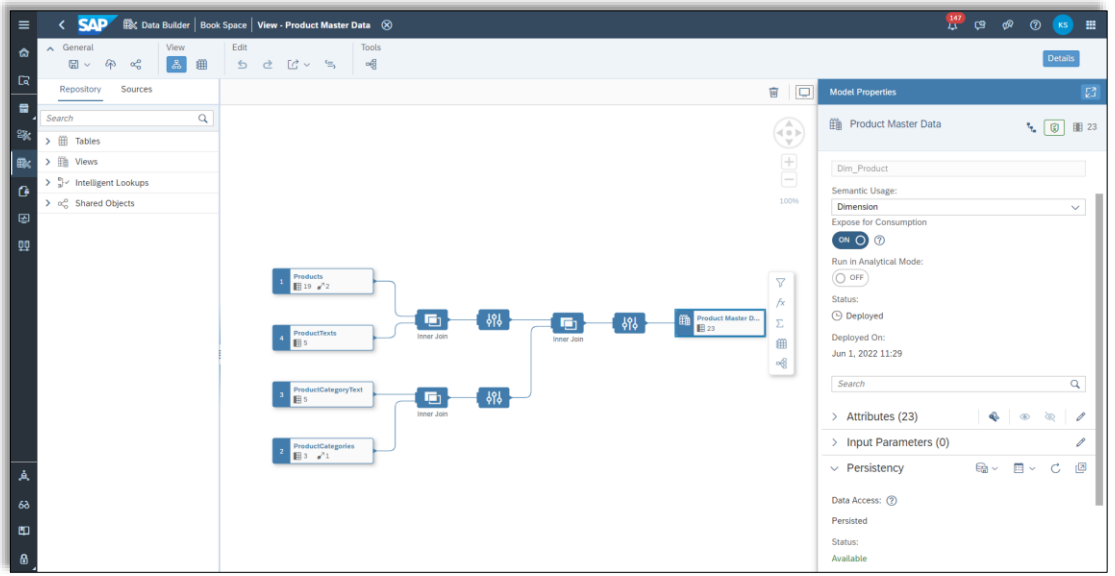


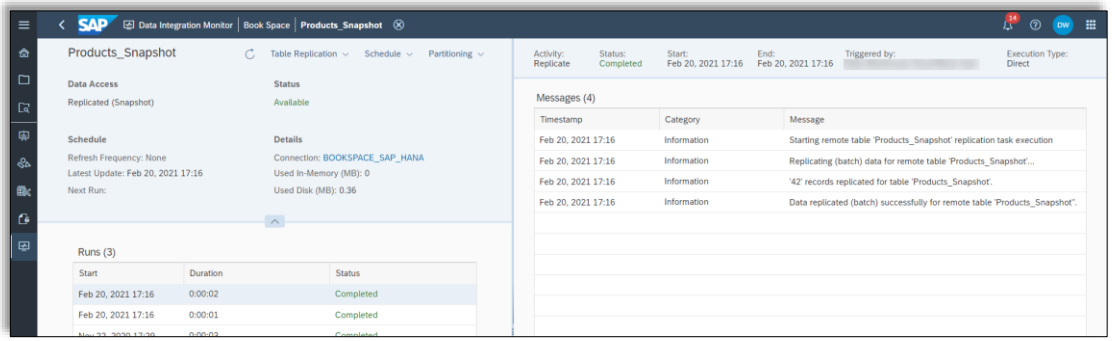


* Filtering depends on source connection and column data types. See more information in the online documentation.

Integrate. View Persistence

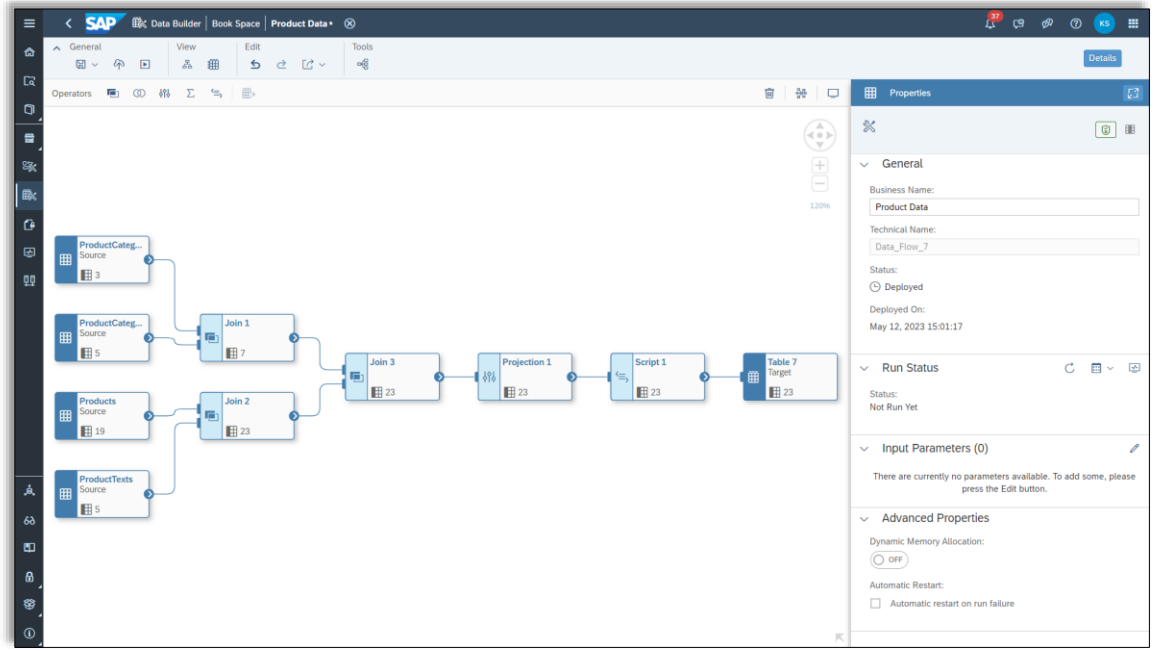
- Graphical & SQL views can be configured as persisted views to materialize the output result
- The result set is persisted similar to remote table snapshots or data flow target tables, and supports partitioning
- Store only required data instead of a full table replication
- Improve performance for views with heavy transformations or slow remote sources
- Monitoring, scheduling and view analyzer access via the Data Integration Monitor
- Supports partitioning and partition-wise refresh
- Asynchronous (Default) and synchronous execution
- Can be used in task chains (optional)



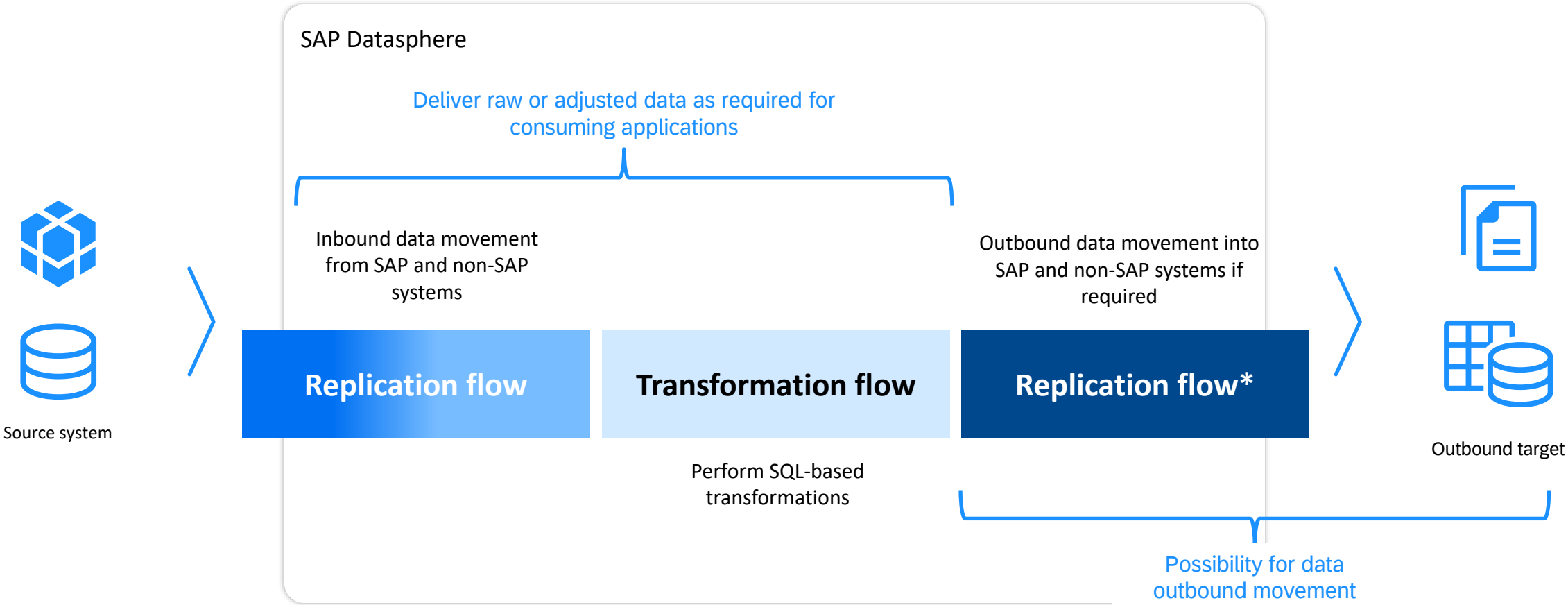


Integrate. Data Flow

- Data integration from variety of data sources
- Easy to use data flow modeling experience for ETL requirements
- Load and combine data from different data sources (SAP and non SAP) like file storages, DBMS or SAP S/4HANA
- Standard transformation capabilities and scripting for advanced requirements
- Apply a generic filter-based delta or select only specific columns to reduce the amount of data that needs to be transferred
- Use substitution/input parameter in filters and calculated columns to substitute the value or use default value at execution time
- Dynamic memory allocation and auto restart option



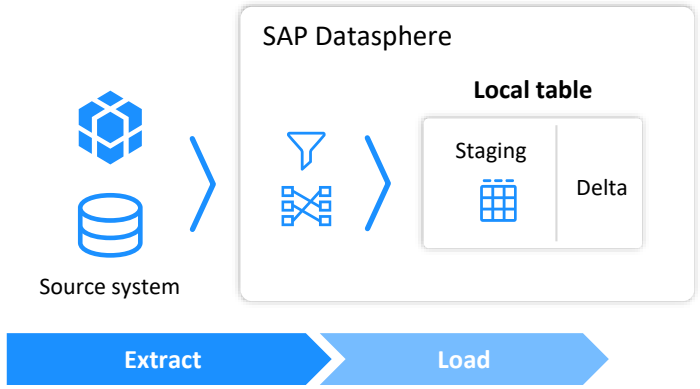
The big picture of data integration in SAP Datasphere



* Delta local tables as source for Replication Flows planned

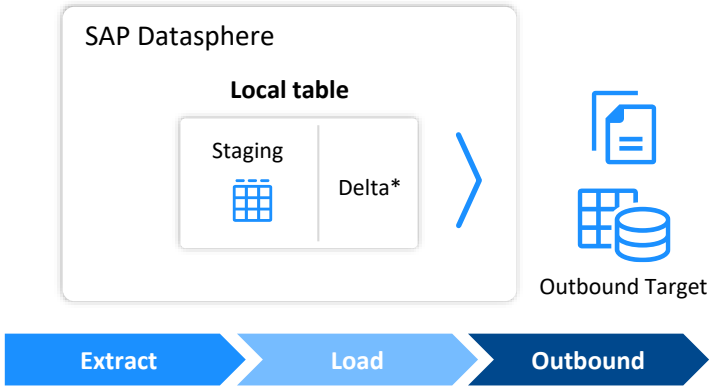
Replication Flow Use Cases

1 Inbound Data Movement



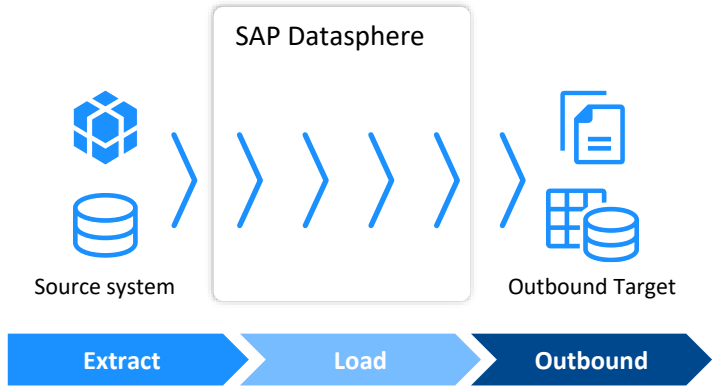
Replicate data from SAP or non SAP sources into SAP Datasphere and capture data changes occurring near-real-time from the source to update the target table

2 Outbound Data Movement



Read data from SAP Datasphere and replicate it into supported SAP and non SAP outbound targets while tracking data changes*

3 Pass-Through Option

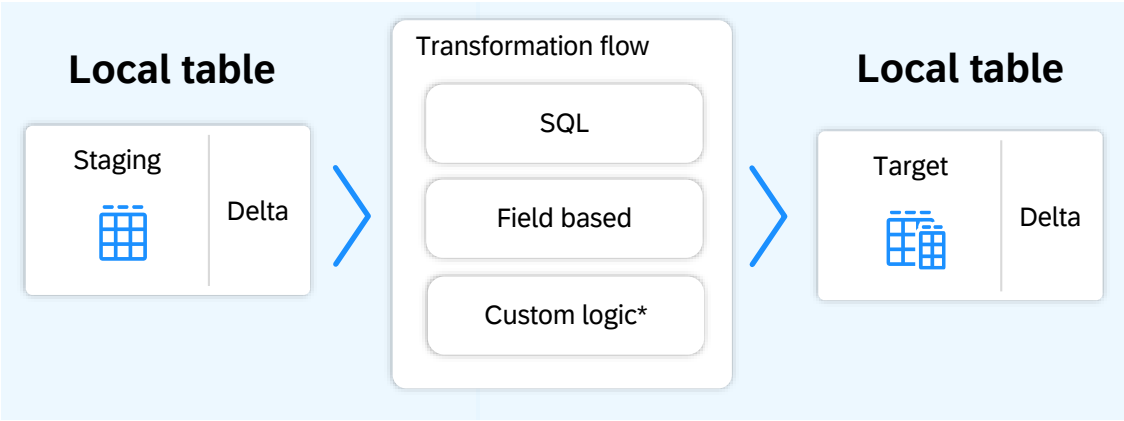


Use SAP Datasphere as a middleware and replicate data from supported sources into supported targets while tracking data changes* occurring near-real-time in that source

