Adaptive Insights

Connector Implementation Process and Technical Requirements

Document History

Date	Author	Changes
	Ed Ebert	Original Document
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Chapter 1: Connector Implementation Process and Technical Requirements

The Adaptive Connector ("the connector") is an application that imports data from your other system(s) (the source) into your Adaptive Insights model. The connector can extract General Ledger, Customer Relationship Management (CRM), and other data from your source system, transform it according to your business rules and Adaptive formatting requirements, and import it via the Adaptive webservice into your model. The connector comes in two basic configurations. For source systems whose data is behind your firewall the connector is installed "on premise", meaning it is installed on a Windows machine on your local network. For data that can be accessed through the "cloud" the connector can be "hosted", meaning it is installed on the Adaptive server and is accessed via a link in your Adaptive model.

The connector usually requires some amount of customization and configuration to meet your specific business requirements. The connector team from Adaptive Insights Professional Services (AIPS) will work with you to determine your requirements. During the course of development we will meet as needed to refine requirement details and have you review results of trial extracts.

The on premise connector can be executed on demand, or it can also be scheduled daily, weekly or monthly, or both. The hosted connector can only be run on demand.

The connector is dependent on mappings stored in Adaptive which will need to be maintained as changes are made to accounts, levels or dimensions.

Connector Functionality

The connector is an Extract, Transform, and Load (ETL) tool, designed to automate imports to Adaptive.

Extract

The connector extracts data from the source system using SQL queries, api calls, or other means. For some source systems the extract is standardized and won't be changed for a specific project; for other systems the extract may need to be modified or even created new. Depending on your exact requirements there may also be more than one extract.

Transform

The transform is the heart of the connector. In this stage the raw data retrieved by the extract is reformatted, sorted, filtered, consolidated, split, or manipulated as needed to convert it into a form ready for importing. Multiple extracts can be combined into a single transformed file. A single extract can be used to generate multiple imports, for example, GL Actuals and Transaction Details. If you have done a manual import, the final output of the transform step is a text file that looks very similar to what you would import manually.

Load

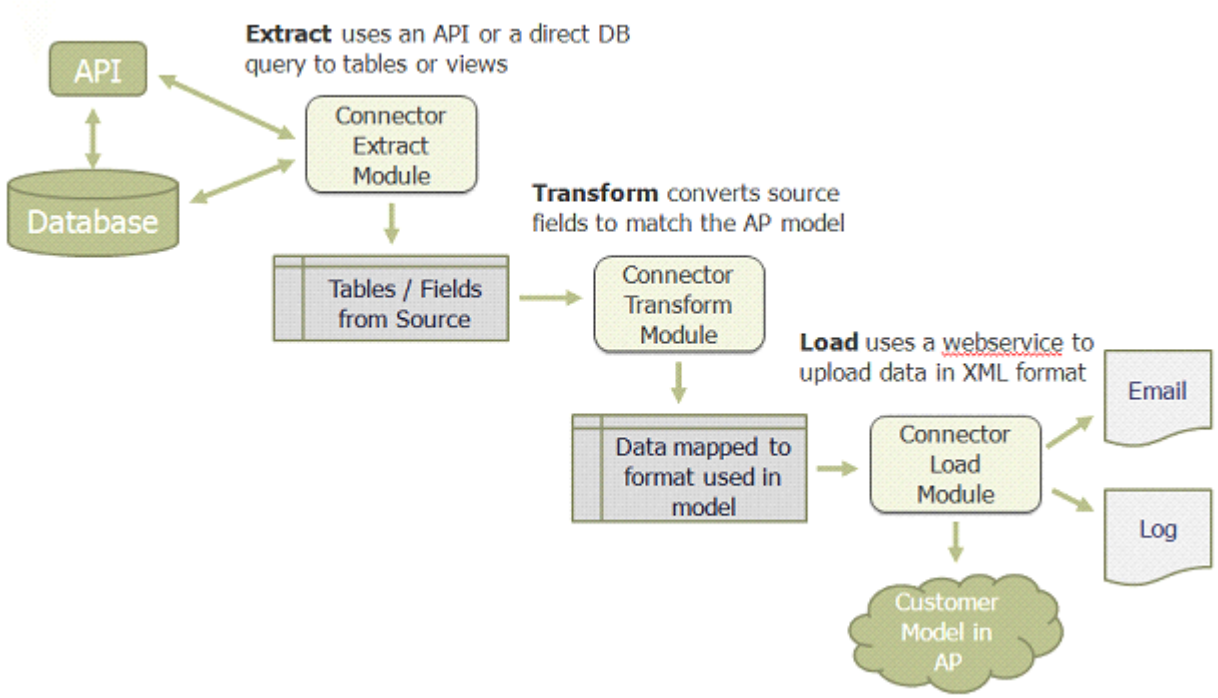
The final stage of the connector is the load into Adaptive. This is accomplished by utilizing the Adaptive web service api. The api supports loading into Standard, Modeled, and Cube sheets, and also supports loading Transaction Details. Data

can be loaded into Plan or Actual versions, and into any standard account (GL Account, Custom Account, Assumption, or Exchange Rate)

Export

The connector can also be customized to export from Adaptive, and to import to another system. Should you require this, our scoping team will discuss your requirements with you and provide a statement of work and estimate.

