Oracle Data Integration Platform

A Cornerstone for Big Data

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Head of Data Analytics and Development, Paysafe

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Presented with

Paysafe

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Program Agenda

1. Oracle Data Integration for Big Data
2. Using ODI on Oracle Big Data and Amazon EMR
3. Customer Use Case: A converged big data platform using ODI 12c with MapR

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Oracle Data Integration Platform for Big Data

Comprehensive Architecture

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Oracle Cloud Platform

Innovate with a Comprehensive, Open, Integrated and Hybrid Cloud Platform that is Highly Scalable, Secure and Globally Available

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Oracle Cloud Platform

Comprehensive | Open | Integrated | Hybrid

- Data Management
- Application Development
- Enterprise Integration
- Data Integration

- Analytics and Big Data
- Content & Experience
- Identity & Security
- Systems Management

Oracle Public Cloud

Oracle Data Center

Built on High Performant Oracle Cloud Infrastructure

Oracle Cloud at Customer

Your Data Center

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Oracle Cloud Platform Momentum

14,000+ Oracle Cloud Platform Customers

3,000+ Apps in the Oracle Cloud Marketplace

$1.4 Billion FY17 Oracle Cloud Platform Revenue (60% YoY Growth)

10 PaaS Categories where Oracle is a Leader According to Industry Analysts

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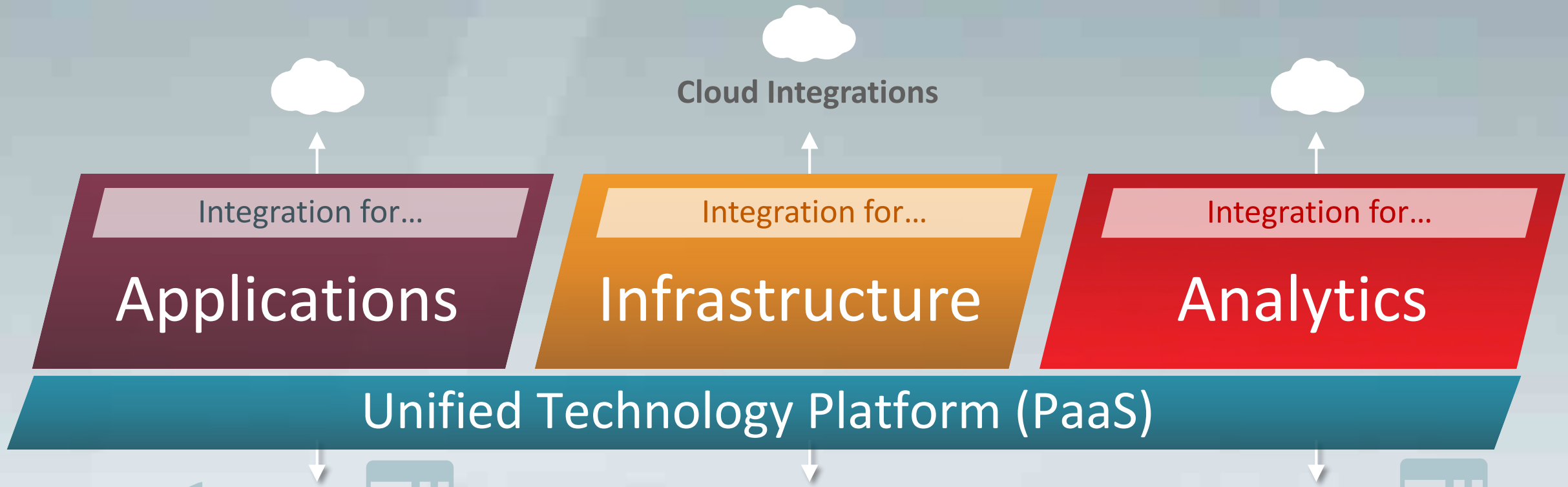
Oracle Integration Platform

Comprehensive Best-of-Breed Capabilities for All Integration Needs



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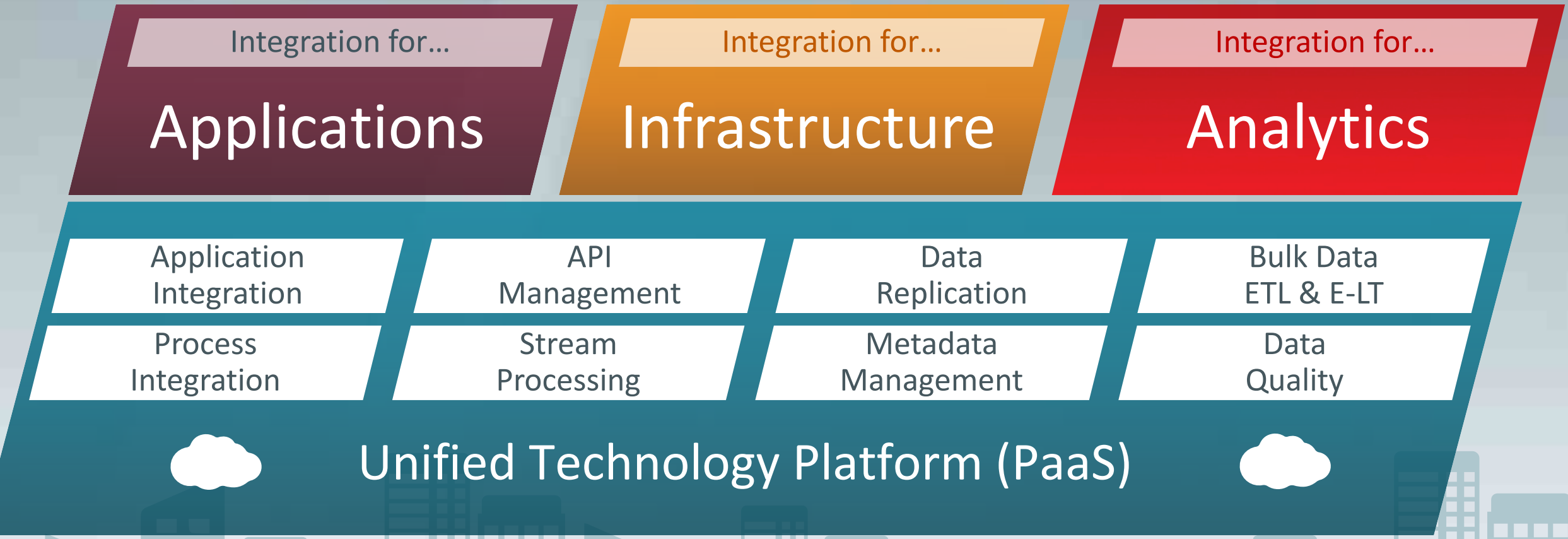
Unified Integration Capabilities

Converged Solution for All Integration Needs



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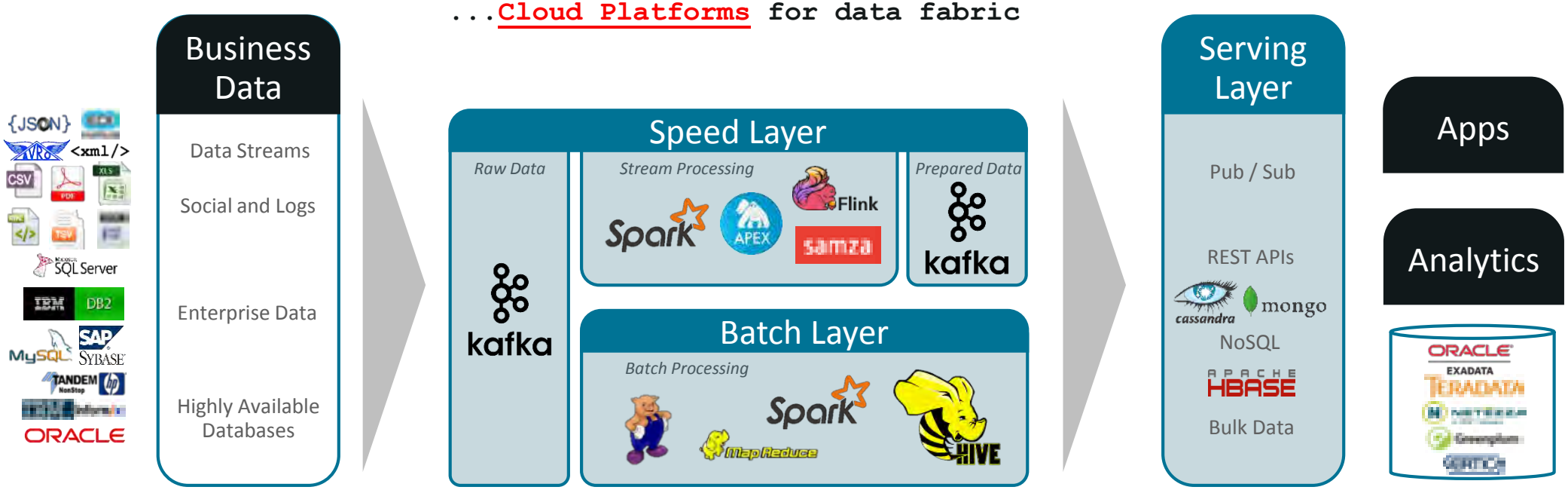
Hybrid Open-Source

