

Webinar

High Performance Live Data Connectivity to All Your Enterprise Data Sources



Today's Session

Key Topics

- SAP Analytics Cloud Connectivity Options
- Live Data Connectivity for SAC
- Live Data Gateway
 - Overview
 - Security
 - Performance
 - Data Transformation
 - Expanded Connections
 - Expanded Consumption

- Q&A – see webinar console

Today's Presenters



ALLAN PYM

Chief Operating Officer
APOS



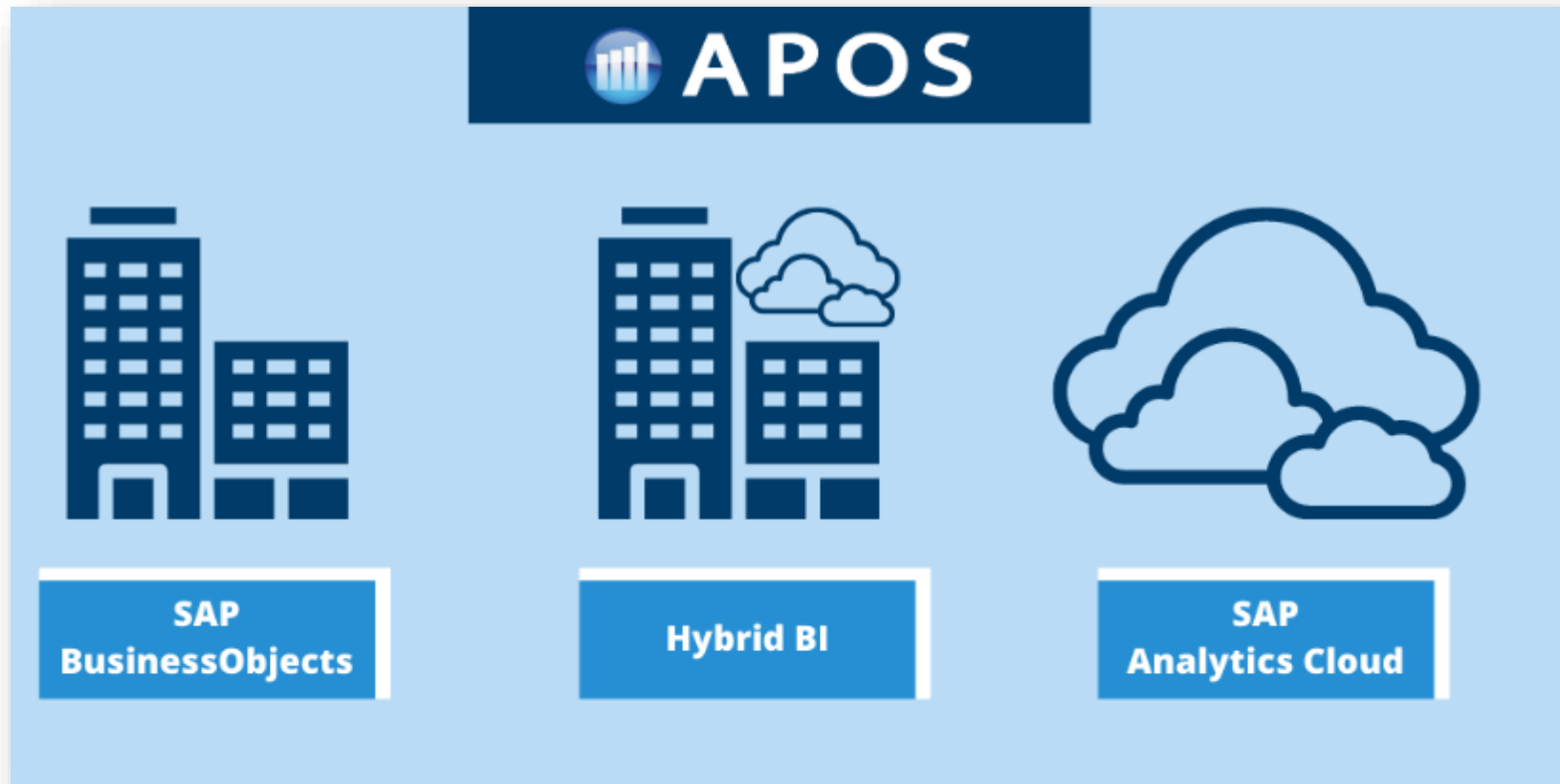
ALAN GOLDING

Solution Consulting Manager
APOS

Who is APOS?

- Formed in 1992
- Enabling BI data connectivity, platform management, administration, migration, governance and compliance
- Simplifying, automating, extending SAP BusinessObjects and SAP Analytics Cloud
- Strategic SDK development and consulting
- Hundreds of customers globally







HOUSEKEEPING



You will have access to the slides via email



You will get the recording within 24 hours

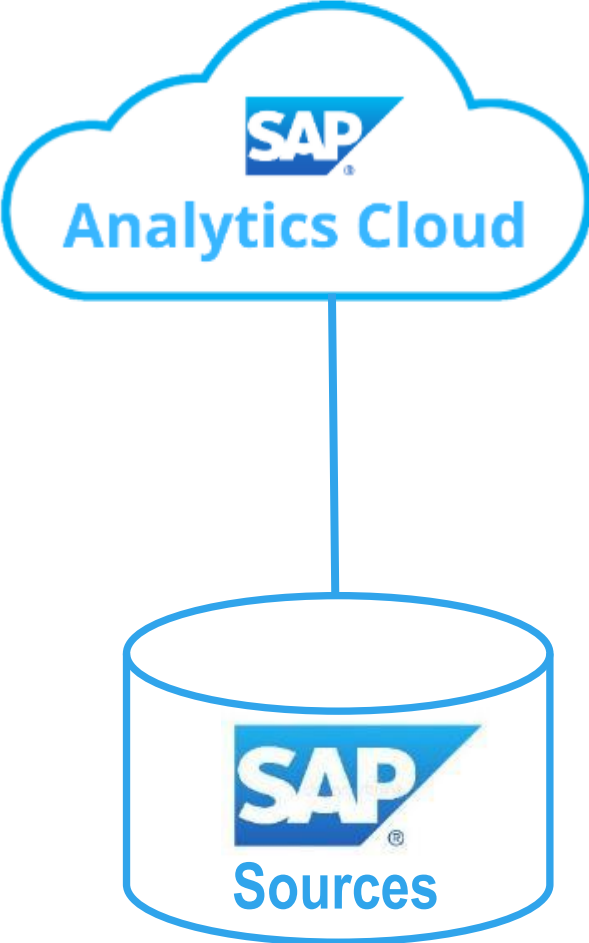


Tell us how we did in the survey

SAC Connectivity – SAP Sources

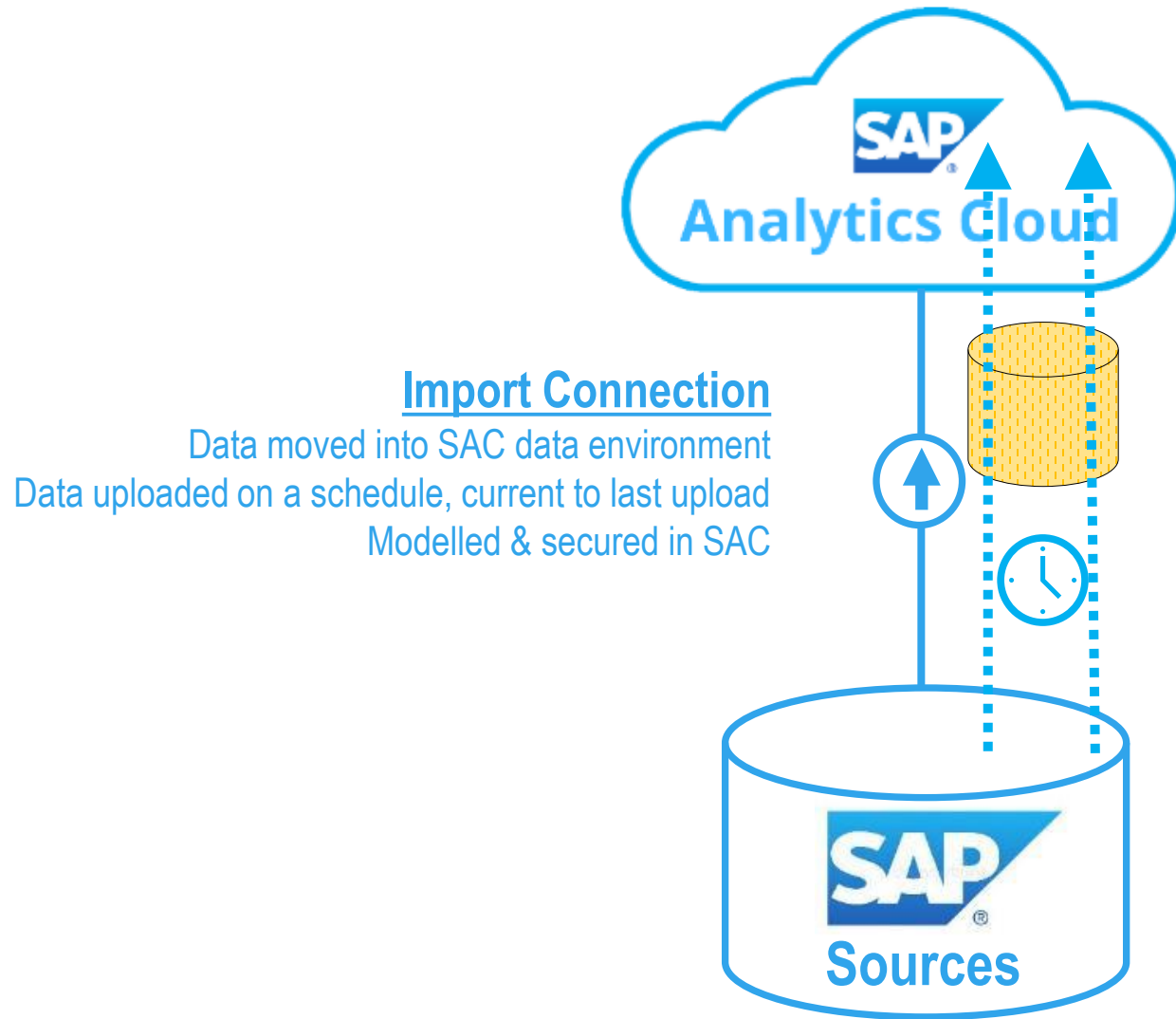


Import Connection

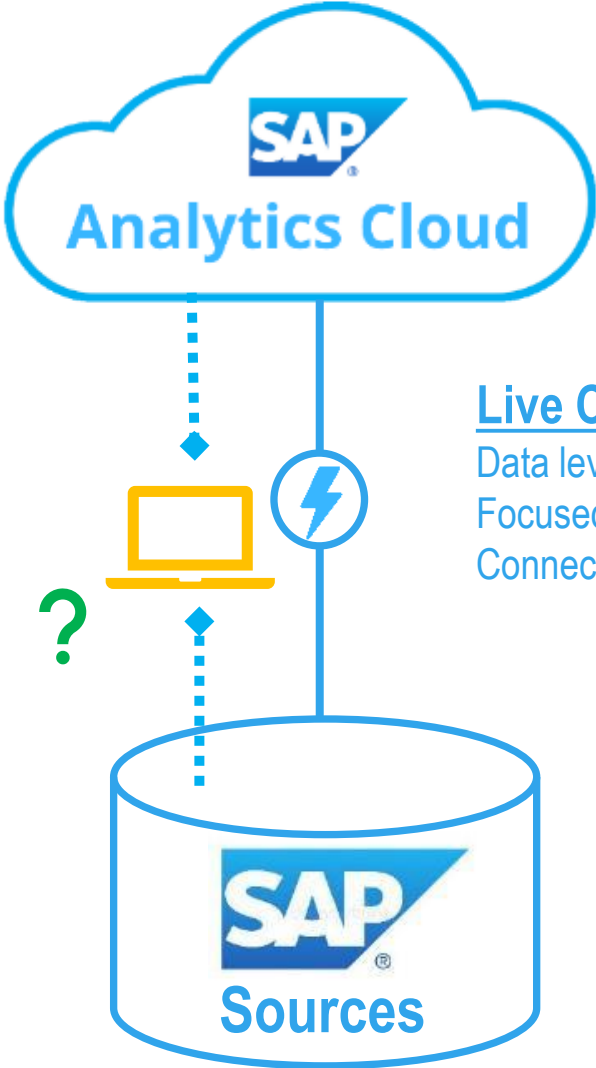


Live Connection

Import Connectivity



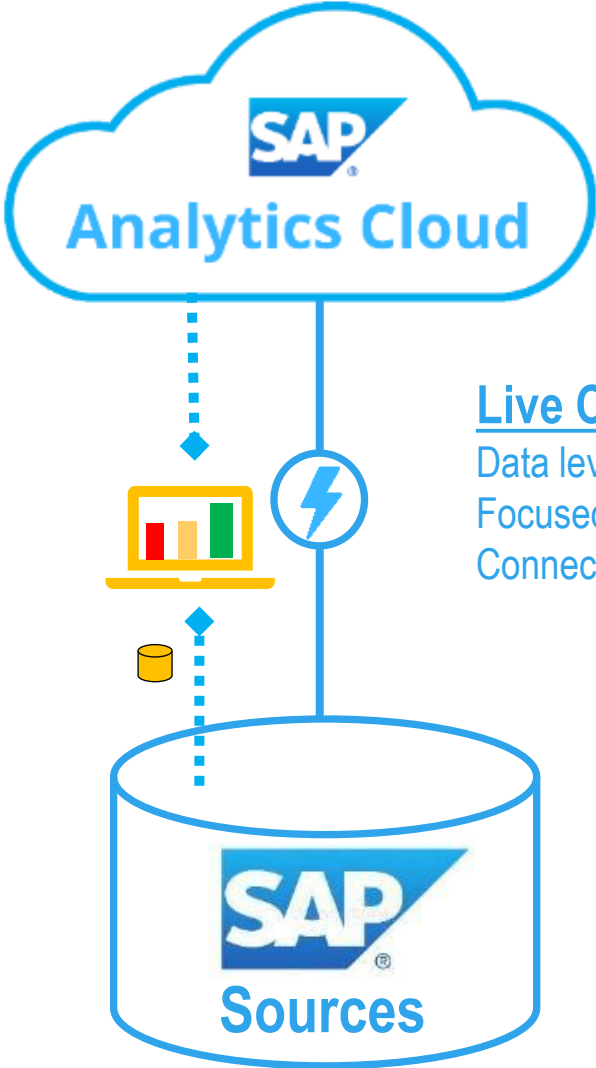
Live Connectivity



Live Connection

Data leveraged from existing location, no data movement
Focused queries against existing source via SAC browser
Connection into existing source modelling & security

