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Introducing the On-Premises Data Connector for OpenEdge

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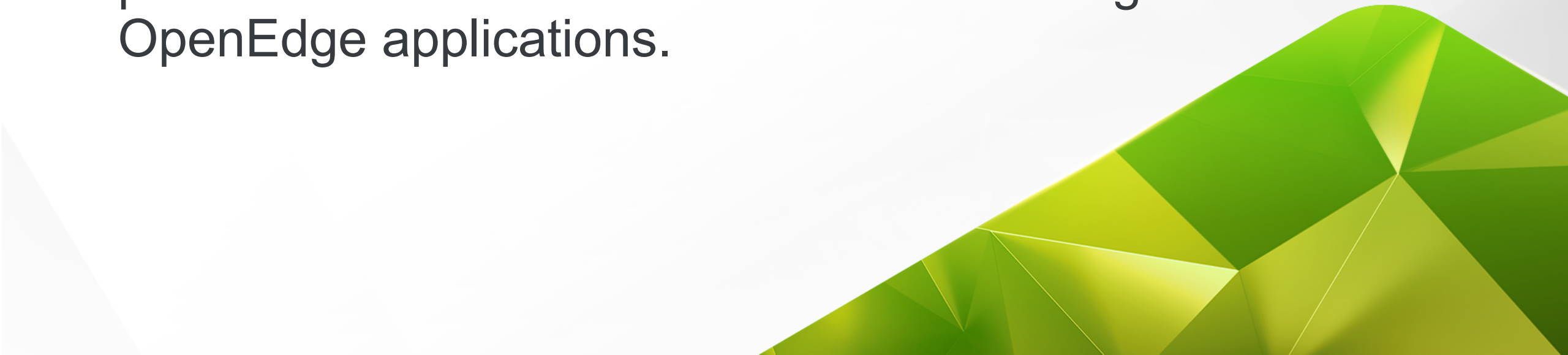
Learn how to leverage Progress' Hybrid Data connectivity services to explore the potential for cloud architectures with existing OpenEdge applications.



Agenda

- Rise of the Hybrid Cloud
- Hybrid Data Pipeline
- OpenEdge Use Cases
- ODBC-ABL Bridge
- Demonstration

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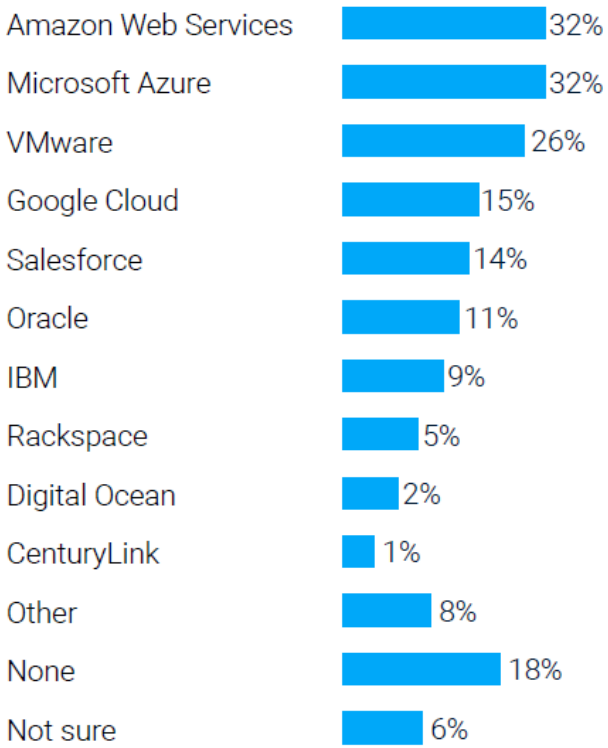
Rise of the Hybrid Cloud

What is it?

Expanding Cloud Infrastructure

(Source: 2017 Data Connectivity Outlook Survey of 1200 participants)

Which cloud infrastructure do you or your customers currently use?



More and more organizations are adopting on-demand clouds to help their businesses scale and grow. For organizations with large investments in on-premises systems, hybrid connectivity is a necessary part of cloud adoption.

To help you deploy hybrid connectivity on cloud computing platforms such as AWS, Azure, VMware and Google Cloud, see our cloud and hybrid tutorials.

