RIT DMA REST API 1.0.4

`[ Base URL: flserver-test.rotman.utoronto.ca:10001/v1 ]`

https://rit.306w.ca/RIT-DMA-API/1.0.4/swagger.yaml

Overview

The Rotman Interactive Trader (RIT) allows users to query market data and submit trading instructions through a REST API, as well as through a Microsoft Excel VBA API. The REST API is further categorized into two approaches: the Client REST API and the DMA (Direct Market Access) REST API. While these two appraoches use the same REST API type, they differ in the connection endpoints. The Client REST API connects to the RIT Client, whereas the DMA REST API connects directly to the RIT Instructor App (RIT Server). This webpage aims to provide detailed information on the **DMA REST API**. If you are looking for detailed information about Excel VBA API, please click **here**. For the Client REST API, please click **here**.

The DMA REST API is a straightforward interface for interacting directly with the Rotman Interactive Trader (RIT) Server. This means that connections to the Decision Cases can be made without using the RIT Client, as long as the endpoint server URL and the TraderID credentials are available. Responses are always JSON objects. Successful requests return with HTTP code `200`, while unsuccessful responses will have HTTP error codes between `400` and `500`. Most programming languages have ways to interact with this kind of API. Some resources:

- MATLAB https://www.mathworks.com/help/mps/restful-api-and-json.html?requestedDomain=www.mathworks.com
- C# https://docs.microsoft.com/en-us/aspnet/web-api/overview/advanced/calling-a-web-api-from-a-net-client
- Python https://realpython.com/blog/python/api-integration-in-python/
- Node https://www.npmjs.com/package/request
- VBA https://stackoverflow.com/questions/19553476/how-to-make-rest-call-with-vba-in-excel along with https://stackoverflow.com/questions/19360440/how-to-parse-json-with-vba-without-external-libraries

Connecting To The DMA REST API

The `API` icon indicates whether an API access is enabled. If there are any issues with starting the API, the icon will be **red** and clicking on it will reveal the associated error message. If the API is turned off, the icon will be greyed out. This icon applies to both Excel VBA API and REST API. Similarly, the `API Orders` icon indicates whether orders can be submitted via API.

Users can click on this `API` icon in order to access more detailed information on interacting with the API.

The DMA REST API is hosted by the RIT Instructor App (Server). The hostname will be the same as the one used to login to the RIT Client, but the port will be different (set to 10,001 in this example). Clicking through the Authorize button below will initialize this page with the proper host and authentication settings for a particular DMA REST API instance and is the recommended way to start exploring this API.

Authentication

All DMA REST API requests must be authenticated. RIT uses a Basic Authentication which requires a specially crafted `Authorization` header (based on your login trader ID and password) to be attached to each request. The header value must be in th form `Basic <credentials>`, where `<credentials>` is the Base64 encoding of a string composed of your trader ID and password concatenated with a `:`. Requests without a correctly set header will be rejected with HTTP code `401`.

For example, if your trader ID was `trader123` and your password was `securepassword`, then you would Base64 encode the string `trader123:securepassword`. The `Authorization` header value should be set to `Basic dHJhZGVyMTIzOnNlY3VyZXBhc3N3b3Jk`.

The API Info dialog will show the correct value for the `Authorization` header for the currently logged in client. Most REST API libraries will typically include a helper function for this kind of authentication (avoiding the need to set this header manually).

Rate Limiting

All endpoints are rate-limited to prevent the server from being overwhelmed with too many requests. When a request is rejected due to rate-limiting, the response will have an HTTP error code of `429`. In addition, the response will contain a `Retry-After` header and `wait` body parameter, indicating the number of seconds to wait before attempting the request again.

In addition to the global rate limit on requests, securities may also have additional, more restrictive rate limits. The `Retry-After` / `wait` times in those cases correspond to the more restrictive rate limits. Requests for other securities with less restrictive rate limits may still be successful.

While the Client REST API is less likely to encouter rate-limiting given the built-in rate-limit handler in the RIT Client, users of the DMA REST API are more likely to experience this response. This is because the DMA REST API connects directly to the server. Therefore, it is recommended to implement a response handler for rate-limiting.

A Sample Code

Given the similar nature of the DMA REST API and the Client REST API, it is possible to use the same REST API request syntaxes for both, as long as authentication and rate-limiting are handled properly. This means that existing codes using the Client REST API can be converted to the DMA REST API. For example, the ALGO1 Python Example code using the Client REST API has been covered to the DMA REST API in the file, **RIT - Example Code - ALGO1 - Python - DMA REST API.py**. It is recommended to keep the similar authentication and rate-limiting code blocks for other algorithms using the DMA REST API to ensure smooth operation.

