

# SQL Access To Your 4GL Application

BI, Reporting, and ETL Integration  
through DataDirect OpenAccess

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**BRAVEPOINT**

**PROGRESS  
EXCHANGE** 2013

DISCOVER. DEVELOP. DELIVER.

# Introduction

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## BI and Reporting Tools



## **PROGRESS** DataDirect **OpenAccess** Standards-based Connectivity

Standard ODBC, JDBC, ADO.NET and OLE DB interface for your application

Expose your data via 4GL/ABL business logic - no applications changes required



# What is OpenAccess for OpenEdge?

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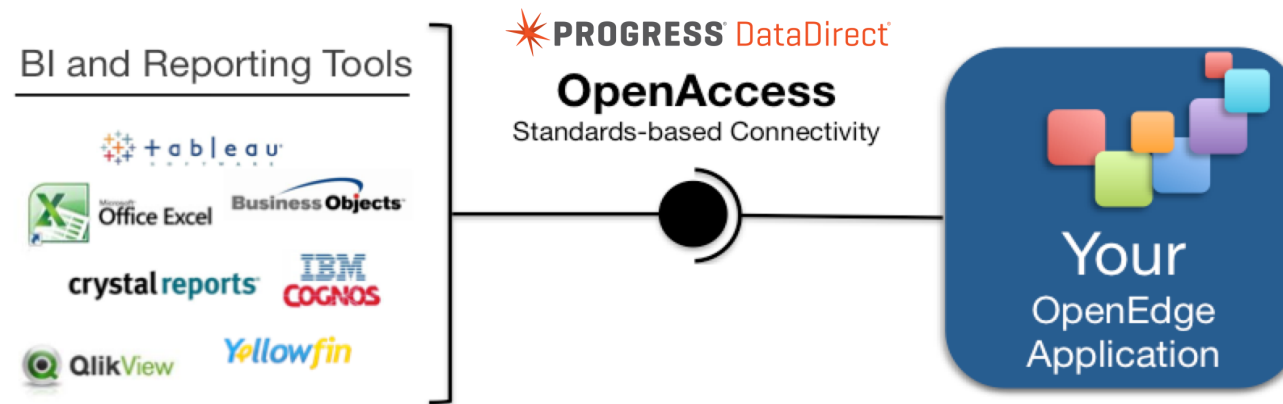
**OpenAccess is an SDK** that allows you to **build a standards-based SQL access layer to your application**

OpenAccess **connects your application with your favorite BI or reporting tool** through your business logic layer, not directly to your underlying database

By leveraging OpenAccess, OpenEdge applications can **expose their complex or multi-tenant data in a secure and reliable way** that is highly compatible with nearly all SQL-compatible tools, including most BI and reporting tools

# Focused on BI/Reporting and ETL Integration Use-Cases

## Expose an OpenEdge Application to BI/Reporting Tools



### Complex Schema Use-case

The application has a complex schema that is txn optimized, not for human analysis. A new logical, simplified schema can be exposed with OA

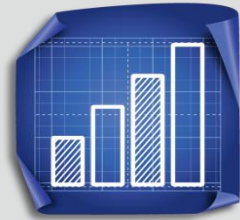
### SaaS Tenancy Use-case

If SaaS, the application may have a custom multi-tenancy implementation that would be compromised by providing direct SQL access to the database