Other popular responses

Linode

Pironet

Redhat OpenShift

OpenStack

Cloud Share

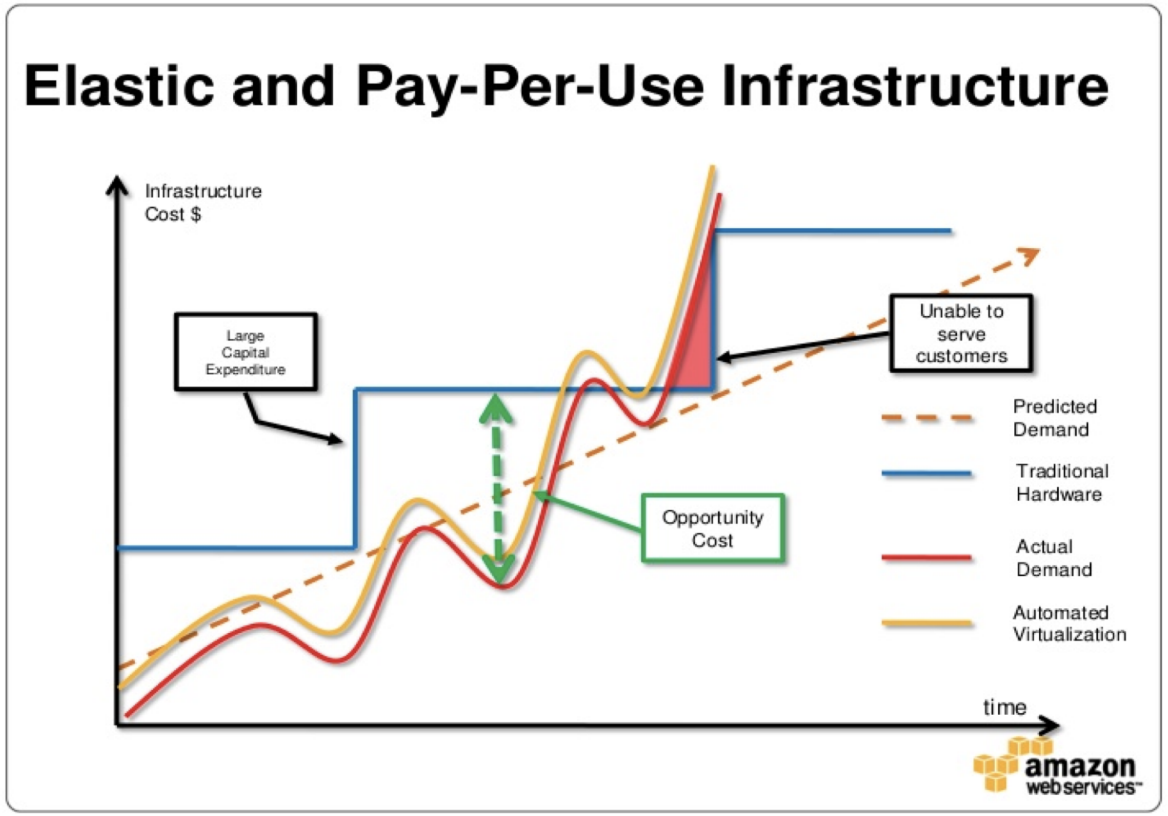
Thomson Reuters Elektron

SAP HANA

Claro Cloud

That Rise Brings new Cost Benefits

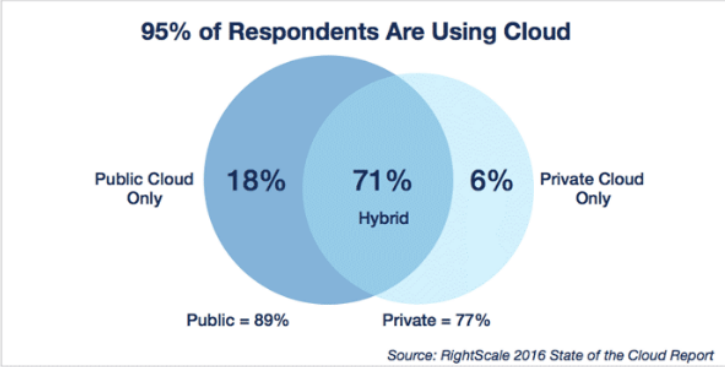
- Scalability when compared to on-premises solutions
- Reduce operating and maintenance costs (OpEx)
- Reduce CapEx – pay as you go.

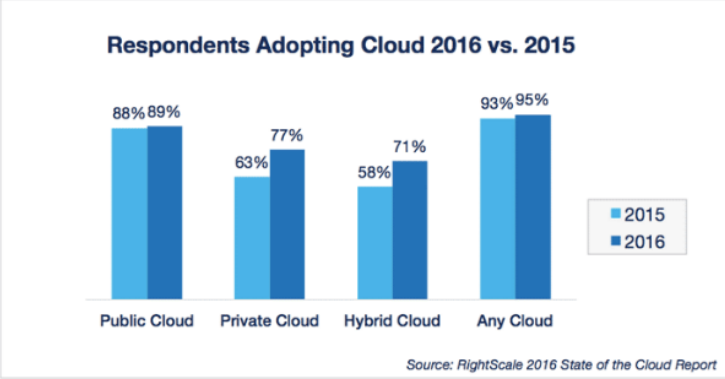


Rise of Hybrid Clouds

Significant Growth in Hybrid Cloud Adoption

In the twelve months since the last State of the Cloud Survey, we've seen strong growth in hybrid cloud adoption as public cloud users added private cloud resource pools. 77 percent of respondents are now adopting private cloud up from 63 percent last year. As a result, use of hybrid cloud environments has grown to 71 percent. In total, 95 percent of respondents are now using cloud up from 93 percent in 2015.

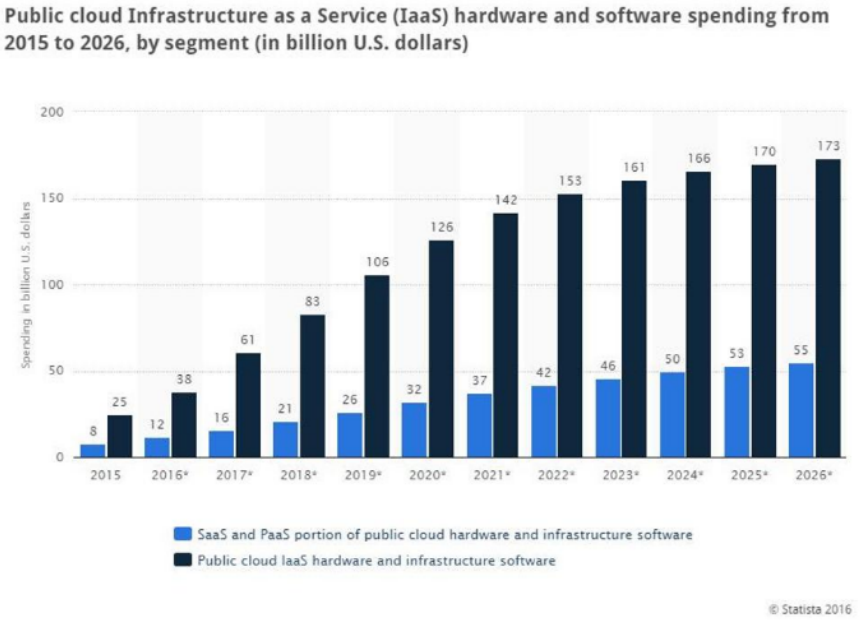




http://www.rightscale.com/blog/cloud-industry-insights/cloud-computing-trends-2016-state-cloud-survey#hybridcloudadoption

Additional key takeaways from the roundup include the following:

- **In 2016, spending on public cloud Infrastructure as a Service hardware and software is forecast to reach $38B, growing to $173B in 2026.** SaaS and PaaS portion of cloud hardware and infrastructure software spending are projected to reach $12B in 2016, growing to $55B in 2026. The following graphic provides an overview of spending on public cloud infrastructure worldwide from 2015 to 2026.