Additional Notes

- Tickers are case-sensitive and should match what is displayed in the RIT Client.

Schemes

HTTP

Authorize 🔒

---

default ⌄

GET	/case	Gets information about the current case.	🔒

Gets information about the current case.

Parameters   Try it out

No parameters

Responses   Response content type | application/json |

Code	Description
200	*OK*

Example Value   Model

```
{
  "name": "string",
  "period": 0,
  "tick": 0,
  "ticks_per_period": 0,
  "total_periods": 0,
  "status": "ACTIVE",
  "is_enforce_trading_limits": true
}
```

| 401 | *Unauthorized.* |

Example Value   Model

```
{
  "code": "UNAUTHORIZED"
}
```

GET   **/trader**   Gets information about the currently signed in trader.   🔒

Gets information about the currently signed in trader.

Parameters   **Try it out**

No parameters

Responses   Response content type   application/json

Code	Description
200	*OK*

Code	Description

Example Value   Model

```
{
  "trader_id": "string",
  "first_name": "string",
  "last_name": "string",
  "nlv": 0
}
```

401	*Unauthorized.*

Example Value   Model

```
{
  "code": "UNAUTHORIZED"
}
```

GET   `/limits`   Trading limits for the current case.   🔒

Trading limits for the current case.

Parameters	**Try it out**

No parameters

Responses	Response content type	application/json

Code	Description
200	*OK*

Example Value   Model

```
[
  {
    "name": "string",
    "gross": 0,
    "net": 0,
    "gross_limit": 0,
    "net_limit": 0,
```

Code	Description

```
                    "gross_fine": 0,
                    "net_fine": 0
                }
            ]
```

401

Unauthorized.

Example Value   Model

```
{
    "code": "UNAUTHORIZED"
}
```

GET   **/news** Gets the most recent news. 🔒

Gets the most recent news.

Parameters	Try it out

Name	Description
after number *(query)*	Retrieve only data with an `news_id` value greater than this value.
limit number *(query)*	Result set limit, counting backwards from the most recent item. Defaults to `20`.

Responses	Response content type	application/json

Code	Description
200	*OK*

Example Value   Model

Code	Description

```
[
  {
    "news_id": 0,
    "period": 0,
    "tick": 0,
    "ticker": "string",
    "headline": "string",
    "body": "string"
  }
]
```

| 401 | *Unauthorized.* |

Example Value   Model

```
{
  "code": "UNAUTHORIZED"
}
```

GET   `/assets` Gets a list of available assets. 🔒

Gets a list of available assets.

Parameters	Try it out

Name	Description
ticker string *(query)*	

Responses	Response content type `application/json`

Code	Description
200	*OK*

Code	Description

Example Value   Model

```
[
  {
    "ticker": "string",
    "type": "CONTAINER",
    "description": "string",
    "total_quantity": 0,
    "available_quantity": 0,
    "lease_price": 0,
    "convert_from": [
      {
        "ticker": "CL",
        "quantity": 10
      }
    ],
    "convert_to": [
      {
        "ticker": "CL",
        "quantity": 10
      }
    ],
    "containment": {
      "ticker": "CL",
      "quantity": 10
    },
    "ticks_per_conversion": 0,
    "ticks_per_lease": 0,
    "is_available": true,
    "start_period": 0,
    "stop_period": 0
  }
]
```

401   *Unauthorized.*

Example Value   Model

```
{
  "code": "UNAUTHORIZED"
}
```

GET   `/assets/history`   Gets the activity log for assets.   🔒

Gets the activity log for assets.

Parameters   Try it out

Name	Description
ticker string *(query)*	
period number *(query)*	Period to retrieve data from. Defaults to the current period.
limit number *(query)*	Result set limit, counting backwards from the most recent item. Defaults to 20.

Responses

Response content type **application/json**

Code	Description
200	*OK*

Example Value   Model

```
[
  {
    "ticker": "string",
    "tick": 0,
    "action": "string",
    "cost": 0,
    "convert_from": [
      {
        "ticker": "CL",
        "quantity": 10
      }
    ],
    "convert_to": [
      {
        "ticker": "CL",
        "quantity": 10
      }
    ],
    "convert_from_price": [
      {
        "ticker": "CL",
        "price": 9.99
      }
    ],
```

Code	Description

```
              "convert_to_price": [
                {
                  "ticker": "CL",
                  "price": 9.99
                }
              ]
            }
          ]
```

401

Unauthorized.

