



SAP BusinessObjects Report Query Management & Governance



Today's Session

Key Topics

Query Management & Governance

- Audit Queries
- Monitor Queries
- Manage Queries

- Q&A – see webinar console

Today's Presenters



Jay Murdoch

Business Development Manager
APOS



Fred Walther

Senior Solution Consultant
APOS

Who is APOS?

- Formed in 1992
- Enabling BI 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





APOS



**SAP
BusinessObjects**



Hybrid BI



**SAP
Analytics Cloud**



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

APOS Insight – Deep System Knowledge



APOS Insight – Deep System Knowledge



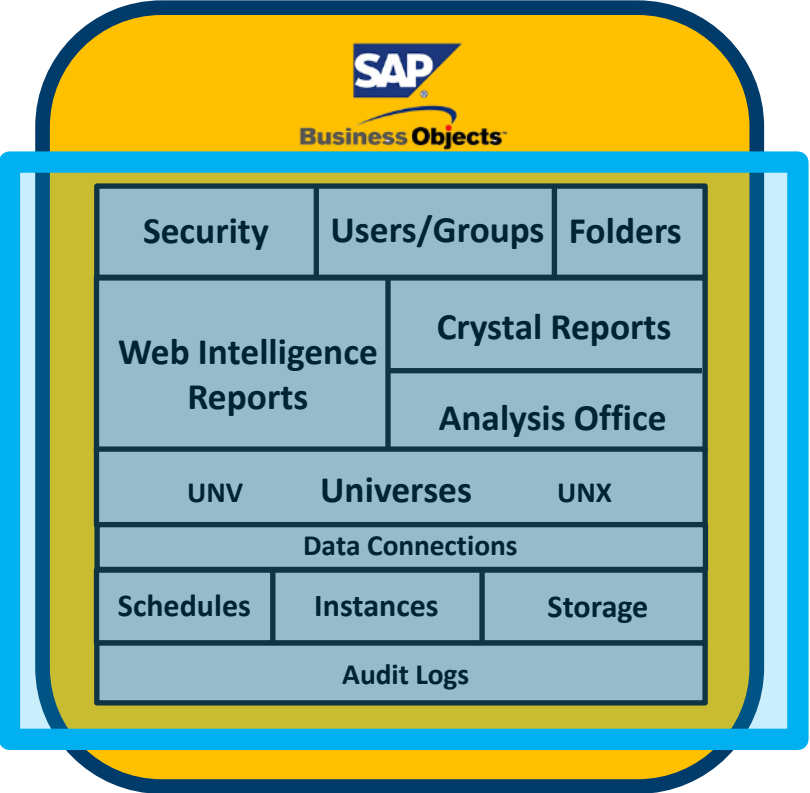
APOS Insight



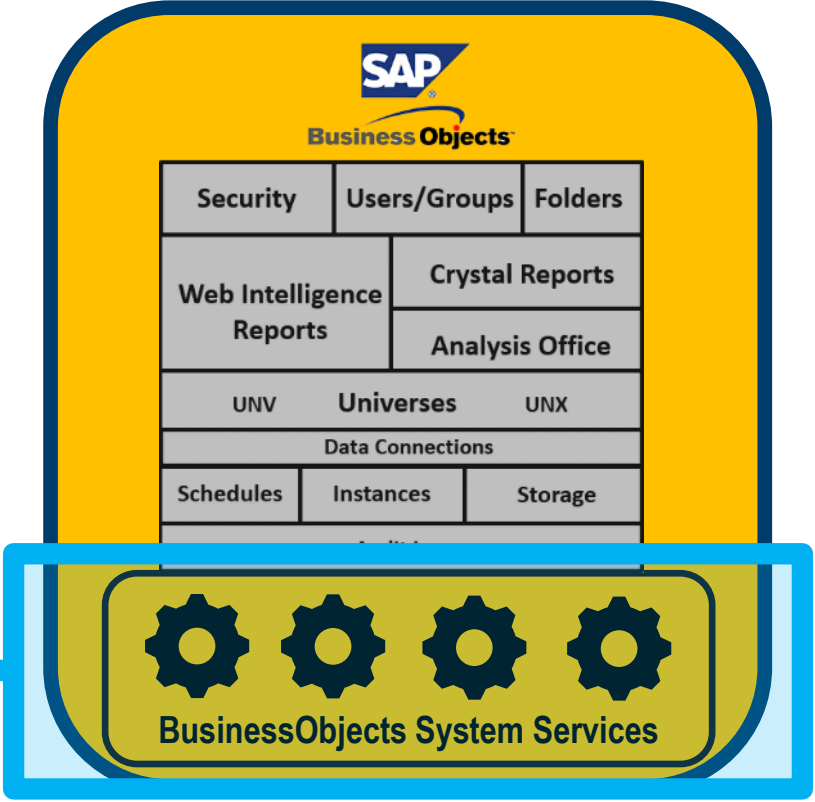
SAP
Business Objects

Security	Users/Groups	Folders
Web Intelligence Reports	Crystal Reports	
	Analysis Office	
UNV	Universes	UNIX
Data Connections		
Schedules	Instances	Storage
Audit Logs		

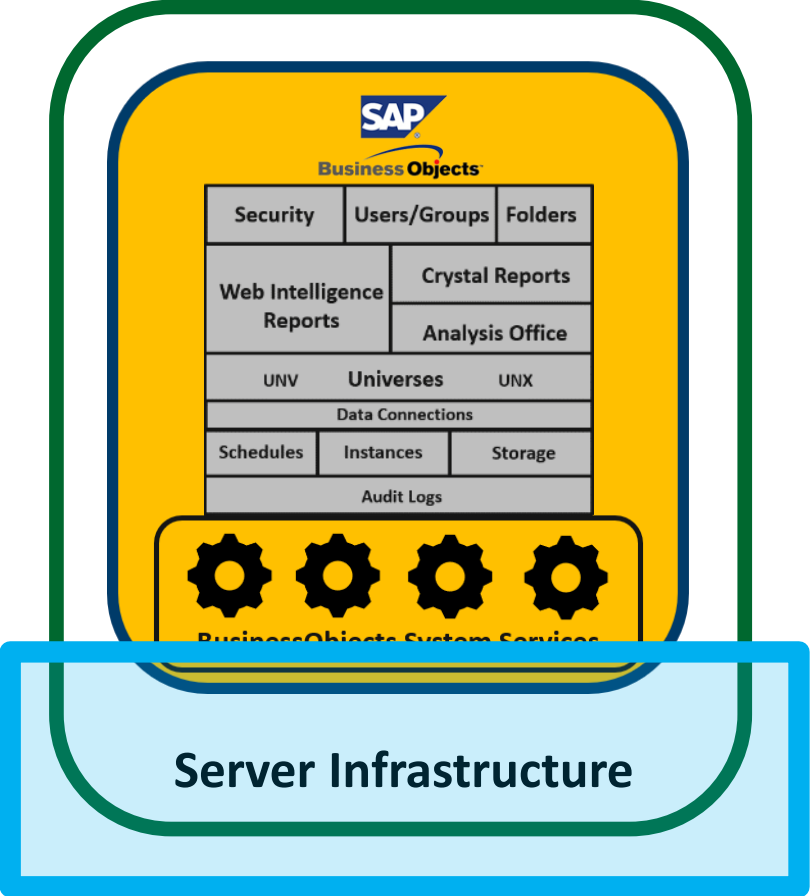
APOS Insight



APOS Insight

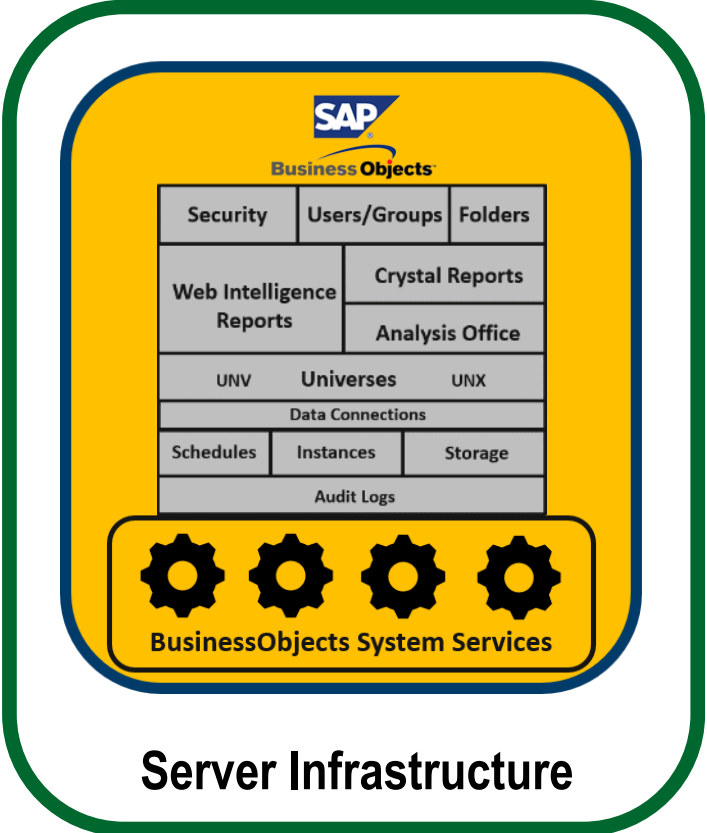


APOS Insight

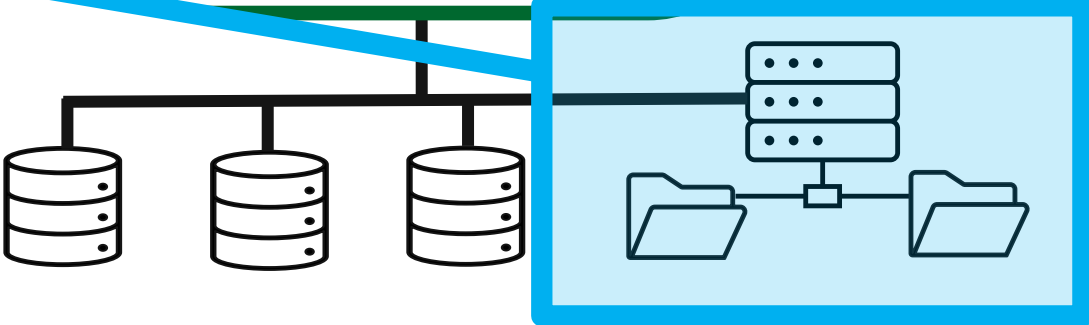
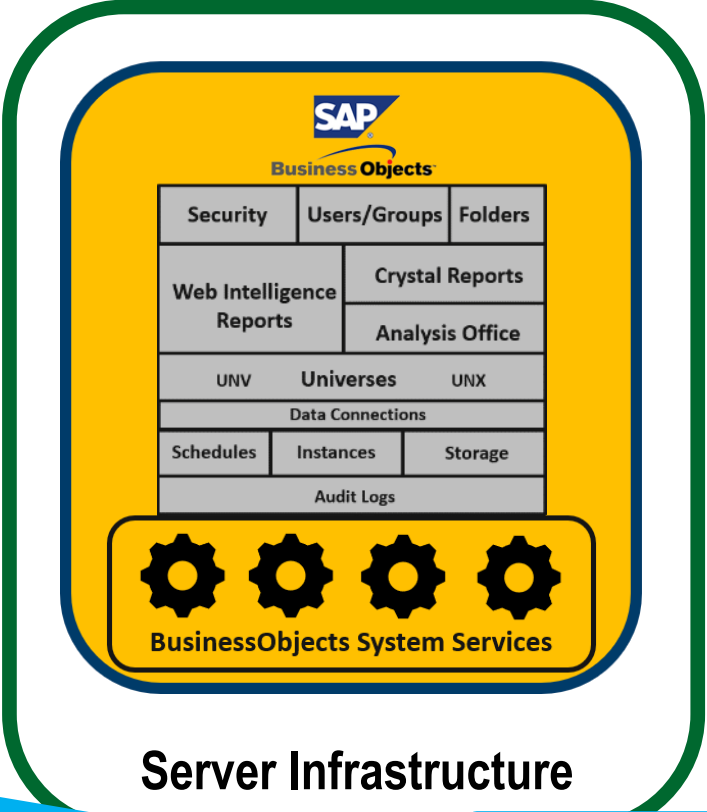


