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1. Introduction

A Durable Data API broker shares financial transaction and tax data between financial data providers (usually a financial institution) (FI) and financial data consumers (typically personal finance management applications) (PFM).

2. Ability Criteria

2.1. Performance

• Low latency for real-time requests
• High throughput for large data sets and high concurrency

2.2. Scalability

• High throughput for batch transfers and large number of concurrent users
• Large transaction data sets

2.3. Interoperability

• Self identifying data messages (transport neutral)
• Multi-version support

2.4. Extensibility

• Agile addition of properties

2.5. Security

• Consent obtained from data owners before transfer
• Different data types have different scope of consent

2.6. Reliability

• 24/7/.9999 availability
• Bandwidth limiting each data partner to prevent DOS

3. Design Principles

The above stated ability criteria lead to specific design principles and implementation patterns. Scalability concerns indicate the use of stateless patterns.

4. Deployment

In legacy OFX, a multitude of desktop PFM applications connect to a multitude of OFX servers. In Durable Data API, this is replaced with a service bus model.

Financial data consumers (such as Intuit) will consolidate requests from all application clients into a single Durable Data API client. The FI's Durable Data API server will authenticate and direct the incoming requests to the appropriate FI backend server.
5. Message Transport

Durable Data API requires the use of HTTP, which a reliable synchronous stateless message protocol. REST is preferred because it decouples the message syntax from the transport concerns. REST supports content type negotiation, conditional fetches, and compression. Since confidential information is being exchanged, all interactions must be encrypted with TLS/TLS (HTTPS).

6. Service Delivery Expectations

The Durable Data API server response to requests must start within 30 seconds. The server may use HTTP 100 continue or 200 chunked encoding response to extend the response time for large data sets. Server responses should not last longer than 120 seconds to prevent long running transactions.

7. Message Syntax

Durable Data API supports two syntax options: JSON is the preferred syntax, and XML the alternative syntax.

8. Security

8.1. Model

Durable Data API uses OAuth 2.0 for authorization. The details of how an Durable Data API client obtains an OAuth token are covered in the OAuth 2.0 RFC. The Durable Data API client must have the following information to successfully interact with a Durable Data API server:

1. OAuth authorization server
   a. Authorization endpoint, e.g. https://oauth.example.com/authorization
   b. Client identifier, e.g. intuit.com
   c. Requested scope (“accounts”, “customer”, “images”, “transfer”, “transactions”)
   d. Allowed redirection client URI, e.g. https://oauth.intuit.com/client
   e. Token endpoint, e.g. https://oauth.example.com/authorization
   f. Client authorization (JWT or shared secret)
   g. Optional client authentication certificate
   h. Authorization Server Certifying Authority public key chain

2. Durable Data API Service (OAuth resource server)
   a. Endpoint, e.g. https://data.example.com
   b. client authentication (Bearer or MAC token)
Optional) client authentication certificate. Use mutual authentication for access by the client agents in addition to the refresh or access token.

d. Resource Server Certifying Authority public key chain. Client will need to make sure server SSL certificate CA is in their truststore.

The FI's Authorization Server must support Authorization Code Grant OAuth as defined in section 4.1 of RFC6749.

8.2. Client Authentication

The recommended approach to securely communicate between an Aggregator and FI is through use of both network transport mutual authentication and message security as defined by the use of the OAuth 2.0 Authorization Code Grant and Bearer Token model. Alternative supported methods are outlined below.

Network transport mutual authentication will consist of a two way TLS/SSL network connection used for all web service calls made between the Aggregator and FI for both OAuth token acquisition and data aggregation operations. The X.509 certificates must be issued and validated by an authorized certificate authority. This will provide data origin authentication, data integrity, and data confidentiality between the Aggregator and FI.

The Aggregator system must be capable of maintaining the confidentiality of their credentials for each FI (e.g. client implemented on a secure server with restricted access to the client credentials).

X = Recommended x = Alternatives supported

<table>
<thead>
<tr>
<th>Network Transport TLS/SSL</th>
<th>Client Authentication</th>
<th>Token Type</th>
</tr>
</thead>
<tbody>
<tr>
<td>Server Side Authentication</td>
<td>Mutual Authentication</td>
<td>Shared Secret</td>
</tr>
<tr>
<td>X</td>
<td>X</td>
<td>X</td>
</tr>
<tr>
<td>x</td>
<td>x</td>
<td>x</td>
</tr>
</tbody>
</table>

Server Side Authentication – Only the Server authenticates itself, assuring its identity to the client across the network transport. Mutual Authentication – Enables both Client and Server to authenticate to each other, assuring each other's identity across the network transport.

In line with FFIEC (Federal Financial Institutions Examination Council) guidance on Authentication to mitigate security risks

When invoking the FI's Durable Data API data service, the Durable Data API client will provide an Authorization header with the access tokens encoded per the agreed encoding.

8.3. Token Scope

The Durable Data API client application will include a list of desired scopes when requesting an authorization token. The following scopes are defined for Durable Data API data service.

<table>
<thead>
<tr>
<th>Primary Entity</th>
<th>Allowed Actions</th>
<th>Token Scope</th>
</tr>
</thead>
<tbody>
<tr>
<td>Account</td>
<td>Read only Access to summary account information</td>
<td>FinancialInformation</td>
</tr>
<tr>
<td>Customer</td>
<td>Read only Access to customer information, including PII</td>
<td>FinancialInformation</td>
</tr>
<tr>
<td>Image</td>
<td>Read only Access to transaction images (checks and receipts)</td>
<td>FinancialInformation</td>
</tr>
<tr>
<td>Statement</td>
<td>Read only Access to statement image</td>
<td>FinancialInformation</td>
</tr>
<tr>
<td>Transfer</td>
<td>Transfer of money between accounts</td>
<td>Transfer</td>
</tr>
<tr>
<td>Transaction</td>
<td>Read only Access to transaction information</td>
<td>FinancialInformation</td>
</tr>
</tbody>
</table>
The Durable Data API server will return the list of allowed scopes with the issued authorization token.

The Durable Data API server may limit the scopes for the purpose of not implementing certain APIs.

The Durable Data API server may also present scopes in the access confirmation page after end user login to have them determine each account(s) access for the requesting application.

9. **Logical Data Model**

Durable Data API will eventually encompass multiple financial data domains. At this point, entities and messages are required to support the aggregation of personal financial data. The logical data model consists of User, Login, Account, Transaction, Detail, Statement and Image entities.

9.1. **Entity Identity**

The User entity is not expressed in Durable Data API messages. The Login entity has an identity unique to its owning Institution. The Login identity is usually the username part of a username / password login. The Login surrogate identity is the OAuth token obtained from the Financial Institution. The Account entity has an identity that is unique to the owning Institution. The Transaction entity has an identity that is unique to the owning Account and is usually unique to the owning Institution.

The entity identity (or surrogate identity) is required when transmitting the entities and is used to relate the entities. Durable Data API identity properties have a maximum of 32 characters. (IBAN account identifiers are 31 characters, ACH has 9 digits for routing and 17 digits for account number, OFX 2.0 allowed `<FITID> with up to 255 characters but recommended 32 or fewer).

9.2. **Surrogate Identity**

OAuth creates a surrogate identity for a Login – a Durable Data API server does not expose the financial institution’s principal identity of the Login. To limit the exposure of personally identifiable information, the other identities transmitted by the Durable Data API
server should be a surrogate identity. Surrogates must provide the same uniqueness constraints on the entity relationships as described above. Any surrogate identities must be long term persistent.

If the FI's account identity is considered confidential, a surrogate identity should be used (AccountId should not equal AccountNumber).

10. Residual Data

Residual data is defined as data that is no longer being used, for example if an account has been closed. Aggregators should delete residual data from their systems within 180 days.

11. Protocol

The Durable Data API client requests data using HTTP GET and POST methods. The request includes an appropriate Request-URI. Requests must include an OAuth token in the authorization header. The following is a sample of the headers provided in a typical request.

```
GET /accounts HTTP/1.1
Host: example.com
Authorization: Bearer w0mcJylzCn-AfvuGdqkty2-KP48=
Accept: application/json
Accept-Charset: UTF-8
Accept-Encoding: gzip
```

The Durable Data API server will use HTTP status codes to indicate the success or failure of a request. Response code details specific to Durable Data API follow. For status codes other than 200, the HTTP response body must contain an Error Entity.

11.1. Headers

11.1.1. Transport Security

All Durable Data API communication must be secured from network sniffing with SSL/TLS. Using TLS will secure the entire request and response including any headers. We recommend that both the Durable Data API client and server use certificates. Additionally, Durable Data API server responses should include Cache-Control headers to prevent any caching or storing of the response.

```
Cache-Control: no-cache, no-store
```

11.1.2. Request Authorization

The Durable Data API client does not identify a User to the Durable Data API server. Instead, the User's financial institution Login is implied via an OAuth token. The data returned by any Durable Data API request is limited to what the User could see using his/her Login and further limited by the scope of the OAuth token.

The Durable Data API client uses the Authorization request header with a Bearer or MAC token. Bearer tokens are recommended although the server has option to issue MAC tokens as an alternative if the client supports it. How to obtain this token was detailed in the Security Model section.

```
Authorization: Bearer w0mcJylzCn-AfvuGdqkty2-KP48=
```

11.1.3. Content Negotiation

Durable Data API clients and servers use standard HTTP headers to negotiate transport options.

The Durable Data API client uses the Accept request header to ask for its preferred syntax. The server must respond with one of the requested syntaxes or with a 406 status code.
The Durable Data API client uses the `Accept-Charset` request header to ask for its preferred character set. The server must respond with the body encoded in one of the requested character sets or with a 406 status code.

```
Accept-Charset: UTF-8
```

The Durable Data API server uses the `Content-Type` response header to inform the client of the response syntax and charset.

```
Content-Type: application/json; charset=UTF-8
```

The Durable Data API client uses the `Accept-Encoding` request header to ask for its preferred compression encoding. The server must either respond with the body compressed with one of the requested compressions, or with the body not compressed.

```
Accept-Encoding: compress, gzip
```

The Durable Data API server uses the `Content-Encoding` response header to inform the client of the response encoding.

```
Content-Encoding: gzip
```

For queries, the Durable Data API client may use the `If-Modified-Since` request header to ask for a data response only if the data has been modified since the given date. If the server supports this header and the data has not been modified, a 304 HTTP response code will be returned to the client.

```
If-Modified-Since: Wed, 12 Sep 2012 06:00:00 GMT
```

### 11.1.4. Server Environment

The Durable Data API server returns a `Date` header with every response.

```
Date: Tue, 11 Sep 2012 19:43:31 GMT
```

### 11.1.5. Host

The `Host` request header field specifies the Internet host and port number of the resource being requested. A `Host` header without any trailing port information implies the default port for the service requested (e.g. “80” for an HTTP URL).

```
Host: example.com
```

### 11.1.6. Client Identity

The Durable Data API client supplies a `User-Agent` header with every request. This header should not be used to change the content of the response. This header is designed to only collect statistics on the products using the Durable Data API data service. The first token is the aggregator and aggregator version. The second token is the product and product version.

```
User-Agent: Intuit/1.2.3 Mint/4.3.1
```

### 11.1.7. Customer Identifier

The Durable Data API client can optionally supply a customer identifier with request header `DDA-CustomerId`. This value identifies the user for whom the OAuth 2.0 token was issued. The value of `DDA-CustomerId` must be the same as the the `user_id` parameter returned by the OAuth 2.0 response and the value of the `CustomerId` field in the `Customer Entity` (if the Durable Data API server implements the
11.1.8. Customer Last Login Time

The Durable Data API client can optionally supply the last time the customer logged into the aggregator product if this data is available.

DDA-CustomerLastLoggedTime: Tue, 11 Sep 2012 19:43:31 GMT

11.1.9. Customer IP Address

The Durable Data API client optionally can supply the customer's IP address if this data is available or applicable.

DDA-CustomerIPAdress: 0.0.0.0

11.1.10. Interaction Tracking

The Durable Data API client may send the DDA-InteractionId request header to the server to help correlate log entries between client and server. Example:

DDA-InteractionId: c770aef3-6784-41f7-8e0e-ff5f97bddd3a

The Durable Data API server must include the value of this header in its log entries. The Durable Data API server must also send DDA-InteractionId as a response header with value equal to the value sent by the client, or a unique value generated by the server if the client did not send DDA-InteractionId.