# OpenAccess vs. Out-of-the-Box Driver

## Embedded OpenEdge Driver

BI Tool



Out-of-the-Box  
ODBC Driver

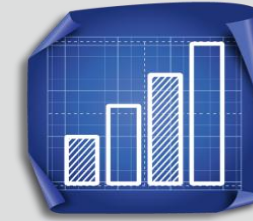


OpenEdge  
Database



## Custom OpenAccess Driver

BI Tool



Custom OpenAccess  
Driver



OpenEdge  
App Server

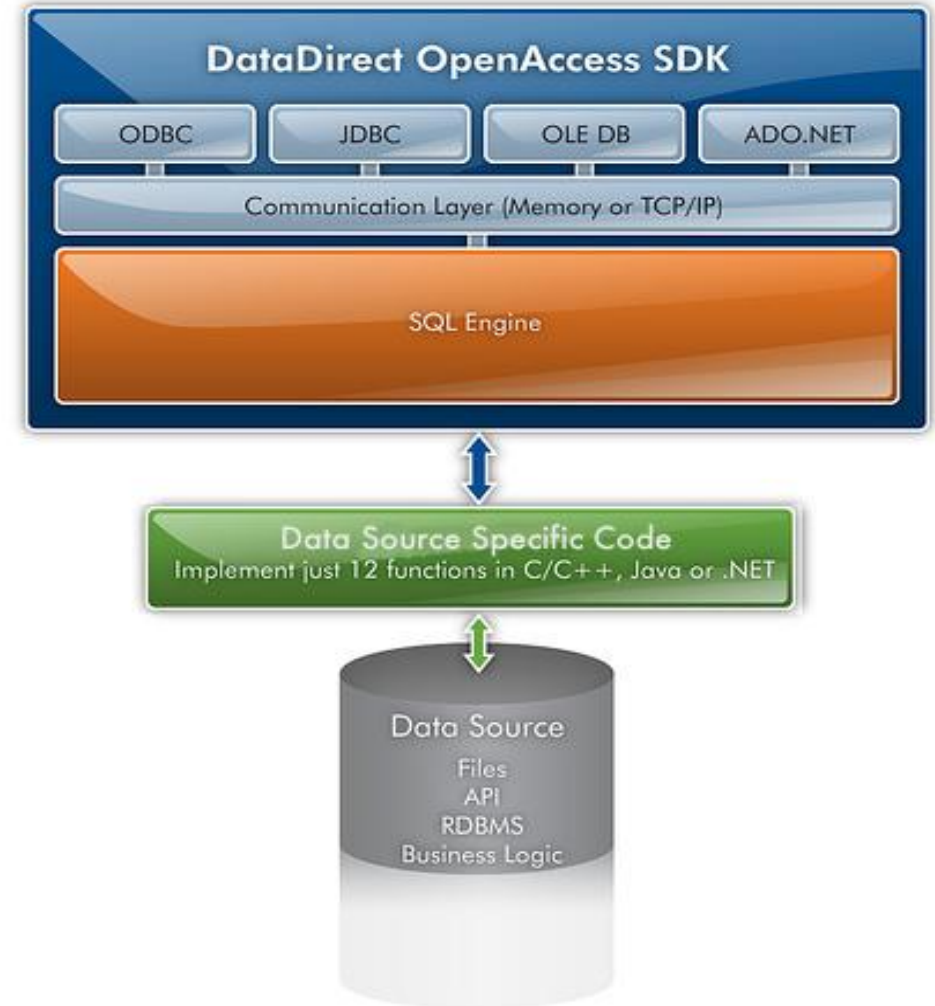


# What Must Be Added

OpenAccess SDK provides 95% of the code needed to open a database. You generate the 5% which resides between the SQL engine and your data store. This code processes the results generated by the SQL engine.

The 5% can be written in C, C++, Java or .NET.

It is the same code whether you are supporting ODBC, OLE DB, JDBC or .NET.



# Concerns You Might Have

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## Out-of-the-Box Driver

- Built by DataDirect, bundled in OE



## Existing BI Partner

- ISV could be embedding analytics



## Data Replication In Place

- Replication to SQL Server most common



## Lack of C++ or Java Skills

- Some ISVs are ABL only

Welcome Bravepoint

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# Agenda

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- What is the OpenAccess SDK?
- Use Case
- Benefits
- Components and Architecture
- Demo

# OpenAccess SDK

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Build a custom SQL driver for your application that connects to your ABL, **not directly to your database,** powered by the OpenAccess SDK.



# Use Case

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- Solution is a developer tool
- Allow an OpenEdge development organization to offer an optimized reporting engine for their customers
- OpenAccess SDK allows the delivery of an optimized OE temp table or result set as a JDBC data source to the target reporting client.