Server Infrastructure

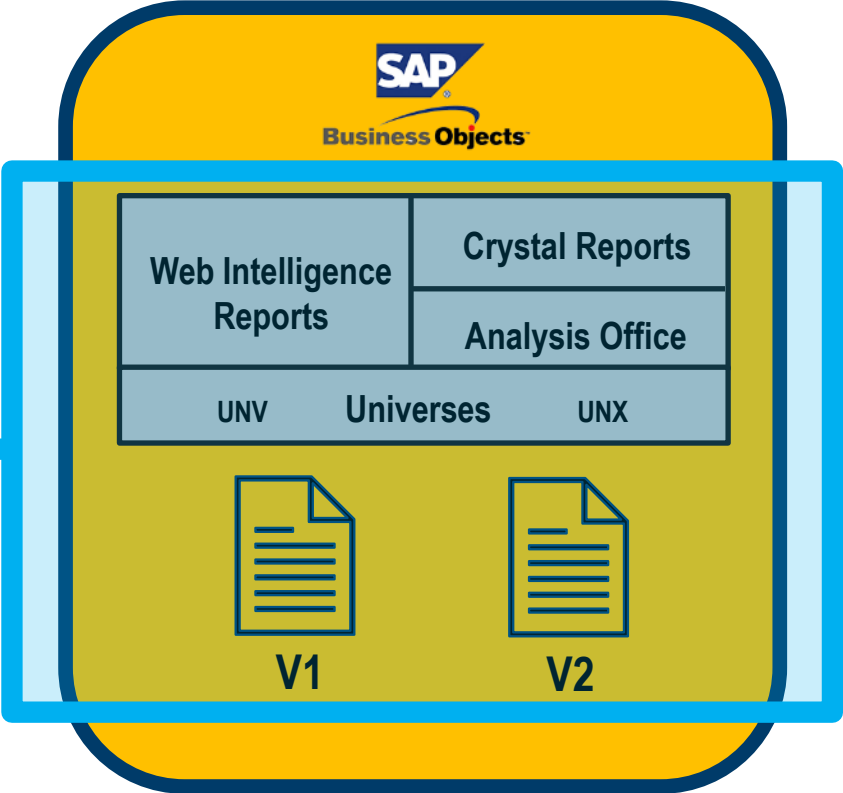
APOS Insight



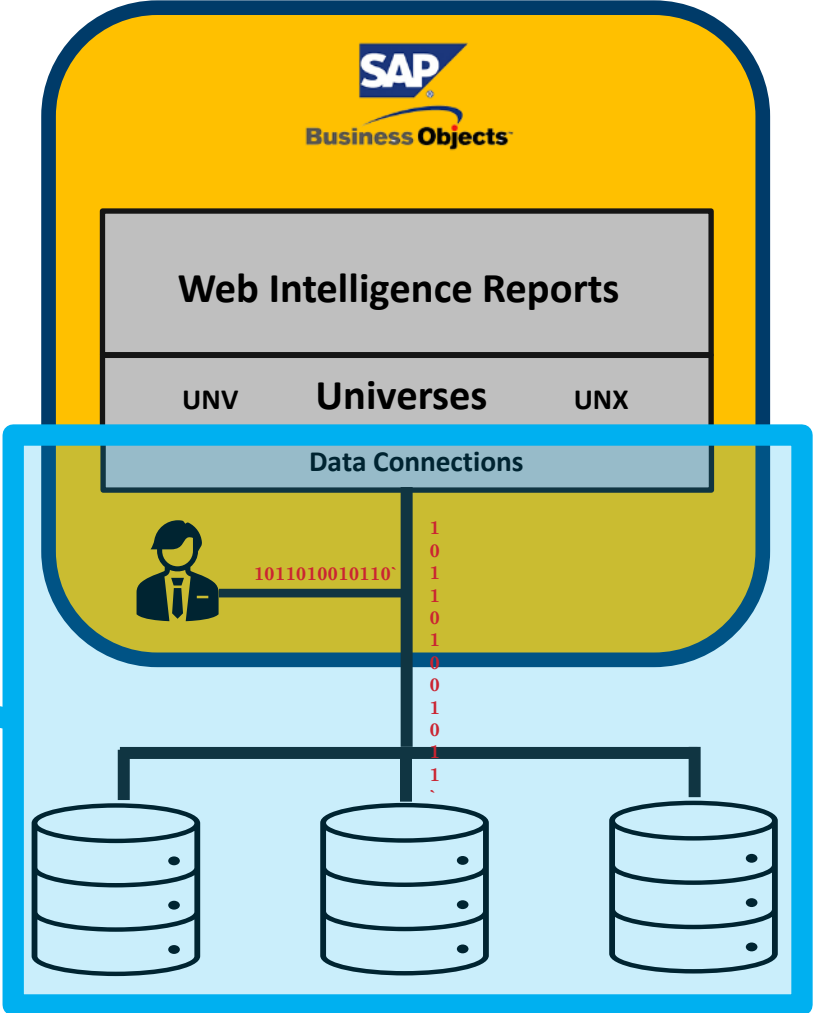
APOS Insight



APOS Insight



APOS Insight



Flashes of Insight – Query Surveillance



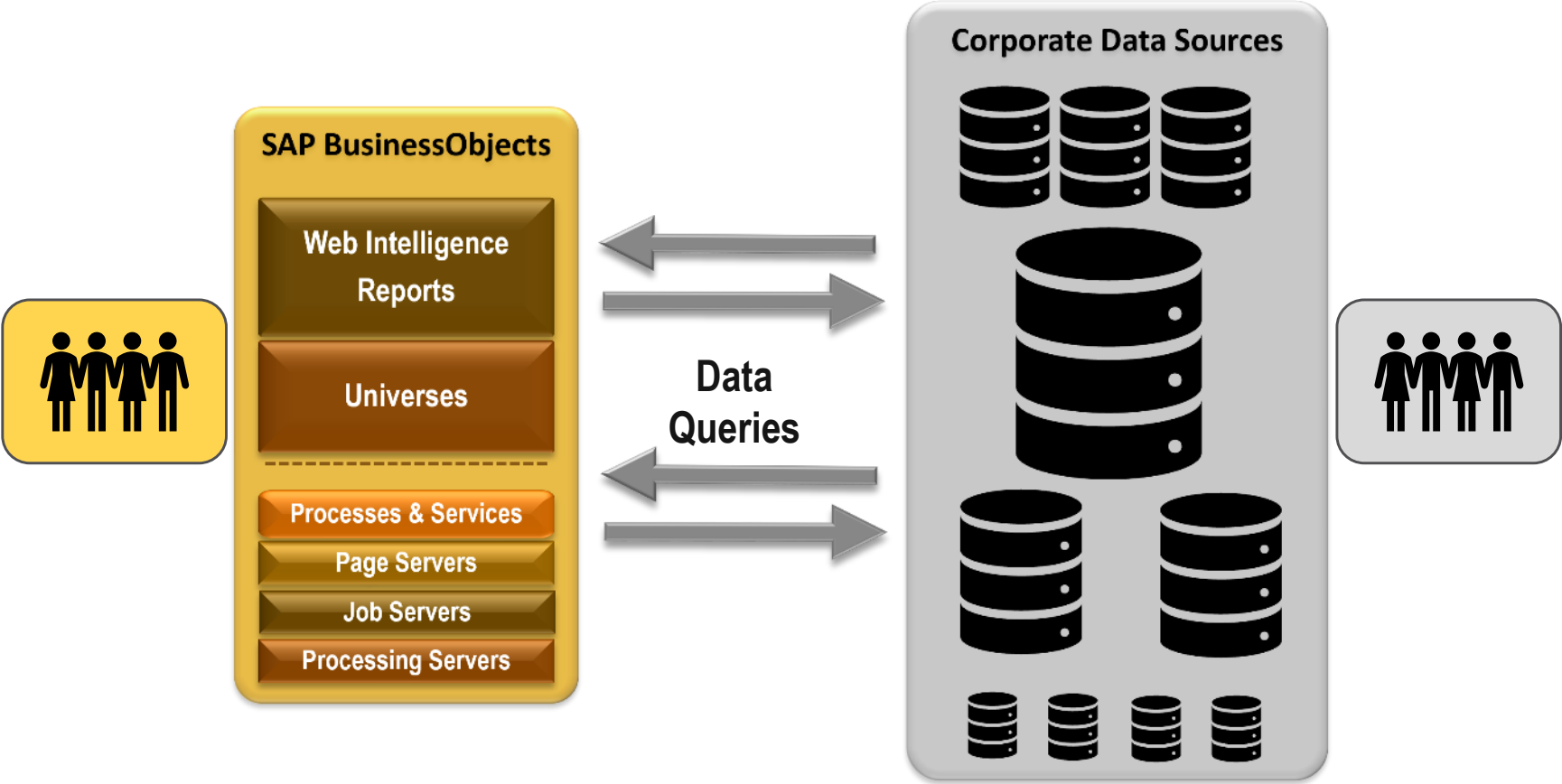
Flashes of Insight - Series



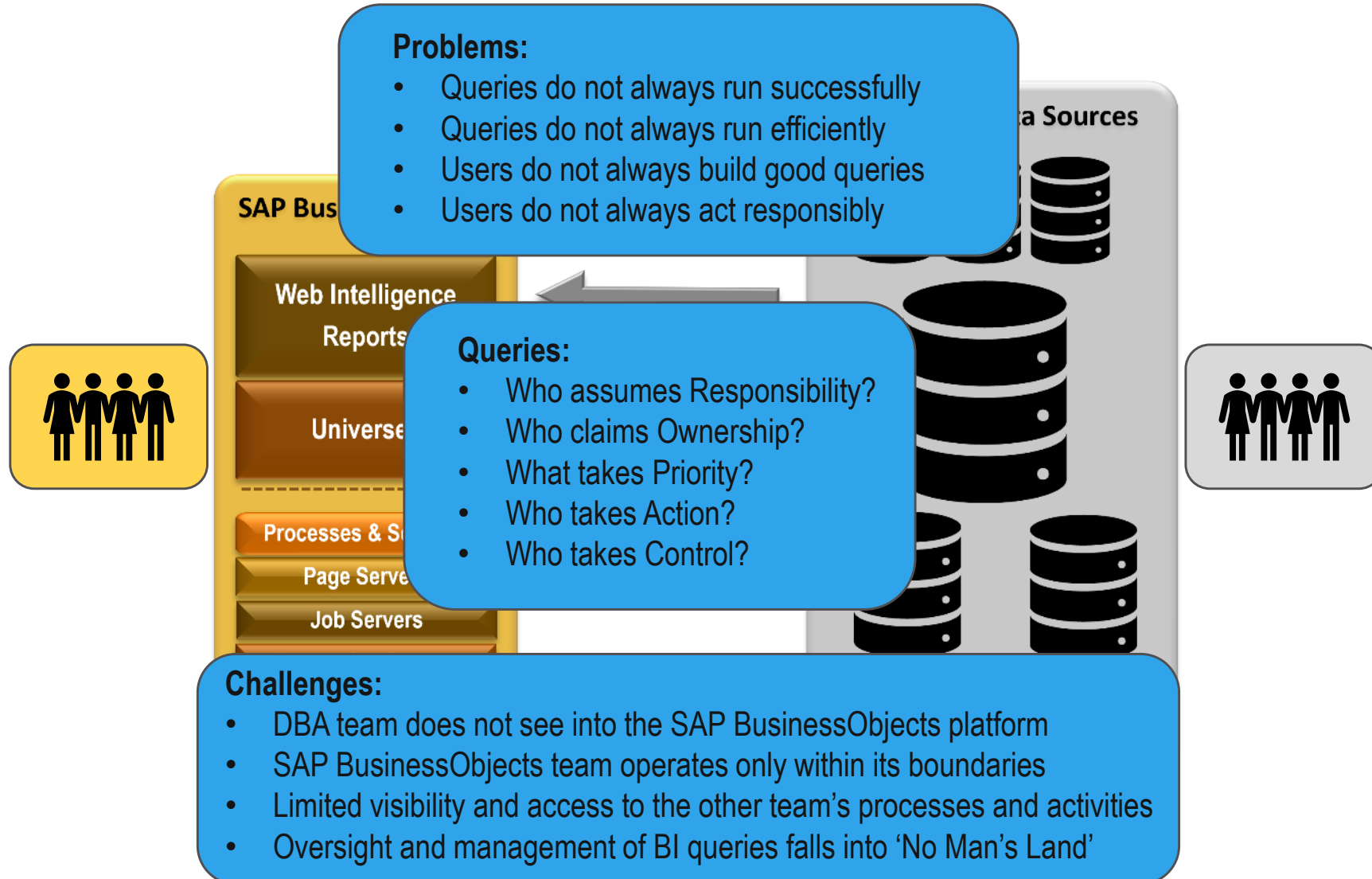
- Session 1 – Managing Change