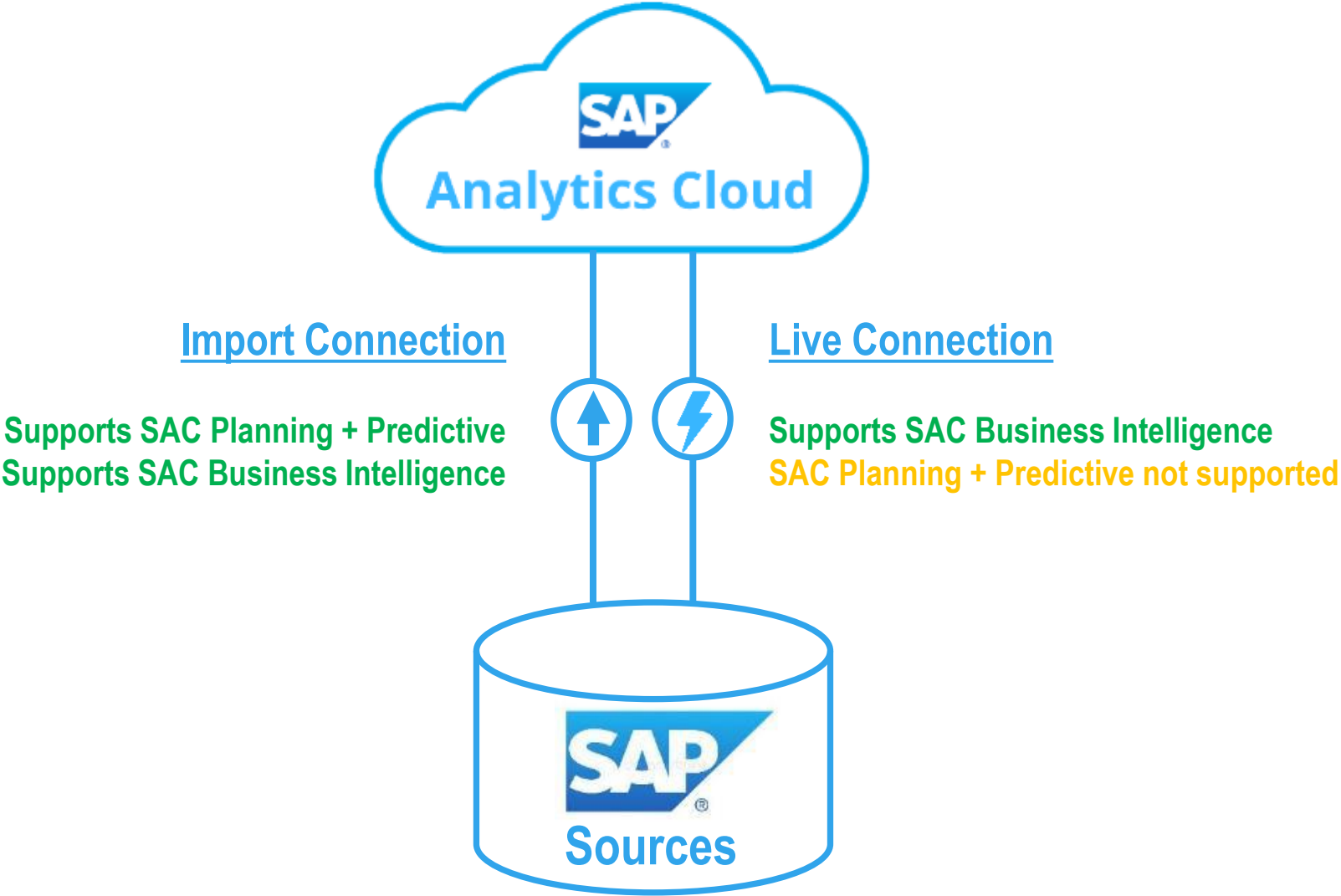
Live Connectivity



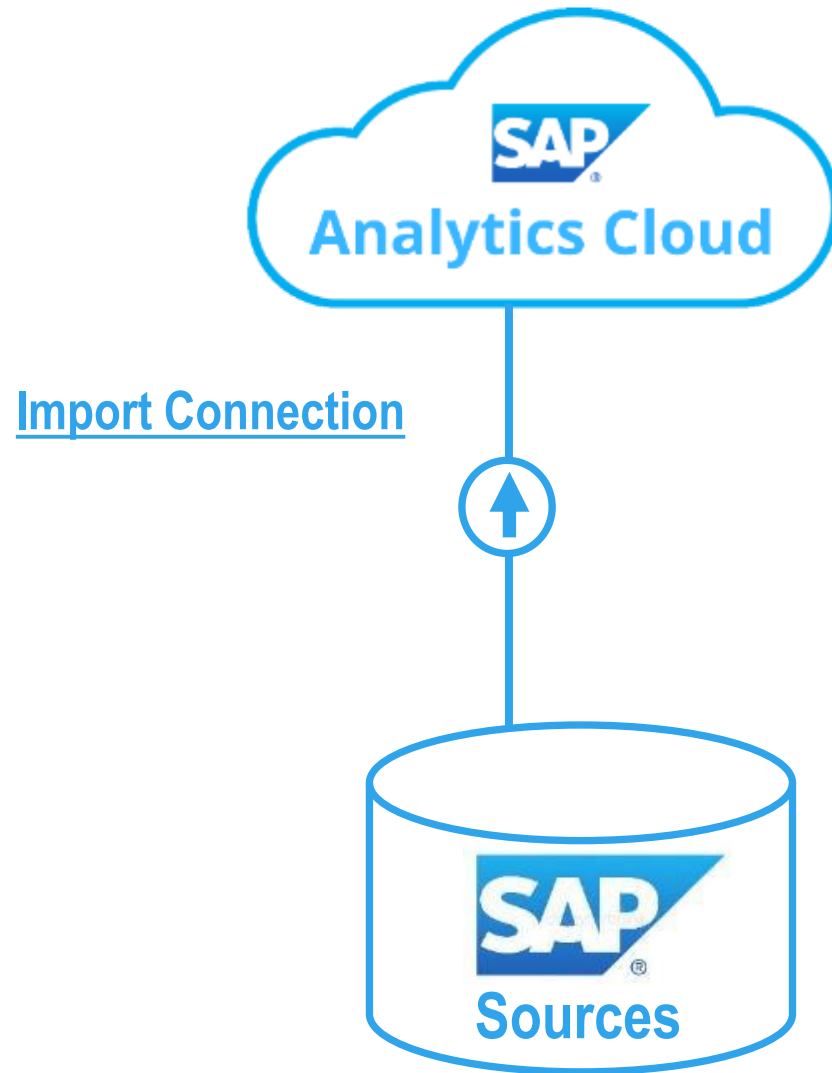
Live Connection

Data leveraged from existing location, no data movement
Focused queries against existing source via SAC browser
Connection into existing source modelling & security

Live & Import Connectivity



Decision Considerations



- Support for Planning & Predictive
- Native support for many sources

- Data replicated into SAC
- Source data security is lost
- Source data modelling is lost
- Data latency – latest upload time
- Data volume limits **
- Data crosses firewall
- Data residency

Import – Data Volume Limits



SAP Help Portal (Documentation) Browse by Product Learning Journeys

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SAP Analytics Cloud Connection Guide

The Importance of Managing a Connectivity Project

Choosing a Live Connection or Importing Data

> Live Connections Overview

> Importing Data

> Single Sign-On (SSO)

Data Volume Maximums:

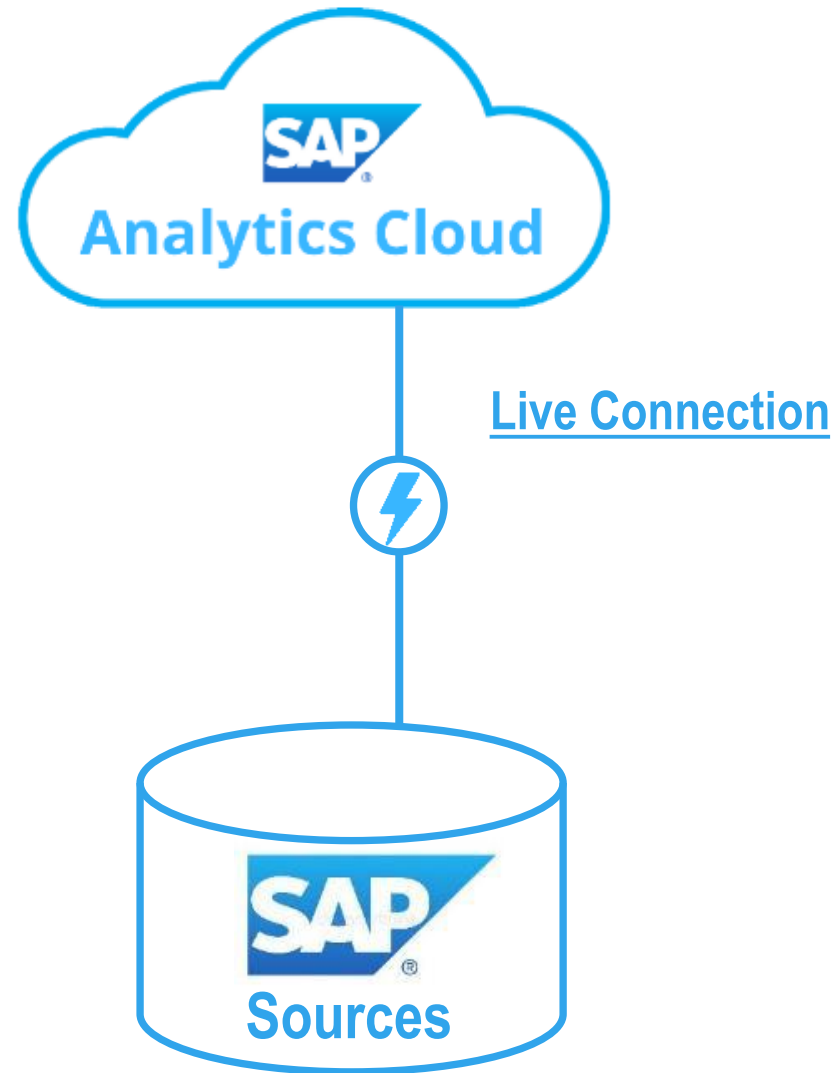
- Columns: 100
- Rows: 800,000
- Dimension members:
 - Planning models: 250,000
 - Analytic models: if there are more than 250,000 unique members, the dimension will be made read-only
- Dimension members with attributes: 150,000
- Dimension members with geo enrichment: 200,000
- Dimension members in hierarchy: 150,000
- Hierarchy depth: 1,000

Decision Considerations



- Data is not replicated
- Database security respected
- Database modelling retained
- Data us current
- No data volume limits
- Data stays behind firewall

- No Planning/Predictive
- Limited sources supported **



Live – Limited Sources Supported



SAP Help Portal (Documentation) Browse by P

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← Previous

- SAP Analytics Cloud Connection Guide
- The Importance of Managing a Connectivity Project
- Choosing a Live Connection or Importing Data**
- > Live Connections Overview
- > Importing Data
- > Single Sign-On (SSO)

Live Connection

Functional Need	Supported Datasources
Local (Cloud data sources)	<ul style="list-style-type: none">▪ SAP Cloud Platform▪ SAP S4/HANA Cloud
Remote (On-premise data sources)	<ul style="list-style-type: none">▪ SAP HANA▪ SAP BW▪ SAP S/4HANA▪ SAP Universe

APOS Live Data Gateway – Expand Live Options



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Advanced Search

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Setting the Default Language for Live Data Connections

Using the 'None' Authentication Option

Using the APOS Live Data Gateway

Error: Failed to connect to system

- > Creating Import Data Connections
- > Creating Export Data Connections
- > Data Preparation and Wrangling (Datasets and Models)
- > Data Analyzer
- > Data Visualization (Stories)
- > Digital Boardroom Presentation
- > Analytic Application Design (Analytics Designer)
- > Microsoft Office Integration
- > Augmented Analytics (Smart Features)
- > Planning
- > Workflow Organization (Calendar)
- > System Administration

Using the APOS Live Data Gateway

The APOS Live Data Gateway provides live data connectivity from SAP Analytics Cloud to an expanded set of on-premise data sources and cloud data sources.

Data provided through APOS Live Data Gateway is kept safely behind the firewall, with no data replication or data upload requirements, and no need to re-create or duplicate data models or data security.

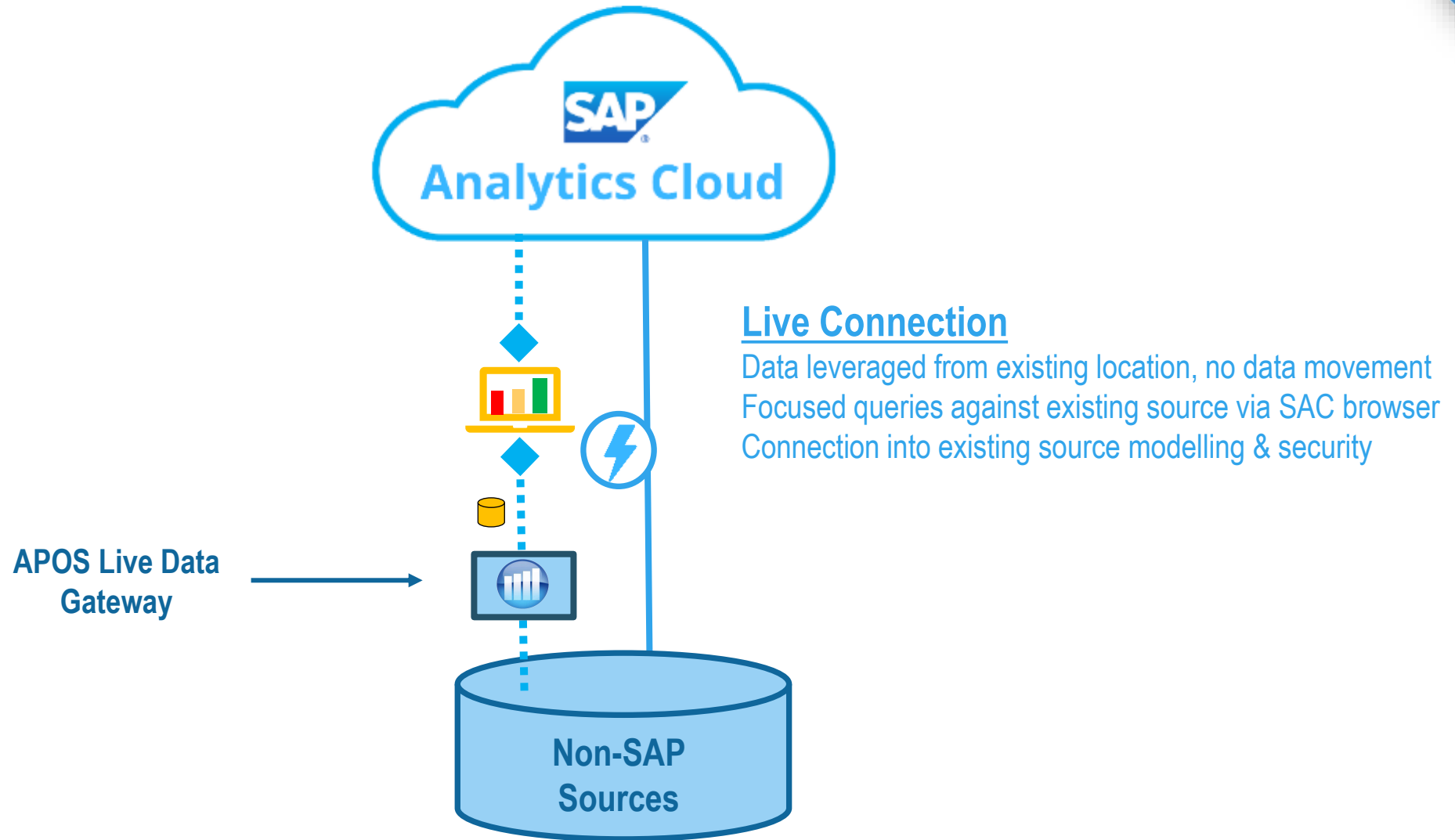
The APOS Live Data Gateway is available on the [SAP App Center](#).

Data Source Types Supported

The APOS Live Data Gateway provides live data connectivity for numerous data sources of OLAP, relational, data appliances, cloud, and legacy SAP data source types:

- Relational Data Sources: Microsoft SQL Server, Oracle, IBM DB2, Sybase IQ, Sybase SQL Anywhere, MySQL
- Data Appliances: Teradata, Netezza

APOS Live Data Gateway – Expand Live Options



APOS Live Data Gateway – Unlock Live Data



APOS Live Data Gateway is a middleware platform which provides virtualized data connection and data transformation to enable live data connectivity and expanded data source options for SAP Analytics Cloud, with a primary focus on **non-SAP data sources**.