# Our Story

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# OpenAccess SDK Benefits

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## **JDBC Drivers typically connect directly to the data source**

- May result in poor performance due to large network traffic
- Causes heavy lifting by client

## **OpenAccess SDK provides connectivity to the business logic layer aka Application Server**

- This allows for serious data transformations
- Record reading optimization
- Sophisticated transactional logic

# OpenAccess SDK Benefits

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- Supports bi-directional data movement
  - Not Just a Query Tool
- **INSERT, UPDATE, DELETE, COMMIT (CRUD)**

# \*OpenAccess Components

## Open Access SDK Client:

JDBC, ODBC, ADO, .Net Communicate (TCP) SDK Server

## OpenAccess SDK Server:

Provide a service interface into the SQL Engine

## SQL Engine:

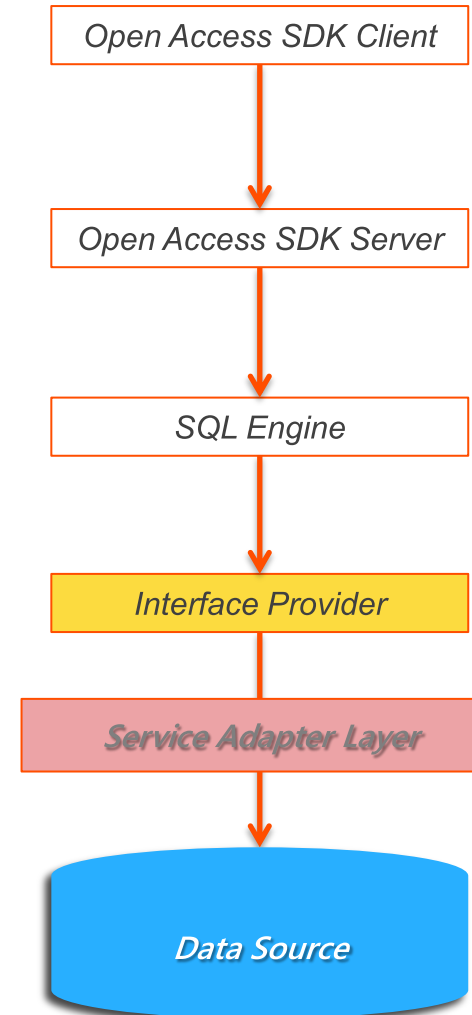
Parse SQL Statements and provides the API for the Interface Provider to access SQL Statement components

## Interface Provider (IP):

Utilizes the provided SQL API to access a application specific data source API.

Java, C, C++, or .NET

**Must be developed\*\*\***

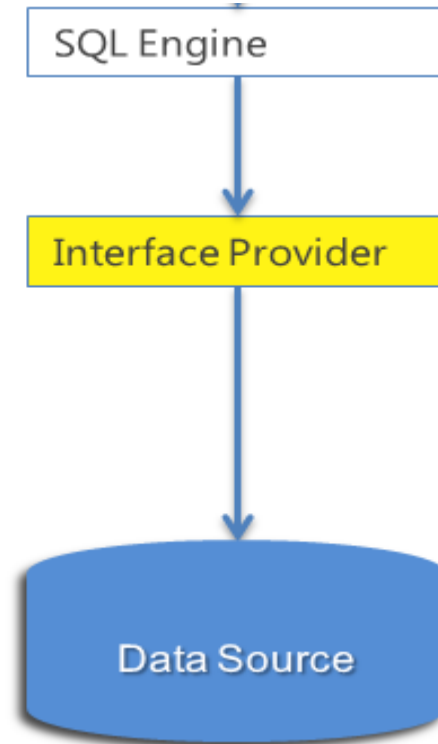


# Interface Provider API

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## Interface Provider implements:

- SQL Engine API
- Data Source Specific API





# SQL Engine API

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## API Packaged in the form of function calls

Function	Description
SCHEMA	Called to retrieve the schema information of your data source (only required if the IP will handle the schema management).
INIT	Called at startup of the OpenAccess SDK SQL engine to initialize the IP.
GETINFO	Gets information about driver specific settings.
CONNECT	Called when a client wants to establish a connection with a data source that is served by the IP. Authentication information is handled at this point.