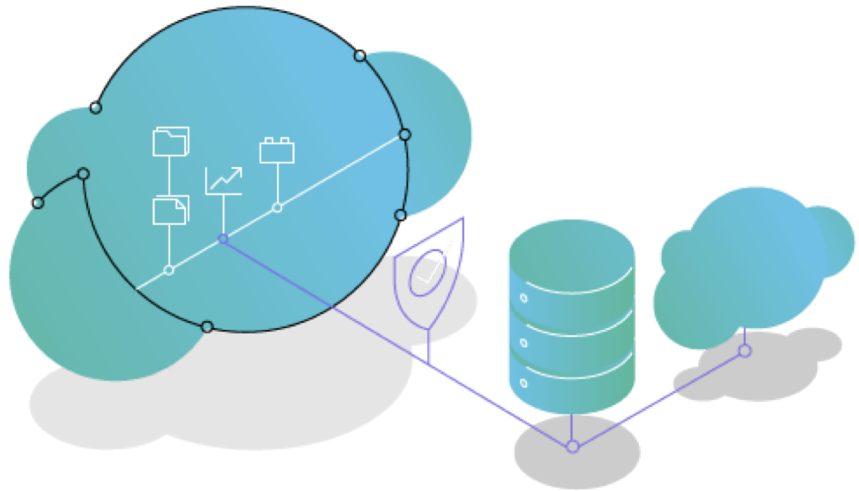


Source: Statistica: Public cloud Infrastructure as a Service (IaaS) hardware and software spending from 2015 to 2026, by segment (in billion U.S. dollars).

http://www.forbes.com/sites/louiscolumbus/2016/03/13/roundup-of-cloud-computing-forecasts-and-market-estimates-2016/#5b5f61a974b0

That Rise Brings new Capabilities

- Meet policy and regulatory security requirements
  - HIPAA
  - Data Privacy
  - PCI DSS
  - SOX
  - GDPR



- Elastic capacity
- Rapid delivery of apps and microservices architectures
- Simplified testing and adoption of the newest technologies (i.e. Machine Learning, Big Data, Virtual Reality, etc)

That Rise Signals the Demise of Secure and Easy Access to Data

Locked behind other clouds

salesforce

ORACLE MARKETING CLOUD

Google Analytics

Progress OpenEdge

Locked behind the firewall

Microsoft SQL Server

Progress OpenEdge

ORACLE

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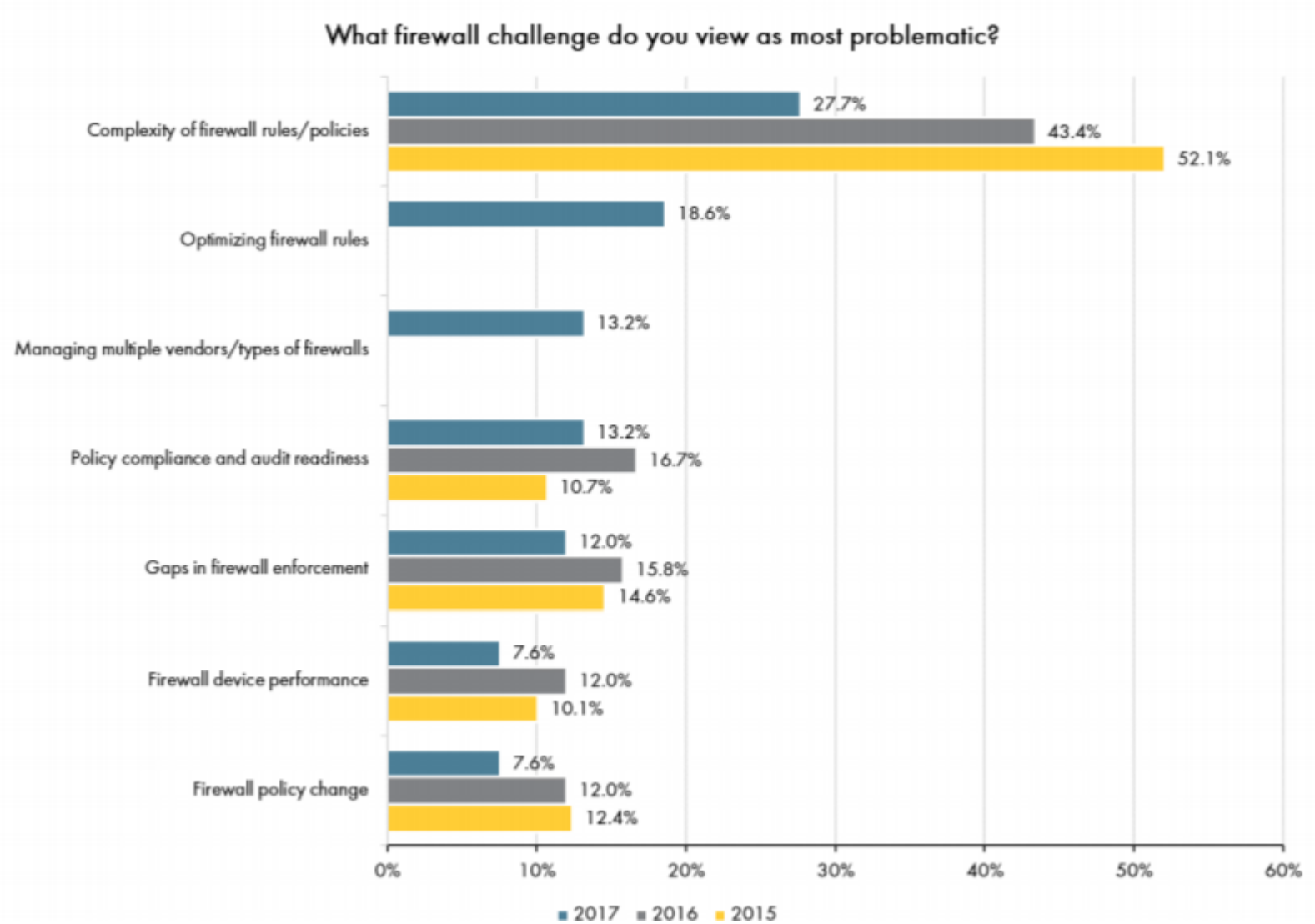
Firewall Friendly Access

