



Action DataConnect 11

Architected for Next-Gen Hybrid Integration

Technical WhitePaper

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Introduction

In recent years, data integration has moved far beyond data warehousing and traditional extract, transform and load (ETL) technologies. The proliferation of big data and cloud applications, combined with growing the adoption of emerging data management technologies such as NoSQL, Hadoop, and in-memory databases, is causing IT organizations to reassess their enterprise data integration strategies. Actian DataConnect 11 features a comprehensive and powerful set of design and management tools that make it easy for developers and system managers to implement and execute integrations and deploy in the cloud, on-prem, or in a hybrid environment.

Action DataConnect solution overview

Action DataConnect is a data integration platform built upon a common architecture that enables Extract, Transform, and Load (ETL), Enterprise Information Integration (EII), Enterprise Application Integration (EAI) and Service Oriented Architecture (EAI) deployment models at enterprise-scale. This common architecture brings together the best in productivity tools for maximizing developer efficiency as the scope of project expands, and eases project management with open repositories to house large-scale, integration designs. Powerful, low-TCO Actian integration engines also enable wide-scale corporate deployments.

DataConnect features a comprehensive and powerful set of design and management tools that make it easy for developers and system managers to overcome challenges often seen during the course of a typical integration project:

- Access all the critical data stored in internally-developed systems needed to fuel a mission-critical decision process
- Move data between partners in supply or demand chains that employ widely disparate systems and business processes

Getting Past Custom Integration Code

Many developers get started with integration projects by writing custom code – typically a one-off development effort to meet a single business requirement. The upfront benefits seem compelling: short start time, no new development tools, simple deployment. As integration requirements grow, however problems with custom code begin to mount – inability to reuse, difficult to maintain (either poor/no documentation and original developer no longer available), not scalable or extensible. As a result, what started as a simple project often become far more complex than initially expected.

- Connect and manage data flows across networks, between applications, and in support of business process orchestration with the agility to quickly adapt when factors change inside and outside the organization
- Comply with industry standards such as ACORD, HIPPA, EDI, HL7, SWIFT, and others
- Pass data from operational and analytic databases into business processes and analytic workflows

Existing customers using DataConnect v9 and v10 will be able to import existing data integration maps and artifacts without needing to perform a migration.

Connectivity Sources

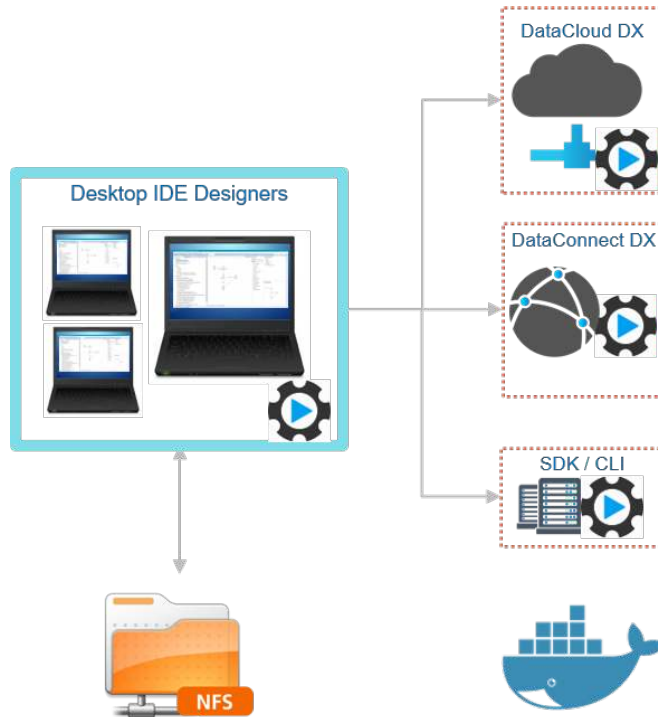
Connectivity is at the core of any integration project. The Actian Integration Engines include hundreds of pre-built connectors for most platforms to provide out-of-the-box connectivity. Connectors can be accessed during both design tasks (e.g. reading metadata for an API) and runtime tasks (e.g. loading transformed data into a database or staging area). While generic connectivity is supported for formats such as ODBC and ASCII delimited flat files, nearly all of the integration connectors from Actian have been written to take advantage of native APIs.