SAP Datasphere transformation flow

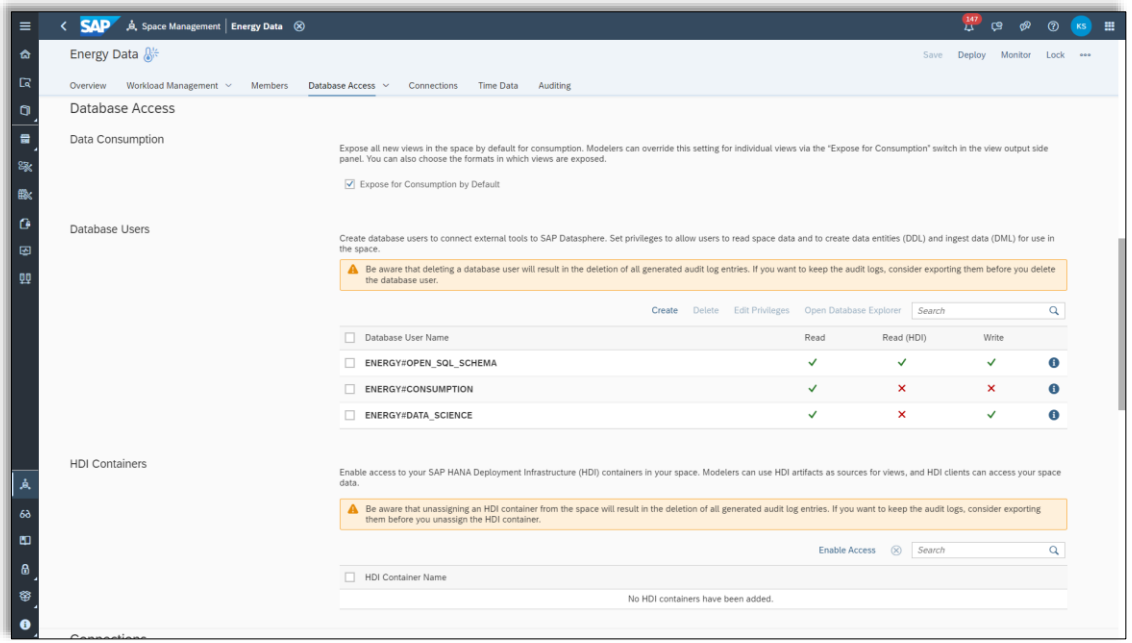
Perform SQL-based transformations on delta and non-delta data

- **Delta staging** in SAP Datasphere to enable SQL transformations, delta writing for multilevel staging, and storage of holistic truth after transformation
- **Support for initial and delta** loading from delta tables
- **Schedulable** through task chains and integrated in data integration monitor
- Integrated in the **data builder** functionality
- **Support** various **SQL-based transformations** (for example, joins, aggregations, functions, calculated columns ...)



Integrate. Open SQL Schema for Data Integration via SQL API

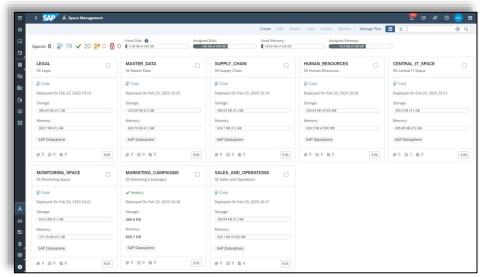
- Enabling external tools access to create artifacts and to write data to an Open SQL Schema of a Space
- Provide SQL endpoint to dedicated database schema
- Connect via an external data integration tool or SQL client
- Usage of SAP HANA SQL capability (DDL & DML)
  - Create views, tables
  - Define & execute stored procedures
  - Leverage Data Anonymization and Data Masking
  - Automated Predictive Library (APL) and Predictive Analysis Library (PAL), if enabled in Space
- Consume data models from your space in the Open SQL Schema
- Start SAP Database Explorer from Space Management



Operate

Operate. Unlocking data insights with integrity

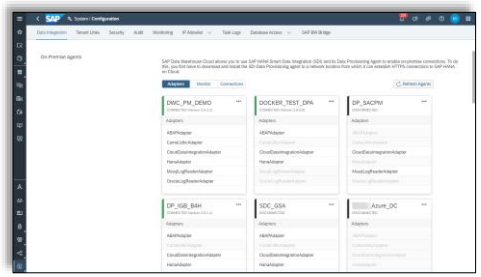
Space Management



Collaboration across spaces

- Access to globally managed data without export & import
- Work independently with your local data and create new insights
- Share your results with others
- Governed by IT

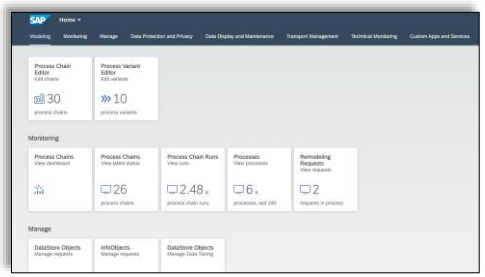
Admin & Security



Manage your settings

- IP Allowlisting & DP Agents
- 3rd Party driver & certificates
- User & Role Management
- Row-level Security & Remote Authorizations from SAP BW/4HANA
- Access HANA Cloud Cockpit
- Auditing & Resource Monitoring

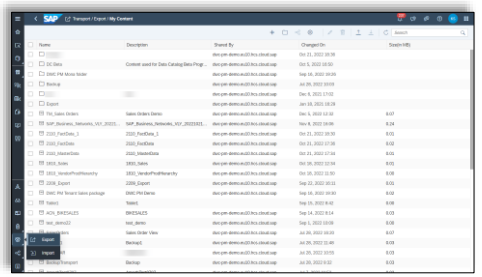
SAP BW bridge



Leverage SAP BW bridge

- SAP BW-based data integration
- Custom ABAP code support
- SAP BW/4HANA Content available for Data Integration
- Tool-supported move of SAP BW-based integration and staging (details see SAP Note 3141688)

Transport

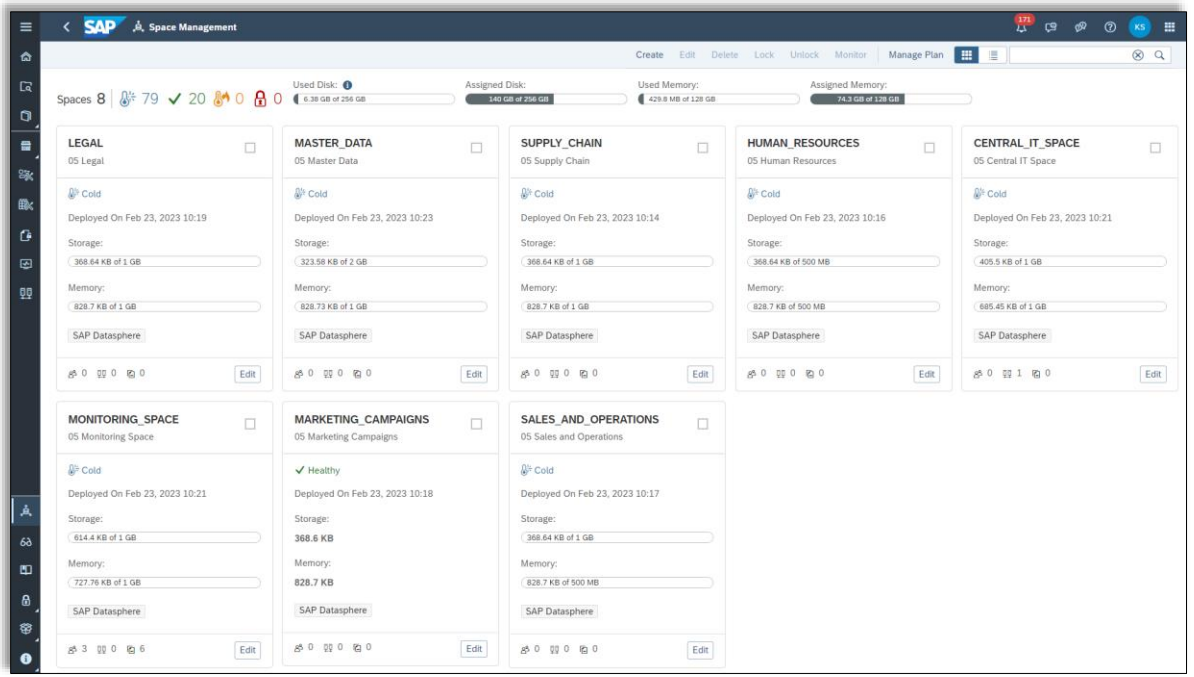


Transfer content between tenants

- Move your own content between different tenants
- Export content packages and share with other tenants

Operate. Space Management

- Spaces are secured virtual work environments which
  - provides isolation for metadata objects and Space resources
  - defines storage quota, control resource usage and workload class settings per Space
  - maintains Space-specific source system connections and a common time dimension
  - manages user access for space members
  - enables sharing of data and currency conversion settings with other spaces
- Database users for
  - read access from other applications
  - write access to an Open SQL Schema via external tools
  - deployment of SAP HANA Deployment Infrastructure (HDI) containers
- Transparent monitoring & statistics
- Optional Auditing for read and change operations
- Optional SAP HANA Data Lake Integration



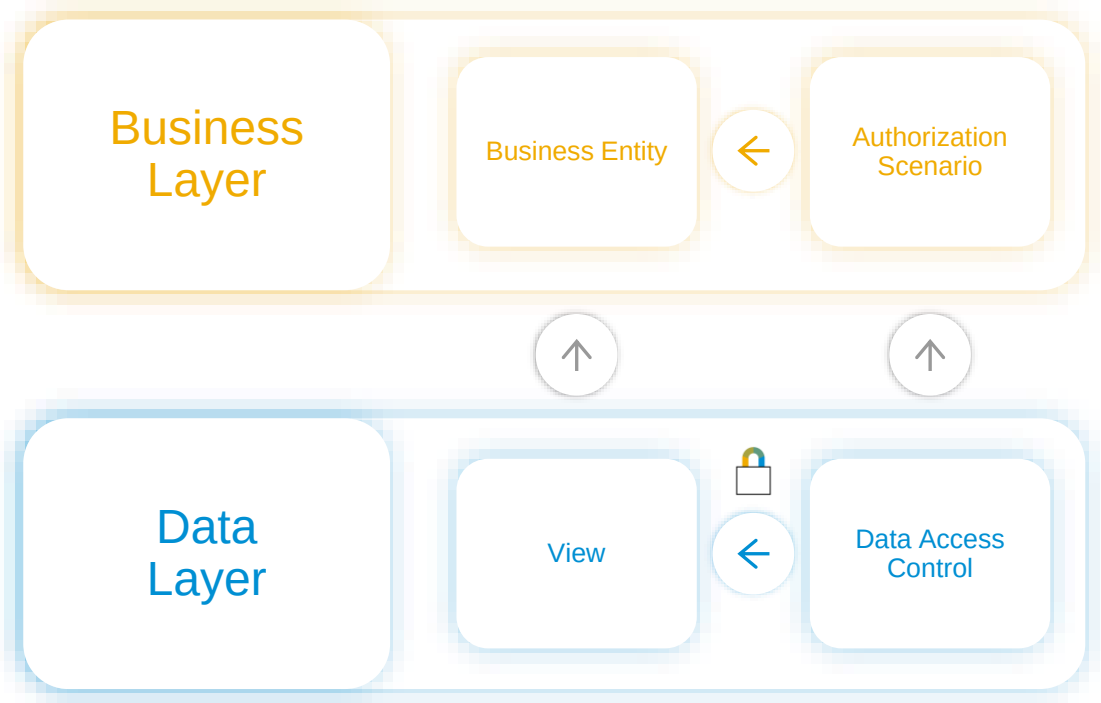
Operate. Data Access Controls & Authorization Scenarios

Data Access Controls

- Allow more granular access to data on row-level
- Applied on artifacts in the Data Layer
- Cannot be overruled
- Data Access Controls are defined once and can be applied to multiple artifacts in Data Layer

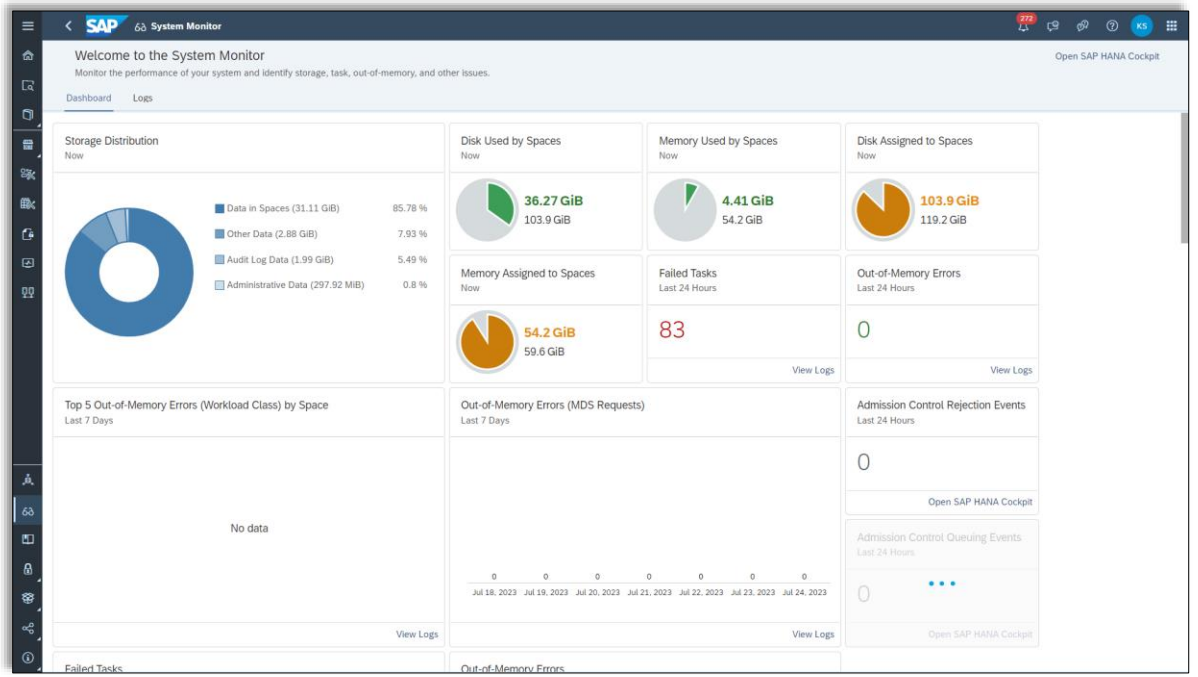
Authorization Scenarios

- Authorization Scenarios in Business Layer define the context in which data is consumed and which Data Access Control is applied
- Consuming objects in Business Layer need to leverage one of the Data Access Controls assigned to the underlying source object in Data Layer