Leverage data from its current location



No movement or importing of data



Leverage existing data modelling



Leverage existing security models



Data is always current



Data never leaves the firewall



No added data storage requirements



Reduce data bandwidth requirements

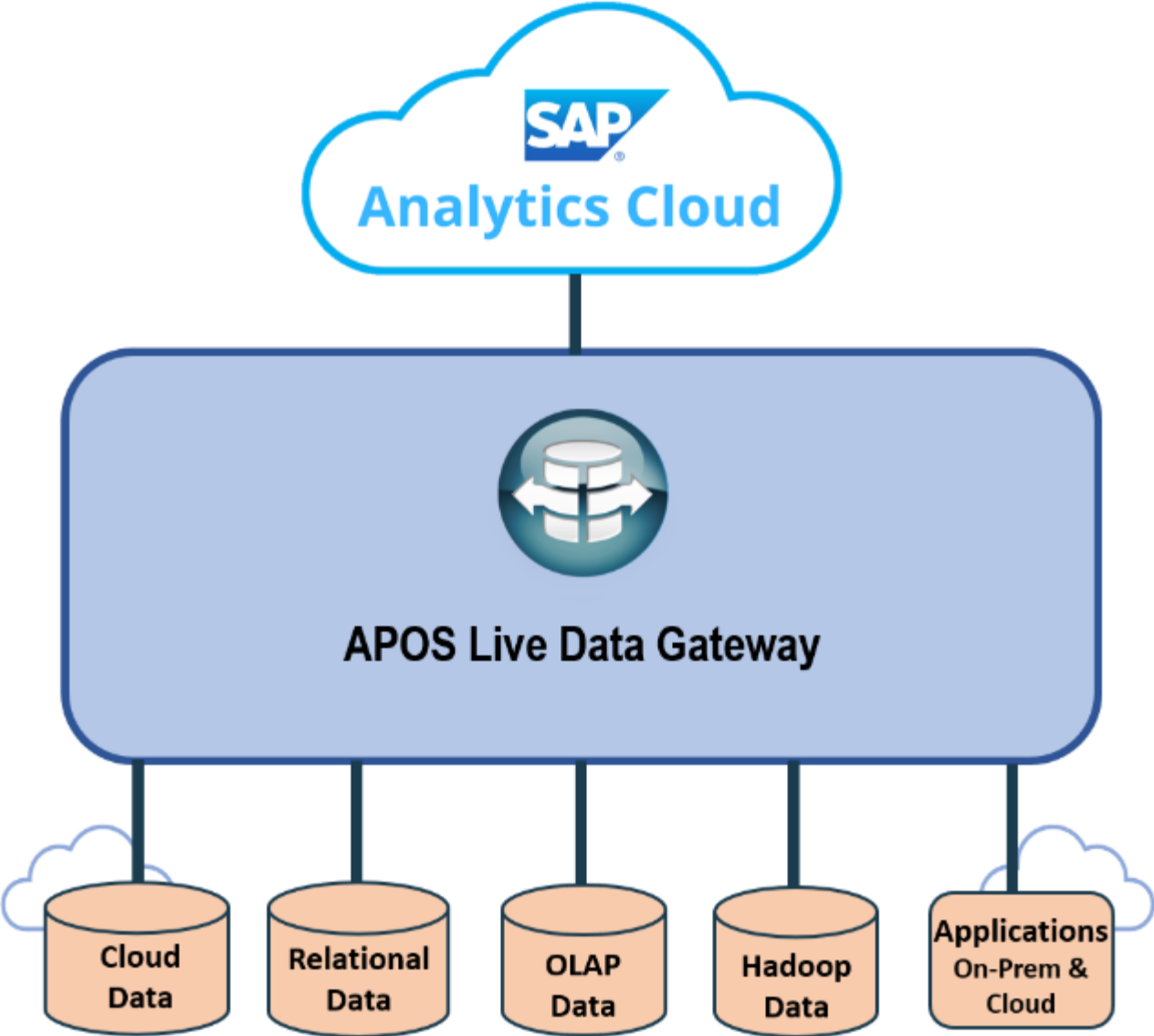


Available on
SAP Store



Alan Golding
Solution Consulting Manager
APOS

APOS Live Data Gateway



Supported Sources



Core Supported Data Sources

- Amazon Athena
- Amazon Aurora
- Amazon EMR
- Amazon Redshift / Redshift Spectrum
- Amazon S3
- Azure Analysis Services
- Azure Cosmos DB
- Azure Data Lake
- Azure SQL Database
- Azure SQL Data Warehouse
- Cloudera
- Databricks
- DB2
- Denodo
- Google BigQuery
- Google Cloud Platform
- Hortonworks
- Informix
- Microsoft SQL Server
- Microsoft Analysis Services
- Azure Blob
- Mongo DB, Mongo DB Atlas
- MySQL
- Netezza
- Oracle
- Oracle Essbase
- Oracle Exadata
- Postgres
- Presto
- Salesforce
- Snowflake
- Sybase IQ, Sybase SQL Anywhere
- Teradata
- SAP BusinessObjects Universes (UNV, UNX)
- SAP BW - version 7.3 and higher
- JDBC connectivity

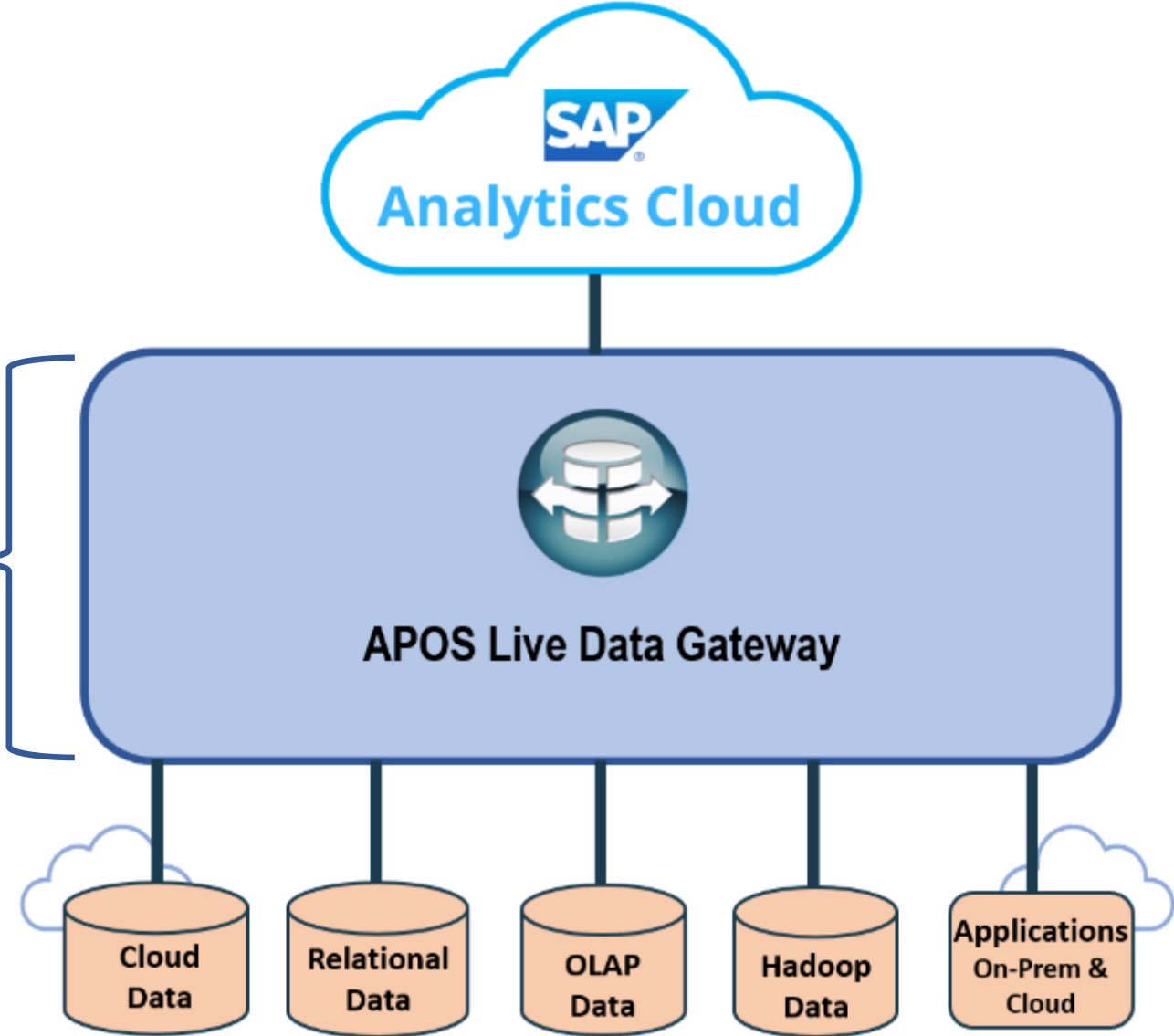
Extended Data Sources: 100+ Additional data source and application connection options

<https://www.apos.com/content/apos-live-data-gateway-data-sources-supported>

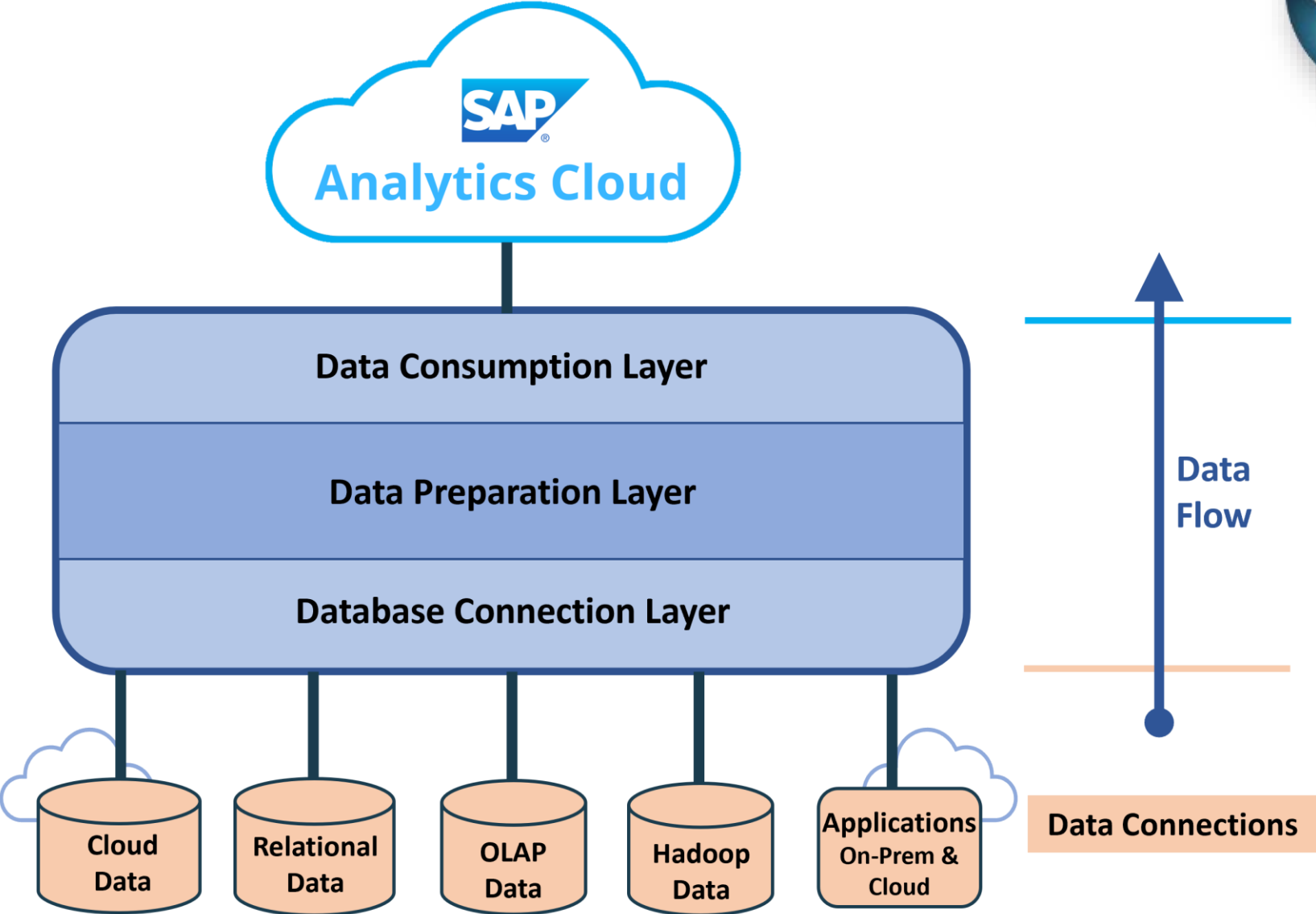
Live Data Gateway Server



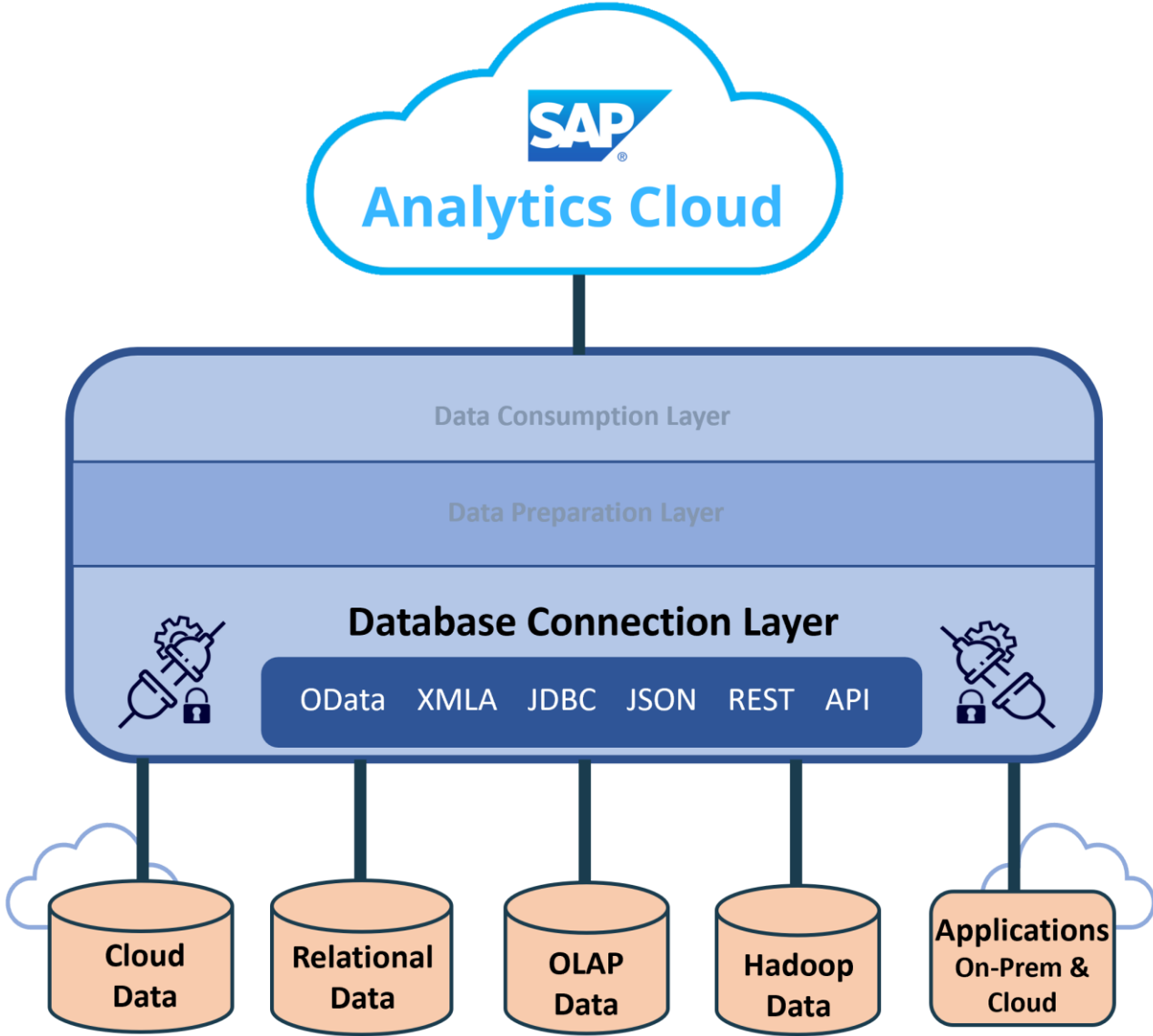
- Windows server
- Managed & controlled by customer
- Deployed on-premise or in customer's cloud environment



