Introduction

Use the Platform Integration Development Guide to learn how to integrate with the Alteryx Analytics platform. Within the guide, you can find overviews of integration options and links to relevant technical resources.

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Alteryx Analytics Platform Overview

Alteryx takes a different approach to analytics. Our platform is purpose-built to create new data partnerships between IT, analytic teams, and the lines of business. With Alteryx, whether you are an analyst or data scientist, you can solve even the most complex analytic business problems, with less time and effort, to drive business-changing outcomes across your organization.

Alteryx Connect

Overview

Alteryx Connect changes how you discover and organize information for analytics in your organization, so you can spend more time collaborating and finding new insights. We are at the beginning of a thrilling analytic experience that combines the power of data cataloging with human insight and empowers you to quickly and easily find, manage, understand, and collaborate on the information that resides in your organization.

Integration Options

Alteryx Connect provides two integration options. The first integration option pushes metadata into Connect. The second integration option pulls metadata from Connect. The integration options are explained below.

Connect Loader SDK

Alteryx Connect helps customers explore their company's data by providing important metadata information, such as the author or location, or social information, such as use frequency or related data.

Connect uses loaders to load data, regardless of location or format. Loaders are available for more-widely used servers and database systems; however, the Connect Loader SDK allows the creation of custom loaders to create and integrate custom metadata and object types into Alteryx Connect.

Visit the Alteryx online help to find out more about the Connect Loader SDK.

Custom loader example – PostgreSQL Loader by The Information Lab

Connect REST API

Connect user data and loaded metadata is accessible through the Connect REST API. The API can be used to incorporate Connect data into other applications.
Visit the Alteryx online help to find out more about the Connect REST API including a list of API endpoints and examples.

Validation

Use the checklist to validate that your custom loader is ready for release.

Task	Details
Functionality	• Load metadata according to specifications. • Set up error message handling.

Messaging	Complete the description and metadata.
Compatibility	Set up messaging so that it provides clear definitions of compatibility with Alteryx platform.
Security	Take into security considerations into account. ● Set up secure management of passwords. ● Remove test credentials or sensitive test data. ● Obfuscate the program where applicable. ● Avoid sending sensitive information over HTTP.
General	Do not use Alteryx APIs/SDKs that have reached end of service (EOS).

Alteryx Designer

Overview

Alteryx Designer streamlines the analytic process by delivering a repeatable workflow for self-service data analytics, leading to deeper insights in hours, not weeks. Alteryx Designer empowers data analysts by combining data preparation, data blending, and analytics – predictive, statistical, and spatial – using the same intuitive user interface.

Integration Options

There are multiple ways to integrate with Alteryx Designer. Integration methods include creation of custom, standard, and coding tools.

Custom Tools

While Alteryx provides a wide range of functionality with the available tools, you may find that a specific action could be better served by creating a custom tool. A custom tool, or HTML5 Plugin, consists of two components:

- the GUI, shown in Designer's Configuration window
- the Engine, which processes logic to handle records passed to and from the Alteryx Engine

The GUI component must be written in HTML5 using the HTML GUI SDK. The HTML GUI SDK is a library of extensions used to create the graphical user interface (GUI) for the configuration panel for a custom Alteryx Designer tool.

HTML GUI tool example – DataRobot Automodel and Predict Tools

The engine component can be created using one of a variety of back end options, which include:

- C++ SDK

The Alteryx C++ SDK allows you to write custom Alteryx plugin tools using C++. This means you can use the C++ SDK to access core elements of the Alteryx Engine framework.

Sample C++ Engine code can be found after Designer install at C:\Program Files\Alteryx\APIs\AlteryxSDK.zip\AlteryxPluginAPI\SDKSampleEngine\SDKSampleEngine.vcxproj

- Python SDK

The Alteryx Python SDK is a Python extension module that provides users the ability to write custom Alteryx plugin tools using Python. This means you can use the Python SDK to access core elements of the Alteryx Engine framework.

Also available is SnakePlane, a flexible, easy-to-use abstraction layer for building tools using the Python SDK.

Python tool example – Azure Data Lake Tools

- Macro

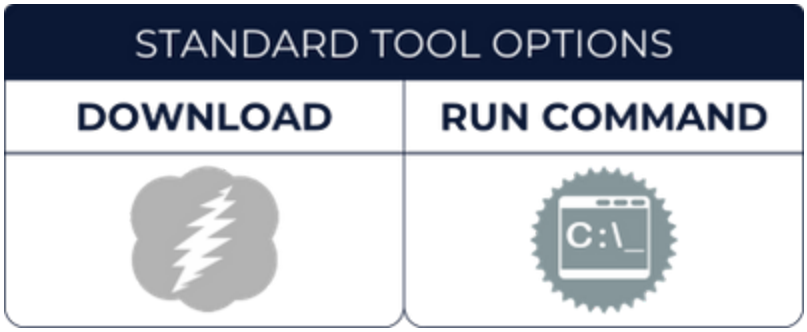
A tool that uses the HTML GUI SDK for its interface component can use an Alteryx Designer macro for its engine component. To set up an existing macro as an engine component, connect data items to interface tools and match the names of the data stream connections to Macro Input and Macro Output tools.