...Open Source at the core of speed & batch processing engines

...Enterprise Vendor tools for connecting to existing IT system and

...Cloud Platforms for data fabric



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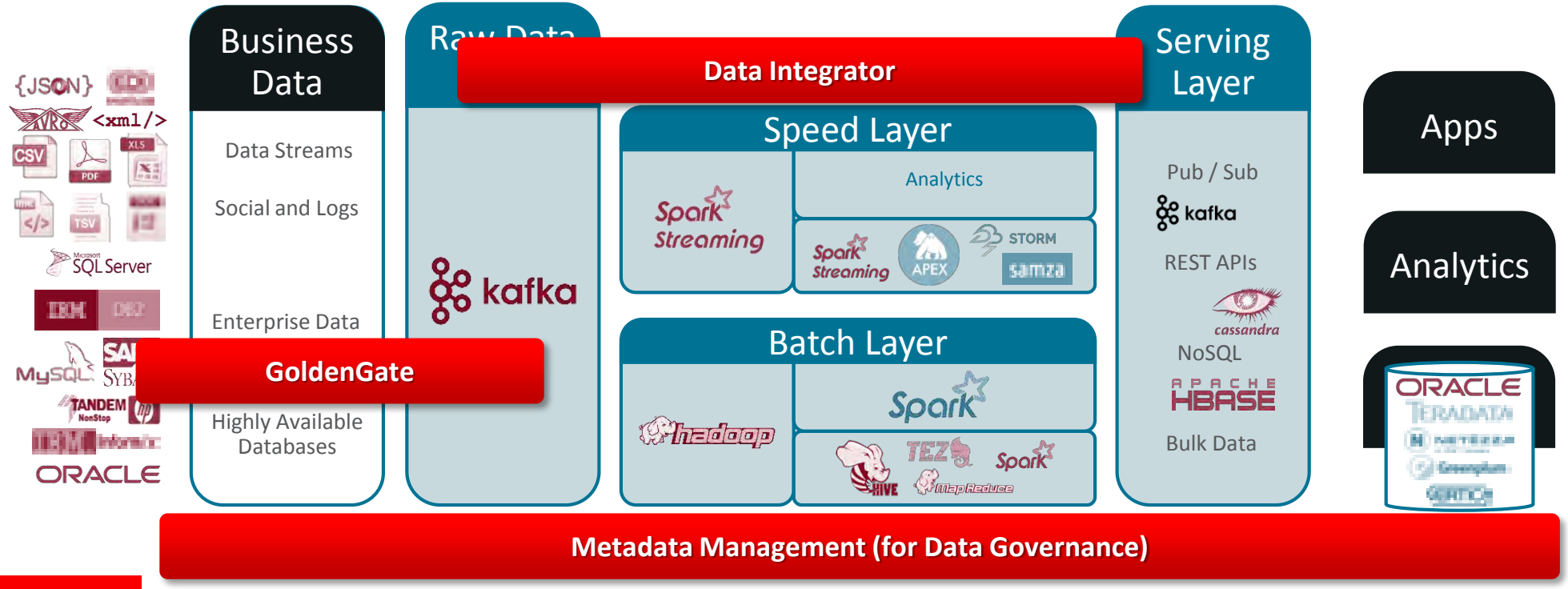
Reference Architecture

Oracle Data Integration Platform Software can help customers **Accelerate & Reduce Risk** around adoption:

- **Ingest Data** with lower latency, greater reliability and from any database using **Oracle GoldenGate**
- **ETP Pipelines for Data** automate pipeline creation with zero-footprint using **Oracle Data Integrator**
- **Govern** the data flowing through Kappa architecture with **Oracle Metadata Management**



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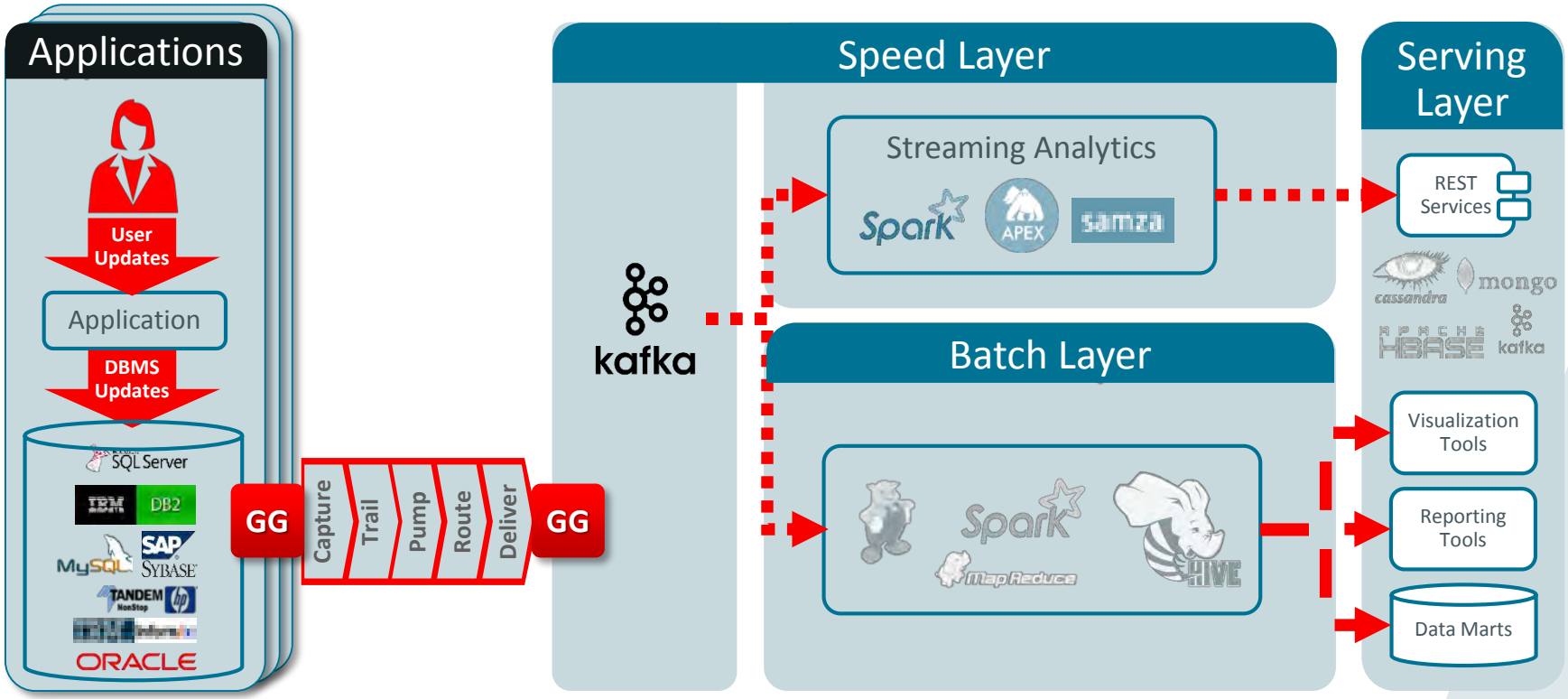
GoldenGate for Ingest