APOS Live Data Gateway



Database Connection Layer



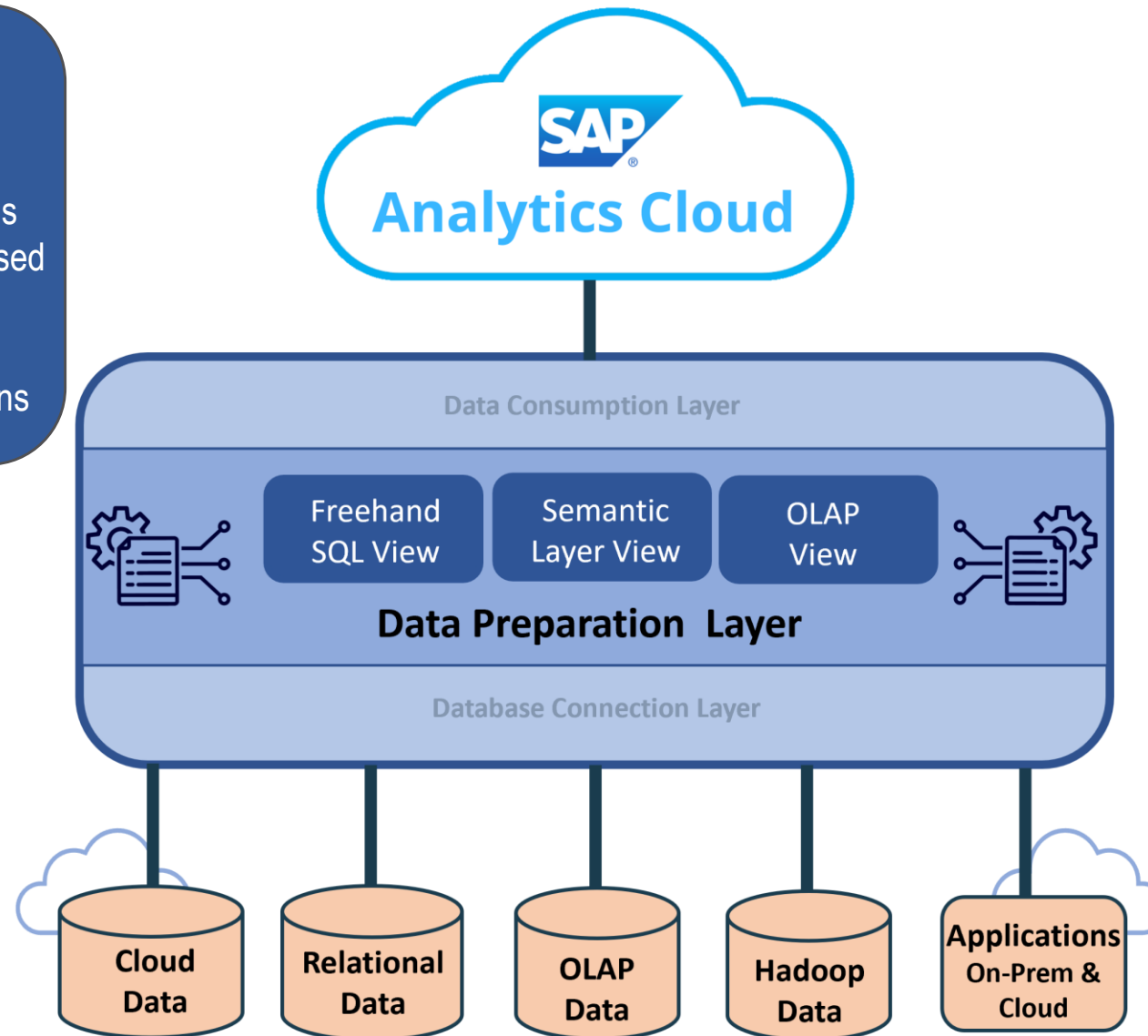
Data Preparation Layer



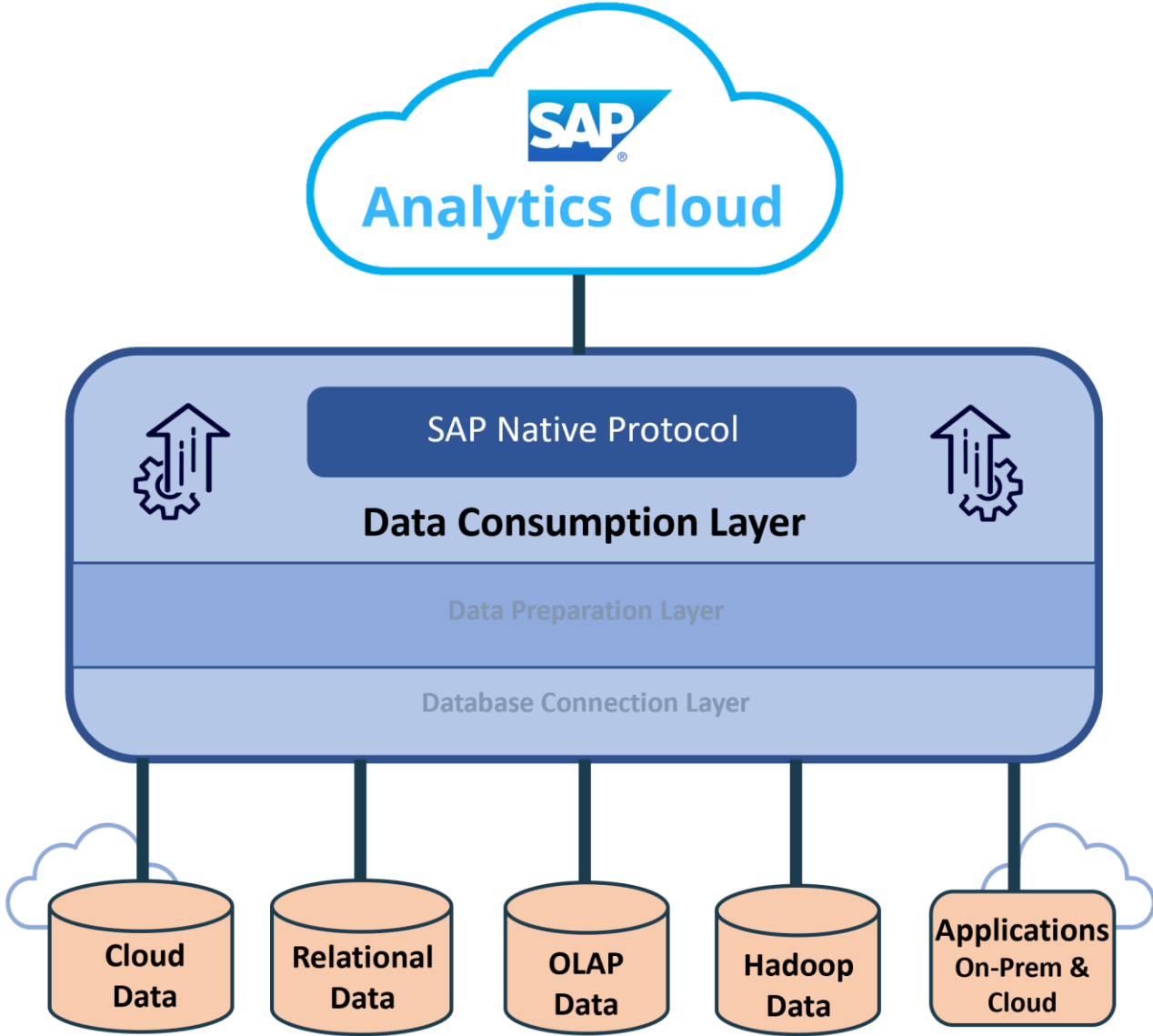
Data Preparation Layer

Key Functions

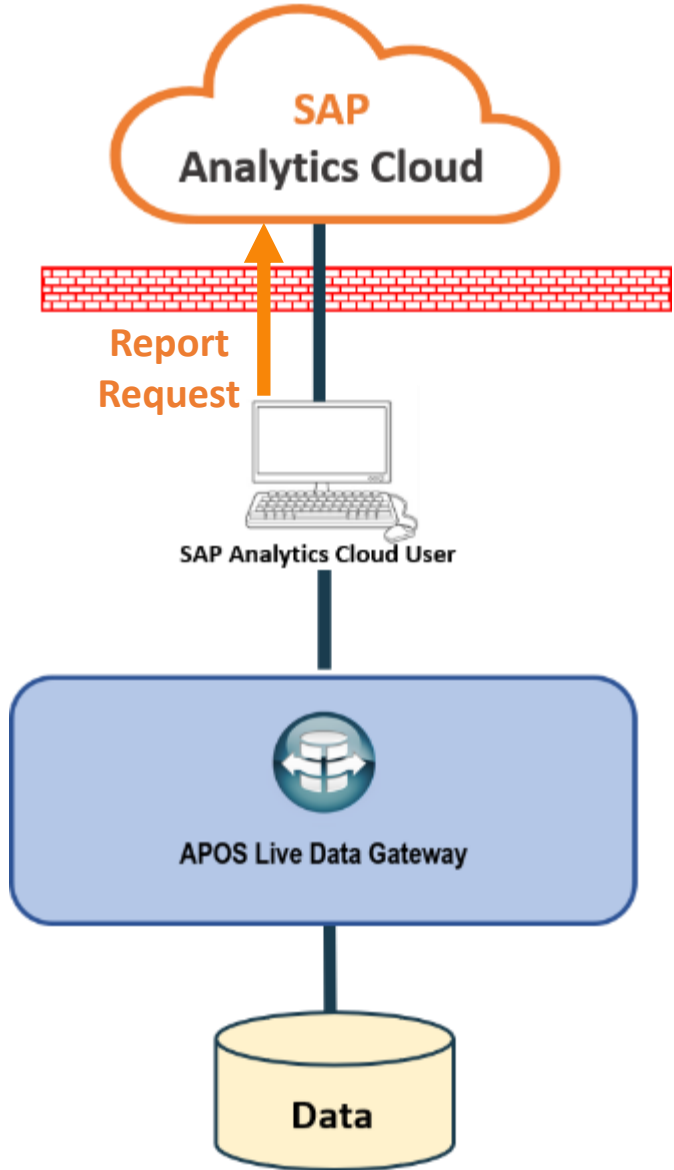
- Define Measures and Dimensions
- Define what data fields are exposed
- Manage table links and joins
- Set meaningful field names
- Optimize with data transformations



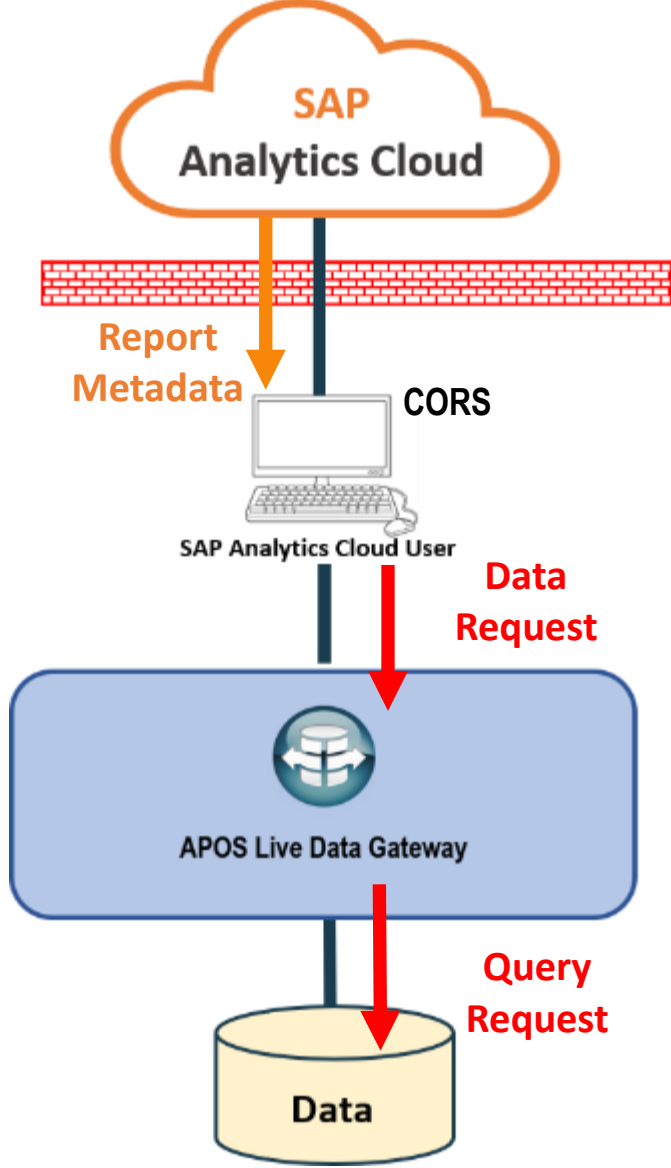
Data Consumption Layer



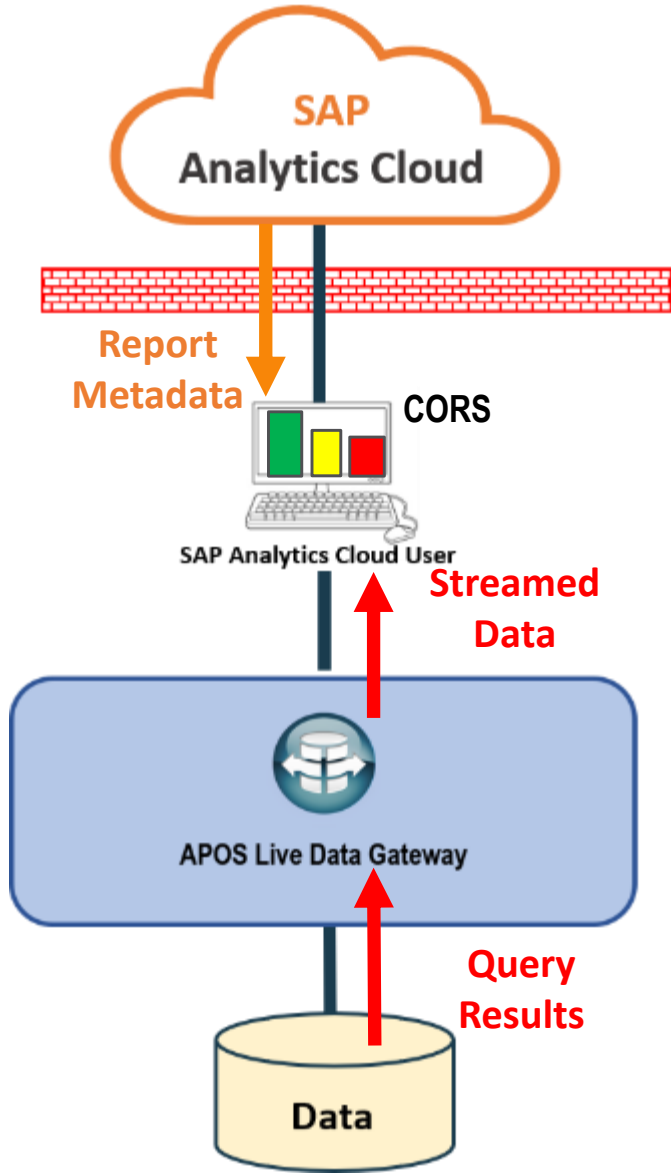
Data Consumption Flow



Data Consumption Flow



Data Consumption Flow



5 Simple Steps to Live Connectivity



1

**Create connection
to Data Source**

2

**Create view in
Data Preparation
Layer**

3

Create connection

4

**Create Model /
Data Set**

5

Create Report



Solution Overview



Performance

Performance Considerations



- No data being stored
- Data being read from source database
- No caching of data
- New queries initiated with each data request within SAC

The screenshot displays the Snowflake Worksheets interface. At the top, there are navigation tabs for Databases, Shares, Marketplace, Warehouses, Worksheets, and History. The main workspace shows a query editor with the following SQL code:

```
1 USE DATABASE SNOWFLAKE_SAMPLE_DATA;  
2 USE SCHEMA TPCDS_SF100TCL;  
3 USE WAREHOUSE APOS;  
4 select count(1) from STORE_SALES; --288,010,550,524  
5
```

Below the query editor, the 'Results' section is visible, showing a data preview with 1 row and 1 column:

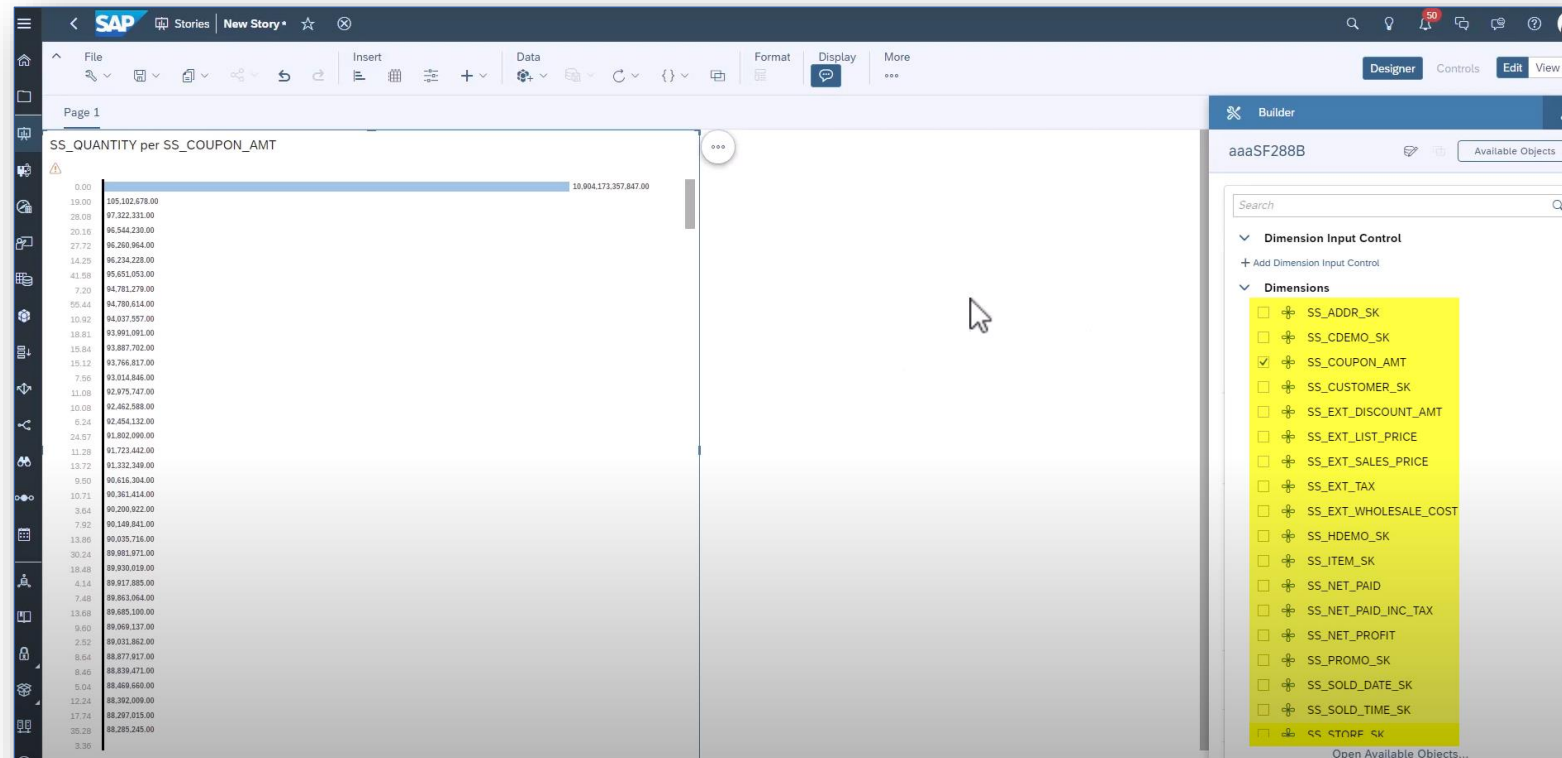
Query ID	SQL	43ms	1 rows
1	select count(1) from STORE_SALES;		288010550524

A red arrow points from the 'Results' table to a callout box on the right. The callout box contains the text 'COUNT(1)' and the value '288010550524', mirroring the data in the results table. The callout box also has an 'Open History' button at the top and a 'Columns' dropdown at the bottom.