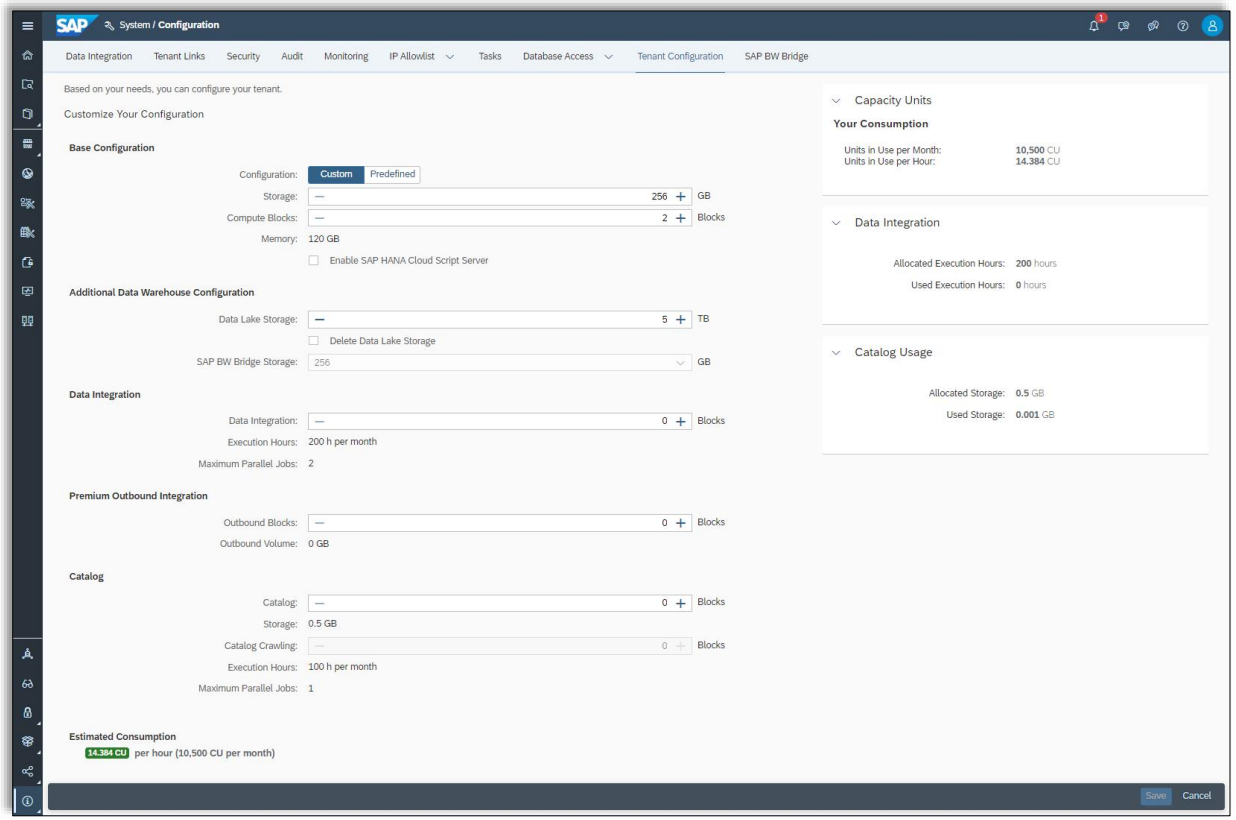
Operate. System Monitor

- The System Monitor tool allows administrators to monitor the performance of their system and identify storage, task, out-of-memory, and other issues across all spaces
  - Disk and Memory assignment and consumption
  - Out-of-memory events
  - Failed Tasks (24h/48h)
  - An overview of all tasks across spaces, and more
  - The top five statements with the highest peak memory consumption and run duration
  - Multi-dimensional services (MDS) queries
  - Drill down to task log and statements



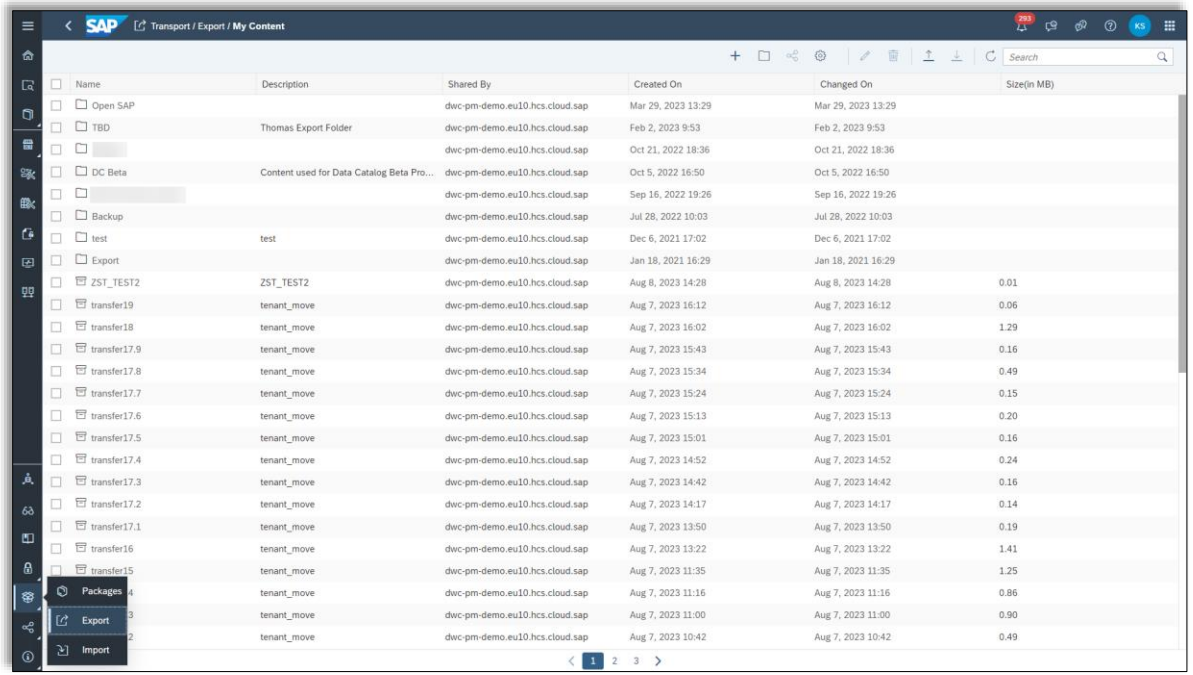
Operate. Flexible Tenant Configuration

- The flexible tenant configuration is available for production and test tenants
- Allows to allocate resources (Capacity Units) according the specific needs after provisioning of a tenant with a fixed minimal configuration (4300 CU)
- Configuring the Sizes of Resources:
  - Storage and compute blocks
  - Enable the SAP HANA Cloud Script Server
  - Data Lake Storage and SAP BW Bridge Storage (optional)
  - Data Integration and Premium Outbound Integration Blocks (optional)
  - Catalog Storage and Crawling Blocks (optional)
- More information



Operate. Transport content between tenants

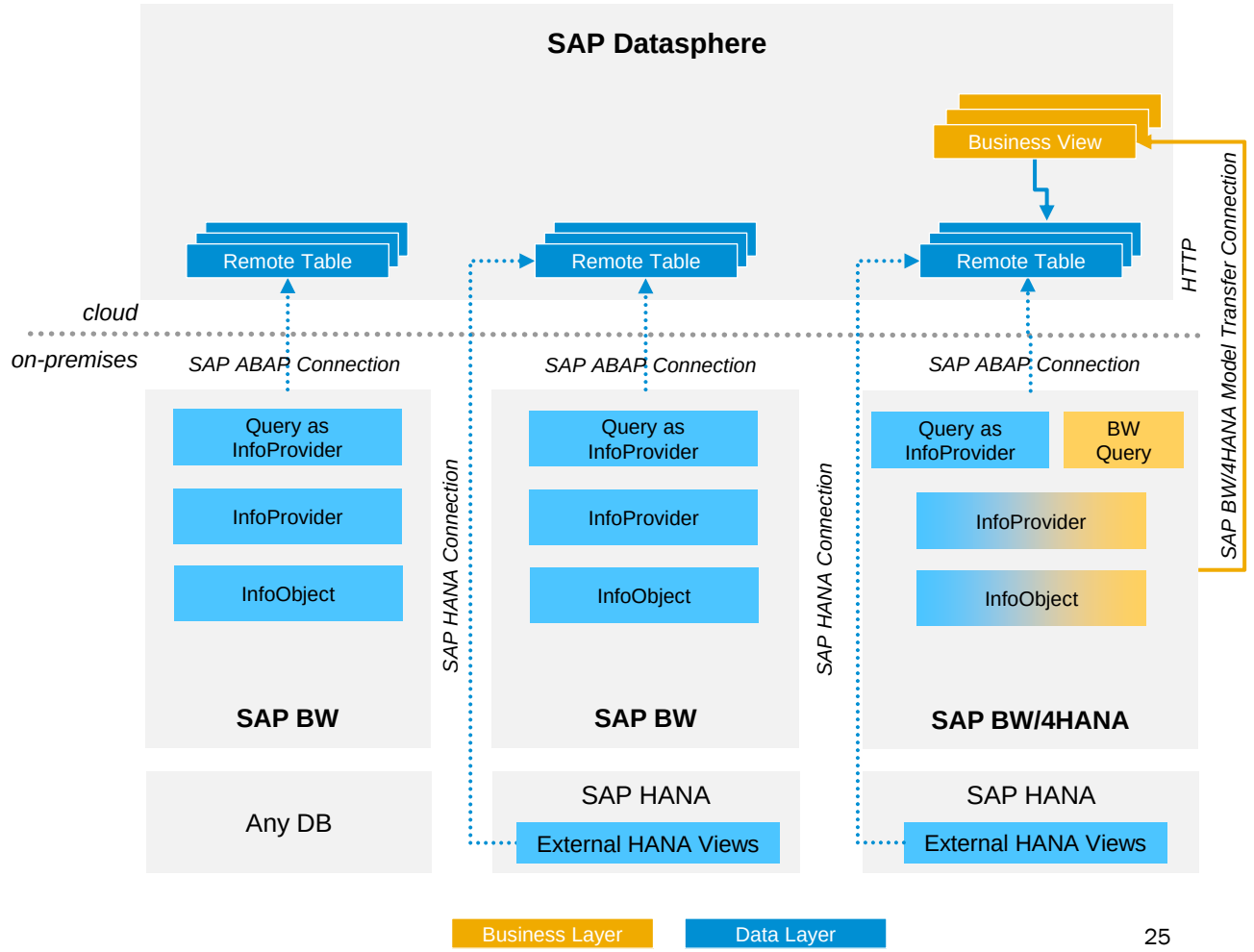
- Export and import your own content using the content network
- Collect and build your own content package based on one or multiple spaces
- Create packages to model groups of related objects for transport between tenants and manage dependencies between packages
- When objects change over time the structure of your package is preserved and you can easily export updated versions of it
- Import content from other systems into an existing Space (same technical name)
- Alternatively, import and export metadata of modelling artifacts as a CSN file containing the definition and description of the SAP Datasphere metadata



SAP BW Bridge & Hybrid

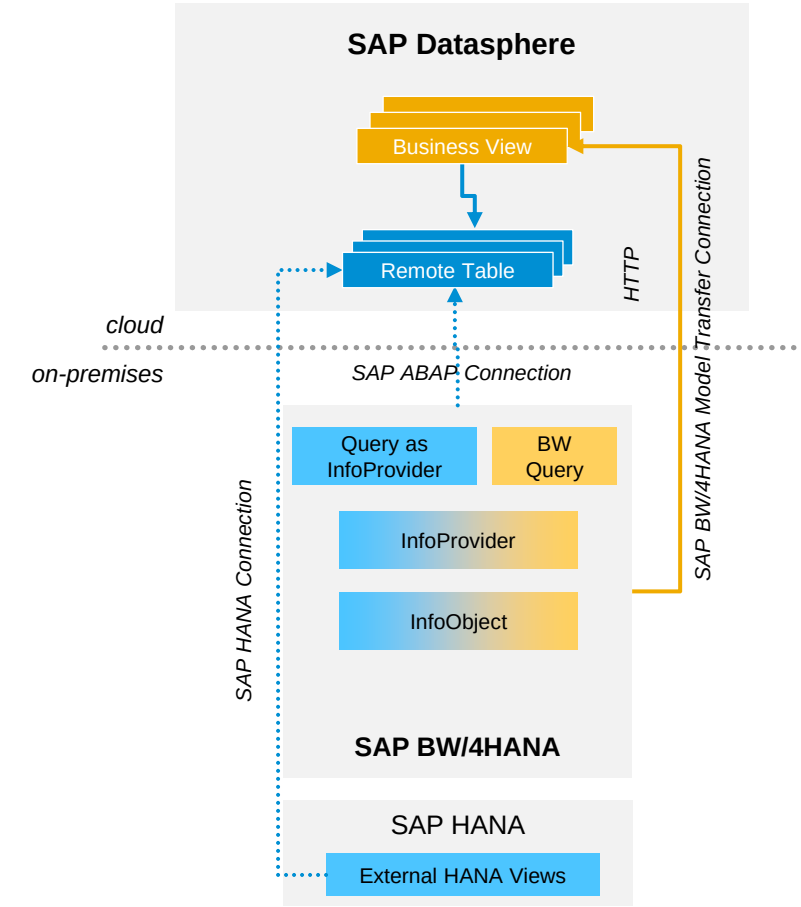
SAP BW Hybrid. Integration Overview

- Two different ways available for integrating SAP BW and SAP BW/4HANA systems:
  - Federated/replicated data consumption scenarios via
    - Operational Data Provisioning framework (SAP ABAP connection)
    - External SAP HANA Views (SAP HANA connection)
  - Federated/replicated business semantics integration scenarios via SAP BW/4HANA Model Transfer connection
- Differences in support of consumable entities, supported entity features, federated or replicated scenarios, location & usage of calculation engine
- Remote or replicated data consumption scenarios supported with SAP BW & SAP BW/4HANA
- Business semantics migration support for SAP BW/4HANA only via SAP BW/4HANA Model Transfer connection



SAP BW Hybrid. SAP BW/4HANA Model Transfer

- Provide SAP BW/4HANA business semantics to SAP Datasphere
- Enable staging scenarios for SAP BW/4HANA data and virtual models
- Transfer BW Query as native entity (KPI, analytic model)
- Support BW Analysis Authorizations in SAP Datasphere
- Hierarchy Support (virtual, available via semantics, native SAP Datasphere dimension with hierarchies)*
- SAP BW/4HANA system only acts remote data source, calculation engine execution (via MDS) happens in SAP Datasphere
- More information about supported features in SAP Note 2932647



* According to the Roadmap.