- Session 2 – Performance Analysis
- Session 3 – Usage Analysis
- Session 4 – Automated Report Testing
- Session 5 – Query Management & Governance (Today)
- Session 6 – Report Impact Analysis



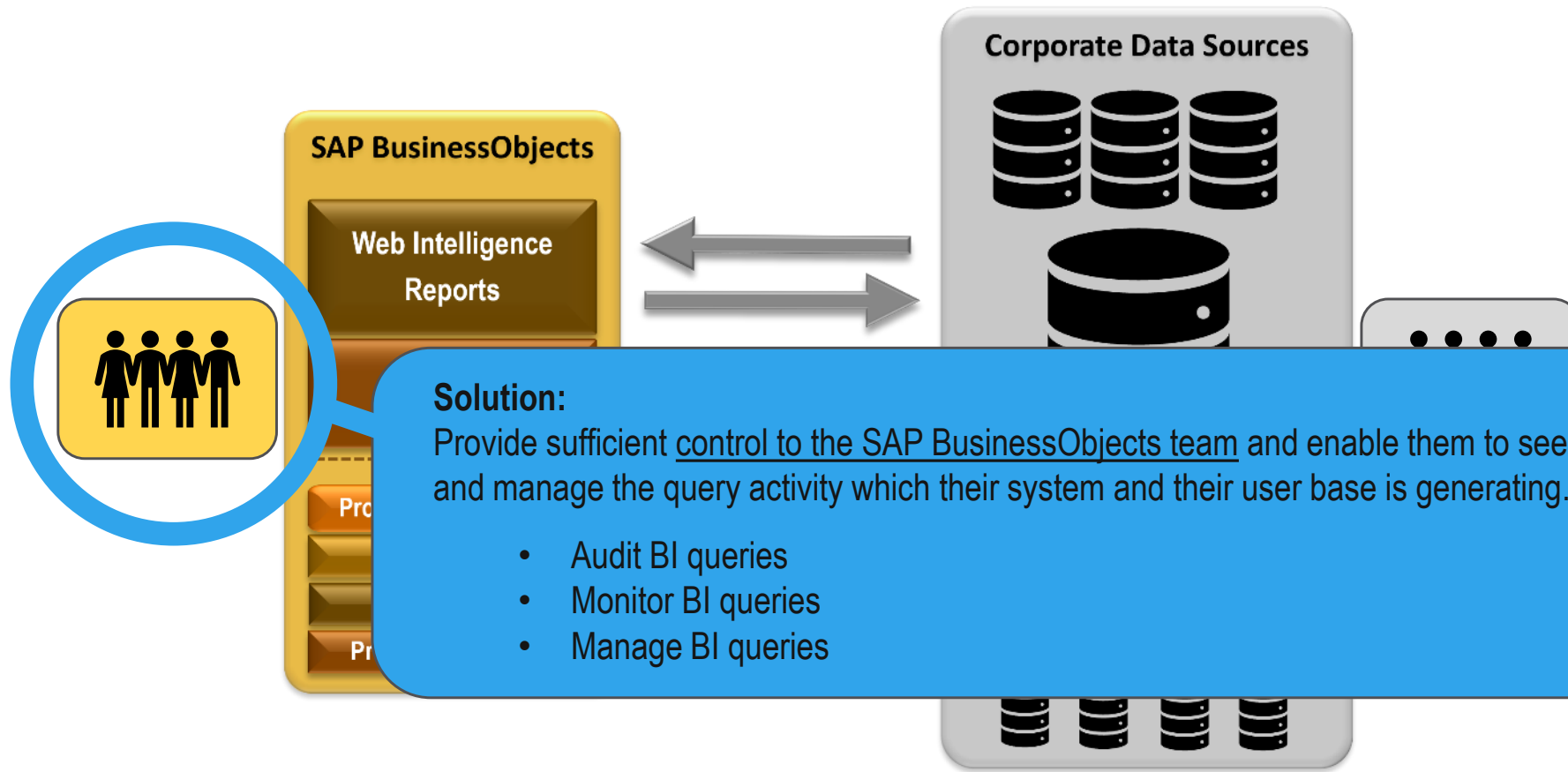
Query Management & Governance



Query Management & Governance



Query Management & Governance

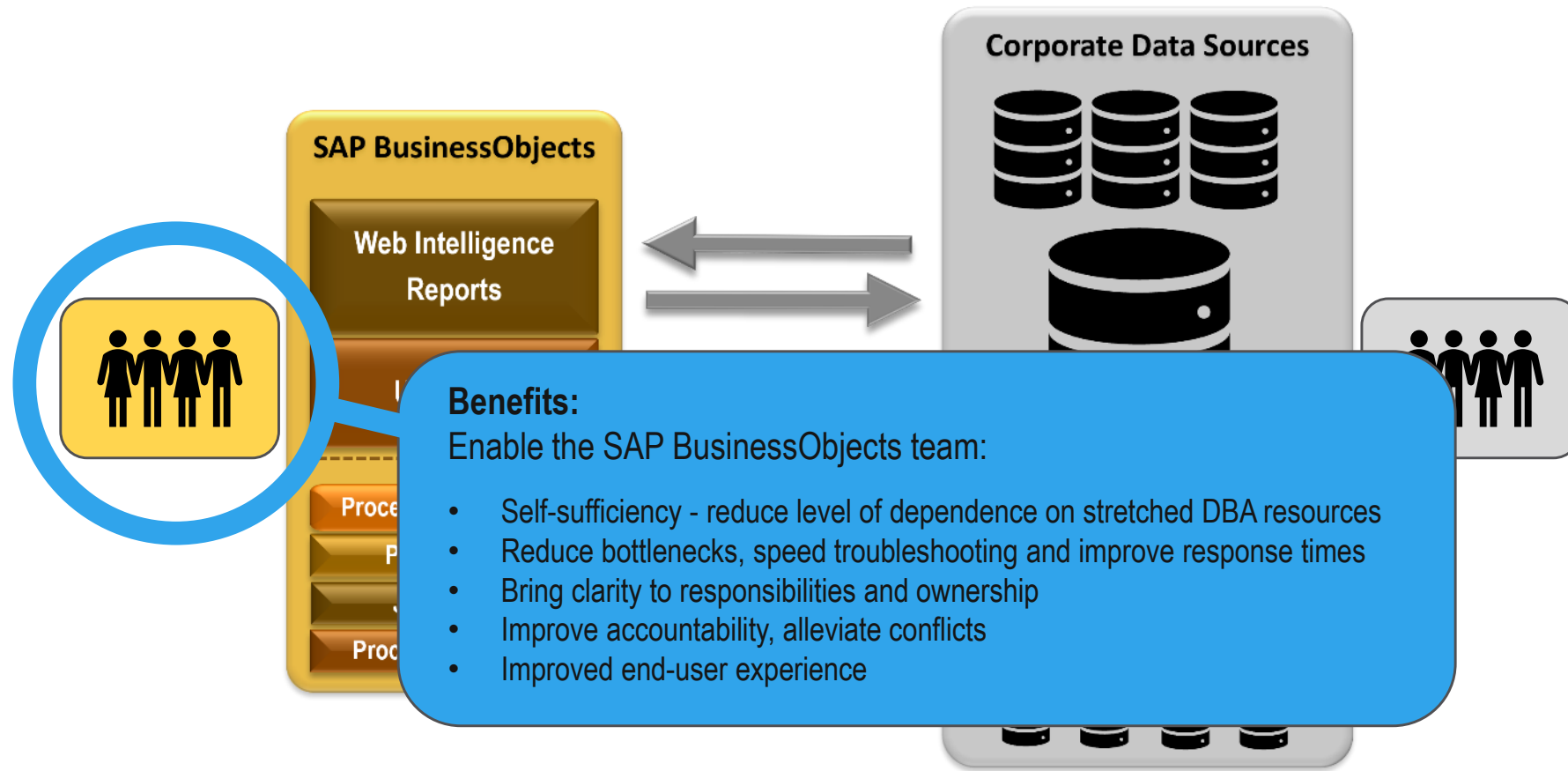


Solution:

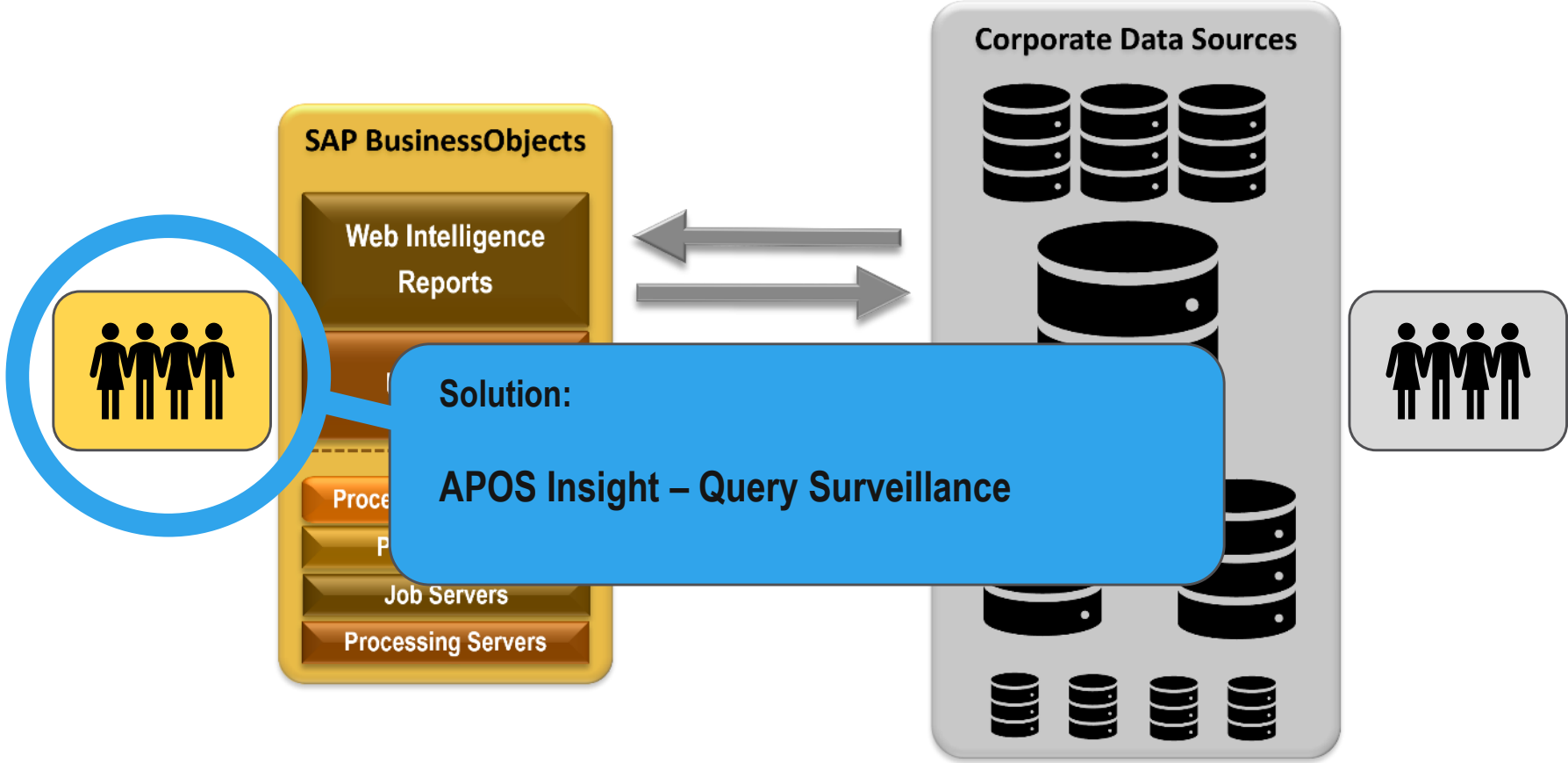
Provide sufficient control to the SAP BusinessObjects team and enable them to see, understand and manage the query activity which their system and their user base is generating.