Native APIs increase performance and functionality options in a design by taking advantage of the native hooks an application or database vendor offers. Many of the connectors are cross-platform and support a range of modes, including client/server access, local database access, multimode where a single data stream can be rapidly spread across multiple tables in a target database, and even mass-insert for high-speed bulk loading of data. Combine this rich native connectivity with the Integration Architect tools for accessing data in non-traditional, unstructured or hierarchical formats, and the DataConnect product can reach nearly any data in or out of your organization's infrastructure, including email, print reports, and data enrichment sources.

In addition to pre-built connectors and support for generic formats, DataConnect features a Message Component Framework SDK that allows developers to create additional custom connectors that enable access to data stored in home-grown and heavily customized systems.

DataConnect Architecture

DataConnect can be separated into two primary components: Design and Manage.



Integrated Design Environment

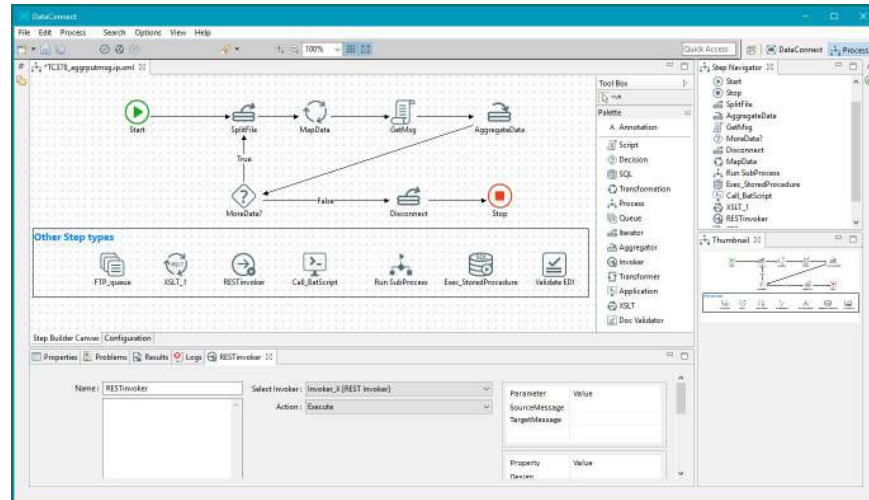
DataConnect provides a comprehensive integrated development environment (IDE) to simplify how distributed integration solutions are designed and managed. The Design environment comprises a suite of tools for connectivity to and orchestration of a wide range of sources and targets, some of which are described below.

Whether designing integration processes for data warehouse loading, converting data between formats, or deploying complex application integration scenarios, DataConnect can help. It includes locally-installed visual designers and cloud-based management tools that accelerate the creation and simplify the management of flexible integration solutions. Capabilities include:

- Visual workflow design interface
- Rich desktop IDE user interface
- Drag-and-drop Mapper
- Interchangeable and reusable artifacts
- On-premise, hybrid, and cloud-to-cloud deployment

The comprehensive design environment delivers many benefits for development and operations teams:

- A single IDE reduces training costs and increases overall productivity.
- Increased reuse of processes through import/export repository sharing reduces development costs
- A vast catalog of connectors with support for hundreds of different data sources and targets helps reduce custom code development and enables seamless data integration that connects a wide range of disparate systems
- The toolset is designed to help reduce overall development time and effort for creating and maintaining data integrations across the enterprise
- Integration artifacts are designed for maximum code reuse across projects.
- Integration processes can be distributed to remote engines and applications to increase flexibility