# SQL Engine API

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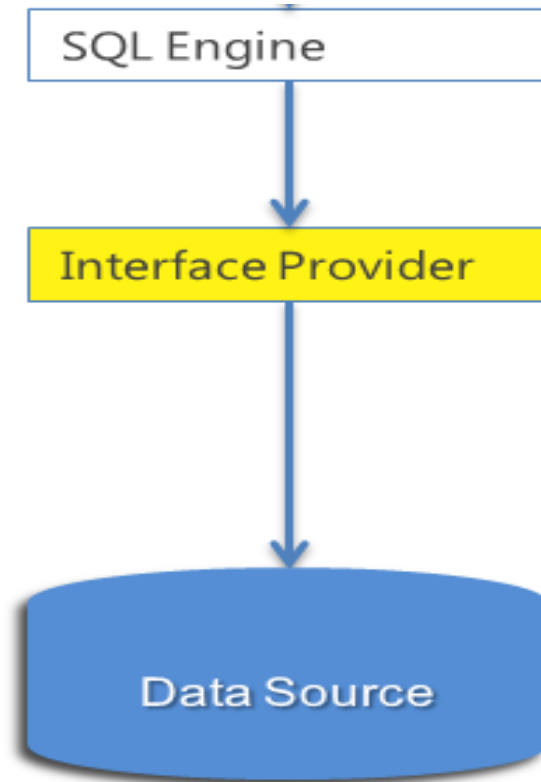
Function	Description
EXECUTE	Called with INSERT, SELECT, UPDATE or DELETE operation code to perform the requested operation.
START TRANSACTION	Called to initiate a new transaction. The IP can use this entry point to perform transaction management for each connection.
END TRANSACTION	Called with operation code COMMIT, ROLLBACK or PREPARE_TO_COMMIT.
DISCONNECT	Closes the connection. The IP should close any files or other connections established on behalf of this connection.
EXIT	Called when the OpenAccess SDK SQL engine is shutting down.

# Interface Provider Considerations

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## Schema Exposure

- **Static Schema Mode:** Uses the OpenSDK Schema Database. This will be done through the use of a DLL or INSERT Statements to define the schema.
- **Dynamic Schema Mode:** Interface Procedure must implement a method for the SCHEMA Function.

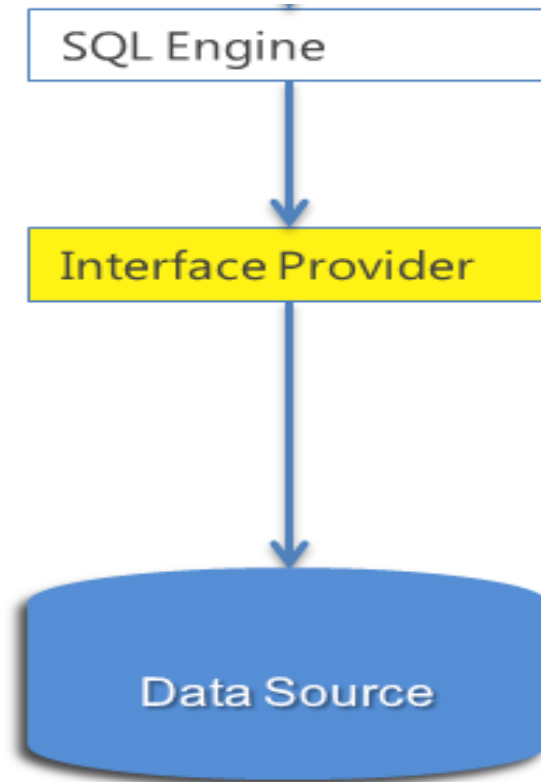


# Interface Provider Considerations

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## Data Source Command level will support

- **Row Based Mode:** SQL Engine performs all parsing, joining, schema validations, and nesting. IP is responsible for simple row based operations.
- **SQL Pass-thru Mode:** SQL Engine parses the SQL Statement and validates it then hands the entire SQL Statement to the IP for further processing.

