

Progress DataDirect Hybrid Data Pipeline

DATA SHEET

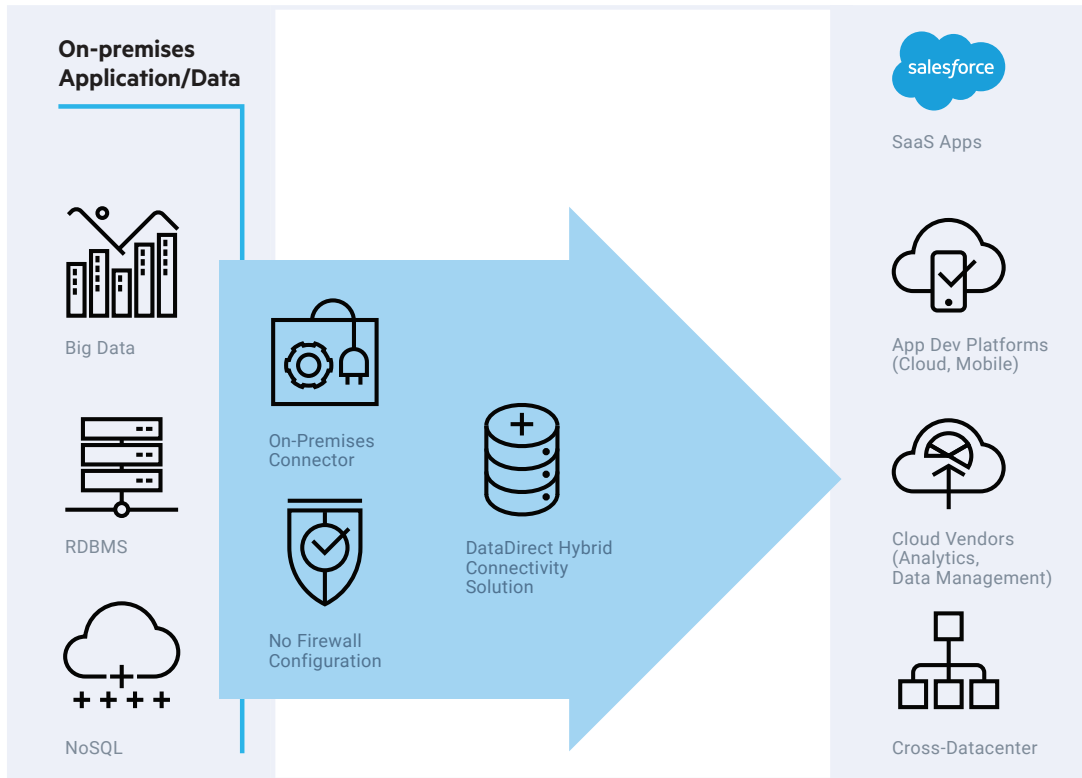
Today, software application vendors offering solutions in the cloud face two big challenges:

- Supporting hybrid environments, in which the application runs in the cloud but needs data from on-premises data sources
- Keeping up with the ever changing array of on-premises and cloud data sources that your application must access

Progress® DataDirect® Hybrid Data Pipeline is a lightweight software service designed to be embedded in a cloud application to allow the application to access data from data sources that are in the cloud or on-premises. Your application can use a single API—ODBC, JDBC, or OData—to access any of the data source types we support, including cloud, SQL, Big Data and NoSQL.

Key Features

- Real-time access to on-premises data sources from the cloud—connect to SQL, NoSQL, or Big Data residing behind a firewall in an enterprise
- Real-time access to cloud data sources—connect to SaaS, SQL, NoSQL and Big Data sources that are deployed in the cloud
- Single API for any data source—use ODBC, JDBC, or OData to access all supported cloud and on-premises data sources
- Works with most cloud infrastructures—deploy in the environment you are running your cloud application
- No need to alter the network perimeter—connect from cloud to on-premises data sources in a secure fashion without requiring a VPN gateway or firewall changes to allow inbound traffic



Hybrid Data Pipeline consists of four major components:

- **Server:** the component an application interfaces to access data and manage data sources. It is deployed close to the consuming application and can be on the same machine or on its own machine within the same cloud. It exposes ODBC, JDBC, OData and REST APIs
- **On-Premises Connector:** the component that is installed remotely, typically behind a firewall. It provides the services to securely access data from on-premises data stores residing behind a firewall from the cloud. This module securely connects to the Hybrid Data Pipeline Server without requiring firewall configuration changes using HTTPS.
- **ODBC 3.8 Compatible Client:** the ODBC driver that allows applications to use ODBC API to connect to the Hybrid Data Pipeline Server to execute SQL queries. A single driver allows access to all data source types supported by Hybrid Data Pipeline. Connection between the driver and Server is supported using HTTP or HTTPS. Client is developed against the DataDirect ODBC framework to ensure compatibility with popular applications.