Platforms

kafka
HIVE
cassandra
mongo
APACHE HBASE
FLUME
hadoop
Apache Solr

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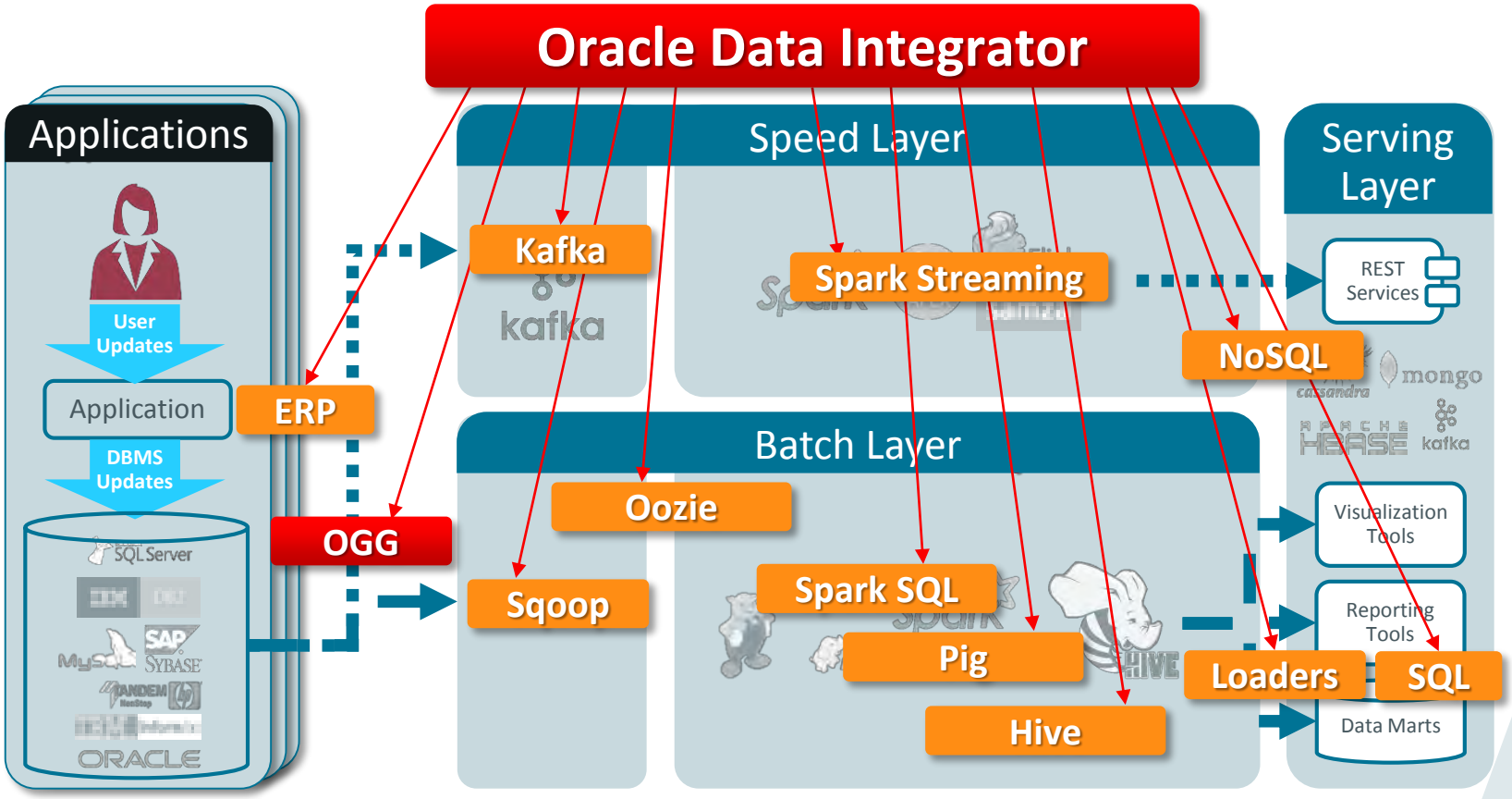
ODI for Big Data Transformations



ETL Engines

Spark Streaming

Big Data Frameworks

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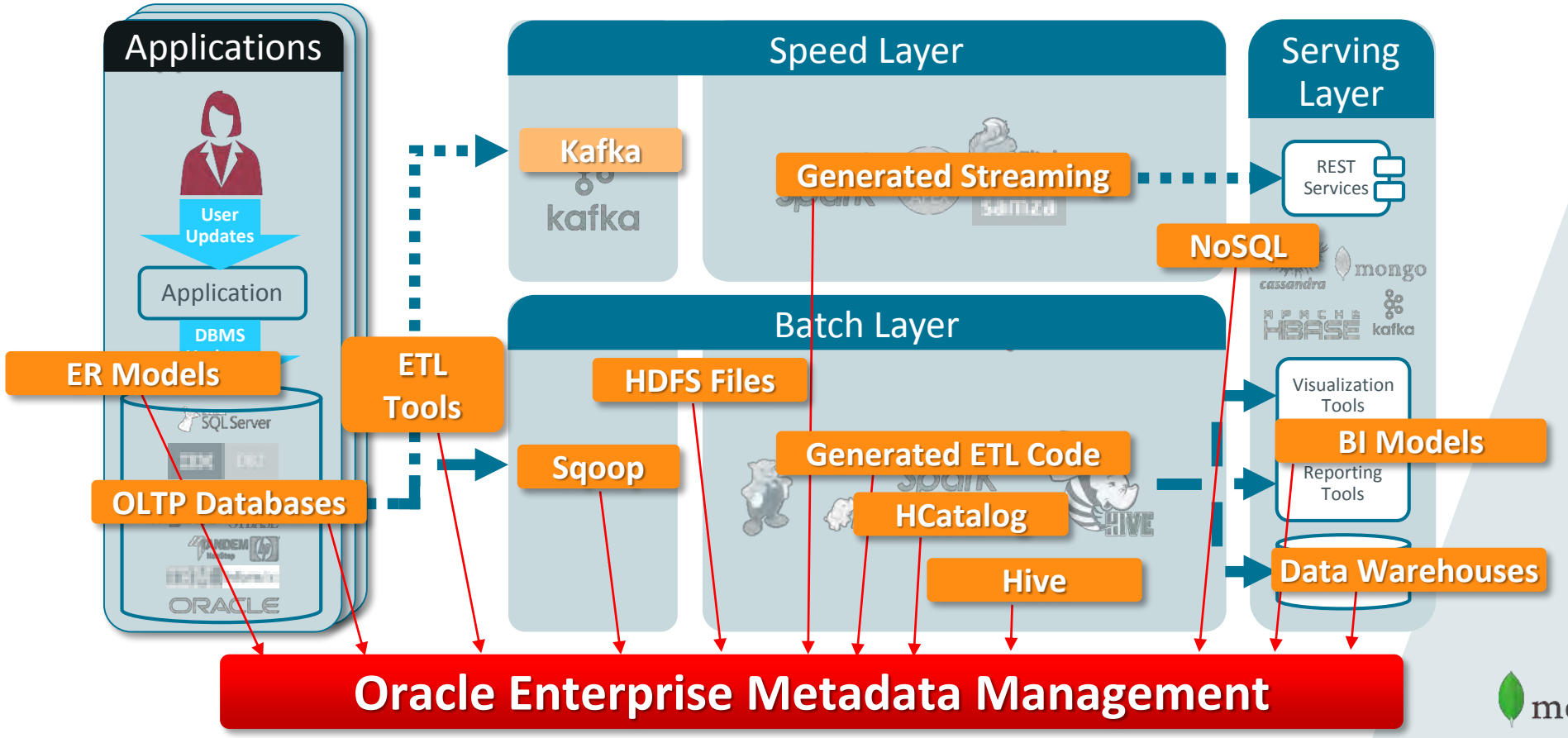
OEMM for Data Governance



Data Catalog

140+ Supported Tools

tableau, informatica, Apache, IBM, SAP, cloudera, Hortonworks, Microsoft, MAPR TECHNOLOGIES, mongoDB., OMG OBJECT MANAGEMENT GROUP

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Using ODI on Oracle Big Data and Amazon EMR

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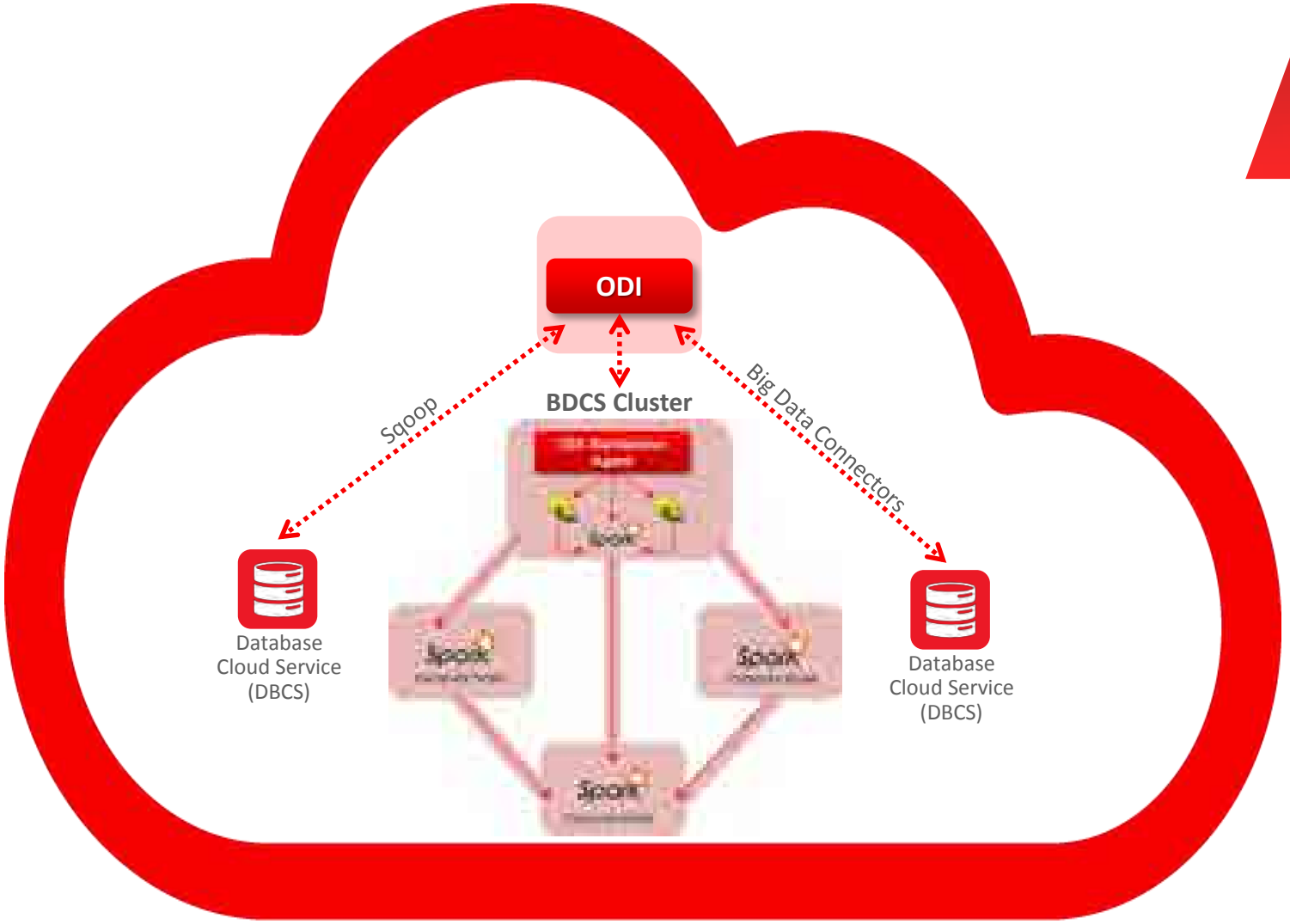
Using Oracle Data Integrator on Big Data