APOS Live Data Gateway – Performance Results



- 288 billion row data set
- 10.5 Terabytes
- On-the-fly aggregated queries
- Sub-2 second response time !



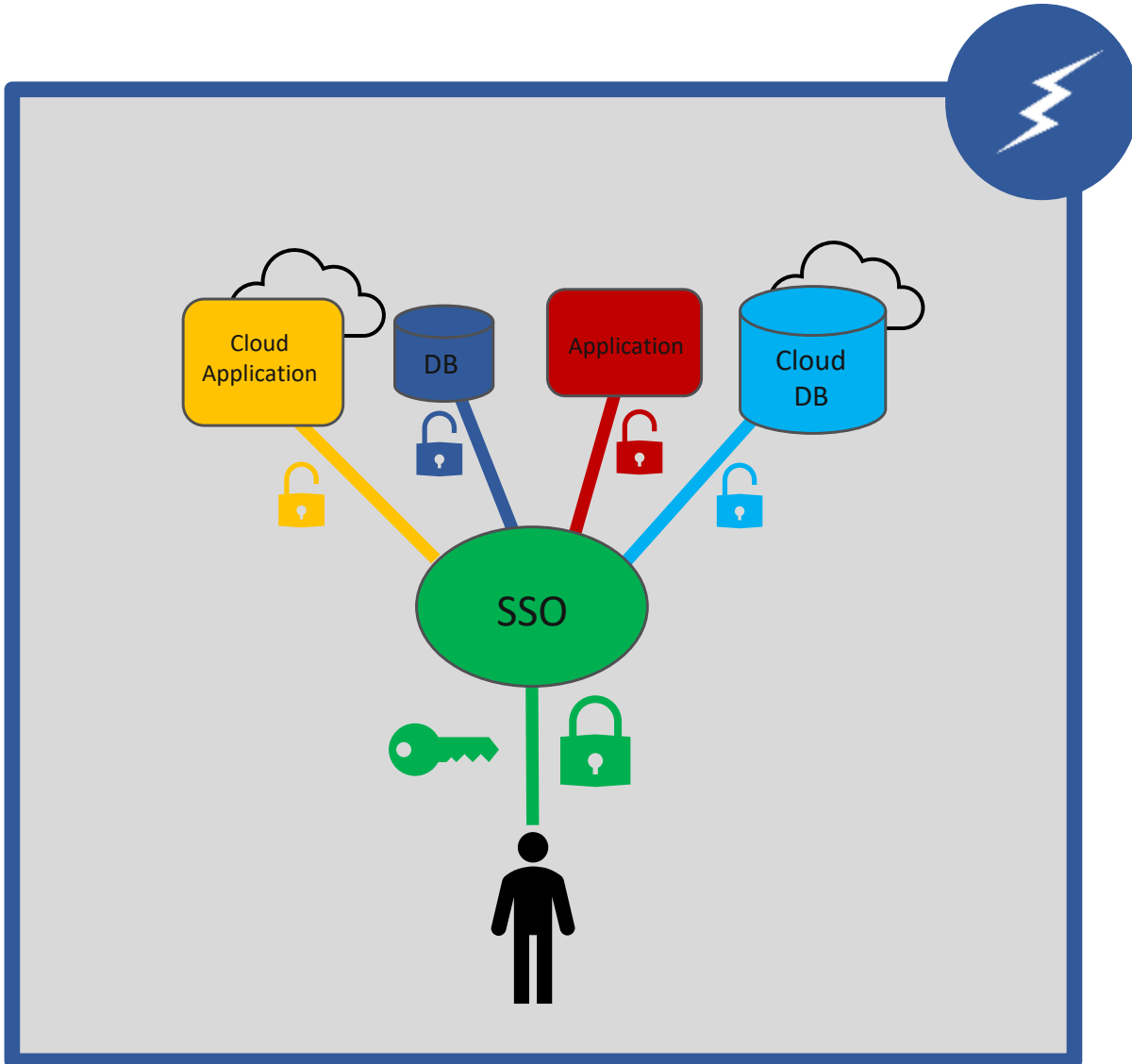


Security

APOS Live Data Gateway – Security



Single Sign On

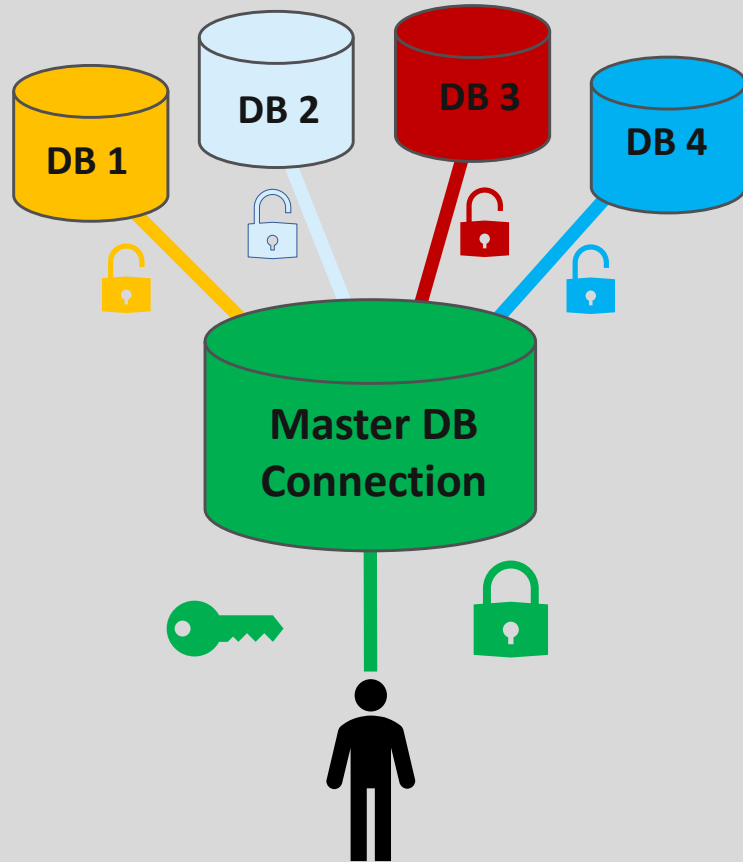


- Unified security authentication
- Integrated to enforce data base security
- Simplified user experience

- Various SSO options supported
- SSO Technologies we work with:

- SAML
- Azure AD
- OKTA
- Google Cloud IDP
- OAuth
- Kerberos with WinAD
- Keypair Authentication
- User Impersonation
- Pre-Defined Cached User

APOS Live Data Gateway – Security



Shared Connectivity

- Single point of SSO for multiple connections
- Master connection can have multiple child connections associated with it
- Removes need for multiple SAC connections

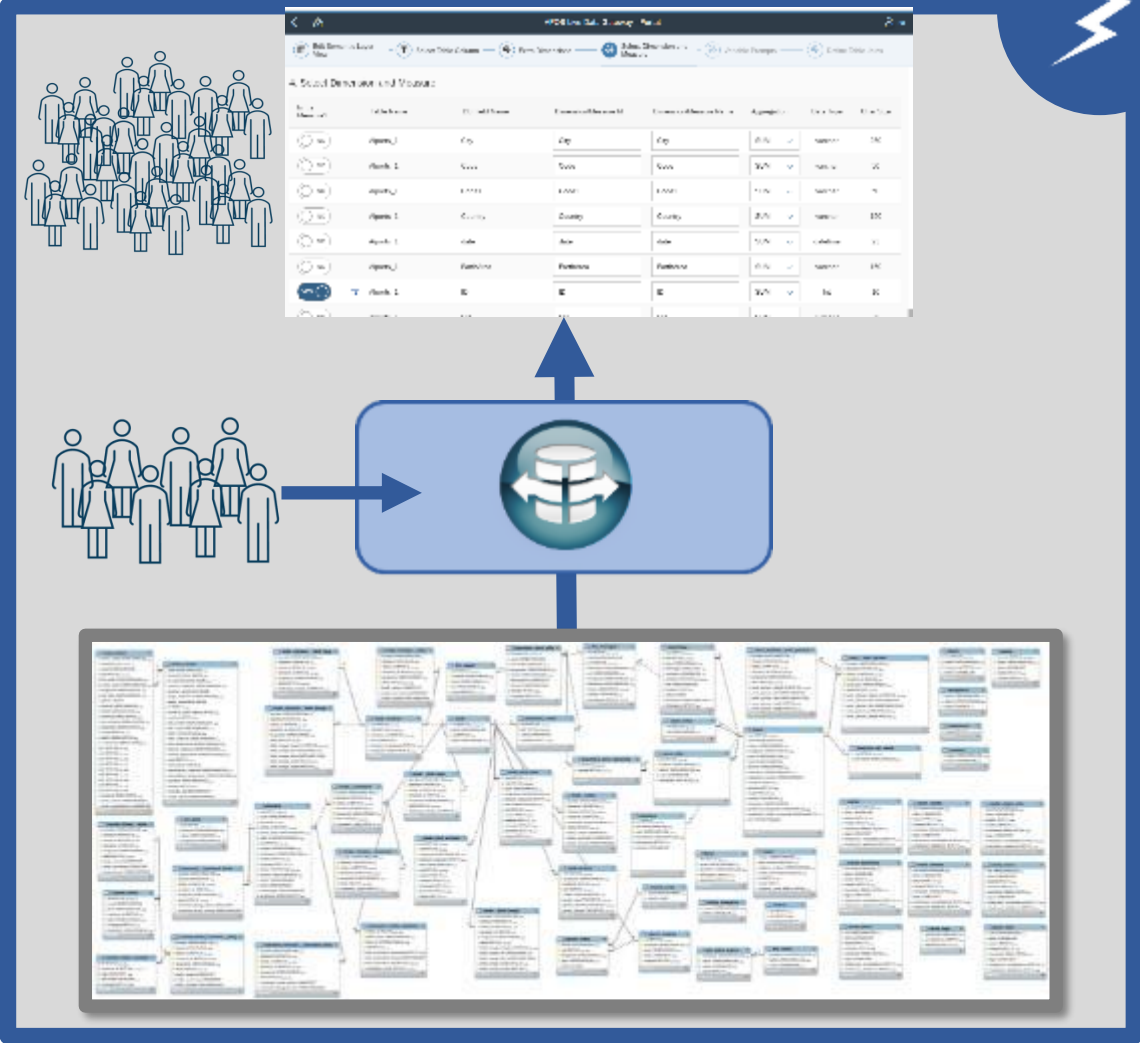


Data Transformations

APOS Live Data Gateway – Data Transformations



Self-Service Data Modelling



- Self Service creation of data modelling assets
- Expand from self-service analytics to self-service modelling
- Strengthen independence of analytics team
- Reduce IT dependence

- Web-based modelling interface
- Controlled user access to modelling
- SSO enabled
- Multiple options for building views

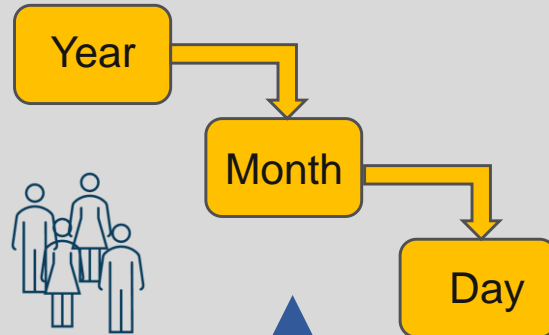
APOS Live Data Gateway – Data Transformations



Date Dimensions

- Create date hierarchies on non-hierarchical data
- Simplified user navigation and experience
- Improved analysis

- Custom date dimensions support
- Hierarchical date dimension support
 - Drill Down
 - Time Series Charts
 - Variance Charts
- Hierarchies available as individual dimensions



Transaction Number	Date	Time	Store Number	Associate Number	Product Code	Transaction Amount	Currency
1200025833	28/01/2022	5:058:00 PM	22	605	B2677XS	422.47	USD
1200025834	28/01/2022	5:058:00 PM	18	233	CFT1315M	135.72	USD
1200025835	28/01/2022	5:059:00 PM	42	321	B2678M	424.66	USD
1200025836	29/01/2022	8:02:00 AM	57	103	CFP1318XL	115.38	USD
1200025837	29/01/2022	8:02:00 AM	4	477	ARW7767L	294.65	USD
1200025838	29/01/2022	8:03:00 AM	51	76	CFT1315S	135.72	USD

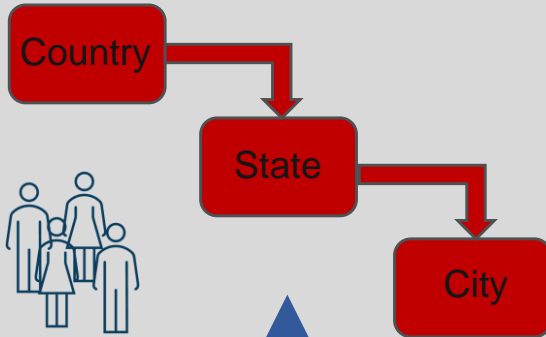
APOS Live Data Gateway – Data Transformations



Custom Hierarchies

- Create custom hierarchies on non-hierarchical data
- Simplified user navigation and experience
- Improved analysis

- Provide ability to create custom dimensions on non-hierarchical data
- Simplified user experience for building and consuming analytics
- Drill down functionality for non-date based dimensions
- Level Type Hierarchies will be supported



Store Number	Street	City	State	Country	Zip Code	Latitude	Longitude
1	810 Phillips Ln	Louisville	KY	USA	40209	38.1912	-85.74234
2	3515 Lindell Blvd	St. Louis	MO	USA	63103	38.63705	-90.2311
3	2906 Belmont Blvd	Nashville	TN	USA	37212	36.12007	-86.79496
4	1015 Joyce Ln	Nashville	TN	USA	37216	36.23382	-86.72676
5	90 Fairlie St NW	Atlanta	GA	USA	30303	33.75712	-84.39016
6	1310 S Tryon St	Charlotte	NC	USA	28203	35.21848	-80.85469

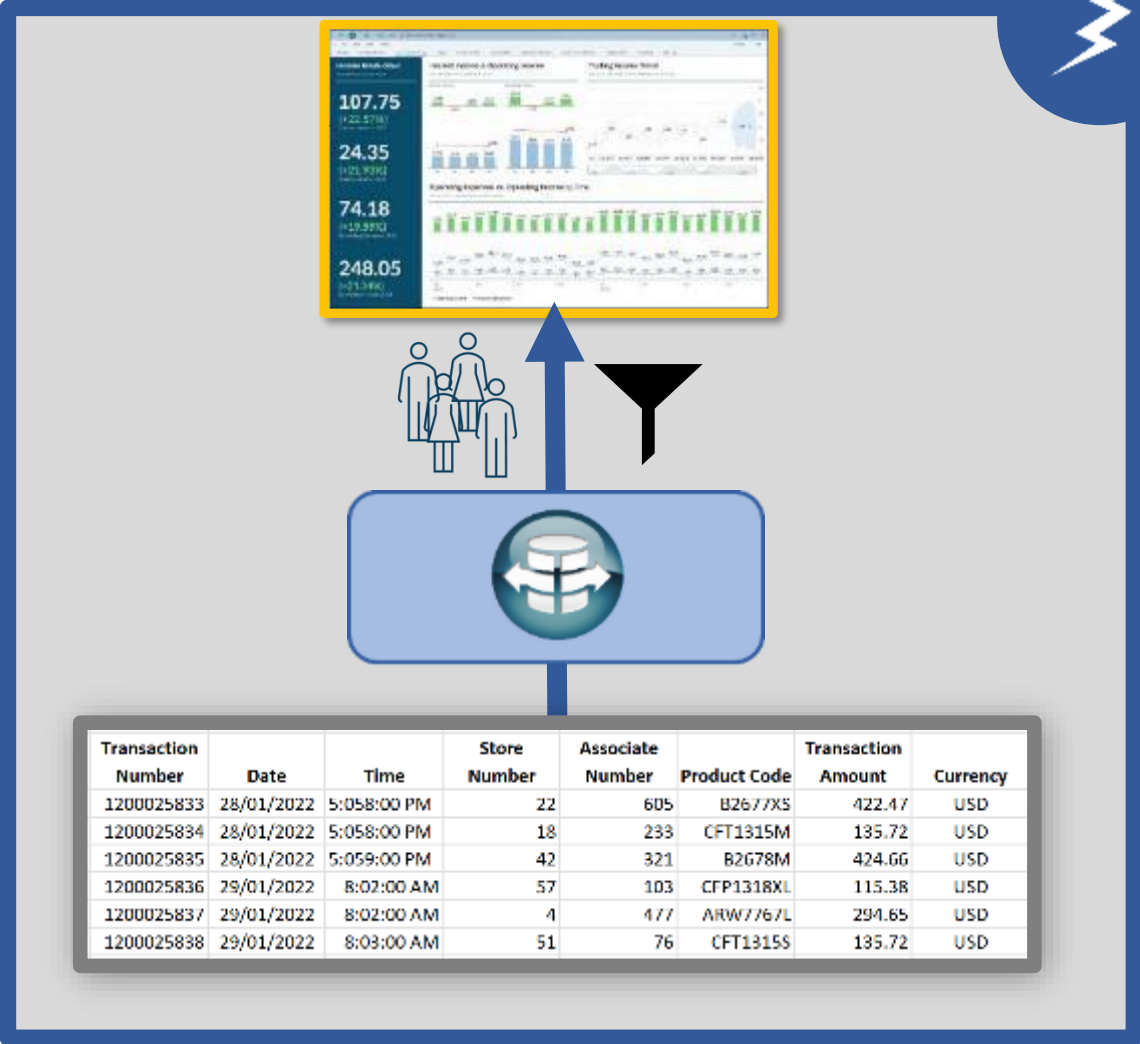
APOS Live Data Gateway – Data Transformations



