

# Data Aggregation Web Services: DataConnect

---

---

©2015 Morningstar. All Rights Reserved.

DataConnect Product Version: V4

Document Issue Date: May 28, 2015

Technical Support: (866) 856-4951

Telephone: (781) 376-0801

Fax: (781) 376-8040

Web: [byallaccounts.morningstar.com](http://byallaccounts.morningstar.com)

---

## Table of Contents

---

DATA AGGREGATION WEB SERVICES .....	1
RELATED DOCUMENTATION .....	1
INFORMATION MODEL.....	1
PRODUCT FAMILY .....	2
DATACONNECT CAPABILITIES .....	3
DATACONNECT LITE.....	4
DATACONNECT ULTRA .....	5
TECHNICAL SUMMARY.....	5

## DATA AGGREGATION WEB SERVICES

Morningstar® ByAllAccounts<sup>SM</sup> data aggregation engine is available as a web service, DataConnect, to enable incorporation of world-class data aggregation functionality into your data solution. DataConnect is available in two levels of capability, Lite for data retrieval, and Ultra for full service capability.

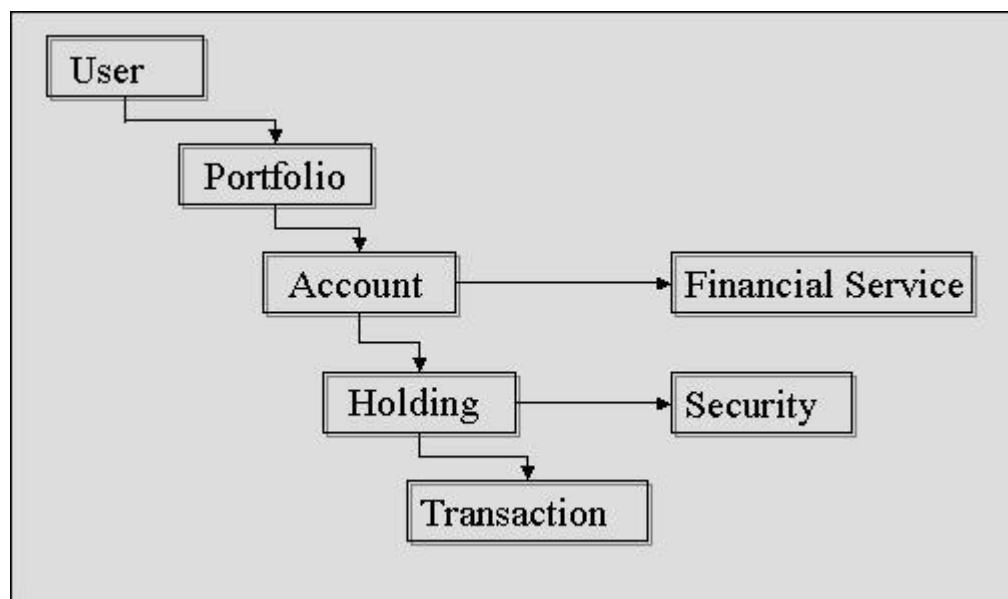
### Related Documentation

This guide provides an overview of DataConnect and the differences between the levels of capability for Ultra and Lite. For more detailed information, refer to:

- *DataConnect Ultra User Guide*
- *DataConnect Lite User Guide*

### Information Model

The ByAllAccounts data aggregation service stores financial information by user (individual investor or household). Figure 1 depicts the important objects in the information model and their relationships.



**Figure 1 - ByAllAccounts Information Model**

**Portfolios** represent investment objectives and are used to group accounts for planning and management of investments.

**Accounts** are financial accounts held at a Financial Institution (FI). If information is available online for an account, then the account will contain account credentials to authenticate an individual for online access that account.

**Holdings** are positions in securities, and Transactions are records of activity in an account, often relating to a particular holding.

### Product Family

ByAllAccounts' products provide different levels of capability, with full-service applications incorporating data views, reports, analytics, and extended information on marketable securities. Table 1 illustrates the capabilities of each product.