- Audit BI queries
- Monitor BI queries
- Manage BI queries

Query Management & Governance



Query Management & Governance



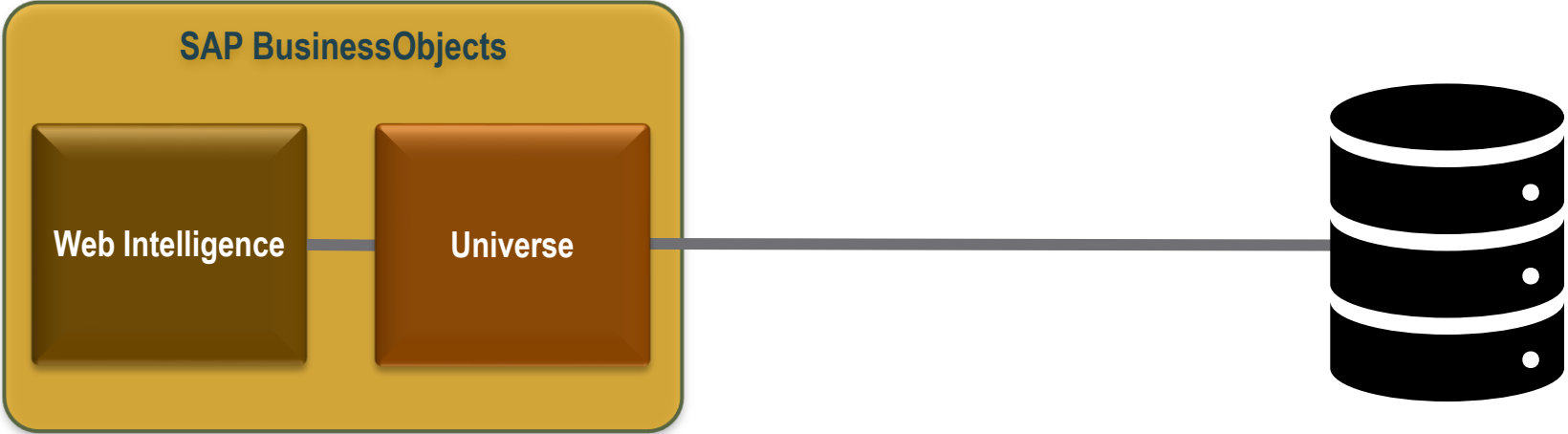


EXTEND
SAP ANALYTICS

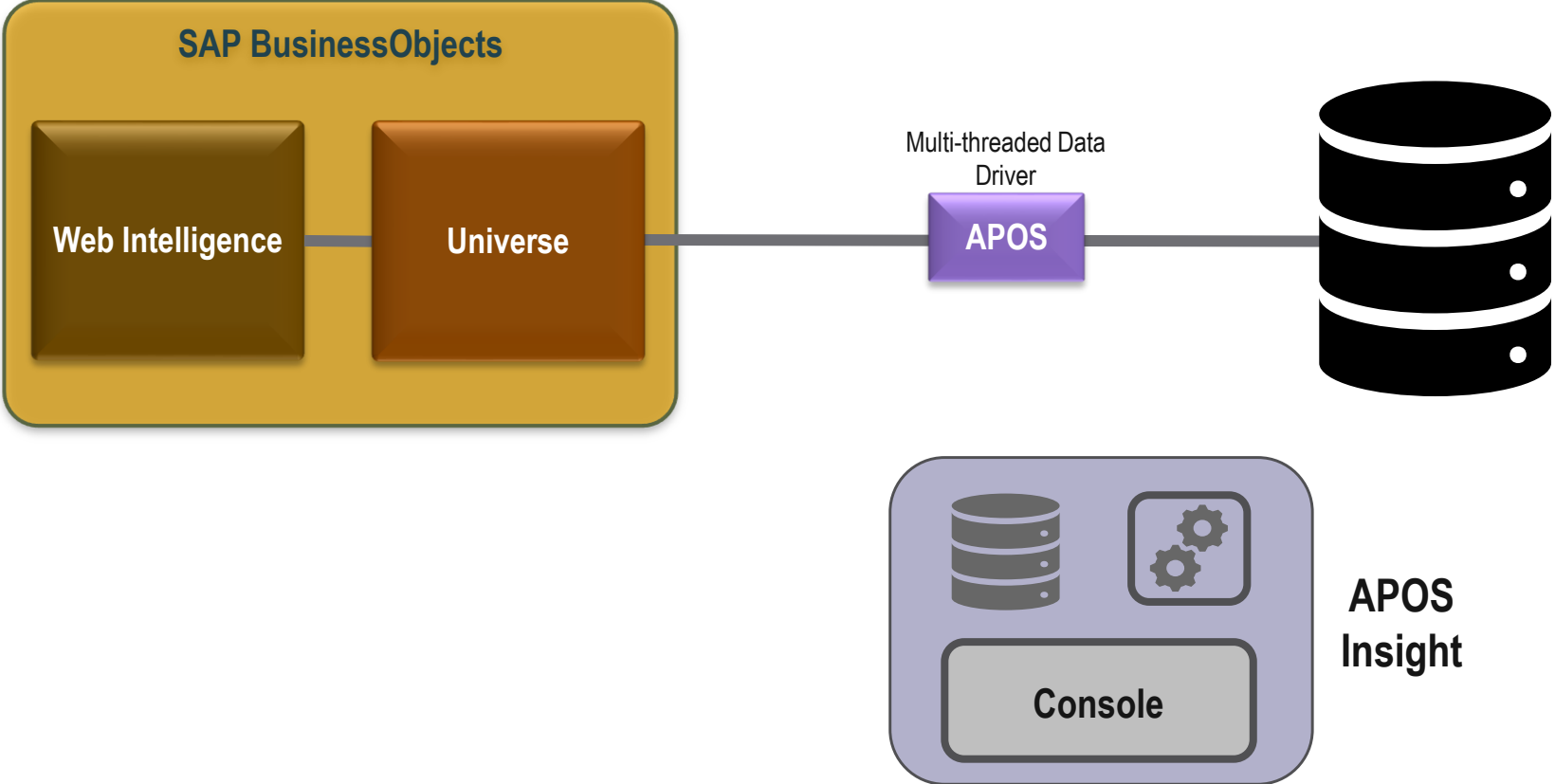


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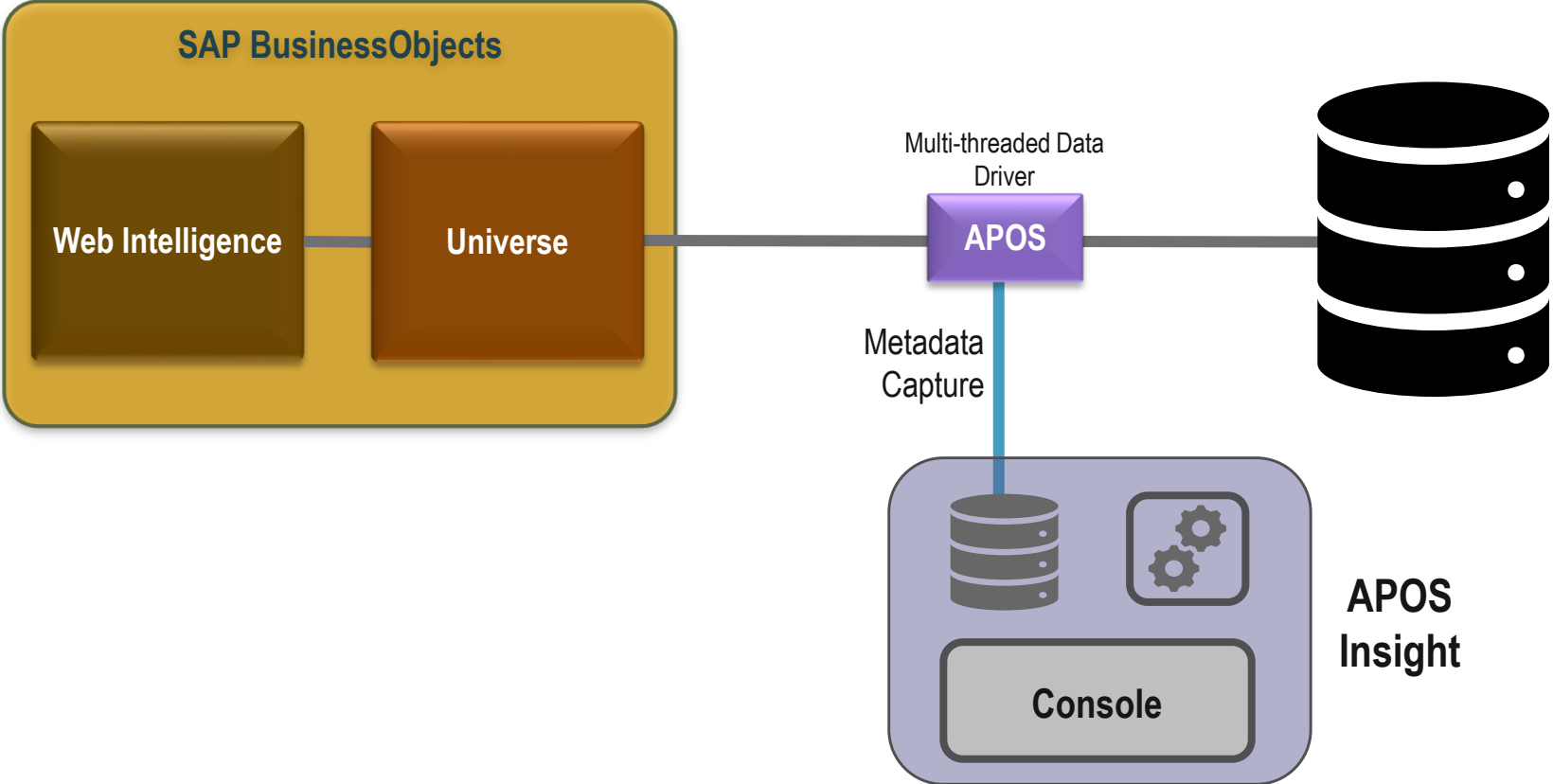
Standard Querying