Example Value   Model

```
{
  "code": "UNAUTHORIZED"
}
```

GET   `/securities`   Gets a list of available securities and associated positions. 🔒

Gets a list of available securities and associated positions.

Parameters	Try it out

Name	Description
ticker `string` *(query)*	

Responses   Response content type   `application/json`

Code	Description
200	*OK*

Example Value   Model

Code	Description

```
[
  {
    "ticker": "string",
    "type": "SPOT",
    "size": 0,
    "position": 0,
    "vwap": 0,
    "nlv": 0,
    "last": 0,
    "bid": 0,
    "bid_size": 0,
    "ask": 0,
    "ask_size": 0,
    "volume": 0,
    "unrealized": 0,
    "realized": 0,
    "currency": "string",
    "total_volume": 0,
    "limits": [
      {
        "name": "string",
        "units": 0
      }
    ],
    "interest_rate": 0,
    "is_tradeable": true,
    "is_shortable": true,
    "start_period": 0,
    "stop_period": 0,
    "description": "string",
    "unit_multiplier": 0,
    "display_unit": "string",
    "start_price": 0,
    "min_price": 0,
    "max_price": 0,
    "quoted_decimals": 0,
    "trading_fee": 0,
    "limit_order_rebate": 0,
    "min_trade_size": 0,
    "max_trade_size": 0,
    "required_tickers": "string",
    "bond_coupon": 0,
    "interest_payments_per_period": 0,
    "base_security": "string",
    "fixing_ticker": "string",
    "api_orders_per_second": 0,
    "execution_delay_ms": 0,
    "interest_rate_ticker": "string",
    "otc_price_range": 0
  }
]
```

401

Unauthorized.

Example Value   Model

```
{
  "code": "UNAUTHORIZED"
```

Code	Description

```
                        }
```

GET /securities/book Gets the order book of a security. 🔒

Gets the order book of a security.

Parameters

Try it out

Name	Description
ticker * required string *(query)*	
limit number *(query)*	Maximum number of orders to return for each side of the order book. Defaults to 20.

Responses

Response content type **application/json**

Code	Description
200	*OK*

Example Value   Model

```
{
  "bid": [
    {
      "order_id": 1221,
      "period": 1,
      "tick": 10,
      "trader_id": "trader49",
      "ticker": "CRZY",
      "type": "LIMIT",
      "quantity": 100,
      "action": "BUY",
      "price": 14.21,
      "quantity_filled": 10,
```

Code	Description

```
                    "vwap": 14.21,
                    "status": "OPEN"
                  }
                ],
                "ask": [
                  {
                    "order_id": 1221,
                    "period": 1,
                    "tick": 10,
                    "trader_id": "trader49",
                    "ticker": "CRZY",
                    "type": "LIMIT",
                    "quantity": 100,
                    "action": "BUY",
                    "price": 14.21,
                    "quantity_filled": 10,
                    "vwap": 14.21,
                    "status": "OPEN"
                  }
                ]
              }
```

401

Unauthorized.

Example Value   Model

```
{
  "code": "UNAUTHORIZED"
}
```

GET   `/securities/history` Gets the OHLC history for a security.   🔒

Gets the OHLC history for a security.

Parameters   [Try it out]

Name	Description

ticker * required
`string`
(query)

period   Period to retrieve data from. Defaults to the current period.
`number`
(query)

Name	Description
limit `number` *(query)*	Result set limit, counting backwards from the most recent item. Defaults to `20`.

Responses

Response content type `application/json`

Code	Description
200	*OK*

Example Value   Model

```
[
  {
    "tick": 11,
    "open": 4.12,
    "high": 4.21,
    "low": 4.1,
    "close": 4.15
  }
]
```

Code	Description
401	*Unauthorized.*

Example Value   Model

```
{
  "code": "UNAUTHORIZED"
}
```

GET   `/securities/tas` Gets time & sales history for a security. 🔒

Gets time & sales history for a security. Data is anonymized.

Parameters

Try it out

Name	Description
ticker * required `string` *(query)*	
after `number` *(query)*	Retrieve only data with an `id` value greater than this value.
period `number` *(query)*	Period to retrieve data from. Defaults to the current period.
limit `number` *(query)*	Result set limit, counting backwards from the most recent item. Defaults to `20`.