11.1.11. Financial Institution Identification

If the Durable Data API service is provided by a service bureau which uses the same end point for multiple institutions, the Durable Data API client must provide a header the identifies the desired financial institution. The service bureau defines this value. For example, it is often the financial institution's routing number (RTN).

DDA-FinancialId: 123456789

11.2. Errors

When Durable Data API servers are unable to fulfill a request, they should send Error Entity as the response payload along with an appropriate HTTP Status Code. Error messages should contain just enough information for an end user to understand what went wrong without compromising security.

<table>
<thead>
<tr>
<th>Error Code</th>
<th>Error Message</th>
<th>HTTP Status Code</th>
</tr>
</thead>
<tbody>
<tr>
<td>601</td>
<td>Customer not found</td>
<td>404</td>
</tr>
<tr>
<td>602</td>
<td>Customer not authorized</td>
<td>401</td>
</tr>
<tr>
<td>701</td>
<td>Account not found</td>
<td>404</td>
</tr>
<tr>
<td>702</td>
<td>Invalid start or end date</td>
<td>400</td>
</tr>
<tr>
<td>703</td>
<td>Invalid date range</td>
<td>400</td>
</tr>
<tr>
<td>901</td>
<td>Source account not found</td>
<td>404</td>
</tr>
<tr>
<td>902</td>
<td>Source account closed</td>
<td>404</td>
</tr>
<tr>
<td>Error Code</td>
<td>Error Message</td>
<td>HTTP Status Code</td>
</tr>
<tr>
<td>------------</td>
<td>--------------------------------------------------------</td>
<td>------------------</td>
</tr>
<tr>
<td>903</td>
<td>Source account not authorized for transfer</td>
<td>401</td>
</tr>
<tr>
<td>904</td>
<td>Destination account not found</td>
<td>404</td>
</tr>
<tr>
<td>905</td>
<td>Destination account closed</td>
<td>404</td>
</tr>
<tr>
<td>906</td>
<td>Destination account not authorized for transfer</td>
<td>401</td>
</tr>
<tr>
<td>907</td>
<td>Invalid amount</td>
<td>404</td>
</tr>
<tr>
<td>908</td>
<td>Duplicate transfer request</td>
<td>409</td>
</tr>
<tr>
<td>909</td>
<td>Transfer not available due to end of day processing</td>
<td>503</td>
</tr>
<tr>
<td>910</td>
<td>Insufficient funds</td>
<td>400</td>
</tr>
<tr>
<td>911</td>
<td>Transaction limit exceeded</td>
<td>400</td>
</tr>
<tr>
<td>950</td>
<td>Transfer not found</td>
<td>404</td>
</tr>
</tbody>
</table>

### 12. Resources

When implementing Durable Data API, client and server maintainers must agree on the data service endpoint. All resource URIs may be prefixed by a base URI, for example [https://example.com/dda/1.0](https://example.com/dda/1.0). The base URI should include the version of Durable Data API that the server implements.

For security reasons identifiers should not be part of the URI and should be part of the HTTP body to prevent inadvertent information disclosure in server audit logs. For this reason some requests are implemented as `POST` rather than `GET` with parameters sent in the body as form data in `application/x-www-form-urlencoded` format.

#### 12.1. POST /account

Get an account.

**Request Formats**

- `application/x-www-form-urlencoded`

**Response Formats**

- `application/json`, `application/xml`

**Response**

one of DepositAccount, LoanAccount, LocAccount, or InvestmentAccount

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Type</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>accountId</td>
<td>form data</td>
<td>Account identifier</td>
</tr>
</tbody>
</table>

**Example request for JSON**

```http
POST /account HTTP/1.1
Host: example.com
Accept: application/json
Authorization: Bearer w0mcJylzCn-AfvuGdqkty2-KP48=
Content-Type: application/x-www-form-urlencoded

accountId=1
```
Example JSON response

HTTP/1.1 200 OK
Content-Type: application/json; charset=utf-8

{
  "DepositAccount" : { }
}

Example request for XML

POST /account HTTP/1.1
Host: example.com
Accept: application/xml
Authorization: Bearer w0mcJylzCn-AfvuGdqkty2-KP48=
Content-Type: application/x-www-form-urlencoded

accountId=1

Example XML response

HTTP/1.1 200 OK
Content-Type: application/xml; charset=utf-8


12.2. POST /account/statement

Get an account statement.

Request Formats
  application/x-www-form-urlencoded

Response Formats
  application/pdf, image/gif, image/jpeg, image/png, image/tiff

Response
  An image of an account statement

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Type</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>accountId</td>
<td>form data</td>
<td>Account identifier</td>
</tr>
<tr>
<td>statementId</td>
<td>form data</td>
<td>Statement identifier</td>
</tr>
</tbody>
</table>

Example request for application/pdf

POST /account/statement HTTP/1.1
Host: example.com
Accept: application/pdf
Authorization: Bearer w0mcJylzCn-AfvuGdqkty2-KP48=
Content-Type: application/x-www-form-urlencoded

accountId=1&statementId=1
Example application/pdf response

HTTP/1.1 200 OK
Content-Type: application/pdf
Binary data

12.3. POST /account/statements

Get statements.

Request Formats
  application/x-www-form-urlencoded

Response Formats
  application/json, application/xml

Response Type
  Statements

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Type</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>accountId</td>
<td>form data</td>
<td>Account identifier</td>
</tr>
<tr>
<td>startTime</td>
<td>form data</td>
<td>Start time for use in retrieval; ISO 8601 date including zone indicator or combined date time including zone indicator</td>
</tr>
<tr>
<td>endTime</td>
<td>form data</td>
<td>End time for use in retrieval; ISO 8601 date including zone indicator or combined date time including zone indicator</td>
</tr>
<tr>
<td>page</td>
<td>form data</td>
<td>Page number (applicable only if the server has indicated that the collection is paginated)</td>
</tr>
</tbody>
</table>

Example request for JSON

POST /account/statements HTTP/1.1
Host: example.com
Accept: application/json
Authorization: Bearer w0mcJylzCn-Afvu6d9qky2-KP48=
Content-Type: application/x-www-form-urlencoded

accountId=1&startTime=2015-01-01Z&endTime=2015-02-01Z&page=1

Example JSON response

HTTP/1.1 200 OK
Content-Type: application/json; charset=utf-8

{  
  "Statements" : {}  
}
Example request for XML

```text
POST /account/statements HTTP/1.1
Host: example.com
Accept: application/xml
Authorization: Bearer w0mcJylzCn-Afvu6dqkty2-KP48=
Content-Type: application/x-www-form-urlencoded

accountId=1&startTime=2015-01-01Z&endTime=2015-02-01Z&page=1
```

Example XML response

```text
HTTP/1.1 200 OK
Content-Type: application/xml; charset=utf-8

```

12.4. POST /account/transaction/image

Get a transaction image.

Request Formats

- application/x-www-form-urlencoded

Response Formats

- application/pdf, image/gif, image/jpeg, image/png, image/tiff

Response

An image of a transaction (such as a scanned check)

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Type</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>accountId</td>
<td>form data</td>
<td>Account identifier</td>
</tr>
<tr>
<td>imageId</td>
<td>form data</td>
<td>Image identifier</td>
</tr>
<tr>
<td>startTime</td>
<td>form data</td>
<td>Start time for use in retrieval; ISO 8601 date including zone indicator or combined date time including zone indicator</td>
</tr>
<tr>
<td>endTime</td>
<td>form data</td>
<td>End time for use in retrieval; ISO 8601 date including zone indicator or combined date time including zone indicator</td>
</tr>
</tbody>
</table>

Example request for application/pdf

```text
POST /account/transaction/image HTTP/1.1
Host: example.com
Accept: application/pdf
Authorization: Bearer w0mcJylzCn-Afvu6dqkty2-KP48=
Content-Type: application/x-www-form-urlencoded

accountId=1&imageId=1&startTime=2015-01-01Z&endTime=2015-02-01Z
```

Example application/pdf response

```text
HTTP/1.1 200 OK
Content-Type: application/pdf

Binary data
```
12.5. POST /account/transactions

Get account transactions.

Request Formats
application/x-www-form-urlencoded

Response Formats
application/json, application/xml

Response Type
Transactions

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Type</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>accountId</td>
<td>form data</td>
<td>Account identifier</td>
</tr>
<tr>
<td>startTime</td>
<td>form data</td>
<td>Start time for use in retrieval; ISO 8601 date including zone indicator or combined date time including zone indicator</td>
</tr>
<tr>
<td>endTime</td>
<td>form data</td>
<td>End time for use in retrieval; ISO 8601 date including zone indicator or combined date time including zone indicator</td>
</tr>
<tr>
<td>page</td>
<td>form data</td>
<td>Page number (applicable only if the server has indicated that the collection is paginated)</td>
</tr>
</tbody>
</table>

Example request for JSON

```
POST /account/transactions HTTP/1.1
Host: example.com
Accept: application/json
Authorization: Bearer w0mcJylzCn-AfvuGdqky2-KP48=
Content-Type: application/x-www-form-urlencoded

accountId=1&startTime=2015-01-01Z&endTime=2015-02-01Z&page=1
```

Example JSON response

```
HTTP/1.1 200 OK
Content-Type: application/json; charset=utf-8

{
   "Transactions" : { }
}
```

Example request for XML

```
POST /account/transactions HTTP/1.1
Host: example.com
Accept: application/xml
Authorization: Bearer w0mcJylzCn-AfvuGdqky2-KP48=
Content-Type: application/x-www-form-urlencoded

accountId=1&startTime=2015-01-01Z&endTime=2015-02-01Z&page=1
```
12.6. GET /accountlist

Get a lightweight list of accounts for the current token.

**Response Formats**
application/json, application/xml

**Response Type**
AccountDescriptorList

**Example request for JSON**
GET /accountlist HTTP/1.1
Host: example.com
Accept: application/json
Authorization: Bearer w0mcJylzCn-Afvu6dGqky2-KP48=

**Example JSON response**
HTTP/1.1 200 OK
Content-Type: application/json; charset=utf-8

```json
{
    "AccountDescriptorList" : { }
}
```

**Example request for XML**
GET /accountlist HTTP/1.1
Host: example.com
Accept: application/xml
Authorization: Bearer w0mcJylzCn-Afvu6dGqky2-KP48=

**Example XML response**
HTTP/1.1 200 OK
Content-Type: application/xml; charset=utf-8

```xml
```

12.7. GET /accountsdetails

Get all account information (details & transactions) for the current token.

**Response Formats**
application/json, application/xml

**Response Type**
Accounts
### Parameter, Type, Description

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Type</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>startTime</td>
<td>optional, form data</td>
<td>Start time for use in retrieval; ISO 8601 date including zone indicator or combined date time including zone indicator</td>
</tr>
<tr>
<td>endTime</td>
<td>optional, form data</td>
<td>End time for use in retrieval; ISO 8601 date including zone indicator or combined date time including zone indicator</td>
</tr>
<tr>
<td>page</td>
<td>optional, form data</td>
<td>Page number (applicable only if the server has indicated that the collection is paginated)</td>
</tr>
</tbody>
</table>

#### Example request for JSON

```
GET /accountsdetails HTTP/1.1
Host: example.com
Accept: application/json
Authorization: Bearer w0mcJylzCn-AfvuGdqkty2-KP48=
```

**Example JSON response**

```
HTTP/1.1 200 OK
Content-Type: application/json; charset=utf-8

{
    "Accounts" : {} 
}
```

#### Example request for XML

```
GET /accountsdetails HTTP/1.1
Host: example.com
Accept: application/xml
Authorization: Bearer w0mcJylzCn-AfvuGdqkty2-KP48=
```

**Example XML response**

```
HTTP/1.1 200 OK
Content-Type: application/xml; charset=utf-8

```

---

**12.8. POST /accountsdetails**

Query all information for a set of accounts provided in the payload.

