

# Embedded Data Virtualization

## Universal Data Connectivity for Any Application

---



**Jerod Johnson**  
Technology Evangelist  
@CData Software

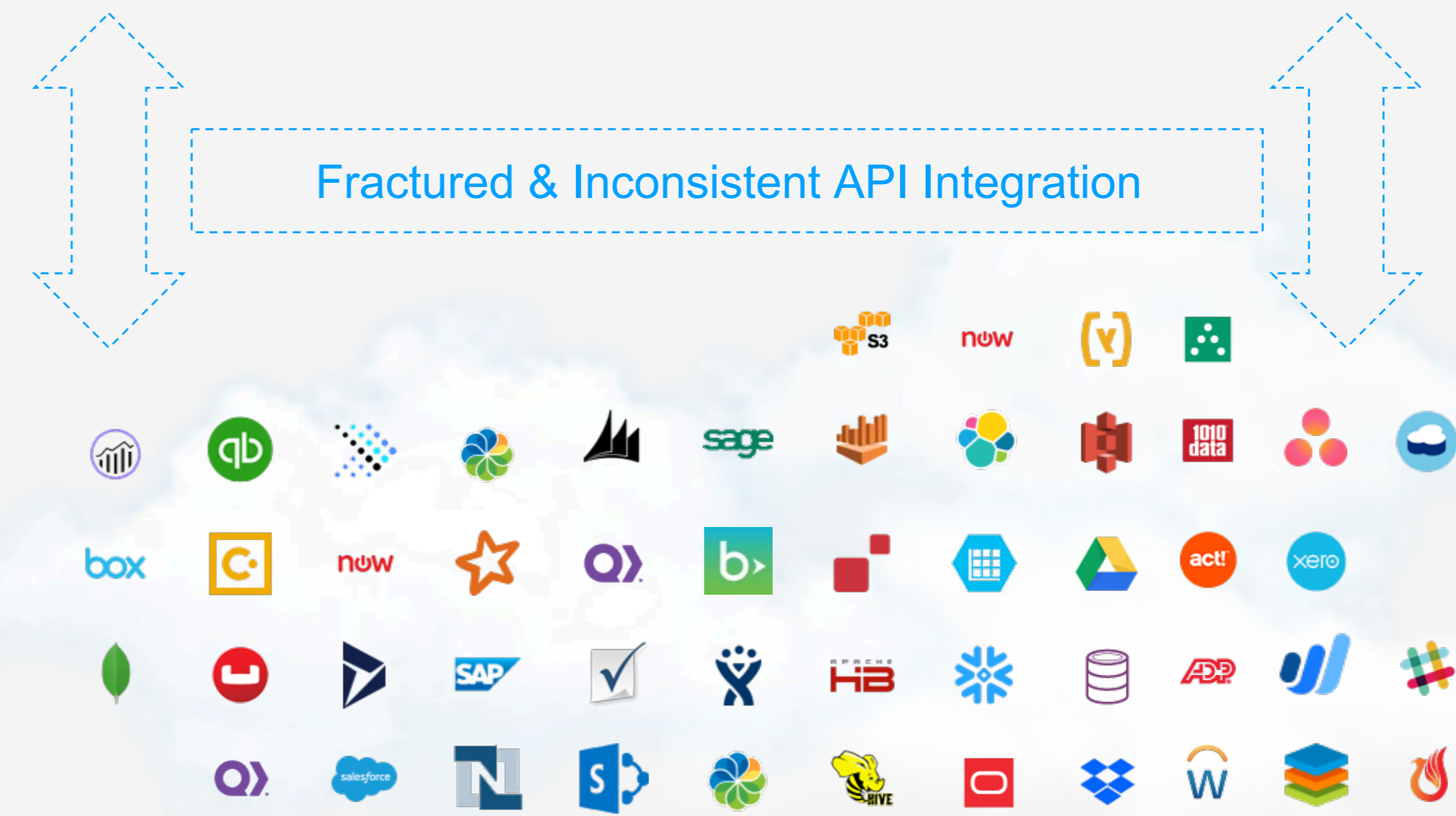
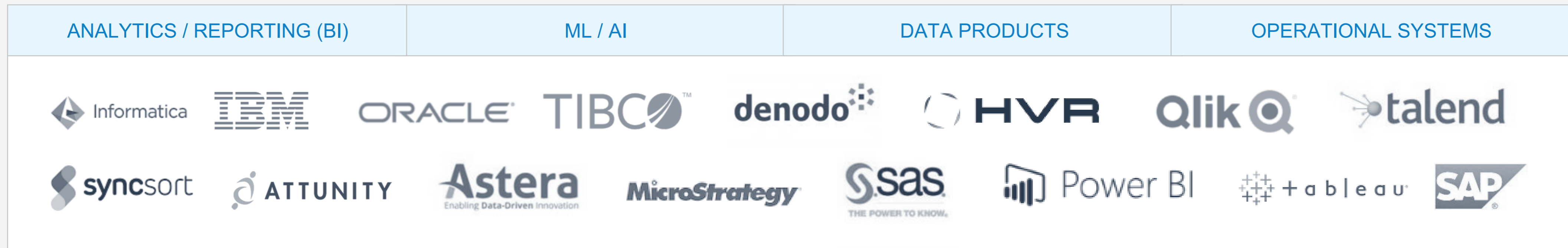
# What We Will Cover