Responses

Response content type   **application/json**

Code	Description
200	*OK*

Example Value   Model

```
[
  {
    "id": 10,
    "period": 1,
    "tick": 50,
    "price": 4.1,
    "quantity": 10
  }
]
```

| 401 | *Unauthorized.* |

Example Value   Model

Code	Description

```
{
  "code": "UNAUTHORIZED"
}
```

GET   `/orders`   Gets a list of all orders.   🔒

Gets a list of all orders.

Parameters

<div align="right">

Try it out

</div>

Name	Description
status `string` *(query)*	The status of the orders to return. Defaults to `OPEN`.

Responses

Response content type   **application/json**

Code	Description
200	*OK*

Example Value   Model

```
[
  {
    "order_id": 1221,
    "period": 1,
    "tick": 10,
    "trader_id": "trader49",
    "ticker": "CRZY",
    "type": "LIMIT",
    "quantity": 100,
    "action": "BUY",
    "price": 14.21,
    "quantity_filled": 10,
    "vwap": 14.21,
    "status": "OPEN"
```

Code	Description
	``` }]```
401	*Unauthorized.* **Example Value** Model ``` { "code": "UNAUTHORIZED" }```

POST   `/orders`   Insert a new order.   🔒

Insert a new order.

Parameters   [Try it out]

Name	Description
ticker * required `string` *(query)*	
type * required `string` *(query)*	
quantity * required `number` *(query)*	
action * required `string` *(query)*	
price `number` *(query)*	Required if `type` is `LIMIT`. Ignored otherwise.
`dry_run`	Only available if `type` is `MARKET`. *Simulates* the order execution and returns the result as if the order was executed.

Name	Description
number *(query)*	

Responses

Response content type   `application/json`

Code	Description
200	*OK*

Example Value   Model

```
{
  "order_id": 1221,
  "period": 1,
  "tick": 10,
  "trader_id": "trader49",
  "ticker": "CRZY",
  "type": "LIMIT",
  "quantity": 100,
  "action": "BUY",
  "price": 14.21,
  "quantity_filled": 10,
  "vwap": 14.21,
  "status": "OPEN"
}
```

| 401 | *Unauthorized.* |

Example Value   Model

```
{
  "code": "UNAUTHORIZED"
}
```

| 429 | *Rate limit exceeded.* |

Example Value   Model

```
{
  "code": "RATE_LIMIT_EXCEEDED",
  "wait": 0.215
}
```

Code	Description

Headers:

Name	Description	Type
Retry-After	Number of seconds to wait before retrying request.	number

---

GET   `/orders/{id}`   Gets the details of a specific order.   🔒

Gets the details of a specific order.

Parameters   [**Try it out**]

Name	Description
id * required integer *(path)*	The id of the order.

Responses   Response content type   [application/json]

Code	Description

200	*OK*
	
	Example Value Model
	
	``
	{
	  "order_id": 1221,
	  "period": 1,
	  "tick": 10,
	  "trader_id": "trader49",
	  "ticker": "CRZY",
	  "type": "LIMIT",
	  "quantity": 100,
	  "action": "BUY",
	  "price": 14.21,
	  "quantity_filled": 10,
	  "vwap": 14.21,
	``

Code	Description

```
      "status": "OPEN"
    }
```

401

Unauthorized.

Example Value   Model

```
    {
      "code": "UNAUTHORIZED"
    }
```

DELETE   /orders/{id}   Cancel an open order.   🔒

Cancel an open order.

Parameters   [Try it out]

Name	Description
id * required `integer` *(path)*	The id of the order.

Responses   Response content type   [application/json]

Code	Description

200

OK

Example Value   Model

```
    {
      "success": true
    }
```

Code	Description
401	*Unauthorized.*

Example Value   Model

```
{
    "code": "UNAUTHORIZED"
}
```

GET   `/tenders` Gets a list of all active tenders. 🔒

Gets a list of all active tenders.

Parameters   Try it out

No parameters

Responses   Response content type   application/json

Code	Description
200	*OK*

Example Value   Model

```
[
  {
    "tender_id": 0,
    "period": 0,
    "tick": 0,
    "expires": 0,
    "caption": "string",
    "quantity": 0,
    "action": "BUY",
    "is_fixed_bid": true,
    "price": 0
  }
]
```

Code	Description
401	*Unauthorized.*

Example Value   Model