Variables Support

- Powerful data filtering
- Simplified user experience
- Improved analysis

- Create custom variables
- Supported in both Client Tool and Web UI
- Utilize formulas
- Utilize full set of values or custom set of values



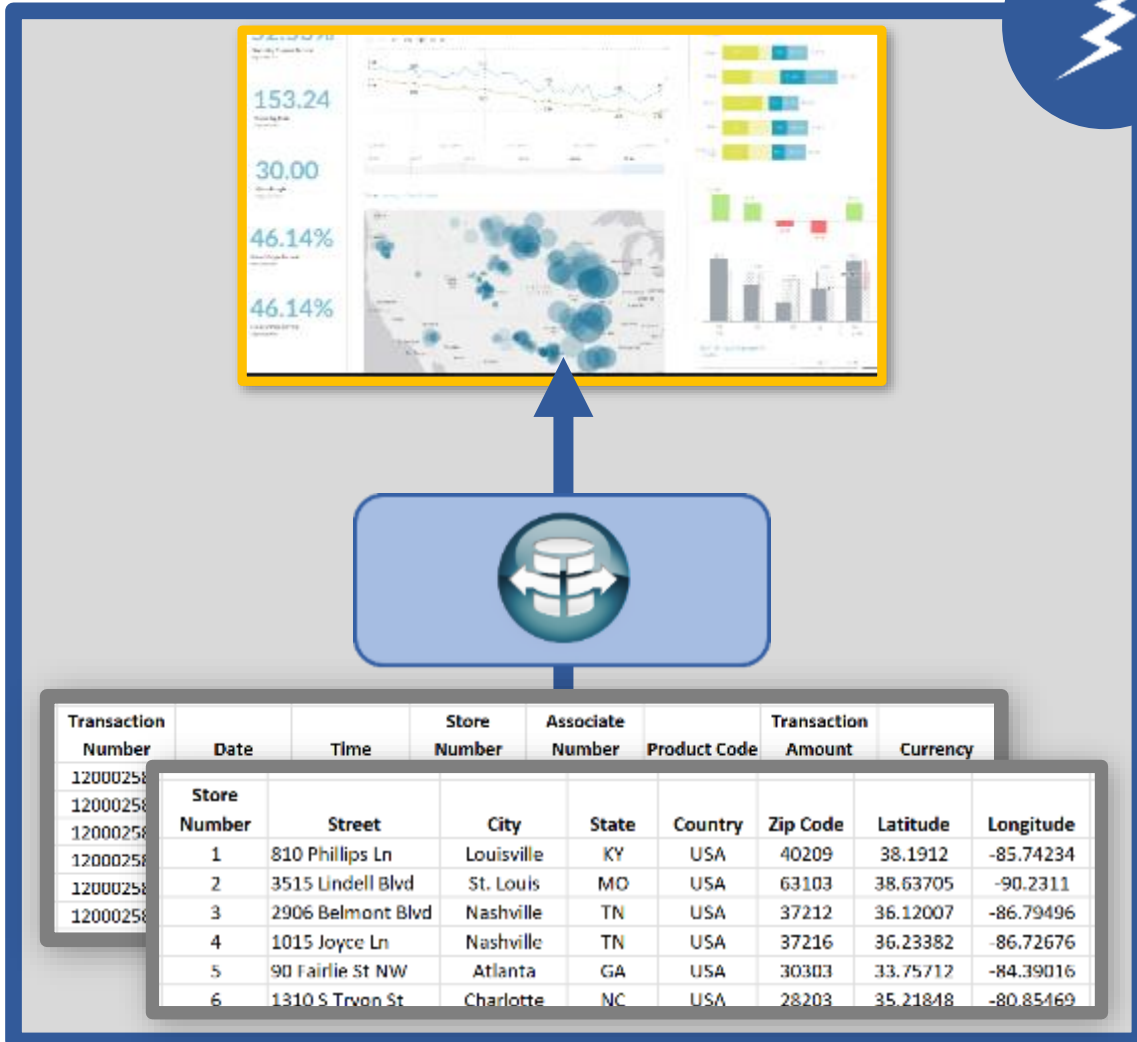
APOS Live Data Gateway – Data Transformations



Geospatial Data

- Supply data for representation on a map
- Highly visual analytics
- Improved analysis

- Geospatial Dimensions support
- Multiple Projections supported
- Multiple Datasource Types supported
- Configure Multiple Geo Dimensions





Expanded Connections

APOS Live Data Gateway – Cloud Data Sources



Transaction Number	Date	Time	Store Number	Associate Number	Product Code	Transaction Amount	Currency
12000258							
12000258							
12000258							
12000258							
12000258							
12000258							

Store Number	Street	City	State	Country	Zip Code	Latitude	Longitude
1	810 Phillips Ln	Louisville	KY	USA	40209	38.1912	-85.74234
2	3515 Lindell Blvd	St. Louis	MO	USA	63103	38.63705	-90.2311
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6	1310 S Tryon St	Charlotte	NC	USA	28203	35.21848	-80.85469

APOS Live Data Gateway – Unique Data Sources



Contacts

All Contacts

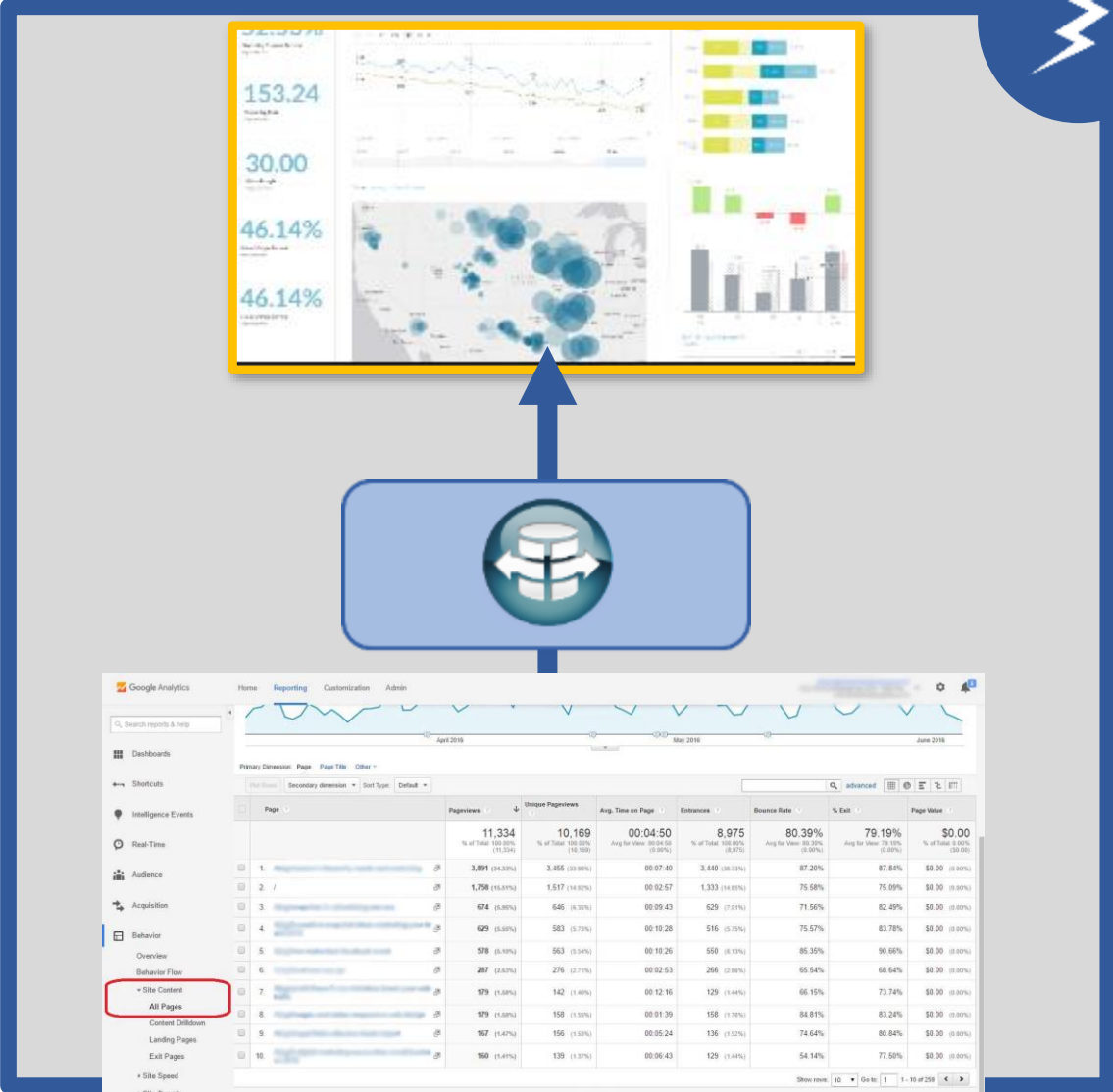
NAME	ACCOUNT NAME	TITLE	PHONE	EMAIL	OWN...	OWNER ...
1 <input type="checkbox"/> Carole White (Sample)	Global Media (Sample)	VP Sales	1 (800) 667-6389	info@salesforce.com	Mary	McGuire
2 <input type="checkbox"/> Geoff Minor (Sample)	Global Media (Sample)	President	1 (800) 667-6389	info@salesforce.com	Mary	McGuire
3 <input type="checkbox"/> Howard Jones (Sample)	Acme (Sample)	Buyer	1 (800) 667-6389	info@salesforce.com	Mary	McGuire
4 <input type="checkbox"/> Jennifer Stamos (Sample)	Acme (Sample)	President and CEO	1 (800) 667-6389	info@salesforce.com	Mary	McGuire
5 <input type="checkbox"/> Jon Amos (Sample)	Global Media (Sample)	Sales Manager	1 (800) 667-6389	info@salesforce.com	Mary	McGuire
6 <input type="checkbox"/> Leanne Tomlin (Sample)	Acme (Sample)	VP Customer Support	1 (800) 667-6389	info@salesforce.com	Mary	McGuire
7 <input type="checkbox"/> Marc Benioff (Sample)	salesforce.com (Sample)	Executive Officer	1 (800) 667-6389	info@salesforce.com	Mary	McGuire

- ✓ Salesforce Accounts
- ✓ Salesforce Opportunities
- ✓ Salesforce Customers
- ✓ etc.

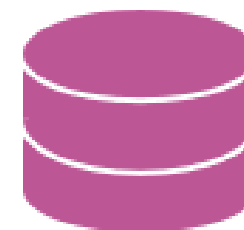
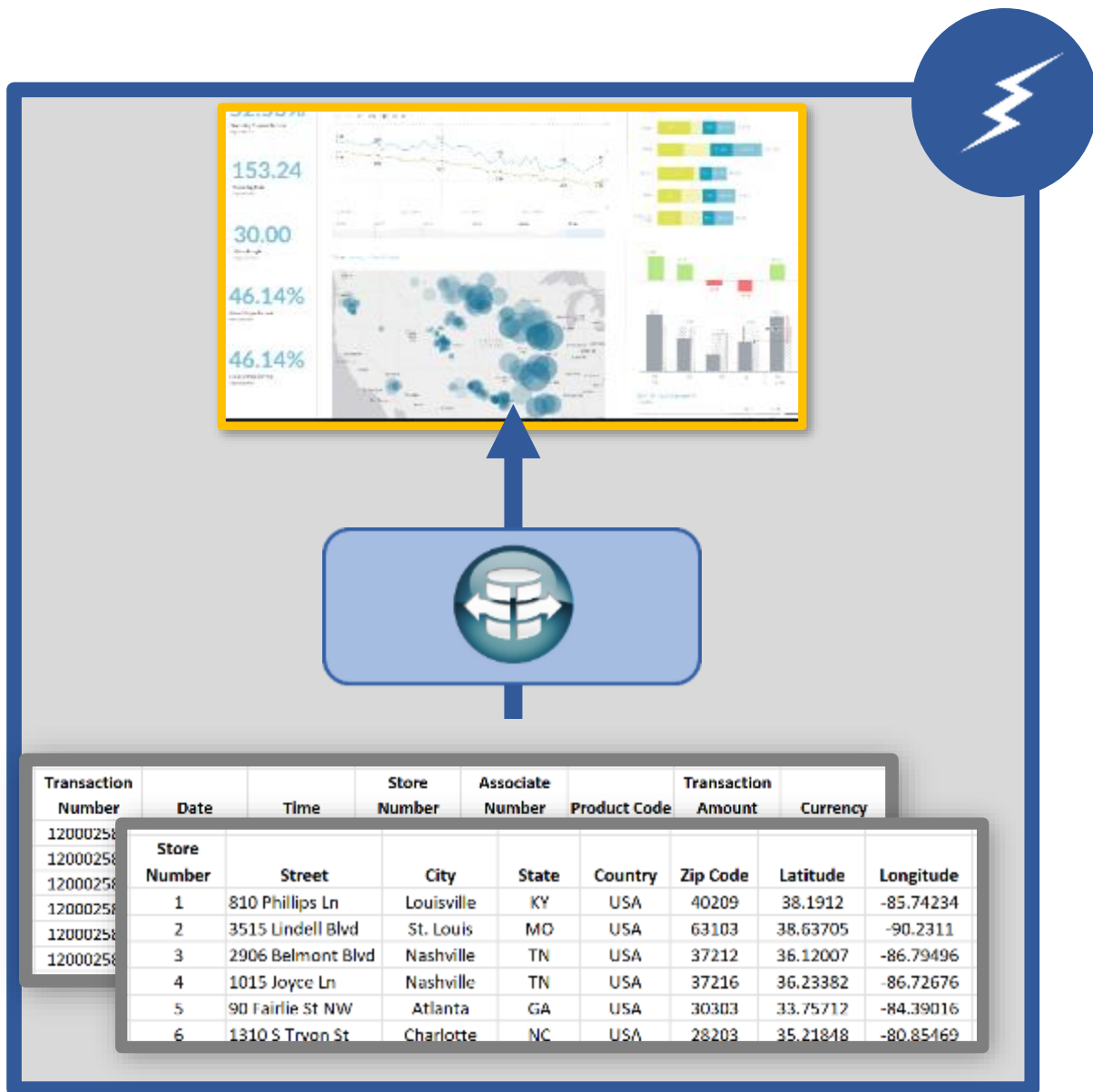
APOS Live Data Gateway – Unique Data Sources



- ✓ Google site traffic
- ✓ User Information
- ✓ Session Statistics
- ✓ Insights into your applications



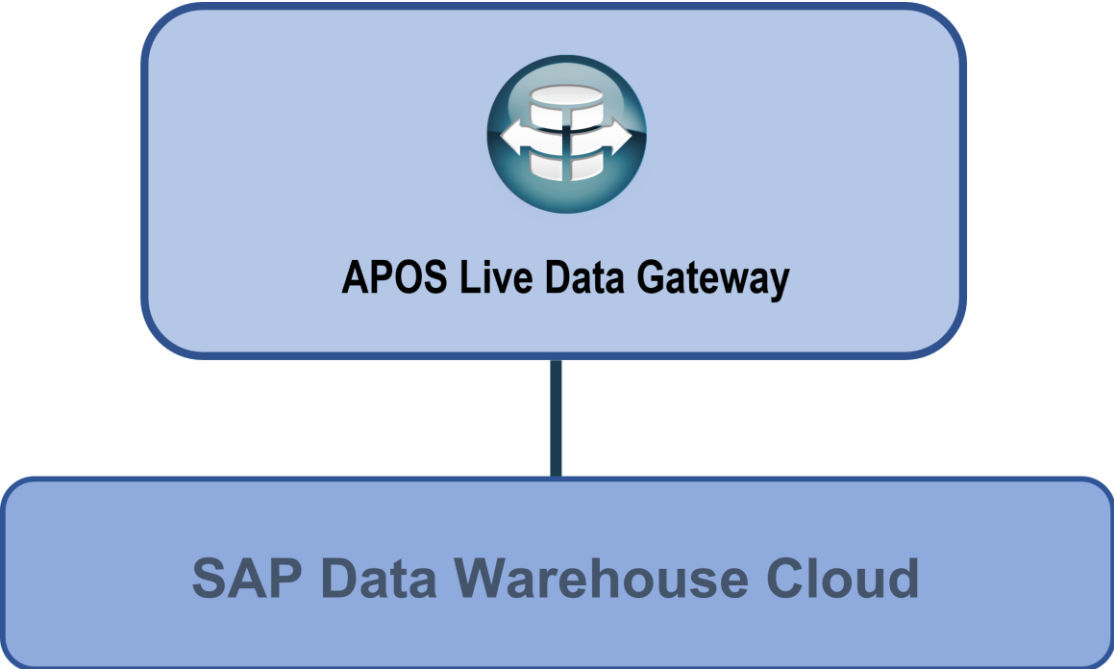
APOS Live Data Gateway – Generic JDBC Connectivity