Big Data Cloud Service (BDCS)

- Use ODI to design Spark, Hive, and Pig mappings on BDCS.
- Use ODI and Sqoop to load data from SQL databases into BDCS.
- Use ODI and the Big Data Connectors to upload data from BDCS into the Oracle Database (DBCS).

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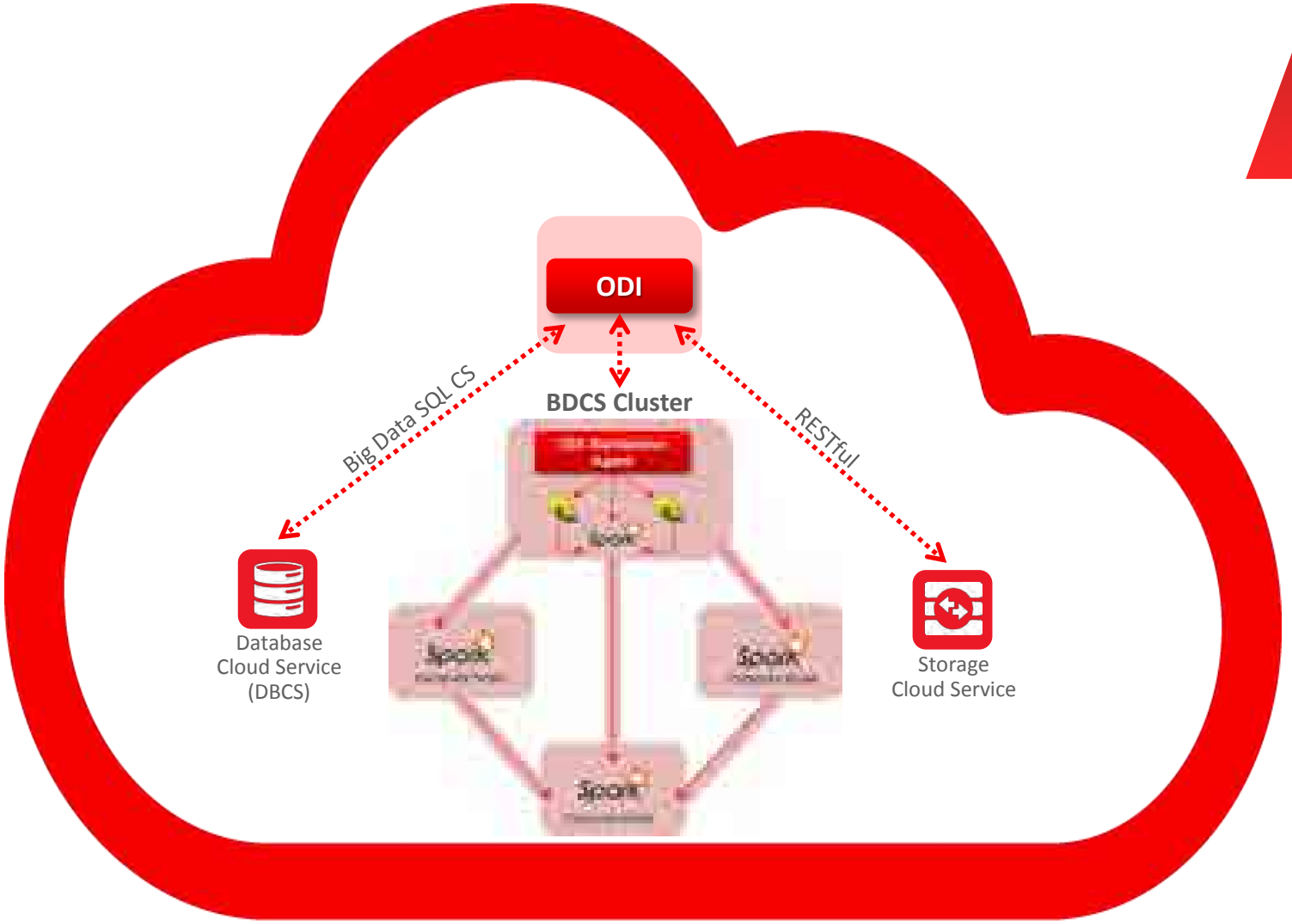
Using Oracle Data Integrator on Big Data



Big Data Cloud Service (BDCS)

- Use ODI and Big Data SQL Cloud Service to join data from DBCS with data from BDCS.
- Use ODI and Big data SQL Cloud Service to copy data from DBCS into BDCS using Copy To Hadoop.
- Use ODI to copy data from Storage Cloud Service into BDCS using RESTful web services.

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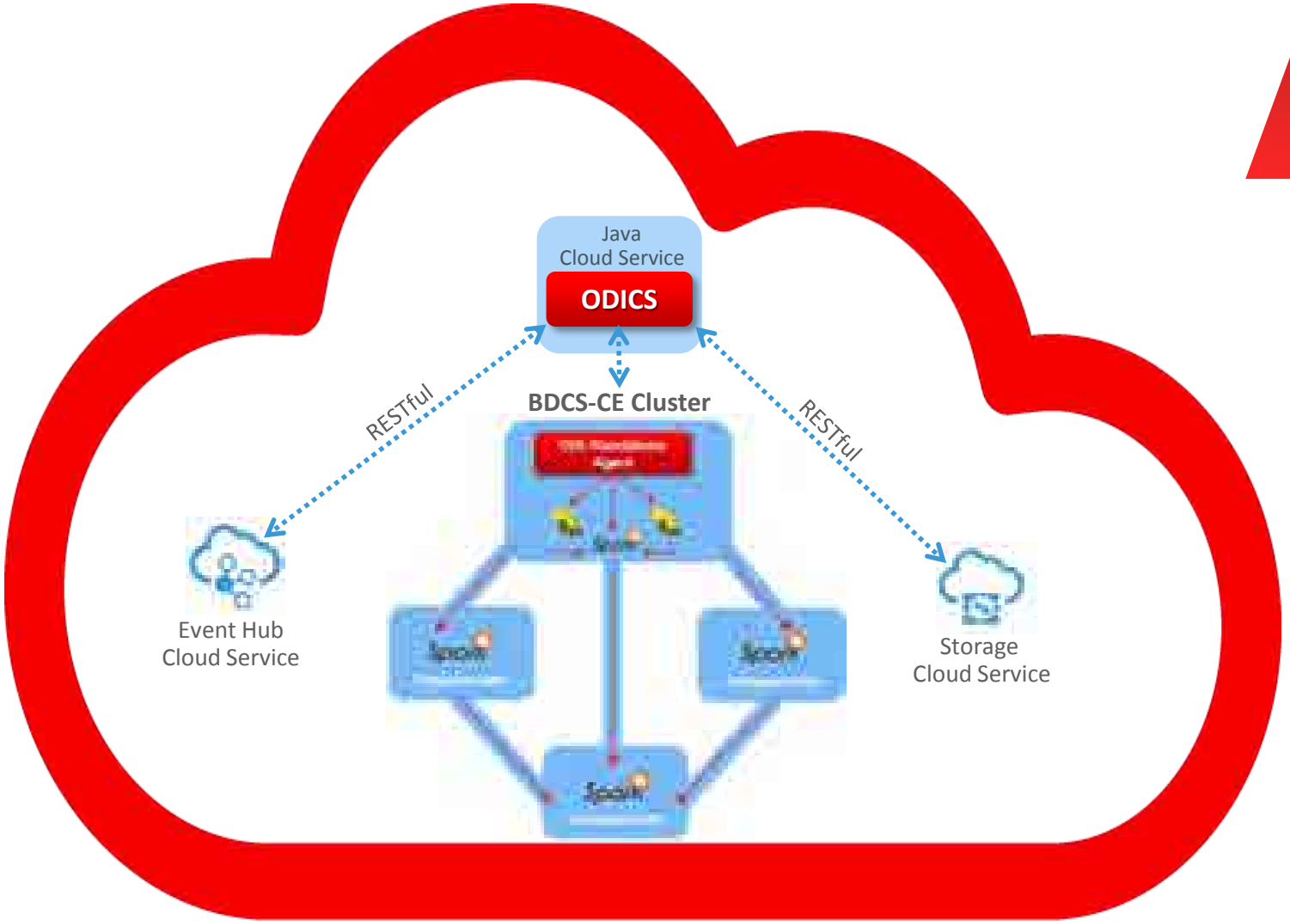
Using Oracle Data Integrator CS on Big Data



Big Data Cloud Service - Compute Edition

- Use ODICS to design and execute Spark, Hive, and Pig mappings on BDCS-CE.
- Use ODICS to integrate data between Event Hub, Storage Cloud, and BDCS-CE using RESTful web services.
- Use ODICS to consume data from Event Hub or Storage Cloud and transform it in BDCS-CE.