Firewall Becoming Barrier for Hybrid Data Adoption



REPORT HIGHLIGHTS

9 of 10

IT PRACTITIONERS BELIEVE THE FIREWALL WILL REMAIN CRITICAL OVER THE NEXT 5 YEARS

COMPLEXITY

IS THE #1 RANKED CHALLENGE FOR FIREWALL MANAGEMENT

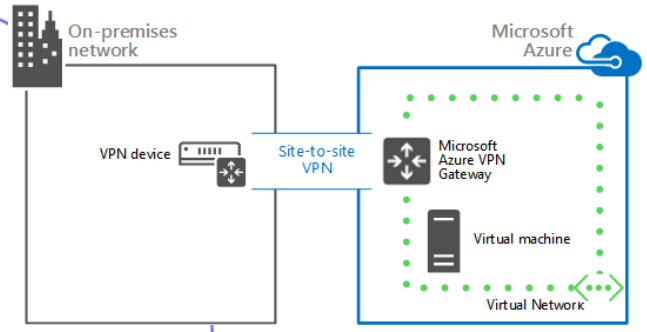
90%

HAVE ADOPTED A CLOUD SOLUTION

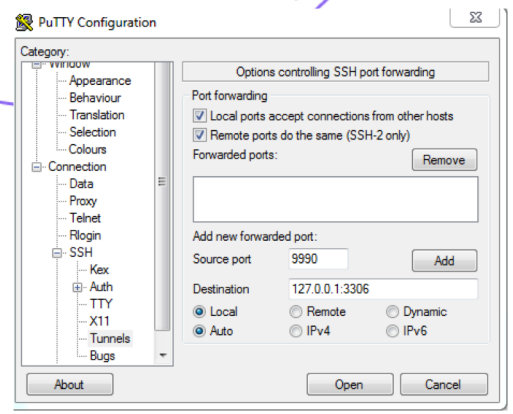
Source: The 2017 State of the Firewall" produced by Firemon

For Data Behind a Firewall, there is no Common Access Approach for Clouds

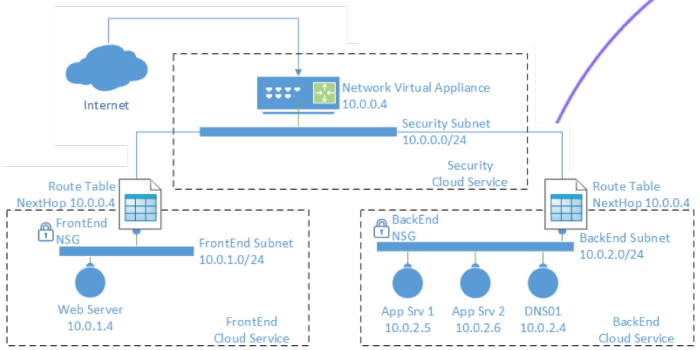
1. Network Based VPN

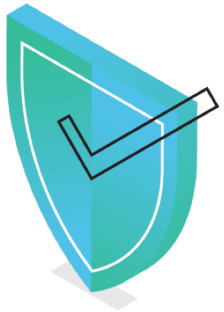


2. SSH Tunneling



3. Reverse Proxy Servers





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DataDirect Hybrid Data Pipeline


Just give them the data…

Hybrid Connectivity
Connectivity needs for the new hybrid world

- *Simplify the way applications connect to important business data behind the firewall*
- *Open up database in cloud for open analytics*
- *VPN configuration requires IT involvement, delaying sales cycles for our partners*
- *Ease the burden on developers by providing a single API to all the data they need to access*

Core Use Cases for HDP

Open Analytics

Open up database in the cloud to external users

Cloud to On-Premises Data Access

Real-time pipe from cloud to on–premises data asset

What is the DataDirect Hybrid Data Pipeline?

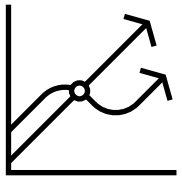
- The Data Pipeline is a lightweight data access service that provides simple, secure access to cloud and on-premises data sources, such as RDBMS, Big Data, and NoSQL.

- Business intelligence tools and applications can use a single API (ODBC, JDBC, or OData) to access any of the data sources available in the Data Pipeline.

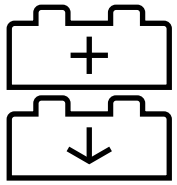
- Flexibility and control are built-in. Users can:
  - Install the Data Pipeline in their own environment, whether it is a private cloud, 3rd party cloud or behind their own firewall.
  - Configure the Data Pipeline to work with the data sources and applications in their specific business environment.
  - Manage their own security.
  - Enable their own data sources for OData in their own cloud.

Security and Control

Limit direct access to your DB

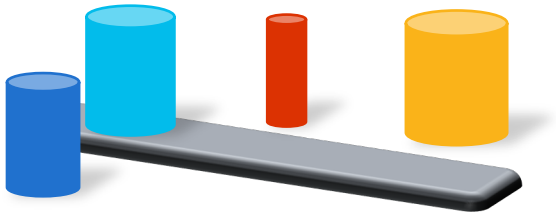


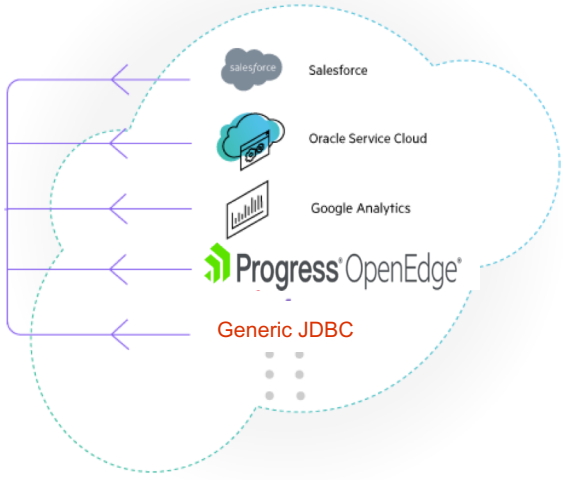
Throttling and Caching can help protect against resource monopolization



Decoupling code from the database makes future transitions easier

What are the pieces of the Hybrid Data Pipeline?