Business Layer | Data Layer

SAP BW Bridge. Value Proposition

What is the SAP BW bridge?

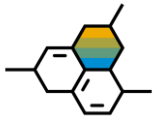
A SAP Datasphere **feature** that provides a path to the public cloud for SAP BW NetWeaver and SAP BW/4HANA customers.

Offers key capabilities of SAP BW directly in SAP Datasphere:

- **Connectivity & Business Content** providing proven SAP BW-based data integration (Extractors) from SAP ECC and SAP S/4HANA
- **Enterprise-ready staging layers** of SAP BW for managing data loading with partitioning, monitoring, error handling
- **Tool-supported move** of SAP BW-based integration and staging

What are the key value propositions?

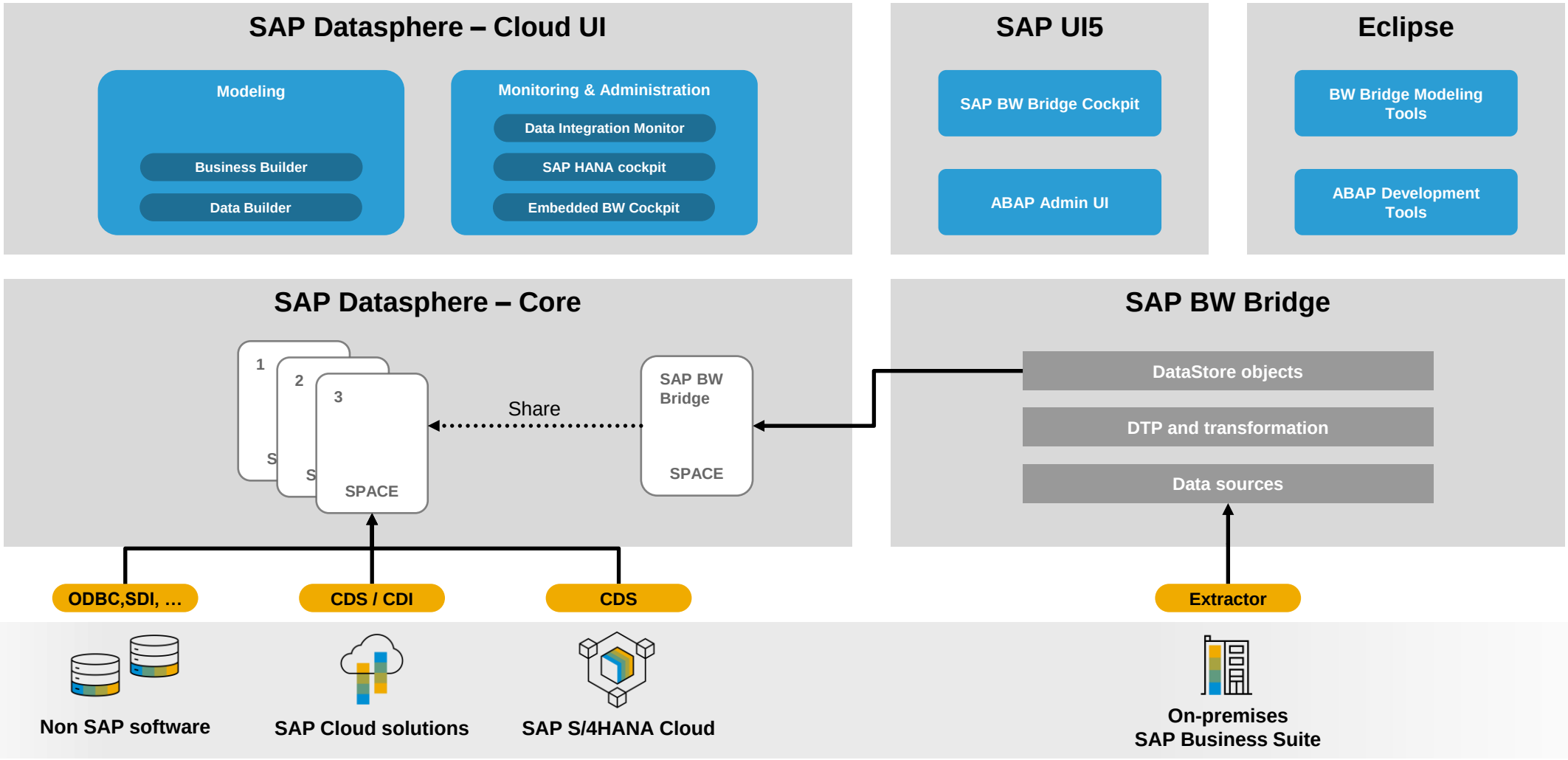
Re-use for business continuity
Leverage SAP BW data structures, transformations, customizations, and skills – quickly extending your SAP BW investments to the public cloud



Connect with confidence
Integrate on-premises SAP Business Suite data with familiar connectivity and semantic richness – retaining instant access while expanding your analytics depth

Innovate with cloud agility
Empower your business to rapidly innovate on BW data with an open, unified data & analytics cloud service – scaling innovation and efficiency in the cloud

SAP BW Bridge. Overview of data integration



Manage

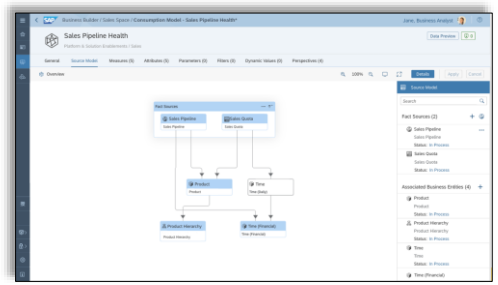
Manage. Modeling for Everybody

Business Analyst
No Code / Low Code

Developer / Power User
Pro Code

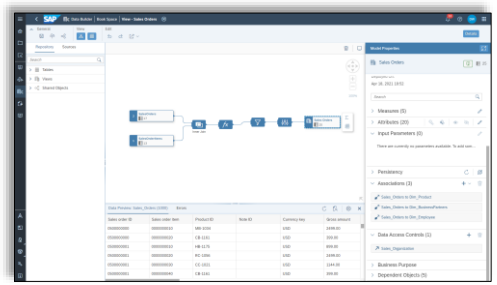
BUILT-IN EDITORS
modeling for all users

Business Modeling



- Allow for a greater degree of self-service
- Non-disruptive environment for business scenarios – independent from the data integration layer

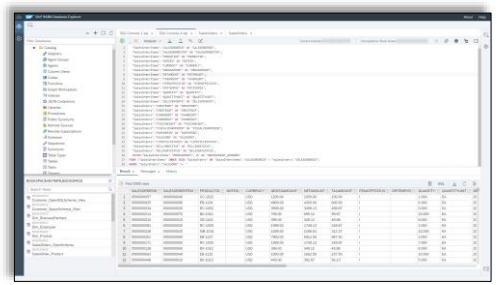
Graphical & Scripted



- Collection of no code/low code editors to support Graphical Modeling
- Model E/R-models, Tables, Views, Analytic Models, SQL & SQL-Script Views
- Focuses on most-used modeling operators

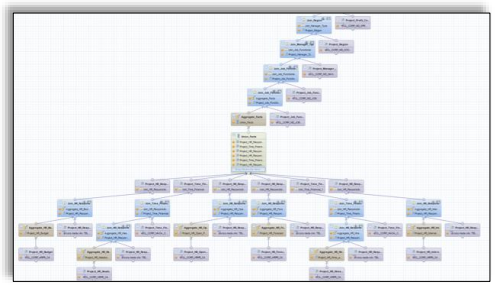
EXTERNAL EDITORS
integrated SQL Data Warehousing

Open SQL Schema



- Option to use SQL DDL & DML leveraging e.g. SQL Views, Tables, Procedures, etc.
- Leveraging existing SQL-tooling & skillset
- SAP Database Explorer

SAP HANA Deployment Infrastructure

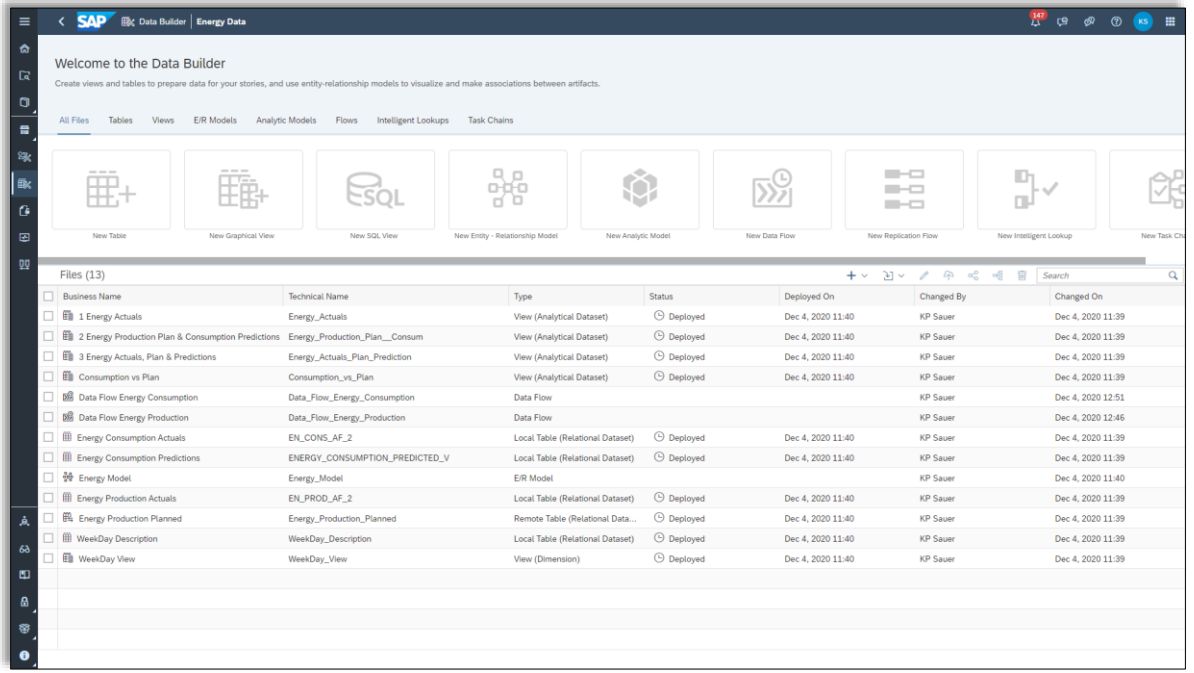


- SAP HANA Cloud Modeling capabilities leveraging Calculation View, Flowgraph, Synonym, etc.
- Simply re-use HANA based Modeling within SAP Datasphere

Manage. Data Builder Overview – Editors

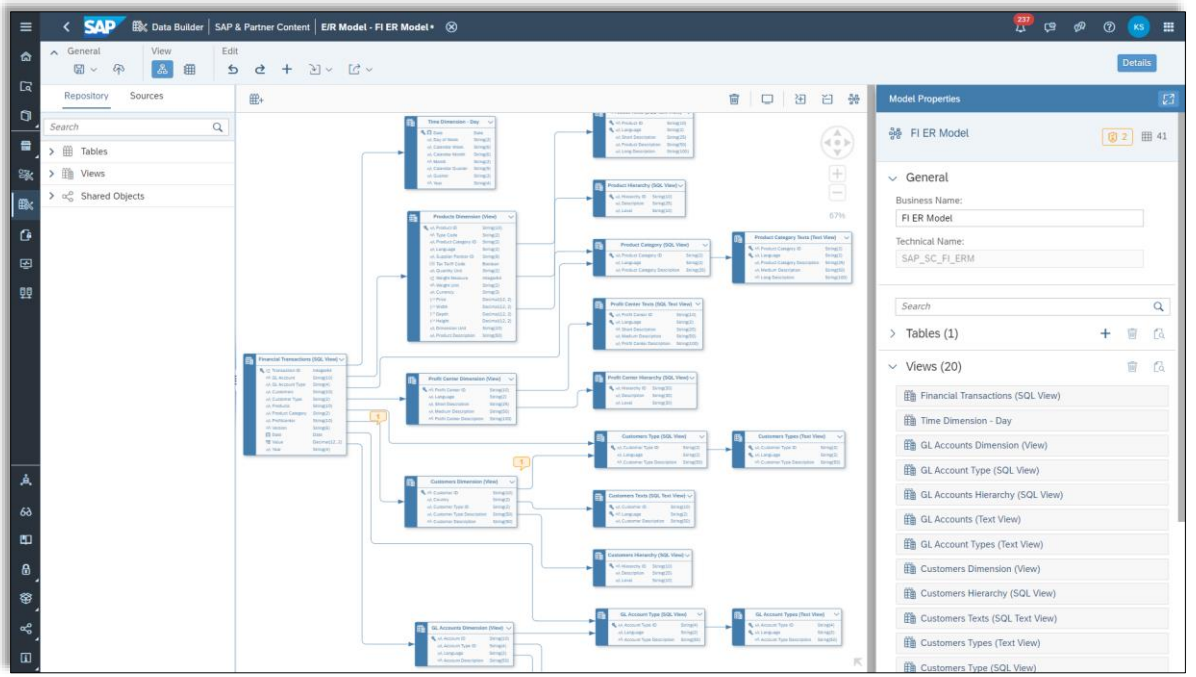
The **Data Builder** offers a collection of editors to create artifacts in the data layer like

- Table Editor
- Graphical View Editor
- SQL View Editor
- Entity-Relationship Editor
- Analytic View Editor
- Data Flow Editor
- Intelligent Lookup Editor
- Replication Flow Editor
- Task Chain Editor