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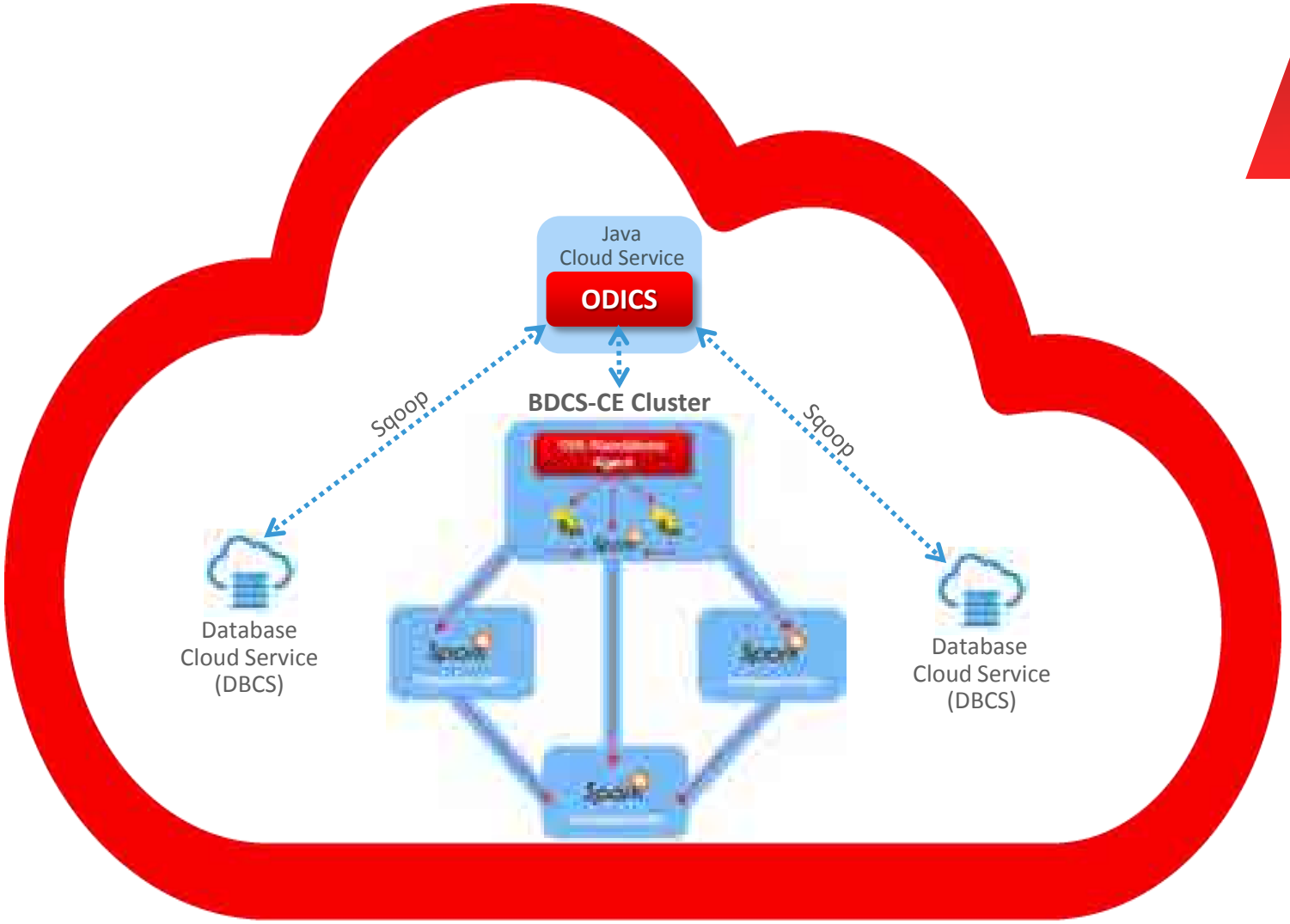
Using Oracle Data Integrator CS on Big Data



Big Data Cloud Service - Compute Edition

1. Use ODICS with Sqoop to extract and load data between DBCS and BDCS-CE.
2. Use ODICS with the BDCS-CE cluster to transform SQL data.
3. Use ODICS to design and execute Sqoop scripts without having to write Sqoop code.

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Using Oracle Data Integrator on Big Data

Amazon Elastic MapReduce (EMR)

1. Provision an ODI repository on Amazon RDS.
2. Install an ODI Standalone agent on your EMR cluster.
3. Use ODI on EMR to design and execute your big data integration tasks.
4. Use ODI to load files from Amazon S3 into EMR, and vice versa.

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Using Oracle Data Integrator on Big Data

Amazon Elastic MapReduce (EMR)

1. Use ODI to build your Spark mappings without having to write Spark code.
2. Design ODI mappings that use Hive tables as sources and targets, but Spark as the transformation engine.
3. Use ODI to execute your Spark mappings against the EMR Spark cluster.

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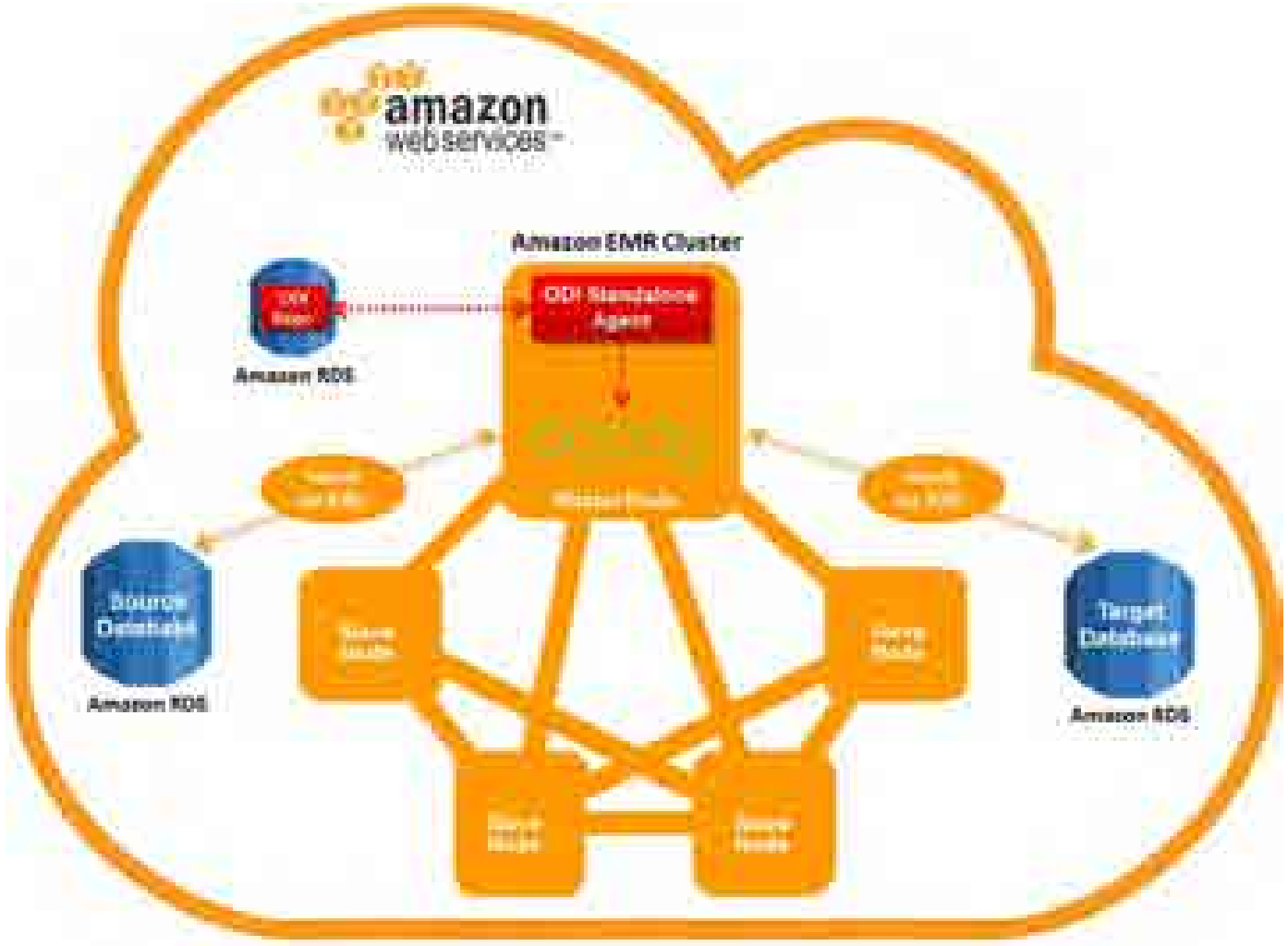
Using Oracle Data Integrator on Big Data



Amazon Elastic MapReduce (EMR)

1. Use ODI to extract data from Amazon RDS.
2. Use ODI with Sqoop to extract and load data between RDS instances.
3. Use ODI to design and execute Sqoop scripts without having to write Sqoop code.