**Request Formats**

- application/json
- application/xml

**Response Formats**

- application/json
- application/xml

**Response Type**

Accounts

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Type</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>body</td>
<td>AccountsDetailsRequest</td>
<td>Request for a detailed list of accounts</td>
</tr>
</tbody>
</table>
Example request for JSON

POST /accountsdetails HTTP/1.1
Host: example.com
Accept: application/json
Authorization: Bearer w0mcJylzCn-Afvu6dqkty2-KP48=
Content-Type: application/json

```
{
  "AccountsDetailsRequest": {
    "singleAccountDetailsRequestList": {
      "singleAccountDetailsRequest": [
        { "accountId": "1", "startTime": "2015-04-01T00:00:00.000Z" },
        { "accountId": "2", "startTime": "2015-05-01T00:00:00.000Z" }
      ]
    }
  }
}
```

Example JSON response

HTTP/1.1 200 OK
Content-Type: application/json; charset=utf-8

```
{
  "Accounts": [ ]
}
```

Example request for XML

POST /accountsdetails HTTP/1.1
Host: example.com
Accept: application/xml
Authorization: Bearer w0mcJylzCn-Afvu6dqkty2-KP48=
Content-Type: application/xml

```
<AccountsDetailsRequest xmlns:dda="http://financial-services-durable-data-api.org/2015">
  <SingleAccountDetailsRequestList>
    <SingleAccountDetailsRequest>
      <AccountId>1</AccountId>
      <StartTime>2015-04-01T00:00:00.000Z</StartTime>
    </SingleAccountDetailsRequest>
    <SingleAccountDetailsRequest>
      <AccountId>2</AccountId>
      <StartTime>2015-05-01T00:00:00.000Z</StartTime>
    </SingleAccountDetailsRequest>
  </SingleAccountDetailsRequestList>
</AccountsDetailsRequest>
```

Example XML response

HTTP/1.1 200 OK
Content-Type: application/xml; charset=utf-8

```
```

12.9. GET /availability

Get information about this API's availability.
Response Formats
application/json, application/xml

Response Type
Availability

Example request for JSON

GET /availability HTTP/1.1
Host: example.com
Accept: application/json
Authorization: Bearer w0mcJylzCn-AfvuGdqkty2-KP48=

Example JSON response

HTTP/1.1 200 OK
Content-Type: application/json; charset=utf-8

{  
  "Availability" : {}  
}

Example request for XML

GET /availability HTTP/1.1
Host: example.com
Accept: application/xml
Authorization: Bearer w0mcJylzCn-AfvuGdqkty2-KP48=

Example XML response

HTTP/1.1 200 OK
Content-Type: application/xml; charset=utf-8


12.10. GET /capability

Get information about this API's capabilities.

Response Formats
application/json, application/xml

Response Type
Capability

Example request for JSON

GET /capability HTTP/1.1
Host: example.com
Accept: application/json
Authorization: Bearer w0mcJylzCn-AfvuGdqkty2-KP48=
Example JSON response

```json
HTTP/1.1 200 OK
Content-Type: application/json; charset=utf-8

{
    "Capability": {
        "allowedConnections": 10,
        "supportsCustomer": true,
        "supportsAccounts": true,
        "supportsTransactions": true,
        "supportsImage": true,
        "messageFormat": "JSON"
    }
}
```

Example request for XML

```plaintext
GET /capability HTTP/1.1
Host: example.com
Accept: application/xml
Authorization: Bearer w0mcJylzCn-Afvu6dqkty2-KP48=
```

Example XML response

```xml
HTTP/1.1 200 OK
Content-Type: application/xml; charset=utf-8

    <AllowedConnections>10</AllowedConnections>
    <SupportsCustomer>true</SupportsCustomer>
    <SupportsAccounts>true</SupportsAccounts>
    <SupportsTransactions>true</SupportsTransactions>
    <SupportsImage>true</SupportsImage>
    <MessageFormat>XML</MessageFormat>
</Capability>
```

12.11. GET /customer

Get information about the customer within the authorization scope.

Response Formats

- application/json, application/xml

Response Type

Customer

Example request for JSON

```plaintext
GET /customer HTTP/1.1
Host: example.com
Accept: application/json
Authorization: Bearer w0mcJylzCn-Afvu6dqkty2-KP48=
```
Example JSON response

HTTP/1.1 200 OK
Content-Type: application/json; charset=utf-8

{
    "Customer": {
        "name": {
            "first": "Michael",
            "middle": "J",
            "last": "Smith",
            "company": "Acme"
        },
        "taxId": "144-27-7471"
    }
}

Example request for XML

GET /customer HTTP/1.1
Host: example.com
Accept: application/xml
Authorization: Bearer w0mcJylzCn-AfvuGdqkty2-KP48=

Example XML response

HTTP/1.1 200 OK
Content-Type: application/xml; charset=utf-8

    <Name>
        <First>Michael</First>
        <Middle>J</Middle>
        <Last>Smith</Last>
        <Company>Acme</Company>
    </Name>
    <TaxId>144-27-7471</TaxId>
</Customer>

12.12. POST /transfer

Create a transfer between accounts.

Request Formats

   application/json, application/xml

Response Formats

   application/json, application/xml

Response Type

   TransferStatus

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Type</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>body</td>
<td>Transfer</td>
<td>Transfer entity</td>
</tr>
</tbody>
</table>
Example request for JSON

```
POST /transfer HTTP/1.1
Host: example.com
Accept: application/json
Authorization: Bearer w0mcJylzCn-Afvu6dqkty2-KP48=
Content-Type: application/json

{
    "Transfer": {}
}
```

Example JSON response

```
HTTP/1.1 200 OK
Content-Type: application/json; charset=utf-8

{
    "TransferStatus": {}
}
```

Example request for XML

```
POST /transfer HTTP/1.1
Host: example.com
Accept: application/xml
Authorization: Bearer w0mcJylzCn-Afvu6dqkty2-KP48=
Content-Type: application/xml

```

Example XML response

```
HTTP/1.1 200 OK
Content-Type: application/xml; charset=utf-8

```

12.13. POST /transfer/status

Get status of a transfer between accounts.

**Request Formats**

- application/x-www-form-urlencoded

**Response Formats**

- application/json, application/xml

**Response Type**

TransferStatus

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Type</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>transferId</td>
<td>form data</td>
<td>Transfer identifier</td>
</tr>
</tbody>
</table>
13. Entities

Entities are specified in the accompanying XML schema document durable-data-api.xsd. Fields are optional unless marked as required.

13.1. Account Entity

An abstract account entity that concrete account entities extend.

Extends and inherits all fields from AccountDescriptor.

<table>
<thead>
<tr>
<th>Field</th>
<th>Type</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>ParentAccountId</td>
<td>Identifier</td>
<td>Long-term persistent identity of the parent account. This is used to group accounts.</td>
</tr>
<tr>
<td>Nickname</td>
<td>string</td>
<td>The user’s moniker for the account</td>
</tr>
<tr>
<td>Currency</td>
<td>Currency</td>
<td>Currency Aggregate</td>
</tr>
<tr>
<td>LineOfBusiness</td>
<td>string</td>
<td>The line of business, such as consumer, consumer joint, small business, corporate, etc.</td>
</tr>
<tr>
<td>AccountNumber</td>
<td>string</td>
<td>End user’s handle for account at owning institution</td>
</tr>
<tr>
<td>Field</td>
<td>Type</td>
<td>Description</td>
</tr>
<tr>
<td>---------------------------</td>
<td>-------------------</td>
<td>-----------------------------------------------------------------------------</td>
</tr>
<tr>
<td>RoutingTransitNumber</td>
<td>string</td>
<td>RTN associated with account number at owning institution.</td>
</tr>
<tr>
<td>BalanceType</td>
<td>BalanceType</td>
<td>ASSET (positive transaction amount increases balance), LIABILITY (positive transaction amount decreases balance)</td>
</tr>
<tr>
<td>InterestRate</td>
<td>Number required</td>
<td>Interest Rate of Account</td>
</tr>
<tr>
<td>InterestRateType</td>
<td>InterestRateType</td>
<td>FIXED or VARIABLE</td>
</tr>
<tr>
<td>InterestRateAsOf</td>
<td>Timestamp</td>
<td>Date of account’s interest rate</td>
</tr>
<tr>
<td>PriorInterestRate</td>
<td>Number</td>
<td>Previous Interest Rate of Account</td>
</tr>
<tr>
<td>TransferIn</td>
<td>Boolean</td>
<td>Account is eligible for incoming transfers</td>
</tr>
<tr>
<td>TransferOut</td>
<td>Boolean</td>
<td>Account is eligible for outgoing transfers</td>
</tr>
<tr>
<td>MicrNumber</td>
<td>String64</td>
<td>MICR Number</td>
</tr>
<tr>
<td>LastActivityDate</td>
<td>Timestamp</td>
<td>Date that last transaction occurred on account</td>
</tr>
<tr>
<td>TransactionsIncluded</td>
<td>Boolean</td>
<td>Default is false. If present and true, a call to retrieve transactions will not return any further details about this account. This is an optimization that allows a Durable Data API server to return transactions and account details in a single call.</td>
</tr>
</tbody>
</table>

### 13.2. AccountDescriptor Entity

Minimal information about the account for use in lightweight arrays.

<table>
<thead>
<tr>
<th>Field</th>
<th>Type</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>AccountId</td>
<td>Identifier required</td>
<td>Long-term persistent identity of the account. Not an account number. This identity must be unique to the owning institution.</td>
</tr>
<tr>
<td>Error</td>
<td>Error</td>
<td>Present if an error was encountered while retrieving this account</td>
</tr>
<tr>
<td>AccountType</td>
<td>AccountType</td>
<td>Account type</td>
</tr>
<tr>
<td>DisplayName</td>
<td>string required</td>
<td>Account identity to display to customer. This may be a masked account number or product name followed by masked number.</td>
</tr>
<tr>
<td>Status</td>
<td>AccountStatus</td>
<td>OPEN, CLOSED, PENDINGOPEN, PENDINGCLOSE, DELINQUENT, PAID, NEGATIVECURRENTBALANCE.</td>
</tr>
<tr>
<td>Description</td>
<td>string required</td>
<td>Description of account</td>
</tr>
<tr>
<td>FiAttributes</td>
<td>Array of FiAttribute</td>
<td>Array of FI-specific attributes</td>
</tr>
</tbody>
</table>

### 13.3. AccountDescriptorList Entity

A lightweight array of accounts.

<table>
<thead>
<tr>
<th>Field</th>
<th>Type</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>AccountDescriptor</td>
<td>Array of AccountDescriptor</td>
<td></td>
</tr>
</tbody>
</table>

### 13.4. Accounts Entity

An optionally paginated array of accounts.
<table>
<thead>
<tr>
<th>Field</th>
<th>Type</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total</td>
<td>int</td>
<td>Total number of results in this collection across all pages</td>
</tr>
<tr>
<td>TotalPages</td>
<td>int</td>
<td>Total number of pages</td>
</tr>
<tr>
<td>Page</td>
<td>int</td>
<td>Current page number</td>
</tr>
<tr>
<td>zero or more of DepositAccount, InvestmentAccount, LoanAccount, or LocAccount</td>
<td>DepositAccount, InvestmentAccount, LoanAccount, or LocAccount</td>
<td>An array of accounts with entity types dependent on the account type (deposit, investment, loan, or line of credit)</td>
</tr>
</tbody>
</table>

13.5. AccountsDetailsRequest Entity

<table>
<thead>
<tr>
<th>Field</th>
<th>Type</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>SingleAccountDetailsRequestList</td>
<td>SingleAccountDetailsRequestList</td>
<td>required</td>
</tr>
</tbody>
</table>

13.6. Availability Entity

<table>
<thead>
<tr>
<th>Field</th>
<th>Type</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>CurrentStatus</td>
<td>string</td>
<td>required</td>
</tr>
<tr>
<td>CurrentStatusDesc</td>
<td>string</td>
<td>required</td>
</tr>
<tr>
<td>PlannedAvailability</td>
<td>Array of</td>
<td>PlannedAvailability</td>
</tr>
<tr>
<td></td>
<td>PlannedAvailability</td>
<td></td>
</tr>
</tbody>
</table>

13.7. Capability Entity

Describes capabilities of this implementation of Durable Data API.