Client Libraries

ODBC driver
JDBC driver

OData endpoint
(nothing to embed… just a URL)

HDP Server

Single or multi-server, App-Server deployment

Built-In Connectors

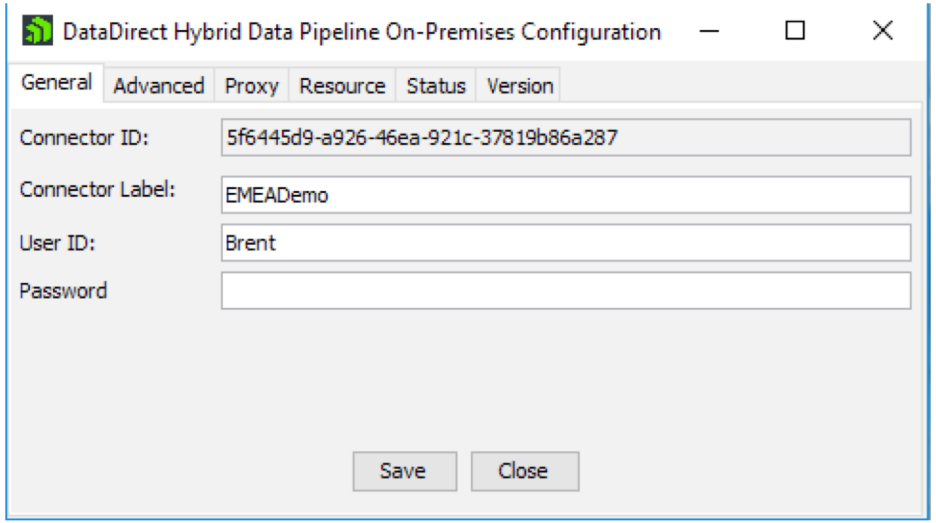
All DataDirect JDBC drivers shipped in the box (Over 20)

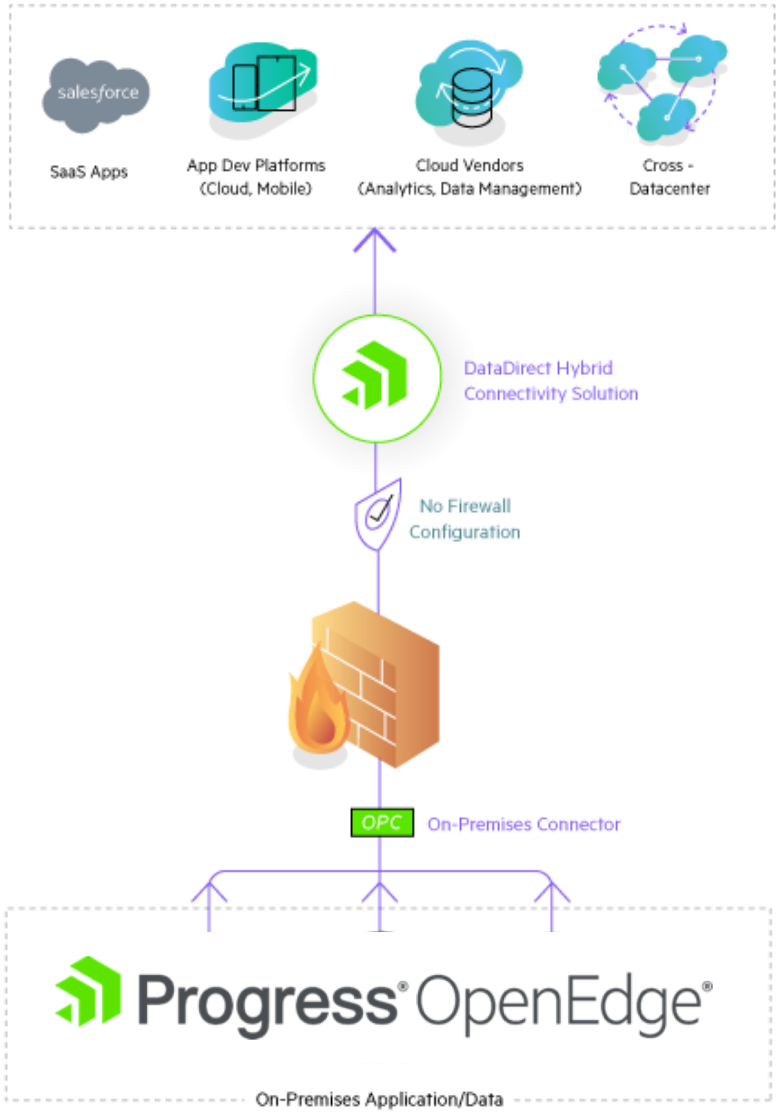
On-Premises Connector

Installs in or near the data center to provide secure access up to the cloud

Patented On-Premises Connector

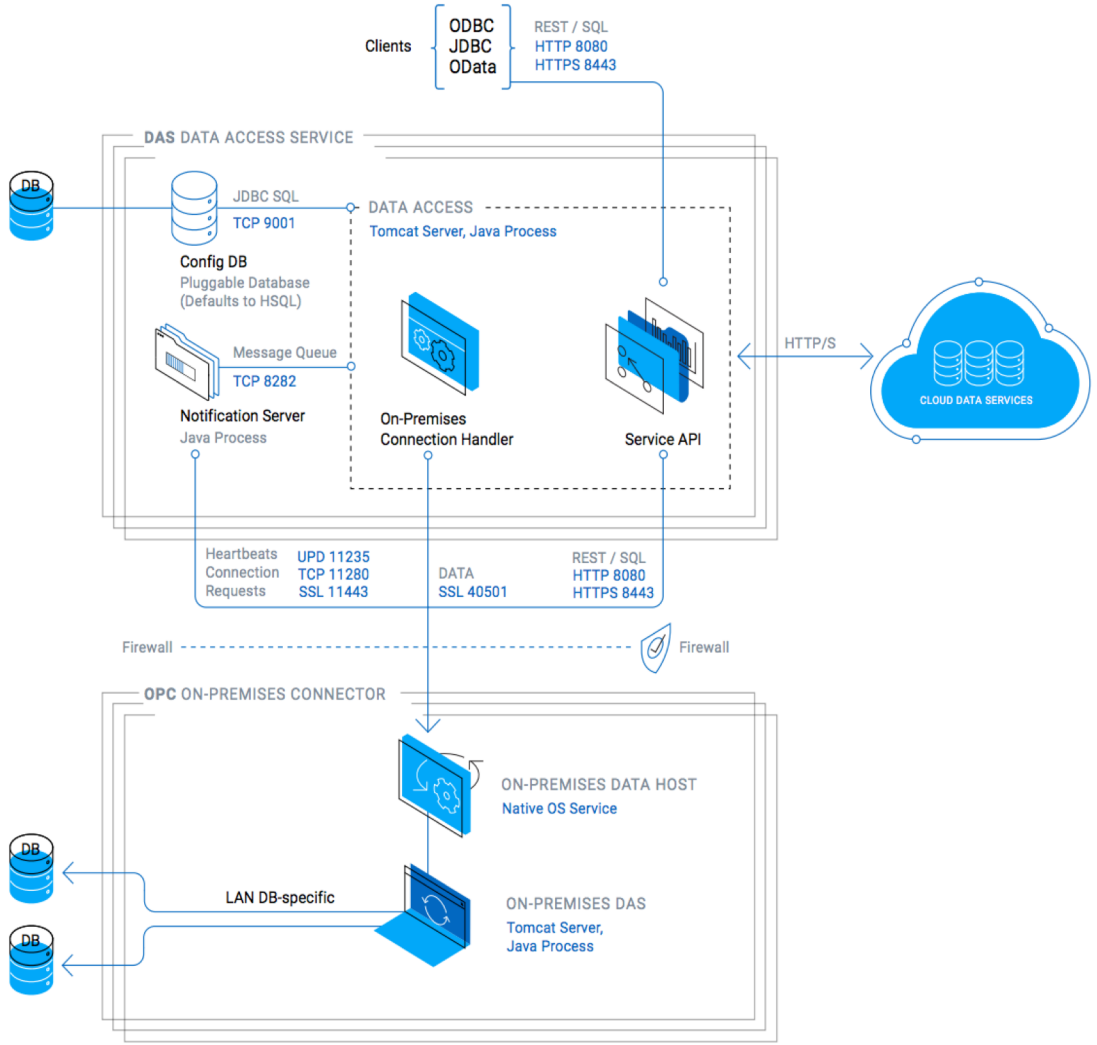
(Only required when accessing data behind a firewall)