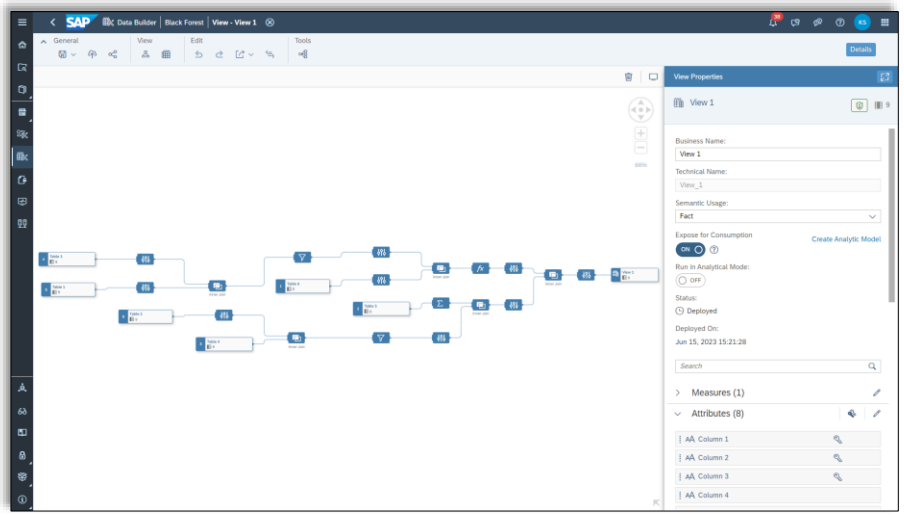
Manage. Entity-Relationship Modeler

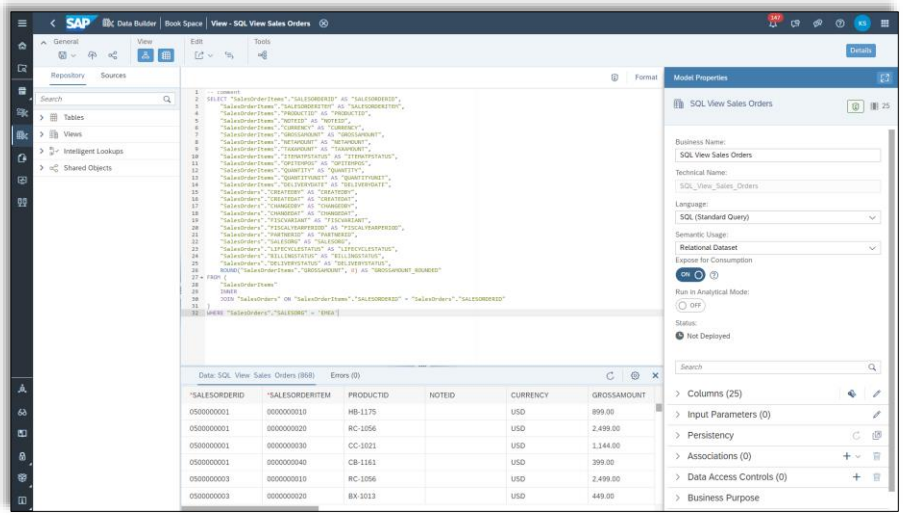
- Definition of entity-relationship models
- Design physical or remote database models
- Reverse model engineering
- Re-use existing entities (table, view) from Data Builder
- Add new entities on-the-fly
- In-editor real-time data preview
- Integrated impact & lineage analysis
- Model Import / Export



Manage. Graphical & Scripted View Editors

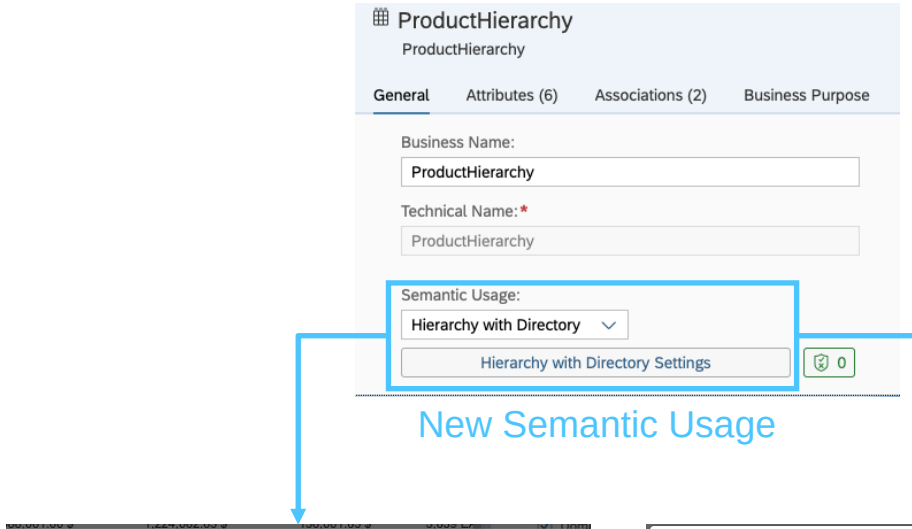
- Define views on top of remote, replicated or local tables
- Create views of type: Fact, Dimension, Text, Hierarchy, Relational Dataset or Analytical Dataset (deprecated)
  - Define measures & attributes in Facts
  - Create Parent-Child or Level-based Hierarchies in Dimension Views
  - Support multi-language text fields
- Define Exposure for Consumption & Sharing with other spaces
- Apply Data Access Controls and Input Parameters
- Create and Schedule View Persistency
- Graphical View Editor
  - Define unions, joins & aggregations, rename & remove columns, add calculations, currency conversion and filters
  - View the data at each node and display the corresponding SQL Statement
- SQL & SQL-Script Editor for Developers

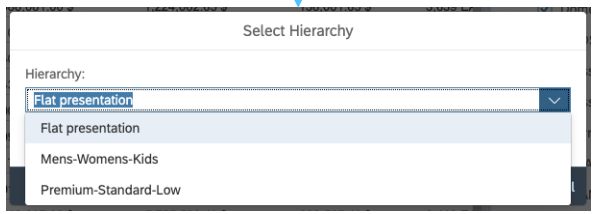


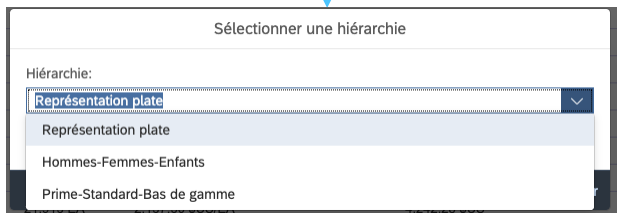


Manage. External Hierarchy with Directory

- Introduction of new hierarchy semantic that is aligned with hierarchy data model of SAP S/4HANA and BW
- Data-driven definition of parent-child hierarchies
- Any number of parallel hierarchies
- Support of Text Nodes
  (e.g. GL account groups - GL accounts)
- Support of nodes of different dimensions within the same hierarchy
  (e.g. sales area - cost center – employee)
- Language-dependent hierarchy descriptions
- Language-dependent node texts
- Time-dependent hierarchies
- Time-dependent hierarchy nodes & their attributes





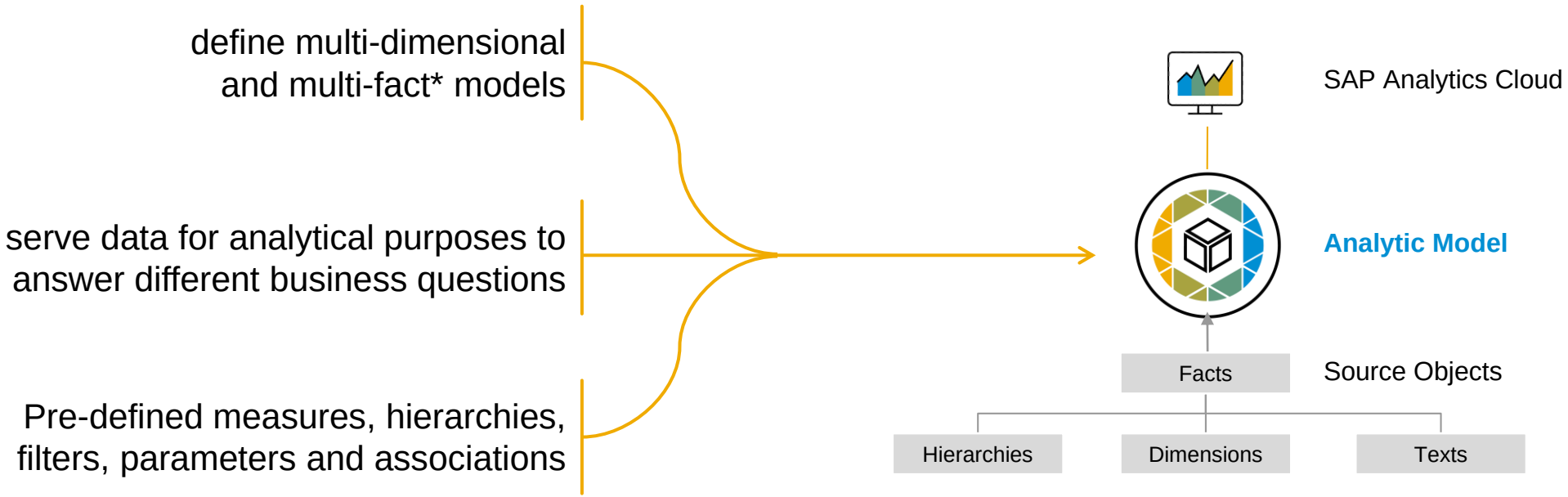


PRODUCTID	Measures: NETAMOUNT
Men	144,214,908.00 $
Women	571,865,043.00 $
Kids	51,720,811.00 $
BMX Jump Lux I	1,629,870.00 $
Mt Discovery Drive	4,686,792.00 $
Flash Drive II	41,634,700.00 $
La Plage Limited	1,432,400.00 $
Universal One	2,337,049.00 $

PRODUCTID	Mesures: NETAMOUNT
Hommes	144,214,908.00 $US
Femmes	571,865,043.00 $US
Enfants	51,720,811.00 $US
VTT Saut Luxe I	1,629,870.00 $US
Mt Découverte Conduite	4,686,792.00 $US
Le Flash II	41,634,700.00 $US
La Plage Limité	1,432,400.00 $US
Universale Une	2,337,049.00 $US

Manage. Analytic Model Overview

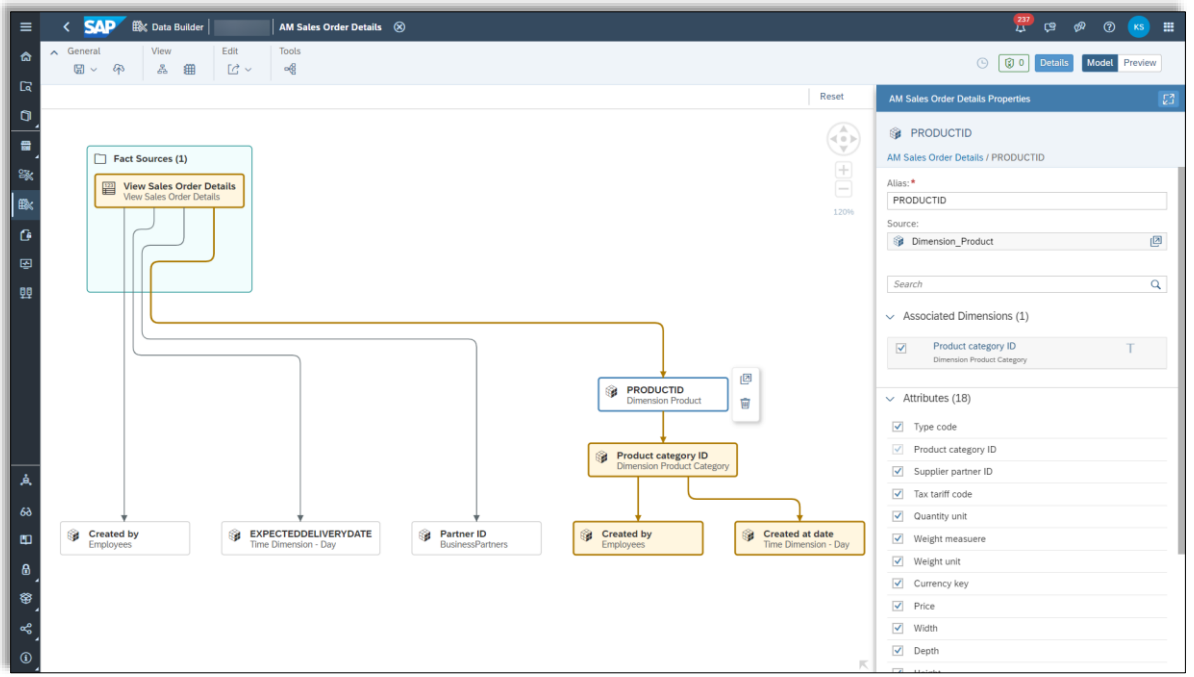
Analytic Models are the analytical foundation to make data ready for consumption in SAP Analytics Cloud.