<table>
<thead>
<tr>
<th>Field</th>
<th>Type</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>AllowedConnections</td>
<td>int</td>
<td>Number of concurrent connections allowed for this client</td>
</tr>
<tr>
<td>ActiveConnections</td>
<td>int</td>
<td>Current number of active connections for this client</td>
</tr>
<tr>
<td>SupportsCustomer</td>
<td>Boolean</td>
<td>Capable of responding to customer queries. Defaults to false.</td>
</tr>
<tr>
<td>SupportsAccounts</td>
<td>Boolean</td>
<td>Capable of responding to accounts and account queries. Defaults to false.</td>
</tr>
<tr>
<td>SupportsTransactions</td>
<td>Boolean</td>
<td>Capable of responding to transaction queries. Defaults to false.</td>
</tr>
<tr>
<td>SupportsStatements</td>
<td>Boolean</td>
<td>Capable of responding to statements and statement queries. Defaults to false.</td>
</tr>
<tr>
<td>SupportsImage</td>
<td>Boolean</td>
<td>Capable of responding to image queries. Defaults to false.</td>
</tr>
<tr>
<td>SupportsBillPay</td>
<td>Boolean</td>
<td>Capable of supporting a bill payment request. Defaults to false.</td>
</tr>
<tr>
<td>SupportsTransfer</td>
<td>Boolean</td>
<td>Capable of supporting a transfer request. Defaults to false.</td>
</tr>
<tr>
<td>MessageFormat</td>
<td>MessageFormat</td>
<td>Whether messages are in XML or JSON format. Defaults to JSON.</td>
</tr>
<tr>
<td>TransferCutOffTime</td>
<td>Timestamp</td>
<td>Cut off time for transfers. Required if transfers are supported.</td>
</tr>
<tr>
<td>Field</td>
<td>Type</td>
<td>Description</td>
</tr>
<tr>
<td>---------------</td>
<td>-----------------</td>
<td>-----------------------------------------------------------------------------</td>
</tr>
<tr>
<td>BillPayCutOffTime</td>
<td>Timestamp</td>
<td>Cut off time for bill payment. Required if bill payment is supported.</td>
</tr>
</tbody>
</table>

### 13.8. Contribution Entity

<table>
<thead>
<tr>
<th>Field</th>
<th>Type</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>SecurityId</td>
<td>string</td>
<td>Unique identifier of security</td>
</tr>
<tr>
<td>SecurityIdType</td>
<td>SecurityIdType</td>
<td>Security identifier type</td>
</tr>
<tr>
<td>EmployerMatchPercentage</td>
<td>Number</td>
<td>Employer contribution match percentage</td>
</tr>
<tr>
<td>EmployerMatchAmount</td>
<td>Number</td>
<td>Employer contribution match amount</td>
</tr>
<tr>
<td>EmployeePreTaxAmount</td>
<td>Number</td>
<td>Employee pre-tax contribution amount</td>
</tr>
<tr>
<td>EmployeePreTaxPercentage</td>
<td>Number</td>
<td>Employee pre-tax contribution percentage</td>
</tr>
<tr>
<td>EmployeeAfterTaxAmount</td>
<td>Number</td>
<td>Employee after tax contribution amount</td>
</tr>
<tr>
<td>EmployeeAfterTaxPercentage</td>
<td>Number</td>
<td>Employee after tax contribution percentage</td>
</tr>
<tr>
<td>EmployeeDeferPreTaxAmount</td>
<td>Number</td>
<td>Employee defer pre-tax contribution match amount</td>
</tr>
<tr>
<td>EmployeeDeferPreTaxPercentage</td>
<td>Number</td>
<td>Employee defer pre-tax contribution match percentage</td>
</tr>
<tr>
<td>EmployeeYearToDate</td>
<td>Number</td>
<td>Employee total year to date contribution</td>
</tr>
<tr>
<td>EmployerYearToDate</td>
<td>Number</td>
<td>Employer total year to date contribution</td>
</tr>
<tr>
<td>RolloverContributionPercentage</td>
<td>Number</td>
<td>Rollover contribution percentage</td>
</tr>
<tr>
<td>RolloverContributionAmount</td>
<td>Number</td>
<td>Rollover contribution Amount</td>
</tr>
</tbody>
</table>

### 13.9. Currency Entity

<table>
<thead>
<tr>
<th>Field</th>
<th>Type</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>CurrencyRate</td>
<td>Number</td>
<td>Currency rate between original and converted currency</td>
</tr>
<tr>
<td>CurrencyCode</td>
<td>Iso4217Code</td>
<td>ISO 4217 currency code</td>
</tr>
<tr>
<td>OriginalCurrencyCode</td>
<td>Iso4217Code</td>
<td>Original ISO 4217 currency code</td>
</tr>
</tbody>
</table>

### 13.10. Customer Entity

<table>
<thead>
<tr>
<th>Field</th>
<th>Type</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>CustomerId</td>
<td>Identifier</td>
<td>Long-term persistent identity of the customer. This identity must be unique to the owning institution.</td>
</tr>
<tr>
<td>Name</td>
<td>CustomerName</td>
<td>The customer’s name</td>
</tr>
<tr>
<td>DateOfBirth</td>
<td>Timestamp</td>
<td>The customer’s date of birth</td>
</tr>
<tr>
<td>TaxId</td>
<td>string</td>
<td>The SSN or TIN associated with this customer</td>
</tr>
<tr>
<td>GovernmentId</td>
<td>string</td>
<td>A federal (such as passport) or state (such as driver’s license) issued identifier</td>
</tr>
<tr>
<td>Field</td>
<td>Type</td>
<td>Description</td>
</tr>
<tr>
<td>------------</td>
<td>-----------------------------</td>
<td>--------------------------------------------------------------------------------------------------</td>
</tr>
<tr>
<td>Email</td>
<td>Array of string</td>
<td>An array of the customer’s electronic mail addresses</td>
</tr>
<tr>
<td>Addresses</td>
<td>Array of DeliveryAddress</td>
<td>An array of the customer’s physical mail addresses</td>
</tr>
<tr>
<td>Telephones</td>
<td>Array of TelephoneNumber</td>
<td>An array of the customer’s telephone numbers</td>
</tr>
</tbody>
</table>

### 13.11. CustomerName Entity

<table>
<thead>
<tr>
<th>Field</th>
<th>Type</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Prefix</td>
<td>string</td>
<td>Name prefix, e.g. Mr.</td>
</tr>
<tr>
<td>First</td>
<td>string</td>
<td>First name</td>
</tr>
<tr>
<td>Middle</td>
<td>string</td>
<td>Middle name</td>
</tr>
<tr>
<td>Last</td>
<td>string</td>
<td>Last name</td>
</tr>
<tr>
<td>Suffix</td>
<td>string</td>
<td>Name suffix, e.g. Jr.</td>
</tr>
<tr>
<td>Company</td>
<td>string</td>
<td>Company name</td>
</tr>
</tbody>
</table>


<table>
<thead>
<tr>
<th>Field</th>
<th>Type</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>ParValue</td>
<td>Number</td>
<td>Par value amount</td>
</tr>
<tr>
<td>DebtType</td>
<td>DebtType</td>
<td>Debt type (COUPON, ZERO)</td>
</tr>
<tr>
<td>DebtClass</td>
<td>DebtClass</td>
<td>Classification of debt (TREASURY, MUNICIPAL, CORPORATE, OTHER)</td>
</tr>
<tr>
<td>CouponRate</td>
<td>Number</td>
<td>Bond coupon rate for next closest call date</td>
</tr>
<tr>
<td>CouponDate</td>
<td>Timestamp</td>
<td>Maturity date for next coupon</td>
</tr>
<tr>
<td>CouponMatureFrequency</td>
<td>CouponMatureFrequency</td>
<td>When coupons mature. One of the following values: MONTHLY, QUARTERLY, SEMIANNUAL, ANNUAL, or OTHER</td>
</tr>
<tr>
<td>CallPrice</td>
<td>Number</td>
<td>Bond call price</td>
</tr>
<tr>
<td>YieldToCall</td>
<td>Number</td>
<td>Yield to next call</td>
</tr>
<tr>
<td>CallDate</td>
<td>Timestamp</td>
<td>Next call date</td>
</tr>
<tr>
<td>CallType</td>
<td>CallType</td>
<td>Type of next call. CALL, PUT, PREFUND, MATURITY</td>
</tr>
<tr>
<td>YieldToMaturity</td>
<td>Number</td>
<td>Yield to maturity</td>
</tr>
</tbody>
</table>

### 13.13. DeliveryAddress Entity

<table>
<thead>
<tr>
<th>Field</th>
<th>Type</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Type</td>
<td>DeliveryAddressType</td>
<td>HOME, BUSINESS, MAILING</td>
</tr>
<tr>
<td>Line1</td>
<td>String64</td>
<td>The delivery location's first line</td>
</tr>
<tr>
<td>Field</td>
<td>Type</td>
<td>Description</td>
</tr>
<tr>
<td>-----------</td>
<td>--------------------</td>
<td>--------------------------------------------------</td>
</tr>
<tr>
<td>Line2</td>
<td>String64</td>
<td>The delivery location’s second line</td>
</tr>
<tr>
<td>Line3</td>
<td>String64</td>
<td>The delivery location’s third line</td>
</tr>
<tr>
<td>City</td>
<td>String64 required</td>
<td>The delivery location’s city</td>
</tr>
<tr>
<td>State</td>
<td>String2 required</td>
<td>The delivery location’s state</td>
</tr>
<tr>
<td>Zip</td>
<td>String9 required</td>
<td>The delivery location’s zip code</td>
</tr>
<tr>
<td>Country</td>
<td>Iso3166CountryCode</td>
<td>ISO 3166 two digit country code</td>
</tr>
</tbody>
</table>

**13.14. DepositAccount Entity**

Extends and inherits all fields from `Account`.

<table>
<thead>
<tr>
<th>Field</th>
<th>Type</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>BalanceAsOf</td>
<td>Timestamp</td>
<td>As-of date of balances</td>
</tr>
<tr>
<td>CurrentBalance</td>
<td>Number</td>
<td>Balance of funds in account</td>
</tr>
<tr>
<td>OpeningDayBalance</td>
<td>Number</td>
<td>Day’s opening fund balance</td>
</tr>
<tr>
<td>AvailableBalance</td>
<td>Number</td>
<td>Balance of funds available for use</td>
</tr>
<tr>
<td>AnnualPercentageYld</td>
<td>Number</td>
<td>Annual Percentage Yield</td>
</tr>
<tr>
<td>InterestYtd</td>
<td>Number</td>
<td>YTD Interest</td>
</tr>
<tr>
<td>Term</td>
<td>int</td>
<td>Term of CD in months</td>
</tr>
<tr>
<td>MaturityDate</td>
<td>Timestamp</td>
<td>Maturity date for CDs</td>
</tr>
<tr>
<td>Transactions</td>
<td>Array of DepositTransaction</td>
<td></td>
</tr>
</tbody>
</table>

**13.15. DepositTransaction Entity**

Extends and inherits all fields from `Transaction`.

<table>
<thead>
<tr>
<th>Field</th>
<th>Type</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>TransactionType</td>
<td>DepositTransactionType</td>
<td>CHECK, WITHDRAWAL, TRANSFER, POSDEBIT, ATMWITHDRAWAL, BILLPAYMENT, FEE, DEPOSIT, ADJUSTMENT, INTEREST, DIVIDEND, DIRECTDEPOSIT, ATMDEPOSIT, POSCREDIT</td>
</tr>
<tr>
<td>Payee</td>
<td>String255</td>
<td>Payee name</td>
</tr>
<tr>
<td>CheckNumber</td>
<td>int</td>
<td>Check number</td>
</tr>
</tbody>
</table>

**13.16. Error Entity**

An error entity which can be used at the API level for error responses or at the account level to indicate a problem specific to a particular account.
<table>
<thead>
<tr>
<th>Field</th>
<th>Type</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Code</td>
<td>string</td>
<td>required Long term persistent identifier which can be used to trace error condition back to log information</td>
</tr>
<tr>
<td>Message</td>
<td>string</td>
<td>End user displayable information which might help the customer diagnose an error</td>
</tr>
</tbody>
</table>

### 13.17. FiAttribute Entity

Fi-specific attribute.