```
{
  "code": "UNAUTHORIZED"
}
```

POST   `/tenders/{id}` Accept the tender.   🔒

Accept the tender.

Parameters   [**Try it out**]

Name	Description
price * required number *(query)*	Bid price for the tender. If tender is fixed-bid, this value must match the tender price.
id * required integer *(path)*	The id of the tender.

Responses   Response content type   [**application/json**]

Code	Description
200	*OK*

Example Value   Model

```
{
  "success": true
}
```

Code	Description
401	*Unauthorized.*

Example Value   Model

```
{
  "code": "UNAUTHORIZED"
}
```

DELETE   `/tenders/{id}`   Decline the tender.   🔒

Decline the tender.

Parameters   Try it out

Name	Description
id * required `integer` *(path)*	The id of the tender.

Responses   Response content type   application/json

Code	Description
200	*OK*

Example Value   Model

```
{
  "success": true
}
```

| 401 | *Unauthorized.* |

Code	Description

Example Value   Model

```json
{
  "code": "UNAUTHORIZED"
}
```

GET   `/leases`   List of all assets currently being leased or being used. 🔒

List of all assets currently being leased or being used.

Parameters	**Try it out**

No parameters

Responses	Response content type	application/json

Code	Description
200	*OK*

Example Value   Model

```json
[
  {
    "id": 0,
    "ticker": "string",
    "type": "CONTAINER",
    "start_lease_period": 0,
    "start_lease_tick": 0,
    "next_lease_period": 0,
    "next_lease_tick": 0,
    "convert_from": [
      {
        "ticker": "CL",
        "quantity": 10
      }
    ],
    "convert_to": [
      {
        "ticker": "CL",
        "quantity": 10
```

Code	Description

```
                    }
                ],
                "containment_usage": 0
            }
        ]
```

401

Unauthorized.

Example Value   Model

```
{
    "code": "UNAUTHORIZED"
}
```

POST   `/leases` Lease or use an asset.   🔒

Lease or use an asset. Depending on the type of asset, you will need to specify the `fromN` and `quantityN` parameters. Only specify subsequent `fromN` & `quantityN` parameters if needed.

Parameters   [Try it out]

Name	Description
ticker * required string *(query)*	Ticker of the asset to lease or use.
from1 string *(query)*	Required for assets that can be used without leasing first (such as REFINERY type assets). Specifies the source ticker.
quantity1 number *(query)*	Required for assets that can be used without leasing first (such as REFINERY type assets). Specifies the source quantity.
from2 string *(query)*	Specifies the 2nd source ticker (if required).

Name	Description
quantity2 number *(query)*	Specifies the 2nd source quantity (if required).
from3 string *(query)*	Specifies the 3rd source ticker (if required).
quantity3 number *(query)*	Specifies the 3rd source quantity (if required).

Responses

Response content type application/json

Code	Description

200	*OK*
	
	Example Value Model
	
	``json
	{
	  "id": 0,
	  "ticker": "string",
	  "type": "CONTAINER",
	  "start_lease_period": 0,
	  "start_lease_tick": 0,
	  "next_lease_period": 0,
	  "next_lease_tick": 0,
	  "convert_from": [
	    {
	      "ticker": "CL",
	      "quantity": 10
	    }
	  ],
	  "convert_to": [
	    {
	      "ticker": "CL",
	      "quantity": 10
	    }
	  ],
	  "containment_usage": 0
	}
	``

401	*Unauthorized.*

Code	Description

Example Value   Model

```
{
  "code": "UNAUTHORIZED"
}
```

GET   `/leases/{id}`   Gets the details of a specific lease.   🔒

Gets the details of a specific lease.

Parameters   **Try it out**

Name	Description
id * required `integer` *(path)*	The id of the asset lease.

Responses   Response content type   `application/json`

Code	Description
200	*OK*

Example Value   Model

```
{
  "id": 0,
  "ticker": "string",
  "type": "CONTAINER",
  "start_lease_period": 0,
  "start_lease_tick": 0,
  "next_lease_period": 0,
  "next_lease_tick": 0,
  "convert_from": [
    {
      "ticker": "CL",
      "quantity": 10
```

Code	Description

```
              }
            ],
            "convert_to": [
              {
                "ticker": "CL",
                "quantity": 10
              }
            ],
            "containment_usage": 0
          }
```

401

Unauthorized.

Example Value   Model