---

- Data Fragmentation & API Explosion
- *'Embedded'* Data Virtualization
- CData Driver Technologies & Data Virtualization
- Demo – Federated Query Driver
- Q & A

# The Problem: Growing Data Fragmentation

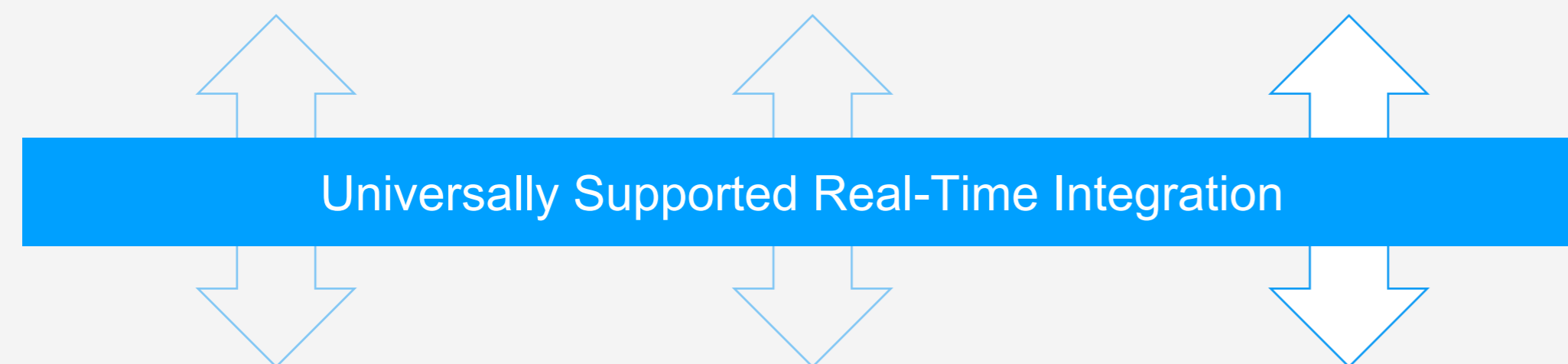
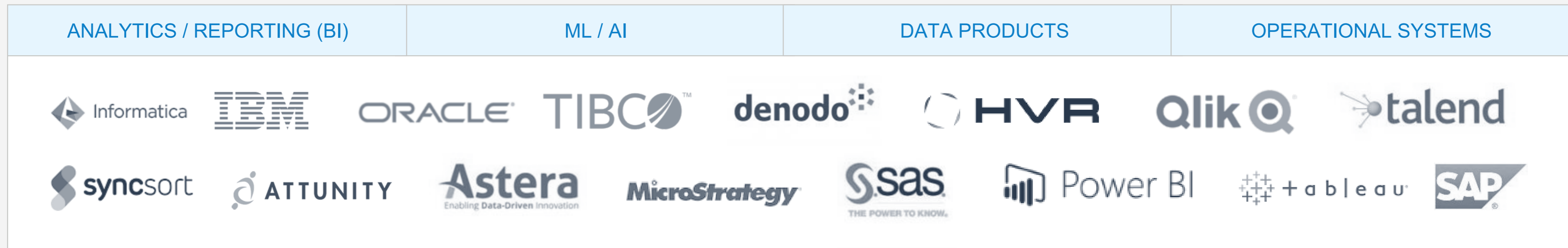
Shift to SaaS, Hybrid, and Multi-Cloud Environments Creates New Enterprise IT Challenges