<table>
<thead>
<tr>
<th>Field</th>
<th>Type</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Name</td>
<td>string</td>
<td>Name of attribute</td>
</tr>
<tr>
<td>Value</td>
<td>string</td>
<td>Value of attribute</td>
</tr>
</tbody>
</table>

### 13.18. FiPortion Entity

<table>
<thead>
<tr>
<th>Field</th>
<th>Type</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>AssetClass</td>
<td>string</td>
<td>FI-specific asset class</td>
</tr>
<tr>
<td>Percent</td>
<td>Number</td>
<td>Percentage of asset class that falls under this asset</td>
</tr>
</tbody>
</table>

### 13.19. Holding Entity

<table>
<thead>
<tr>
<th>Field</th>
<th>Type</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>HoldingId</td>
<td>Identifier</td>
<td>Long term persistent identity of the holding</td>
</tr>
<tr>
<td>SecurityId</td>
<td>string</td>
<td>Unique identifier of security</td>
</tr>
<tr>
<td>SecurityIdType</td>
<td>SecurityIdType</td>
<td>Security identifier type</td>
</tr>
<tr>
<td>HoldingName</td>
<td>string</td>
<td>Holding name or security name</td>
</tr>
<tr>
<td>HoldingType</td>
<td>HoldingType</td>
<td>STOCK, BOND, MUTUALFUND, CD, ANNUITY, OPTIONS</td>
</tr>
<tr>
<td>HoldingSubType</td>
<td>HoldingSubType</td>
<td>MONEYMARKET, CASH</td>
</tr>
<tr>
<td>PositionType</td>
<td>PositionType</td>
<td>LONG, SHORT</td>
</tr>
<tr>
<td>HeldInAccount</td>
<td>HeldInAccount</td>
<td>Sub-account CASH, MARGIN, SHORT, OTHER</td>
</tr>
<tr>
<td>Description</td>
<td>string</td>
<td>The description of the holding</td>
</tr>
<tr>
<td>Symbol</td>
<td>string</td>
<td>Ticker / Market symbol</td>
</tr>
<tr>
<td>OriginalPurchaseDate</td>
<td>Timestamp</td>
<td>Date of original purchase</td>
</tr>
<tr>
<td>PurchasedPrice</td>
<td>Number</td>
<td>Price of holding at the time of purchase</td>
</tr>
<tr>
<td>CurrentUnitPrice</td>
<td>Number</td>
<td>Current unit price</td>
</tr>
<tr>
<td>ChangeInPrice</td>
<td>Number</td>
<td>Change in current price compared to previous day's close</td>
</tr>
<tr>
<td>CurrentUnitPriceDate</td>
<td>Timestamp</td>
<td>Current unit price as of date</td>
</tr>
<tr>
<td>Field</td>
<td>Type</td>
<td>Description</td>
</tr>
<tr>
<td>-----------------------</td>
<td>---------------------------</td>
<td>--------------------------------------------------------------------------------------------------------------------------------------------</td>
</tr>
<tr>
<td>Units</td>
<td>Number required</td>
<td>Required for stock, mutual funds. Number of shares (with decimals).</td>
</tr>
<tr>
<td>MarketValue</td>
<td>Number</td>
<td>Market value at the time of data retrieved</td>
</tr>
<tr>
<td>FaceValue</td>
<td>Number</td>
<td>Required for bonds. Face value at the time of data retrieved.</td>
</tr>
<tr>
<td>AverageCost</td>
<td>Boolean</td>
<td>Cost is average of all purchases for holding</td>
</tr>
<tr>
<td>CashAccount</td>
<td>Boolean</td>
<td>If true, indicates that this holding is used to maintain proceeds from sales, dividends, and other cash postings to the investment account</td>
</tr>
<tr>
<td>Rate</td>
<td>Number</td>
<td>For CDs, bonds, and other rate based holdings</td>
</tr>
<tr>
<td>ExpirationDate</td>
<td>Timestamp</td>
<td>For CDs, bonds, and other time-based holdings</td>
</tr>
<tr>
<td>Inv401kSource</td>
<td>Inv401kSourceType</td>
<td>Source for money for this security. PRETAX, AFTERTAX, MATCH, PROFITSHARING, ROLLOVER, OTHERVEST, OTHERNONVEST</td>
</tr>
<tr>
<td>Currency</td>
<td>Currency</td>
<td>Currency information if it is different from Account entity</td>
</tr>
<tr>
<td>AssetClasses</td>
<td>Array of Portion</td>
<td>Percent breakdown by asset class</td>
</tr>
<tr>
<td>FiAssetClasses</td>
<td>Array of FiPortion</td>
<td>Percent breakdown by FI-specific asset class percentage breakdown</td>
</tr>
<tr>
<td>FiAttributes</td>
<td>Array of FiAttribute</td>
<td>Array of FI-specific attributes</td>
</tr>
<tr>
<td>TaxLots</td>
<td>Array of TaxLot</td>
<td>Breakdown by tax lot</td>
</tr>
</tbody>
</table>

### 13.20. InvestmentAccount Entity

Extends and inherits all fields from Account.

<table>
<thead>
<tr>
<th>Field</th>
<th>Type</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>BalanceAsOf</td>
<td>Timestamp required</td>
<td>As-of date for balances</td>
</tr>
<tr>
<td>AllowedCheckWriting</td>
<td>Boolean</td>
<td>Check writing privileges</td>
</tr>
<tr>
<td>AllowedOptionTrade</td>
<td>Boolean</td>
<td>Allowed to trade options</td>
</tr>
<tr>
<td>CurrentValue</td>
<td>Number required</td>
<td>Total current value of all investments</td>
</tr>
<tr>
<td>Holdings</td>
<td>Array of Holding</td>
<td>Array of holdings</td>
</tr>
<tr>
<td>OpenOrders</td>
<td>Array of OpenOrder</td>
<td>Array of open orders</td>
</tr>
<tr>
<td>Contribution</td>
<td>Array of Contribution</td>
<td>Describes how new contributions are distributed among the available securities</td>
</tr>
<tr>
<td>Vesting</td>
<td>Array of Vesting</td>
<td>Provides the past, present, and future vesting schedule and percentages</td>
</tr>
<tr>
<td>Field</td>
<td>Type</td>
<td>Description</td>
</tr>
<tr>
<td>-----------------------</td>
<td>-----------------------</td>
<td>-----------------------------------------------------------------------------</td>
</tr>
<tr>
<td>InvestmentLoans</td>
<td>Array of InvestmentLoan</td>
<td>Array of investment loans</td>
</tr>
<tr>
<td>AvailableCashBalance</td>
<td>Number</td>
<td>Cash balance across all sub-accounts. Should include sweep funds.</td>
</tr>
<tr>
<td>Margin</td>
<td>Boolean</td>
<td>Margin trading is allowed</td>
</tr>
<tr>
<td>MarginBalance</td>
<td>Number</td>
<td>Margin balance</td>
</tr>
<tr>
<td>ShortBalance</td>
<td>Number</td>
<td>Short balance</td>
</tr>
<tr>
<td>RolloverAmount</td>
<td>Number</td>
<td>Rollover amount</td>
</tr>
<tr>
<td>EmployerName</td>
<td>string</td>
<td>Name of the employer in investment 401k Plan</td>
</tr>
<tr>
<td>BrokerId</td>
<td>string</td>
<td>Unique identifier FI</td>
</tr>
<tr>
<td>PlanId</td>
<td>string</td>
<td>Plan number for Investment 401k plan</td>
</tr>
<tr>
<td>CalendarYearFor401k</td>
<td>Timestamp</td>
<td>Date for this calendar year for 401K account</td>
</tr>
<tr>
<td>BalanceList</td>
<td>Array of InvestmentBalance</td>
<td>Balance List. Name value pair aggregate.</td>
</tr>
<tr>
<td>DailyChange</td>
<td>Number</td>
<td>Daily change</td>
</tr>
<tr>
<td>PercentageChange</td>
<td>Number</td>
<td>Percentage change</td>
</tr>
<tr>
<td>Transactions</td>
<td>Array of InvestmentTransaction</td>
<td></td>
</tr>
</tbody>
</table>

### 13.21. InvestmentBalance Entity

<table>
<thead>
<tr>
<th>Field</th>
<th>Type</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>BalanceName</td>
<td>string</td>
<td>Name of the balance</td>
</tr>
<tr>
<td>BalanceDescription</td>
<td>string</td>
<td>Description of balance</td>
</tr>
<tr>
<td>BalanceType</td>
<td>InvestmentBalanceType</td>
<td>AMOUNT, PERCENTAGE</td>
</tr>
<tr>
<td>BalanceValue</td>
<td>Number</td>
<td>Value of balance name</td>
</tr>
<tr>
<td>BalanceDate</td>
<td>Timestamp</td>
<td>Date as of this balance</td>
</tr>
<tr>
<td>Currency</td>
<td>Currency</td>
<td>Currency if different from that of account</td>
</tr>
</tbody>
</table>

### 13.22. InvestmentLoan Entity

<table>
<thead>
<tr>
<th>Field</th>
<th>Type</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>LoanId</td>
<td>string</td>
<td>Unique identifier for this loan</td>
</tr>
<tr>
<td>LoanDescription</td>
<td>string</td>
<td>Description</td>
</tr>
<tr>
<td>InitialLoanBalance</td>
<td>Number</td>
<td>Initial loan balance amount</td>
</tr>
<tr>
<td>LoanStartDate</td>
<td>Timestamp</td>
<td>Start date of the loan</td>
</tr>
<tr>
<td>CurrentLoanBalance</td>
<td>Number</td>
<td>Current loan principal balance amount</td>
</tr>
<tr>
<td>DateAsOf</td>
<td>Timestamp</td>
<td>Date and time of current loan balance</td>
</tr>
</tbody>
</table>
### Loan Entity

<table>
<thead>
<tr>
<th>Field</th>
<th>Type</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>LoanRate</td>
<td>Number</td>
<td>Loan annual interest rate for the loan</td>
</tr>
<tr>
<td>LoanPaymentAmount</td>
<td>Number</td>
<td>Loan payment amount</td>
</tr>
<tr>
<td>LoanPaymentFrequency</td>
<td>LoanPaymentFrequency</td>
<td>WEEKLY, BIWEEKLY, TWICEMONTHLY, MONTHLY, FOURWEEKS, BIMONTHLY, QUARTERLY, SEMIANNUALLY, ANNUALLY, OTHER</td>
</tr>
<tr>
<td>LoanPaymentInitial</td>
<td>Number</td>
<td>Initial number of loan payments</td>
</tr>
<tr>
<td>LoanPaymentsRemaining</td>
<td>int</td>
<td>Remaining number of loan payments</td>
</tr>
<tr>
<td>LoanMaturityDate</td>
<td>Timestamp</td>
<td>Expected loan end date</td>
</tr>
<tr>
<td>LoanInterestToDate</td>
<td>Number</td>
<td>Total interest paid to date on this loan</td>
</tr>
<tr>
<td>LoanTotalProjectedInterest</td>
<td>Number</td>
<td>Total projected interest to be paid on this loan</td>
</tr>
<tr>
<td>LoanNextPaymentDate</td>
<td>Timestamp</td>
<td>The next payment date for the loan</td>
</tr>
</tbody>
</table>

### 13.23. InvestmentTransaction Entity

Extends and inherits all fields from Transaction.