The Process workflow tool lets you call maps and numerous other step types

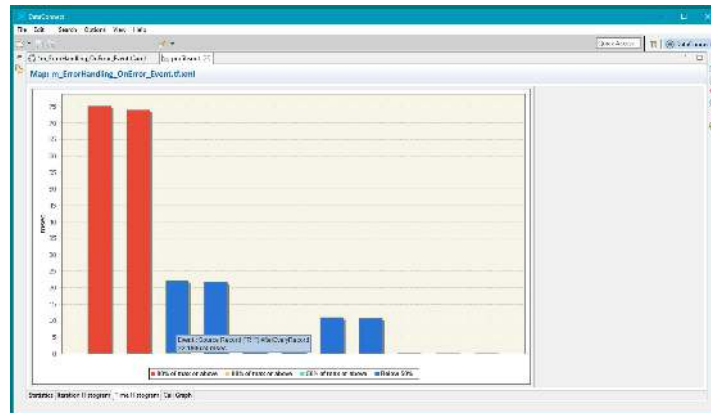
Process Designer

Process Designer has an intuitive interface available for “drag-and-drop” integration process design. Using simple flowchart symbols, Process Designer links multi-step integration processes together to create a single, automated integration task. Key uses range from simple integration flows, to multi-step business process control, to parallel processing of large data loads, and even to integration orchestration across message queues.

Process Designer – Message Component Framework

Message Component Framework (MCF) provides a uniform runtime environment for message components. The components provide additional services to extend integration workflows. An SDK is also provided that enable developers to create

custom connectors and/or processing services. The environment is also responsible for the management of the component lifecycle and for the invocation of component actions.



Map Execution profiler shows how often events and actions fire and how long they take

Map Designer

Map Designer is a powerful data mapping and transformation designer that provides a visually appealing user interface with Wizards that provide guided steps for ease of use. The XML-based metadata that define the integration process enable substantially more reuse and efficient editing by separating Map, Process, Connection, Scripting, and other modules into discrete objects, promoting enhanced reusability in medium to large-scale production environments.

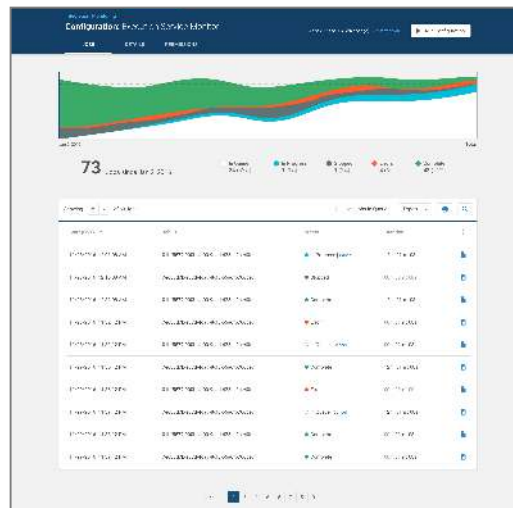
Schema Designer

The Schema Designer provides a visual interface for creating, saving, and manipulating definition files (metadata) of structured data sources. The resulting metadata is stored as a resource on the file system in an open repository and include schema, record recognition rules, and record validation rule information. With the Schema Designer, you can arrange field order, assign field names and type, and specify data size.

Design once, deploy anywhere

Once the integrations are designed in the IDE, they can be deployed to one of many runtime environments:

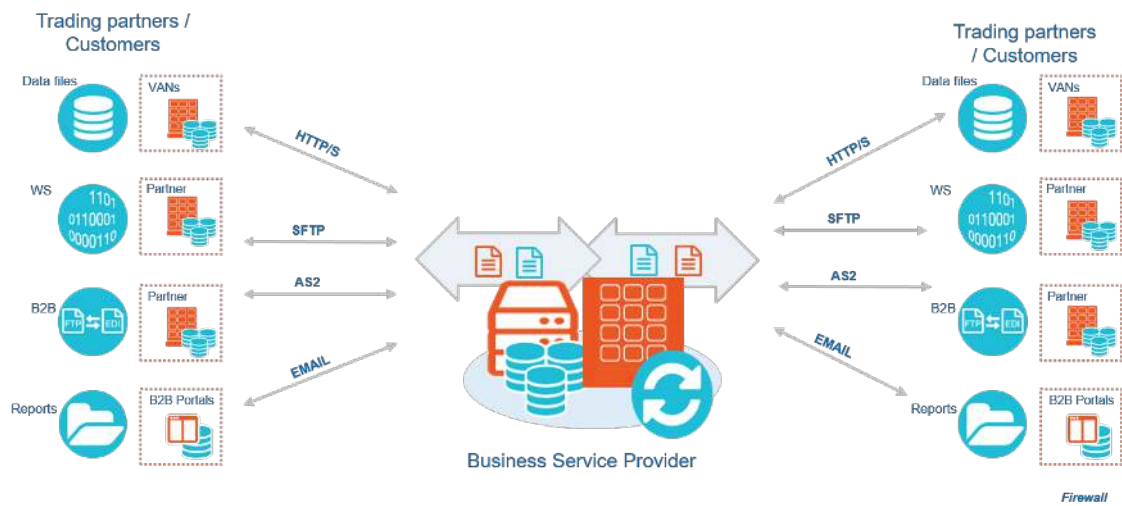
- DataCloud – which is secure (SSAE16 SOC type 2 certified), scalable, and redundant
- DataConnect Server – on-premise, inside-the-firewall option that gives you full control
- SDK or Command Line interface – embed within your own management infrastructure



Job execution status can be monitored in real time within the cloud management console

Use case: business solutions providers

DataConnect is widely deployed by business solution providers because it provides a standardized, consistent, and reusable approach to data and application integration that facilitates rapid on-boarding of customers, partners, suppliers, and data feeds for many industries. DataConnect supports a comprehensive range of files and data formats standardized into a canonical schema, and is ideally suited for most operational and business-to-business integration use cases that require integrating diverse data sets at frequent intervals or in real time.



“We’ve expanded the target to make data integration much simpler and easier, all while reducing data onboarding time and overall costs. Having [DataConnect] in place makes it much easier for our trading partners to meet our data collection requirements and for us to access more data to increase our customer’s experiences. In one area, we were able to reduce the implementation time of a complex and regulated interface from over 90 days to 30 days or less in most cases.”

- Lloyd Turley, Director, Consumer Health and Spending Accounts Operations, ADP

Action DataConnect 11 Design Goals

The latest release of Action DataConnect, informed by extensive customer input as well as emerging industry use cases, focuses on developer productivity and integration architecture simplification. A new desktop IDE with features and functionalities for mapping, debugging, web services connectivity, and other design and runtime services highlight more user-friendly tools and greater deployment flexibility.

Backwards compatibility with Action DataConnect versions 9 and 10 is another core theme in the version 11 release. Installed base customers can import artifacts created with prior releases without having to perform difficult and time-consuming migration tasks.

New features and enhancements

DataConnect 11 incorporates an extensive range of enhanced capabilities. Highlights include:

Architecture

- Lightweight desktop design interface built on a widely-adopted extensible open source IDE framework
- Ability to import rather than migrate integration artifacts from prior DataConnect versions
- Full support for Data Integrator Version 9 Events and Actions for backward compatibility
- Open, file system-based metadata repository that enables use of your existing source control systems
- Flexible software development kit (SDK) and command line interface (CLI) to support your custom job management infrastructure
- DataCloud deployment option: Manage in the cloud, runtime on premise via agents

Integration Features

- REST Invoker 3.0: Easy-to-use and standardized approach to RESTful web service APIs
- Engine execution profiler provides immediate, interactive performance feedback
- Built-in XML and Text editors for power users to directly modify metadata
- Content assist in the script editor (aka code completion)
- Reject connection tab for improved ease of use
- Optional support for macro sets and encrypted values
- Improved "Search and Replace" functionality and Help system

Upgrade Paths from Versions 9 and 10

Pervasive Data Integrator Version 9 (now known as Actian DataConnect) users can skip Version 10 altogether and upgrade directly to Version 11. Version 9 maps and artifacts can be imported to Version 11 without the need to perform a migration. DataConnect 10 users will be able to upgrade in a subsequent release targeted for late 2017.



Learn More

To learn more about how DataConnect 11 can jump start your data integration project, [click here](#) to request a no-cost evaluation license.



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