- **JDBC 4.0 Compatible Client:** the JDBC driver that allows applications to use JDBC API to connect to the Hybrid Data Pipeline Server to execute SQL queries. A single driver allows access to all data source types supported by Hybrid Data Pipeline. Connection between the driver and Server is supported using HTTP or HTTPS. Client is developed against DataDirect JDBC framework to ensure compatibility with popular applications and frameworks.

Data Source Support

Hybrid Data Pipeline supports access to both cloud data sources and on-premises data sources. Cloud data sources are accessed directly from the Data Access Services (DAS). An application connects to DAS, and the DAS establishes a connection to the cloud data source using the data sources wire protocol. On-premises data sources are accessed through the Hybrid Data Pipeline on-premises connector that is running on a remote machine that can be behind a firewall. A request from the application is routed to the corresponding on-premises connector for execution against a data source that is accessible from the on-premises connector.

Supported Data Sources

The following data sources can be accessed using the Hybrid Data Pipeline Server in conjunction with the on-premises connector through one of the supported APIs—ODBC, JDBC and OData. In this configuration, actual access to the data source listed below is performed from the on-premises connector.

Amazon Redshift
Apache Hadoop Hive 0.8.0 and higher
Amazon EMR 2.1.4 and higher
Cloudera CDH update 4 and higher
Hortonworks 1.3 and higher
IBM BigInsights 3.0 and higher
MapR 1.2 and higher
Pivotal HD 2.0.1 and higher
DB2 V9.1, V9.5, V9.7, 9.8 for Linux, UNIX, Windows
DB2 V8.x for Linux, UNIX, Windows
DB2 11 for z/OS*
DB2 V10 for z/OS
DB2 V9.1 for z/OS
DB2 UDB V8.1 for z/OS
DB2 I 7.1, 7.2* (DB2 UDB V7R1, V7R2 for iSeries)
DB2 I 6.1 (DB2 UDB V6R1 for iSeries)

DB2 for I 5/OS (DB2 UDB V5R4 for iSeries)
Google Analytics
Greenplum 4, 4.1, 4.2, 4.3
Greenplum 3.3
Informix Dynamic Server 12.1*
Informix Dynamic Server 11.0, 11.5, 11.7
Informix Dynamic Server 10.0
Informix Dynamic Server 9.2, 9.3, 9.4
Microsoft Dynamics CRM 2011 Rollup 16, 2013, 2015
Microsoft Windows Azure SQL Database Version 11.0 and higher
Microsoft SQL Server 2014*
Microsoft SQL Server 2012
Microsoft SQL Server 2008 R1, R2
Microsoft SQL Server 2005
Microsoft SQL Server 2000 Desktop Engine (MSDE 2000)
Microsoft SQL Server 2000
MySQL Community Edition
MySQL Enterprise Edition 5.0, 5.1, 5.5, 5.6*
Oracle 12c R1 (12.1)*
Oracle 11g R1, R2 (11.1, 11.2)
Oracle 10g R1, R2 (10.1, 10.2)
Oracle 9i R1, R2 (9.0.1, 9.2)
Oracle 8i R3 (8.1.7)
Oracle Marketing Cloud
Oracle Service Cloud
Oracle Sales Cloud
PostgreSQL 9.0, 9.1, 9.2, 9.3, 9.4*
PostgreSQL 8.2, 8.3, 8.4
Progress OpenEdge 11.0, 11.1*, 11.2*, 11.3*, 11.4*
Progress OpenEdge 10.1.x, 10.2.x
Progress Rollbase 2.0 and higher
Salesforce
SugarCRM 7.1.6 and higher
Sybase Adaptive Server Enterprise 15.0, 15.5, 15.7
Sybase Adaptive Server Enterprise 12.0, 12.5, 12.5.x
Sybase Adaptive Server Enterprise 11.9
Veeva CRM

*Latest version includes Day One Support. With this policy, Hybrid Data Pipeline will support any new versions of supported data sources on day one.

Supported Data Sources using On-Premises Connector

The following data sources can be accessed using the Hybrid Data Pipeline Server in conjunction with the on-premises connector through one of the supported APIs—ODBC, JDBC and OData. In this configuration, actual access to the data source listed below is performed from the on-premises connector.