Macro tool example – Cognitive Services Text Analytics Tool

Coding Tools

Multiple tools included with Alteryx Designer allow you to extend the capabilities by interacting with APIs or command line scripts:

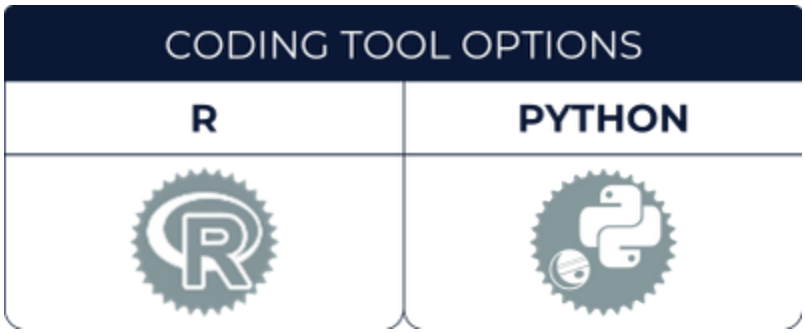
- Run Command Tool allows you to run external command programs within Designer.
- Download Tool allows for interaction with SOAP and REST APIs and can also be used to download or upload data via FTP and SFTP.



Coding Tools

Two coding tools included in Alteryx Designer allow you to incorporate custom code:

- R Tool is a code editor for users of R. The tool allows you to write custom R code and include external packages.
- Python Tool is a code editor for users of Python. The tool allows you to write custom Python code and include external libraries.



Integration Option Considerations

Option	Best Use
Custom Tool	Interface requires dynamic inputs and/or logic Compared to Standard/Coding options: ● High complexity and development effort
Standard Tool	Interaction is limited to an API call or command Compared to Custom/Coding options: ● Low complexity and development effort
Coding Tool	Limited user interaction Compared to Custom/Standard options: ● Medium complexity and development effort

Validation

Use the checklist to validate that your custom tool is ready for release.

Task	Details	
Verify standards	Confirm that the tool meets distribution standards using the Tool Verification Checklist.	
Package tool	Use tool packaging instructions to create a tool installation YXI.	

Alteryx Server

Overview

Alteryx Server accelerates your time to analytical insight and empowers analysts and business users across your organization to make informed, data-driven decisions. Using a scalable platform to deploy and share analytics, you and your team can easily collaborate on business-critical decisions.

Integration Option

Alteryx Server can be used to power your analytic processes. The Gallery REST API provides a way to programmatically interact with the Server.

Gallery REST API example – Presidential Election App

Validation

Use the checklist below to validate that your integration is ready for release.

Task	Details	
Functionality	• Test on multiple machines. • Set up error message handling.	
Compatibility	Set up messaging so that it provides clear definitions of compatibility with Alteryx platform.	
Security	Take security considerations into account. • Set up secure management of passwords. • Avoid sending sensitive information over HTTP.	
General	Do not use Alteryx APIs/SDKs that have reached end of service (EOS).	

Alteryx Promote

Overview

Alteryx Promote provides an end-to-end data science system for developing, deploying and managing predictive models and scoring data with real-time decision APIs. It allows data scientists and analytics teams to build, manage and deploy predictive models to production faster — and more reliably — without writing any custom deployment code.

Integration Options

Use the Alteryx Promote integration options to embed machine learning capabilities into your product. There are three integration options:

- Promote API provides endpionts to query predictive models. Querying a model consists of sending in structured data to the model, allowing the model to process the data and make a prediction, then returning that prediction from the model to the requesting client.
- Python Client provides a library of Python methods used in the various stages of model deployment, including deploying a model and making a prediction.
- R Client provides a library of R methods used in the various stages of model deployment, including deploying a model and making a prediction.

Embedded Analytics & Data Science: Shell Oil Case Study

Validation

Use the checklist below to validate that your integration is ready for release.

Task	Details	
Functionality	• Test on multiple machines. • Set up error message handling.	
Compatibility	Set up messaging so that it provides clear definitions of compatibility with Alteryx platform.	
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Additional Resources

Alteryx Connect

- General Connect Help
- Connect Loader SDK
- Connect REST API

Alteryx Designer

Custom Tools

- HTML GUI SDK
- C++ SDK
- Python SDK
- Macro Help
- Tool Mastery Series on Apps and Macros

Standard Tools

- Run Command Tool
- Download Tool

Coding Tools

- R Tool
- Python Tool

Alteryx Server

- Gallery API

Alteryx Promote

- Promote REST API
- Python Client
- R Client