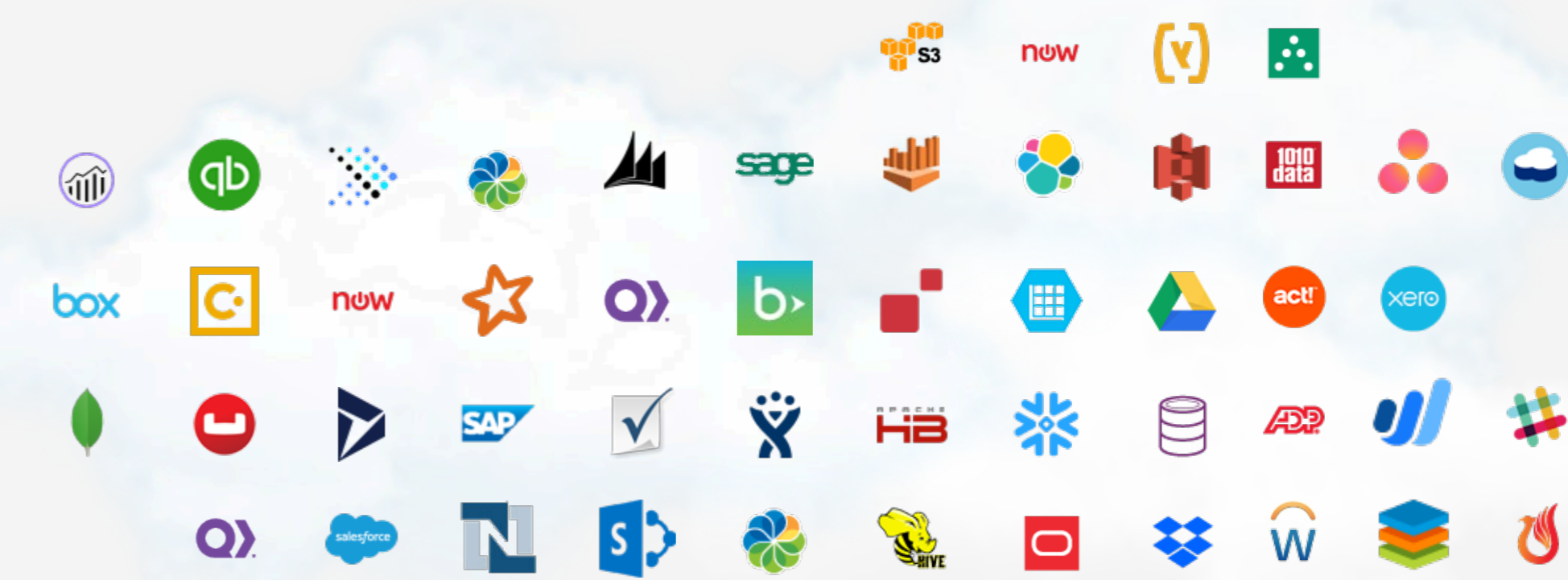


# The Solution: Standards -Based Connectivity

Universal Data Connectivity: Connect All Tools With All Data

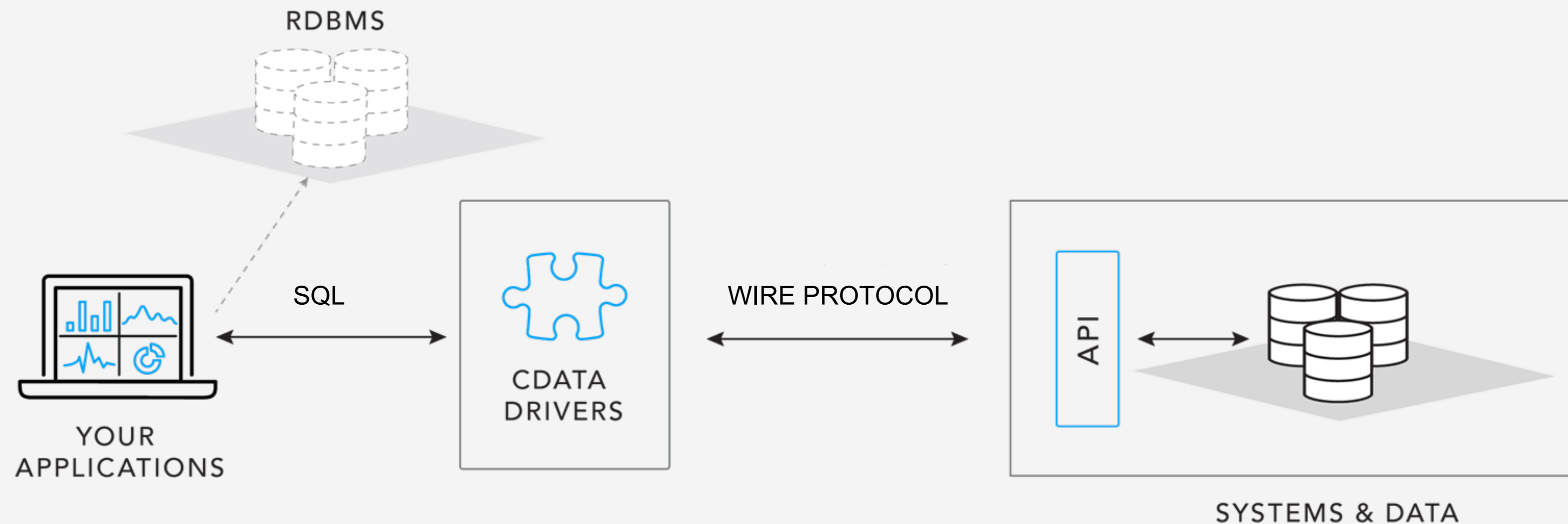


Universal Interface to SaaS, NoSQL & Big Data



# CData Driver Technologies

We Make APIs Look Like Databases



By wrapping APIs in standards-compliant interfaces we make data available in any context where a relational database can be used.

# Typical Data Virtualization Architecture

CONSUME

DATA CONSUMERS

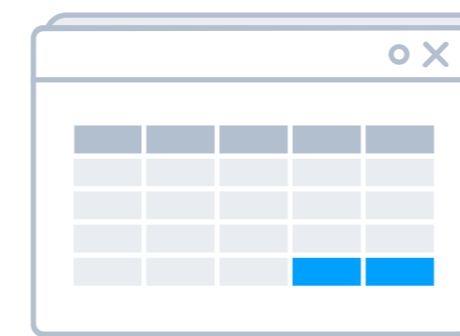


Enterprise Application, Reporting, BI, Machine Learning/AI, ESB, Mobile, Web, etc

Multiple Protocols  