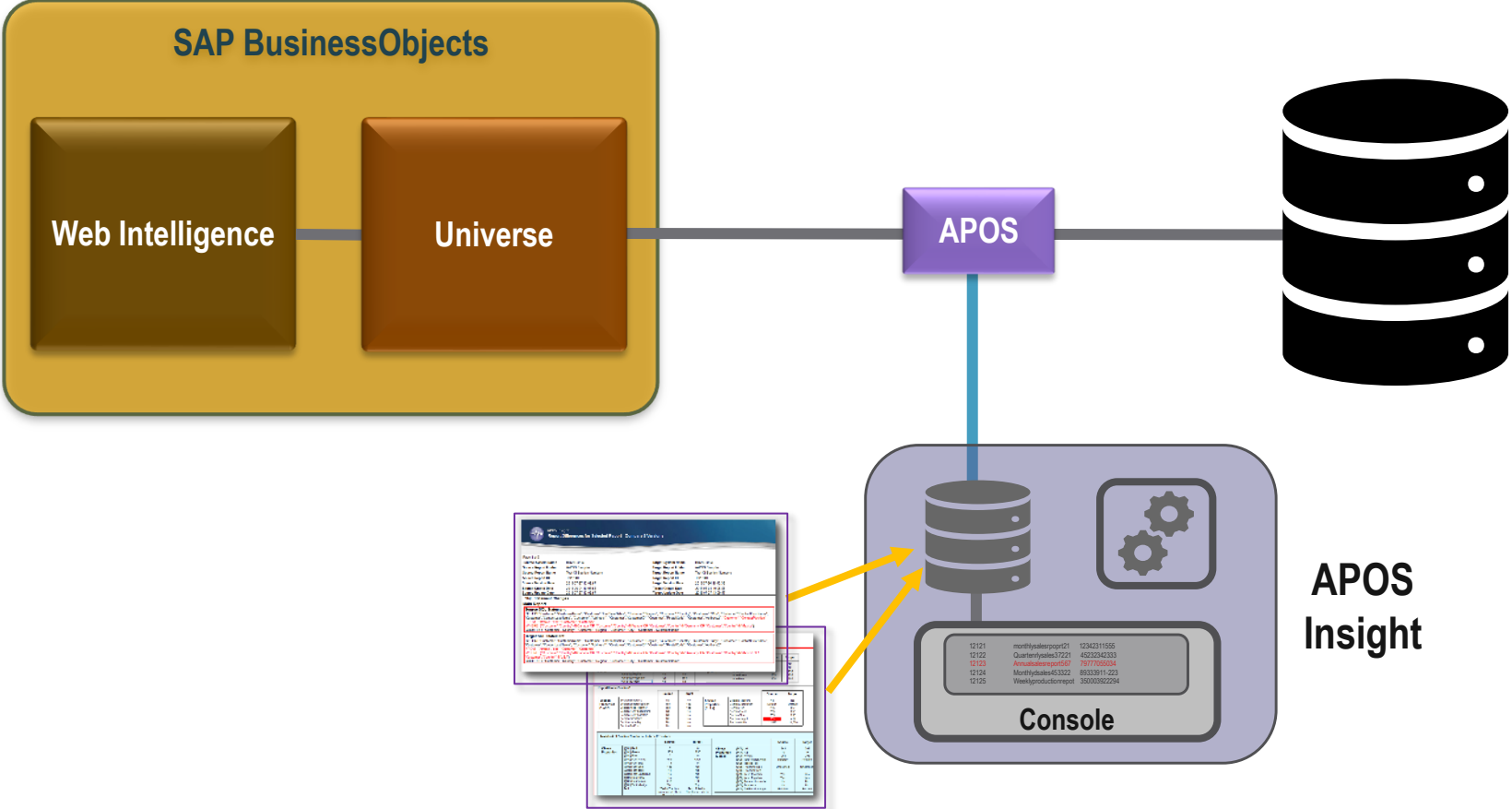
APOS Insight - Query Surveillance



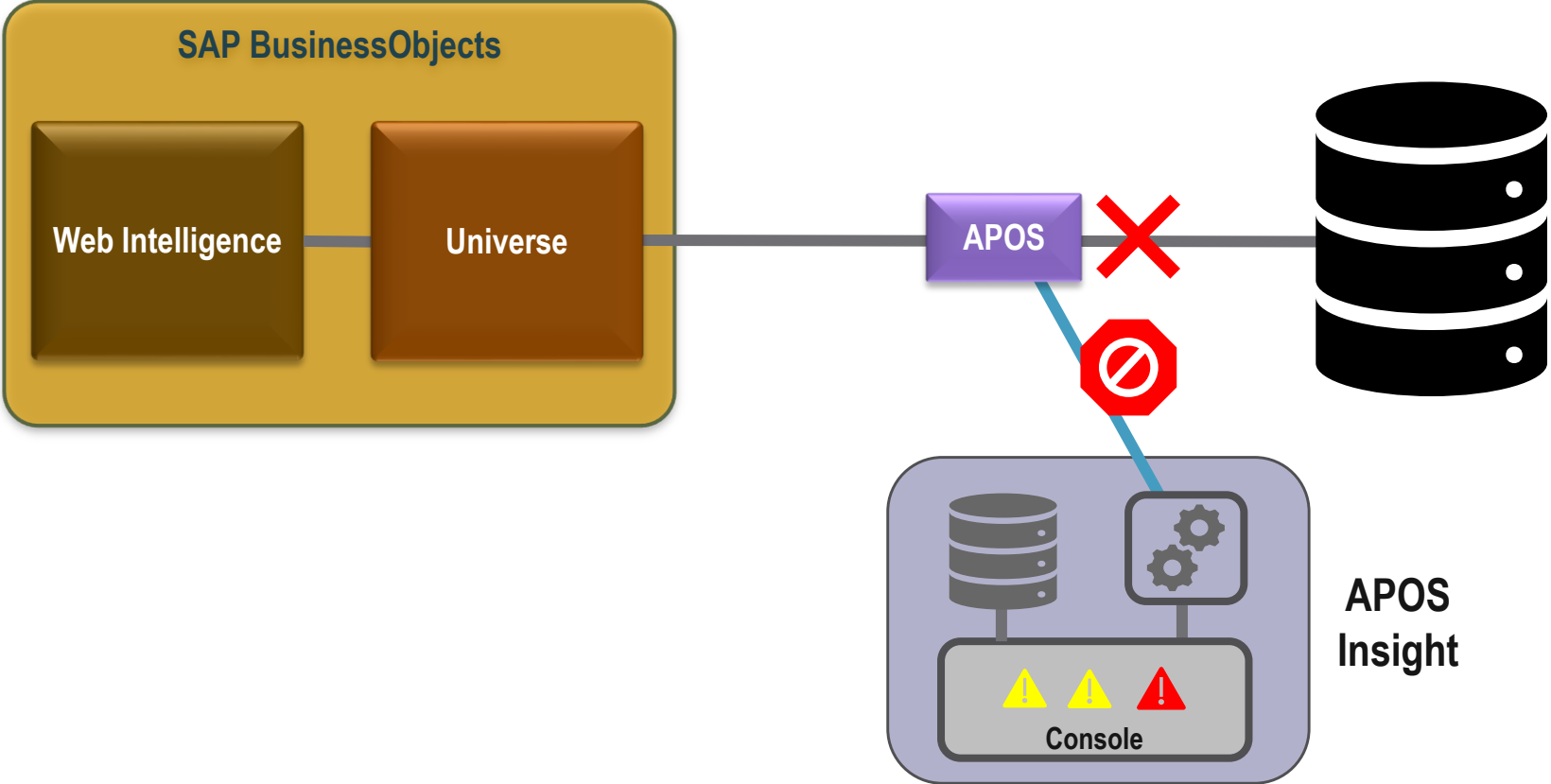
APOS Insight - Query Surveillance



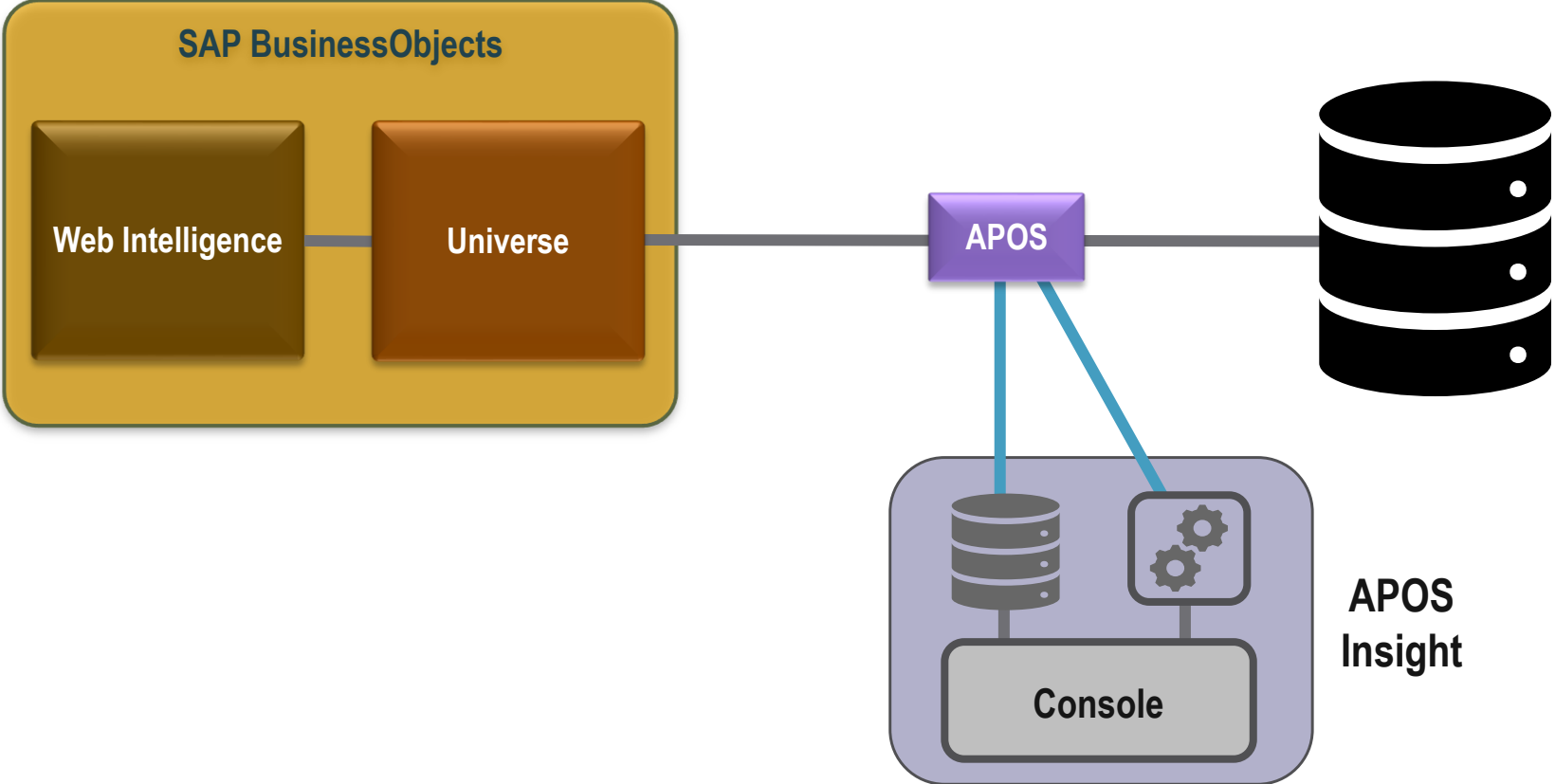
APOS Insight - Query Surveillance



APOS Insight - Query Surveillance



APOS Insight - Query Surveillance



Query Management & Governance



Query Auditing

Query Monitoring

Query Management

Query Management & Governance



Query Auditing

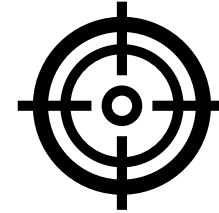
- Capture query metadata in database
- Analyze query data
- Report on sensitive data access



Query Auditing



- **Increase Awareness and Accuracy**
- **Reduce Troubleshooting Time**
- **Improve Response Time**
- **Improve System Performance**
- **Improve User Satisfaction**
- **Strengthen Governance & Security**
- **Reduce Costs**



Query Auditing



What reports have been run?

What queries have those reports submitted to the database?

How long did those queries take to run?

What universes were accessed by those reports?

Was there any sensitive data accessed by those queries?



Query Auditing



What reports have been run?

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What universes were accessed by those reports?

Was there any sensitive data accessed by those queries?

The screenshot shows a window titled "Query Script viewer" with a close button in the top right corner. Below the title bar, there are two radio buttons: "Use the query script generated by your query" (which is selected) and "Use custom query script". Below these options is a text area containing a SQL query. At the bottom right of the window are "Undo" and "Validate" buttons.

```
SELECT
Calendar_year_lookup.Yr,
Outlet_Lookup.State,
sum(Shop_facts.Amount_sold),
sum(Shop_facts.Quantity_sold),
Article_lookup.Article_label,
Outlet_Lookup.Shop_name
FROM
  Calendar_year_lookup,
  Outlet_Lookup,
  Shop_facts,
  Article_lookup
WHERE
  ( Outlet_Lookup.Shop_id=Shop_facts.Shop_id )
  AND ( Article_lookup.Article_id=Shop_facts.Article_id )
  AND ( Shop_facts.Week_id=Calendar_year_lookup.Week_id )
  AND
```

Query Auditing



What reports have been run?

What queries have those reports submitted to the database?

How long did those queries take to run?

What universes were accessed by those reports?

Was there any sensitive data accessed by those queries?



Query Auditing



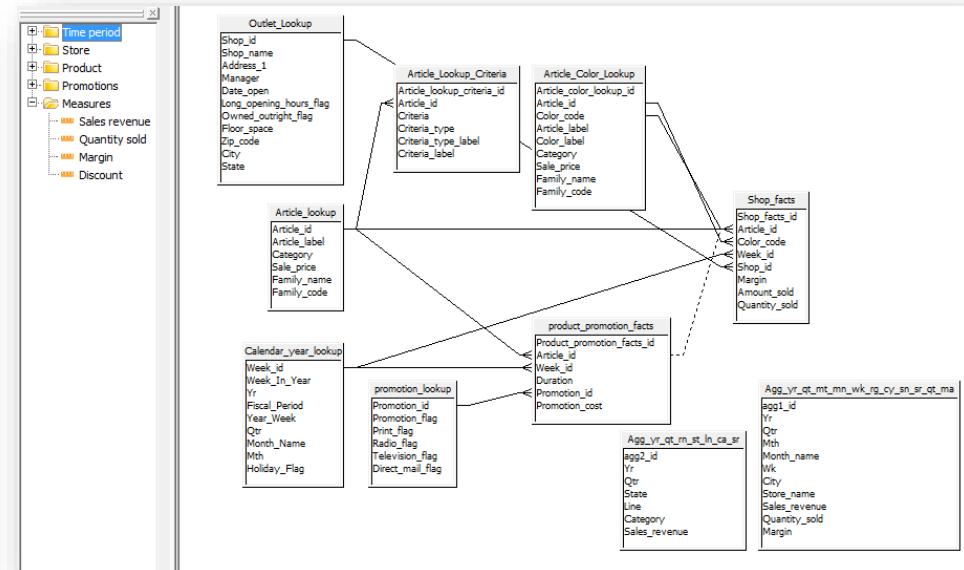
What reports have been run?

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Query Auditing



What reports have been run?

What queries have those reports submitted to the database?

How long did those queries take to run?

What universes were accessed by those reports?

Was there any sensitive data accessed by those queries?

P.H.I.
Financial
H.R.
Etc.



Query Auditing - Capture query metadata



JDBC Driver Details | **JDBC Logging Details** | Limits | Data Monitoring | About

Please fill in your JDBC logging details:

Driver Name:

Driver Paths:

Connection URL:

User Name: Password: Confirm:

Log Table Name:

Cancel Table:

Thread Table:

Threshold (milliseconds): Metrics Threshold (milliseconds):

Capture query metadata in a database

dt	bouser	dbuser	osuser	querytext	queryerrmsg	queryduration	queryrowsread	DocumentName	DataProviderName	DataProviderType	UniverseName
2022-01-26 11:31:48.557	Joshua	sa	BI42SP6FW\$	SELECT dbo.Customer....	NULL	2117	272	Sales by Month	Query 1	DPUNIVERS	Xtreme_IDAC
2022-01-26 11:29:47.997	Fred	sa	BI42SP6FW\$	SELECT Patients.Patien...	NULL	2125	17	Patient_Diagnosis	Query 1	DPUNIVERS	Patients
2022-01-26 11:28:42.573	Dave	sa	BI42SP6FW\$	SELECT dbo.Customer....	NULL	2253	272	Order Status	Query 1	DPUNIVERS	Xtreme_IDAC
2022-01-26 11:27:14.567	Dan	sa	BI42SP6FW\$	SELECT Patients.Patien...	NULL	2212	90	PatientAddresses	Query 1	DPUNIVERS	Patients
2022-01-26 11:26:07.610	Betty	sa	BI42SP6FW\$	SELECT dbo.Customer....	NULL	2149	272	Sales by Month	Query 1	DPUNIVERS	Xtreme_IDAC
2022-01-26 11:24:26.510	Bob	sa	BI42SP6FW\$	SELECT dbo.Customer....	NULL	2189	272	Financial Statement	Query 1	DPUNIVERS	Xtreme_IDAC_FW
2022-01-26 11:23:21.140	Bert	sa	BI42SP6FW\$	SELECT dbo.Customer....	NULL	2920	272	Order Status	Query 1	DPUNIVERS	Xtreme_IDAC
2022-01-26 10:18:21.507	Bill	sa	BI42SP6FW\$	SELECT Patients.Patien...	NULL	2192	90	PatientAddresses	Query 1	DPUNIVERS	Patients
2022-01-25 11:29:07.823	Admin...	sa	BI42SP6FW\$	SELECT dbo.Customer....	NULL	2944	272	Customer Sales Fr...	Query 1	DPUNIVERS	Xtreme_IDAC_FW