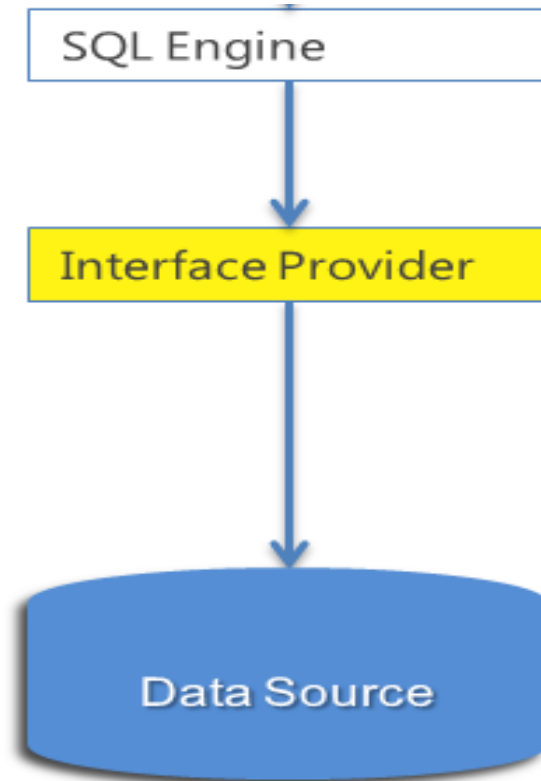


# Interface Provider Considerations

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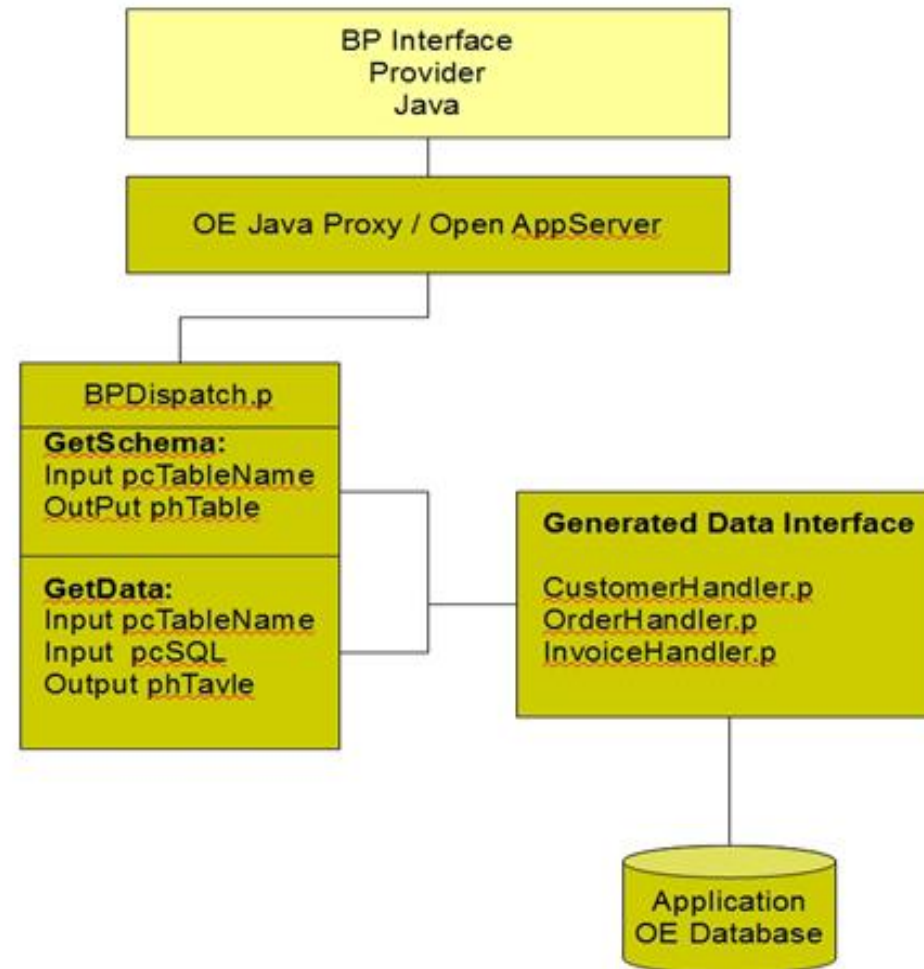
## Determine the functionality the IP will support:

- What SQL Functions will be supported. SELECT, INSERT, UPDATE, DELETE
- Implement the GETSUPPORT Function to allow the SQL Engine to determine what SQL functions are supported.



# Service Adapter Overview

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OpenAccess DEMO

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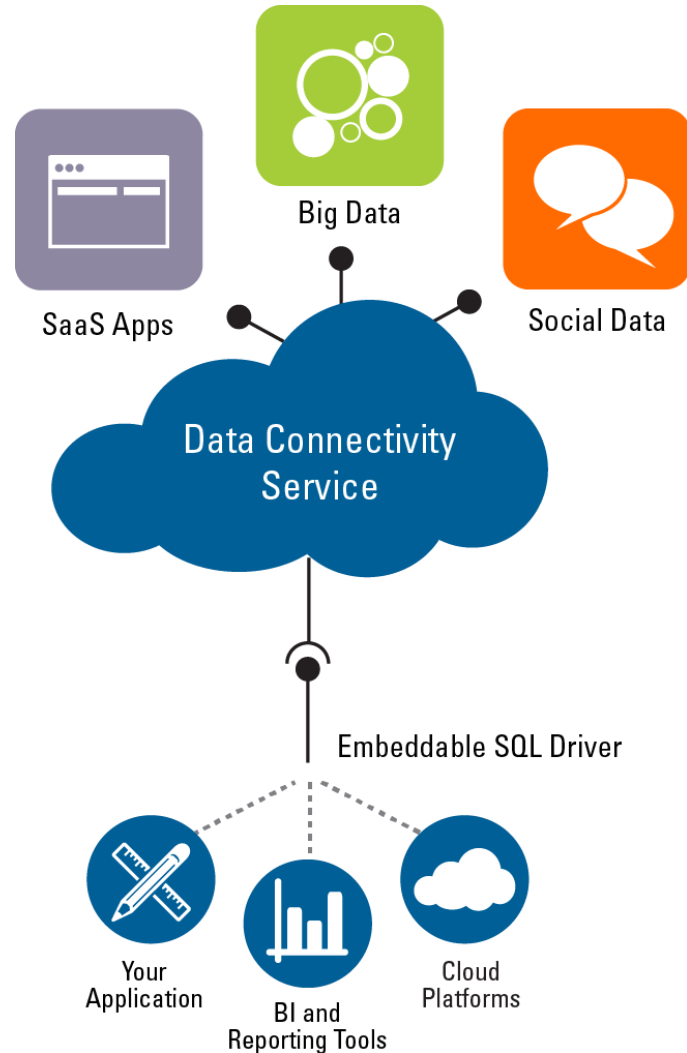
One More Thing...