Query, Search, Browse

Request/Reply  
Secure Delivery

COMBINE



Query Federation

Data Caching

Data Transformation

Metadata Caching

SQL Parsing

SQL Normalization

Data Virtualization Layer

CONNECT

DISPARATE DATA SOURCES



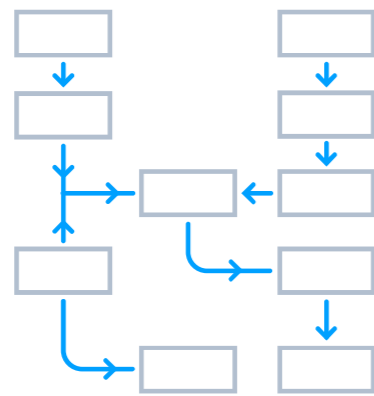
Databases & Data Warehouses, Cloud & SaaS Application, File formats & Unstructured Data

# *'Embedded'* Data Virtualization?

A growing solution to data fragmentation for integration

---

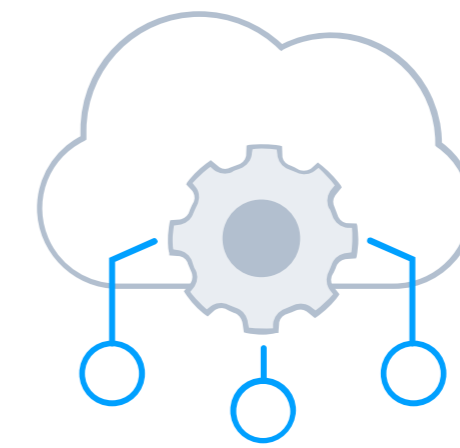
The popularity of data virtualization has resulted in the componentization of DV technology for integration with data-centric applications.