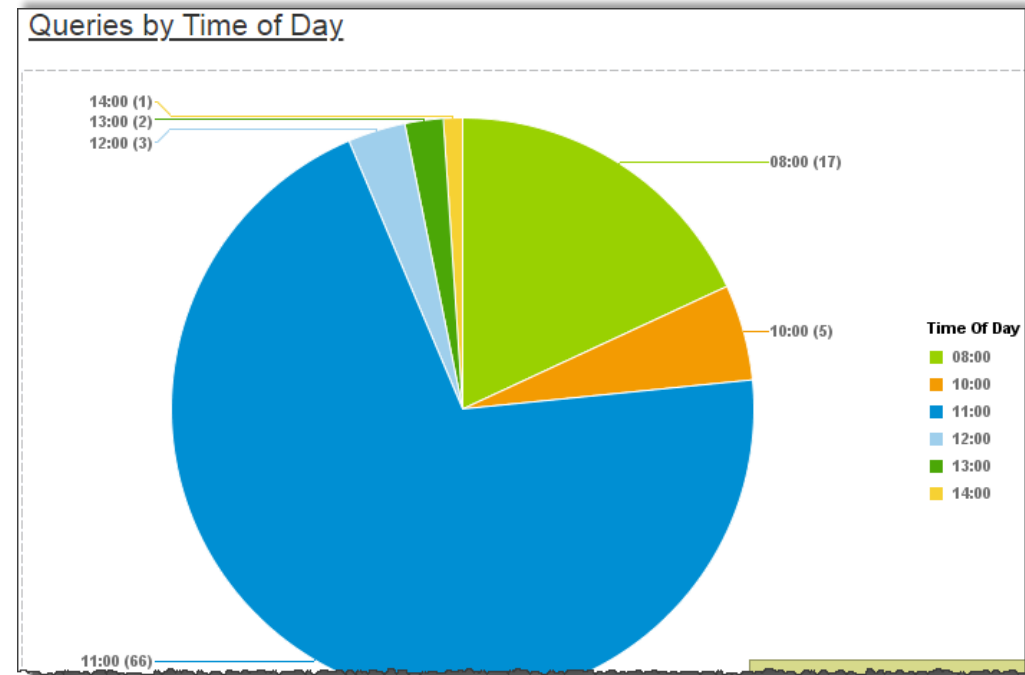
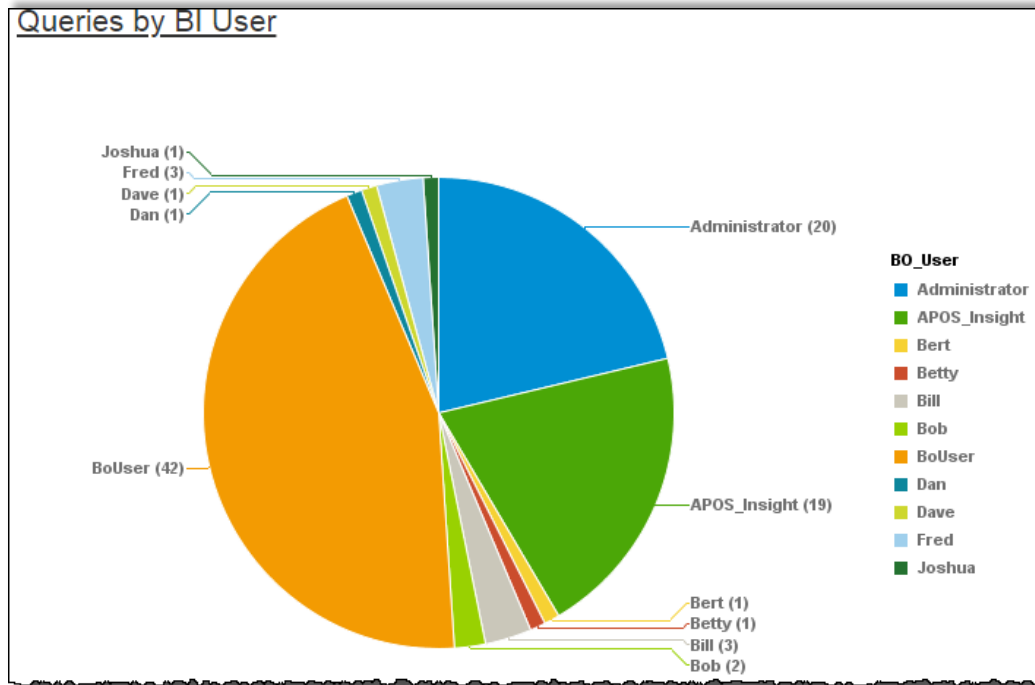
Query Auditing - Analyze query data



Report Queries Sorted By Duration 1/26/2022 3:32:19 PM

Query Duration(ms)	Query Date-Time	Document_Name	Universe_Name
4,714	12/16/2019 11:27:34 AM	Orders for Country from UNX	Xtreme_IDAC_FW
4,378	12/16/2019 11:53:01 AM	Orders for Country from UNX	Xtreme_IDAC_FW
4,071	12/16/2019 10:53:05 AM	IDAC_Customers_With_Orders	Xtreme_IDAC_FW
3,371	12/16/2019 11:31:33 AM	Sales By Country for Xtreme	Xtreme_IDAC_FW

Analyze query data



Query Auditing - Sensitive data access



JDBC Driver Details | JDBC Logging Details | Limits | **Data Monitoring** | About

Please fill in the database fields you wish to monitor:

Enable Field Tracking

Table Name: [IDAC].[dbo].[field_tracker]

Field Name Suffix:

PatientID

Thread Pool Size: 10 | Thread Timeout (seconds): 5

Insert Buffer Size: 1000

Add | Remove

Configure and report on sensitive data access

Field Tracker Report 1/26/2022 5:31:35 PM

Search for Queries that Reference Patient ID: 6

Field_Name	Field Value	BO_User	Query Date-Time	Document_Name	Universe_Name
PatientID	6	Bill	1/26/2022 5:30:23 PM	Patient_Diagnosis	Patients
PatientID	6	Fred	1/26/2022 5:29:53 PM	PatientAddresses	Patients

Customer Use Case - Query Auditing



North American Health Care (e.g. HIPAA) – Who has seen my data?

Query Governance can be used in Health care to address the Who, What, When, Where, and Why of Patient data.

Who – who is the person that accessed patient data

What – what data was accessed

When – what date-time was the data accessed

Where – from which database did the data come

Why – which report was run that accessed the data

Query Management & Governance



Query Monitoring

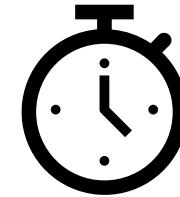
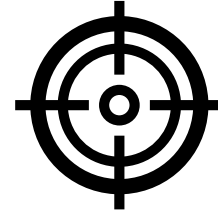
- Notification on excessive runtime
- Notification on specific report
- Notification on specific user



Query Monitoring



- Increase Awareness and Accuracy
- Reduce Troubleshooting Time
- Improve Response Time
- Improve System Performance
- Improve User Satisfaction
- Reduce Costs



Query Monitoring



SAP BusinessObjects has no option to monitor the queries submitted by reports



Query Monitoring



Alert Settings
Define the settings you wish to use for the alert

Alert Name: Report run by Bill

Subject: A query has been submitted by %BOUSER%

Database fields to use: Add To Subject

Message: BusinessObjects user Bill has submitted a query.

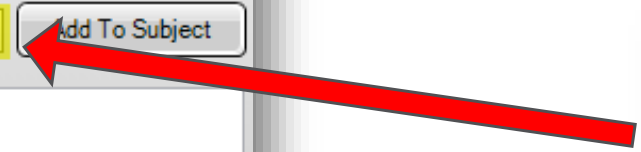
Sample SQL: <Please select a sample>

Note: ID field must be included in Select statement

Select SQL:

```
SELECT * FROM jdbc_log WHERE
FORMAT(dt, 'yyyy-MM-dd') = FORMAT(getdate(), 'yyyy-MM-dd')
AND bouser='Bill'
```

Custom alerts based on any metadata property



- ID
- Date
- BO User
- DB User
- OS User
- Duration
- DB Duration
- Read Duration
- Rows Read Duration
- Database Product Name
- Database Version
- Connection
- Document Name
- Data Provider Name
- Data Provider Type
- Universe ID
- Universe Name
- Process ID
- Process Name
- Parent Process ID
- Parent Process Name
- CPU Frequency
- Number Of CPUs
- OS Name
- Total Memory
- Free Memory
- Host Name
- IP Address
- Java Runtime Version
- Connection Name

Query Monitoring



Alert Settings
Define the settings you wish to use for the alert

Alert Name:

Subject:

Database fields to use:

Message:

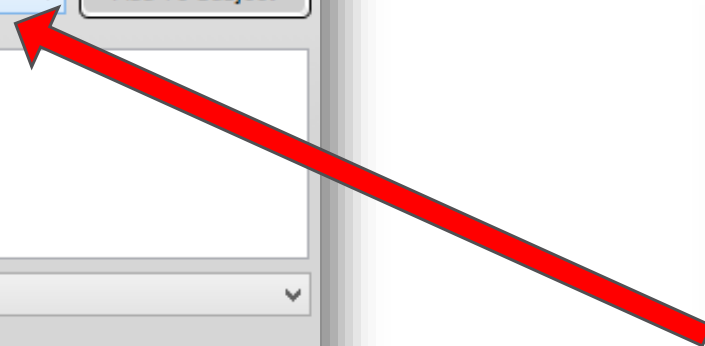
Sample SQL:

Note: ID field must be included in Select statement

Select SQL:

Custom alerts based on any metadata property




- ID
- Date
- BO User
- DB User
- OS User
- Duration
- DB Duration
- Read Duration
- Rows Read Duration
- Database Product Name
- Database Version
- Connection
- Document Name
- Data Provider Name
- Data Provider Type
- Universe ID
- Universe Name
- Process ID
- Process Name
- Parent Process ID
- Parent Process Name
- CPU Frequency
- Number Of CPUs
- OS Name
- Total Memory
- Free Memory
- Host Name
- IP Address
- Java Runtime Version
- Connection Name



Query Monitoring



A query has been submitted by : Bill

 wmbi@apos.com
To  Fred Walther
 We could not verify the identity of the sender

BusinessObjects user Bill has submitted

ID: 4755aa19-5dc6-46aa-aba9-70

Date: : 1/27/2022 10:49:34 AM

BO User: : Bill




DB User: : sa

OS User: : BI42SP6FW\$

SQL Text: : SELECT

```
dbo.Customer.CustomerID,  
dbo.Customer.CustomerName,  
dbo.Customer.Country  
FROM  
dbo.Customer
```

: Betty has run the Patient_Diagnosis report

 wmbi@apos.com
To  Fred Walther
 We removed extra line breaks from this message.