- Firewall friendly and secure connection without network configuration or requirement to open any ports
- Simple Configuration in minutes
- Utilizes outbound SSL only

Access Data Directly Over SQL or REST From the Cloud



All data is encrypted in transit and data is not persisted in the pipeline

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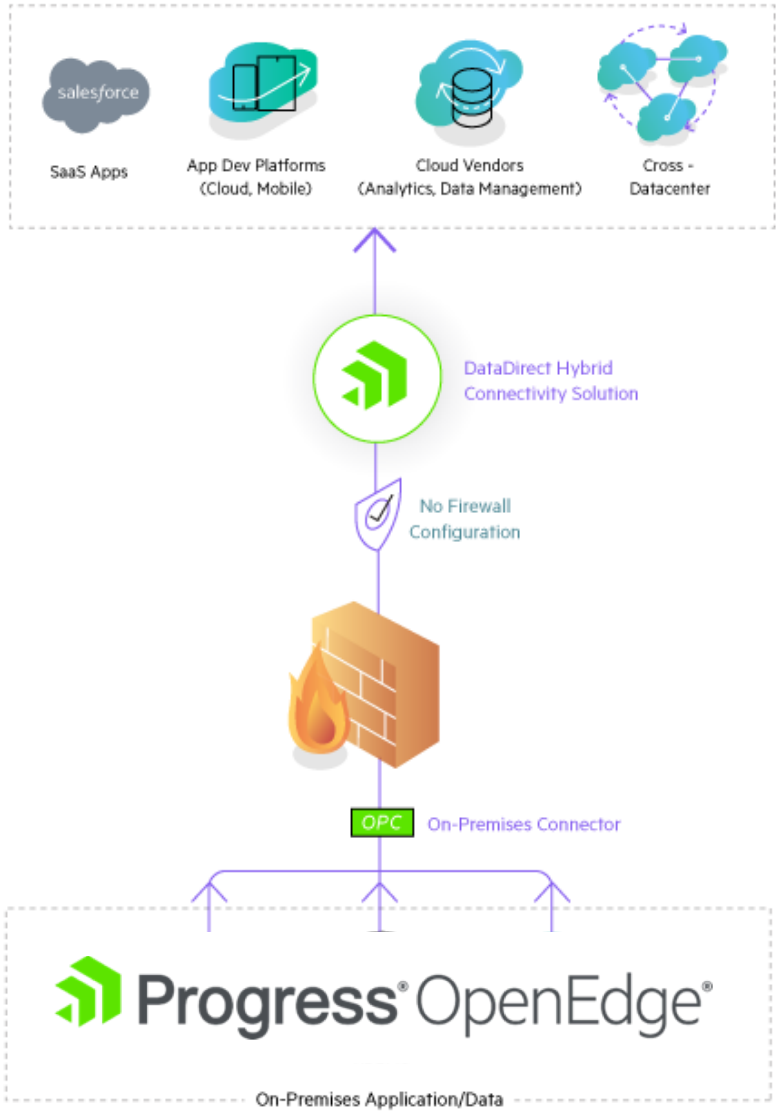
Hybrid Connectivity Needs of OpenEdge

OpenEdge in the Cloud

- **OpenEdge in the Cloud**
  - Local SQL Server-based WMS
  - Local BI Tool (PowerBI, Tableau, Excel)
- **OpenEdge On-Premises**
  - Cloud WMS
  - Cloud BI Tool
- **OpenEdge Cloud to Cloud Integration**