<table>
<thead>
<tr>
<th>Field</th>
<th>Type</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>TransactionType</td>
<td>InvestmentTransactionType</td>
<td>PURCHASED, SOLD, PURCHASEDOMNode, PURCHASETOOPEN, PURCHASETOCLOSE, SOLDDOMAIN, SOLDTOOPEN, INTEREST, MARGININTEREST, REINVESTOFINCOME, RETURNOFCAPITAL, TRANSFER, CONTRIBUTION, FEE, OPTIONEXERCISE, OPTIONEXPIRATION, DIVIDEND, DIVIDENDREINVEST, SPLIT, CLOSURE, INCOME, EXPENSE, CLOSUREOPT, INVEXPENSE, JRNLS, JRNLFUND, OTHER, DIV, SRVCHG, DEP, ATM, POS, XFER, CHECK, PAYMENT, CASH, DIRECTDEP, DIRECTDEBIT, REPEATPMT</td>
</tr>
<tr>
<td>Shares</td>
<td>Number</td>
<td>Required for stock, mutual funds. Number of shares (with decimals). Negative numbers indicate securities are being removed from the account.</td>
</tr>
<tr>
<td>FaceValue</td>
<td>Number</td>
<td>Cash value for bonds</td>
</tr>
<tr>
<td>Price</td>
<td>Number</td>
<td>Unit purchase price</td>
</tr>
<tr>
<td>SecurityId</td>
<td>string</td>
<td>Unique identifier of security</td>
</tr>
<tr>
<td>SecurityIdType</td>
<td>SecurityIdType</td>
<td>Security identifier type</td>
</tr>
<tr>
<td>SecurityType</td>
<td>SecurityType</td>
<td>STOCK, MUTUALFUND, DEBT, OPTION, SWEEP, OTHER</td>
</tr>
<tr>
<td>Symbol</td>
<td>string</td>
<td>Ticker symbol</td>
</tr>
<tr>
<td>Markup</td>
<td>Number</td>
<td>Portion of unit price that is attributed to the dealer markup</td>
</tr>
<tr>
<td>Commission</td>
<td>Number</td>
<td>Transaction commission</td>
</tr>
<tr>
<td>Taxes</td>
<td>Number</td>
<td>Taxes on the trade</td>
</tr>
<tr>
<td>Fees</td>
<td>Number</td>
<td>Fees applied to the trade</td>
</tr>
<tr>
<td>Load</td>
<td>Number</td>
<td>Load on the transaction</td>
</tr>
<tr>
<td>Inv401kSource</td>
<td>Inv401kSourceType</td>
<td>Source of money. PRETAX, AFTERTAX, MATCH, PROFITSHARING, ROLLOVER, OTHERVEST, OTHERNONVEST</td>
</tr>
<tr>
<td>Field</td>
<td>Type</td>
<td>Description</td>
</tr>
<tr>
<td>-----------------------</td>
<td>--------------------</td>
<td>-----------------------------------------------------------------------------</td>
</tr>
<tr>
<td>ConfirmationNumber</td>
<td>string</td>
<td>Confirmation number of the transaction</td>
</tr>
<tr>
<td>FractionalCash</td>
<td>Number</td>
<td>Cash for fractional units (used for stock splits)</td>
</tr>
<tr>
<td>IncomeType</td>
<td>IncomeType</td>
<td>Type of investment income: CGLONG (capital gains-long term), CGSHORT (capital gains-short term), MISC</td>
</tr>
<tr>
<td>OldUnits</td>
<td>Number</td>
<td>Number of shares before split</td>
</tr>
<tr>
<td>SplitRatioNumerator</td>
<td>Number</td>
<td>Split ratio numerator</td>
</tr>
<tr>
<td>SplitRatioDenominator</td>
<td>Number</td>
<td>Split ratio denominator</td>
</tr>
<tr>
<td>NewUnits</td>
<td>Number</td>
<td>Number of shares after split</td>
</tr>
<tr>
<td>SubAccountSec</td>
<td>SubAccountType</td>
<td>Sub-account security Type: CASH, MARGIN, SHORT and OTHERS</td>
</tr>
<tr>
<td>SubAccountFund</td>
<td>SubAccountType</td>
<td>From which account money came in: CASH, MARGIN, SHORT and OTHERS</td>
</tr>
<tr>
<td>LoanId</td>
<td>string</td>
<td>For 401k accounts only. This indicates the transaction was due to a loan or a loan repayment.</td>
</tr>
<tr>
<td>LoanPrincipal</td>
<td>Number</td>
<td>How much loan pre-payment is principal</td>
</tr>
<tr>
<td>LoanInterest</td>
<td>Number</td>
<td>How much loan pre-payment is interest</td>
</tr>
<tr>
<td>PayrollDate</td>
<td>Timestamp</td>
<td>The date for the 401k transaction was obtained in payroll</td>
</tr>
<tr>
<td>PriorYearContrib</td>
<td>Boolean</td>
<td>Indicates this buy was made using prior years contribution. TRUE or FALSE</td>
</tr>
<tr>
<td>Withholding</td>
<td>Number</td>
<td>Federal tax withholding</td>
</tr>
<tr>
<td>TaxExempt</td>
<td>Boolean</td>
<td>Tax-exempt transaction TRUE or FALSE</td>
</tr>
<tr>
<td>Gain</td>
<td>Number</td>
<td>For sales</td>
</tr>
<tr>
<td>StateWithholding</td>
<td>Number</td>
<td>State tax withholding</td>
</tr>
<tr>
<td>Penalty</td>
<td>Number</td>
<td>Indicates amount withheld due to a penalty</td>
</tr>
<tr>
<td>RunningBalance</td>
<td>Number</td>
<td>Running balance of the position</td>
</tr>
<tr>
<td>UnitPrice</td>
<td>Number</td>
<td>Price per commonly-quoted unit. Does not include markup/markdown, unitprice. Share price for stocks, mutual funds, and others. Percentage of par for bonds. Per share (not contract) for options.</td>
</tr>
<tr>
<td>Units</td>
<td>Number</td>
<td>For security-based actions other than stock splits, quantity. Shares for stocks, mutual funds, and others. Face value for bonds. Contracts for options.</td>
</tr>
<tr>
<td>UnitType</td>
<td>UnitType</td>
<td>SHARES, CURRENCY</td>
</tr>
<tr>
<td>TransactionReason</td>
<td>TransactionReason</td>
<td>Reason for this transaction; CALL (the debt was called), SELL (the debt was sold), MATURITY (the debt reached maturity)</td>
</tr>
</tbody>
</table>

**13.24. LineItem Entity**

<table>
<thead>
<tr>
<th>Field</th>
<th>Type</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Description</td>
<td>string</td>
<td>The description of the line item</td>
</tr>
<tr>
<td>Description</td>
<td>required</td>
<td></td>
</tr>
</tbody>
</table>
### Field | Type | Description
--- | --- | ---
Amount | Number | The amount of money attributable to this line item
CheckNumber | int | Check number
Memo | String255 | Secondary item description
Reference | string | A reference number
ImageIds | Array of string | Array of image identifiers (unique to transaction) used to retrieve images of check or transaction receipt

### 13.25. LoanAccount Entity

Extends and inherits all fields from `Account`.

<table>
<thead>
<tr>
<th>Field</th>
<th>Type</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>BalanceAsOf</td>
<td>Timestamp</td>
<td>As-of date for balances</td>
</tr>
<tr>
<td>PrincipalBalance</td>
<td>Number</td>
<td>Principal balance of loan</td>
</tr>
<tr>
<td>EscrowBalance</td>
<td>Number</td>
<td>Escrow balance of loan</td>
</tr>
<tr>
<td>OriginalPrincipal</td>
<td>Number</td>
<td>Original principal of loan</td>
</tr>
<tr>
<td>OriginatingDate</td>
<td>Timestamp</td>
<td>Loan origination date</td>
</tr>
<tr>
<td>LoanTerm</td>
<td>int</td>
<td>Term of loan in months</td>
</tr>
<tr>
<td>TotalNumberOfPayments</td>
<td>int</td>
<td>Total number of payments</td>
</tr>
<tr>
<td>NextPaymentAmount</td>
<td>Number</td>
<td>Amount of next payment</td>
</tr>
<tr>
<td>NextPaymentDate</td>
<td>Timestamp</td>
<td>Date of next payment</td>
</tr>
<tr>
<td>PaymentFrequency</td>
<td>PaymentFrequency</td>
<td>DAILY, WEEKLY, BIWEEKLY, SEMIMONTHLY, MONTHLY, SEMIANNUALLY, ANNUALLY</td>
</tr>
<tr>
<td>CompoundingPeriod</td>
<td>CompoundingPeriod</td>
<td>DAILY, WEEKLY, BIWEEKLY, SEMIMONTHLY, MONTHLY, SEMIANNUALLY, ANNUALLY</td>
</tr>
<tr>
<td>PayoffAmount</td>
<td>Number</td>
<td>Payoff amount</td>
</tr>
<tr>
<td>LastPaymentAmount</td>
<td>Number</td>
<td>Last payment amount</td>
</tr>
<tr>
<td>LastPaymentDate</td>
<td>Timestamp</td>
<td>Last payment date</td>
</tr>
<tr>
<td>MaturityDate</td>
<td>Timestamp</td>
<td>Maturity date</td>
</tr>
<tr>
<td>InterestPaidYearToDate</td>
<td>Number</td>
<td>Interest paid year to date</td>
</tr>
<tr>
<td>Transactions</td>
<td>Array of LoanTransaction</td>
<td></td>
</tr>
</tbody>
</table>

### 13.26. LoanTransaction Entity

Extends and inherits all fields from `Transaction`. 

31
### Field | Type | Description
--- | --- | ---
TransactionType | LoanTransactionType | PAYMENT, FEE, ADJUSTMENT, INTEREST
PaymentDetails | PaymentDetails | Breakdown of payment details

#### 13.27. LocAccount Entity
Extends and inherits all fields from Account.

### Field | Type | Description
--- | --- | ---
BalanceAsOf | Timestamp | As-of date of balances
CreditLine | Number | Credit limit
AvailableCredit | Number | Available credit
NextPaymentAmount | Number | Amount of next payment
NextPaymentDate | Timestamp | Due date of next payment
PrincipalBalance | Number | Principal balance
CurrentBalance | Number | Current balance LOC
MinimumPaymentAmount | Number | Minimum payment amount
LastPaymentAmount | Number | Last payment amount
LastPaymentDate | Timestamp | Last payment date
PointsAccrued | Number | Points accrued
CurrentRewardsBalance | Number | Current rewards balance
PointsRedeemed | Number | Points redeemed
PurchasesApr | Number | Purchases APR
AdvancesApr | Number | Advances APR
CashAdvanceLimit | Number | Cash advance limit
AvailableCash | Number | Available cash
FinanceCharges | Number | Finance charges
Transactions | Array of LocTransaction | 

#### 13.28. LocTransaction Entity
A line of credit transaction.
Extends and inherits all fields from Transaction.
### 13.29. MutualFundSecurity Entity

<table>
<thead>
<tr>
<th>Field</th>
<th>Type</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>MutualFundType</td>
<td>MutualFundType</td>
<td>Mutual fund type. OPENEND, CLOSEEND, OTHER</td>
</tr>
<tr>
<td>UnitsStreet</td>
<td>Number</td>
<td>Units in the FI’s street name, positive quantity</td>
</tr>
<tr>
<td>UnitsUser</td>
<td>Number</td>
<td>Units in user’s name directly, positive quantity</td>
</tr>
<tr>
<td>ReinvestDividends</td>
<td>Boolean</td>
<td>Reinvest dividends</td>
</tr>
<tr>
<td>ReinvestCapitalGains</td>
<td>Boolean</td>
<td>Reinvest capital gains</td>
</tr>
<tr>
<td>Yield</td>
<td>Number</td>
<td>Current yield reported as portion of the fund’s assets</td>
</tr>
<tr>
<td>YieldAsOfDate</td>
<td>Timestamp</td>
<td>As-of date for yield value</td>
</tr>
</tbody>
</table>

### 13.30. OpenOrder Entity

<table>
<thead>
<tr>
<th>Field</th>
<th>Type</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>OrderId</td>
<td>Identifier</td>
<td>Long term persistent identity of the order. Id for this order transaction.</td>
</tr>
<tr>
<td>SecurityId</td>
<td>string</td>
<td>Unique identifier of security</td>
</tr>
<tr>
<td>SecurityIdType</td>
<td>SecurityIdType</td>
<td>Security identifier type</td>
</tr>
<tr>
<td>Symbol</td>
<td>string</td>
<td>Market symbol</td>
</tr>
<tr>
<td>Description</td>
<td>string</td>
<td>Description of order</td>
</tr>
<tr>
<td>Units</td>
<td>Number</td>
<td>Number of units (shares or bonds etc).</td>
</tr>
<tr>
<td>OrderType</td>
<td>OrderType</td>
<td>Type of order BUY, SELL, BUYTOCOVER, BUYTOOPEN, SELLTOCOVER, SELLTOOPEN, SELLSHORT, SELLCLOSE</td>
</tr>
<tr>
<td>OrderDate</td>
<td>Timestamp</td>
<td>Order date</td>
</tr>
<tr>
<td>UnitPrice</td>
<td>Number</td>
<td>Unit price</td>
</tr>
<tr>
<td>UnitType</td>
<td>UnitType</td>
<td>Type of unit SHARES, CURRENCY</td>
</tr>
<tr>
<td>OrderDuration</td>
<td>OrderDuration</td>
<td>This order is good for DAY, GOODTILLCANCEL, IMMEDIATE</td>
</tr>
<tr>
<td>SubAccount</td>
<td>SubAccountType</td>
<td>CASH, MARGIN, SHORT, OTHER</td>
</tr>
<tr>
<td>LimitPrice</td>
<td>Number</td>
<td>Limit price</td>
</tr>
<tr>
<td>StopPrice</td>
<td>Number</td>
<td>Stop price</td>
</tr>
<tr>
<td>Field</td>
<td>Type</td>
<td>Description</td>
</tr>
<tr>
<td>---------------------</td>
<td>--------------------</td>
<td>-----------------------------------------------------------------------------</td>
</tr>
<tr>
<td>Inv401kSource</td>
<td>Inv401kSourceType</td>
<td>For 401(k) accounts, source of money for this order. PRETAX, AFTERTAX, MATCH, PROFITSHARING, ROLLOVER, OTHERVEST, OTHERNONVEST. Default if not present is OTHERNONVEST.</td>
</tr>
</tbody>
</table>