Apache Hadoop Hive 0.8.0 and higher
Amazon EMR 2.1.4 and higher
Cloudera CDH update 4 and higher
Hortonworks 1.3 and higher
IBM BigInsights 3.0 and higher
MapR 1.2 and higher
Pivotal HD 2.0.1 and higher
DB2 V9.1, V9.5, V9.7, 9.8 for Linux, UNIX, Windows
DB2 V8.x for Linux, UNIX, Windows
DB2 11 for z/OS*
DB2 V10 for z/OS
DB2 V9.1 for z/OS
DB2 UDB V8.1 for z/OS
DB2 I 7.1, 7.2* (DB2 UDB V7R1, V7R2 for iSeries)
DB2 I 6.1 (DB2 UDB V6R1 for iSeries)
DB2 for I 5/OS (DB2 UDB V5R4 for iSeries)
Greenplum 4, 4.1, 4.2, 4.3
Greenplum 3.3
Informix Dynamic Server 12.1*
Informix Dynamic Server 11.0, 11.5, 11.7
Informix Dynamic Server 10.0
Informix Dynamic Server 9.2, 9.3, 9.4
Microsoft Dynamics CRM 2011 Rollup 16, 2013, 2015
Microsoft SQL Server 2014*
Microsoft SQL Server 2012
Microsoft SQL Server 2008 R1, R2
Microsoft SQL Server 2005
Microsoft SQL Server 2000 Desktop Engine (MSDE 2000)
Microsoft SQL Server 2000
MySQL Enterprise Edition 5.0, 5.1, 5.5, 5.6*
Oracle 12c R1 (12.1)*
Oracle 11g R1, R2 (11.1, 11.2)
Oracle 10g R1, R2 (10.1, 10.2)
Oracle 9i R1, R2 (9.0.1, 9.2)
Oracle 8i R3 (8.1.7)
Pivotal HAWQ 1.1*, 1.2*

PostgreSQL 9.0, 9.1, 9.2, 9.3, 9.4*
 PostgreSQL 8.2, 8.3, 8.4
 Progress OpenEdge 11.0, 11.1*, 11.2*, 11.3*, 11.4*
 Progress OpenEdge 10.1.x, 10.2.x
 Progress Rollbase 2.0 and higher
 SAP Adaptive Server Enterprise 16.0*
 SugarCRM 7.1.6 and higher
 Sybase Adaptive Server Enterprise 15.0, 15.5, 15.7
 Sybase Adaptive Server Enterprise 12.0, 12.5, 12.5.x
 Sybase Adaptive Server Enterprise 11.9

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System Requirements.

Hybrid Data Pipeline Data Access Service

Supported Operating Systems

Supported Java

Linux	Red Hat Enterprise Linux 6.8, 7.x
	SUSE Linux Enterprise Server 10.x, 11, 12
	Oracle Linux 6.7+, 7.x
	CentOS Linux 6.8, 7.x

Oracle JRE 1.8

Hybrid Data Pipeline Server installer contains the required version of JRE and by default is configured to use the version we ship with the product.

Supported Java Container

Tomcat

Hybrid Data Pipeline Server installer contains the required version of Tomcat and by default is configured to use the version we ship with the product.

Hybrid Data Pipeline On-Premises Connector

Supported Operating Systems

All editions of the following Windows 32-bit and 64-bit operating systems:

- Windows 7
- Windows 8
- Windows 10
- Windows Server 2008
- Windows Server 2012 (Windows 64-bit only)

Network Connectivity

The on-premises connector supports the following protocols for connecting to the Hybrid Data Pipeline Server:

- UDP
- TCP
- TCP with TLS

Proxy Support:

Connection can be routed through a proxy with the following authentication types:

- None
- HTTP Proxy Authentication
- NTLM Proxy Authentication

Supported Java

Oracle JRE 1.8

Application Programming Interface

A cloud application uses Hybrid Data Pipeline through a set of APIs—a data access API and a management API. The data access API is made up of ODBC, JDBC and OData. The management API is a REST API.

Data Access APIs

An application can use ODBC or JDBC to connect to the Hybrid Data Pipeline Server to execute SQL against any supported cloud or on-premises data sources.

ODBC

	32-bit	64-bit
AIX	AIX 5L, version 5.3 fixpack 5 and higher 6.1 7.1	AIX 5L, version 5.3 fixpack 5 and higher 6.1 7.1
HP-UX PA-RISC	11i (B.11.23 and B.11.31) 11i (B.11.11) 11	11i (B.11.23 and B.11.31)
HP-UX IPF	11i (B.11.23 and B.11.31)	11i (B.11.23 and B.11.31)
Linux	Red Hat Enterprise Linux 4.x, 5.x, 6.x	Red Hat Enterprise Linux 4.x, 5.x, 6.x
	SUSE Linux Enterprise Server 10.x, 11, 12	SUSE Linux Enterprise Server 10.x, 11, 12
	Oracle Linux 6.x, 7.x	Oracle Linux 6.x, 7.x
	CentOS Linux 6.8, 7	CentOS Linux 6.8, 7
Oracle Solaris on Oracle SPARC	Oracle Solaris 8, 9, 10	Oracle Solaris 8, 9, 10
Oracle Solaris x86: Intel	Oracle Solaris 10, 11	N/A
Oracle Solaris x64: Intel and AMD	Oracle Solaris 10, 11	Oracle Solaris 10, Oracle Solaris 11 Express
Windows	Windows 10 Windows 8, 8.1 Windows 7 Windows Vista Windows XP Service Pack 2 and higher Windows Server 2008 Windows Server 2003	Windows 10 Windows 8, 8.1 Windows 7 Windows Vista Windows XP Service Pack 2 and higher Windows Server 2012 R1, R2 Windows Server 2008 Windows Server 2003