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Using Oracle Data Integrator on Big Data

Amazon Elastic MapReduce (EMR)

1. Use ODI on EMR to design Hive data integration tasks without having to write Hive code.
2. Use ODI on EMR to design and execute data upload operations between Amazon S3 and Hive.

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Data Integration and a converged Big Data platform – using ODI 12c with MapR

Paysafe Group ELT Solution

Paysafe

Agenda

- We are Paysafe
- Company growth and challenges
- Micro services in Big Data environment
- Analytical needs require heavy data integration
- How we used ODI
- Summary and Conclusions

We are

Paysafe

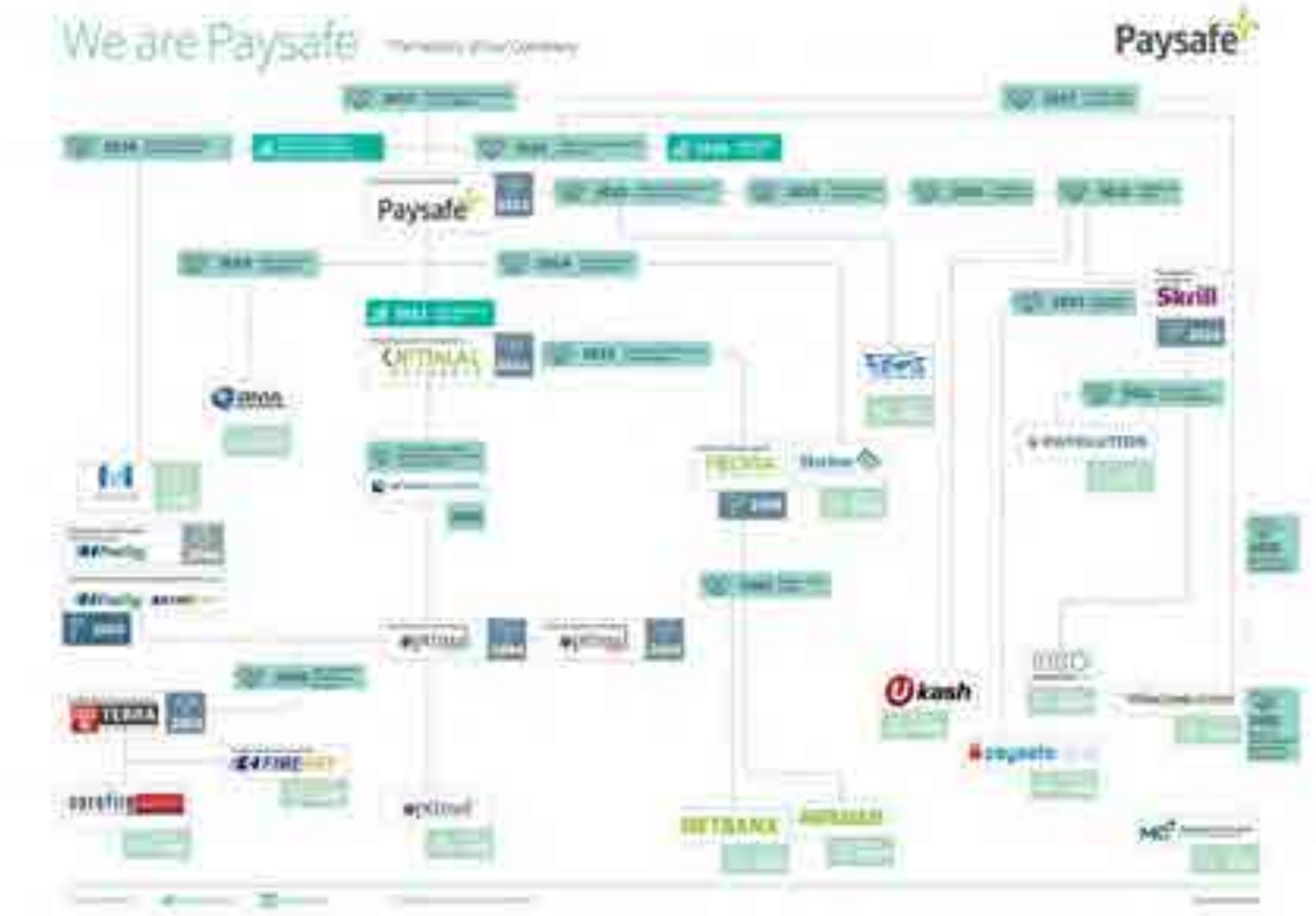
We believe that every point of every payment should be relevant, simple and secure.

Paysafe provides digital payments and transaction related solutions to businesses and consumers around the world. Paysafe is listed on the FTSE 250 Index of the London Stock Exchange under the symbol PAYS.

Paysafe offers multi-platform products with an emphasis on emerging payment technologies including mobile. Paysafe's brand portfolio includes:

Paysafe

Company history



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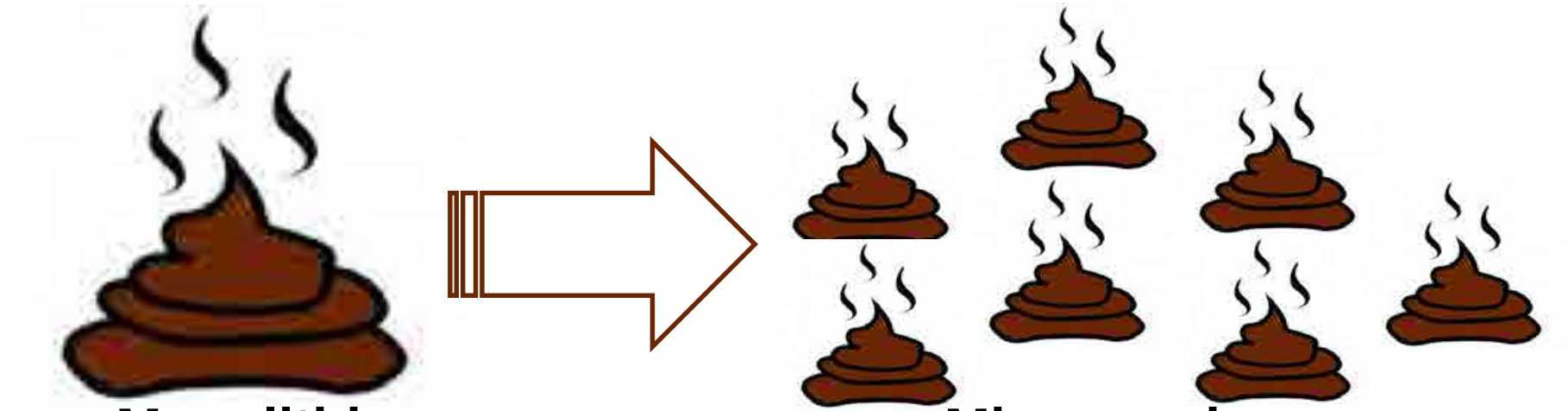
Global company

- Need to integrate separate organizations and systems
- Challenges to communicate and align even for simple changes
- Splitting large applications into parts decreases cross-team dependency

Main Paysafe offices

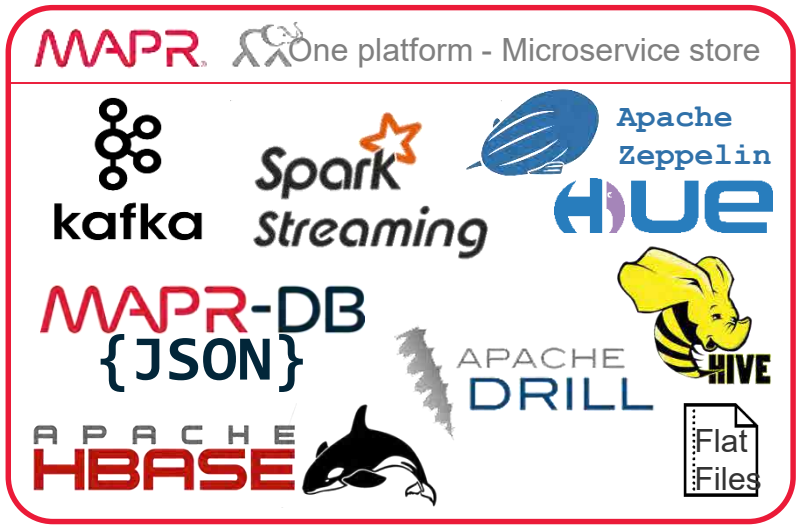
Microservices

- Divide and Conquer
- "Do one thing and do it well"
- Private data stores in distributed multi cluster Big Data environment - MapR
- Emit events in a messaging bus - Kafka