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# Progress DataDirect Cloud Can Bring Awareness to OpenEdge ISV Applications



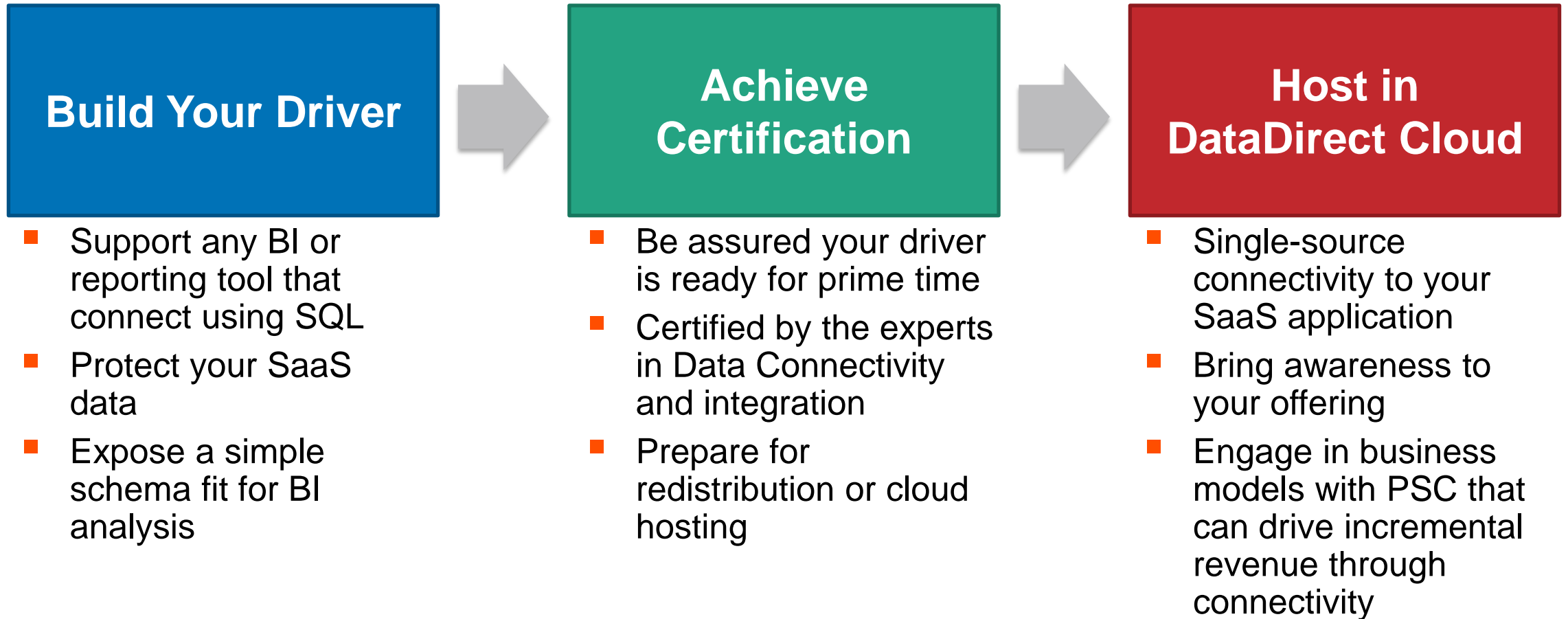
DataDirect Cloud allows your application or your preferred BI tool to **easily connect to SaaS, BigData, and Social data.**

Its **standards-based SQL interface** works with any ODBC or JDBC compatible application.

One interface for unlimited data sources

# A Roadmap of Connectivity for ISVs

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# Resources

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## **Open Access Landing Page**

<http://www.datadirect.com/resources/open-access.html>

## **Solution Brief on OA for OE**

[https://myprogress.progress.com/departments/gfo/Brochures/Solution%20Brief%20-%20OpenAccess%20for%20OpenEdge%20-%20June%2020%202013%20\(2\).pdf](https://myprogress.progress.com/departments/gfo/Brochures/Solution%20Brief%20-%20OpenAccess%20for%20OpenEdge%20-%20June%2020%202013%20(2).pdf)

## **Progress Software Use Case**

<http://www.datadirect.com/products/custom-driver-sdk/universal-access-use-cases/progress-app.html>

## **Case study: Netsuite**

<http://www.datadirect.com/case-study/netsuite.html>

## **Data sheet**

<https://myprogress.progress.com/departments/gfo/Data%20Sheets/DS-openAccess-sdk.pdf>



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