An overview of the connector ETL functionality is presented in the diagram below.



Project Overview

Connector projects generally follow this flow:

Pre kickoff meeting with a Project Manager and a member of the Integration team. Prior to or during this meeting you will be given material (such as this document) to guide you through the project and tell you what information Adaptive will need. You will also be sent the information to download the connector installer. This should downloaded by you to the host machine prior to the project kickoff.

Data gathering. During this time you will be preparing the connector host machine (for an on premise source) and getting the various credentials and access the connector team will need to implement the connector. The integration engineer will verify that he can remotely connect to the desktop and will verify connectivity to the source system. We will also want to refine our understanding of requirements and assure that we have any other technical information we will need to implement the extract from your source system.

Kickoff. After the data gathering is complete and the host computer is ready, the integration engineer will meet for a formal kickoff of the implementation phase. At this time we will review the business rules and the general shape of the project.

Implementation. The AIPS Integration engineer will be working on the connector host machine (on premise), setting up the extract and the transform of the data to the form required for importing to Adaptive. Depending on the project, the engineer may request you to review of extracted files to assure that the data is in the right form and has the right values. A clone (copy of our live model) may be created and used for testing.

Close out. After you have reviewed the results of an import to your live production model and the data has been reconciled, the project will be closed out. A user guide will be provided, and a handoff/training meeting will complete the project.

Preparing For the Connector

For on premise connectors, AIPS will require remote login access to the host machine where the connector is to be installed. AIPS will perform all modification and testing on the host machine. The connector extracts data from the source system either by direct database query, or by using an application programming interface (api). In either case, Adaptive will be dependent on technical and IT resources at your site to set up the required access. Depending on the complexity and familiarity of the source system, Adaptive may need significant assistance in composing and testing the extract needed.

The Adaptive model will need to be ready for imports before the connector project can be completed. This means that levels, accounts, dimensions, and sheets need to be created, and the account, level, and dimension value import mapping needs to be defined.

Technical preparation

We will work with your team to get the technical aspects of the connectivity set up, and to get the access we need to extract the data from your source system. These tasks include:

- Configure a host machine on which the connector will reside (on-premise connector only)
- Provide remote access to the host machine (RDP, TeamViewer, or other)
- Provide credentials and other technical means to access the source system, one of:
  - direct database access (SQL Server, Oracle, or ODBC)
  - APIs for use by the source system
  - other access (e.g. BAPI for SAP connectors)
- Provide SMTP information so the connector can send email status upon execution
- Assist with development of queries or api calls as needed

Source System Access

AIPS will configure the connector to extract data from your source system. AIPS will require a read-only login and password to your source system. The login should allow access through an API or directly into a source database rather than to the application itself. For database access we recommend that the login not be windows authenticated.

For database based sources, AIPS may need to work with you to define or refine SQL queries or stored procedures. The need will be determined by the specific system involved, how much expertise and experience AIPS has with that system, and any unique requirements.

For API base sources, AIPS may need to work with you or a third party consultant to build the exact set of calls required.

For certain systems, such as SAP or QuickBooks, there are additional requirements concerning software that must be installed or configured to enable the connector.

Business preparation

We will work with your business expert, usually someone on your finance team, to define the business requirements and review and approve the results of our work. These tasks include:

- Provide a connector login to the Adaptive model (e.g. connector@customer.com). This account will at a minimum require import data privileges. During development we request that this account have Administrator privileges so that we can troubleshoot by examining the model as needed.
- Provide samples of source system data, including files used for manual imports
- Provide transformation rules explaining how source system data must be manipulated to determine accounts, plans, splits and/or dimensions, balances, etc. as designed in the AP model
- Implement account, level, and dimension value mapping as needed.
- Review the data extracted by the connector to ensure it is complete and accurate
- Review the import data generated by the connector
- Tie-out financial and other information loaded into Adaptive by the connector

Transform Business Rules

AIPS will customize the connector to transform the raw data extracted from the source system into the import format required for the Adaptive model. AIPS will use information supplied by you to create the transforms. Information that we will need includes:

- Start of fiscal year
- Accounting periods or calendar months used by the source system
- Rules to be used for identifying Accounts in your source system. If Account is defined by several fields within the source system, exact rules indicating how the fields are to be combined must be provided.
- Rules to be used for identifying organizational Levels. If the Level is defined by several fields within the source system, we must understand the exact rules indicating how the fields are to be combined.
- Rules to be used for identifying Amounts.
- Fields used to generate amounts (i.e., a single end of month balance, the sum of an end of month debit and credit, etc.)
- Accounts for which signs must be reversed (e.g., revenue accounts, liabilities and equities); identified by account ranges or individual account numbers.
- Balance sheet account calculations for end-of-month balances, if necessary (i.e., single field available, sum of debits and credits for period, debits less credits for period, calculated from beginning of the fiscal year, calculated from the beginning of time, etc.)
- Specific accounts to exclude
- Specific levels or plans to exclude
- Rules to be used for identifying Splits and/or Dimensions. If Splits/Dimensions are defined by several fields within the source system, we must understand how the fields are to be combined.
- Samples of manual import files, if available. If Excel formulas are used to generate the import file, and understanding of how those work will help with the design of the connector.

Technical requirements for the Connector Host (On-Premise Connector)

The connector is a Windows client application. It requires a U.S. version of the Windows Operating System running in an English language, U.S. locale. The connector can run on an individual user desktop or laptop, a shared physical machine, or on a virtual machine. Hardware and Software requirements for the host machine are shown below:

- Hardware or virtual machine running Windows 7, Windows 8, Windows 8.1, Windows Server 2003, Windows Server 2008, or Windows Server 2012
- RAM requirements are as recommended by Microsoft for the OS installed
- 2 GB Hard drive space
- Remote login access to the connector host machine.
  - Adaptive provides TeamViewer Host for remote access during implementation (licensed and provided by Adaptive for the implementation project).
  - RDP, VPN, or other method as desired
- Unattended remote access is preferred. Remote access is not required once the connector is in production, except as needed for support.
- Network access to the Adaptive IP address range for testing and production data uploads to the Adaptive model.
  - 165.193.228.64 through 165.193.228.127
  - 63.128.135.128 through 63.128.135.191
  - 164.177.189.138 through 164.177.189.139
  - 83.217.255.248 through 83.217.255.255
- Network access to the Adaptive ftp sites for file transfer during implementation.
  - ftp://ftp.adaptiveplanning.com (ip: 165.193.228.111 port 21 and 22)
  - ftp://software.adaptiveplanning.com (165.193.228.113 port 21 and 22)
- Access and credential for the source system
  - Local network access to the source system database server with necessary database client components (e.g., Oracle client) installed.
  - Access to the source system API if direct database access is not feasible.
  - Read-only logins to the database or API are required. (Note: Development and implementation will take longer if access is through an API versus direct database queries.)
- Optional
  - Access to an SMTP server, with logins if required. Once execution is complete, the connector generates an email to the user or group responsible for imports. The email is sent via SMTP with a from address of connector@adaptiveplanning.com. Relay should be allowed.
  - If possible, SQL Management Studio, Squirrel SQL or another SQL query tool

Installation of the connector on a Windows Terminal Server is not supported.

We recommend that the connector be installed on a shared machine or on multiple user desktops/laptops. Reinstalling the connector on another machine after project completion may require some assistance from Adaptive.

Technical requirements for the Hosted Connector

The hosted connector, by definition, resides on the Adaptive servers. There is no requirement for any hardware resources at your site. The integration engineer will need the following

- Credentials to access the source system
- Credentials to access Adaptive

Run Time Considerations

The on premise connector can be run both as an on-demand and as a scheduled application. The hosted connector can only be run on demand and cannot be scheduled.

Account and Level Mapping

Because your business changes over time, you will likely need to update or add mappings for new levels, accounts and dimensions.