**Table 1 - Capabilities by Product**

Capability	AccountView	DataConnect Ultra	DataConnect Lite
<b>Data Entry</b>			
User	√	√	
Portfolio	√	√	
Account	√	√	
Account Credentials	√	√	
<b>Data Export</b>			
User		√	√
Portfolio	√	√	√
Account	√	√	√
Account Credentials		√	
Holding	√	√	√
Holding Lot *	√	√	√
Transaction	√	√	√
Security	√	√	√
Financial Service	√	√	√

<b>Immediate Aggregation</b>	√	√	
<b>Data Views</b>	√		
<b>Reports</b>	√		
<b>Analytics</b>			
Alerts	√		
<b>Security - Extended Info</b>	√		

\* Also known as position lot or tax lot.

DataConnect can be used in conjunction with AccountView. DataConnect Lite is often used in combination with AccountView to retrieve financial information for back-office use. AccountView is a convenient product to use with DataConnect Ultra as it provides for account holders to securely manage their credentials without requiring the ByAllAccounts' customer to construct a user interface for those capabilities.

### DataConnect Capabilities

DataConnect provides access to the core capabilities of the service. Table 2 provides additional detail on the capabilities available in the two DataConnect products.

**Table 2 - DataConnect Capabilities**

<b>Functionality</b>	<b>DataConnect Lite</b>	<b>DataConnect Ultra</b>
<b>Access Level</b>		
Individual	√	√
Firm	√	√
<b>Operation Styles</b>		
Synchronous	√	√
Asynchronous	√	√
<b>Retrieve Basic Financial Information</b>		
User	√	√

Portfolio	✓	✓
Account	✓	✓
Holding	✓	✓
Transaction	✓	✓
Financial Service	✓	✓
Security	✓	✓
Holding Lots *	✓	✓
<b>Retrieve Extended Financial Information</b>		
Financial Service: Online Access Instructions		✓
User: Personal Information		✓
Account: Access Credentials		✓
<b>Data Creation and Maintenance</b>		
User		✓
Portfolio		✓
Account		✓
<b>Additional Operations</b>		
Test account		✓
Test account credentials		✓
On-demand Update Account (from Financial Service)		✓
In-session Activation Codes		✓
Aggregation with tax lots		✓

\* Also known as position lots or tax lots.

### DataConnect Lite

DataConnect Lite allows you to retrieve data for a single user, a select set of users, or for the entire set of users associated with a particular ByAllAccounts customer.

DataConnect Lite is used in conjunction with AccountView, which provides for data entry.

### **DataConnect Ultra**

DataConnect Ultra provides access to all capabilities needed to develop a full data aggregation solution. In addition to all the capabilities of DataConnect Lite, Ultra enables you to configure the data aggregation engine for data retrieval. To begin aggregating data, all that is required is:

1. establish a user in the service for the Investor
2. create account objects in the service for that Investor, supplying the account credentials necessary to access the account at the Financial Institution where the account is held.

The data aggregation engine aggregates all accounts with sufficient credentials on a nightly basis. Ultra also provides an immediate data aggregation operation. After data has been aggregated, you use DataConnect to retrieve it from the data store.

### **Technical Summary**

DataConnect is a Web Service with an API that consists of XML 1.0 messages exchanged between the API client program and the DataConnect service host. Messages are exchanged over an Internet connection using the industry-standard https protocol. All message exchange occurs only over https to ensure that unauthorized individuals are not able to obtain access to sensitive data. DataConnect XML messages comply with a simple format (available in Document Type Definition files) developed by ByAllAccounts.

A client program invokes the service by sending XML request messages via https POST to the DataConnect web server. DataConnect responds with data or operation status in XML format. Response data is delivered over https (streamed) and is always compressed in the ZIP standard compression format to ensure efficient delivery.

DataConnect operations that may have a lengthy processing time are provided as asynchronous operations. Some operations are available in both synchronous and asynchronous form. The general style of the asynchronous operation is for the DataConnect server to provide a receipt to you for the requested operation and a data



expiration time. Later, you submit a request with this receipt to the DataConnect server to request your data. Data is retained for you to retrieve up to the expiration time.

DataConnect provides a single style of authentication - user ID and password. The authenticated user may be an individual Investor who is authorized to access his own data, or an Administrator who is authorized to access all data for a ByAllAccounts customer.

**Table 3 - DataConnect Technical Summary**

<b>Facet</b>	<b>Implementation</b>
<b>Connectivity</b>	Internet to service host <a href="http://www.byallaccounts.net">www.byallaccounts.net</a>
<b>Protocol</b>	https
<b>Authentication</b>	User ID and Password
<b>Authorization</b>	Individual or Administrator
<b>Request Message Format</b>	XML (DTD)
<b>Response Message Format</b>	XML (DTD)