Generic JDBC

- Live connectivity to other data sources that support JDBC with APOS Live Data Gateway

Live Connectivity to SAP Data Warehouse Cloud





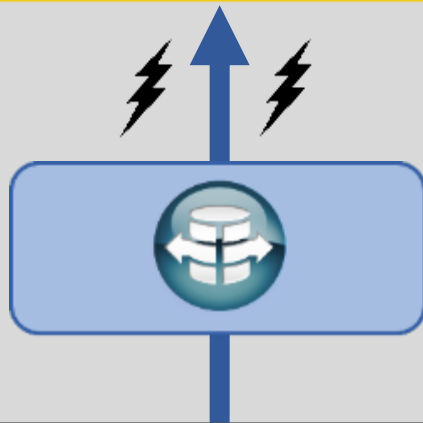
Expanded Consumption

APOS Live Data Gateway



Power BI to SAP DWC Support

 Power BI

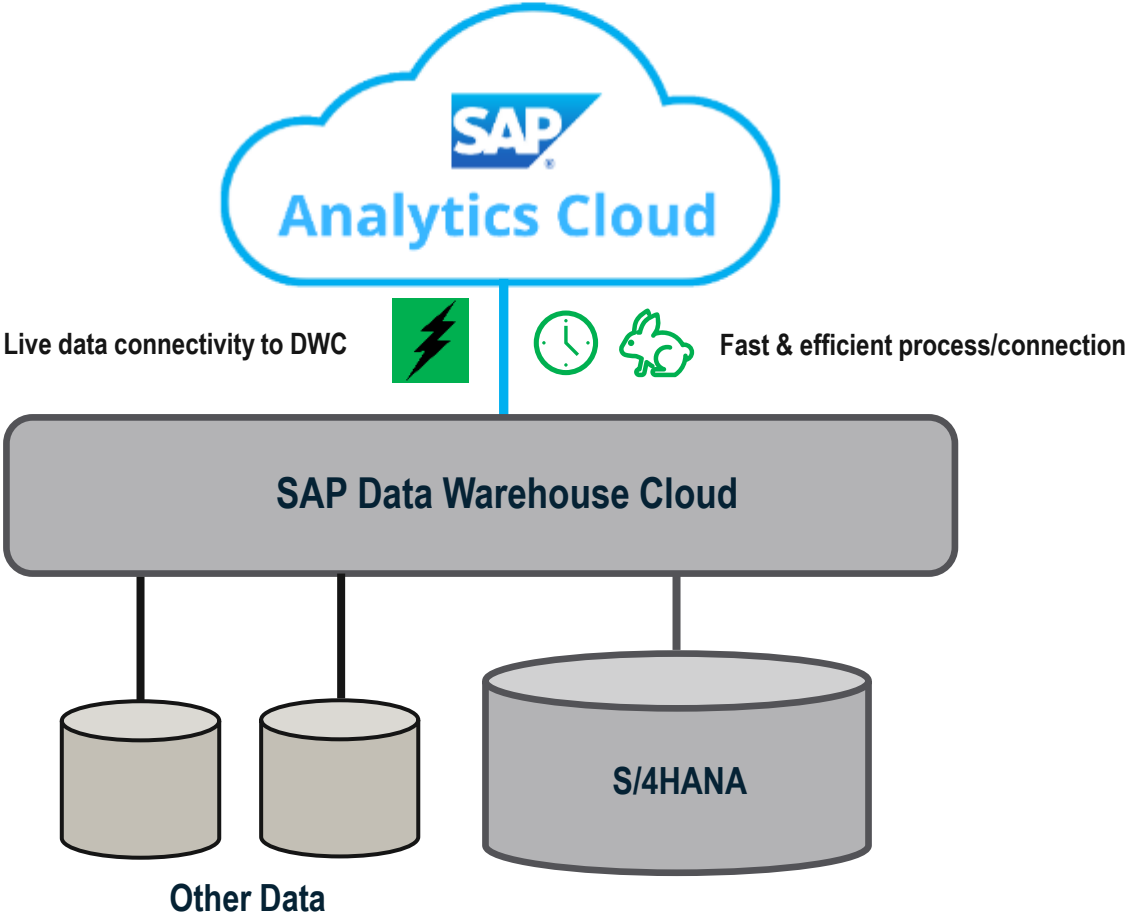


SAP Data Warehouse Cloud

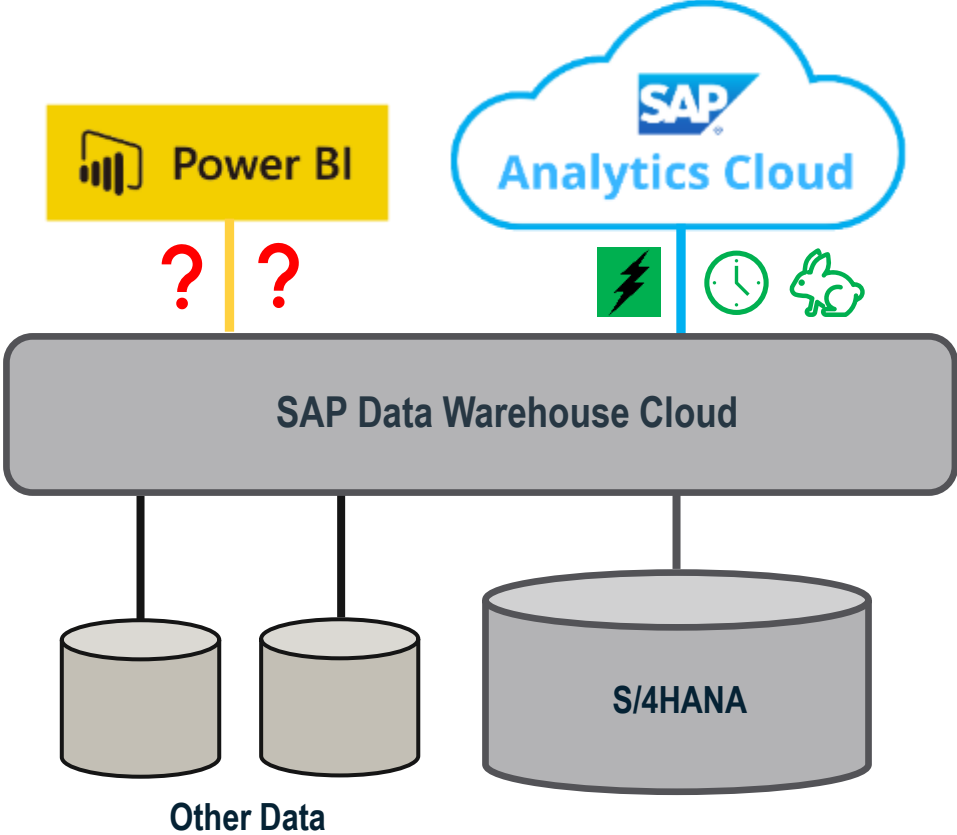
- Connect live from Power BI to SAP DWC (Data Warehouse Cloud)
- Expand how SAP DWC data can be leveraged

- Power BI DirectQuery connection support
- Quick access to SAP DWC data in Power BI
- No data load wait times
- No movement of data from SAP DWC
- Effective connectivity for large data sets

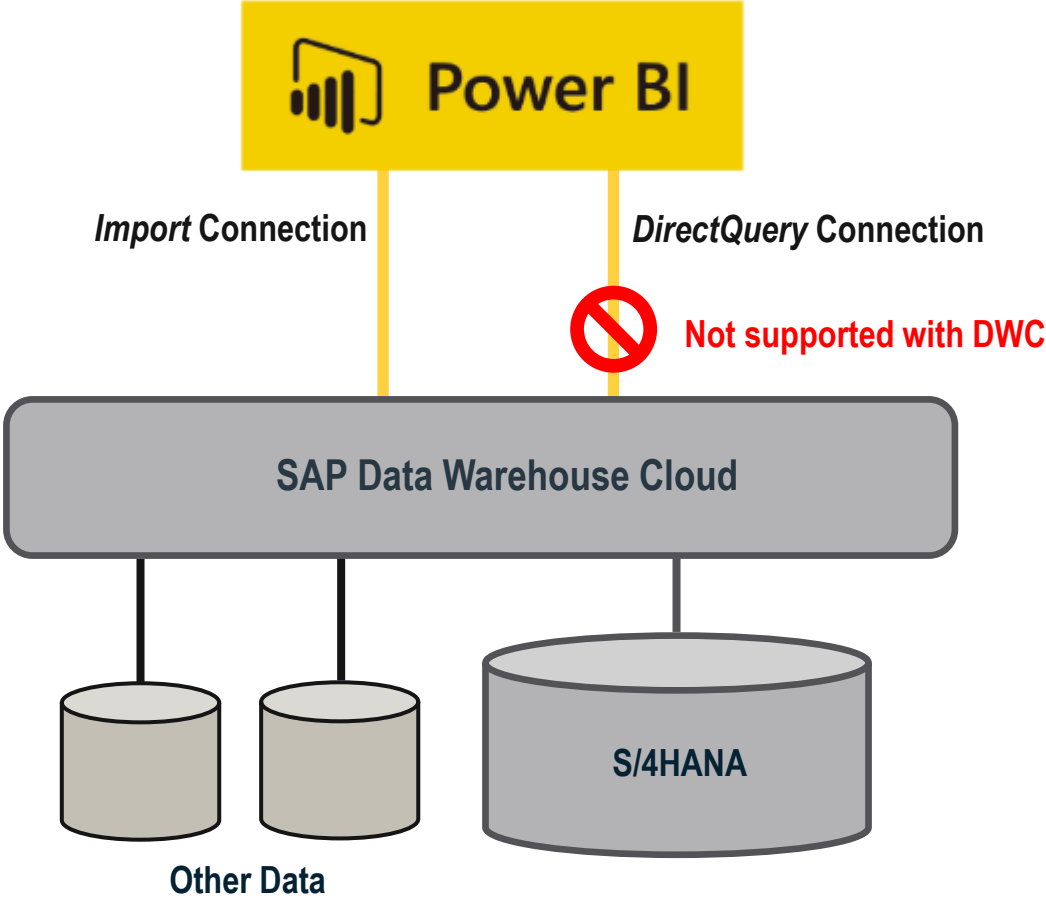
Built-in Live Connectivity from SAC to DWC



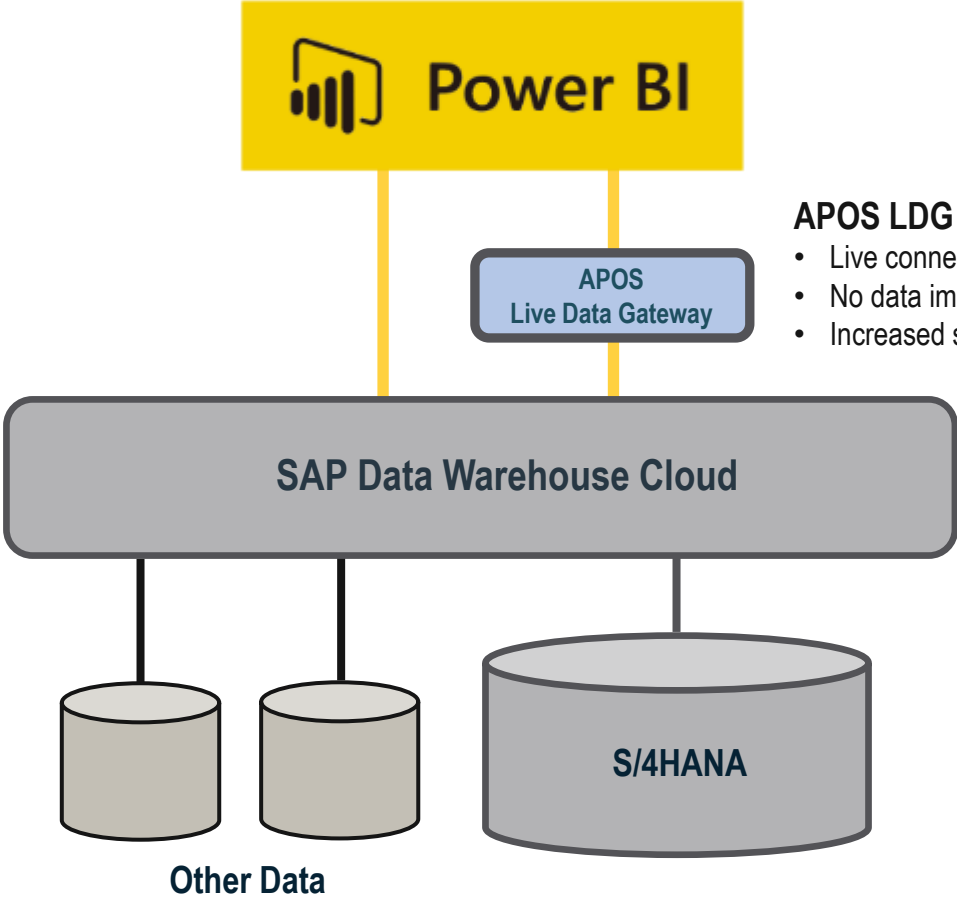
Power BI Connectivity to DWC



Power BI DirectQuery to DWC

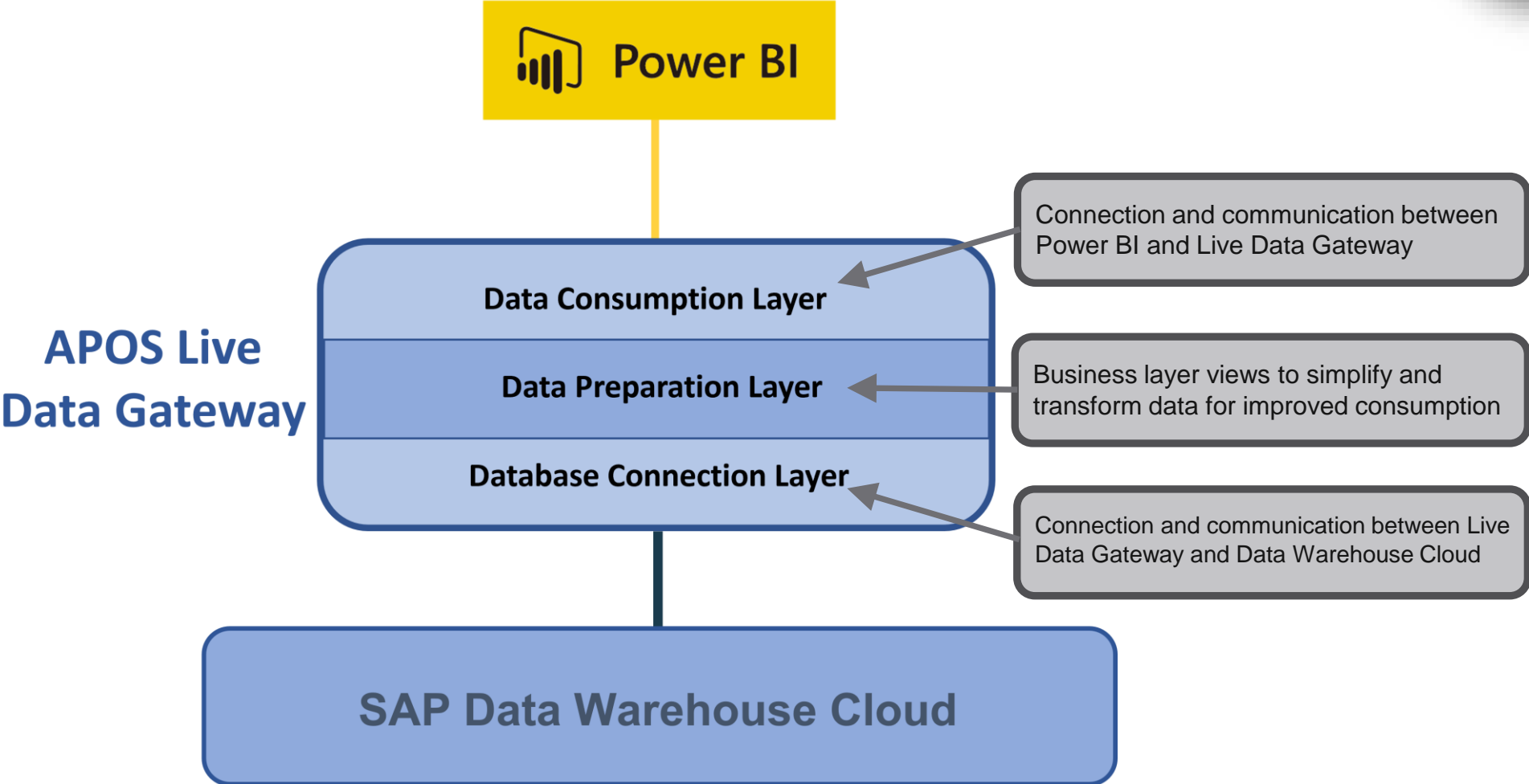


DirectQuery to DWC with Live Data Gateway



- APOS LDG enables *DirectQuery* Connection**
- Live connection to DWC with direct, targeted queries
 - No data import into PBI = no data latency or analytics latency
 - Increased speed & efficiency of data process