```
{
  "code": "UNAUTHORIZED"
}
```

POST   **/leases/{id}**   Use a leased asset.   🔒

Use a leased asset. Only specify subsequent `fromN` & `quantityN` parameters if needed.

Parameters   [**Try it out**]

Name	Description
from1 * required string *(query)*	Specifies the 1st source ticker.
quantity1 * required number *(query)*	Specifies the 1st source quantity.
from2 string *(query)*	Specifies the 2nd source ticker (if required).
quantity2 number *(query)*	Specifies the 2nd source quantity (if required).

Name	Description
from3 `string` *(query)*	Specifies the 3rd source ticker (if required).
quantity3 `number` *(query)*	Specifies the 3rd source quantity (if required).
id * **required** `integer` *(path)*	The id of the asset lease.

Responses   Response content type | application/json |

Code	Description

200	*OK*
	
	Example Value Model
	
	``json
	{
	  "id": 0,
	  "ticker": "string",
	  "type": "CONTAINER",
	  "start_lease_period": 0,
	  "start_lease_tick": 0,
	  "next_lease_period": 0,
	  "next_lease_tick": 0,
	  "convert_from": [
	    {
	      "ticker": "CL",
	      "quantity": 10
	    }
	  ],
	  "convert_to": [
	    {
	      "ticker": "CL",
	      "quantity": 10
	    }
	  ],
	  "containment_usage": 0
	}
	``

401	*Unauthorized.*

Code	Description

Example Value   Model

```
{
  "code": "UNAUTHORIZED"
}
```

DELETE   `/leases/{id}`   Unlease an asset.   🔒

Unlease an asset.

Parameters   **Try it out**

Name	Description
id * required integer *(path)*	The id of the asset lease.

Responses   Response content type   **application/json**

Code	Description
200	*OK*

Example Value   Model

```
{
  "success": true
}
```

401	*Unauthorized.*

Example Value   Model

Code	Description

```
{
  "code": "UNAUTHORIZED"
}
```

POST   `/commands/cancel`   Bulk cancel open orders.   🔒

Bulk cancel open orders. Exactly one query parameter must be specified. If multiple query parameters are specified, only the first available parameter in the order below will be processed. Returns a result object that specifies which orders were actually cancelled.

Parameters

<div align="right">

Try it out

</div>

Name	Description
all `number` *(query)*	Set to **1** to cancel all open orders.
ticker `string` *(query)*	Cancel all open orders for a security.
ids `string` *(query)*	Cancel a set of orders referenced via a comma-separated list of order ids. For example, `12,13,91,1`.

Responses

Response content type   `application/json`

Code	Description
200	*OK*

Example Value   Model

```
{
  "cancelled_order_ids": [
```

Code	Description

```
        12,
        13,
        91
      ]
    }
```

401
Unauthorized.

Example Value   Model

```
{
  "code": "UNAUTHORIZED"
}
```

Models   ⌄

Error   {
    code*   string
    message   string
}

CaseStatus   string
Enum:
    Array [3]

OrderType   string
Enum:
    Array [2]

SecurityType   string
Enum:
    Array [12]

AssetType   string
Enum:
    Array [6]

TickerQuantity {

ticker	string	
	example: CL	
quantity	number	
	example: 10	

}

TickerPrice {

ticker	string	
	example: CL	
price	number	
	example: 9.99	

}

OrderAction string
Enum:

    Array [2]

OrderStatus string
Enum:

    Array [3]

Order {

order_id	integer	
	example: 1221	
period	integer	
	example: 1	
tick	integer	
	example: 10	
trader_id	string	
	example: trader49	
ticker	string	
	example: CRZY	
	Case sensitive.	
type	string	
	example: LIMIT	
	Enum:	
	Array [2]	
quantity	number	
	example: 100	
action	string	
	Enum:	
	Array [2]	
price	number	
	example: 14.21	
	Will be null if type is LIMIT.	
quantity_filled	number	
	example: 10	
	Always less than or equal to quantity.	

```
    vwap                        number
                                example: 14.21
                                Volume-weighted average price for transacted quantity. null if
                                quantity_filled is 0.

    status                      string
                                Enum:

                                    Array [ 3 ]
}


AssetLease      {
    id                          integer
                                Lease id.

    ticker                      string
    type                        string
                                example: CONTAINER
                                Enum:

                                    Array [ 6 ]
    start_lease_period  integer
    start_lease_tick    integer
    next_lease_period   integer
    next_lease_tick     integer
    convert_from
                                [...]

    convert_to
                                [...]
    containment_usage   integer
                                Currently utilized capacity for CONTAINER type assets.

}


SuccessResult       {
    description:            Placeholder result to indicate an operation was successful.

    success                 boolean
                            example: true
}
```

VALID {···}