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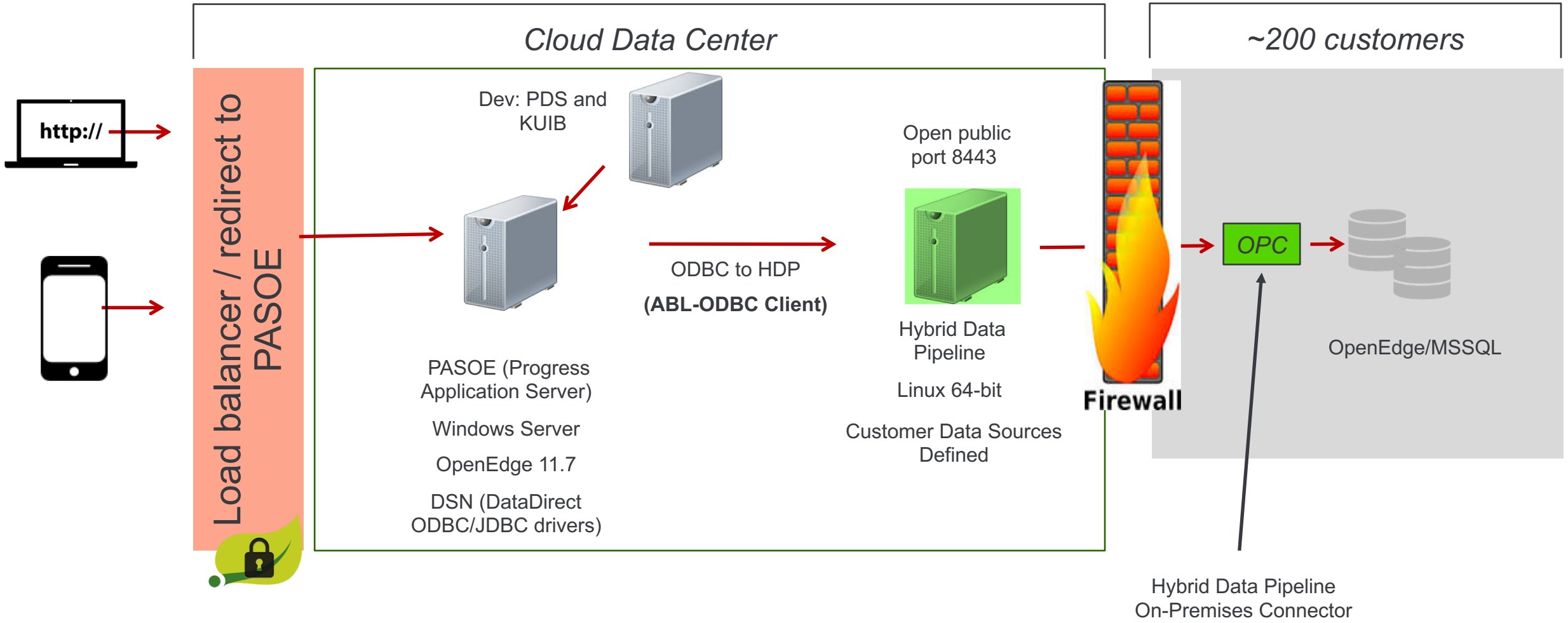
Demo 1: Making the ABL-ODBC Connection

Hosted OE + HDP Architecture



- Public IP address for login using Web/Mobile UI's

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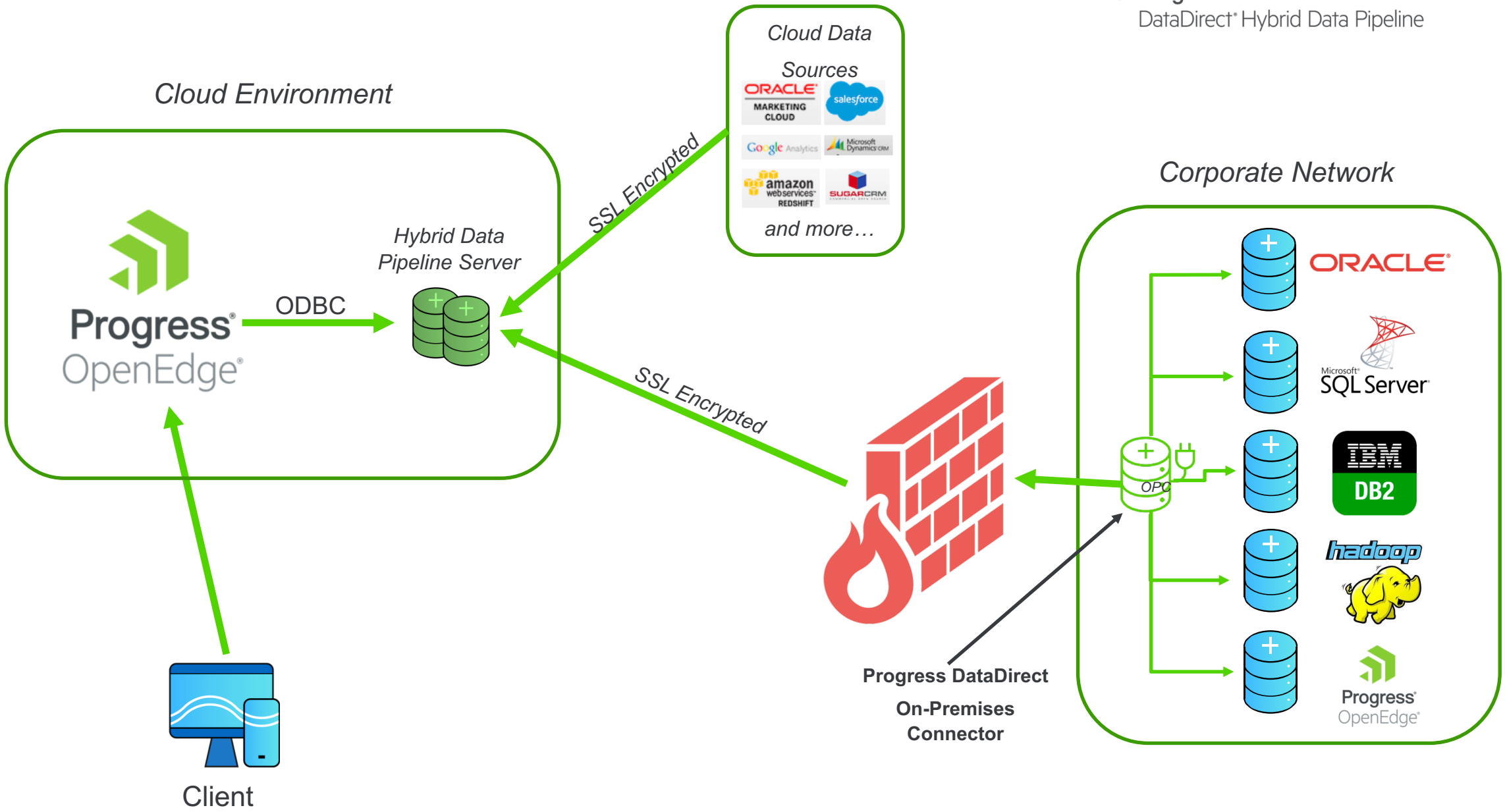
DataDirect® Hybrid Data Pipeline