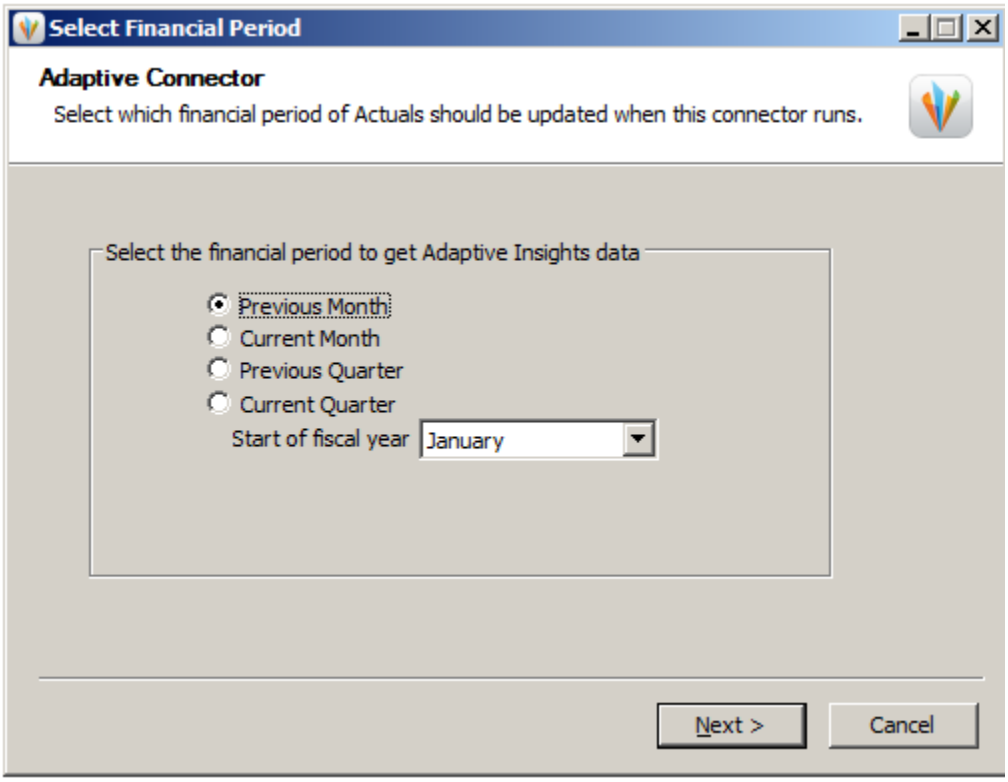
The connector imports all data rows which are mapped and notifies the user via email (if email is configured in the connector) of any unmapped accounts, plans and/or dimensions as well as potential conflicts with cube sheet restrictions or split label creation. Errors due to missing maps errors can also be reviewed in Adaptive by going to the Import tab, Import History, and clicking the "View Details" link associated with the import of interest. You can execute the connector again after updating the mappings.

Selecting time range to import

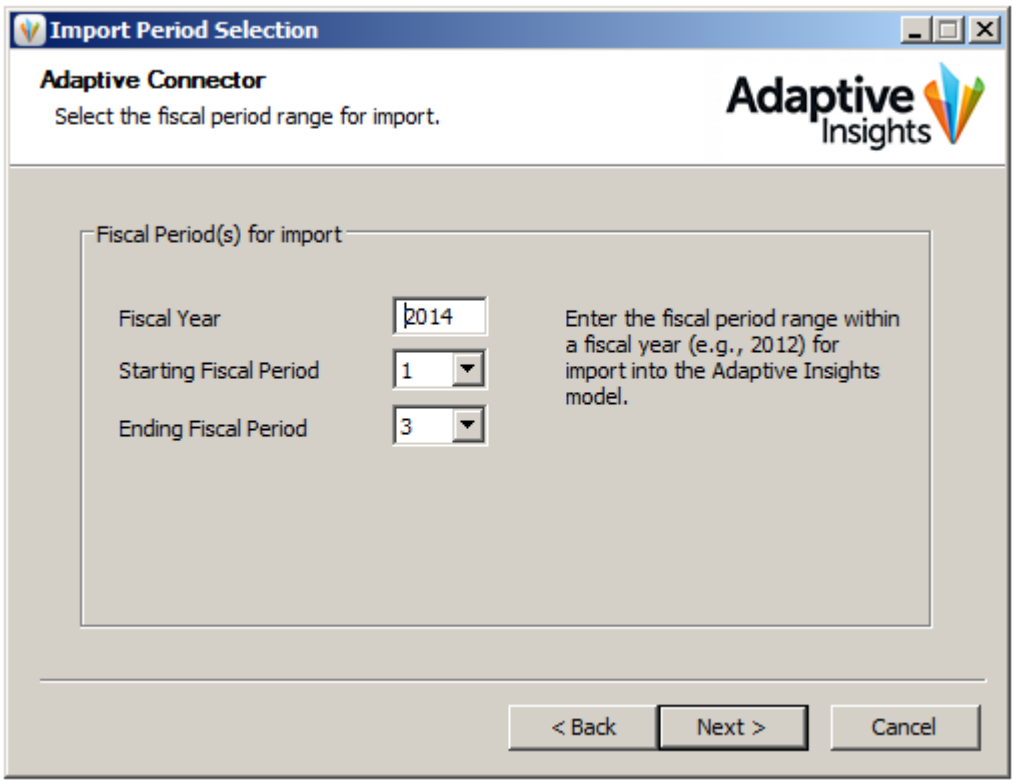
When run On-Demand, the user (typically one or two administrators for the Adaptive system) will be presented options to select a time period for import of data. When multiple sources and/or multiple imports are part of the your connector, additional options are presented to the user.

Import periods are generally selected by one of two options depending on your implementation and the source system. The two possible import options are for the import of:

- Relative time: Current Month, Previous Month, Current Quarter or Previous Quarter



- Absolute time: A fiscal period range within a specified fiscal year



Scheduled connector runs provide only for the selection of Current Month, Previous Month, Current Quarter or Previous Quarter.