BI and Data analytics in Microservices world

- Microservices architecture is solving problems on the application(s) side
- But creates new ones on BI and Data Analytics side
  - Unstructured data do not fit in structured BI – ETL is required
  - Private data store cannot be accessed
  - Immature Big Data tools and products
  - Custom coding
    - Lack of Backwards compatibility in every release
    - Difficult maintenance and monitoring



Custom Coding / Scripting

Business Intelligence

Paysafe

ETL/ELT

- Product maturity
- Vendor support / documentation
- No more custom coding
- Easy to use and maintain
- Using Query Processing Engines to Generate Code in Different Languages
- End-to-end solution for data replication, data consumption and data analytics
- Working with Unstructured Data and Complex Data
- Significant Run Time efficiency for moving data
- Troubleshooting and debugging facilities

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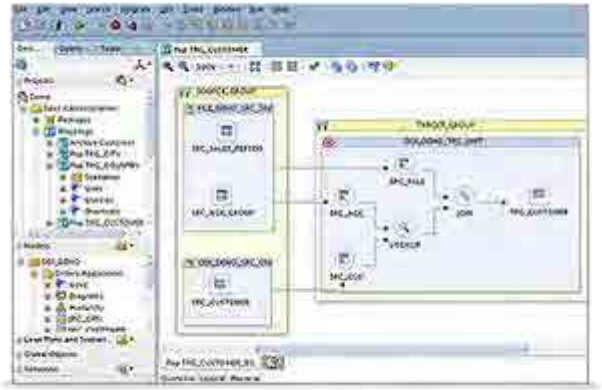
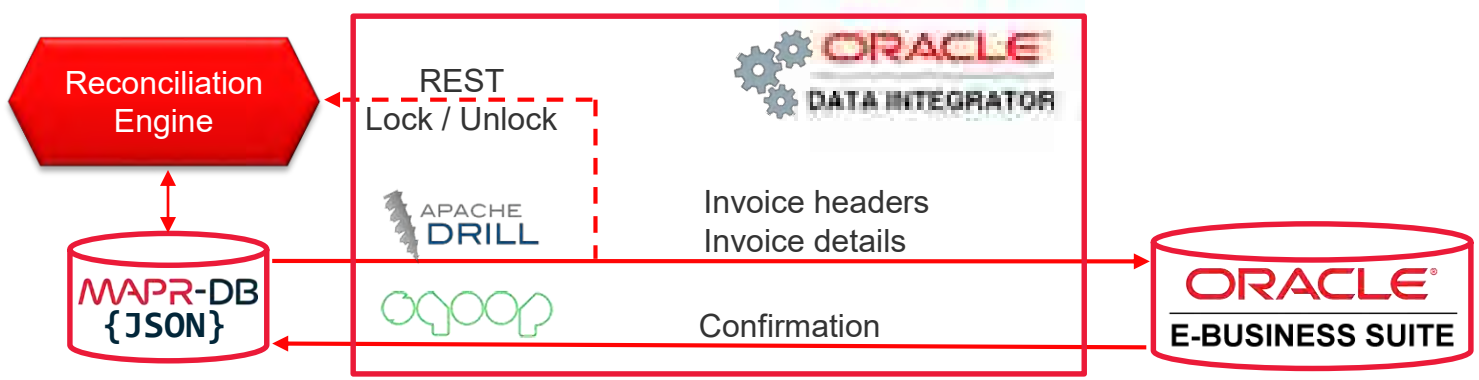
DATA INTEGRATOR



Card Issuing financial reconciliation

- Reconciliation engine – on top of the MapR platform
- Input – Statements from banks, MasterCard invoices, etc.
- Output – loaded into Oracle EBS database, feeding some information back into the MapR JsonDB tables



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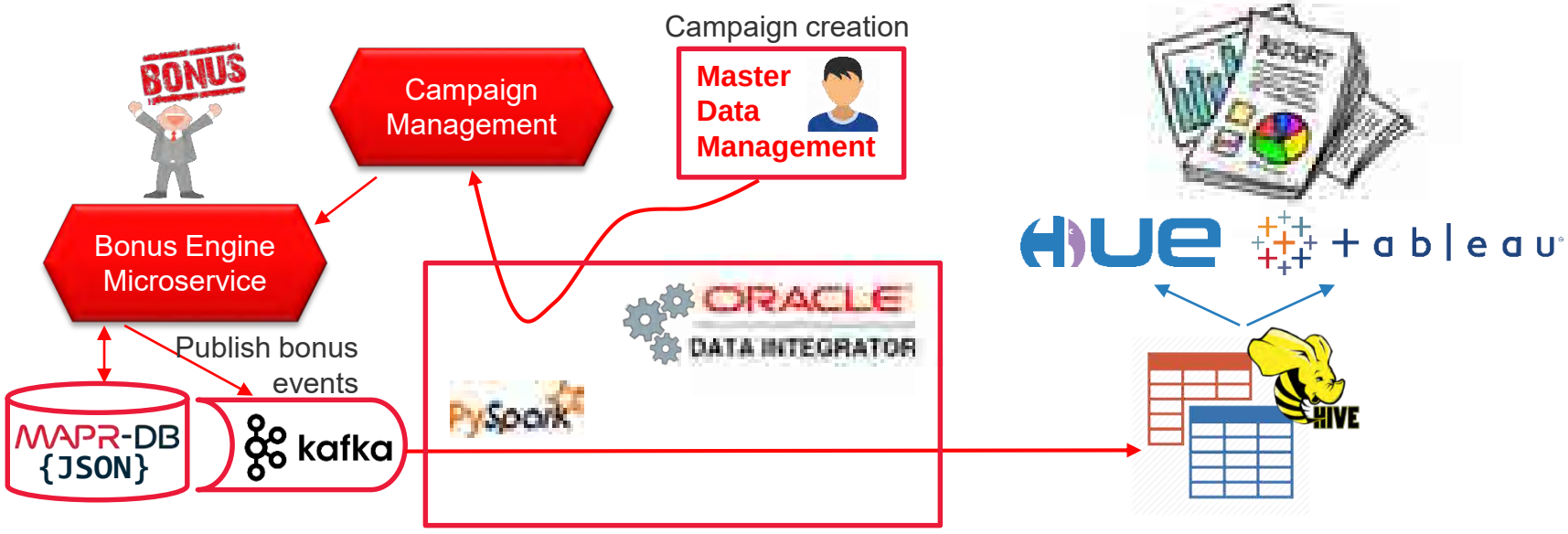
Bonus Engine reporting

- Bonus Engine microservice for tracking transactions eligible for a campaign bonus and creating bonus transactions.
- Multiple layers/technologies involving an MDM tool, Campaign Management tool (Oracle Responsys), etc.



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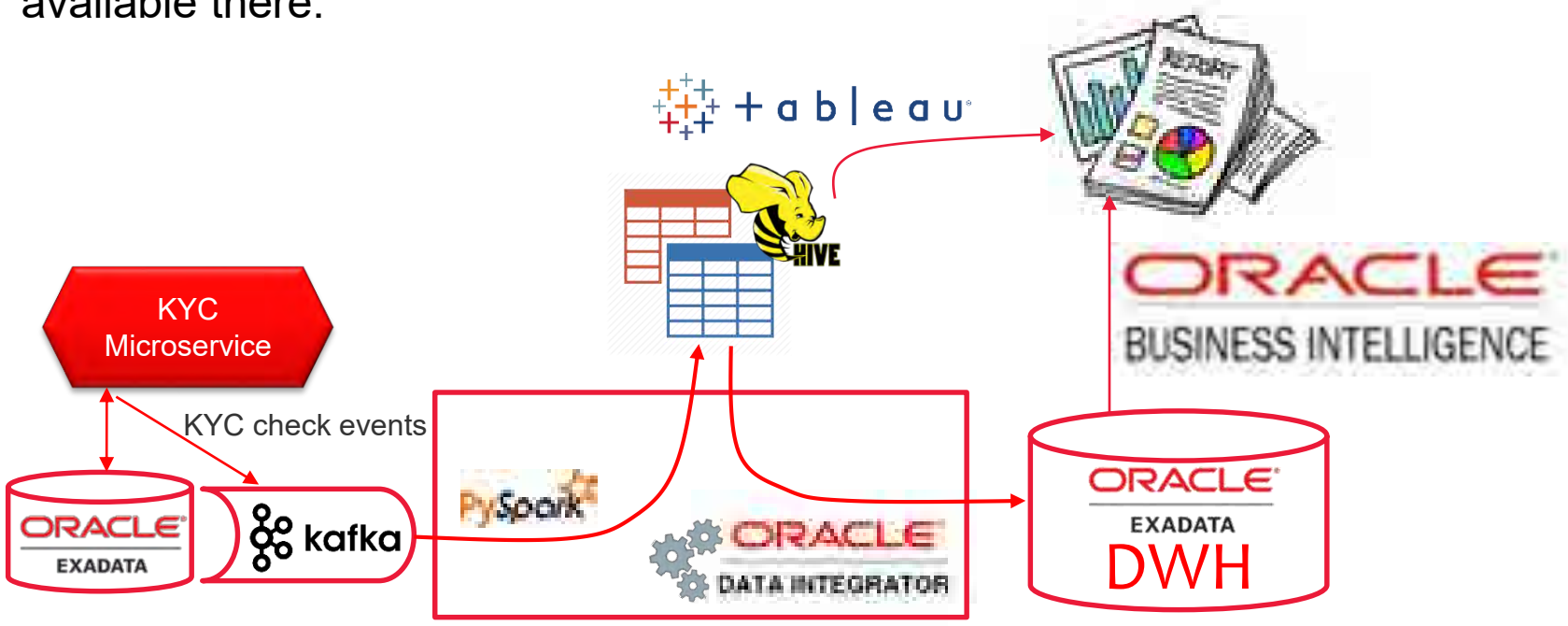
Know Your Customer (KYC)