Direct Query Connectivity with Live Data Gateway



General View Edit

Save Refresh Share

View icons

Edit icons

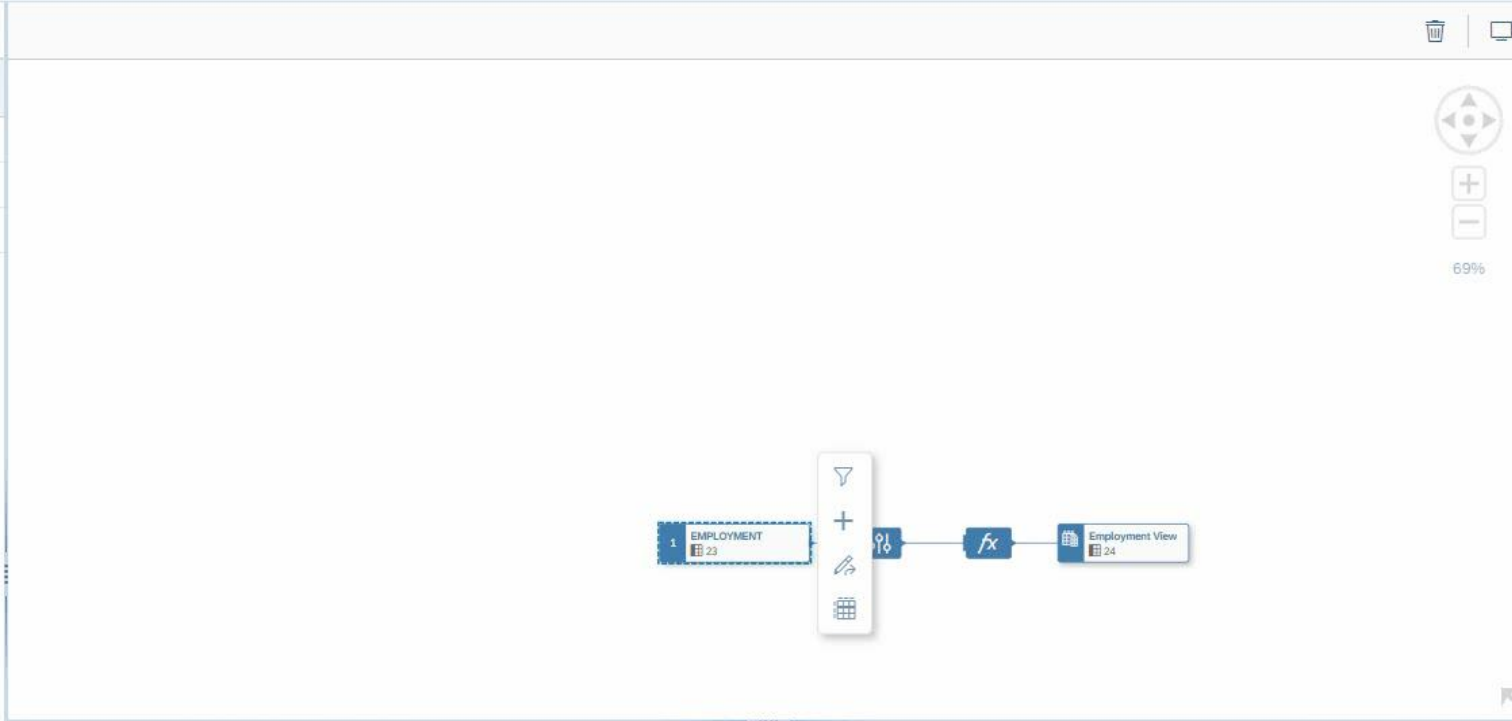
Repository Sources

Search

Tables

Views

Intelligent Lookups



Remote Table Properties

EMPLOYMENT 23

General

Business Name: EMPLOYMENT

Technical Name: EMPLOYMENT

Alias:

Connection: HANA_RI

Remote Table: "RI_CHRO"."EMPLOYMENT"

Data Access: Remote

Distinct Values: OFF

Status: Deployed

Data Preview: EMPLOYMENT (1000) Errors

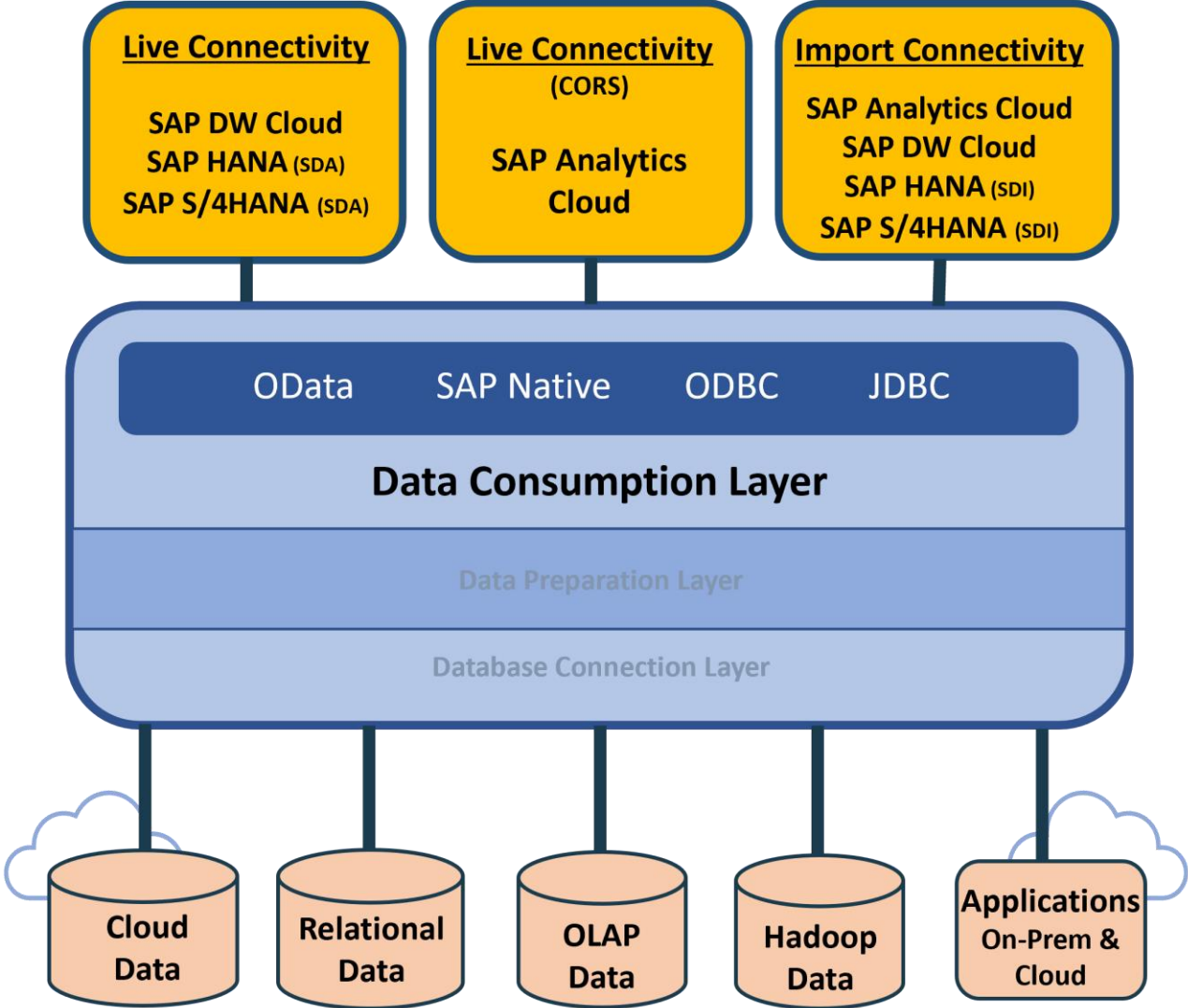
AGYSUB	LOC	AGELVL	EDLVL	GSEGRD	LOSLVL	OCC
AF07	US	H	13	12	D	1801
AF07	US	I	13	12	D	1801
AF07	US	I	13	12	D	1801
AF07	US	G	13	12	D	1801
AF07	US	H	13	12	D	1801
AFGS	US	H	13	12	D	1801

Columns

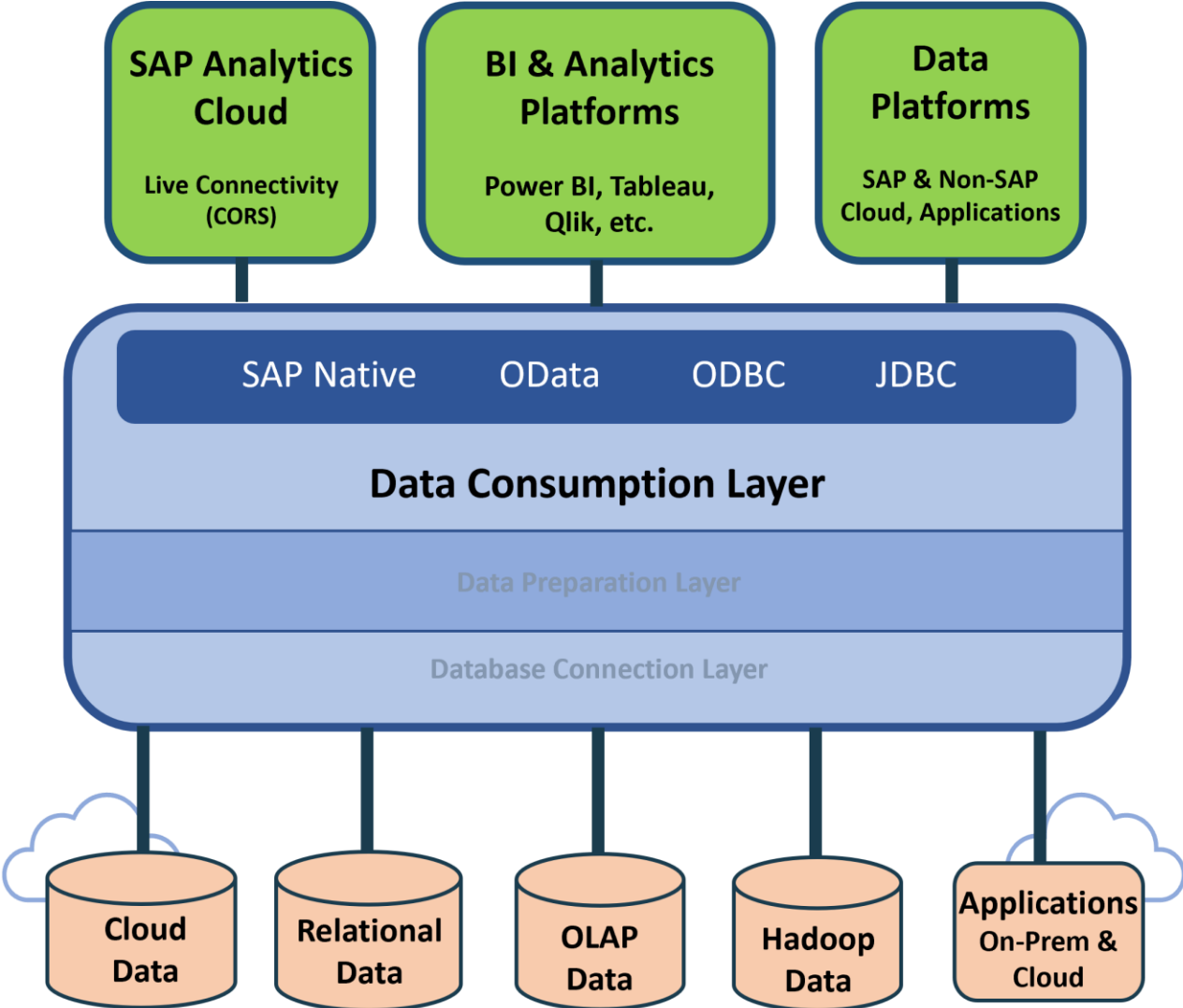
Search Columns

AA AGYSUB

APOS Live Data Gateway – SAP Landscape



APOS Live Data Gateway – Unified Semantic Layer



APOS Live Data Gateway – Session Summary

- SAP Analytics Cloud Connectivity Options
- Live Data Connectivity for SAC
- APOS Live Data Gateway
 - Overview
 - Security
 - Performance
 - Data Transformation
 - Expanded Connections
 - Expanded Consumption



APOS Solutions for SAP Analytics Cloud



APOS Live Data Gateway

- High-performance live data connectivity
- Virtualized, governed, self-service connectivity
- Connect to Relational databases
- Connect to OLAP data sources
- Connect to Cloud data environments
- Connect to SAP Application data



APOS Publisher for Cloud

- Automated SAC report broadcasting
- Secure & timely information delivery
- Use multiple formats & destinations
- Burst stories with multiple filters
- Conditional broadcasting



APOS Insight for Cloud

Monitor – tracking & alerting for:

- SAC story performance
- System response measures

Validation automated comparisons across SAC versions of:

- SAC story data
- SAC story performance
- SAC story structure

Impact analysis – granular auditing of SAC story structure metadata

APOS Solutions for SAP BusinessObjects



APOS Insight

BI System Auditing

- System Inventory
- Security Analysis
- System Usage Analysis
- Report Impact Analysis

BI Report Testing

- Automated Report Testing
- Regression Testing
- Validation of Report Data
- Report Performance Testing

BI System Monitoring

- Advanced System Monitoring
- Operating Environment Monitoring
- Database Monitoring
- Process Monitoring

BI Query Surveillance

- Real-time BI Query Monitoring
- Query Performance Alerting & Auditing
- Query Intervention; Remote Cancelling
- Sensitive Data Audit



APOS Administrator

Object Management

- Bulk Security Management
- Bulk Settings Management
- System Objects Promotion
- Connections Maintenance

Schedule Management

- High-volume schedule management
- Multiple schedule properties editing
- Grid scheduling interface
- Repeatable scheduling templates

Instance Management

- Manage entire instance inventory
- Granular instance search
- Stop, pause, release, reschedule
- Rapid recovery to failed schedules

APOS Storage Center



- System Backup
- Content Archiving
- Content Versioning
- Selective Restoration
- Automated System Clean Up

APOS Publisher



- Systematic Content Delivery
- Advanced Document Bursting
- Enhanced Content Distribution
- Security and Encryption
- Statement Generation

APOS Web Intelligence Migrator



- Bulk conversion of Universes from UNV to UNX
- High-Volume Report Web Intelligence reports
- Success validation
- Controlled, project-based workflow

Upcoming Events



Technical Deep Dive into APOS Live Data Gateway Live Latest Features Demo and Q&A

March 2nd - 11am EST

You will learn how to:

Setup/Configuration

- Deployment Services, Certificates

Data Virtualization Layer

- Setting up connections to data sources
- Different connection types and options
- SSO options

Data Preparation Layer

- Building views using the Web UI
- Custom Hierarchies and Date Hierarchies
- Variable Prompts
- Geospatial Data (projection types)

Data Consumption Layer

- SAC Connection and SAC Models

SAC Story Creation with Live Connectivity Demonstration



Register at www.apos.com

Upcoming Events

MOVE IT OR LOSE IT!

Automating Your Upgrade to UNX Universes - Webinar

March 23rd - 11am EDT

Join us for this live session will focus on how APOS Web Intelligence Migrator can help you automate and accelerate your UNX conversion and Web Intelligence repointing. We will demonstrate how the planning and execution of your upgrade does not need to be intimidating.

You will learn how to:

- Why upgrade to UNX now?
- What are the challenges you will face upgrading to UNX?
- How does automation make this project achievable?
- How does APOS automation allow you to control the process confidently?



Register at www.apos.com

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Please enter your questions in the Q&A panel.



Thank You!

Get in Touch

WEBSITE

www.apos.com

EMAIL ADDRESS

info@apos.com

PHONE NUMBER

(+1) 519 894 2767