* According to the Roadmap

Manage. Analytic Model Features

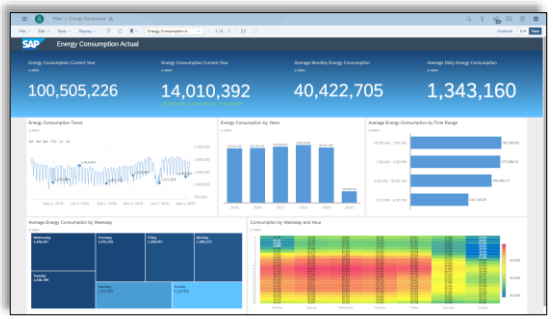
- The Analytic Model allows multi-dimensional and rich analytical modelling with less effort to answer business questions easier, faster and more efficiently
- It offers many features like
  - Calculated & restricted measures incl. constant selection
  - Exception aggregation
  - Pruning of attributes and measures
  - Nested dimensions & variable support
  - Compound keys
  - Time-dependency for dimensions & texts
  - Currency conversion after aggregation
  - Multi-dimensional analytical preview incl. filtering, pivoting, hierarchies, etc.
  - Repository integration for impact & lineage analysis, model export/import, change management and transports
  - Migration support from Analytical Data Set
  - Exposure through the public OData API



Use

Use. Choice and openness with pre-built business content

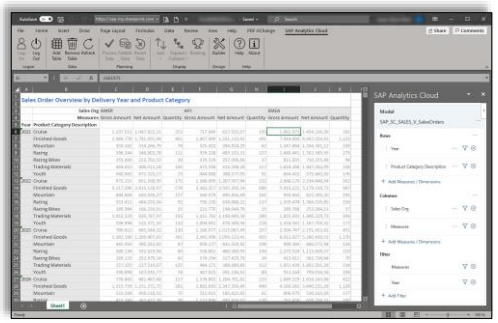
SAP Analytics Cloud



One seamless user experience

- Direct consumption of models in SAP Analytics Cloud (live connection)
- Any number of SAP Datasphere systems can be connected to any number of SAP Analytics Cloud systems

MS Office Integration



Live Connection to MS Excel

- SAP Analytics Cloud, add-in for Microsoft Office 365 (live connection) online or desktop version
- SAP Datasphere with SAP Analysis for Microsoft Office 2.8 SP14+

External API

jupyter **Excel** **R Studio**

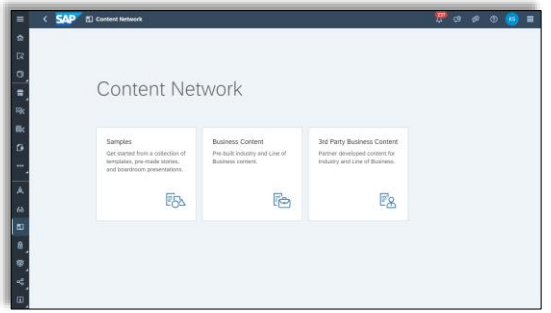
PowerBI **Tableau** **zepl**

API 3rd Party consumption

External API for consumption

- Freedom of choice
- Use consumption interface to connect any 3rd party front end tool to your exposed views
- Make your data models accessible for consumption tools & applications

Business Content

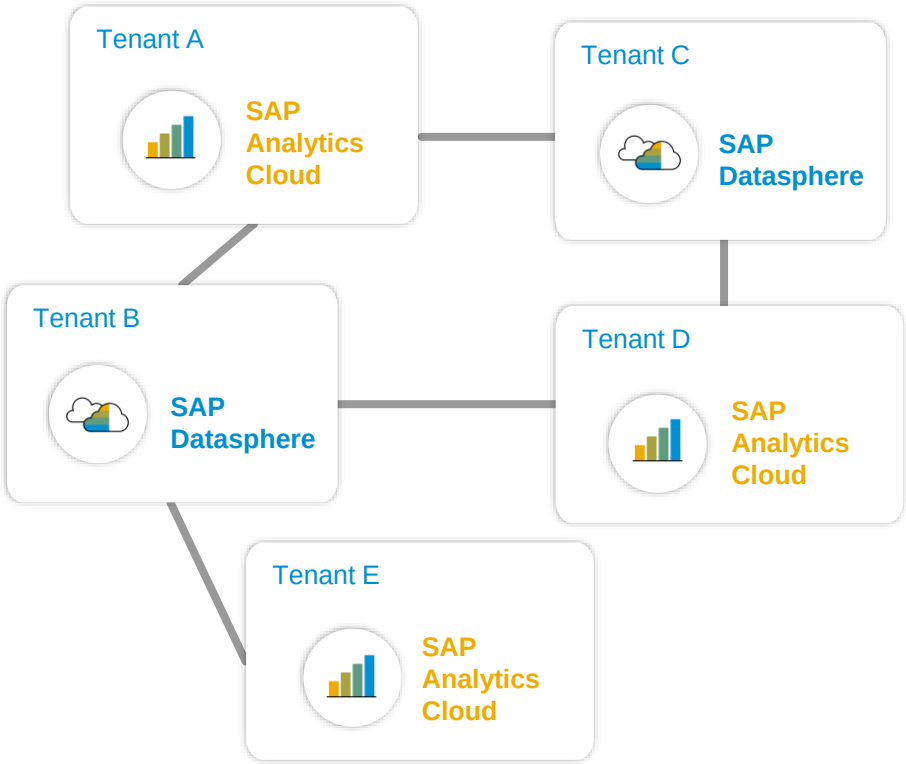


Business accelerators

- Content packages ready to use and accelerate your project
- Packages SAP and partners for various LOB and industry scenarios
- Separate packages for data models and visualizations

Use. SAP Analytics Cloud & SAP Datasphere

- Regardless of the tenant any SAP Datasphere can be connected across tenants to any SAP Analytics Cloud
- SAP Datasphere systems are connected via Live Connector
- The live connectivity needs to be set up manually
- SAP Datasphere remote connections can also be set up for SAP Analytics Cloud NEO tenants
- SAP Analytics Cloud and SAP Datasphere can run in different release cycles

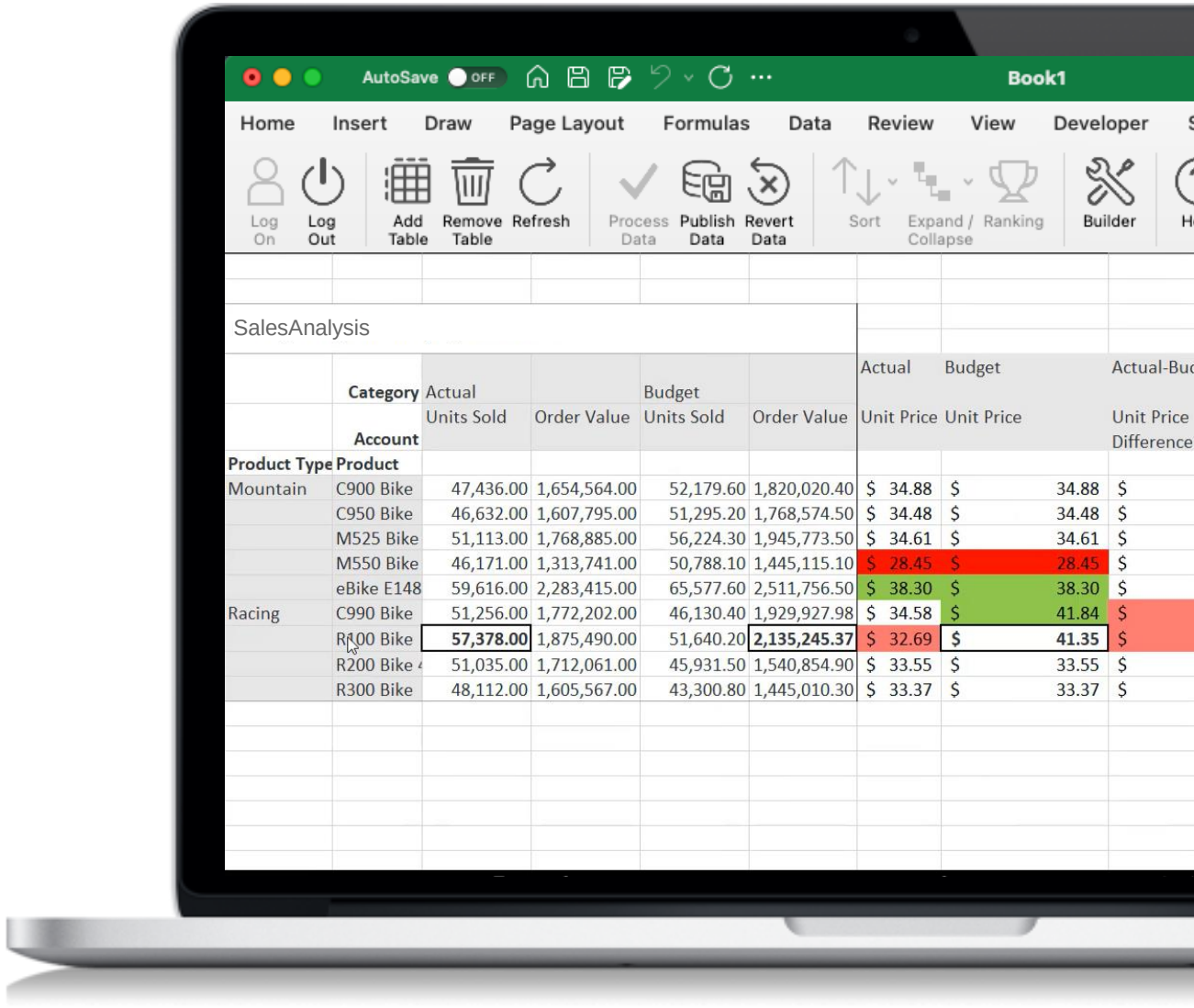


SAP Note: 2832606 - Limitations with Live Connections

Use. SAP Analytics Cloud, add-in for Microsoft Office

- Live connection support for SAP Datasphere via the SAP Analytics Cloud, add-in for Microsoft Office
- Ability to connect live to source data sets in SAP Datasphere and create Excel reports
- Use Microsoft Office 365 online or desktop version
- Add-in available via Microsoft Store

- Find more information
  - SAP Community for the SAP Analytics Cloud, add-in for Microsoft Office
  - Learn how to use it in this Blog

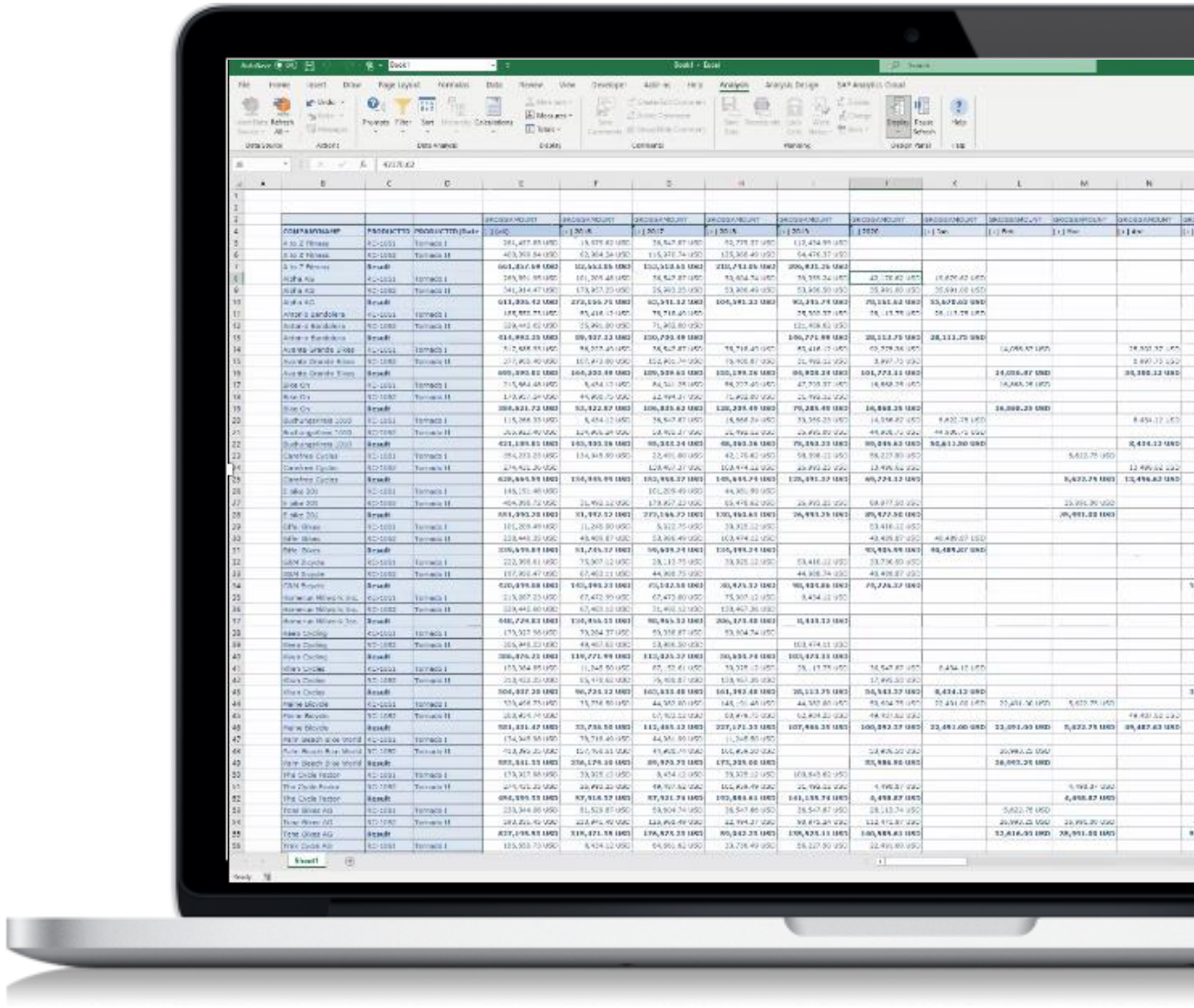


	Category	Actual		Budget		Actual	Budget	Actual-Bud
	Account	Units Sold	Order Value	Units Sold	Order Value	Unit Price	Unit Price	Unit Price Difference
Product Type	Product							
Mountain	C900 Bike	47,436.00	1,654,564.00	52,179.60	1,820,020.40	$ 34.88	$ 34.88	$
	C950 Bike	46,632.00	1,607,795.00	51,295.20	1,768,574.50	$ 34.48	$ 34.48	$
	M525 Bike	51,113.00	1,768,885.00	56,224.30	1,945,773.50	$ 34.61	$ 34.61	$
	M550 Bike	46,171.00	1,313,741.00	50,788.10	1,445,115.10	$ 28.45	$ 28.45	$
	eBike E148	59,616.00	2,283,415.00	65,577.60	2,511,756.50	$ 38.30	$ 38.30	$
Racing	C990 Bike	51,256.00	1,772,202.00	46,130.40	1,929,927.98	$ 34.58	$ 41.84	$
	R900 Bike	57,378.00	1,875,490.00	51,640.20	2,135,245.37	$ 32.69	$ 41.35	$
	R200 Bike	51,035.00	1,712,061.00	45,931.50	1,540,854.90	$ 33.55	$ 33.55	$
	R300 Bike	48,112.00	1,605,567.00	43,300.80	1,445,010.30	$ 33.37	$ 33.37	$