- Enhanced Due Diligence microservice emitting Kafka events for various customer validations procedures

- Fast layer reporting via Spark/Tableau and Batch layer with data being loaded in the DWH for complex analyses using all other customer related information available there.



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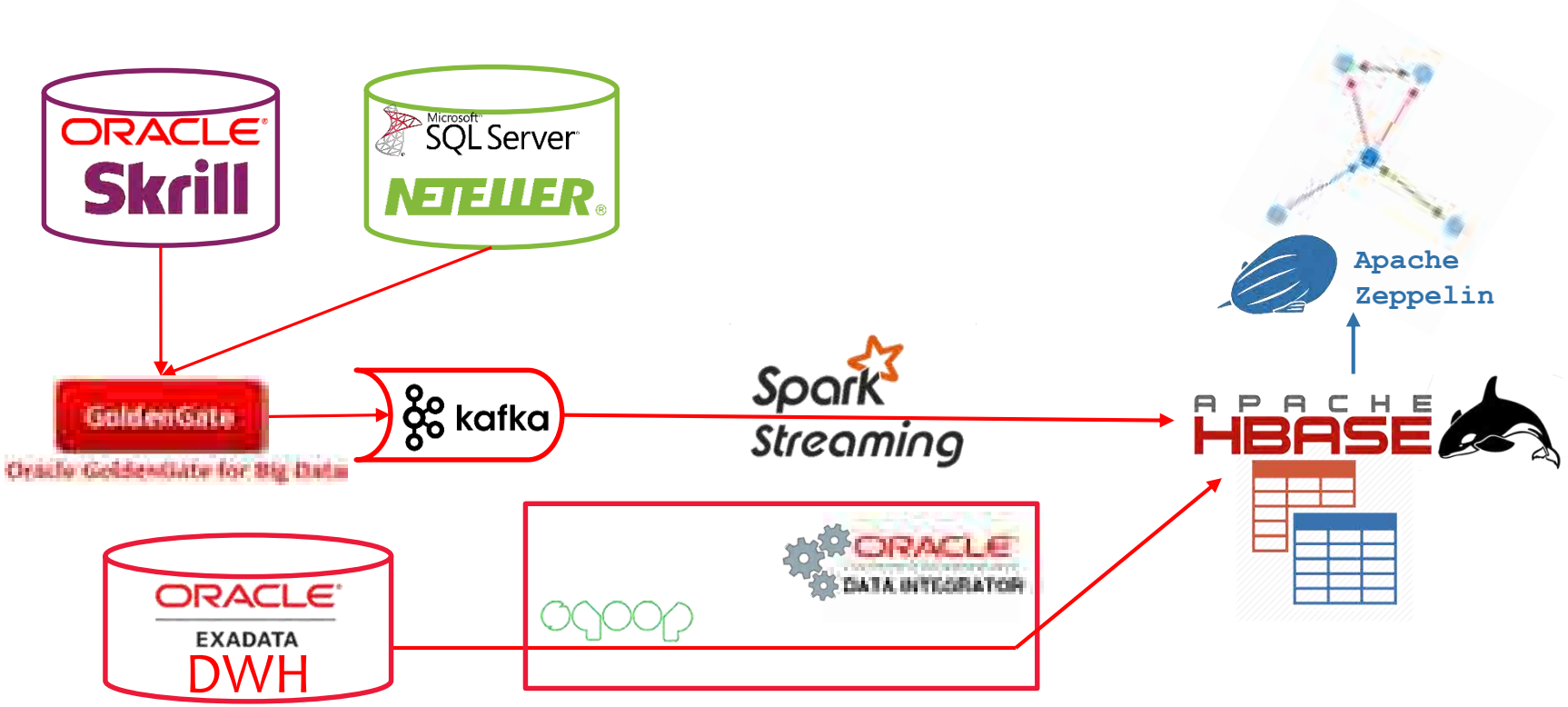
Linked accounts

- Analytic application that detects connected customer accounts within Skrill and Neteller digital wallets
- Support Risk and Compliance teams with information for duplicate or linked accounts



Paysafe

Conclusion

- Different use cases
- Different needs
- Different technologies and languages
- ODI fits them all

Business benefits for Paysafe:

- Stable solution to support the group platform migration, enabling new products and services on top
- Possibility to combine existing functionalities and new ones within the same tool set
- Existing knowledge and structures have been leveraged, therefore speeding up the implementation

Q&A

Get a sneak peek at cutting-edge data integration designs and receive a free gift!

- Oracle is constantly developing new software and features that will make your work easier, and Oracle's User Experience team would love to get your feedback on new data integration designs.
- Feedback sessions will take place at a date and time of your own choice.
- You can take part via webconference, from the comfort and convenience of your own office.
- If you're interested, please fill out the 1-page form at **http://bit.ly/2vIHlSg** **uppercase I lowercase l**
- **To show our appreciation, we will post all participants their choice from a wide selection of thank-you gifts.**

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Data Integration Programming

Presen-tations on:

- Oracle Data Integration Platform Cloud
- Oracle Data Integrator
- Oracle GoldenGate
- Oracle Enterprise Data Quality
- Oracle Enterprise Metadata Management

Hands-on Labs:

- Oracle GoldenGate Real-Time Data Replication in the Cloud HOL7715
- Oracle Enterprise Data Quality HOL7653
- ODI and OGG for Big Data HOL7708
- Oracle Data Integration Platform Cloud HOL7673

Demo Stations:

- The EXchange Integration Area - Moscone West
- The EXchange Data Management Area - Moscone West
- The EXchange Analytics & Big Data Area - Moscone West

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Data Integration Programming – FOCUS ON DOC LINK

Sunday, October 1

- Lift and Shift Workloads to Cloud with Oracle Data Integration Platform Cloud [SUN6653]
- Data Movement between On-Prem, Fusion ERP Cloud, Fusion HCM Cloud and Salesforce [SUN7286]
- Accelerate Migration to Cloud Infrastructure with Data Integration Platform [SUN6896]

Monday, October 2

- Oracle Data Integration Platform Strategy and Roadmap [CON6646]
- Filling Your Data Lake with Potable Data, Using Data Integration [CON5465]
- GoldenGate : Deep Dive into Automating OGG using the new Microservices [CON6569]
- Oracle Data Integration Platform: Foundation for Cloud Integration [CON6650]
- Oracle Data Integration Platform Empowers Enterprise Grade Big Data Solutions [CON6893]
- Oracle Data Integration Platform Cloud Deep Dive [CON6651]
- Oracle GoldenGate Cloud Service: Real-Time Data Replication in the Cloud [HOL7715]

Tuesday, October 3

- Oracle Data Integrator Product Update and Strategy [CON6654]
- Oracle Enterprise Data Quality: Product Overview and Roadmap [CON6656]
- Accelerate Cloud On-Boarding Using Oracle GoldenGate Cloud Service [CON6894]
- Oracle Enterprise Data Quality for All Types of Data [HOL7653]
- **Oracle Data Integration Platform: a Cornerstone for Big Data [CON6655]**
- GoldenGate: MAA and Best Practices for Oracle GoldenGate Microservices [CON6570]
- Oracle GoldenGate Product Update and Strategy [CON6897]

Wednesday, October 4

- A Practical Path to Enterprise Data Governance at Energy Australia [CON6657]
- Oracle Data Integrator and Oracle GoldenGate for Big Data [HOL7708]
- Introduction to Oracle Data Integration Platform Cloud [HOL7673]
- An Enterprise Databus: GoldenGate in the Cloud Working with Kafka and Spark (CON6895]
- GoldenGate: Best Practices & Deep Dive on OGG 12.3 Microservices at Cloud [CON6568]

- Oracle GoldenGate for Big Data [CON6898]
- Oracle Data Integration Platform Cloud Service Governance Edition [CON6652]

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Integrated Cloud

Applications & Platform Services

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