**Data Integration  
Tools**



**DBMS & Data  
Warehousing**



**iPaaS & Application  
Integration Platforms**

# A Path to Data Virtualization - SQL for APIs

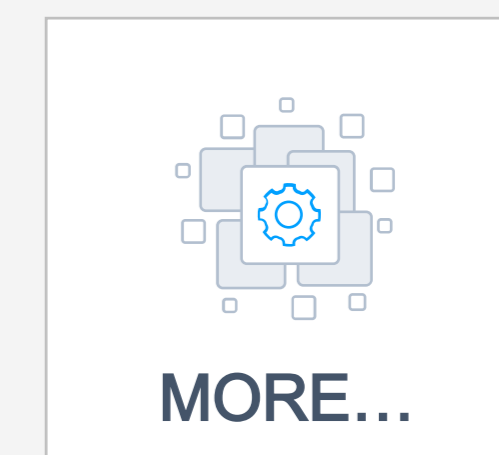
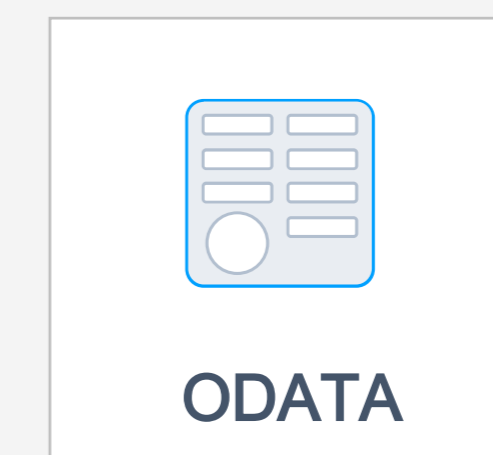
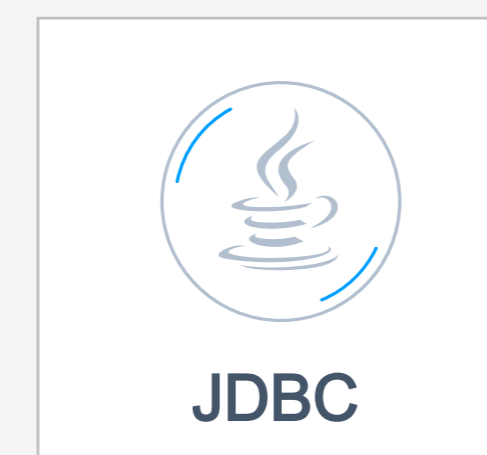
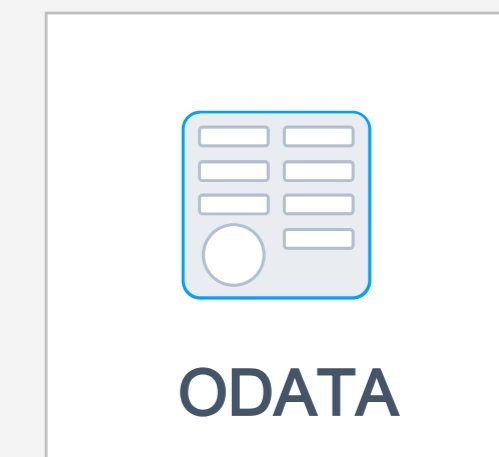
A SQL Abstraction layer on top of APIs

Real-time data access through SQL via standard driver technologies like ODBC, JDBC, & ADO.NET.

Designed for data-centric applications and operations.

An extension of typical API strategy.

- ✓ Real-time Data Connectivity Layer
- ✓ Caching & Query Optimization
- ✓ Data Transformation & Custom Views
- ✓ Metadata Discovery
- ✓ Data Consumption Layer
- ❑ *Query Federation*





# New CData Query Federation Engine

Embedded Data Virtualization Technology

1. 'Driver of Drivers' – Standard fully-embeddable form factors for ODBC, JDBC, ADO.NET etc.
2. SQL-92 based real-time data connectivity.
3. Full support for DV technologies including federated queries / joins across data sources, optimized query execution, caching, and more.

Data Virtualization Driver



# DEMO

CData Federated Query Driver

# Takeaways

- Virtualization technologies give users a consistent data interface regardless of where their data lives.
- With *Embedded Virtualization* :
  - Citizen analysts can easily augment the connectivity their existing data virtualization solution.
  - Developers and IT professionals can quickly build new data virtualization layers using a single data interface.

# Questions & Next Steps

CData Software – *See The World As A Database*

- Please ask questions through the chat panel
- Learn more: [cdata.com/queryfederation](https://cdata.com/queryfederation)



## Thank You For Joining the Session

How can I help?



**Jerod Johnson**  
jerodj@cdata.com