Use. SAP Analysis for Office Support

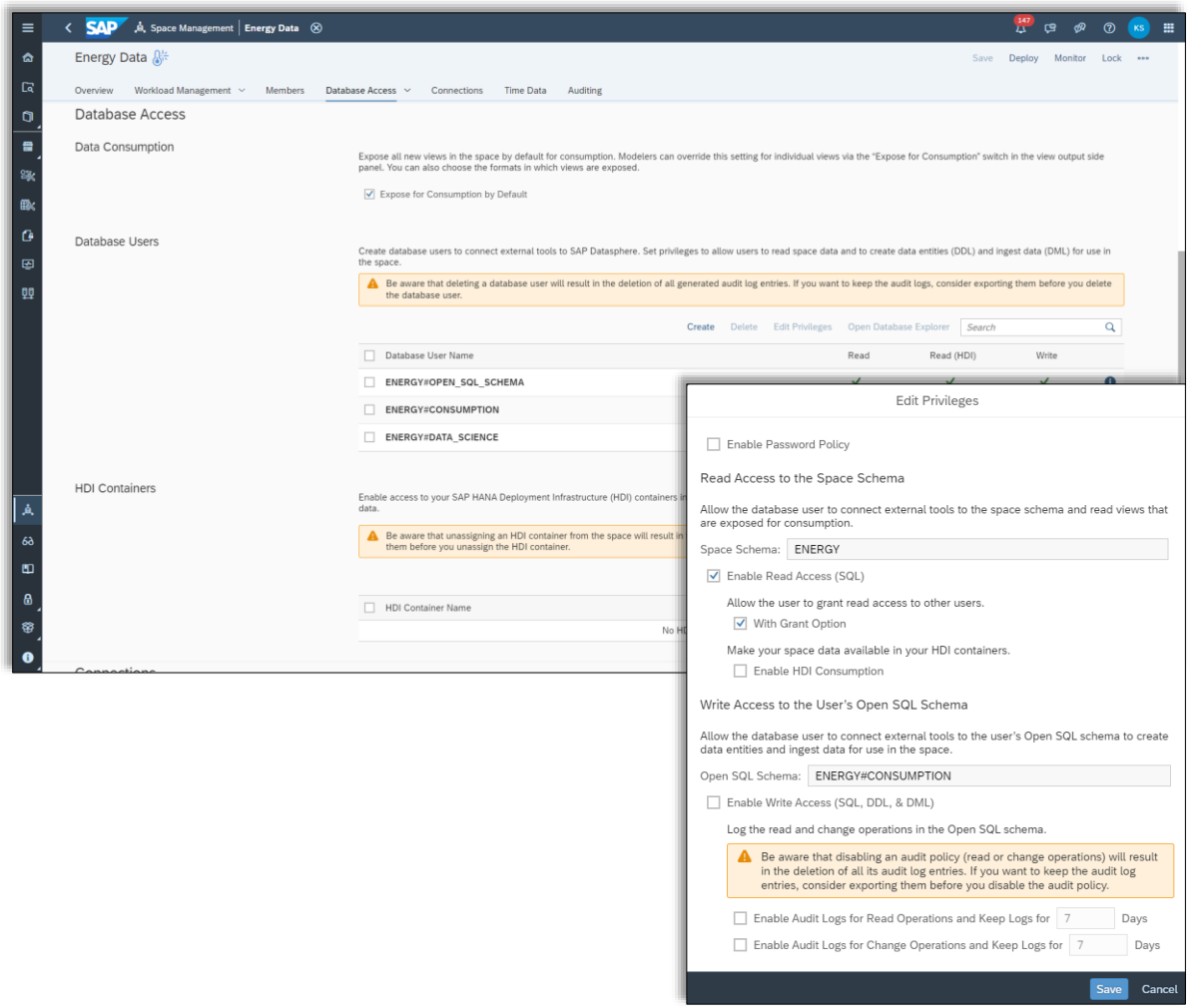
- Live connection support for SAP Datasphere via the Excel Plug-In
- Support SAP Datasphere as data source for the SAP Analysis for Office (AfO) Excel plug-in 2.8 SP14+
- Provide your business users with flexibility by extending the AfO support to cloud sources

- Find more information
  - SAP Community for the SAP Analysis for Microsoft Office
  - Learn how to use it in this Blog



Use. 3rd Party Data Consumption API SQL Access

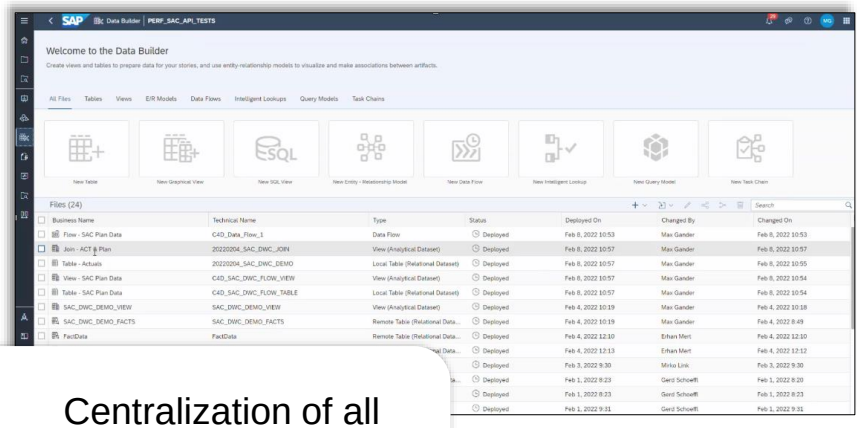
- Enabling read access for external consumption tools or applications via a database user with read privileges
- Consume exposed data models from your space
- Provide SQL endpoint to dedicated space schema
- Connect with 3rd party SQL client



Use. 3rd Party Data Consumption API OData

- Support bi-directional integration with SAP Analytics Cloud for planning purposes
- Enable consumption through 3rd party BI tools & apps
- Supports deployed Data Builder artefacts that are marked as “Expose for Consumption”
- Supports standard OData v4 query parameters ($select, $filter, $top, etc.)
- Supports business user access and authentication via “Authorization Code”
- No write-back (read-only)
- More information: SAP Help

Combined Plan vs. Actual Reporting in SAP Analytics Cloud



Centralization of all Reporting and Planning Data in SAP Datasphere

Use. SAP Datasphere Business Content

SAP Business Content

- Enterprise Analytics for Procurement — SAP Ariba
- Spend Analytics — SAP Ariba
- Responsive Supply Network, Sales and Inventory — Automotive
- Revenue Growth Management — Consumer Products
- Finance for — SAP S/4HANA Cloud
- Financial Analytics Dashboard for SAP Analytics Cloud — SAP S/4HANA
- POS Analytics — Retail
- Life Science Dashboard — SAP SCM
- Statistical Process Control — SPC
- Customer Value Management — Telecommunication
- Meter to Cash — Utilities
- SAP Monitoring Content (Data Integration Tasks) — SAP Datasphere
- Sample Content — Finance, HR, Sales
- Business Network Value Analytics — Cross Supply Chain
- Intelligent Real Estate — Real Estate
- Sales Analytics for — SAP S/4HANA + Cloud
- Solution Order Analysis — SAP S/4HANA Cloud
- Working Capital Dashboard — SAP S/4HANA + Cloud
- Plan Maintenance Analysis — Enterprise Asset Management
- Finance Foundation — SAP S/4HANA + Cloud
- Process Insights — SAP Signavio
- Service Analysis — SAP S/4HANA + Cloud
- Quality Management — Cartena-X
- SAP Community Content — GitHub

SAP Generator

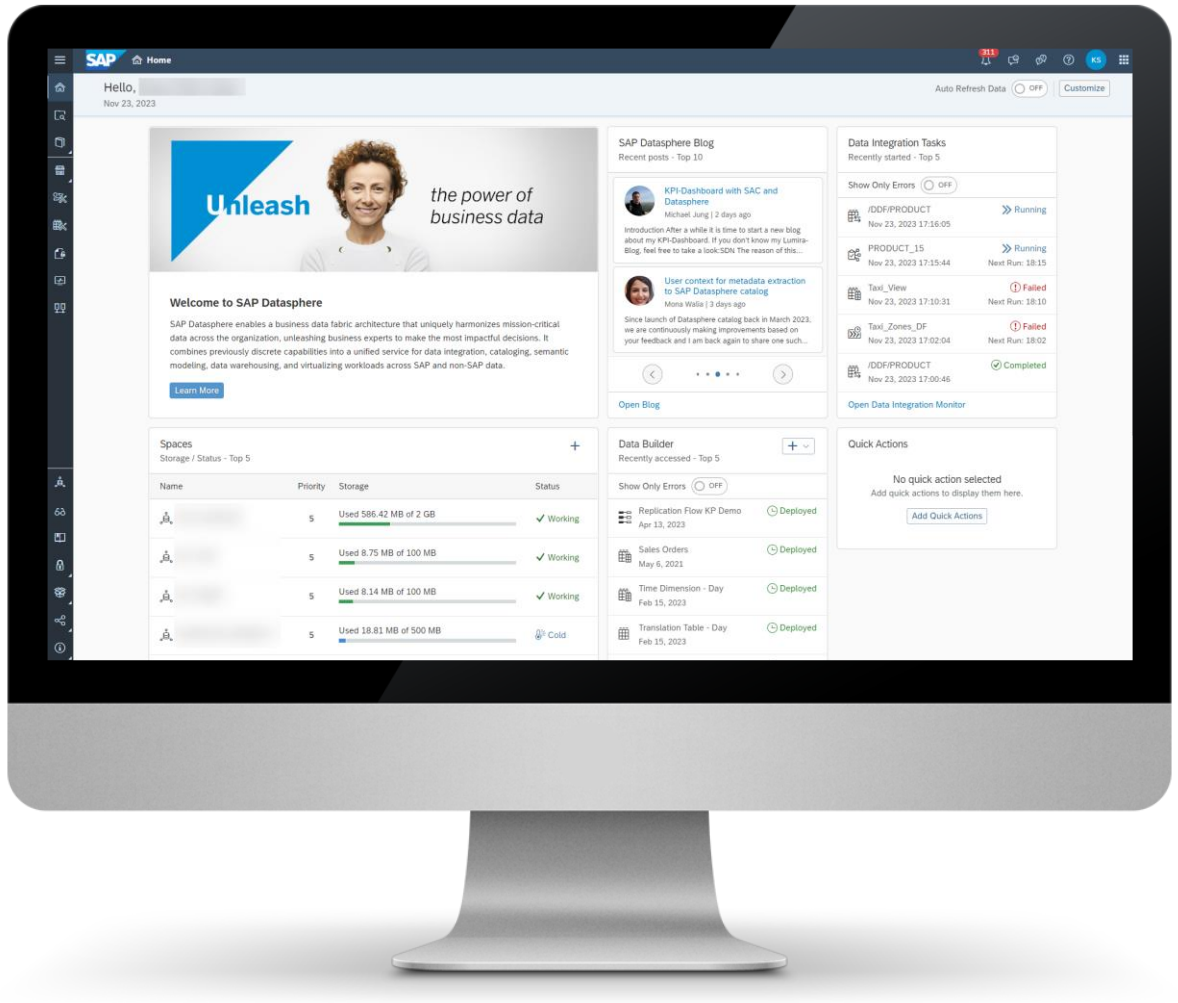
- Content Generation — SAP S/4HANA Cloud
- Content Generation — SAP S/4HANA

Partner Business Content

- Marketing Analytics — Adverity
- E-Commerce – Cross Marketplace Insights — datazeit
- Procurement Cockpit — CubeServ
- Sales Dashboard — IBSolution
- Optimizing Order Fulfillment with ML — Inspired Intellect
- Analytics for Effective Inventory Optimization — ISR
- SuccessFactors / Attendance Tracker — KPC
- Product Cost Simulation — mib:NDC
- Sales Insights (SAP BW & Salesforce) — PWC
- SPARTA – Sales Planning and Forecasting Analytics — Reply
- MOSAIC – Margin-Optimized Sales Intelligence — Reply
- OPERA – Opportunity Performance Analysis — Reply
- Lyra Integrated Capacity Planning (EAM & HCM) — Rizing
- Financial Reporting for SAP Business One — s-peers
- EWM Insights — Westernacher
- RapidViews FI-CO — Rapid Views
- RapidViews SD — Rapid Views
- RapidViews MM — Rapid Views
- RapidViews PP — Rapid Views
- RapidViews QM — Rapid Views

Find more information about the Business Content on the SAP Community. Partner Content also listed on SAP Store.

More information



- Check out the product page on sap.com and get access to a Guided Experience Trial system
- Get started with documents & videos
- Use the tutorials and our Learning Journey to learn more
- Stay updated using the Release Navigator
- Join the Community and check out the Best Practices recommendations
- Add your ideas and requests for new features on the SAP Datasphere Customer Influence
- Online Documentation on SAP Help

SAP Datasphere
Exercises

SAP Datasphere - Exercises

- Exercise 1: First Log On
- Exercise 2: Creating the Store Dimension
- Exercise 3: Creating the Product Dimension
- Exercise 4: Creating the Sales Manager Hierarchy
- Exercise 5: Creating the Sales Manager Dimension
- Exercise 6: Creating the FACT Model
- Exercise 7: Creating the Analytical Model

SAP Datasphere – Analytical Model

- The analytic model is now the object for building stories on in SAP Analytics Cloud.
- The analytic model will replace analytical datasets which are exposed for consumption. Analytical datasets will continue to exist, but you should now use the analytic model instead.
- The analytic model offers more calculations and greater functionality. You can prune what you want to expose in your object, thus avoiding unnecessary calculations and in turn achieving a better performance. It also offers calculated measures and restricted measures, and an analytical preview.
- Analytical datasets will still be available, but new features will only be developed for the analytic model. You can easily create analytic model on top of analytical datasets.

https://help.sap.com/docs/SAP_DATASPHERE/c8a54ee704e94e15926551293243fd1d/a9950b0a7bc04fd1b9827800e67b26f1.html?q=analytical%20model&locale=en-US

SAP Datasphere – Analytical Model

- Rich measure modelling: With calculation **after aggregation**, restricted measures & exception aggregation as well as the possibility to stack all of these, users can build very complex calculation models and even refine them in SAC stories
- Careful design how analytics users see the data: modelers can curate which measures, attributes and associated dimensions to expose to users. This helps analytics users to see exactly the data that is relevant to them, reduces likelihood for errors & boosts performance
- Collection of user input via prompts in SAP Analytics Cloud: these can be used for subsequent calculations, filters & time-dependency. Value helps are provided too, of course.
- Rich previewing possibility: modelers can inspect the result of their modelling efforts in-place because the Data Analyzer of SAP Analytics Cloud is tightly embedded into the Analytic Model editor. So slice & dice, pivoting, filtering, hierarchy usage and many more features are available to help users understand the data how it'll be presented for consumption
- Time-dependency support: Analytic Models support this critical feature to let users travel back & forth in time while Lines of Business, structures & organizations are constantly evolving.
- Dependency Management & Transport: Complex analytic projects require careful planning and a sophisticated toolset for managing the dependency and lifecycle of all modelling artefacts. The Analytic Model is fully integrated into the SAP Datasphere repository and thus benefits from impact & lineage analysis, change management & transport management

https://blogs.sap.com/2023/03/13/introducing-the-analytic-model-in-sap-datasphere/