A report with sensitive data has been

ID: 7ee289a0-f2c5-4812-9

Date: : 1/27/2022 11:16:0

BO User: : Betty




DB User: : sa

OS User: : BI42SP6FW\$

SQL Text: : SELECT

```
Patients.PatientID,  
Patients.PatientLastName,  
CAST(Patients.Diagnosis AS nvarchar(250))  
Patients  
WHERE  
CAST(Patients.Diagnosis AS nvarchar(250))
```

This is a long Query by : Administrator

 wmbi@apos.com
To  Fred Walther
 We removed extra line breaks from this message.

A query that has taken longer than 5 minutes is running

ID: 155d0a59-4ce8-41a7-86f4-c89f03d9de64

Date: : 1/27/2022 4:14:11 PM

BO User: : Administrator

DB User: : sa

OS User: : BI42SP6FW\$

SQL Text: : SELECT

```
CAST(Patients.Diagnosis AS nvarchar(250) ),  
Patients.PatientID,  
dbo.Customer.CustomerID,  
dbo_Customer2.CustomerID,  
dbo_Customer2.CustomerName  
FROM  
Patients,  
dbo.Customer,  
dbo.Customer dbo_Customer2
```

Receive e-mail
alerts with all
query information

Query Monitoring



Query console allows you to monitor queries that are currently running

The screenshot shows the APOS IDAC Console interface. On the left, there is a 'Logging Database' section with a 'Database Connection' button, 'Log In' and 'Log Out' buttons, and a 'Query Builder' section with a radio button for 'Real Time Query' and an 'Edit Query...' link. The main area displays a table of running queries.

ID	Date	BO User	DB User	OS User	Query
7ee289a...	1/27/2022 11:16:03 AM	Betty	sa	BI42SP...	SELEC...
4755aa1...	1/27/2022 10:49:34 AM	Bill	sa	BI42SP...	SELEC...
28451d8...	1/26/2022 5:30:23 PM	Bill	sa	BI42SP...	SELEC...
ee4aa8c...	1/26/2022 5:29:53 PM	Fred	sa	BI42SP...	SELEC...
298934b...	1/26/2022 4:11:28 PM	Fred	sa	BI42SP...	SELEC...
775d67a...	1/26/2022 4:10:41 PM	Joshua	sa	BI42SP...	SELEC...
e9445ea...	1/26/2022 11:31:48 AM	Joshua	sa	BI42SP...	SELEC...
9643128...	1/26/2022 11:29:47 AM	Fred	sa	BI42SP...	SELEC...

Query Management & Governance



Query Management

- Manually cancel queries
- Automate Query cancelling
- View historical queries in console



Query Management



- **Improve Response Time**
- **Improve System Performance**
- **Improve User Satisfaction**
- **Reduce Costs**



Query Management



SAP BusinessObjects has no option to manage queries that have been submitted to the database by the reports



Query Management

SAP BusinessObjects has no option to manage queries that have been submitted to the database by the reports.

The DBA team usually does not have insight into the BI platform.

Queries, and their performance, fall into a "No Man's Land"



Query Management

Query console allows live queries to be selected and cancelled manually

No need to involve DBA and their team

Allows the BI Team to be self-sufficient with regard to database queries

The screenshot displays the APOS IDAC Console interface. On the left, there are sections for 'Logging Database' (with 'Database Connection' and 'Log In/Out' buttons), 'Query Builder' (with 'Real Time Query' and 'Historical Query' radio buttons and their respective SQL snippets), and 'Refresh Settings' (with an 'Auto Refresh' checkbox and 'Set Rate/Refresh' buttons). At the bottom left, there are 'Actions For Selected' buttons: 'Include Record', 'Exclude Record', and 'Cancel Query' (highlighted in yellow). The main area on the right is a table with the following data:

ID	Date	BO User	DB User	OS User	Query	Error Message	Query Duration
b...	1/27/2022 4:54:29 PM	Administr...	sa	BI42SP6FW\$	SELEC...	N/A	-1



Query Management



Query console allows historical queries to be analyzed

Data can be filtered and sorted dynamically

APOS IDAC Console

Logging Database

Database Connection

Log In Log Out

Query Builder

Real Time Query | Edit Query...
SELECT * FROM dbo.JDBC_Log WHERE queryduration = 1

Historical Query | Edit Query...
SELECT * FROM dbo.JDBC_Log WHERE id <> '0'
AND queryduration <> -1
ORDER BY dt DESC

ID	Date	BO User	DB User	OS User	Query	Error Message	Query Duration	DB Duration	Read Duration	Rows Read	Database N...	Database V...	Connect UR
1...	1/27/2022 4:14:11 PM	Administr...	sa	BI42SP6FW\$	SELEC...		605734	0	605274	12738750	Microsoft S...	13.00.4259	jdbc:sqlserv
6...	1/27/2022 3:48:38 PM	Administr...	sa	BI42SP6FW\$	SELEC...		605128	0	605122	11695785	Microsoft S...	13.00.4259	jdbc:sqlserv
a...	1/27/2022 3:33:30 PM	Administr...	sa	BI42SP6FW\$	SELEC...		604950	0	604939	12053115	Microsoft S...	13.00.4259	jdbc:sqlserv
7...	1/27/2022 3:30:08 PM	Administr...	sa	BI42SP6FW\$	SELEC...		4208	0	4195	73712	Microsoft S...	13.00.4259	jdbc:sqlserv
af...	1/27/2022 3:29:03 PM	Administr...	sa	BI42SP6FW\$	SELEC...		2211	0	2203	5002	Microsoft S...	13.00.4259	jdbc:sqlserv
4...	1/27/2022 3:28:07 PM	Administr...	sa	BI42SP6FW\$	SELEC...		2327	0	2314	5002	Microsoft S...	13.00.4259	jdbc:sqlserv
9...	1/27/2022 3:27:32 PM	Administr...	sa	BI42SP6FW\$	SELEC...		2112	0	2092	272	Microsoft S...	13.00.4259	jdbc:sqlserv
fd...	1/27/2022 3:27:16 PM	Administr...	sa	BI42SP6FW\$	SELEC...		2031	0	0	-1	Microsoft S...	13.00.4259	jdbc:sqlserv
3...	1/27/2022 3:25:10 PM	Administr...	sa	BI42SP6FW\$	SELEC...		2518	0	0	-1	Microsoft S...	13.00.4259	jdbc:sqlserv
7...	1/27/2022 11:16:03 AM	Betty	sa	BI42SP6FW\$	SELEC...		2647	0	2239	17	Microsoft S...	13.00.4259	jdbc:sqlserv
4...	1/27/2022 10:49:34 AM	Bill	sa	BI42SP6FW\$	SELEC...		2648	0	2211	272	Microsoft S...	13.00.4259	jdbc:sqlserv
2...	1/26/2022 5:30:23 PM	Bill	sa	BI42SP6FW\$	SELEC...		2171	0	2134	17	Microsoft S...	13.00.4259	jdbc:sqlserv
e...	1/26/2022 5:29:53 PM	Fred	sa	BI42SP6FW\$	SELEC...		3041	0	2488	90	Microsoft S...	13.00.4259	jdbc:sqlserv
2...	1/26/2022 4:11:28 PM	Fred	sa	BI42SP6FW\$	SELEC...		2605	0	2578	90	Microsoft S...	13.00.4259	jdbc:sqlserv
7...	1/26/2022 4:10:41 PM	Joshua	sa	BI42SP6FW\$	SELEC...		2771	0	2331	17	Microsoft S...	13.00.4259	jdbc:sqlserv

Query Management

Configure alerts to automatically cancel queries based upon any query metadata (e.g. query Runtime)



Alert Settings
Define the settings you wish to use for the alert

Alert Name: Long Query 10

Subject: %BOUSER% executed a long query

Database fields to use:

Message:

Sample SQL: <Please select a sample>
Note: ID field must be included in Select statement

Select SQL: `SELECT * FROM jdbc_log WHERE queryduration = -1 AND dt <= dateadd(mi,-10,getdate())`

Enable Auto Cancel

Enable Email Message

Email List: fwalther@apos.com

Query Surveillance - Benefits



Benefit	Query Auditing	Query Monitoring	Query Management
Increase Awareness and Accuracy	✓	✓	
Reduce Troubleshooting Time	✓	✓	✓
Improve Response Time	✓	✓	✓
Improve System Performance	✓	✓	✓
Improve User Satisfaction	✓	✓	
Strengthen Governance & Security	✓	✓	✓
Reduce Costs	✓		

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

- Automate secure information delivery
- Deliver timely information
- Create a flexible messaging environment
- Simplify administration
- Use multiple formats & destinations
- Burst stories with multiple filters
- Burst conditionally
- Collate stories
- Personalize PowerPoint bursting



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 Semantic Layer Migration

- Capture SAP BI Universe data connection and data modelling logic
- Project-based, wizard-driven interface
- Scan your SAP BI content for relevant data connections
- Harmonize SAP BI and HANA data modelling throughout Hybrid BI
- Translate SAP BusinessObjects modelling to SAP HANA Calculation Views
- Translate SAP BusinessObjects modelling to a unified semantic layer



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

Web Intelligence Migration

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

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



Upcoming Events



Expanded Bursting and Broadcasting for SAP Analytics Cloud Reports – Webinar

April 7th , 2022 - 11am EDT

As SAP Analytics Cloud deployments are growing, and as more is expected of SAC, organizations are recognizing expanded requirements for report content distribution to a wide variety of stakeholders. At the same time, they are faced with legacy and soon-to-be-deprecated distribution capabilities that must be replaced as their digital transformation continues.

The need to implement enterprise-level bursting, broadcasting, publishing and distribution requirements is driving adoption of APOS Publisher for Cloud. Here's your chance to see how this can work for you.

What you will learn:

- **Enterprise-level bursting**
Use dynamic rules, conditional bursting, expanded destinations and formats
- **Dynamic and low maintenance broadcasting**
Scheduling, consolidation, query-driven, and reduced IT burden
- **BEx / BW broadcasting**
Work with Analysis Office; replace BEx / BW broadcasting

...and more.



Register at www.apos.com

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Join easily by searching "SAP Analytics Cloud (SAC)" & Request to Join on LinkedIn!

QUESTIONS?

Please enter your questions in the Q&A panel.



Thank You!

Get in Touch

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