### 13.31. OptionSecurity Entity

<table>
<thead>
<tr>
<th>Field</th>
<th>Type</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Secured</td>
<td>Secured</td>
<td>How the option is secured. NAKED, COVERED.</td>
</tr>
<tr>
<td>OptionType</td>
<td>OptionType</td>
<td>Option type: PUT = put, CALL = call</td>
</tr>
<tr>
<td>StrikePrice</td>
<td>Number</td>
<td>Strike price / Unit price</td>
</tr>
<tr>
<td>ExpireDate</td>
<td>Timestamp</td>
<td>Expiration date of option</td>
</tr>
<tr>
<td>SharesPerContract</td>
<td>Number</td>
<td>Shares per contract</td>
</tr>
</tbody>
</table>

### 13.32. OtherSecurity Entity

<table>
<thead>
<tr>
<th>Field</th>
<th>Type</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>TypeDescription</td>
<td>string</td>
<td>Description of Other Security</td>
</tr>
</tbody>
</table>

### 13.33. PaymentDetails Entity

<table>
<thead>
<tr>
<th>Field</th>
<th>Type</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>PrincipalAmount</td>
<td>Number</td>
<td>The amount of payment applied to principal</td>
</tr>
<tr>
<td>InterestAmount</td>
<td>Number</td>
<td>The amount of payment applied to interest</td>
</tr>
<tr>
<td>InsuranceAmount</td>
<td>Number</td>
<td>The amount of payment applied to life/ health/accident insurance on the loan</td>
</tr>
<tr>
<td>EscrowAmount</td>
<td>Number</td>
<td>The amount of payment applied to escrow</td>
</tr>
<tr>
<td>PmiAmount</td>
<td>Number</td>
<td>The amount of payment applied to PMI</td>
</tr>
<tr>
<td>FeesAmount</td>
<td>Number</td>
<td>The amount of payment applied to fees</td>
</tr>
</tbody>
</table>

### 13.34. PlannedAvailability Entity

<table>
<thead>
<tr>
<th>Field</th>
<th>Type</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Status</td>
<td>string</td>
<td></td>
</tr>
<tr>
<td>StatusShortDesc</td>
<td>string</td>
<td></td>
</tr>
<tr>
<td>StatusStartDate</td>
<td>Timestamp</td>
<td>required</td>
</tr>
<tr>
<td>StatusEndDate</td>
<td>Timestamp</td>
<td>required</td>
</tr>
</tbody>
</table>
### 13.35. Portion Entity

<table>
<thead>
<tr>
<th>Field</th>
<th>Type</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>AssetClass</td>
<td>AssetClass</td>
<td>DOMESTICBOND, INTLBOND, LARGESTOCK, SMALLSTOCK, INTLSTOCK, MONEYMARKET, OTHER</td>
</tr>
<tr>
<td>Percent</td>
<td>Number</td>
<td>Percentage of asset class that falls under this asset</td>
</tr>
</tbody>
</table>

### 13.36. SingleAccountDetailsRequest Entity

<table>
<thead>
<tr>
<th>Field</th>
<th>Type</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>AccountId</td>
<td>string</td>
<td>Account identifier</td>
</tr>
<tr>
<td>StartTime</td>
<td>Timestamp</td>
<td>Start time for use in retrieval; ISO 8601 date including zone indicator or combined date time including zone indicator</td>
</tr>
<tr>
<td>EndTime</td>
<td>Timestamp</td>
<td>End time for use in retrieval; ISO 8601 date including zone indicator or combined date time including zone indicator</td>
</tr>
<tr>
<td>Page</td>
<td>Number</td>
<td>Page number (applicable only if the server has indicated that the collection is paginated)</td>
</tr>
</tbody>
</table>

### 13.37. SingleAccountDetailsRequestList Entity

<table>
<thead>
<tr>
<th>Field</th>
<th>Type</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>SingleAccountDetailsRequest</td>
<td>Array of</td>
<td>SingleAccountDetailsRequest</td>
</tr>
</tbody>
</table>

### 13.38. Statement Entity

<table>
<thead>
<tr>
<th>Field</th>
<th>Type</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>AccountId</td>
<td>Identifier</td>
<td>Corresponds to AccountId in Account entity</td>
</tr>
<tr>
<td>StatementId</td>
<td>Identifier</td>
<td>Long-term persistent identity of the statement</td>
</tr>
<tr>
<td>StatementDate</td>
<td>Timestamp</td>
<td>Date of the statement</td>
</tr>
<tr>
<td>Description</td>
<td>string</td>
<td>Description of statement</td>
</tr>
</tbody>
</table>

### 13.39. Statements Entity

<table>
<thead>
<tr>
<th>Field</th>
<th>Type</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total</td>
<td>int</td>
<td>Total number of results in this collection across all pages</td>
</tr>
<tr>
<td>TotalPages</td>
<td>int</td>
<td>Total number of pages</td>
</tr>
<tr>
<td>Page</td>
<td>int</td>
<td>Current page number</td>
</tr>
<tr>
<td>Statement</td>
<td>Array of Statement</td>
<td>Statements</td>
</tr>
</tbody>
</table>
### 13.40. StockSecurity Entity

<table>
<thead>
<tr>
<th>Field</th>
<th>Type</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>UnitsStreet</td>
<td>Number</td>
<td>Units in the FI's street name, positive quantity</td>
</tr>
<tr>
<td>UnitsUser</td>
<td>Number</td>
<td>Units in user's name directly, positive quantity</td>
</tr>
<tr>
<td>ReinvestDividends</td>
<td>Boolean</td>
<td>Reinvest dividends</td>
</tr>
<tr>
<td>StockType</td>
<td>StockType</td>
<td>COMMON, PREFERRED, CONVERTIBLE, OTHER</td>
</tr>
<tr>
<td>Yield</td>
<td>Number</td>
<td>Current yield</td>
</tr>
<tr>
<td>YieldAsOfDate</td>
<td>Timestamp</td>
<td>Yield as-of date</td>
</tr>
</tbody>
</table>

### 13.41. SweepSecurity Entity

<table>
<thead>
<tr>
<th>Field</th>
<th>Type</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>CurrentBalance</td>
<td>Number</td>
<td>Balance of funds in account</td>
</tr>
<tr>
<td>AvailableBalance</td>
<td>Number</td>
<td>Balance of funds available for use</td>
</tr>
<tr>
<td>BalanceAsOf</td>
<td>Timestamp</td>
<td>As-of date of balances</td>
</tr>
<tr>
<td>Checks</td>
<td>Boolean</td>
<td>Whether or not checks can be written on the account</td>
</tr>
</tbody>
</table>

### 13.42. TaxLot Entity

<table>
<thead>
<tr>
<th>Field</th>
<th>Type</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>OriginalPurchaseDate</td>
<td>Timestamp</td>
<td>Lot acquired date</td>
</tr>
<tr>
<td>Quantity</td>
<td>Number</td>
<td>Lot quantity</td>
</tr>
<tr>
<td>PurchasedPrice</td>
<td>Number</td>
<td>Original purchase price</td>
</tr>
<tr>
<td>CostBasis</td>
<td>Number</td>
<td>Total amount of money spent acquiring this lot including any fees or commission expenses incurred</td>
</tr>
<tr>
<td>CurrentValue</td>
<td>Number</td>
<td>Lot market value</td>
</tr>
<tr>
<td>PositionType</td>
<td>PositionType</td>
<td>LONG, SHORT</td>
</tr>
</tbody>
</table>

### 13.43. TelephoneNumber Entity

<table>
<thead>
<tr>
<th>Field</th>
<th>Type</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Type</td>
<td>TelephoneNumberType</td>
<td>HOME, BUSINESS, CELL, FAX</td>
</tr>
<tr>
<td>Country</td>
<td>String3</td>
<td>Country calling codes defined by ITU-T recommendations E.123 and E.164</td>
</tr>
<tr>
<td>Number</td>
<td>String10</td>
<td>Telephone number</td>
</tr>
</tbody>
</table>
### 13.44. Transaction Entity

<table>
<thead>
<tr>
<th>Field</th>
<th>Type</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>AccountId</td>
<td>Identifier</td>
<td>Corresponds to AccountId in Account</td>
</tr>
<tr>
<td>TransactionId</td>
<td>Identifier</td>
<td>Long term persistent identity of the transaction (unique to account)</td>
</tr>
<tr>
<td>ReferenceTransactionId</td>
<td>Identifier</td>
<td>For reverse postings, the identity of the transaction being reversed. For the correction transaction, the identity of the reversing post. For credit card posting transactions, the identity of the authorization transaction.</td>
</tr>
<tr>
<td>PostedTimestamp</td>
<td>Timestamp</td>
<td>The date and time that the transaction was posted to the account. If not provided then TransactionTimestamp can be used as PostedTimestamp.</td>
</tr>
<tr>
<td>TransactionTimestamp</td>
<td>Timestamp</td>
<td>The date and time that the transaction was added to the server backend systems</td>
</tr>
<tr>
<td>Description</td>
<td>string</td>
<td>The description of the transaction</td>
</tr>
<tr>
<td>Memo</td>
<td>String255</td>
<td>Secondary transaction description</td>
</tr>
<tr>
<td>DebitCreditMemo</td>
<td>DebitCreditMemo</td>
<td>DEBIT, CREDIT, MEMO</td>
</tr>
<tr>
<td>Category</td>
<td>string</td>
<td>Transaction category, preferably MCC or SIC.</td>
</tr>
<tr>
<td>SubCategory</td>
<td>string</td>
<td>Transaction category detail</td>
</tr>
<tr>
<td>Reference</td>
<td>string</td>
<td>A tracking reference identifier</td>
</tr>
<tr>
<td>Status</td>
<td>TransactionStatus</td>
<td>PENDING, MEMO, POSTED, AUTHORIZATION</td>
</tr>
<tr>
<td>Amount</td>
<td>Number</td>
<td>The amount of money in the account currency</td>
</tr>
<tr>
<td>ForeignAmount</td>
<td>Number</td>
<td>The amount of money in the foreign currency</td>
</tr>
<tr>
<td>ForeignCurrency</td>
<td>Iso4217Code</td>
<td>The ISO 4217 code of the foreign currency</td>
</tr>
<tr>
<td>ImageIds</td>
<td>Array of string</td>
<td>Array of Image Identifiers (unique to Transaction) used to retrieve Images of check or transaction receipt</td>
</tr>
<tr>
<td>LineItem</td>
<td>Array of LineItem</td>
<td>Breakdown of the transaction details</td>
</tr>
<tr>
<td>FiAttributes</td>
<td>Array of FiAttribute</td>
<td>Array of FI-specific attributes</td>
</tr>
</tbody>
</table>

### 13.45. Transactions Entity

Optionally paginated array of transactions.