ODBC – ABL Bridge

Sample Code Available on Github

https://github.com/PeterJudge-PSC/abl_odbc_api

```
define variable sqlOdbcConn as ODBCConnection no-undo.
define variable sfdcOdbcConn as ODBCConnection no-undo.
define variable cStmt as character no-undo.
define variable oResultSet as JsonObject no-undo.
define variable hResultSet as handle no-undo.
define variable oConfig as JsonObject no-undo.

/* Load connection info: DSN & credentials from JSON file  */
oConfig = cast(new ObjectModelParser():ParseFile('conf/mssql.json'), JsonObject).
sqlOdbcConn = new ODBCConnection(oConfig).
sqlOdbcConn:Initialize().

/* Retrieve MS SQL Server data source schema from HDP */
oResultSet = sqlOdbcConn:GetTables(true).
oResultSet:WriteFile('tests/results/conf_schema.json', true).

/* Execute a SQL SELECT statement and get the result set as an ABL temp-table */
cStmt = " select * from Chinook.dbo.Album ".
sqlOdbcConn:ExecuteStatement(cStmt, output table-handle hResultSet).
hResultSet:write-json('file', 'tests/results/sqlAlbumsDataFromResultSet.json', true).

/* Connect to HDP SFDC data source */
oConfig = cast(new ObjectModelParser():ParseFile('conf/sfdc.json'), JsonObject).
sfdcOdbcConn = new ODBCConnection(oConfig).
sfdcOdbcConn:Initialize().

/* Execute a SQL SELECT statement and get the result set as an existing ABL temp-table */
define temp-table ttAccount no-undo
    field AccountNumber             as      CHARACTER
    field Sys_Name                  as      CHARACTER
    field AnnualRevenue             as      DECIMAL
    field NumberOfEmployees         as      INTEGER
    field Description               as      CHARACTER
    index acNumIdx AccountNumber.

/* Execute a SQL SELECT statement and get the result set as an existing ABL temp-table */
cStmt = "select ACCOUNTNUMBER, SYS_NAME, ANNUALREVENUE, NUMBEROFEMPLOYEES, DESCRIPTION from SFORCE.ACCOUNT ".
sfdcOdbcConn:ExecuteStatement(cStmt, input buffer ttAccount:handle).
buffer ttAccount:WRITE-XML ('file', 'tests/results/sfdcAccountInfoFromTT.xml', true).
```

Load DSN & Credentials

Get MS SQL Schema from HDP

Execute SQL SELECT and write to ABL temp table

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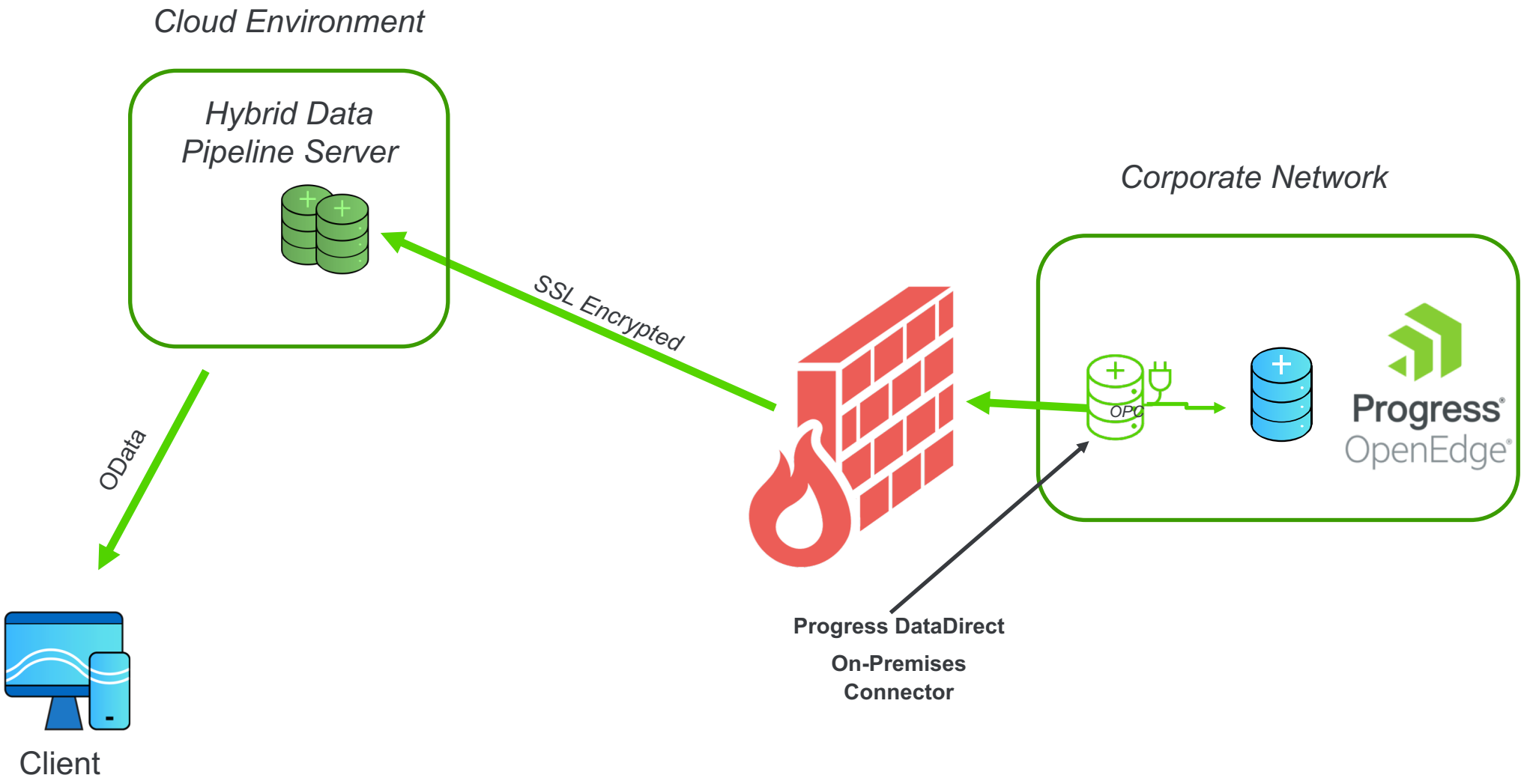
Demo 2:
BI Tool to OpenEdge via OData



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Demonstration

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Questions

Thank You!

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