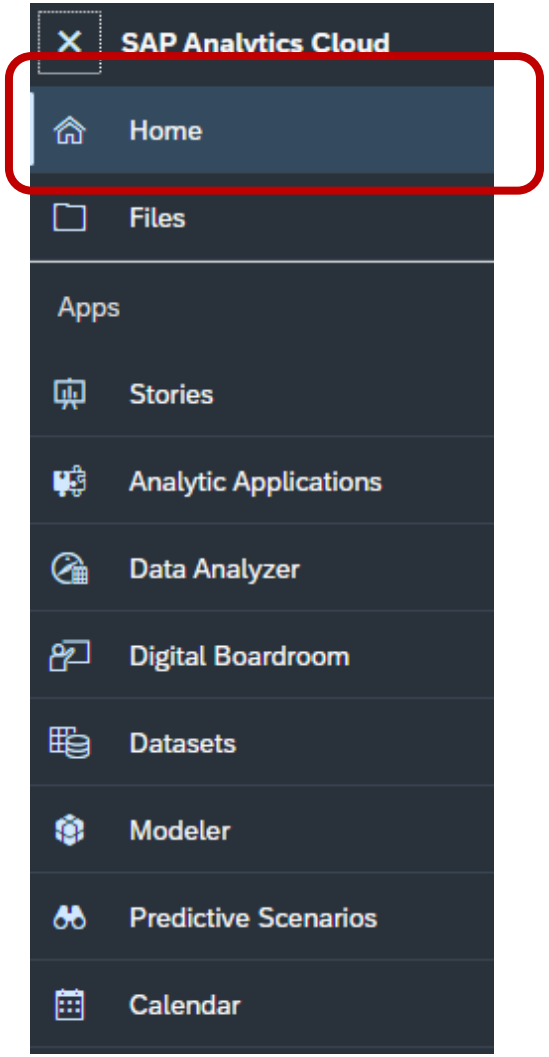
SAP Datasphere – Analytical Model

- With calculated measures, complex calculations can be expressed on top of the current drill-down & filter state. This calculation will be performed after aggregation. Calculated measures allow pulling together existing measures and combine them via standard operators and complex functions.
- Restricted measures, by contrast, are all about filtering data in complex ways across one or many dimensions & values. User input can be collected for full flexibility & dynamics. Especially when taken together with calculated measures, for example, complex ratios and value distributions can be expressed. Restricted measures also allow to redefine the standard aggregation of source measures to e.g. replace a SUM by a MAX, MIN or Average.
- Count distinct measures allow to count dimension members of the current drill-down and are super-helpful to e.g. count distinct customers in a sales region, or distinct products in a store.
- Exception aggregation can be added in order to express complex subquery relationships. Typical examples include counting customers w special properties, reporting warehouse stock levels that cannot be aggregated along the time axis or reporting on the total sales of best-performing products.

https://blogs.sap.com/2023/03/13/introducing-the-analytic-model-in-sap-datasphere/

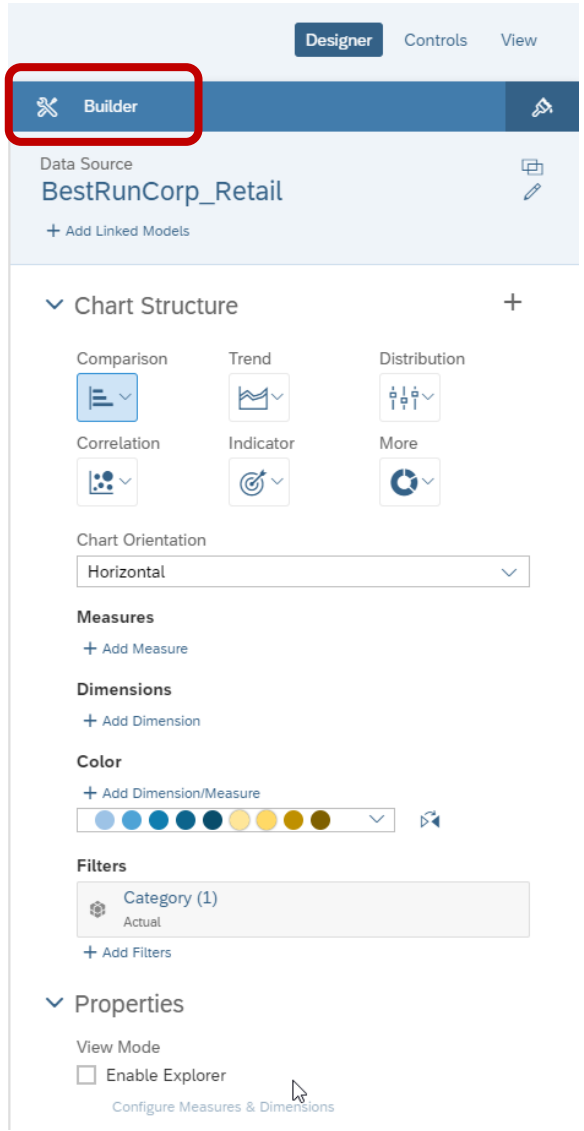
SAP Analytics Cloud
Exercises

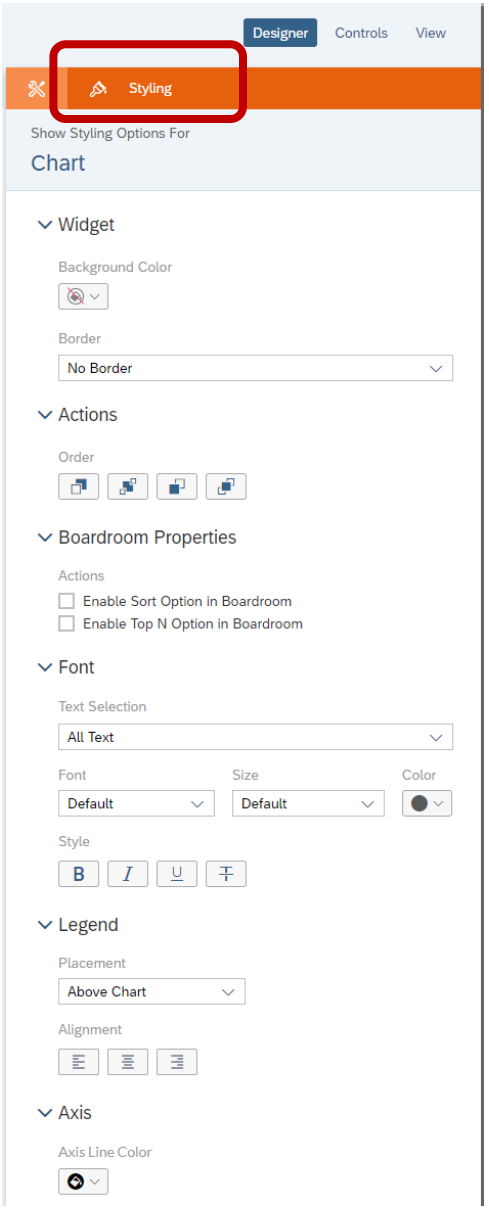
SAP Analytics Cloud – Exercise Details



- Home menu (top left)
  - Provides access to the repository as well as the option to create stories / apps

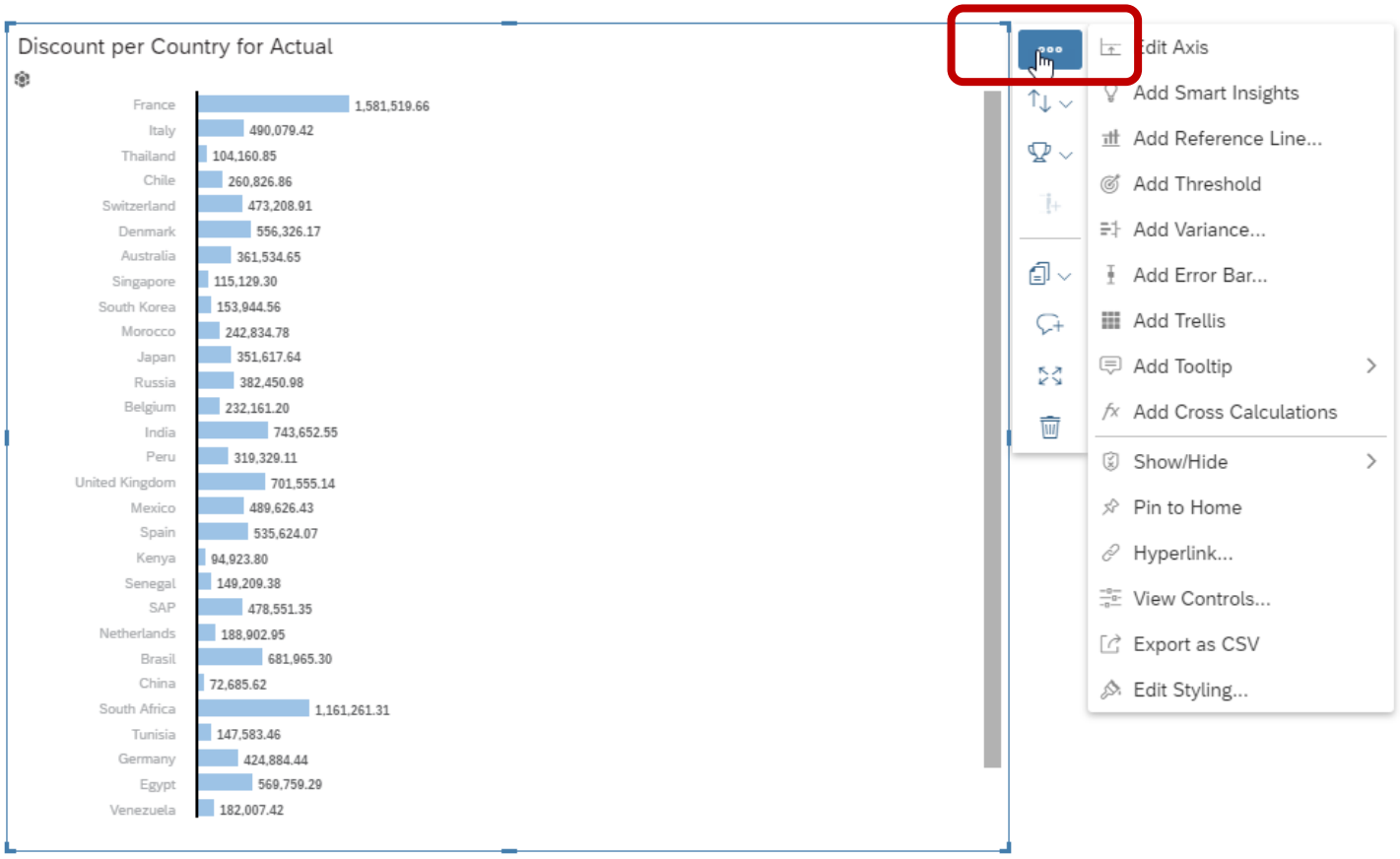
SAP Analytics Cloud – Exercise Details





- Builder Panel
  - Chart and Table configuration on elements, like dimension / measures
- Styling Panel
  - Formatting details like font, color, …

SAP Analytics Cloud – Exercise Details

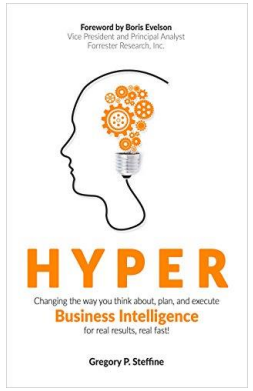


- Context menu provides access to elements like Variance, Threshold, Reference line…
- Available for Map, Chart, table

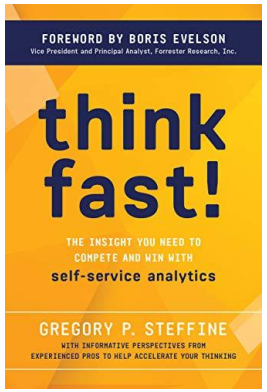
SAP Analytics Cloud – Exercise Details

- EXERCISE 01 – Year over Year Comparison
- EXERCISE 02 – Geographic Revenue Distribution
- EXERCISE 03 – Sales Person Report
- EXERCISE 04 – Using the Analytical Model

Resources

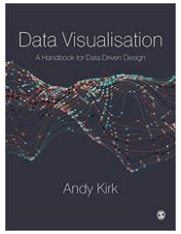


Hyper: Changing the way you think about, plan, and execute business intelligence for real results, real fast!
by Gregory P. Steffine, Boris Evelson

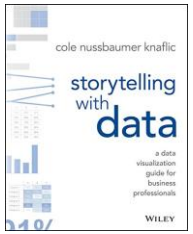


Think Fast!: The insight you need to compete and win with self-service analytics
by Gregory P. Steffine, Boris Evelson

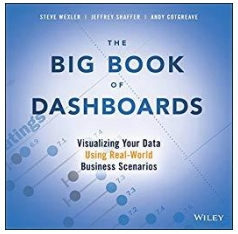
Resources



[Data Visualisation: A Handbook for Data Driven Design]
Andy Kirk



[Storytelling with Data: A Data Visualization Guide for Business Professionals]
Cole Nussbaumer Knaflic



[The Big Book of Dashboards: Visualizing Your Data Using Real-World Business Scenarios]
Steve Wexler, Jeffrey Shaffer, Andy Cotgreave

[#MakeoverMonday: Improving How We Visualize and Analyze Data, One Chart at a Time]
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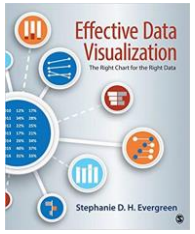

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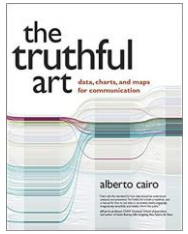

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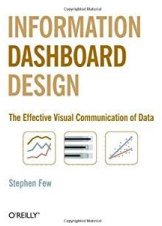

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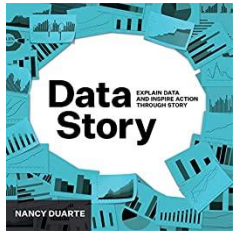

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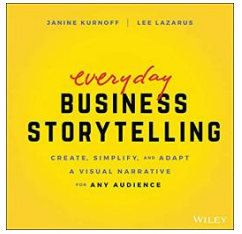

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By Janine Kurnoff

Thank you! Any Questions?

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