<table>
<thead>
<tr>
<th>Field</th>
<th>Type</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total</td>
<td>int</td>
<td>Total number of results in this collection across all pages</td>
</tr>
<tr>
<td>TotalPages</td>
<td>int</td>
<td>Total number of pages</td>
</tr>
<tr>
<td>Page</td>
<td>int</td>
<td>Current page number</td>
</tr>
<tr>
<td>Field</td>
<td>Type</td>
<td>Description</td>
</tr>
<tr>
<td>------------------------------------</td>
<td>-------------------------------</td>
<td>-------------------------------------------------------------------------------------------------------</td>
</tr>
<tr>
<td>zero or more of DepositTransaction, InvestmentTransaction, LoanTransaction, or LocTransaction</td>
<td>DepositTransaction, InvestmentTransaction, LoanTransaction, or LocTransaction</td>
<td>An array of transactions with entity types dependent on the account type (deposit, investment, loan, or line of credit)</td>
</tr>
</tbody>
</table>

### 13.46. Transfer Entity

<table>
<thead>
<tr>
<th>Field</th>
<th>Type</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>TransferId</td>
<td>Identifier</td>
<td>Client generated, long-term persistent identity of the transfer action. This ID should be maintained and returned by institution.</td>
</tr>
<tr>
<td>FromAccountId</td>
<td>Identifier</td>
<td>Long-term persistent identity of the source account</td>
</tr>
<tr>
<td>ToAccountId</td>
<td>Identifier</td>
<td>Long-term persistent identity of the destination account</td>
</tr>
<tr>
<td>Amount</td>
<td>Number</td>
<td>Positive amount of money to be transferred</td>
</tr>
<tr>
<td>Memo</td>
<td>String255</td>
<td>User-entered reason for transfer</td>
</tr>
<tr>
<td>PaymentDetails</td>
<td>PaymentDetails</td>
<td>Payment details</td>
</tr>
</tbody>
</table>

### 13.47. TransferStatus Entity

<table>
<thead>
<tr>
<th>Field</th>
<th>Type</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>TransferId</td>
<td>Identifier</td>
<td>Client generated, long-term persistent identity of the transfer action. This ID should be maintained and returned by institution.</td>
</tr>
<tr>
<td>ReferenceId</td>
<td>Identifier</td>
<td>Long term persistent identifier for transfer attempt</td>
</tr>
<tr>
<td>Status</td>
<td>TransferStatusStatus</td>
<td>SUCCESS, NOFUNDS, PENDING, FAILURE</td>
</tr>
<tr>
<td>TransferDate</td>
<td>Timestamp</td>
<td>Date of transfer attempt</td>
</tr>
</tbody>
</table>

### 13.48. Vesting Entity

<table>
<thead>
<tr>
<th>Field</th>
<th>Type</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>VestingDate</td>
<td>Timestamp</td>
<td>Vesting date</td>
</tr>
<tr>
<td>Symbol</td>
<td>string</td>
<td>Security symbol</td>
</tr>
<tr>
<td>StrikePrice</td>
<td>Number</td>
<td>Strike price</td>
</tr>
<tr>
<td>VestingPercentage</td>
<td>Number</td>
<td>Vesting percentage</td>
</tr>
<tr>
<td>OtherVestAmount</td>
<td>Number</td>
<td>Other vest amount</td>
</tr>
<tr>
<td>OtherVestPercentage</td>
<td>Number</td>
<td>Other vest percentage</td>
</tr>
<tr>
<td>VestedBalance</td>
<td>Number</td>
<td>Vested balance</td>
</tr>
<tr>
<td>UnVestedBalance</td>
<td>Number</td>
<td>Unvested balance</td>
</tr>
<tr>
<td>Field</td>
<td>Type</td>
<td>Description</td>
</tr>
<tr>
<td>---------------------</td>
<td>--------</td>
<td>----------------------</td>
</tr>
<tr>
<td>VestedQuantity</td>
<td>Number</td>
<td>Vested quantity</td>
</tr>
<tr>
<td>UnVestedQuantity</td>
<td>Number</td>
<td>Unvested quantity</td>
</tr>
</tbody>
</table>

### 14. Simple Types

Simple types are specified in the accompanying XML schema document `durable-data-api.xsd`. All defined simple types inherit from the following basic types.

<table>
<thead>
<tr>
<th>Name</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>string</td>
<td>A string of Unicode characters</td>
</tr>
<tr>
<td>int</td>
<td>A 32-bit signed integer</td>
</tr>
<tr>
<td>decimal</td>
<td>An arbitrary-precision decimal number</td>
</tr>
<tr>
<td>dateTime</td>
<td>A string specifying a date and time</td>
</tr>
</tbody>
</table>

Many enumerations are implemented without enforcement of values to accommodate categorizations that are not covered by this document. These are described as having **Suggested Values**. Enumerations whose values are enforced are described as having **Valid Values**.

#### 14.1. AccountStatus

**Base Type**

string

**Suggested Values**

CLOSED
DELINQUENT
NEGATIVECURRENTBALANCE
OPEN
PAID
PENDINGCLOSE
PENDINGOPEN

#### 14.2. AccountType

**Base Type**

string

**Suggested Values**

401A
401K
403B
529
AUTOLOAN
CD
CHARGE
CHECKING
COMMERCIALLINEOFCREDIT
COMMERCIALLOAN
COVERDELL
CREDITCARD
ESROW
14.3. AssetClass

Base Type
string

Suggested Values
DOMESTICBOND
INTLBOND
INTLSTOCK
LARGESTOCK
MONEYMARKET
OTHER
SMALLSTOCK

14.4. BalanceType

Base Type
string

Valid Values
ASSET
LIABILITY

14.5. Boolean

'true' or 'false'.

Base Type
boolean

Pattern
ture
14.6. CallType

Base Type
string

Suggested Values
CALL
MATUREITY
PREFUND
PUT

14.7. CompoundingPeriod

Base Type
string

Suggested Values
ANNUALLY
BIWEEKLY
DAILY
MONTHLY
SEMIANNUALLY
SEMIMONTHLY
WEEKLY

14.8. CouponMatureFrequency

Base Type
string

Suggested Values
ANNUAL
MONTHLY
OTHER
QUARTERLY
SEMIANNUAL

14.9. DebitCreditMemo

Base Type
string

Suggested Values
CREDIT
DEBIT
MEMO

14.10. DebtClass

Base Type
string

Suggested Values
14.11. DebtType

**Base Type**

string

**Suggested Values**

COUPON
ZERO

14.12. DeliveryAddressType

**Base Type**

string

**Suggested Values**

BUSINESS
HOME
MAILING

14.13. DepositTransactionType

**Base Type**

string

**Suggested Values**

ADJUSTMENT
ATMDEPOSIT
ATMWITHDRAWAL
BILLPAYMENT
CHECK
DEPOSIT
DIRECTDEPOSIT
DIVIDEND
FEE
INTEREST
POSCREDIT
POSDEBIT
TRANSFER
WITHDRAWAL


**Base Type**

string

**Suggested Values**

CASH
MARGIN
OTHER
SHORT
14.15. HoldingSubType

Base Type
string

Suggested Values
CASH
MONEYMARKET

14.16. HoldingType

Base Type
string

Suggested Values
ANNUITY
BOND
CD
MUTUALFUND
OPTIONS
STOCK

14.17. Identifier

Base Type
string

Maximum Length
128

14.18. IncomeType

Base Type
string

Suggested Values
CGLONG
CGSHORT
MISC

14.19. InterestRateType

Base Type
string

Suggested Values
FIXED
VARIABLE

14.20. Inv401kSourceType

Base Type
string

Suggested Values
14.21. InvestmentBalanceType

Base Type
string

Suggested Values
AMOUNT
PERCENTAGE

14.22. InvestmentTransactionType

Base Type
string

Suggested Values
ADJUSTMENT
ATM
CASH
CHECK
CLOSURE
CLOSUREOPT
CONTRIBUTION
DEP
DIRECTDEBIT
DIRECTDEP
DIV
DIVIDEND
DIVIDENDREINVEST
EXPENSE
FEE
INCOME
INTEREST
INVEXPENSE
JRNLFUND
JRNLSIC
MARGININTEREST
OPTIONEXERCISE
OPTIONEXPIRATION
OTHER
PAYMENT
POS
PURCHASED
PURCHASEDTOCOVER
PURCHASETOCLOSE
PURCHASETOOPEN
REINVESTOFINCOME
REPEATPMT
RETURNOFCAPITAL
SOLD
SOLDDOCLOSE
14.23. Iso3166CountryCode

ISO 3166 Codes for the representation of names of countries and their subdivisions.

**Base Type**

string

**Valid Values**

- AD
- AE
- AF
- AG
- AI
- AL
- AM
- AN
- AO
- AQ
- AR
- AS
- AT
- AU
- AW
- AX
- AZ
- BA
- BB
- BD
- BE
- BF
- BG
- BH
- BI
- BJ
- BM
- BN
- BO
- BR
- BS
- BT
- BV
- BW
- BY
- BZ
- CA
- CC
- CD
- CF
- CG
- CH
- CI
- CK
- CL
### 14.24. Iso4217Code

**Base Type**
- `string`

**Valid Values**
- AED
- AFN
- ALL
- AMD
- ANG
- AOA
- ARS
- AUD
- AWG
- AZN
- BAM
- BBD
- BDT
- BGN
- BHD
- BIF
- BMD
- BND
- BOB
- BOV
- BRL
- BSD
- BTN
- BWP
- BYR
- BZD
- CAD
- CDF
- CHE
- CHF
- CHF
- CHF
- CHW
14.25. LoanPaymentFrequency

Base Type
string

Suggested Values
ANNUALLY
BIMONTHLY
BIWEEKLY
FOURWEEKS
MONTHLY
OTHER
QUARTERLY
SEMIANNUALLY
TWICEMONTHLY
WEEKLY

14.26. LoanTransactionType

Base Type
string

Suggested Values
ADJUSTMENT
FEE
INTEREST
PAYMENT
14.27. LocTransactionType

Base Type
string

Suggested Values
ADJUSTMENT
CHECK
FEE
INTEREST
PAYMENT
WITHDRAWAL

14.28. MessageFormat

Base Type
string

Valid Values
JSON
XML

14.29. MutualFundType

Base Type
string

Suggested Values
CLOSEEND
OPENEND
OTHER

14.30. Number

Base Type
decimal

14.31. OptionType

Base Type
string

Suggested Values
CALL
PUT

14.32. OrderDuration

Base Type
string

Suggested Values
DAY
GOODTILLCANCEL
IMMEDIATE
14.33. OrderType

Base Type
string

Suggested Values
BUY
BUYTOCOVER
BUYTOOPEN
SELL
SELLCLOSE
SELLSHORT
SELLTOCOVER
SELLTOOPEN

14.34. PaymentFrequency

Base Type
string

Suggested Values
ANNUALLY
BIWEEKLY
DAILY
MONTHLY
SEMIANNUALLY
SEMIMONTHLY
WEEKLY

14.35. PositionType

Base Type
string

Suggested Values
LONG
SHORT

14.36. Secured

Base Type
string

Suggested Values
COVERED
NAKED

14.37. SecurityIdType

Base Type
string

Suggested Values
CUSIP
ISIN
SEDOL
14.38. SecurityType

Base Type
    string

Suggested Values
    DEBT
    MUTUALFUND
    OPTION
    OTHER
    STOCK
    SWEEP

14.39. StockType

Base Type
    string

Suggested Values
    COMMON
    CONVERTIBLE
    OTHER
    PREFERRED

14.40. String10

Base Type
    string

Maximum Length
    10

14.41. String2

Base Type
    string

Maximum Length
    2

14.42. String255

Base Type
    string

Maximum Length
    255

14.43. String3

Base Type
string

14.44. String64

Base Type
string

Maximum Length
64

14.45. String9

Base Type
string

Maximum Length
9

14.46. SubAccountType

Base Type
string

Suggested Values
CASH
MARGIN
OTHERS
SHORT

14.47. TelephoneNumberType

Base Type
string

Suggested Values
BUSINESS
CELL
FAX
HOME

14.48. Timestamp

ISO 8601 date time with milliseconds in UTC time zone.

Base Type
datetime

Pattern
\d{4}\-\d{2}\-\d{2}\T\d{2}:\d{2}:\d{3}Z

14.49. TransactionReason

Base Type
string

Suggested Values
CALL
MATURITY
SELL

14.50. TransactionStatus

Base Type
string

Suggested Values
AUTHORIZATION
MEMO
PENDING
POSTED

14.51. TransferStatusStatus

Base Type
string

Suggested Values
FAILURE
NOFUNDS
PENDING
SUCCESS

14.52. UnitType

Base Type
string

Suggested Values
CURRENCY
SHARES