JDBC

Any platform that supports Java 6 or higher JVM.

OData

OData allows client applications to access data sources with REST calls, eliminating the need to install and configure a local JDBC or ODBC driver. OData is an open protocol that allows the creation and consumption of queryable and interoperable RESTful APIs in a simple and standard way. Hybrid Data Pipeline supports OData.

Management API

The cloud application interacts with the Hybrid Data Pipeline Server for configuration and user management through the Hybrid Data Pipeline REST API.

Hybrid Data Pipeline provides a representational state transfer (REST) application programming interface (API) for managing Hybrid Data Pipeline Base connectivity service resources. Some examples of managed resources are data sources and on-premises connector access control lists (ACLs).

The Management API is comprised of the User Provisioning API, the Connector API and the Data Source API. A user and a data source must be configured within the Hybrid Data Pipeline Server before the application can use the data access API to connect and execute a query. The API supports the following types of operations:

API Name	Description
Connector	<p>Allows the application to:</p> <ul style="list-style-type: none"> • Get information about on-premises connectors they own and update the display name of each connector • Create, view, update and delete data source groups • Configure load balancing for data sources
Data Stores	<p>Provides information on:</p> <ul style="list-style-type: none"> • What data stores are available • Whether a user is entitled to use a specific data store
Data Sources	<ul style="list-style-type: none"> • Allows a user to create, view, update and delete data sources • Allows a user to create, view, update and delete data source groups • Allows an administrator to enable users to get the information for the schema map editor they will be implementing
OAuth	<ul style="list-style-type: none"> • Create, view, update and delete OAuthApplications • Create, view, update and delete OAuthProfiles
User Provisioning	<ul style="list-style-type: none"> • Create, view, update and delete end user accounts • Change or invalidate a user's password

Management Console

The Hybrid Data Pipeline Server can be configured using the Web UI that is accessible from any browser. During the evaluation and development phases, this is the most convenient way to set up Hybrid Data Pipeline for use from your application. All the functionality that is implemented in the Web UI is also available through the REST API. The typical use case is for the application to implement the data source configuration UI and use the management API to provision those data sources within the Hybrid Data Pipeline Server.

Supports following features:

- Create and configure data sources
- Create and manage users
- Test connections
- Execute SQL queries

Supported Browsers

- Internet Explorer 11.0
- Firefox 48 +
- Chrome 53 +
- Safari 9.1 +
- Microsoft Edge

Security Vulnerability Response Policy

Upon identification of any security vulnerability that would impact Hybrid Data Pipeline, Progress will exercise commercially reasonable efforts to address the vulnerability in accordance with the following guidelines:

Priority*	Time Guideline	Version(s)
High Risk (CVSS 8+ or industry equivalent)	30 days	Active (i.e. latest shipping version) and all Supported versions
Medium Risk (CVSS 5-to-8 or industry equivalent)	180 days	Active (i.e. latest shipping version)
Low Risk (CVSS 0-to-5 or industry equivalent)	Next major release or best effort	Active (i.e. latest shipping version)

* Priority is established based on the current version of the Common Vulnerability Scoring System (CVSS), an open industry standard for assessing the severity of computer system security vulnerabilities. For additional information on this scoring system, refer to <https://en.wikipedia.org/wiki/CVSS>.

About Progress

Progress (NASDAQ: PRGS) offers the leading platform for developing and deploying mission-critical business applications. Progress empowers enterprises and ISVs to build and deliver cognitive-first applications, that harness big data to derive business insights and competitive advantage. Progress offers leading technologies for easily building powerful user interfaces across any type of device, a reliable, scalable and secure backend platform to deploy modern applications, leading data connectivity to all sources, and award-winning predictive analytics that brings the power of machine learning to any organization. Over 1700 independent software vendors, 80,000 enterprise customers, and 2 million developers rely on Progress to power their applications. Learn about Progress at www.progress.com or +1-800-477-6473

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